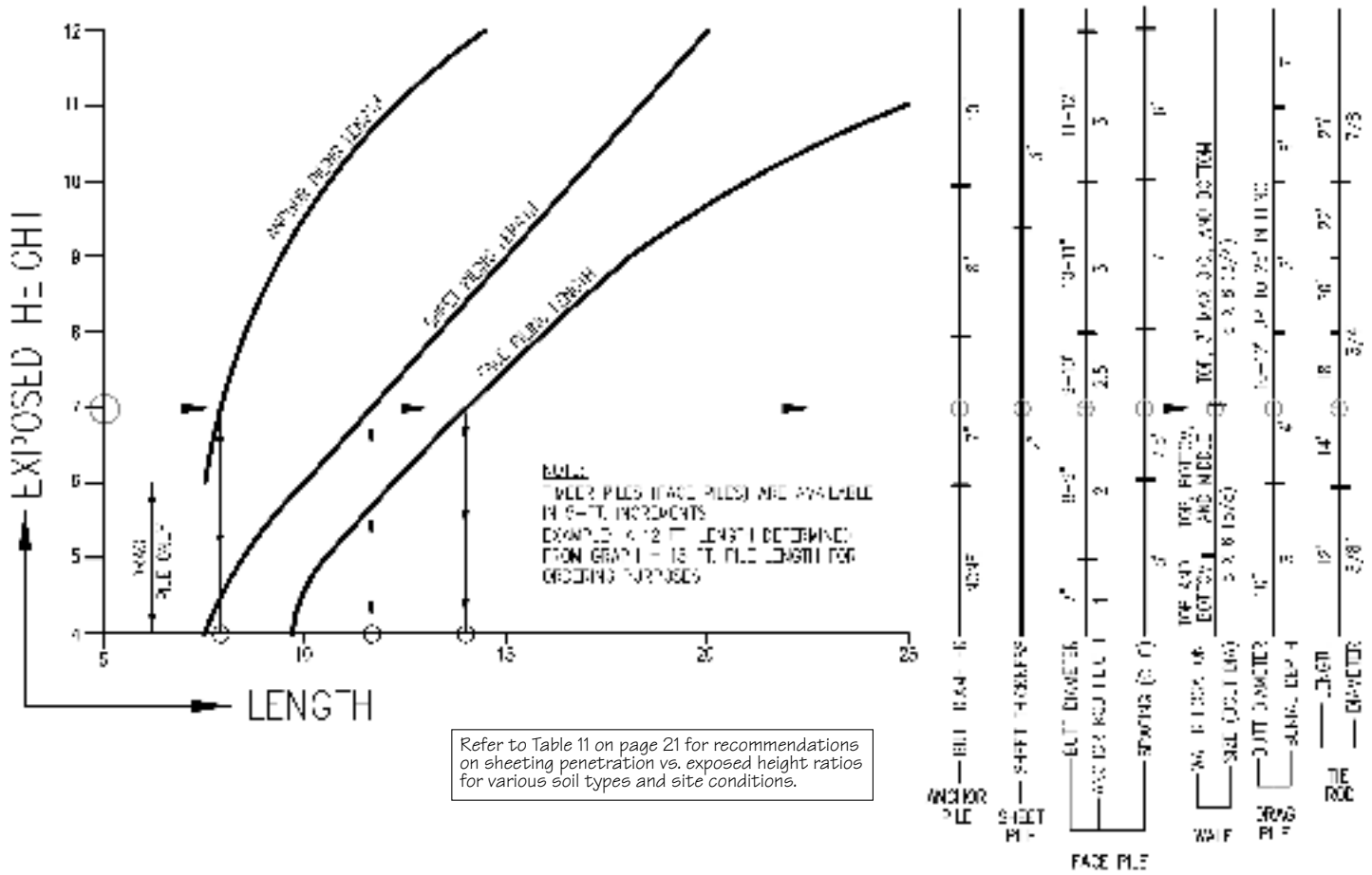


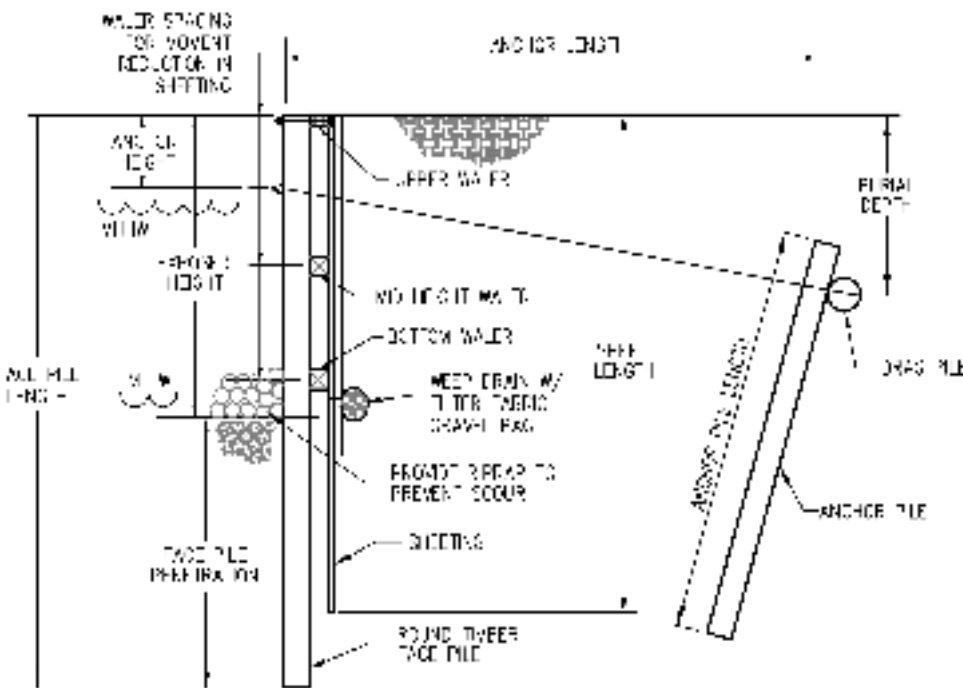
BULKHEAD DESIGN NOMOGRAPH (Flat Berm, Flat Bank, Sandy Soil)

Procedure for use of nomograph:

Draw horizontal line from exposed height of bulkhead across entire width of nomograph as shown in example below. Draw vertical lines from points of intersection on graphs (anchor, sheet, and face piles down to length line).



TYPICAL BULKHEAD TERMINOLOGY (NO SCALE)



Nomograph Example:

For a 7 ft. exposed height bulkhead in good granular soil with a flat berm angle (0 degree) and a flat bank angle (0 degree) a trial design would yield:

Solution:

- Anchor pile length = 8'
- Sheeting thickness = 2'
- Sheet pile length = 12'
- Face pile length = 14'
- Anchor pile butt dia = 7"
- Face pile butt dia = 9-10"
- Anchor location = 2.5'
- Anchor spacing = 7.5'
- Water design
 - Top water 6x8 (3/4 bolts)
 - Mid water 6x8 (3/4 bolts)
 - Bottom water 6x8 (3/4 bolts)
- Drag pile butt dia = 10"
- Drag pile burial depth = 4'
- Tie rod = 3/4" dia. 18' long