

Grand Forks County Planning and Zoning

Approval: _____ Denial: _____

Date: _____

Zoning Administrator/Building Official

Septic System Permit Application – Mound System

Page 1

Applicant(s):

Name(s) _____

Address _____

City _____ State _____ Zip _____

Phone # _____ Fax # _____

Cell # _____ Email _____

Installer/Designer:

Name(s): _____

License Number: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone #: _____ Cell #: _____

Parcel Information:

PID#(s): _____ Parcel Acreage: _____

Complete Legal Description: _____

_____.

Septic System Design Information (Continued):

Septic System Design Information:

1. Septic Tank Capacity: _____ gallons. (see figure A-1)

FIGURE A-1. CAPACITY OF SEPTIC TANKS *

Single-Family Dwellings - Number of Bedrooms	Multiple Dwelling Units or Apartments - One Bedroom Each	Other Uses - Maximum Fixture Units Served	Minimum Septic Tank Working Capacity in Gallons
1-3		20	1000
4	2	25	1200
5 or 6	3	33	1500
7 or 8	4	45	2000
	5	55	2250
	6	60	2500
	7	70	2750
	8	80	3000
	9	90	3250
	10	100	3500

Extra bedroom, 150 gallons each.
 Extra dwelling units over 10, 250 gallons each.
 Extra fixture units over 100, 25 gallons per fixture unit.

* NOTE: Septic tank sizes in this table include sludge storage

2. Soils.

Depth to restrictive layer or mottled soils: _____ feet.

Soil Classification or Texture: _____.

Percolation rate: _____ MPI.

Percent Land Slope: _____ %.

3. Mound Area.

Estimated Design Flow: _____ gallons per day. (see Figure A-2)

Figure A-2 - Estimated Sewage Flows

Number of Bedrooms	Gallons Per Day
2	300
3	450
4	600
5	750
6	900

Septic System Design Information (Continued):

Sand Base Area Calculation:

_____ gpd(Design Flow) / 0.25 gal/ft²/day(Soil Loading Rate) = _____ ft².(Sand Base Area)

Rock Base Area Calculation:

_____ gpd(Design Flow) / 1.2 gal/ft²/day(Soil Loading Rate) = _____ ft².(Rock Base Area)

4. Dosing Chamber.

Minimum Pump Tank Size = _____ gallons. (Design Flow)

Maximum Pump Discharge: _____ gpm. (must be greater than 7.5 gpm per 100 ft² of rock area)

Pump Lift Capacity: _____ feet. (must be 5 feet greater that elevation change plus pipe friction loss)

Change in elevation from pump to the top of rock bed: _____ feet.

5. Sketch of Proposed System:

Select an appropriate scale; one inch = _____ feet.

Show pertinent property boundaries, rights-of-way, easements.

Show location of house, garage, driveway, and all other improvements, existing or proposed.

Show location and layout of sewage treatment system, wells, setbacks and separation distances.

Use attached mound diagram for detailed dimensions of rock bed and sand base area.

6. "AS BUILT" Drawing:

The installer of a treatment system shall submit an "as built" drawing of the system to the Grand Forks County Planning Department within thirty (30) days after the system has been completed.

7. Application Fee: \$250 (\$150 w/o Soil Testing)

Please contact the Grand Forks County Planning Department if there are unanswered questions or if you're unsure how to proceed. We will strive to process your application as quickly as possible and assist you in every way we can.

I hereby authorize the County Planner or authorized agent to enter upon property subject to this application to gather information pertinent to this request.

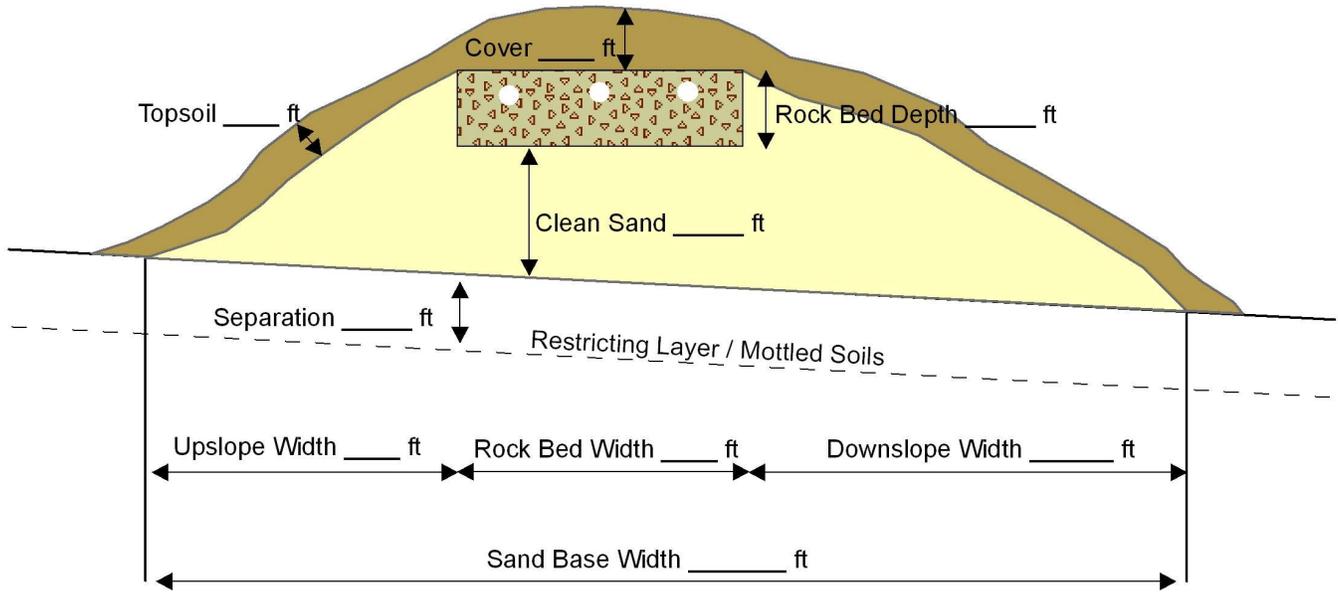
Signature of Installer/Designer: _____ Date: _____

_____ Date: _____

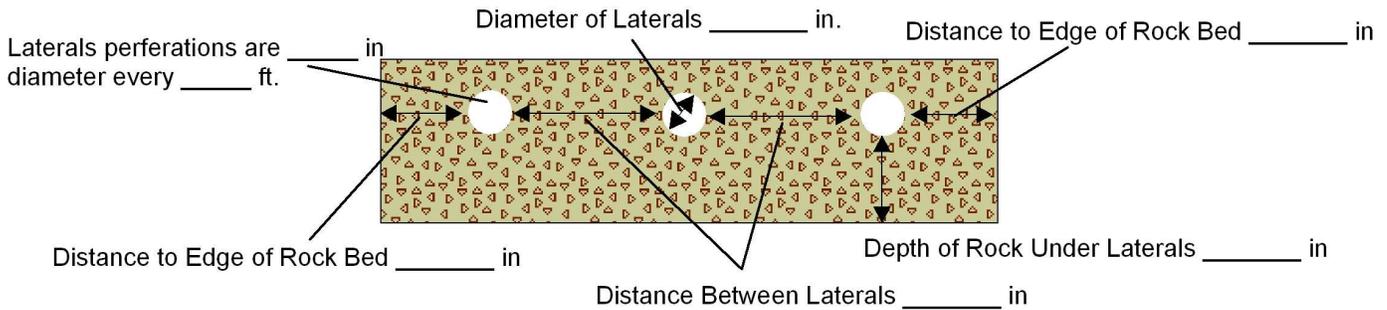
Signature(s) of Property Owner(s): _____ Date: _____

_____ Date: _____

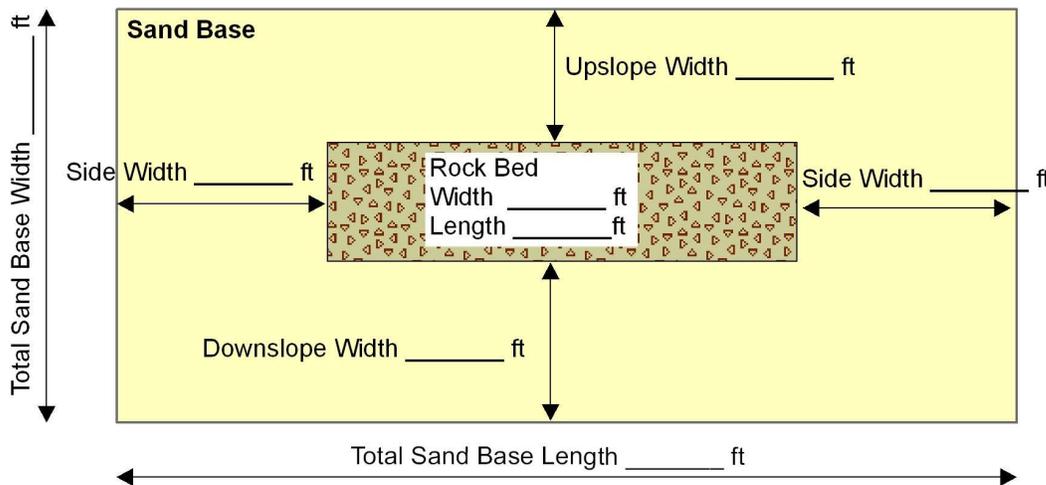
Mound System Cross-Section



Rock Bed Cross-Section



Mound System Overview



Soil Boring Log

Client: _____

Address: _____

Date: _____

Location: _____

Soil Type: _____

Disturbed/ Compacted yes no

of Bedrooms: _____

Type of observation: Probe Pit Boring

Garbage Disposal: yes no

Type: I II III IV

Flow: _____

Parent Material: Till Outwash Loess Bedrock Alluvium

Vegetation: Wet Dry Unknown

Slope Form: _____

Slope: _____ %

Drainage: Good Problems Solutions _____

Floodplain: yes no

Elevation of Boring: _____

Depth of Water: _____

Depth to Bedrock: _____

Depth of Sat. Soil: _____

Max Depth of System: _____

Soil Sizing Factor: _____

Linear Loading Rate: _____

Well Information:

Location: _____

Depth: _____

Casing Depth: _____

10' of Imp. material: yes no

Depth (inches)	Texture	Color	Structure
			Blocky Platy Prismatic None

Additional Notes: _____

Preliminary design:

Trench _____ Bed _____ Atgrade _____ Mound _____ Holding Tank _____

Gravity Dist. _____ Pressure Dist. _____

Sand: Serial _____ Pressure _____ Liner _____ Clay: Liner _____

PERCOLATION TEST SHEET

Test hole location _____ Hole # _____ Date test hole was prepared: _____

Depth of hole bottom: _____ inches Diameter of hole: _____ inches

Soil Data from test hole:

depth, inches	soil texture:	soil color
_____	_____	_____
_____	_____	_____
_____	_____	_____

Method of scratching sidewall: _____ Depth of pea size gravel in bottom of hole: _____ inches

Date and hour of initial water filling: _____ Depth of initial water filling: _____ above hole bottom

Method used to maintain 12" of water depth in hole for 4 hours: _____

Percolation test conducted by: _____ Percolation test started at _____ (am / pm).

Maximum water depth above hole bottom during test: _____ inches

TIME	INTERVAL (MINUTES)	WATER DEPTH	WATER DROP (fraction)	WATER DROP (decimal)	PERC RATE CALCULATION	conversions
_____	START	_____	_____	_____	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ A	1/16 = .06
_____	REFILL	_____	_____	_____	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ B	1/8 = .13
_____	REFILL	_____	_____	_____	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ C	3/16 = .19
_____	REFILL	_____	_____	_____	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ D	1/4 = .25
_____	REFILL	_____	_____	_____	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ E	5/16 = .31
_____	REFILL	_____	_____	_____	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ F	3/8 = .38
_____	REFILL	_____	_____	_____	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ G	7/16 = .44
_____	REFILL	_____	_____	_____	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ H	1/2 = .5
_____	REFILL	_____	_____	_____	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ A	9/16 = .56
_____	REFILL	_____	_____	_____	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ B	5/8 = .63
_____	REFILL	_____	_____	_____	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ C	11/16 = .69
_____	REFILL	_____	_____	_____	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ D	3/4 = .75
_____	REFILL	_____	_____	_____	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ E	13/16 = .81
_____	REFILL	_____	_____	_____	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ F	7/8 = .88
_____	REFILL	_____	_____	_____	$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \text{PERC}$ G	15/16 = .94

Ten Percent Calculation *

A,B,C Largest # of ABC _____ Smallest # of ABC _____ Smallest # of ABC $\times 0.10 =$ _____
C,D,E Largest # of CDE _____ Smallest # of CDE _____ Smallest # of CDE $\times 0.10 =$ _____
E,F,G Largest # of EFG _____ Smallest # of EFG _____ Smallest # of EFG $\times 0.10 =$ _____

B,C,D Largest # of BCD _____ Smallest # of BCD _____ Smallest # of BCD $\times 0.10 =$ _____
D,E,F Largest # of DEF _____ Smallest # of DEF _____ Smallest # of DEF $\times 0.10 =$ _____
F,G,H Largest # of FGH _____ Smallest # of FGH _____ Smallest # of FGH $\times 0.10 =$ _____

* If the top number in each set of boxes is larger than the bottom number, take another reading. If the top number is equal to or smaller than bottom number, average the 3 numbers for the perc rate.