ENGINEERING INDEX PROPERTIES
Tripp County, South Dakota

Engineering Index Properties table gives the engineering classifications and the range of index properties for the layers of each soil in the survey area. Depth to the upper and lower boundaries of each layer is indicated. Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. Loam, for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, gravelly. Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 1998) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 1998). The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection. If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest. The AASHTO classification for soils tested, with group index numbers in parentheses, is given in Engineering Index Properties table.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage. Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination. The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

ENGINEERING INDEX PROPERTIES--Continued
Tripp County, South Dakota

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
AaB2:												
Anselmo--------	0-6	Loamy fine sand	SC-SM, SM	A-2	0	0	100	90-100	65-85	15-30	15-20	NP-5
	6-25	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-95	35-65	15-25	NP-7
	25-44	Fine sandy loam	SC-SM, SM	A-4	0	0	100	100	70-85	40-50	15-25	NP-7
	44-60	Loamy fine sand	SC-SM, SM	A-2	0	0	100	100	50-80	15-35	15-20	NP-5
AbB:												
Anselmo--------	0-10	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	100	60-100	30-65	15-25	NP-7
	10-25	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-95	35-65	15-25	NP-7
	25-44	Fine sandy loam	SC-SM, SM	A-4	0	0	100	100	70-85	40-50	15-25	NP-7
	44-60	Loamy fine sand	SC-SM, SM	A-2	0	0	100	100	50-80	15-35	15-20	NP-5
AbC:												
Anselmo--------	0-10	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	100	60-100	30-65	15-25	NP-7
	10-25	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-95	35-65	15-25	NP-7
	25-44	Fine sandy loam	SC-SM, SM	A-4	0	0	100	100	70-85	40-50	15-25	NP-7
	44-60	Loamy fine sand	SC-SM, SM	A-2	0	0	100	100	50-80	15-35	15-20	NP-5
AbD:												
Anselmo--------	0-10	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	100	60-100	30-65	15-25	NP-7
	10-25	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-95	35-65	15-25	NP-7
	25-44	Fine sandy loam	SC-SM, SM	A-4	0	0	100	100	70-85	40-50	15-25	NP-7
	44-60	Loamy fine sand	SC-SM, SM	A-2	0	0	100	100	50-80	15-35	15-20	NP-5
AhC:												
Anselmo--------	0-10	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	100	60-100	30-65	15-25	NP-7
	10-25	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-95	35-65	15-25	NP-7
	25-44	Fine sandy loam	SC-SM, SM	A-4	0	0	100	100	70-85	40-50	15-25	NP-7
	44-60	Loamy fine sand	SC-SM, SM	A-2	0	0	100	100	50-80	15-35	15-20	NP-5
Holt----------	0-6	Fine sandy loam	SC-SM, SM	A-4	0	0	100	95-100	90-100	35-50	15-30	NP-7
	6-16	Fine sandy loam	SM	A-4	0	0	90-100	90-100	70-100	35-50	20-35	NP-10
	16-28	Fine sandy loam	SM	A-2, A-4	0	0	90-100	90-100	70-100	25-45	20-35	NP-10
	28-60	Weathered bedrock			---	---	---	---	---	---	---	---
AtD:												
Anselmo--------	0-10	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	100	60-100	30-65	15-25	NP-7
	10-25	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-95	35-65	15-25	NP-7
	25-44	Fine sandy loam	SC-SM, SM	A-4	0	0	100	100	70-85	40-50	15-25	NP-7
	44-60	Loamy fine sand	SC-SM, SM	A-2	0	0	100	100	50-80	15-35	15-20	NP-5
Longpine-------	0-7	Fine sandy loam	ML, SM	A-4	0	0	95-100	75-100	75-100	40-65	15-25	NP-7
	7-14	Gravelly fine sandy loam	SM	A-1, A-2	0	0-5	55-100	50-75	40-60	10-35	15-25	NP-5
	14-60	Unweathered bedrock			---	---	---	---	---	---	---	---
AvA:												
Anselmo--------	0-10	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	100	60-100	30-65	15-25	NP-7
	10-25	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-95	35-65	15-25	NP-7
	25-44	Fine sandy loam	SC-SM, SM	A-4	0	0	100	100	70-85	40-50	15-25	NP-7
	44-60	Loamy fine sand	SC-SM, SM	A-2	0	0	100	100	50-80	15-35	15-20	NP-5
Vetal----------	0-17	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	95-100	85-100	40-55	20-35	3-10
	17-35	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	95-100	60-95	25-65	20-30	3-10
	35-60	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	95-100	60-95	30-65	20-30	3-10

ENGINEERING INDEX PROPERTIES--Continued
Tripp County, South Dakota

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Ba:												
Bigbend--------	0-3	Silty clay loam	CL, ML	A-6, A-7	0	0	100	100	95-100	85-95	35-50	10-25
	3-45	Stratified very fine sandy loam to silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	85-100	55-95	20-35	NP-15
	45-60	Stratified loamy very fine sand to silty clay loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	90-100	55-90	20-35	NP-15
Inavale--------	0-4	Loamy fine sand	SC-SM, SM, SP-SM	A-2, A-3	0	0	100	100	85-95	5-35	15-25	NP-5
	4-8	Loamy fine sand	SC-SM, SM, SP-SM	A-2, A-3	0	0	100	90-100	65-85	5-30	15-25	NP-5
	8-60	Fine sand	SC-SM, SM, SP-SM	A-2, A-3	0	0	100	100	70-90	5-30	15-25	NP-5
	60-64	Fine sand	SC-SM, SM, SP-SM	A-2, A-3	0	0	100	90-100	65-85	5-30	15-25	NP-5
Munjor---------	0-6	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0	0	100	95-100	65-100	30-55	15-30	NP-7
	6-60	Fine sandy loam	CL, ML, SC, SM	A-4	0	0	100	95-100	85-100	35-65	15-30	3-10
	60-64	Loamy sand	SM, SP-SM	A-2-4, A-3	0	0	98-100	95-100	55-100	5-30	---	NP
BmC:												
Boro----------	0-3	Silty clay	CH, MH	A-7	0	0	100	100	90-100	80-100	60-80	30-40
	3-60	Silty clay	CH, MH	A-7	0	0	100	100	90-100	80-100	60-80	30-40
Millboro-------	0-7	Silty clay	CH, MH	A-7	0	0	100	100	90-100	75-100	50-80	20-50
	7-19	Clay	CH, MH	A-7	0	0	100	100	90-100	85-100	50-80	20-50
	19-60	Silty clay	MH, CH	A-7	0	0	100	95-100	90-100	85-100	50-80	20-50
BnC:												
Boyd----------	0-5	Clay	CH, MH	A-7	0	0	100	95-100	95-100	90-100	65-100	30-60
	5-19	Clay	MH, CH	A-7	0	0	100	95-100	95-100	80-100	65-100	30-60
	19-27	Clay	MH, CH	A-7	0	0	95-100	85-100	75-100	60-100	65-100	30-60
	27-60	Weathered bedrock			---	---	---	---	---	---	---	---
BoD:												
Boyd----------	0-5	Clay	MH, CH	A-7	0	0	100	95-100	95-100	90-100	65-100	30-60
	5-19	Clay	MH, CH	A-7	0	0	100	95-100	95-100	80-100	65-100	30-60
	19-27	Clay	CH, MH	A-7	0	0	95-100	85-100	75-100	60-100	65-100	30-60
	27-60	Weathered bedrock			---	---	---	---	---	---	---	---
Okaton---------	0-4	Silty clay	CH, MH	A-7	0	0	100	95-100	90-100	85-100	50-85	20-50
	4-12	Clay	CH, MH	A-7	0	0	100	95-100	90-100	85-100	50-85	20-50
	12-60	Weathered bedrock	CH, MH	A-7	0	0	100	95-100	90-100	85-100	---	---
Bp:												
Bridgeport-----	0-11	Silty clay loam	CL	A-6	0	0	100	100	95-100	75-95	30-40	11-20
	11-60	Silty clay loam	CL	A-4, A-6	0	0	100	100	90-100	65-100	25-40	8-20
Bt:												
Bridgeport-----	0-11	Silty clay loam	CL	A-6	0	0	100	100	95-100	75-95	30-40	11-20
	11-60	Silty clay loam	CL	A-4, A-6	0	0	100	100	90-100	65-100	25-40	8-20
CaB:												
Canning--------	0-5	Loam	CL	A-4, A-6	0	0	100	100	85-100	50-90	30-40	8-15
	5-22	Clay loam	SC, CL	A-6, A-7	0	0	95-100	85-100	60-90	35-80	30-45	10-20
	22-60	Gravelly sand	GM, SC-SM, SM, GC-GM	A-1, A-2, A-3	0	0	40-100	30-80	15-70	5-30	15-25	NP-5
CbD:												
Canning--------	0-5	Loam	CL	A-4, A-6	0	0	100	100	85-100	50-90	30-40	8-15
	5-22	Clay loam	CL, SC	A-6, A-7	0	0	95-100	85-100	60-90	35-80	30-45	10-20
	22-60	Gravelly sand	GC-GM, GM, SC-SM, SM	A-1, A-2, A-3	0	0	40-100	30-80	15-70	5-30	15-25	NP-5
Murdo----------	0-2	Loam	CL-ML, CL	A-4, A-6	0	0	95-100	90-100	65-90	50-75	25-40	5-15
	2-12	Clay loam	ML, SC, SM, CL	A-4, A-6	0	0-5	85-95	50-90	45-80	35-60	30-40	7-15
	12-18	Gravelly loam	CL-ML, SC, SC-SM, CL	A-4, A-6	0	1-5	80-95	45-85	40-75	35-55	20-35	5-12
	18-60	Gravelly sand	GP, SM, SP, GM	A-1, A-2	0	1-5	40-80	10-55	5-45	0-30	0-25	NP-12
Cc:												
Carter---------	0-8	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	85-100	30-45	15-25
	8-22	Clay	CH, MH	A-7	0	0	100	100	90-100	90-100	60-85	25-50
	22-60	Silty clay	CH, MH	A-7	0	0	100	100	90-100	90-100	55-80	25-50
Cd:												
Cass----------	0-17	Fine sandy loam	SM, SC-SM	A-2, A-4	0	0	100	95-100	85-95	20-40	15-20	NP-5
	17-60	Loamy fine sand	SP-SM, SM	A-2, A-3	0	0	95-100	95-100	50-75	5-30	5-15	NP-5
ChA:												
Chappell-------	0-15	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	90-100	90-100	60-85	30-50	18-30	NP-7
	15-26	Sandy loam	SC-SM, SM	A-2, A-4	0	0	90-100	90-100	60-80	30-50	18-30	NP-7
	26-60	Gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0	0-5	35-65	30-60	5-30	0-15	---	NP

ENGINEERING INDEX PROPERTIES--Continued
Tripp County, South Dakota

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
CnC:												
Chappell-------	0-15	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	90-100	90-100	60-85	30-50	18-30	NP-7
	15-26	Sandy loam	SM, SC-SM	A-2, A-4	0	0	90-100	90-100	60-80	30-50	18-30	NP-7
	26-60	Gravelly coarse sand	GP-GM, SP, SP-SM, GP	A-1	0	0-5	35-65	30-60	5-30	0-15	---	NP
Dix----------	0-12	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	95-100	95-100	60-95	30-75	15-20	NP-5
	12-60	Gravelly coarse sand	GP, GP-GM, SP-SM, SP	A-1	0	0-5	30-90	20-85	10-35	0-10	0-5	NP-5
DaA:												
Dix----------	0-12	Fine sandy loam	ML, SC-SM, SM, CL-ML	A-2, A-4	0	0	95-100	95-100	60-95	30-75	15-20	NP-5
	12-60	Gravelly coarse sand	GP-GM, SP, SP-SM, GP	A-1	0	0-5	30-90	20-85	10-35	0-10	0-5	NP-5
DbD:												
Dix----------	0-12	Fine sandy loam	ML, SC-SM, SM, CL-ML	A-2, A-4	0	0	95-100	95-100	60-95	30-75	15-20	NP-5
	12-60	Gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0	0-5	30-90	20-85	10-35	0-10	0-5	NP-5
DgB:												
Doger----------	0-35	Loamy fine sand	SC-SM, SP-SM, SM	A-2, A-3, A-4	0	0	100	100	95-100	5-45	15-25	NP-5
	35-60	Loamy fine sand	SM, SP-SM, SC-SM	A-2, A-3	0	0	100	100	95-100	5-35	15-25	NP-5
DmA:												
Doger----------	0-35	Loamy fine sand	SM, SP-SM, SC-SM	A-2, A-3, A-4	0	0	100	100	95-100	5-45	15-25	NP-5
	35-60	Loamy fine sand	SM, SP-SM, SC-SM	A-2, A-3	0	0	100	100	95-100	5-35	15-25	NP-5
Elsmere--------	0-12	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	100	70-100	30-50	15-25	NP-5
	12-22	Loamy fine sand	SM, SP-SM	A-2, A-3	0	0	100	100	60-100	5-30	5-15	NP-5
	22-60	Fine sand	SM, SP-SM	A-2, A-3	0	0	100	100	60-100	5-30	5-15	NP-5
DnC2:												
Dunday---------	0-12	Loamy fine sand	SM	A-2	0	0	100	100	90-100	13-35	15-20	NP-5
	12-60	Loamy fine sand	SP-SM, SM	A-2, A-3	0	0	100	100	50-95	5-35	10-20	NP-5
Doger----------	0-35	Loamy fine sand	SC-SM, SM, SP-SM	A-2, A-3, A-4	0	0	100	100	95-100	5-45	15-25	NP-5
	35-60	Loamy fine sand	SC-SM, SM, SP-SM	A-2, A-3	0	0	100	100	95-100	5-35	15-25	NP-5
DuC:												
Dunday---------	0-12	Loamy fine sand	SM	A-2	0	0	100	100	90-100	13-35	15-20	NP-5
	12-60	Loamy fine sand	SM, SP-SM	A-2, A-3	0	0	100	100	50-95	5-35	10-20	NP-5
Doger----------	0-35	Loamy fine sand	SC-SM, SM, SP-SM	A-2, A-3, A-4	0	0	100	100	95-100	5-45	15-25	NP-5
	35-60	Loamy fine sand	SC-SM, SM, SP-SM	A-2, A-3	0	0	100	100	95-100	5-35	15-25	NP-5
Em:												
Elsmere--------	0-12	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	100	70-100	30-50	15-25	NP-5
	12-22	Loamy fine sand	SP-SM, SM	A-2, A-3	0	0	100	100	60-100	5-30	5-15	NP-5
	22-60	Fine sand	SM, SP-SM	A-2, A-3	0	0	100	100	60-100	5-30	5-15	NP-5
EpE:												
Epping---------	0-4	Silt loam	ML, CL, CL-ML	A-4	0	0	100	95-100	90-100	70-85	15-30	2-10
	4-8	Silt loam	ML, CL, CL-ML	A-4, A-6	0	0	100	100	85-95	60-75	15-35	2-15
	8-12	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	85-100	60-95	20-40	5-20
	12-60	Weathered bedrock			---	---	---	---	---	---	---	---
Er:												
Erd----------	0-3	Clay	CH, MH	A-7	0	0	100	95-100	90-100	90-100	55-80	25-50
	3-20	Clay	CH, MH	A-7	0	0	100	95-100	90-100	90-100	55-80	25-50
	20-60	Clay	CH, MH	A-7	0	0	100	95-100	90-100	90-100	55-80	25-50
Es:												
Erd----------	0-3	Clay	MH, CH	A-7	0	0	100	95-100	90-100	90-100	55-80	25-50
	3-20	Clay	MH, CH	A-7	0	0	100	95-100	90-100	90-100	55-80	25-50
	20-60	Clay	MH, CH	A-7	0	0	100	95-100	90-100	90-100	55-80	25-50
Capa----------	0-1	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	70-90	25-40	7-20
	1-15	Clay	CH, MH	A-7	0	0	100	100	95-100	90-100	60-85	25-50
	15-60	Clay	CH, MH	A-7	0	0	100	100	95-100	90-100	60-85	25-50
Gp:												
Orthents, Gravelly------	0-10	Gravelly loam	GM, SM	A-2, A-4	0	0-5	60-90	50-80	45-70	25-50	20-35	NP-7
	10-60	Very gravelly sand	SW-SM, SM, SW	A-1	0	0-10	60-85	45-70	15-45	0-15	15-25	NP-5
Ha:												
Bigbend--------	0-7	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	70-95	25-40	2-15
	7-53	Stratified very fine sandy loam to silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	85-100	55-95	20-35	NP-15
	53-60	Stratified loamy very fine sand to silty clay loam	ML, CL, CL-ML	A-4, A-6	0	0	100	100	90-100	55-90	20-35	NP-15

ENGINEERING INDEX PROPERTIES--Continued
Tripp County, South Dakota

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
HbA:												
Holt----------	0-6	Fine sandy loam	SM, SC-SM	A-4	0	0	100	95-100	90-100	35-50	15-30	NP-7
	6-16	Fine sandy loam	SM	A-4	0	0	90-100	90-100	70-100	35-50	20-35	NP-10
	16-28	Fine sandy loam	SM	A-2, A-4	0	0	90-100	90-100	70-100	25-45	20-35	NP-10
	28-60	Weathered bedrock			---	---	---	---	---	---	---	---
Anselmo--------	0-10	Fine sandy loam	SC-SM, SM, ML, CL-ML	A-2, A-4	0	0	100	100	60-100	30-65	15-25	NP-7
	10-25	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-95	35-65	15-25	NP-7
	25-44	Fine sandy loam	SC-SM, SM	A-4	0	0	100	100	70-85	40-50	15-25	NP-7
	44-60	Loamy fine sand	SM, SC-SM	A-2	0	0	100	100	50-80	15-35	15-20	NP-5
HgA:												
Huggins--------	0-6	Silt loam	CL	A-6, A-7	0	0	100	100	90-100	70-100	30-45	10-20
	6-21	Silty clay	CH, CL	A-7	0	0	100	100	90-100	80-100	40-65	15-35
	21-28	Gravelly clay loam	CL, CL-ML, GC, SC	A-2, A-4, A-6, A-7	---	0-5	50-85	30-70	30-70	5-60	25-45	5-20
	28-60	Unweathered bedrock			---	---	---	---	---	---	---	---
HkB:												
Huggins--------	0-6	Silt loam	CL	A-6, A-7	0	0	100	100	90-100	70-100	30-45	10-20
	6-21	Silty clay	CL, CH	A-7	0	0	100	100	90-100	80-100	40-65	15-35
	21-28	Gravelly clay loam	CL, GC, SC, CL-ML	A-2, A-4, A-6, A-7	---	0-5	50-85	30-70	30-70	5-60	25-45	5-20
	28-60	Unweathered bedrock			---	---	---	---	---	---	---	---
Kadoka---------	0-5	Silt loam	CL, ML	A-4, A-6, A-7	0	0	100	95-100	90-100	85-100	30-45	5-20
	5-28	Silt loam	CL, ML	A-7, A-6	0	0	100	95-100	90-100	65-100	35-50	10-25
	28-60	Silt loam	CL, ML	A-4, A-6, A-7	0	0-5	85-100	70-100	60-100	55-100	30-45	5-20
	60-64	Weathered bedrock			---	---	---	---	---	---	---	---
Hr:												
Hurley---------	0-2	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	25-40	5-15
	2-60	Clay	MH, CH	A-7	0	0	100	100	85-100	80-100	60-90	30-50
	60-64	Weathered bedrock			---	---	---	---	---	---	50-100	20-65
Ia:												
Inavale--------	0-8	Loamy fine sand	SC-SM, SM, SP-SM	A-2, A-3	0	0	100	100	85-95	5-35	15-25	NP-5
	8-13	Fine sand	SC-SM, SM, SP-SM	A-2, A-3	0	0	100	90-100	65-85	5-30	15-25	NP-5
	13-16	Loamy fine sand	SP-SM, SC-SM, SM	A-2, A-3	0	0	100	100	70-90	5-30	15-25	NP-5
	16-60	Fine sand	SP-SM, SC-SM, SM	A-2, A-3	0	0	100	90-100	65-85	5-30	15-25	NP-5
Ic:												
Inavale--------	0-8	Loamy fine sand	SP-SM, SC-SM, SM	A-2, A-3	0	0	100	100	85-95	5-35	15-25	NP-5
	8-13	Fine sand	SP-SM, SM, SC-SM	A-2, A-3	0	0	100	90-100	65-85	5-30	15-25	NP-5
	13-16	Loamy fine sand	SM, SC-SM, SP-SM	A-2, A-3	0	0	100	100	70-90	5-30	15-25	NP-5
	16-60	Fine sand	SM, SP-SM, SC-SM	A-2, A-3	0	0	100	90-100	65-85	5-30	15-25	NP-5
KaA:												
Kadoka---------	0-5	Silt loam	ML, CL	A-4, A-6, A-7	0	0	100	95-100	90-100	85-100	30-45	5-20
	5-28	Silt loam	ML, CL	A-6, A-7	0	0	100	95-100	90-100	65-100	35-50	10-25
	28-60	Silt loam	CL, ML	A-4, A-6, A-7	0	0-5	85-100	70-100	60-100	55-100	30-45	5-20
	60-64	Weathered bedrock			---	---	---	---	---	---	---	---
KbD:												
Kadoka---------	0-5	Silt loam	ML, CL	A-4, A-6, A-7	0	0	100	95-100	90-100	85-100	30-45	5-20
	5-28	Silt loam	CL, ML	A-6, A-7	0	0	100	95-100	90-100	65-100	35-50	10-25
	28-60	Silt loam	ML, CL	A-4, A-6, A-7	0	0-5	85-100	70-100	60-100	55-100	30-45	5-20
	60-64	Weathered bedrock			---	---	---	---	---	---	---	---
Epping---------	0-4	Silt loam	CL, CL-ML, ML	A-4	0	0	100	95-100	90-100	70-85	15-30	2-10
	4-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	85-95	60-75	15-35	2-15
	8-12	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	60-95	20-40	5-20
	12-60	Weathered bedrock			---	---	---	---	---	---	---	---
Ke:												
Keya----------	0-15	Silt loam	ML, CL	A-4, A-6	0	0	100	100	90-100	80-95	30-40	5-15
	15-60	Clay loam	CL	A-6, A-7	0	0	100	95-100	85-100	60-80	30-45	10-20
	60-64	Fine sandy loam	SC, SM, ML, CL	A-4, A-6	0	0	100	95-100	70-85	40-80	25-40	3-15
Ko:												
Kolls----------	0-5	Clay	CH, MH	A-7	0	0	100	100	95-100	85-100	50-90	25-50
	5-22	Clay	CH, MH	A-7	0	0	100	100	95-100	85-100	60-90	25-55
	22-60	Clay	CH, MH	A-7	0	0	100	100	95-100	85-100	60-90	25-55

ENGINEERING INDEX PROPERTIES--Continued
Tripp County, South Dakota

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
LkC:												
Lakoma---------	0-5	Silty clay	CH, MH	A-7	0	0	100	95-100	90-100	85-100	55-85	25-50
	5-22	Clay	CH, MH	A-7	0	0	95-100	85-100	85-100	85-100	55-85	25-50
	22-28	Clay	MH, CH	A-7	0	0	95-100	70-100	60-100	50-100	55-85	25-50
	28-60	Weathered bedrock			---	---	---	---	---	---	---	---
Millboro-------	0-7	Silty clay	MH, CH	A-7	0	0	100	100	90-100	75-100	50-80	20-50
	7-19	Clay	MH, CH	A-7	0	0	100	100	90-100	85-100	50-80	20-50
	19-60	Silty clay	MH, CH	A-7	0	0	100	95-100	90-100	85-100	50-80	20-50
LoD:												
Lakoma---------	0-5	Silty clay	CH, MH	A-7	0	0	100	95-100	90-100	85-100	55-85	25-50
	5-22	Clay	MH, CH	A-7	0	0	95-100	85-100	85-100	85-100	55-85	25-50
	22-28	Clay	CH, MH	A-7	0	0	95-100	70-100	60-100	50-100	55-85	25-50
	28-60	Weathered bedrock			---	---	---	---	---	---	---	---
Okaton---------	0-8	Silty clay	MH, CH	A-7	0	0	100	95-100	90-100	85-100	50-85	20-50
	8-12	Clay	CH, MH	A-7	0	0	100	95-100	90-100	85-100	50-85	20-50
	12-60	Weathered bedrock	CH, MH	A-7	0	0	100	95-100	90-100	85-100	---	---
LwA:												
Lowry----------	0-10	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-100	25-40	5-15
	10-38	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	80-100	25-40	5-15
	38-60	Loam	ML, CL	A-4, A-6	0	0	100	100	95-100	70-100	25-40	3-15
MaA:												
Manter---------	0-7	Fine sandy loam	SC-SM, SM, ML, CL-ML	A-2, A-4	0	0	95-100	75-100	45-85	25-55	20-30	NP-10
	7-36	Fine sandy loam	SC-SM, SM, ML, CL-ML	A-2, A-4	0	0	95-100	75-100	50-85	30-55	15-25	NP-10
	36-60	Loamy fine sand	SM	A-1, A-2, A-4	0	0	95-100	75-100	40-85	15-50	---	NP
MaB:												
Manter---------	0-7	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	95-100	75-100	45-85	25-55	20-30	NP-10
	7-36	Fine sandy loam	CL-ML, SC-SM, SM, ML	A-2, A-4	0	0	95-100	75-100	50-85	30-55	15-25	NP-10
	36-60	Loamy fine sand	SM	A-1, A-2, A-4	0	0	95-100	75-100	40-85	15-50	---	NP
MfE:												
Manter---------	0-7	Fine sandy loam	SM, SC-SM, ML, CL-ML	A-2, A-4	0	0	95-100	75-100	45-85	25-55	20-30	NP-10
	7-36	Fine sandy loam	SC-SM, SM, ML, CL-ML	A-2, A-4	0	0	95-100	75-100	50-85	30-55	15-25	NP-10
	36-60	Loamy fine sand	SM	A-4, A-1, A-2	0	0	95-100	75-100	40-85	15-50	---	NP
Anselmo--------	0-10	Fine sandy loam	ML, SC-SM, SM, CL-ML	A-2, A-4	0	0	100	100	60-100	30-65	15-25	NP-7
	10-25	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-95	35-65	15-25	NP-7
	25-44	Fine sandy loam	SM, SC-SM	A-4	0	0	100	100	70-85	40-50	15-25	NP-7
	44-60	Loamy fine sand	SM, SC-SM	A-2	0	0	100	100	50-80	15-35	15-20	NP-5
Mh:												
Aquolls--------	0-10	Clay	MH, CH	A-7	0	0-5	100	95-100	85-100	70-100	55-80	25-50
	10-60	Stratified clay to fine sandy loam	CL-ML, CL	A-4, A-6	0	0-5	100	100	80-95	50-70	20-35	5-15
MoA:												
Millboro-------	0-7	Silty clay	CH, MH	A-7	0	0	100	100	90-100	75-100	50-80	20-50
	7-19	Clay	MH, CH	A-7	0	0	100	100	90-100	85-100	50-80	20-50
	19-60	Silty clay	MH, CH	A-7	0	0	100	95-100	90-100	85-100	50-80	20-50
MoB:												
Millboro-------	0-7	Silty clay	MH, CH	A-7	0	0	100	100	90-100	75-100	50-80	20-50
	7-19	Clay	CH, MH	A-7	0	0	100	100	90-100	85-100	50-80	20-50
	19-60	Silty clay	CH, MH	A-7	0	0	100	95-100	90-100	85-100	50-80	20-50
MoC:												
Millboro-------	0-7	Silty clay	CH, MH	A-7	0	0	100	100	90-100	75-100	50-80	20-50
	7-19	Clay	CH, MH	A-7	0	0	100	100	90-100	85-100	50-80	20-50
	19-60	Silty clay	CH, MH	A-7	0	0	100	95-100	90-100	85-100	50-80	20-50
Mr:												
Mosher---------	0-8	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	85-100	70-100	25-40	5-20
	8-16	Clay	CL, MH, ML, CH	A-7	0	0	100	95-100	90-100	70-100	40-65	15-30
	16-60	Clay loam	MH, ML, CH, CL	A-6, A-7	0	0	100	95-100	90-100	70-100	35-60	10-35
	60-64	Stratified loamy sand to clay	CL-ML, GC, SC, CL	A-4, A-6, A-7	0	0	55-100	45-100	40-90	35-80	20-45	5-20

ENGINEERING INDEX PROPERTIES--Continued
Tripp County, South Dakota

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticit index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Ms:												
Mosher---------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	70-100	25-40	5-20
	8-16	Clay	CH, CL, MH, ML	A-7	0	0	100	95-100	90-100	70-100	40-65	15-30
	16-60	Clay loam	MH, ML, CH, CL	A-6, A-7	0	0	100	95-100	90-100	70-100	35-60	10-35
	60-64	Stratified loamy sand to clay	GC, SC, CL-ML, CL	A-4, A-6, A-7	0	0	55-100	45-100	40-90	35-80	20-45	5-20
Jerauld--------	0-3	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	60-100	25-40	5-15
	3-10	Clay loam	CL, CH	A-7	0	0	95-100	95-100	90-100	55-95	45-70	20-40
	10-22	Clay loam	CH, CL	A-7	0	0	95-100	95-100	90-100	55-95	45-70	20-40
	22-60	Silty clay	CH, CL, MH, ML	A-7	0	0	95-100	95-100	85-100	55-90	40-85	20-45
Mu:												
Munjor---------	0-6	Fine sandy loam	CL-ML, SC-SM, SM, ML	A-2-4, A-4	0	0	100	95-100	65-100	30-55	15-30	NP-7
	6-60	Fine sandy loam	SC, ML, CL, SM	A-4	0	0	100	95-100	85-100	35-65	15-30	3-10
	60-64	Loamy sand	SM, SP-SM	A-2-4, A-3	0	0	98-100	95-100	55-100	5-30	---	NP
OaF:												
Okaton---------	0-8	Silty clay	MH, CH	A-7	0	0	100	95-100	90-100	85-100	50-85	20-50
	8-12	Clay	MH, CH	A-7	0	0	100	95-100	90-100	85-100	50-85	20-50
	12-60	Weathered bedrock	CH, MH	A-7	0	0	100	95-100	90-100	85-100	---	---
ObE:												
Okaton---------	0-8	Silty clay	CH, MH	A-7	0	0	100	95-100	90-100	85-100	50-85	20-50
	8-12	Clay	CH, MH	A-7	0	0	100	95-100	90-100	85-100	50-85	20-50
	12-60	Weathered bedrock	CH, MH	A-7	0	0	100	95-100	90-100	85-100	---	---
Lakoma---------	0-5	Silty clay	MH, CH	A-7	0	0	100	95-100	90-100	85-100	55-85	25-50
	5-22	Clay	MH, CH	A-7	0	0	95-100	85-100	85-100	85-100	55-85	25-50
	22-28	Clay	CH, MH	A-7	0	0	95-100	70-100	60-100	50-100	55-85	25-50
	28-60	Weathered bedrock			---	---	---	---	---	---	---	---
OcF:												
Okaton---------	0-8	Silty clay	CH, MH	A-7	0	0	100	95-100	90-100	85-100	50-85	20-50
	8-12	Clay	CH, MH	A-7	0	0	100	95-100	90-100	85-100	50-85	20-50
	12-60	Weathered bedrock	MH, CH	A-7	0	0	100	95-100	90-100	85-100	---	---
Rock Outcrop, Soft----------	0-60	Weathered bedrock	CH, MH	A-7-5	0	0-15	95-100	95-100	90-100	85-100	50-90	20-55
On:												
Mosher---------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	70-100	25-40	5-20
	8-16	Clay	CH, CL, MH, ML	A-7	0	0	100	95-100	90-100	70-100	40-65	15-30
	16-60	Clay loam	CH, CL, MH, ML	A-6, A-7	0	0	100	95-100	90-100	70-100	35-60	10-35
	60-64	Stratified loamy sand to clay	CL, CL-ML, GC, SC	A-4, A-6, A-7	0	0	55-100	45-100	40-90	35-80	20-45	5-20
Oo:												
Onita----------	0-9	Silt loam	CL, ML	A-4, A-6, A-7	0	0	100	95-100	90-100	70-100	30-45	7-20
	9-29	Silty clay	CH, CL, MH, ML	A-7	0	0	100	95-100	90-100	75-100	40-60	10-30
	29-60	Silty clay loam	CH, CL	A-6, A-7	0	0-5	95-100	95-100	85-100	65-100	30-55	10-30
Mosher---------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	70-100	25-40	5-20
	8-16	Clay	MH, ML, CL, CH	A-7	0	0	100	95-100	90-100	70-100	40-65	15-30
	16-60	Clay loam	CH, CL, ML, MH	A-6, A-7	0	0	100	95-100	90-100	70-100	35-60	10-35
	60-64	Stratified loamy sand to clay	GC, SC, CL-ML, CL	A-4, A-6, A-7	0	0	55-100	45-100	40-90	35-80	20-45	5-20
OpC:												
Opal----------	0-7	Clay	CH, MH	A-7	0	0-2	100	100	90-100	80-100	60-80	25-45
	7-25	Clay	CH, MH	A-7	0	0-2	100	100	90-100	80-100	65-85	30-50
	25-60	Weathered bedrock			---	---	---	---	---	---	60-95	25-60
OsE:												
Opal----------	0-7	Clay	CH, MH	A-7	0	0-2	100	100	90-100	80-100	60-80	25-45
	7-25	Clay	CH, MH	A-7	0	0-2	100	100	90-100	80-100	65-85	30-50
	25-60	Weathered bedrock			---	---	---	---	---	---	60-95	25-60
Sansarc--------	0-4	Clay	CH, MH	A-7	0	0	100	95-100	90-100	75-100	60-90	25-55
	4-17	Clay	CH, MH	A-7	0	0	95-100	95-100	95-100	85-100	60-90	25-55
	17-60	Weathered bedrock	CH, MH	A-7	0	0	100	95-100	90-100	85-100	50-90	20-55
Ow:												
Orwet----------	0-18	Loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	95-100	85-95	60-90	22-35	3-15
	18-60	Fine sandy loam	SM	A-2	0	0	95-100	95-100	51-85	15-30	10-20	NP-5
	60-64	Loamy fine sand	SP-SM, SM	A-2, A-3	0	0	95-100	95-100	51-70	5-15	10-20	NP-5

ENGINEERING INDEX PROPERTIES--Continued
Tripp County, South Dakota

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Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
PrA:												
Promise--------	0-9	Clay	CH, MH	A-7	0	0	100	100	90-100	80-100	55-90	25-55
	9-60	Clay	CH, MH	A-7	0	0	100	100	90-100	85-100	60-85	25-50
	60-64	Silty clay	CH, MH	A-7	0	0	100	100	90-100	85-100	60-90	25-55
PrB:												
Promise--------	0-9	Clay	CH, MH	A-7	0	0	100	100	90-100	80-100	55-90	25-55
	9-60	Clay	MH, CH	A-7	0	0	100	100	90-100	85-100	60-85	25-50
	60-64	Silty clay	MH, CH	A-7	0	0	100	100	90-100	85-100	60-90	25-55
PrC:												
Promise--------	0-9	Clay	CH, MH	A-7	0	0	100	100	90-100	80-100	55-90	25-55
	9-60	Clay	MH, CH	A-7	0	0	100	100	90-100	85-100	60-85	25-50
	60-64	Silty clay	CH, MH	A-7	0	0	100	100	90-100	85-100	60-90	25-55
PsA:												
Wendte---------	0-9	Clay	CH, MH	A-7	0	0	100	100	90-100	80-100	50-80	20-50
	9-60	Stratified silty clay loam to clay	CH, MH	A-7	0	0	100	100	90-100	70-100	50-80	20-50
PtA:												
Hilmoe---------	0-8	Clay	CH, CL	A-7	0	0	100	95-100	95-100	80-100	40-60	20-40
	8-27	Stratified silty clay loam to clay	CH, CL	A-7	0	0	100	95-100	95-100	80-100	40-65	20-40
	27-60	Stratified very fine sandy loam to clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	90-100	55-80	25-40	5-15
Q:												
Orthents, Gravelly------	0-10	Gravelly sandy loam	GM, SM	A-2, A-4	0	0-5	60-90	50-80	45-70	25-50	20-35	NP-7
	10-60	Gravelly loamy sand	SM, SW, SW-SM	A-1	0	0-10	60-85	45-70	15-45	0-15	15-25	NP-5
RaA:												
Ree----------	0-7	Loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0	95-100	90-100	80-100	70-95	24-45	3-20
	7-26	Clay loam	CL	A-6, A-7	0	0	95-100	90-100	70-100	65-85	30-45	10-20
	26-60	Stratified fine sandy loam to clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6, A-7	0	0	95-100	85-100	70-100	35-85	25-45	5-22
RaB:												
Ree----------	0-7	Loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0	95-100	90-100	80-100	70-95	24-45	3-20
	7-26	Clay loam	CL	A-6, A-7	0	0	95-100	90-100	70-100	65-85	30-45	10-20
	26-60	Stratified fine sandy loam to clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6, A-7	0	0	95-100	85-100	70-100	35-85	25-45	5-22
RaC:												
Ree----------	0-7	Loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0	95-100	90-100	80-100	70-95	24-45	3-20
	7-26	Clay loam	CL	A-6, A-7	0	0	95-100	90-100	70-100	65-85	30-45	10-20
	26-60	Stratified fine sandy loam to clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6, A-7	0	0	95-100	85-100	70-100	35-85	25-45	5-22
RaD:												
Ree----------	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0	95-100	90-100	80-100	70-95	24-45	3-20
	7-26	Clay loam	CL	A-6, A-7	0	0	95-100	90-100	70-100	65-85	30-45	10-20
	26-60	Stratified fine sandy loam to clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6, A-7	0	0	95-100	85-100	70-100	35-85	25-45	5-22
ReA:												
Reliance-------	0-7	Silty clay loam	CH, CL, MH, ML	A-6, A-7	0	0	100	100	95-100	80-100	35-55	15-25
	7-30	Silty clay loam	CH, CL	A-6, A-7	0	0	100	100	95-100	85-100	35-60	15-30
	30-60	Silt loam	CH, CL	A-6, A-7	0	0	100	100	90-100	70-100	30-55	10-30
ReB:												
Reliance-------	0-7	Silty clay loam	CH, CL, MH, ML	A-6, A-7	0	0	100	100	95-100	80-100	35-55	15-25
	7-30	Silty clay loam	CH, CL	A-6, A-7	0	0	100	100	95-100	85-100	35-60	15-30
	30-60	Silt loam	CL, CH	A-6, A-7	0	0	100	100	90-100	70-100	30-55	10-30
ReC:												
Reliance-------	0-7	Silty clay loam	CH, CL, MH, ML	A-6, A-7	0	0	100	100	95-100	80-100	35-55	15-25
	7-30	Silty clay loam	CH, CL	A-6, A-7	0	0	100	100	95-100	85-100	35-60	15-30
	30-60	Silt loam	CH, CL	A-6, A-7	0	0	100	100	90-100	70-100	30-55	10-30
ReC2:												
Reliance-------	0-7	Silty clay loam	CH, CL, MH, ML	A-6, A-7	0	0	100	100	95-100	80-100	35-55	15-25
	7-30	Silty clay loam	CH, CL	A-6, A-7	0	0	100	100	95-100	85-100	35-60	15-30
	30-60	Silt loam	CH, CL	A-6, A-7	0	0	100	100	90-100	70-100	30-55	10-30
RfA:												
Ronson---------	0-8	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	95-100	60-95	25-45	15-30	NP-7
	8-22	Sandy loam	SC, SC-SM, SM	A-2, A-4	0	0	100	100	60-90	25-45	15-30	NP-10
	22-60	Weathered bedrock			---	---	---	---	---	---	---	---

ENGINEERING INDEX PROPERTIES--Continued
Tripp County, South Dakota

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
RoB:												
Ronson---------	0-8	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	100	95-100	60-95	25-45	15-30	NP-7
	8-22	Sandy loam	SC, SC-SM, SM	A-2, A-4	0	0	100	100	60-90	25-45	15-30	NP-10
	22-60	Weathered bedrock			---	---	---	---	---	---	---	---
Longpine-------	0-7	Fine sandy loam	ML, SM	A-4	0	0	95-100	75-100	75-100	40-65	15-25	NP-7
	7-14	Gravelly fine sandy loam	SM	A-1, A-2	0	0-5	55-100	50-75	40-60	10-35	15-25	NP-5
	14-60	Unweathered bedrock			---	---	---	---	---	---	---	---
RsB:												
Rosebud--------	0-5	Loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	80-100	80-100	55-90	24-34	3-12
	5-14	Loam	CL	A-6, A-7	0	0	95-100	80-100	80-100	60-85	30-50	12-26
	14-30	Very fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4, A-6	0	0	95-100	80-100	60-100	30-90	20-40	2-12
	30-60	Weathered bedrock			---	---	---	---	---	---	---	---
RuC:												
Rosebud--------	0-5	Loam	CL, CL-ML, ML	A-6, A-4	0	0	95-100	80-100	80-100	55-90	24-34	3-12
	5-14	Loam	CL	A-6, A-7	0	0	95-100	80-100	80-100	60-85	30-50	12-26
	14-30	Very fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4, A-6	0	0	95-100	80-100	60-100	30-90	20-40	2-12
	30-60	Weathered bedrock			---	---	---	---	---	---	---	---
Canyon---------	0-6	Loam	CL, CL-ML, ML	A-4	0	0-5	90-95	75-95	50-95	50-75	15-30	2-10
	6-10	Loam	GM, ML, SC, SM	A-4	0	0-5	60-95	50-95	45-95	35-75	15-25	NP-10
	10-60	Weathered bedrock			---	---	---	---	---	---	---	---
RuD:												
Rosebud--------	0-5	Loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	80-100	80-100	55-90	24-34	3-12
	5-14	Loam	CL	A-6, A-7	0	0	95-100	80-100	80-100	60-85	30-50	12-26
	14-30	Very fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4, A-6	0	0	95-100	80-100	60-100	30-90	20-40	2-12
	30-60	Weathered bedrock			---	---	---	---	---	---	---	---
Canyon---------	0-6	Loam	CL, CL-ML, ML	A-4	0	0-5	90-95	75-95	50-95	50-75	15-30	2-10
	6-10	Loam	GM, ML, SC, SM	A-4	0	0-5	60-95	50-95	45-95	35-75	15-25	NP-10
	10-60	Weathered bedrock			---	---	---	---	---	---	---	---
SaE:												
Sansarc--------	0-4	Clay	CH, MH	A-7	0	0	100	95-100	90-100	75-100	60-90	25-55
	4-17	Clay	CH, MH	A-7	0	0	95-100	95-100	95-100	85-100	60-90	25-55
	17-60	Weathered bedrock	CH, MH	A-7	0	0	100	95-100	90-100	85-100	50-90	20-55
Opal----------	0-7	Clay	CH, MH	A-7	0	0-2	100	100	90-100	80-100	60-80	25-45
	7-25	Clay	CH, MH	A-7	0	0-2	100	100	90-100	80-100	65-85	30-50
	25-60	Weathered bedrock			---	---	---	---	---	---	60-95	25-60
ScF:												
Sansarc--------	0-4	Clay	CH, MH	A-7	0	0	100	95-100	90-100	75-100	60-90	25-55
	4-17	Clay	CH, MH	A-7	0	0	95-100	95-100	95-100	85-100	60-90	25-55
	17-60	Weathered bedrock	CH, MH	A-7	0	0	100	95-100	90-100	85-100	50-90	20-55
Rock Outcrop, Soft----------	0-60	Weathered bedrock	CH, MH	A-7-5	0	0-15	95-100	95-100	90-100	85-100	50-90	20-55
ShE:												
Schamber-------	0-18	Gravelly loam	GM, GW-GM, SM, SW-SM	A-1, A-2	0-2	0-5	55-90	50-75	40-60	10-35	0-25	NP-5
	18-60	Very gravelly sand	GW-GM, SW, SW-SM, GW	A-1	0-5	0-15	30-80	25-50	5-20	0-10	0-25	NP-5
Murdo----------	0-2	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	65-90	50-75	25-40	5-15
	2-12	Clay loam	CL, ML, SC, SM	A-4, A-6	0	0-5	85-95	50-90	45-80	35-60	30-40	7-15
	12-18	Gravelly loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	1-5	80-95	45-85	40-75	35-55	20-35	5-12
	18-60	Gravelly sand	GM, GP, SM, SP	A-1, A-2	0	1-5	40-80	10-55	5-45	0-30	0-25	NP-12
So:												
Scott----------	0-6	Silt loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0	100	100	100	95-100	20-45	2-20
	6-60	Clay	CH, CL	A-7	0	0	100	100	100	95-100	41-75	20-45
SsB:												
Shena----------	0-5	Silt loam	ML, CL	A-4, A-6	0	0	100	100	90-100	70-90	30-40	5-15
	5-12	Silty clay loam	CH, CL	A-7	---	0-5	100	95-100	90-100	75-95	40-65	15-35
	12-60	Unweathered bedrock			---	---	---	---	---	---	---	---
Sw:												
Bullcreek------	0-2	Clay	CH, MH	A-7	0	0	95-100	95-100	90-100	85-100	60-100	28-60
	2-12	Clay	CH, MH	A-7	0	0	95-100	95-100	90-100	85-100	70-100	35-60
	12-18	Clay	CH, MH	A-7	0	0	95-100	95-100	90-100	85-100	70-100	35-60
	18-60	Clay	CH	A-7	0	0	95-100	95-100	90-100	85-100	70-100	40-60

ENGINEERING INDEX PROPERTIES--Continued
Tripp County, South Dakota

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
TaE:												
Longpine-------	0-7	Fine sandy loam	ML, SM	A-4	0	0	95-100	75-100	75-100	40-65	15-25	NP-7
	7-14	Gravelly fine sandy loam	SM	A-1, A-2	0	0-5	55-100	50-75	40-60	10-35	15-25	NP-5
	14-60	Unweathered bedrock			---	---	---	---	---	---	---	---
TrF:												
Longpine-------	0-7	Fine sandy loam	ML, SM	A-4	0	0	95-100	75-100	75-100	40-65	15-25	NP-7
	7-14	Gravelly fine sandy loam	SM	A-1, A-2	0	0-5	55-100	50-75	40-60	10-35	15-25	NP-5
	14-60	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock Outcrop, Hard----------	0-60	Unweathered bedrock	GP, GP-GM	A-1-a	50-85	0-5	0-5	0-5	0-5	0-5	---	NP
VaD:												
Valentine------	0-5	Fine sand	SM, SP, SP-SM	A-2, A-3	0	0	100	100	70-100	2-25	15-20	NP-5
	5-60	Fine sand	SM, SP, SP-SM	A-2, A-3	0	0	100	100	90-100	2-20	15-20	NP-5
VdC:												
Valentine------	0-5	Fine sand	SM, SP, SP-SM	A-2, A-3	0	0	100	100	70-100	2-25	15-20	NP-5
	5-60	Fine sand	SM, SP, SP-SM	A-2, A-3	0	0	100	100	90-100	2-20	15-20	NP-5
Dunday---------	0-12	Loamy fine sand	SM	A-2	0	0	100	100	90-100	13-35	15-20	NP-5
	12-60	Loamy fine sand	SM, SP-SM	A-2, A-3	0	0	100	100	50-95	5-35	10-20	NP-5
VnD:												
Valentine------	0-5	Fine sand	SM, SP, SP-SM	A-2, A-3	0	0	100	100	70-100	2-25	15-20	NP-5
	5-60	Fine sand	SM, SP, SP-SM	A-2, A-3	0	0	100	100	90-100	2-20	15-20	NP-5
Longpine-------	0-7	Fine sandy loam	ML, SM	A-4	0	0	95-100	75-100	75-100	40-65	15-25	NP-7
	7-14	Gravelly fine sandy loam	SM	A-1, A-2	0	0-5	55-100	50-75	40-60	10-35	15-25	NP-5
	14-60	Unweathered bedrock			---	---	---	---	---	---	---	---
Vt:												
Vetal----------	0-17	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	95-100	85-100	40-55	20-35	3-10
	17-35	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	95-100	60-95	25-65	20-30	3-10
	35-60	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	95-100	60-95	30-65	20-30	3-10
w:												
Water (less Tha 40 Acres)-----	---	---	---	---	---	---	---	---	---	---	---	---
Wa:												
Wanblee--------	0-2	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	80-95	25-40	3-15
	2-8	Clay loam	CH, CL	A-7	0	0	100	100	90-100	70-85	40-70	15-45
	8-20	Loam	CL	A-6, A-7	0	0	100	95-100	90-100	65-85	35-50	15-30
	20-60	Weathered bedrock			---	---	---	---	---	---	---	---
Wortman--------	0-8	Silt loam	CL, ML	A-4, A-6	0	0	100	95-100	85-100	80-95	30-40	5-15
	8-19	Clay loam	CH, CL	A-7	0	0	100	95-100	90-100	70-95	40-75	15-45
	19-30	Loam	CL, ML	A-4, A-6, A-7	0	0	100	95-100	85-95	60-80	30-45	5-20
	30-60	Weathered bedrock			---	---	---	---	---	---	---	---
Wb:												
Wann----------	0-20	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	95-100	95-100	70-100	30-50	15-25	NP-5
	20-50	Sandy loam	SM, SC-SM	A-2, A-4	0	0	95-100	75-100	60-100	20-50	15-25	NP-5
	50-60	Stratified sandy clay loam to fine sand	SM	A-2, A-4	0	0	95-100	95-100	70-100	15-40	15-20	NP-3
WeE:												
Westover-------	0-12	Loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	85-100	65-85	20-40	5-15
	12-32	Loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	100	90-100	70-90	45-80	15-30	5-15
	32-60	Sand and gravel	GM, GP-GM, SM, SP-SM	A-1, A-2, A-3	0	0-5	40-80	25-75	15-70	5-30	15-20	NP-5
WfA:												
Wewela---------	0-8	Loamy fine sand	SC-SM, SM	A-2	0	0	100	100	50-75	20-35	15-25	NP-5
	8-13	Sandy clay loam	CL, SC	A-6, A-7	0	0	100	100	60-100	35-55	30-45	10-20
	13-26	Clay	CH, MH	A-7	0	0	100	95-100	90-100	85-100	55-85	20-50
	26-60	Weathered bedrock			---	---	---	---	---	---	---	---
WgA:												
Wewela---------	0-8	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-85	40-55	15-30	NP-7
	8-13	Sandy clay loam	CL, SC	A-6, A-7	0	0	100	100	60-100	35-55	30-45	10-20
	13-26	Clay	CH, MH	A-7	0	0	100	95-100	90-100	85-100	55-85	20-50
	26-60	Weathered bedrock			---	---	---	---	---	---	---	---
WgB:												
Wewela---------	0-8	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	70-85	40-55	15-30	NP-7
	8-13	Sandy clay loam	CL, SC	A-6, A-7	0	0	100	100	60-100	35-55	30-45	10-20
	13-26	Clay	CH, MH	A-7	0	0	100	95-100	90-100	85-100	55-85	20-50
	26-60	Weathered bedrock			---	---	---	---	---	---	---	---

ENGINEERING INDEX PROPERTIES--Continued
Tripp County, South Dakota

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticit index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Wh:												
Whitelake------	0-11	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	100	70-100	30-55	15-25	NP-5
	11-14	Loamy fine sand	SC-SM, SM	A-2, A-4	0	0	100	100	70-100	30-50	15-25	NP-5
	14-24	Sandy clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	100	100	60-100	35-55	25-40	6-20
	24-60	Stratified sand to silt loam	CL, CL-ML, ML, SC-SM	A-2, A-4, A-6	0	0	100	95-100	60-100	20-65	15-35	NP-12
Wk:												
Whitelake------	0-11	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	100	100	70-100	30-55	15-25	NP-5
	11-14	Loamy fine sand	SC-SM, SM	A-2, A-4	0	0	100	100	70-100	30-50	15-25	NP-5
	14-24	Sandy clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	100	100	60-100	35-55	25-40	6-20
	24-60	Stratified sand to silt loam	CL, CL-ML, ML, SC-SM	A-2, A-4, A-6	0	0	100	95-100	60-100	20-65	15-35	NP-12
Lute----------	0-3	Fine sandy loam	SC, SC-SM, SM	A-2, A-4	0	0	100	100	70-100	30-50	20-30	2-10
	3-10	Sandy clay loam	SC, SC-SM, SM	A-4, A-6	0	0	100	100	60-100	35-50	20-35	2-15
	10-60	Stratified very fine sandy loam to loamy sand	SC, SC-SM, SM	A-1, A-2, A-4	0	0	100	100	45-100	15-50	15-30	NP-10
Wn:												
Witten---------	0-9	Silty clay	CH, MH	A-7	0	0	100	100	95-100	90-100	50-80	20-50
	9-26	Clay	CH, MH	A-7	0	0	100	100	95-100	90-100	60-85	25-50
	26-60	Clay	CH, MH	A-7	0	0	100	100	95-100	90-100	60-80	25-45
Wo:												
Wortman--------	0-8	Silt loam	CL, ML	A-4, A-6	0	0	100	95-100	85-100	80-95	30-40	5-15
	8-19	Clay loam	CH, CL	A-7	0	0	100	95-100	90-100	70-95	40-75	15-45
	19-30	Loam	CL, ML	A-4, A-6, A-7	0	0	100	95-100	85-95	60-80	30-45	5-20
	30-60	Weathered bedrock			---	---	---	---	---	---	---	---