

SOIL DATA

REINFORCED SOIL

Unit weight, γ 140.0 lb/ft³
Design value of internal angle of friction, ϕ 38.0 °

RETAINED SOIL

Unit weight, γ 140.0 lb/ft³
Design value of internal angle of friction, ϕ 36.0 °

FOUNDATION SOIL (Considered as an equivalent uniform soil)

Equivalent unit weight, γ_{equiv} 125.0 lb/ft³
Equivalent internal angle of friction, ϕ_{equiv} 32.0 °
Equivalent cohesion, c_{equiv} 0.0 lb/ft²

Water table does not affect bearing capacity

AASHTO does not permit a friction angle greater than 34 degrees unless project specific backfill testing is conducted by triaxial or direct shear methods. See AASHTO 11.10.6.2

The bottom of the MSE wall is below the normal water elevation. How can the water table not affect bearing capacity calculations? Also, how will the MSE wall be protected from scour and erosion?

LATERAL EARTH PRESSURE COEFFICIENTS

K_a (internal stability) = 0.2379 (if batter is less than 10°, K_a is calculated from eq. 15. Otherwise, eq. 38 is utilized)
Inclination of internal slip plane, $\psi = 64.00^\circ$ (see Fig. 28 in DEMO 82).
 K_a (external stability) = 0.2596 (if batter is less than 10°, K_a is calculated from eq. 16. Otherwise, eq. 17 is utilized)

BEARING CAPACITY

Bearing capacity coefficients (calculated by MSEW): $N_c = 35.49$ $N_\gamma = 30.21$

Bearing capacity factors should be reduced for sloping ground.

SEISMICITY

Not Applicable