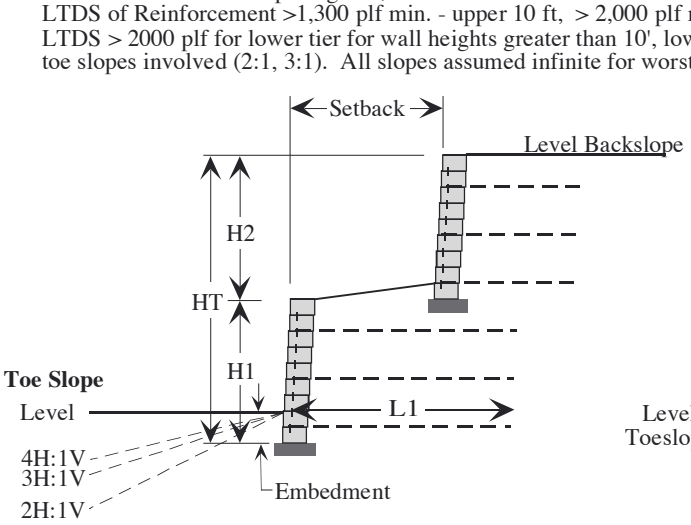
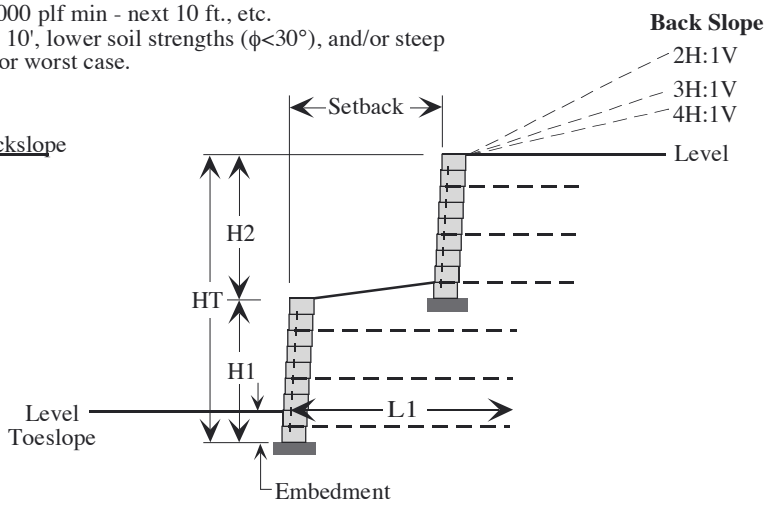
Tiered Wall - Slope Stability Ratios

The following figures and graphs provide a guide to the relationship between tiered walls and slopes and the L1 to HT ratio required to satisfy basic global stability requirements for simple ϕ only soil strength criteria. Slopes 2H:1V and greater require special attention to soil design parameters.

Assumptions of Stability Analysis

H1 ~ H2 ~ Setback. Note: Closer spacing is better for global stability, worse for stress.
No significant surcharge, γ = 120 pcf, SF>1.3 min - Bishop , Top of lower wall ~ Bottom of upper wall
Vertical reinforcement spacing ~ 2', Lowest reinforcement ~ 1' from bottom
LTDS of Reinforcement >1,300 plf min. - upper 10 ft, > 2,000 plf min - next 10 ft., etc.
LTDS > 2000 plf for lower tier for wall heights greater than 10', lower soil strengths (ϕ<30°), and/or steep toe slopes involved (2:1, 3:1). All slopes assumed infinite for worst case.



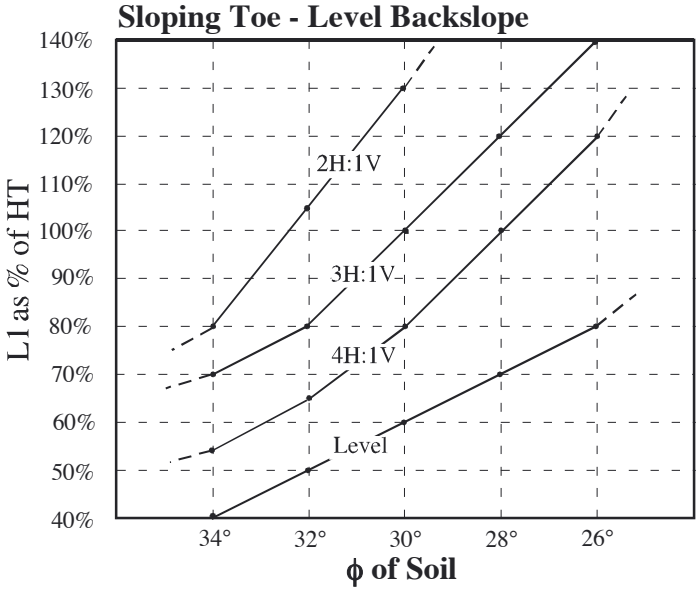


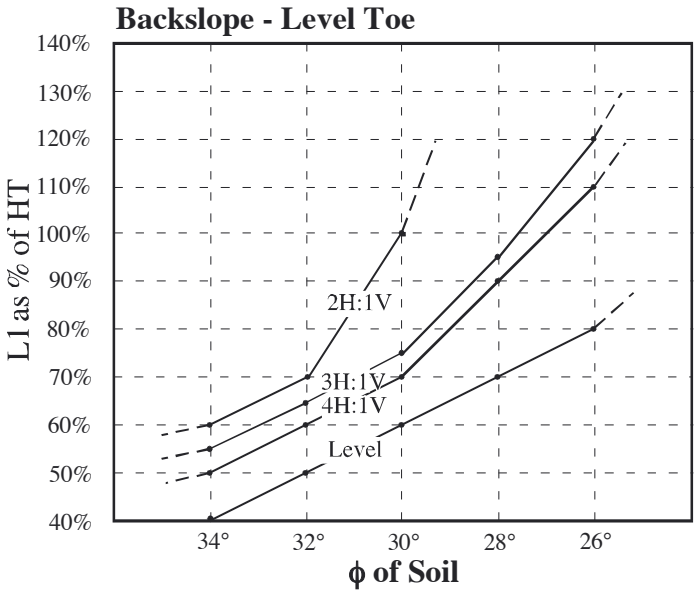
Min. Embedment for Toeslope

Level	10% HT
4H:1V	1.0' + 10% HT
3H:1V	1.3' + 10% HT
2H:1V	2.0' + 10% HT

Min. Embedment for Backslope

Level	10% HT
4H:1V	10% HT
3H:1V	10% HT
2H: 1V	10% HT





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