



Public Health

Idaho North Central District



Basic Septic System Installer Training Class

Public Health – Idaho North Central District

www.idahopublichealth.com

INTENT OF REGULATIONS

- a. Inaccessible to insects, rodents, or other wild or domestic animals.
 - b. Are not accessible to individuals
 - c. Are not a public nuisance due to odor or unsightly appearance.
 - d. Do not injure or interfere with existing or potential beneficial uses of the waters of the State.
-
- IDAPA 58.01.03
 - Technical Guidance Manual

WHAT IS SEWAGE?



Residential
Waste

- Blackwater
- Greywater
- Pollutants

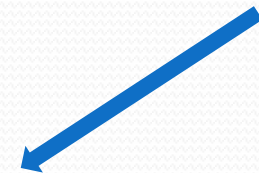
Other
Pollutants



SEWAGE



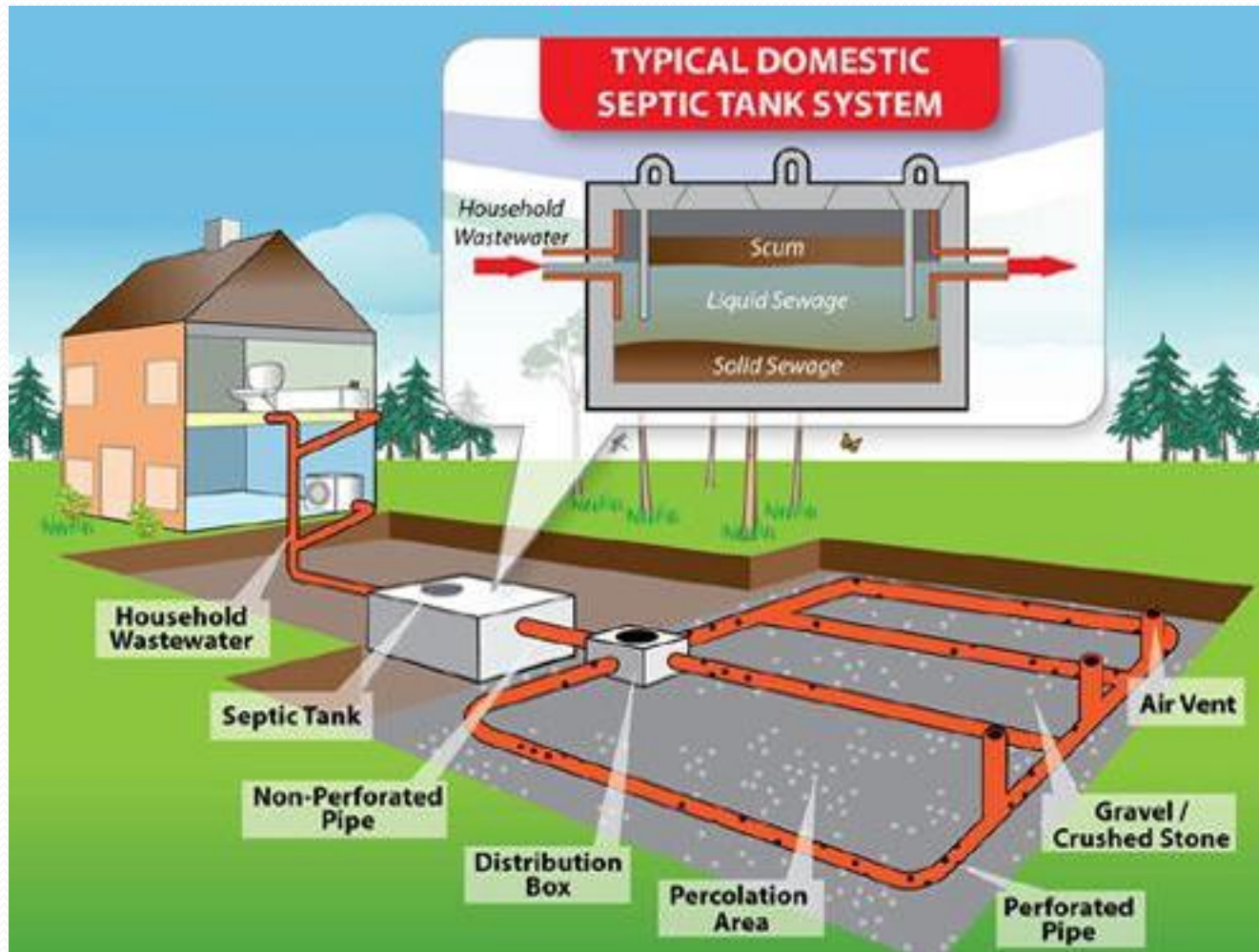
Commercial
Waste



WHAT IS SEWAGE?

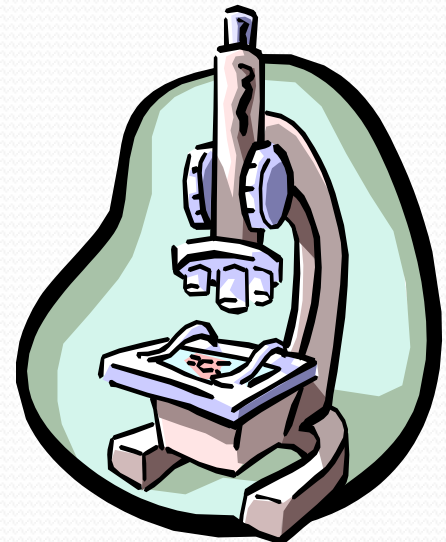
Any combination of **liquid, water, and pollutants** from activities and processes occurring in dwellings, commercial buildings, industrial plants, institutions and other establishments, together with any groundwater, surface water and storm water that may be present; liquid or water that is chemically, biologically, physically rationally identifiable as containing black water, gray water or commercial or industrial pollutants.

WHAT IS A SEWAGE SYSTEM?



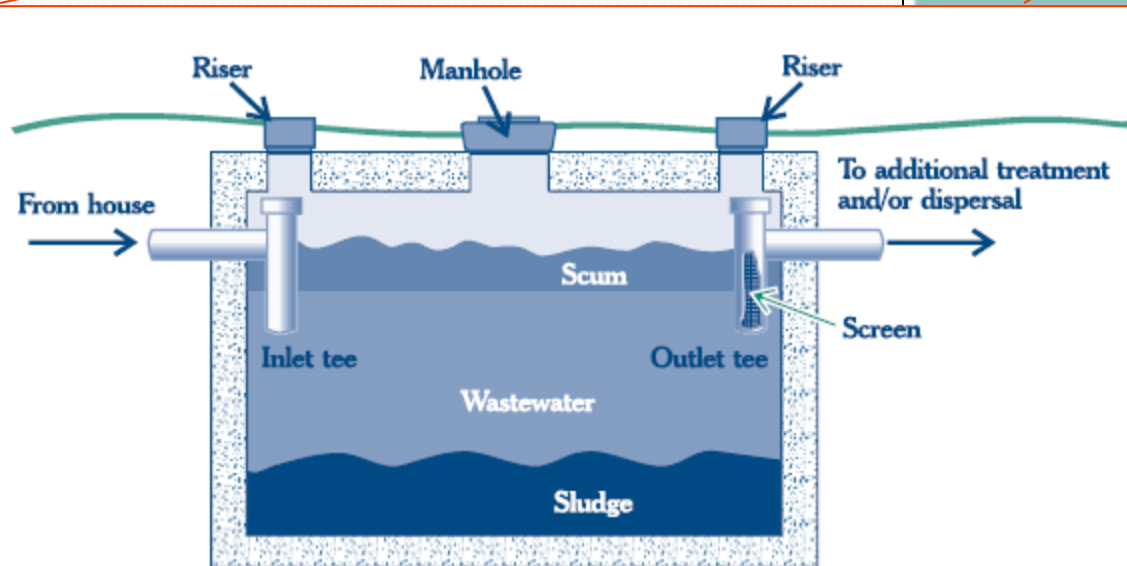
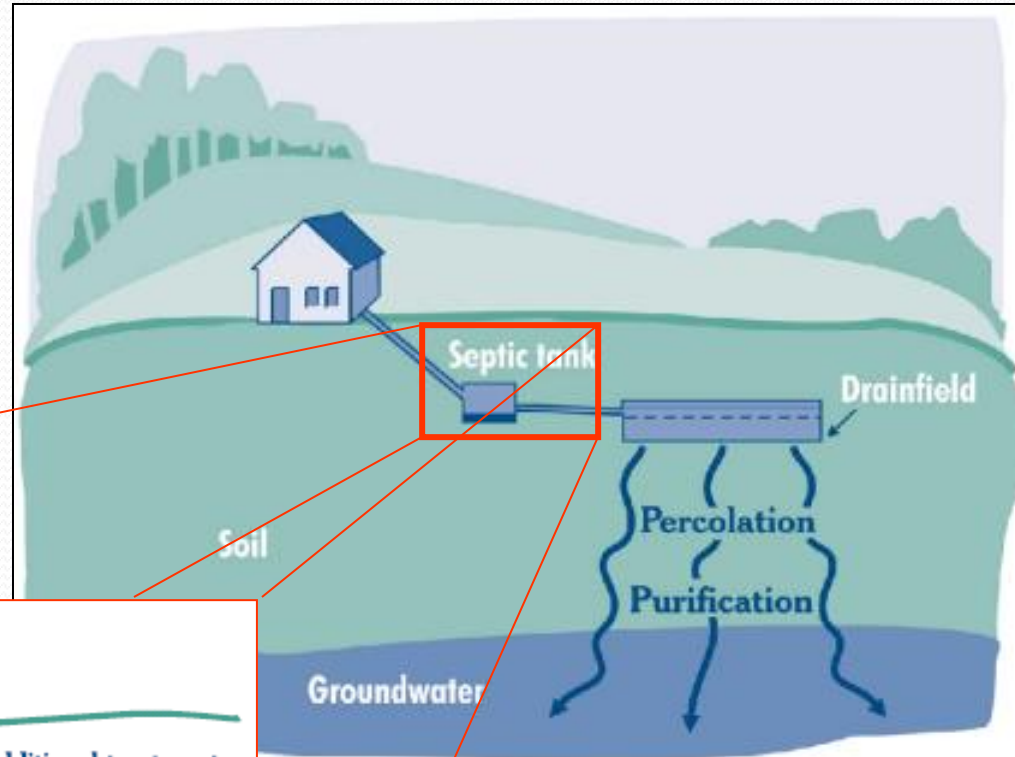
Importance of Proper Sewage Disposal

- Prevent pollution of surface waters
 - Prevent pollution of ground waters (*i.e.* aquifers)
 - Prevent waste from being accessible to disease carrying vectors, such as flies, rodents, insects, etc.
 - Protect human health!
- 🦠 E. Coli
 - 🦠 Giardia
 - 🦠 Salmonella
 - 🦠 Shigella
 - 🦠 Hepatitis A
 - 🦠 Norovirus
 - 🦠 Cholera
 - 🦠 Dysentery



How do Septic Systems protect Public Health?

- The septic tank separates the sewage, and provides storage.
- Many disease causing organisms are destroyed and never leave the septic tank.



- The drainfield discharges the wastewater to the soil which acts as a natural filtration process to treat and remove disease causing organisms.

Who can install septic systems?

- A State of Idaho **licensed** basic or complex installer.
 - Basic installer's must maintain a \$5,000 sewage installer's bond.
 - A complex installer must maintain a \$15,000 bond.
 - License must be renewed annually by January 1st and an approved refresher course must be completed every 3 years.
- A property owner may install his/her own standard or basic alternative system.

Basic Installers

May install:

- Standard and basic alternative
- Capping fill
- Gravelless drainfields
- Steep slope
- Privies (composting, incinerating, pit, and vault)
- In-trench sand filter

Complex Installers

May install:

- All standard systems
- Pump to gravity systems
- Evapotranspiration systems
- Extended treatment systems
- Intermittent sand filter, in-trench sand filter
- Lagoon systems
- Large soil absorption systems
- Pressure distribution systems
- Sand mound
- Two cell infiltrative systems
- Other systems specified by the director

When Do I Need a Permit?

- All new onsite sewage disposal systems are required to be permitted.
- Replacement disposal systems require a replacement permit.
- If you replace an existing septic tank or add another tank, a permit is required.
- If an outhouse/pit privy/composting is installed, a permit is required.
- You do not need a permit to fix a clogged or broken pipe, or to replace a malfunctioning electrical component.

Sewage Permits

- Sewage Permit Application
 - Statewide application
 - Entire fee (\$800) must be paid upfront
 - If site is denied \$500 will be refunded to applicant
- Speculative Site Evaluation
 - Fee is \$300
 - Only valid for one year
 - \$300 is credited towards permit fee if submitted within 1 year

Information on a Permit

- Type of system
- Size of tank
- Size of drainfield
- Location
- Other:
 - Diverter
 - Filter
 - Riser/Lids
- Permits are valid for 1 year
 - Can be renewed yearly for \$50



Property Address (if available): _____ City _____
Legal Description: Section: _____ Township: _____ Range: _____ County: _____ Parcel #: _____
Subdivision: _____ Lot _____ Block _____ Acres: _____
Directions (nearest crossroad): _____

Applicants Name: _____ Email: _____
Mailing Address: _____ Phone #: _____
City: _____ State: _____ Zip Code: _____
Applicant is : Landowner Contractor Installer Other

Owners Name : _____
Mailing Address : _____ Phone # : _____
City : _____ State: _____ Zip Code: _____

Type of Septic Installation : New Expansion Repair Tank Only Speculative Site Evaluation

Proposed Usage : Residential Non-Residential Other (i.e. barn, shop, etc.)
 Central (more than two dwellings) Large Soil Absorption (2,500 gal/day or ten or more dwellings) # of Units: _____

Is there an existing structure on this parcel? Yes No Year Built: _____

Number of Bedrooms: (residential only) _____ Number of bathrooms: _____
Number of People: _____ Square Footage: _____ Garbage Disposal? Yes No
Non-Residential Flow Design: Average: (gallons per day (gpd)) _____ Peak: (gpd) _____

Foundation Type : Basement Crawl Space Split Level Slab

Property is located : Inside City Inside County

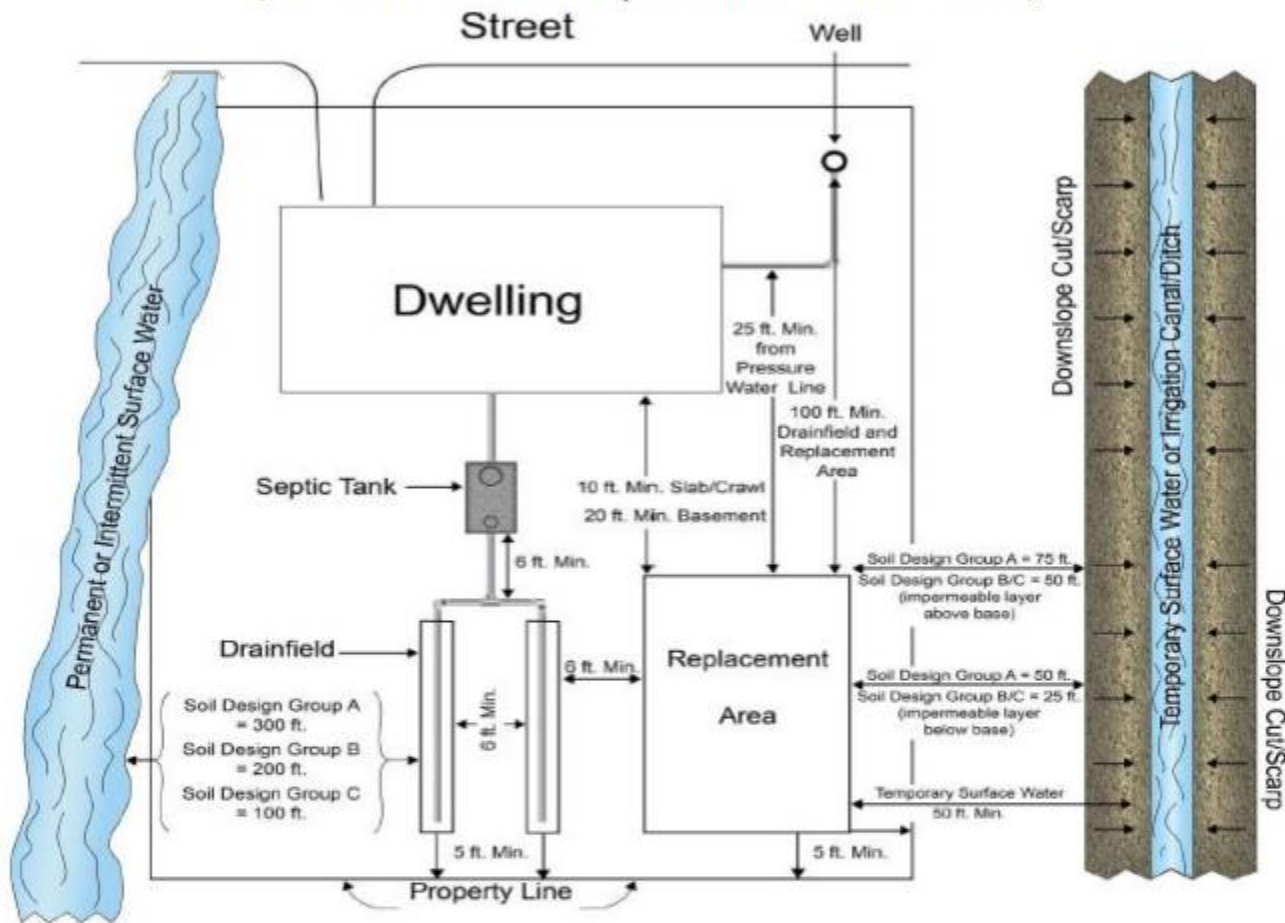
Zoning certificate or other county documentation submitted? Yes No N/A

City sewer or central wastewater collection system 200 feet or less to structure? Yes No

Water Supply : Private Well Shared Well Public Water System, Number: _____
(Non-Public)

TYPICAL PLOT PLAN

(This shows the dimensional requirements for a standard drainfield)



Plot Plan Needs to Include the following:

1. Property lines
2. Buildings
3. Driveway and parking area
4. Well locations, water lines
5. Proposed location of septic tank and drainfield lines
6. Drainfield replacement area (100% size of original)
7. Rivers, streams, irrigation canals/ditches
8. Easement and right-of-ways
9. Streets, roads, banks
10. Pools (20 foot set back from edge of pool to drainfield)

PERMIT-Subsurface Sewage Disposal



Nez Perce County
215 10th Street
Lewiston, ID 83501
Phone: (208) 799-9100
Fax: (208) 799-0349



Latah County
233 E Palouse River Drive
Moscow, ID 83843
Phone: (208) 882-7606
Fax: (208) 882-3494



Clearwater County
105 115th Street
Oronogo, ID 83544
Phone: (208) 476-7800
Fax: (208) 476-7494

Date _____
Permit # _____
Parcel # : _____
Computer # _____

Idaho County
803 West Main Street
Grangeville, ID 83530
Phone: (208) 983-2842
Fax: (208) 983-2845

Lewis County
132 N. Hill Street
Kamiah, ID 83536
Phone: (208) 935-2124
Fax: (208) 935-0223

Applicant's Name: _____ Phone # _____
 Owners Name: _____
 Property Address: _____
 Legal Description: _____
 Subdivision: _____

Section	Township	Range
Lot	Block	Size(acres):

Type of Installation	Type of System (check all that apply)			Water Supply
<input type="checkbox"/> New System <input type="checkbox"/> Expansion <input type="checkbox"/> Repair <input type="checkbox"/> Tank Only	<input type="checkbox"/> Absorption Bed <input type="checkbox"/> Capping Fill <input type="checkbox"/> Central System <input type="checkbox"/> Composting Toilet <input type="checkbox"/> Drip Distribution <input type="checkbox"/> ETPS <input type="checkbox"/> Experimental <input type="checkbox"/> Extra Drainrock <input type="checkbox"/> Evapotranspiration <input type="checkbox"/> Gravel Drainfield	<input type="checkbox"/> Gravelless Drainfield <input type="checkbox"/> Gray Water Sump <input type="checkbox"/> Gray Water System <input type="checkbox"/> Holding Tank <input type="checkbox"/> Incinerator Toilet <input type="checkbox"/> Individual Lagoon <input type="checkbox"/> Intermittent SF <input type="checkbox"/> Intrench SF <input type="checkbox"/> LSAS <input type="checkbox"/> Pit Privy	<input type="checkbox"/> Pressurized DF <input type="checkbox"/> Recirculating GF <input type="checkbox"/> RV Dump Station <input type="checkbox"/> Sand Mound <input type="checkbox"/> Seepage Pit <input type="checkbox"/> Steep Slope Drainfield <input type="checkbox"/> Two Cell Lagoon <input type="checkbox"/> Vault Privy <input type="checkbox"/> Other (see below)	<input type="checkbox"/> Private <input type="checkbox"/> Shared <input type="checkbox"/> Public <hr/> <input type="checkbox"/> Well <input type="checkbox"/> Spring

Conditions of Approval:

Residential permit _____ Bedrooms

Non-residential permit _____ Gallons Per Day

Soil Type: _____ USDA

The minimum septic tank capacity is: _____ Gallons

The minimum effective drainfield absorption area is: _____ Square Feet

The drainfield can be no closer to permanent/intermittent surface water than: _____ Feet

Note: (Final approval of this permit requires inspection of the uncovered system.)

All plans, specifications, and conditions contained in the approved permit application are hereby incorporated into, and are enforceable as part of the permit. The permit will expire one (1) year from date of issuance. The permit may be renewed if the renewal is applied for on or before the expiration date.

EHS Permit Issued Signature	DATE				
	TRAVEL				
	INSPECT				
EHS Code	Date	EHS			

Getting Started...

- Make sure you have a permit before getting started!
- Contact your local EHS if you have any questions or concerns about permit.
 - Lewiston 208-799-3100 Bonnie or Jacob
 - Moscow 208-882-7506 Nancy or Lane
 - Orofino 208-476-7850 Ebben
 - Grangeville 208-983-2842 Mike
- Keep in contact with EHS to arrange inspections as necessary. Provide 24 - 48 hours notice!

Test Holes/Site Evaluations



Digging Test Holes



- Test holes need to be dug to a minimum of 7ft to 8ft or until a limiting layer is encountered.
- Test holes in Type A soils that are well drained need to be dug to a depth of 10 ft.
- Slope test holes so that EHS can enter hole to identify soil type and structure.

The Role of Soil

- Effluent Treatment
- “Not too fast, Not too Slow”
- Pathogen Destruction
 - Bacteria
 - Viruses
- Nutrients
 - Nitrogen
 - Phosphorus



What does the test hole tell us?

- Soil Type
- Soil Depth
- Soil Structure
- Soil Layers
- If there are any limiting layers including:
 - Rock
 - Caliche/cemented layers
 - High water table
 - Seasonal or groundwater

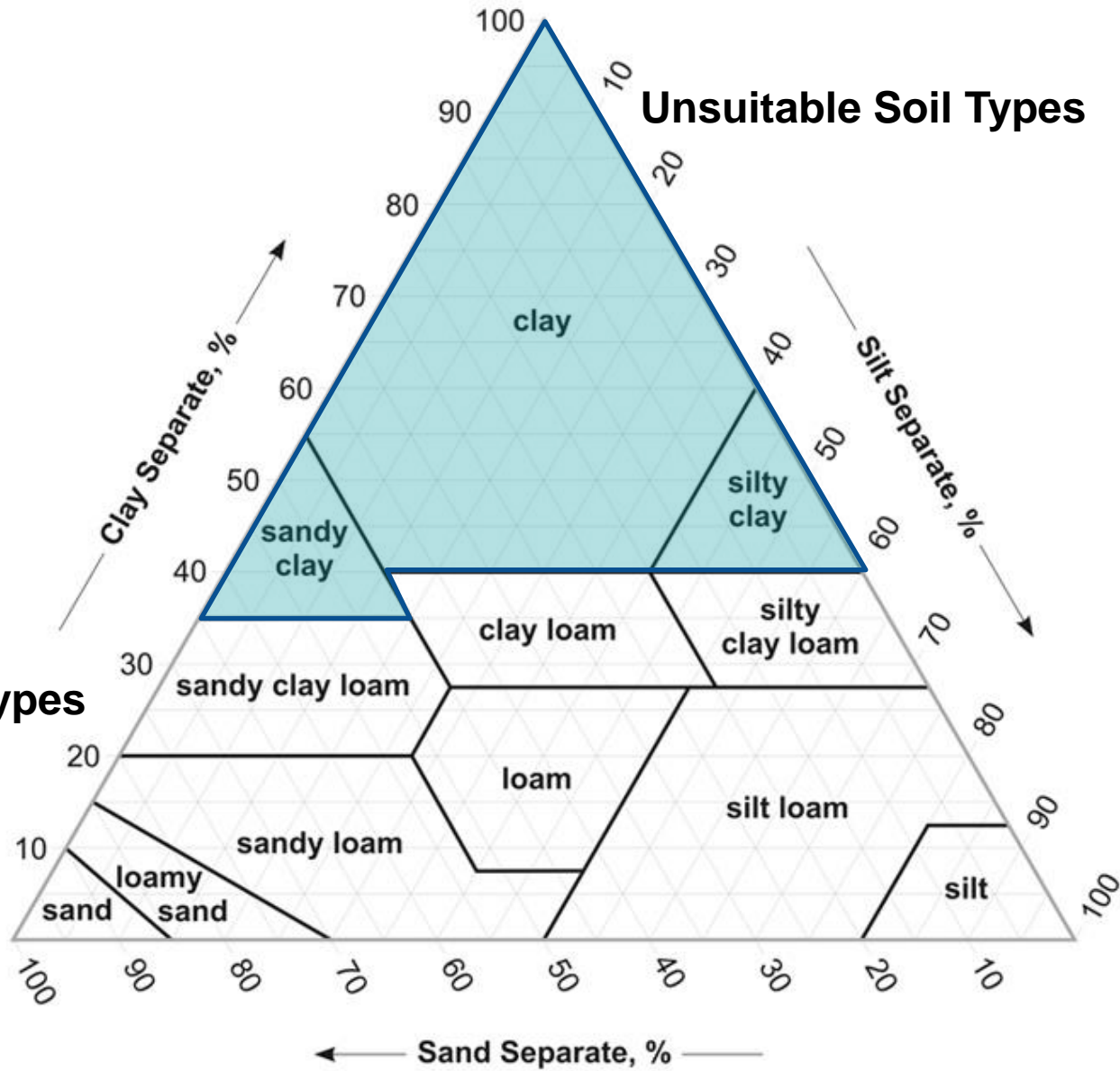


Soil Texture and Groups

- Soil texture is determined by the amount of three constituents: **sand, silt, and clay**
- Texture determines:
 - Porosity
 - Permeability
 - Aeration
 - Drainage
- Idaho uses the Soil Textural Classification from the USDA



Unsuitable Soil Types



Suitable Soil Types

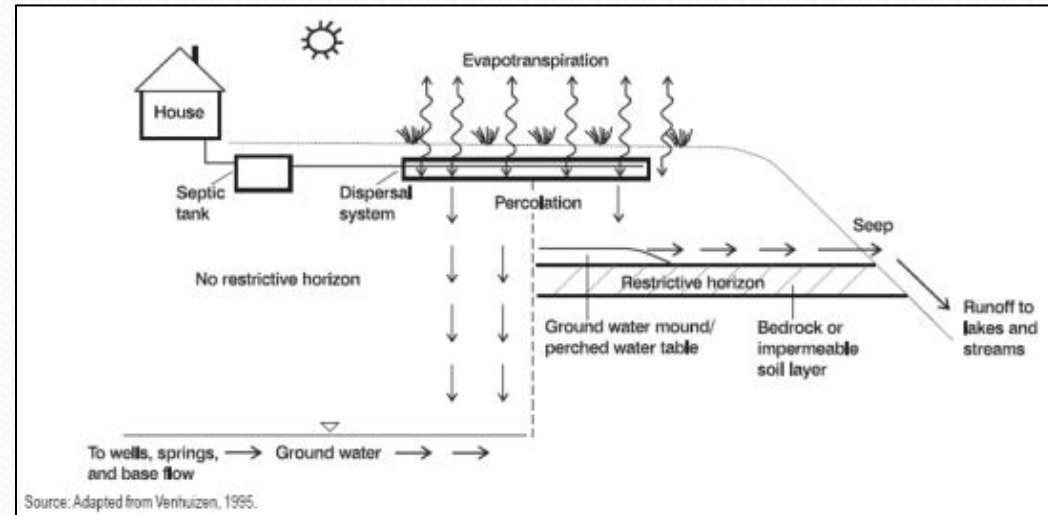
Application Rates

Soil Class	Soil Type	Percolation Rate (mins/in)	Application Rate (gals/day/ft²)
N/A	Gravel, Coarse Sand	<1	Not suitable
A-1	Medium Sand	1-3	1.20
A-2a	Medium Sand, poorly graded	4-5	1.0
A-2b	Fine Sand, loamy sand	6-15	0.75
B-1	Sandy Loam	16-30	0.60
B-2	Loam, silt loam	31-60	0.45
C-1	Sandy or silty clay loam	45-60	0.30
C-2	Clay Loam	61-120	0.20
N/A	Clays, organic muck, duripan, hardpan	>120	Not suitable

Soil Depths

Effective Soil Depth is Determined by:

- Impermeable Layer
- Fractured/Fissured Bedrock
- Extremely Permeable Material
- Normal High Ground Water
- Seasonal High Ground Water



✓ Adequate effective soil depth is necessary to safely treat sewage

Effective Soil Depth

(In Feet by Soil Design Group to Limiting Layer)

Site conditions Limiting Layer	Soil Classifications		
	A Porous	B ↔	C Less Porous
Impermeable Layer	2	2	2
Fractured Bedrock, Fissured Bedrock or Extremely Permeable Material	6	4	3
Normal High Ground Water Level	6	4	3
Seasonal High Ground Water Level	1	1	1

Suitable soils?



Textural Red-Flags



A Word on Fill

- Systems placed in fill material.
- Woody, rocky, construction debris
- May require groundwater monitoring



Effective Soil Depth?



Putting it all together...

GPD + Soil + Site Conditions + Hydrology =
Disposal Area

“Once we fully understand all these conditions we can properly size the on-site wastewater system for the specific site”

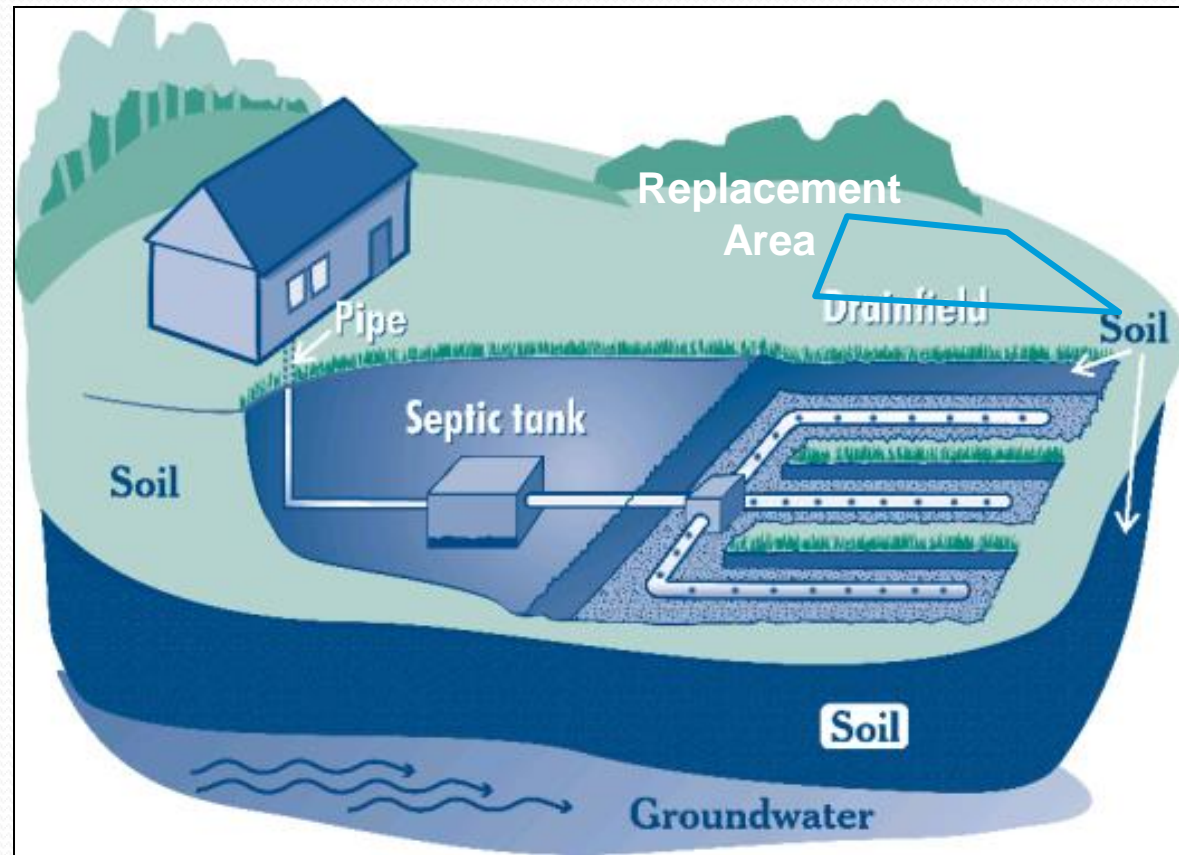
Parts of a Septic System

- Septic Tank

- Dosing chamber with pump to elevate sewage if not gravity fed

- Drainfield

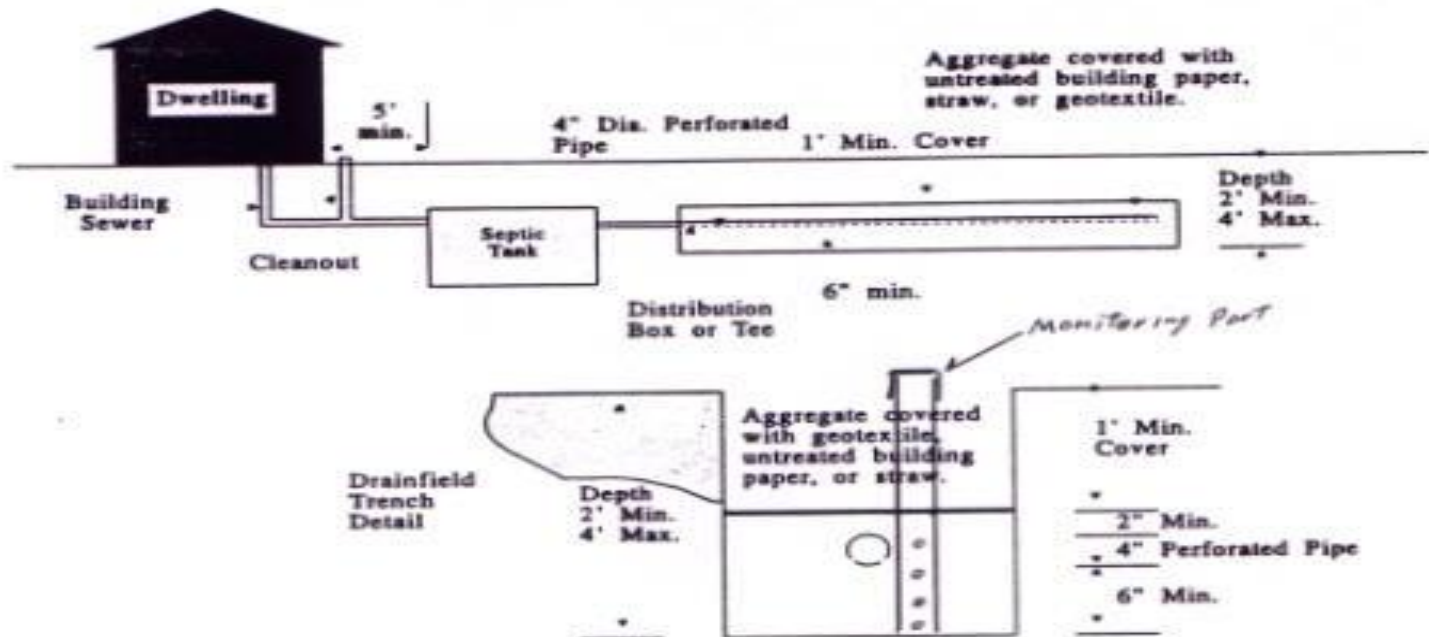
- Variety of systems addressed in basic & complex systems
- Replacement Area

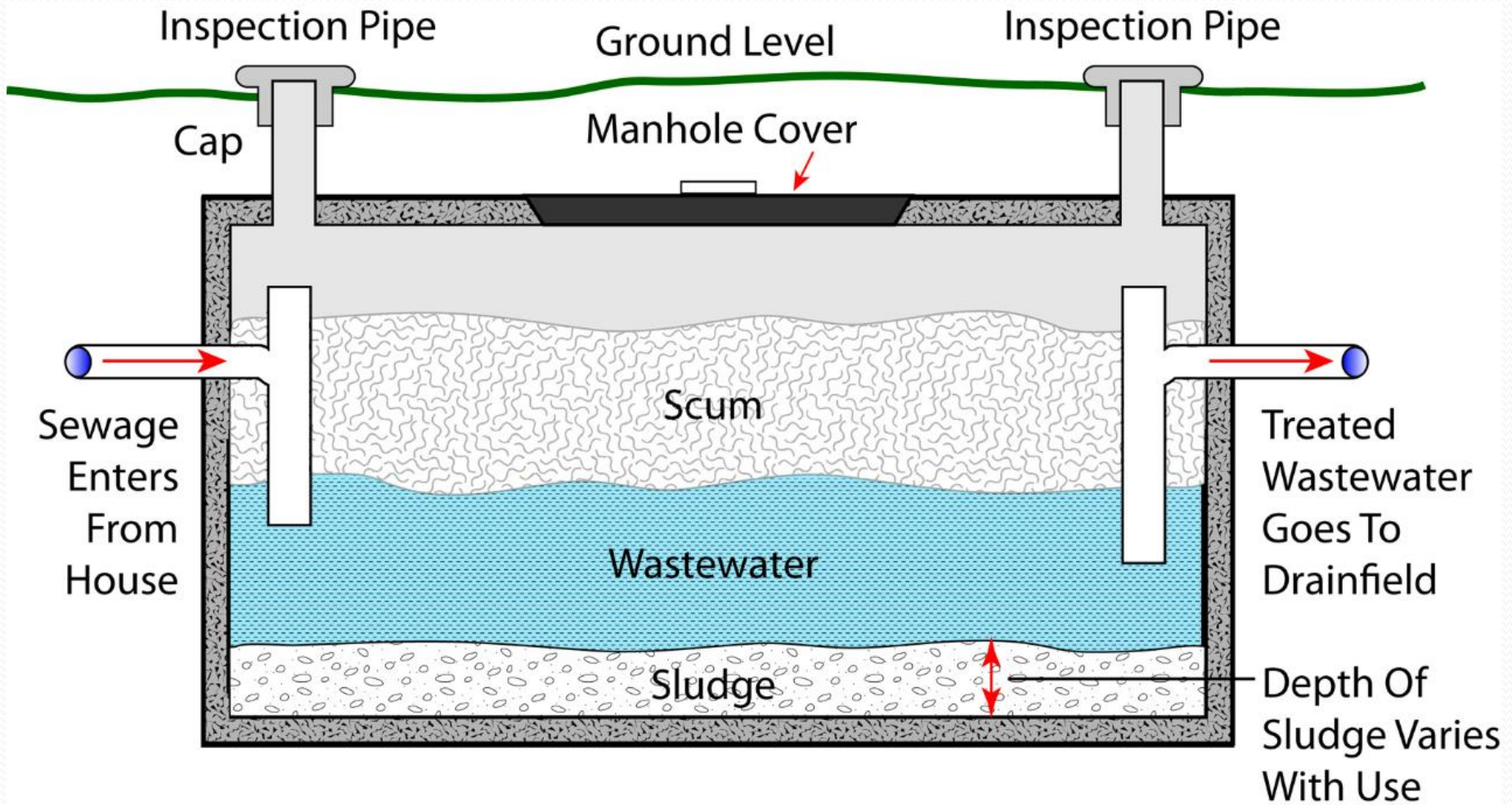


Standard System Requirements

- Standard System = septic tank + drain field
- Slope not greater than 20%
- Suitable soil type
- Effective soil depth
- Separation distances must be able to be met
- Properly sized tank: 1000 gallons for up to 4 bedrooms, then 250 gal per each additional bedroom
- Adequate space for two complete systems to be installed, primary site and replacement area.

Cross-sectional View of a Standard Drainfield





Schematic of a Septic Tank

What does a Septic Tank do?

- **Trap** solids
 - Sludge & Scum (floaters and sinkers)
- **Treats** solids and blackwaste
 - Anaerobic Bacteria
 - Partial solids reduction
- Gases **vent** to house stack



Septic Tank Requirements

- State approved with required markings
- Sound
- Sealed
- Bedded
- Level
- Baffles
- ABS sch. 40



Tank Requirements

- **Two tanks required when...**
 - **Two residences sharing drainfield on same property.**
 - **Example: 2 bedroom home, 1 bedroom accessory cottage.**
- **Not required when detached structure has only a bathroom.**

Inlet and Outlet Baffles



Baffles help protect the drainfield by keeping solids in the tank

Plastic Septic Tanks



- Need to be filled with water before backfilling.
- Extreme caution still needs to be taken when backfilling, especially if working with rocky or heavy soils.
- Must be approved by DEQ.

Tank Accessibility

(or “out of sight – out of mind”)





Search: 44830816

*"You've learned a life lesson today . . .
Digging your ass off for treasure only
to end up in a septic tank!"*

Tank Placement

- Conveniently located: is the tank accessible for maintenance?
- How much weight can a tank support?



Tank Risers



- Risers are required if the cover depth of the septic tank is more than 24" below finished grade.
- Riser needs to extend to within 18" of finished grade.
- Know the maximum rated cover depth for septic tanks.

Tank Replacement



- Obtain tank-only permit
- Existing system
 - Permitted?
 - Inspection for function.
 - Placement = current code

Tank Abandonment



- Tank must be pumped.
- Disconnected.
- Filled in or removed.

Factors that affect tank performance

- Gallons per day
- Waste strength
- Medications
- Temperatures
 - Inside & outside
- Household cleaners



**Not in My
Septic System!**

X Cloggers

diapers, cat litter, cigarette filters, coffee grounds, grease, feminine hygiene products, etc.

X Killers

household chemicals, gasoline, oil, pesticides, antifreeze, paint, etc.

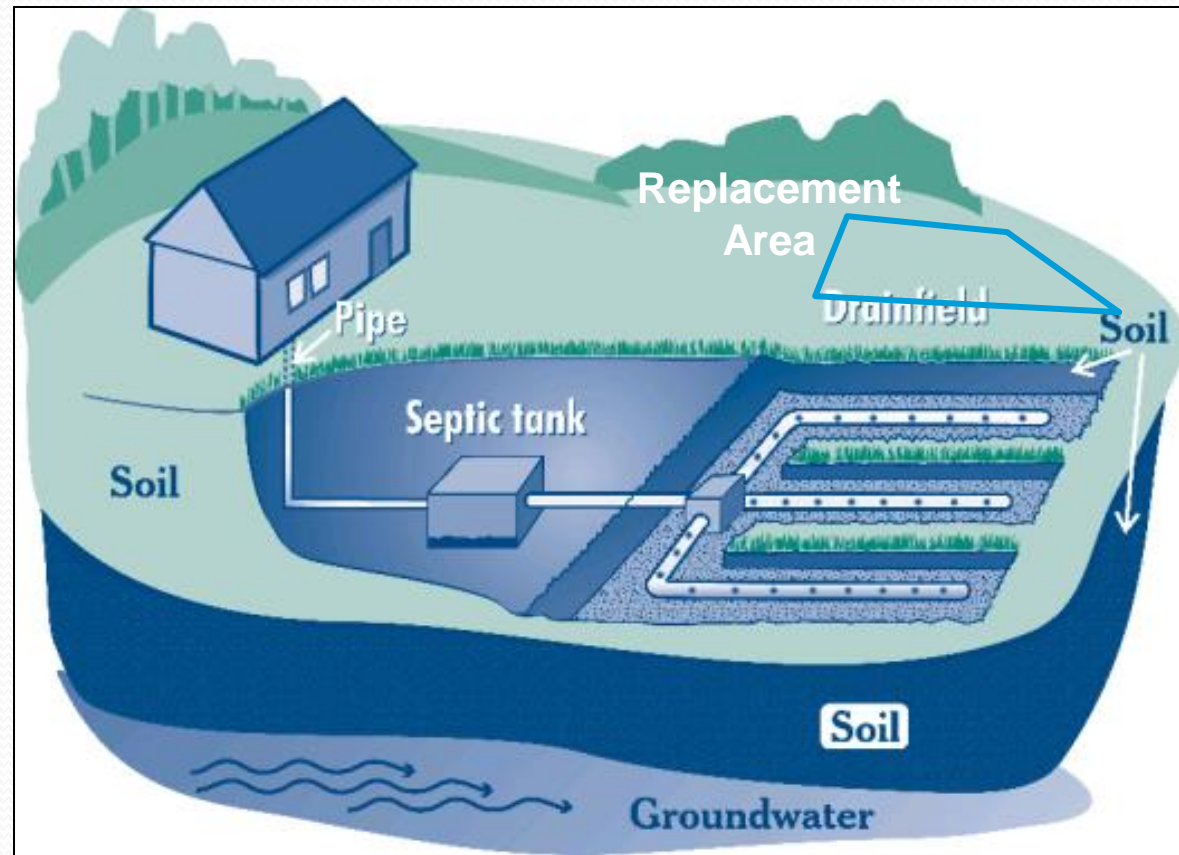
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- Variety of systems addressed in basic & complex systems
- Replacement Area



Piping

Pipe Material and Specification ^{a,b}		Function			
		Tank to Dosing Chamber	Tanks to Drainfield ^{c,d}	Gravity Drainfield ^{c,d}	Pressure Distribution System
ABS Sch. 40 ^e	ASTM D2661	X	X	X	X
	ASTM F628	X	X	X	X
PVC Sch. 40	ASTM F891-10	X	X	X	X
PVC	ASTM D3034 ^f	X	X	X	
	ASTM D2729			X	
	ASTM D2241	X	X	X	X
	AWWA C900	X	X	X	X
	ASTM D2665	X	X	X	
	ASTM D1785	X	X	X	X
PE	AWWA C906	X	X	X	X
	ASTM F810 ^g		X	X	
	ASTM F667 ^h			X	

DRAINFIELDS

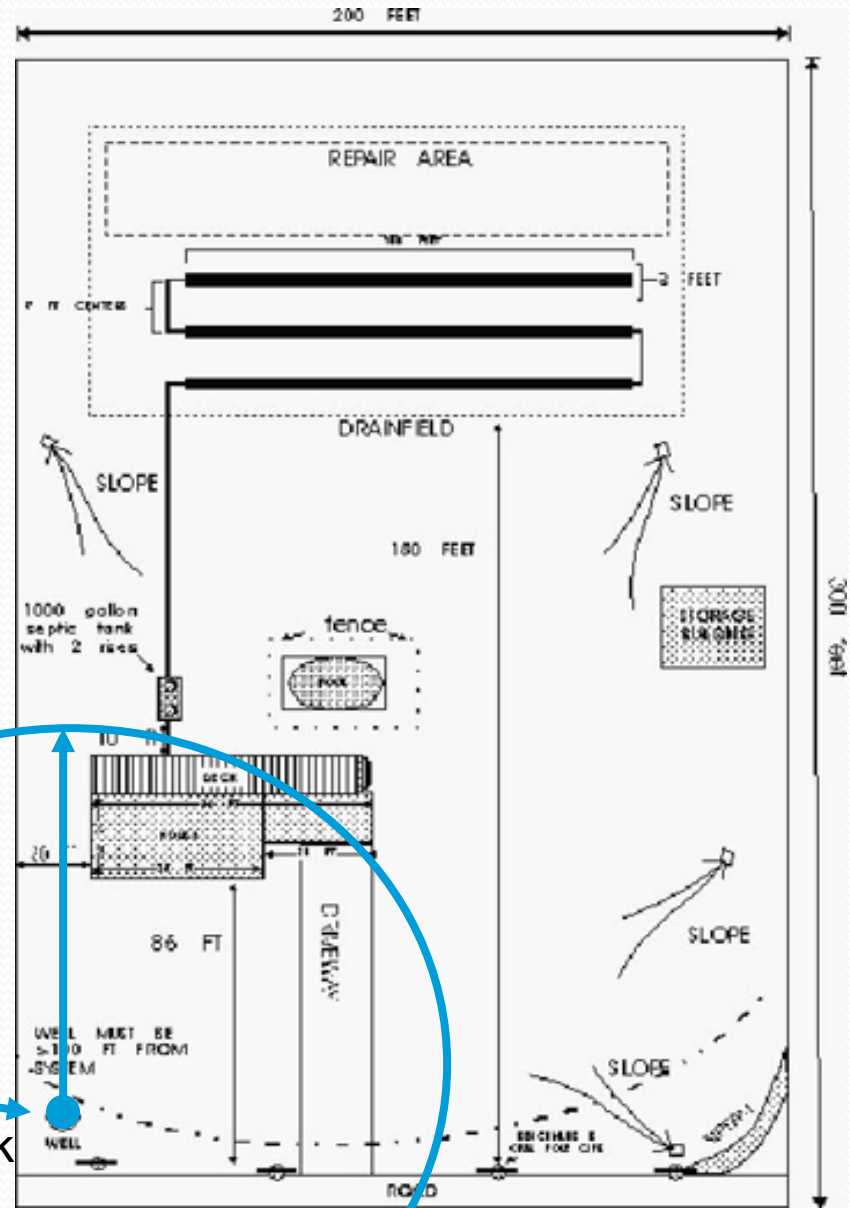
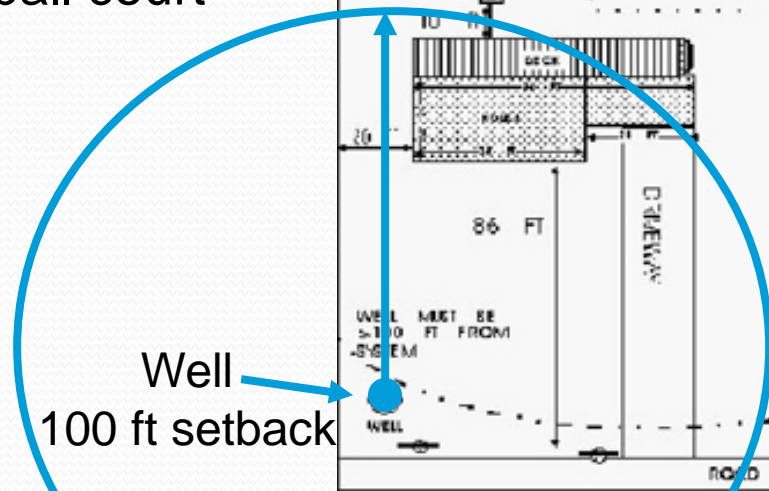


Drainfield Placement

- Is it near test holes' location?
- Are conditions suitable for installation?
- Replacement areas need to be at least 6 feet from existing drainfield.
- Systems cannot be placed in fill material.
- Are all setbacks capable of being met?
- WHERE'S THE WELL?

Site Considerations

- Prior Land Use
 - driveway or other cause for compaction
 - foreign soils, buried materials, Wells
- Future Land Use Restrictions
 - future building, garage, shop
 - parking lot
 - Pool, tennis/basketball court

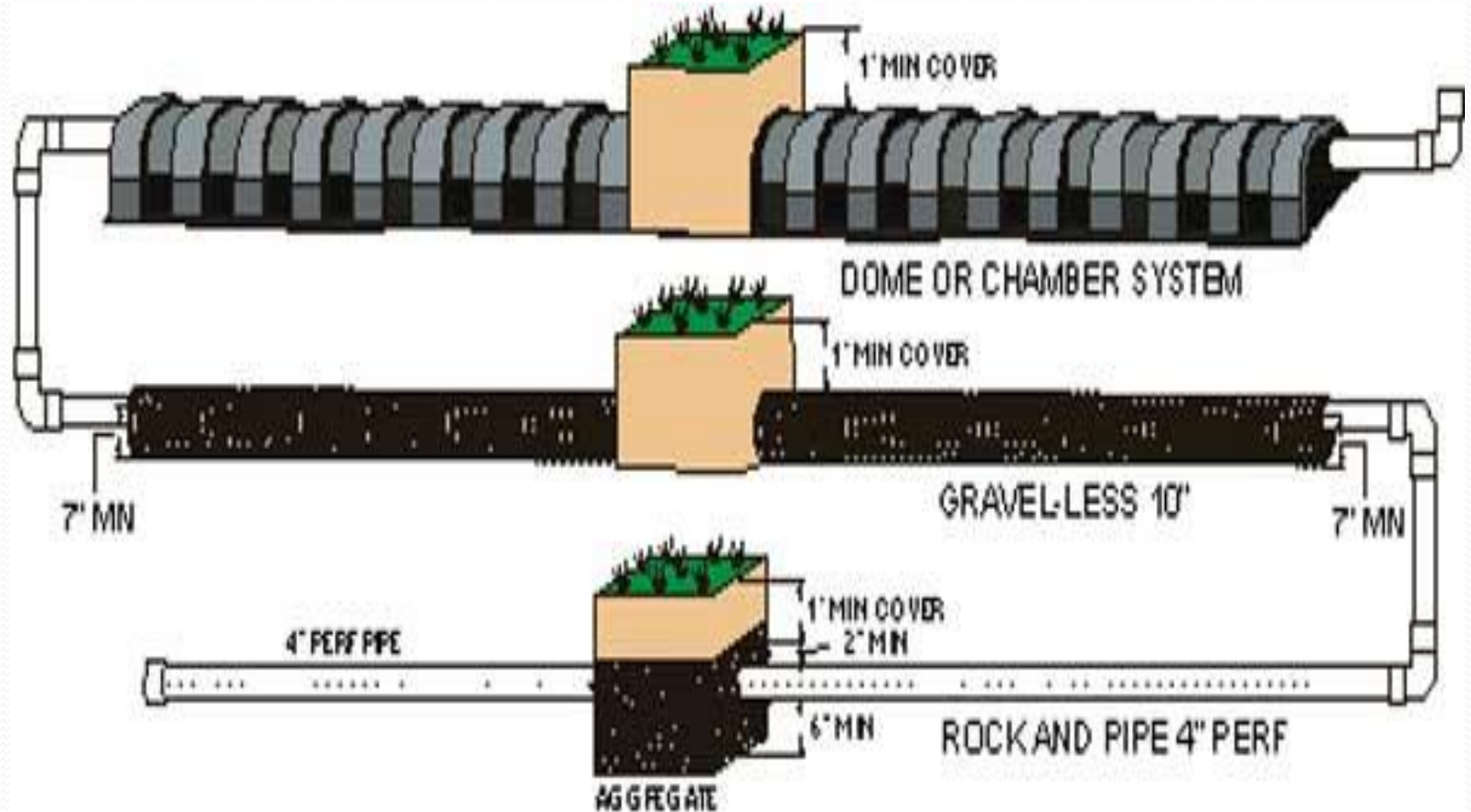


Septic Tank and Wastewater Flow Sizing

Options Evaluated - 3 bedroom home

Ontario, Canada	4 bed = 500 GPD + m ²
New Jersey	500 GPD + 150 GPD /bedroom
Pennsylvania	400 GPD + 100 GPD /bedroom
N.C.	360 GPD + 120 GPD /bedroom
MT	350 GPD
Maryland	450 GPD + 150 GPD /bedroom
Louisiana	400 GPD + 100 GPD /bedroom
Illinois	600 GPD + 200 GPD /bedroom
New Mexico	375 GPD + 75 GPD /person
Arizona	450 GPD + 150 GPD /bedroom
Arkansas	450 GPD + 150 GPD /bedroom
Idaho	250 GPD + 50 GPD /bedroom

Drainfield System Types



Gravel or Gravelless?



Gravel System



Gravelless Chambers



Issues with Gravelless Chambers

- Ground Squirrels – Use equal distribution or place wire fencing along bottom of trenches
- Weathering/UV damage
- Silt barrier



Sewage System Criteria

Item	All Soil Groups
Length of individual distribution laterals	100 ft max
Grade of distribution pipes and trench bottom	Level
Width of trenches	6 ft max
Depth of trenches	2-4 ft deep
Undisturbed earth between trenches	6 ft

Sewage System Criteria

Item	All Soil Groups
Undisturbed earth between septic tank and trenches	6 ft min
Depth of aggregate – total	12 inches min
Over distribution laterals	2 inches min
Under distribution laterals	6 inches min
Depth of soil over aggregate	12 inches min
Aggregate size	1/2 to 2 1/2 inches, free of fines

Separation Distances

Drainfield

Feature of Interest	Septic Tank	Soil Type A	Soil Type B	Soil Type C
Public wells, springs, or suction lines	100 ft	100 ft	100 ft	100 ft
Other wells, springs, or suction lines	50 ft	100 ft	100 ft	100 ft
Public Water Distribution lines	25 ft	25 ft	25 ft	25 ft
Other water distribution lines	10 ft	25 ft	25 ft	25 ft
Permanent or Intermittent surface water	50 ft	300 ft	200 ft	100 ft
Temporary surface water, irrigation canals, and ditches	25 ft	50 ft	50 ft	50 ft

Separation Distances

Drainfield

Feature of Interest	Septic Tank	Soil Type A	Soil Type B	Soil Type C
Down slope cut or scarp: impermeable layer above base	25 ft	75 ft	50 ft	50 ft
Down slope cut or scarp: impermeable layer below base	25 ft	50 ft	25 ft	25 ft
Crawl space or slab	5 ft	10 ft	10 ft	10 ft
Basement	5 ft	20 ft	20 ft	20 ft
Property Line	5 ft	5 ft	5 ft	5 ft
Seasonal high water level	2 ft	1 ft	1 ft	1 ft

Equal Distribution



- Effluent from the septic tank is directed equally into each drainfield leg

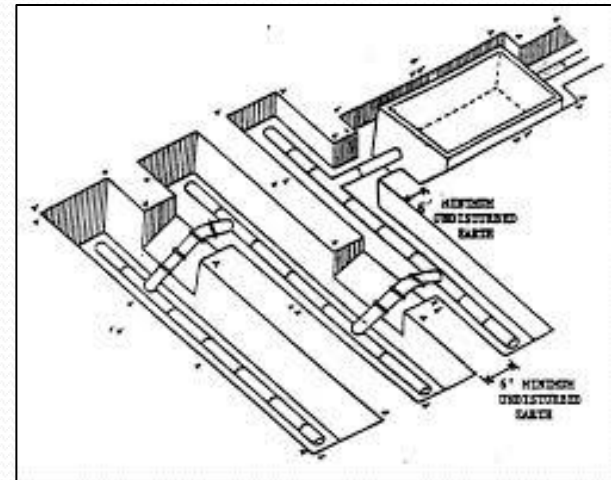
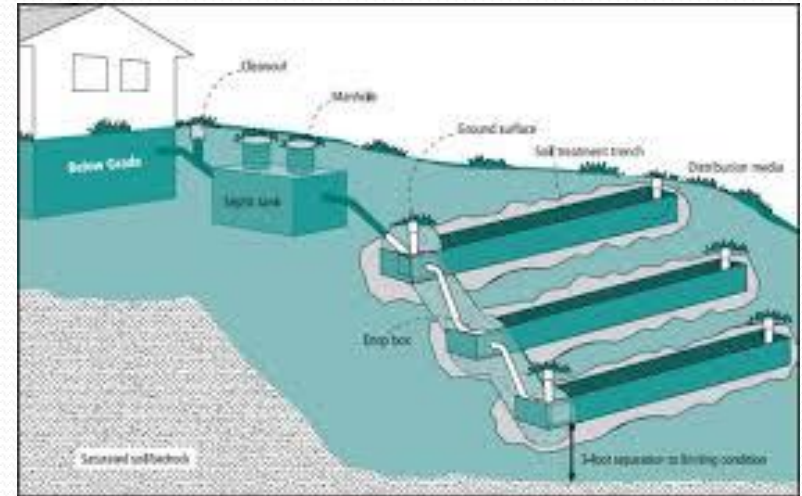
Equal Distribution

Distribution Box (D-box)

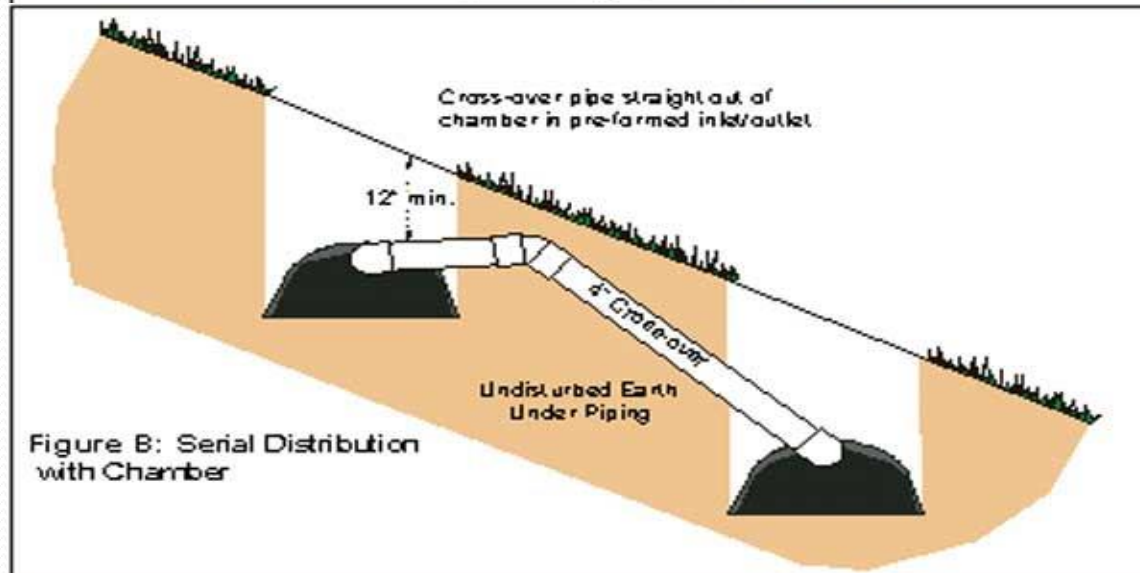
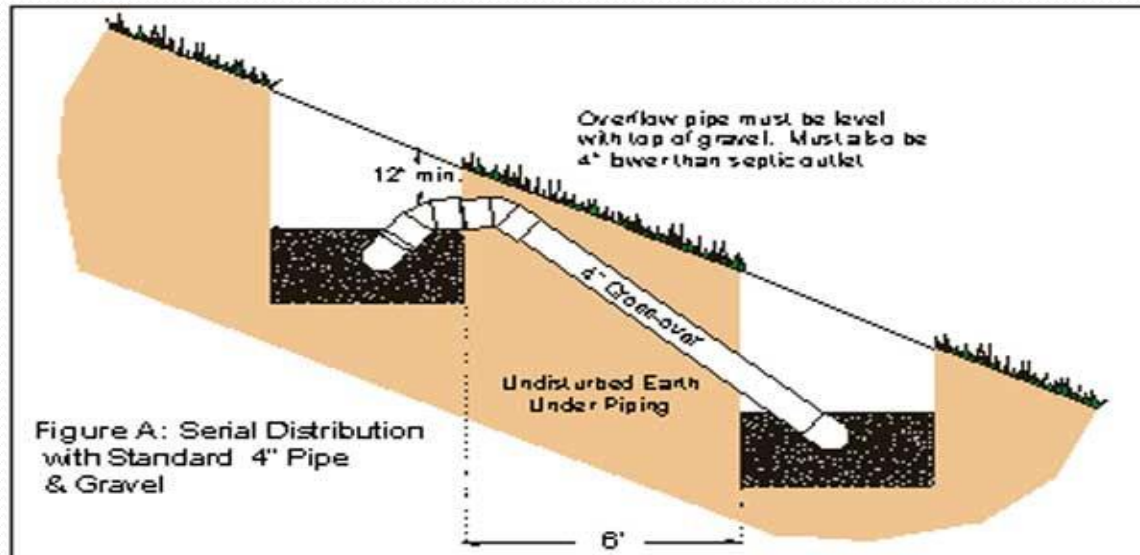


Serial Distribution

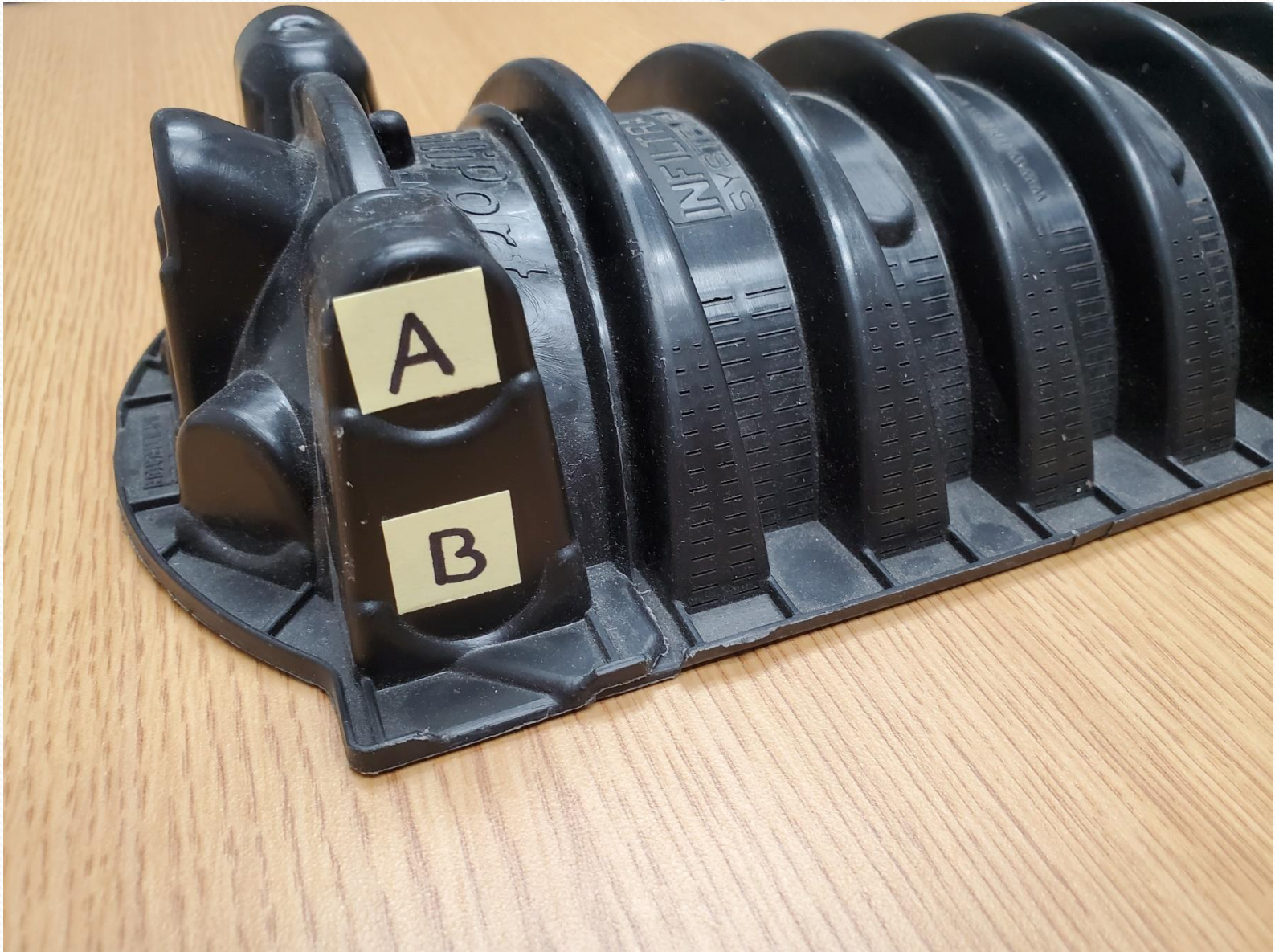
- Effluent from the septic tank fills one drainfield leg at a time, before overflowing to the next leg.
- Cannot use combination of serial and equal distribution



Serial Distribution

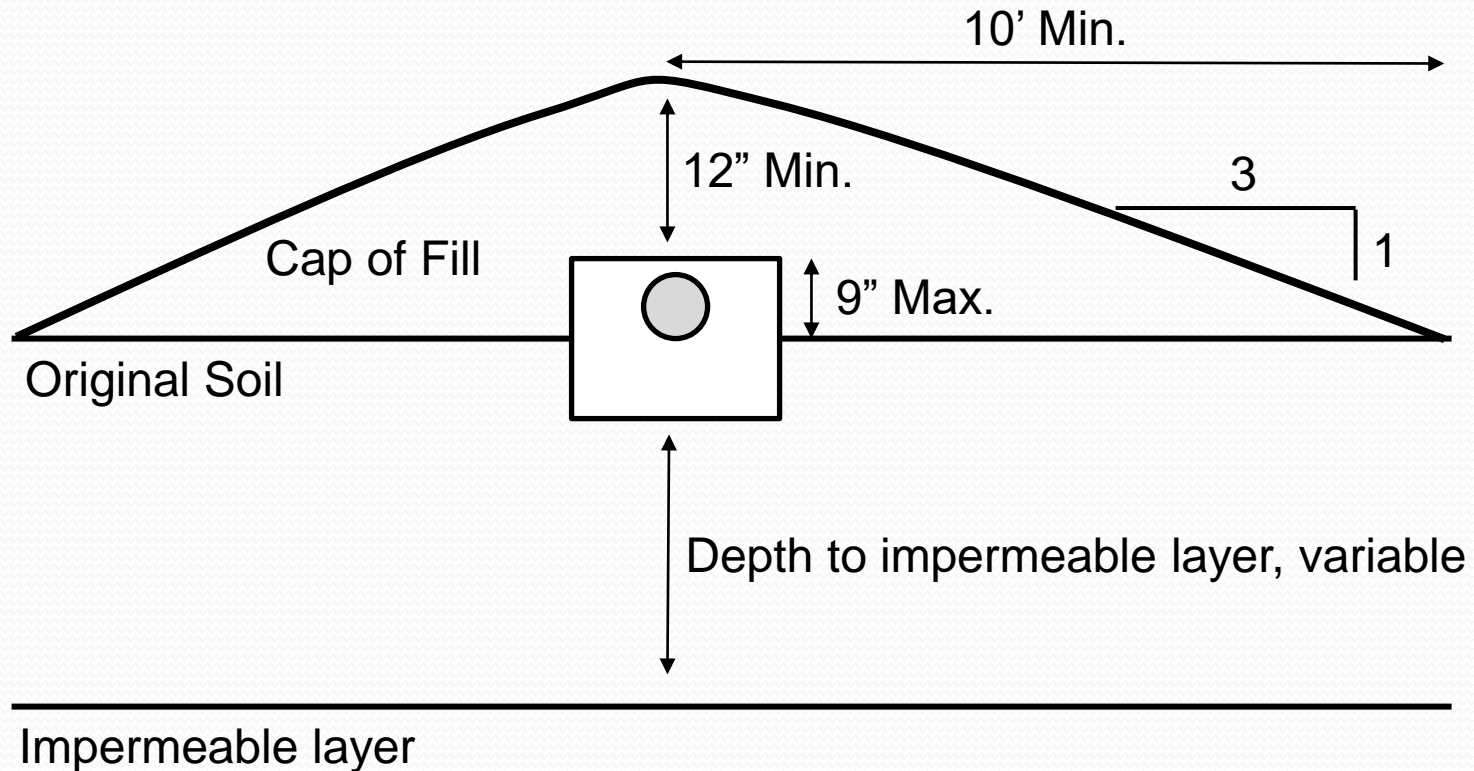


Endcaps



Capping Fill Trench

- Utilized when there is not adequate natural soil depth.
- Bottom of trench is 3" to 24" deep.



Construction of Capping Fill Trenches

- Entire drainfield area is scarified to a depth of 6-8"
 - Use chisel plow or backhoe teeth to disrupt vegetative mat
 - NO smearing soil
 - Avoid compaction
- Do not remove natural soil
- Edges of finished cap should be at least 10 feet beyond the nearest trench sidewall
- Finished side slopes should be at a 3 to 1 grade.
- Use of equipment with pneumatic tires is prohibited on fill or cover.
- Must have 12" of cover (or more).
- Site may not exceed 12% slope if drainfield extends above natural soil, or 20% slope when drainfield is at or below natural soil.
- Fill material must be same as or one soil design group finer than natural soil.

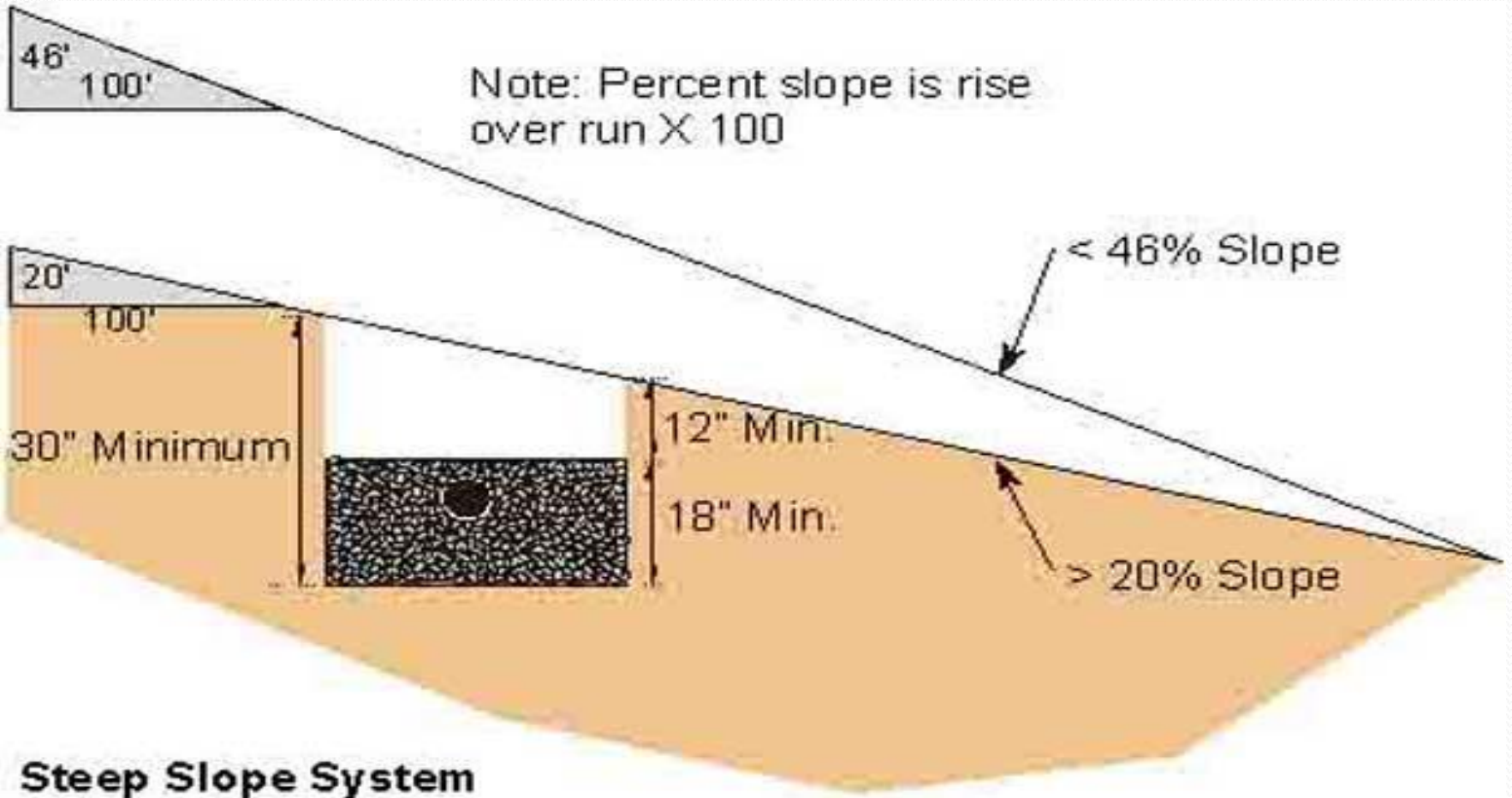
Capping Fill Trench

Inspections:

- Site soils texture, fill soil texture, scarification or vegetative mat disruption process will be inspected by the EHS.
- The installed trenches will be inspected by the EHS.
- Final inspection after covering may be conducted by the EHS to investigate the degree of incorporation of fill soil with the original soil.



Steep Slope System

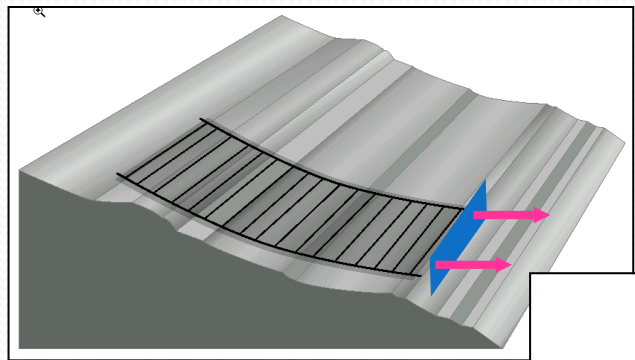


Steep Slope System Cont.

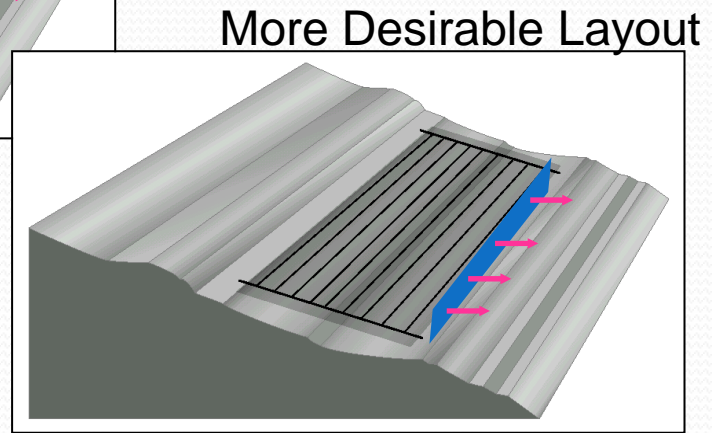
- The soil must be well drained, with no evidence of saturation, and of Soil Design **Group A or B** with no evidence of textural change in the effective depth.
- Parallel trenches must be separated by at least **8 feet** of undisturbed soil.
- If more than one trench is used **serial distribution** is required.



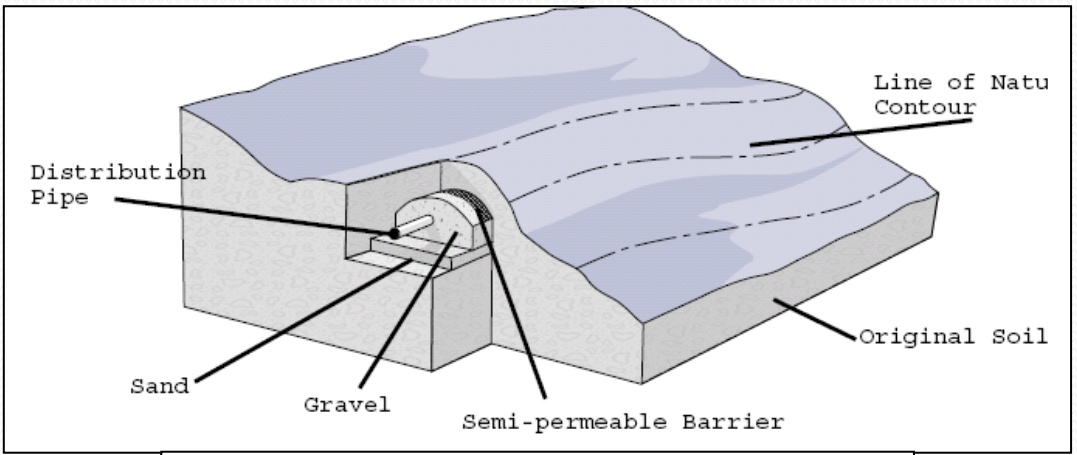
Minimizing Linear Loading to Protect lowest trench loading




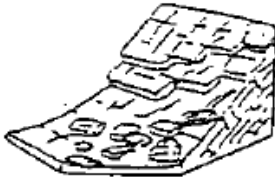
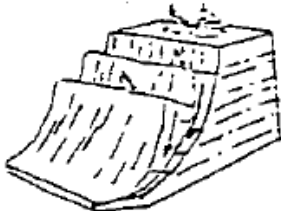


Less Desirable Layout



More Desirable Layout

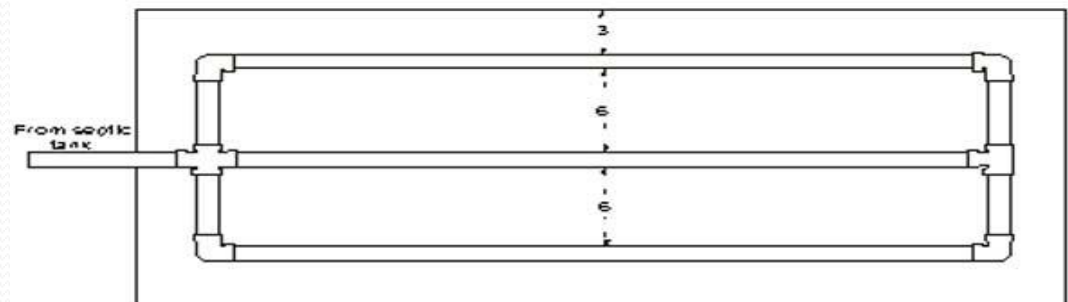
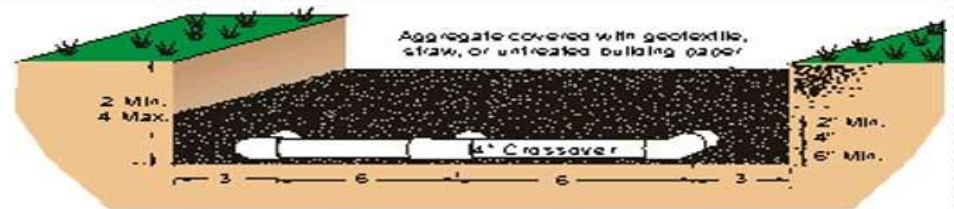


Follow Contour of Native Slope

Process	Definition and Characteristics	Illustration
Rock fall and debris fall	The rapid descent of a rock mass, vertically from a cliff or by leaps down a slope. The chief means by which taluses are maintained.	 <p>A 3D perspective drawing showing a vertical cliff face on the left. A large, rectangular rock mass is shown in mid-air, having just detached from the cliff. Below the cliff, a pile of smaller rock fragments (talus) is visible at the base of the slope.</p>
Rockslide and debris slide	The rapid, sliding descent of a rock mass down a slope. Commonly forms heaps and confused, irregular masses of rubble.	 <p>A 3D perspective drawing of a slope. A large, blocky rock mass is shown sliding down the incline. The rock is tilted relative to the slope. At the bottom of the slope, there is a chaotic pile of rubble and smaller rock fragments.</p>
Slump	The downward slipping of a coherent body of rock or regolith along a curved surface of the slumped mass, and any flat-lying planes in it, becomes rotated as it slides downward. The movement creates a sharp facing downslope.	 <p>A 3D perspective drawing showing a curved failure surface within a rock mass. The upper part of the mass has rotated downwards and outwards, creating a steep, curved face. The lower part remains relatively flat, illustrating the rotation of the coherent body.</p>
Debris flow	The rapid downslope plastic flow of a mass of debris. Commonly forms an apron- or tongue-like area, with an irregular surface. In some cases, begins with slump at head, and concentric ridges and transverse furrows in surface of the tongue-like part.	 <p>A 3D perspective drawing of a slope with several trees at the top. A large, fan-shaped area of debris is shown flowing down the slope. The surface of the debris flow is depicted with concentric ridges and transverse furrows, indicating its plastic flow nature.</p>
Variety mudflow	A debris flow in which the consistency of the substance is that of mud; generally contains a large portion of fine particles, and a large amount of water.	 <p>A 3D perspective drawing showing a slope with a large, fluid-like mass of debris flowing down it. The flow has a smooth, rounded front and is shown spreading out at the base, characteristic of a mudflow.</p>

Absorption Beds

- Slopes less than 8%
- Do not drive rubber tires on bottom of bed
- Distribution laterals must be spaced on not greater than 6' centers
- Sidewalls may not be more than 3' from any distribution lateral



Placement and Landscaping Issues



The only reason your neighbor's grass is greener because their septic tank is overflowing.



Factors that affect Drainfields



- Gallons per day
- Overflow of solids
- Garbage disposals and grinder pumps.
- Water softener brine
- Careless users
- Lack of maintenance!

Extending the life of a drainfield

- Increasing tank capacity extends the retention and treatment time of septic tank effluent. This provides a better quality of effluent being dispersed to the drainfield.
- Effluent Filters – Catch additional fine materials that would otherwise enter the drainfield.
- Regular maintenance and pumping of the septic tank.

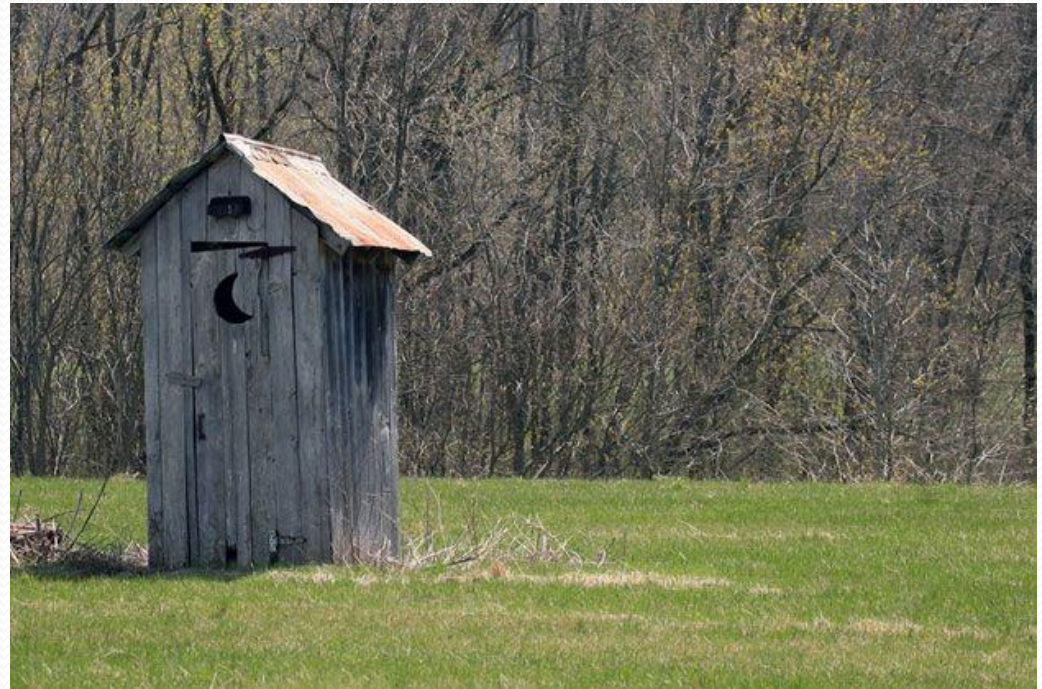


Outlet Baffles with Filters



Privy

- Composting toilets
- Incinerating toilets
- Pit privies
- Vault privies

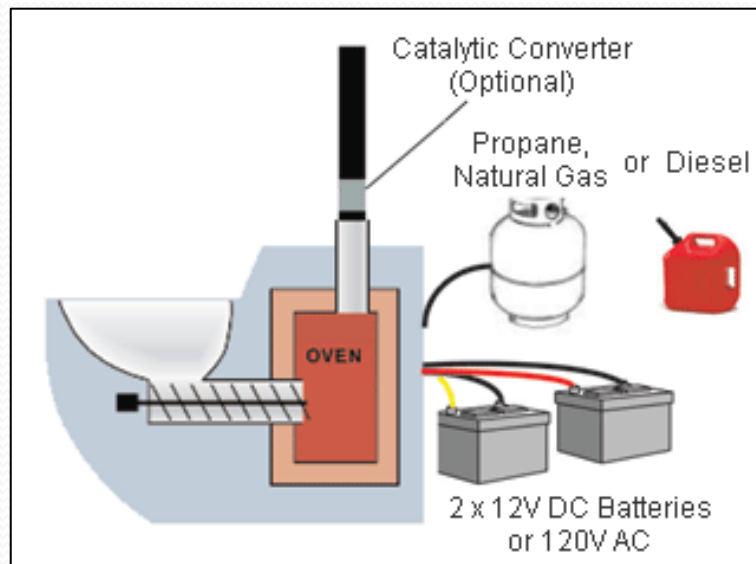


Requirements

- The structure will not have water under pressure
- Privies are for the disposal of nonwater-carried human excreta
- The chamber must be vented to the outside
- More likely than not you will have to install a grey water sump with the privy.

Composting and incinerating toilets

- Toilets must be on the approved components list, section five of the TGM
- Installed and operated in accordance with the manufacturers guidelines



Pit Privy

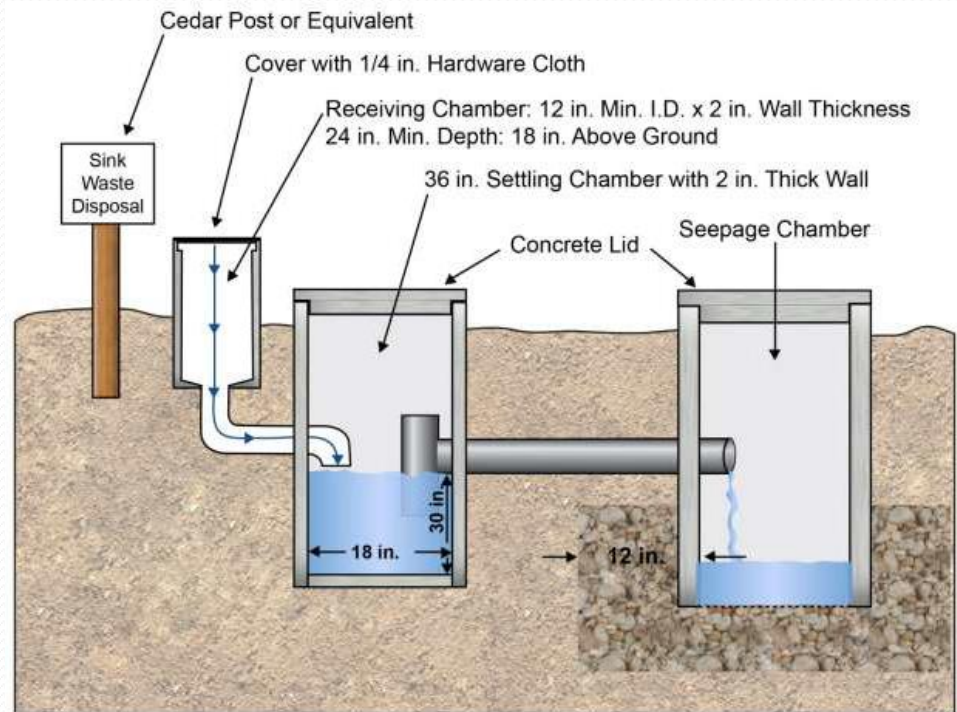
- The pit should be 3 to 6 feet deep and have a volume of about 50 gallons per seat.
- Cracks crevasses and openings of the building are not to exceed $1/16^{\text{th}}$ of an inch
- The vent should be 7 square inches per seat and extend 12 inches above the roof.
- Pit must be abandoned when sewage comes within 16 inches of the ground surface, cover with dirt and mark site.
- Must meet most of the standard setbacks

Vault privy

- Vault must either be on the approved components list, or made using a modified septic tank and meet the pit privy construction standards
- Maintenance access located outside the structure with a minimum diameter of 8 inches.
- Volume of at least 375 gallons per seat, 500 gallon minimum.
- Must meet septic tank setbacks

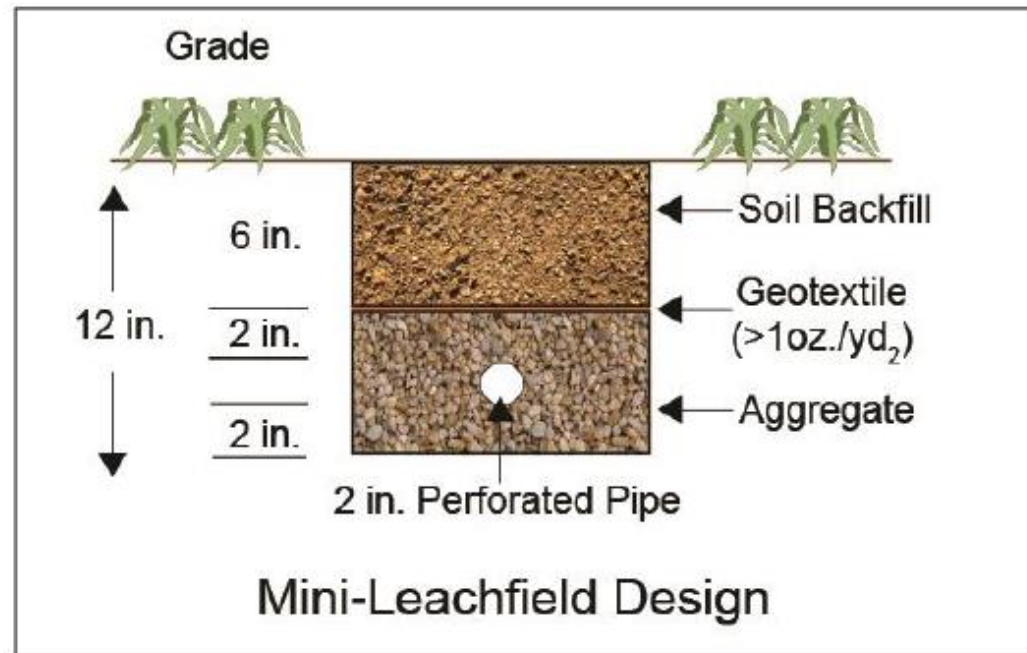
Grey Water Sump

- Limited to a flow of 10 gallons per day
- Greywater is hand-carried. It cannot be pumped to the disposal system
- Minimum 100 feet from surface water and meet all other standard system setbacks.
- Must be clearly labeled if system is in a public place

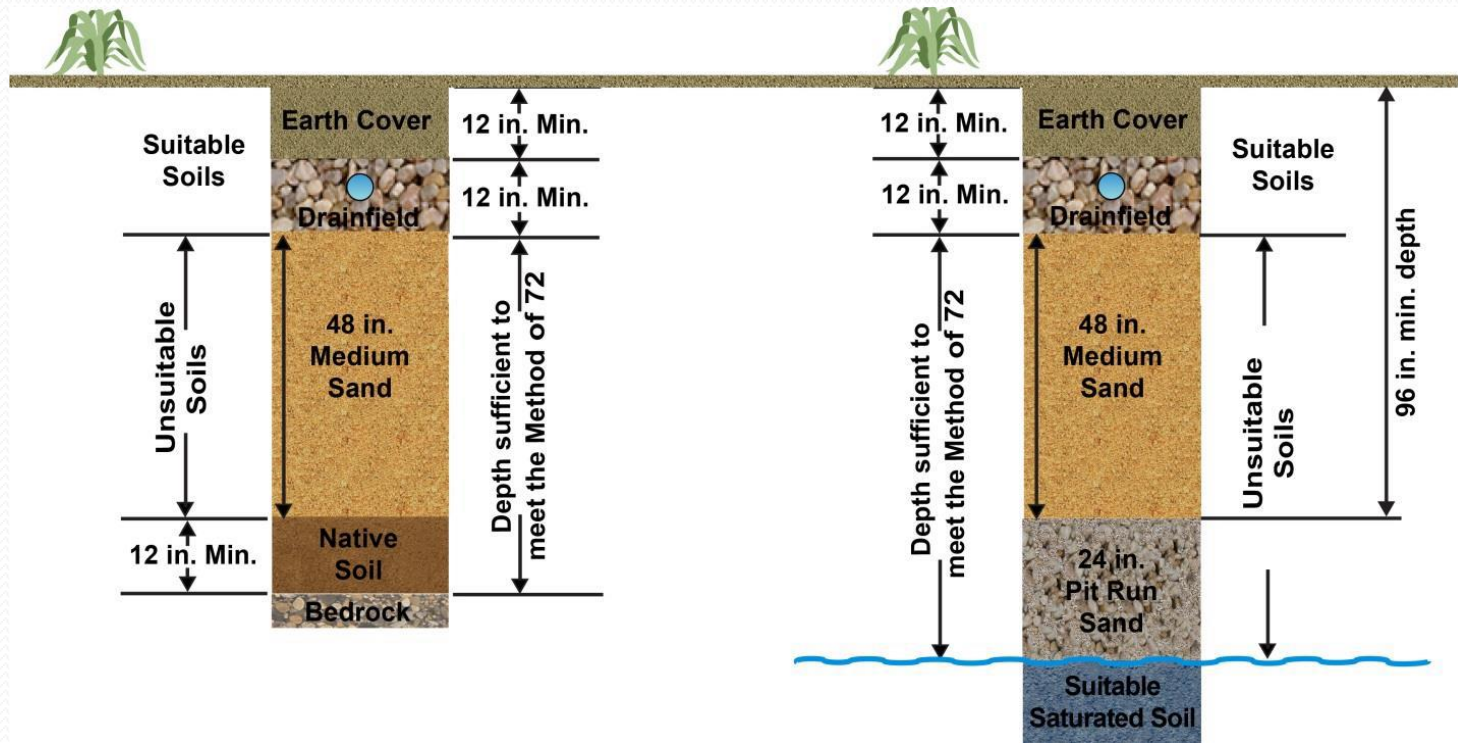


Gray Water System

- Landscape irrigation
- Bathtubs, showers, handwashing water only
- Separate from blackwater system
- Drip irrigation or “mini-leachfield”
- No vegetable gardens
- No surface irrigation
- Na, Cl tolerant plants



In-trench Sand Filter



- Installed where impermeable, unsuitable soil, or ground water is near surface.
- Method of 72 to determine depth.

Failing Systems...

- Age
- Improper Design
- Poor installation
- System Overload
 - Hydraulically
 - Organically



Failing Systems...



Failing systems



BIOMAT



Signs of Failure



Replacing a Failed System

- Why did the system fail?
- Is the old system still usable?
- Size and placement of new system.
- The new system must be at least 6' from the existing system.
- Permits are required for replacement systems.



“Last resort” Systems

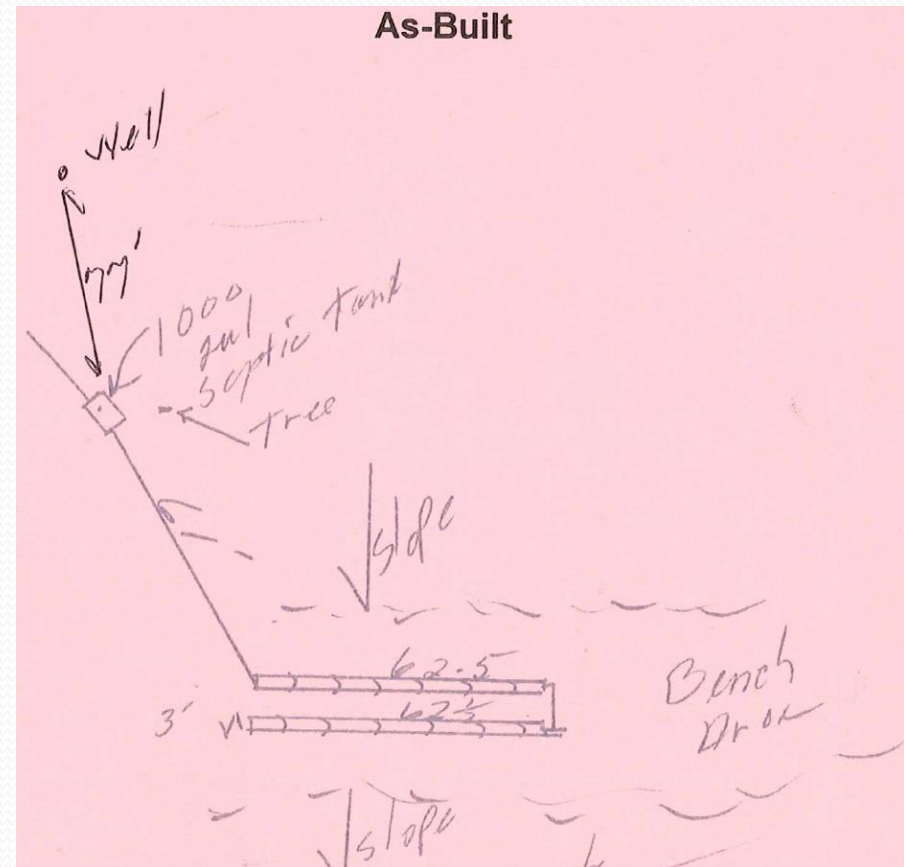
- Seepage Pits
 - Allowed as a “last resort”
 - Site must be suitable in all respects except it is not large enough
 - Pit bottom no deeper than 18 feet
 - No C type soils
- Holding Tanks
 - Only allowed under **emergency situations** by approval of the director. All Conditions of Approval set forth in Idaho Code must be met.

System Assessments

- PH-INCD no longer performs mortgage surveys on homes.
- Opportunity for installers to pick up extra work.
- Conduct water testing for realtors and evaluate current septic damage and check for needed repairs.
- These services are required for mortgage transactions with banks and any refinancing done on the house.

Locating Old As-Builts

- Give us as much information as possible.
- Date of construction, previous owners name, deed transfer date, etc



Last but not Least!

- Make sure your installation meets all requirements set forth on permit.
- Watch your setbacks, including setbacks to neighboring properties.
- Schedule final inspection **in advance** with EHS.
- Confirm that inspection has been completed and approved before covering system.

Questions?