

Engineering Interpretations

Construction Material and Excavating

Soils are rated as sources for road fill, topsoil, sand, and gravel. Suitability ratings of good, fair, or poor are given for soils used as a source of road fill and topsoil. Ratings of probable and improbable are given for sand and gravel. A rating of probable means that on the basis of the available evidence, the source material is likely to be in or below the soil. A rating of improbable means that the source material is unlikely to be in or below the soil. The ratings for sand and gravel do not consider the quality of the source material because quality depends on how the source material is to be used.

Road Fill

Road fill consists of soil material that is excavated from its original position and used in road embankments elsewhere. The evaluations for road fill are for low embankments that generally are less than 6 feet in height and are less exacting in design than high embankments such as those along superhighways. The rating is given for the whole soil, from the surface to a depth of about 5 feet, based on the assumption that soil horizons will be mixed in loading, dumping, and spreading. Soils are rated as to the amount of material available for excavation, the ease of excavation, and how well the material performs after it is in place.

Sand

Sand as a construction material is usually defined as particles ranging in size from 0.074 mm (sieve #200) to 4.75 mm (sieve #4) in diameter. Sand is used in great quantities in many kinds of construction. Specifications for each purpose vary widely. The intent of this rating is to show only the probability of finding material in suitable quantity. The suitability of the sand for specific purposes is not evaluated. If the lowest layer of the soil contains sand, the soil is rated as a probable source regardless of thickness. The assumption is that the sand layer below the depth of observation exceeds the minimum thickness.

Gravel

Gravel as a construction material is defined as particles ranging in size from 4.76 mm (sieve #4) to 76 mm (3 inches) in diameter.

Gravel is used in great quantities in many kinds of construction. Specifications for each purpose vary widely. The intent of this rating is to show only the probability of finding material in suitable quantity. The suitability of the gravel for specific purposes is not evaluated. If the lowest layer of the soil contains gravel, the soil is rated as a probable source regardless of thickness. The assumption is that the gravel layer below the depth of observation exceeds the minimum thickness.

Topsoil

The term "topsoil" has several meanings. As used here, the term describes soil material used to cover an area so as to improve soil conditions for establishment and maintenance of adapted vegetation. Generally, the upper part of the soil, which is richest in organic matter, is most desirable; however, material excavated from deeper layers is also used. In this rating, the upper 40 inches of soil material is evaluated for use as topsoil. In the

borrow area, the material below 40 inches is evaluated for its suitability for plant growth after the upper 40 inches is removed. The soil properties that are used to rate the soil as topsoil are those that affect plant growth, the ease of excavation, loading, and spreading, and those that affect the reclamation of the borrow area.

This subsection includes:

- **(a) Construction Materials and Excavating**

Table 19.--Construction Materials and Excavating

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Roadfill		Source for sand		Source for gravel		Source for topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
40000: Barden-----	Very limited low strength (very limited) shrink-swell (very limited) wetness (slightly limited)	1.00 1.00 0.12	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Limited too clayey (limited) wetness (slightly limited)	0.99 0.12	Very limited wetness (very limited) cutbanks cave (slightly limited) too clayey (slightly limited)	1.00 0.29 0.27
40011: Barco-----	Very limited depth to bedrock (very limited) low strength (very limited)	1.00 1.00	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Limited depth to bedrock (very limited)	0.99	Very limited hard bedrock <40" (very limited) cutbanks cave (slightly limited)	1.00 0.29
40015: Eldorado-----	Limited large stones (limited) low strength (slightly limited) shrink-swell (slightly limited)	0.96 0.22 0.05	Improbable excess fines (thickest layer) excess fines (bottom layer) small stones (thickest layer)	1.00 1.00 0.30	Improbable excess fines (bottom layer) excess fines (thickest layer) small stones (thickest layer)	1.00 1.00 0.30	Very limited small stones (very limited) large surface stones (moderately limited) too clayey (slightly limited)	1.00 0.34 0.17	Very limited too clayey (very limited) large stones (limited) cutbanks cave (slightly limited)	1.00 0.96 0.29
40016: Eldorado-----	Very limited large stones (very limited) low strength (very limited) shrink-swell (slightly limited)	1.00 1.00 0.04	Improbable excess fines (thickest layer) excess fines (bottom layer) small stones (thickest layer)	1.00 1.00 0.30	Possible excess fines (bottom layer) possible source (thickest layer) small stones (thickest layer)	1.00 0.33 0.30	Very limited small stones (very limited) large stones >25% (very limited) large surface stones (moderately limited)	1.00 1.00 0.41	Very limited large stones (very limited) too clayey (very limited) cutbanks cave (slightly limited)	1.00 1.00 0.29
40017: Maplegrove----	Very limited low strength (very limited) wetness (limited) shrink-swell (slightly limited)	1.00 0.80 0.10	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Very limited area reclaim (very limited) too clayey (very limited) dense layer (limited)	1.00 1.00 0.93	Very limited wetness (very limited) cutbanks cave (very limited) too clayey (very limited)	1.00 1.00 1.00

Table 19.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Source for sand		Source for gravel		Source for topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
40018: Medoc-----	Limited wetness (limited) shrink-swell (limited)	0.99 0.78	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited too clayey (very limited) wetness (limited) too acid (slightly limited)	1.00 0.99 0.30	Very limited wetness (very limited) too clayey (limited) cutbanks cave (slightly limited)	1.00 0.64 0.29
40019: Newtonia-----	Slightly limited shrink-swell (slightly limited)	0.12	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Not limited		Moderately limited too clayey (moderately limited) cutbanks cave (slightly limited)	0.30 0.29
Eldorado-----	Limited large stones (limited) low strength (slightly limited) shrink-swell (slightly limited)	0.96 0.22 0.05	Improbable excess fines (thickest layer) excess fines (bottom layer) small stones (thickest layer)	1.00 1.00 0.30	Improbable excess fines (bottom layer) excess fines (thickest layer) small stones (thickest layer)	1.00 1.00 0.30	Very limited small stones (very limited) too clayey (slightly limited) area reclaim (slightly limited)	1.00 0.17 0.08	Very limited too clayey (very limited) large stones (limited) cutbanks cave (slightly limited)	1.00 0.96 0.29
40020: Newtonia-----	Slightly limited shrink-swell (slightly limited)	0.20	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Moderately limited too clayey (moderately limited)	0.33	Moderately limited too clayey (moderately limited) cutbanks cave (slightly limited)	0.30 0.29
Eldorado-----	Limited large stones (limited) low strength (slightly limited) shrink-swell (slightly limited)	0.96 0.22 0.05	Improbable excess fines (thickest layer) excess fines (bottom layer) small stones (thickest layer)	1.00 1.00 0.30	Improbable excess fines (bottom layer) excess fines (thickest layer) small stones (thickest layer)	1.00 1.00 0.30	Very limited small stones (very limited) too clayey (slightly limited) area reclaim (slightly limited)	1.00 0.17 0.08	Very limited too clayey (very limited) large stones (limited) cutbanks cave (slightly limited)	1.00 0.96 0.29

Table 19.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Source for sand		Source for gravel		Source for topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
40021: Opolis-----	Very limited low strength (very limited) wetness (limited) shrink-swell (limited)	1.00 0.88 0.64	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited too clayey (very limited) wetness (limited) slope (moderately limited)	1.00 0.88 0.37	Very limited wetness (very limited) too clayey (moderately limited) slope (moderately limited)	1.00 0.57 0.37
Hepler-----	Limited wetness (limited)	0.86	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Limited wetness (limited) too clayey (slightly limited) too acid (slightly limited)	0.86 0.17 0.12	Very limited wetness (very limited) flooding (moderately limited) cutbanks cave (slightly limited)	1.00 0.60 0.29
40022: Opolis-----	Very limited low strength (very limited) wetness (limited) shrink-swell (limited)	1.00 0.88 0.64	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited too clayey (very limited) wetness (limited) too acid (slightly limited)	1.00 0.88 0.06	Very limited wetness (very limited) too clayey (moderately limited) cutbanks cave (slightly limited)	1.00 0.57 0.29
40023: Opolis-----	Very limited low strength (very limited) wetness (limited) shrink-swell (limited)	1.00 0.88 0.64	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited too clayey (very limited) wetness (limited) too acid (slightly limited)	1.00 0.88 0.06	Very limited wetness (very limited) too clayey (moderately limited) cutbanks cave (slightly limited)	1.00 0.57 0.29
40024: Opolis-----	Very limited low strength (very limited) wetness (limited) shrink-swell (moderately limited)	1.00 0.88 0.53	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Limited wetness (limited) too clayey (moderately limited)	0.88 0.33	Very limited wetness (very limited) too clayey (moderately limited) cutbanks cave (slightly limited)	1.00 0.39 0.29

Table 19.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Source for sand		Source for gravel		Source for topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
40026: Sylvania-----	Limited wetness (limited) depth to bedrock (moderately limited) shrink-swell (slightly limited)	0.71 0.39 0.25	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited too clayey (very limited) wetness (limited) too acid (moderately limited)	1.00 0.71 0.48	Very limited cutbanks cave (very limited) wetness (very limited) too clayey (limited)	1.00 1.00 0.95
40027: Sylvania-----	Moderately limited shrink-swell (moderately limited) depth to bedrock (slightly limited) wetness (slightly limited)	0.41 0.17 0.00	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited too clayey (very limited) too acid (moderately limited) wetness (slightly limited)	1.00 0.48 0.00	Limited wetness (limited) too clayey (limited) cutbanks cave (slightly limited)	0.97 0.95 0.29
40028: Sylvania-----	Limited depth to bedrock (limited) shrink-swell (moderately limited)	0.66 0.40	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited too clayey (very limited) too acid (moderately limited) depth to bedrock (slightly limited)	1.00 0.48 0.26	Limited too clayey (limited) wetness (limited) cutbanks cave (slightly limited)	0.95 0.87 0.29
40029: Sylvania-----	Limited wetness (limited) shrink-swell (moderately limited) depth to bedrock (slightly limited)	0.71 0.45 0.25	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited too clayey (very limited) wetness (limited) too acid (moderately limited)	1.00 0.71 0.48	Very limited wetness (very limited) too clayey (limited) slope (moderately limited)	1.00 0.95 0.37
44000: Cherokee-----	Limited wetness (limited) shrink-swell (limited)	0.99 0.70	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited too clayey (very limited) wetness (limited) too acid (moderately limited)	1.00 0.99 0.54	Very limited wetness (very limited) too clayey (moderately limited) cutbanks cave (slightly limited)	1.00 0.57 0.29

Table 19.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Source for sand		Source for gravel		Source for topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
44002: Carl-----	Very limited shrink-swell (very limited) wetness (very limited)	1.00 1.00	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Very limited wetness (very limited) too clayey (very limited)	1.00 1.00	Very limited wetness (very limited) cutbanks cave (very limited) too clayey (moderately limited)	1.00 1.00 0.51
44004: McCune-----	Limited wetness (limited) shrink-swell (slightly limited)	0.86 0.23	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Limited wetness (limited) too clayey (moderately limited) too acid (slightly limited)	0.86 0.33 0.24	Very limited wetness (very limited) cutbanks cave (slightly limited)	1.00 0.29
46001: Verdigris----	Not limited		Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Slightly limited too clayey (slightly limited)	0.25	Moderately limited flooding (moderately limited) cutbanks cave (slightly limited)	0.60 0.29
46002: Hepler-----	Limited wetness (limited)	0.86	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Limited wetness (limited) too clayey (slightly limited) too acid (slightly limited)	0.86 0.17 0.12	Very limited wetness (very limited) flooding (moderately limited) cutbanks cave (slightly limited)	1.00 0.60 0.29
46004: Osage-----	Very limited shrink-swell (very limited) wetness (very limited)	1.00 1.00	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited wetness (very limited) too clayey (very limited)	1.00 1.00	Very limited wetness (very limited) cutbanks cave (very limited) flooding (moderately limited)	1.00 1.00 0.60

Table 19.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Source for sand		Source for gravel		Source for topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
46005: Verdigris-----	Not limited		Improbable excess fines (thickest layer)	1.00	Improbable excess fines (bottom layer)	1.00	Slightly limited too clayey (slightly limited)	0.25	Moderately limited flooding (moderately limited)	0.60
			excess fines (bottom layer)	1.00	excess fines (thickest layer)	1.00			cutbanks cave (slightly limited)	0.29
70006: Credon-----	Very limited low strength (very limited)	1.00	Improbable excess fines (thickest layer)	1.00	Possible excess fines (thickest layer)	1.00	Very limited too clayey (very limited)	1.00	Very limited cutbanks cave (very limited)	1.00
	shrink-swell (moderately limited)	0.45	excess fines (bottom layer)	1.00	excess fines (bottom layer)	0.99	dense layer (limited)	0.93	wetness (very limited)	1.00
	wetness (slightly limited)	0.26					wetness (slightly limited)	0.26	too clayey (very limited)	1.00
70012: Hoberg-----	Very limited low strength (very limited)	1.00	Improbable excess fines (thickest layer)	1.00	Possible excess fines (thickest layer)	1.00	Limited dense layer (limited)	0.95	Very limited wetness (very limited)	1.00
	wetness (moderately limited)	0.48	excess fines (bottom layer)	1.00	small stones (bottom layer)	0.66	wetness (moderately limited)	0.48	dense layer (limited)	0.95
			small stones (bottom layer)	0.66	possible source (bottom layer)	0.42	small stones (slightly limited)	0.12	too clayey (moderately limited)	0.57
70045: Keeno-----	Moderately limited wetness (moderately limited)	0.48	Improbable excess fines (thickest layer)	1.00	Possible possible source (bottom layer)	0.42	Very limited small stones (very limited)	1.00	Very limited cutbanks cave (very limited)	1.00
	large stones (slightly limited)	0.00	excess fines (bottom layer)	1.00	possible source (thickest layer)	0.42	dense layer <20" (very limited)	1.00	wetness (very limited)	1.00
			small stones (bottom layer)	0.10	small stones (bottom layer)	0.10	too clayey (limited)	0.67	dense layer <20" (very limited)	1.00
70056: Crackerneck---	Moderately limited large stones (moderately limited)	0.58	Improbable excess fines (thickest layer)	1.00	Possible excess fines (bottom layer)	0.99	Very limited small stones (very limited)	1.00	Very limited cutbanks cave (very limited)	1.00
	shrink-swell (slightly limited)	0.22	excess fines (bottom layer)	1.00	small stones (thickest layer)	0.83	too clayey (very limited)	1.00	wetness (very limited)	1.00
	wetness (slightly limited)	0.15	small stones (thickest layer)	0.83	small stones (bottom layer)	0.83	area reclaim (very limited)	1.00	too clayey (limited)	0.79

Table 19.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Source for sand		Source for gravel		Source for topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
70057: Crackerneck---	Limited slope (limited) large stones (moderately limited) shrink-swell (slightly limited)	0.92 0.58 0.22	Improbable excess fines (thickest layer) excess fines (bottom layer) small stones (thickest layer)	1.00 1.00 0.83	Possible excess fines (bottom layer) small stones (thickest layer) small stones (bottom layer)	0.99 0.83 0.83	Very limited slope (very limited) small stones (very limited) too clayey (very limited)	1.00 1.00 1.00	Very limited slope (very limited) cutbanks cave (very limited) wetness (very limited)	1.00 1.00 1.00
70058: Crackerneck---	Slightly limited large stones (slightly limited) wetness (slightly limited) shrink-swell (slightly limited)	0.18 0.15 0.12	Improbable excess fines (thickest layer) excess fines (bottom layer) small stones (thickest layer)	1.00 1.00 0.83	Possible excess fines (bottom layer) small stones (thickest layer) possible source (thickest layer)	1.00 0.83 0.25	Very limited small stones (very limited) area reclaim (very limited) too acid (moderately limited)	1.00 1.00 0.36	Very limited cutbanks cave (very limited) wetness (very limited) too clayey (limited)	1.00 1.00 0.79
70059: Goss-----	Very limited low strength (very limited) slope (limited) large stones (slightly limited)	1.00 0.92 0.25	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Possible excess fines (bottom layer) excess fines (thickest layer)	0.60 0.60	Very limited slope (very limited) small stones (very limited) area reclaim (very limited)	1.00 1.00 1.00	Very limited slope (very limited) cutbanks cave (very limited) too clayey (very limited)	1.00 1.00 1.00
70060: Hoberg-----	Moderately limited wetness (moderately limited)	0.48	Improbable excess fines (thickest layer) excess fines (bottom layer)	1.00 1.00	Improbable excess fines (bottom layer) excess fines (thickest layer)	1.00 1.00	Very limited small stones (very limited) dense layer (limited) too clayey (moderately limited)	1.00 0.99 0.50	Very limited cutbanks cave (very limited) wetness (very limited) dense layer (limited)	1.00 1.00 0.99
Eldorado-----	Limited large stones (limited) low strength (slightly limited) shrink-swell (slightly limited)	0.96 0.22 0.05	Improbable excess fines (thickest layer) excess fines (bottom layer) small stones (thickest layer)	1.00 1.00 0.30	Improbable excess fines (bottom layer) excess fines (thickest layer) small stones (thickest layer)	1.00 1.00 0.30	Very limited small stones (very limited) too clayey (slightly limited) area reclaim (slightly limited)	1.00 0.17 0.08	Very limited too clayey (very limited) large stones (limited) cutbanks cave (slightly limited)	1.00 0.96 0.29

Table 19.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Source for sand		Source for gravel		Source for topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
70060: Pomme-----	Not limited		Improbable excess fines (thickest layer)	1.00	Possible possible source (bottom layer)	0.43	Very limited small stones (very limited)	1.00	Very limited cutbanks cave (very limited)	1.00
			excess fines (bottom layer)	1.00	possible source (thickest layer)	0.43	area reclaim (very limited)	1.00	too clayey (limited)	0.72
							too clayey (slightly limited)	0.25		
70061: Pomme-----	Not limited		Improbable excess fines (thickest layer)	1.00	Possible possible source (bottom layer)	0.43	Very limited small stones (very limited)	1.00	Very limited cutbanks cave (very limited)	1.00
			excess fines (bottom layer)	1.00	possible source (thickest layer)	0.43	area reclaim (very limited)	1.00	too clayey (limited)	0.72
							too clayey (slightly limited)	0.25		
70062: Pomme-----	Not limited		Improbable excess fines (thickest layer)	1.00	Possible possible source (bottom layer)	0.43	Very limited small stones (very limited)	1.00	Very limited cutbanks cave (very limited)	1.00
			excess fines (bottom layer)	1.00	possible source (thickest layer)	0.43	area reclaim (very limited)	1.00	too clayey (limited)	0.72
							too clayey (slightly limited)	0.25		
Rueter-----	Moderately limited large stones (moderately limited)	0.52	Improbable excess fines (thickest layer)	1.00	Possible small stones (thickest layer)	0.83	Very limited area reclaim (very limited)	1.00	Very limited cutbanks cave (very limited)	1.00
	shrink-swell (slightly limited)	0.18	excess fines (bottom layer)	1.00	small stones (bottom layer)	0.66	small stones (very limited)	1.00	too clayey (very limited)	1.00
			small stones (thickest layer)	0.83	possible source (thickest layer)	0.37	large stones (slightly limited)	0.30	large stones (moderately limited)	0.52
70063: Rueter-----	Limited large stones (limited)	0.80	Improbable excess fines (thickest layer)	1.00	Possible small stones (thickest layer)	0.66	Very limited area reclaim (very limited)	1.00	Very limited cutbanks cave (very limited)	1.00
	shrink-swell (slightly limited)	0.25	excess fines (bottom layer)	1.00	small stones (bottom layer)	0.66	small stones (very limited)	1.00	too clayey (very limited)	1.00
			small stones (thickest layer)	0.66	possible source (thickest layer)	0.37	large stones >25% (very limited)	1.00	large stones (limited)	0.80

Table 19.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Source for sand		Source for gravel		Source for topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
70064: Rueter-----	Moderately limited large stones (moderately limited)	0.52	Improbable excess fines (thickest layer)	1.00	Possible small stones (thickest layer)	0.83	Very limited area reclaim (very limited)	1.00	Very limited cutbanks cave (very limited)	1.00
	shrink-swell (slightly limited)	0.18	excess fines (bottom layer)	1.00	small stones (bottom layer)	0.66	small stones (very limited)	1.00	too clayey (very limited)	1.00
			small stones (thickest layer)	0.83	possible source (thickest layer)	0.37	large stones (slightly limited)	0.30	large stones (moderately limited)	0.52
70065: Rueter-----	Moderately limited large stones (moderately limited)	0.52	Improbable excess fines (thickest layer)	1.00	Possible small stones (thickest layer)	0.83	Very limited area reclaim (very limited)	1.00	Very limited cutbanks cave (very limited)	1.00
	shrink-swell (slightly limited)	0.18	excess fines (bottom layer)	1.00	small stones (bottom layer)	0.66	small stones (very limited)	1.00	too clayey (very limited)	1.00
			small stones (thickest layer)	0.83	possible source (thickest layer)	0.37	large stones (slightly limited)	0.30	large stones (moderately limited)	0.52
70066: Winnipeg-----	Very limited low strength (very limited)	1.00	Improbable excess fines (thickest layer)	1.00	Possible excess fines (thickest layer)	1.00	Moderately limited too clayey (moderately limited)	0.42	Very limited cutbanks cave (very limited)	1.00
			excess fines (bottom layer)	1.00	excess fines (bottom layer)	0.75			too clayey (slightly limited)	0.24
71751: Bearthicket---	Very limited low strength (very limited)	1.00	Improbable excess fines (thickest layer)	1.00	Possible excess fines (thickest layer)	1.00	Slightly limited too clayey (slightly limited)	0.17	Very limited cutbanks cave (very limited)	1.00
			excess fines (bottom layer)	1.00	excess fines (bottom layer)	0.60			flooding (moderately limited)	0.60
73031: Gerald-----	Very limited low strength (very limited)	1.00	Improbable excess fines (thickest layer)	1.00	Improbable excess fines (thickest layer)	1.00	Very limited too clayey (very limited)	1.00	Very limited wetness (very limited)	1.00
	wetness (limited)	0.86	excess fines (bottom layer)	1.00	excess fines (bottom layer)	1.00	wetness (limited)	0.86	cutbanks cave (very limited)	1.00
			small stones (bottom layer)	0.10	small stones (bottom layer)	0.10			too clayey (very limited)	1.00

Table 19.--Construction Materials and Excavating--Continued

Map symbol and soil name	Roadfill		Source for sand		Source for gravel		Source for topsoil		Shallow excavations	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75376: Cedargap-----	Not limited		Improbable excess fines (thickest layer)	1.00	Possible excess fines (thickest layer)	0.84	Very limited small stones (very limited)	1.00	Very limited cutbanks cave (very limited)	1.00
			excess fines (bottom layer)	1.00	excess fines (bottom layer)	0.55	area reclaim (very limited)	1.00	flooding (moderately limited)	0.60
			small stones (thickest layer)	0.30	small stones (thickest layer)	0.30	too clayey (moderately limited)	0.50		
99000: Pits-----	Not rated		Not rated		Not rated		Not rated		Not rated	
Quarries-----	Not rated		Not rated		Not rated		Not rated		Not rated	
99001: Water-----	Not rated		Not rated		Not rated		Not rated		Not rated	
99002: Borrow areas--	Not rated		Not rated		Not rated		Not rated		Not rated	
99003: Miscellaneous water-----	Not rated		Not rated		Not rated		Not rated		Not rated	
99005: Landfill-----	Very limited slope (very limited)	1.00	Improbable excess fines (thickest layer)	1.00	Improbable excess fines (bottom layer)	1.00	Very limited slope (very limited)	1.00	Very limited slope (very limited)	1.00
	low strength (very limited)	1.00	excess fines (bottom layer)	1.00	excess fines (thickest layer)	1.00				
99010: Dumps-----	Not rated		Not rated		Not rated		Not rated		Not rated	
Pits-----	Not rated		Not rated		Not rated		Not rated		Not rated	
99011: Kanima-----	Not limited		Improbable excess fines (thickest layer)	1.00	Possible excess fines (bottom layer)	0.79	Very limited small stones (very limited)	1.00	slightly limited cutbanks cave (slightly limited)	0.29
			excess fines (bottom layer)	1.00	excess fines (thickest layer)	0.60	area reclaim (very limited)	1.00		
							too acid (limited)	0.60		