

Sloping and Benching - DATE 11/01/26 – 11/07/26

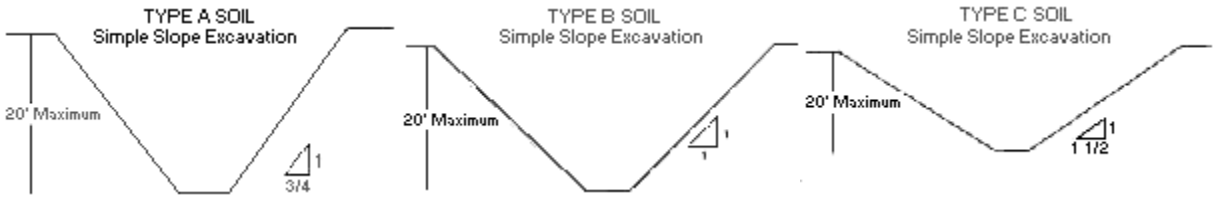
OSHA requires that we protect our employees from cave-ins. Two methods covered in this toolbox talk are **sloping** and **benching** the sides of the excavation.

Sloping

Maximum allowable slopes for excavations less than 20 ft (6.09 m) based on soil type and angle to the horizontal are as follows:

Table V:2-1 Allowable Slopes

Soil Type	Height:Depth Ratio	Slope Angle
Stable Rock	Vertical	90°
Type A	0.75:1	53°
Type B	1:1	45°
Type C	1.5:1	34°



The above figures illustrate the different types of slope excavations for Type A, B, and C soils in single slope excavations.

Sloping with Layered Soil

For areas with layered soil, the slope can follow the soil types only if stronger soil is below weaker soil. If the soil below is weaker, you must follow the weaker soil slope angle for the entire slope of excavation. Total depth of excavation of 20'-0" maximum.

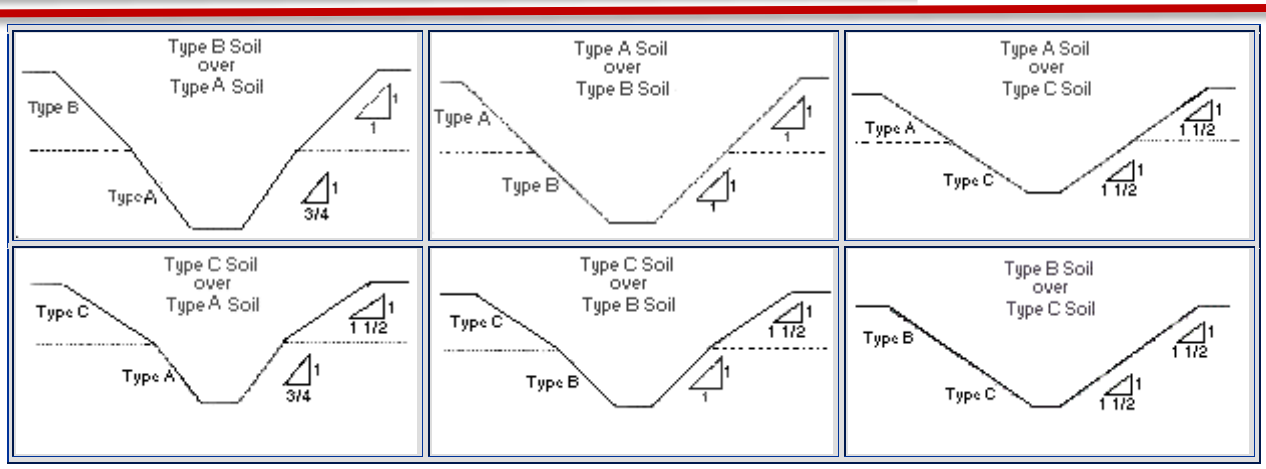
The following page illustrates the different types of slope excavations in layered soils.



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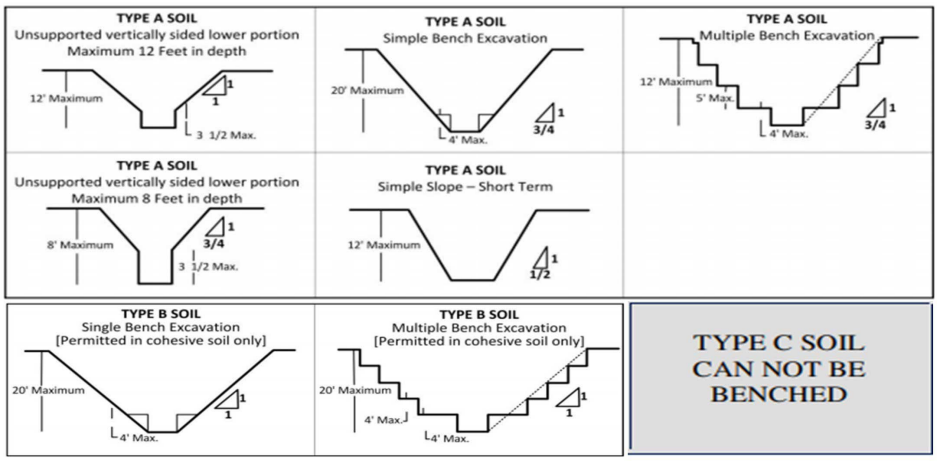
Toolbox Talk





Benching

There are two basic types of benching, simple and multiple. The type of soil determines the horizontal to vertical ratio of the benched side. As a general rule, the bottom vertical height of the trench must not exceed 4 ft (1.2 m) for the first bench. Subsequent benches may be up to a maximum of 5 ft (1.5 m) vertical in Type A soil and 4 ft (1.2 m) in Type B soil to a total trench depth of 20 ft (6.0 m). All subsequent benches must be below the maximum allowable slope for that soil type. For Type B soil the trench excavation is permitted in cohesive soil only.



Temporary Spoil

Temporary spoil must be placed no closer than 2 ft (0.61 m) from the surface edge of the excavation, measured from the nearest base of the spoil to the cut. This distance requirement ensures that loose rock or soil from the temporary spoil will not fall on employees in the trench. Spoil should be placed so that it channels rainwater and other run-off water away from the excavation. Spoil should be placed so that it cannot accidentally run, slide, or fall back into the excavation.

More detail can be found in the Brieser Safety Manual Section 24. Next week we will discuss Protective Systems.



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