

# ABSORPTION AREA CONSTRUCTION

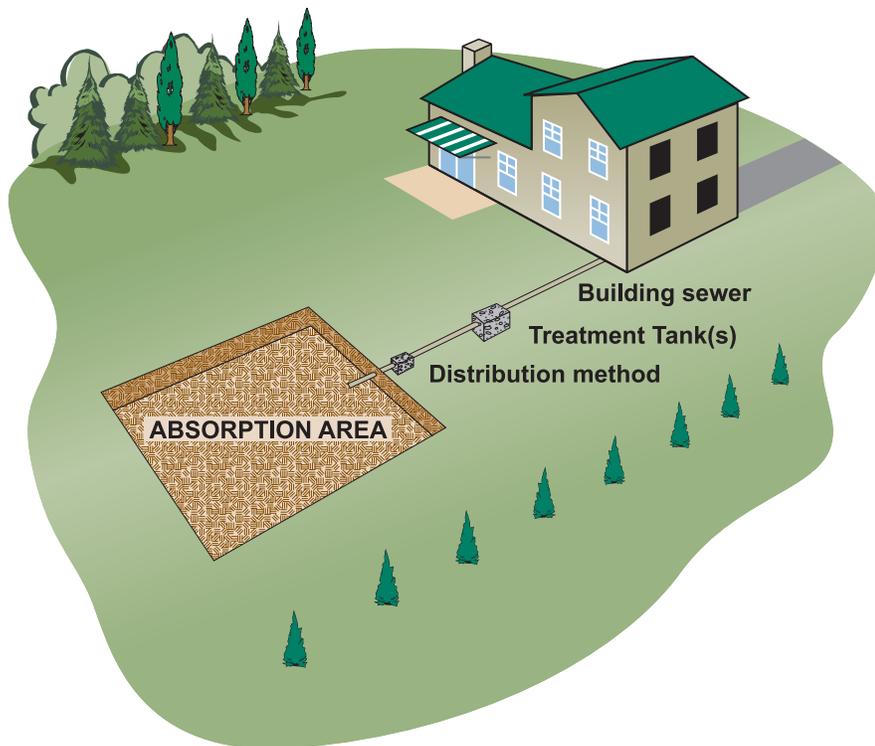
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## OBJECTIVE

The purpose of this chapter is to:

- Understand the regulations for constructing the absorption area.

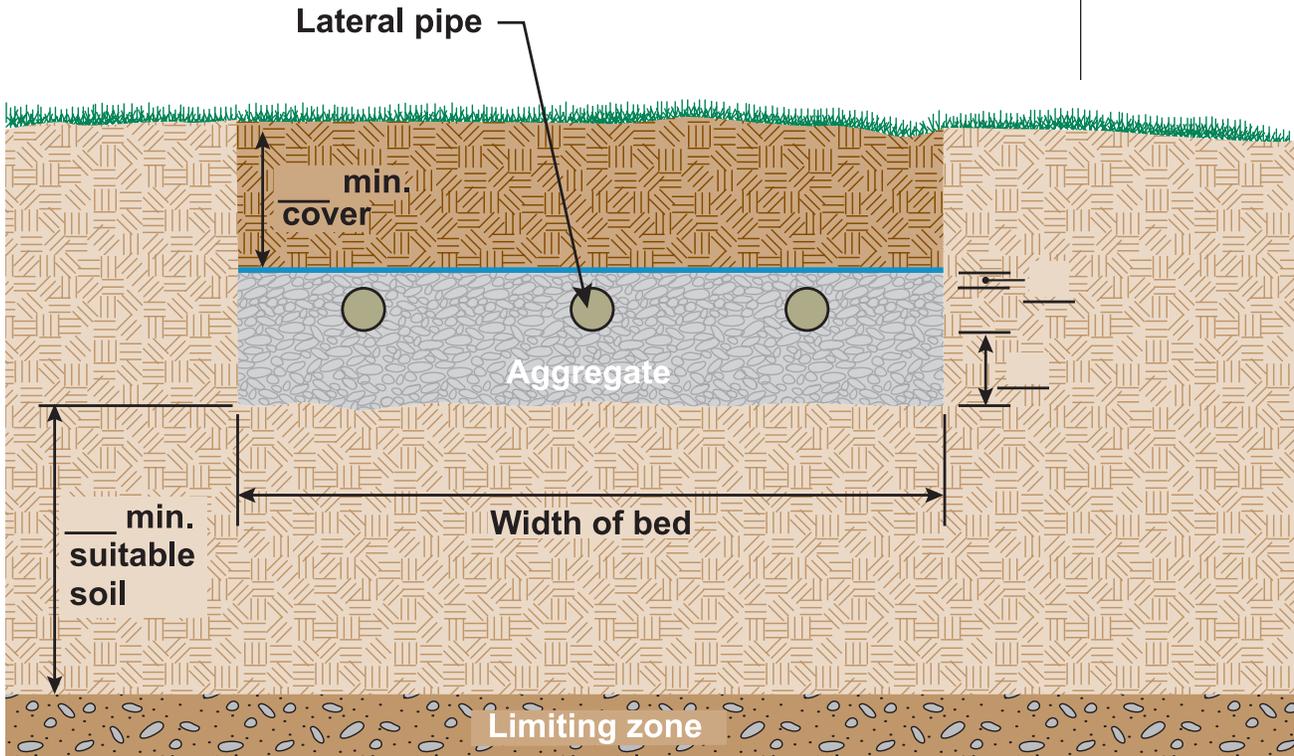


# THE DRAIN FIELD CONSTRUCTION

## IN-GROUND SYSTEM



NOTES





### Section 73.51(α)

- The regulation for construction of the absorption area:

Maintain a \_\_\_-inch minimum separation from the bottom of the absorption area aggregate to the top of the limiting zone.



### Section 73.52(b)(14)

- A \_\_\_-inch minimum ground cover, which is suitable for vegetative growth, must be placed over the aggregate.

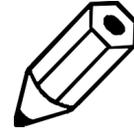
Where the aggregate is less than 12 inches from the undisturbed soil surface, the ground cover can extend above original grade. Then the soil cover must extend horizontally beyond the absorption area by at least 3 feet on all sides.



### Sections 73.52(b)(8) & (11)

- \_\_\_\_\_-inch minimum of aggregate is placed above the pipe, and \_\_\_\_\_-inch minimum of aggregate is placed below the pipe.

This aggregate must comply with regulations.  
This will be reviewed later in the academy.

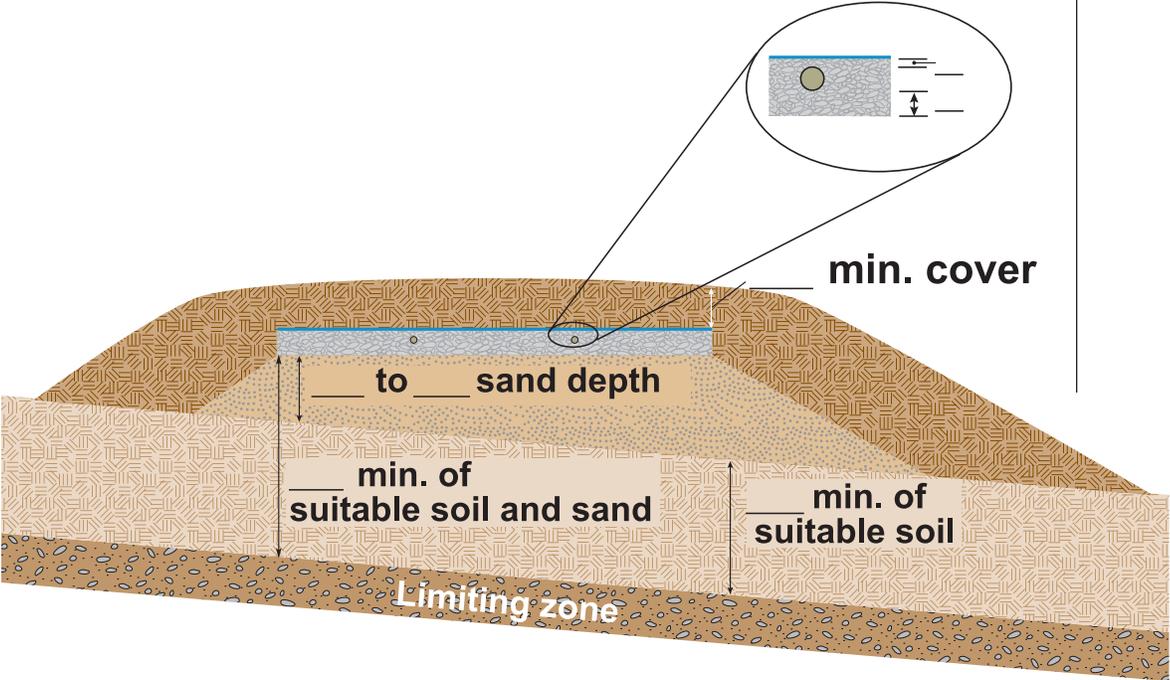


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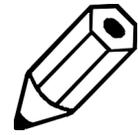
**ELEVATED SYSTEM**



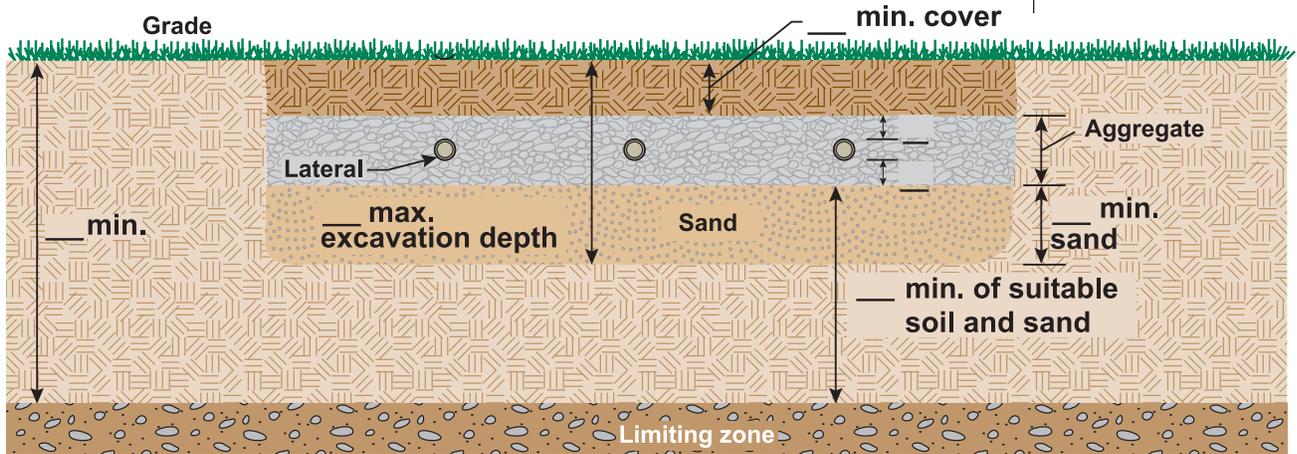
**NOTES**



# SUBSURFACE SAND FILTER SYSTEM



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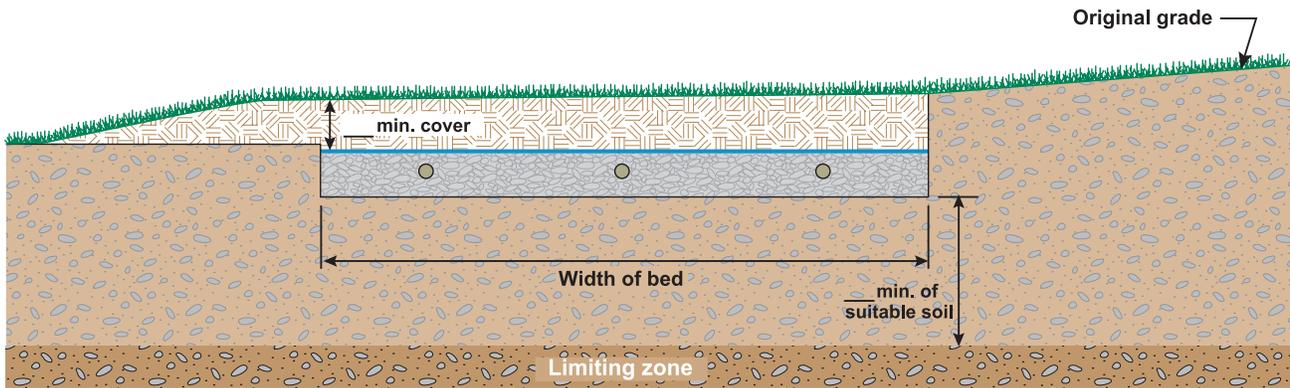


# SYSTEMS WITH A SLOPE

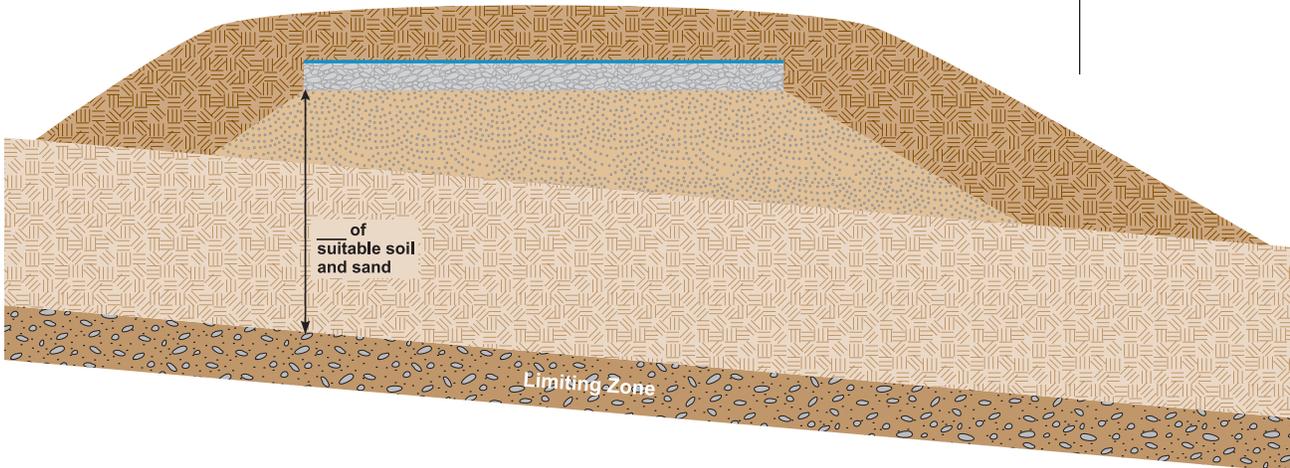


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## In-Ground Absorption Area With a Slope



## Elevated Absorption Area With a Slope

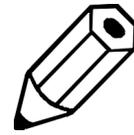


## DEPTH OF SYSTEM

The bottom of the absorption area aggregate cannot be deeper than \_\_\_ feet or less than \_\_\_ inches from original grade.

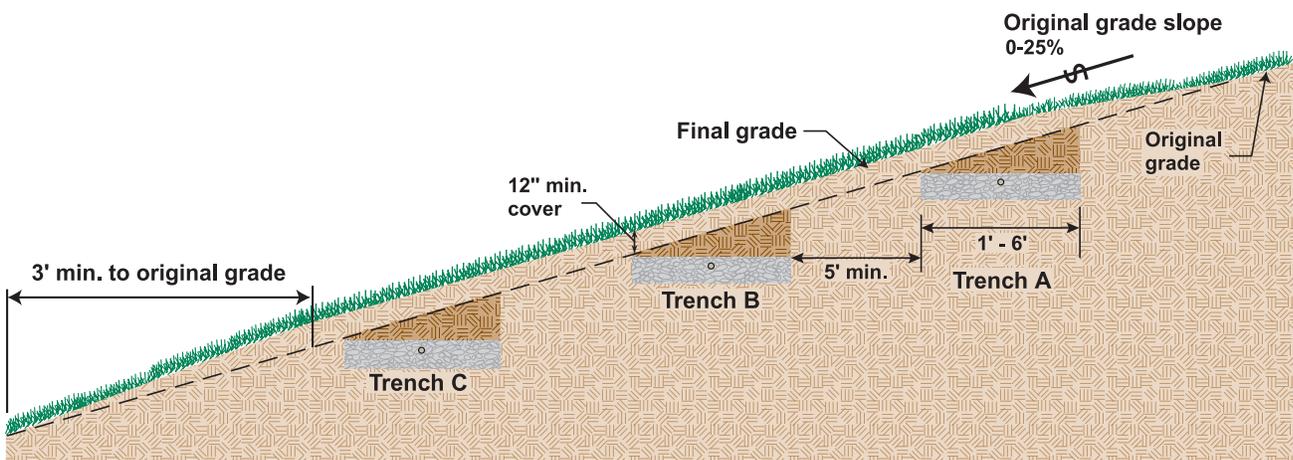
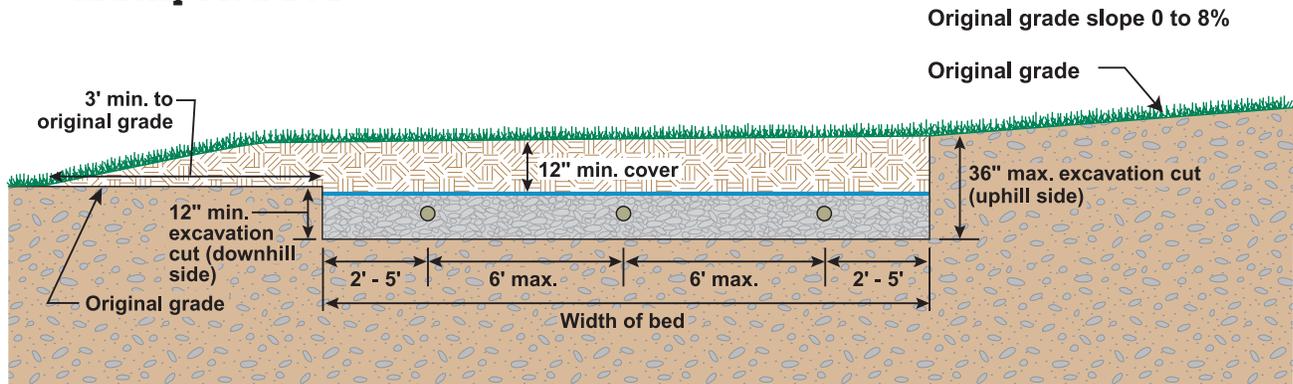
This means that the maximum depth of cut for absorption area from original grade is 3 feet on the upslope, and the minimum depth of cut for the absorption area from original grade is 12 inches on the downslope.

## WHEN TO USE A BED AND WHEN TO USE A TRENCH

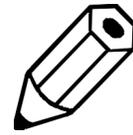


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### Gravity Flow Bed

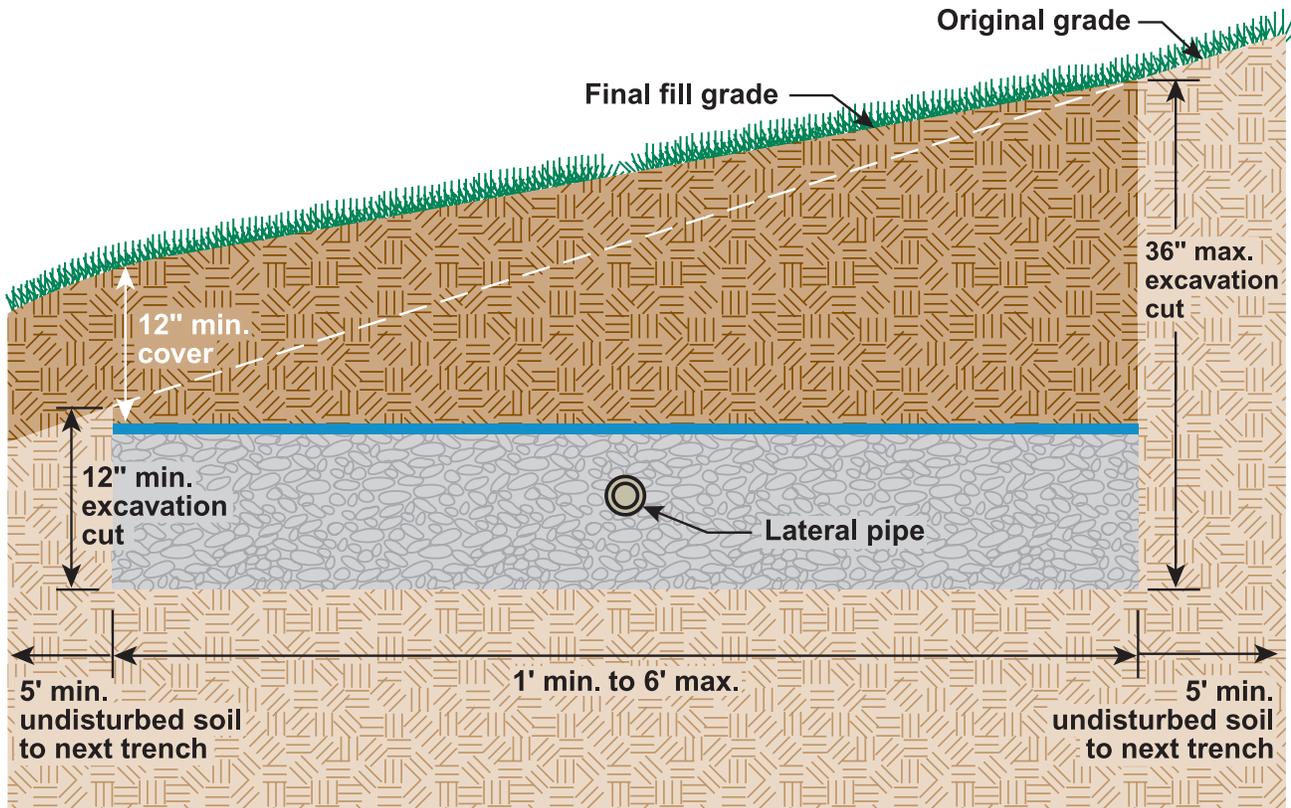


Trenches are used to combat the effects of steeper slopes.

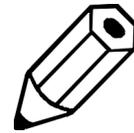


**NOTES**

**Trenches – Individual Trench Close-Up**



### Calculating Width of Bed or Trench for an In-Ground System



NOTES

$$\frac{[ LZ - (ID + 48) ] \times 8.3}{\text{Slope (\%)}}$$

- LZ = depth of limiting zone in inches
- ID = minimum installation depth in inches to the bottom of the absorption area aggregate in inches
- 48 = the minimum regulatory separation in inches between the bottom of aggregate and the top of the limiting zone
- 8.3 = conversion factor for this formula
- Slope = steepest percent slope over absorption area (The percent slope is expressed as a whole number. Example: 8% = 8)

Example:

- LZ = 72 in.
- ID = 12 in.
- Slope = 8%
- Absorption area length is installed along contours

$$\frac{[ 72 \text{ in.} - (12 \text{ in.} + 48) ] \times 8.3}{8} = 12.45 \text{ ft. maximum width}$$

Note: By regulation, the maximum width for a trench is 6 feet; therefore, this example would be for a bed absorption area.

## **REVIEW OF CONVENTIONAL SYSTEMS (NOT INCLUDING IRSIS)**



NOTES



How many inches of minimum separation must be maintained from the bottom of the absorption area aggregate to the top of the limiting zone?



What is the minimum amount of suitable soil to install an in-ground system (not considering slope)?



What is the minimum amount of suitable soil to install a sand mound?



Turn to Section 73.55(a)(4) (page 73-43) in your regulations book.

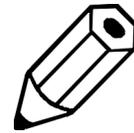


What type of conventional system could be installed on 57 inches of suitable soil?



## KEY POINTS

- A \_\_\_\_ - inch minimum separation must be maintained between the bottom of the absorption area aggregate and the top of the limiting zone.
- The minimum depth of aggregate above the pipe is \_\_\_\_ inches.
- The minimum depth of aggregate below the pipe is \_\_\_\_ inches.
- With an elevated system, certified \_\_\_\_ is used to maintain the 48-inch minimum separation.
- A minimum of \_\_\_\_ inches of sand is needed for any conventional elevated sand mound system.



## NOTES