Problems

9.1 through 9.5 Refer to Figure 9.19. Calculate σ, u, and σ' at A, B, C, and D for the following cases and plot the variations with depth. (*Note:* e = void ratio, w = moisture content, G_s = specific gravity of soil solids, γ_d = dry unit weight, and γ_{sat} = saturated unit weight.)

Problem	Details of soil layer		
	I	II	III
9.1	$H_1 = 5$ ft $\gamma_d = 112$ lb/ft^3	$H_2 = 6$ ft $\gamma_{sat} = 120$ lb/ft^3	$H_3 = 8$ ft $\gamma_{sat} = 125$ lb/ft^3
9.2	$H_1 = 5$ ft $\gamma_d = 100$ lb/ft^3	$H_2 = 10$ ft $\gamma_{sat} = 116$ lb/ft^3	$H_3 = 9$ ft $\gamma_{sat} = 122$ lb/ft^3
9.3	$H_1 = 3$ m $\gamma_d = 15$ kN/m^3	$H_2 = 4$ m $\gamma_{sat} = 16$ kN/m^3	$H_3 = 5$ m $\gamma_{sat} = 18$ kN/m^3
9.4	$H_1 = 4$ m $e = 0.4$ $G_s = 2.62$	$H_2 = 5$ m $e = 0.6$ $G_s = 2.68$	$H_3 = 3$ m $e = 0.81$ $G_s = 2.73$
9.5	$H_1 = 4$ m $e = 0.6$ $G_s = 2.65$	$H_2 = 3$ m $e = 0.52$ $G_s = 2.68$	$H_3 = 1.5$ m $w = 40\%$ $e = 1.1$

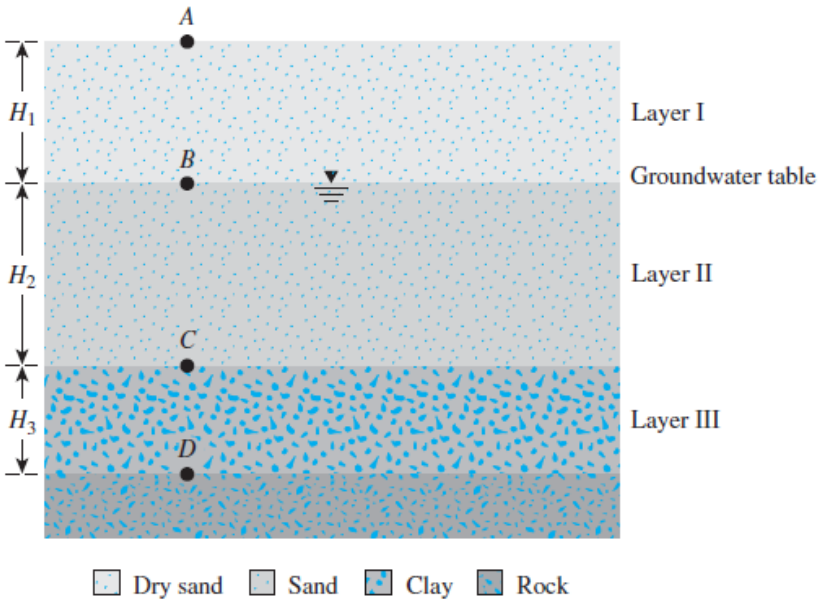

Figure 9.19

10.14 An earth embankment diagram is shown in Figure 10.39. Determine the stress increase at point A due to the embankment load.

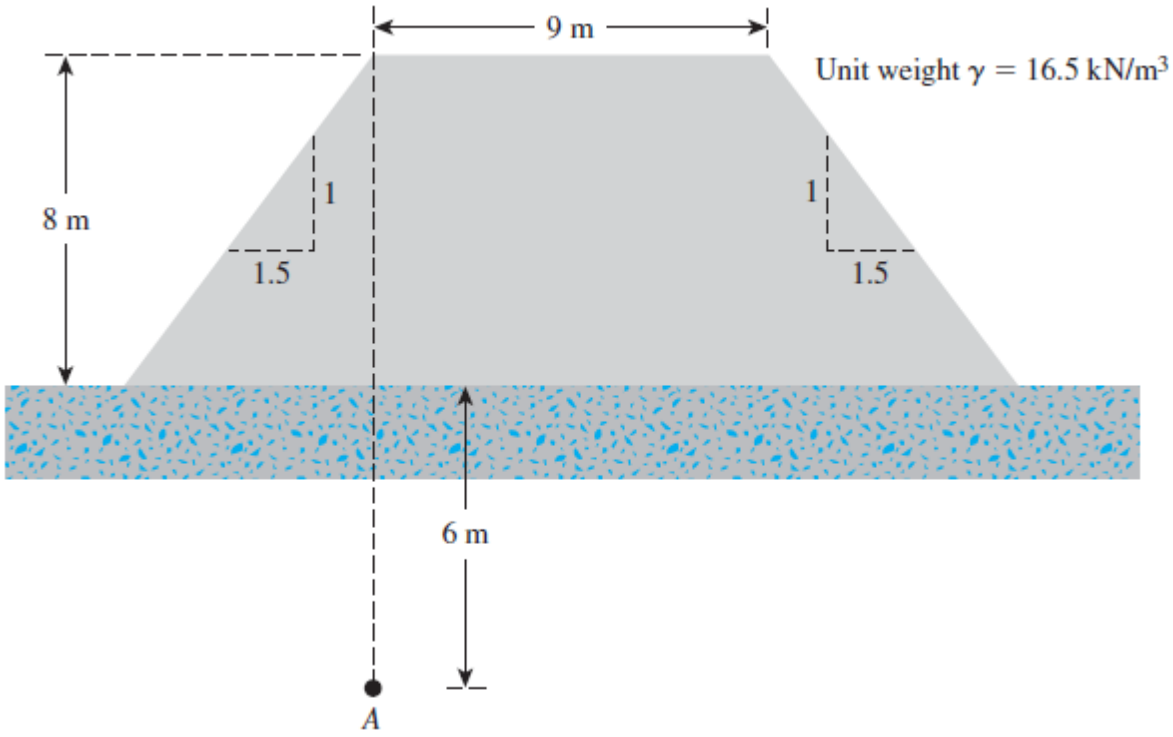

Figure 10.39