

The following table gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A restrictive layer is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. Depth to top is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as low, moderate, or high, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as low, moderate, or high. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Map symbol and soil name	Restrictive layer				Potential for Frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated Steel	Concrete
		In	In				
009DT:							
Dillwyn-----	---	---	---	---	Low	Low	Low
Tivoli-----	---	---	---	---	Low	Low	Low
009TV:							
Tivoli-----	---	---	---	---	Low	Low	Low
047CS:							
Carwile-----	---	---	---	---	Low	High	Moderate
Drummond-----	---	---	---	---	Low	High	High
151KP:							
Kanza-----	---	---	---	---	Low	High	Moderate
Plevna-----	---	---	---	---	Low	High	Low
159DP:							
Dillwyn-----	---	---	---	---	Low	Low	Low
Plevna-----	---	---	---	---	Low	High	Low
159DT:							
Dillwyn-----	---	---	---	---	Low	Low	Low
Tivoli-----	---	---	---	---	Low	Low	Low
159DU:							
Drummond-----	---	---	---	---	Low	High	High
159PE:							
Plevna-----	---	---	---	---	Low	High	Low
990:							
Abbyville-----	---	---	---	---	Low	High	Low
991:							
Abbyville, rarely flooded-	---	---	---	---	Low	High	Low
Kisiwa, occasionally flooded-----	---	---	---	---	Low	High	Low
1005:							
Albion-----	---	---	---	---	Low	Low	Low
1011:							
Albion-----	---	---	---	---	Low	Low	Low
Shellabarger----	---	---	---	---	Low	Low	Moderate
1324:							
Carway-----	---	---	---	---	Low	High	Moderate
Carbika-----	---	---	---	---	Low	Moderate	Low
1359:							
Clark-----	---	---	---	---	Low	Moderate	Low
Ost-----	---	---	---	---	Low	Moderate	Low
1553:							
Darlow-----	---	---	---	---	Low	High	Low
Elmer-----	---	---	---	---	Low	High	Low
1555:							
Dillhut-----	---	---	---	---	Low	Low	Moderate
Plev-----	---	---	---	---	Low	High	Moderate
1556:							
Dillhut-----	---	---	---	---	Low	Low	Moderate
Solvay-----	---	---	---	---	Low	High	Moderate
1725:							
Farnum-----	---	---	---	---	Low	Moderate	Low
Funmar-----	---	---	---	---	Low	Moderate	Low
1726:							
Farnum-----	---	---	---	---	Low	Moderate	Low
Funmar-----	---	---	---	---	Low	Moderate	Low
1985:							
Hayes-----	---	---	---	---	Low	Moderate	Low
1986:							
Hayes-----	---	---	---	---	Low	Moderate	Low
Solvay-----	---	---	---	---	Low	High	Moderate
1987:							
Hayes-----	---	---	---	---	Low	Moderate	Low
Turon-----	---	---	---	---	Low	Low	Moderate
1988:							
Hayes-----	---	---	---	---	Low	Moderate	Low
2381:							
Kanza-----	---	---	---	---	Low	High	Moderate
Ninnescah-----	---	---	---	---	Low	High	Low
2556:							
Langdon-----	---	---	---	---	Low	Low	Low
2958:							
Ninnescah-----	---	---	---	---	Low	High	Low
3053:							
Ost-----	---	---	---	---	Low	Moderate	Low
3180:							
Pratt-----	---	---	---	---	Low	Low	Moderate
3181:							
Pratt-----	---	---	---	---	Low	Low	Moderate
Turon-----	---	---	---	---	Low	Low	Moderate
3511:							
Saltcreek-----	---	---	---	---	Low	Moderate	Low
Naron, sandy substratum-----	---	---	---	---	Low	Low	Low
3512:							
Saltcreek-----	---	---	---	---	Low	Moderate	Low
Naron-----	---	---	---	---	Low	Low	Low

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	Kind	Depth to top	Thickness	Hardness		Uncoated Steel	Concrete
		In	In				
3520:							
Saxman-----	---	---	---	---	Low	Low	High
3540:							
Solvay-----	---	---	---	---	Low	High	Moderate
3639:							
Taver-----	---	---	---	---	Low	High	Low
3640:							
Tivin-----	---	---	---	---	Low	Low	Low
3641:							
Tivin-----	---	---	---	---	Low	Low	Low
Dillhut-----	---	---	---	---	Low	Low	Moderate
3644:							
Turon-----	---	---	---	---	Low	Low	Moderate
Carway-----	---	---	---	---	Low	High	Moderate
3926:							
Water-----	---	---	---	---	Low	---	---
An:							
Albion-----	---	---	---	---	Low	Low	Low
At:							
Attica-----	---	---	---	---	Low	Low	Low
Ba:							
Blanket-----	---	---	---	---	Low	High	Low
BIG:							
Big Salt Marsh--	---	---	---	---	Low	---	---
Ca:							
Carwile-----	---	---	---	---	Low	High	Moderate
Cw:							
Carwile-----	---	---	---	---	Low	High	Moderate
Cx:							
Clark-----	---	---	---	---	Low	Moderate	Low
Dp:							
Dillwyn-----	---	---	---	---	Low	Low	Low
Plevna-----	---	---	---	---	Low	High	Low
Dt:							
Dillwyn-----	---	---	---	---	Low	Low	Low
Tivoli-----	---	---	---	---	Low	Low	Low
Fa:							
Farnum-----	---	---	---	---	Low	Moderate	Low
Fr:							
Farnum-----	---	---	---	---	Low	Moderate	Low
GRP:							
Gravel Pits-----	---	---	---	---	Low	---	---
INT:							
Aquolls-----	---	---	---	---	Low	---	---
Kg:							
Kingman-----	---	---	---	---	Low	High	Low
M-W:							
Miscellaneous	---	---	---	---	---	---	---
Water-----							
Na:							
Naron-----	---	---	---	---	Low	Low	Low
NAA:							
Naron-----	---	---	---	---	Low	Low	Low
NBB:							
Naron-----	---	---	---	---	Low	Low	Low
Nu:							
Natrustolls-----	---	---	---	---	Low	High	High
Pa:							
Plevna-----	---	---	---	---	Low	High	Low
Pc:							
Plevna-----	---	---	---	---	Low	High	Low
Ph:							
Pratt-----	---	---	---	---	Low	Low	Moderate
Po:							
Pratt-----	---	---	---	---	Low	Low	Moderate
Pr:							
Pratt-----	---	---	---	---	Low	Low	Moderate
Carwile-----	---	---	---	---	Low	High	Moderate
Pt:							
Pratt-----	---	---	---	---	Low	Low	Moderate
Tivoli-----	---	---	---	---	Low	Low	Low
Ta:							
Tabler-----	---	---	---	---	Low	High	Low
TAA:							
Tabler-----	---	---	---	---	Low	High	Low
Tv:							
Tivoli-----	---	---	---	---	Low	Low	Low
W:							
Water-----	---	---	---	---	Low	---	---
Wa:							
Waldeck-----	---	---	---	---	Low	Moderate	Low
Za:							
Zenda-----	---	---	---	---	Low	High	Low
Natrustolls-----	---	---	---	---	Low	High	High
ZSS:							
Drummond-----	---	---	---	---	Low	High	High
Zenda-----	---	---	---	---	Low	High	Low

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