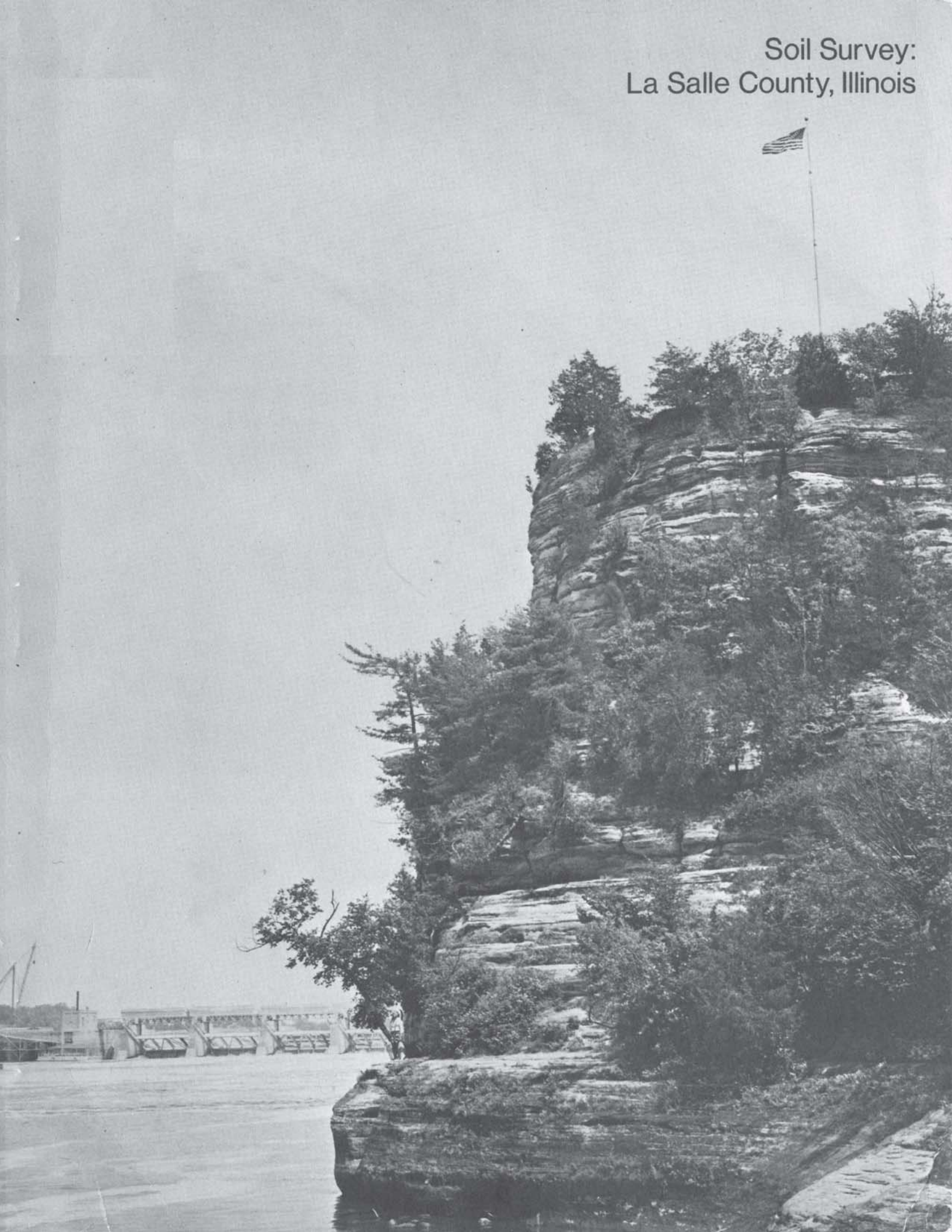
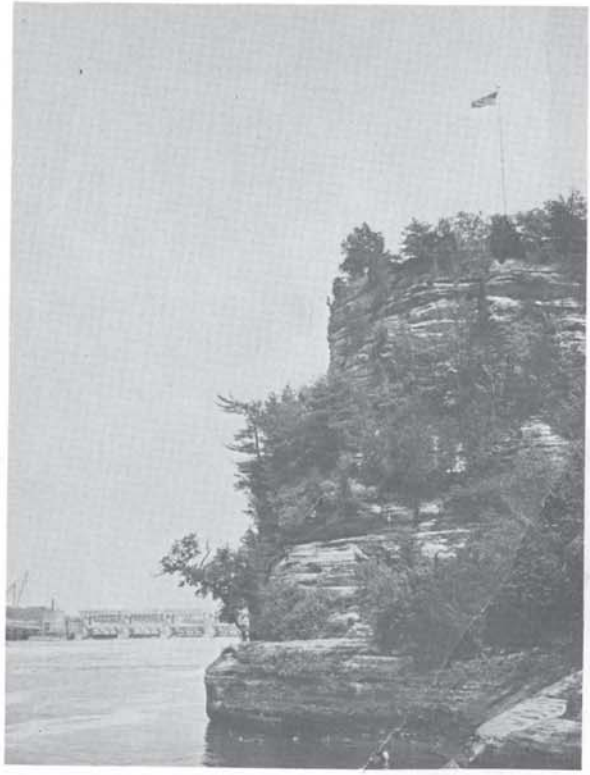
Soil Survey: La Salle County, Illinois



Historic Starved Rock, shown below and on the cover, is the center of attraction in Starved Rock State Park. Various Indian legends are told about Starved Rock, which is located on the south bluff of the Illinois River near Utica. Such outcrops of St. Peter sandstone are included in the sandstone rockland map unit (9G).

SOIL SURVEY:



SOIL REPORT 91

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La Salle County, Illinois

University of Illinois Agricultural Experiment Station in cooperation with Soil Conservation Service, U.S. Department of Agriculture.

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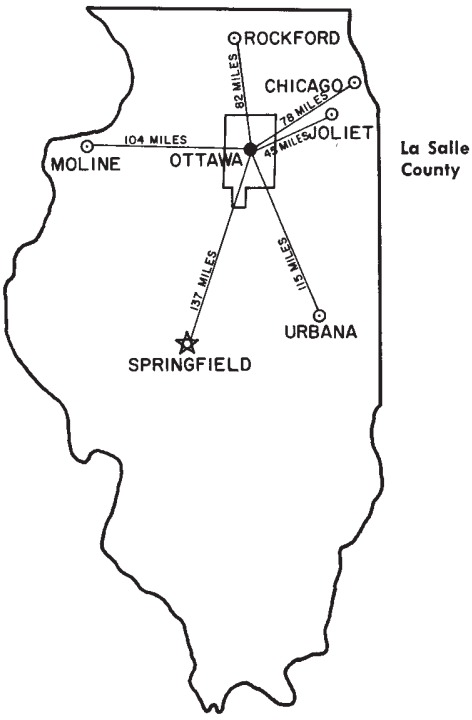


May, 1972 Urbana, Illinois

CONTENTS

HOW TO USE THE SOIL MAP AND REPORT

Examine the soil map. The soil map of La Salle County consists of 96 sheets. Each sheet covers 12 square miles. An index to the numbered map sheets, showing the area covered by each sheet, accompanies the soil map. Table 1 lists the estimated acreage of each soil and the pages on which each soil is discussed.

The aerial photo background of these soil maps shows up in light and dark shades. In cultivated areas, the poorly drained, low-lying soils most often occur in darker shades and surrounding soils occur as lighter shades. Forested areas usually show up in darker shades. Soil boundaries, soil symbols, streams, and cultural features such as roads and houses are all printed in black.

The soil symbols (e.g., 36C2) designate soil mapping units that are based on three things: soil, slope, and erosion.

In each symbol, the first number indicates the soil or the soil complex, except that mapping units in Hesch complex use the alternate symbols VA, VB, and VC2. For example, number 36 indicates that the soil is Tama silt loam.

The second part of the soil symbol is a letter indicating the slope range for that particular mapping unit. The slope letters or symbols have the following meanings in this report.

Slope symbol	*Slope description*	*Slope range (%)*
A	Nearly level	0–2
B	Very gently sloping	2–4
C	Gently sloping	4–7
D	Sloping	7–12
E	Strongly sloping	12–18
F	Moderately steep	18–30
G	Steep	over 30

Soil symbols having no slope designations are understood to have 0- to 2-percent or A slopes (e.g., 152).

The third part of the mapping unit symbol is a number following the slope letter. This number indicates the degree of erosion. The erosion designations used in this report have the following meanings:

Erosion symbol	*Erosion description*
None	No erosion to slight erosion
2	Moderate erosion
3	Severe erosion

No erosion to slight erosion means there are more than 7 inches of surface soil remaining, moderate erosion means there are between 3 and 7 inches of surface soil remaining, and severe erosion indicates less than 3 inches of surface soil remaining.

The mapping unit symbol 36C2 indicates that the soil is Tama silt loam, occurring on 4- to 7-percent slopes, and moderately eroded.

Two other symbols (W and +) are found in the mapping unit symbols of a few soils. The W indicates that the area is subject to frequent ponding of water, but is not continually wet (e.g., W451). The + indicates 6 to 12 inches of deposition over the normal soil usually occurring on low-lying nearly level soils (e.g., 103+).

To help in finding a particular farm or tract of land, many cultural features such as roads, railroads, towns, and farmhouses are shown on the soil map. Section boundaries, section numbers, township and range numbers, and physical features such as streams and ponds are also shown. If the legal description is known, a tract of land can be easily located by using township, range, and section numbers.

Study the characteristics of the soils. After locating a tract of land and identifying the mapping units on it, turn to the Guide to Mapping Units on page 4 to find where the different kinds of soils are described and where management and other features are discussed.

In studying the soil descriptions, note that soils are separated on the basis of many characteristics to a depth of 4 to 5 feet, not on their surface character alone. Often the surface or A horizon of one soil is little or no different from that of another, yet the difference in the subsoil or B horizon and the parent material or C horizon of these two soils may be great, thus resulting in a difference in agricultural value. The nature of the B and C horizons is important in determining the drainability and moisture-supplying power of most soils, especially during critical periods of excess rainfall and drouths.

Most upland and terrace soils have three major horizons — A, B, and C. Sometimes an R horizon (bedrock) is encountered. The horizons used in this report are defined briefly in Figure 1. Other symbols such as Ap, t, g, II, and III are defined below. The Ap is the surface plow layer in a cultivated soil. "t" indicates that, in general, the subsoil has 20 percent more fine material (clay) than the surface horizon. "g" indicates there is evidence of strong gleying or waterlogging in the soil. The II and III indicate that these materials are of different origin than the overlying soil material.

Table 1. — Guide to Mapping Units in La Salle County, With Estimated Acreages

Symbol	Name	Acres: Mapping Unit	Acres: Series	Description: Page	Management Group: Symbol	Management Group: Page	Woodland Group: No.	Woodland Group: Page
9G	Sandstone rock land, 30-60% slopes	1,250	1,250	76	VIIe-3	103	7	111
23B	Blount silt loam, 2-4% slopes	1,023		28	IIe-4	99	4	110
23C	Blount silt loam, 4-7% slopes	57		28	IIe-4	99	4	110
23C2	Blount silt loam, 4-7% slopes, eroded	626	1,706	28	IIe-4	99	4	110
24C2	Dodge silt loam, 4-7% slopes, eroded	342		37	IIe-1	98	1	109
24C3	Dodge soils, 4-7% slopes, severely eroded	66		37	IIIe-1	100	1	109
24D2	Dodge silt loam, 7-12% slopes, eroded	27	435	37	IIIe-1	100	1	109
25E2	Hennepin silt loam, 12-18% slopes, eroded	1,109		49	VIe-1	102	1	109
25F2	Hennepin silt loam, 18-30% slopes, eroded	821		49	VIe-1	102	1	109
25F3	Hennepin soils, 18-30% slopes, severely eroded	577		49	VIIe-1	103	1	109
25G3	Hennepin soils, 30-60% slopes, severely eroded	2,940	5,447	49	VIIe-1	103	1	109
36B	Tama silt loam, 2-4% slopes	4,636		89	IIe-1	98	1	109
36C	Tama silt loam, 4-7% slopes	2,147		89	IIe-1	98	1	109
36C2	Tama silt loam, 4-7% slopes, eroded	3,488	10,271	89	IIe-1	98	1	109
41A	Muscatine silt loam, 0-2% slopes	44,615		66	I-2	98	2	110
41B	Muscatine silt loam, 2-4% slopes	67,113	111,728	66	IIe-2	98	2	110
60C2	LaRose silt loam, 4-7% slopes, eroded	136		55	IIe-1	98	1	109
60C3	LaRose soils, 4-7% slopes, severely eroded	145		55	IIIe-1	100	1	109
60D2	LaRose silt loam, 7-12% slopes, eroded	270		55	IIIe-1	100	1	109
60D3	LaRose soils, 7-12% slopes, severely eroded	401	952	55	IVe-1	102	1	109
61A	Atterberry silt loam, 0-2% slopes	2,088		24	I-2	98	2	110
61B	Atterberry silt loam, 2-4% slopes	4,876	6,964	24	IIe-2	98	2	110
67	Harpster silty clay loam	21,043		48	IIw-1	99	8	111
W67	Harpster silty clay loam, wet	62	21,105	48	V-w	102	8	111
68	Sable silty clay loam	41,859	41,859	75	IIw-1	99	8	111
73	Ross loam	4,207	4,207	73	IIw-2	99	8	111
82	Millington loam	3,269	3,269	62	IIw-2	99	8	111
83	Wabash silty clay	2,925	2,925	94	IIIw-1	101	8	111
87A	Dickinson fine sandy loam, 0-2% slopes	179		36	IIIs-1	102	5	110
87B	Dickinson fine sandy loam, 2-4% slopes	996		36	IIIs-1	102	5	110
87C2	Dickinson fine sandy loam, 4-7% slopes, eroded	190	1,365	36	IIIs-1	102	5	110
88B	Sparta loamy sand, 2-4% slopes	296		79	IIIs-1	102	5	110
88D2	Sparta loamy sand, 7-12% slopes, eroded	224	520	79	VIe-1	102	5	110
91A	Swygert silt loam, 0-2% slopes	1,969		87	IIw-4	100	4	110
91B	Swygert silt loam, 2-4% slopes	14,911		87	IIe-4	99	4	110
91B2	Swygert silt loam, 2-4% slopes, eroded	1,473		87	IIe-4	99	4	110
91C	Swygert silt loam, 4-7% slopes	268		87	IIIe-4	101	4	110
91C2	Swygert silt loam, 4-7% slopes, eroded	3,580		87	IIIe-4	101	4	110
91C3	Swygert soils, 4-7% slopes, severely eroded	754		87	IVe-2	102	4	110
91D2	Swygert silt loam, 7-12% slopes, eroded	98		87	IVe-2	102	4	110
91D3	Swygert soils, 7-12% slopes, severely eroded	211	23,264	87	VIIe-2	103	4	110
93E2	Rodman gravelly loam, 12-18% slopes, eroded	601		72	VIIe-1	103	5	110
93F2	Rodman gravelly loam, 18-30% slopes, eroded	393	994	72	VIIe-1	103	5	110
94G	Limestone rock land, 30-60% slopes	1,389	1,389	57	VIIe-3	103	7	111
95G	Shale rock land, 30-60% slopes	2,296	2,296	78	VIIe-3	103	7	111
103	Houghton muck	480		52	IIIw-2	101	8	111
103+	Houghton muck, silt loam overwash	115	595	52	IIIw-2	101	8	111
104A	Virgil silt loam, 0-2% slopes	2,124		93	I-2	98	2	110
104B	Virgil silt loam, 2-4% slopes	705	2,829	93	IIe-2	100	2	110
105A	Batavia silt loam, 0-2% slopes	820		25	I-1	98	1	109
105B	Batavia silt loam, 2-4% slopes	3,614		25	IIe-1	98	1	109
105C2	Batavia silt loam, 4-7% slopes, eroded	212	4,646	25	IIe-1	98	1	109
107	Sawmill silty clay loam	4,483	4,483	76	IIw-2	99	8	111
123	Riverwash	515	515	72	VIIs-1	103	8	111
125	Selma loam	169	169	78	IIw-1	99	8	111
131B	Alvin fine sandy loam, 2-4% slopes	211		21	IIs-1	100	5	110
131C2	Alvin fine sandy loam, 4-7% slopes, eroded	146	357	21	IIIe-2	100	5	110
132A	Starks silt loam, 0-2% slopes	2,290		79	IIw-4	100	2	110
132B	Starks silt loam, 2-4% slopes	435	2,725	79	IIe-2	98	2	110
134A	Camden silt loam, 0-2% slopes	777		32	I-1	98	1	109
134B	Camden silt loam, 2-4% slopes	4,299		32	IIe-1	98	1	109
134C2	Camden silt loam, 4-7% slopes, eroded	1,546		32	IIe-1	98	1	109
134C3	Camden soils, 4-7% slopes, severely eroded	204		32	IIIe-1	100	1	109
134D2	Camden silt loam, 7-12% slopes, eroded	740		32	IIIe-1	100	1	109
134D3	Camden soils, 7-12% slopes, severely eroded	620		32	IVe-1	102	1	109
134E2	Camden silt loam, 12-18% slopes, eroded	144		32	VIe-1	102	1	109
134E3	Camden soils, 12-18% slopes, severely eroded	378		32	VIe-1	102	1	109
134F2	Camden silt loam, 18-30% slopes, eroded	248	8,956	32	VIe-1	102	1	109

Table 1. — Continued

Symbol	Name	Acres: Mapping Unit	Acres: Series	Description: Page	Management Group: Symbol	Management Group: Page	Woodland Group: No.	Woodland Group: Page
145B	Saybrook silt loam, 2-4% slopes	350		77	IIe-1	98	1	109
145C2	Saybrook silt loam, 4-7% slopes, eroded	176	526	77	IIe-1	98	1	109
146A	Elliott silt loam, 0-2% slopes	333		42	IIw-4	100	4	110
146B	Elliott silt loam, 2-4% slopes	9,654		42	IIe-4	99	4	110
146B2	Elliott silt loam, 2-4% slopes, eroded	636		42	IIe-4	99	4	110
146C2	Elliott silt loam, 4-7% slopes, eroded	80	10,703	42	IIe-4	99	4	110
147B	Clarence silt loam, 2-4% slopes	570		35	IIIe-4	101	4	110
147B2	Clarence silt loam, 2-4% slopes, eroded	77		35	IIIe-4	101	4	110
147C2	Clarence silt loam, 4-7% slopes, eroded	77	724	35	IIIe-4	101	4	110
148A	Proctor silt loam, 0-2% slopes	852		69	I-1	98	1	109
148B	Proctor silt loam, 2-4% slopes	3,261		69	IIe-1	98	1	109
148C	Proctor silt loam, 4-7% slopes	154		69	IIe-1	98	1	109
148C2	Proctor silt loam, 4-7% slopes, eroded	1,171		69	IIe-1	98	1	109
148C3	Proctor soils, 4-7% slopes, severely eroded	91		69	IIIe-1	100	1	109
148D2	Proctor silt loam, 7-12% slopes, eroded	123		69	IIIe-1	100	1	109
148D3	Proctor soils, 7-12% slopes, severely eroded	34	5,686	69	IVe-1	102	1	109
149A	Brenton silt loam, 0-2% slopes	5,630		29	I-2	98	2	110
149B	Brenton silt loam, 2-4% slopes	3,091	8,721	29	IIe-2	98	2	110
151A	Ridgeville fine sandy loam, 0-2% slopes	436		71	IIs-1	100	8	111
151B	Ridgeville fine sandy loam, 2-4% slopes	389	825	71	IIs-1	100	8	111
152	Drummer silty clay loam	89,771	89,771	39	IIw-1	99	8	111
154A	Flanagan silt loam, 0-2% slopes	17,370		44	I-2	98	2	110
154B	Flanagan silt loam, 2-4% slopes	43,452		44	IIe-2	98	2	110
154B2	Flanagan silt loam, 2-4% slopes, eroded	495		44	IIe-2	98	2	110
154C2	Flanagan silt loam, 4-7% slopes, eroded	504	61,821	44	IIe-1	98	2	110
171B	Catlin silt loam, 2-4% slopes	14,848		33	IIe-1	98	1	109
171C	Catlin silt loam, 4-7% slopes	2,009		33	IIe-1	98	1	109
171C2	Catlin silt loam, 4-7% slopes, eroded	12,001		33	IIe-1	98	1	109
171C3	Catlin soils, 4-7% slopes, severely eroded	343		33	IIIe-1	100	1	109
171D3	Catlin soils, 7-12% slopes, severely eroded	1,521	30,722	33	IVe-1	102	1	109
194B	Morley silt loam, 2-4% slopes	795		65	IIe-3	101	3	110
194C	Morley silt loam, 4-7% slopes	102		65	IIIe-1	100	3	110
194C2	Morley silt loam, 4-7% slopes, eroded	1,032		65	IIIe-1	100	3	110
194D2	Morley silt loam, 7-12% slopes, eroded	357		65	IIIe-1	100	3	110
194E2	Morley silt loam, 12-18% slopes, eroded	206	2,492	65	VIe-1	102	3	110
198A	Elburn silt loam, 0-2% slopes	17,453		41	I-2	98	2	110
198B	Elburn silt loam, 2-4% slopes	13,775	31,228	41	IIe-2	98	2	110
199A	Plano silt loam, 0-2% slopes	2,035		68	I-1	98	1	109
199B	Plano silt loam, 2-4% slopes	13,806		68	IIe-1	98	1	109
199C	Plano silt loam, 4-7% slopes	687		68	IIe-1	98	1	109
199C2	Plano silt loam, 4-7% slopes, eroded	1,895		68	IIe-1	98	1	109
199C3	Plano soils, 4-7% slopes, severely eroded	137		68	IIIe-1	100	1	109
199D3	Plano soils, 7-12% slopes, severely eroded	114	18,674	68	IVe-1	102	1	109
206	Thorp silt loam	5,647	5,647	90	IIw-3	100	4	110
210	Lena muck	619	619	56	IIIw-2	101	8	111
219A	Millbrook silt loam, 0-2% slopes	1,057		61	I-2	98	2	110
219B	Millbrook silt loam, 2-4% slopes	372	1,429	61	IIe-2	98	2	110
223B	Varna silt loam, 2-4% slopes	715		92	IIe-3	98	3	110
223B2	Varna silt loam, 2-4% slopes, eroded	760		92	IIe-3	98	3	110
223C	Varna silt loam, 4-7% slopes	173		92	IIe-3	98	3	110
223C2	Varna silt loam, 4-7% slopes, eroded	5,229		92	IIe-3	98	3	110
223C3	Varna soils, 4-7% slopes, severely eroded	3,027		92	IIIe-1	98	3	110
223D2	Varna silt loam, 7-12% slopes, eroded	453		92	IIIe-1	98	3	110
223D3	Varna soils, 7-12% slopes, severely eroded	1,463	11,820	92	IVe-1	98	3	110
224C3	Strawn soils, 4-7% slopes, eroded	270		83	IIIe-1	100	1	109
224D2	Strawn silt loam, 7-12% slopes, eroded	165		83	IIIe-1	100	1	109
224D3	Strawn soils, 7-12% slopes, severely eroded	105	540	83	IVe-1	100	1	109
228A	Nappanee silt loam, 0-2% slopes	90		67	IIw-4	100	4	110
228B	Nappanee silt loam, 2-4% slopes	4,512		67	IIIe-4	101	4	110
228B2	Nappanee silt loam, 2-4% slopes, eroded	80		67	IIIe-4	101	4	110
228C2	Nappanee silt loam, 4-7% slopes, eroded	4,218		67	IIIe-4	101	4	110
228C3	Nappanee soils, 4-7% slopes, severely eroded	219	9,119	67	IVe-2	103	4	110
232	Ashkum silty clay loam	3,866	3,866	23	IIw-1	99	8	111
233A	Birkbeck silt loam, 0-2% slopes	717		27	I-1	98	1	109
233B	Birkbeck silt loam, 2-4% slopes	3,964		27	IIe-1	98	1	109
233C	Birkbeck silt loam, 4-7% slopes	192		27	IIe-1	98	1	109
233C2	Birkbeck silt loam, 4-7% slopes, eroded	1,396		27	IIe-1	98	1	109
233C3	Birkbeck soils, 4-7% slopes, severely eroded	84		27	IIIe-1	100	1	109
233D2	Birkbeck silt loam, 7-12% slopes, eroded	508	6,861	27	IIIe-1	100	1	109
234A	Sunbury silt loam, 0-2% slopes	1,266		86	I-2	98	2	110
234B	Sunbury silt loam, 2-4% slopes	1,423	2,689	86	IIe-2	98	2	110

Table 1. — Continued

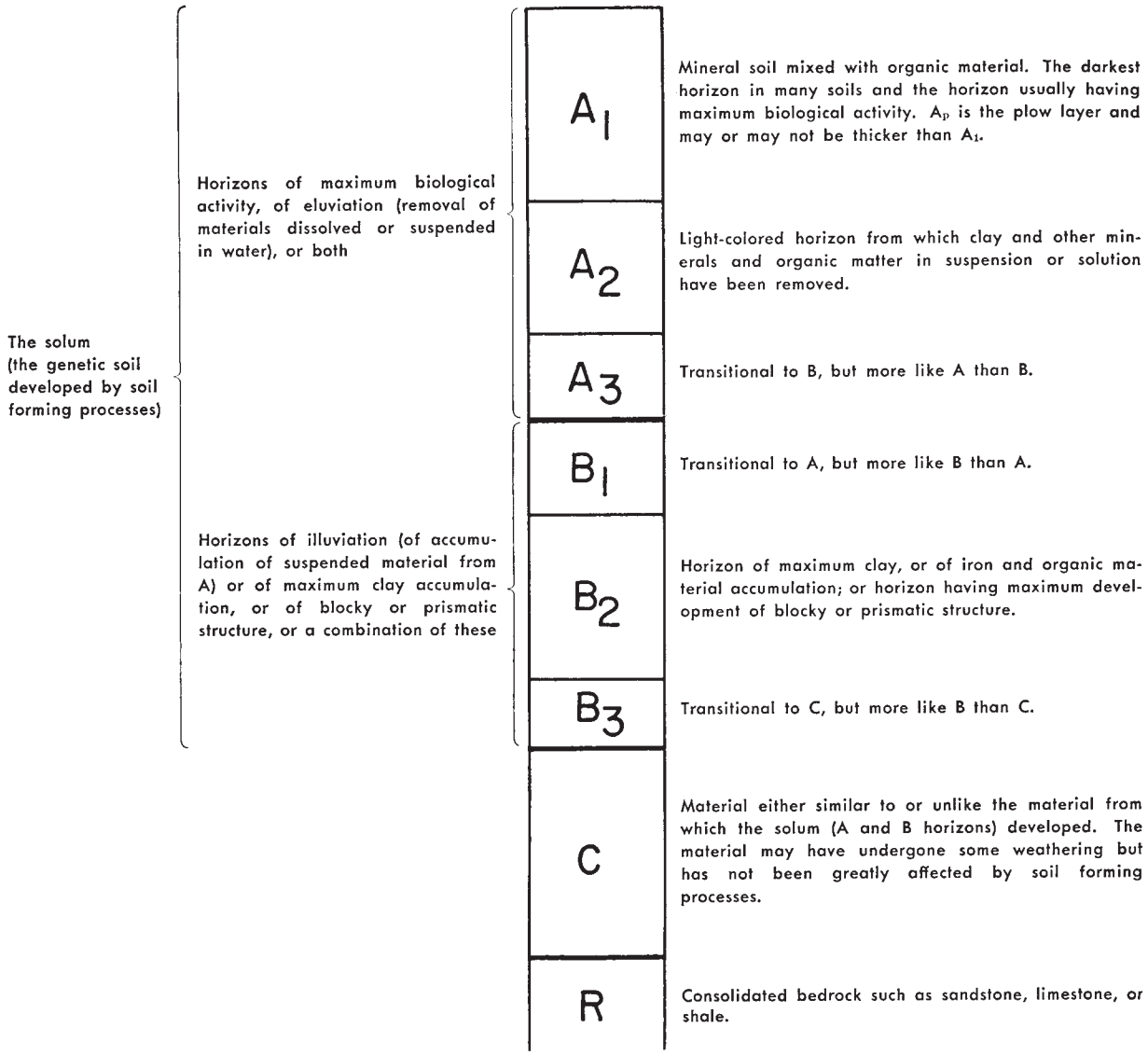
Symbol	Name	Acres: Mapping Unit	Acres: Series	Description Page	Management Group: Symbol	Management Group: Page	Woodland Group: No.	Woodland Group: Page
235	Bryce silty clay	15,755	15,755	30	IIw-3	100	8	111
236A	Sabina silt loam, 0-2% slopes	1,061		74	I-2	98	2	110
236B	Sabina silt loam, 2-4% slopes	1,952	3,013	74	IIe-2	98	2	110
238	Rantoul silty clay	173	173	70	IIIw-1	101	8	111
241D3	Chatsworth soils, 7-12% slopes, severely eroded	1,121		34	VIIe-2	103	3	110
241E3	Chatsworth soils, 12-18% slopes, severely eroded	588		34	VIIe-2	103	3	110
241F2	Chatsworth silt loam, 18-30% slopes, eroded	659		34	VIIe-2	103	3	110
241G2	Chatsworth silt loam, 30-50% slopes, eroded	578		34	VIIe-2	103	3	110
241G3	Chatsworth soils, 30-50% slopes, severely eroded	6,510	9,456	34	VIIe-2	103	3	110
242A	Kendall silt loam, 0-2% slopes	2,070		53	IIw-4	100	2	110
242B	Kendall silt loam, 2-4% slopes	1,432	3,502	53	IIe-2	98	2	110
243A	St. Charles silt loam, 0-2% slopes	925		80	I-1	98	1	109
243B	St. Charles silt loam, 2-4% slopes	3,301		80	IIe-1	98	1	109
243B2	St. Charles silt loam, 2-4% slopes, eroded	305		80	IIe-1	98	1	109
243C	St. Charles silt loam, 4-7% slopes	34		80	IIe-1	98	1	109
243C2	St. Charles silt loam, 4-7% slopes, eroded	980		80	IIe-1	98	1	109
243C3	St. Charles soils, 4-7% slopes, severely eroded	112		80	IIIe-1	100	1	109
243D2	St. Charles silt loam, 7-12% slopes, eroded	389	6,046	80	IIIe-1	100	1	109
278A	Stronghurst silt loam, 0-2% slopes	2,328		85	IIw-4	100	2	110
278B	Stronghurst silt loam, 2-4% slopes	1,084	3,412	85	IIe-2	98	2	110
280B	Fayette silt loam, 2-4% slopes	891		43	IIe-1	98	1	109
280C2	Fayette silt loam, 4-7% slopes, eroded	349	1,240	43	IIe-1	98	1	109
290A	Warsaw silt loam, 0-2% slopes	445		95	IIs-1	100	5	110
290B	Warsaw silt loam, 2-4% slopes	685		95	IIs-1	100	5	110
290C2	Warsaw silt loam, 4-7% slopes, eroded	120		95	IIIe-2	100	5	110
290C3	Warsaw soils, 4-7% slopes, severely eroded	40	1,290	95	IIIe-2	100	5	110
293A	Andres silt loam, 0-2% slopes	763		22	I-2	98	4	110
293B	Andres silt loam, 2-4% slopes	1,315	2,078	22	IIe-2	98	4	110
294B	Symerton silt loam, 2-4% slopes	953		88	IIe-1	98	3	110
294C	Symerton silt loam, 4-7% slopes	355		88	IIe-1	98	3	110
294C2	Symerton silt loam, 4-7% slopes, eroded	602	1,910	88	IIe-1	98	3	110
295A	Mokena silt loam, 0-2% slopes	2,040		63	IIw-4	100	4	110
295B	Mokena silt loam, 2-4% slopes	2,203		63	IIe-4	99	4	110
295B2	Mokena silt loam, 2-4% slopes, eroded	72	4,315	63	IIe-4	99	4	110
298B	Beecher silt loam, 2-4% slopes	604	604	26	IIe-4	99	4	110
311B	Ritchey silt loam, 2-4% slopes	215		72	IIIe-3	101	6	111
311C2	Ritchey silt loam, 4-7% slopes, eroded	35	250	72	IIIe-3	101	6	111
314	Joliet silty clay loam	510	510	52	IIIw-3	101	8	111
315B	Channahon silt loam, 2-4% slopes	687	687	34	IIIe-3	101	6	111
317	Millsdale silty clay loam	695	695	62	IIIw-3	101	8	111
318B	Lorenzo loam, 2-4% slopes	248		58	IIIs-1	102	5	110
318C2	Lorenzo loam, 4-7% slopes, eroded	315	563	58	IIIs-1	102	5	110
320B	Frankfort silt loam, 2-4% slopes	1,134		46	IIIe-4	101	4	110
320B2	Frankfort silt loam, 2-4% slopes, eroded	86		46	IIIe-4	101	4	110
320C2	Frankfort silt loam, 4-7% slopes, eroded	371	1,591	46	IIIe-4	101	4	110
321A	DuPage loam, 0-2% slopes	2,440		40	IIw-2	99	8	111
321B	DuPage loam, 2-4% slopes	171	2,611	40	IIw-2	99	8	111
325B	Dresden silt loam, 2-4% slopes	370		38	IIs-1	100	5	110
325C2	Dresden silt loam, 4-7% slopes, eroded	173	543	38	IIIe-2	100	5	110
327B	Fox silt loam, 2-4% slopes	518		45	IIs-1	100	5	110
327C2	Fox silt loam, 4-7% slopes, eroded	466		45	IIIe-2	100	5	110
327D2	Fox silt loam, 7-12% slopes, eroded	553		45	IIIe-2	100	5	110
327E2	Fox silt loam, 12-18% slopes, eroded	176	1,713	45	VIe-1	102	5	110
330	Peotone silty clay loam	1,503	1,503	67	IIIw-1	101	8	111
344A	Harvard silt loam, 0-2% slopes	510		48	I-1	98	1	109
344B	Harvard silt loam, 2-4% slopes	1,122		48	IIe-1	98	1	109
344C2	Harvard silt loam, 4-7% slopes, eroded	371	2,003	48	IIe-1	98	1	109
375A	Rutland silt loam, 0-2% slopes	9,276		73	IIw-4	100	4	110
375B	Rutland silt loam, 2-4% slopes	38,856		73	IIe-4	99	4	110
375B2	Rutland silt loam, 2-4% slopes, eroded	183		73	IIe-4	99	4	110
375C2	Rutland silt loam, 4-7% slopes, eroded	538	48,853	73	IIe-4	99	4	110
386B	Downs silt loam, 2-4% slopes	608		37	IIe-1	98	1	109
386C2	Downs silt loam, 4-7% slopes, eroded	679	1,287	37	IIe-1	98	1	109
388B	Wenona silt loam, 2-4% slopes	1,419		95	IIe-3	101	3	110
388C	Wenona silt loam, 4-7% slopes	317		95	IIe-3	101	3	110
388C2	Wenona silt loam, 4-7% slopes, eroded	816	2,552	95	IIe-3	101	3	110

Table 1.— Concluded

Symbol	Name	Acres: Mapping Unit	Acres: Series	Description Page	Management Group: Symbol	Management Group: Page	Woodland Group: No.	Woodland Group: Page
389A	Hesch loamy sand, shallow variant, 0-2% slopes	770		51	VIe-2	103	7	111
389B	Hesch loamy sand, shallow variant, 2-4% slopes	170	940	51	VIe-2	103	7	111
390-389A or VA	Hesch complex, 0-2% slopes	579		50	VIe-2	103	5	110
390-389B or VB	Hesch complex, 2-4% slopes	738		50	VIe-2	103	5	110
390-389 or VC2	Hesch complex, 4-7% slopes, eroded	101	1,418	50	VIe-2	103	5	110
393A	Marseilles silt loam, gray subsoil variant, 0-2% slopes	810		60	IIw-4	100	6	111
393B	Marseilles silt loam, gray subsoil variant, 2-4% slopes	470	1,280	60	IIe-4	100	6	111
397F2	Boone loamy fine sand, 18-30% slopes, eroded	599	599	29	VIIe-3	103	7	111
400	Calco silty clay loam	3,397	3,397	31	IIw-2	99	8	111
413B	Gale silt loam, 2-4% slopes	290		47	IIIe-3	101	1	109
413C2	Gale silt loam, 4-7% slopes, eroded	217		47	IIIe-3	101	1	109
413E3	Gale soils, 12-18% slopes, severely eroded	29	536	47	VIIe-2	103	1	109
435	Streator silty clay loam	14,156	14,156	83	IIw-1	99	8	111
448B	Mona silt loam, 2-4% slopes	88		64	IIe-3	98	3	110
448B2	Mona silt loam, 2-4% slopes, eroded	87		64	IIe-3	98	3	110
448C2	Mona silt loam, 4-7% slopes, eroded	69		64	IIe-3	98	3	110
448C3	Mona soils, 4-7% slopes, severely eroded	64	308	64	IIIe-1	100	3	110
451	Lawson silt loam	3,200		56	IIw-2	99	8	111
W451	Lawson silt loam, wet	120	3,320	56	V-w	102	8	111
537	Hesch fine sandy loam, gray subsoil variant	2,330	2,330	51	IIIw-3	101	8	111
549A	Marseilles silt loam, 0-2% slopes	155		59	IIIe-3	101	6	111
549B	Marseilles silt loam, 2-4% slopes	855		59	IIIe-3	101	6	111
549C	Marseilles silt loam, 4-7% slopes	120		59	IIIe-3	101	6	111
549C2	Marseilles silt loam, 4-7% slopes, eroded	192		59	IIIe-3	101	6	111
549D2	Marseilles silt loam, 7-12% slopes, eroded	202	1,524	59	IVe-2	101	6	111
554B	Kernan silt loam, 2-4% slopes	1,267	1,267	54	IIe-4	99	4	110
560C2	St. Clair silt loam, 4-7% slopes, eroded	197		81	IIIe-4	101	3	110
560D	St. Clair silt loam, 7-12% slopes	145		81	IVe-2	102	3	110
560D2	St. Clair silt loam, 7-12% slopes, eroded	484		81	IVe-2	102	3	110
560E2	St. Clair silt loam, 12-18% slopes, eroded	82	908	81	VIIe-2	103	3	110
572A	Loran silt loam, 0-2% slopes	1,363		57	IIw-4	100	4	110
572B	Loran silt loam, 2-4% slopes	255		57	IIe-4	99	4	110
572C2	Loran silt loam, 4-7% slopes, eroded	592	2,210	57	IIe-4	99	4	110
633	Traer silt loam	300	300	91	IIIw-1	101	4	110
	Made land	1,302	1,302					
	Mining operations	4,473	4,473					
	Spoil	283	283					
	Water	7,510	7,510					
	TOTAL	737,920	737,920					

DISTRIBUTION OF SOILS BY SLOPE AND EROSION IN LA SALLE COUNTY

	A	B	C	D	E	F	G	TOTALS
None to slight	348,805	281,993	6,615	145	-	-	4,935	642,493
Moderate	-	4,254	45,228	4,593	2,318	2,720	578	59,691
Severe	-	-	5,556	5,590	995	577	9,450	22,168
TOTALS	348,805	286,247	57,399	10,328	3,313	3,297	14,963	724,352



Principal horizons of upland soils. Not every horizon and subhorizon shown here, however, is necessarily present in all soils. (Adapted from *Nomenclature of soil horizons*, U.S. Dept. Agr. Handbook 18, pp. 174-783. 1951.) (Fig. 1)

HOW SOILS ARE CLASSIFIED, NAMED, AND MAPPED

Soil scientists made this survey to learn what kinds of soils are in La Salle County, where they are located, and how they can be used.

They went into the county knowing they would very likely find many soils they had already seen and some they had not. They observed the steepness, length, and shape of slopes, geological features, kinds of native crops and plants, and many other facts about the soils. They dug many holes to expose soil profiles. A soil profile is a sequence of natural layers or horizons which extends from the surface into the parent material.

The soil scientists compared the soil profiles found in the county. They also compared them with those profiles in nearby counties and even in places more distant. The soils were classified and named according to uniform nationwide procedures (USDA, 1951).

Soils that have profiles almost alike make up a soil series. Except for different texture in the surface layer, the major horizons of all the soils in a series are similar in thickness, arrangement, and other important characteristics. Each soil series is named for a town or other geographic feature near the place where a soil of that series was first observed and mapped. Drummer and Flanagan, for example, are the names of two soil series used in La Salle County. All the

Securing an undisturbed soil profile sample using a 3-inch hydraulic probe mounted on a pick-up truck. (Fig. 2)

The authors writing a detailed soil description from a soil core. Such factors as kind, thickness, color, texture, structure, and consistence of the various horizons are noted. Samples from selected soil profiles are taken for laboratory analyses. (Fig. 3)

soils in the United States having the same series name are essentially alike in those characteristics that affect their behavior in the natural undisturbed landscape.

Soils of one series can differ in texture of the surface soil and in slope, erosion, stoniness, or some other characteristic that affects the use of soils by man. The name of a soil phase indicates a feature or features that affect management. For example, Tama silt loam, 4- to 7-percent slopes, eroded, is one of the several phases within the Tama series.

After a guide for classifying and naming the soils had been worked out, the soil scientists working in the field, drew boundaries of the individual soils on aerial photographs. The initial soil legend was adjusted and revised as mapping progressed to incorporate newly found soils and to delete soils from the initial legend that were found to be of very minor extent. The aerial photographs show such features as woodlands, buildings, field borders, trees, and other details that help in drawing soil boundaries accurately. In addition, various shadings on the aerial photo indicate such soil features as surface color, erosion conditions, and landscape position which are a great help in drawing accurate soil boundaries. The detailed soil maps in the back of this publication were prepared from aerial photographs.

The areas shown on the soil maps are called mapping units. On most maps detailed enough to be useful in planning the management of farms and fields, a mapping unit is nearly equivalent to a soil phase. It is not exactly equivalent because it is not practical to show on such a map all the small, scattered bits of soil of some other kind that have been seen within an area that is dominantly of recognized soil phase.

In parts of La Salle County along the Illinois River different kinds of soils occupy small areas in such an intricate pattern that it is not practical to show them separately on the soil map. This kind of a soil pattern is shown as one mapping unit and is called a soil complex. Hesch complex, 2- to 4-percent slopes, is an example.

Most soil surveys include areas where the soil material is so frequently worked by wind or water that it cannot be classified by soil series, e.g., Riverwash. Other areas that are included as land types in La Salle County are the bedrock outcrop areas, Sandstone Rockland, Limestone Rockland, and Shale Rockland.

While the survey is in progress, samples of selected

soils are taken for laboratory measurements. Laboratory data, such as the physical and chemical properties, from the same kinds of soils in other places are assembled and used to establish the validity of certain soil series. Data on yields of crops under defined management practices are assembled from field or plot experiments and farm records on the same kinds of soils. Yields under specifically defined management are estimated for all soils (Table 2).

But only part of a soil survey is finished when the soils have been named, described, and delineated on the soil map and when the laboratory data and yield estimates have been assembled. The mass of detailed information then needs to be organized in such a way as to be useful to different groups such as farmers, managers of woodland, engineers, land-use planners, and homeowners. Grouping soils that are similar in suitability for each specific use is the method of organization commonly used in soil survey.

On the basis of yield and practice tables and other data, the soil scientists set up trial groups. They test these groups by further study and by consultation with farmers, agronomists, engineers, and others and then adjust the groups according to the results of their study and consultation. Thus, the groupings that are finally evaluated reflect up-to-date knowledge of the soils and their behavior under present methods of use and management.

GENERAL FEATURES OF LA SALLE COUNTY

Location and Size of County

La Salle County is located in north central Illinois. The Illinois River runs almost due west through the center of the county. It is bounded on the west by Bureau, Putnam, and Marshall counties, on the north by Lee and De Kalb counties, on the east by Kendall and Grundy counties, and on the south by Livingston and Woodford counties.

Ottawa, the county seat, lies along the Illinois River in almost the center of the county. Ottawa is about 80 miles from Chicago; 230 miles from St. Louis, Missouri; 75 miles from Peoria; and 115 miles from Champaign-Urbana.

La Salle County is the second largest county in Illinois with a total area of 1,153 square miles or 737,920 acres. At its largest extent, it is 48 miles from north to south and 30 miles from east to west. Ottawa is located 41 degrees, 21 minutes north latitude and 88 degrees, 50 minutes west longitude.

Physiography

Almost all of La Salle County is in the Bloomington Ridged Plains within the Till Plains section of the Central Lowland Province (Leighton et al., 1948). A small area in the southwestern part of the county is in the Kankakee Plain within the same section and province as above.

The Bloomington Ridged Plain consists mainly of Woodfordian glacial till of Wisconsinan age, and is characterized by low, broad, morainic ridges, with intervening wide stretches of relatively flat or gently undulating ground moraines. It was in the Bloomington Ridged Plain that the grass-covered stretches of rolling prairie and extensive swamps, described by the early settlers, was most typically and extensively developed.

The moraines form a series of curves roughly concentric with the outer boundary of the district. The named moraines in La Salle County from north to south include La Molle, Paw Paw, Arlington, Mendota, Farm Ridge, Mt. Palatine, Minonk, Norway, and Ransom (Willman and Frye, 1970).

The Illinois River has cut a relatively deep, narrow valley through the Norway, Ransom, and Farm Ridge moraines and into the underlying bedrock for practically its whole length through the county.

Maximum elevation in La Salle County is about 920 feet in the vicinity of Welland in the northwestern part of the county. Lowest elevation is about 460 feet in the Illinois River valley where it exits the county near La Salle-Peru. The approximate elevation of towns along the Illinois River are: Utica, 470 feet; Ottawa, 485 feet; Marseilles, 490 feet; and Seneca, 500 feet. Elevation of towns in other parts of the county are: Earlville, 706 feet; La Salle, 630 feet; Mendota, 740 feet; Ransom, 700 feet; Serena, 630 feet; Sheridan, 585 feet; Streator, 630 feet; and Tonica, 660 feet.

Geology

La Salle County lies within the area of North America that was covered by continental glaciers during the Ice Age or Pleistocene. At least three of the four major glacial stages during the Ice Age covered La Salle County. Glacial drift from the Kansan stage lies buried deeply by the materials from the Illinoian stage, and finally the glacial drift of the Wisconsinan stage occurs uppermost. There is no evidence that drift materials from the oldest glacial stage, the Nebraskan, occurs in the county (Willman and Payne, 1942).

The glacial till and outwash material of the Wisconsinan stage, along with such glacial landscape features as end and ground moraines, control the nature

Silica pits in St. Peter sandstone at Wedron along the Fox River. Light-colored Camden soils occur in the left foreground. Bottomland soils such as DuPage and Millington are found along the Fox River. In the far upper left background are such soils as Flanagan, Catlin, and Drummer. (Fig. 4)

of the land surface in practically all of the county. The total thickness of glacial drift in the county varies from 50 feet or less to over 500 feet on the northwest corner of the county (Piskin and Bergstrom, 1967).

Illite is the dominant clay mineral in the glacial tills, ranging from 50 to 70 percent. (Jones, Beavers, and Alexander, 1966).

Loess or windblown silt occurs in varying thickness over the upland parts of the county. It is 5 to 10 feet thick in the western part of the county and thins to less than 2½ to 3 feet in the eastern part of the county (Fehrenbacher et al., 1968).

Sandstone, shale, and limestone outcrop along the Illinois, Fox, and Vermilion rivers. All are quarried and used commercially in the county.

The foregoing comments concerning the total geologic situation in La Salle County are very brief. For more details concerning both ice-age and hard-rock geology consult Illinois State Geological Survey references (Willman and Frye, 1970; Cady, 1919; Willman and Payne, 1942) listed under references in the back of this report.

Mineral Resources

Silica sand from the St. Peter sandstone formation is extensively mined in the Ottawa area along the Illinois and Fox rivers. St. Peter sandstone is nearly pure silica used for glass making, molding sand, and a wide variety of silica chemical products (Willman and Payne, 1942).

Coal mining, both strip and shaft, were once important in the county. The little coal that is mined now (as it occurs in the mining of clay and shale) is used locally (Willman and Payne, 1942).

Sand and gravel deposits occur in many parts of the county, but are especially numerous in the outwash and terrace areas along the major and even some minor streams. Two large sand and gravel operations are located near Sheridan and Seneca. Much of the sand and gravel is used in surfacing gravel roads and as concrete aggregate when washed and graded.

Clay and shale are mined extensively in the county for making tile and brick. A few areas where clay and shale are mined extensively for refractory pur-

poses are Streator, Lowell, Marseilles, and Ottawa (Willman and Payne, 1942).

Limestone is quite prevalent along the Illinois and Vermilion rivers. It is extensively used primarily in manufacturing cement in the La Salle-Oglesby area. Quarrying near Troy Grove, Utica, and Sheridan supplies limestone for agricultural purposes and for concrete aggregate.

Water Resources

The Illinois, Fox, and Vermilion rivers are important surface water resources in the county. They are used for industry and recreation. Ground water is prevalent in St. Peter and other deeper sandstones at depths ranging from near the surface to over 2,000 feet. Much water for municipal and domestic use is taken from much shallower wells of 50 to around 500 feet. In general, the county has a good supply of water for all uses.

Climate

La Salle County has a continental climate typical of northern Illinois, with hot summers and cold winters. Low-pressure areas and associated weather fronts bring frequent changes in temperature, humidity, cloudiness, and wind direction during much of the year.[1]

Annual precipitation averages 33 inches. About one year in six the annual precipitation is either less than 28 inches and more than 38 inches. The winter months from November through February are the driest, averaging less than 2 inches. Spring and summer months, April through July, are usually the wettest months, averaging nearly 4 inches. More than half the annual precipitation normally falls during the growing season from May through September.

Normally July and August rainfall alone is insufficient to meet the water needs of most field crops. It is during this period that stored subsoil moisture is extracted by field crops. Major drouths are infrequent. Rather prolonged dry periods during a portion of the growing season are not unusual and usually result in some reduction in yield.

[1] The authors are indebted to W. L. Denmark, assistant professor of climatology, University of Illinois Department of Horticulture, for his assistance in the preparation of the material on climate.

Summer precipitation occurs mostly as brief showers or thunderstorms which are occasionally accompanied by hail (Huff and Changnon, 1959) or damaging winds. The highest recorded rainfall for a single 24-hour period was 8.77 inches at Ottawa in July, 1958.

La Salle County averages about 45 thunderstorm days annually, with half of these occurring during the critical part of the growing season in June, July, and August. There is an average of about two hail-producing thunderstorms in the county annually, with less than one per year during the critical summer months. Not all hailstorms have stones of sufficient size or quantity to produce extensive crop damage.

Annual snowfall averages 25 to 27 inches. More than 20 inches has fallen in a single month on several occasions.

Summers are warm, but hot periods are seldom prolonged. Cool air invasion from the north occurs frequently enough in the summer to prevent long stagnation of hot, humid air masses. July is the warmest month. Temperatures of 100° F. or higher occurred during 75 percent of the summers from 1931 through 1956, but less than 25 percent of the years from 1957 through 1969. The highest recorded temperature was 113° F. at La Salle on July 14, 1936. Summer days with 90° F. or higher average about 35 annually.

January is normally the coldest month. February frequently has days as cold as January, but cold periods are usually of shorter duration. Temperatures of 0° F. or below have been recorded in all years but one since 1931. The average winter minimum temperature is −10° F. The coldest temperature in this century was −26° F. at Streator on February 15, 1905. Temperatures of 0° F. or below occur on an average of eight days annually, usually during the three winter months. Below 0° F. temperatures have occurred as early as November and as late as March.

The number of days between the average date of the last freezing temperature (32° F. or below) in the spring and the average date of the first such occurrence in the fall is termed the "growing season." The growing season designation can be misleading because different crops have different temperatures at which growth is affected. The average date of the last freezing temperature in the spring is April 24 and the average date of the first freezing temperature in the fall is October 17 (Joos, 1960). The average growing season is 175 days in La Salle County.

Ottawa, along the Illinois River, showing the confluence of the Fox River in the upper left. The bottomland areas along both rivers flood occasionally. (Fig. 5)

CULTURAL FEATURES

Organization and Population

Before the white man came to what is now La Salle County, the area was at various times inhabited by the Iroquois, Potawatomi, Sauk, Fox, Ottawa, and Illinois Indians. Marquette and Joliet, early French explorers, were the first white men to enter the area along the Illinois River in 1673. A few years later the French explorer La Salle entered the area on his way to the mouth of the Mississippi River. He later came back to the Illinois valley as a more permanent base of operation and the county is named after him. La Salle County was established by law on January 15, 1831.

The population of La Salle County increased about 13 percent from 1930 to 1960 with a population in 1960 of 110,800. Ottawa, the county seat had a population of 19,408 in 1960. Also in 1960 the population of several other towns and cities was: Earlville, 1,420; Mendota, 6,154; La Salle, 11,897; Peru, 10,000; Oglesby, 4,215; Marseilles, 4,347; and Streator, 16,-868 (La Salle County Regional Planning Commission, 1967).

Transportation and Industrial Development

La Salle County is served extensively by eight major railroads: Chicago and Northwestern; Chicago, Burlington, and Quincy; Illinois Central; Chicago, Rock Island, and Pacific; New York Central; Milwaukee Road; Sante Fe; and the Gulf, Mobile, and Ohio. In addition, the La Salle and Bureau County Railroad connects La Salle and Princeton.

All-weather, farm-to-market roads are well distributed throughout the county. Many federal and state highways, including Interstate 80, provide excellent hard-surface roads in all parts of the county.

The Illinois River carries a large amount of barge traffic. Many industries are located along the river to take advantage of barge service. Locks are located

at Marseilles and Starved Rock. Several grain terminals are located along the river. Sand and gravel from near Seneca is shipped by barge. Cities such as Marseilles, Ottawa, La Salle-Peru, and Streator have many and varied industrial developments contributing greatly to the economic well-being of the county.

Starved Rock State Park, located along the south side of the Illinois River near Utica, contains 1,451 acres and is used by many visitors. Buffalo Rock, Matthiessen, and Illini state parks are smaller, but are also frequently used and contribute greatly to the recreation possibilities in the county.

Agriculture

Agriculture has long been one of the important industries in La Salle County. Good soils, good transportation, and nearness to Chicago area markets have all had a decidedly favorable effect on farming.

Corn and soybeans are the major grain crops produced in the county. In 1970 the corn acreage was 288,480; the soybean acreage was 171,100; the oat acreage was 22,017; and wheat acreage was 1,397. Acres cut for hay in 1969 totaled 16,618.

In 1970 about 80 percent of La Salle County was in farms. The average farm size was 257 acres and there were 2,481 farms. For many years the average farm size has been increasing and the number of farms has been decreasing.

Livestock are also very important in La Salle County agriculture. In 1964 about 38 percent of the value of farm products was from livestock and the remaining 62 percent from the sale of farm crops (La Salle County Regional Planning Commission, 1967).

GENERAL SOIL AREAS OF LA SALLE COUNTY

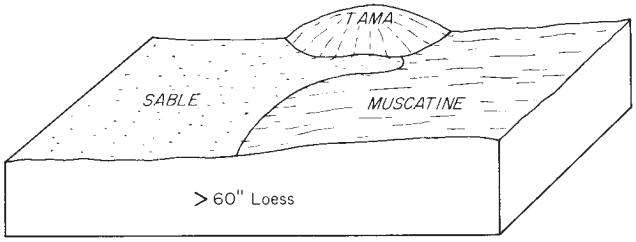
The location and extent of the 13 general soil association areas in La Salle County are shown on the accompanying general soil map (page 15). A soil association is a landscape that has a distinct proportional pattern of soils. It normally consists of one or more major soils and at least one minor soil.

This type of soils information is for those who are interested in a broad picture of the soil resources and soil conditions in the entire county. It is useful in comparing soils in different parts of the county and in locating large tracts of land that may be suitable for specific purposes. When planning or managing individual farms or small tracts of land, the detailed soil map should be consulted because the soils in any one general soil association area will ordinarily differ in slope, erosion, drainage, and other characteristics that affect management.

The 13 soil associations in La Salle County are described in this section. More detailed information about the individual soils in each association can be obtained by studying the detailed soil map at the back of this report and by reading the section on "Descriptions of La Salle County Soils." The name of each soil association consists of the names of three or four soil series which are most extensive in each association. In the majority of cases, the most extensive soil in the association is listed first, with less extensive soils following in descending order of importance.

Area A — Muscatine-Sable-Tama Association

Soil association A occurs in the loess-covered uplands in the western part of La Salle County. The major soils are formed in loess over 5 feet thick and



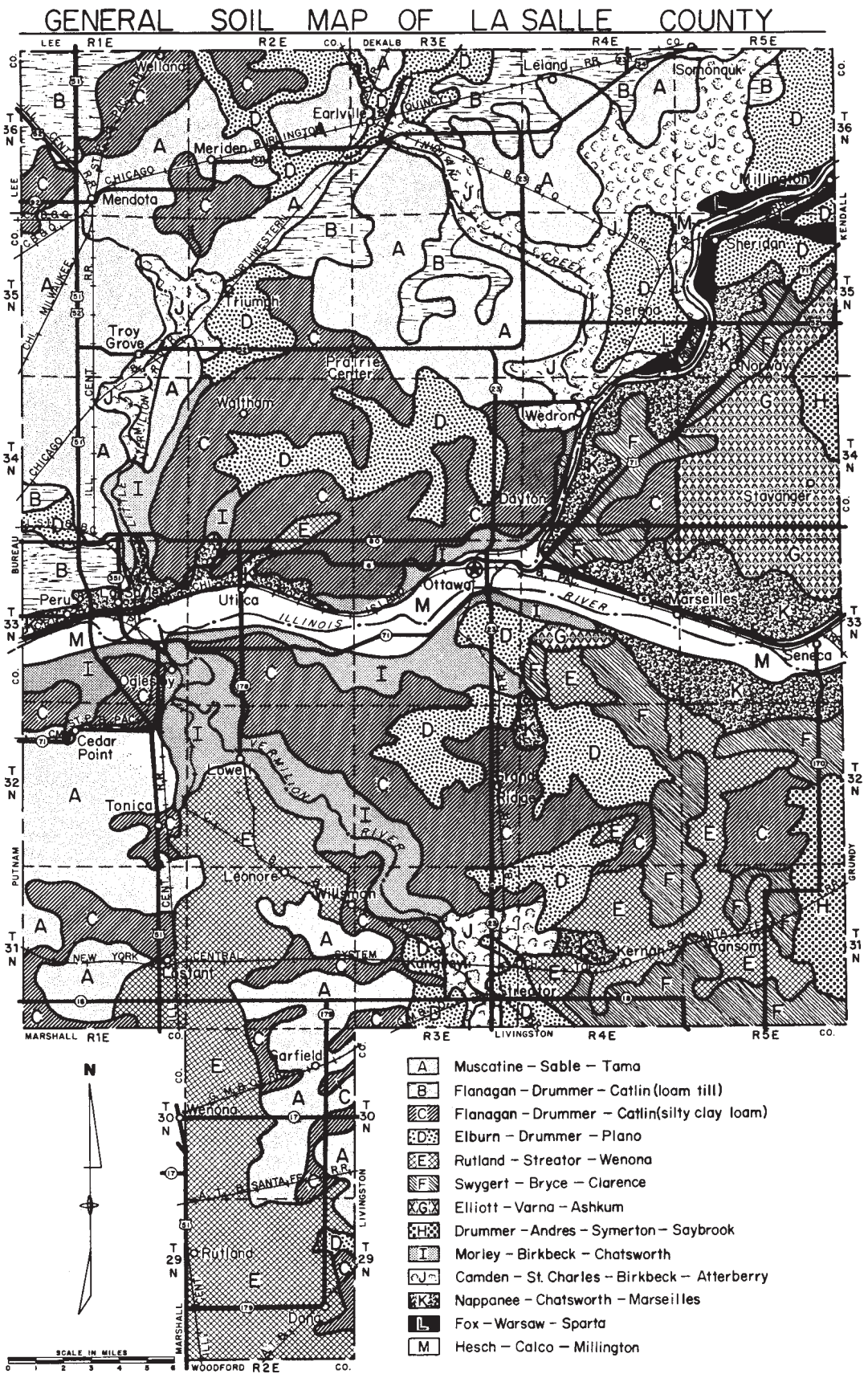
Parent material and landscape position of major soils in soil association A. (Fig. 6)

the topography is most nearly level to very gently sloping. A few soil areas are gently sloping. The soils are dark colored, having been developed under prairie native vegetation.. The soils in this association area are among the most productive in the county and also in the state.

This soil association occupies about 20 percent of the county. It is about 65 percent Muscatine soils, 25 percent Sable soils, 7 percent Tama soils, and 3 percent other soils.

Muscatine and Tama occupy the higher parts of the landscape (Fig. 6). Muscatine is somewhat poorly drained and Tama is moderately well to well drained. Sable is poorly drained. Small areas of Harpster, Peotone, and Catlin will occur in this association. Harpster soils are dark and low lying, with free carbonates on and below the soil surface. Peotone soils usually occur on small very poorly drained wet spots. Catlin occurs in some of the more sloping areas.

Corn and soybeans are the principal crops grown in this soil association area. Although almost all of the soils needing tile have been adequately tiled, maintenance of this tiling system is important.


GENERAL SOIL MAP OF LA SALLE COUNTY
LEE
DEKALB
MARSHALL
LIVINGSTON
WOODFORD
R1E
R2E
R3E
R4E
R5E
T 36 N
T 35 N
T 34 N
T 33 N
T 32 N
T 31 N
T 30 N
T 29 N
Walland
Earlville
Leland
Somonauk
Meriden
Mendota
Millington
Sheridan
Serena
Troy Grove
Triumph
Prairie Center
Waltham
Wedron
Norway
Dayton
Stavanger
Ottawa
Utica
Peru
Marseilles
Seneca
Oglesby
Cedar Point
Lowell
Tonica
Leonore
Wilmington
Kernan
Ransom
Streator
Garfield
Wenona
Rutland
Dana
ILLINOIS RIVER
VERMILION RIVER
SCALE IN MILES
A Muscatine – Sable – Tama
B Flanagan – Drummer – Catlin (loam till)
C Flanagan – Drummer – Catlin (silty clay loam)
D Elburn – Drummer – Plano
E Rutland – Streator – Wenona
F Swygert – Bryce – Clarence
G Elliott – Varna – Ashkum
H Drummer – Andres – Symerton – Saybrook
I Morley – Birkbeck – Chatsworth
J Camden – St. Charles – Birkbeck – Atterberry
K Nappanee – Chatsworth – Marseilles
L Fox – Warsaw – Sparta
M Hesch – Calco – Millington

Area B — Flanagan-Drummer-Catlin (Loam Till) Association

Soil association B occurs mainly in the northern two tiers of townships in La Salle County. The major soils in this association area are developed in 40 to 60 inches of loess over loam till on mostly nearly level to very gently sloping topography in upland positions. A few areas are gently sloping. The soils are dark colored and have been developed under prairie native vegetation.

This soil association occupies about 5 percent of the county It is about 35 percent Flanagan soils, 33 percent Drummer soils, 18 percent Catlin soils, and 14 percent other soils. Flanagan and Catlin soils occupy the higher positions of the landscape (Fig. 7) and the Drummer soils occupy the lower positions. Flanagan is somewhat poorly drained and Catlin is moderately well to well drained. Drummer is poorly drained.

Some of the minor soils in this soil association are Peotone, Harpster, LaRose, and Muscatine. Peotone is a very dark, very poorly drained soil usually occurring in small closed depressions. Harpster soils are dark colored, calcareous on the surface, and occupy low-lying positions in the landscape The dark-colored, well-drained LaRose soils occur as minor areas on the steeper slopes where the loess cover is thin or absent over the loam till. Muscatine soils are dark colored and somewhat poorly drained, and they occur as minor areas where the loess is thicker than 5 feet.

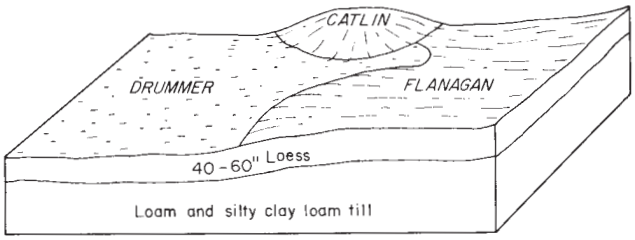
Corn and soybeans are the principal grain crops grown in this soil association area.

Area C — Flanagan-Drummer-Catlin (Silty Clay Loam Till) Association

Soil association C occurs in nearly all parts of La Salle County, but is concentrated in the central part both north and south of the Illinois River. The major soils in this association are developed in 40 to 60 inches of loess over silty clay loam glacial till on mostly nearly level to very gently sloping topography in the uplands. A few areas are gently sloping. The soils are dark colored, having been developed under prairie native vegetation.

This soil association occupies about 18 percent of the land area of La Salle County. It is about 36 percent Flanagan soils, 33 percent Drummer soils, 18 percent Catlin soils, and 13 percent other soils. Flanagan and Catlin soils occupy the higher positions on the landscape (Fig. 7) and Drummer soils occur on the lower positions. Flanagan is somewhat poorly drained, Catlin moderately well to well drained, and Drummer poorly drained.

Some of the minor soils in this soil association are



Parent material and landscape position of major soils in soil associations B and C. (Fig. 7)

Varna, Peotone, Harpster, Muscatine, Tama, Proctor, and Symerton. Varna soils are dark, moderately well- to well-drained soils occurring on the more sloping areas where the loess thickness is less than 18 inches. Peotone is a very dark, very poorly drained soil usually occurring in small closed depressions. Harpster soils are very dark colored and calcareous on the surface. They occupy low-lying positions in the landscape. Small areas of Muscatine and Tama soils may be found where the loess thickness exceeds 5 feet. Very minor areas of Proctor and Symerton soils are found where outwash is encountered along some of the smaller drainageways.

Although the major soils in this association and those in soil association B are the same soil series, the glacial till in this soil association area is of silty clay loam texture and that in soil association B is loam texture. The silty clay loam till is normally less permeable than the loam till. For more details on the difference between these two tills see Wascher, H. L., et al., 1960.

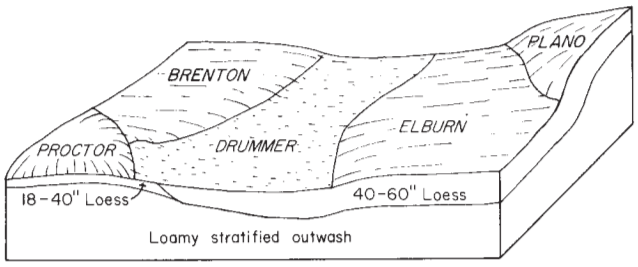
Grain and livestock farms predominate. Corn and soybeans are the principal grain crops grown.

Area D — Elburn-Drummer-Plano Association

Soil association D occurs in nearly all parts of the county. The major soils in this association are developed in 40 to 60 inches of loess over loamy stratified outwash material or sandy loam glacial till and occur on nearly level to very gently sloping topography on outwash and till plains. A few areas are gently sloping. The soils are dark colored, having been developed under prairie native vegetation.

This soil association occupies about 11 percent of La Salle County. It is about 36 percent Elburn soils, 27 percent Drummer soils, 22 percent Plano soils, and 15 percent other soils. The Elburn and Plano soils occupy the higher portions of the landscape (Fig. 8) and Drummer soils occupy the lower portions. Elburn is somewhat poorly drained, Plano moderately well- to well-drained, and Drummer poorly drained.

Some of the minor soils in soil association D are Brenton, Proctor, Thorp, Muscatine, and Flanagan.



Parent material and landscape position of major soils in soil association D. (Fig. 8)

Brenton and Proctor are formed in 18 to 40 inches of loess over loamy stratified outwash. Brenton is somewhat poorly drained and Proctor is moderately well- to well-drained. The D soil association areas south of the Illinois River have a larger percentage of Brenton and Proctor soils than those north of the Illinois River.

The D soil association area in the very northeast corner of the county is underlain by sandy loam till. All other D areas are underlain by loamy stratified outwash material. In the northeast area the Thorp soil is very prevalent in the low-lying positions. Thorp is a poorly drained soil with a grayish cast on the dark surface and a subsoil high in clay content. In other areas Thorp is usually found in small closed depressions.

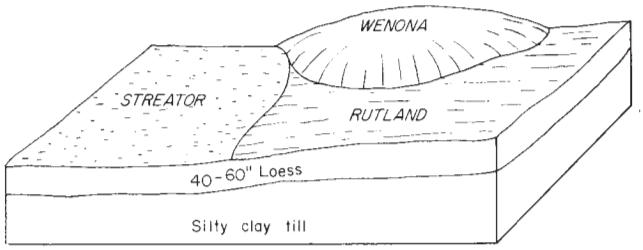
Muscatine and Flanagan soils occur in minor amounts in this soil association where the loess is occasionally over 60 inches thick or where loam or silty clay loam till is encountered at the 40- to 60-inch depth.

Grain and livestock farms predominate. Corn and soybeans are the principal grain crops grown.

Area E — Rutland-Streator-Wenona Association

Soil association E is, for the most part, in the southern half of the county below the Illinois River. The major soils in this association are developed in 40- to 60-inches of loess over silty clay glacial till and occur on upland till plains and moraines on nearly level to very gently sloping topography with a very minor amount being gently sloping. The soils are dark colored, having been developed under prairie native vegetation.

This soil association occupies about 12 percent of La Salle County. It is about 57 percent Rutland soils, 16 percent Streator soils, 3 percent Wenona soils, and 24 percent other soils. The Rutland and Wenona soils occupy the higher portions in the landscape and the Streator soils occupy the lower portions (Fig. 9). Rutland is somewhat poorly drained, Wenona is moderately well- to well-drained, and Streator is poorly drained.



Parent material and landscape position of major soils in soil association E. (Fig. 9)

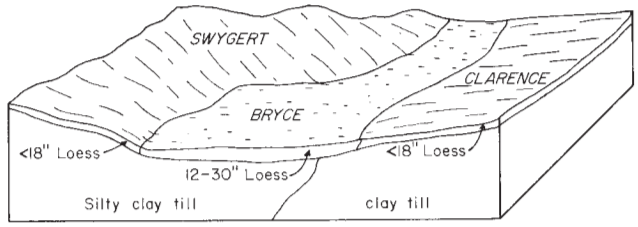
Some of the minor soils in this soil association are Swygert, Mokena, Mona, Rantoul, Elburn, Plano, and Proctor. Swygert is probably the most extensive minor soil in this soil association, occurring where the loess cover is 18 inches or less. The Mokena and Mona soils are found where the loamy to sandy outwash is moderately thick between the underlying silty clay till and loess. Rantoul is a very dark-colored, very poorly drained soil occurring in small closed depressions. Elburn and Plano occur in minor areas in this association where loamy stratified outwash is found beneath the loess cover. Proctor, in this area, is mostly found along some of the minor drainageways on the sloping areas adjacent to the drainageway.

Grain and livestock farms predominate. Corn and soybeans are the principal crops grown.

Area F — Swygert-Bryce-Clarence Association

Soil association F occurs in the southeastern part of the county and east of the Fox River on the Norway and Ransom moraines. The major soils in this association are developed in less than 18 inches of loess on silty clay and clay glacial till on upland till plains and moraines on very gently sloping to sloping topography. They are dark colored as a result of prairie native vegetation.

This soil association occupies about 6 percent of the county. It is about 55 percent Swygert soils, 37 percent Bryce soils, 2 percent Clarence soils, and 6 percent other soils. Swygert soils occupy the higher portions on the landscape and Bryce soils occur in the lower areas (Fig. 10). Swygert is somewhat poorly drained and Bryce is poorly drained.



Parent material and landscape position of major soils in soil association F. (Fig. 10)

Some of the minor soils in this association are Rutland, Mokena, Mona, Brenton, Proctor, and Drummer. Rutland and Mokena are the most extensive minor soils in this association. Rutland, a dark-colored, somewhat poorly drained soil, occurs in localized areas where the loess is 40 to 60 inches thick. Mokena, which is also a dark-colored, somewhat poorly drained soil, occurs where loamy stratified outwash overlies the silty clay and clay tills. Small areas of Mona also occur. Where the loamy stratified outwash is thick enough some areas of Brenton and Proctor soils occur.

Grain and livestock farms predominate. Corn and soybeans are the principal grain crops grown.

Because of the slow permeability of the major soils in this association, soils on slopes have a tendency to erode more rapidly than more permeable soils.

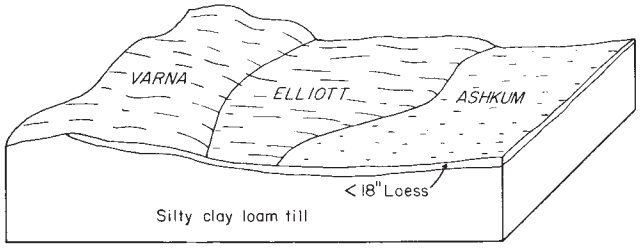
Area G — Elliott-Varna-Ashkum Association

Soil association G occurs in the glacial till upland on the Ransom moraine in the northeastern part of La Salle County between the Illinois and Fox rivers. The major soils in this association are developed in less than 18 inches of loess on silty clay loam glacial till in upland till plains and moraines on very gently sloping to sloping topography. They are dark colored as a result of prairie native vegetation.

This soil association occupies about 4 percent of the county. It is about 37 percent Elliott soils, 41 percent Varna soils, 14 percent Ashkum soils, and 8 percent other soils. Elliott and Varna soils occupy the higher portions of the landscape and Ashkum soils occupy the lower positions (Fig. 11). Elliott is somewhat poorly drained, Varna moderately well to well drained, and Ashkum poorly drained.

Some of the minor soils in this association are Drummer, Flanagan, Elburn, and Peotone. Drummer, a very dark-colored, poorly drained soil, occurs in low-lying areas where the loess is 40 to 60 inches thick. Flanagan and Elburn occur as minor areas where the loess is 40 to 60 inches thick. Peotone usually occurs in small, closed depressions.

Grain and livestock farms predominate. Corn and soybeans are the principal grain crops grown.



Parent material and landscape position of major soils in soil association G. (Fig. 11)

Erosion control practices are important in this soil association.

Area H — Drummer-Andres-Symerton-Saybrook Association

Soil association H occurs in two areas along the eastern border of La Salle County. The major soils in this association, except Saybrook, are developed in a thin covering of loess over loamy stratified outwash with silty clay loam glacial till encountered at the 30- to 50-inch depth in upland areas on nearly level to gently sloping topography. Saybrook soils are developed in 18 to 40 inches of loess over loam glacial till. An area of Saybrook and associated soils occurs on the north end of the H soil association area east of Norway in the northeast part of the county along the county line. This area of Saybrook and associated soils is included in this association because of size and proximity, and because of the similarity of land use. All these soils are dark colored.

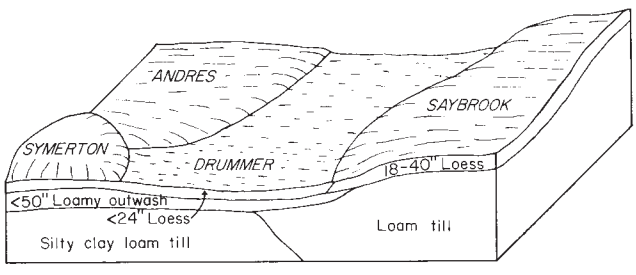
This soil association occupies a little less than 2 percent of the area of La Salle County. It is about 33 percent Drummer soils, 16 percent Andres soils, 14 percent Symerton soils, 4 percent Saybrook soils, and 33 percent other soils. Drummer soils occupy the lower positions in the landscape, with Andres and Symerton occurring on the slightly elevated positions (Fig. 12). Drummer is poorly drained, Andres somewhat poorly drained, and Symerton and Saybrook moderately well- to well-drained.

Some of the minor soils in this association are Brenton, Proctor, Varna, Elliott, and Ashkum. Proctor and Brenton soils occur as isolated areas where the loamy stratified outwash occurs to depths of more than 60 inches. Varna and Elliott soils occur where the total thickness of loess and outwash does not exceed 18 inches. Ashkum soils occur where the silty clay loam till occurs at the 18- to 36-inch depth.

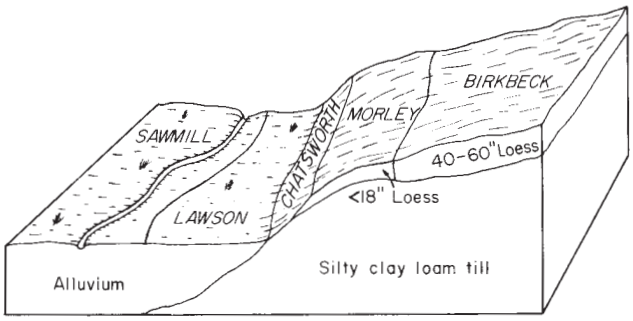
Grain and livestock farms predominate. Corn and soybeans are the principal grain crops grown.

Area I — Morley-Birkbeck-Chatsworth Association

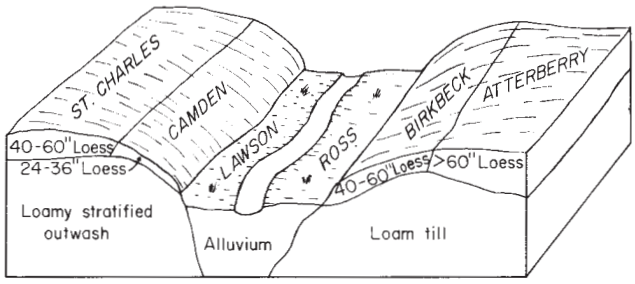
Soil association I occurs along all the major streams in the county, but mainly along the Vermilion River



Parent material and landscape position of major soils in soil association H. (Fig. 12)



Parent material and landscape position of major soils in soil association I. (Fig. 13)



Parent material and landscape position of major soils in soil association J. (Fig. 14)

and the Illinois River. This soil association consists mostly of upland soils developed under native forest vegetation on thin and moderately thick loess over silty clay loam till on the very gently sloping to strongly sloping areas. On many of the steeper slopes adjacent to the bottomlands, soils shallow to bedrock are encountered. The I area along the Vermilion River also includes soils in the relatively narrow bottomland. The soils in this association are light colored.

This soil association occupies about 6 percent of the area of La Salle County. It is an extremely variable association. It is about 10 percent each of Morley, Birkbeck, and Chatsworth soils, and 70 percent other soils. Morley, Birkbeck, and Chatsworth soils are the most extensive in the association (Fig. 13). They are essentially light-colored, well-drained soils developed in very thin to moderately thick loess over silty clay loam till.

Some of the other soils occurring in this association in approximate decreasing amounts are Blount, Camden, Starks, Shale Rockland, Sandstone Rockland, Limestone Rockland, Fayette, Stronghurst, Sabina, Kendall, St. Charles, Marseilles, Hennepin, Atterberry, Boone, Kernan, Loran, Gale, Sawmill, Lawson, Ross, and DuPage. See the section on soil descriptions for comments concerning the above soils.

There are many wooded areas in this association. Where the native forest has been cleared, grain and livestock farms predominate. The amount of pasture in this association is higher than in the darker colored soil associations.

Area J — Camden-St. Charles-Birkbeck-Atterberry Association

Soil association J occurs along the upper part of the Little Vermilion Creek, along Indian Creek and Somanauk Creek in the northeast part of the county, and along the Vermilion River in the southern part of the county. This soil association consists mostly of upland terrace and outwash soils developed under forest native vegetation in thin to moderately thick loess over loamy stratified outwash and including some upland areas of moderately thick loess over loam till. These soils occur mostly on nearly level to moderately steep topography.

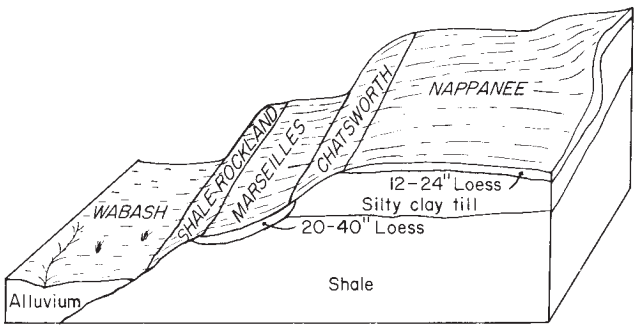
This soil association occupies about 6 percent of La Salle County. It is about 20 percent Camden soils, 12 percent St. Charles soils, 14 percent Birkbeck soils, 14 percent Atterberry soils, and about 40 percent other soils. Camden and St. Charles soils are light-colored, well-drained soils. Camden soils developed in 24 to 36 inches of silty material, usually loess, and St. Charles soils developed in 40 to 60 inches of loess over loamy stratified outwash (Fig. 14). In places in this association where the loamy stratified outwash thins or is absent, the light-colored, moderately well- to well-drained Birkbeck soils are found. Atterberry soils, somewhat poorly drained and developed in loess over 60 inches thick, are found at the border between the J and A soil association areas and in the central part of the J soil association area in the northeast two townships of the county.

Some of the other soils occuring in this association in approximate decreasing amounts are: Hennepin, Kendall, Sabina, Stronghurst, Fayette, Lawson, Ross, DuPage, Sawmill, and Fox. For more detail about the minor soils of this soil association see the section in this report on soil descriptions.

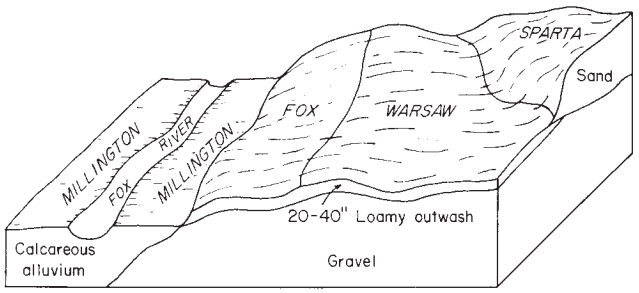
Many wooded areas exist in this association. Where the native forest has been cleared, grain and livestock farms predominate. There is a higher amount of pasture in this soil association than in the darker colored soil associations.

Area K — Nappanee-Chatsworth-Marseilles Association

Soil association K occurs mainly in the eastern part of La Salle County adjacent to and on both sides of the Illinois River valley and on the north side of the Illinois River valley near La Salle-Peru. The eastern areas of this soil association consist of light-colored upland soils developed in thin loess over silty clay glacial till on mostly very gently sloping to steep topogra-



Parent material and landscape position of major soils in soil association K. (Fig. 15)



Parent material and landscape position of major soils in soil association L. (Fig. 16)

phy. Some of the steeper slopes in the eastern area have shale outcropping at or near the surface. The western area near La Salle-Peru is also composed of light-colored soils, is mostly underlain by shale at shallow depths and by limestone in the Utica area, and is steep near the Illinois River bottomland and less sloping away from it.

This soil association comprises about 5 percent of the area of La Salle County. It is about 24 percent Nappanee soils, 16 percent Chatsworth soils, 7 percent Marseilles soils, and 53 percent other soils. Nappanee soils are somewhat poorly drained, occurring on very gently to gently sloping topography in areas of silty clay till (Fig. 15). Chatsworth soils are found on the steeper slopes in areas of silty clay till. Marseilles soils occur where shale is found at moderate depths.

Some of the other soils in this association in approximate decreasing amounts are: Shale Rockland, Frankfort, and St. Clair in the eastern area of the association, and Shale Rockland, Limestone Rockland, Gale, Camden, and Ritchey in the western section near La Salle-Peru. For more detail about the minor soils of soil association K, see the section in this report on soil descriptions.

Much of this soil association area is wooded, except in towns and cities. Where the native forest has been cleared, grain and livestock farms predominate. Shale and limestone quarries are found in this soil associaton.

Area L — Fox-Warsaw-Sparta Association

Soil association L occurs in the vicinity of Sheridan along the Fox River in the northeast part of the county. The soils in this association are primarily developed in a thin to moderately thick covering of medium-textured material over stratified gravel and sand. Some areas of sandy soils occur. Both light- and dark-colored soils on very gently sloping to steep topography are included. The sandy and gravelly parent materials are derived from water-sorted glacial drift deposited along the Fox River Valley.

This soil association comprises about 1 percent of the county. It is about 29 percent Fox soils, 22 percent Warsaw soils, 9 percent Sparta soils, and 40 percent other soils. Fox soils are light-colored, well-drained soils developed in 20 to 40 inches of loamy outwash material over stratified gravel and sand. Warsaw soils are the dark-colored soils developed in the same material as Fox soils. Sparta soils are dark-colored, weakly developed, well-drained sandy soils (Fig. 16).

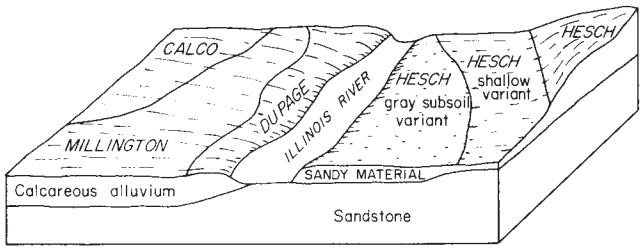
Some of the other soils in this association in approximate decreasing amounts are: in the light-colored soil areas, Rodman, St. Charles, Camden, and Harvard; and in the dark soil areas, Proctor and Lorenzo. Rodman soils are developed in gravel on the steeper slopes. Most of the St. Charles, Camden, and Harvard soils in this soil association are underlain by gravel deposits. In this association Proctor soils occur where the silty to loamy material is more than 5 feet thick over the gravel. Lorenzo occurs where the loamy overburden is 12 to 24 inches thick over gravel.

A small part of this association is wooded. Where the native forest has been cleared, grain and livestock farms predominate. Gravel pits are common.

Area M — Hesch-Calco-Millington Association

Soil association M is comprised of the Illinois River and Fox River bottomlands. The alluvium along the Fox River is mostly calcareous, loamy and dark colored, with some areas shallow to sandstone. The Illinois River bottomlands, east of La Salle, consist primarily of thin to moderately thick alluvial material over sandstone, limestone, and shale bedrock. West of La Salle the bottomland consists primarily of deep, moderately fine-textured, dark, calcareous soils. Most of the soils occur on nearly level topography. Occasionally, where bedrock occurs near the surface, some gently sloping to sloping areas are found.

This soil association comprises about 4 percent of the county. It is about 15 percent Hesch and Hesch variant soils, 10 percent Calco soils, 10 percent Mill-



Parent material and landscape position of major soils in soil association M. (Fig. 17)

ington soils, and 65 percent other soils. Hesch and Hesch variant soils are developed from sandy material 10 to 40 inches thick over sandstone. Calco soils are poorly drained, moderately fine textured, dark, and calcareous, occurring in extensive areas in the Illinois River bottomland near La Salle. Millington soils are poorly drained, dark, loamy textured, and calcareous, occurring most extensively in the Fox River bottomland (Fig. 17).

Some of the other soils in this soil association in approximate decreasing amounts are: DuPage, Wabash, Brenton, Sawmill, Ridgeville, Dickenson, Selma, Riverwash, Loran, Channahon, Houghton, Lena, Millsdale, and Sparta. These other soils vary widely in their composition. For more detail concerning each soil see the soil description section of this report.

Land use in the bottomlands is varied. Wet and swampy areas and many areas shallow to bedrock are idle. Some of the areas shallow to bedrock are in pasture, and the deeper alluvial soils are frequently in row crops, mostly corn and soybeans. Limestone, shale, and sandstone quarries are found in this association.

DESCRIPTIONS OF LA SALLE COUNTY SOILS

The general occurrence, formation, relationship to other soils, and soil profile characteristics of each soil are given in this section. The profile characteristics are for an extensive mapping unit which has not been severely eroded.

Mapping units for each soil series are listed and briefly described, giving the series name, texture of the surface horizon, range in slope gradient, and degree of erosion if it is moderate or severe. If slope is not mentioned in the name, the slope gradient is less than 2 percent. If erosion is not indicated in the mapping unit name, the soil has little or no erosion.

Names of the mapping units are given under each soil series in the following sections, in the Guide to Mapping Units on pages 4 to 7, and in Tables 2, 4, and 5.

In the profile descriptions, the horizons are designated by letters as indicated on page 8. The soil description includes the depth, color, texture, structure, consistence, reaction, and nature of horizon boundary for the several horizons in each profile.

Munsell color notations and consistence are for moist soils. The color notations refer to soil color standards developed by the Munsell Color Co., Inc. The notations consist of three variables: hue, value, and chroma. In the notation 10YR 4/2, for example, the hue is denoted by the 10YR (YR = yellow red); the value by 4; and the chroma by 2. Hue is the dominant spectral (rainbow) color and is related to the dominant wave length of the light. Value refers to the relative lightness or darkness and is a function of the total amount of light. Chroma is the relative purity or strength of the spectral color.

Following the soil profile description, such items as mapping inclusions, permeability, surface runoff, available moisture capacity, and organic matter content (Alexander, 1970) are indicated.

The soils are described in alphabetical order on the following pages, but are in numerical order in Table 1, which gives the estimated acreage of each mapping unit and soil series.

Alvin Series (131)

Alvin soils are light colored, well- to moderately well-drained, and developed in sandy alluvium under forest vegetation. They occur on nearly level to gently sloping sandy terrace areas along or near the Illinois, Fox, and Vermilion rivers. Alvin soils frequently occur as isolated sandy areas and are associated with such terrace and outwash soils as Camden and Fox.

Two mapping units are shown on the soil map:

131B Alvin fine sandy loam, 2 to 4 percent slopes
131C2 Alvin fine sandy loam, 4 to 7 percent slopes, eroded

Some areas of Alvin soils in the 131C2 mapping unit have slopes ranging up to 12 percent. Alvin soils are mostly in cropland, but some areas are in timber and pasture. Permeability is moderate to moderately rapid. Surface runoff is slow to medium. Available moisture capacity is moderate to low. Surface organic matter content averages 1.0 percent.

Representative profile of Alvin fine sandy loam, 20 feet downslope from top of sandy ridge, 200 feet east of paved road in the Vermilion River valley in NW¼, NW¼, NW¼, SW¼ of Sec. 9, T32N, R2E:

A1 (0-5") Dark brown (10YR 3/3 moist); fine sandy loam; weak, very fine to fine crumb structure; very friable; roots abundant; medium acid; clear smooth boundary.

A2 (5-14") Yellowish brown (10YR 5/4 moist); fine sandy loam to loamy sand; weak, fine, platy structure; very friable; roots common; medium acid; clear smooth boundary.

B1 (14-23") Dark yellowish brown (10YR 4/4 moist); fine, sandy loam; moderate, fine to medium, subangular blocky structure; very friable; roots common; medium acid; clear smooth boundary.

B2t (23-33") Brown to dark brown (7.5YR 4/4 moist); few, fine, faint, yellowish brown (10YR 5/4, 5/6, 5/8 moist) and yellowish red (5YR 4/8 moist) mottles; sandy clay loam to heavy sandy clay loam; moderate, medium, subangular blocky structure; friable; roots occasional to common; medium acid; abrupt smooth boundary.

B3t (33-41") Brown to dark brown (7.5YR 4/4 moist); sandy clay loam; weak, coarse, angular blocky; friable; roots occasional; slightly acid; abrupt smooth boundary.

C (41-68") Brown to dark brown (7.5YR 4/4 moist) band; common, medium, distinct mottles; sandy clay loam to sandy loam; massive structure; friable; roots occasional; going down from medium acid to very strongly acid; bands from 41-47", 48-55", 57-59", and 62-68". Yellowish brown to dark yellowish brown (10YR 5/4 to 4/4 moist) non-banded material; loamy sand; structureless; loose; medium to very strongly acid; non-banded material from 47-48", 55-57", and 59-62". The bands are darker colored and have more clay than the non-banded material.

Andres Series (293)

Andres soils are dark colored, somewhat poorly drained, and developed in a thin covering of loess less than 24 inches thick on loamy outwash material over silty clay loam till. The till is usually encountered at the 30- to 50-inch depth. The soils occur on nearly level to very gently sloping areas primarily in soil association area H on the general soil map. A very small number of delineations of Andres also occur in soil association areas C and G where localized occurrences of loamy outwash exist in the silty clay loam till. Andres soils are associated in the landscape with the dark-colored, moderately well- to well-drained Symerton soils and the very dark-colored, poorly drained Drummer soils.

Two mapping units are shown on the soil map:

293A Andres silt loam, 0 to 2 percent slopes

293B Andres silt loam, 2 to 4 percent slopes

A few areas of 293B have surface horizons 4 to 7 inches thick. Andres soils are almost entirely in cropland. Permeability is moderate. Surface runoff is slow to medium. Available moisture capacity is high. Surface organic matter content averages 4.5 percent.

Representative profile of Andres silt loam, 62 feet south of quarterline fence in NW¼, NW¼, SW¼, SW¼ of Sec. 33, T32N, R4E:

A1 (0-13") Black (10YR 2/1 moist); silt loam; moderate, fine, granular structure; friable; roots abundant; mildly alkaline; clear smooth boundary.

IIB1 (13-18") Very dark, grayish brown (10YR 3/2 moist) light silty clay loam to clay loam; moderate, fine, subangular blocky structure; firm; roots abundant; mildly alkaline; clear smooth boundary.

IIB2t (18-35") Dark grayish brown (2.5Y 4/2 moist); many, fine, distinct yellowish brown (10YR 5/4, 5/6, 5/8 moist) mottles, brown to yellowish brown (10YR 5/4 and 5/3 moist) thin, dull clay coatings continuous over all surfaces of ped; moderate, firm, subangular blocky to angular blocky structure; firm; many iron concretions; mildly alkaline; clear smooth boundary.

IIB3 (35-40") Mixed grayish brown, light brownish gray, light olive brown, and yellowish brown (2.5Y 5/2, 6/2, 5/6 and 10YR 5/8 moist); silt loam to loam; weak, medium, angular blocky structure; medium textured outwash containing many iron concretions; calcareous; abrupt smooth boundary.

IIIC (40-52") Mixed light gray to gray, light olive brown and olive brown (5Y 6/1, 2.5Y 5/4 and 4/4 moist) silty clay loam; massive; firm; calcareous; till pebbles and stones present.

Ashkum Series (232)

Ashkum soils are very dark colored, poorly drained, and developed in silty to loamy material 18 to 36 inches thick over silty clay loam glacial till. Sola are 3 to 5 feet thick. These soils occupy nearly level to depressional areas in association with Elliott and Varna soils mostly on the Marseilles moraine in the eastern part of the county in soil area G on the general soil map. Ashkum soils are associated on the landscape with the dark-colored, somewhat poorly drained Elliott soils and the dark-colored, moderately well- to well-drained Varna soils.

One mapping unit is shown on the soil map:

232 Ashkum silty clay loam

Some areas of Ashkum soils have dark silty clay loam and silt loam overwash 6 to 12 inches thick on the normal profile where they are in a position to receive sediments from higher ground. A few areas occur on slopes of 2 to 4 percent. Ashkum soils are almost entirely in cropland. Permeability is moderately slow. Surface runoff is slow to ponded. Available moisture capacity is high to very high. Surface organic matter content averages 6.0 percent.

Representative profile of Ashkum silty clay loam, 165 feet east of quarterline and 230 feet north of center of gravel road in SE¼, SE¼, SW¼, SE¼ of Sec. 19, T34N, R5E:

A1 (0-15") Black (N 2/ to 10YR 2/1 moist); silty clay loam; moderate, medium, granular structure; firm; roots common; medium acid; clear smooth boundary.

B1 (15-20") Very dark gray (10YR 3/1 moist); silty clay loam; moderate, fine, subangular blocky structure; firm; roots common; slightly acid; clear smooth boundary.

B21 (20-27") Dark, grayish brown (2.5Y 4/2 moist) silty clay, with many, fine, distinct, yellowish brown (10YR 5/4 moist) mottles; thin, dull, very dark gray (10YR 3/1 moist) clay coatings discontinuous in all directions; moderate, medium prismatic structure breaking to moderate, medium subangular and angular blocky structure; firm; roots occasional; neutral; clear smooth boundary.

IIB22 (27-33") Dark, grayish brown (2.5YR 4/2 moist) light silty clay to heavy silty clay loam, with many, fine, distinct, yellowish brown and gray (10YR 5/4 and 5/1 moist) mottles; thin, shiny, very dark grayish brown (2.5Y 3/2 moist) clay coatings continuous over all surfaces of ped; moderate, medium prismatic structure breaking to moderate, medium to coarse angular blocky structure; firm; roots occasional; neutral; abrupt smooth boundary.

IIB3 (33-38") Mixed grayish brown (2.5Y 5/2 moist), yellowish brown (10YR 5/6 moist), and dark brown to brown (7.5YR 4/4 moist) heavy silty clay loam; thin, shiny, dark gray (10YR 4/1 moist) clay coats continuous over all surfaces of the ped; moderate, medium to coarse angular blocky structure; prismatic in upper 3-5 inches; firm; no roots; silty clay loam till; neutral; gradual smooth boundary.

IIC (38-50") Mixed dark greenish gray (5GY 3/1 moist) and brown to dark brown (7.5YR 4/4 moist) heavy silty clay loam; massive; firm; no roots; calcareous.

Atterberry Series (61)

Atterberry soils are moderately dark colored, somewhat poorly drained, and developed in more than five feet of loess under mixed forest-prairie native vegetation. They occur on nearly level to very gently sloping upland areas. They typically occur in the transitional area between forest and prairie soils. These soils occur principally near the border between areas I-J and A on the general soil map. Atterberry soils are associated on the landscape with the light-colored, somewhat poorly drained Stronghurst soils, the dark-colored, somewhat poorly drained Muscatine soils, and the very dark-colored, poorly drained Sable soils.

Two mapping units are shown on the soil map:

61A Atterberry silt loam, 0 to 2 percent slopes
61B Atterberry silt loam, 2 to 4 percent slopes

A few acres of 61A are moderately well drained and some areas of 61B are moderately eroded. Atterberry soils are nearly all in cropland, with small areas in timber or pasture. Permeability is moderate and available moisture capacity very high. Surface runoff is slow to medium. Surface organic matter content averages 3.0 percent.

Representative profile of Atterberry silt loam, 10 feet east of fence near telephone pole in SW¼, NW¼, SW¼, SW¼ of Sec. 24, T36N, R4E:

Ap (0-8") Black (10YR 2/1 moist); silt loam; moderate, fine, granular structure; friable; neutral; abrupt smooth boundary.

A2 (8-11") Dark, grayish brown (10YR 4/2 moist); silt loam; moderate, fine to medium, granular structure; friable; medium acid; clear smooth boundary.

B1 (11-15") Brown to dark brown (10YR 4/3 moist) light silty clay loam, with dull, thin, dark, grayish brown (10YR 4/2 moist) clay coatings continuous over all surfaces of a ped; moderate, fine, subangular blocky structure; friable; strongly acid; clear smooth boundary.

B21t (15-20") Grayish brown (2.5YR 5/2 moist) medium silty clay loam, with common, fine, distinct yellowish brown (10YR 5/6, 5/8 moist) mottles and thin, dull, dark, grayish brown (10YR 4/2 moist) clay coatings, continuous over all surfaces of a ped; moderate, medium, subangular blocky structure; firm; iron concretions present; strongly acid; clear smooth boundary.

B22t (20-30") Mixed grayish brown and light grayish brown (2.5Y 5/2, 6/2 moist) silty clay loam, with common, fine, distinct, yellowish brown mottles and dull, thin, grayish brown (2.5Y 5/2 moist) clay coatings continuous over all surfaces of a ped; moderate, medium, subangular blocky structure; firm; iron concretions present; medium acid; clear smooth boundary.

B3 (30-40") Mixed grayish brown and light olive brown (2.5Y 5/2, 5/6 moist) light silty clay loam, with grayish brown (2.5Y 5/2 moist) clay

coatings discontinuous over all surfaces of ped; weak, medium to coarse subangular blocky structure; friable; iron concretions present; slightly acid; clear smooth boundary.

C (40-60") Mixed, light, olive brown and light, brownish gray (2.5Y 5/6, 6/2 moist) silt loam; massive structure; iron concretions present; mildly alkaline.

Batavia Series (105)

Batavia soils are moderately dark colored, moderately well- to well-drained, and developed in 40 to 60 inches of loess over loamy stratified outwash or sandy loam till under mixed prairie-forest native vegetation. They occur on nearly level to gently sloping uplands primarily in soil area J on the general soil map. On the landscape Batavia soils are associated with the somewhat poorly drained Virgil soils and the poorly drained Drummer soils.

Three mapping units are shown on the soil map:

105A Batavia silt loam, 0 to 2 percent slopes
105B Batavia silt loam, 2 to 4 percent slopes
105C Batavia silt loam, 4 to 7 percent slopes

Batavia soils immediately east and north of Sheridan are underlain by gravel. A few delineations of 105B are moderately eroded and a few of 105C2 are severely eroded. Batavia soils are nearly all in cropland, with small areas in timber and pasture. Permeability is moderate and available moisture capacity is high. Surface runoff is slow to rapid. Surface organic matter content averages 2.5 percent.

Representative profile of Batavia silt loam, 400 feet east of road intersection, SE¼, SW¼, SW¼, SE¼ of Sec. 1, T33N, R4E:

Ap (0-7") Very dark brown (10YR 2/2 moist); silt loam; moderate, fine, granular structure; friable; roots abundant; neutral; abrupt smooth boundary.

A2 (7-14") Brown to dark brown (10YR 4/3 moist), the A2 has some dark material mixed in it due to worms or deep plowing; silt loam; weak, fine, platy structure breaking to moderate, fine granular structure; friable; roots abundant; neutral; clear smooth boundary.

B1 (14-18") Brown to dark brown (10YR 4/3 moist); heavy silt loam; moderate, very fine, subangular blocky structure; firm; roots common; neutral; clear smooth boundary.

B21t (18-28") Yellowish brown (10YR 5/4 moist) silty clay loam; with dull, thin, dark, grayish brown clay coatings discontinuous over all surfaces of ped and a few, dull, thin, light gray (10YR 7/2 moist) silt coatings patchy over all surfaces of ped; moderate, fine, subangular blocky structure; firm; roots common; strongly acid; gradual smooth boundary.

B22t (28-42") Light, brownish gray (10YR 6/2 moist) silty clay loam, with common, fine, distinct dark gray and yellowish brown (10YR 4/1, 5/6 moist) mottles and dull, thin, brown (10YR 5/3 moist) clay coatings continuous over all surfaces of ped; moderate, medium subangular blocky structure; firm; roots common; many iron concretions; strongly acid; clear smooth boundary.

IIB3 (42-56") Pale brown (10YR 6/3 moist) silt loam; with many, fine, distinct, yellowish brown (10YR 5/4, 5/6, 5/8 moist) mottles and very weak clay coatings; weak, coarse, subangular blocky structure; friable;

roots occasional; many iron concretions; gritty, strongly acid; clear wavy boundary.

IIC (56-60") Mixed brown to yellowish brown (10YR 5/2, 5/6, 5/8 moist); sandy loam to gritty silt loam; massive structure; friable; roots occasional; occasional till pebbles; slightly acid.

Beecher Series (298)

Beecher soils are moderately dark colored, somewhat poorly drained, and developed in less than 18 inches of loess on silty clay loam till under mixed prairie-forest vegetation. They occur on very gently sloping upland till plains primarily on the border between soil area G-C and I on the general soil map. On the landscape Beecher soils are associated with the poorly drained Ashkum soils, the dark-colored Elliott soils, and light-colored Blount and Morley soils.

One mapping unit is shown on the soil map:

298B Beecher silt loam, 2 to 4 percent slopes

Some areas of bluffwash, mostly along the south bluff of the Illinois River east of Ottawa, are included with the Beecher soils. These bluffwash soil inclusions are in most instances less well developed than modal Beecher. A few other areas of 298B may occur on 0 to 2 percent slopes, and still fewer have moderate erosion. The Beecher soils are nearly all in cropland, with small areas in timber or pasture. Permeability is slow to moderately slow and available moisture capacity is high. Surface runoff is slow to medium. Surface organic matter content averages 3.0 percent.

Representative soil profile of Beecher silt loam, 10 feet east of fence in pasture, NW¼, SW¼, NW¼, NW¼ of Sec. 3, T33N, R3E:

A1 (0-8") Very dark brown (10YR 2/2 moist) silt loam; moderate fine to medium granular structure; friable; neutral, roots abundant; neutral; clear smooth boundary.

A2 (8-12") Dark grayish brown (10YR 4/2 moist) silt loam; very weak medium platy to moderate fine to medium granular structure; roots common; friable; neutral; clear smooth boundary.

B1t (12-15") Dark grayish brown (10YR 4/2 moist) silty clay loam, with common fine distinct grayish brown (10YR 5/2 moist) and yellowish brown (10YR 5/6 moist) mottles; moderate fine subangular blocky structure; roots common; firm; neutral; clear smooth boundary.

IIB21t (15-24") Dark grayish brown (10YR 4/2 moist) heavy silty clay loam, with common fine distinct grayish brown (10YR 5/2 moist) and yellowish brown (10YR 5/6 moist) mottles; weak medium to coarse prismatic structure breaking to moderate medium subangular and angular blocky, with dark gray (10YR 4/1 moist) thin discontinuous clay films; roots occasional; some till pebbles; firm; neutral; clear smooth boundary.

IIB22t (24-33") Grayish brown (10YR 5/2 moist) heavy silty clay loam, with common fine distinct yellowish brown (10YR 5/6 moist) mottles; weak to moderate medium to coarse prismatic structure breaking to moderate to strong medium angular blocky, with dark gray (10YR 4/1 moist) thin discontinuous clay films; till pebbles present; firm; slightly acid; clear smooth boundary.

IIB3t (33-36") Mixed grayish brown (2.5Y 5/2 moist) and brown (10YR 4/3 moist) heavy silty clay loam; moderate to strong medium to coarse angular blocky structure, with dark grayish brown (10YR 4/2 moist) thin discontinuous clay films; a few Fe-Mn concretions; till pebbles present; firm; neutral, abrupt smooth boundary.

IIC (36-40") Mixed grayish brown (2.5Y 5/2 moist) and brown (10YR 4/3 moist) silty clay loam; till; weak coarse angular blocky structure to massive; firm, calcareous.

Birkbeck Series (233)

Birkbeck soils are light colored, moderately well- to well-drained, and developed in 40 to 60 inches of loess over loam and silty clay loam glacial till under forest native vegetation. They occur on nearly level to sloping upland till plains in soil areas I and J on the general soil map. They are associated on the landscape with the light-colored somewhat poorly drained Sabina soils and in some areas with the light-colored poorly drained Traer soils.

Six mapping units are shown on the soil map:

233A Birkbeck silt loam, 0 to 2 percent slopes
233B Birkbeck silt loam, 2 to 4 percent slopes
233C Birkbeck silt loam, 4 to 7 percent slopes
233C2 Birkbeck silt loam, 4 to 7 percent slopes, eroded
233C3 Birkbeck soils, 4 to 7 percent slopes, severely eroded
233D2 Birkbeck silt loam, 7 to 12 percent slopes, eroded

A very few areas of 233B are moderately eroded. Some areas of 233A, 233B, 233C, 233C2, and 233D2 have 15 to 25 inches of loamy outwash between the loess and the glacial till. Minor acreages of 233D2 are strongly sloping and severely eroded. Birkbeck soils are largely under cropland, while some areas are in forest and pasture. Permeability is moderate and available moisture capacity is high. Surface runoff is moderate to rapid. Surface organic matter content averages 2.0 percent.

Representative profile of Birkbeck silt loam, 6 feet west of gate in NE corner of NE¼, SE¼, NE¼, NW¼ of Sec. 27, T36N, R3E:

Ap (0-7") Dark grayish brown (10YR 4/2 moist) silt loam, moderate fine crumb structure; friable; neutral; abrupt smooth boundary.

A2 (7-11") Yellowish brown (10YR 5/4 moist) silt loam; weak fine platy to moderate fine granular structure; friable; strongly acid; clear smooth boundary.

B1t (11-15") Yellowish brown (10YR 5/4 moist) light silty clay loam; moderate fine subangular blocky structure, with dark yellowish brown (10YR 4/4 moist) continuous clay films; firm medium acid; clear smooth boundary.

B21t (15-27") Dark yellowish brown (10YR 4/4 moist) silty clay loam; moderate fine subangular blocky structure, with dark brown (10YR 4/3 moist) continuous clay films; firm; very strongly acid; clear smooth boundary.

B22t (27-34") Dark yellowish brown (10YR 4/4 moist) silty clay loam; moderate medium subangular blocky structure, with dark brown (10YR 4/3 moist) continuous clay films; firm; very strongly acid; clear smooth boundary.

B23t (34-40") Dark yellowish brown (10YR 4/4 moist) silty clay loam; with few fine faint grayish brown (10YR 5/2 moist) and brown (10YR 5/3 moist) mottles; moderate medium subangular blocky structure, with dark brown (10YR 4/3 and 3/3 moist) continuous clay films; few fine iron concretions; firm; slightly acid; clear smooth boundary.

IIB3t (40-46") Dark brown (10YR 4/3 moist) to dark yellowish brown (10YR 4/4 moist) gritty silty clay loam, with few fine faint yellowish brown (10YR 5/4 moist) and brown (10YR 5/3 moist) mottles; moderate medium subangular blocky structure, with continuous verticle dark brown (10YR 3/3 moist) clay films; neutral; clear smooth boundary.

IIC (46-60") Yellowish brown (10YR 5/4 moist) loam; massive; friable; calcareous, till.

Blount Series (23)

Blount soils are light colored, somewhat poorly drained, and developed in less than 18 inches of loess on silty clay loam till under forest native vegetation. They occur on very gently sloping upland till plains in soil area I on the general soil map. They are associated on the landscape with the light-colored moderately well-drained Morley and Chatsworth soils.

Three mapping units are shown on the soil map:

23B Blount silt loam, 2 to 4 percent slopes
23C Blount silt loam, 4 to 7 percent slopes
23C2 Blount silt loam, 4 to 7 percent slopes, eroded

Some areas of 23B are moderately eroded, especially near the upper part of the slope class. 23C2 includes some delineations that have surface horizons a little darker than is normal for Blount. Some areas are bluff wash from the slopes along the south bluffs along the Illinois River between Marseilles and Seneca and these areas are slightly less well developed than modal Blount. A very small acreage of 23C2 is severely eroded. The Blount soils are mostly in cropland, but some are in timber and pasture. Permeability is slow to moderately slow. Available moisture capacity is high. Surface runoff is medium. Surface organic matter content averages 2.5 percent.

Representative profile of Blount silt loam, 25 feet east of road corner, NW¼, NW¼, SW¼, SW¼ of Sec. 30, T33N, R3E:

A1 (0-4") Very dark gray (10YR 3/1 moist) silt loam; moderate fine granular structure; friable; neutral; abrupt smooth boundary.

A2 (4-7") Grayish brown (10YR 5/2 moist) silt loam; moderate fine platy structure; friable; slightly acid; clear smooth boundary.

B1t (7-11") Brown (10YR 5/3 moist) to grayish brown (10YR 5/2 moist) silty clay loam, with few fine distinct yellowish brown (10YR 5/4 moist) mottles; fine to very fine subangular blocky structure, with patchy discontinuous light gray (10YR 7/2 moist) silt coatings and dark grayish brown (10YR 4/2 moist) discontinuous clay films; firm, medium acid; clear smooth boundary.

B21t (11-18") Brown (10YR 5/3 moist) to grayish brown (10YR 5/2 moist) heavy silty clay loam, with common fine distinct yellowish brown (10YR 5/8 moist) mottles; weak fine to medium prismatic structure breaking to moderate fine to medium subangular blocky, with dark grayish brown (10YR 4/2 moist) to grayish brown (10YR 5/2 moist) continuous clay films; firm; strongly acid; clear smooth boundary.

IIB22t (18-28") Grayish brown (10YR 5/2 moist) heavy silty clay loam to silty clay, with common fine distinct yellowish brown (10YR 5/6 and 5/8 moist) mottles; moderate medium to coarse prismatic structure breaking to moderate medium subangular blocky, with dark gray (10YR 4/1 moist) continuous clay films; very firm; strongly acid; abrupt smooth boundary.

IIC (28-40") Gray (10YR 5/1 to 6/1 moist) silty clay loam, with common fine distinct yellowish brown (10YR 5/8 moist) mottles; massive, very firm; calcareous, till.

Boone Series (397)

Boone soils are light colored, well drained, and developed in decomposed sandstone 20 to 40 inches thick over sandstone bedrock under forest native vegetation. They occur principally on strongly sloping to steep slopes along the Illinois, Fox, and Little Vermilion rivers.

One mapping unit is shown on the soil map:

397F2 Boone loamy fine sand, 18 to 30 percent slopes, eroded

A few areas of 397F2 are on slopes ranging from 4 to 12 percent and some areas have severe erosion. In some areas, especially along the Illinois River, the depth to sandstone bedrock will range down to 10 inches. These soils are normally in pasture or timber. Surface runoff is medium to rapid, permeability is very rapid, and available moisture capacity is low to very low. Surface organic matter content averages 1.0 percent.

Representative profile of Boone loamy fine sand, half way down north facing slope in SW¼, SW¼, SW¼, SW¼ of Sec. 14, T34N, R1E:

A1 (0-4") Very dark grayish brown (10YR 3/2 moist) to dark grayish brown (10YR 4/2 moist) loamy fine sand; weak very fine granular structure; very friable; medium acid; clear smooth boundary.

A2 (4-8") Brown (10YR 4/3 moist) loamy fine sand; very weak very fine platy structure; very friable; medium acid; clear smooth boundary.

C1 (8-15") Dark yellowish brown (10YR 4/4 moist) loamy fine sand; weak fine subangular blocky structure; very friable to loose; slightly acid; clear smooth boundary.

C2 (15-20") Yellowish brown (10YR 5/6 moist) to light yellowish brown (10YR 6/4 moist) fine sand; single grain; loose; slightly acid; abrupt wavy boundary.

R1 (20-32") Strong brown (7.5YR 5/6 moist) loose sandstone; slightly acid.

R2 (32-40") White (10YR 8/1 moist) St. Peter sandstone, with few fine faint yellowish brown (10YR 5/6 moist) mottles; slightly acid.

Brenton Series (149)

Brenton soils are dark colored, somewhat poorly drained, and developed in less than 40 inches of loess or silty material over stratified loamy outwash material under prairie native vegetation. They occur on nearly level to very gently sloping areas of glacial outwash plains and stream terraces and occur principally in soil area D with some in soil area M. They are associated on the landscape with the dark-colored, moderately well- to well-drained Proctor and the poorly drained Drummer soils.

Two mapping units are shown on the soil map:

149A Brenton silt loam, 0 to 2 percent slopes
149B Brenton silt loam, 2 to 4 percent slopes

A few small areas of 149A have surface horizons covered by 6 to 12 inches of dark silty overwash material. Brenton soils are almost entirely in cropland. Runoff is slow to medium, permeability is moderate, and available moisture capacity is high. Surface organic matter content averages 4.5 percent.

Representative profile of Brenton silt loam, 875 feet west of southeast corner of Sec. 10, 30 feet north of center of gravel road in SE¼, SW¼, SE¼, SE¼ of Sec. 10, T32N, R4E:

Ap (0-9") Black (10YR 2/1 moist) silt loam; moderate fine to medium granular structure; friable; neutral; abrupt smooth boundary.

A3 (9-14") Black (10YR 2/1 moist) to very dark brown (10YR 2/2 moist) heavy silt loam; moderate fine to medium granular structure; friable, slightly acid; clear smooth boundary.

B21t (14-20") Dark grayish brown (10YR 4/2 moist) silty clay loam, with many fine to medium distinct yellowish brown (10YR 5/4, 5/6, and 5/8 moist) mottles; moderate fine subangular blocky structure, with very dark grayish brown (10YR 3/2 moist) continuous clay films; common fine Fe-Mn concretions; firm; slightly acid; clear smooth boundary.

B22t (20-33") Dark grayish brown (10YR 4/2 moist) silty clay loam, with many fine to medium distinct yellowish brown (10YR 5/4, 5/6, and 5/8 moist) mottles; weak medium prismatic structure breaking to moderate medium subangular blocky, with dark grayish brown (10YR 4/2 moist) continuous clay films; common fine Fe-Mn concretions; firm; slightly acid, clear smooth boundary; few sand grains in lower part.

IIB3 (33-41") Dark grayish brown (2.5Y 4/2 moist) to grayish brown (2.5Y 5/2 moist) clay loam, with many fine to medium distinct olive brown (2.5Y 4/4 moist) and light olive brown (2.5Y 5/4 and 5/6 moist) mottles; weak to moderate medium subangular blocky structure; friable; neutral; clear smooth boundary.

IIC (41-46") Mixed light olive brown (2.5Y 5/4 and 5/6 moist) and yellowish brown (10YR 5/6 and 5/8 moist) sandy loam to loam; massive; friable; calcareous.

Bryce Series (235)

Bryce soils are very dark colored, poorly drained, and developed in 12 to 30 inches of loess or silty material over silty clay glacial till under swamp grass native vegetation. They occur in nearly level to depressional areas on upland till plains in soil area F on the general soil map. They are associated on the landscape with the dark-colored, somewhat poorly drained Swygert and the very dark-colored, very poorly drained Rantoul soils.

One mapping unit is shown on the soil map:

235 Bryce silty clay

A very few areas have 6 to 12 inches of silty overwash over the normal soil. A few areas occur on 2 to 4 percent slopes. Bryce soils are mostly in cropland. Permeability is slow, surface runoff is slow to ponded, and available moisture capacity is high. Surface organic matter content averages 6.0 percent.

Representative profile of Bryce silty clay, 230 feet south of northeast corner of Sec. 22, then 15 feet into field in NE¼, NE¼, NE¼, NE¼ of Sec. 22, T31N, R5E:

Ap (0-7") Black (N 2/ moist) silty clay; moderate fine to medium granular structure; roots common; firm; strongly acid; abrupt smooth boundary.

A12 (7-15") Black (10YR 2/1 to N 2/ moist) silty clay; moderate fine to medium granular structure; firm; slightly acid; clear smooth boundary.

B1g (15-18") Very dark gray (5Y 3/1 moist) silty clay; moderate fine subangular blocky structure, with black (N 2/ moist) continuous clay films; firm; slightly acid; clear smooth boundary.

B21g (18-25") Olive gray (5Y 4/2 moist) silty clay, with many fine distinct yellowish brown (10YR 5/6 and 5/8 moist) and dark gray (10YR 4/1 moist) mottles; moderate medium prismatic structure breaking to moderate medium subangular blocky, with dark olive gray (5Y 3/2 moist) continuous clay films; very firm, neutral; gradual smooth boundary.

B22g (25-33") Olive gray (5Y 5/2 moist) silty clay, with many fine distinct olive (5Y 5/6 moist) and yellowish brown (10YR 5/8) mottles; moderate medium prismatic structure breaking to moderate medium to coarse angular blocky, with olive gray (5Y 4/2 moist) continuous clay films; very firm; neutral; clear smooth boundary.

B3g (33-41") Gray (5Y 5/1 moist) silty clay, with many fine distinct olive (5Y 5/4 and 5/6 moist) mottles; moderate medium prismatic structure breaking to moderate medium to coarse angular blocky; with dark gray (5Y 4/1 moist) continuous clay films; very firm; neutral; clear smooth boundary.

Cg (41-50") Mixed gray (N 5/ moist), dark yellowish brown (10YR 4/4 moist), and yellowish brown (10YR 5/4, 5/6, 5/8 moist) silty clay till with stones and pebbles present; very weak coarse angular blocky structure to massive; very firm, calcareous.

Calco Series (400)

Calco soils are calcareous, dark colored, poorly drained, and developed in moderately fine-textured calcareous alluvium under predominantly swamp grass native vegetation with some trees. They occur primarily on the Illinois River floodplains west of Utica in soil area M on the general soil map. In some areas they are associated on the landscape with the calcareous dark-colored poorly drained Millington soils and the calcareous dark-colored somewhat poorly drained DuPage soils.

One mapping unit is shown on the soil map:

400 Calco silty clay loam

Some areas of 400 are swampy and are so indicated on the soil map. Where these soils are cleared and drained they are primarily used as cropland. Permeability is moderately slow, surface runoff is slow, and available moisture capacity is high to very high. Surface organic matter content averages 6.0 percent.

Representative profile of Calco silty clay loam, 50 feet east of turn in private lane in NE¼, NE40, NE160 of Sec. 22, T33N, R1E:

Ap (0-6") Very dark gray (10YR 3/1 moist) to black (10YR 2/1 moist) silty clay loam; moderate fine granular structure; friable; moderately alkaline; calcareous; abrupt smooth boundary.

A12 (6-21") Black (10YR 2/1 moist) silty clay loam; moderate medium to coarse granular structure; friable; moderately alkaline; calcareous; gradual smooth boundary.

A13 (21-31") Very dark gray (10YR 3/1 moist) to black (10YR 2/1 moist) silty clay loam; moderate medium to coarse granular structure; friable; moderately alkaline; calcareous; gradual smooth boundary.

Bg1 (31-49") Very dark gray (10YR 3/1 moist) silty clay loam, with few fine faint very dark grayish brown (10YR 3/2 moist) mottles; weak fine to medium subangular blocky structure; friable to firm; moderately alkaline; calcareous; gradual smooth boundary.

Bg2 (49-65") Dark brown (10YR 4/3 moist) (10YR 3/3 moist crushed) silty clay loam, with common fine distinct gray (5Y 5/1 moist) mottles; weak fine to medium subangular blocky structure; friable to firm; moderately alkaline, calcareous.

Camden Series (134)

Camden soils are light colored, well- to moderately well-drained, and developed in 24 to 36 inches of loess or silty material over stratified loamy outwash under forest native vegetation. They occur on glacial outwash plains and on stream terraces principally in soil areas I and J on the general soil map. They are associated on the landscape with the light-colored, somewhat poorly drained Starks soils.

Nine mapping units are shown on the soil map:

134A Camden silt loam, 0 to 2 percent slopes
134B Camden silt loam, 2 to 4 percent slopes
134C2 Camden silt loam, 4 to 7 percent slopes, eroded
134C3 Camden soils, 4 to 7 percent slopes, severely eroded
134D2 Camden silt loam, 7 to 12 percent slopes, eroded
134D3 Camden soils, 7 to 12 percent slopes, severely eroded
134E2 Camden silt loam, 12 to 18 percent slopes, eroded
134E3 Camden soils, 12 to 18 percent slopes, severely eroded
134F2 Camden silt loam, 18 to 30 percent slopes, eroded

In many areas, especially along stream terraces, Camden soils may be underlain by sand and gravel deposits at depths greater than 60 inches. Some areas of 134B are moderately eroded. Some areas of 134C2 and 134D2 have no erosion to slight erosion. Camden soils are mostly in cropland but some, especially the more sloping areas, are in timber and pasture. Permeability is moderate, runoff is slow to rapid, depending on slope, and available moisture capacity is high. Surface organic matter content averages 2.0 percent.

Representative profile of Camden silt loam, in middle of east rim of old gravel pit in NW¼, SW¼, NW¼ of Sec. 26, T33N, R5E:

A1 (0-3") Very dark grayish brown (10YR 3/2 moist) silt loam; weak fine crumb structure; friable; neutral; abrupt smooth boundary.

A21 (3-6") Dark grayish brown (10YR 4/2 moist) silt loam; strong fine platy structure; friable; slightly acid; clear slightly wavy boundary.

A22 (6-9") Dark yellowish brown (10YR 4/4 moist) silt loam; strong fine platy structure; friable slightly acid; clear smooth boundary.

B1 (9-15") Yellowish brown (10YR 5/6 moist) heavy silt loam; weak fine subangular blocky structure; friable; slightly acid; gradual smooth boundary.

B21t (15-22") Dark brown (7.5YR 4/4 moist) silty clay loam; moderate fine subangular blocky structure; firm; strongly acid; diffuse smooth boundary.

IIB22t (22-35") Dark yellowish brown (10YR 4/4 moist) silty clay loam; strong medium angular blocky structure, with dark grayish brown (10YR 4/2 moist) continuous clay coatings; few fine prominent very dark grayish brown (10YR 3/2 moist) Fe-Mn concretions; firm; strongly acid; gradual smooth boundary.

IIB23t (35-43") Dark yellowish brown (10YR 4/4 moist) to dark brown (7.5YR 4/4 moist) gritty silty clay loam; moderate coarse angular blocky structure, with dark yellowish brown (10YR 3/4 moist) continuous clay coatings; firm; strongly acid; gradual smooth boundary.

IIB3t (43-50") Dark brown (7.5YR 4/4 moist) fine sandy clay loam; massive; beta; very firm; medium acid; clear smooth boundary.

IIC (50-60") Dark brown (7.5YR 4/4 moist) very fine sandy loam stratified with thin layers of sand and silt loam; massive, friable; slightly acid to neutral.

Catlin Series (171)

Catlin soils are dark colored, moderately well- to well-drained, and developed in 40 to 60 inches of loess on loam and silty clay loam glacial till under prairie native vegetation. They occur on very gently sloping to sloping upland till plains in soil areas B and C on the general soil map. Area B is underlain by silty clay loam till and area C by loam till. They are associated on the landscape with the dark-colored, somewhat poorly drained Flanagan soils and the very dark-colored, poorly drained Drummer soils.

Five mapping units are shown on the soil map:

171B Catlin silt loam, 2 to 4 percent slopes
171C Catlin silt loam, 4 to 7 percent slopes
171C2 Catlin silt loam, 4 to 7 percent slopes, eroded
171C3 Catlin soils, 4 to 7 percent slopes, severely eroded
171D3 Catlin soils, 7 to 12 percent slopes, severely eroded

Some areas of 171B and 171C2 have moderately dark surfaces, especially where they occur near the light-colored timbered soils, and also a few areas have a 1- to 2-foot layer of stratified loamy outwash between less than 24 inches of loess and the glacial till. Some areas of 171D3 are moderately eroded. Permeability is moderate, runoff is medium, and available moisture capacity is high to very high. Surface organic matter content averages 3.5 percent.

Representative profile of Catlin silt loam, 898 feet south of northeast corner of Sec. 5 in road cut in NE¼, SE¼, NE¼ of Sec. 5, T35N, R2E:

A1 (0-11") Black (10YR 2/1 moist) to very dark gray (10YR 3/1 moist) silt loam; moderate fine granular structure; friable; neutral; clear smooth boundary.

A3 (11-14") Very dark grayish brown (10YR 3/2 moist) silt loam; moderate fine to medium granular structure; friable; medium acid; clear smooth boundary.

B1 (14-17") Dark brown (10YR 3/3 moist) light silty clay loam; moderate very fine to fine subangular blocky structure, with very dark gray (10YR 3/1 moist) discontinuous clay films; firm; medium acid; clear smooth boundary.

B21t (17-22") Brown (10YR 4/3 moist) silty clay loam; weak fine prismatic structure breaking to moderate fine subangular blocky, with dark brown (10YR 3/3 moist) discontinuous clay films; firm; strongly acid; clear smooth boundary.

B22t (22-26") Yellowish brown (10YR 5/4 moist) silty clay loam, with few fine distinct yellowish brown (10YR 5/8 moist) and very dark gray (10YR 3/1 moist) mottles; weak fine prismatic structure breaking to moderate fine subangular blocky, with dark yellowish brown (10YR 4/4 moist) discontinuous clay films; firm; medium acid; clear smooth boundary.

B31 (26-41") Yellowish brown (10YR 5/6 moist) heavy silt loam to light silty clay loam; weak coarse angular blocky structure; friable; neutral; abrupt smooth boundary.

IIB32 (41-46") Brown (10YR 5/3 moist) heavy loam to light silty clay loam; weak coarse angular blocky structure; friable to firm; neutral to weakly calcareous; gradual smooth boundary.

IIC (46-60") Brown (10YR 5/3 moist) loam; massive; friable; calcareous.

Channahon Series (315)

Channahon soils are dark colored, well drained, and developed in 10 to 20 inches of loamy material over limestone bedrock under prairie native vegetation. They occur on very gently sloping to gently sloping terraces along the Illinois River, and occur principally in soil area M on the general soil map. They are associated with the very dark-colored, poorly drained Joliet soils.

One mapping unit is shown on the soil map:

315B Channahon silt loam, 2 to 6 percent slopes

The areas of 315B just southwest of Utica differ from modal Channahon in that the soil material over the limestone is sandy instead of loamy and is indicated on the soil map by sand spot symbols. A few areas are found on nearly level slopes. Some of the areas near the high end of the slope range for this soil are moderately eroded. Channahon soils are mostly in cropland, but some are in pasture. Permeability is moderate. Surface runoff is medium. Available moisture capacity is low. Surface organic matter content averages 2.5 percent.

Representative profile of Channahon silt loam, 25 feet west of telephone pole in very southeast corner of SE¼, SE¼, SE¼, SE¼ in Sec. 11, T33N, R1E:

A1 (0-8") Very dark grayish brown (10YR 3/2 moist) silt loam; moderate fine granular structure; friable; abundant roots; some limestone fragments; mildly alkaline; clear smooth boundary.

Bt (8-17") Dark yellowish brown (10YR 3/4 moist) light silty clay loam to light clay loam; moderate fine and medium subangular blocky structure; friable; plentiful roots; thin discontinuous dark brown (10YR 3/3 moist) clay films; some limestone fragments and sand grains; mildly alkaline; abrupt smooth boundary.

IIR (17-60") Light olive gray (5Y 6/2 moist) limestone bedrock; calcareous.

Chatsworth Series (241)

Chatsworth soils are light colored, moderately well- to well-drained, and developed in less than 12 inches of loess on medium-textured material over silty clay, silty clay loam, and clay glacial till under forest vegetation. They occur on sloping to steep upland till plains mostly on the slopes associated with drainageways. They occur primarily in soil areas I and K on the general soil map. They are associated with the light-colored, moderately well-drained Morley soils in silty clay loam till areas and with the light-colored, moderately well-drained St. Clair and light-colored, somewhat poorly drained Nappanee soils in the silty clay till and till areas.

Five mapping units are shown on the soil map:

241D3 Chatsworth soils, 7 to 12 percent slopes, severely eroded

241E3 Chatsworth soils, 12 to 18 percent slopes, severely eroded

141F2 Chatsworth silt loam, 18 to 30 percent slopes, eroded

241G2 Chatsworth silt loam, 30 to 60 percent slopes, eroded

241G3 Chatsworth soils, 30 to 60 percent slopes, severely eroded

A very small acreage of the 241D3 mapping unit is somewhat poorly drained. Some of the 241E3 is eroded instead of severely eroded. A very few areas have medium-textured outwash material 1 to 3 feet thick over the glacial till. A small acreage of the 241F2 mapping unit is severely eroded. Chatsworth soils are principally in woodland and pasture. Permeability is very slow and runoff is rapid to very rapid. Available moisture capacity is low to moderate. Surface organic matter content averages 2.0 percent.

Representative profile of Chatsworth silt loam, eroded, 115 feet southwest of gate on 35-percent slope in SE¼, SE¼, NW¼ of Sec. 30, T33N, R4E:

A1 (0-2") Very dark grayish brown (10YR 3/2 moist) silt loam; moderate fine granular structure; friable; slightly acid; abrupt smooth boundary.

B1 (2-8") Olive brown (10YR 4/4 moist) silty clay, with common fine faint dark grayish brown (2.5Y 4/2 moist) mottles; moderate to strong fine to medium subangular and angular blocky structure; firm, slightly acid; clear smooth boundary; till pebbles common.

B2 (8-14") Olive brown (10YR 4/4 moist) silty clay, with common fine faint grayish brown (2.5YR 5/2, 4/2 moist) mottles; weak medium to coarse angular blocky; very firm; calcareous; clear smooth boundary; till pebbles common.

C (14-40") Light olive brown (2.5Y 5/4 moist) silty clay, with common fine faint grayish brown (2.5Y 5/2 moist) mottles; massive; very firm, calcareous; till pebbles common.

Clarence Series (147)

Clarence soils are dark colored, somewhat poorly drained, and developed in less than 18 inches of loess or silty material over clay-textured glacial till under prairie native vegetation. They occur on very gently sloping to gently sloping upland till plains in soil area F on the general soil map. They are associated on the landscape in La Salle County with the dark-colored, poorly drained Bryce soils.

Three mapping units are shown on the soil map:

147B Clarence silt loam, 2 to 4 percent slopes
147B2 Clarence silt loam, 2 to 4 percent slopes, eroded
147C2 Clarence silt loam, 4 to 7 percent slopes, eroded

A small acreage of 147B occurs on 0 to 2 percent slopes and a small acreage of 147C2 is severely eroded. Clarence soils are mostly in cropland. Permeability is very slow and surface runoff is moderate to rapid. Available moisture capacity is moderate. Surface organic matter content averages 3.5 percent.

Representative profile of Clarence silt loam, in road cut in very southwest corner of Sec. 36, T32N, R4E:

A1 (0-9") Black (10YR 2/1 moist) heavy silt loam; moderate fine to medium granular structure; friable; medium acid; clear smooth boundary.

A3 (9-14") Very dark gray (10YR 3/1 moist) heavy silt loam; moderate fine to medium granular structure; friable; strongly acid; clear smooth boundary.

IIB21t (14-18") Dark grayish brown (2.5Y 4/2 moist) silty clay, with few fine distinct olive brown (2.5Y 4/4 moist) mottles; moderate fine subangular blocky structure, with dark gray (10YR 4/1 moist) discontinuous clay films; firm to very firm; medium acid; clear smooth boundary.

IIB22t (18-29") Dark grayish brown (2.5Y 4/2 moist) clay, with common fine faint olive brown (2.5Y 4/4 moist) mottles; moderate medium to coarse prismatic structure breaking to moderate medium subangular and angular blocky, with dark gray (10YR 4/1 moist) discontinuous clay films; slickensides-like coatings on ped surfaces in lower part of horizon; very firm; neutral; clear smooth boundary.

IIC (29-50") Dark grayish brown (2.5Y 4/2 moist) clay, with common distinct olive brown (2.5Y 4/4 moist) and gray (N 5/ moist) mottles; very weak coarse prismatic structure breaking to weak coarse angular blocky to massive; few till pebbles; very firm; calcareous till.

Dickinson Series (87)

Dickinson soils are dark colored, well drained, and developed in sandy alluvial deposits primarily under prairie native vegetation. They occur on nearly level to gently sloping stream terraces along the Illinois, Fox, and Vermilion rivers, primarily in areas M and L on the general soil map. They are associated on the landscape with the moderately dark-colored, well-drained Sparta soils and the dark-colored, somewhat poorly drained Ridgeville soils.

Three mapping units are shown on the soil map:

87A Dickinson fine sandy loam, 0 to 2 percent slopes

87B Dickinson fine sandy loam, 2 to 4 percent slopes

87C2 Dickinson fine sandy loam, 4 to 7 percent slopes, eroded

Some areas of 87A and 87B have loam-textured surfaces. A very few areas of 87B and 87C2 have clay loam subsoil horizons and light loam surfaces. Dickinson soils are mostly cropland. Permeability is moderately rapid to rapid and runoff is medium. Available moisture-holding capacity is moderate. Surface organic matter content averages 3.0 percent.

Representative profile of Dickinson fine sandy loam, 120 feet west-northwest of bank of Indian Creek in SE¼, SE¼, SW¼, SE¼ of Sec. 2, T35N, R3E:

A1 (0-10") Very dark gray (10YR 3/1 moist) fine sandy loam; weak fine crumb structure; very friable; neutral; clear smooth boundary.

A3 (10-18") Very dark grayish brown (10YR 3/2 moist) fine sandy loam; weak fine crumb to structureless; very friable; neutral; clear smooth boundary.

B2 (18-26") Dark brown (10YR 4/3 to 3/3 moist) loam to heavy fine sandy loam; weak medium subangular blocky structure to massive; friable; neutral; clear smooth boundary.

C1 (26-36") Dark brown (10YR 4/3 moist) heavy fine sandy loam; massive; very friable to loose; moderately alkaline; calcareous; gradual smooth boundary.

C2 (36-54") Grayish brown (10YR 5/2 moist) heavy fine sandy loam, with few fine faint yellowish brown (10YR 5/6, 5/8 moist) mottles; massive very friable to loose; moderately alkaline; calcareous; gradual smooth boundary.

C3 (54-60") Grayish brown (10YR 5/2 moist) light fine sandy loam to fine loamy sand, with many medium distinct yellowish red (5YR 4/6 moist) mottles; single grain; loose; moderately alkaline; calcareous.

Dodge Series (24)

Dodge soils are light colored, well drained, and developed in 20 to 36 inches of loess or silty material over loam glacial till under forest native vegetation. They occur on gently sloping to sloping upland till plains in soil area J on the general soil map. They are associated on the landscape primarily with the light-colored, well-drained Birkbeck and Hennepin soils.

Three mapping units are shown on the soil map:

24C2 Dodge silt loam, 4 to 7 percent slopes, eroded
24C3 Dodge soils, 4 to 7 percent slopes, severely eroded
24D2 Dodge silt loam, 7 to 12 percent slopes, eroded

A very small acreage of 24C2 and 24D2 is moderately well drained. Dodge soils are mostly cultivated, but some are in pasture and woodland. Permeability is moderate and surface runoff is medium to rapid. Available moisture capacity is high. Surface organic matter content averages 2.0 percent.

Representative profile of Dodge silt loam, 170 feet west of farm lane, 50 feet west of old oak tree, on north side of road in SE¼, SW¼, NE¼, NE¼ of Sec. 9, T35N, R4E:

A1 (0-4") Dark grayish brown (10YR 4/2 moist) (10YR 5/2 dry) silt loam, moderate fine crumb structure, roots abundant; friable; neutral; abrupt smooth boundary.

A2 (4-11") Yellowish brown (10YR 5/4 moist) (10YR 7/3 dry) silt loam; weak fine platy breaking to weak fine granular structure; roots common; friable; slightly acid; abrupt smooth boundary.

B1 (11-16") Brown (10YR 4/3 moist) heavy silt loam; moderate very fine subangular blocky structure; roots common; friable; slightly acid; clear smooth boundary.

B21t (16-25") Dark yellowish brown (10YR 4/4 moist) silty clay loam; moderate fine to medium subangular and angular blocky structure, with dark brown (10YR 4/3 moist) continuous clay films and light gray (10YR 7/2) discontinuous silt coatings; firm; strongly acid; roots occasional; clear smooth boundary.

IIB22t (25-30") Brown (10YR 4/3 moist) gritty heavy silty clay loam; moderate medium subangular and angular blocky structure; with dark brown (7.5YR 3/2 moist) continuous clay films; roots occasional; medium acid; abrupt wavy boundary.

IIC (30-50") Yellowish brown (10YR 5/4 moist) loam; massive; many till pebbles; firm; calcareous till.

Downs Series (386)

Downs soils are moderately dark colored, moderately well- to well-drained, and developed in more than 5 feet of loess under mixed prairie-forest native vegetation. They occur on very gently sloping to gently sloping uplands of soil area A on the general soil map adjacent to soil areas that have lighter colored, forest-derived soils. They are associated on the landscape with the moderately dark-colored, somewhat poorly drained Atterberry soils and the very dark-colored poorly drained Sable soils. The dark-colored Tama soils and the light-colored Fayette soils, both moderately well- to well-drained, may also occur as landscape associates.

Two mapping units are shown on the soil map:

386B Downs silt loam, 2 to 4 percent slopes
386C2 Downs silt loam, 4 to 7 percent slopes, eroded

A very few areas of 386B are moderately eroded. A few areas of 386C2 are slightly eroded rather than moderately eroded, and small limited acreages are somewhat poorly drained. Downs soils are mostly in cropland with minor areas in pasture. Permeability is moderate and surface runoff is medium to rapid. Available moisture capacity is very high. Surface organic matter content averages 3.0 percent.

Representative profile of Downs silt loam, 70 feet west of road culvert at entrance to field in NE¼, SW¼, NW¼, NW¼ of Sec. 35, T35N, R1E:

A1 (0-8") Very dark brown (10YR 2/2 moist) silt loam; moderate fine granular structure; roots abundant; friable; slightly acid; clear smooth boundary.

A2 (8-13") Dark brown (10YR 3/3 moist) (10YR 6/3 dry) silt loam; weak fine platy structure breaking to moderate fine granular, with light gray (10YR 7/2) patchy silt coatings; roots abundant; friable; medium acid; abrupt smooth boundary.

B1 (13-21") Dark brown (10YR 4/3 moist) light silty clay loam to heavy silt loam; moderate very fine subangular blocky structure; with dark yellowish brown (10YR 3/4 moist) continuous clay films and light gray (10YR 7/2) patchy silt coatings; roots occasional; many fine Fe-Mn concretions; firm; strongly acid; clear smooth boundary.

B2t (21-35") Dark yellowish brown (10YR 4/4 moist) silty clay loam, with few fine faint yellowish brown (10YR 5/4 moist) and light yellowish brown (10YR 6/4 moist) mottles in lower part; moderate fine to medium subangular blocky structure, with dark yellowish brown (10YR 4/4 moist) continuous clay films and light gray (10YR 7/2) patchy silt coatings; roots occasional; many fine Fe-Mn concretions; firm; strongly acid; clear smooth boundary.

B3t (35-43") Brown (10YR 4/3 moist) light silty clay loam, with many fine distinct grayish brown (10YR 5/2 moist) and yellowish brown (10YR 5/4, 5/6, 5/8 moist) mottles; moderate medium subangular blocky structure, with brown (10YR 4/3 moist) continuous clay films and light gray (10YR 7/2 moist) patchy silt coatings; many fine Fe-Mn concretions; firm; strongly acid; clear smooth boundary.

C (43-60") Dark yellowish brown (10YR 4/4 moist) to yellowish brown (10YR 5/4 moist) silt loam, with many fine distinct grayish brown (10YR 5/2 moist), light brownish gray (10YR 6/2 moist), and brownish yellow (10YR 6/6 moist), and many fine faint yellowish brown (10YR 5/6 moist) mottles; massive; many fine Fe-Mn concretions; medium acid to neutral; many fine Fe-Mn concretions.

Dresden Series (325)

Dresden soils are moderately dark colored, well drained, and developed in 24 to 40 inches of loamy material over calcareous gravels and sands under mixed prairie-forest native vegetation. They occur on very gently sloping to gently sloping outwash plains and stream terraces principally along the Fox River in area L on the general soil map. They are associated on the landscape with the light-colored, well-drained Fox soils and the dark-colored, well-drained Warsaw and Rodman soils.

Two mapping units are shown on the soil map:

325B Dresden silt loam, 2 to 4 percent slopes

325C2 Dresden silt loam, 4 to 7 percent slopes, eroded

A very few areas of 325B are moderately eroded. Dresden soils are mostly in cropland. Permeability is moderate in the A and B horizons and rapid to very rapid in the underlying gravel and sand. Surface runoff is slow to medium. Available moisture capacity is moderate to low. Surface organic matter content averages 3.0 percent.

Representative profile of Dresden silt loam, 1,000 feet south of angle road corner, 200 feet west in field in NW¼, SE¼, NE¼ of Sec. 25, T36N, R5E:

Ap (0-7") Very dark brown (10YR 2/2 moist) silt loam; moderate fine granular structure; friable; neutral; abrupt smooth boundary.

A2 (7-11") Dark grayish brown (10YR 4/2 moist) silt loam; weak fine granular structure; friable; medium acid; clear smooth boundary.

B21t (11-19") Dark brown (10YR 4/3 moist) silty clay loam; weak fine and medium subangular blocky structure; firm; slightly acid; gradual smooth boundary.

B22t (19-26") Dark yellowish brown (10YR 4/4 moist) clay loam; weak medium subangular blocky and blocky structure; firm; slightly acid; abrupt irregular boundary.

IIB3 (26-35") Dark brown (7.5YR 3/2 moist) gravelly clay loam; weak medium subangular blocky structure; firm; neutral; abrupt wavy boundary.

IIC (35-60") Dark yellowish brown (10YR 4/4 moist) gravel and some sand; structureless; single grain; loose; calcareous.

Drummer Series (152)

Drummer soils are very dark colored, poorly drained, and developed in 40 to 60 inches of loess over stratified loamy to sandy outwash and sandy loam, loam, and silty clay loam glacial till under marsh grass-prairie native vegetation. They occur on nearly level to depressional areas of loess-covered upland till areas and loess-covered outwash plains in soil areas B, C, D, and H on the general soil map. They are found on the landscape with Flanagan, Catlin, Elburn, Plano, Andres, Symerton, Brenton, and Proctor soils as their poorly drained associate.

One mapping unit is shown on the soil map:

152 Drummer silty clay loam

Drummer is a very extensive soil in La Salle County, as it is in the northeastern part of the state. Some areas of 152 have 6 to 12 inches of dark-colored silty clay loam to silt loam overwash over the normal soil, while a very few areas have light-colored overwash. A few areas are on slopes of 2 to 4 percent. Some areas in soil area H in the southeast corner of the county have thinner loess and thicker outwash between the underlying silty clay loam till and the loess. Drummer soils are almost exclusively in cropland. Permeability is moderate. Surface runoff is slow to ponded. Available moisture capacity is very high. Surface organic matter content averages 6.0 percent.

Representative profile of Drummer silty clay loam, 397 feet south of quarterline fence and 85 feet west into field in NE¼, SE¼, SE¼ of Sec. 14, T34N, R2E:

Ap (0-8") Black (10YR 1/1 moist) silty clay loam; weak medium angular blocky structure breaking to weak coarse granular; roots common; firm; neutral; abrupt smooth boundary.

A12 (8-15") Black (10YR 1/1 moist) silty clay loam; moderate fine angular blocky structure breaking to strong coarse granular; roots common; firm; neutral; clear smooth boundary.

B21g (15-19") Grayish brown (2.5Y 5/2 moist) silty clay loam; moderate fine angular to subangular blocky structure with a slight tendency to prismatic, with black (10YR 1/1 moist) continuous clay films. Roots common, frequent krotovinas are encountered from here to 60 inches; firm; neutral; clear smooth boundary.

B22g (19-26") Grayish brown (2.5Y 5/2 moist) silty clay loam, with common fine faint light olive brown (2.5Y 5/6 moist) mottles; weak medium prismatic structure breaking to medium angular blocky structure, with black (10YR 2/1 moist) continuous clay films; roots common; few fine Fe-Mn concretions; firm; neutral; clear smooth boundary.

B31g (26-40") Olive gray (5Y 5/2 moist) light silty clay loam, with many fine distinct light olive brown (2.5Y 5/6 moist) and yellowish brown (10YR 5/8 moist) mottles; moderate fine to medium prismatic structure breaking to moderate medium angular blocky, with dark grayish brown (2.5Y 4/2 moist) discontinuous clay films; roots common; many small Fe-Mn concretions; firm; neutral to mildly alkaline; abrupt wavy boundary.

IIB32g (40-50") Gray (5Y 5/1 moist) silt loam, with many medium distinct light olive brown (2.5Y 5/6 moist) and yellowish brown (10YR 5/8 moist) mottles; thin layers of loam are encountered; weak coarse angular blocky structure to massive; roots few; friable; moderately alkaline; calcareous; abrupt wavy boundary.

IICg (50-60") Mixed pale yellow (5Y 7/3 moist), yellowish brown (10YR 5/8 moist) and dark gray (N 4/ moist) (10YR 5/6 moist crushed) fine sandy loam with some fine gravel and thin layers of fine sand and silt; friable; mildly alkaline; calcareous.

DuPage Series (321)

DuPage soils are calcareous, dark colored, well-to moderately well-drained, and developed in calcareous stream alluvium under prairie native vegetation. They occur on the nearly level to very gently sloping floodplains of the Illinois, Fox, and Vermilion rivers in soil area M and the floodplain portion along the Vermilion River in soil area I of the general soil map. They are associated on the floodplain landscape with the very dark-colored, poorly drained, calcareous Millington and Calco soils.

Two mapping units are shown on the soil map:

321A DuPage silt loam, 0 to 2 percent slopes

321B DuPage silt loam, 2 to 4 percent slopes

Very occasionally a small area of 321B has slopes a little over 4 percent. DuPage soils are most often in cropland, but some areas are in forest or pasture. Permeability is moderate. Surface runoff is slow to medium. Available moisture capacity is high to very high. Surface organic matter content averages 4.0 percent.

Representative profile of DuPage silt loam, 330 feet along curved lane to southwest, then 300 feet west in NE¼, SE¼, SE¼ of Sec. 20, T33N, R1E:

Ap (0-9") Black (10YR 2/1 moist) gritty silt loam; moderate fine granular structure; friable; moderately alkaline; calcareous; abrupt smooth boundary; many small shells present.

A12 (9-14") Very dark brown (10YR 2/2 moist) gritty silt loam; moderate fine to medium granular structure; friable; moderately alkaline; calcareous; clear smooth boundary.

A13 (14-27") Very dark grayish brown (10YR 3/2 moist) to dark brown (10YR 3/3 moist) loam; weak medium granular structure; friable; moderately alkaline; calcareous; gradual smooth boundary.

C (27-60") Brown (10YR 4/3 moist) loam to gritty silt loam; weak medium to coarse granular structure to massive; friable; moderately alkaline; calcareous.

Elburn Series (198)

Elburn soils are dark colored, somewhat poorly drained, and developed in 40 to 60 inches of loess over loamy stratified material or sandy loam till under prairie native vegetation. They occur on nearly level to very gently sloping loess-mantled outwash and till plains in soil area D on the general soil map. They are associated on the landscape with the dark-colored, well-drained Plano soils and the very dark-colored, poorly drained Drummer soils.

Two mapping units are shown on the soil map:

198A Elburn silt loam, 0 to 2 percent slopes
198B Elburn silt loam, 2 to 4 percent slopes

A very few areas of 198B are moderately eroded. Elburn soils in soil area D on the general soil map occurring north of the Fox River in the very northeast corner of the county are underlain by sandy loam till. Elburn soils in the other D soil areas in the county are underlain by loamy stratified outwash materials. Elburn soils are almost entirely in cropland. Permeability is moderate and surface runoff is slow to medium. The available moisture capacity is high. Surface organic matter content averages 4.5 percent.

Representative profile of Elburn silt loam, 250 feet west of north-south county line road, 60 feet north of center of gravel road in field in SE¼, SE¼, SE¼, SE¼ of Sec. 13, T36N, R5E:

Ap (0-9") Black (10YR 2/1 moist) silt loam; moderate fine granular structure; friable; neutral; abrupt smooth boundary.

A12 (9-14") Very dark gray (10YR 3/1 moist) silt loam; moderate fine granular structure; friable; neutral; clear smooth boundary.

B1 (14-16") Dark grayish brown (10YR 4/2 moist) light silty clay loam; moderate very fine subangular blocky structure; firm; slightly acid; clear smooth boundary.

B21t (16-24") Dark grayish brown (10YR 4/2 moist) to grayish brown (10YR 5/2 moist) silty clay loam with many fine distinct yellowish brown (10YR 5/4 and 5/6 moist) mottles; moderate fine to very fine subangular blocky structure, with continuous very dark grayish brown (10YR 3/2 moist) clay films; common fine Fe-Mn concretions; firm; medium acid, clear smooth boundary.

B22t (24-32") Grayish brown (10YR 5/2 moist) silty clay loam, with many fine to medium yellowish brown (10YR 5/4, 5/6 and 5/8 moist) and light grayish brown (10YR 6/2 moist) mottles; weak medium prismatic structure breaking to moderate fine subangular blocky, with dark grayish brown (10YR 4/2 moist) continuous clay films; many fine Fe-Mn concretions; firm; strongly acid; clear smooth boundary.

B23t (32-40") Grayish brown (10YR 5/2 moist) to brown (10YR 5/3 moist) silty clay loam, with many fine to coarse light brownish gray (10YR 6/2 moist) and yellowish brown (10YR 5/8, 5/6, and 5/4 moist) mottles; weak medium prismatic structure breaking to moderate fine subangular blocky, with dark grayish brown (10YR 4/2 moist) continuous clay films; many fine Fe-Mn concretions; firm; medium acid; clear smooth boundary.

B31 (40-48") Brown (10YR 5/3 and 4/3 moist) heavy silt loam to light silty clay loam, with common fine faint yellowish brown (10YR 5/4 and 5/6 moist) and few fine prominent yellowish brown (10YR 5/8 moist) mottles; weak medium subangular blocky structure, with dark brown (10YR 4/3 moist) discontinuous clay films, common fine Fe-Mn concretions; friable; medium acid; abrupt smooth boundary.

IIB32 (48-56") Brown (10YR 5/3 moist) to yellowish brown (10YR 5/4 moist) gritty silty clay loam to light clay loam, with common few distinct yellowish brown (10YR 5/6 and 5/8 moist) mottles; weak medium subangular blocky structure; common fine Fe-Mn concretions; friable; slightly acid; clear smooth boundary.

IIB33 (56-61") Brown (10YR 5/3 moist) to yellowish brown (10YR 5/4 moist) clay loam, with few fine prominent yellowish brown (10YR 5/8 moist) mottles; very weak medium subangular blocky structure; few fine Fe-Mn concretions; friable; slightly acid; abrupt smooth boundary.

IIC (61-66") Yellowish brown (10YR 5/4 moist) to light yellowish brown (10YR 6/4 moist) sandy loam, with few fine faint yellowish brown (10YR 5/6 and 5/8 moist) mottles; massive; few fine Fe-Mn concretions; friable; calcareous.

Elliott Series (146)

Elliott soils are dark colored, somewhat poorly drained, and developed in less than 18 inches of loess or silty material over silty clay loam glacial till under prairie native vegetation. They occur on nearly level to gently sloping glacial till plains primarily in soil area G on the general soil map. They are associated on the landscape with the dark-colored, moderately well-drained Varna soils and the very dark-colored, poorly drained Ashkum soils.

Four mapping units are shown on the soil map:

146A Elliott silt loam, 0 to 2 percent slopes
146B Elliott silt loam, 2 to 4 percent slopes
146B2 Elliott silt loam, 2 to 4 percent slopes, eroded
146C2 Elliott silt loam, 4 to 7 percent slopes, eroded

A very few acres of 146B2 are severely eroded and a few areas of 146C2 have no erosion to slight erosion. Elliott soils are almost entirely in cropland. Permeability is moderately slow and surface runoff is medium. Available moisture capacity is high. Surface organic matter content averages 4.5 percent.

Representative profile of Elliott silt loam, in SW¼, SW¼, SW¼, SW¼ of Sec. 36, T34N, R5E:

A1 (0-9") Black (10YR 2/1 moist) heavy silt loam; moderate fine to medium granular structure; friable; neutral; clear smooth boundary.

A3 (9-13") Very dark gray (10YR 3/1 moist) heavy silt loam; moderate fine to medium granular structure; friable; neutral; clear smooth boundary.

IIB1t (13-17") Dark grayish brown (10YR 4/2 moist) heavy silty clay loam, with few fine distinct yellowish brown (10YR 5/4 moist) mottles; moderate fine to medium subangular blocky structure; firm; slightly acid; clear smooth boundary.

IIB21t (17-29") Dark brown (10YR 4/3 moist) heavy silty clay loam to light silty clay, with few fine distinct gray (10YR 6/1 moist) mottles; moderate fine prismatic structure breaking to strong fine subangular blocky, with dark grayish brown (10YR 4/2 moist) clay films; firm; medium acid; clear smooth boundary.

IIB3 (29-35") Dark grayish brown (10YR 4/2 moist) silty clay loam, with few fine distinct gray (10YR 6/1 moist) mottles; moderate fine to medium angular blocky structure; very firm; moderately alkaline; calcareous; gradual smooth boundary.

IIC (35-40") Dark grayish brown (10YR 4/2 moist) silty clay loam, with few fine distinct gray (10YR 6/1 moist) mottles; massive; very firm; moderately alkaline; calcareous.

Fayette Series (280)

Fayette soils are light colored, well- to moderately well-drained, and developed in more than 5 feet of loess under forest native vegetation. They occur on very gently sloping to gently sloping loess-covered uplands, primarily in soil area I with small acreages in soil area J on the general soil map. They are associated on the landscape with the light-colored, somewhat poorly drained Stronghurst soils and the light-colored, poorly drained Traer soils.

Two mapping units are shown on the soil map:

280B Fayette silt loam, 2 to 4 percent slopes
280C2 Fayette silt loam, 4 to 7 percent slopes, eroded

A fairly large portion of 280B is moderately well drained and some areas have moderate erosion. A very few areas of 280C2 either occur on slopes of 7 to 12 percent, have no erosion to slight erosion, or are severely eroded. Fayette soils are principally in timber and pasture, but some areas are in cropland. Permeability is moderate, surface runoff medium, and available moisture capacity is very high. Surface organic matter content averages 2.0 percent.

Representative profile of Fayette silt loam, 133 feet west of pasture gate, 129 feet south in NW¼, NE¼, NE¼, NW¼ of Sec. 11, T34N, R1E:

A1 (0-6") Very dark grayish brown (10YR 3/2 moist) to dark grayish brown (10YR 4/2 moist) (10YR 6/2 dry) silt loam; moderate fine to medium granular structure; roots abundant; friable; medium acid; clear smooth boundary.

A21 (6-9") Dark grayish brown (10YR 4/2 moist) silt loam; weak fine platy structure breaking to moderate fine granular; some very dark grayish brown (10YR 3/2 moist) worm channel fillings; roots abundant; friable; medium acid; abrupt wavy boundary.

A22 (9-13") Brown (10YR 5/3 moist) silt loam; weak fine platy structure breaking to moderate very fine to fine subangular blocky; roots abundant; friable; medium acid; abrupt smooth boundary.

B1 (13-16") Brown (10YR 5/3 moist) light silty clay loam; moderate fine subangular blocky structure, with light gray (10YR 7/2) patchy silt coatings; roots common; friable; medium acid; clear wavy boundary.

B21t (16-22") Dark yellowish brown (10YR 4/4 moist) silty clay loam; moderate very fine to fine subangular blocky structure, with light gray (10YR 7/2) patchy silt coatings; roots common; firm; medium acid; gradual wavy boundary.

B22t (22-32") Dark yellowish brown (10YR 4/4 moist) silty clay loam; moderate medium subangular blocky structure, with brown (10Y 4/3 moist) continuous clay films; roots common; firm; medium acid; gradual smooth boundary.

B31t (32-41") Dark yellowish brown (10YR 4/4 moist) light silty clay loam; moderate coarse subangular blocky structure, with some light gray (10YR 7/2) patchy silt coatings and dark yellowish brown (10YR 4/4 moist) discontinuous clay films; roots common; firm; medium acid; gradual wavy boundary.

B32 (41-60") Yellowish brown (10YR 5/4 moist) heavy silt loam to light silty clay loam; weak to moderate coarse subangular blocky structure; with some light gray (10YR 7/2) patchy silt coatings and dark yellowish brown (10YR 4/4 moist) discontinuous clay films; roots common; few fine black (N 2/ moist) Fe-Mn concretions; friable; strongly to medium acid.

Flanagan Series (154)

Flanagan soils are dark colored, somewhat poorly drained, and developed in 40 to 60 inches of loess on loam and silty clay loam till under prairie native vegetation. They occur on nearly level to gently sloping loess-covered glacial till plains in soil areas B and C on the general soil map. Soil area B is underlain by loam till and soil area C is underlain by silty clay loam till. Flannagan soils are associated on the landscape with the dark-colored, moderately well- to well-drained Catlin soils, and the very dark-colored, poorly drained Drummer soils.

Four mapping units are shown on the soil map:

154A Flanagan silt loam, 0 to 2 percent slopes

154B Flanagan silt loam, 2 to 4 percent slopes

154B2 Flanagan silt loam, 2 to 4 percent slopes, eroded

154C2 Flanagan silt loam, 4 to 7 percent slopes, eroded

A very few areas of 154A and 154B have 6 to 12 inches of dark-colored silty overwash. Flanagan soils are almost entirely in cropland. Permeability is moderate and surface runoff is slow to medium. Available moisture capacity is high to very high. Surface organic matter content averages 4.5 percent.

Representative profile of Flanagan silt loam, 187 feet south of quarterline fence in road cut in NW¼, NW¼, SW¼, SW¼ of Sec. 15, T34N, R3E:

A1 (0-10") Black (10YR 2/1 moist) silt loam; moderate very fine crumb structure; roots abundant; friable; neutral; clear smooth boundary.

A3 (10-14") Very dark gray (10YR 3/1 moist) silt loam; moderate fine granular structure; roots abundant; friable; slightly acid; clear smooth boundary.

B1 (14-17") Very dark gray (10YR 3/1 moist) to very dark grayish brown (10YR 3/2 moist) light silty clay loam; moderate fine subangular blocky structure; roots common; friable; medium acid; clear smooth boundary.

B21t (17-21") Dark grayish brown (10YR 4/2 moist) silty clay loam; moderate fine subangular blocky structure, roots common; few black (10YR 2/1 moist) to very dark gray (10YR 3/1 moist) worm casts; firm; medium acid; clear smooth boundary.

B22t (21-29") Light olive brown (2.5Y 4/4 moist) heavy silty clay loam, with common fine distinct yellowish brown (10YR 5/6 and 5/8 moist) and gray (10YR 6/1 moist) mottles; moderate fine to medium subangular blocky structure, with dark grayish brown (10YR 4/2 moist) continuous clay films; roots occasional; many fine Fe-Mn concretions; firm; medium acid; clear smooth boundary.

B23t (29-40") Grayish brown (2.5Y 5/2 moist) silty clay loam, with many fine to medium distinct yellowish brown (10YR 5/4, 5/6 and 5/8 moist) and gray (10YR 6/1 moist) mottles; moderate medium subangular blocky structure, with dark grayish brown (10YR 4/2 moist) continuous clay films; roots occasional; firm; slightly acid; abrupt smooth boundary.

IIB3 (40-42") Olive brown (2.5Y 4/4 moist) gritty silty clay loam, with common fine faint grayish brown (2.5Y 5/2 moist) and few fine distinct yellowish brown (10YR 5/4 moist) mottles; moderate medium angular blocky structure; roots occasional; firm; neutral; abrupt smooth to wavy boundary.

IIC (42-60") Olive brown (2.5Y 4/4 moist) loam with numerous pebbles and small stones and common fine distinct gray (5Y 5/1 moist) and yellowish brown (10YR 5/4 moist) mottles; moderate coarse angular blocky structure grading to massive in lower part; some secondary carbonates in cracks; firm; moderately alkaline; calcareous.

Fox Series (327)

Fox soils are light colored, well drained, and developed in 20 to 40 inches of loamy outwash material over stratified calcareous gravel and sand under forest native vegetation. They occur on very gently sloping to strongly sloping terraces principally along the Fox River in soil area L on the general soil map and also in minor areas along the other major streams in the county. They are associated on the landscape in many cases with the light-colored, well-drained Camden and St. Charles soils.

Four mapping units are shown on the soil map:

327B Fox silt loam, 2 to 4 percent slopes
327C2 Fox silt loam, 4 to 7 percent slopes, eroded
327D2 Fox silt loam, 7 to 12 percent slopes, eroded
327E2 Fox silt loam, 12 to 18 percent slopes, eroded

A few areas of 327B are on 0 to 2 percent slopes and a few areas are less than 20 inches to gravel. Also a very few areas of 327B have moderately dark surfaces. Some areas of 327C2 have no erosion to slight erosion. A few areas of 327D2 and 327E2 are severely eroded. Fox soils are mostly in timber and pasture, but some are in cropland. Permeability is moderate and surface runoff ranges from slow to rapid. Available moisture capacity is low to moderate. Surface organic matter content averages 2.0 percent.

Representative profile of Fox silt loam, in southwest corner of gravel pit in SW¼, SE¼, SE¼, SE¼ of Sec. 8, T36N, R5E:

A1 (0-4") Dark grayish brown (10YR 4/2 moist) silt loam, moderate fine granular structure; friable; medium to slightly acid; abrupt smooth boundary.

A2 (4-8") Brown (10YR 5/3 moist) silt loam, moderate medium platy structure; friable; medium acid; clear smooth boundary

B1t (8-12") Brown (10YR 4/3 moist) heavy silt loam, moderate fine subangular and angular blocky structure; friable; some light gray (10YR 7/2 moist) silt coatings on peds; medium acid; clear smooth boundary.

B21t (12-25") Brown (10YR 4/3 to 7.5YR 4/4 moist) silty clay loam, weak medium prismatic structure breaking to moderate medium angular and subangular blocky structure; thin nearly continuous clay films, firm, medium acid; clear smooth boundary.

IIB22t (25-30") Brown (10YR 4/3 to 7.5YR 4/4 moist) gritty silty clay loam to clay loam; weak medium prismatic structure breaking to moderate medium angular and subangular blocky; thin nearly continuous clay films on peds; slightly acid to neutral; abrupt smooth boundary.

IIB3t (30-40") Dark brown (10YR 3/3 to 7.5YR 3/2 moist) gravelly clay loam, weak medium subangular blocky structure to massive, some clay films; friable to firm; mildly alkaline; abrupt wavy boundary.

IIC (40-60") Yellowish brown (10YR 5/4 moist) gravel and sand, single grain, some stratification; loose; calcareous.

Frankfort Series (320)

Frankfort soils are moderately dark colored, somewhat poorly drained, and developed in a thin mantle of silty material, usually loess, on silty clay glacial till under mixed prairie-forest vegetation. They occur on very gently sloping to gently sloping upland glacial till plains and moraines, principally near the borderline between soil areas F and K on the general soil map in the eastern part of the county. They are associated on the landscape with the very dark-colored, poorly drained Bryce soils and with other somewhat poorly drained soils such as the dark-colored Swygert and the light-colored Nappanee.

Three mapping units are shown on the soil map:

320B Frankfort silt loam, 2 to 4 percent slopes
320B2 Frankfort silt loam, 2 to 4 percent slopes, eroded
320C2 Frankfort silt loam, 4 to 7 percent slopes, eroded

A few acres of 320C2 have no erosion to slight erosion. Frankfort soils are mostly in cropland, but some are in timber and pasture. Permeability is slow and surface runoff medium to rapid. Available moisture capacity is moderate. Surface organic matter content averages 3.0 percent.

Representative profile of Frankfort silt loam, approximately 475 feet south of ditch in NE¼, NE¼, SE¼, NE¼ of Sec. 6, T34N, R5E:

A1 (0-6") Very dark grayish brown (10YR 3/2 moist) silt loam; moderate fine to medium granular; friable; neutral; clear smooth boundary.

A2 (6-9") Dark gray (10YR 4/1 moist) silt loam; weak medium platy structure to moderate fine granular; friable; medium acid; abrupt smooth boundary.

B1t (9-13") Dark grayish brown (10YR 4/2 moist) silty clay loam; moderate very fine subangular blocky structure; firm; medium acid; clear smooth boundary.

B21t (13-19") Dark grayish brown (2.5Y 4/2 moist) silty clay, with few fine faint olive brown (2.5Y 4/4 moist) mottles; weak medium prismatic structure breaking to moderate fine to medium subangular blocky, with very dark grayish brown (2.5Y 3/2 moist) discontinuous clay films; few fine Fe-Mn concretions; very firm; medium acid; clear smooth boundary.

IIB22t (19-24") Grayish brown (2.5Y 5/2 moist) heavy silty clay, with common fine distinct yellowish brown (10YR 5/8 moist) and light olive brown (2.5Y 5/4 moist) mottles, weak medium prismatic structure breaking to moderate medium angular blocky, with dark grayish brown (2.5Y 4/2 moist) discontinuous clay films; common fine Fe-Mn concretions; very firm; neutral; clear smooth boundary.

IIC (24-40") Light olive brown (2.5Y 5/4 moist) silty clay, with many fine distinct yellowish brown (10YR 5/6 and 5/8 moist), grayish brown (2.5Y 5/2 moist), and light brownish gray (2.5Y 6/2 moist) mottles; weak coarse angular blocky structure to massive, with some gray (N 6/ moist) discontinuous clay films; very firm; moderately alkaline; calcareous.

Gale Series (413)

Gale soils are light colored, well drained, and developed in loess 18 to 36 inches over sandstone bedrock under forest native vegetation. They occur on very gently sloping to strongly sloping areas along the Illinois River where sandstone is found near the surface. The Little Vermilion River and Utica are located in one of the larger areas of Gale soils. Gale soils occur in association with other soils which are underlain by sandstone, such as the Hesch series.

Three mapping units are shown on the soil map:

413B Gale silt loam, 2 to 4 percent slopes
413C2 Gale silt loam, 4 to 7 percent slopes, eroded
413E3 Gale soils, 12 to 18 percent slopes, severely eroded

A few areas of 413B are on 0 to 2 percent slopes and a few areas of 413C2 have no erosion to slight erosion. A very few areas of 413E3 are moderately eroded. Gale soils are mostly in timber and pasture, but some are in cropland. Permeability is moderate and surface runoff is medium to rapid. Available moisture capacity is moderate. Surface organic matter content averages 2.0 percent.

Representative profile of Gale silt loam, about 400 feet northeast of center of Sec. 12, T33N, R1E (ordinarily the upper profile is slightly to medium acid, but this site is near a cement plant):

A1 (0-6") Dark grayish brown (10YR 4/2 moist) silt loam; weak to moderate fine crumb structure; roots abundant; friable; neutral; abrupt smooth boundary.

A2 (6-15") Dark yellowish brown (10YR 4/4 moist) silt loam; weak fine platy structure breaking to weak to moderate medium to coarse granular; roots common; friable; neutral; clear smooth boundary.

B1 (15-19") Dark yellowish brown (10YR 4/4 moist) heavy silt loam; moderate fine subangular blocky structure, with light gray (10YR 7/1) patchy silt coatings; roots common; friable; neutral; clear smooth boundary.

B2t (19-31") Dark yellowish brown (10YR 4/4 moist) silty clay loam; moderate fine to medium subangular blocky structure, with light gray (10YR 7/1 moist) patchy silt coatings and dark brown (10YR 4/3 moist) continuous clay films; roots occasional; firm; slightly acid; clear smooth boundary.

IIB3 (31-41") Dark yellowish brown (10YR 4/4 moist) gritty silty clay loam; weak medium subangular blocky structure; with dark brown (10YR 4/3 moist) continuous clay films; roots occasional; a few pebbles; firm; strongly acid; abrupt wavy boundary.

IIR (41-60") Light gray (10YR 7/1 moist) weakly cemented St. Peter sandstone; slightly to medium acid, many feet thick.

Harpster Series (67)

Harpster soils are very dark colored, poorly drained, calcareous, and developed in silty material derived from glacial till, outwash, or loess under swamp grass native vegetation. They occur on nearly level to depressional areas primarily in soil association areas A, B, C, D, and E. Occasionally a delineation will be found in other dark-colored soil association areas. They normally occur in association with such low-lying soils as Sable, Drummer, and Streator.

Two mapping units are shown on the soil map:

67 Harpster silty clay loam
W67 Harpster silty clay loam, wet

A few areas of 67 are on 2 to 4 percent slopes and a few other areas have silt loam surfaces. A very few areas have 6 to 12 inches of primarily dark-colored overwash. W67 is normally too wet for crop production, but can be drained if outlets are found. Except for W67, almost all the Harpster soils are in cropland. Permeability is moderate to moderately slow and surface runoff is slow to ponded. Available moisture capacity is high to very high. Surface organic matter content averages 5.5 percent.

Representative profile of Harpster silty clay loam, at southwest corner of SW¼, SE¼ of Sec. 29, T36N, R4E:

$A1_{ca}$ (0-13") Black (10YR 2/1 moist) silty clay loam; moderate fine granular structure; friable; calcareous; clear smooth boundary.

$A3_{ca}$ (13-19") Black (10YR 2/1 moist) silty clay loam; very fine subangular blocky structure; friable; calcareous; clear smooth boundary.

$B2_g$ (19-26") Dark gray (10YR 4/1 moist) to very dark gray (10YR 3/1 moist) silty clay loam; weak fine to medium subangular blocky structure; friable; weakly calcareous; gradual smooth boundary.

$B3_g$ (26-36") Gray (5Y 5/1 moist) light silty clay loam, with common medium faint yellowish brown (10YR 5/4 and 5/8 moist) mottles; weak coarse angular blocky structure; friable; weakly calcareous; gradual smooth boundary; krotovinas common.

Cg (36-50") Gray (5Y 5/1 moist) silt loam, with common medium faint yellowish brown (10YR 5/4 and 5/8 moist) mottles; massive; friable; calcareous.

Harvard Series (344)

Harvard soils are moderately dark colored, well- to moderately well-drained, and developed in a very thin covering of loess or silty material on loamy outwash or alluvial sediments under mixed prairie-forest native vegetation. They occur on nearly level to gently sloping outwash plains and on old stream terraces along the Illinois, Fox, and Vermilion rivers. They are associated on the landscape with the moderately dark-colored, somewhat poorly drained Millbrook soils and the very dark-colored, poorly drained Drummer soils.

Three mapping units are shown on the soil map:

344A Harvard silt loam, 0 to 2 percent slopes
344B Harvard silt loam, 2 to 4 percent slopes
344C2 Harvard silt loam, 4 to 7 percent slopes, eroded

Some areas of 344B are moderately eroded. Some areas of 344C2 are slightly eroded and a very few severely eroded. Most of the Harvard soils are in cropland. Permeability is moderate and surface runoff medium. Available moisture capacity is high. Surface organic matter content averages 2.5 percent.

Representative profile of Harvard silt loam, approximately 150 feet west of southeast corner of Sec 6, T33N, R2E:

Ap (0-7") Very dark grayish brown (10YR 3/2 moist) silt loam; moderate fine granular structure; neutral; abrupt smooth boundary.

B1 (7-10") Brown (10YR 4/3 moist) light silty clay loam; weak to moderate very fine subangular blocky structure; friable; neutral; clear smooth boundary.

B21t (10-22") Brown (10YR 4/3 moist) silty clay loam; moderate fine subangular blocky structure, with light gray (10YR 7/2) patchy silt coatings and dark brown (10YR 3/3 moist) discontinuous clay films; firm; slightly acid; clear smooth boundary.

B22t (22-30") Dark yellowish brown (10YR 4/4 moist) to yellowish brown (10YR 5/4 moist) silty clay loam; moderate fine angular and subangular blocky structure, with light gray (10YR 7/2) patchy silt coatings and dark brown (10YR 4/3 moist) discontinuous clay films; firm; medium acid; clear smooth boundary.

IIB3t (30-33") Dark yellowish brown (10YR 4/4 moist) gritty light silty clay loam; weak to moderate medium subangular blocky structure, with light gray (10YR 7/2) patchy silt coatings and dark brown (10YR 4/3 moist) discontinuous clay films; firm; medium acid; abrupt wavy boundary.

IIC (33-50") Dark yellowish brown (10YR 4/4 moist) loam to fine sandy loam, stratified; massive, friable to loose; medium acid.

Hennepin Series (25)

Hennepin soils are light colored, well-drained, and developed primarily in loam and sandy glacial till, but in some areas in La Salle County they developed in loamy outwash under forest native vegetation. They occur on strongly sloping to steep slopes primarily in soil area J in northeastern and southern parts of the county. The light-colored, well-drained Strawn, St. Charles, Camden, and Dodge soils are associated with Hennepin on the same landscape in many places.

Four mapping units are shown on the soil map:

25E2 Hennepin loam, 12 to 18 percent slopes, eroded
25F2 Hennepin loam, 18 to 30 percent slopes, eroded
25F3 Hennepin soils, 18 to 30 percent slopes, severely eroded
25G3 Hennepin soils, 30 to 60 percent slopes, severely eroded

Because of their sloping to steep positions on the landscape, Hennepin soils tend to have more variation in profile characteristics within any one delineation than is normal for most other soils in the county. The 25E2 mapping unit contains many areas with severe erosion and areas where the depth to calcareous material is 20 to 25 inches. Also, a few areas of 25E2 occur on 7 to 12 percent slopes. A very few areas of 25F3 are more sandy than normal and the 25G3 mapping unit contains many areas which are only moderately eroded. Hennepin soils are mostly in timber and pasture. They are rarely in cropland. Permeability is moderate and surface runoff is rapid to very rapid. Available moisture capacity is high. Surface organic matter content averages 2.0 percent.

Representative profile of Hennepin loam, northwest corner of NE¼, NE¼ of Sec. 11, T35N, R3E:

A1 (0-6") Dark grayish brown (10YR 4/2 moist) loam; moderate medium granular structure; friable; few rock fragments; few pebbles; neutral; clear smooth boundary.

B (6-12") Brown (10YR 4/3 moist) loam; moderate medium and coarse granular structure; friable; many rock fragments; many pebbles; mildly alkaline; calcareous in lower part.

C (12-40") Brown (10YR 5/3 moist) loam; massive; friable; many rock fragments; many pebbles; calcareous.

Hesch Series (390-389, 389, 537)

Hesch soils in La Salle County consist of three different soils shown on the soil map. First, Hesch complex (390-389) consists of two soils that could not be separated readily on the soil map — Hesch fine sandy loam (390) and Hesch loamy sand, shallow variant (389). The second Hesch soil, Hesch loamy sand, shallow variant (389), occurs not only in the complex listed above, but also as a soil mapped separately. The third Hesch soil, Hesch sandy loam, gray subsoil variant (537), is poorly drained and mapped as a separate soil.

Hesch Complex (390-389)

Hesch complex (390-389) consists of two soils that could not be readily separated on the soil map. They are Hesch fine sandy loam (390) and Hesch loamy sand, shallow variant (389).

Hesch fine sandy loam (390) soils are dark-colored, well-drained sandy soils developed in 20 to 40 inches of sandy material over sandstone bedrock under prairie native vegetation. Hesch complex occurs on nearly level to gently sloping areas, primarily on the flood plains and terraces along the Illinois River between Utica and Seneca in soil area M on the general soil map. They are associated on the landscape with the other Hesch soils described here.

Three mapping units are shown on the soil map:

390-389A or VA Hesch complex, 0 to 2 percent slopes

390-389B or VB Hesch complex, 2 to 4 percent slopes

390-389C2 or VC2 Hesch complex, 4 to 7 percent slopes, eroded

The major portion (65 to 75 percent) of all 390-389 mapping units are similar to the soil description above. The remaining 25 to 35 percent consist of Hesch loamy sand, shallow variant (389). Some areas of all three 390-389 mapping units have loam-textured surfaces. A very few areas of 390-389B are somewhat poorly drained and a very few areas of 390-389C2 are slightly eroded. Permeability is moderate to moderately rapid to rapid, and surface runoff is medium to slow. Available moisture capacity is low. Surface organic matter content averages 2.5 percent.

Representative profile of Hesch fine sandy loam, 250 feet north of drainageway and 20 feet east of farm lane in NE¼, NW¼, SW¼, NE¼ of Sec. 28, T33N, R5E:

Ap (0-8") Very dark grayish brown (10YR 3/2 moist) fine sandy loam; weak fine granular structure; friable; medium acid; abrupt smooth boundary.

A12 (8-10") Very dark grayish brown (10YR 3/2 moist) fine sandy loam; weak to moderate fine granular structure; slightly acid; clear smooth boundary.

B1 (10-13") Yellowish brown (10YR 5/6 moist) fine sandy loam; weak fine subangular blocky structure; friable; medium to strongly acid; clear smooth boundary.

B2t (13-19") Yellowish brown (10YR 5/6 moist) to brownish yellow (10YR 6/6 moist) heavy fine sandy loam to loam, weak to moderate fine subangular blocky structure, with thin patchy clay films; friable; strongly acid; gradual smooth boundary.

B3t (19-29") Brownish yellow (10YR 6/6 moist) fine sandy loam to loam; weak fine subangular blocky structure, with thin patchy clay films; friable; strongly acid; abrupt smooth boundary.

R (29"+) Brownish yellow (10YR 6/6 moist) to yellowish brown (10YR 5/6 moist) sandstone; acid; some mica-like flakes in the sandstone.

Hesch Loamy Sand, Shallow Variant (389)

Hesch loamy sand, shallow variant soils are dark colored, well drained, and developed in less than 10 inches of sandy material over sandstone primarily under prairie native vegetation. They occur on nearly level to very gently sloping areas, principally on the floodplains and terraces along the Illinois River from near Utica to Seneca in soil area M on the general soil map. They are associated on the landscape with the well-drained Hesch complex soils (390-389) and the poorly drained Hesch sandy loam, gray subsoil variant soils (537).

Two mapping units are shown on the soil map:

389A Hesch loamy sand, shallow variant, 0 to 2 percent slopes

389B Hesch loamy sand, shallow variant, 2 to 4 percent slopes

389A includes some areas which are somewhat poorly drained and a very few areas which are 10 to 24 inches to sandstone rather than less than 10 inches. Some 389B is moderately eroded and a few areas have dark grayish-brown surface horizons. These areas are normally in pasture or woodland, being too shallow for cropland. Permeability is rapid to the top of the sandstone. Surface runoff is usually very slow. Available moisture capacity is very low. Surface organic matter content averages 2.0 percent.

Representative profile of Hesch loamy sand, shallow variant, 277 feet west of fence extending south of Illinois Route 71 in SE¼, SE¼, SE¼, NW¼ of Sec. 21, T33N, R3E:

A1 (0-5") Very dark brown (10YR 2/2 moist) to very dark gray (10YR 3/1 moist) loamy sand; single grain; loose, neutral; clear smooth boundary.

B (5-7") Strong brown (7.5YR 5/8 moist) loamy sand; single grain; loose, neutral; some dark brown (7.5YR 4/4 moist) sandstone fragments; abrupt smooth boundary.

R (7-15") Light gray (10YR 7/2 moist) to light brownish gray (10YR 6/2 moist) St. Peter sandstone; slightly acid.

Hesch Sandy Loam, Gray Subsoil Variant (537)

Hesch sandy loam, gray subsoil variant soils are dark colored, poorly drained, and developed in 20 to 40 inches of sandy material over sandstone bedrock under swamp and prairie grass native vegetation. They occur in nearly level to depressional areas in the floodplains and terraces along the Illinois River between Utica and Seneca in soil area M on the general soil map. They occur on the landscape with the well-drained Hesch complex soils (390-389) and the Hesch loamy sand, shallow variant soils (389).

One mapping unit is shown on the soil map:

537 Hesch sandy loam, gray subsoil variant

Included in the 537 mapping unit are areas which have loam surfaces and a few other areas which are 40 to 60 inches to sandstone. It also includes some areas that are somewhat poorly drained. These soils are frequently in cropland but sometimes are in timber or pasture. Permeability is moderate to moderately rapid and surface runoff is slow to medium. Available moisture capacity is low to moderate. Surface organic matter content averages 4.0 percent.

Representative profile of Hesch sandy loam; gray subsoil variant (537), 135 feet south of road culvert, then 44 feet west of center of road in SW¼, NE¼, SE¼ of Sec. 19, T33N, R3E:

Ap (0-7") Black (10YR 2/1 moist) sandy loam to light loam; weak fine granular structure; friable; neutral; abrupt smooth boundary.

A12 (7-13") Black (10YR 2/1 moist) sandy loam to light loam; moderate fine granular structure; few fine Fe-Mn concretions; friable, slightly acid; clear smooth boundary.

B1g (13-18") Very dark grayish brown (10YR 3/2 moist) to dark grayish brown (10YR 4/2 moist) sandy loam to loam; weak fine to medium subangular blocky structure; few fine Fe-Mn concretions; friable; medium acid; clear smooth boundary.

B2gt (18-32") Mixed grayish brown (2.5Y 5/2 moist), light brownish gray (2.5Y 6/2 moist), and light gray (2.5Y 7/2 moist) heavy sandy loam to loam, with many fine prominent yellowish brown (10YR 5/8 moist) and yellowish red (5YR 4/8 moist) mottles; moderate medium subangular blocky structure; friable; strongly acid; clear smooth boundary.

B3g (32-37") Light brownish gray (2.5Y 6/2 moist) loamy sand, with common coarse prominent yellowish red (5YR 4/8 moist), brown (7.5YR 4/4 moist) and grayish brown (2.5Y 5/2 moist) mottles; weak medium to coarse subangular blocky structure; loose; strongly acid; clear smooth boundary.

R (37-40") Mixed light yellowish brown (2.5Y 6/4 moist) and light gray (2.5Y 7/2 moist) St. Peter sandstone; neutral to slightly acid.

Houghton Series (103)

Houghton soils are very dark-colored, noncalcareous, very poorly drained organic soils developed in herbaceous organic deposits more than 50 inches thick under primarily swampy native vegetation. They usually occur in depressional areas. Even though of limited extent, they occur in nearly all parts of the county. They are associated on the landscape with a wide variety of mineral soils.

Two mapping units are shown on the soil map:

103 Houghton muck

103+ Houghton silt loam, overwash

Some areas of 103 have inadequate drainage for normal cultivation and a very few areas are on 2 to 4 percent slopes. The 103+ mapping unit has a thin 6- to 12-inch layer of dark silt loam to light silty clay loam material over a normal Houghton muck profile. Many of the Houghton muck soil areas are in cropland, but some are a little too wet for cultivation and are left in pasture or are idle. Permeability is rapid and surface runoff is very slow to ponded. Available moisture capacity is very high.

Representative profile of Houghton muck, 790 feet east of west quarter corner and 230 feet north of half-line fence, in SW¼, SE¼, SW¼, NW¼ of Sec. 26, T36N, R3E:

Oa1p (0-10") Black (10YR 1/1 moist) muck; massive; very friable; neutral; clear smooth boundary.

Oa2 (10-40") Black (10YR 1/1 moist) muck; massive; very friable; neutral; gradual smooth boundary.

Oa3 (40-60") Black (10YR 2/1 moist) muck; massive; very friable; slightly acid.

Joliet Series (314)

Joliet soils are dark colored, poorly drained, and developed in 10 to 20 inches of alluvium or glacial drift on limestone bedrock under swamp grass native vegetation. They occur on nearly level to slightly depressional areas in the floodplains of the Illinois River between Utica and Seneca where limestone occurs at shallow depths. They are associated on the landscape with the dark-colored, poorly drained Millsdale soils and the dark-colored, well-drained Channahon soils.

One mapping unit is shown on the soil map:

314 Joliet silty clay loam

Most areas of 314 are in pasture, but a few areas are in cropland. Occasionally there are areas that are idle because of wetness. Permeability is moderate and surface runoff is slow. Available moisture capacity is low. Surface organic matter content averages 4.5 percent.

Representative profile of Joliet silty clay loam, 150 feet east of bypass road in NW¼, SW¼, NW¼, SW¼ of Sec. 16, T33N, R2E:

A1 (0-9") Black (10YR 2/1 moist) silty clay loam with some sand; moderate medium granular structure; firm; neutral; clear smooth boundary.

A3 (9-15") Very dark brown (10YR 2/2 moist) silty clay loam with some sand; weak fine and medium granular structure; firm; neutral; clear smooth boundary.

Bg (15-19") Dark gray (N 4/ moist) silty clay loam with some sand; common fine distinct yellowish brown (10YR 5/8 moist) mottles; weak fine and medium subangular blocky structure; firm; moderately alkaline; abrupt smooth boundary.

R (19"+) Level bedded grayish, calcareous, limestone bedrock.

Kendall Series (242)

Kendall soils are light colored, somewhat poorly drained, and developed in 40 to 60 inches of loess over loamy outwash or sandy loam till under forest native vegetation. They occur on nearly level to gently sloping areas primarily in soil area J on the general soil map and occasionally are found in soil areas I and K. They are associated on the landscape with the moderately well- to well-drained, light-colored St. Charles soils. In other areas where the loess is thinner, they are associated with the Camden and Starks soils.

Two mapping units are shown on the soil map:

242A Kendall silt loam, 0 to 2 percent slopes

242B Kendall silt loam, 2 to 4 percent slopes

A very few areas of 242B have moderate erosion. Kendall soils are mostly in cropland, but a small area is in timber or pasture. Permeability is moderate and surface runoff is slow to medium. Available moisture capacity is high. Surface organic matter content averages 2.0 percent.

Representative profile of Kendall silt loam, 540 feet east of northeast corner of farmstead in NW¼, NW¼, NW¼, NE¼ of Sec. 35, T35N, R3E (this site is a small mapping inclusion of Kendall within an area of Virgil soils):

A1 (0-4") Very dark gray (10YR 3/1 moist) (10YR 5/1 dry) silt loam; moderate fine to medium granular structure; roots abundant; friable; neutral; abrupt smooth boundary.

A2 (4-10") Dark grayish brown (2.5Y 4/2 moist) (10YR 6/1 dry) silt loam; weak fine to medium platy structure breaking to moderate very fine subangular blocky, with light gray (10YR 7/1) patchy silt coatings; roots common; friable; neutral; clear smooth boundary.

B1 (10-14") Dark grayish brown (2.5Y 4/2 moist) (10YR 6/1 dry) very light silty clay loam; weak medium platy structure breaking to moderate fine subangular to angular blocky, with light gray (10YR 7/1) patchy silt coatings; roots common; friable; slightly acid; abrupt smooth boundary.

B21t (14-16") Dark grayish brown (2.5Y 4/2 moist) silty clay loam, with common fine distinct yellowish brown (10YR 5/4, 5/6, and 5/8 moist) mottles; moderate fine to medium subangular with some angular blocky structure, with light gray (10YR 7/1) patchy silt coatings and dark grayish brown (2.5Y 4/2 moist) continuous clay films; firm; strongly acid; clear smooth boundary.

B22t (16-23") Grayish brown (2.5Y 5/2 moist) silty clay loam, with many fine distinct light grayish brown (2.5Y 6/2 moist) and yellowish brown (10YR 5/6 and 5/8 moist) mottles; moderate medium prismatic structure breaking to moderate medium angular blocky, with dark gray (10YR 4/1 moist) continuous clay coatings; roots occasional; many fine Fe-Mn concretions; firm; strongly acid; clear smooth boundary.

B23t (23-31") Light olive brown (2.5Y 5/6 moist) to light brownish gray (2.5Y 6/2 moist) silty clay loam, with many fine distinct yellowish brown (10YR 5/4, 5/6, and 5/8 moist) mottles; weak medium prismatic structure breaking to moderate medium to coarse angular blocky with grayish brown (2.5Y 5/2 moist) continuous clay films and some black (10YR 2/1 moist) discontinuous clay films on vertical faces; roots occasional; many fine Fe-Mn concretions; firm; medium acid; clear smooth boundary.

B31 (31-40") Mixed light olive brown (10YR 5/4 moist) and yellowish brown (10YR 5/4, 5/6 and 5/8 moist) light silty clay loam; weak coarse angular and subangular blocky structure, with dark gray (10YR 4/1 moist) discontinuous clay films and some black (10YR 2/1 moist) patchy clay films on vertical faces; roots occasional; many fine Fe-Mn concretions; firm; neutral; abrupt wavy boundary.

IIB32 (40-45") Mixed grayish brown (2.5Y 5/2 moist) and yellowish brown (10YR 5/4, 5/6, and 5/8 moist) gritty silt loam; weak coarse angular blocky structure; friable; neutral to weakly calcareous; gradual smooth boundary.

IIC (45-55") Grayish brown (2.5Y 5/2 moist) sandy loam, with many fine distinct yellowish brown (10YR 5/6 and 5/8 moist) mottles; massive; friable; calcareous.

Kernan Series (554)

Kernan soils are light colored, somewhat poorly drained, and developed in 35 to 55 inches of loess over silty clay glacial till under forest native vegetation. They occur on very gently sloping areas principally along the Vermilion River in soil area I where it borders soil area E in T32N, R2E. They are associated on the landscape with the St. Clair, Nappanee, and Streator soils.

One mapping unit is shown on the soil map:

554B Kernan silt loam, 2 to 4 percent slopes

Some areas of 554B have moderately dark surface horizons and other areas are moderately well drained. Much of the area of Kernan soils is in cropland, but some is in timber and pasture. Permeability is moderately slow to slow and surface runoff is slow to medium. Available moisture capacity is high. Surface organic matter content averages 2.5 percent.

Representative profile of Kernan silt loam, about 765 feet north of farmstead lane along gravel road, then 50 feet east into woods in NW¼, NW¼, SE¼, NE¼ of Sec. 7, T32N, R2E:

A1 (0-5") Very dark grayish brown (10YR 3/2 moist) silt loam; moderate fine crumb structure; friable; plentiful roots; neutral; abrupt smooth boundary.

A2 (5-14") Grayish brown (10YR 5/2 moist) silt loam; weak thin platy breaking to moderate fine and medium granular structure with gray (10YR 5/1) patchy silt coatings; friable; plentiful roots; slightly acid; clear smooth boundary.

B1t (14-17") Brown (10YR 5/3 moist) heavy silt loam to light silty clay loam with few fine faint grayish brown (10YR 5/2 moist) and yellowish brown (10YR 5/6 moist) mottles; weak fine subangular blocky structure with thin discontinuous light gray (10YR 7/1) silt coatings; friable; few roots; medium to strongly acid; clear smooth boundary.

B21t (17-30") Mixed grayish brown (10YR 5/2 moist), brown (10YR 5/3 moist), and yellowish brown (10YR 5/4 moist) heavy silty clay loam; moderate medium angular and subangular blocky structure with moderately thick continuous dark grayish brown (10YR 4/2 moist) and dark brown (10YR 4/3 moist) clay films; firm; few roots; strongly acid; clear smooth boundary.

B22t (30-36") Mixed light brownish gray (10YR 6/2 moist), grayish-brown (10YR 5/2 moist) and yellowish brown (10YR 5/4 moist) silty clay loam; moderate medium and coarse angular blocky structure with thin discontinuous dark brown (10YR 4/3 moist) clay films; firm; few roots; medium acid; abrupt wavy boundary.

IIB3t (36-42") Dark grayish brown (10YR 4/2 moist) silty clay with many fine distinct gray (N 6/ moist) and light olive brown (2.5Y 5/4 moist) mottles; weak medium and coarse subangular and angular blocky structure with thin discontinuous dark grayish brown (10YR 4/2 moist) clay films; very firm; neutral; clear smooth boundary.

IIC (42-60") Dark grayish brown (2.5Y 4/2 moist) silty clay with common fine distinct gray (N 6/ moist) and light olive brown (2.5Y 5/4 moist) mottles; massive; very firm; calcareous; glacial till.

LaRose Series (60)

LaRose soils are dark colored, well- to moderately well-drained, and developed in less than 10 inches of loess on loam glacial till under prairie native vegetation. They occur on gently sloping to sloping upland areas primarily in soil area B in the northern part of the county. They are associated on the landscape with Saybrook, Catlin, Flanagan, and Drummer soils.

Four mapping units are shown on the soil map:

60C2 LaRose silt loam, 4 to 7 percent slopes, eroded
60C3 LaRose soils, 4 to 7 percent slopes, severely eroded
60D2 LaRose silt loam, 7 to 12 percent slopes, eroded
60D3 LaRose soils, 7 to 12 percent slopes, severely eroded

A few areas of 60C3, 60D2, and 60D3 have soil profiles leached to depths of 24 to 40 inches. Most of the LaRose soils are in cropland but some of the more sloping areas are in pasture. Permeability is moderate and surface runoff is rapid. Available moisture capacity is high. Surface organic matter content averages 3.0 percent.

Representative profile of LaRose silt loam, 480 feet south of northeast corner of Sec. 19, 50 feet west of gravel road in SE¼, NE¼, NE¼, NE¼ of Sec. 19, T36N, R1E:

Ap (0-7") Very dark grayish brown (10YR 3/2 moist) gritty silt loam; moderate fine granular structure; friable; neutral; abrupt smooth boundary.

B21t (7-12") Brown (10YR 4/3 moist) to dark yellowish brown (10YR 4/4 moist) gritty silty clay loam; moderate fine subangular blocky structure, with dark brown (10YR 3/3 moist) continuous clay films; many till pebbles; firm; neutral; clear smooth boundary.

B22t (12-21") Dark yellowish brown (10YR 4/4 moist) gritty silty clay loam; moderate medium subangular blocky structure, with dark brown (10YR 4/3 moist) continuous clay films; many till pebbles; firm; neutral; abrupt smooth boundary.

C (21-60") Mixed grayish brown (10YR 5/2 moist) and yellowish brown (10YR 5/6 and 5/8 moist) loam; massive; friable; calcareous; till.

Lawson Series (451)

Lawson soils are dark colored, noncalcareous, somewhat poorly drained, and developed in silty alluvial sediments on the floodplains of many streams in the county. They occur on nearly level and, in a few instances, on very gently sloping areas along both small and large streams. They are associated on the floodplain landscape with other bottomland soils such as Ross and Sawmill.

Two mapping units are shown on the soil map:

451 Lawson silt loam
W451 Lawson silt loam, wet

Some areas of 451 are on 2 to 4 percent slopes and tend to be better drained than normal for Lawson. Some of the larger areas are used for cropland if protected from flooding. The narrower areas in smaller stream bottomlands are not usually in cropland. Some areas are in timber or pasture. Permeability is moderate and surface runoff is slow. Available moisture capacity is high to very high. Surface organic matter content averages 4.0 percent.

Representative profile of Lawson silt loam, 60 feet south of road across from farm lane in creek bank in NE¼, NW¼, NW¼, NE¼ of Sec. 10, T34N, R1E:

A1 (0-30") Very dark gray (10YR 3/1 moist) silt loam; moderate coarse granular structure; friable; neutral; clear smooth boundary.

A12g (30-70") Dark grayish brown (10YR 4/2 moist) silt loam, with common fine distinct yellowish brown (10YR 5/8 moist) mottles; moderate fine subangular blocky structure; friable; neutral.

Lena Series (210)

Lena soils are very dark-colored, calcareous, very poorly drained organic soils developed primarily in herbaceous organic deposits under primarily swampy native vegetation. They usually occur in depressional areas. Even though of very limited extent, they occur in many parts of the county with some of the larger areas occurring along the Illinois River. They are associated on the landscape with a wide variety of mineral soils.

One mapping unit is shown on the soil map:

210 Lena muck

Some areas of 210 have a thin silt loam overwash over the normal Lena soil. One area of 210 in the NE¼ of Sec. 25, T36N, R5E, differs from normal Lena in that it occurs on a sloping area and is underlain by marl. Snail shells are evident in all Lena muck soils. Some of the Lena soil areas are in cropland, but others are undrained and unsuitable for cultivation. Permeability is rapid and surface runoff is very slow to ponded. Available moisture capacity is very high.

Representative profile of Lena muck, 300 feet east of lane corner in NW¼, NW¼, NW¼, NW¼ of Sec. 34, T33N, R5E:

Oa1 (0-5") Very dark brown (10YR 2/2 moist) muck; weak fine to medium subangular blocky structure; friable; calcareous; abrupt smooth boundary.

Oa2 (5-8") Light gray (10YR 7/1 to 7/2 moist) marley muck, with common fine distinct grayish brown (10YR 5/2 moist) and light yellowish brown (10YR 6/4 moist) mottles; massive; friable; highly calcareous; abrupt wavy boundary.

Oa3 (8-14") Black (N 2/ moist) muck; weak fine platy to massive; very friable; neutral, clear wavy boundary.

Oa4 (14-40") Black (N 2/ moist) muck; massive, with pockets of dark reddish brown (2.5YR 3/4 moist) iron segregation; friable; neutral to calcareous.

Oa5 (40-60") Black (N 2/ moist) muck, massive; calcareous.

Limestone Rockland (94)

This land type is found mainly on slopes greater than 30 percent. In most places light-colored silty material and loose limestone rocks form a very thin covering over the limestone bedrock. Some areas are very steep and are composed chiefly of bare limestone rock. All the limestone in La Salle County is dolomite. Most of this land type occurs near Utica and La Salle along the Illinois and Vermilion rivers, while small areas are found in the eastern part of the county along the Illinois River. Limestone outcrops within other soils on steep slopes are shown by a special symbol indicated on the map legend. Some areas have a forest cover while others are barren. This land type is all idle except that used for recreation.

Loran Series (572)

Loran soils are dark colored, somewhat poorly drained, and developed in 30 to 50 inches of loess or silty material over acid shales of Pennsylvanian age under prairie native vegetation. They occur on nearly level to gently sloping areas primarily east of Ottawa along the Illinois River and northwest of Peru on the uplands. They are associated east of Ottawa with the very dark-colored, poorly drained Wabash soils and northwest of Peru with Drummer soils.

Three mapping units are shown on the soil map:

572A Loran silt loam, 0 to 2 percent slopes
572B Loran silt loam, 2 to 4 percent slopes
572C2 Loran silt loam, 4 to 7 percent slopes, eroded

Some areas of 572A, 572B, and 572C2, especially along the Illinois River east of Ottawa, have a silty mantle 6 inches or so less than the minimum of 30 inches indicated above. A few other areas, especially on B and C slopes, are moderately well drained. Permeability is moderately slow and surface runoff is medium. Available moisture capacity is high to moderate. Surface organic matter content averages 4.5 percent.

Representative profile of Loran silt loam, 41 feet west of manhole at junction of 9th and Church streets in northwest Peru, Illinois, in NE¼, SE¼, SW¼, SW¼ of Sec. 17, T33N, R1E:

Ap (0-8") Black (10YR 2/1 moist) silt loam; weak to moderate fine to medium granular structure; neutral; abrupt smooth boundary.

A12 (8-10") Black (10YR 2/1 moist) silt loam; moderate medium granular structure; friable; neutral; clear smooth boundary.

B1t (10-14") Dark grayish brown (10YR 4/2 moist) light silty clay loam; moderate very fine to fine subangular blocky structure, with very dark grayish brown (10YR 3/2 moist) discontinuous clay films; friable; slightly acid; clear smooth boundary.

B21t (14-19") Grayish brown (2.5Y 5/2 moist) silty clay loam, with common fine faint yellowish brown (10YR 5/4 and 5/6 moist) mottles; moderate fine subangular blocky structure; with very dark grayish brown (10YR 3/2 moist) continuous clay films; many fine Fe-Mn concretions; firm; medium acid; clear smooth boundary.

B22t (19-27") Grayish brown (2.5Y 5/2 moist) silty clay loam, with common fine faint yellowish brown (10YR 5/4 and 5/6 moist) and common fine distinct gray (10YR 5/1 moist) mottles; moderate to strong fine prismatic structure breaking to strong fine angular blocky, with dark grayish brown (2.5Y 4/2 moist) continuous clay films; many fine Fe-Mn concretions; firm; medium acid; clear smooth boundary.

B23t (27-32") Grayish brown (2.5Y 5/2 moist) silty clay loam, with many fine distinct light olive brown (2.5Y 5/4 and 5/6 moist) and gray (10YR 5/1 moist) mottles; moderate fine to medium prismatic structure breaking to moderate to strong fine to medium angular and subangular blocky, with dark grayish brown (2.5Y 4/2 moist) continuous clay films; many fine Fe-Mn concretions; firm; slightly acid; clear smooth boundary.

B31 (32-39") Grayish brown (2.5Y 5/2 moist) heavy silt loam, with many fine to medium distinct light olive brown (2.5Y 5/4 and 5/6 moist) and gray (10YR 5/1 moist) mottles; weak medium prismatic structure breaking to weak to moderate medium angular blocky, with grayish brown (2.5Y 5/2 moist) discontinuous clay films; many fine Fe-Mn concretions; friable; neutral; clear smooth boundary.

B32 (39-44") Yellowish brown (10YR 4/4 moist) silt loam, with many fine to medium distinct light olive brown (2.5Y 5/4 and 5/6 moist) mottles; weak medium to coarse angular blocky structure, with grayish brown (2.5Y 5/2 moist) discontinuous clay films; friable; neutral; abrupt smooth boundary.

IIB33 (44-47") Light olive brown (2.5Y 5/4 moist) heavy silty clay loam, with many fine to medium faint light olive brown (2.5Y 5/6 moist) mottles; weak medium to coarse angular blocky structure; very firm; neutral, abrupt smooth boundary; shale.

IIR (47-60") Olive yellow (2.5Y 6/6 moist) and olive gray (5Y 5/2 moist) clay (shale), with streaks of very dark grayish brown (2.5Y 3/2 moist); massive; very firm; slightly acid to neutral.

Lorenzo Series (318)

Lorenzo soils are dark colored, well drained, and developed in 12 to 24 inches of loamy material over calcareous gravel and sand under prairie native vegetation. They occur on very gently to gently sloping areas of gravelly terraces along the major streams in the county. They are associated on the landscape with the Rodman, Dresden, and Warsaw soils.

Two mapping units are shown on the soil map:

318B Lorenzo loam, 2 to 4 percent slopes
318C2 Lorenzo loam, 4 to 7 percent slopes, eroded

A few areas of 318B have slopes of less than 2 percent and some areas are moderately eroded. A very few areas of 318C2 are severely eroded. Most areas of Lorenzo soils are in cropland but some are in pasture. Permeability is moderately rapid to rapid and surface runoff is slow to moderate. Available moisture capacity is low. Surface organic matter content averages 3.0 percent.

Representative profile of Lorenzo loam, 920 feet east of "T" road intersection and 320 feet south in NW¼, NW¼, NE¼ of Sec. 35, T33N, R5E:

A1 (0-6") Very dark brown (10YR 2/2 moist) loam; moderate fine and medium granular structure; friable; neutral; clear smooth boundary.

AB (6-9") Dark brown (7.5YR 3/2 moist) heavy loam; weak medium angular blocky structure; friable; neutral; clear smooth boundary.

B2t (9-16") Dark brown (7.5YR 4/4 moist) clay loam with some gravel; weak medium and coarse angular blocky structure; firm; thin patchy dark brown (7.5YR 3/2 moist) clay films; slightly acid; abrupt smooth boundary.

IIB3 (16-18") Brown (7.5YR 4/4 moist) loamy gravel; very weak coarse subangular blocky structure to single grain; loose; thin patchy dark brown (7.5YR 3/2 moist) clay films; mildly alkaline; abrupt smooth boundary.

IIC (18-60") Yellowish brown (10YR 5/4 moist) fine and medium gravel; single grain; loose; calcareous.

Marseilles Series (549)

Marseilles soils are light colored, well- to moderately well-drained, and developed in 20 to 40 inches of loess or silty material over noncalcareous shale under forest native vegetation. They occur on nearly level to sloping areas primarily on the uplands adjacent to the Illinois River in soil area K on the general soil map between Ottawa and Marseilles, and around La Salle. Marseilles soils are associated on the landscape with the light-colored, somewhat poorly drained, Marseilles, gray subsoil variant soils.

Five mapping units are shown on the soil map:

549A Marseilles silt loam, 0 to 2 percent slopes
549B Marseilles silt loam, 2 to 4 percent slopes
549C Marseilles silt loam, 4 to 7 percent slopes
549C2 Marseilles silt loam, 4 to 7 percent slopes, eroded
549D2 Marseilles silt loam, 7 to 12 percent slopes, eroded

A very few areas of 549B are moderately eroded. A very few areas of 549C and 549C2 are somewhat poorly drained. A few areas of 549D2 are slightly eroded, and a few other areas occur on slopes of 12 to 18 percent. Marseilles soils are under varied land use, including cropland, timber, pasture, and urban development. Permeability is moderate to moderately slow and surface runoff is slow to rapid. Available moisture capacity is moderate. Surface organic matter content averages 2.0 percent.

Representative profile of Marseilles silt loam, 140 feet N-NW of center of U.S. Route 6, at top of bluff in SW¼, SE¼, NE¼ of Sec. 9, T33N, R4E:

A1 (0-5") Very dark grayish-brown (10YR 3/2 moist) (10YR 4/2 dry) silt loam, moderate fine granular structure; friable; strongly acid; clear smooth boundary.

A2 (5-11") Dark grayish-brown (10YR 4/2 moist) (10YR 5/2 dry) silt loam; weak thin platy breaking to strong fine granular structure; friable; medium acid; clear smooth boundary.

B21t (11-17") Brown (10YR 4/3 moist) light silty clay loam; strong fine subangular blocky structure; firm; thin, discontinuous, dark grayish-brown (10YR 4/2 moist) clay films; medium acid; clear smooth boundary.

B21t (17-28") Brown (10YR 4/3 moist) silty clay loam; strong fine and medium subangular and angular blocky structure; firm; thin discontinuous dark grayish-brown (10YR 4/2 moist) clay films; medium acid; clear smooth boundary.

IIB22t (28-39") Dark brown (7.5YR 4/4 moist) clay loam; strong medium subangular and angular blocky structure; firm; thin, discontinuous dark grayish-brown (10YR 4/2 moist) clay films; medium acid; abrupt smooth boundary.

IIC (39-60") Grayish-brown (2.5Y 5/2 moist) clay loam shale, with streaks of very dark grayish-brown (2.5Y 3/2 moist) and light brownish gray (2.5Y 6/2 moist); some hard shale fragments; strongly acid.

Marseilles Series, Gray Subsoil Variant (393)

Marseilles, gray subsoil variant, soils are light colored, somewhat poorly drained, and developed in 20 to 40 inches of loess or silty material over noncalcareous shale under forest native vegetation. They occur on nearly level to very gently sloping areas primarily on uplands adjacent to the Illinois River in soil area K on the general soil map between Ottawa and Marseilles, and around La Salle. Marseilles, gray subsoil variant, soils are associated on the landscape with the light-colored, well to moderately well-drained Marseilles soils.

Two mapping units are shown on the soil map:

393A Marseilles silt loam, gray subsoil variant, 0 to 2 percent slopes

393B Marseilles silt loam, gray subsoil variant, 2 to 4 percent slopes

Most areas of 393A and 393B are in timber and urban development, with occasional areas in cropland and pasture. Permeability is moderately slow. Surface runoff is slow to medium. Available moisture capacity is moderate. Surface organic matter content averages 2.0 percent.

Representative profile of Marseilles silt loam, gray subsoil variant, 150 feet east of entrance to small turnaround, then 80 feet north of center of U.S. Route 71 in SW¼, NW¼, NE¼, NW¼ in Sec. 25, T33N, R2E:

A1 (0-5") Dark gray (10YR 4/1 moist) (10YR 5/1 dry) silt loam; moderate to strong fine granular structure; friable; medium acid; clear smooth boundary.

A2 (5-10") Mixed light brownish gray (10YR 6/2 moist) and pale yellow (2.5Y 7/4 moist) silt loam, with few fine to medium prominent yellowish red (5YR 5/6 and 5/8 moist) and few fine prominent yellowish brown (10YR 5/4 and 5/6 moist) mottles; moderate to strong, fine to medium platy structure breaking to moderate fine granular, with light gray (10YR 7/2) to white (10YR 8/2) patchy silt coatings; friable; strongly acid; clear smooth boundary.

B1t (10-15") Light brownish gray (10YR 6/2 moist) to pale brown (10YR 6/3 moist) silty clay loam, with common fine distinct gray (10YR 5/1 moist), yellowish brown (10YR 5/4 moist), and dark yellowish brown (10YR 4/4 moist) mottles; moderate to strong fine subangular blocky structure, with light gray (10YR 7/2) patchy silt coatings; firm; very strongly to strongly acid; clear smooth boundary.

B21t (15-30") Light brownish gray (10YR 6/2 moist) silty clay, with common fine distinct yellowish brown (10YR 5/4 and 5/6 moist) mottles; moderate medium prismatic structure breaking to moderate medium to coarse angular blocky, with light gray (10YR 7/2) patchy silt coatings and grayish brown (10YR 5/2 moist) continuous clay films; common fine Fe-Mn concretions; firm; extremely acid; clear smooth boundary.

B22t (30-38") Light brownish gray (2.5Y 5/2 moist) silty clay, with common fine distinct yellowish brown (10YR 5/4 and 5/6 moist) mottles; weak medium prismatic structure breaking to moderate medium angular blocky, with grayish brown (10YR 5/2 moist) discontinuous clay films; common fine Fe-Mn concretions, firm; very strongly acid; clear smooth boundary.

IIB3t (38-45") Light brownish gray (2.5Y 5/2 moist) silty clay, with common fine distinct yellowish brown (10YR 5/4 and 5/6 moist) mottles; weak medium prismatic structure breaking to weak to moderate angular blocky, with grayish brown (10YR 5/2 moist) discontinuous clay films; firm; strongly acid; clear smooth boundary; shale.

IIR (45-60") Olive (5Y 5/4 and 5/6 moist) silty clay to clay shale, with many fine distinct yellowish brown (10YR 5/4 and 5/6 moist), gray (10YR 5/1 moist), and olive gray (10YR 5/2 moist) mottles; massive; firm, slightly acid to neutral.

Millbrook Series (219)

Millbrook soils are moderately dark, somewhat poorly drained, and developed in 24 to 40 inches of loess or silty material over loamy outwash under mixed prairie-forest native vegetation. They occur on nearly level to gently sloping areas primarily at the border between soil areas D and J in the northeastern part of the county and around Streator. Millbrook soils are associated on the upland or terrace landscape with the moderately dark-colored, moderately well- to well-drained Harvard soils, the light-colored, somewhat poorly drained Starks soils, and the very dark-colored, poorly drained Drummer soils.

Two mapping units are shown on the soil map:

219A Millbrook silt loam, 0 to 2 percent slopes
219B Millbrook silt loam, 2 to 4 percent slopes

Most areas of 219A and 219B are in cropland while some areas are in pasture and urban development. Permeability is moderate and surface runoff is medium. Available moisture capacity is high. Surface organic matter content averages 3.0 percent.

Representative profile of Millbrook silt loam, 30 feet east of Hackberry tree on north side of road in SE¼, SW¼, NW¼, SW¼ in Sec. 16, T35N, R5E (the profile was near a gravel road, consequently the pH is high in upper parts of the profile):

A1 (0-7") Very dark gray (10YR 3/1 moist) (10YR 5/2 dry) silt loam; moderate medium crumb structure; roots abundant; friable; neutral, abrupt smooth boundary.

A2 (7-15") Dark grayish brown (10YR 4/2 moist) (10YR 6/1 to 5/2 dry) silt loam; weak medium platy structure breaking to moderate medium crumb; roots common; friable; clear smooth boundary.

B1 (15-18") Dark brown (10YR 4/3 moist) to dark grayish brown (10YR 4/2 moist) heavy silt loam, with few fine faint yellowish brown (10YR 5/4 moist) mottles; moderate fine subangular and angular blocky structure with light gray (10YR 7/2) patchy silt coatings and dark brown (10YR 3/3 moist) continuous clay films; roots common; many fine Fe-Mn concretions; firm; neutral; clear smooth boundary.

B21t (18-24") Dark grayish brown (10YR 4/2 moist) silty clay loam, with few fine faint yellowish brown (10YR 5/4 moist) mottles; moderate fine to medium subangular blocky structure, with light gray (10YR 7/2) patchy silt coatings and very dark grayish brown (10YR 3/2 moist) continuous clay films; many fine Fe-Mn concretions; firm; neutral; clear smooth boundary.

IIB22t (24-31") Mixed dark brown (10YR 4/2 moist), yellowish brown (10YR 5/6 and 5/8 moist), and pale brown (10YR 6/3 moist) gritty silty clay loam; moderate medium subangular blocky structure, with light gray (10YR 7/2) patchy silt coatings and very dark grayish brown (10YR 3/2 moist) continuous clay films; roots occasional; firm; neutral; clear smooth boundary.

IIB3 (31-41") Dark brown (7.5YR 3/2 to 4/4 moist) light sandy clay loam to heavy sandy loam, with few medium distinct yellowish brown (10YR 5/4, 5/6 and 5/8 moist) and light yellowish brown (10YR 6/4 moist) mottles; weak medium subangular blocky structure; roots occasional; firm; medium acid; clear smooth boundary.

IIC1 (41-45") Grayish brown (2.5Y 5/2 moist) stratified silt loam and loam, with many fine distinct yellowish brown (10YR 5/4, 5/6 and 5/8 moist) mottles; massive; many fine Fe-Mn concretions; roots common; friable; slightly acid; clear smooth boundary.

IIC2 (45-60") Yellowish brown (10YR 5/4, 5/6, and 5/8 moist) loam with stratified sand and silt; massive; roots occasional; pebbles common; friable; neutral.

Millington Series (82)

Millington soils are very dark-colored, poorly drained, calcareous, and developed in calcareous dark-colored alluvium under marsh and prairie grass native vegetation. They occur primarily on the nearly level floodplains of the Fox and Illinois rivers in soil area M on the general soil map. They are associated on the floodplain landscape in most cases with the dark-colored, calcareous, well- to moderately well-drained DuPage soils.

One mapping unit is shown on the soil map:

82 Millington loam

A few areas of 82 are on slopes of 2 to 4 percent and an occasional area is wet and swampy. Millington soils are in cropland, pasture, and woodland, with some areas having cottage development along the Fox River. Permeability is moderate. The water table is normally high. Surface runoff is slow to ponded. Available moisture capacity is high. Surface organic matter content averages 5.0 percent.

Representative profile of Millington loam along Fox River in SE¼, SE¼, SE¼, SW¼ of Sec. 20, T35N, R5E:

A1 (0-15") Black (10YR 2/1 moist) loam, weak medium granular structure; friable; many roots; common snail shells; calcareous; diffuse smooth boundary.

B (15-35") Very dark gray (10YR 3/1 moist) loam, many medium distinct dark yellowish brown (10YR 4/4) mottles; weak medium blocky structure; friable; common roots; common snail shells; calcareous; diffuse smooth boundary.

Cg (35-50") Stratified dark gray (10YR 4/1 moist), dark yellowish brown (10YR 4/4 moist), yellowish brown (10YR 5/4 and 5/6 moist), and gray (N 5/ moist) sandy clay loam, silt loam, silty clay loam, and clay loam; massive; firm; common snail shells; calcareous.

Millsdale Series (317)

Millsdale soils are very dark colored, very poorly drained, and developed in 20 to 40 inches of moderately fine- to fine-textured alluvium over limestone bedrock under prairie and marsh grass native vegetation. They occur on nearly level to ponded areas along the Illinois River floodplain where the bedrock is shallow. They are associated on the landscape with the Joliet soils which are shallower to limestone and the Channahon soils which are better drained.

One mapping unit is shown on the soil map:

317 Millsdale silty clay loam

Occasionally some areas of 317 may have depths to limestone of 40 to 60 inches and a very few other areas may have slopes slightly over 2 percent. Millsdale soils are mostly in cropland, but some are in pasture. Permeability is moderately slow. Surface runoff is slow to ponded. Available moisture capacity is moderate to low. Surface organic matter content averages 5.0 percent.

Representative profile of Millsdale silty clay loam, about 70 feet south of gravel road in NW¼, NW¼, NE¼, SE¼ of Sec. 14, T33N, R4E:

Ap (0-7") Black (10YR 2/1 moist) heavy silty clay loam, weak to moderate medium granular structure; roots common; firm; medium acid; clear smooth boundary.

A12 (7-12") Black(10YR 2/1 moist) heavy silty clay loam; moderate medium angular blocky structure; roots common; firm; slightly acid; clear smooth boundary.

B1 (12-15") Very dark grayish brown (10YR 3/2 moist) heavy silty clay loam, with few fine distinct yellowish brown (10YR 5/6 moist) mottles; weak fine prismatic structure breaking to moderate to strong fine to medium angular blocky, with very dark grayish brown (10YR 3/2 moist) continuous clay films; roots occasional; firm; neutral; clear smooth boundary.

B2t (15-28") Dark grayish brown (10YR 4/2 moist) light silty clay, with common fine distinct light olive brown (2.5Y 5/4 moist) mottles; weak fine to medium prismatic structure breaking to moderate fine to medium subangular and angular blocky, with very dark brown (2.5Y 2/2 moist) continuous clay films; roots occasional; firm; neutral; gradual smooth boundary.

B3 (28-33") Mixed light olive brown (2.5Y 5/4 moist), grayish brown (10YR 5/2 moist), and yellowish brown (10YR 5/8 moist) silty clay loam; weak coarse angular blocky structure; roots occasional; firm; neutral to mildly alkaline; abrupt smooth boundary.

IIR (38"+) Limestone; dolomite.

Mokena Series (295)

Mokena soils are dark colored, somewhat poorly drained, and developed in up to 24 inches of loess on loamy outwash over silty clay or clay glacial till under prairie native vegetation. They occur on nearly level to very gently sloping areas on upland heavy-textured glacial till plains having a covering of loamy outwash in soil area F on the general soil map. They are associated on the landscape with better drained Mona soils and the poorly drained Drummer and Bryce soils.

Three mapping units are shown on the soil map:

295A Mokena silt loam, 0 to 2 percent slopes

295B Mokena silt loam, 2 to 4 percent slopes

295B2 Mokena silt loam, 2 to 4 percent slopes, eroded

Mokena soils are mostly in cropland with some occasional areas in pasture. Permeability is moderately slow and surface runoff is medium. Available moisture capacity is high. Surface organic matter content averages 4.5 percent.

Representative profile of Mokena silt loam, 1,056 feet southwest of road corner then 10 feet into field in NE¼, SW¼, NE¼, NE¼ of Sec. 7, T34N, R5E:

Ap (0-9") Very dark gray (10YR 3/1 moist) silt loam; moderate fine granular structure; friable; slightly acid; abrupt smooth boundary.

A12 (9-13") Very dark gray (10YR 3/1 moist) heavy silt loam; moderate fine granular structure; slightly acid; clear smooth boundary.

B1 (13-17") Dark brown (10YR 4/3 moist) light silty clay loam; with common fine distinct yellowish brown (10YR 5/6 and 5/8 moist) and grayish brown (10YR 5/2 moist) mottles; moderate fine subangular blocky structure, with thin discontinuous clay films; firm; neutral; clear smooth boundary.

IIB21t (17-24") Dark grayish brown (10YR 4/2 moist) to brown (10YR 4/3 moist) clay loam, with many to common fine distinct grayish brown (10YR 5/2 moist) and yellowish brown (10YR 5/6 moist) mottles; moderate medium subangular blocky structure, with thin continuous clay films; many fine Fe-Mn concretions; firm; neutral; clear smooth boundary.

IIB22t (24-30") Mixed grayish brown (10YR 5/2 moist), light brownish gray (10YR 6/2 moist) and brown (10YR 4/3 moist) clay loam; weak to moderate fine to medium subangular blocky structure, with thin continuous clay films; many Fe-Mn concretions; firm; neutral; clear smooth boundary.

IIB31 (30-34") Grayish brown (10YR 5/2 moist) clay loam, with common fine distinct gray (10YR 5/1 moist) and yellowish brown (10YR 5/6 mottles); weak to moderate subangular blocky structure, with thin discontinuous clay films; friable; neutral; few Fe-Mn concretions; abrupt smooth boundary.

IIIB32 (34-38") Grayish brown (2.5Y 5/2 moist) silty clay, with common fine prominent gray (10YR 5/1 moist) and yellowish brown (10YR 5/6 moist) mottles; weak fine to medium angular blocky structure with some thin patchy clay films; very firm; calcareous; gradual smooth boundary.

IIIC (38-46") Grayish brown (2.5Y 5/2 moist) silty clay; massive; very firm; calcareous.

Mona Series (448)

Mona soils are dark colored, moderately well- to well-drained, and developed in up to 24 inches of loess on loamy outwash over silty clay to clay glacial till under prairie native vegetation. They occur on very gently sloping to gently sloping upland heavy-textured glacial till plains having a covering of loamy outwash in soil area F on the general soil map. They are associated on the landscape with the somewhat poorly drained Mokena soils and the poorly drained Drummer and Bryce soils.

Four mapping units are shown on the soil map:

448B Mona silt loam, 2 to 4 percent slopes
448B2 Mona silt loam, 2 to 4 percent slopes, eroded
448C2 Mona silt loam, 4 to 7 percent slopes, eroded
448C3 Mona soils, 4 to 7 percent slopes, severely eroded

Some areas of 448C2 and 448C3 are somewhat poorly drained. A very few areas of 448C3 are on slopes of 7 to 12 percent. Mona soils are mostly in cropland. Permeability is moderately slow. Surface runoff is slow to medium. Available moisture capacity is high. Surface organic matter content averages 4.0 percent.

Representative profile of Mona silt loam, 360 feet southwest of culvert on east side of U.S. Route 71 in SW¼, NE¼, NW¼, NE¼ of Sec. 33, T35N, R5E:

Ap (0-10") Black (10YR 2/1 moist) silt loam; moderate fine granular structure, friable, abundant roots, slightly acid; clear smooth boundary.

IIB1 (10-14") Dark brown (10YR 3/3 moist) to dark yellowish brown (10YR 4/4 moist) light clay loam; moderate fine subangular blocky structure; friable; slightly acid; clear smooth boundary.

IIB21t (14-23") Dark brown (10YR 4/4 moist) clay loam; moderate fine subangular blocky structure, with thin discontinuous clay films; firm; slightly acid; clear smooth boundary.

IIB22t (23-28") Brown (10YR 4/3 moist) clay loam; moderate fine to medium subangular blocky structure, with thin discontinuous clay films; some pebbles; firm; neutral; clear smooth boundary.

IIB31 (28-36") Brown (10YR 4/3 moist) to dark yellowish brown (10YR 4/4 moist) fine gravelly clay loam; weak coarse subangular blocky structure, with very thin discontinuous clay films; firm; neutral; abrupt smooth boundary.

IIIB32 (36-39") Dark grayish brown (10YR 4/2 moist) silty clay, with many fine to medium distinct yellowish brown (10YR 5/6 moist) and grayish brown (10YR 5/2 moist) mottles; weak medium angular blocky structure, with very thin patchy clay films; very firm; calcareous; gradual smooth boundary.

IIIC (39-44") Grayish brown (10YR 5/2 moist) silty clay; weak coarse angular blocky to massive; very firm; calcareous.

Morley Series (194)

Morley soils are light colored, moderately well- to well-drained, and developed in less than 18 inches of loess on silty clay loam glacial till under forest native vegetation. They occur on very gently sloping to strongly sloping areas on upland glacial till plains underlain by silty clay loam glacial till in area I on the general soil map. Morley soils are associated on the landscape with the somewhat poorly drained Blount soils and the steep, moderately well- to well-drained Chatsworth soils.

Five mapping units are shown on the soil map:

194B Morley silt loam, 2 to 4 percent slopes
194C Morley silt loam, 4 to 7 percent slopes
194C2 Morley silt loam, 4 to 7 percent slopes, eroded
194D2 Morley silt loam, 7 to 12 percent slopes, eroded
194E2 Morley silt loam, 12 to 18 percent slopes, eroded

A few areas of 194B are moderately eroded. A few areas of 194C2 are severely eroded. The areas of 194D2 and 194E2 occurring along the base of the bluffs on the south side of the Illinois River floodplain approximately between Marseilles and Seneca have less well-developed subsoils than is normal for Morley soils. A very few areas of 194D2 have a moderately dark surface. Morley soils are mostly in cropland with some areas in timber and pasture. Permeability is moderately slow to slow and surface runoff is medium to rapid. Available moisture capacity is high. Surface organic matter content averages 2.5 percent.

Representative profile of Morley silt loam in road cut in NW¼, NE¼, NE¼, SW¼ of Sec. 5, T33N, R5E:

A1 (0-4") Very dark grayish brown (10YR 3/2 moist) silt loam; weak very fine to fine crumb structure; roots abundant; friable; neutral; abrupt smooth boundary.

A2 (4-10") Dark grayish brown (10YR 4/2 moist) silt loam; moderate fine to medium platy structure; roots abundant; friable; neutral; abrupt smooth boundary.

IIB1t (10-15") Brown (10YR 4/3 moist) silty clay loam; moderate very fine angular blocky structure; roots abundant; firm; medium acid; clear smooth boundary; till pebbles present.

IIB21t (15-19") Brown (10YR 4/3 moist) heavy silty clay loam; moderate very fine to fine angular blocky structure; roots common; firm; slightly acid; clear smooth boundary, till pebbles present.

IIB22t (19-26") Olive brown (2.5Y 4/4 moist) heavy silty clay loam to light silty clay; moderate medium to fine angular and subangular blocky structure, with very dark grayish brown (2.5Y 3/2 moist) clay films; roots occasional; firm; neutral; clear smooth boundary; many till pebbles.

IIC (26-50") Light olive brown (2.5Y 5/4 moist) silty clay loam, with few fine distinct gray (10YR 5/1 moist), yellowish brown (10YR 5/8 moist), and gray (5Y 6/1 moist) mottles; weak medium angular blocky structure grading to massive in lower part, with olive brown (2.5Y 4/4 moist) discontinuous clay films; firm; calcareous.

Muscatine Series (41)

Muscatine soils are dark colored, somewhat poorly drained, and developed in more than 5 feet of loess under prairie native vegetation. They occur on nearly level to very gently sloping loess-covered uplands in soil area A on the general soil map. They are associated on the landscape with the dark-colored, moderately well- to well-drained Tama soils and the very dark-colored, poorly drained Sable soils.

Two mapping units are shown on the soil map:

41A Muscatine silt loam, 0 to 2 percent slopes
41B Muscatine silt loam, 2 to 4 percent slopes

A very few areas of 41A are moderately well drained. Some areas of 41B have moderate erosion. Muscatine soils are almost entirely in Cropland. Permeability is moderate. Surface runoff is slow. Available moisture capacity is very high. Surface organic matter content averages 4.5 percent.

Representative profile of Muscatine silt loam, 631 feet north of section corner, then 30 feet east of center of U.S. Route 51, in NW¼, SW¼, SW¼, SW¼ of Sec. 33, T35N, R1E:

A1 (0-13") Black (10YR 2/1 moist) silt loam, moderate fine granular structure; friable; roots abundant; neutral; clear smooth boundary.

A3 (13-18") Black (10YR 2/1 moist) heavy silt loam; weak fine to medium subangular blocky structure breaking to fine medium granular; a few light gray (10YR 7/1 moist) thin patchy silt coatings; friable; neutral; clear smooth boundary.

B1t (18-25") Dark grayish brown (2.5Y 4/2 moist) silty clay loam; moderate fine subangular blocky structure; firm; slightly acid; clear smooth boundary.

B21t (25-30") Grayish brown (2.5Y 5/2 moist) silty clay loam, with common fine distinct yellowish brown (10YR 5/6 moist) mottles; weak medium prismatic structure breaking to moderate fine subangular blocky structure, with dark grayish brown (10YR 4/2 moist) continuous clay films; firm; slightly acid; clear smooth boundary.

B22t (30-40") Light brownish gray (2.5Y 6/2 moist) silty clay loam, with common fine prominent yellowish brown (10YR 5/8 moist) mottles; weak medium prismatic structure breaking to moderate medium subangular blocky, with dark grayish brown (2.5Y 4/2 moist) discontinuous clay films; firm; slightly acid; clear smooth boundary.

B3 (40-48") Light brownish gray (2.5Y 6/2 moist) silt loam, with common fine to medium prominent yellowish brown (10YR 5/6 moist) mottles; moderate coarse angular blocky structure; friable; neutral, clear smooth boundary.

C (48-72") Light gray (10YR 6/1 moist) and yellowish brown (10YR 5/6 and 5/8 moist) silt loam; massive; friable; calcareous.

Nappanee (228)

Nappanee soils are light colored, somewhat poorly drained, and developed in 12 to 24 inches of loess over silty clay and clay glacial till under forest native vegetation. They occur on nearly level to gently sloping upland till plains in soil area K on the general soil map. They are associated on the landscape with light-colored, moderately well-drained St. Clair and Chatsworth soils.

Five mapping units are shown on the soil map:

228A Nappanee silt loam, 0 to 2 percent slopes
228B Nappanee silt loam, 2 to 4 percent slopes
228B2 Nappanee silt loam, 2 to 4 percent slopes, eroded
228C2 Nappanee silt loam, 4 to 7 percent slopes, eroded
228C3 Nappanee soils, 4 to 7 percent slopes, severely eroded

A few areas of 228A, 228B, and 228C2 have moderately dark surfaces. Some areas of 228B and 228C2 have a 12- to 24-inch layer of loamy outwash between the loess and silty clay till. A very few areas of 228C2 have slopes of 7 to 12 percent. Nappanee soils are mostly in cropland, but some areas are in timber or pasture. Permeability is slow to very slow. Surface runoff is slow to medium. Available moisture capacity is moderate. Surface organic matter content averages 2.5 percent.

Representative profile of Napanee silt loam, near southwest corner of SW2½ acres along blacktop road, in SW¼, SW¼, NW¼, SW¼ in Sec. 7, T33N, R5E:

A1 (0-3") Dark grayish brown (2.5Y 4/2 moist) silt loam; weak very fine crumb structure; friable, neutral; clear smooth boundary.

A2 (3-7") Light brownish gray (2.5Y 6/2 moist) silt loam; moderate fine platy structure; friable; slightly acid; abrupt smooth boundary.

B21t (7-17") Dark grayish brown (10YR 4/2 moist) light silty clay; moderate very fine to fine subangular blocky structure, with very dark gray (10YR 3/1 moist) to dark gray (10YR 4/1 moist) continuous clay films; firm, neutral; clear smooth boundary.

IIB22t (17-22") Gray (10YR 5/1 moist) silty clay, with common medium distinct yellowish brown (10YR 5/6 and 5/8 moist) mottles; moderate medium angular blocky structure, with dark gray (10YR 4/1 moist) continuous clay films; firm; neutral, clear smooth boundary; till.

IIC (22-36") Grayish brown (2.5Y 5/2 moist) silty clay; weak medium to coarse angular blocky structure, with gray (10YR 6/1 moist) discontinuous clay films, very firm; calcareous.

Peotone Series (330)

Peotone soils are very dark colored, very poorly drained, and developed in depressions that receive sediments of loess and glacial drift from surrounding areas. They are developed under prairie and marsh grass vegetation and occur primarily in upland depressional areas in soil areas A, B, C, D, G, and H on the general soil map. They are associated on the landscape with all of the major soils listed for the soil association areas shown above.

One mapping unit is shown on the soil map:

330 Peotone silty clay loam

Some areas of 330 have a 6- to 12-inch dark-colored silt loam overwash and a very few areas are undrained, ponded, or swampy. Most areas of Peotone soils are in cropland except those which are undrained and swampy. Permeability is moderately slow and surface runoff is very slow to ponded. Available moisture capacity is very high to high. Surface organic matter content averages 6.0 percent.

Representative profile of Peotone silty clay loam, 400 feet west of southeast corner of section in SW¼, SE¼, SE¼, SE¼ of Sec. 19, T34N, R5E:

A11 (0-6") Black (N 2/ moist) silty clay loam; moderate fine granular structure; roots abundant; firm; neutral; gradual smooth boundary.

A12 (6-15") Black (10YR 2/1 moist) silty clay loam; strong fine angular blocky structure; roots common; firm; neutral; gradual smooth boundary.

B21g (15-22") Black (10YR 2/1 moist) heavy silty clay loam; strong medium angular to subangular blocky structure; roots common; firm; neutral; gradual smooth boundary.

B22g (22-40") Black (10YR 2/1 moist) heavy silty clay loam; moderate medium prismatic structure breaking to strong medium subangular and angular blocky, with black (10YR 2/1 moist) continuous clay films; roots occasional; firm; mildly alkaline; clear smooth boundary.

B23g (40-44") Very dark gray (10YR 3/1 moist) heavy silty clay loam; moderate medium prismatic structure breaking to strong medium subangular blocky; roots occasional; firm; calcareous; clear smooth boundary.

Cg (44-60") Gray (5Y 5/1 moist) silty clay loam, with common fine distinct yellowish brown (10YR 5/6 moist) and dark gray (5Y 4/1 moist) mottles; weak to moderate medium angular blocky structure; roots occasional; firm; calcareous.

Plano Series (199)

Plano soils are dark colored, moderately well- to well-drained, and developed in 30 to 50 inches of loess over loamy glacial outwash or sandy loam glacial till under prairie native vegetation. They occur on nearly level to sloping upland areas primarily in soil association D on the general soil map. They are associated on the landscape with the dark-colored, somewhat poorly drained Elburn soils and the very dark-colored, poorly drained Drummer soils.

Six mapping units are shown on the soil map:

199A Plano silt loam, 0 to 2 percent slopes
199B Plano silt loam, 2 to 4 percent slopes
199C Plano silt loam, 4 to 7 percent slopes
199C2 Plano silt loam, 4 to 7 percent slopes, eroded
199C3 Plano soils, 4 to 7 percent slopes, severely eroded
199D3 Plano soils, 7 to 12 percent slopes, severely eroded

Plano soils occurring north of the Fox River in the very northeast corner of the county in soil area D are underlain for the most part by sandy loam glacial till. Plano soils in the other D soil areas in the county are underlain by loamy stratified outwash materials. Some areas of 199B are moderately eroded. A very few areas of 199C2 in the northeast part of the county have the loess overburden thinner than 30 inches. A very few areas of 199D3 are moderately eroded rather than severely eroded. Plano soils are almost entirely in cropland. Permeability is moderate and surface runoff is slow to rapid, depending on slope. Available moisture capacity is high to very high. Surface organic matter content averages 4.0 percent.

Representative profile of Plano silt loam, 400 feet east of northwest corner of section, in NW¼, NW¼ NW¼, NW¼ of Sec. 10, T34N, R3E:

A1 (0-9") Very dark brown (10YR 2/2 moist) silt loam; moderate fine granular structure; friable; neutral; clear smooth boundary.

A3 (9-12") Dark brown (10YR 3/3 moist) heavy silt loam; weak fine granular structure; friable; slightly acid; clear smooth boundary.

B1 (12-16") Dark brown (10YR 3/3 moist) light silty clay loam; weak fine subangular blocky structure; firm; medium acid; clear smooth boundary.

B21t (16-28") Brown (10YR 4/3 moist) silty clay loam; moderate fine subangular blocky structure; firm; thin continuous very dark grayish brown (10YR 3/2 moist) clay films; medium acid; clear smooth boundary.

B22t (28-45") Dark brown (10YR 4/3 moist) silty clay loam, few fine faint brown (10YR 5/3 moist) mottles; moderate medium subangular blocky structure; firm; thin continuous dark brown (7.5YR 3/2 moist) clay films; medium acid; clear smooth boundary.

IIB31 (45-53") Dark yellowish brown (10YR 4/4 moist) stratified silt loam, loam, and sandy loam, many fine distinct yellowish brown (10YR 5/8 moist) mottles, few fine distinct grayish brown (10YR 5/2 moist) mottles; weak, coarse angular blocky structure; friable; thin continuous clay films; medium acid; abrupt smooth boundary.

IIB32 (53-60") Dark brown (7.5YR 4/2 to 4/4 moist) heavy loam; structureless, massive; friable; neutral.

Proctor Series (148)

Proctor soils are dark colored, moderately well- to well-drained, and developed in less than 40 inches of loess or silty material over stratified loamy outwash under prairie native vegetation. They occur on nearly level to sloping glacial outwash plains and alluvial terraces, primarily in soil area D on the general soil map. They are associated on the landscape with the dark-colored, somewhat poorly drained Brenton soils and the very dark-colored poorly drained Drummer soils.

Seven mapping units are shown on the soil map:

148A Proctor silt loam, 0 to 2 percent slopes
148B Proctor silt loam, 2 to 4 percent slopes
148C Proctor silt loam, 4 to 7 percent slopes
148C2 Proctor silt loam, 4 to 7 percent slopes, eroded
148C3 Proctor soils, 4 to 7 percent slopes, severely eroded
148D2 Proctor silt loam, 7 to 12 percent slopes, eroded
148D3 Proctor soils, 7 to 12 percent slopes, severely eroded

Some areas of 148B are moderately eroded. Proctor soils are almost entirely in cropland. Permeability is moderate. Surface runoff is slow to rapid. Available moisture capacity is high. Surface organic matter content averages 3.5 percent.

Representative profile of Proctor silt loam, very southeast corner of Sec. 27, T31N, R3E:

Ap (0-7") Very dark gray (10YR 3/1 moist to very dark brown 10YR 2/2 moist) silt loam; moderate fine granular structure.

A3 (7-10") Very dark grayish brown (10YR 3/2 moist) silt loam; moderate fine to medium granular structure; roots abundant; friable; medium acid; clear smooth boundary.

B1 (10-14") Dark yellowish brown (10YR 3/4 moist) light silty clay loam; moderate fine subangular blocky structure; roots occasional; firm; medium acid; clear smooth boundary.

B21t (14-20") Brown (10YR 4/3 moist) silty clay loam; moderate fine subangular blocky structure; roots occasional; firm; medium acid; gradual smooth boundary.

B22t (20-28") Brown (10YR 4/3 moist) silty clay loam; moderate fine subangular and angular blocky structure, with dark grayish brown (10YR 4/2 moist) continuous clay films; roots occasional; firm; medium acid; gradual smooth boundary.

IIB23t (28-38") Brown (10YR 4/3 moist) gritty silty clay loam; moderate medium prismatic structure breaking to moderate medium angular blocky, with dark grayish brown (10YR 4/2 moist) continuous clay films; roots occasional; firm; medium acid; gradual smooth boundary.

IIB3t (38-43") Brown (10YR 4/3 moist) gritty light silty clay loam; moderate medium angular blocky structure; roots occasional; firm; medium acid; abrupt wavy boundary.

IIC1 (43-53") Brown (7.5YR 4/4 moist) gritty heavy silt loam; massive; roots occasional; friable; medium acid; abrupt wavy boundary.

IIC2 (53-62") Brown (7.5YR 4/4 moist) fine sandy loam to fine sand; single grain; loose; medium acid; abrupt wavy boundary.

IIC3 (62-70") Dark brown (7.5YR 3/2 moist) heavy sandy loam to sandy clay loam; weak medium angular blocky structure; friable; medium acid; abrupt wavy boundary.

IIC4 (70-80") Yellowish brown (10YR 5/4, 5/6, 5/8 moist) sand with some fine gravel; single grain; loose; calcareous.

Rantoul Series (238)

Rantoul soils are very dark colored, very poorly drained, and developed in depressions that receive sediments of loess and glacial drift from surrounding areas. They are developed under prairie and marsh grass vegetation in areas where silty clay and clay till are underlying. They occur primarily in upland depressional areas in soil areas F and E on the general soil map. They are associated on the landscape primarily with Bryce, Streator, Swygert, and Rutland soils.

One mapping unit is shown on the soil map:

238 Rantoul silty clay

A very few areas of 238 are undrained and too wet for cropland. Rantoul soils are almost entirely in cropland. Permeability is very slow to slow and surface runoff is very slow to ponded. Available moisture capacity is moderate to high. Surface organic matter content averages 6.0 percent.

Representative profile of Rantoul silty clay, about 30 feet east of culvert, in SW¼, SW¼, SE¼, SE¼ on Sec. 36, T31N, R4E:

A1 (0-18") Black (10YR 2/1 moist) silty clay; moderate to strong fine subangular blocky structure; some small till pebbles; very firm; neutral; clear smooth boundary.

B21g (18-30") Black (10YR 2/1 moist) silty clay, with few fine prominent olive (5Y 5/3 moist) mottles; moderate fine prismatic structure breaking to moderate fine to medium subangular and angular blocky, with very dark gray (10YR 3/1 moist) continuous clay films; some small till pebbles; very firm; slightly acid; clear smooth boundary.

B22g (30-40") Gray (5Y 5/1 moist) heavy silty clay, with common fine distinct olive (5Y 5/4 and 5/6 moist), yellowish brown (10YR 5/8 moist), and black (10YR 2/1 moist) mottles; moderate medium prismatic structure breaking to moderate medium angular blocky, with dark gray (10YR 4/1 moist) continuous clay films; some small till pebbles; very firm; neutral; clear smooth boundary.

B3g (40-60") Olive gray (5Y 5/2 moist) light silty clay, with many fine distinct yellowish brown (10YR 5/4, 5/6, 5/8 moist) mottles; weak coarse angular blocky structure, with olive gray (5Y 4/2 moist) discontinuous clay films; small till pebbles present; firm; neutral.

This description site for Rantoul is an inclusion in an area of Bryce soils.

Ridgeville Series (151)

Ridgeville soils are dark colored, somewhat poorly drained, and developed in sandy alluvium under prairie native vegetation. They occur primarily on stream terraces along the major streams in La Salle County in soil area M on the general soil map. Although associated with a large number of terrace and bottomland soils, Ridgeville soils occur primarily in association with the poorly drained Selma soils.

Two mapping units are shown on the soil map:

151A Ridgeville fine sandy loam, 0 to 2 percent slopes

151B Ridgeville fine sandy loam, 2 to 4 percent slopes

A very few areas of 151A and 151B lack the normal subsoil clay content of typical Ridgeville. Some areas of 151A and 151B have surface textures of loam and subsoil textures of heavy sandy clay loam. Most areas of Ridgeville soils are in cropland, while small or inaccessible areas may be in pasture or sparse trees. Permeability is moderate to moderately rapid, and surface runoff is slow. Available moisture capacity is moderate to high. Surface organic matter content averages 3.0 percent.

Representative profile of Ridgeville fine sandy loam, 50 feet south of fence, 170 feet west of large oak tree, in NW¼, NE¼, NW¼, SW¼ of Sec. 17, T33N, R3E:

Ap (0-10") Black (10YR 2/1 moist) fine sandy loam; weak fine granular structure; roots common; friable; neutral; clear to abrupt smooth boundary.

A3 (10-21") Very dark grayish brown (10YR 3/2 moist) fine sandy loam, with few fine faint dark brown (10YR 3/3 moist) mottles; weak fine granular structure; roots common; friable; neutral; clear smooth boundary.

B1t (21-27") Dark grayish brown (10YR 4/2 moist) light sandy clay loam, with common fine faint brown (10YR 4/3 moist) and grayish brown (10YR 5/2 moist) mottles; weak fine to medium subangular blocky structure; roots common; friable; neutral; clear smooth boundary.

B2t (27-56") Dark brown (10YR 4/3 moist) to dark grayish brown (10YR 5/2 moist) light sandy clay loam, with many fine to medium distinct grayish brown (10YR 5/2 moist) and dark yellowish brown (10YR 4/4 moist) mottles; weak medium subangular blocky structure with gray (10YR 5/1 moist) discontinuous clay films; medium to slightly acid; roots occasional; clear smooth boundary.

C (56-60") Dark grayish brown (10YR 4/2 moist) sand and some fine gravel, stratified; single grain; roots occasional; weakly calcareous.

Ritchey Series (311)

Ritchey soils are light colored, well drained, and developed in 10 to 20 inches of silty material over limestone bedrock under forest native vegetation. They occur on very gently sloping to gently sloping areas primarily on the river bluffs west of Utica and to a lesser extent at places along the Fox River. Ritchey soils are limited in extent in the county, occurring only in areas where limestone is shallow and consequently Ritchey soils have many and varied landscape associates.

Two mapping units are shown on the soil map:

311B Ritchey silt loam, 2 to 4 percent slopes
311C2 Ritchey silt loam, 4 to 7 percent slopes

Some areas of 311B are on slopes of 0 to 2 percent. Most areas of Ritchey soils are in timber or pasture. Permeability is moderate in the upper unconsolidated material and very slow to none in the limestone. Surface runoff is medium. Available moisture capacity is low. Surface organic matter content averages 2.0 percent.

Representative profile of Ritchey silt loam, 33 feet southwest of U.S. Coast and Geodedic benchmark in NE¼, NE¼, NW¼, NW¼ of Sec. 18, T33N, R2E:

A1 (0-4") Very dark grayish brown (10YR 3/2 moist) silt loam; moderate fine granular structure; friable; abundant roots; mildly alkaline; abrupt smooth boundary.

A2 (4-7") Brown (10YR 4/3 moist) silt loam; weak thin and medium platy breaking to moderate fine granular structure; friable; plentiful roots; mildly alkaline; clear smooth boundary.

B2t (7-17") Brown (10YR 4/3 moist) clay loam; moderate to strong fine and medium subangular and angular blocky structure; firm; plentiful roots; thin continuous dark brown (10YR 3/3 moist) clay films; neutral; abrupt smooth boundary.

IIR (17-60") Light brownish gray (2.5Y 6/2 moist) bedded limestone bedrock; calcareous.

Riverwash (123)

Riverwash is a land type consisting mostly of recently deposited calcareous sand and gravel occurring primarily in the floodplains of the Illinois River. Occasionally a thin 1- to 2-inch layer of dark sandy loam material will occur on the surface. Many of the 123 areas contain clam shells. Most of the areas are nearly level to very gently sloping, but a very few areas have slopes up to 12 percent. Most Riverwash areas are idle, but some are in poor pasture. Riverwash usually occurs in small areas and is associated with several bottomland soils. Permeability is rapid to very rapid and surface runoff is slow. Available moisture capacity is very low.

Rodman Series (93)

Rodman soils are dark colored, well drained, and developed in less than 10 inches of gravelly loam material over calcareous gravel and sand. They occur on strongly sloping to steep areas principally in the northeastern part of the county in soil area L on the general soil map. Rodman soils are associated in many areas with the well-drained Fox soils.

Two mapping units are shown on the soil map:

93E2 Rodman gravelly loam, 12 to 18 percent slopes, eroded
93F2 Rodman gravelly loam, 18 to 30 percent slopes, eroded

Some areas of 93E2 and 93F2 may be severely eroded. Some areas of 93E2 have slopes less than 12 percent and some areas of 93F2 have slopes greater than 30 percent. Some areas of 93E2 have a 10- to 24-inch layer of gravelly loam material over the calcareous gravel. Rodman soils are mainly used for forest or pasture. Permeability is very rapid and surface runoff is slow to medium. Available moisture capacity is low. Surface organic matter content averages 3.0 percent.

A very thin (1 to 3 inches) cambic B may sometimes be present in this soil between the A1 and the C.

Representative profile of Rodman gravelly loam, 660 feet west-southwest of center of road on steep slope along Fox River, in SE¼, SE¼, NW¼, SE¼ of Sec. 25, T36N, R5E:

A1 (0-7") Black (10YR 2/1 moist) to very dark brown (10YR 2/2 moist) gravelly loam; weak fine crumb structure; friable, neutral; clear wavy boundary.

C (7-40") Dark yellowish brown (10YR 4/4 moist) cobbly gravel; single grain; loose; calcareous.

Ross Series (73)

Ross soils are noncalcareous dark-colored, moderately well- to well-drained bottomland soils developed in alluvial floodplains of major and minor streams. They occur on nearly level floodplains of many streams in La Salle County. Some areas occur in soil area M on the general soil map and in other soil areas which have streams large enough for floodplains. Ross soils are associated with other bottomland soils such as Sawmill and Lawson.

One mapping unit is shown on the soil map:

73 Ross loam

Some areas of 73 are somewhat poorly drained and some small areas have slopes a little greater than 2 percent. This soil is one of the more variable bottomland soils in the county with respect to drainage class. Most of the smaller, narrow areas of Ross soils are in timber or pasture while some of the larger areas are in cropland. Flooding is a problem on these soils. Permeability is moderate and surface runoff is slow. Available moisture capacity is high. Surface organic matter content averages 4.0 percent.

Representative profile of Ross loam, 20 feet into field at road corner, in NW¼, NE¼, NW¼, NE¼ of Sec. 16, T35N, R4E:

Ap (0-8") Black (10YR 2/1 moist) loam to gritty silt loam; weak fine to medium granular structure; roots abundant; friable; neutral; clear smooth boundary.

A12 (8-15") Black (10YR 2/1 moist) loam to gritty silt loam; weak to moderate fine to medium granular structure; roots abundant; friable; neutral; clear smooth boundary.

A13 (15-30") Very dark grayish brown (10YR 3/2 moist) loam; weak fine subangular blocky structure; roots common; friable; neutral; clear smooth boundary.

C1 (30-40") Yellowish brown (10YR 5/4 moist) fine sandy loam to loam; massive; roots occasional; friable; calcareous; clear smooth boundary.

C2 (40-50") Pale brown (10YR 6/3 moist) fine sandy loam, with few fine distinct yellowish brown (10YR 5/4, 5/6, 5/8 moist) mottles; roots occasional; massive; friable; calcareous.

Rutland Series (375)

Rutland soils are dark colored, somewhat poorly drained, and developed in 35 to 55 inches of loess over silty clay and clay glacial till under prairie native vegetation. They occur on nearly level to gently sloping upland areas almost entirely in soil area E on the general soil map. Rutland soils are associated on the landscape with the moderately well-drained, dark-colored Wenona soils and the very dark-colored, poorly drained Streator soils.

Four mapping units are shown on the soil map:

375A Rutland silt loam, 0 to 2 percent slopes
375B Rutland silt loam, 2 to 4 percent slopes
375B2 Rutland silt loam, 2 to 4 percent slopes, eroded
375C2 Rutland silt loam, 4 to 7 percent slopes, eroded

A very few areas of 375C2 have no erosion to slight erosion. Rutland soils are almost entirely in cropland. Permeability is moderately slow and surface runoff is slow to medium. Available moisture capacity is high. Surface organic matter content averages 4.5 percent.

Representative profile of Rutland silt loam, 662 feet north of the half-section line, 23 feet east of center of road in NW¼, SW¼, SW¼, NW¼ of Sec. 31, T31N, R2E:

A1 (0-14") Black (10YR 2/1 moist) heavy silt loam; moderate fine granular structure; friable; abundant roots; slightly acid; gradual smooth boundary.

A3 (14-19") Very dark gray (10YR 3/1 moist) heavy silt loam; moderate fine and medium granular structure; friable; plentiful roots; medium acid; clear smooth boundary.

B21t (19-23") Very dark gray (10YR 3/1 moist) heavy silty clay loam with common fine faint brown (10YR 4/3 moist) mottles; moderate fine subangular blocky structure with continuous very dark gray (10YR 3/1 moist) coatings; firm; plentiful roots; few iron-manganese concretions; strongly acid; clear smooth boundary.

B22t (23-33") Dark grayish brown (10YR 4/2 moist) heavy silty clay loam to light silty clay with many fine and medium distinct yellowish-brown (10YR 5/4 moist) mottles; moderate fine and medium angular and subangular blocky structure with continuous dark grayish brown (10YR 4/2 moist) clay films; firm; plentiful roots; common iron-manganese concretions; strongly acid; gradual boundary.

B23t (33-42") Grayish brown (2.5Y 5/2 moist) heavy silty clay loam with many fine and medium distinct yellowish brown (10YR 5/6 moist) mottles; weak medium prismatic breaking to moderate to strong medium angular blocky structure with continuous dark grayish brown (2.5Y 4/2 moist) clay films; firm; plentiful roots; common iron-manganese concretions; medium acid; clear smooth boundary.

B31t (42-46") Mixed grayish brown (2.5Y 5/2 moist) and yellowish brown (10YR 5/6 moist) silty clay loam; weak coarse angular and subangular blocky structure with discontinuous dark gray (10YR 4/1 moist) and grayish brown (2.5Y 5/2 moist) clay films; firm; occasional roots; common iron-manganese concretions; neutral; abrupt smooth boundary.

IIB32t (46-55") Mixed greenish gray (5G 5/1), brown (10YR 4/3 moist) and yellowish brown (10YR 5/6 moist) light silty clay; weak coarse angular blocky structure with greenish gray (5G 6/1 moist) clay films; very firm; calcareous; clear smooth boundary.

IIC (55-65") Mixed greenish gray (5G 5/1 moist) and brown (10YR 4/3 moist) silty clay; massive; very firm; calcareous glacial till.

Sabina Series (236)

Sabina soils are light colored, somewhat poorly drained, and developed in 40 to 60 inches of loess over loam and silty clay loam glacial till under forest native vegetation. They occur on nearly level to very gently sloping upland areas primarily in soil areas I and J on the general soil map. They are associated on the landscape with Birkbeck and Hennepin soils.

Two mapping units are shown on the soil map:

236A Sabina silt loam, 0 to 2 percent slopes
236B Sabina silt loam, 2 to 4 percent slopes

A very few areas of 236B are moderately eroded. In general, the Sabina soils in soil area J in the northeast part of the county are underlain by loam glacial till. Sabina soils in soil areas J and I in the rest of the county are underlain by silty clay loam till. Sabina soils are mostly in cropland, with some in timber and pasture. Permeability is moderate to moderately slow and surface runoff is slow to medium. Available moisture capacity is high. Surface organic matter content averages 2.0 percent.

Representative profile of Sabina silt loam, 25 feet west of N-S forest field fence in SE¼, SW¼, SE¼, SE¼ of Sec. 22, T36N, R4E:

A1 (0-6") Very dark gray (10YR 2/1 moist) (10YR 5/1 to 6/1 dry) silty loam; moderate medium to coarse granular structure; roots abundant; friable; neutral; clear smooth boundary.

A2 (6-11") Grayish brown (10YR 5/2 moist) silt loam; weak fine platy structure breaking to weak medium granular; roots abundant; friable; neutral; abrupt smooth boundary.

B1 (11-15") Brown (10YR 5/3 moist) light silty clay loam; moderate fine subangular blocky structure, with light gray (10YR 6/1 moist) patchy silt coatings; roots common; many fine Fe-Mn concretions; friable; neutral; clear smooth boundary.

B2t (15-36") Grayish brown (2.5Y 5/2 moist) to dark grayish brown (2.5Y 4/2 moist) heavy silty clay loam, with many fine distinct yellowish brown (10YR 5/4, 5/6, 5/8 moist) mottles; weak medium prismatic structure breaking to moderate medium subangular and angular blocky structure, with dark gray (10YR 4/1 moist) continuous clay films; roots common, many fine Fe-Mn concretions; firm; medium acid; gradual smooth boundary.

B31t (36-45") Mixed dark grayish brown (2.5Y 4/2 moist) and light olive brown (10YR 5/4 and 5/6 moist) light silty clay loam; moderate medium subangular blocky structure, with dark gray (10YR 4/1 moist) continuous clay films; firm; neutral; clear smooth boundary.

IIB32 (45-48") Mixed light gray (10YR 6/1 moist) and yellowish brown (10YR 5/4, 5/6, 5/8 moist) gritty light silty clay loam; weak medium subangular blocky structure; firm; neutral; clear smooth boundary.

IIC (48-60") Mixed light gray (10YR 6/1 moist) and yellowish brown (10YR 5/4, 5/6, 5/8 moist) loam; till; massive; friable; calcareous.

Sable Series (68)

Sable soils are very dark colored, poorly drained, and developed in more than 60 inches of loess under prairie native vegetation consisting of marsh grasses and sedges. They occur on level to nearly level loess-covered uplands in soil area A on the general soil map. They are associated with the dark-colored, somewhat poorly drained Muscatine soils and the dark-colored, moderately well- to well-drained Tama soils.

One mapping unit is shown on the soil map:

68 Sable silty clay loam

Some areas of 68 have 6 to 12 inches of dark-colored silty overwash over the normal Sable profile and a very few areas have slopes of slightly greater than 2 percent. Sable soils are used almost entirely for cropland. Permeability is moderate. Surface runoff is slow to ponded. Available moisture capacity is high to very high. Surface organic matter content averages 5.5 percent.

Representative profile of Sable silty clay loam, in field 275 feet west of quarter-line fence in SE¼, SE¼, SW¼, SW¼ of Sec. 5, T35N, R3E:

A11 (0-9") Black (N 2/ moist) silty clay loam; moderate fine granular structure; friable; neutral; clear smooth boundary.

A12 (9-16") Black (N 2/ moist) silty clay loam; moderate medium granular structure; firm; neutral; clear smooth boundary.

B1g (16-21") Dark grayish brown (2.5Y 4/2 moist) silty clay loam, with many fine distinct yellowish brown (10YR 5/4, 5/6, 5/8 moist) and gray (10YR 5/1 moist) mottles; moderate fine to medium subangular blocky structure, with very dark gray (10YR 3/1 moist) continuous clay films; firm, neutral; clear smooth boundary.

B2g (21-35") Olive gray (5Y 5/2 moist) silty clay loam, with many medium distinct yellowish brown (10YR 5/4, 5/6, 5/8 moist), gray (10YR 5/1 moist), and light brownish gray (10YR 6/2 moist) mottles; weak medium prismatic structure breaking to moderate fine to medium subangular blocky, with dark grayish brown (2.5Y 4/2 moist) continuous and black (N 2/ moist) patchy clay films; many fine Fe-Mn concretions; firm, neutral; clear smooth boundary.

B3g (35-46") Olive gray (5Y 5/2 moist) silty clay loam, with few fine distinct gray (N 6/ moist) and yellowish brown (10YR 5/6 and 5/8 moist) mottles; weak coarse angular blocky structure, with black (N 2/ moist) patchy clay films; many fine Fe-Mn concretions; firm; neutral to mildly alkaline; clear smooth boundary.

C1g (46-62") Mixed yellowish brown (10YR 5/6 and 5/8 moist), brownish yellow (10YR 6/6 moist), and grayish brown (2.5Y 5/2 moist) heavy silt loam; massive; many fine Fe-Mn concretions; firm; neutral to mildly alkaline; clear smooth boundary.

C2g (62-72") Mixed yellowish brown (10YR 5/6 and 5/8 moist) and grayish brown (2.5Y 5/2 moist) silt loam; massive; few fine Fe-Mn concretions; friable; calcareous.

Sandstone Rockland (9)

This land type is found on steep slopes ranging from 30 percent to nearly vertical. Sandstone outcrops over at least part of the areas mapped, with the depth to sandstone varying from 0 to 6 inches in other parts of these delineations. Usually this type has a number of rock fragments strewn on the surface. These areas usually have trees where the depth to sandstone is great enough to support growth. Since this type is so variable, no typical profile description is given. Where unconsolidated material appears over the sandstone it varies in texture from a silt loam or loam near the top of the slope to the more sandy textures near the bottom of the slope. Some of the areas included in this type are nearly vertical exposures of bare St. Peters sandstone occurring mainly west of Ottawa in the Starved Rock-Buffalo Rock areas. Viewed from above on aerial photos this area has very narrow belts along the Illinois River. In La Salle County the area involved with this type is essentially all St. Peters sandstone of Ordovician age with a few areas occurring in Pennsylvania sandstone east of Ottawa along the Illinois River. This land type is mostly idle except that used for recreation.

Sawmill Series (107)

Sawmill soils are very dark colored, poorly drained, and developed in bottomlands in silty clay loam alluvial sediments. They occur on level to nearly level areas in the floodplains of major and minor streams in the county. Sawmill soils are associated on the floodplain landscape with other bottomland soils such as Lawson and Ross.

One mapping unit is shown on the soil map:

107 Sawmill silty clay loam

Some areas of 107 tend to be wet for longer periods than others. Some areas have 6 to 12 inches of dark silty overwash over the normal Sawmill profile. Periodic flooding is a problem with this soil. Some areas are used for cropland, but some are in timber and pasture. Permeability is moderate to moderately slow and surface runoff is slow to ponded. Available moisture capacity is high to very high. Surface organic matter content averages 4.5 percent.

Representative profile of Sawmill silty clay loam, 350 feet west and 200 feet south of northeast corner of Sec. 18, T34N, R1E:

A11 (0-14") Black (N 2/ moist) silty clay loam; moderate medium to coarse granular structure; firm; neutral; clear smooth boundary.

A12 (14-24") Very dark gray (10YR 3/1 moist) silty clay loam; moderate medium granular structure; firm; neutral; clear smooth boundary.

B1g (24-27") Dark gray (10YR 4/1 moist) silty clay loam, with common fine distinct yellowish brown (10YR 5/6 moist) and gray (10YR 5/1 moist) mottles; moderate fine subangular blocky structure; firm; neutral; clear smooth boundary.

B21g (27-38") Gray (10YR 5/1 moist) to grayish brown (10YR 5/2 moist) silty clay loam, with common fine distinct yellowish brown (10YR 5/6 moist) mottles; moderate fine to medium angular and subangular blocky structure, with dark gray (10YR 4/1 moist) discontinuous clay films; firm; slightly acid; clear smooth boundary.

B22g (38-52") Gray (10YR 5/1 moist) silty clay loam, with few fine distinct yellowish brown (10YR 5/6 moist) mottles; weak coarse angular blocky structure; firm; neutral; clear smooth boundary.

Cg (52-60") Gray (10YR 5/1 moist) gritty silty clay loam stratified with sands, silts and clays to 70"; massive; friable; neutral.

Saybrook Series (145)

Saybrook soils are dark colored, moderately well- to well-drained, and developed in 18 to 40 inches of loess over loam glacial till under prairie native vegetation. They occur on very gently sloping to gently sloping upland areas. The largest area of occurrence is in the northern part of area H on the east county line, north of the Illinois River. Other areas of Saybrook soils are found occasionally in soil area B on the general soil map. Saybrook soils are located on the landscape with the very dark-colored, poorly drained Drummer soils and the dark-colored, somewhat poorly drained Flanagan soils.

Two mapping units are shown on the soil map:

145B Saybrook silt loam, 2 to 4 percent slopes
145C2 Saybrook silt loam, 4 to 7 percent slopes, eroded

Some areas of 145B are moderately eroded and a very few areas have slopes of less than 2 percent. Saybrook soils are mostly in cropland. Permeability is moderate. Surface runoff is medium. Available moisture capacity is high. Surface organic matter content averages 4.0 percent.

Representative profile of Saybrook silt loam, 1,320 feet northeast of center of blacktop road along gravel road, then 10 feet north of ROW (right-of-way) in field, in NE¼, SW¼, SW¼ of Sec. 36, T35N, R5E:

Ap (0-9") Black (10YR 2/1 moist) silt loam; weak to moderate fine granular structure; friable; neutral; abrupt smooth boundary.

A3 (9-13") Very dark grayish brown (10YR 3/2 moist) silt loam; moderate fine granular structure; friable; neutral; clear smooth boundary.

B1 (13-17") Brown (10YR 4/3 moist) light silty clay loam; moderate fine subangular blocky structure, with thin discontinuous clay films; friable medium acid; clear smooth boundary.

B21t (17-23") Brown (10YR 4/3 moist) silty clay loam; moderate fine to medium subangular blocky structure, with continuous clay films; firm; slightly acid; abrupt smooth boundary.

IIB3 (23-29") Brown (10YR 4/3 to 5/3 moist) gritty silty clay loam, with few fine faint yellowish brown (10YR 5/4 and 5/8 moist) mottles; moderate fine to medium subangular blocky structure, with continuous clay films; firm; slightly acid, some pebbles; clear smooth boundary.

IIC (29-36") Yellowish brown (10YR 5/4 moist) loam, with common fine faint to distinct yellowish brown (10YR 5/6 and 5/8 moist) and light brownish gray (10YR 6/2 moist) mottles; weak coarse angular blocky structure to massive; friable; calcareous.

Selma Series (125)

Selma soils are dark colored, poorly drained, and developed in 40 to 60 inches of loamy alluvium over stratified sands and loamy sands under prairie native vegetation consisting of marsh grasses and sedges. They occur on level to nearly level bottomland and terrace areas primarily along the Illinois River in soil area M on the general soil map. They are associated on the landscape with Ridgeville and Dickinson soils.

One mapping unit is shown on the soil map:

125 Selma loam

Some areas of 125 are wet and some areas contain more sand in the upper 40 inches or so than is normal for the Selma soils. Most areas of Selma soils are in cropland except those which are too wet. Permeability is moderate. Surface runoff is very slow to ponded. Available moisture capacity is moderate to high. Surface organic matter content averages 5.0 percent.

Representative profile of Selma loam, 370 feet north of gravel road and 50 feet east of county line, in NW¼, SW¼, NW¼, SW¼ of Sec. 30, T33N, R1E:

Ap (0-10") Black (10YR 2/1 moist) light loam; weak fine to medium granular structure; friable; neutral; abrupt smooth boundary.

A3 (10-20") Black (10YR 2/1 moist) loam, weak fine to medium granular structure; friable; neutral; clear smooth boundary.

B21g (20-34") Dark grayish brown (2.5Y 4/2 moist) light clay loam to sandy clay loam, with many fine distinct yellowish brown (10YR 5/6 and 5/8 moist) and grayish brown (10YR 5/2 moist) mottles; moderate medium subangular blocky structure; firm to friable; neutral; clear smooth boundary.

B22g (34-42") Dark grayish brown (2.5Y 4/2 moist) light clay loam to sandy clay loam, with many fine distinct yellowish brown (10YR 5/6 and 5/8 moist) mottles; weak to moderate medium subangular blocky structure, firm, neutral; clear smooth boundary.

Cg (42-60") Mixed gray (10YR 5/1 moist), grayish brown (10YR 5/2 moist) and brown (10YR 5/3 moist) loamy sand to light sandy loam; single grain; loose; neutral; stratified.

Shale Rockland (95)

This land type is found mainly on steep slopes ranging up to nearly vertical. The shale ranges from a sandy shale in the eastern part of the county along the Illinois River to a more clayey shale in the western part of the county along the Illinois and Vermilion rivers. Areas occur along the Vermilion River from the mouth at the Illinois River to Streator on the south. The shale is neutral to slightly acid. Where the slopes are very steep, exposing bare shale, little or no vegetation occurs. Where slopes are less steep a thin layer of unconsolidated material over the shale supports trees. Permeability is very slow. Surface runoff is rapid to very rapid. Available moisture capacity is low. Most of these areas are barren or in forest.

Sparta Series (88)

Sparta soils are dark-colored, well-drained sandy soils developed in deep sandy wind-reworked alluvium under prairie native vegetation. They occur on very gently sloping to sloping areas along the Fox River near Millington and Sheridan, west of Ottawa, and near Seneca along the Illinois River. Sparta soils are not extensive, occurring in isolated areas, and are associated with a variety of alluvial soils.

Two mapping units are shown on the soil map:

88B Sparta loamy sand, 2 to 4 percent slopes
88D2 Sparta loamy sand, 7 to 12 percent slopes, eroded

A few areas of 88B have slopes of less than 2 percent. A few areas of 88D2 have surface horizons thinner than indicated in the profile description above. Also some areas of 88D2 occur on 4- to 7-percent slopes. Some areas of Sparta soils are in cropland, but many are in pasture or planted to evergreens. Permeability is very rapid. Surface runoff is slow. Available moisture capacity is very low. Surface organic matter content averages 2.0 percent.

Representative profile of Sparta loamy sand, approximately 1,050 feet south of Route 71 along lane in SW¼, SW¼, NW¼, SW¼ of Sec. 21, T33N, R3E:

A1 (0-13") Very dark grayish brown (10YR 3/2 moist) loamy sand; single grain; very friable; slightly acid; clear smooth boundary.

C1 (13-35") Yellowish brown (10YR 5/6 moist) sand; single grain; loose; slightly acid; diffuse smooth boundary.

C2 (35-60") Brownish yellow (10YR 6/6 moist) sand; single grain; loose; strongly acid.

Starks Series (132)

Starks soils are light colored, somewhat poorly drained, and developed in 24 to 40 inches of loess or silty material over stratified loamy outwash under forest native vegetation. They occur on nearly level to very gently sloping stream terraces and upland glacial outwash plains primarily in area J on the general soil map. They are associated on the landscape with the light-colored, well-drained Camden and Hennepin soils.

Two mapping units are shown on the soil map:

132A Starks silt loam, 0 to 2 percent slopes
132B Starks silt loam, 2 to 4 percent slopes

Starks soils are mostly in cropland, with a small amount in timber and pasture. Permeability is moderate to moderately slow and surface runoff is medium. Available moisture capacity is high. Surface organic matter content averages 2.0 percent.

Representative profile of Starks silt loam, in center of SE¼, Sec. 23, T32N, R2E:

A1 (0-4") Very dark gray (10YR 3/1 moist) (10YR 5/1 dry) silt loam; moderate fine granular structure; friable; neutral; abrupt smooth boundary.

A2 (4-12") Pale brown (10YR 6/3 moist) silt loam; weak fine platy structure breaking to moderate medium granular; friable; slightly acid, clear smooth boundary.

B1t (12-18") Brown (10YR 5/3 moist) light silty clay loam, with few fine faint gray (10YR 5/1 and 6/1 moist) mottles; moderate fine subangular blocky structure, with light gray (10YR 7/2) continuous clay coatings; firm; medium acid; clear smooth boundary.

B21t (18-24") Brown (10YR 5/3 moist) to grayish brown (10YR 5/2 moist) silty clay loam, with many fine distinct yellowish brown (10YR 5/6 and 5/8 moist), light brownish gray (10YR 6/2 moist) mottles; moderate medium subangular blocky structure, with light gray (10YR 7/2) discontinuous silt coatings and gray (10YR 5/1 moist) to grayish brown (10YR 5/2 moist) continuous clay films; strongly acid; gradual smooth boundary; many fine Fe-Mn concretions.

IIB22t (24-36") Grayish brown (10YR 5/2 moist) to brown (10YR 5/3 moist) silty clay loam with some sand, with many fine distinct yellowish brown (10YR 5/6 and 5/8 moist) and light brownish gray (10YR 6/2 moist) mottles; moderate medium subangular blocky structure, with grayish brown (10YR 5/2 moist) discontinuous clay films; firm; very strongly acid; many fine Fe-Mn concretions; gradual smooth boundary.

IIB31 (36-46") Mixed yellowish brown (10YR 5/6 and 5/8 moist) and light brownish gray (10YR 6/2 moist) sandy clay loam; stratified weak medium to coarse subangular blocky structure; firm; strongly acid; gradual smooth boundary.

IIB32 (46-60") Mixed yellowish brown (10YR 5/4 and 5/8 moist) and gray (10YR 6/1 moist) sandy clay loam; stratified; very weak coarse subangular blocky structure; firm to friable; strongly acid; abrupt smooth boundary.

IIC (60-70") Yellowish brown (10YR 5/4 moist) heavy sandy loam; massive; friable; medium acid.

St. Charles Series (243)

St. Charles soils are light colored, well- to moderately-well drained, and developed in 40 to 60 inches of loess over stratified loamy outwash or sandy loam glacial till under forest native vegetation. They occur on nearly level to sloping areas on stream terraces and glacial outwash plains primarily in soil area J on the general soil map and occasionally are found in soil areas I and K. They are associated on the landscape with the light-colored, somewhat poorly drained Kendall soils and in some areas with the light-colored, well-drained Camden soils.

Seven mapping units are shown on the soil map:

243A St. Charles silt loam, 0 to 2 percent slopes
243B St. Charles silt loam, 2 to 4 percent slopes
243B2 St. Charles silt loam, 2 to 4 percent slopes, eroded
243C St. Charles silt loam, 4 to 7 percent slopes
243C2 St. Charles silt loam, 4 to 7 percent slopes, eroded
243C3 St. Charles soils, 4 to 7 percent slopes, severely eroded
243D2 St. Charles silt loam, 7 to 12 percent slopes, eroded

Some areas of 243B and 243C2, especially near Sheridan, are underlain by stratified sand and gravel. Some areas of 243B2, 243C2, 243C3, and 243D2 have only 15 to 30 inches of silty material over sandy loam till and occur almost entirely in soil area J in the northeast part of the county. A few areas of 243D2 are severely eroded. Most areas of St. Charles soils are in cropland, but some are in timber and pasture. Permeability is moderate and surface runoff is medium. Available moisture is high. Surface organic matter content averages 2.0 percent.

Representative profile of St. Charles silt loam, 550 feet west of northeast corner of section 8, then 60 feet south of center of road, in T36N, R3E:

A1 (0-5") Dark grayish brown (10YR 4/2 moist) silt loam; weak fine crumb structure; friable; slightly acid; abrupt smooth boundary.

A2 (5-13") Pale brown (10YR 6/3 moist) silt loam; weak fine platy structure; friable; medium acid; abrupt smooth boundary.

B1 (13-17") Dark brown (10YR 4/3 moist) light silty clay loam; moderate fine subangular blocky structure; firm; thin patchy very pale brown (10YR 8/3) silt coats; medium acid; clear smooth boundary.

B21t (17-22") Dark yellowish brown (10YR 4/4 moist) silty clay loam; moderate fine and medium subangular blocky structure; firm; thin continuous brown (7.5YR 4/4 moist) clay films and some very pale brown (10YR 8/3) silt coats; medium acid; clear smooth boundary.

B22t (22-35") Dark yellowish brown (10YR 4/4 moist) silty clay loam; common faint yellowish brown (10YR 5/6 moist) mottles; moderate fine and medium subangular blocky structure; firm; thin continuous brown (7.5YR 4/4 moist) clay films; medium acid; gradual smooth boundary.

B31 (35-41") Yellowish brown (10YR 5/4 moist) light silty clay loam; few fine distinct pale brown (10YR 6/3 moist) and common fine faint yellowish brown (10YR 5/8 moist) mottles; weak medium and coarse subangular blocky and blocky structure; firm; medium acid; gradual smooth boundary.

B32 (41-52") Yellowish brown (10YR 5/4 moist) heavy silt loam; many medium and coarse faint yellowish brown (10YR 5/8 moist) and brown (10YR 5/3 moist) mottles; weak coarse blocky structure; friable; medium acid; gradual wavy boundary.

IIB33 (52-62") Dark brown (7.5YR 4/4 moist) heavy loam; weak coarse blocky structure; friable; neutral; clear wavy boundary.

IIC (62-70") Yellowish brown (10YR 5/6 moist) stratified loam, silt loam and sandy loam; structureless, massive; calcareous.

St. Clair Series (560)

St. Clair soils are light colored, moderately well drained, and developed in 12 to 30 inches of loess or silty material on silty clay to clay glacial till under forest native vegetation. They occur on gently sloping to strongly sloping upland glacial till plains in soil area K in the eastern part of the county. St. Clair soils are associated on the landscape with the light-colored, somewhat poorly drained Nappanee soils and the light-colored, moderately well- to well-drained Chatsworth soils.

Four mapping units are shown on the soil map:

560C2 St. Clair silt loam, 4 to 7 percent slopes, eroded
560D St. Clair silt loam, 7 to 12 percent slopes
560D2 St. Clair silt loam, 7 to 12 percent slopes, eroded
560E2 St. Clair silt loam, 12 to 18 percent slopes, eroded

This description site for St. Clair is an inclusion in an area of Chatsworth soils.

The 560C2 mapping unit has 10 to 15 inches more loess than is normal for modal St. Clair soils and a few areas are somewhat poorly drained. A very few areas of 560D have thicker loess than normal and are moderately eroded. Some areas of 560D2 have moderately dark-colored surfaces and in some instances these areas are severely eroded. A very few areas of 560E2 are only slightly eroded. Most areas of St. Clair soils are in timber or pasture, but some are in cropland. Permeability is slow to very slow. Surface runoff is medium on lesser slopes and rapid on steeper slopes. Available moisture capacity is moderate. Surface organic matter content averages 2.0 percent.

Representative profile of St. Clair silt loam, in NW¼, SW¼, NE¼, NW¼, SE¼ of Sec. 25, T33N, R4E:

A1 (0-3") Dark gray (10YR 4/2 moist) silt loam; moderate fine to medium granular structure; friable; very strongly acid, clear smooth boundary.

A21 (3-6") Brown (10YR 5/3 moist) silt loam; weak medium platy structure breaking to moderate medium granular; friable; very strongly acid; clear smooth boundary.

A22 (6-9") Yellowish brown (10YR 5/4 moist) silt loam; weak coarse platy structure breaking to moderate very fine subangular blocky; friable; very strongly acid; clear smooth boundary.

B1t (9-14") Yellowish brown (10YR 5/4 moist) silty clay loam; moderate very fine subangular blocky structure, with light gray (10YR 7/1) silt coatings; and brown (10YR 5/3 moist) continuous clay films; firm; strongly acid; clear smooth boundary.

IIB21t (14-23") Yellowish brown (10YR 5/4 moist) heavy silty clay loam, with many fine faint yellowish brown (10YR 5/6 moist) and grayish brown (10YR 5/2 moist) mottles; moderate fine subangular blocky structure, with brown (10YR 5/3 moist) continuous clay films; few pebbles; firm; strongly acid; clear smooth boundary.

IIB22t (23-26") Brown (10YR 4/3 moist) heavy silty clay loam, with many fine distinct yellowish brown (10YR 5/8 moist) mottles; moderate fine subangular blocky structure, with dark grayish brown (10YR 4/2 moist) to very dark grayish brown (10YR 3/2 moist) continuous clay films; few pebbles; firm; slightly acid to neutral; clear smooth boundary.

IIB23t (26-30") Greenish gray (5GY 5/1 moist) and yellowish brown (10YR 5/4 moist) silty clay; moderate fine angular blocky structure; common pebbles and stones; very firm; slightly acid to neutral; gradual smooth boundary.

IIB3t (30-38") Yellowish brown (10YR 5/4 moist) matrix color, with 1-2 mm. gray (5Y 5/1 moist) surrounding the matrix; silty clay; moderate fine angular blocky structure; common pebbles and stones; very firm; calcareous; clear smooth boundary.

IIC (38-50") Matrix color of yellowish brown (10YR 5/4 moist) with 1-2 mm. gray (5Y 5/1 moist) surrounding the matrix, silty clay; weak coarse angular blocky structure to massive; light gray (10YR 7/1) secondary carbonates; common pebbles and stones; very firm; calcareous.

Strawn Series (224)

Strawn soils are light colored, well to moderately well drained, and developed in less than 12 inches of loess on loam glacial till under forest native vegetation. They occur on gently sloping to sloping upland loam glacial till areas primarily in soil area J on the general soil map. Strawn soils are associated on the landscape with the light-colored, well-drained Dodge and Hennepin soils.

Three mapping units are shown on the soil map:

224C3 Strawn soils, 4 to 7 percent slopes, severely eroded

224D2 Strawn silt loam, 7 to 12 percent slopes, eroded

224D3 Strawn soils, 7 to 12 percent slopes, severely eroded

A very few areas of 224C3 are moderately eroded. Some areas of 224D3 have a little thicker layer of loess than is normal for Strawn and have a little thicker solum. Most areas of Strawn soils are in cropland, but some are in timber and pasture. Permeability is moderate and surface runoff is rapid. Available moisture capacity is high. Surface organic matter content averages 2.0 percent.

Representative profile of Strawn silt loam, 10 feet south and 10 feet west of south gate post in SE¼, NW¼, SW¼, NE¼ of Sec. 10, T36N, R4E:

Ap (0-5") Very dark grayish brown (10YR 3/2 moist) (10YR 5/2 dry) silt loam; moderate fine granular structure; friable; neutral; abrupt smooth boundary.

B1 (5-8") Dark grayish brown (10YR 4/2 moist) light silty clay loam; moderate fine subangular blocky structure; with very dark grayish brown (10YR 3/2 moist) continuous clay films; firm; slightly acid, clear smooth boundary.

B21t (8-12") Brown (10YR 4/3 moist) silty clay loam; moderate fine angular and subangular blocky structure, with dark grayish brown (10YR 4/2 moist) continuous clay films; firm; slightly acid; clear smooth boundary.

IIB22t (12-16") Brown (10YR 4/3 moist) gritty silty clay loam; moderate fine angular and subangular blocky structure, with dark grayish brown (10YR 4/2 moist) continuous clay films; slightly acid to neutral; clear smooth boundary.

IIB3 (16-22") Dark yellowish brown (10YR 4/4 moist) gritty silty clay loam; weak to moderate medium angular and subangular blocky structure; firm; neutral; clear smooth boundary.

IIC (22-40") Yellowish brown (10YR 5/4 moist) loam; massive; till; friable; calcareous.

Streator Series (435)

Streator soils are very dark colored, poorly drained, and developed in 40 to 60 inches of loess over silty clay glacial till under prairie native vegetation consisting of marsh grasses and sedges. They occur on level to nearly upland glacial till areas in soil area E on the general soil map. They are associated with the dark-colored, somewhat poorly drained Rutland soils and the dark-colored, moderately well-drained Wenona soils.

One mapping unit is shown on the soil map:

435 Streator silty clay loam

Some areas of 435 have 6 to 12 inches of silty overwash over the normal Streator soil profile. Streator soils are almost entirely in cropland. Permeability is moderately slow. Surface runoff is slow to ponded. Available moisture capacity is high. Surface organic matter content averages 5.5 percent.

Representative profile of Streator silty clay loam, 415 feet south of the northeast corner of Sec. 19 and 50 feet west of center of road in T30N, R2E:

Ap (0-8") Black (10YR 2/1 moist) heavy silty clay loam; weak fine and medium granular structure; friable; plentiful roots; neutral; clear smooth boundary.

A12 (8-12") Black (N 2/ moist) light silty clay; strong medium and coarse granular structure; firm; plentiful roots; neutral; clear smooth boundary.

B21 (12-16") Very dark gray (10YR 3/1 moist) light silty clay; weak medium prismatic structure breaks to moderate fine and medium subangular blocky structure; firm; plentiful roots; few dark brown (10YR 3/3 moist) iron-manganese concretions; neutral; clear smooth boundary.

B22g (16-20") Dark gray (5Y 4/1 moist) heavy silty clay loam, few fine faint grayish brown (10YR 5/2 moist) mottles; weak medium prismatic structure breaks to moderate fine and medium subangular blocky structure; firm; plentiful roots; thin continuous very dark gray (10YR 3/1 moist) clay films; few to common dark brown (10YR 3/3 moist) iron-manganese concretions; neutral; clear smooth boundary.

B23g (20-30") Olive gray (5Y 4/2 moist) heavy silty clay loam, common fine distinct yellowish brown (10YR 5/6 moist) mottles; moderate medium and coarse prismatic structure breaks to strong medium and coarse blocky structure; very firm; plentiful roots; thin continuous dark gray (5Y 4/1 moist) clay films; many iron-manganese concretions; neutral; gradual smooth boundary.

B31g (30-38") Dark gray (5Y 4/1 moist) heavy silty clay loam, many fine distinct light olive brown (2.5Y 5/4 moist) and yellowish brown (10YR 5/6 moist) mottles; moderate medium and coarse prismatic structure breaks to moderate medium and coarse blocky structure; very firm; plentiful roots; thin continuous grayish brown (10YR 5/2 moist) and gray (5Y 5/1 moist) clay films; many very dark brown (10YR 2/2 moist) iron-manganese concretions; mildly alkaline; gradual smooth boundary.

B32g (38-42") Olive gray (5Y 5/2 moist) heavy silty clay loam, many fine and medium prominent yellowish brown (10YR 5/4 and 5/6 moist) mottles; moderate coarse prismatic structure breaks to weak medium and coarse blocky structure; very firm; few roots; discontinuous gray (5Y 5/1 moist) clay films; mildly alkaline; gradual smooth boundary.

IIB33g (42-51") Olive gray (5Y 5/2 moist) silty clay, many fine and medium prominent yellowish brown (10YR 5/4 and 5/6 moist) mottles; weak medium and coarse prismatic structure; very firm; no roots; discontinuous gray (5Y 5/1 moist) clay films; many glacial pebbles; calcareous; gradual smooth boundary.

IIC (51-60") Gray (5Y 5/1 moist) heavy silty clay, many fine and medium prominent yellowish brown (10YR 5/6 and 5/8 moist) mottles; structureless; massive; very firm; calcareous.

Stronghurst Series (278)

Stronghurst soils are light colored, somewhat poorly drained, and developed in more than 60 inches of loess under forest native vegetation. They occur on nearly level to very gently sloping loess-covered uplands in soil areas J and I on the general soil map where the loess is over 60 inches thick. They are associated on the landscape with the light-colored, well- and moderately well-drained Fayette soils and the light-colored, poorly drained Traer soils.

Two mapping units are shown on the soil map:

278A Stronghurst silt loam, 0 to 2 percent slopes
278B Stronghurst silt loam, 2 to 4 percent slopes

A few areas of 278A are moderately well drained. Stronghurst soils are mostly in cropland, but some are in timber and pasture. Permeability is moderate. Surface runoff is slow to medium. Available moisture capacity is high to very high. Surface organic matter content averages 2.0 percent.

Representative profile of Stronghurst silt loam, 268 feet south of gravel road and 290 feet west of half-line fence in SE¼, NE¼, NE¼, NW¼ of Sec. 11, T34N, R1E:

A1 (0-4") Very dark grayish brown (10YR 3/2 moist) friable silt loam; moderate fine and medium crumb; abundant roots; few worm channels filled with A2 material in lower part; medium acid; clear smooth boundary.

A2 (4-9") Grayish brown (10YR 5/2 moist) friable silt loam; moderate medium platy breaking to weak fine subangular blocky; common roots; many worm channels filled with A1 material; strongly acid; clear smooth boundary.

B1 (9-14") Brown (10YR 5/3 moist) firm light silty clay loam; few fine faint yellowish brown (10YR 5/4 moist) mottles; moderate very fine and fine subangular blocky; brown (10YR 5/3 moist) very thin continuous clay coatings and light brownish gray (10YR 6/2) thin patchy silt coatings; common roots; occasional black (N 2/ moist) Fe-Mn concretions; occasional worm channels filled with A1 material; strongly acid; clear smooth boundary.

B21t (14-22") Grayish brown to brown (10YR 5/2-5/3 moist crushing to 10YR 5/4 moist) firm silty clay loam; few fine faint yellowish brown (10YR 5/4 and 5/6 moist) mottles; moderate fine angular and subangular blocky with dark grayish brown (10YR 4/2 moist) thin shiny continuous clay coatings; occasional roots; occasional Fe-Mn concretions; strongly acid; clear smooth boundary.

B22t (22-29") Grayish brown (2.5Y 5/2 crushing to 10YR 5/3 moist) firm medium silty clay loam; many fine distinct yellowish brown (10YR 5/6 and 5/4 moist), light brownish gray (2.5Y 6/2 moist) and dark grayish brown (2.5Y 4/2 moist) mottles; moderate fine and medium angular blocky with dark grayish brown (10YR 4/2 moist) thin shiny continuous clay coatings; common fine black (N 2/) Fe-Mn concretions; occasional roots; medium acid; diffuse smooth boundary.

B23t (29-40") Mixed light brownish gray (2.5Y 6/2 moist) and grayish brown (2.5Y 5/2 moist) firm medium silty clay loam with many fine distinct yellowish brown (10YR 5/6 and 5/8 moist) and dark grayish brown (10YR 4/2 moist) mottles; weak medium prismatic breaking to moderate medium and coarse angular blocky with grayish brown (10YR 5/2 moist) and dark grayish brown (10YR 4/2 moist) thin shiny continuous clay coatings, thickest on vertical faces; many fine black (N 2/0 moist) Fe-Mn concretions; occasional roots; neutral; clear smooth boundary.

C1 (40-60") Mixed grayish brown (2.5Y 5/2 moist) and yellowish brown (10YR 5/6 and 5/8 moist) friable heavy silt loam; occasional vertical cleavage planes with grayish brown (2.5Y 5/2 moist) thin shiny clay coatings; many fine black (N 2/ moist) Fe-Mn concretions; occasional roots; neutral to mildly alkaline; diffuse smooth boundary.

Sunbury Series (234)

Sunbury soils are moderately dark colored, somewhat poorly drained, and developed in 40 to 60 inches of loess over loam and silty clay loam glacial till under mixed prairie-forest native vegetation. They occur on nearly level to very gently sloping upland loess-covered glacial till plains primarily on the border between soil areas I-J and B-C on the general soil map. Sunbury soils are associated on the landscape with dark-colored, somewhat poorly drained Flanagan soils, light-colored, somewhat poorly drained Sabina soils, and dark-colored, poorly drained Drummer soils.

Two mapping units are shown on the soil map:

234A Sunbury silt loam, 0 to 2 percent slopes
234B Sunbury silt loam, 2 to 4 percent slopes

Some areas of 234B are moderately eroded. Sunbury soils are almost entirely in cropland. Permeability is moderate. Surface runoff is slow to medium. Available moisture capacity is high. Surface organic matter content averages 3.0 percent.

Representative profile of Sunbury silt loam, at edge of field in SW¼, NW¼, SW¼, NE¼ of Sec. 10, T36N, R4E:

Ap (0-8") Very dark brown (10YR 2/2 moist) silt loam; moderate fine granular structure; friable; slightly acid; abrupt smooth boundary.

A2 (8-12") Very dark grayish brown (10YR 3/2 moist) to grayish brown (10YR 4/2 moist) (10YR 7/2 dry) silt loam; weak medium platy structure breaking to moderate fine granular; friable; medium acid; abrupt smooth boundary.

B1 (12-16") Brown (10YR 4/3 moist) light silty clay loam; moderate fine subangular blocky structure, with very dark grayish brown (10YR 3/2 moist) continuous clay films; firm; medium acid; clear smooth boundary.

B21t (16-30") Brown (10YR 5/3 moist) heavy silty clay loam, with common fine distinct yellowish brown (10YR 5/8 moist), light brownish gray (10YR 6/2 moist), and gray (10YR 5/1 moist) mottles; weak fine to medium prismatic structure breaking to moderate fine to medium subangular and angular blocky, with dark grayish brown (10YR 4/2 moist) continuous clay films; firm; medium acid; clear smooth boundary.

B22t (30-36") Mixed grayish brown (10YR 5/2 moist), brown (10YR 5/3 moist), and yellowish brown (10YR 5/4 and 5/6 moist) heavy silty clay loam, with few fine distinct yellowish brown (10YR 5/8 moist) mottles; weak medium prismatic structure, with dark gray (10YR 4/1 moist) discontinuous clay films; firm; medium to slightly acid; clear smooth boundary.

B31 (36-40") Light olive brown (2.5Y 5/4 moist) light silty clay loam, with many fine distinct yellowish brown (10YR 5/6 and 5/8 moist) and dark gray (10YR 4/1 moist) mottles; weak coarse angular blocky structure; firm; neutral; clear smooth boundary.

IIB32 (40-47") Mixed light olive brown (2.5Y 5/4 moist), light yellowish brown (10YR 6/4 moist), and yellowish brown (10YR 5/6 and 5/8 moist) heavy silt loam to loam; weak coarse angular blocky structure; friable, neutral to mildly alkaline; abrupt smooth boundary.

IIC (47-52") Mixed light olive brown (2.5Y 5/4 moist), light yellowish brown (2.5Y 6/4 moist), and yellowish brown (10YR 5/6 and 5/8 moist) loam; till; massive; friable, calcareous; many till pebbles.

Swygert Series (91)

Swygert soils are dark colored, somewhat poorly drained, and developed in less than 18 inches of loess over silty clay glacial till under prairie native vegetation. They occur on nearly level to sloping upland glacial till plains in soil area F on the general soil map. Swygert soils are associated on the landscape with the very dark-colored, poorly drained Bryce soils.

Eight mapping units are shown on the soil map:

- 91A Swygert silt loam, 0 to 2 percent slopes
- 91B Swygert silt loam, 2 to 4 percent slopes
- 91B2 Swygert silt loam, 2 to 4 percent slopes, eroded
- 91C Swygert silt loam, 4 to 7 percent slopes
- 91C2 Swygert silt loam, 4 to 7 percent slopes, eroded
- 91C3 Swygert soils, 4 to 7 percent slopes, severely eroded
- 91D2 Swygert silt loam, 7 to 12 percent slopes, eroded
- 91D3 Swygert soils, 7 to 12 percent slopes, severely eroded

Some areas of 91C3 are on slopes of about 3 percent and a few areas of 91C3 and 91D3 occurring in soil area E on the general soil map have 40 to 50 inches of loess over silty clay till and are moderately well drained. A few areas of 91D2 have 40 to 50 inches of loess over silty clay till. A very few areas of 91D3 are on slopes of 12 to 18 percent. Swygert soils are almost entirely in cropland. Permeability is slow. Surface runoff is slow to rapid. Available moisture capacity is moderate. Surface organic matter content averages 4.0 percent.

Representative profile of Swygert silt loam, 330 feet south of northeast corner of Sec. 33 in T31N, R5E:

A1 (0-8") Black (10YR 2/1 moist) heavy silt loam to light silty clay loam; moderate fine to medium granular structure; friable; medium acid, clear smooth boundary.

B1 (8-11") Very dark brown (10YR 2/2 moist) silty clay loam; moderate very fine subangular blocky structure; friable; medium acid; clear smooth boundary.

IIB2t (11-28") Dark grayish brown (2.5Y 4/2 moist) silty clay to heavy silty clay, with common fine distinct yellowish brown (10YR 5/6 and 5/8 moist) and dark gray (10YR 4/1 moist) mottles; moderate to strong medium subangular and angular blocky structure, with very dark grayish brown (2.5Y 3/2 moist) continuous clay films; many fine Fe-Mn concretions; some till pebbles and stones; firm to very firm; neutral; clear smooth boundary.

IIC (28-40") Olive (5Y 5/3 moist) silty clay, with common medium distinct to prominent yellowish brown (10YR 5/8 moist) mottles; very weak coarse angular blocky structure to massive; many fine Fe-Mn concretions; firm to very firm; calcareous.

Symerton Series (294)

Symerton soils are dark colored, moderately well to well drained, and developed in less than 24 inches of loess on loamy outwash material over silty clay loam glacial till usually encountered at 30 to 50 inches. They occur on very gently sloping to gently sloping upland areas where glacial outwash occurs over silty clay loam glacial till in soil area H at the eastern edge of the county. Symerton soils are associated on the landscape with the dark-colored, somewhat poorly drained Andres soils and the very dark-colored, poorly drained Drummer soils.

Three mapping units are shown on the soil map:

294B Symerton silt loam, 2 to 4 percent slopes

294C Symerton silt loam, 4 to 7 percent slopes

294C2 Symerton silt loam, 4 to 7 percent slopes, eroded

A very few areas of 294B are moderately eroded and a very few areas have loam to sandy loam surface texture. A few areas of 294C2 are somewhat poorly drained. Symerton soils are almost entirely in cropland. Permeability is moderate and surface runoff is medium. Available moisture capacity is high. Surface organic matter content averages 3.5 percent.

Representative profile of Symerton silt loam, in a road bank 200 feet south of northwest corner of northwest 10 acres in NW¼, SW¼ of Sec. 12, T31N, R5E:

A11 (0-12") Black (10YR 2/1 moist) silt loam; weak fine granular structure; friable; slightly acid; clear smooth boundary.

A12 (12-15") Very dark brown (10YR 2/2 moist) silt loam; weak to moderate very fine and fine granular structure; friable; medium acid; clear wavy boundary.

B1 (15-20") Very dark grayish brown (10YR 3/2 moist) light silty clay loam; weak fine and medium subangular blocky structure; friable; medium acid; clear smooth boundary.

IIB21t (20-28") Dark yellowish brown (10YR 4/4 moist) sandy clay loam; moderate fine and medium subangular blocky structure; firm; thin continuous dark brown (10YR 4/3 moist) clay films; few small pebbles; slightly acid; clear wavy boundary.

IIB22t (28-34") Dark yellowish brown (10YR 4/4 moist) clay loam; weak to moderate medium to coarse subangular blocky structure; firm; moderate continuous dark brown (10YR 4/3 moist) clay films; few small pebbles; mildly alkaline; abrupt wavy boundary.

IIIB3 (34-44") Brown (10YR 4/3 moist) heavy silty clay loam; many fine faint mottles of grayish brown (10YR 5/2 moist) and gray (5Y 6/1 moist); moderate coarse angular and subangular blocky structure; firm; few small pebbles; calcareous; clear smooth boundary.

IIIC (44-60") Brown (10YR 4/3 moist) silty clay loam; many medium faint mottles of grayish brown (10YR 5/2 moist) and few fine distinct mottles of gray (5Y 6/1 moist) massive; firm; few small pebbles; calcareous.

Tama Series (36)

Tama soils are dark colored, moderately well to well drained, and developed in more than 60 inches of loess under prairie native vegetation. They occur on very gently to gently sloping loess-covered uplands in soil area A on the general soil map, principally in the western part of the county. Tama soils are associated on the landscape with the dark-colored, somewhat poorly drained Muscatine soils and the very dark-colored, poorly drained Sable soils.

Three mapping units are shown on the soil map:

36B Tama silt loam, 2 to 4 percent slopes

36C Tama silt loam, 4 to 7 percent slopes

36C2 Tama silt loam, 4 to 7 percent slopes, eroded

Some areas of 36B are moderately eroded. Occasionally an area of 36C and 36C2 is somewhat poorly drained. A very few areas of 36C2 are severely eroded. Tama soils are almost entirely in cropland. Permeability is moderate. Surface runoff is medium. Available moisture capacity is very high. Surface organic matter content averages 3.5 percent.

Representative profile of Tama silt loam, 200 feet west of stream, then 160 feet south, in NW¼, NW¼, NE¼, NW¼ of Sec. 5, T34N, R1E:

A1 (0-7") Very dark brown (10YR 2/2 moist) silt loam; moderate fine granular structure; roots abundant; friable; neutral; clear smooth boundary.

A3 (7-12") Dark brown (10YR 3/3 moist) silt loam; moderate fine to medium granular structure; roots abundant; friable; neutral; clear smooth boundary.

B1t (12-18") Brown (10YR 4/3 moist) light silty clay loam; moderate very fine subangular blocky structure; roots common; firm; medium acid; clear smooth boundary.

B2t (18-30") Yellowish brown (10YR 5/4 moist) silty clay loam, with common fine very faint light yellowish brown (10YR 6/4 moist) and yellowish brown (10YR 5/8 moist) mottles; moderate very fine to fine subangular blocky structure, with light gray (10YR 7/2) patchy silt coatings; roots common; many fine Fe-Mn concretions; firm; medium acid, clear smooth boundary.

B3t (30-40") Mixed pale brown (10YR 6/3 moist) and yellowish brown (10YR 5/4 moist) silty clay loam; moderate medium angular blocky structure, with light gray (10YR 7/2 moist) patchy silt coatings and yellowish brown (10YR 5/4 moist) continuous clay films; many fine Fe-Mn concretions; firm; medium acid; clear smooth boundary.

C1 (40-58") Mixed yellowish brown (10YR 5/4, 5/6, 5/8 moist), pale brown (10YR 6/3 moist), and brownish yellow (10YR 6/3 moist) silt loam; massive; many fine Fe-Mn concretions; friable; neutral; clear smooth boundary.

C2 (58-60") Mixed yellowish brown (10YR 5/4, 5/6, 5/8 moist), pale brown (10YR 6/3 moist), and brownish yellow (10YR 6/6 moist) silt loam; massive; many fine Fe-Mn concretions; calcareous.

Thorp Series (206)

Thorp soils are dark colored, poorly drained, and developed in loess or silty material 40 to 60 inches thick over loamy stratified outwash, loam till, and sandy loam till. They occur on nearly level to depressional areas in nearly all parts of the county, but more especially in soil areas B, C, and D on the general soil map. Thorp soils are associated on the landscape with a wide variety of soils such as Plano, Elburn, Proctor, Brenton, Flanagan, and Catlin.

One mapping unit is shown on the soil map:

206 Thorp silt loam

Some areas of 206 are somewhat poorly drained. A few areas have 6 to 12 inches of dark silty overwash on the normal Thorp soil. A very few areas of 206 in the very northeast part of the county have thick surface, subsurfaces, and subsoil horizons. Very occasionally Thorp soils will occur on slopes of 2 to 3 percent. Thorp soils commonly occur in small depressional areas. They are almost entirely in cropland. Permeability is slow and surface runoff is slow to ponded. Available moisture capacity is high. Surface organic matter content averages 3.5 percent.

Representative profile of Thorp silt loam, 450 feet north-northeast of east-northeast road center and 40 feet east of center of road in SW¼ of SW¼ of Sec. 27, T36N, R5E:

Ap (0-7") Black (10YR 2/1 moist) silt loam; moderate very fine granular structure; friable; neutral; abrupt smooth boundary.

A12 (7-14") Very dark gray (10YR 3/1 moist) silt loam; moderate fine granular structure; friable; slightly acid; abrupt smooth boundary.

A2 (14-19") Dark gray (10YR 4/1 moist) silt loam, few fine distinct yellowish brown (10YR 5/6 moist) mottles; weak fine granular structure; friable; medium acid; clear smooth boundary.

B1g (19-21") Dark gray (10YR 4/1 moist) and dark grayish brown (2.5Y 4/2 moist) light silty clay loam, few fine prominent yellowish brown (10YR 5/6 moist) mottles; weak fine prismatic breaking to fine subangular blocky structure; firm; thin continuous very dark gray (10YR 3/1 moist) clay films; medium acid; clear smooth boundary.

B21tg (21-33") Gray (5Y 5/1 moist) and olive gray (5Y 4/2 moist) silty clay loam, many fine distinct yellowish brown (10YR 5/6 moist) mottles; moderate medium prismatic breaking to moderate fine and medium subangular blocky structure; firm; thick continuous very dark gray (10YR 3/1 moist) clay films; medium acid; clear smooth boundary.

B22tg (33-43") Grayish brown (2.5Y 5/2 moist) silty clay loam, common fine distinct yellowish brown (10YR 5/6 moist) and light yellowish brown (2.5Y 6/4 moist) mottles; weak fine prismatic breaking to moderate fine angular and subangular blocky structure; firm; moderately thick, very dark gray (10YR 3/2 moist) to dark gray (N 4/) clay films; slightly acid; clear smooth boundary.

IIB3t (43-50") Mixed grayish brown (10YR 5/2 moist) and yellowish brown (10YR 5/6 moist) sandy clay loam; weak coarse subangular blocky structure; friable; thin, patchy dark grayish brown (2.5Y 4/2 moist) clay films; neutral; clear smooth boundary.

IIC (50-65") Mixed grayish brown (10YR 5/2 moist) and yellowish brown (10YR 5/8 moist) stratified heavy sandy loam and sand layers; friable; in sandy loam layers and loose in sand layers; calcareous.

Traer Series (633)

Traer soils are light colored, poorly drained, and developed in more than 5 feet of loess under forest native vegetation. They occur on nearly level to depressional upland areas in soil areas I and J on the general soil map. They are associated on the landscape primarily with the light-colored, somewhat poorly drained Stronghurst soils and the moderately well- to well-drained Fayette soils.

One mapping unit is shown on the soil map:

633 Traer silt loam

Some areas of 633 are underlain with loam till, sandy loam till, and loamy outwash at the 40- to 60-inch depth. Most areas of Traer soils are in cropland. Permeability is slow. Surface runoff is slow to ponded. Available moisture capacity is high. Surface organic matter content averages 2.0 percent.

Representative profile of Traer silt loam, 210 feet south of gravel road, then 60 feet west of east pasture fence in NE¼, NE¼, NE¼, NW¼ of Sec. 11, T34N, R1E:

A1 (0-5") Very dark gray (10YR 3/1 moist) silt loam; weak fine platy structure combined with moderate fine crumb; roots abundant; friable; medium acid, abrupt smooth boundary.

A2 (5-14") Grayish brown (2.5Y 5/2 moist) silt loam; moderate thin to very thin platy structure; roots abundant; friable; common fine Fe-Mn concretions; strongly acid; clear smooth boundary.

B1 (14-18") Grayish brown (2.5Y 5/2 moist) light silty clay loam; moderate fine subangular blocky structure, with light gray (10YR 7/1) discontinuous silt coatings and dark gray (10YR 4/1 moist) discontinuous clay films; roots abundant; friable; strongly acid; abrupt smooth boundary.

B21tg (18-23") Dark gray (2.5Y 4/1 moist) heavy silty clay loam; moderate fine and very fine angular blocky structure, with very dark gray (10YR 3/1 moist) to dark gray (10YR 4/1 moist) continuous clay coatings; roots common; firm; strongly acid; gradual smooth boundary.

B22tg (23-28") Olive gray (5Y 5/2 moist) heavy silty clay loam, with few fine distinct yellowish brown (10YR 5/6 and 5/8 moist) mottles; moderate fine to very fine angular blocky structure, with dark gray (2.5Y 4/1 moist) continuous clay films; roots common; firm; strongly acid; gradual smooth boundary.

B23tg (28-36") Olive gray (5Y 5/2 moist) heavy silty clay loam, with few fine distinct yellowish brown (10YR 5/6 and 5/8 moist) mottles; moderate medium angular blocky structure with dark gray (10YR 4/1 moist) continuous clay films; few roots; firm; medium acid; gradual smooth boundary.

B24tg (36-46") Olive gray (5Y 5/2 moist) silty clay loam, with common fine distinct dark brown (10YR 4/3 moist) and yellowish brown (10YR 5/8 moist) mottles; weak medium prismatic structure breaking to weak coarse angular blocky, with dark gray (2.5Y 4/1 moist) discontinuous clay films; roots few; firm; neutral; gradual wavy boundary.

C1g (46-53") Olive gray (5Y 5/2 moist) heavy silt loam to light silty clay loam, with common fine distinct strong brown (7.5YR 5/6 and 5/8 moist) mottles; nearly massive but with some vertical cleavage planes 3 to 6 inches apart containing very dark gray (10YR 3/1 moist) to dark gray (10YR 4/1 moist) discontinuous clay films; firm; neutral; gradual smooth boundary.

C2g (53-62") Similar to above except slightly more mottled and fewer and thinner clay films.

Varna Series (223)

Varna soils are dark colored, moderately well to well drained, and developed in less than 18 inches of loess on silty clay loam glacial till under prairie native vegetation. They occur on very gently sloping to sloping upland glacial till areas primarily in area G on the general soil map. Occasional areas are found in soil area C. They occur on the landscape with the dark-colored, somewhat poorly drained Elliott soils and the very dark-colored, poorly drained Ashkum soils.

Seven mapping units are shown on the soil map:

223B Varna silt loam, 2 to 4 percent slopes
223B2 Varna silt loam, 2 to 4 percent slopes, eroded
223C Varna silt loam, 4 to 7 percent slopes
223C2 Varna silt loam, 4 to 7 percent slopes, eroded
223C3 Varna soils, 4 to 7 percent slopes, severely eroded
223D2 Varna silt loam, 7 to 12 percent slopes, eroded
223D3 Varna soils, 7 to 12 percent slopes, severely eroded

Some areas of 223C3 and 223D3 are somewhat poorly drained. Some areas of 223C3, 223D2, and 223D3 have a layer of loamy outwash between the loess and silty clay loam glacial till. A very few areas of 223D2 have slopes of 12 to 18 percent. Varna soils are almost entirely in cropland. Permeability is moderately slow. Surface runoff is medium to rapid. Available moisture capacity is high. Surface organic matter content averages 3.5 percent.

Representative profile of Varna silt loam, in road cut in NW¼, SW¼, SW¼, SW¼ of Sec. 14, T34N R5E:

A1 (0-8") Very dark gray (10YR 3/1 moist) silt loam; moderate very fine granular structure; friable; neutral; clear smooth boundary.

A3 (8-10") Very dark grayish brown (10YR 3/2 moist) heavy silt loam, moderate very fine subangular blocky structure; firm; neutral; clear smooth boundary.

IIB1t (10-15") Dark brown (10YR 3/3 moist) to dark yellowish brown (10YR 4/4 moist) heavy silty clay loam; moderate very fine to fine subangular blocky structure; firm; slightly acid; clear smooth boundary; some till pebbles and stones.

IIB21t (15-24") Dark yellowish brown (10YR 4/4 moist) heavy silty clay loam; moderate fine to medium subangular blocky structure, with dark yellowish brown (10YR 3/4 moist) continuous clay films; very firm; medium acid, clear smooth boundary, some till pebbles and stones.

IIB22t (24-32") Dark yellowish brown (10YR 4/4 moist) silty clay loam; moderate fine to medium subangular blocky structure; neutral; clear smooth boundary; many till pebbles and stones.

IIC (32-45") Olive brown (2.5Y 4/4 moist) silty clay loam; massive; till; very firm; calcareous, many till pebbles and stones.

Virgil Series (104)

Virgil soils are moderately dark colored, somewhat poorly drained, and developed in 40 to 60 inches of loess over loamy stratified outwash or sandy loam till under mixed prairie-forest native vegetation. They occur on nearly level to very gently sloping stream terrace and upland sandy loam till plain areas, primarily in soil area J on the general soil map. They are associated on the landscape with the moderately dark-colored, moderately well- to well-drained Batavia soils and the very dark-colored, poorly drained Drummer soils.

Two mapping units are shown on the soil map:

104A Virgil silt loam, 0 to 2 percent slopes
104B Virgil silt loam, 2 to 4 percent slopes

A few areas of 104B are moderately eroded. Virgil soils are almost entirely in cropland. Permeability is moderate and surface runoff is slow to medium. Available moisture capacity is high. Surface organic matter content averages 3.0 percent.

Representative profile of Virgil silt loam, 470 feet north of house on east side of road in NW¼, NW¼, SW¼, NE¼ of Sec. 16, T35N, R5E:

A1 (0-9") Very dark gray (10YR 3/1 moist) silt loam; moderate fine to medium granular structure; roots abundant; friable; neutral; clear smooth boundary.

A2 (9-14") Dark gray (10YR 4/1 moist) to dark grayish brown (10YR 4/2 moist) silt loam; weak fine platy structure breaking to moderate fine to medium granular; roots abundant; friable; medium acid; clear smooth boundary.

B1 (14-18") Dark grayish brown (10YR 4/2 moist) light silty clay loam; moderate very fine to fine subangular blocky structure, with light gray (10YR 7/1) patchy silt coatings; roots common; firm; strongly acid; clear smooth boundary.

B21t (18-25") Brown (10YR 5/3 moist) to grayish brown (10YR 5/2 moist) silty clay loam, with common fine distinct yellowish brown (10YR 5/4 and 5/6 moist) mottles; moderate fine subangular blocky structure, with dark grayish brown (10YR 4/2 moist) continuous clay films; roots common; many fine Fe-Mn concretions; firm; strongly acid; clear smooth boundary.

B22t (25-34") Grayish brown (10YR 5/2 moist) silty clay loam, with common fine distinct yellowish brown (10YR 5/4, 5/6, 5/8 moist) mottles; moderate medium prismatic structure breaking to moderate medium to coarse angular blocky, with dark grayish brown (10YR 4/2 moist) continuous clay films; roots occasional; many fine Fe-Mn concretions; firm; strongly acid; clear smooth boundary.

B23t (35-40") Grayish brown (10YR 5/2 moist) silty clay loam, with many medium distinct yellowish brown (10YR 5/4, 5/6, 5/8 mottles) weak medium prismatic structure breaking to moderate medium to coarse angular blocky, with dark grayish brown (2.5Y 4/2 moist) continuous clay films; roots occasional; many fine Fe-Mn concretions; firm; medium acid; clear wavy boundary.

IIB3 (40-49") Dark brown (10YR 4/3 moist) clay loam to silty clay loam, with many medium distinct yellowish brown (10YR 5/4, 5/6, 5/8 moist) and grayish brown (10YR 5/2 moist) mottles; weak coarse angular blocky structure, with dark gray (10YR 4/1 moist) discontinuous clay films; many fine Fe-Mn concretions; friable; neutral; clear smooth boundary.

IIC1 (49-60") Mixed grayish brown (10YR 5/2 moist) and yellowish brown (10YR 5/4, 5/6, 5/8 moist) sandy clay loam to sandy loam; massive; many fine Fe-Mn concretions; friable; neutral to mildly alkaline; clear smooth boundary.

IIC2 (60-66") Mixed light olive brown (2.5Y 5/4 moist) and dark brown (10YR 4/3 moist) sandy loam stratified with sands and silts; massive; many fine Fe-Mn concretions; friable; calcareous.

Wabash Series (83)

Wabash soils are very dark colored, poorly to very poorly drained, and developed in heavy-textured alluvial deposits under primarily prairie native vegetation consisting of marsh grasses and sedges. They occur on nearly level to depressional areas along the Illinois River in soil area M on the general soil map. Wabash soils are associated on the landscape with a large number of bottomland and terrace soils. East of Ottawa large areas of Wabash soils are underlain at depths of 50 to 60 inches by clayey shale and some areas around Seneca are underlain at 50 to 60 inches by sandstone.

One mapping unit is shown on the soil map:

83 Wabash silty clay

While primarily a bottomland soil, a few areas of 83 are shown on the upland northeast of La Salle associated with soils underlain by shale. A very few areas of 83 occur on slopes of 2 to 3 percent and some areas have a wetness problem. In some areas a 6- to 12-inch layer of dark-colored overwash occurs on top of the normal Wabash soil. Most areas of 83, where not too wet, are in cropland, but a few areas are either idle, in pasture, or in trees. Permeability is very slow to slow. Surface runoff is slow to ponded. Available moisture capacity is high to moderate. Surface organic matter content averages 5.0 percent.

Representative profile of Wabash silty clay, at edge of shale pit in SW¼, SW¼, SE¼, SW¼ of Sec. 5, T33N, R4E:

Ap (0-7") Black (N 2/ moist) silty clay; moderate fine to very fine angular blocky structure; roots abundant; firm; neutral; abrupt smooth boundary.

A12 (7-15") Black (N 2/ moist) silty clay; moderate fine to medium angular blocky structure; roots abundant; firm; neutral; gradual smooth boundary.

A3g (15-24") Very dark gray (N 3/ moist) silty clay, with common medium prominent strong brown (7.5YR 5/8 moist) mottles; moderate medium to fine angular blocky structure; roots occasional; firm; neutral; clear wavy boundary.

B21g (24-28") Dark gray (N 4/ moist) (10YR 3/2 crushed moist) silty clay, with many medium prominent yellowish red (5YR 5/8 moist) mottles; moderate medium to coarse angular blocky structure; roots occasional; firm; neutral; clear smooth boundary.

B22g (28-45") Gray (5Y 4/1 moist) light silty clay, with many coarse yellowish red (5Y 5/8 moist) mottles; weak coarse angular blocky structure; roots occasional; firm; neutral; gradual smooth boundary.

Cg (45-60") Olive gray (5Y 5/2 moist) light silty clay, with many coarse prominent yellowish red (5Y 5/8 moist) mottles; massive; firm; neutral.

Warsaw Series (290)

Warsaw soils are dark colored, well drained, and developed in 20 to 40 inches of loamy outwash material over stratified calcareous gravel and sand under prairie native vegetation. They occur on nearly level to gently sloping stream terraces and glacial outwash plains principally in soil area L on the general soil map. Warsaw soils are associated on the landscape with the dark-colored, well-drained Lorenzo and Proctor soils.

Four mapping units are shown on the soil map:

290A Warsaw silt loam, 0 to 2 percent slopes
290B Warsaw silt loam, 2 to 4 percent slopes
290C2 Warsaw silt loam, 4 to 7 percent slopes, eroded
290C3 Warsaw soils, 4 to 7 percent slopes, severely eroded

Some areas of 290A, 290B, and 290C2 have 40 to 60 inches of loess or silty material over the gravel. Some areas of 290B are moderately eroded. A very few areas of 290C3 have slopes of 7 to 12 percent. Most areas of Warsaw soils are in cropland, but some are in pasture. Permeability is moderate in the A and B horizons and rapid to very rapid in the underlying gravel and sand. Surface runoff is medium. Available moisture capacity is low to moderate. Surface organic matter content averages 3.0 percent.

Representative profile of Warsaw silt loam, 275 feet north-northeast of road culvert, 5 feet east of ROW (right-of-way) in field in NW¼, SE¼, NE¼, SW¼ of Sec. 12, T35N, R4E:

Ap (0-9") Very dark brown (10YR 2/2 moist) silt loam; moderate fine granular structure; friable; neutral; abrupt smooth boundary.

A3 (9-13") Dark brown (10YR 3/3 moist) to dark yellowish brown (10YR 3/4 moist) heavy silt loam; moderate fine granular structure; friable; neutral; clear smooth boundary.

B1t (13-17") Brown (7.5YR 4/4 moist) to dark yellowish brown (10YR 4/4 moist) gritty silty clay loam; weak to moderate fine subangular blocky structure; friable; neutral; clear smooth boundary.

B2t (17-25") Brown (10YR 4/3 moist) to dark brown (10YR 3/3 moist) clay loam; moderate fine to medium subangular blocky structure with thin discontinuous clay films; firm; neutral; abrupt smooth boundary.

IIB3 (25-29") Dark brown (7.5YR 3/2 to 4/4 moist) gravelly clay loam; massive; beta; firm; neutral; abrupt smooth boundary.

IIC (29-36") Dark yellowish brown (10YR 4/4 moist) to yellowish brown (10YR 5/4 and 5/6 moist) fine gravel and sand; single grain; loose; calcareous.

Wenona Series (388)

Wenona soils are dark colored, moderately well- to well-drained, and developed in 40 to 60 inches of loess over silty clay glacial till under prairie native vegetation. They occur on very gently sloping to gently sloping upland glacial till plains in soil area E on the general soil map. They are associated on the landscape with the dark-colored, somewhat poorly drained Rutland soils and the very dark-colored, poorly drained Streator soils.

Three mapping units are shown on the soil map:

388B Wenona silt loam, 2 to 4 percent slopes
388C Wenona silt loam, 4 to 7 percent slopes
388C2 Wenona silt loam, 4 to 7 percent slopes, eroded

A few areas of 388B are moderately eroded. Wenona soils are almost entirely in cropland. Permeability is moderately slow. Surface runoff is medium. Available moisture capacity is high. Surface organic matter content averages 3.5 percent.

Representative profile of Wenona silt loam, 375 feet east of southwest corner of Sec. 8, 35 feet north of center of road, T29N, R2E:

Ap (0-9") Very dark brown (10YR 2/2 moist, 10YR 3/2, dry) heavy silt loam; moderate fine granular structure; friable; many roots; slightly acid; abrupt smooth boundary.

A3 (9-14") Very dark brown (10YR 2/2 moist, 10YR 3/2, dry) heavy silt loam; moderate fine and medium granular structure; friable; many roots; medium acid; clear smooth boundary.

B21t (14-20") Brown (10YR 4/3 moist) silty clay loam; moderate fine subangular blocky structure; firm; plentiful roots; thin discontinuous dark brown (10YR 3/3 moist) clay-organic films; medium acid; clear smooth boundary.

B22t (20-26") Yellowish brown (10YR 5/4 moist) heavy silty clay loam; moderate medium subangular blocky structure; firm; plentiful roots; thin discontinuous dark brown (10YR 4/3 moist) clay films; medium acid; clear smooth boundary.

B23t (26-37") Dark yellowish brown (10YR 4/4 moist) heavy silty clay loam, few fine faint grayish brown (10YR 5/2 moist) and brown (10YR 5/3 moist) and few fine distinct yellowish brown (10YR 5/8 moist) mottles; weak medium prismatic breaking to moderate medium subangular blocky structure; firm; few roots; thin discontinuous dark brown (10YR 4/3 moist) clay films; slightly acid; abrupt smooth boundary.

IIB3t (37-50") Olive (5Y 5/3 moist) silty clay, common fine faint olive gray (5Y 5/2 moist) and common fine distinct yellowish brown (10YR 5/4 and 5/6 moist) mottles; weak medium prismatic structure breaks to weak coarse blocky structure; very firm; few roots; thin discontinuous olive gray (5Y 5/2 moist) clay films on vertical faces; common small pebbles; slightly calcareous; clear smooth boundary.

IIC (50-60") Olive gray (5Y 5/2 moist) silty clay, common fine and medium distinct light olive brown (2.5Y 5/4 moist) and few fine prominent yellowish brown (10YR 5/6 and 5/8 moist) mottles; massive; very firm; no roots; common small pebbles; strongly calcareous.

INTERPRETATION OF SOILS FOR SPECIFIC PURPOSES

This section of the soil report has several parts. It deals with the soils of the county in relation to various uses and methods of management.

In the first part, the system of soil capability classification and management grouping as used by the Soil Conservation Service, USDA, is explained. Each soil management group is defined, along with suitable crops or other uses and main management needs.

The second part gives information concerning crop yields and productivity of all the soil mapping units in the county.

The third part discusses the use and management of La Salle County soils for woodland.

The fourth part gives a general discussion of wildlife management.

The fifth part summarizes the characteristics of each soil and its limitations or suitability for various uses. Two tables accompany this part. One (Table 3) summarizes soil characteristics with emphasis on engineering properties, the other (Table 4) gives appraisals or ratings of La Salle County soils for many uses.

Use and Management of La Salle County Soils for Agricultural Production

Capability Groups of Soils

Capability classification is the grouping of soils to show, in a general way, their suitability for most kinds of farming. It is a practical classification based on the limitations of the soils, the risk of damage when they are used for the ordinary field crops or sown pastures, and the way they respond to treatment. The classification does not apply to horticultural crops, and other crops that have their own special requirements for economical production. The soils are classified according to degree and kind of permanent limitations, but without consideration of major and generally expensive landforming that would change the slope, depth, or other characteristics of the soils, and without consideration of possible major reclamation. A complete discussion of the capability classification is given in Agriculture Handbook 210, Land Capability Classification (Klingebiel and Montgomery, 1966).

For soil management groupings in the capability system, all the soils are grouped at three levels, the capability class, subclass, and management group.

Capability classes, the broadest grouping, are designated by Roman numerals I through VIII. As the numerals increase they indicate progressively greater limitations and narrower choices for practical use.

The classes are defined as follows:

Class I. Soils with few limitations that restrict their use.

Class II. Soils with some limitations that reduce the choice of plants or require moderate conservation practices.

Class III. Soils with severe limitations that reduce the choice of plants or require special conservation practices, or both.

Class IV. Soils with very severe limitations that restrict the choice of plants or require very careful management, or both.

Class V. Soils subject to little or no erosion but with other limitations, impractical to remove, that limit their use largely to pasture, range, woodland, or wildlife food and cover.

Class VI. Soils with severe limitations that make them generally unsuited to cultivation without major reclamation and limit their use largely to pasture, range, woodland, or wildlife food and cover.

Class VII. Soils with very severe limitations that make them unsuited to cultivation without major reclamation and restrict their use largely to range, woodland, or wildlife food and cover.

Class VIII. (Not used in La Salle County.) Soils and landforms with limitations that preclude their use for commercial plant production without major reclamation and restrict their use to recreation, wildlife, water supply, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, **e**, **w**, or **s** to the class numeral, for example, IIe. The letter **e** shows that the main limitation is risk of erosion; **w** shows that water on or in the soil interferes with plant growth or cultivation; **s** shows that the soil is limited mainly because it is shallow, drouthy, or stony.

Management groups are soil groups within the subclasses. Different management groups are designated by adding a number to the subclass symbol, for example, IIe-1 or IIIs-3. The soils in one management group are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity and other responses to management. A listing of the management group classification of the soils in La Salle County is given in the Guide to Mapping Units.

La Salle County Soil Management Groups

In the following pages each of the management groups in La Salle County is described. Suggestions for

use and management of the soils in each group are given. The names of the soil series represented are mentioned in the description of each group, but this does not mean that all the soils in a given series are in the management group. Made land, industrial land, mine dumps, strip mines, and quarries are not listed in management groups.

Management Group I-1

This group consists of deep, nearly level, moderately well-drained to well-drained, silty soils on uplands and terraces. These soils are members of the Batavia, Birkbeck, Camden, Harvard, Plano, Proctor, and St. Charles series. They have moderate permeability and high available moisture capacity. They have high natural fertility and are naturally slightly acid to medium acid. With sound management practices these soils are capable of sustained high yields of all adapted crops. Erosion is not a serious hazard.

Soils of this group are well suited to corn, soybeans, and small grain. They are seldom used for hay and pasture. Row crops can be grown intensively.

The following soil mapping units are in this management group: 105A, 134A, 148A, 199A, 233A, 243A, and 344A.

Management Group I-2

This group consists of deep, nearly level, somewhat poorly drained, silty soils on uplands and terraces. These soils are members of the Andres, Atterberry, Brenton, Elburn, Flanagan, Millbrook, Muscatine, Sabina, Sunbury, and Virgil series. They have moderate permeability and high available moisture capacity. They have high natural fertility and are naturally slightly acid to medium acid. With sound management practices and adequate drainage these soils are capable of sustained high yields of all adapted crops. Tile drainage is commonly used. Erosion is not a serious hazard.

Soils of this group are well suited to corn, soybeans, and small grain. They are seldom used for hay and pasture. Row crops can be grown intensively.

The following soil mapping units are in this management group: 41A, 61A, 104A, 149A, 154A, 198A, 219A, 234A, 236A, and 293A.

Management Group IIe-1

This group consists of deep, gently sloping to moderately sloping, moderately well-drained to well-drained silty soils on uplands and terraces. These soils are members of the Batavia, Birkbeck, Camden, Catlin, Dodge, Downs, Fayette, La Rose, Plano, Proctor, St. Charles, Saybrook, Symerton, and Tama series. They have moderate permeability and high available moisture capacity. They have high natural fertility and are naturally slightly acid to medium acid.

Soils of this group are well suited to corn, soybeans, and small grain, and to grass and legumes grown for hay or pasture. Row crops can be grown intensively if erosion is controlled.

All conservation practices are relatively easy to establish in these areas. Adequate conservation practices hold soil losses to a minimum, conserve moisture, and make these soils capable of producing sustained high yields of all adapted crops.

The following soil mapping units are in this management group: 24C2, 36B, 36C, 60C2, 105B, 105C2, 134B, 134C2, 145B, 145C2, 148B, 148C, 148C2, 154C2, 171B, 171C, 171C2, 199B, 199C, 199C2, 233B, 233C, 233C2, 243B, 243B2, 243C, 243C2, 280B, 280C2, 294B, 294C, 194C2, 344B, 344C2, 386B, and 386C2.

Management Group IIe-2

This group consists of deep, gently sloping, somewhat poorly drained, silty soils on uplands and terraces. These soils are members of the Andres, Atterberry, Brenton, Elburn, Flanagan, Kendall, Millbrook, Muscatine, Sabina, Starks, Stronghurst, Sunbury, and Virgil series. They have moderate permeability and high available moisture capacity. They have high natural fertility and are naturally slightly acid to medium acid.

Soils of this group are well suited to corn, soybeans, and small grain, and to grass and legumes grown for hay or pasture. Row crops can be grown intensively if erosion is controlled. Tile are often needed in areas of these soils to improve the drainage and dry out the grassed waterways.

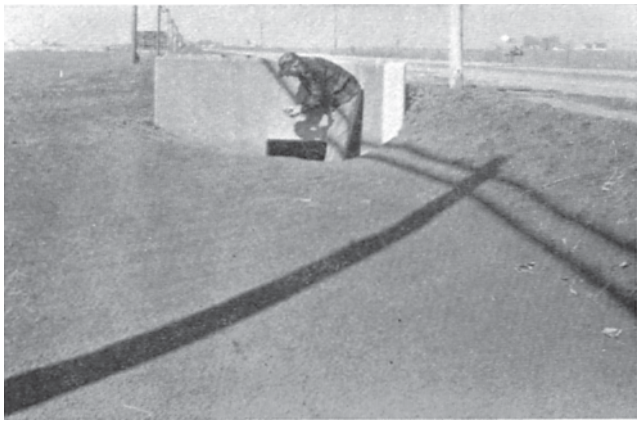
The following soil mapping units are in this management group: 41B, 61B, 104B, 132B, 149B, 154B, 154B2, 198B, 219B, 234B, 236B, 242B, 278B, and 293B.

Management Group IIe-3

This group consists of deep, gently sloping, moderately well-drained to well-drained silty soils on uplands. These soils are members of the Mona, Morley, Varna, and Wenona series. They have moderately slow permeability and high available moisture capacity. They have medium to high natural fertility and are naturally medium acid to strongly acid.

Soils of this group are suited to corn, soybeans, and small grain, and to grasses and legumes grown for hay or pasture.

Erosion control can be a problem in areas that are intensively cultivated. Winter cover crops, green manure crops, and crop residues help maintain organic matter content and good soil tilth. Combined with



Roadside ditch filled with dark-colored surface soil material from wind erosion on fall plowing. Picture taken in March along Route 6 west of Ottawa. (Fig. 18)

minimum tillage, contour cultivation, or other erosion-control practices, they help reduce runoff and loss of soil.

The following soil mapping units are in this management group: 194B, 223B, 223B2, 223C, 223C2, 388B, 388C, 388C2, 448B, 448B2, and 448C2.

Management Group IIe-4

This group consists of deep, gently sloping to moderately sloping, somewhat poorly drained soils on uplands. These soils are members of the Beecher, Blount, Elliott, Kernan, Marseilles (gray subsoil variant), Mokena, Rutland, and Swygert series. They have moderate to slow permeability and high available moisture capacity. They have medium to high natural fertility and are naturally slightly acid to medium acid.

Soils of this group are well suited to corn, soybeans, and small grain, and to grass and legumes grown for hay or pasture. Row crops can be grown intensively if erosion is controlled. Tile are often needed in areas of these soils to improve drainage. Tile do not drain well in Swygert and Marseilles (gray subsoil variant) soils. Tile are also needed in many of the grassed waterways in these soils.

The following soil mapping units are in this management group: 23B, 23C, 23C2, 91B, 91B2, 146B, 146B2, 146C2, 295B, 295B2, 298B, 375B, 375B2, 375C2, 393B, 554B, 572B, and 572C2.

Management Group IIw-1

This group consists of deep, nearly level, poorly drained soils on uplands and terraces. These soils are members of the Ashkum, Drummer, Harpster, Sable, Selma, and Streator series. They have moderate to moderately slow permeability and a high water table, and some areas are subject to ponding. They have high natural fertility and available moisture capacity. Typically, they have a surface layer and subsoil of silty clay loam. Selma soils have a loam-textured surface layer and a clay loam-textured subsoil. These soils are neutral in reaction. Harpster soils are calcareous.

Soils of this group are well suited to corn and soybeans, and they can be grown intensively. Small grains, hay, or pasture are only important on livestock farms.

Artificial drainage is needed because of the high water table and ponding. Although most areas contain tile, many would benefit from additional tile drains and improved outlet ditches.

The following soil mapping units are in this management group: 67, 68, 125, 152, 232, and 435.

Management Group IIw-2

This group consists of nearly level to gently sloping floodplain soils. These soils are members of the Calco, Du Page, Lawson, Millington, Ross, and Sawmill series. They have moderate to moderately slow permeability and high available moisture capacity. These soils have poor, somewhat poor, and moderately good natural drainage. All are in the river and stream valleys that are subject to frequent flooding. They have high natural fertility and high available moisture capacity. Calco and Sawmill soils are silty clay loam textures and the others have silt loam or loam textures. Lawson, Ross, and Sawmill soils are neutral in reaction, and Calco, DuPage, and Millington are calcareous.

Soils of this group are well suited to corn and soybeans. If the flooding hazard is too severe for row

Flooding along the Fox River in winter near Dayton on DuPage soils. (Fig. 19)

crops, the soils are used for pasture, but they are seldom used for small grain and hay.

When practical, flood protection and adequate drainage by tile or open ditch will improve yields.

The following soil mapping units are in this management group: 73, 82, 107, 321A, 321B, 400, and 451.

Management Group IIw-3

This group consists of nearly level, poorly drained soils on uplands and terraces. These soils are members of the Bryce and Thorp series. They have slow permeability, high moisture-holding capacity, and a high water table. Some areas are subject to ponding. Bryce soils have silty clay textures in all horizons and Thorp soils have a thick gray silt loam horizon over a silty clay loam subsoil. They are slightly acid to neutral in reaction.

These soils are suited to corn and soybeans. Small grains, hay, or pasture are only important on livestock farms. If adequate drainage is provided, corn and soybeans can frequently be grown.

Suitable drainage outlets are hard to locate, and tile do not function satisfactorily. In many areas crops are damaged by flooding during the growing season.

The following soil mapping units are in this management group: 206 and 235.

Management Group IIw-4

This group consists of deep, nearly level, silty, somewhat poorly drained soils on uplands and terraces. They are members of the Kendall, Elliott, Loran, Marseilles (gray subsoil variant), Mokena, Nappanee, Rutland, Starks, Stronghurst, and Swygert series. These soils have moderate to moderately slow permeability and moderate to high moisture-holding capacity. Swygert, Marseilles, and Nappanee series have slow permeability and only moderately high natural fertility. These soils are slightly acid to medium acid in reaction.

Soils in this group are suited to corn, soybeans, and small grain, and to grass and legumes grown for hay and pasture. Row crops can be grown intensively when there is adequate drainage and sound management.

Drainage is needed in some areas. Tile are not always satisfactory in the Nappanee, Swygert, and Marseilles (gray subsoil variant) soils.

The following soil mapping units are in this management group: 91A, 132A, 146A, 228A, 242A, 278A, 295A, 375A, 393A, and 572A.

Management Group IIs-1

This group consists of nearly level to gently sloping, somewhat poorly to well-drained soils of the terraces. These soils are moderately deep over sand and gravel. They are members of the Alvin, Dresden, Fox, Ridgeville, and Warsaw series. They have moderate permeability in the subsoil, rapid permeability in the underlying material, and moderate available moisture-holding capacity. Ridgeville series has high moisture-holding capacity. They have medium natural fertility and are naturally medium acid to strongly acid.

Soils of this group are suited to small grains. Suitability for other crops is somewhat limited by the moderate moisture-holding capacity.

Erosion is not a serious problem, but should be controlled with conservation practices when row crops are grown often.

The following soil mapping units are in this management group: 131B, 151A, 151B, 290A, 290B, 325B, and 327B.

Management Group IIIe-1

This group consists of deep, moderately sloping to strongly sloping, moderately well-drained to well-drained silty soils on uplands and terraces. These soils are members of the Birkbeck, Camden, Catlin, Dodge, Downs, Fayette, La Rose, Mona, Morley, Plano, Proctor, St. Charles, Strawn, and Varna series. They have moderate to moderately slow permeability and high available moisture capacity. They have medium to low natural fertility and are slightly acid to strongly acid in reaction. Erosion is a severe hazard.

If management practices are intensive, the soils of this group are suited to cultivated crops, hay, and pasture.

Erosion control is the main problem. Grass and legumes should be grown frequently in the rotation. Contouring and terracing should be used to control erosion where practical. Where these practices are not used tillage should be kept to a minimum, and a cover of growing vegetation or mulch should be kept on the surface as much of the time as possible.

The following soil mapping units are in this management group: 24C3, 24D2, 60C3, 60D2, 134C3, 134D2, 148C3, 148D2, 171C3, 194C, 194C2, 194D2, 199C3, 223C3, 223D2, 224C3, 224D2, 233C3, 233D2, 243C3, 243D2, and 448C3.

Management Group IIIe-2

This group consists of moderately sloping to strongly sloping, moderately well-drained to well-drained soils of the terraces. These soils are moderately deep over sand and gravel. They are members of the Alvin, Dresden, Fox, and Warsaw series. They have moderate permeability in the subsoil and rapid permeability in the underlying material. They have moderate available moisture capacity. They have medium natural fertility and are naturally medium acid to

strongly acid. Erosion is a hazard, with wind erosion being more of a hazard on the sandy-surfaced Alvin soils.

Suitability of these soils for cultivated crops is limited by the limited moisture-holding capacity, medium natural fertility, and the hazard of erosion.

Control of erosion is the main problem. Grass and legumes should be grown frequently. Tillage should be kept to a minimum, and a cover of growing vegetation or mulch should be kept on the surface as much of the time as possible.

The following soil mapping units are in this management group: 131C2, 290C2, 290C3, 325C2, 327C2, and 327D.

Management Group IIIe-3

This group consists of gently sloping to moderately sloping, moderately well-drained to well-drained soils of the uplands. These soils have a silty or loamy surface, a clay loam to silty clay loam subsoil, and have limestone, sandstone, or shale rock at 2 to 4 feet below the surface. They are members of the Channahon, Gale, Marseilles, and Ritchey series. Some Marseilles occurs on nearly level areas. These soils have moderate permeability and low to moderate available moisture capacity. They have moderate natural fertility and are slightly acid to strongly acid in reaction.

Soils of this group are of limited suitability for cultivated crops, meadow, and pasture. They are limited by the shallow to moderately deep rooting zone and restricted moisture supply.

Control of erosion and low to moderate water-holding capacity are the main problems. Grass and legumes should be grown frequently. Tillage should be kept to a minimum, and a cover of growing vegetation or mulch should be left on the surface as often as possible.

The following soil mapping units are in this management group: 311B, 311C2, 315B, 413B, 413C2, 549A, 549B, 549C, and 549C2.

Management Group IIIe-4

This group consists of deep, gently sloping to moderately sloping, somewhat poorly drained soils on uplands. These soils have a silty surface layer and a clayey to very clayey subsoil. They are members of the Clarence, Frankfort, Nappanee, St. Clair, and Swygert series. They have slow permeability and moderate to high available moisture-holding capacity. They have low to medium natural fertility and are naturally slightly acid to strongly acid in reaction.

Soils of this group are suited to cultivated crops, meadow, and pasture.

Suitability of these soils for cultivated crops is limited by wetness in spring, by low fertility, by erosion hazard, and by lack of available moisture in some years. Erosion control practices are needed. All crop residues should be returned to the soil.

The following soil mapping units are in this management group: 91C, 91C2, 147B, 147B2, 147C2, 228B, 228B2, 228C2, 320B, 320B2, 320C2, and 560C2.

Management Group IIIw-1

This group consists of deep, level to depressional soils on the uplands and terraces. Typically these soils have a surface layer and subsoil of heavy silty clay loam to silty clay. They are members of the Peotone, Rantoul, Traer, and Wabash series. They have moderately slow to slow permeability and high available moisture capacity. Traer soils have a silty surface layer.

Soils of this group are well suited for corn and soybeans. These soils are usually wetter than the surrounding soils, and very often crops will suffer from standing or ponding water.

Establishing an outlet for drainage is the most serious problem. Tile, tile with surface inlets, or open ditches are used.

The following soil mapping units are in this management group: 83, 238, 330, and 633.

Management Group IIIw-2

This group consists of Houghton muck and Lena muck. They are deep, level, organic soils in depressional areas of the uplands, terraces, or bottomlands. These soils receive water from runoff on surrounding soils and are subject to severe ponding. They have variable permeability and very high available moisture capacity. They are somewhat low in natural fertility. Houghton soils are naturally neutral and Lena soils are calcareous.

If artificially drained, these soils are well suited to corn, soybeans, and specialized crops. They are seldom used for small grain or hay. Undrained areas are used for pasture or left for wildlife habitat.

The main problems are control of ponding and maintenance of drainage systems and outlets. Over-drainage can result in a hazard of wind erosion or fire.

The following soil mapping units are in this management group: 103, 103+, and 210.

Management Group IIIw-3

This group consists of shallow to moderately deep, level, poorly drained soils on the terraces and uplands. They are members of the Joliet, Hesch (gray subsoil variant), and Millsdale series. The permeability rates are variable and the moisture-holding capacity is low to moderate. Some areas are subject to ponding. Joliet

and Millsdale soils have silty clay loam textures and Hesch soils have sandy loam to loam textures. Joliet soils are shallow and Millsdale soils moderately deep to limestone. Hesch soils are moderately deep to sandstone. These soils are moderate to low in natural fertility and are naturally slightly acid to neutral in reaction.

If artificially drained, these soils are suited to corn and soybeans. They are seldom used for small grain or hay. Undrained areas are used for pasture.

The main problem is drainage. Tiling or open-ditch construction is not always practical because of the fairly shallow depths to bedrock and the scarcity of adequate outlets.

The following soil mapping units are in this management group: 314, 317, and 537.

Management Group IIIs-1

This group consists of nearly level to moderately sloping, moderately well-drained to well-drained soils of the terraces. These soils are shallow to moderately deep over sand and gravel. They are members of the Dickinson, Lorenzo, and Sparta series. They have very rapid to moderately rapid permeability and moderate to low moisture-holding capacity. They have low to medium natural fertility and are medium acid to strongly acid in reaction.

Soils of this group are suited to small grains. Suitability for other crops is limited by the shallow rooting zones and subsequent lower moisture-holding capacity.

Wind erosion can be a serious problem when row crops are grown. With all cropping, tillage should be kept to a minimum, and a cover of growing vegetation or mulch should be kept on the surface as much of the time as possible.

The following soil mapping units are in this management group: 87A, 87B, 87C2, 88B, 318B, and 318C2.

Management Group IVe-1

This group consists of deep, strongly sloping, severely eroded, moderately well-drained to well-drained soils on uplands and terraces. These soils are members of the Camden, Catlin, La Rose, Plano, and Proctor series. They have moderate to moderately slow permeability and high available moisture capacity. They have low natural fertility, and are slightly acid to strongly acid in reaction. Erosion is a very severe hazard when they are cropped.

These soils can be used occasionally for a crop that requires cultivation, but they are better suited to hay or pasture. Many areas would be best suited for tree planting.

Erosion control is the main problem. Conservation practices should be used to control erosion where practical. Practices such as terracing and contouring are not practical in many areas because of the irregular topography.

The following soil mapping units are in this management group: 60D3, 134D3, 148D3, 171D3, 199D3, 223D3, and 224D3.

Management Group IVe-2

This group consists of moderately deep to deep, moderately sloping to strongly sloping, somewhat poorly drained to moderately well-drained soils on uplands. These soils are members of the Marseilles, Nappanee, St. Clair, and Swygert series. They have slow permeability and moderate moisture-holding capacity. These soils have clayey subsoils and underlying material. Marseilles soils are underlain with shale. They have low natural fertility.

These soils can be used occasionally for a crop that requires cultivation, but they are better suited to hay or pasture. Areas still covered with trees should not be cleared.

Erosion control is the main problem. For many areas, terracing and other conservation practices are not practical because of irregular topography.

The following soil mapping units are in this management group: 91C3, 91D2, 228C3, 549D2, 560D, and 560D2.

Management Group V-w

This group consists of Harpster silty clay loam, wet, and Lawson silt loam, wet. These are marshy soils that are wet the entire year and, for the most part, cannot be drained.

At present these soils are suitable as habitat for wetland wildlife.

The following soil mapping units are in this management group: W67 and W451.

Management Group VIe-1

This group consists of moderately steep to steep silty, loamy, and sandy soils on the uplands and terraces. These soils are members of the Camden, Fox, Hennepin, Morley, and Sparta series. They have moderate to rapid permeability. The available moisture capacity is high in the Camden and Hennepin series, moderate in the Fox series, and low in the Sparta series. Natural fertility is low. Erosion of areas unprotected by vegetation is severe.

These soils are suited to hay, pasture, trees, and other permanent vegetative cover.

Control of erosion is the main problem. Overgrazing of pastures should be prevented, and grazing of wooded areas should not be permitted.

The following soil mapping units are in this management group: 25E2, 25F2, 88D2, 134E2, 134E3, 134F2, 194E2, and 327E2.

Management Group VIe-2

This group consists of nearly level to moderately sloping, well-drained sandy soils of the uplands and terraces. These soils are the Hesch loamy sand (shallow variant) and the Hesch complex soils. These soils have rapid permeability and low to very low moisture-holding capacity. They are sandy material 10 to 40 inches over sandstone. Natural fertility is low to very low and wind erosion is a severe hazard.

These soils are best suited to trees or to pasture in the Hesch complex areas.

Providing a cover of permanent vegetation to prevent wind erosion is the main problem. Overgrazing of pastures should be prevented, and grazing of wooded areas should not be permitted.

The following soil mapping units are in this management group: 389A, 389B, 390-389A, 390-389B, 390-389C2, VA, VB, and VC2.

Management Group VIIe-1

This group consists of well-drained loamy to gravelly soils on moderately steep to very steep slopes on the uplands and terraces. These soils are members of the Hennepin and Rodman series. Hennepin soils have high moisture-holding capacity and moderate permeability. Rodman soils have low moisture-holding capacity and rapid permeability. They have low natural fertility and unprotected areas are subject to severe erosion.

Soils of this group are suited to trees, pasture, or other permanent vegetation. Areas covered with trees should not be cleared.

Maintaining cover to protect against erosion is the main problem. Grazing should be controlled, and grazing of wooded areas should not be permitted.

The following soil mapping units are in this management group: 25F3, 25G3, 93E2, and 93F2.

Management Group VIIe-2

This group consists of strongly sloping to very steep eroded clayey soils on the uplands. These soils are members of the Chatsworth, Gale, St. Clair, and Swygert series. These soils have slow to very slow permeability and low natural fertility. Unprotected areas are subject to severe erosion.

Soils of this group even have a limited suitability for trees and pasture. Areas covered with trees or grass should not be disturbed. Establishing a vegetative cover is often difficult.

Maintaining vegetative cover to protect against erosion is the main problem. Grazing should be restricted or closely controlled, and the grazing of wooded areas should not be permitted.

The following soil mapping units are in this management group: 91D3, 241D3, 241E3, 241F2, 241G2, 241G3, 413E3, and 560E2.

Management Group VIIe-3

This group consists of steep to very steep rocky soils along the river bluffs. Members of this group are Sandstone Rockland, Limestone Rockland, Shale Rockland, and the Boone series. These soils are not suitable for the commercial production of plants. Their use is restricted to trees in areas where the soil is thick enough to support them and to wildlife or recreational purposes.

The following soil mapping units are in this management group: 9G, 94G, 95G, and 397F2.

Management Group VIIs-1

This group is a land type of sandy riverwash material in the bottomland of the Illinois River. The areas are subject to flooding and to additional deposits of sand from dredging operations in the waterway. Their use is restricted to wildlife cover or recreation.

The following soil mapping unit is in this management group: 123.

Crop Yields and Productivity

Average crop yields under two levels of management are given in Table 2 for each mapping unit. The two levels of management, basic (column A) and high (column B), are defined in Illinois Extension Circular 1016, "Productivity of Illinois Soils" (Odell and Oschwald, 1970), and briefly in the following paragraphs.

The basic management level includes partial drainage for those soils needing drainage, with additional drainage being needed for optimum production. Soil reaction is maintained to a pH of 6.0 to 6.5. Available phosphorus (P-1) test levels are kept at values of 10 to 15. Available potassium levels are maintained at 125 to 150 on soils with low potassium-supplying power and 200 or more on soils with medium to high potassium-supplying power. Nitrogen levels are those obtained by adding 50 to 75 pounds of nitrogen per year to the corn crop in a C-SB-W-M rotation. Crop residues are returned to the soil. Plant populations for corn are 12,000 to 14,000 per acre. Erosion control practices are not adequate to control soil losses within tolerances considered necessary to prevent serious soil damage. Weed and insect control and tillage often lack timeliness.

Long-time average crop yields from the residue-

Table 2. — Estimated Average Yields of Crops on La Salle County Soils Under Basic (Column A) and High (Column B) Levels of Management[a]

Soil Map Symbol	Corn		Soybeans		Wheat		Oats		Alfalfa hay		Mixed pasture	
	A	B	A	B	A	B	A	B	A	B	A	B
	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac	tons/ac	tons/ac	days[b]	days[b]
9G	N[c]	N	N	N	N	N	N	N	N	N	N	N
23B	50	92	17	32	18	42	31	58	2.0	3.9	100	195
23C	47	87	16	30	17	40	30	55	1.9	3.7	95	185
23C2	44	83	15	29	16	38	28	52	1.8	3.5	90	175
24C2	57	95	19	32	21	41	37	55	2.4	4.0	120	200
24C3	47	89	16	30	17	38	30	52	1.9	3.8	100	190
24D2	53	89	18	30	20	38	35	52	2.2	3.8	110	190
25E2	N	N	N	N	10	21	21	34	1.3	2.3	65	115
25F2	N	N	N	N	10	19	19	32	1.2	2.1	60	105
25F3	N	N	N	N	N	N	N	N	.8	2.0	45	100
25G3	N	N	N	N	N	N	N	N	.8	1.8	40	90
36B	83	135	28	42	29	54	57	81	3.4	5.4	170	270
36C	78	128	26	40	28	51	54	77	3.2	5.1	160	255
36C2	74	122	25	38	26	49	51	73	3.1	4.9	150	240
41A	91	145	31	46	32	56	62	86	3.7	5.6	185	280
41B	86	145	29	46	30	56	59	86	3.5	5.6	175	280
60C2	61	92	18	32	19	39	39	58	2.5	3.8	125	190
60C3	50	87	15	30	16	37	32	55	2.0	3.6	100	180
60D2	57	87	17	30	18	37	36	55	2.3	3.6	115	180
60D3	43	86	13	30	13	36	27	54	1.7	3.5	85	180
61A	82	130	27	40	28	52	57	77	3.2	5.1	160	255
61B	78	130	26	40	27	52	54	77	3.0	5.1	150	255
67	77	118	24	40	23	45	52	67	2.7	4.5	135	225
W67	N	N	N	N	N	N	N	N	N	N	N	N
68	90	136	32	46	30	53	58	77	3.4	5.1	170	255
73	80	123	27	41	27	50	57	71	3.1	4.9	155	245
82	73	113	23	36	20	44	42	61	2.5	4.2	125	210
83	62	92	21	33	18	37	32	51	2.0	3.4	100	170
87A	55	84	17	30	19	38	37	57	2.1	3.5	105	175
87B	52	84	16	30	18	38	35	57	2.0	3.5	100	175
87C2	47	76	14	27	16	34	31	51	1.8	3.1	90	160
88B	44	74	14	26	15	32	27	48	1.6	3.0	80	150
88D2	37	63	12	22	13	27	22	41	1.4	2.5	70	130
91A	58	99	20	35	21	44	38	66	2.3	4.1	115	205
91B	55	99	19	35	20	44	36	66	2.2	4.1	110	205
91B2	46	89	16	32	17	40	30	59	1.8	3.7	95	185
91C	52	94	18	33	19	42	34	63	2.1	3.9	105	195
91C2	43	84	15	30	16	37	29	56	1.7	3.5	85	175
91C3	32	74	11	26	12	33	21	50	1.3	3.1	65	155
91D2	41	79	14	28	15	35	27	53	1.6	3.3	80	165
91D3	29	69	10	25	11	31	19	46	1.2	2.9	60	145
93E2	N	N	N	N	6	15	12	24	.7	1.7	35	80
93F2	N	N	N	N	6	14	11	22	.6	1.5	35	75
94G	N	N	N	N	N	N	N	N	N	N	N	N
95G	N	N	N	N	N	N	N	N	N	N	N	N
103	75	112	25	40	N	N	N	N	N	N	140	200
103+	75	112	25	40	N	N	N	N	N	N	140	200
104A	83	129	27	41	27	52	58	76	3.2	5.1	160	255
104B	79	129	26	41	26	52	55	76	3.0	5.1	150	255
105A	77	120	25	39	25	48	56	74	3.1	4.9	155	245
105B	73	120	24	39	24	48	53	74	2.9	4.9	145	245
105C2	65	108	21	35	21	43	48	67	2.6	4.4	130	220
107	85	125	30	41	29	46	55	67	3.4	4.9	170	245
123	N	N	N	N	N	N	N	N	N	N	N	N
125	76	118	26	40	28	46	56	69	2.8	4.5	140	225
131B	57	83	18	30	19	39	33	55	2.2	3.6	110	180
131C2	51	75	16	27	17	35	29	49	2.0	3.2	100	160
132A	69	112	22	36	22	48	48	65	2.8	4.6	140	230
132B	66	112	21	36	21	48	46	65	2.7	4.6	135	230
134A	64	106	20	35	21	45	43	64	2.7	4.5	135	225

Table 2. — Continued

Soil Map Symbol	Corn		Soybeans		Wheat		Oats		Alfalfa hay		Mixed pasture	
	A	B	A	B	A	B	A	B	A	B	A	B
	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac	tons/ac	tons/ac	days[b]	days[b]
134B	61	106	19	35	20	45	41	64	2.6	4.5	130	225
134C2	54	95	17	32	18	41	37	58	2.3	4.1	115	200
134C3	45	90	14	30	15	38	30	54	1.9	3.8	95	190
134D2	51	89	16	30	17	38	34	54	2.2	3.8	110	190
134D3	38	85	12	28	13	36	26	51	1.6	3.6	80	180
134E2	48	85	15	28	16	36	32	51	2.0	3.6	100	180
134E3	35	80	11	26	12	34	24	48	1.5	3.4	75	170
134F2	N	N	N	N	15	34	30	48	1.9	3.4	95	170
145B	77	121	24	42	25	52	52	76	2.9	5.1	150	255
145C2	69	109	21	38	22	47	47	68	2.6	4.6	130	230
146A	68	110	23	38	24	47	46	72	2.8	4.6	140	230
146B	65	110	22	38	23	47	44	72	2.7	4.6	135	230
146B2	61	105	21	36	22	45	41	68	2.5	4.4	125	220
146C2	58	99	20	34	20	42	39	65	2.4	4.1	120	205
147B	46	87	16	32	17	41	28	60	1.8	3.7	90	185
147B2	38	78	14	29	14	37	23	54	1.5	3.3	75	165
147C2	36	74	13	27	14	35	22	51	1.4	3.1	70	155
148A	81	125	27	40	29	51	59	80	3.1	5.0	155	250
148B	77	125	26	40	28	51	56	80	2.9	5.0	147	250
148C	73	119	24	38	26	48	53	76	2.8	4.8	140	235
148C2	69	113	23	36	25	46	50	72	2.6	4.5	130	225
148C3	57	105	19	34	20	43	41	68	2.2	4.3	110	210
148D2	65	106	22	34	23	43	47	68	2.5	4.3	125	210
148D3	49	100	16	32	17	41	35	64	1.9	4.0	95	200
149A	88	139	31	43	31	54	60	83	3.5	5.4	175	270
149B	84	139	29	43	29	54	57	83	3.3	5.4	165	270
151A	66	100	22	36	22	46	47	68	2.8	4.2	140	210
151B	63	100	21	36	21	46	45	68	2.7	4.2	135	210
152	89	134	32	46	30	53	57	75	3.4	5.0	170	250
154A	90	141	31	47	32	58	60	84	3.6	5.5	180	275
154B	86	141	29	47	30	58	57	84	3.4	5.5	170	275
154B2	81	134	28	45	29	55	54	80	3.2	5.2	160	260
154C2	77	127	26	42	27	52	51	76	3.1	5.0	155	250
171B	81	128	26	41	28	53	56	79	3.2	5.3	160	265
171C	77	122	24	39	26	50	53	75	3.1	5.0	150	250
171C2	75	115	23	37	25	48	50	71	2.9	4.8	145	240
171C3	60	109	19	35	20	45	41	67	2.4	4.5	120	225
171D3	43	90	14	29	15	37	30	55	1.7	3.7	85	185
194B	46	86	16	31	16	39	27	56	1.8	3.7	90	185
194C	44	82	15	29	15	37	26	53	1.7	3.5	85	175
194C2	42	78	14	27	14	35	25	50	1.6	3.3	80	165
194D2	39	73	13	26	13	33	23	47	1.5	3.1	75	155
194E2	37	69	12	24	12	31	22	45	1.4	2.9	70	150
198A	90	140	31	45	31	55	61	85	3.6	5.5	180	275
198B	86	140	29	45	29	55	58	85	3.4	5.5	170	275
199A	86	131	29	41	31	52	60	82	3.5	5.3	175	265
199B	82	131	28	41	29	52	57	82	3.3	5.3	165	265
199C	77	124	26	39	28	49	54	78	3.2	5.0	160	250
199C2	73	118	25	37	26	47	51	74	3.0	4.8	150	240
199C3	60	111	20	35	22	44	42	70	2.5	4.5	125	225
199D3	52	105	17	33	19	42	36	66	2.1	4.2	105	210
206	66	110	23	38	22	44	48	63	2.5	4.2	125	210
210	72	109	23	37	N	N	N	N	N	N	125	180
219A	78	125	26	39	28	51	52	74	3.0	4.9	150	245
219B	74	125	25	39	27	51	49	74	2.9	4.9	140	245
223B	61	102	19	36	20	44	40	65	2.3	4.2	115	210
223B2	58	97	18	34	19	42	38	62	2.2	4.0	110	200
223C	58	97	18	34	19	42	38	62	2.2	4.0	110	200
223C2	55	92	17	32	18	40	36	59	2.1	3.8	105	190
223C3	45	87	14	30	15	38	30	55	1.7	3.6	85	180

Table 2. — Continued

Soil Map Symbol	Corn		Soybeans		Wheat		Oats		Alfalfa hay		Mixed pasture	
	A	B	A	B	A	B	A	B	A	B	A	B
	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac	tons/ac	tons/ac	days[b]	days[b]
223D2	52	87	16	30	17	38	34	55	2.0	3.6	100	180
223D3	39	82	12	29	13	35	25	52	1.5	3.3	75	170
224C3	37	77	12	23	12	30	23	44	1.4	3.0	70	150
224D2	43	81	13	25	14	32	26	46	1.6	3.1	80	155
224D3	32	72	10	22	11	29	19	41	1.2	2.8	60	140
228A	40	76	13	28	14	35	26	50	1.6	3.1	80	155
228B	38	76	12	28	13	35	25	50	1.5	3.1	75	155
228B2	32	68	10	25	11	32	21	45	1.3	2.8	65	140
228C2	30	65	10	24	11	30	20	43	1.2	2.6	60	130
228C3	22	57	7	21	8	26	14	38	.8	2.3	45	115
232	76	113	26	43	24	47	46	72	2.8	4.5	140	225
233A	66	107	21	37	23	48	46	64	2.7	4.5	135	225
233B	63	107	20	37	22	48	44	64	2.6	4.5	130	225
233C	59	102	19	35	21	46	41	61	2.4	4.3	120	215
233C2	56	96	18	33	20	43	39	58	2.3	4.1	115	205
233C3	46	91	15	31	16	41	32	54	1.9	3.8	95	190
233D2	53	91	17	31	18	41	37	54	2.2	3.8	110	190
234A	83	128	27	41	28	54	56	76	3.2	5.1	160	255
234B	79	128	26	41	27	54	53	76	3.0	5.1	150	255
235	66	104	23	39	21	42	39	64	2.4	4.0	120	200
236A	73	116	23	38	25	49	50	68	2.9	4.7	145	235
236B	69	116	22	38	24	49	48	68	2.8	4.7	140	235
238	53	93	18	32	14	31	25	45	1.6	2.9	80	145
241D3	N	N	N	N	8	18	15	32	.9	2.1	45	105
241E3	N	N	N	N	4	11	7	20	.5	1.3	25	65
241F2	N	N	N	N	N	N	N	N	N	N	30	70
241G2	N	N	N	N	N	N	N	N	N	N	N	N
241G3	N	N	N	N	N	N	N	N	N	N	N	N
242A	73	117	23	37	24	48	51	68	2.9	4.7	145	235
242B	69	117	22	37	23	48	48	68	2.8	4.7	140	235
243A	67	110	21	35	23	46	47	66	2.7	4.5	135	225
243B	64	110	20	35	22	46	45	66	2.6	4.5	130	225
243B2	60	104	19	33	21	44	42	63	2.4	4.3	120	215
243C	60	104	19	33	21	44	42	63	2.4	4.3	120	215
243C2	57	99	18	32	20	41	40	59	2.3	4.1	115	205
243C3	47	94	15	30	16	39	33	56	1.9	3.8	95	190
243D2	54	94	17	30	18	39	38	56	2.2	3.8	110	190
278A	74	120	23	38	25	48	51	69	2.9	4.8	145	240
278B	70	120	22	38	24	48	48	69	2.8	4.8	140	240
280B	69	111	21	35	23	47	45	66	2.7	4.6	140	230
280C2	61	100	19	31	21	43	41	60	2.5	4.2	125	210
290A	75	100	21	36	24	46	53	67	2.8	4.2	140	210
290B	71	100	20	36	23	46	50	67	2.7	4.2	135	210
290C2	64	90	18	32	20	41	45	60	2.4	3.8	120	190
290C3	53	85	15	31	17	39	37	57	2.0	3.6	100	180
293A	83	126	28	44	28	53	55	80	3.3	5.0	165	250
293B	79	126	27	44	27	53	52	80	3.1	5.0	155	250
294B	76	118	24	40	25	51	51	75	2.9	4.9	145	245
294C	72	112	23	38	24	48	49	71	2.7	4.7	135	235
294C2	68	106	21	36	22	46	46	68	2.6	4.4	130	220
295A	68	110	22	37	22	48	46	70	2.6	4.3	130	215
295B	65	110	21	37	21	48	44	70	2.5	4.3	125	215
295B2	61	105	20	35	20	47	41	66	2.3	4.1	120	205
298B	57	101	19	35	20	44	38	65	2.3	4.1	115	205
311B	33	57	14	23	15	33	26	46	1.5	2.6	75	130
311C2	26	48	11	20	12	28	21	39	1.2	2.2	60	110
314	41	72	16	29	15	34	27	49	1.6	3.0	80	150
315B	35	65	14	26	15	35	27	50	1.4	2.9	70	145
317	60	98	23	37	20	41	38	59	2.3	4.0	115	200
318B	55	80	15	27	17	38	34	55	1.9	3.3	95	165
318C2	44	68	12	23	14	32	27	47	1.5	2.8	75	140

Table 2. — Concluded

Soil Map Symbol	Corn		Soybeans		Wheat		Oats		Alfalfa hay		Mixed pasture	
	A	B	A	B	A	B	A	B	A	B	A	B
	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac	bu/ac	tons/ac	tons/ac	days[b]	days[b]
320B	44	83	15	30	16	39	27	54	1.6	3.4	80	170
320B2	37	75	13	27	14	35	22	49	1.4	3.0	70	150
320C2	35	71	12	26	13	33	21	46	1.3	2.9	65	145
321A	67	108	22	34	19	44	44	62	2.6	4.4	130	220
321B	64	108	21	34	18	44	42	62	2.5	4.4	125	220
325B	59	96	18	33	20	43	40	63	2.4	4.1	120	205
325C2	53	86	16	30	18	39	36	57	2.1	3.7	105	185
327B	52	92	17	30	18	40	32	58	2.0	3.9	100	195
327C2	47	83	15	27	16	36	29	52	1.8	3.5	90	175
327D2	44	78	14	26	15	34	27	49	1.7	3.3	85	165
327E2	41	74	14	24	14	32	26	46	1.6	3.1	80	155
330	70	107	24	38	22	37	45	53	2.5	3.8	125	190
344A	72	115	23	37	25	47	48	71	2.9	4.7	145	235
344B	68	115	22	37	24	47	46	71	2.8	4.7	140	235
344C2	61	104	20	33	21	42	41	64	2.5	4.2	125	210
375A	80	115	26	41	26	51	57	76	3.1	4.8	155	240
375B	76	115	25	41	25	51	54	76	2.9	4.8	150	240
375B2	72	109	23	39	23	48	51	72	2.8	4.6	140	230
375C2	68	104	22	37	22	46	48	68	2.6	4.3	130	215
386B	77	124	26	39	27	52	59	75	3.2	5.0	160	250
386C2	69	112	24	35	25	46	53	67	2.8	4.5	140	230
388B	71	108	23	38	24	48	52	72	2.9	4.6	145	230
388C	68	103	22	36	23	46	50	68	2.7	4.4	135	220
388C2	64	97	20	34	21	43	47	65	2.6	4.1	130	205
389A	27	42	8	15	9	19	18	27	1.0	1.6	50	80
389B	26	42	8	15	9	19	17	27	1.0	1.6	50	80
390-389A or VA	40	63	12	23	13	28	27	40	1.5	2.5	75	125
390-389B or VB	38	63	11	23	12	28	26	40	1.4	2.5	70	125
390-389C2 or VC2	34	57	10	21	11	25	23	36	1.3	2.3	65	115
393A	43	73	15	26	15	34	29	48	1.7	3.0	85	150
393B	41	73	14	26	14	34	28	48	1.6	3.0	80	150
397F2	N	N	N	N	7	16	15	26	1.0	1.9	50	95
400	71	112	23	38	22	43	45	63	2.5	4.2	125	210
413B	47	73	16	24	17	28	28	41	1.8	2.9	90	150
413C2	42	65	14	22	15	26	25	37	1.6	2.7	80	135
413E3	27	54	9	18	10	21	16	31	1.0	2.2	50	110
435	78	112	26	41	24	47	52	70	2.8	4.4	140	220
448B	57	100	18	34	19	44	37	67	2.2	4.1	110	205
448B2	54	95	17	32	18	42	35	64	2.1	3.9	105	195
448C2	51	90	16	31	17	40	33	60	2.0	3.7	100	185
448C3	42	85	13	29	14	37	27	57	1.6	3.5	80	175
451	86	130	30	42	31	52	57	73	3.5	5.1	175	255
W451	N	N	N	N	N	N	N	N	N	N	N	N
537	74	107	25	37	27	42	55	63	2.7	4.2	135	210
549A	55	88	18	30	19	37	35	54	2.1	3.5	105	175
549B	52	88	17	30	18	37	33	54	2.0	3.5	100	175
549C	50	84	16	29	17	35	32	51	1.9	3.3	95	165
549C2	47	79	15	27	16	33	30	49	1.8	3.2	90	160
549D2	44	75	14	26	15	31	28	46	1.7	3.0	85	150
554B	54	94	18	34	18	44	37	62	2.1	3.9	105	195
560C2	27	55	10	22	11	29	18	39	1.2	2.5	60	125
560D	30	59	11	24	12	30	21	42	1.3	2.7	65	135
560D2	25	52	9	21	10	27	17	37	1.1	2.4	55	120
560E2	23	49	9	20	9	25	16	35	1.0	2.2	50	110
572A	63	95	21	34	22	41	43	55	2.6	4.0	130	200
572B	60	95	20	34	21	41	41	55	2.5	4.0	125	200
572C2	54	86	18	31	19	37	37	50	2.2	3.6	110	180
633	66	108	21	35	40	43	42	62	2.3	4.1	115	205

[a] Levels of management are defined briefly in the text and more in detail in Circular 1016 — Productivity of Illinois Soils — Univ. of Ill. College of Agriculture, Coop. Ext. Service.

[b] Expected number of days that one acre will carry one cow.

[c] Symbol "N" indicates crop not adapted.

limestone plots at the Illinois agronomy fields were used as the basis for yield estimates for such benchmark soils as Sable, Muscatine, Flanagan, and Elliott.

The high management level is based on input levels thought to be required for maximum profit. This level is based on present technology (used by about 10 percent of the farmers) and on recent yields obtained from high-input levels at the agronomy fields and research centers in Illinois. Specific management inputs include drainage improvement consistent with soil properties and economic considerations. Soil reaction is maintained to a pH of 6.0 to 6.5. Available phosphorus (P-1) test levels are maintained at 40 to 50. Available potassium test levels are kept at 240 or higher. Nitrogen application rates are 125 to 175 pounds per acre per year for corn. Corn plant populations are 20,000 to 24,000 per acre, adjusted downward for soils low in water-holding capacity. Erosion-control practices are such that the soil is not seriously damaged. Weed and insect control are adequate and timely. Tillage operations fit the soil and the crop, while avoiding excessive tillage. The best crop varieties are used. Harvesting is timely and efficient.

The yields shown in Table 2 for mapping units are calculated from the yields shown in Circular 1016, "Productivity of Illinois Soils," using a separate adjustment percentage for each different slope and erosion class of all soils in La Salle County.

Use and Management of Soils for Woodland

When La Salle County was first settled, the major river valleys, the bluffs above them, and much of the upland near the major streams were forested.[1] This forest land accounted for about 20 percent of the land area of the county. Most of this forest was mixed oak and bottomland species such as cottonwood and soft maple; however, the northern half of La Salle County lies within the range of northern coniferous species, and red and white pine probably occurred in that portion of the county. What appears to be the only remaining native red pine in Illinois is found on a high bluff above the Fox River south of the highway bridge near Sheridan in northeastern La Salle County. Much of the upland forest and the majority of the bottomland forest have been cleared for agriculture. This leaves La Salle County with 32,000 acres of forest land or less than 5 percent of the land area of the county in forest.

In the past, little attention has been given to woodland management in the county. The 1970 Illinois Conservation Needs Committee Survey (Illinois Conservation Needs Committee, 1970) indicates that over 60 percent of the county's forest land needs to be managed better. In addition, the county contains 8,000 acres of marginal cropland, in capability classes VI and VII, which might better be returned to woodland. Also, the county contains about 4,000 acres of mine spoils, borrow pits, and other highly erosive lands in need of afforestation or more intensive treatment. Timber management is not now a major source of income in La Salle County. However, the potential use of forest land for recreation and watershed protection is great. In recognition of the need for reforestation and the potential productivity of forest land, the State of Illinois produces millions of tree seedlings annually. These seedlings are available to landowners if they are planted for purposes other than landscaping or ornamentation. In addition, the State Division of Forestry will aid landowners in bringing their forest land under proper forest management. This section of the Soil Survey Report is intended to provide the soils information necessary for such management.

Tree species vary in their site requirements. The most important factors affecting the ability of a site to grow trees are those which affect the availability of moisture and nutrients. These factors are related to major soil characteristics such as texture, structure, content of organic matter, drainage, and depth to a restrictive layer. Consequently, a knowledge of the soil type allows one to make a fair estimate of the site's suitability and potential productivity for a given tree species. Other factors, however, also influence the site quality. For example, a slope facing south may have the same soil type as one facing north, but it will generally be much drier, and this will be reflected in the tree growth rates on the two sites.

Table 3 gives suitable species and potential growth rates for the soils of the county. These figures are based on the average soil for the series which comprise each group. It should be understood that near the boundary between soil series or in extreme slope positions, as well as on different aspects, these values may vary considerably.

The soils of La Salle County have been placed into eight woodland suitability groups, based on their physical and chemical properties and their response to woodland use and management. Each group is composed of soils requiring similar treatment and possessing similar potential for forest growth. Soils of the county that did not natively support forest have been included in these groups. Such soils often respond quite differently than their associates in the group. However, not enough information on such response exists to segregate them into special groups. They have been placed in the report not to encourage their afforesta-

[1] The authors are indebted to Richard F. Fisher, assistant professor of forestry and forest soils in agronomy for his major contribution to this section.

Table 3. — Woodland Suitability Groups of La Salle County Soils

Woodland group no.	Estimated annual growth (bd. ft./ acre)	Species to favor in managing existing stands	Species suitable for planting	Plant competition	Equipment limitation	Erosion hazard
1	upland oak 160-265	northern red oak white oak black oak	red pine white pine white oak Japanese larch Scotch pine*	moderate	slight to moderate	slight to moderate
2	upland oak 110-300	northern red oak ash white oak	white pine Norway spruce ash northern red oak Scotch pine*	severe	moderate	slight
3	upland oak 100-200	white oak black oak	red pine white pine Japanese larch Scotch pine*	moderate	slight to moderate	slight to moderate
4	upland oak 70-240	northern red oak ash white oak	white pine Norway spruce white oak Scotch pine*	severe	moderate	slight
5	upland oak 70-190	white oak black oak white pine	red pine white pine Scotch pine*	slight	slight	slight to moderate
6	upland oak 50-180	black oak white oak	Norway spruce white oak Scotch pine* red pine	moderate	moderate	slight to moderate
7	upland oak 20-160	black oak white oak red cedar	red cedar jack pine Scotch pine	slight	severe	severe
8	cottonwood 300-500 bottomland hardwoods 200-470	silver maple cottonwood ash sycamore	cottonwood ash silver maple sycamore	severe	severe	slight

*For Christmas trees only.

tion, but rather to provide the necessary information should anyone wish to plant trees on any of these soils.

Table 3 gives the suitability of soils for woodland use by woodland suitability grouping. For each group the following criteria are evaluated: estimated annual growth rate, suitable species, plant competition, equipment limitation, and erosion hazard. The annual growth rate is given in terms of board feet per acre for native hardwood timber as supplied by the Illinois Technical Forestry Association (Illinois Technical Forestry Association, 1965). Under suitable species, there are two sublistings. Often species suitable for planting differ from those which should be favored in existing stands; consequently both are evaluated (Central States Forest Experiment Station, 1962). Plant competition refers to the amount of herbaceous and shrubby plant competition that will be encountered when trying to reforest a barren site. Slight and moderate competition may reduce growth and survival of planted seedlings. If competition is severe, then it must be controlled to achieve any appreciable survival and growth of planted tree seedlings. Such control is generally achieved with selected chemicals, and aid in implementing such a control program is available from the State Division of Forestry or the state Extension service. Equipment limitation refers to the inability or inadvisability of using heavy equipment for all or part of the year. Slight limitation means that only short seasonal limitations occur. Moderate limitation indicates a prolonged seasonal limitation, while severe indicates that the use of heavy equipment is either excluded or quite inadvisable for a majority of the year. Erosion hazard refers to the ease with which the site may be eroded. Slight hazard indicates that few, if any, precautions need to be taken, while moderate or severe hazard indicates that an increasing need for erosion prevention measures exists.

Woodland Group 1

These upland and terrace soils are moderately well- to well-drained with moderate permeability. Parent materials included loess, loam till, sandy loam till, and stratified loamy outwash. Most soils are on nearly level to sloping topography, but some are on steeper slopes. The water table is normally below three feet.

Soils natively supporting forest: Batavia, Birkbeck, Camden, Dodge, Downs, Fayette, Gale, Harvard, Hennepin, St. Charles, and Strawn.

Soils not natively supporting forest: Catlin, LaRose, Plano, Proctor, Saybrook, and Tama.

Generally the soils in the group that did not natively support forest are relatively easy to afforest with coniferous species, and the growth of such species is generally good. No information is available on the potential coniferous timber production on soils in this group. Generally the forests that exist on soils of this group are composed of red, white, and black oak. Red and black oak do not grow as well as white oak, except on the poorest sites where black oak may be superior. Forests on the soils of this group can usually endure intense recreational use.

Woodland Group 2

These upland and terrace soils are somewhat poorly drained, with moderate permeability. Parent materials include loess, loam till, sandy loam till, and loamy stratified outwash. These soils are, for the most part, on nearly level to very gently sloping topography. The water table is frequently between one and two feet.

Soils natively supporting forest: Atterberry, Kendall, Millbrook, Sabina, Starks, Stronghurst, Sunbury, and Virgil.

Soils not natively supporting forest: Brenton, Elburn, Flanagan, and Muscatine.

Although it is not difficult to afforest the soils in this group which did not natively support forest, the growth of trees on these soils tends to be rapid at first but nearly ceases at an early age. On these soils red and white oak predominate in native stands, with red oak being superior in growth and form. When planting conifers on such sites or in fields where even a small proportion of the area is in soils of this group, it should be kept in mind that red pine does not perform well on these soils. Forests on soils in this group can generally endure moderate to heavy recreational use.

Woodland Group 3

These upland soils are moderately well- to well-drained with moderately slow to slow permeability. Parent materials include silty clay loam till, silty clay till, and loess over silty clay till. The range in slope is from very gently sloping to steep. The water table is normally below three feet.

Soils natively supporting forest: Chatsworth, Morley, and St. Clair.

Soils not natively supporting forest: Mona, Symerton, Varna, and Wenona.

The native forest soils and those soils in this group which did not natively support forest behave quite similarly. Growth on these soils is slow, and trees seldom attain great size. The soils' best forest use is for Christmas trees. Black and white oak should be favored in natural stands. Forests on soils of this group can usually endure only moderate recreational use.

Woodland Group 4

These upland soils are somewhat poorly drained (Thorp and Traer are poorly drained) with moderately slow to slow permeability. Parent materials include silty clay loam till, silty clay till, clay till, loess over silty clay and clay till, loess over shale, and loess and outwash over silty clay loam till. These soils predominately occur on nearly level to gently sloping areas.

Soils natively supporting forest: Beecher, Blount, Frankfort, Kernan, Nappanee, and Traer.

Soils not natively supporting forest: Andres, Clarence, Elliott, Loran, Mokena, Rutland, Swygert, and Thorp.

The soils in this group which were not natively forested are difficult to afforest. When seedlings are established, growth is poor. These soils are too wet and heavy for good growth of most conifers. There are some good native oak stands on soils of this group. Red and possibly white oak should be favored. Forests on soils of this group can usually endure only moderate recreational use.

Woodland Group 5

These terrace and outwash soils are well drained with moderately rapid to rapid permeability. Parent materials include loamy, sandy, and gravelly outwash materials. These soils occur on nearly level to moderately steep slopes. The water table is normally below three feet.

Soils natively supporting forest: Alvin, Dickinson, Dresden, Fox, Hesch complex, Rodman, and Sparta.

Soils not natively supporting forest: Lorenzo and Warsaw.

The natively forested and nonforested soils of this group behave quite similarly. Most of these soils tend to be somewhat drouthy, and hardwoods do not grow well on them. Conifers do quite well, and although no information exists on potential wood yield, the yield of Christmas trees and greens is very good. Forests on

soils of this group can usually endure only moderate to slight recreational use.

Woodland Group 6

These soils, mostly in the uplands, are moderately well to somewhat poorly drained with 20 to 40 inches of silty or loamy material over shale, sandstone, and limestone bedrock. Permeability is moderate in the unconsolidated material. These soils occur on nearly level to sloping areas. The water table is generally below three feet.

Soils natively supporting forest: Marseilles, Marseilles gray subsoil variant, and Ritchey.

Soil not natively supporting forest: Channahon.

The shallowness of these soils to bedrock restricts the occurrence of very large trees. The moderately shallow depth to bedrock limits the available moisture supply and rooting depth. Black and white oak should be favored on natural stands on Marseilles and Ritchey soils. Northern red oak and ash should be favored in natural stands on the Marseilles gray subsoils. The forests on these soils have moderate recreational potential.

Woodland Group 7

These soils are well drained, with 10 to 20 inches of unconsolidated material over shale, sandstone, and limestone bedrock. All soils except Hesch shallow variant occur on steep slopes. Permeability is variable.

Soils natively supporting forest: Boone, Hesch shallow variant, Limestone Rockland, Sandstone Rockland, and Shale Rockland.

These shallow soils seldom produce marketable timber products and can only support light recreational use. However, they should be maintained in forest to reduce erosion and provide watershed protection.

Woodland Group 8

These upland and bottomland soils are mostly poorly drained with mainly moderate to moderately slow permeability. Parent materials include medium to moderately fine alluvium in the bottomland; loess, loess over loamy stratified outwash, silty clay loam till, and silty clay till in the upland. Mucks occur in both upland and bottomland. The great majority of both groups of soils are nearly level to depressional. Water tables are frequently less than one foot, and flooding occurs in the bottomlands.

Bottomland soils natively supporting forest: Calco, DuPage, Hesch gray subsoil variant, Houghton, Houghton overwash, Joliet, Lawson, Lawson wet, Lena, Millington, Millsdale, Ridgeville, Riverwash, Ross, Sawmill, Selma, and Wabash. Du Page, Ross, and Riverwash are well drained but occur in the bottomlands. Ridgeville is somewhat poorly drained and occurs almost entirely in the bottomlands.

Upland soils not natively supporting forest: Ashkum, Bryce, Drummer, Harpster, Harpster wet, Peotone, Rantoul, Sable, and Streator.

The upland soils of this group are difficult to afforest, and seedlings which do survive stop growing at an early age. Generally it is not advisable to attempt to plant these sites. The bottomland soils of this group will support good cottonwood and fine soft maple stands. Because stands on soils of this group lack a forest floor or duff layer, recreational use of such forests should be quite limited.

Wildlife Management

The successful management of wildlife on any tract land requires that food, cover, and water be available in a suitable combination. Lack of any one element, or imbalance of any one, will cause the desired wildlife species to leave.

Most successful wildlife habitats are created, improved, or maintained by planting suitable vegetation; by manipulating existing vegetation so as to bring about the establishment of desired food and cover plants; or by a combination of such measures. The influence of a soil on the growth characteristics of plants can be inferred from knowledge about the properties of the soil. The properties of each soil are recorded in this report, and by using this information the type of wildlife habitat needed can be determined.

There are three general classes of wildlife:

Openland wildlife: Birds and mammals that normally make their homes on croplands, pastures, meadows, and areas overgrown with grasses, herbs, and shrubbery plants. Examples of these would be pheasants, quail, meadowlarks, rabbits, red foxes, and woodchucks.

Woodland wildlife: Birds and mammals that normally make their homes in wooded areas where there is a mixture of trees and shrubs. Examples of these would be songbirds, squirrels, foxes, deer, and raccoon.

Wetland wildlife: Birds and mammals that normally make their homes in wet areas such as ponds, swamps, and marshes. Examples of these are ducks, geese, herons, muskrats, and beavers.

Use of Soils as a Resource

The following section summarizes the characteristics of each soil and its limitations or value for various

Table 4. — Soils of La Salle County and Their Estimated Physical and Chemical Properties and Interpretations as Construction Materials

Soil series and map unit symbols	Depth to seasonal high water table (ft.)	Depth from surface (in.)	Soil Textural Classification			Percentage <3 in. passing sieve[2]		
			USDA	Engineering Unified	Engineering AASHO	No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 200 (0.074 mm.)
Alvin: 131B, 131C2[5]	Over 3	0-11	Fine sandy loam	SM or ML	A-4	100	100	30-60
		11-35	Sandy clay loam	SC or CL	A-4 or A-6	100	100	40-65
		35-60	Sand to loamy sand	SP or SM	A-3 or A-2	100	95-100	0-20
Andres: 293A, 293B	1 to 3	0-18	Silt loam	CL or CL-ML	A-6	95-100	85-95	75-90
		18-36	Clay loam	CL	A-7 or A-6	95-100	85-95	55-85
		36-60	Silty clay loam	CL	A-7	95-100	90-95	80-90
Ashkum: 232	0 to 1[1]	0-20	Silty clay loam	CL or MH	A-7	95-100	90-100	95-100
		20-33	Silty clay	CL or CH	A-7	95-100	90-100	85-100
		33-50	Silty clay loam	CL	A-6 or A-7	95-100	90-100	85-100
Atterberry: 61A, 61B	1 to 3	0-11	Silt loam	ML or CL	A-4 or A-6	100	100	95-100
		11-40	Silty clay loam	CL	A-7 or A-6	100	100	95-100
		40-60	Silt loam	CL or ML	A-6	100	100	95-100
Batavia: 105A, 105B, 105C2[5]	Over 3	0-18	Silt loam	CL or ML	A-6 or A-4	95-100	90-100	85-100
		18-42	Silty clay loam	CL	A-6	95-100	90-100	85-100
		42-60	Sandy loam to silt loam	ML or SM	A-2 or A-4	90-100	80-90	25-60
Beecher: 298B	1 to 3	0-12	Silt loam	CL or ML	A-6 or A-4	95-100	95-100	90-100
		12-36	Silty clay	CH or CL	A-7	95-100	85-100	80-100
		36-60	Silty clay loam	CL	A-6 or A-7	95-100	90-100	80-100
Birkbeck: 233A, 233B, 233C, 233C2[5], 233D2[5], 233C3[6]	Over 3	0-11	Silt loam	ML or CL	A-4 or A-6	100	100	95-100
		11-46	Silty clay loam	CL	A-7 or A-6	100	95-100	95-100
		46-60	Loam	ML or CL	A-4 or A-6	95-100	85-95	55-75
Blount: 23B, 23C, 23C2[5]	1 to 3	0-7	Silt loam	ML or CL	A-4 or A-6	95-100	95-100	90-100
		7-28	Silty clay	CH or CL	A-7	95-100	90-100	85-100
		28-40	Silty clay loam	CL	A-6 or A-7	95-100	90-100	85-100
Boone: 397F2[5]	Over 3	0-8	Loamy fine sand	SM	A-2	100	95-100	90-100
		8-20	Loamy fine sand to sand	SP or SM	A-3 or A-2	100	90-100	15-25
		20-40	Sandstone	-	-	(7)	(7)	(7)
Brenton: 149A, 149B	1 to 3	0-14	Silt loam	CL or ML	A-6	100	95-100	80-95
		14-41	Silty clay loam to clay loam	CL	A-6 or A-7	95-100	90-100	60-90
		41-46	Sandy loam to loam	SM, SC, or CL	A-2, A-4, or A-6	90-100	80-95	30-80
Bryce: 235	0 to 1[1]	0-15	Silty clay	CH or MH	A-7	100	95-100	90-100
		15-41	Silty clay	CH	A-7	100	95-100	90-100
		41-50	Silty clay	CH or CL	A-7 or A-6	95-100	90-100	85-100
Calco: 400	0 to 1[8]	0-31	Silty clay loam	CL or CH	A-7	100	95-100	90-100
		31-65	Silty clay loam	CL	A-6 or A-7	95-100	90-100	80-100
Camden: 134A, 134B, 134C2[5], 134D2[5], 134E2[5], 134F2[5], 134C3[6], 134D3[6], 134E3[6]	Over 3	0-9	Silt loam	ML or CL	A-4 or A-6	100	95-100	80-95
		9-43	Silty clay loam to clay loam	CL	A-6 or A-7	95-100	90-100	60-90
		43-60	Sandy loam to loam	SM, SC, or CL	A-2, A-4, or A-6	90-100	80-95	30-80
Catlin: 171B, 171C, 171C2[5], 171C3[6], 171D3[6]	Over 3	0-14	Silt loam	CL or ML	A-4 or A-6	100	100	95-100
		14-46	Silty clay loam	CL	A-7	100	95-100	95-100
		46-60	Loam	ML or CL	A-4 or A-6	95-100	85-95	55-75
Channahon: 315B	Over 3	0-8	Silt loam	ML or CL	A-4 or A-6	90-100	85-95	55-80
		8-17	Clay loam	CL	A-6 or A-7	90-100	80-90	60-85
		17-60	Limestone	-	-	(7)	(7)	(7)
Chatsworth: 241F2[5], 241G2[5], 241D3[4], 241E3[6], 241G3[6],	Over 3	0-2	Silt loam	CL	A-6 or A-7	95-100	95-100	90-100
		2-14	Silty clay	CL or CH	A-7	95-100	90-100	85-100
		14-40	Silty clay or silty clay loam	CH or CL	A-7	95-100	90-100	85-100
Clarence: 147B, 147B2[5], 147C2[5]	1 to 3	0-14	Silty clay loam	CL	A-7	95-100	95-100	90-100
		14-29	Clay	CH	A-7	95-100	90-100	85-100
		29-50	Clay	CH	A-7	95-100	90-100	85-100
Dickinson: 87A, 87B, 87C2[5]	Over 3	0-18	Fine sandy loam	SM or SC	A-2 or A-4	95-100	95-100	25-40
		18-54	Fine sandy loam	SM	A-2	95-100	90-100	25-65
		54-60	Loamy fine sand	SM	A-2	55-75	50-70	0-20
Dodge: 24C2[5], 24D2[5], 24C3[6]	Over 3	0-11	Silt loam	ML or CL	A-4 or A-6	100	95-100	70-90
		11-30	Silty clay loam	CL	A-7	95-100	90-100	60-80
		30-50	Loam	ML	A-4	95-100	85-95	50-80
Downs: 386B, 386C2[5]	Over 3	0-13	Silt loam	ML or CL	A-4 or A-6	100	100	95-100
		13-43	Silty clay loam	CL	A-6 or A-7	100	100	95-100
		43-60	Silt loam	ML or CL	A-4 or A-6	100	100	95-100
Dresden: 325B, 325C2[5]	Over 3	0-11	Silt loam	ML or CL	A-6	100	95-100	80-95
		11-35	Silty clay loam to clay loam	CL	A-6 or A-7	95-100	90-100	60-90
		35-60	Gravel and sand	GP or SP	A-1	40-80	30-70	0-10
Drummer: 152	0 to 1[1]	0-15	Silty clay loam	CL, CH, or OH	A-7	95-100	95-100	85-100
		15-40	Silty clay loam	CL or CH	A-7 or A-6	95-100	95-100	85-100
		40-60	Silt loam to sandy loam	SM, CL, or ML	A-2, A-4, or A-6	90-100	80-100	30-75
DuPage: 321A, 321B	0 to 1[8]	0-14	Silt loam	ML or CL	A-4 or A-6	90-100	85-95	80-90
		14-27	Loam	ML or CL	A-4 or A-6	90-100	85-95	70-90
		27-60	Silt loam	ML or CL	A-4 or A-6	90-100	80-100	25-80
Elburn: 198A, 198B	1 to 3	0-14	Silt loam	CL	A-6	100	100	90-100
		14-56	Silty clay loam	CL	A-6 or A-7	100	100	95-100
		56-66	Sandy loam to silt loam	SM or ML	A-2 or A-4	90-100	80-90	25-60

Table 4. — Continued

Soil series and map unit symbols	Permeability (in./hr.)	Available moisture capacity (in./in. of soil)	Reaction (pH)	Shrink-swell potential	Corrosion potential for conduits (concrete)	Workability as a construction material and compaction characteristics	Shearing strength when compacted	Compressibility when compacted and saturated
Alvin: 131B, 131C2[5]	2.00-6.30	.16-.18	5.6-6.5	Low	(3)	Fair	Medium to low	Medium
	.60-2.00	.16-.18	5.6-6.5	Low	Moderate	Good to fair	Low	Medium
	6.30-20.0	.05-.10	5.1-6.0	Low	Moderate	Fair	Medium	Low to medium
Andres: 293A, 293B	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.15-.19	6.1-7.8	Moderate	Moderate	Fair	Low	Medium
	.20- .60	.18-.20	Calc.	Low	Low	Fair	Low	Medium
Ashkum: 232	.60-2.00	.21-.23	6.1-7.3	Moderate to high	(3)	Fair to poor	Low	Medium to high
	.20- .60	.13-.19	6.1-7.3	Moderate to high	Low	Fair to poor	Low	Medium to high
	.20- .60	.18-.20	Calc.	Moderate	Low	Fair	Low	Medium
Atterberry: 61A, 61B	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.20-2.00	.18-.20	5.1-6.0	Moderate	Moderate	Fair	Low	Medium
	.60-2.00	.20-.22	6.6-7.8	Low	Low	Fair	Low	Medium
Batavia: 105A, 105B, 105C2[5]	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.18-.20	5.1-6.0	Low to moderate	Moderate	Fair	Low	Medium
	.60-6.30	.11-.22	6.1-7.8	Low	Low	Fair	Medium to low	Medium
Beecher: 298B	.60-2.00	.22-.24	5.6-6.5	Low	(3)	Fair	Low	Medium
	.20- .60	.11-.18	5.6-6.5	Moderate	Moderate	Fair to poor	Low	Medium to high
	.20- .60	.18-.20	Calc.	Low	Low	Fair	Low	Medium
Birkbeck: 233A, 233B, 233C, 233C2[5], 233D2[5], 233C3[6]	.60-2.00	.22-.24	5.6-6.5	Low	(3)	Fair	Low	Medium
	.60-2.00	.18-.20	5.1-6.0	Moderate	Moderate	Fair	Low	Medium
	.20-2.00	.17-.19	Calc.	Low	Low	Fair	Low	Medium
Blount: 23B, 23C, 23C2[5]	.60-2.00	.22-.24	5.6-6.5	Low	(3)	Fair	Low	Medium
	.060- .20	.11-.18	5.1-6.0	Moderate	Moderate	Fair to poor	Low	Medium to high
	.20- .60	.18-.20	Calc.	Low	Low	Fair	Low	Medium
Boone: 397F2[5]	15-35	.10-.12	5.6-6.0	Low	(3)	Fair	Medium	Medium
	15-25	.07-.12	6.1-6.5	Low	Low	Fair	Medium	Low to medium
	(7)	(7)	6.1-6.5	(7)	(3)	(7)	(7)	(7)
Brenton: 149A, 149B	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.15-.20	6.1-6.5	Moderate	Moderate	Fair	Low	Medium
	.60-2.00	.11-.19	6.6-7.8	Low	Low	Fair to good	Low to medium	Medium
Bryce: 235	.20- .60	.12-.14	6.1-7.3	Moderate to high	(3)	Poor	Low	High
	.060- .20	.11-.13	6.1-7.3	High	Moderate	Poor	Low	High
	.060- .20	.10-.12	Calc.	Moderate to high	Low	Poor to fair	Low	High to medium
Calco: 400	.21- .23	.21-.23	Calc.	Moderate	Low	Fair to poor	Low	Medium to high
	.18- .20	.18-.20	Calc.	Moderate	Low	Fair	Low	Medium
Camden: 134A, 134B, 134C2[5], 134D2[5], 134E2[5], 134F2[5], 134C3[6], 134D3[6], 134E3[6]	.60-2.00	.22-.24	5.6-6.5	Low	(3)	Fair	Low	Medium
	.60-2.00	.15-.20	5.1-6.1	Moderate	Moderate	Fair	Low	Medium
	.60-6.30	.12-.14	6.6-7.8	Low	Low	Low	Low	Fair to good
Catlin: 171B, 171C, 171C2[5], 171C3[6], 171D3[6]	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.18-.20	5.6-6.5	Moderate	Moderate	Fair	Low	Medium
	.20-2.00	.17-.19	Calc.	Low	Low	Fair	Low	Medium
Channahon: 315B	.60-2.00	.20-.24	6.1-7.8	Low	(3)	Fair	Low	Medium
	.60-2.00	.15-.19	6.1-7.8	Moderate	Low	Fair	Low	Medium
	(7)	(7)	Calc.	(7)	(3)	(7)	(7)	(7)
Chatsworth: 241F2[5], 241G2[5], 241D3[4], 241E3[6], 241G3[6],	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	>.063	.11-.13	6.1-7.3	High	Low	Fair to poor	Low	Medium to high
	>.063	.10-.12	Calc.	Moderate	Low	Poor	Low	High
Clarence: 147B, 147B2[5], 147C2[5]	.20- .60	.21-.23	5.6-6.5	Moderate	(3)	Fair	Low	Medium
	>.063	.09-.11	5.6-7.3	High	Moderate	Poor	Low	High
	>.063	.08-.10	Calc.	Moderate	Low	Poor	Low	High
Dickinson: 87A, 87B, 87C2[5]	2.00-6.30	.16-.18	6.1-7.3	Low	(3)	Fair	Medium	Medium
	.60-2.00	.15-.17	6.6-7.8	Low	Moderate	Fair	Medium	Medium
	6.30-20.0	.08-.10	7.4-8.4	Low	Low	Fair	Medium	Medium
Dodge: 24C2[5], 24D2[5], 24C3[6]	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.18-.20	5.1-6.5	Moderate	Moderate	Fair	Low	Medium
	.20-2.00	.17-.19	Calc.	Low	Low	Fair	Low	Medium
Downs: 386B, 386C2[5]	.60-2.00	.22-.24	5.6-6.5	Low	(3)	Fair	Low	Medium
	.60-2.00	.18-.20	5.1-6.0	Moderate	Moderate	Fair	Low	Medium
	.60-2.00	.20-.22	6.1-7.8	Low	Low	Fair	Low	Medium
Dresden: 325B, 325C2[5]	.60-2.00	.22-.24	5.6-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.15-.20	5.6-6.5	Moderate	Moderate	Fair	Low	Medium
	6.30-20.0	.02-.04	Calc.	Low	Low	Good to fair	Medium	Low
Drummer: 152	.60-2.00	.21-.23	6.6-7.3	Moderate	(3)	Poor to fair	Low	High to medium
	.60-2.00	.18-.20	6.6-7.3	Moderate	Low	Fair to poor	Low	Medium to high
	.60-2.00	.11-.22	7.4-7.8	Low	Low	Fair	Low to medium	Medium
DuPage: 321A, 321B	.60-2.00	.22-.24	Calc.	Low	(3)	Fair	Low	Medium
	.60-2.00	.17-.19	Calc.	Low	Low	Fair	Low	Medium
	.60-2.00	.20-.22	Calc.	Low	Low	Fair	Low	Medium
Elburn: 198A, 198B	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.18-.20	5.1-6.0	Moderate	Moderate	Fair	Low	Medium
	.60-6.30	.11-.22	6.1-7.8	Low	Low	Fair	Medium to low	Medium

Table 4. — Continued

Soil series and map unit symbols	Depth to seasonal high water table (ft.)	Depth from surface (in.)	Soil Textural Classification			Percentage <3 in. passing sieve(2)		
			USDA	Engineering Unified	Engineering AASHO	No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 200 (0.074 mm.)
Elliott: 146A, 146B, 146B2(5), 146C2(5)	1 to 3	0-13	Silt loam	ML or CL	A-6 or A-7	95-100	95-100	90-100
		13-29	Silty clay	CL or CH	A-7	95-100	90-100	85-100
		29-40	Silty clay loam	CL	A-6 or A-7	95-100	90-100	85-100
Fayette: 280B, 280C2(5)	Over 3	0-13	Silt loam	ML or CL	A-4 or A-6	100	100	95-100
		13-41	Silty clay loam	CL	A-7 or A-6	100	100	95-100
		41-66	Silt loam	ML or CL	A-4 or A-6	100	100	95-100
Flanagan: 154A, 154B, 154B2(5), 154C2(5)	1 to 3	0-14	Silt loam	ML or CL	A-4 or A-6	100	100	95-100
		14-42	Silty clay loam	CL	A-7 or A-6	100	95-100	95-100
		42-60	Loam and silty clay loam	CL	A-4, A-6, or A-7	95-100	85-95	55-75
Fox: 327B, 327C2(5), 327D2(5), 327E2(5)	Over 3	0-8	Silt loam	ML or CL	A-4 or A-6	100	95-100	55-90
		8-40	Silty clay loam to clay loam	CL or SC	A-6 or A-7	95-100	90-100	45-90
		40-60	Gravel and sand	GP or SP	A-1	40-80	30-70	0-10
Frankfort: 320B, 320B2(5), 320C2(5)	1 to 3	0-9	Silt loam	ML or CL	A-6 or A-7	95-100	95-100	90-100
		9-24	Silty clay	CH	A-7	95-100	90-100	85-100
		24-40	Silty clay	CH or CL	A-7	95-100	90-100	85-100
Gale: 413B, 413C2(5), 413E3(6)	Over 3	0-15	Silt loam	ML or CL	A-4 or A-6	95-100	95-100	90-100
		15-41	Silty clay loam	CL	A-6 or A-7	90-100	80-100	60-90
		41-60	Sandstone	(7)	(7)	(7)	(7)	(7)
Harpster: 67, W67	0 to 1(1)	0-19	Silty clay loam	CL or CH	A-7 or A-6	95-100	95-100	70-100
		19-36	Silty clay loam	CL	A-6 or A-7	95-100	80-100	65-100
		36-50	Silt loam or loam	ML or CL	A-4 or A-6	90-100	80-100	30-100
Harvard: 344A, 344B, 344C2(5)	Over 3	0-7	Silt loam	CL or ML	A-6	100	95-100	85-95
		7-33	Silty clay loam to clay loam	CL	A-6 or A-7	95-100	90-100	60-90
		33-50	Sandy loam to loam	SM, SC, or CL	A-2, A-4, or A-6	90-100	80-95	30-80
Hennepin: 25E2(5), 25F2(5), 25F3(6), 25G3(6)	Over 3	0-6	Loam	ML or CL	A-4 or A-6	95-100	90-100	50-90
		6-40	Loam to sandy loam	SM, SC, or CL	A-2, A-4, or A-6	90-100	80-100	25-60
Hesch complex: 390-389A or VA, 389-389B or VB, 390-389C2 or VC2(5) (Data for 390 part of complex)	Over 3	0-10	Fine sandy loam	SC or SM	A-2 or A-4	100	95-100	30-60
		10-29	Fine sandy loam	SC or CL	A-4 or A-6	100	95-100	30-60
		29-36	Sandstone	(7)	(7)	(7)	(7)	(7)
Hesch, shallow variant: 389A, 389B	Over 3	0-7	Loamy sand	SM	A-2	100	95-100	15-25
		7-15	Sandstone	(7)	(7)	(7)	(7)	(7)
Hesch, gray subsoil variant: 537	0 to 1(1)	0-13	Sandy loam	SC or SM	A-2 or A-4	100	95-100	30-60
		13-37	Loam	ML or CL	A-4 or A-6	100	90-100	60-80
		37-40	Sandstone	(7)	(7)	(7)	(7)	(7)
Houghton: 103, 103+	0 to 1(1)	0-60	Muck	Pt	(7)	(7)	(7)	(7)
Joliet: 314	0 to 1(8)	0-15	Silty clay loam	CL or OH	A-6 or A-7	90-100	85-95	55-80
		15-19	Silty clay loam	CL	A-6 or A-7	90-100	80-90	60-85
		19-24	Limestone	(7)	(7)	(7)	(7)	(7)
Kendall: 242A, 242B	1 to 3	0-10	Silt loam	CL	A-6	100	95-100	90-100
		10-40	Silty clay loam	CL	A-6 or A-7	100	95-100	90-100
		40-55	Sandy loam to silt loam	SM or ML	A-2 or A-4	95-100	85-95	25-60
Kernan: 554B	1 to 3	0-14	Silt loam	CL	A-6	95-100	95-100	90-100
		14-36	Silty clay loam	CL	A-6 or A-7	95-100	90-100	85-100
		36-60	Silty clay	CH	A-7	95-100	90-100	90-100
LaRose: 60C2(5), 60D2(5), 60C3(6), 60D3(6)	Over 3	0-7	Silt loam	ML or CL	A-6 or A-4	95-100	95-100	80-100
		7-21	Silty clay loam	CL	A-6 or A-7	95-100	90-100	55-75
		21-60	Loam	ML or CL	A-4 or A-6	90-100	85-95	55-75
Lawson: 451, W451	0 to 1(8)	0-30	Silt loam	CL, ML, or OL	A-6 or A-4	100	95-100	85-100
		30-70	Silt loam to loam	CL or ML	A-6 or A-4	95-100	85-95	55-95
Lena: 210	0 to 1(1)	0-60	Muck	Pt	(7)	(7)	(7)	(7)
Limestone rockland: 94G	-	0-10	Limestone	(7)	(7)	(7)	(7)	(7)
Loran: 572A, 572B, 572C2(5)	1 to 3	0-10	Silt loam	CL or ML	A-4 or A-6	95-100	95-100	90-100
		10-44	Silty clay loam	CL	A-6 or A-7	95-100	90-100	85-100
		44-60	Shale	(7)	(7)	(7)	(7)	(7)
Lorenzo: 318B, 318C2(5)	Over 3	0-9	Loam	ML or CL	A-4 or A-6	95-100	95-100	80-95
		9-16	Clay loam	CL	A-6	90-100	80-100	60-80
		16-60	Gravel and sand	GP or SP	A-1	50-70	30-45	0-10
Marseilles: 549A, 549B, 549C, 549C2(5), 549D2(5)	Over 3	0-11	Silt loam	CL or ML	A-6	100	100	95-100
		11-39	Silty clay loam to clay loam	CL	A-6 or A-7	95-100	90-100	60-70
		39-60	Shale	(7)	(7)	(7)	(7)	(7)
Marseilles, gray subsoil variant: 393A, 393B	1 to 3	0-10	Silt loam	CL or ML	A-6	100	100	95-100
		10-45	Silty clay	CL	A-6 or A-7	95-100	90-100	60-70
		45-60	Shale	(7)	(7)	(7)	(7)	(7)
Millbrook: 219A, 219B	1 to 3	0-15	Silt loam	CL or ML	A-6	100	95-100	90-100
		15-41	Silty clay loam to clay loam	CL	A-6 or A-7	100	90-100	60-90
		41-60	Sandy loam to loam	SM, SC, or CL	A-2, A-6, or A-4	95-100	90-100	30-80
Millington: 82	0 to 1(8)	0-35	Loam	ML or CL	A-4 or A-6	90-100	80-90	50-90
		35-50	Clay loam to silt loam	CL	A-4 or A-6	90-100	80-90	50-90

Table 4. — Continued

Soil series and map unit symbols	Permeability (in./hr.)	Available moisture capacity (in./in. of soil)	Reaction (pH)	Shrink-swell potential	Corrosion potential for conduits (concrete)	Workability as a construction material and compaction characteristics	Shearing strength when compacted	Compressibility when compacted and saturated
Elliott: 146A, 146B, 146B2[5], 146C2[5]	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.20- .60	.11-.18	5.6-6.5	Moderate to high	Moderate	Fair to poor	Low	Medium to high
	.20- .60	.18-.20	Calc.	Low	Low	Fair	Low	Medium
Fayette: 280B, 280C2[5]	.60-2.00	.22-.24	5.6-6.5	Low	(3)	Fair	Low	Medium
	.60-2.00	.18-.20	5.6-6.5	Moderate	Moderate	Fair	Low	Medium
	.60-2.00	.20-.22	6.6-7.8	Low	Low	Fair	Low	Medium
Flanagan: 154A, 154B, 154B2[5], 154C2[5]	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.18-.20	5.6-6.5	Moderate to high	Moderate	Fair	Low	Medium
	.20-2.00	.17-.20	Calc.	Low	Low	Fair	Low	Medium
Fox: 327B, 327C2[5], 327D2[5], 327E2[5]	.60-2.00	.22-.24	5.1-6.5	Low	(3)	Fair	Low	Medium
	.60-2.00	.15-.20	5.6-6.5	Moderate	Moderate	Fair to good	Low	Medium
	6.30-20.0	.02-.04	Calc.	Low	Low	Good to fair	Medium	Low
Frankfort: 320B, 320B2[5], 320C2[5]	.20-2.00	.22-.24	5.6-7.3	Low	(3)	Fair	Low	Medium
	>.20	.11-.13	5.6-7.3	Moderate	Low	Poor	Low	High
	>.20	.10-.12	Calc.	Low to moderate	Low	Poor to fair	Low	Medium to high
Gale: 413B, 413C2[5], 413E3[6]	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.18-.20	5.1-6.5	Moderate	Moderate	Fair	Low	Medium
	(7)	(7)	5.6-6.5	(7)	(3)	(7)	(7)	(7)
Harpster: 67, W67	.60-2.00	.21-.23	Calc.	Moderate	(3)	Poor to fair	Low	Medium to high
	.60-2.00	.18-.20	Calc.	Moderate	Low	Fair	Low	Medium
	.60-2.00	.17-.22	Calc.	Low	Low	Fair	Low	Medium
Harvard: 344A, 344B, 344C2[5]	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.15-.20	5.6-6.5	Moderate	Moderate	Fair	Low	Medium
	.60-6.30	.11-.19	Calc.	Low	Low	Fair	Low to medium	Medium
Hennepin: 25E2[5], 25F2[5] 25F3[6], 25G3[6]	.60-2.00	.16-.22	6.6-7.8	Low	(3)	Fair	Low	Medium
	.60-2.00	.15-.19	Calc.	Low	Low	Fair	Low to medium	Medium
Hesch complex: 390-389A or VA, 389-389B or VB, 390-389C2 or VC2[5] (Data for 390 part of complex)	.60-2.00	.16-.18	5.6-6.5	Low	(3)	Fair to good	Medium to low	Medium
	.60-2.00	.15-.17	5.1-6.0	Low	Moderate	Fair to good	Low	Medium
	(7)	(7)	5.6-6.5	(7)	(3)	(7)	(7)	(7)
Hesch, shallow variant: 389A, 389B	6.30-20.0	.10-.12	5.6-7.3	Low	(3)	Fair	Medium	Medium
	(7)	(7)	5.6-6.5	(7)	(3)	(7)	(7)	(7)
Hesch, gray subsoil variant: 537	.60-2.00	.13-.15	5.6-7.3	Low	(3)	Fair to good	Medium to low	Medium
	.60-2.00	.17-.19	5.1-6.0	Moderate	Moderate	Fair	Low	Medium
	(7)	(7)	5.6-6.5	(7)	(3)	(7)	(7)	(7)
Houghton: 103, 103+	6.30-20.0	Variable	6.1-7.3	Low[4]	Low	(7)	(7)	(7)
Joliet: 314	.60-2.00	.21-.23	6.6-7.8	Low	(3)	Fair to poor	Low	Medium to high
	.60-2.00	.18-.20	6.6-8.4	Moderate	Moderate	Fair	Low	Medium
	(7)	(7)	Calc.	(7)	(3)	(7)	(7)	(7)
Kendall: 242A, 242B	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.20-2.00	.18-.20	5.1-6.0	Moderate	Moderate	Fair	Low	Medium
	.63-6.30	.11-.22	6.1-7.8	Low	Low	Fair	Medium to low	Medium
Kernan: 554B	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.20- .60	.18-.20	5.1-7.3	Moderate to high	Moderate	Fair	Low	Medium
	>.063	.10-.12	Calc.	Moderate	Low	Poor	Low	High
LaRose: 60C2[5], 60D2[5], 60C3[6], 60D3[6]	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.18-.20	6.1-7.3	Moderate	Moderate	Fair	Low	Medium
	.20-2.00	.17-.19	Calc.	Low	Low	Fair	Low	Medium
Lawson: 451, W451	.60-2.00	.22-.24	6.6-7.3	Low	Low	Fair to poor	Low	Medium to high
	.60-2.00	.17-.22	6.6-7.8	Low	Low	Fair	Low	Medium
Lena: 210	6.30-20.0	Variable	Calc.	Low[4]	Low	(7)	(7)	(7)
Limestone rockland: 94G	(7)	(7)	Calc.	(7)	(3)	(7)	(7)	(7)
Loran: 572A, 572B, 572C2[5]	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.20- .60	.18-.20	5.6-6.5	Moderate to high	Moderate	Fair	Low	Medium
	(7)	(7)	6.1-7.3	(7)	(3)	(7)	(7)	(7)
Lorenzo: 318B, 318C2[5]	.60-2.00	.20-.22	6.1-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.15-.19	6.1-7.3	Moderate to low	Low	Fair	Low	Medium
	6.30-20.0	.02-.04	Calc.	Low	Low	Good to fair	Medium	Low
Marseilles: 549A, 549B, 549C, 549C2[5], 549D2[5]	.60-2.00	.22-.24	5.1-6.5	Low	(3)	Fair	Low	Medium
	.20-2.00	.15-.20	5.6-6.5	Moderate	Moderate	Fair	Low	Medium
	(7)	(7)	6.1-7.3	(7)	(3)	(7)	(7)	(7)
Marseilles, gray subsoil variant: 393A, 393B	.60-2.00	.22-.24	5.1-6.0	Low	(3)	Fair	Low	Medium
	.20-2.00	.11-.13	5.1-6.0	Moderate	Moderate	Fair	Low	Medium
	(7)	(7)	6.1-7.3	(7)	(3)	(7)	(7)	(7)
Millbrook: 219A, 219B	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.20-2.00	.15-.20	6.1-6.5	Moderate	Moderate	Fair	Low	Medium
	.60-2.00	.11-.19	6.6-7.8	Low	Low	Fair	Low to medium	Medium
Millington: 82	.60-6.30	.20-.22	Calc.	Low	Low	Fair	Low	Medium
	.60-6.30	.15-.22	Calc.	Low	Low	Fair	Low	Medium

Table 4. — Continued

Soil series and map unit symbols	Depth to seasonal high water table (ft.)	Depth from surface (in.)	Soil Textural Classification			Percentage <3 in. passing sieve[2]		
			USDA	Engineering		No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 200 (0.074 mm.)
				Unified	AASHO			
Millsdale: 317	0 to 1[8]	0-12	Silty clay loam	CL or CH	A-6	100	95-100	90-95
		12-33	Silty clay	CL or CH	A-6 or A-7	100	95-100	85-95
		33-36	Limestone	(7)	(7)	(7)	(7)	(7)
Mokena: 295A, 295B, 295B2[5]	1 to 3	0-13	Silt loam	ML or CL	A-4 or A-6	100	95-100	80-95
		13-34	Clay loam	CL or CH	A-6 or A-7	95-100	90-100	60-90
		34-46	Silty clay	CH	A-7	95-100	90-100	70-95
Mona: 448B, 448B2[5] 448C2[5], 448C3[6]	Over 3	0-10	Silt loam	ML or CL	A-6	100	95-100	80-95
		10-36	Clay loam	CL or CH	A-6 or A-7	95-100	90-100	60-80
		36-44	Silty clay	CH	A-7	95-100	90-100	70-95
Morley: 194B, 194C, 194C2[5], 194D2[5], 194E2[5]	Over 3	0-10	Silt loam	CL or ML	A-6 or A-4	95-100	95-100	90-100
		10-26	Silty clay loam	CL or CH	A-6 or A-7	95-100	90-100	85-100
		26-50	Silty clay loam	CL	A-7	95-100	90-100	85-100
Muscatine: 41A, 41B	1 to 3	0-18	Silt loam	CL or ML	A-6 or A-7	100	100	95-100
		18-40	Silty clay loam	CL or CH	A-6 or A-7	100	100	95-100
		40-72	Silt loam	CL	A-6	100	100	95-100
Nappanee: 228A, 228B, 228B2[5], 228C2[5], 228C3[6]	1 to 3	0-7	Silt loam	CL or ML	A-6 or A-4	95-100	95-100	90-100
		7-22	Silty clay	CH	A-7	95-100	90-100	85-100
		22-36	Silty clay	CH or CL	A-7	95-100	90-100	85-100
Peotone: 330	0 to 1[1]	0-22	Silty clay loam	CL	A-7	95-100	90-100	85-100
		22-44	Silty clay loam	CL or CH	A-7	95-100	90-100	85-100
		44-60	Silty clay loam	CL	A-7	95-100	90-100	85-100
Plano: 199A, 199B, 199C, 199C2[5], 199C3[6], 199D3[6]	Over 3	0-12	Silt loam	CL or ML	A-6 or A-4	100	100	95-100
		12-45	Silty clay loam	CL	A-6	100	100	95-100
		45-60	Sandy loam to silt loam	ML or SM	A-4 or A-2	90-100	80-90	25-60
Proctor: 148A, 148B, 148C, 148C2[5], 148D2[5], 148C3[6], 148D3[6]	Over 3	0-10	Silt loam	CL	A-6	100	95-100	80-95
		10-43	Silty clay loam to clay loam	CL	A-6 or A-7	95-100	90-100	60-90
		43-70	Sandy loam to loam	SM, SC, or CL	A-2, A-4, or A-6	90-100	80-95	30-80
Rantoul: 238	0 to 1[1]	0-30	Silty clay	CH or CL	A-7	95-100	95-100	90-100
		30-40	Silty clay	CH or CL	A-7	95-100	90-100	85-100
		40-60	Silty clay	CH or CL	A-7 or A-6	95-100	90-100	85-100
Ridgeville: 151A, 151B	1 to 3	0-21	Fine sandy loam	SM or SC	A-4 or A-2	100	95-100	30-60
		21-56	Sandy clay loam	SC or CL	A-6	100	95-100	40-70
		56-60	Sand	SM or SP	A-3	100	95-100	25-45
Ritchey: 311B, 311C2[5]	Over 3	0-7	Silt loam	CL or ML	A-6 or A-4	95-100	90-100	70-90
		7-17	Clay loam	CL	A-6 or A-7	95-100	90-100	80-100
		17-60	Limestone	(7)	(7)	(7)	(7)	(7)
Riverwash: 123	-	0-40	Sand and gravel	GP or SP	A-1	40-80	30-70	0-10
Rodman: 93E2[5], 93F2[5]	Over 3	0-7	Gravelly loam	GM or ML	A-2 or A-4	70-80	70-80	30-60
		7-40	Gravel and sand	GP or SP	A-1	50-80	35-70	0-10
Ross: 73	Over 3[8]	0-30	Loam	CL or ML	A-6 or A-4	100	95-100	85-100
		30-50	Fine sandy loam	SM or SC	A-4 or A-2	95-100	85-95	55-95
Rutland: 375A, 375B, 375B2[5], 375C2[5]	Over 3	0-19	Silt loam	CL or ML	A-6 or A-7	95-100	95-100	90-100
		19-46	Silty clay loam	CL	A-7	95-100	90-100	85-100
		46-65	Silty clay	CH	A-7	95-100	90-100	90-100
Sabina: 236A, 236B	1 to 3	0-11	Silt loam	ML or CL	A-6	100	100	95-100
		11-48	Silty clay loam	CL	A-7 or A-6	100	95-100	95-100
		48-60	Loam	ML or CL	A-4 or A-6	95-100	85-95	55-75
Sable: 68	0 to 1[1]	0-16	Silty clay loam	CH, CL, or OH	A-7	100	100	95-100
		16-46	Silty clay loam	CL or CH	A-6 or A-7	100	100	95-100
		46-72	Silt loam	CL	A-6	100	100	95-100
St. Charles: 243A, 243B, 243B2[5], 243C, 243C2[5], 243D2[5], 243C3[6]	Over 3	0-13	Silt loam	CL or ML	A-6 or A-4	100	100	95-100
		13-41	Silty clay loam	CL	A-6	100	100	95-100
		41-70	Sandy loam to silt loam	ML or SM	A-2 or A-4	90-100	80-90	25-60
St. Clair: 560C2[5], 560D, 560D2[5], 560E2[5]	Over 3	0-9	Silt loam	CL or ML	A-6 or A-4	95-100	95-100	90-100
		9-26	Silty clay loam	CH	A-7	95-100	90-100	85-100
		26-50	Silty clay	CH	A-7	95-100	90-100	85-100
Sandstone rockland: 9G	-	0-10	Sandstone	(7)	(7)	(7)	(7)	(7)
Sawmill: 107	0 to 1[8]	0-24	Silty clay loam	CL, CH, or MH	A-7	100	95-100	90-100
		24-52	Silty clay loam	CL	A-6 or A-7	95-100	90-100	80-100
Saybrook: 145B, 145C2[5]	Over 3	0-13	Silt loam	CL or ML	A-6	100	95-100	80-100
		13-29	Silty clay loam	CL	A-7 or A-6	95-100	90-100	70-95
		29-36	Loam	CL or ML	A-4 or A-6	95-100	85-95	55-75
Selma: 125	0 to 1[1]	0-20	Loam	ML or CL	A-4 or A-6	100	100	60-80
		20-42	Clay loam	CL	A-6 or A-7	100	90-100	55-85
		42-60	Sandy loam to sand	SM or ML	A-2 or A-4	100	90-100	25-70
Shale rockland: 95G		0-10	Shale	(7)	(7)	(7)	(7)	(7)
Sparta: 88B, 88D2[5]	Over 3	0-13	Loamy sand	SM	A-2	100	95-100	15-25
		13-60	Sand	SP	A-3	100	95-100	0-10

Table 4. — Continued

Soil series and map unit symbols	Permeability (in./hr.)	Available moisture capacity (in./in. of soil)	Reaction (pH)	Shrink-swell potential	Corrosion potential for conduits (concrete)	Workability as a construction material and compaction characteristics	Shearing strength when compacted	Compressibility when compacted and saturated
Millsdale: 317	.20- .60	.14-.21	5.6-6.5	Moderate	(3)	Fair to poor	Low	Medium to high
	.060- .60	.13-.18	6.6-7.8	Moderate	Low	Fair to poor	Low	Medium to high
	(7)	(7)	Calc.	(7)	(3)	(7)	(7)	(7)
Mokena: 295A, 295B, 295B2(5)	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.15-.19	6.1-7.3	Moderate	Low	Fair to poor	Low	Medium to high
	>.20	.10-.12	Calc.	Moderate	Low	Poor	Low	High
Mona: 448B, 448B2(5) 448C2(5), 448C3(6)	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.15-.19	6.1-7.3	Moderate	Low	Fair to poor	Low	Medium to high
	>.20	.10-.12	Calc.	Moderate	Low	Poor	Low	High
Morley: 194B, 194C, 194C2(5), 194D2(5), 194E2(5)	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.20- .60	.13-.18	5.6-6.5	Moderate	Moderate	Fair to poor	Low	Medium to high
	.20- .60	.18-.20	Calc.	Low to moderate	Low	Fair	Low	Medium
Muscatine: 41A, 41B	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.18-.20	6.1-6.5	Moderate	Moderate	Fair to poor	Low	Medium to high
	.60-2.00	.20-.22	6.6-7.8	Low	Low	Fair	Low	Medium
Nappanee: 228A, 228B, 228B2(5), 228C2(5), 228C3(6)	.20- .60	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	>.20	.11-.13	6.1-7.3	Moderate	Moderate	Poor	Low	High
	>.20	.10-.12	Calc.	Low to moderate	Low	Poor to fair	Low	High to medium
Peotone: 330	.60-2.00	.21-.23	6.6-7.3	Moderate	(3)	Fair	Low	Medium
	.20- .60	.15-.19	6.6-7.8	Moderate	Low	Fair to poor	Low	Medium to high
	.20- .60	.18-.20	Calc.	Moderate	Low	Fair	Low	Medium
Plano: 199A, 199B, 199C, 199C2(5), 199C3(6), 199D3(6)	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.18-.20	5.1-6.0	Low to moderate	Moderate	Fair	Low	Medium
	.60-6.30	.11-.22	6.1-7.8	Low	Low	Fair	Medium to low	Medium
Proctor: 148A, 148B, 148C, 148C2(5), 148D2(5), 148C3(6), 148D3(6)	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.15-.20	5.6-6.5	Moderate	Moderate	Fair	Low	Medium
	.60-6.30	.11-.19	6.6-7.8	Low	Low	Fair	Low to medium	Medium
Rantoul: 238	.20- .60	.12-.14	6.1-7.3	High	(3)	Poor to fair	Low	High to medium
	>.20	.10-.12	6.6-7.8	High	Moderate	Poor to fair	Low	High to medium
	>.20	.10-.18	6.6-7.8	High	Low	Poor to fair	Low	High to medium
Ridgeville: 151A, 151B	.60-2.00	.16-.18	6.1-7.3	Low	(3)	Fair to good	Medium to low	Medium
	.60-2.00	.16-.18	5.6-6.5	Moderate	Moderate	Fair to good	Low	Medium
	2.00-20.0	.05-.07	6.1-7.8	Low	Moderate	Fair to good	Medium	Low to medium
Ritchey: 311B, 311C2(5)	.60-2.00	.22-.24	6.1-7.8	Low	(3)	Fair	Low	Medium
	.60-2.00	.15-.19	6.1-7.3	Moderate	Moderate	Fair	Low	Medium
	(7)	(7)	Calc.	(7)	(3)	(7)	(7)	(7)
Riverwash: 123	6.30-20.0	.04-.06	Calc.	Low	Low	Good to fair	High to medium	Low
Rodman: 93E2(5), 93F2(5)	2.00-6.30	.09-.15	6.6-7.3	Low	(3)	Good to fair	Medium to low	Low to medium
	6.30-20.0	.04-.06	Calc.	Low	Low	Good to fair	High to medium	Low
Ross: 73	.60-2.00	.20-.22	6.6-7.3	Low	Low	Fair	Low	Medium
	.60-2.00	.15-.17	6.6-7.8	Low	Low	Fair to good	Medium to low	Medium
Rutland: 375A, 375B, 375B2(5), 375C2(5)	.60-2.00	.22-.24	5.6-7.3	Low	(3)	Fair	Low	Medium
	.20- .60	.13-.18	5.1-6.5	Moderate to high	Moderate	Fair	Low	Medium
	>.060	.10-.12	Calc.	Moderate	Low	Poor	Low	High
Sabina: 236A, 236B	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.20-2.00	.18-.20	5.6-7.3	Moderate	Moderate	Fair	Low	Medium
	.20-2.00	.17-.19	Calc.	Low	Low	Fair	Low	Medium
Sable: 68	.60-2.00	.21-.23	6.6-7.3	Moderate	(3)	Fair to poor	Low	High to medium
	.60-2.00	.18-.20	6.6-7.8	Moderate	Low	Fair to poor	Low	Medium to high
	.60-2.00	.20-.22	6.6-7.8	Low	Low	Fair	Low	Medium
St. Charles: 243A, 243B, 243B2(5), 243C, 243C2(5), 243D2(5), 243C3(6)	.60-2.00	.22-.24	5.6-6.5	Low	(3)	Fair	Low	Medium
	.60-2.00	.18-.20	5.1-6.0	Moderate	Moderate	Fair	Low	Medium
	.60-6.30	.11-.22	6.1-7.8	Low	Low	Fair	Medium to low	Medium
St. Clair: 560C2(5), 560D, 560D2(5), 560E2(5)	.20- .60	.22-.24	4.5-6.0	Low	(3)	Fair	Low	Medium
	>.20	.13-.18	5.1-6.5	Moderate	Moderate	Poor	Low	High
	>.20	.10-.12	Calc.	Moderate	Low	Poor	Low	High
Sandstone rockland: 9G	(7)	(7)	5.6-6.5	(7)	(3)	(7)	(7)	(7)
Sawmill: 107	.60-2.00	.21-.23	6.6-7.3	Moderate	Low	Poor to fair	Low	High to medium
	.60-2.00	.18-.20	6.1-7.3	Moderate	Low	Fair	Low	Medium
Saybrook: 145B, 145C2(5)	.60-2.00	.22-.24	6.6-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.18-.20	5.6-6.5	Moderate	Moderate	Fair	Low	Medium
	.20-2.00	.17-.19	Calc.	Low	Low	Fair	Low	Medium
Selma: 125	.60-2.00	.20-.22	6.6-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.15-.19	6.1-7.3	Moderate	Low	Fair	Low	Medium
	2.00-6.30	.05-.11	6.6-7.3	Low	Low	Fair	Medium to low	Medium
Shale rockland: 95G	(7)	(7)	6.1-7.3	(7)	(3)	(7)	(7)	(7)
Sparta: 88B, 88D2(5)	6.30-20.0	.10-.12	6.1-6.6	Low	(3)	Fair	Medium	Medium
	6.30-20.0	.07-.09	5.1-6.5	Low	Moderate	Fair	Medium	Low

Table 4. — Continued

Soil series and mapping symbols	Depth to seasonal high water table (ft.)	Depth from surface (in.)	Soil Textural Classification			Percentage <3 in. passing sieve(2)		
			USDA	Engineering		No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 200 (0.074 mm.)
				Unified	AASHO			
Starks: 132A, 132B	1 to 3	0-12	Silt loam	CL	A-6 or A-4	100	95-100	80-95
		12-46	Silty clay loam to clay loam	CL	A-6 or A-7	95-100	90-100	60-90
		46-70	Sandy loam to loam	SM, CL, or SC	A-2, A-4, or A-6	90-100	80-95	30-80
Strawn: 224D2(5), 224C3(6), 224D3(6)	Over 3	0-5	Silt loam	ML or CL	A-4 or A-6	100	90-100	80-100
		5-22	Silty clay loam	CL	A-6 or A-7	95-100	90-100	70-95
		22-40	Loam	ML or CL	A-4 or A-6	95-100	85-95	55-75
Streator: 435	0 to 1(1)	0-16	Silty clay to silty clay loam	CL or CH	A-7	100	100	95-100
		16-42	Silty clay loam to silty clay	CL or CH	A-7	100	100	95-100
		42-60	Silty clay	CH	A-7	95-100	90-100	85-100
Stronghurst: 278A, 278B	1 to 3	0-9	Silt loam	ML or CL	A-4 or A-6	100	100	95-100
		9-40	Silty clay loam	CL	A-7 or A-6	100	100	95-100
		40-46	Silt loam	CL or ML	A-6	100	100	95-100
Sunbury: 234A, 234B	1 to 3	0-12	Silt loam	ML or CL	A-6	100	100	95-100
		12-40	Silty clay loam	CL	A-7 or A-6	100	95-100	95-100
		40-52	Loam	CL or ML	A-4 or A-6	95-100	85-95	55-75
Swygert: 91A, 91B, 91B2(5), 91C, 91C2(5), 91D2(5), 91C3(6), 91D3(6)	1 to 3	0-8	Silt loam	CL	A-6 or A-7	95-100	95-100	90-100
		8-28	Silty clay	CH	A-7	95-100	90-100	85-100
		28-40	Silty clay	CH	A-7	95-100	90-100	85-100
Symerton: 294B, 294C, 294C2(5)	Over 3	0-15	Silt loam	CL or ML	A-6 or A-7	95-100	85-95	75-95
		15-34	Clay loam	CL	A-7 or A-6	95-100	85-95	55-85
		34-60	Silty clay loam	CL	A-7	95-100	80-95	80-90
Tama: 36B, 36C, 36C2(5)	Over 3	0-12	Silt loam	CL or ML	A-6 or A-4	100	100	95-100
		12-40	Silty clay loam	CL	A-6 or A-7	100	100	95-100
		40-60	Silt loam	CL	A-6	100	100	95-100
Thorp: 206	0 to 1(1)	0-19	Silt loam	CL or ML	A-6 or A-7	95-100	90-100	80-90
		19-43	Silty clay loam	CL	A-7	95-100	90-100	75-90
		43-65	Sandy loam to clay loam	SM or CL	A-2 or A-6	90-100	85-95	25-90
Traer: 633	0 to 1(1)	0-14	Silt loam	ML or CL	A-4 or A-6	100	100	95-100
		14-46	Silty clay loam	CL or CH	A-7	100	100	95-100
		46-62	Silt loam	CL	A-6	100	100	95-100
Varna: 223B, 223B2, 223C, 223C2(5), 223D2(5), 223C3(6), 223D3(6)	Over 3	0-10	Silt loam	CL	A-6	100	95-100	80-95
		10-32	Silty clay loam	CL or CH	A-7	95-100	90-100	80-95
		32-45	Silty clay loam	CL	A-7	95-100	90-100	80-95
Virgil: 104A, 104B	1 to 3	0-14	Silt loam	CL	A-6	100	100	90-100
		14-49	Silty clay loam	CL or CH	A-6 or A-7	100	100	95-100
		49-66	Sandy loam to silt loam	ML or SM	A-4 or A-2	90-100	80-90	25-60
Wabash: 83	0 to 1(8)	0-28	Silty clay	CH or OH	A-7	100	100	95-100
		28-60	Silty clay	CH	A-7	100	100	90-100
Warsaw: 290A, 290B, 290C2(5), 290C3(6)	Over 3	0-13	Silt loam	ML or CL	A-6	100	95-100	80-95
		13-29	Clay loam	CL	A-6 or A-7	95-100	90-100	60-90
		29-36	Gravel and sand	GP or SP	A-1	40-80	30-70	0-10
Wenona: 388B, 388C, 388C2(5)	Over 3	0-14	Silt loam	ML or CL	A-6	100	100	95-100
		14-37	Silty clay loam	CL	A-7	95-100	90-100	60-70
		37-60	Silty clay	CH	A-7	95-100	85-100	70-80

(1) Variable - depends on artificial (tile or open ditch) drainage provided.

(2) Based on mechanical analysis according to AASHO designation: T88-57 (AASHO, 1961)

(3) Corrosion potential is estimated only for the horizons in which conduits are likely to be buried.

(4) Muck has an extremely high volume change due to compressibility and subsidence of the unstable organic matter.

(5) Only 3 to 7 inches of the top layer remains, and cropped is mixed with the subsoil.

(6) Less than 3 inches of the top layer remains, and if cropped most of surface layer is subsoil.

(7) Not estimated.

(8) Subject to flooding unless protected.

Table 4. — Concluded

Soil series and mapping symbols	Permeability (in./hr.)	Available moisture capacity (in./in. of soil	Reaction (pH)	Shrink-swell potential	Corrosion potential for conduits (concrete)	Workability as a construction material and compaction characteristics	Shearing strength when compacted	Compressibility when compacted and saturated
Starks: 132A, 132B	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.20-2.00	.15-.20	5.1-6.5	Moderate	Moderate	Fair	Low	Medium
	.60-2.00	.11-.19	6.6-7.8	Low	Low	Fair	Low to medium	Medium
Strawn: 224D2(5), 224C3(6), 224D3(6)	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.18-.20	6.1-7.3	Moderate	Moderate	Fair	Low	Medium
	.20-2.00	.17-.19	Calc.	Low	Low	Fair	Low	Medium
Streator: 435	.60-2.00	.14-.21	6.6-7-3	High	(3)	Poor to fair	Low	High to medium
	.20- .60	.13-.18	6.6-7.8	High	Moderate	Poor to fair	Low	High to medium
	>.20	.10-.12	Calc.	High	Low	Poor	Low	High
Stronghurst: 278A, 278B	.60-2.00	.22-.24	5.1-6.5	Low	(3)	Fair	Low	Medium
	.20-2.00	.18-.20	5.1-6.5	Moderate	Moderate	Fair	Low	Medium
	.60-2.00	.20-.22	6.6-7.8	Low	Low	Fair	Low	Medium
Sunbury: 234A, 234B	.60-2.00	.22-.24	5.6-6.5	Low	(3)	Fair	Low	Medium
	.20-2.00	.18-.20	5.6-7.3	Moderate	Moderate	Fair	Low	Medium
	.20-2.00	.17-.19	Calc.	Low	Low	Fair	Low	Medium
Swygert: 91A, 91B, 91B2(5), 91C, 91C2(5), 91D2(5), 91C3(6), 91D3(6)	.20- .60	.21-.24	5.6-7.3	Low to moderate	(3)	Fair	Low	Medium
	.060- .20	.11-.13	5.6-7.3	Moderate	Moderate	Poor	Low	High
	>.20	.10-.12	Calc.	Moderate	Low	Poor	Low	High
Symerton: 294B, 294C, 294C2(5)	.60-2.00	.22-.24	5.6-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.15-.19	5.6-7.3	Moderate	Moderate	Fair	Low	Medium
	.20- .60	.18-.20	Calc.	Low	Low	Fair	Low	Medium
Tama: 36B, 36C, 36C2(5)	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.18-.20	5.6-6.5	Moderate	Moderate	Fair	Low	Medium
	.60-2.00	.20-.22	6.6-7.8	Low	Low	Fair	Low	Medium
Thorp: 206	0.60-2.00	.22-.24	5.6-7.3	Low	(3)	Fair	Low	Medium
	.060- .20	.18-.20	5.6-6.5	Moderate	Moderate	Fair	Low	Medium
	0.60-2.00	.11-.16	6.6-7.8	Low	Low	Fair	Medium to low	Medium
Traer: 633	.60-2.00	.22-.24	5.3-6.3	Low	(3)	Fair	Low	Medium
	.060- .20	.15-.20	5.1-6.5	Moderate	Moderate	Fair to poor	Low	Medium to high
	.060- .20	.20-.22	6.6-7.8	Moderate	Low	Fair	Low	Medium
Varna: 223B, 223B2, 223C, 223C2(5), 223D2(5), 223C3(6), 223D3(6)	.20-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.20- .60	.15-.20	5.6-6.5	Moderate	Moderate	Fair to poor	Low	Medium to high
	.20- .60	.18-.20	Calc.	Low	Low	Fair	Low	Medium
Virgil: 104A, 104B	.60-2.00	.22-.24	5.6-7.0	Low	(3)	Fair	Low	Medium
	.20-2.00	.18-.20	5.1-6.5	Moderate	Moderate	Fair to poor	Low	Medium to high
	.60-6.30	.11-.22	6.1-7.8	Low	Low	Fair	Medium to low	Medium
Wabash: 83	.060- .20	.12-.14	6.6-7.3	High	Low	Poor	Low	High
	>.20	.10-.16	6.6-7.3	High	Low	Poor	Low	High
Warsaw: 290A, 290B, 290C2(5), 290C3(6)	.60-2.00	.22-.24	6.1-7.3	Low	(3)	Fair	Low	Medium
	.60-2.00	.15-.20	6.1-7.3	Moderate	Moderate	Fair	Low	Medium
	6.30-20.0	.02-.04	Calc.	Low	Low	Good to fair	Medium	Low
Wenona: 388B, 388C, 388C2(5)	.60-2.00	.22-.24	5.6-7.3	Low	(3)	Fair	Low	Medium
	.20- .60	.18-.20	5.6-6.5	Moderate	Moderate	Fair	Low	Medium
	>.20	.10-.12	Calc.	Moderate	Low	Poor	Low	High

uses. It is provided to assist in the sound land use and development of La Salle County.

It is not intended that this report will eliminate the need for on-site inspections for design and construction of specific plans or works. The interpretations given in this section should be used primarily to plan more detailed field investigations.

Estimates of the soil properties significant in engineering are given in Table 4, along with interpretations relating to various engineering uses of the soils.

Classification

The terms used to describe texture in the USDA classification are defined in the Glossary. Engineers commonly use two classification systems that express, by means of symbols, the relative suitability of the soil material for engineering uses. These systems are explained below.

AASHO System. Most highway engineers classify soil material in accordance with the system approved by the American Association of State Highway Officials (AASHO, 1961). In this system, soil material is classified in seven principal groups. The groups range from A-1, consisting of gravelly soils of high bearing capacity, to A-7, consisting of clayey soils having low strength when wet. The soils of La Salle County, Illinois, have been classified under this system in Table 4.

Unified System. Some engineers prefer to use the Unified Soil Classification System (Waterways Experiment Station, 1953). In this system soil material is identified as coarse grained (8 classes), fine grained (6 classes), and highly organic (1 class). The soils of La Salle County have been classified under this system in Table 4.

Percentage Passing Sieve

This lists the percentage of the total material passing the respective sieves. It is based on a mechanical analysis according to AASHO designation T88.

Permeability

Permeability refers to the rate of movement of water through the undisturbed soil. It is expressed in terms of inches per hour. Some of the soil factors affecting permeability are texture, structure, consistence, bulk density, and porosity. The groupings made for permeability are given in the Glossary.

Available Moisture Capacity

This is the amount of water in a moist soil, at field capacity, that can be removed by plants. These ratings are expressed in inches of water per inch of soil depth.

Reaction

Reaction is the degree of acidity or alkalinity of the soil, expressed in pH values or in descriptive words. The correlation of pH values and descriptive terms is found in the Glossary.

Interpretations of Soils as Construction Materials

The last five columns in Table 4 are interpretations of the soil as construction materials. They are rated using three general terms (severe, moderate, and slight) related to the properties involved.

Shrink-swell potential. Shrink-swell potential is that quality of a soil that determines its volume change with changes in moisture content. Much damage to building foundations, roads, and other structures is caused by shrinking and swelling of soils as a result of drying and wetting. The volume change behavior of soils is influenced by the amount of moisture change and amount and kind of clay present in the soil. Those soil materials rated high are less desirable from an engineering standpoint, as increases in volume are usually accompanied by a loss in bearing strength.

Corrosion potential for concrete conduits. This indicates the potential danger to concrete conduits or structures through chemical action that dissolves or weakens the structural material (Romanoff, 1957).

Workability as a construction material and compaction characteristics. The soil characteristics that determine the rating are similar, therefore they are listed in the same column. The workability of a soil is defined as a measure of the ease with which a soil is handled and traversed by ordinary construction equipment. Compaction characteristics refer to the ease with which proper compaction can be obtained, assuming reasonably suitable compaction equipment is being used and there is proper control of moisture.

Shearing strength when compacted and saturated. Shearing strength or shearing resistance varies over a considerable range with varying conditions of density, moisture content, and consolidation. Shearing strength is important in determining stability of slopes and bearing capacity for foundations. Cohesion tests are a basis of a soil's stability and should be based on the most unfavorable moisture condition that will prevail.

Compressibility when compacted and saturated. Compressibility of a soil pertains to its susceptibility

to a decrease in volume when subjected to load. In general, compressibility increases with increasing liquid limit. Compressibility is related to pore space and particle size distribution.

Suitability and Limitations of La Salle County Soils for Specific Uses

Table 5 gives appraisals or ratings of the soils in La Salle County as to their suitability or limitations for many uses. The interpretations are based on the soil properties shown in Tables 4 and 7. Test data from certain soils, along with field observations, are also used to determine these ratings. The intent is to provide a set of guides and indicators of potential hazards to soil use. These hazards may require unusual or specific precautions in planning, designing, or constructing engineering structures, or planning land use.

Cropland Drainage

Refers to the natural drainage of each mapping unit when used for cropland. This does not indicate the adequacy of artificial drainage systems employed on any soil area in the county. The footnotes indicate the possible needs and conditions that usually have to be overcome to provide adequate drainage.

Water Hazards

Refers to the general water hazards of each soil as related to all uses. The soils with slight water hazards will contribute to the runoff, and add water to the lower lying soils. The footnotes indicate the degree or intensity of the runoff. This runoff intensity is based on slope and soil conditions. Kinds of vegetative cover and conservation practices make considerable differences in runoff intensities.

Cropland Limitations

Refers to the crop production limitations of the soil. Intertilled crops are meant to be corn and soybeans. Crops requiring a minimum of tillage operations are meant to be meadow and small grains. Crops providing permanent cover are meant to be trees and pasture.

Soils with *slight* limitations have a sustained very high to high yield potential, are suited to continuous intertilled cropping, and have a wide range for adapted plant species.

Soils with *moderate* limitations have a moderate to high yield potential, are not usually suited to continous intertilled cropping, and are somewhat limited in their range of adapted plant species.

Soils with *severe* limitations have a low yield potential, are not suited to intertilled crops, and are limited in their range of adapted plant species.

Ponds or Reservoirs

Refers to the limitations of the soil area to hold impounded water. The ratings are based primarily on the soil features that affect the loss of water through seepage.

Source of Topsoil

Refers to soil material that is used to topdress road banks, lawns, or dams to establish or promote vegetation. Only the surface layer of each soil is rated as a good source, a fair source, or a poor source. These ratings are based on the organic-matter content and ease of working. When topsoil is moved some of its field characteristics may change. Although topdressing is an effective means of establishing turf on highway cuts and fills, mulching, fertilizing, and reseeding will provide good turf and control erosion on many soils.

Septic Filter Field

The septic tank filter field is a part of the septic tank absorption system for sewage disposal. It is a subsurface tile system laid in such a way that effluent from the septic tank is distributed with reasonable uniformity into the natural soil.

Factors important in determining the limitation of the soil for a filter field are listed as footnotes. It should be pointed out that even in soil areas with slight limitations a site inspection should be made prior to installation (USDHEW, 1967).

Sewage Lagoon

A sewage lagoon is a shallow lake used to hold sewage for the time required for bacterial decomposition. The limitations of the soil for sewage lagoons are based on the ability of the soil to hold the water without seepage, the slope of the area, and the location of the water table (FHA, 1960).

Urbanizing Areas

This rating is given to show the soil area limitations for use as residential, commercial, or industrial sites. The ratings are based primarily on the soil material, slope, and wetness hazards. The footnotes indicate the reason the soil area has a moderate or severe limitation. In this rating, moderate would mean the limitations can usually be overcome by correct planning and careful design. Severe limitations means the use may be questionable or not feasible. More detailed planning and special designs are necessary to overcome the limitations.

Recreation Uses

Refers to the use of the soil for specific recreational purposes. The ratings are based on soil features as

Table 5. — Suitability and Limitations of La Salle County Soils for Specific Uses

		Cropland[a] Drainage	Water[b] Hazards	Cropland[c] Limitations	Pond or[d] Reservoir	Source of[e] Topsoil	Septic Filter[f] Field	Sewage[g] Lagoon
9G	Sandstone rockland	(9)	Slight (1)	Severe R3	Poor (4,5)	Poor (9)	Severe (9)	Severe (6)
23B	Blount	Fair (1)	Moderate (3,4)	Slight G3	Slight	Fair (3)	Severe (2,3)	Moderate (1)
23C		Good	Slight (2)	Moderate Y3	Slight	Fair (3)	Severe (3)	Moderate (1)
23C2		Good	Slight (2)	Moderate Y3	Slight	Poor (3,4)	Severe (3)	Moderate (1)
24C2	Dodge	Good	Slight (2)	Moderate Y1	Moderate (1)	Poor (3,4)	Moderate (5)	Moderate (1)
24C3		Good	Slight (2)	Moderate Y3	Moderate (1)	Poor (3,4)	Moderate (5)	Moderate (1)
24D2		Good (6)	Slight (1)	Moderate Y3	Moderate (1)	Poor (4,7)	Moderate (1,5)	Severe (1)
25E2	Hennepin	(9)	Slight (1)	Severe R2	Moderate (1)	Poor (9)	Severe (1)	Severe (6)
25F2		(9)	Slight (1)	Severe R3	Severe (4)	Poor (9)	Severe (1)	Severe (6)
25F3		(9)	Slight (1)	Severe R3	Severe (4)	Poor (9)	Severe (1)	Severe (6)
25G3		(9)	Slight (1)	Severe R3	Severe (4)	Poor (9)	Not suitable	Severe (6)
36B	Tama	Good	Slight (3)	Slight G2	Moderate (1)	Good	Slight	Moderate (2)
36C		Good	Slight (2)	Moderate Y1	Moderate (1)	Good	Slight	Moderate (1,2)
36C2		Good	Slight (2)	Moderate Y1	Moderate (1)	Fair (4)	Slight	Moderate (1,2)
41A	Muscatine	Fair (1)	Moderate (4)	Slight G1	Moderate (1)	Good	Moderate (2)	Moderate (2)
41B		Fair (1)	Moderate (3,4)	Slight G1	Moderate (1)	Good	Moderate (2)	Moderate (1,2)
60C2	LaRose	Good	Slight (2)	Moderate Y1	Moderate (1)	Fair (4)	Moderate (5)	Moderate (1)
60C3		Good	Slight (2)	Moderate Y3	Moderate (1)	Poor (3,4)	Moderate (5)	Moderate (1)
60D2		Good	Slight (1)	Moderate Y3	Moderate (1)	Poor (4,7)	Moderate (1,5)	Severe (1)
60D3		Good (6)	Slight (1)	Severe R1	Moderate (1)	Poor (9)	Moderate (1,5)	Severe (1)
61A	Atterberry	Fair (1)	Moderate (4)	Slight G1	Moderate (1)	Good	Moderate (2)	Moderate (2)
61B		Fair (1)	Moderate (3,4)	Slight G1	Moderate (1)	Good	Moderate (2)	Moderate (1,2)
67	Harpster	Poor (2,3)	Severe (5,6)	Slight G2	Moderate (1)	Fair (1,5)	Severe (2)	Severe (2,3)
W67		Very poor (3,7)	Very severe (5,6,8)	Severe R3	Moderate (1)	Poor (1)	Severe (2,4)	Severe (2,3)
68	Sable	Poor (2,3)	Severe (5,6)	Slight G2	Moderate (1)	Fair (1,5)	Severe (2)	Severe (2,3)
73	Ross	Poor (5)	Very severe (7)	Slight G2	Moderate (1)	Good	Severe (4)	Severe (2,3)
82	Millington	Poor (2,5)	Very severe (5,7)	Slight G2	Slight	Fair (1)	Severe (2,4)	Severe (3)
83	Wabash	Poor (2,4)	Severe (5,6,8)	Moderate Y2	Slight	Poor (1,6)	Severe (3,4)	Severe (3)
87A	Dickinson	Good	Slight (3)	Moderate Y2	Severe (3)	Fair (8)	Slight (8)	Severe (4)
87B		Good	Slight (3)	Moderate Y2	Severe (3)	Fair (8)	Slight (8)	Severe (4)
87C2		Good (6)	Slight (3)	Moderate Y3	Severe (3)	Poor (3,8)	Slight (8)	Severe (1,4)
88B	Sparta	Good (6)	Slight (3)	Moderate Y2	Severe (3)	Poor (8)	Slight (8)	Severe (4)
88D2		Good (6)	Slight (3)	Severe R3	Severe (3)	Poor (8,9)	Moderate (1,8)	Severe (1,4)
91A	Swygert	Fair (4)	Moderate (4)	Moderate Y2	Slight	Good	Severe (2,3)	Slight
91B		Fair (4)	Moderate (3,4)	Moderate Y2	Slight	Fair (5)	Severe (2,3)	Moderate (1)
91B2		Good (8)	Moderate (3,4)	Moderate Y2	Slight	Poor (3,5)	Severe (2,3)	Moderate (1)
91C		Good (8)	Slight (2,4)	Moderate Y3	Slight	Fair (5)	Severe (3)	Moderate (1)
91C2		Good (8)	Slight (2,4)	Moderate Y3	Slight	Poor (4,5)	Severe (3)	Moderate (1)
91C3		Good (8)	Slight (2,4)	Severe R1	Slight	Poor (6)	Severe (3)	Moderate (1)
91D2		Good (6)	Slight (1)	Severe R1	Slight	Poor (4,9)	Severe (1,3)	Severe (1)
91D3		Good (6)	Slight (1)	Severe R3	Slight	Poor (6,9)	Severe (1,3)	Severe (1)
93E2	Rodman	(9)	Slight (2)	Severe R3	Severe (2)	Poor (9)	Severe (1)	Severe (6)
93F2		(9)	Slight (2)	Severe R3	Severe (2)	Poor (9)	Severe (1)	Severe (6)
94G	Limestone rockland	(9)	Slight (1)	Severe R3	Severe (4,5)	Poor (9)	Not suitable	Severe (6)
95G	Shale rockland	(9)	Slight (1)	Severe R3	Severe (4,5)	Poor (9)	Not suitable	Severe (6)
103	Houghton	Very poor (2,4)	Very severe (5,6,8)	Moderate Y2	Slight	Poor (1,2)	Severe (2,4,6)	Severe (3,4)
103+		Very poor (2,4)	Very severe (5,6,8)	Moderate Y2	Slight	Poor (1,2)	Severe (2,4,6)	Severe (3,4)
104A	Virgil	Fair (1)	Moderate (4)	Slight G1	Moderate (1)	Good	Moderate (2)	Moderate (2)
104B		Fair (1)	Moderate (3,4)	Slight G1	Moderate (1)	Good	Moderate (2)	Moderate (1,5)
105A	Batavia	Good (1)	Slight (3)	Slight G1	Moderate (1)	Good	Slight	Moderate (2)
105B		Good	Slight (3)	Slight G2	Moderate (1)	Good	Slight	Moderate (1,5)
105C2		Good	Slight (2)	Moderate Y1	Moderate (1)	Fair (4)	Slight	Moderate (1,5)
107	Sawmill	Poor (2,5)	Very severe (5,7)	Slight G2	Slight	Fair (1,5)	Severe (2,4)	Severe (3)
123	Riverwash	(9)	Very severe (5,7)	Severe R3	Severe (2)	Poor (1,8)	Severe (4)	Severe (3,6)
125	Selma	Poor (2,3)	Severe (5,6)	Slight G2	Moderate (1)	Fair (1)	Severe (2)	Severe (2,3)
131B	Alvin	Good	Slight (3)	Moderate Y1	Severe (3)	Poor (3,8)	Slight (8)	Severe (2)
131C2		Good (6)	Slight (3)	Moderate Y3	Severe (3)	Poor (3,8)	Slight (8)	Severe (2)
132A	Starks	Fair (1)	Moderate (4)	Slight G3	Moderate (1)	Fair (3)	Moderate (2)	Moderate (2)
132B		Fair (1)	Moderate (3,4)	Slight G3	Moderate (1)	Fair (3)	Moderate (2)	Moderate (1,2)

Table 5. — Continued

		Urbanizing[h/] Area	Cottage and [i/] Utility Bldgs.	Tent and Trailer [i/] Campsite	Picnic and Exten-[i/] sive Play Area	Intensive Play [i/] Area	Paths and Trails [i/]
9G	Sandstone rockland	Severe (5)	Severe (9)	Severe (9)	Severe (9)	Severe (9)	Severe (9)
23B	Blount	Moderate (3)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
23C		Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Severe (6)	Slight
23C2		Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Severe (6)	Slight
24C2	Dodge	Moderate (2)	Slight	Slight	Moderate (6)	Moderate (6)	Slight
24C3		Moderate (2)	Slight	Slight	Moderate (6)	Moderate (6)	Slight
24D2		Moderate (3)	Moderate (6)	Moderate (6)	Moderate (6)	Severe (6)	Slight
25E2	Hennepin	Severe (4)	Severe (6)	Severe (6)	Severe (6)	Severe (9)	Moderate (6)
25F2		Severe (4)	Severe (6)	Severe (9)	Severe (6)	Severe (9)	Severe (6)
25F3		Severe (4)	Severe (6)	Severe (9)	Severe (6)	Severe (9)	Severe (6)
25G3		Severe (4)	Severe (9)	Severe (9)	Severe (9)	Severe (9)	Severe (6)
36B	Tama	Slight	Slight	Slight	Slight	Moderate (6)	Slight
36C		Slight	Slight	Slight	Slight	Moderate (6)	Slight
36C2		Slight	Slight	Slight	Slight	Moderate (6)	Slight
41A	Muscatine	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
41B		Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
60C2	LaRose	Moderate (2)	Slight	Slight	Slight	Moderate (6)	Slight
60C3		Moderate (2)	Slight	Slight	Slight	Moderate (6)	Slight
60D2		Moderate (3)	Moderate (6)	Moderate (6)	Moderate (6)	Severe (6)	Moderate (6)
60D3		Moderate (3)	Moderate (6)	Moderate (6)	Moderate (6)	Severe (6)	Moderate (6)
61A	Atterberry	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
61B		Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
67	Harpster	Severe (4)	Severe (2,7)	Severe (2,7)	Severe (2,7)	Severe (2,7)	Severe (2,7)
W67		Severe (6)	Severe (9)	Severe (9)	Severe (9)	Severe (9)	Severe (9)
68	Sable	Severe (4)	Severe (2,7)	Severe (2,7)	Severe (2,7)	Severe (2,7)	Severe (2,7)
73	Ross	Severe (5)	Severe (4)	Moderate (4)	Moderate (4)	Moderate (4)	Slight
82	Millington	Severe (5)	Severe (4)	Severe (4,7)	Severe (4,7)	Severe (4,7)	Severe (4,7)
83	Wabash	Severe (6)	Severe (4)	Severe (4,7)	Severe (4,7)	Severe (4,7)	Severe (4,7)
87A	Dickinson	Slight	Slight	Slight	Slight	Slight	Slight
87B		Slight	Slight	Slight	Slight	Moderate (6)	Slight
87C2		Moderate (1)	Slight	Slight	Slight	Moderate (6)	Slight
88B	Sparta	Slight	Slight	Moderate (8)	Moderate (8)	Moderate (8)	Moderate (8)
88D2		Moderate (1)	Moderate (6)	Severe (6,8)	Severe (6,8)	Severe (6,8)	Moderate (8)
91A	Swygert	Moderate (3)	Moderate (2)	Moderate (2)	Moderate (2,5)	Moderate (2)	Moderate (2,7)
91B		Moderate (3)	Moderate (2)	Moderate (2)	Moderate (2,5)	Moderate (2,6)	Moderate (2,7)
91B2		Moderate (3)	Moderate (2)	Moderate (2)	Moderate (2,5)	Moderate (2,6)	Moderate (2,7)
91C		Severe (4)	Moderate (6)	Moderate (2)	Moderate (2,5)	Moderate (2,6)	Moderate (2,7)
91C2		Severe (4)	Moderate (6)	Moderate (6,7)	Moderate (5,6)	Moderate (5,6)	Moderate (2,7)
91C3		Severe (4)	Moderate (6)	Severe (3,6)	Severe (3,6)	Severe (5,6)	Moderate (3,7)
91D2		Severe (4)	Severe (6)	Severe (3,6)	Severe (3,6)	Severe (5,6)	Moderate (6,7)
91D3		Severe (4)	Severe (6)	Severe (3,6)	Severe (3,6)	Severe (5,6)	Severe (3,7)
93E2	Rodman	Severe (4)	Severe (6)	Severe (6)	Severe (6)	Severe (9)	Moderate (6)
93F2		Severe (4)	Severe (6)	Severe (9)	Severe (6)	Severe (9)	Severe (6,8)
94G	Limestone rockland	Severe (5)	Severe (9)	Severe (9)	Severe (9)	Severe (9)	Severe (9)
95G	Shale rockland	Severe (5)	Severe (9)	Severe (9)	Severe (9)	Severe (9)	Severe (9)
103	Houghton	Severe (6)	Severe (9)	Severe (9)	Severe (9)	Severe (9)	Severe (4)
103+		Severe (6)	Severe (9)	Severe (9)	Severe (9)	Severe (9)	Severe (4)
104A	Virgil	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
104B		Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
105A	Batavia	Slight	Slight	Slight	Slight	Slight	Slight
105B		Slight	Slight	Slight	Slight	Moderate (6)	Slight
105C2		Slight	Slight	Slight	Slight	Moderate (6)	Slight
107	Sawmill	Severe (5)	Severe (2,4)	Severe (2,4)	Severe (2,4)	Severe (2,4)	Severe (2,4)
123	Riverwash	Severe (5)	Severe (9)	Severe (9)	Severe (9)	Severe (9)	Severe (4)
125	Selma	Severe (4)	Severe (2)	Severe (2)	Severe (2)	Severe (2)	Severe (2)
131B	Alvin	Slight	Slight	Slight	Slight	Moderate (6)	Slight
131C2		Moderate (1)	Slight	Moderate (8)	Moderate (8)	Moderate (6)	Slight
132A	Starks	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
132B		Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)

Table 5. — Continued

		Cropland[a] Drainage	Water[b] Hazards	Cropland[c] Limitations	Pond or[d] Reservoir	Source of[e] Topsoil	Septic Filter[f] Field	Sewage[g] Lagoon
134A	Camden	Good (1)	Slight (3)	Slight G1	Severe (3)	Fair (3)	Slight	Moderate (2)
134B		Good	Slight (3)	Slight G2	Severe (3)	Fair (3)	Slight	Moderate (1,2)
134C2		Good	Slight (2)	Moderate Y1	Severe (3)	Poor (3,4)	Slight	Severe (1,2)
134C3		Good (6)	Slight (2)	Moderate Y3	Severe (3)	Poor (3,4)	Slight	Severe (1,2)
134D2		Good (6)	Slight (1)	Moderate Y3	Severe (3)	Poor (3,4)	Moderate (1)	Severe (1,2)
134D3		Good (6)	Slight (1)	Severe R1	Severe (3)	Poor (9)	Moderate (1)	Severe (1,2)
134E2		Good (6)	Slight (1)	Severe R2	Severe (3)	Poor (9)	Severe (1)	Not suitable
134E3		Good (6)	Slight (1)	Severe R2	Severe (3)	Poor (9)	Severe (1)	Not suitable
134F2		(9)	Slight (1)	Severe R2	Severe (3,4)	Poor (9)	Severe (1)	Not suitable
145B	Saybrook	Good	Slight (3)	Slight G2	Slight-mod.(1)	Good	Slight	Moderate (1,2)
145C2		Good	Slight (2)	Moderate Y1	Slight-mod.(1)	Fair (4)	Slight	Moderate (1)
146A	Elliott	Fair (1)	Moderate (4)	Slight G3	Slight	Good	Severe (2,3)	Slight
146B		Fair (1)	Moderate (3,4)	Slight G3	Slight	Good	Severe (2,3)	Moderate (1)
146B2		Good	Moderate (3,4)	Moderate Y1	Slight	Fair (4)	Severe (2,3)	Moderate (1)
146C2		Good	Slight (2)	Moderate Y3	Slight	Fair (4)	Severe (3)	Moderate (1)
147B	Clarence	Fair (1,4)	Moderate (3,4)	Moderate Y2	Slight	Fair (5)	Severe (2,3)	Moderate (1)
147B2		Fair (1,4)	Moderate (3,4)	Moderate Y2	Slight	Poor (4,5)	Severe (2,3)	Moderate (1)
147C2		Good (8)	Slight (2,4)	Moderate Y3	Slight	Poor (4,6)	Severe (2,3)	Moderate (1)
148A	Proctor	Good (1)	Slight (3)	Slight G1	Severe (3)	Good	Slight	Moderate (2)
148B		Good	Slight (3)	Slight G2	Severe (3)	Good	Slight	Moderate (1,2)
148C		Good	Slight (2)	Moderate Y1	Severe (3)	Good	Slight	Moderate (1,2)
148C2		Good	Slight (2)	Moderate Y1	Severe (3)	Fair (4)	Slight	Moderate (1,2)
148C3		Good (6)	Slight (2)	Moderate Y3	Severe (3)	Poor (4)	Slight	Moderate (1,2)
148D2		Good (6)	Slight (1)	Moderate Y3	Severe (3)	Poor (4,7)	Moderate (1)	Severe (1,2)
148D3		Good (6)	Slight (1)	Severe R1	Severe (3)	Poor (4,7)	Moderate (1)	Severe (1,2)
149A	Brenton	Fair (1)	Moderate (4)	Slight G1	Moderate (1)	Good	Moderate (2)	Moderate (2)
149B		Fair (1)	Moderate (3,4)	Slight G1	Moderate (1)	Good	Moderate (2)	Moderate (1,2)
151A	Ridgeville	Fair (1)	Moderate (4)	Slight G3	Severe (3)	Good	Moderate (2)	Severe (4)
151B		Fair (1)	Moderate (3,4)	Slight G3	Severe (3)	Good	Moderate (2)	Severe (4)
152	Drummer	Poor (2,3)	Severe (5,6)	Slight G2	Slight-mod.(1)	Fair (1,5)	Severe (2)	Severe (3)
154A	Flanagan	Fair (1)	Moderate (4)	Slight G1	Slight-mod.(1)	Good	Moderate (2)	Moderate (2)
154B		Fair (1)	Moderate (3,4)	Slight G1	Slight-mod.(1)	Good	Moderate (2)	Moderate (1,2)
154B2		Fair (1)	Moderate (3,4)	Slight G2	Slight-mod.(1)	Fair (4)	Moderate (2)	Moderate (1,2)
154C2		Good	Slight (2,4)	Moderate Y1	Slight-mod.(1)	Fair (4)	Moderate (2)	Moderate (1,2)
171B	Catlin	Good	Slight (3)	Slight G2	Slight-mod.(1)	Good	Slight	Moderate (1,2)
171C		Good	Slight (2)	Moderate Y1	Slight-mod.(1)	Good	Slight	Moderate (1,2)
171C2		Good	Slight (2)	Moderate Y1	Slight-mod.(1)	Fair (4)	Slight	Moderate (1,2)
171C3		Good	Slight (2)	Moderate Y3	Slight-mod.(1)	Poor (4)	Slight	Moderate (1,2)
171D3		Good (6)	Slight (1)	Severe R1	Slight-mod.(1)	Poor (4,7)	Moderate (1)	Severe (1,2)
194B	Morley	Good	Slight (3)	Moderate Y1	Slight	Fair (3)	Severe (3)	Moderate (1)
194C		Good	Slight (2)	Moderate Y3	Slight	Fair (3)	Severe (3)	Moderate (1)
194C2		Good (8)	Slight (2)	Moderate Y3	Slight	Poor (3,4)	Severe (3)	Moderate (1)
194D2		Good (6)	Slight (1)	Severe R1	Slight	Poor (3,7)	Severe (1,3)	Severe (1)
194E2		Good (6)	Slight (1)	Severe R2	Slight	Poor (9)	Severe (1,3)	Severe (1)
198A	Elburn	Fair (1)	Moderate (4)	Slight G1	Moderate (1)	Good	Moderate (2)	Moderate (2)
198B		Fair (1)	Moderate (3,4)	Slight G1	Moderate (1)	Good	Moderate (2)	Moderate (1,2)
199A	Plano	Good (1)	Slight (3)	Slight G1	Severe (3)	Good	Slight	Moderate (1,2)
199B		Good	Slight (3)	Slight G2	Severe (3)	Good	Slight	Moderate (1,2)
199C		Good	Slight (2)	Moderate Y1	Severe (3)	Good	Slight	Moderate (1,2)
199C2		Good	Slight (2)	Moderate Y1	Severe (3)	Fair (4)	Slight	Moderate (1,2)
199C3		Good	Slight (2)	Moderate Y3	Severe (3)	Poor (4)	Slight	Moderate (1,2)
199D3		Good (6)	Slight (1)	Severe R1	Severe (3)	Poor (4)	Moderate (1)	Severe (1,2)
206	Thorp	Poor (1,2)	Severe (5,6)	Moderate Y2	Moderate (1)	Fair (1)	Severe (2,4)	Severe (3)
210	Lena	Very poor (2,4)	Very severe (5,6,8)	Moderate Y2	Slight	Poor (1,2)	Severe (2,4,6)	Severe (3,4)
219A	Millbrook	Fair (1)	Moderate (4)	Slight G1	Moderate (1)	Good	Moderate (2)	Moderate (2)
219B		Fair (1)	Moderate (3,4)	Slight G1	Moderate (1)	Good	Moderate (2)	Moderate (1,2)
223B	Varna	Good	Slight (3)	Moderate Y1	Slight	Good	Moderate (5)	Moderate (1)
223B2		Good	Slight (3)	Moderate Y1	Slight	Fair (4)	Moderate (5)	Moderate (1)
223C		Good	Slight (2)	Moderate Y3	Slight	Good	Moderate (5)	Moderate (1)
223C2		Good (8)	Slight (2)	Moderate Y3	Slight	Poor (4)	Severe (3)	Moderate (1)
223C3		Good (8)	Slight (2)	Severe R1	Slight	Poor (3,4)	Severe (3)	Moderate (1)
223D2		Good (6)	Slight (1)	Severe R1	Slight	Poor (4,7)	Severe (1,3)	Severe (1)
223D3		Good (6)	Slight (1)	Severe R1	Slight	Poor (9)	Severe (1,3)	Severe (1)
224C3	Strawn	Good (6)	Slight (2)	Moderate Y3	Moderate (1)	Poor (3,4)	Moderate (5)	Moderate (1,2)
224D2		Good (6)	Slight (1)	Moderate Y3	Moderate (1)	Poor (9)	Severe (1,5)	Severe (1)
224D3		Good (6)	Slight (1)	Severe R2	Moderate (1)	Poor (9)	Severe (1,5)	Severe (1)
228A	Nappanee	Fair (1,4)	Moderate (4)	Moderate Y2	Slight	Fair (3)	Severe (2,3)	Moderate
228B		Fair (1,4)	Moderate (3,4)	Moderate Y2	Slight	Fair (3)	Severe (2,3)	Moderate (1)
228B2		Good (8)	Moderate (3,4)	Moderate Y2	Slight	Poor (3,4)	Severe (2,3)	Moderate (1)
228C2		Good (8)	Slight (2,4)	Moderate Y3	Slight	Poor (3,4)	Severe (3)	Moderate (1)
228C3		Good (8)	Slight (2,4)	Severe R1	Slight	Poor (6)	Severe (3)	Moderate (1)
232	Ashkum	Poor (2,3)	Severe (5,6)	Slight G2	Slight	Fair (1,5)	Severe (2)	Severe (3)

Table 5. — Continued

		Urbanizing[h/] Area	Cottage and[i/] Utility Bldgs.	Tent and Trailer[i/] Campsite	Picnic and Exten-[i/] sive Play Area	Intensive Play[i/] Area	Paths and Trails[i/]
134A	Camden	Slight	Slight	Slight	Slight	Slight	Slight
134B		Slight	Slight	Slight	Slight	Moderate (6)	Slight
134C2		Slight	Slight	Slight	Slight	Moderate (6)	Slight
134C3		Slight	Slight	Moderate (3)	Moderate (3)	Moderate (6)	Slight
134D2		Moderate (1)	Moderate (6)	Moderate (6)	Moderate (6)	Severe (6)	Slight
134D3		Moderate (1)	Moderate (6)	Severe (3,6)	Severe (3,6)	Severe (6)	Moderate (3)
134E2		Severe (4)	Severe (6)	Severe (6)	Severe (6)	Severe (6)	Moderate (6)
134E3		Severe (4)	Severe (6)	Severe (3,6)	Severe (3,6)	Severe (6)	Moderate (3,6)
134F2		Severe (4)	Severe (6)	Severe (6)	Severe (6)	Severe (9)	Severe (6)
145B	Saybrook	Slight	Slight	Slight	Slight	Moderate (6)	Slight
145C2		Slight	Slight	Moderate (6)	Moderate (6)	Moderate (6)	Slight
146A	Elliott	Moderate (3)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
146B		Moderate (3)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
146B2		Moderate (3)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
146C2		Moderate (2)	Moderate (2)	Moderate (2,7)	Moderate (2,7)	Moderate (6)	Moderate (2)
147B	Clarence	Severe (4)	Moderate (2)	Moderate (2,5)	Moderate (2,5)	Moderate (2,6)	Moderate (2)
147B2		Severe (4)	Moderate (2)	Moderate (2,5)	Moderate (2,5)	Moderate (2,6)	Moderate (2)
147C2		Severe (4)	Moderate (2)	Moderate (2,5)	Moderate (2,5)	Severe (2,6)	Moderate (2)
148A	Proctor	Slight	Slight	Slight	Slight	Slight	Slight
148B		Slight	Slight	Slight	Slight	Moderate (6)	Slight
148C		Slight	Slight	Slight	Slight	Moderate (6)	Slight
148C2		Slight	Slight	Slight	Slight	Moderate (6)	Slight
148C3		Slight	Slight	Moderate (3)	Moderate (3)	Moderate (6)	Slight
148D2		Moderate (1)	Moderate (6)	Moderate (6)	Moderate (6)	Severe (6)	Moderate (6)
148D3		Moderate (1)	Moderate (6)	Moderate (3,6)	Moderate (3,6)	Severe (6)	Moderate (6)
149A	Brenton	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
149B		Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
151A	Ridgeville	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
151B		Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
152	Drummer	Severe (4)	Severe (2,7)	Severe (2,7)	Severe (2,7)	Severe (2,7)	Severe (2,7)
154A	Flanagan	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
154B		Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
154B2		Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
154C2		Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
171B	Catlin	Slight	Slight	Slight	Slight	Moderate (6)	Slight
171C		Slight	Slight	Slight	Slight	Moderate (6)	Slight
171C2		Slight	Slight	Slight	Slight	Moderate (6)	Slight
171C3		Slight	Slight	Moderate (3)	Moderate (3)	Moderate (6)	Slight
171D3		Moderate (1)	Moderate (6)	Moderate (3,6)	Moderate (3,6)	Severe (6)	Moderate (6)
194B	Morley	Moderate (2)	Slight	Moderate (5)	Slight	Moderate (6)	Slight
194C		Moderate (2)	Slight	Moderate (5)	Slight	Severe (6)	Slight
194C2		Moderate (2)	Slight	Moderate (5)	Moderate (3)	Severe (6)	Slight
194D2		Moderate (3)	Moderate (6)	Severe (5,6)	Severe (3,6)	Severe (6)	Moderate (6)
194E2		Severe (4)	Severe (6)	Severe (5,6)	Severe (3,6)	Severe (6)	Moderate (6)
198A	Elburn	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
198B		Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
199A	Plano	Slight	Slight	Slight	Slight	Slight	Slight
199B		Slight	Slight	Slight	Slight	Moderate (6)	Slight
199C		Slight	Slight	Slight	Slight	Moderate (6)	Slight
199C2		Slight	Slight	Slight	Slight	Moderate (6)	Slight
199C3		Slight	Slight	Moderate (3)	Moderate (3)	Moderate (6)	Slight
199D3		Moderate (1)	Moderate (6)	Moderate (6)	Moderate (6)	Severe (6)	Moderate (6)
206	Thorp	Severe (5)	Severe (2,4)	Severe (2,4)	Severe (2,4)	Severe (2,4)	Severe (2,4)
210	Lena	Severe (6)	Severe (9)	Severe (9)	Severe (9)	Severe (9)	Severe (4)
219A	Millbrook	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
219B		Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
223B	Varna	Moderate (2)	Slight	Moderate (5)	Moderate (5)	Moderate (6)	Slight
223B2		Moderate (2)	Slight	Moderate (5)	Moderate (5)	Moderate (6)	Slight
223C		Moderate (2)	Slight	Moderate (5)	Moderate (5)	Moderate (6)	Slight
223C2		Moderate (2)	Slight	Moderate (5)	Moderate (5)	Moderate (6)	Slight
223C3		Moderate (2)	Moderate (3)	Severe (3,5)	Severe (3,5)	Severe (3,6)	Moderate (5)
223D2		Moderate (3)	Moderate (6)	Severe (6)	Severe (6)	Severe (6)	Moderate (6)
223D3		Moderate (3)	Moderate (6)	Severe (3,6)	Severe (3,6)	Severe (6)	Moderate (6)
224C3	Strawn	Moderate (2)	Slight	Slight	Slight	Moderate (6)	Slight
224D2		Moderate (3)	Moderate (6)	Moderate (6)	Moderate (6)	Severe (6)	Moderate (6)
224D3		Moderate (3)	Moderate (6)	Moderate (6)	Moderate (6)	Severe (6)	Moderate (6)
228A	Nappanee	Severe (4)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
228B		Severe (4)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (6)	Moderate (2)
228B2		Severe (4)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (6)	Moderate (2)
228C2		Severe (4)	Moderate (3)	Moderate (3)	Moderate (3)	Moderate (6)	Moderate (2)
228C3		Severe (4)	Moderate (3)	Severe (3)	Severe (3)	Severe (3,6)	Severe (3,5)
232	Ashkum	Severe (5)	Severe (4)	Severe (2,7)	Severe (2,7)	Severe (2,7)	Severe (4)

Table 5. — Continued

		Cropland a/ Drainage	Water b/ Hazards	Cropland c/ Limitations	Pond or d/ Reservoir	Source of e/ Topsoil	Septic Filter f/ Field	Sewage g/ Lagoon
233A	Birkbeck	Good (1)	Slight (3)	Slight G1	Slight-mod.(1)	Fair (3)	Slight	Moderate (2)
233B		Good	Slight (3)	Slight G2	Slight-mod.(1)	Fair (3)	Slight	Moderate (1,2)
233C		Good	Slight (2)	Moderate Y1	Slight-mod.(1)	Fair (3)	Slight	Moderate (1,2)
233C2		Good	Slight (2)	Moderate Y1	Slight-mod.(1)	Poor (3,4)	Slight	Moderate (1,2)
233C3		Good	Slight (2)	Moderate Y3	Slight-mod.(1)	Poor (3,4)	Slight	Moderate (1,2)
233D2		Good (6)	Slight (1)	Moderate Y3	Slight-mod.(1)	Poor (4,7)	Moderate (1)	Severe (1,2)
234A	Sunbury	Fair (1)	Moderate (4)	Slight G1	Slight-mod.(1)	Good	Moderate (2)	Moderate (2)
234B		Fair (1)	Moderate (3,4)	Slight G1	Slight-mod.(1)	Good	Moderate (2)	Moderate (1,2)
235	Bryce	Poor (2,4)	Severe (5,6)	Moderate Y2	Slight	Fair (1,6)	Severe (2,3)	Severe (3)
236A	Sabina	Fair (1)	Moderate (4)	Slight G1	Slight-mod.(1)	Fair (3)	Moderate (2)	Moderate (2)
236B		Fair (1)	Moderate (3,4)	Slight G1	Slight-mod.(1)	Fair (3)	Moderate (2)	Moderate (1,2)
238	Rantoul	Very poor (2,4,5)	Severe (5,6,8)	Moderate Y2	Slight	Poor (1,6)	Severe (2,3,4)	Severe (3)
241D3	Chatsworth	(9)	Slight (1)	Severe R3	Slight	Poor (9)	Severe (1,3)	Severe (6)
241E3		(9)	Slight (1)	Severe R3	Slight	Poor (9)	Severe (1,3)	Severe (6)
241F2		(9)	Slight (1)	Severe R3	Slight	Poor (9)	Severe (9)	Severe (6)
241G2		(9)	Slight (1)	Severe R3	Slight (4)	Poor (9)	Severe (9)	Severe (6)
241G3		(9)	Slight (1)	Severe R3	Slight (4)	Poor (9)	Severe (9)	Severe (6)
242A	Kendall	Fair (1)	Moderate (4)	Slight G1	Moderate (1)	Fair (3)	Moderate (2)	Moderate (2)
242B		Fair (1)	Moderate (3,4)	Slight G1	Moderate (1)	Fair (3)	Moderate (2)	Moderate (1,2)
243A	St. Charles	Good (1)	Slight (3)	Slight G1	Severe (3)	Fair (3)	Slight	Moderate (3)
243B		Good	Slight (3)	Slight G2	Severe (3)	Fair (3)	Slight	Moderate (1,2)
243B2		Good	Slight (3)	Slight G2	Severe (3)	Poor (3,4)	Slight	Moderate (1,2)
243C		Good	Slight (2)	Moderate Y1	Severe (3)	Fair (3)	Slight	Moderate (1,2)
243C2		Good	Slight (2)	Moderate Y1	Severe (3)	Poor (3,4)	Slight	Moderate (1,2)
243C3		Good	Slight (2)	Moderate Y3	Severe (3)	Poor (3,4)	Slight	Moderate (1,2)
243D2		Good (6)	Slight (1)	Moderate Y3	Severe (3)	Poor (4,7)	Moderate (1)	Severe (1,2)
278A	Stronghurst	Fair (1)	Moderate (4)	Slight G1	Moderate (1)	Fair (3)	Moderate (2)	Moderate (2)
278B		Fair (1)	Moderate (3,4)	Slight G1	Moderate (1)	Fair (3)	Moderate (2)	Moderate (1,2)
280B	Fayette	Good	Slight (3)	Slight G2	Moderate (1)	Fair (3)	Slight	Moderate (1,2)
280C2		Good	Slight (3)	Moderate Y1	Moderate (1)	Poor (3,4)	Slight	Moderate (1,2)
290A	Warsaw	Good	Slight (3)	Slight G3	Severe (2)	Good	Slight (8)	Severe (4)
290B		Good	Slight (3)	Moderate Y1	Severe (2)	Good	Slight (8)	Severe (4)
290C2		Good (6)	Slight (2)	Moderate Y3	Severe (2)	Fair (4)	Slight (8)	Severe (4)
290C3		Good (6)	Slight (2)	Severe R1	Severe (2)	Poor (3,4)	Slight (8)	Severe (4)
293A	Andres	Fair (1)	Moderate (4)	Slight G1	Slight	Good	Moderate (2)	Slight
293B		Fair (1)	Moderate (3,4)	Slight G1	Slight	Good	Moderate (2)	Moderate (1)
294B	Symerton	Good	Slight (3)	Slight G2	Slight	Good	Slight	Moderate (1)
294C		Good	Slight (2)	Moderate Y1	Slight	Good	Slight	Moderate (1)
294C2		Good	Slight (2)	Moderate Y1	Slight	Fair (4)	Slight	Moderate (1)
295A	Mokena	Fair (1)	Moderate (4)	Slight G3	Slight	Good	Severe (2,5)	Slight
295B		Fair (1)	Moderate (3,4)	Slight G3	Slight	Good	Severe (2,5)	Moderate (1)
295B2		Good (1)	Moderate (3,4)	Moderate Y1	Slight	Fair (4)	Severe (2,5)	Moderate (1)
298B	Beecher	Fair (1)	Moderate (3,4)	Slight G3	Slight	Fair (3)	Severe (2,3)	Moderate (1)
311B	Ritchey	Good	Slight (3)	Moderate Y3	Severe (5)	Fair (3)	Severe (7)	Severe (5)
311C2		Good (6)	Slight (2)	Severe R1	Severe (5)	Poor (3,4)	Severe (7)	Severe (5)
314	Joliet	Very poor (2,4,5)	Severe (5,6)	Severe R1	Severe (5)	Poor (1,5)	Severe (2,7)	Severe (3,5)
315B	Channahon	Good	Slight (3)	Moderate Y3	Severe (5)	Fair (3)	Severe (7)	Severe (5)
317	Millsdale	Poor (2,3,5)	Severe (5,6)	Slight G3	Severe (5)	Poor (1,5)	Severe (2,7)	Severe (3,5)
318B	Lorenzo	Good	Slight (3)	Moderate Y2	Severe (2)	Fair (3)	Slight (8)	Severe (4)
318C2		Good (6)	Slight (3)	Moderate Y3	Severe (2)	Poor (3,4)	Slight (8)	Severe (4)
320B	Frankfort	Fair (1)	Moderate (3,4)	Moderate Y2	Slight	Fair (3)	Severe (2,3)	Moderate (1)
320B2		Good (8)	Moderate (3,4)	Moderate Y2	Slight	Poor (3,4)	Severe (2,3)	Moderate (1)
320C2		Good (8)	Slight (2)	Moderate Y3	Slight	Poor (3,4)	Severe (2,3)	Moderate (1)
321A	DuPage	Poor (5)	Very severe (4,7)	Slight G2	Moderate (1)	Good	Severe (4)	Severe (3)
321B		Poor (5)	Very severe (4,7)	Slight G2	Moderate (1)	Good	Severe (4)	Severe (3)
325B	Dresden	Good	Slight (3)	Moderate Y1	Severe (2)	Fair (3)	Slight (8)	Severe (4)
325C2		Good (6)	Slight (2)	Moderate Y3	Severe (2)	Poor (3,4)	Slight (8)	Severe (4)
327B	Fox	Good	Slight (3)	Moderate Y1	Severe (2)	Fair (3)	Slight (8)	Severe (4)
327C2		Good (6)	Slight (2)	Moderate Y3	Severe (2)	Poor (3,4)	Slight (8)	Severe (4)
327D2		Good (6)	Slight (1)	Moderate Y3	Severe (2)	Poor (4,7)	Moderate (1,8)	Severe (4)
327E2		Good (6)	Slight (1)	Severe R2	Severe (2)	Poor (9)	Severe (1,8)	Not suitable
330	Peotone	Very poor (2,3,5)	Very severe (5,6,8)	Moderate Y2	Slight	Fair (1,6)	Severe (2,3,4)	Severe (3)
344A	Harvard	Good (1)	Slight (3)	Slight G1	Severe (3)	Good	Slight	Moderate (2)
344B		Good	Slight (3)	Slight G2	Severe (3)	Good	Slight	Moderate (1,2)
344C2		Good	Slight (2)	Moderate Y1	Severe (3)	Fair (4)	Slight	Moderate (2)

Table 5. — Continued

		Urbanizing[h] Area	Cottage and[i] Utility Bldgs.	Tent and Trailer[i] Campsite	Picnic and Exten-[i] sive Play Area	Intensive Play[i] Area	Paths and Trails[i]
233A	Birkbeck	Slight	Slight	Slight	Slight	Slight	Slight
233B		Slight	Slight	Slight	Slight	Moderate (6)	Slight
233C		Slight	Slight	Slight	Slight	Moderate (6)	Slight
233C2		Slight	Slight	Slight	Slight	Moderate (6)	Slight
233C3		Slight	Slight	Moderate (3)	Moderate (3)	Moderate (6)	Slight
233D2		Moderate (2)	Moderate (6)	Moderate (6)	Moderate (6)	Severe (6)	Moderate (6)
234A	Sunbury	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
234B		Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
235	Bryce	Severe (5)	Severe (4)	Severe (2,7)	Severe (2,7)	Severe (2,7)	Severe (4)
236A	Sabina	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
236B		Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
238	Rantoul	Severe (6)	Severe (2,4)	Severe (4,7)	Severe (4,7)	Severe (4,7)	Severe (4,7)
241D3	Chatsworth	Severe (4)	Severe (3,6)	Severe (3,6)	Severe (3,6)	Severe (6)	Severe (3,6)
241E3		Severe (5)	Severe (3,6)	Severe (3,6)	Severe (3,6)	Severe (9)	Severe (3,6)
241F2		Severe (5)	Severe (9)	Severe (9)	Severe (9)	Severe (9)	Severe (3,6)
241G2		Severe (5)	Severe (9)	Severe (9)	Severe (9)	Severe (9)	Severe (3,6)
241G3		Severe (5)	Severe (9)	Severe (9)	Severe (9)	Severe (9)	Severe (3,6)
242A	Kendall	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
242B		Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
243A	St. Charles	Slight	Slight	Slight	Slight	Slight	Slight
243B		Slight	Slight	Slight	Slight	Moderate (6)	Slight
243B2		Slight	Slight	Slight	Slight	Moderate (6)	Slight
243C		Slight	Slight	Slight	Slight	Moderate (6)	Slight
243C2		Slight	Slight	Slight	Slight	Moderate (6)	Slight
243C3		Slight	Slight	Moderate (3)	Moderate (3)	Moderate (6)	Slight
243D2		Moderate (2)	Moderate (6)	Moderate (6)	Moderate (6)	Severe (6)	Moderate (6)
278A	Stronghurst	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
278B		Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
280B	Fayette	Slight	Slight	Slight	Slight	Moderate (6)	Slight
280C2		Slight	Slight	Slight	Slight	Moderate (6)	Slight
290A	Warsaw	Slight	Slight	Slight	Slight	Slight	Slight
290B		Slight	Slight	Slight	Slight	Moderate (6)	Slight
290C2		Slight	Slight	Slight	Slight	Moderate (6)	Slight
290C3		Slight	Slight	Slight	Slight	Moderate (6)	Slight
293A	Andres	Moderate (3)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
293B		Moderate (3)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
294B	Symerton	Slight	Slight	Slight	Slight	Moderate (6)	Slight
294C		Slight	Slight	Slight	Slight	Moderate (6)	Slight
294C2		Slight	Slight	Slight	Slight	Moderate (6)	Slight
295A	Mokena	Moderate (3)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
295B		Moderate (3)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
295B2		Moderate (3)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
298B	Beecher	Moderate (3)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
311B	Ritchey	Severe (4)	Moderate (1)	Slight	Slight	Severe (1,6)	Slight
311C2		Severe (4)	Moderate (1)	Slight	Slight	Severe (1,6)	Slight
314	Joliet	Severe (6)	Severe (1,4)	Severe (2,4)	Severe (2,4)	Severe (1,4)	Severe (4)
315B	Channahon	Severe (4)	Moderate (1)	Slight	Slight	Severe (1,6)	Slight
317	Millsdale	Severe (6)	Severe (1,4)	Severe (2,4)	Severe (2,4)	Severe (1,4)	Severe (4)
318B	Lorenzo	Slight	Slight	Slight	Slight	Moderate (6)	Slight
318C2		Moderate (1)	Slight	Slight	Slight	Moderate (6)	Slight
320B	Frankfort	Severe (4)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2,6)	Moderate (2)
320B2		Severe (4)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2,6)	Moderate (2)
320C2		Severe (4)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2,6)	Moderate (2)
321A	DuPage	Severe (5)	Severe (4)	Moderate (4)	Moderate (4)	Moderate (4)	Slight
321B		Severe (5)	Severe (4)	Moderate (4)	Moderate (4)	Moderate (4)	Slight
325B	Dresden	Slight	Slight	Slight	Slight	Moderate (6)	Slight
325C2		Slight	Slight	Slight	Slight	Moderate (6)	Slight
327B	Fox	Slight	Slight	Slight	Slight	Moderate (6)	Slight
327C2		Slight	Slight	Slight	Slight	Moderate (6)	Slight
327D2		Moderate (1)	Moderate (6)	Moderate (6)	Moderate (6)	Severe (6)	Moderate (6)
327E2		Severe (4)	Severe (6)	Severe (6)	Moderate (6)	Severe (6)	Moderate (6)
330	Peotone	Severe (6)	Severe (2,4)	Severe (2,7)	Severe (2,7)	Severe (2,7)	Severe (4)
344A	Harvard	Slight	Slight	Slight	Slight	Slight	Slight
344B		Slight	Slight	Slight	Slight	Moderate (6)	Slight
344C2		Slight	Slight	Slight	Slight	Moderate (6)	Slight

Table 5. — Continued

		Cropland [a] Drainage	Water [b] Hazards	Cropland [c] Limitations	Pond or [d] Reservoir	Source of [e] Topsoil	Septic Filter [f] Field	Sewage [g] Lagoon
375A	Rutland	Fair (1)	Moderate (4)	Slight G3	Slight	Good	Severe (2,5)	Slight
375B		Fair (1)	Moderate (3,4)	Slight G3	Slight	Good	Severe (2,5)	Moderate (1)
375B2		Good	Moderate (3,4)	Moderate Y1	Slight	Fair (4)	Severe (2,5)	Moderate (1)
375C2		Good	Slight (2)	Moderate Y3	Slight	Fair (4)	Severe (5)	Moderate (1)
386B	Downs	Good	Slight (3)	Slight G2	Moderate (1)	Good	Slight	Moderate (1,2)
386C2		Good	Slight (2)	Moderate Y1	Moderate (1)	Fair (4)	Slight	Moderate (1,2)
388B	Wenona	Good	Slight (3)	Moderate Y1	Slight	Good	Moderate (5)	Moderate (1)
388C		Good	Slight (2)	Moderate Y3	Slight	Good	Moderate (5)	Moderate (1)
388C2		Good	Slight (2)	Moderate Y3	Slight	Fair (4)	Moderate (5)	Moderate (1)
389A	Hesch (shallow	Good (6)	Slight (3)	Severe R1	Severe (5)	Poor (3,8)	Severe (7)	Severe (5)
389B	variant)	Good (6)	Slight (3)	Severe R1	Severe (5)	Poor (3,8)	Severe (7)	Severe (5)
390-389A or VA	(Hesch	Good (6)	Slight (3)	Severe R1	Severe (5)	Fair (8)	Severe (7)	Severe (5)
390-389B or VB	complex)	Good (6)	Slight (3)	Severe R1	Severe (5)	Fair (8)	Severe (7)	Severe (5)
390-389C2 or VC2		Good (6)	Slight (2)	Severe R1	Severe (5)	Poor (4,8)	Severe (7)	Severe (5)
393A	Marseilles	Fair (1)	Moderate (4)	Slight G3	Moderate (5)	Fair (3)	Moderate (2,7)	Moderate (5)
393B		Fair (1)	Moderate (3,4)	Slight G3	Moderate (5)	Fair (3)	Moderate (2,7)	Moderate (1,5)
397F2	Boone	(9)	Slight (1)	Severe R2	Severe (5)	Poor (9)	Severe (9)	Severe (6)
400	Calco	Poor (2,5)	Very Severe (5,7)	Slight G2	Slight	Fair (1,6)	Severe (2,4)	Severe (3)
413B	Gale	Good	Slight (3)	Moderate Y1	Severe (5)	Fair (3)	Moderate (7)	Severe (5)
413C2		Good (6)	Slight (2)	Moderate Y3	Severe (5)	Poor (3,4)	Moderate (7)	Severe (5)
413E3		Good (6)	Slight (1)	Severe R2	Severe (5)	Poor (9)	Severe (1,7)	Severe (6)
435	Streator	Poor (2,3)	Severe (5,6)	Slight G2	Slight	Fair (1,6)	Severe (2,3)	Severe (3)
448B	Mona	Good	Slight (3)	Moderate Y1	Slight	Good	Moderate (5)	Moderate (1)
448B2		Good	Slight (3)	Moderate Y1	Slight	Fair (4)	Moderate (5)	Moderate (1)
448C2		Good	Slight (2)	Moderate Y3	Slight	Poor (4)	Moderate (5)	Moderate (1)
448C3		Good	Slight (2)	Severe R1	Slight	Poor (4)	Moderate (5)	Moderate (1)
451	Lawson	Poor (5)	Very severe (4,7)	Slight G2	Slight	Good	Severe (2,4)	Severe (3)
W451		Very poor (7)	Very severe (4,7)	Severe R3	Slight	Fair (10)	Severe (2,4)	Severe (3)
537	Hesch, gray subsoil variant	Poor (2,3,5)	Moderate (4)	Moderate Y2	Severe (5)	Fair (8)	Moderate (2,7)	Moderate (5)
549A	Marseilles	Good (1)	Slight (3)	Moderate Y2	Severe (5)	Fair (3)	Moderate (5,7)	Moderate (5)
549B		Good	Slight (3)	Moderate Y2	Severe (5)	Fair (3)	Moderate (5,7)	Moderate (1,5)
549C		Good	Slight (2)	Moderate Y3	Severe (5)	Fair (3)	Moderate (5,7)	Moderate (1,5)
549C2		Good	Slight (2)	Moderate Y3	Severe (5)	Poor (3,4)	Moderate (5,7)	Moderate (1,5)
549D2		Good (6)	Slight (1)	Severe R1	Severe (5)	Poor (4,7)	Severe (1,7)	Severe (1,5)
554B	Kernan	Good	Moderate (3,4)	Slight G3	Slight	Fair (3)	Severe (2,3)	Moderate (1)
560C2	St. Clair	Good (8)	Slight (2)	Moderate Y3	Slight	Poor (3,4)	Severe (3)	Moderate (1)
560D		Good (6)	Slight (1)	Severe R1	Slight	Poor (3,7)	Severe (1,3)	Severe (1)
560D2		Good (6)	Slight (1)	Severe R1	Slight	Poor (4)	Severe (1,3)	Severe (1)
560E2		Good (6)	Slight (1)	Severe R3	Slight	Poor (9)	Severe (1,3)	Severe (1)
572A	Loran	Fair (1)	Moderate (4)	Moderate Y1	Severe (5)	Good	Moderate (2,7)	Moderate (5)
572B		Fair (1)	Moderate (3,4)	Moderate Y1	Severe (5)	Good	Moderate (2,7)	Moderate (1,5)
572C2		Good	Slight (2)	Moderate Y3	Severe (5)	Fair (4)	Moderate (7)	Severe (1,5)
633	Traer	Poor (1,2)	Severe (5,6)	Moderate Y2	Moderate (1)	Fair (1)	Severe (2,4)	Severe (3)

[a] CROPLAND DRAINAGE . . . . . (1) Surface drains, random tile lines, or random tile lines with surface inlets may be needed as outlets for low spots. (2) High water table soil, needs artificial drainage or maintenance of present drainage system to be farmed. (3) Tileable, when adequate outlets are available. (4) Tile not recommended, use shallow surface drains, or random tile with surface inlets. (5) Subject to periodic flooding or ponding. (6) Excessive drainage and droughty conditions prevail. (7) Marshy area. (8) Clayey soils, slow to dry out in spring. (9) Not applicable.

[b] WATER HAZARDS . . . . . (1) Rapid runoff. (2) Moderate runoff. (3) Slow runoff. (4) Seasonal high water table of 1 to 3 feet below the surface. (5) Seasonal high water table of 0 to 1 foot below the surface. (6) Ponding hazard. (7) Flooding hazard. (8) Poor drainage outlets.

[c] CROPLAND LIMITATIONS . . . . (G1) Soils of very high yield potential with slight limitations. (G2) Soils of very high yield potential that needs some conservation or management practice to reach their potential. (G3) Soils of high yield potential that have a continuing limitation affecting yields. With sound conservation and management practices they are suited for continuous intertilled cropping. (Y1) Soils capable of high yield potential when sound conservation and management practices are used. (Y2) Soils with moderate to high yield potential when intensive drainage and management practices are used. (Y3) Soils of moderate yield potential. Yields are limited because of, or a combination of, slopes, erosion, or a limiting soil factor. Intensive conservation and management practices are needed for profitable intertilled crop production. (R1) Soils that are suited only to the production of crops that require a minimum of tillage operations. (R2) Soils suited only to the production of crops that provide permanent cover to the soils (pasture or woodland). (R3) Soils with very severe limitations due to wetness or a combination of steep slopes, shallow depth to rock, and erosion. They must have permanent cover of grass or trees. Marshland areas are best utilized as wildlife habitat.

[d] POND OR RESERVOIR . . . . . (1) Moderate seepage probable. (2) Material too permeable to meet specifications. (3) Rapid seepage probable. (4) Steep slopes, may have variable geological strata, needs on-site investigation. (5) Bedrock exposures.

[e] SOURCE OF TOPSOIL* . . . . . *Only the surface layer is rated. See Table for thickness of surface horizon. (1) Seasonal high water table. (2) Possible source of organic material, muck or peat. (3) Thin surface layer and low organic matter content. (4) Surface layer thin or eroded, clayey material at or near surface. (5) Clayey textured surface, not easily worked when wet. (6) Very clayey textured surface, sticky when wet and cloddy when dry. (7) Slopes difficult to work, stripping will cause severe erosion. (8) Sandy textures, low in organic matter content and plant nutrients. (9) Strongly sloping to steep and very little or no topsoil. (10) Marshy or swampy.

[f] SEPTIC TANK FILTER FIELD . . (1) Slope limitation. (2) Seasonal high water table. (3) Slow to moderately slow permeability. (4) Ponding or flooding hazard. (5) Moderate to moderately slow permeability. (6) Unsuitable material for filter field. (7) Bedrock shallow. (8) Very permeable material may cause pollution of nearby water supplies. (9) Very unsatisfactory sites because of steep slopes.

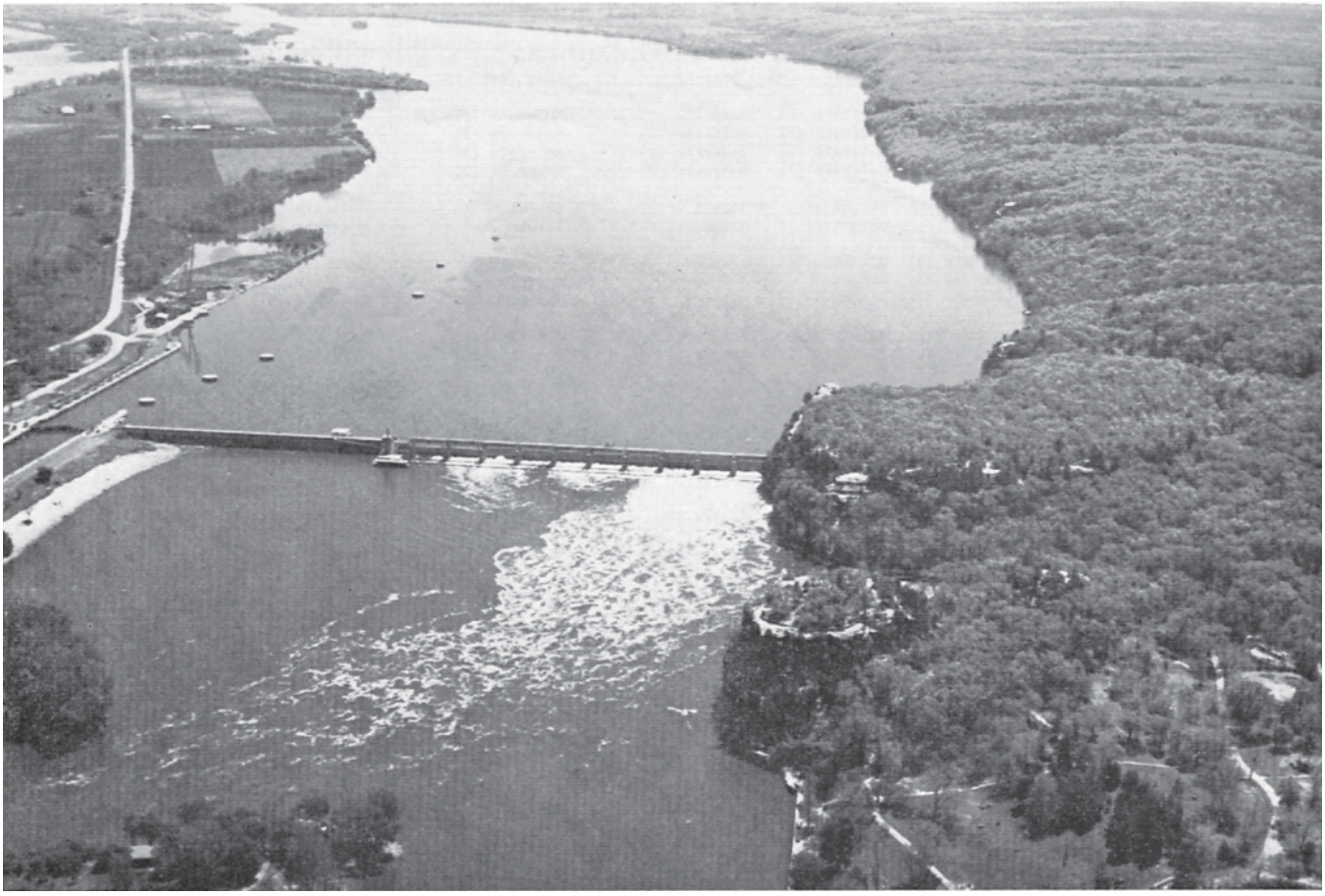
[g] SEWAGE LAGOON . . . . . (1) Slope limitation. (2) Hazard of seepage. (3) High water table or ponding and flooding hazard. (4) Material too permeable. (5) Shallow to bedrock. (6) Not suitable because of slope or soil conditions.

[h] URBANIZING AREAS . . . . . (1) Moderate limitations due to slope. (2) Moderate limitations due to soil material or wetness. (3) Moderate limitations due to soil material and slope or soil material and wetness. (4) Severe limitations due to slope, soil material, and wetness or a combination of these features. (5) Severe limitations due to slope, soil material, wetness, and flooding, or a combination of these. (6) Severe limitations due to soil material, extreme wetness and flooding.

[i] RECREATIONAL USES . . . . . (1) Bedrock shallow. (2) Seasonal high water tables. (3) Eroded areas. (4) Flooding or ponding danger. (5) Soil slow to dry out. (6) Slope limitations. (7) Sticky surface when wet. (8) Sandy surfaces, grass difficult to maintain. (9) Use not feasible, or unsuitable.

Table 5. — Concluded

		Urbanizing[h] Area	Cottage and[i] Utility Bldgs.	Tent and Trailer[i] Campsite	Picnic and Exten-[i] sive Play Area	Intensive Play[i] Area	Paths and Trails[i]
375A	Rutland	Moderate (3)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
375B		Moderate (3)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2,6)	Moderate (2)
375B2		Moderate (3)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2,6)	Moderate (2)
375C2		Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2,6)	Moderate (2)
386B	Downs	Slight	Slight	Slight	Slight	Moderate (6)	Slight
386C2		Slight	Slight	Slight	Slight	Moderate (6)	Slight
388B	Wenona	Moderate (2)	Slight	Slight	Slight	Moderate (6)	Slight
388C		Moderate (2)	Slight	Slight	Slight	Moderate (6)	Slight
388C2		Moderate (2)	Slight	Slight	Slight	Moderate (6)	Slight
389A	Hesch (shallow	Severe (4)	Severe (1)	Severe (1,8)	Severe (1,8)	Severe (1,8)	Moderate (8)
389B	variant)	Severe (4)	Severe (1)	Severe (1,8)	Severe (1,8)	Severe (1,8)	Moderate (8)
390-389A or VA (Hesch		Severe (4)	Severe (1)	Severe (1,8)	Severe (1,8)	Severe (1,8)	Moderate (8)
390-389B or VB complex)		Severe (4)	Severe (1)	Severe (1,8)	Severe (1,8)	Severe (1,8)	Moderate (8)
390-389C2 or VC2		Severe (4)	Severe (1)	Severe (1,8)	Severe (1,8)	Severe (1,8)	Moderate (8)
393A	Marseilles	Moderate (3)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
393B		Moderate (3)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2,6)	Moderate (2)
397F2	Boone	Severe (5)	Severe (1,6)	Severe (9)	Severe (9)	Severe (9)	Severe (6,8)
400	Calco	Severe (5)	Severe (2,4)	Severe (2,4)	Severe (2,4)	Severe (2,4)	Severe (2,4)
413B	Gale	Slight	Slight	Slight	Slight	Moderate (6)	Slight
413C2		Slight	Slight	Slight	Slight	Severe (1,6)	Slight
413E3		Severe (5)	Severe (1,6)	Severe (9)	Severe (9)	Severe (9)	Moderate (6)
435	Streator	Severe (5)	Severe (2,4)	Severe (2,7)	Severe (2,7)	Severe (2,7)	Severe (4)
448B	Mona	Moderate (2)	Slight	Moderate (5)	Moderate (5)	Moderate (6)	Slight
448B2		Moderate (2)	Slight	Moderate (5)	Moderate (5)	Moderate (6)	Slight
448C2		Moderate (2)	Slight	Moderate (5)	Moderate (5)	Moderate (6)	Slight
448C3		Moderate (2)	Moderate (3,5)	Severe (3,5)	Severe (3,5)	Severe (3,6)	Moderate (3)
451	Lawson	Severe (5)	Severe (4)	Severe (4)	Moderate (4)	Severe (4)	Moderate (4)
W451		Severe (6)	Severe (9)	Severe (9)	Severe (9)	Severe (9)	Severe (9)
537	Hesch, gray subsoil variant	Severe (4)	Severe (2)	Severe (2)	Severe (2)	Severe (2)	Severe (2)
549A	Marseilles	Slight	Slight	Slight	Slight	Slight	Slight
549B		Slight	Slight	Slight	Slight	Moderate (6)	Slight
549C		Slight	Slight	Slight	Slight	Moderate (6)	Slight
549C2		Slight	Slight	Slight	Slight	Moderate (6)	Slight
549D2		Severe (5)	Moderate (6)	Moderate (6)	Moderate (6)	Severe (6)	Moderate (6)
554B	Kernan	Moderate (3)	Moderate (5)	Moderate (5)	Moderate (5)	Moderate (6)	Moderate (5)
560C2	St. Clair	Severe (4)	Moderate (5)	Moderate (5)	Moderate (5)	Moderate (6)	Moderate (5)
560D		Severe (4)	Moderate (5)	Severe (5,6)	Severe (5,6)	Severe (6)	Moderate (6)
560D2		Severe (4)	Moderate (5)	Severe (5,6)	Severe (5,6)	Severe (6)	Moderate (6)
560E2		Severe (5)	Severe (6)	Severe (5,6)	Severe (5,6)	Severe (6)	Moderate (6)
572A	Loran	Moderate (3)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)
572B		Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (1,6)	Moderate (2)
572C2		Severe (4)	Moderate (1,2)	Moderate (2)	Moderate (2)	Moderate (1,6)	Moderate (2)
633	Traer	Severe (5)	Severe (2,4)	Severe (2,4)	Severe (2,4)	Severe (2,4)	Severe (2,4)



The Illinois River and the Starved Rock Lock and Dam near Utica. Starved Rock State Park is in the lower right quarter of the picture. (Fig. 20)

they affect the behavior of the soil when they are used or managed for different recreational purposes. The soil feature limiting the use is shown on the footnotes. *Cottage and utility buildings* applies to year-round cottages, washrooms and bathrooms, picnic shelters, and service buildings. *Tent and trailer campsites* applies to areas for camping and accompanying activities. They should be suitable for unsurfaced parking and intensive foot traffic. *Picnic and extensive play areas* should be suitable for picnics and intensive foot traffic, especially where picnic games can be played. *Intensive play areas* applies to areas that are developed for playgrounds and organized games. These areas need to be nearly level and to support intensive foot traffic. *Paths and trails* are areas used for trails, cross-country hiking, bridle paths, and other uses that allow for the movement of people.

GENESIS AND CLASSIFICATION OF LA SALLE COUNTY SOILS

Factors of Soil Formation

The factors that determine the kind of soil that forms at any given point are the composition of the parent material, the climate under which the soil material accumulated and weathered, the plants and animals on and in the soil, the relief or lay of the land, and time. Each of these factors modifies the effects of the other four.

Climate and vegetation are the active factors of soil formation. They alter the accumulated soil material and bring about the development of genetically related horizons. Relief, mainly by its influence on temperature and runoff, modifies the effects of climate and vegetation. The parent material also affects the kind of profile that can be formed and, in extreme cases, determines it almost entirely. Finally, time is needed to change the parent material into a soil. Usually a

long time is required for the development of distinct horizons.

Parent material. The parent materials of the soils of La Salle County are mainly loess and glacial till and to a lesser extent outwash and organic materials. Some areas have sandstone, shale, and limestone exposed at the surface, mainly on steeper slopes.

Loess, a silt-size, wind-deposited material, originated mainly in the floodplains of the major glacial outwash streams, such as the Mississippi and Illinois rivers. Here the prevailing winds from the west and northwest picked up the silty material and blew it in an easterly direction. Loess thickness on the stable uplands in western La Salle County reaches 10 feet in some places, but mostly ranges from 5 to 8 feet and thins to generally less than 2 feet in most areas of the eastern part of the county. Soil area A on the general soil map consists of loess over 5 feet thick; areas B, C, D, and E have 3 to 5 feet of loess over glacial till; and some soils in areas I and J also have 3 to 5 feet of loess.

Glacial till textures in the county include clay, silty clay, silty clay loam, loam, and sandy loam (Wascher et al., 1960). The unweathered till is calcareous. Clay and silty clay till are found in soil areas E, F, and K; silty clay loam till in areas C, G, H, and J; loam till in areas B, H, and J; and sandy loam till in areas D and J in the northeastern part of the county.

The outwash material in the county consists of both glacial outwash and outwash deposited in stream terraces. Textures range from gravel to silt loam. Soil areas D and part of J on the general soil map consist primarily of about 3 feet of loess over stratified loamy glacial outwash material and soil area L consists mainly of gravelly outwash material.

Soils and land types that are shallow to sandstone, shale, and limestone occur along all the major river valleys in the county.

The organic parent material consists of the fibrous remains of grasses, sedges, rushes, and reeds that accumulated in depressional areas in shallow water. Mucks are well-decomposed organic matter with moderate amounts of mineral matter.

Plants and animals. Plants, micro-organisms, earth worms, and other forms of life that live on or in the soil are active in the soil-forming processes. As plants die and decay, they contribute organic matter to the soils. Bacteria and fungi promote the decomposition of plant remains and the incorporation of organic matter into the soils. Burrowing animals help loosen the soil.

Organic matter accumulates in the soils that are under grass, and it accumulates on the surface of the soils that are under forest vegetation. Soils under forest vegetation develop more rapidly than those under grass, possibly because the more complete decomposition outside the soil produces more chelating substances, which promote the downward movement of iron and aluminum.

Native vegetation in La Salle County consisted of grass and forest. Soils that formed under grass are darker colored than those that formed under forest vegetation and have a different sequence of horizons. Virgin soils that formed under grass have a 10- to 15-inch A1 horizon, but no A2 horizon. Soils that formed under forest vegetation have a 1- to 5-inch A1 horizon and a light-colored A2 horizon. Soils that formed in transitional areas where forest is encroaching on grass have a 5- to 10-inch A1 horizon and a light-colored A2 horizon.

The soils in soil associations A, B, C, D, E, F, G, and H were developed mainly under grass and those in the other soil association were developed mainly under forest or transitional vegetation.

Soil formation has been greatly affected by the activities of man in the following ways. The kind of vegetation has been changed by clearing forested areas and seeding them to crops. Erosion in sloping areas and deposition of soil materials in low areas have been hastened by cultivating sloping soils. The natural condition of the soils has been altered by draining wet soils, irrigating dry soils, applying lime to acid soils, and applying large amounts of fertilizer. The beginning of a new cycle of soil formation has been forced in places where much grading has destroyed soil profiles or much filling has covered them.

Relief. Under given climatic conditions and in uniform parent materials, relief largely controls the amount of moisture in the soils. It influences the amount of runoff, infiltration, drainage water, and the degree of erosion. The direction of slopes is of some importance. Because south-facing slopes receive direct rays from the sun, they have more evaporation and are generally drier than north-facing slopes.

In general, sloping soils are better drained than soils in low-lying areas and nearly level but coarse-textured soils are better drained than more sloping but fine-textured soils.

The degree of drainage governs the oxidation and hydration of certain mineral compounds, mainly iron. In general, well-drained soils are well oxidized and poorly drained soils are poorly oxidized. The degree of oxidation and hydration, in turn, determines the brown, yellowish-brown, and gray colors in soils that have not been darkened by organic matter. There are brown (10YR 5/3) and yellowish-brown (10YR 5/4

and 5/8) colors in the subsoil of well-drained soils that have a low water table; gray and brown mottles in the subsoil of moderately well-drained to somewhat poorly drained soils that have a fluctuating water table; and gray (10YR 5/1) to dark gray (10YR 5/1) to dark gray (10YR 4/1) matrix colors and a few yellowish-brown (10YR 5/4 and 5/6) mottles in the subsoil of poorly drained soils that have a high water table.

In the more sloping areas, part of the rainfall runs off and with less water passing through the profile, soil development has not proceeded quite as far. Soil horizons are not so strongly differentiated and chemical weathering has not been as severe. On quite steep slopes, where runoff is very rapid, geologic erosion or the removal of soil under natural conditions may almost keep pace with soil development. Soils on these slopes usually are thin and weakly developed.

Climate. Climate affects soil formation through its effect on weathering, vegetation, and erosion. Freezing and thawing help break down minerals and rock fragments. Wind causes dust-storms and the shifting of sand dunes. Water received as rainfall percolates downward in soils that have favorable slope and permeability and carries with it bases and clay. The bases and clay accumulate in the lower soil horizons. Among the bases that accumulate are calcium, magnesium, and potassium. Clay has properties quite different from the original soil material.

La Salle County has a humid temperature climate that has been favorable for soil development. Both rainfall and temperature have encouraged growth of grass and trees. Enough water has percolated through the soils to cause the downward movement of fine particles, colloids, and soluble minerals. Consequently, most of the soils have a greater proportion of silicon in the surface layer, an accumulation of clay in the subsoil, and an acid reaction. For more on climate see page 12.

Time. Time is necessary for the formation of soil from parent material. Normally a long period is required for formation of soils that have distinct, well-expressed horizons, but the length of time is largely dependent on the combined action of the other soil-forming factors. For example, more time is required if the parent material is fine textured than if it is coarse textured, because of the slow percolation of water in fine-textured material and the consequently slower leaching of lime out of the soil.

In general, soil development is faster in humid climates which support good vegetation growth than in dry climates which support little vegetation. On slopes where geologic erosion is great, soils may be in the early stages of development, even though the slopes have been exposed to weathering for thousands of years.

Geologically, the upland soils in La Salle County are young. They were formed in till laid down about 15,000 years B.P. and in loess laid down 9,000 to 15,000 years B.P. Much of the stream alluvium would be still younger.

Taxonomic Classification of La Salle County Soils

Soils are classified so that we can more easily remember their significant characteristics, assemble knowledge about them, see their relationship to one another, and understand their behavior and their response to the whole environment. Through classification and the use of soil maps, we can apply our knowledge of soils to specific tracts of land.

The current system of soil classification used by the National Cooperative Soil Survey was adopted in 1965 and is under continual study. Those interested in the development of the system should refer to the latest literature available (USDA, 1960; Simonson, 1962; USDA, 1970).

The current system consists of six categories. Beginning with the most inclusive, these categories are order, suborder, great group, subgroup, family, and finally the series. The criteria for classification are soil properties that are measurable or observable, but the properties are selected so that soils of similar genesis are grouped together. Placement of some series in the current system of classification, particularly in families, may change as more precise information becomes available.

Table 6 shows the classification of the soil series in La Salle County according to the current system. The categories of the current system are defined briefly in the following paragraphs.

Order

Soils are grouped into orders according to properties that seem to have resulted from the same processes acting to about the same degree on the parent material. Ten soil orders are recognized in the current system: Entisols, Vertisols, Inceptisols, Aridisols, Mollisols, Spodosols, Alfisols, Ultisols, Oxisols, and Histosols, The Entisols, Inceptisols, Mollisols, Alfisols, and Histosols are represented in La Salle County.

Entisols are recent soils in which there has been little, if any, horizon development. Inceptisols occur mostly on young, but not recent, land surfaces. Mollisols have a thick, dark-colored surface layer, moderate

Table 6. — Taxonomic Classification of La Salle County Soils

Order	Suborder	Great Group	Subgroup	Family	Series
Entisols	Psamments	Quartzipsamments	Typic Quartzipsamments	Mesic, uncoated	Boone
				Fine loamy, mixed, mesic	Hennepin
Inceptisols	Ochrepts	Eutrochrepts	Typic Eutrochrepts	Fine, illitic, mesic	Chatsworth
Mollisols	Aquolls	Argiaquolls	Typic Argiaquolls	Fine, mixed, mesic	Millsdale
		Haplaquolls	Typic Haplaquolls	Coarse loamy, mixed, mesic	Hesch, gray subsoil variant
				Fine loamy, mixed, mesic	Selma
				Fine silty, mixed, mesic	Sable
					Drummer
				Fine, montmorillonitic, mesic	Streator
				Fine, mixed, mesic	Ashkum
					Bryce
			Vertic Haplaquolls	Fine, montmorillonitic, mesic	Rantoul
					Wabash
			Cumulic Haplaquolls	Fine loamy, mixed, calcareous, mesic	Millington
				Fine silty, mixed, mesic	Sawmill
				Fine, montmorillonitic, mesic	Peotone
				Fine silty, mixed, calcareous, mesic	Calco
			Lithic Haplaquolls	Loamy, mixed, mesic	Joliet
		Calciaquolls	Typic Calciaquolls	Fine silty, mixed, mesic	Harpster
	Udolls	Argiudolls	Typic Argiudolls	Coarse loamy, mixed, mesic	Hesch
				Fine loamy over sandy or sandy skeletal, mixed, mesic	Lorenzo
					Warsaw
				Fine loamy, mixed, mesic	LaRose
					Symerton
					Mona
				Fine silty, mixed, mesic	Proctor
					Tama
					Plano
					Catlin
					Saybrook
				Fine, montmorillonitic, mesic	Wenona
				Fine, illitic, mesic	Varna
			Aquic Argiudolls	Coarse loamy, mixed, mesic	Ridgeville
				Fine loamy, mixed, mesic	Andres
					Mokena
				Fine silty, mixed, mesic	Muscatine
					Elburn
					Loran
					Brenton
				Fine, montmorillonitic, mesic	Flanagan
					Rutland
				Fine, illitic, mesic	Elliott
					Swygert
				Very fine, illitic, mesic	Clarence
			Lithic Argiudolls	Loamy, mixed, mesic	Channahon
		Hapludolls	Typic Hapludolls	Sandy skeletal, mixed, mesic	Rodman
				Coarse loamy, mixed, mesic	Dickinson
			Cumulic Hapludolls	Fine loamy, mixed, mesic	DuPage
					Ross
				Fine silty, mixed, mesic	Lawson
			Lithic Hapludolls	Sandy, mixed, mesic	Hesch, shallow variant
			Entic Hapludolls	Sandy, mixed, mesic	Sparta
	Albolls	Argialbolls	Argiaquic Argialbolls	Fine silty, mixed, mesic	Thorp
Alfisols	Udalfs	Hapludalfs	Typic Hapludalfs	Coarse loamy, mixed, mesic	Alvin
				Fine loamy over sandy or sandy skeletal, mixed, mesic	Fox
				Fine silty over sandy or sandy skeletal, mixed, mesic	Gale
				Fine loamy, mixed, mesic	Strawn
				Fine silty, mixed, mesic	Fayette
					St. Charles
					Birkbeck
					Dodge
					Camden
					Marseilles
				Fine, illitic, mesic	Morley
					St. Clair
			Aquic Hapludalfs	Fine, montmorillonitic, mesic	Marseilles, gray subsoil variant
			Mollic Hapludalfs	Fine loamy over sandy or sandy skeletal, mixed, mesic	Dresden
				Fine silty, mixed, mesic	Harvard
					Downs
					Batavia
			Aquollic Hapludalfs	Fine, montmorillonitic, mesic	Sunbury
			Lithic Hapludalfs	Loamy, mixed, mesic	Ritchey
	Aqualfs	Ochraqualfs	Aeric Ochraqualfs	Fine silty, mixed, mesic	Starks
					Stronghurst
					Kendall
				Fine, montmorillonitic, mesic	Sabina
					Kernan
				Fine, illitic, mesic	Blount
					Nappanee
			Udollic Ochraqualfs	Fine silty, mixed, mesic	Millbrook
					Atterberry
					Virgil
				Fine, illitic, mesic	Beecher
					Frankfort
			Typic Ochraqualfs	Fine, montmorillonitic, mesic	Traer
Histosols	Saprists	Medisaprists	Typic Medisaprists	Euic, mesic	Houghton
					Lena

to strong structure, and base saturation of more than 50 percent. Alfisols contain accumulated aluminum and iron, have argillic or natric horizons, and have a base saturation of more than 35 percent. Histosols are organic soils.

Suborder

Each order is divided into suborders, primarily on the basis of soil characteristics that indicate genetic similarity. The suborders have a narrower climatic range than the order. The criteria for suborders reflects either the presence or absence of waterlogging or soil differences resulting from climate or vegetation.

Great Group

Each suborder is divided into great groups, on the basis of uniformity in kind and sequence of genetic horizons.

Table 7. — Chemical Analyses and Particle Size Distribution of Selected Soils in La Salle County

Soil and location	Horizon	Depth inches	pH	% organic matter	Exchangeable cations me./100 gm. Ca	Mg	K	Na	Cation exchange capacity me./100 gm.	% base saturation	Percent of Particle Size Sand 2-.05 mm.	Silt .05-.002 mm.	Clay <.002 mm.
Drummer silty clay loam	Ap	0-8	6.9	5.1	25.1	8.0	3.7	Tr.	32.3	100	4.4	65.7	29.9
T34N, R2E, Sec. 14,	A12	8-15	6.6	2.7	20.6	8.0	2.5	Tr.	28.2	100	3.6	64.0	32.4
SE160, SE40, NE10	B21g	15-19	6.7	1.0	17.9	8.8	2.5	.1	27.1	100	2.7	63.2	34.1
	B22g	19-26	6.7	.6	15.6	7.9	1.2	.1	23.0	100	2.7	68.7	28.6
	B31g	26-40	7.0	.4	14.9	7.8	1.2	.1	21.8	100	5.4	68.2	26.4
	IIB32g	40-50	calc.	.2	-	-	-	-	11.6	100	18.5	65.1	16.4
	IICg	50-60	calc.	.2	-	-	-	-	6.8	100	56.7	32.7	10.6
Fayette silt loam	A1	0-6	5.7	2.8	7.0	1.6	.4	Tr.	11.9	76	3.6	81.5	14.9
T34N, R1E, Sec. 11,	A21	6-9	5.7	1.2	6.2	1.4	.4	Tr.	10.3	78	2.4	80.5	17.1
NW160, NE40, NE10	A22	9-13	5.7	.8	10.1	2.1	.4	.1	13.4	95	3.3	74.0	22.7
	B1	13-16	5.9	.6	11.2	3.6	.4	.1	15.7	97	2.0	70.7	27.3
	B21t	16-22	5.8	.5	13.2	5.1	.5	.1	19.6	96	3.1	65.2	31.7
	B22t	22-32	5.8	.4	12.3	6.0	.5	.1	20.1	94	2.8	65.9	31.3
	B31t	32-41	5.6	.3	9.9	5.7	.4	.1	18.0	89	5.7	66.7	27.6
	B32	41-50	5.4	.2	9.6	6.0	.5	.1	16.9	96	3.0	70.0	27.0
	B32	50-60	5.5	.2	9.3	5.9	.4	.1	16.4	96	2.7	73.0	24.3
Streator silty clay	Ap	0-8	7.4	-	-	-	-	-	-	-	3.3	59.3	37.4
loam T30N, R2E, Sec.	A12	8-12	7.5	-	-	-	-	-	-	-	3.3	54.3	42.4
19, NE160, NE40, NE10	B21	12-16	7.3	-	-	-	-	-	-	-	3.7	54.8	41.5
	B22g	16-20	7.1	-	-	-	-	-	-	-	3.8	56.9	39.3
	B23g	20-30	7.2	-	-	-	-	-	-	-	2.6	59.4	38.0
	B31g	30-38	7.2	-	-	-	-	-	-	-	4.2	59.7	36.1
	B32g	38-42	7.5	-	-	-	-	-	-	-	4.0	58.5	37.5
	IIB33g	42-51	calc.	-	-	-	-	-	-	-	9.3	42.1	48.5
	IIC	51-60	calc.	-	-	-	-	-	-	-	-	-	-
St. Clair silt loam	A1	0-3	6.6	4.4	11.0	4.2	.2	.2	16.2	96	5.8	72.4	21.8
T33N, R4E, Sec. 13,	A2	3-9	5.2	1.4	5.1	3.9	.2	.1	13.7	67	5.2	65.9	28.9
NE160, NE40, NE10	B1t	9-13	4.9	1.4	7.2	10.0	.4	.2	22.5	79	4.2	40.7	55.1
	B2t	13-18	6.3	1.2	9.9	13.2	.4	.2	21.8	100	3.6	33.4	63.0
	IIB3t	18-28	calc.	.8	-	-	-	-	-	100	7.1	36.9	56.0
	IIC	28-50	calc.	1.1	-	-	-	-	-	100	5.5	34.6	59.9
Stronghurst silt loam	A1	0-4	5.4	3.7	6.8	1.8	.5	Tr.	13.4	68	4.0	81.0	15.0
T34N, R1E, Sec. 11,	A2	4-9	5.2	1.0	5.6	1.7	.4	Tr.	10.6	73	3.2	79.3	17.5
NW160, NE40, NE10	B1t	9-14	4.7	.8	11.1	4.8	.5	.1	17.8	93	3.4	68.5	28.1
	B21t	14-22	4.8	.7	16.1	8.8	.7	.1	28.5	90	2.9	60.1	37.0
	B22t	22-29	5.4	.5	14.6	8.8	.6	.1	24.0	100	2.7	65.6	31.7
	B23t	29-40	6.4	.4	15.6	9.1	.6	.1	24.0	100	3.5	66.2	30.3
	C1	40-46	7.4	.3	-	-	.4	.1	21.7	100	4.6	70.4	25.0
	C2	46-66	calc.	.2	-	-	-	-	-	100	8.8	80.3	10.9
Thorp silt loam	Ap	0-10	7.1	3.4	11.5	4.9	.6	.1	16.7	100	14.8	62.9	22.3
T36N, R5E, Sec. 27,	A21	10-15	6.8	1.6	6.5	3.6	.3	.1	10.8	96	19.8	62.7	17.5
SE160, SW40, NW10	A22	15-21	6.4	1.1	5.4	2.8	.2	.1	9.3	91	21.5	62.4	16.1
	B1g	21-25	6.1	.9	7.8	3.6	.4	.1	13.8	86	16.5	61.0	22.5
	B21gt	25-34	6.0	.6	12.4	5.4	.5	.1	20.7	89	8.6	60.6	30.8
	B22gt	34-44	5.8	.5	10.6	4.5	.5	.1	17.4	90	13.2	60.6	26.2
	IIB3gt	44-54	6.0	.4	8.1	3.6	.5	.1	13.7	89	27.5	52.2	20.3
	IIC1g	54-59	5.9	.3	4.6	1.9	.3	.1	7.9	86	51.7	36.3	12.0
	IIC2g	59-66	5.8	.2	6.5	2.9	.4	.1	11.1	88	19.1	62.5	18.4
	IIC3	66-75	6.0	.2	2.3	1.0	.1	.1	3.9	88	78.9	14.0	7.1
	IIC4g	75-80	6.6	-	3.7	2.1	.2	.1	6.0	100	72.2	16.2	11.6
Traer silt loam	A1	0-5	5.6	4.0	6.8	1.8	.4	Tr.	13.0	69	2.5	80.8	16.7
T34N, R1E, Sec. 11,	A2	5-14	5.0	.6	4.7	1.7	.3	Tr.	9.6	70	2.5	79.6	17.9
NW160, NE40, NE10	B1	14-18	4.6	.4	9.7	4.8	.5	.1	18.3	82	1.5	68.7	29.8
	B21tg	18-23	4.6	.6	14.3	8.2	.6	.1	27.1	86	1.2	59.2	39.6
	B22tg	23-28	4.8	.5	16.0	10.0	.7	.2	28.7	94	.9	59.3	39.8
	B23tg	28-36	5.1	.4	17.2	10.7	.6	.2	28.8	100	1.5	60.3	38.2
	B24tg	36-46	6.3	.4	17.6	10.9	.5	.2	26.8	100	3.2	61.8	35.0
	C1g	46-53	6.9	.4	15.0	8.8	.4	.1	22.5	100	2.8	68.9	28.3
	C2g	53-62	7.3	.3	-	-	-	-	19.8	100	4.6	70.2	25.2

Subgroup

Each great group is divided into subgroups, one representing the central (typic) concept of the group, and others called intergrades made up of soils that have mostly the properties of one great group but also one or more properties of another great group.

Family

Families are established within subgroups, primarily on the basis of properties important to plant growth. Some of these properties are: texture, mineralogy, reaction, soil temperature, permeability, consistence, and thickness of horizons.

Series

The series has the narrowest range of characteristics of the categories in the classification system.

The series is rather uniform in certain characteristics and arrangement of horizons. If genetic horizons are thin or absent, as in some alluvial soils for example, the series are uniform in soil properties within a defined depth limit, usually the upper 40 inches. A soil series is a group of soils which has developed from a particular kind of parent material and has genetic horizons similar in differentiating characteristics and arrangement in the profile.

These differentiating characteristics include such

morphological features as kind, thickness, and arrangement of horizons, as well as their color, structure, reaction, consistence, mineralogical and chemical composition, and texture below the A horizon. The soil series is the lowest category in the taxonomic key (Table 6).

Chemical and Physical Characteristics and Water Table Studies of Some La Salle County Soils

Chemical and Physical Properties

Selected chemical and physical properties of several soils occurring in La Salle County are given in Table 7. The soil descriptions associated with the data for Drummer, Fayette, Streator, Stronghurst, and Traer soils are those in the soil description section of this report. The data for the St. Clair and Thorp soils are for soil profiles sampled near, but not exactly at, the site shown in the soil description section.

Water Table Studies

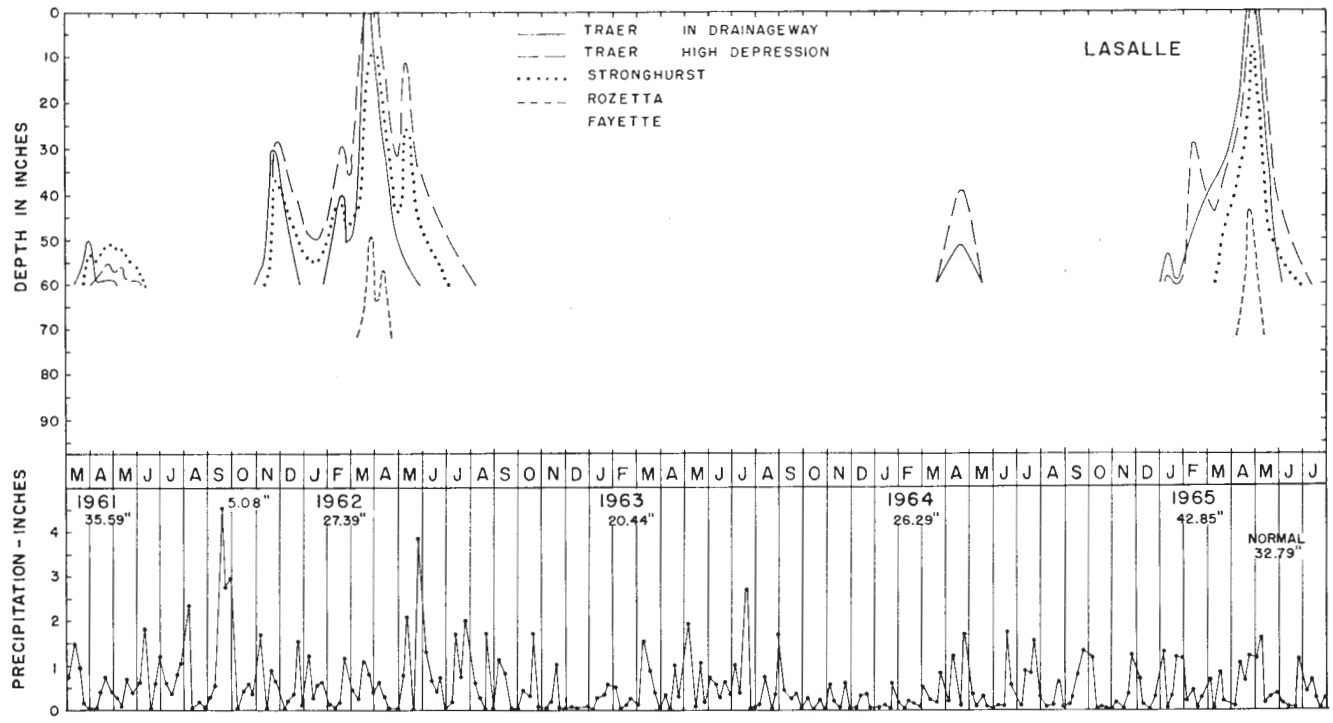
The depth to the free water tables were measured in a natural drainage sequence of loess-derived, light-colored, forest-derived soils (Fig. 21) (Fehrenbacher et al., 1969). These included the poorly drained Traer, somewhat poorly drained Stronghurst, moderately well-drained Rozetta, and well-drained Fayette. The Rozetta series does not appear as a correlated soil in this report because the little that was mapped in the county was included with the Fayette series.

Measurements were made in two Traer soils, one in a drainageway and one in a slight depression on a higher area. Traer is slowly to moderately slowly permeable, and the other soils are moderately permeable.

The area was in bluegrass pasture with scattered trees. There were no tile in the high depressional Traer or Stronghurst, but the water table in the drainageway Traer may have been influenced slightly by tile.

Depending on rainfall, the water table was high in the poorly and somewhat poorly drained soils in the spring of two of the five years (1962 and 1965) and was briefly as high as 45 to 50 inches in the moderately well-drained Rozetta. The water table was never above 84 inches in the well-drained Fayette. In the very dry year of 1963, the water table did not rise above 60 inches in any of the soils.

Measurements at all sites emphasize the need for adequate drainage systems to keep water tables from being too high at times in poorly and somewhat poorly drained soils.



Water tables and precipitation at La Salle County site (T34N, R1E, Sec. 11). (Fig. 21)

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GLOSSARY

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as crumbs, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvium. Soil material, such as sand, silt, or clay, that has been deposited on land by streams.

Available moisture capacity. The capacity of the soil to hold water that can be used by plants. Water held between the wilting point (15 atmospheres of tension) and the field capacity (⅓ atmosphere). In this publication classes of available moisture capacity to a depth of 60 inches are as follows:

Very high. 12 inches or more	Low . . . . . 3 to 6 inches
High . . . . . 9 to 12 inches	Very low. . . . . Less than 3
Moderate . 6 to 9 inches	inches

Base saturation. The degree to which material that has base-exchange properties is saturated with exchangeable cations other than hydrogen, expressed as a percentage of the cation-exchange capacity.

Calcareous soil. A soil that contains enough calcium carbonate (often with magnesium carbonate) to effervesce (fizz) visibly when treated with cold, dilute hydrochloric acid.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of clay on the surface of a soil aggregate. Synonyms: clay coat, clay skin.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrations of compounds, or of soil grains cemented together. The composition of some concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are examples of material commonly found in concretions.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are —

Loose. Noncoherent when dry or moist; does not hold together in a mass.

Friable. When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm. When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic. When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky. When wet, adheres to other material, and tends to stretch somewhat and pull apart, rather than to pull free from other material.

Hard. When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft. When dry, breaks into powder or individual grains under very slight pressure.

Cemented. Hard and brittle; little affected by moistening.

Contour farming. Plowing, cultivating, planting, and harvesting in rows that are at right angles to the natural direction of the slope or parallel to the terrace grade.

Contour strip-cropping. Growing crops in strips that follow the contour or are parallel to terraces or diversions. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Cover crop. A close-growing crop grown primarily to improve and to protect the soil between periods of regular crop production; or a crop grown between trees and vines in orchards and vineyards.

Drainage, soil. Refers to the conditions of frequency and duration of periods of saturation or partial saturation that existed during the development of the soil, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven different classes of natural soil drainage are recognized.

Excessively drained soils are commonly very porous and rapidly permeable and have a low water-holding capacity.

Somewhat excessively drained soils are also very permeable and are free from mottling throughout their profile.

Well-drained soils are nearly free from mottling and are commonly of intermediate texture.

Moderately well-drained soils commonly have a slowly permeable layer in or immediately beneath the solum. They have uniform color in the A and upper B horizons and have mottling in the lower B and C horizons.

Somewhat poorly drained soils are wet for significant periods but not all the time, and in the Podzolic soils commonly have mottlings below a depth of 6 to 16 inches, in the lower A horizon and in the B and C horizons.

Poorly drained soils are wet for long periods and are light gray and generally mottled from the surface downward, although mottling may be absent or nearly so in some soils.

Very poorly drained soils are wet nearly all the time. They have a dark-gray or black surface layer and are gray or light gray, with or without mottling, in the deeper parts of the profile.

Erosion. The wearing away of the land surface by wind (sandblast), running water, and other geological agents. *Uneroded* means that more than 7 inches of the surface layer remains; *eroded* means that 3 to 7 inches of the surface layer remains; *severely eroded* means that less than 3 inches of the surface layer remains.

Gleyed soil. A soil in which waterlogging and lack of oxygen have caused the material in one or more horizons to be neutral gray in color. The term "gleyed" is applied to soil horizons with yellow and gray mottling caused by intermittent waterlogging.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, and covered by grass for protection against erosion; used to conduct surface water away from cropland.

Green manure catch crop. A crop that is plowed under while green for its beneficial effect on the soil.

Glacial till. Unassorted, unstratified sediment carried or deposited by glacial ice.

Horizon soil. A layer of soil, approximately parallel to the surface, that has distinct characteristics produced by soil-forming processes. These are the major horizons:

O horizon. The layer of organic matter on the surface of a mineral soil. This layer consists of decaying plant residues.

A horizon. The mineral horizon at the surface or just below an O horizon. This horizon is the one in which living organisms are most active and therefore is marked by the accumulation of humus. The horizon may have lost one or more of soluble salts, clay, and sesquioxides (iron and aluminum oxides).

B horizon. The mineral horizon below an A horizon. The B horizon is in part a layer of change from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics caused (1) by accumulation of clay, sesquioxides, humus, or some combination of these; (2) by prismatic or blocky structure; (3) by redder or stronger colors than the A horizon; or (4) by some combination of these. Combined A and B horizons are usually called the solum, or true soil. If a soil lacks a B horizon, the A horizon alone is the solum.

C horizon. The weathered rock material immediately beneath the solum. In most soils this material is presumed to be like that from which the overlying horizons were formed. If the material is known to be different from that in the solum, a Roman numeral precedes the letter C.

R layer. Consolidated rock beneath the soil. The rock usually underlies a C horizon but may be immediately beneath an A or B horizon.

Lime concretion. An aggregate cemented by the precipitation of calcium carbonate ($CaCO_3$).

Loess. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Mottled. Irregularly marked with spots of different colors that vary in number and size. Mottling in soils usually indicates poor aeration and lack of drainage. Descriptive terms are as follows: Abundance — *few, common,* and *many;* size — *fine, medium,* and *coarse;* and contrast — *faint, distinct* and *prominent*. The size measurements are these: *fine*, less than 5 millimeters (about 0.2 inch) in diameter along the greatest dimension; *medium*, ranging from 5 millimeters to 15 millimeters (about 0.2 to 0.6 inch) in diameter along the greatest dimension; and *coarse*, more than 15 millimeters (about 0.6 inch) in diameter along the greatest dimension.

Organic matter (content). A general term for plant and animal material, in or on the soil, in all stages of decomposition. Readily decomposed organic matter is often distinguished from the more stable forms that are past the stage of rapid decomposition. Average organic matter contents in surface horizons are reported in this publication as percent by weight for cultivated soils or for virgin soils as if they were cultivated.

Outwash, glacial. The material swept out, sorted, and deposited beyond the glacial ice front by streams of melt water.

Ped. An individual natural soil aggregate, such as a crumb, a prism, or a block, in contrast to a clod.

Phase, soil. A subdivision of a soil series, or other unit in the soil classification system made because of differences in the soil that affect its management but do not affect its classification in the natural landscape. A soil type, for example, may be divided into phases because of differences in slope, stoniness, thickness, or some other characteristic that affects its management but not its behavior in the natural landscape.

Porosity, soil. The degree to which the soil mass is permeated with pores or cavities.

Profile, soil. A vertical section of the soil through all its horizons and extending into the parent material.

Permeability, soil. The quality of a soil that enables it to transmit air and water. The following relative classes of soil permeability, used in this soil survey, refer to estimated rates of movement of water in inches per hour:

Inches per hour		*Inches per hour*	
Very slow	Less than 0.06	Moderate	0.63–2.00
Slow	0.06–0.20	Moderately rapid	2.00–6.3
Moderately slow	0.20–0.63	Rapid	6.3–20.0

Reaction, soil. The degree of acidity or alkalinity of a soil expressed in pH values. A soil that tests to pH 7.0 is precisely neutral in reaction because it is neither acid nor alkaline. An acid or "sour," soil is one that gives an acid reaction; an alkaline soil is one that is alkaline in reaction. In words, the degrees of acidity or alkalinity are expressed thus:

pH		*pH*	
Extremely acid	Below 4.5	Mildly alkaline	7.4 to 7.8
Very strongly acid	4.5 to 5.0	Moderately alkaline	7.9 to 8.4
Strongly acid	5.1 to 5.5	Strongly alkaline	8.5 to 9.0
Medium acid	5.6 to 6.0	Very strongly alkaline	9.1 and higher
Slightly acid	6.1 to 6.5		
Neutral	6.6 to 7.3		

Sand. Individual rock or mineral fragments in soils having diameters ranging from 0.05 to 2.0 millimeters. Most sand grains consist of quartz, but they may be any mineral composition. The textural class name of any soil that contains 85 percent or more sand and not more than 10 percent clay.

Series, soil. A group of soils that developed from a particular type of parent material and have genetic horizons that, except for texture of the surface layer, are similar in differentiating characteristics and in arrangement in the profile.

Silt. Individual mineral particles in a soil that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). Soil of the silt textural class is 80 percent or more silt and less than 12 percent clay.

Soil. A natural, three-dimensional body on the earth's surface that supports plants and that has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Solum. The upper part of a soil profile, above the parent material, in which the processes of soil formation are active. The solum in mature soil includes the A and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and other plant and animal life characteristic of the soil are largely confined to the solum.

Structure, soil. The arrangement of primary soil particles into compound particles or clusters that are separated from adjoining aggregates and have properties unlike those of an equal mass of unaggregated primary soil particles. The principal forms of soil structure are — *platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are (1) *single grain* (each grain by itself, as in dune sand) or (2) *massive* (the particles adhering together without any regular cleavage, as in many claypans and hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Substratum. Technically the part of the soil below the solum.

Surface soil. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, about 5 to 8 inches in thickness. The plowed layer.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surplus runoff so that it may soak into the soil or flow slowly to a prepared outlet without harm. Terraces in fields are generally built so they can be farmed. Terraces intended mainly for drainage have a deep channel that is maintained in permanent sod.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Tilth, soil. The condition of the soil in relation to the growth of plants, especially soil structure. Good tilth refers to the friable state and is associated with high noncapillary porosity and stable, granular structure. A soil in poor tilth is nonfriable, hard, nonaggregated, and difficult to till.

Water table. The highest part of the soil or underlying rock material that is wholly saturated with water. In some places an upper, or perched, water table may be separated from a lower one by a dry zone.

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Much new information about soils has been obtained since the older soil maps and reports in the above list were printed, especially numbers 1 to 53, which were issued before 1933. For many areas this newer information is necessary if the maps and other soil information in the reports are to be correctly interpreted. Help in making these interpretations can be obtained by writing to the Department of Agronomy, University of Illinois, Urbana 61801.

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