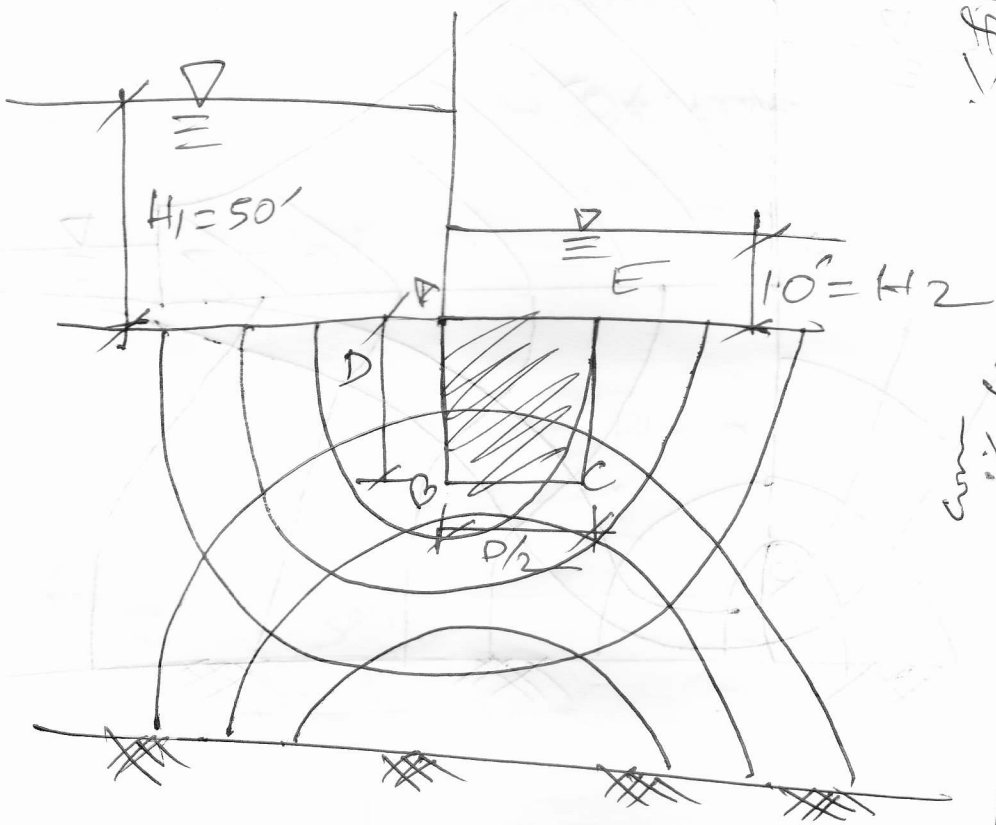


Muhammad
 Sin
 of sheet
 pile
 AB = d = Depth of embankment of sheet pile

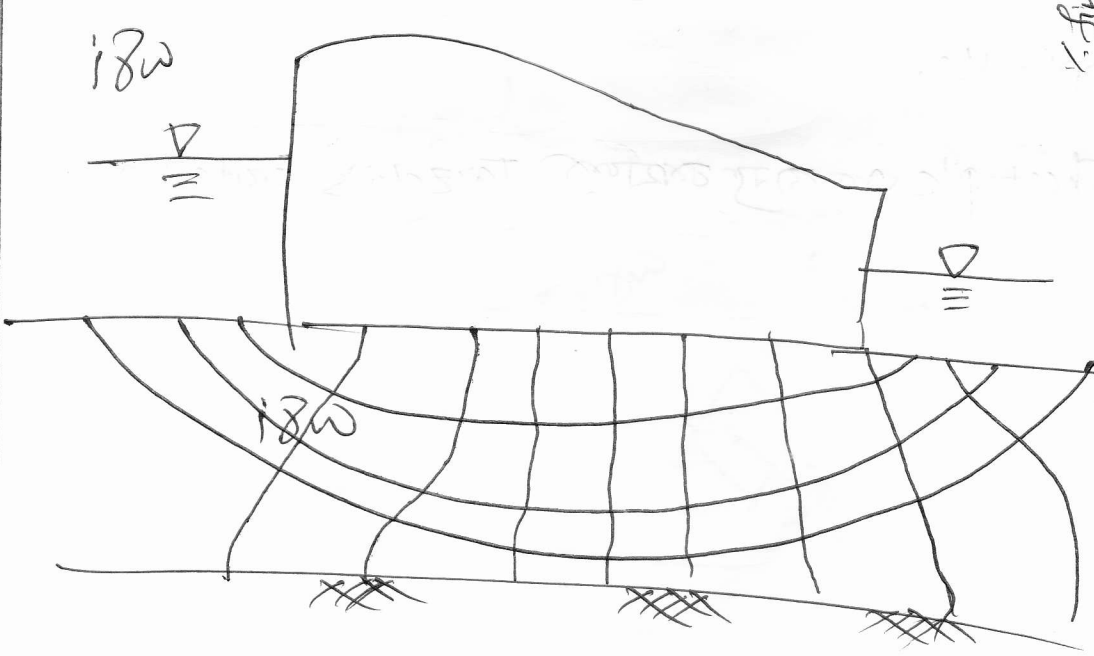
heaving
 subsurface
 erosion
 2/21

0.15x

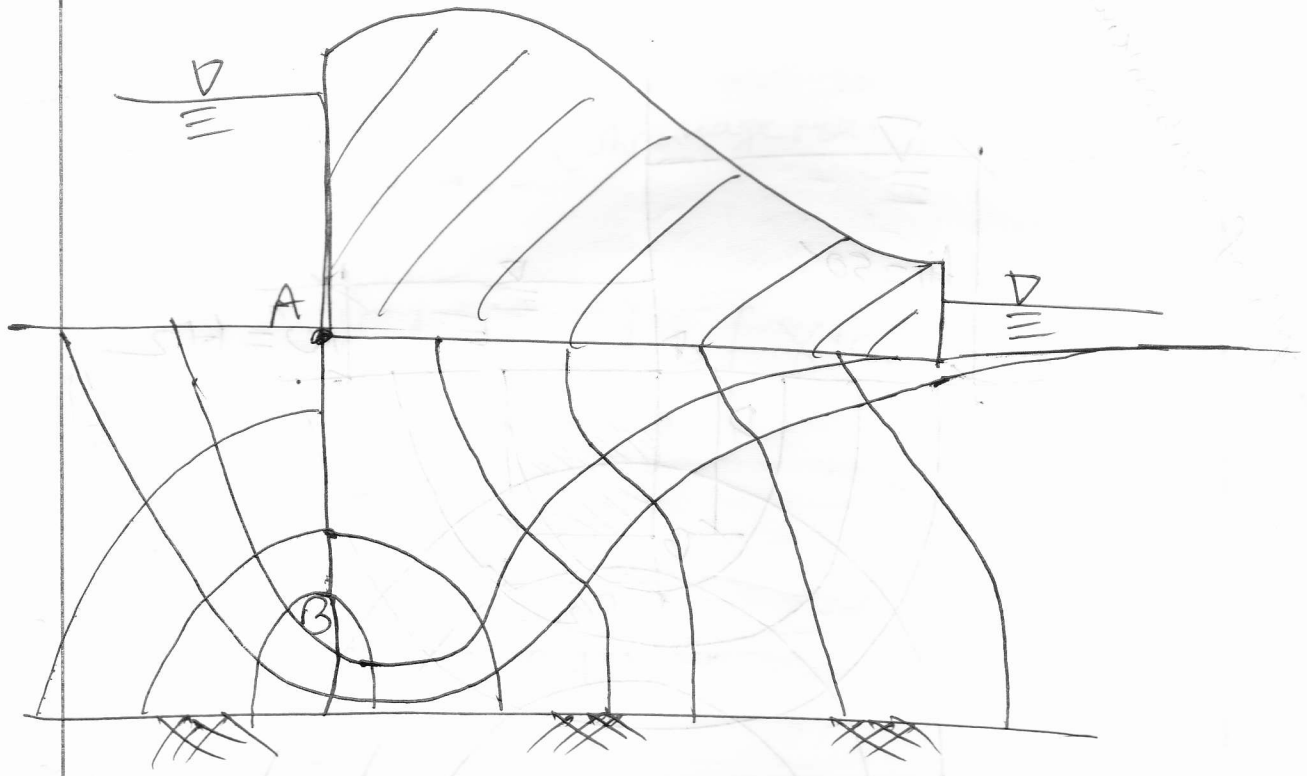


1/2 fin
 |
 |

cur
 1/2 fin
 |
 |

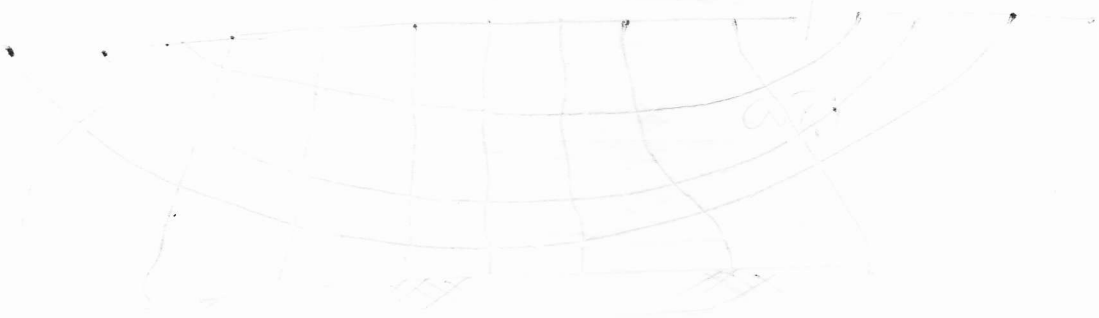


1/2 finer
 (5 + sieve x 0.85)



Harza's criteria for structure are not applicable.

Sheet pile are not applicable Tarzaki's criteria.



Tarek's:

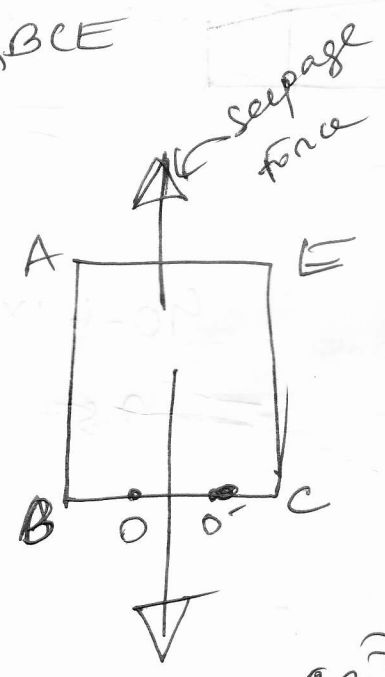
D is the depth of embankment.

downstream direction is $D/2$ যোগে ২৬১

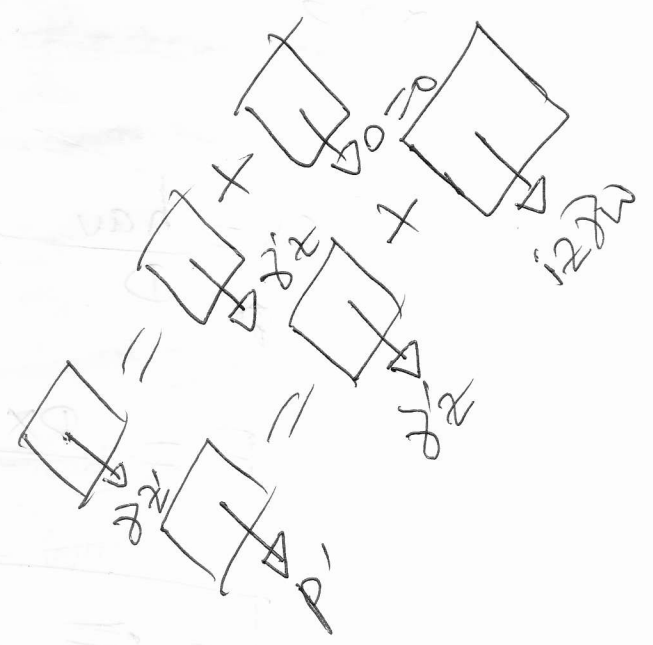
$$BC = AE = D/2$$

You have to make sure you protect area

ABCE

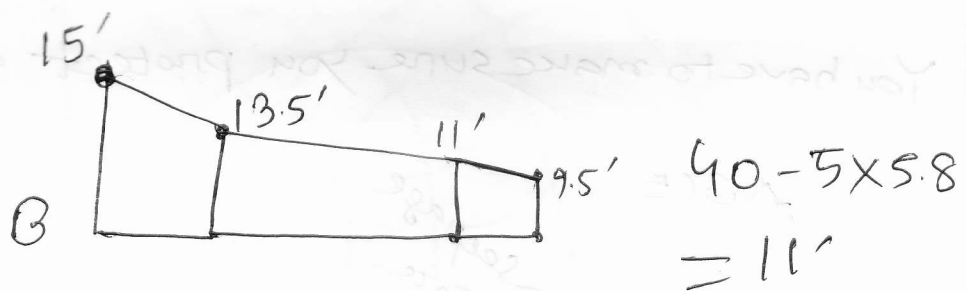


$$P = \gamma z + i 2 \gamma w$$



$$W = D \times D/2 \times 1 \times 8'$$

$$u = i_{av} \times D \times D/2$$



$$5.3 \times 5$$

$$26.5$$

$$40 - 6 \times 5$$

$$= 9.5$$

$$i_{av} = \frac{h_{av}}{D}$$

$$F = \frac{D \times D/2 \times 1 \times 8'}{D \times D/2 \times 1 \times i_{av} \times 8w}$$

$F.S = \frac{8}{i_{av} \cdot 8w}$

F.S \rightarrow (4-5) \rightarrow Terzaghi's method

Terzaghi's method \rightarrow F.S (

Sheet pile \rightarrow embankment depth \approx 2(5)

Which is highly susceptible to quick condition,

Filtered material use \approx \approx Less

Obstruction \approx flow \approx \approx

It should be fine enough to protect base material without development of seepage force

It should be coarse enough so that water can flow easily.

Criteria fulfilling base material:

in the filtered material should be small enough to hold the larger particles of the protected material in place.

The filtered material should have a high permeability to prevent build up of large seepage force and the hydrostatic pressure in the filters.

The first criteria will be satisfied if

$$\frac{D_{15}(F)}{D_{85}(B)} < 4 \text{ to } 5$$

$D_{15}(F)$ and ~~$D_{85}(B)$~~ diameter through which ~~15%~~ 15% of ~~the~~ filter material will pass.

Diameter through which 85% of base material will pass. $D_{85}(B)$

$$\frac{D_{15}(F)}{D_{15}(B)} \geq 4 \text{ to } 5$$

US Navy, 1971 in addition to those criteria,

a) To avoid the movement of the particles of the protected soil, $D_{15}(F)/D_{85}(B)$ must be less than 5.

In addition to that, ~~$D_{15}(F)/D_{15}(B)$~~ .

$D_{50}(F)/D_{50}(B)$ must be less than 25.

$$D_{15}(F)/D_{15}(B) < 20$$

If the uniformity coefficient, C_u of the protected soil is less than 1.5,

$D_{15}(F)/D_{85}(B)$ may be increased to 6.

Also if C_u of the protected soil is greater than 4,
then $D_{15}(F)/D_{15}(B)$ may be increased to 40.

For avoiding build up of large seepage force,
in the filtered material, $D_{15}(F)/D_{15}(B) > 4$.

{ USCS
AASHTO

Classification

ASTM D2487

ASTM D2288