Soil Classification

All soil classification must be done by a competent person by using at least one visual inspection and one manual inspection.

Visual Testing

* Collect information regarding previous excavations in the area.
* Collect information on underground utilities or structures.
* Observe excavated soil to see if it clumps (cohesive) or breaks apart (granular).
* Observe open sides of excavation for layer system tension cracks and small parts falling from the walls.
* Observe surrounding area for surface water, water leaking into the excavation and placement of the area on the water table.

Manual Testing

* Placidity Testing: Roll moist soil into a ball and attempt to roll the ball into threads as small as an 1/8 inch thick. If the thread stays together with out crumbling the soil is cohesive. If the thread crumbles the soil is not cohesive.
* Dry Strength: If soil is dry, pick up a dry ball of soil, if it crumbles into a powder or grains with medium pressure the soil is granular (any combo of gravel, sand, silt). If the soil breaks into smaller clumps that are harder to break the soil may be clay with sand or gravel.
* Thumb Penetration: Press your thumb into a clump of soil if the clump lightly dents with high pressure the soil is approximately Type A, if your thumb sinks to the finger nail it is approximately Type B soil, and if your thumb sinks past the fingernail it is approximately Type C soil.
* Pocket Penetrometer: Press the metal piston into the soil until it meets the marked line on the end of the piston. Read the measurement on the back side of the penetrometer.

Type A soil

* Cohesive soils with an unconfined compressive strength of 1.5 ton per square foot (tsf) (144 kPa) or greater. Examples of cohesive soils are: clay, silty clay, sandy clay, clay loam and, in some cases, silty clay loam and sandy clay loam. Cemented soils such as caliche and hardpan are also considered Type A.

No soil is Type A if:

* The soil is fissured; or
* The soil is subject to vibration from heavy traffic, pile driving, or similar effects; or
* The soil has been previously disturbed; or
* The soil is part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or greater; or
* The material is subject to other factors that would require it to be classified as a less stable material.

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Type B

* Cohesive soil with an unconfined compressive strength greater than 0.5 tsf (48 kPa) but less than 1.5 tsf (144 kPa); or
* Granular cohesionless soils including: angular gravel (similar to crushed rock), silt, silt loam, sandy loam and, in some cases, silty clay loam and sandy clay loam
* Previously disturbed soils except those which would otherwise be classified as Type C soil
* Soil that meets the unconfined compressive strength or cementation requirements for Type A, but is fissured or subject to vibration; or
* Dry rock that is not stable.

Type C

* Cohesive soil with an unconfined compressive strength of 0.5 tsf (48 kPa) or less; or
* Granular soils including gravel, sand, and loamy sand; or
* Submerged soil or soil from which water is freely seeping; or
* Submerged rock that is not stable.