HACETTEPE UNIVERSITY DEPARTMENT OF CIVIL ENGINEERING
IMU 438 – Geotechnical Design

Braced Cut Design

8 m deep trenches will be excavated in sandy soil profile for a sewage project. The trench width is 5 m. The average SPT-N values are

$N_{1,60}$ = 15 for 0-3 m

$N_{1,60}$ = 28 for 3-20 m

You may assume, e = 0.50, G_s =2.5 and $\Upsilon_{dry} = \Upsilon_{sat}$ = 20 kN/m^3. The ground water table is at 3 m from ground level. A free space of 2.5 m is to be provided from the bottom. There would be a surcharge of 20 kN/m^2 on both sides due to material storage. Please design a sheet pile retaining structure and struts for this trench.

You are expected to prepare a ~10 min. presentation and a report of 8-10 pages.