

## Map Unit Description (MN)

Nobles County, Minnesota

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation]

### 1003B--Udorthents (cut and fill land), 0 to 6 percent slopes

#### Udorthents, (cut and fill land)

*Extent:* 100 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 0 to 6 percent

*Parent material:* variable loamy material

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):*

*Wind erodibility index (WEI):*

*Kw factor (surface layer)*

*Land capability, nonirrigated*

*Hydric soil:*

*Hydrologic group:*

*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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### 1007--Udorthents, shallow (sanitary landfill)

#### Udorthents, shallow, sanitary landfill

*Extent:* 100 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 0 to 20 percent

*Parent material:* variable soil material

*Restrictive feature(s):* greater than 60 inches

*Flooding:*

*Ponding:*

*Drainage class:* well drained

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):*

*Wind erodibility index (WEI):*

*Kw factor (surface layer)*

*Land capability, nonirrigated*

*Hydric soil: no*

*Hydrologic group:*

*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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## Map Unit Description (MN)

Nobles County, Minnesota

### 1015A--Havelock clay loam, 0 to 2 percent slopes, frequently flooded

#### Havelock, frequently flooded

*Extent:* 75 to 85 percent of the unit

*Landform(s):* flats on flood plains

*Slope gradient:* 0 to 2 percent

*Parent material:* alluvium

*Restrictive feature(s):* greater than 60 inches

*Flooding:* frequent

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 5w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A1,A2 -- 0 to 32 in	clay loam	moderate	5.42 to 7.33 in	7.4 to 8.4
Cg -- 32 to 60 in	clay loam	moderate	4.75 to 5.59 in	7.4 to 8.4

### 1024A--Havelock clay loam, 0 to 2 percent slopes, occasionally flooded

#### Havelock, occasionally flooded

*Extent:* 75 to 85 percent of the unit

*Landform(s):* flats on flood plains

*Slope gradient:* 0 to 2 percent

*Parent material:* alluvium

*Restrictive feature(s):* greater than 60 inches

*Flooding:* occasional

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 2w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1,A2 -- 0 to 32 in	clay loam	moderate	5.42 to 7.33 in	7.4 to 8.4
Cg -- 32 to 60 in	clay loam	moderate	4.75 to 5.59 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### GP--Pits, gravel-Udipsamments complex

#### Pits, gravel

*Extent:* 50 to 100 percent of the unit  
*Landform(s):* moraines, outwash plains, stream terraces  
*Slope gradient:* 0 to 45 percent  
*Parent material:* sandy and gravelly outwash  
*Restrictive feature(s):* greater than 60 inches  
*Flooding:*  
*Ponding:*  
*Drainage class:*

*Soil loss tolerance (T factor):*  
*Wind erodibility group (WEG):*  
*Wind erodibility index (WEI):*  
*Kw factor (surface layer)*  
*Land capability, nonirrigated*  
*Hydric soil:*  
*Hydrologic group:*  
*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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#### Udipsamments

*Extent:* 15 to 30 percent of the unit  
*Landform(s):* moraines, outwash plains, stream terraces  
*Slope gradient:* 0 to 6 percent  
*Parent material:* outwash  
*Restrictive feature(s):* greater than 60 inches  
*Flooding:*  
*Ponding:*  
*Drainage class:* excessively drained

*Soil loss tolerance (T factor):*  
*Wind erodibility group (WEG):*  
*Wind erodibility index (WEI):*  
*Kw factor (surface layer)*  
*Land capability, nonirrigated*  
*Hydric soil:*  
*Hydrologic group:*  
*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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## Map Unit Description (MN)

Nobles County, Minnesota

### L5A--Delft, overwash-Delft complex, 1 to 4 percent slopes

#### Delft, overwash

*Extent:* 40 to 60 percent of the unit

*Landform(s):* drainageways on moraines, swales on moraines

*Slope gradient:* 1 to 4 percent

*Parent material:* colluvium over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 2w

*Hydric soil:* no

*Hydrologic group:* C/D

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 12 in	loam	moderately slow	2.13 to 2.36 in	5.6 to 7.8
A -- 12 to 37 in	loam	moderately slow	4.54 to 5.04 in	5.6 to 7.8
Bg -- 37 to 47 in	clay loam	moderate	1.87 to 2.17 in	6.6 to 7.8
Cg -- 47 to 80 in	loam	moderate	4.96 to 6.28 in	7.4 to 8.4

#### Delft

*Extent:* 30 to 55 percent of the unit

*Landform(s):* drainageways on moraines, swales on moraines

*Slope gradient:* 1 to 3 percent

*Parent material:* colluvium over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 2w

*Hydric soil:* yes

*Hydrologic group:* C/D

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 37 in	loam	moderately slow	6.66 to 7.40 in	5.6 to 7.8
Bg -- 37 to 50 in	clay loam	moderate	2.47 to 2.86 in	6.6 to 7.8
Cg -- 50 to 60 in	loam	moderate	1.48 to 1.87 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L6A--Biscay loam, 0 to 2 percent slopes

#### Biscay

<i>Extent:</i> 80 to 100 percent of the unit	<i>Soil loss tolerance (T factor):</i> 3
<i>Landform(s):</i> swales on outwash plains, swales on stream terraces	<i>Wind erodibility group (WEG):</i> 6
<i>Slope gradient:</i> 0 to 2 percent	<i>Wind erodibility index (WEI):</i> 48
<i>Parent material:</i> outwash	<i>Kw factor (surface layer)</i> .28
<i>Restrictive feature(s):</i> greater than 60 inches	<i>Land capability, nonirrigated</i> 2w
<i>Flooding:</i> none	<i>Hydric soil:</i> yes
<i>Ponding:</i> none	<i>Hydrologic group:</i> B/D
<i>Drainage class:</i> poorly drained	<i>Potential for frost action:</i> high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1,A2 -- 0 to 20 in	loam	moderate	4.02 to 4.42 in	6.1 to 7.8
Bg -- 20 to 28 in	loam	moderate	1.34 to 1.50 in	6.6 to 7.8
2BCg -- 28 to 36 in	gravelly loam	moderately rapid	0.87 to 1.34 in	6.6 to 7.8
2Cg -- 36 to 60 in	stratified very gravelly coarse sand to loamy sand	rapid	0.48 to 0.96 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L78A--Canisteo clay loam, 0 to 2 percent slopes

#### Canisteo

*Extent:* 55 to 85 percent of the unit

*Landform(s):* rims on depressions on moraines, flats on moraines

*Slope gradient:* 0 to 2 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 2w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 18 in	clay loam	moderate	3.26 to 3.98 in	7.4 to 8.4
Bkg -- 18 to 39 in	loam	moderate	3.13 to 3.96 in	7.4 to 8.4
Cg -- 39 to 80 in	loam	moderate	6.14 to 7.78 in	7.4 to 8.4

### L79B--Clarion loam, 2 to 5 percent slopes

#### Clarion

*Extent:* 50 to 80 percent of the unit

*Landform(s):* hills on moraines

*Slope gradient:* 2 to 5 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 14 in	loam	moderate	2.83 to 3.12 in	5.6 to 7.3
Bw -- 14 to 33 in	loam	moderate	3.21 to 3.59 in	5.6 to 7.3
Bk -- 33 to 60 in	loam	moderate	4.02 to 5.09 in	7.4 to 8.4

## Map Unit Description (MN)

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### L83A--Webster clay loam, 0 to 2 percent slopes

#### Webster

*Extent:* 50 to 85 percent of the unit

*Landform(s):* flats on moraines, swales on moraines

*Slope gradient:* 0 to 2 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 2w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 19 in	clay loam	moderate	3.59 to 3.97 in	6.6 to 7.3
Bg -- 19 to 26 in	clay loam	moderate	1.13 to 1.28 in	6.6 to 7.8
BCg,Cg -- 26 to 60 in	loam	moderate	5.08 to 6.43 in	7.4 to 8.4

### L85A--Nicollet clay loam, 1 to 3 percent slopes

#### Nicollet

*Extent:* 70 to 95 percent of the unit

*Landform(s):* flats on moraines, rises on moraines

*Slope gradient:* 1 to 3 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 1

*Hydric soil:* no

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 17 in	clay loam	moderate	2.88 to 3.72 in	5.6 to 7.3
Bw,Bg -- 17 to 33 in	clay loam	moderate	2.42 to 3.07 in	5.6 to 7.3
Bg -- 33 to 36 in	clay loam	moderate	0.41 to 0.52 in	7.4 to 8.4
Cg -- 36 to 60 in	loam	moderate	3.60 to 4.56 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L88A--Lura silty clay, depressional, 0 to 1 percent slopes

#### Lura, depressional

*Extent:* 75 to 95 percent of the unit

*Landform(s):* depressions on lake plains

*Slope gradient:* 0 to 1 percent

*Parent material:* lacustrine sediments

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 3w

*Hydric soil:* yes

*Hydrologic group:* C/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	silty clay	slow	1.38 to 1.67 in	6.1 to 7.8
A -- 10 to 58 in	clay	slow	6.72 to 8.17 in	6.1 to 7.3
Bg -- 58 to 72 in	silty clay	moderately slow	1.56 to 2.69 in	6.6 to 7.8

## Map Unit Description (MN)

Nobles County, Minnesota

### L96B--Estherville-Hawick complex, 2 to 6 percent slopes

#### Estherville

*Extent:* 40 to 65 percent of the unit

*Landform(s):* outwash plains, hills on stream terraces

*Slope gradient:* 2 to 6 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat excessively drained

*Soil loss tolerance (T factor):* 2

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 3s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 13 in	sandy loam	moderately rapid	1.69 to 2.34 in	5.6 to 7.3
Bw1 -- 13 to 18 in	sandy loam	moderately rapid	0.61 to 0.85 in	5.6 to 7.3
2Bw2 -- 18 to 23 in	loamy coarse sand	rapid	0.10 to 0.20 in	5.6 to 7.3
2C -- 23 to 60 in	gravelly coarse sand	rapid	0.74 to 1.48 in	6.6 to 8.4

#### Hawick

*Extent:* 25 to 40 percent of the unit

*Landform(s):* outwash plains, hills on stream terraces

*Slope gradient:* 2 to 6 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 4s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	sandy loam	rapid	0.21 to 0.92 in	6.1 to 7.8
Bw,C -- 7 to 80 in	gravelly coarse sand	very rapid	1.46 to 4.37 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L97C--Hawick-Estherville complex, 6 to 12 percent slopes

#### Hawick

*Extent:* 45 to 70 percent of the unit

*Landform(s):* outwash plains, hills on stream terraces

*Slope gradient:* 6 to 12 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .17

*Land capability, nonirrigated* 4s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	gravelly sandy loam	rapid	0.21 to 0.92 in	6.1 to 7.8
Bw,C -- 7 to 80 in	gravelly coarse sand	very rapid	1.46 to 4.37 in	7.4 to 8.4

#### Estherville

*Extent:* 25 to 40 percent of the unit

*Landform(s):* hills on outwash plains, hills on stream terraces

*Slope gradient:* 6 to 12 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat excessively drained

*Soil loss tolerance (T factor):* 2

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 4s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 13 in	sandy loam	moderately rapid	1.69 to 2.34 in	5.6 to 7.3
Bw1 -- 13 to 18 in	sandy loam	moderately rapid	0.61 to 0.85 in	5.6 to 7.3
2Bw2 -- 18 to 23 in	loamy coarse sand	rapid	0.10 to 0.20 in	5.6 to 7.3
2C -- 23 to 60 in	gravelly coarse sand	rapid	0.74 to 1.48 in	6.6 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L98A--Crippin-Nicollet complex, 1 to 3 percent slopes

#### Crippin

*Extent:* 40 to 60 percent of the unit

*Landform(s):* flats on moraines, rises on moraines

*Slope gradient:* 1 to 3 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 1

*Hydric soil:* no

*Hydrologic group:* B/D

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,AB -- 0 to 15 in	loam	moderate	2.99 to 3.29 in	6.6 to 8.4
Bw -- 15 to 27 in	loam	moderate	2.07 to 2.32 in	7.4 to 8.4
C -- 27 to 60 in	loam	moderate	4.90 to 6.21 in	7.4 to 8.4

#### Nicollet

*Extent:* 30 to 45 percent of the unit

*Landform(s):* moraines

*Slope gradient:* 1 to 3 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 1

*Hydric soil:* no

*Hydrologic group:* B/D

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 17 in	clay loam	moderate	2.88 to 3.72 in	5.6 to 7.3
Bw -- 17 to 21 in	clay loam	moderate	0.59 to 0.75 in	5.6 to 7.3
Bg -- 21 to 36 in	clay loam	moderate	2.24 to 2.84 in	7.4 to 8.4
Cg -- 36 to 60 in	loam	moderate	3.60 to 4.56 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L102C2--Omsrud-Storden complex, 6 to 12 percent slopes, moderately eroded

#### Omsrud, moderately eroded

*Extent:* 40 to 70 percent of the unit

*Landform(s):* hills on moraines

*Slope gradient:* 6 to 12 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 3e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	loam	moderate	1.81 to 1.99 in	5.6 to 7.3
Bw -- 9 to 19 in	clay loam	moderate	1.67 to 1.87 in	5.6 to 7.3
Bk -- 19 to 36 in	loam	moderate	2.54 to 3.22 in	7.4 to 8.4
C -- 36 to 80 in	loam	moderate	6.61 to 8.38 in	7.4 to 8.4

#### Storden, moderately eroded

*Extent:* 20 to 30 percent of the unit

*Landform(s):* hills on moraines

*Slope gradient:* 6 to 12 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 3e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	loam	moderate	1.42 to 1.56 in	7.4 to 8.4
Bk -- 7 to 55 in	loam	moderate	7.20 to 9.13 in	7.4 to 8.4
C -- 55 to 80 in	loam	moderate	3.72 to 4.71 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L102D2--Omsrud-Storden complex, 12 to 18 percent slopes, moderately eroded

#### Omsrud, moderately eroded

*Extent:* 40 to 75 percent of the unit

*Landform(s):* hills on moraines

*Slope gradient:* 12 to 18 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 4e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	loam	moderate	1.81 to 1.99 in	5.6 to 7.3
Bw -- 9 to 19 in	clay loam	moderate	1.67 to 1.87 in	5.6 to 7.3
Bk -- 19 to 36 in	loam	moderate	2.54 to 3.22 in	7.4 to 8.4
C -- 36 to 80 in	loam	moderate	6.61 to 8.38 in	7.4 to 8.4

#### Storden, moderately eroded

*Extent:* 15 to 25 percent of the unit

*Landform(s):* hills on moraines

*Slope gradient:* 12 to 18 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 4e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	loam	moderate	1.42 to 1.56 in	7.4 to 8.4
Bk -- 7 to 55 in	loam	moderate	7.20 to 9.13 in	7.4 to 8.4
C -- 55 to 80 in	loam	moderate	3.72 to 4.71 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L107A--Canisteo-Glencoe, depressional, complex, 0 to 2 percent slopes

#### Canisteo

*Extent:* 30 to 70 percent of the unit

*Landform(s):* rims on depressions on moraines, flats on moraines

*Slope gradient:* 0 to 2 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 2w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 18 in	clay loam	moderate	3.26 to 3.98 in	7.4 to 8.4
Bkg -- 18 to 39 in	loam	moderate	3.13 to 3.96 in	7.4 to 8.4
Cg -- 39 to 80 in	loam	moderate	6.14 to 7.78 in	7.4 to 8.4

#### Glencoe, depressional

*Extent:* 15 to 55 percent of the unit

*Landform(s):* depressions on moraines

*Slope gradient:* 0 to 1 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 3w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	clay loam	moderate	1.77 to 2.17 in	6.1 to 7.8
A,ABg -- 10 to 35 in	clay loam	moderate	4.54 to 5.54 in	6.1 to 7.8
Bg -- 35 to 48 in	loam	moderate	1.95 to 2.47 in	6.6 to 7.8
Cg -- 48 to 60 in	loam	moderate	1.77 to 2.24 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L111A--Nicollet silty clay loam, 1 to 3 percent slopes

#### Nicollet

*Extent:* 70 to 90 percent of the unit

*Landform(s):* flats on moraines, rises on moraines

*Slope gradient:* 1 to 3 percent

*Parent material:* lacustrine sediments over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 1

*Hydric soil:* no

*Hydrologic group:* B/D

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	silty clay loam	moderate	1.67 to 2.17 in	5.6 to 7.3
Bw -- 10 to 31 in	clay loam	moderate	3.13 to 3.96 in	5.6 to 7.8
Bk -- 31 to 42 in	loam	moderate	1.65 to 2.09 in	7.4 to 8.4
C -- 42 to 80 in	loam	moderate	5.73 to 7.26 in	7.4 to 8.4

### L112A--Webster silty clay loam, 0 to 2 percent slopes

#### Webster

*Extent:* 75 to 90 percent of the unit

*Landform(s):* flats on moraines, swales on moraines

*Slope gradient:* 0 to 2 percent

*Parent material:* lacustrine sediments over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 2w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A,AB -- 0 to 24 in	silty clay loam	moderate	4.56 to 5.04 in	6.6 to 7.3
Bg -- 24 to 45 in	clay loam	moderate	3.40 to 3.83 in	6.6 to 7.8
Cg -- 45 to 80 in	loam	moderate	5.20 to 6.58 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L126A--Coland silty clay loam, 0 to 2 percent slopes, occasionally flooded

#### Coland, occasionally flooded

*Extent:* 65 to 90 percent of the unit

*Landform(s):* flats, flood plains

*Slope gradient:* 0 to 2 percent

*Parent material:* alluvium

*Restrictive feature(s):* greater than 60 inches

*Flooding:* occasional

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 2w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 25 in	silty clay loam	moderate	5.04 to 5.54 in	6.1 to 7.3
AC,Cg1 -- 25 to 54 in	loam	moderate	5.75 to 6.32 in	6.1 to 7.3
Cg2 -- 54 to 60 in	sandy loam	moderately rapid	0.77 to 1.00 in	6.1 to 7.8

### L127A--Coland silty clay loam, channeled, 0 to 2 percent slopes, frequently flooded

#### Coland, frequently flooded

*Extent:* 65 to 90 percent of the unit

*Landform(s):* flats on flood plains

*Slope gradient:* 0 to 2 percent

*Parent material:* alluvium

*Restrictive feature(s):* greater than 60 inches

*Flooding:* frequent

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 5w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A1 -- 0 to 12 in	silty clay loam	moderate	2.36 to 2.60 in	6.1 to 7.3
A2 -- 12 to 30 in	loam	moderate	3.62 to 3.98 in	6.1 to 7.3
A3 -- 30 to 55 in	stratified fine sandy loam to loam	moderate	5.04 to 5.54 in	6.1 to 7.3
AB,Bg -- 55 to 80 in	fine sandy loam	moderately rapid	3.22 to 4.22 in	6.1 to 7.8

## Map Unit Description (MN)

Nobles County, Minnesota

### L129B--Terril loam, 2 to 6 percent slopes

#### Terril

*Extent:* 80 to 95 percent of the unit

*Landform(s):* hills on moraines

*Slope gradient:* 2 to 6 percent

*Parent material:* colluvium over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1 -- 0 to 27 in	loam	moderate	5.43 to 5.98 in	6.1 to 7.3
A2,BA -- 27 to 40 in	loam	moderate	2.21 to 2.47 in	6.1 to 7.3
Bw -- 40 to 63 in	loam	moderate	3.65 to 4.11 in	6.1 to 7.3
C -- 63 to 80 in	loam	moderate	2.54 to 3.22 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L130A--Okoboji mucky silty clay loam, depressional, 0 to 1 percent slopes

#### Okoboji, mucky silty clay loam, depressional

*Extent:* 60 to 85 percent of the unit

*Landform(s):* depressions on lake plains, depressions on moraines

*Slope gradient:* 0 to 1 percent

*Parent material:* lacustrine sediments over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer):* .32

*Land capability, nonirrigated:* 3w

*Hydric soil:* yes

*Hydrologic group:* C/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 13 in	mucky silty clay loam	moderate	2.86 to 3.25 in	6.1 to 7.8
A -- 13 to 35 in	silty clay loam	moderately slow	3.97 to 4.41 in	6.6 to 7.8
Bg -- 35 to 60 in	silty clay loam	moderately slow	4.46 to 4.96 in	6.6 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L133A--Waldorf silty clay loam, 0 to 2 percent slopes

#### Waldorf

*Extent:* 75 to 85 percent of the unit

*Landform(s):* flats on moraines, lake plains on moraines, swales on moraines

*Slope gradient:* 0 to 2 percent

*Parent material:* lacustrine sediments

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 2w

*Hydric soil:* yes

*Hydrologic group:* C/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 15 in	silty clay loam	moderately slow	2.69 to 3.74 in	6.1 to 7.3
AB -- 15 to 20 in	silty clay loam	moderately slow	0.92 to 1.28 in	6.1 to 7.3
Bg -- 20 to 53 in	silty clay	moderately slow	4.30 to 5.29 in	6.6 to 7.8
Cg -- 53 to 80 in	silty clay loam	moderately slow	5.35 to 5.89 in	7.6 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L134B--Clarion-Crooksford complex, 1 to 5 percent slopes

#### Clarion

*Extent:* 55 to 75 percent of the unit

*Landform(s):* hills on moraines

*Slope gradient:* 2 to 5 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 14 in	loam	moderate	2.83 to 3.12 in	5.6 to 7.3
Bw -- 14 to 33 in	loam	moderate	3.21 to 3.59 in	5.6 to 7.3
Bk -- 33 to 60 in	loam	moderate	4.02 to 5.09 in	7.4 to 8.4

#### Crooksford

*Extent:* 15 to 25 percent of the unit

*Landform(s):* hills on moraines

*Slope gradient:* 1 to 5 percent

*Parent material:* lacustrine/loess sediments over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	silty clay loam	moderate	1.97 to 2.36 in	6.1 to 7.3
BA -- 10 to 20 in	silty clay loam	moderate	2.05 to 2.46 in	6.1 to 7.3
Bw -- 20 to 26 in	silt loam	moderate	1.06 to 1.42 in	6.6 to 7.8
2Bw -- 26 to 34 in	loam	moderate	1.34 to 1.50 in	5.6 to 7.3
2Bk -- 34 to 80 in	loam	moderate	7.83 to 11.06 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L135A--Okabena silty clay loam, 1 to 3 percent slopes

#### Okabena

<p><i>Extent:</i> 70 to 90 percent of the unit</p> <p><i>Landform(s):</i> flats on lake plains, rises on lake plains, flats on moraines, rises on moraines</p> <p><i>Slope gradient:</i> 1 to 3 percent</p> <p><i>Parent material:</i> lacustrine sediments over till</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> somewhat poorly drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</p> <p><i>Wind erodibility group (WEG):</i> 6</p> <p><i>Wind erodibility index (WEI):</i> 48</p> <p><i>Kw factor (surface layer):</i> .32</p> <p><i>Land capability, nonirrigated:</i> 1</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> B/D</p> <p><i>Potential for frost action:</i> high</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,AB -- 0 to 15 in	silty clay loam	moderate	2.69 to 3.59 in	5.6 to 7.3
Bw -- 15 to 22 in	silty clay loam	moderate	1.13 to 1.42 in	5.6 to 7.3
Bk -- 22 to 43 in	silt loam	moderate	3.34 to 4.59 in	7.4 to 8.4
Cg -- 43 to 48 in	silt loam	moderate	0.82 to 1.02 in	7.4 to 8.4
2Cg -- 48 to 80 in	clay loam	moderate	4.78 to 6.06 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L136A--Crooksford silty clay loam, 1 to 3 percent slopes

#### Crooksford

*Extent:* 75 to 90 percent of the unit

*Landform(s):* flats on moraines, rises on moraines

*Slope gradient:* 1 to 3 percent

*Parent material:* lacustrine/loess sediments over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 1

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	silty clay loam	moderate	1.97 to 2.36 in	6.1 to 7.3
BA -- 10 to 20 in	silty clay loam	moderate	2.05 to 2.46 in	6.1 to 7.3
Bw -- 20 to 26 in	silt loam	moderate	1.06 to 1.42 in	6.6 to 7.8
2Bw -- 26 to 34 in	loam	moderate	1.34 to 1.50 in	5.6 to 7.3
2Bk -- 34 to 80 in	loam	moderate	7.83 to 11.06 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L137A--Cylinder loam, 0 to 2 percent slopes

#### Cylinder

*Extent:* 80 to 95 percent of the unit

*Landform(s):* flats on outwash plains, swales on outwash plains, flats on stream terraces, swales on stream terraces

*Slope gradient:* 0 to 2 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat poorly drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 2s

*Hydric soil:* no

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1 -- 0 to 14 in	loam	moderate	2.83 to 3.12 in	5.6 to 7.3
A2 -- 14 to 18 in	loam	moderate	0.67 to 0.75 in	6.1 to 7.3
Bg1,2 -- 18 to 28 in	loam	moderate	1.67 to 1.87 in	6.1 to 7.3
2BC,2C -- 28 to 80 in	gravelly loamy sand	rapid	1.04 to 2.08 in	6.6 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L138B--Estherville loam, 1 to 6 percent slopes

#### Estherville

*Extent:* 80 to 95 percent of the unit

*Landform(s):* hills on outwash plains, hills on terraces

*Slope gradient:* 1 to 6 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat excessively drained

*Soil loss tolerance (T factor):* 2

*Wind erodibility group (WEG):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 3s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 13 in	loam	moderately rapid	1.69 to 2.34 in	5.6 to 7.3
Bw1 -- 13 to 18 in	sandy loam	moderately rapid	0.61 to 0.85 in	5.6 to 7.3
2Bw2 -- 18 to 23 in	loamy coarse sand	rapid	0.10 to 0.20 in	5.6 to 7.3
2C -- 23 to 60 in	gravelly coarse sand	rapid	0.74 to 1.48 in	6.6 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L139A--Wadena loam, 0 to 2 percent slopes

#### Wadena

<i>Extent:</i> 80 to 90 percent of the unit	<i>Soil loss tolerance (T factor):</i> 3
<i>Landform(s):</i> flats on outwash plains, rises on outwash plains, flats on stream terraces, rises on stream terraces	<i>Wind erodibility group (WEG):</i> 6
<i>Slope gradient:</i> 0 to 2 percent	<i>Wind erodibility index (WEI):</i> 48
<i>Parent material:</i> loamy sediments over outwash	<i>Kw factor (surface layer)</i> .24
<i>Restrictive feature(s):</i> greater than 60 inches	<i>Land capability, nonirrigated</i> 2s
<i>Flooding:</i> none	<i>Hydric soil:</i> no
<i>Ponding:</i> none	<i>Hydrologic group:</i> B
<i>Drainage class:</i> well drained	<i>Potential for frost action:</i> low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 13 in	loam	moderate	2.60 to 2.86 in	6.1 to 7.3
Bw1 -- 13 to 20 in	loam	moderate	0.99 to 1.35 in	5.6 to 7.3
Bw2 -- 20 to 30 in	sandy loam	moderately rapid	1.28 to 1.77 in	5.6 to 7.3
2C -- 30 to 60 in	gravelly coarse sand	rapid	0.60 to 1.20 in	6.6 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L139B--Wadena loam, 2 to 6 percent slopes

#### Wadena

*Extent:* 80 to 90 percent of the unit

*Landform(s):* hills on outwash plains, hills on terraces

*Slope gradient:* 2 to 6 percent

*Parent material:* loamy sediments over outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 13 in	loam	moderate	2.60 to 2.86 in	6.1 to 7.3
Bw1 -- 13 to 20 in	loam	moderate	0.99 to 1.35 in	5.6 to 7.3
Bw2 -- 20 to 30 in	sandy loam	moderately rapid	1.28 to 1.77 in	5.6 to 7.3
2C -- 30 to 60 in	gravelly coarse sand	rapid	0.60 to 1.20 in	6.6 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L140A--Ocheda silty clay loam, 1 to 3 percent slopes

#### Ocheda

<i>Extent:</i> 75 to 90 percent of the unit	<i>Soil loss tolerance (T factor):</i> 5
<i>Landform(s):</i> flats on lake plains, rises on lake plains, flats on moraines, rises on moraines	<i>Wind erodibility group (WEG):</i> 4
<i>Slope gradient:</i> 1 to 3 percent	<i>Wind erodibility index (WEI):</i> 86
<i>Parent material:</i> lacustrine sediments over till	<i>Kw factor (surface layer)</i> .28
<i>Restrictive feature(s):</i> greater than 60 inches	<i>Land capability, nonirrigated</i> 1
<i>Flooding:</i> none	<i>Hydric soil:</i> no
<i>Ponding:</i> none	<i>Hydrologic group:</i> C/D
<i>Drainage class:</i> somewhat poorly drained	<i>Potential for frost action:</i> high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,AB -- 0 to 20 in	silty clay loam	moderately slow	3.21 to 3.81 in	5.6 to 7.3
Bw -- 20 to 28 in	silty clay loam	moderately slow	1.02 to 1.26 in	5.6 to 7.3
Bkg -- 28 to 57 in	silty clay	moderately slow	3.20 to 4.37 in	7.4 to 8.4
2Cg -- 57 to 80 in	loam	moderate	3.43 to 4.34 in	7.4 to 8.4

### L141A--Spillville loam, 0 to 2 percent slopes, occasionally flooded

#### Spillville, occasionally flooded

<i>Extent:</i> 80 to 90 percent of the unit	<i>Soil loss tolerance (T factor):</i> 5
<i>Landform(s):</i> flats on flood plains, rises on flood plains	<i>Wind erodibility group (WEG):</i> 6
<i>Slope gradient:</i> 0 to 2 percent	<i>Wind erodibility index (WEI):</i> 48
<i>Parent material:</i> alluvium	<i>Kw factor (surface layer)</i> .28
<i>Restrictive feature(s):</i> greater than 60 inches	<i>Land capability, nonirrigated</i> 2w
<i>Flooding:</i> occasional	<i>Hydric soil:</i> no
<i>Ponding:</i> none	<i>Hydrologic group:</i> B/D
<i>Drainage class:</i> somewhat poorly drained	<i>Potential for frost action:</i> moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 51 in	loam	moderate	9.72 to 10.75 in	5.6 to 7.3
C -- 51 to 60 in	loam	moderately rapid	1.30 to 1.56 in	5.6 to 7.3

## Map Unit Description (MN)

Nobles County, Minnesota

### L144A--Chetomba silty clay loam, 0 to 2 percent slopes

#### Chetomba

<p><i>Extent:</i> 65 to 85 percent of the unit</p> <p><i>Landform(s):</i> flats on lake plains, swales on lake plains, flats on moraines, swales on moraines</p> <p><i>Slope gradient:</i> 0 to 2 percent</p> <p><i>Parent material:</i> lacustrine sediments over till</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> poorly drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</p> <p><i>Wind erodibility group (WEG):</i> 6</p> <p><i>Wind erodibility index (WEI):</i> 48</p> <p><i>Kw factor (surface layer):</i> .32</p> <p><i>Land capability, nonirrigated:</i> 2w</p> <p><i>Hydric soil:</i> yes</p> <p><i>Hydrologic group:</i> B/D</p> <p><i>Potential for frost action:</i> high</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 23 in	silty clay loam	moderate	4.11 to 5.48 in	6.1 to 7.3
Bg -- 23 to 31 in	silty clay loam	moderate	1.32 to 1.82 in	6.6 to 7.8
Cg -- 31 to 43 in	silt loam	moderate	1.89 to 2.60 in	7.4 to 8.4
2Cg -- 43 to 60 in	loam	moderate	2.54 to 3.22 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L145A--Canisteo silty clay loam, 0 to 2 percent slopes

#### Canisteo

*Extent:* 75 to 85 percent of the unit

*Landform(s):* rims on depressions on moraines, flats on moraines

*Slope gradient:* 0 to 2 percent

*Parent material:* lacustrine sediments over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer):* .28

*Land capability, nonirrigated:* 2w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A --	0 to 17 in	silty clay loam	moderate	3.05 to 3.72 in	7.4 to 8.4
Bg --	17 to 27 in	silty clay loam	moderate	1.48 to 1.87 in	7.4 to 8.4
Cg --	27 to 60 in	loam	moderate	4.63 to 5.29 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L146A--Glencoe silty clay loam, depressional, 0 to 1 percent slopes

#### Glencoe, depressional

*Extent:* 75 to 100 percent of the unit  
*Landform(s):* depressions on moraines  
*Slope gradient:* 0 to 1 percent  
*Parent material:* till  
*Restrictive feature(s):* greater than 60 inches  
*Flooding:* none  
*Ponding:* frequent  
*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 5  
*Wind erodibility group (WEG):* 6  
*Wind erodibility index (WEI):* 48  
*Kw factor (surface layer)* .32  
*Land capability, nonirrigated* 3w  
*Hydric soil:* yes  
*Hydrologic group:* B/D  
*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	silty clay loam	moderate	1.87 to 2.07 in	6.6 to 7.3
A,AB -- 10 to 29 in	clay loam	moderate	3.47 to 4.24 in	6.1 to 7.8
Bg -- 29 to 40 in	clay loam	moderate	1.65 to 2.09 in	6.6 to 7.8
Cg -- 40 to 80 in	loam	moderate	5.96 to 7.56 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L150A--Prinsburg silty clay loam, 0 to 2 percent slopes

#### Prinsburg

*Extent:* 65 to 80 percent of the unit

*Soil loss tolerance (T factor):* 5

*Landform(s):* rims on depressions on lake plains, flats on lake plains, rims on depressions on moraines, flats on moraines

*Wind erodibility group (WEG):* 4L

*Slope gradient:* 0 to 2 percent

*Wind erodibility index (WEI):* 86

*Parent material:* lacustrine sediments over till

*Kw factor (surface layer)* .28

*Restrictive feature(s):* greater than 60 inches

*Land capability, nonirrigated* 2w

*Flooding:* none

*Hydric soil:* yes

*Ponding:* none

*Hydrologic group:* B/D

*Drainage class:* poorly drained

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 19 in	silty clay loam	moderate	3.40 to 4.54 in	7.4 to 8.4
Bkg -- 19 to 29 in	silt loam	moderate	1.64 to 2.25 in	7.4 to 8.4
Bg,Cg -- 29 to 46 in	silt loam	moderate	2.71 to 3.72 in	7.4 to 8.4
2Cg -- 46 to 60 in	loam	moderate	2.07 to 2.62 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L151A--Glencoe mucky silty clay loam, ponded, 0 to 1 percent slopes

#### Glencoe, ponded

*Extent:* 75 to 90 percent of the unit

*Landform(s):* depressions on moraines

*Slope gradient:* 0 to 1 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 8

*Wind erodibility index (WEI):* 0

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 8w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 42 in	mucky silty clay loam	moderate	7.58 to 9.27 in	6.1 to 7.8
Bg -- 42 to 50 in	clay loam	moderate	1.18 to 1.50 in	6.6 to 7.8
Cg -- 50 to 60 in	loam	moderate	1.48 to 1.87 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L152B--Lowlein-Round lake complex, 1 to 6 percent slopes

#### Lowlein

*Extent:* 35 to 70 percent of the unit

*Landform(s):* hills on moraines, stream terraces

*Slope gradient:* 1 to 5 percent

*Parent material:* outwash over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 14 in	loam	moderately rapid	1.84 to 2.13 in	6.1 to 7.3
Bw1 -- 14 to 24 in	loam	moderately rapid	1.18 to 1.38 in	6.1 to 7.3
Bw2 -- 24 to 31 in	loamy sand	rapid	0.43 to 0.78 in	6.1 to 7.3
2C -- 31 to 60 in	loam	moderate	4.31 to 5.46 in	7.4 to 8.4

#### Round Lake

*Extent:* 15 to 40 percent of the unit

*Landform(s):* hills on moraines

*Slope gradient:* 2 to 6 percent

*Parent material:* outwash over lacustrine silty sediments

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 3s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 11 in	sandy loam	moderately rapid	1.43 to 1.98 in	5.6 to 7.3
Bw -- 11 to 14 in	sandy loam	moderately rapid	0.41 to 0.57 in	5.6 to 7.3
2Bw -- 14 to 26 in	loamy coarse sand	rapid	0.24 to 0.47 in	5.6 to 7.3
2Bk -- 26 to 35 in	gravelly coarse sand	rapid	0.18 to 0.36 in	6.6 to 8.4
2C -- 35 to 48 in	coarse sand	rapid	0.26 to 0.52 in	6.6 to 8.4
3Cg -- 48 to 80 in	silt loam	moderate	5.10 to 7.02 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L153A--Essexville sandy loam, 0 to 2 percent slopes

#### Essexville

*Extent:* 75 to 90 percent of the unit

*Landform(s):* beaches on moraines, rims on depressions on moraines, flats on moraines

*Slope gradient:* 0 to 2 percent

*Parent material:* glaciolacustrine sediments over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer):* .17

*Land capability, nonirrigated:* 3w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* moderate

*Representative soil profile:*

		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap --	0 to 8 in	sandy loam	moderately rapid	1.02 to 1.42 in	7.4 to 8.4
A --	8 to 13 in	loamy sand	rapid	0.20 to 0.61 in	7.4 to 8.4
Bg --	13 to 22 in	sand	rapid	0.36 to 1.09 in	7.4 to 8.4
2Cg --	22 to 60 in	loam	moderate	5.67 to 7.18 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L154E--Belview-Ridgeton complex, 15 to 45 percent slopes

#### Belview

*Extent:* 30 to 70 percent of the unit

*Landform(s):* escarpments on moraines

*Slope gradient:* 18 to 45 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 6e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 9 in	loam	moderate	1.81 to 1.99 in	7.4 to 8.4
Bk -- 9 to 50 in	loam	moderate	6.14 to 7.78 in	7.4 to 8.4
C -- 50 to 60 in	loam	moderate	1.48 to 1.87 in	7.4 to 8.4

#### Ridgeton

*Extent:* 15 to 50 percent of the unit

*Landform(s):* escarpments on moraines

*Slope gradient:* 15 to 40 percent

*Parent material:* colluvium over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 6e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A1,A2,A3 -- 0 to 32 in	loam	moderate	6.38 to 7.02 in	6.1 to 7.3
Bw -- 32 to 40 in	loam	moderate	1.32 to 1.49 in	6.1 to 7.3
C1,C2 -- 40 to 80 in	loam	moderate	5.96 to 7.56 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L155A--Okoboji mucky silty clay loam, ponded, 0 to 1 percent slopes

#### Okoboji, ponded

*Extent:* 75 to 90 percent of the unit

*Landform(s):* depressions on moraines

*Slope gradient:* 0 to 1 percent

*Parent material:* alluvium or lacustrine sediments over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 8

*Wind erodibility index (WEI):* 0

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 8w

*Hydric soil:* yes

*Hydrologic group:* C/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A1 -- 0 to 10 in	mucky silty clay loam	moderate	2.17 to 2.46 in	6.1 to 7.8
A2 -- 10 to 52 in	silty clay loam	moderately slow	7.58 to 8.43 in	6.6 to 7.8
Bg -- 52 to 60 in	silty clay loam	moderately slow	1.42 to 1.57 in	6.6 to 7.8

## Map Unit Description (MN)

Nobles County, Minnesota

### L156C2--Omsrud-Storden-Pilot Grove complex, 6 to 12 percent slopes, moderately eroded

#### Omsrud, moderately eroded

*Extent:* 30 to 50 percent of the unit

*Landform(s):* hills on moraines

*Slope gradient:* 6 to 12 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 3e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	loam	moderate	1.81 to 1.99 in	5.6 to 7.3
Bw -- 9 to 19 in	clay loam	moderate	1.67 to 1.87 in	5.6 to 7.3
Bk -- 19 to 36 in	loam	moderate	2.54 to 3.22 in	7.4 to 8.4
C -- 36 to 80 in	loam	moderate	6.61 to 8.38 in	7.4 to 8.4

#### Storden, moderately eroded

*Extent:* 15 to 50 percent of the unit

*Landform(s):* hills on moraines

*Slope gradient:* 6 to 12 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 3e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	loam	moderate	1.42 to 1.56 in	7.4 to 8.4
Bk -- 7 to 55 in	loam	moderate	7.20 to 9.13 in	7.4 to 8.4
C -- 55 to 80 in	loam	moderate	3.72 to 4.71 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L156C2--Omsrud-Storden-Pilot Grove complex, 6 to 12 percent slopes, moderately eroded

#### Pilot Grove

*Extent:* 15 to 25 percent of the unit

*Landform(s):* hills on moraines

*Slope gradient:* 6 to 12 percent

*Parent material:* outwash over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 4s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	sandy loam	moderately rapid	1.18 to 1.63 in	5.6 to 7.3
Bw -- 9 to 17 in	sandy loam	moderately rapid	1.02 to 1.42 in	5.6 to 7.3
2BC -- 17 to 22 in	loamy coarse sand	rapid	0.10 to 0.20 in	5.6 to 7.3
2C1 -- 22 to 39 in	gravelly coarse sand	rapid	0.34 to 0.68 in	6.6 to 8.4
2C2 -- 39 to 55 in	gravelly coarse sand	rapid	0.32 to 0.65 in	6.6 to 8.4
3C -- 55 to 80 in	loam	moderate	3.97 to 5.46 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L156D2--Omsrud-Storden-Pilot Grove complex, 12 to 18 percent slopes, moderately eroded

#### Omsrud, moderately eroded

*Extent:* 30 to 60 percent of the unit

*Landform(s):* hills on moraines

*Slope gradient:* 12 to 18 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 4e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	loam	moderate	1.81 to 1.99 in	5.6 to 7.3
Bw -- 9 to 19 in	clay loam	moderate	1.67 to 1.87 in	5.6 to 7.3
Bk -- 19 to 36 in	loam	moderate	2.54 to 3.22 in	7.4 to 8.4
C -- 36 to 80 in	loam	moderate	6.61 to 8.38 in	7.4 to 8.4

#### Storden, moderately eroded

*Extent:* 15 to 30 percent of the unit

*Landform(s):* hills on moraines

*Slope gradient:* 12 to 18 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 4e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	loam	moderate	1.42 to 1.56 in	7.4 to 8.4
Bk -- 7 to 55 in	loam	moderate	7.20 to 9.13 in	7.4 to 8.4
C -- 55 to 80 in	loam	moderate	3.72 to 4.71 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L156D2--Omsrud-Storden-Pilot Grove complex, 12 to 18 percent slopes, moderately eroded

#### Pilot Grove

*Extent:* 15 to 20 percent of the unit

*Landform(s):* hills on moraines

*Slope gradient:* 12 to 18 percent

*Parent material:* outwash over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 6s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	sandy loam	moderately rapid	1.18 to 1.63 in	5.6 to 7.3
Bw -- 9 to 17 in	sandy loam	moderately rapid	1.02 to 1.42 in	5.6 to 7.3
2BC -- 17 to 22 in	loamy coarse sand	rapid	0.10 to 0.20 in	5.6 to 7.3
2C1 -- 22 to 39 in	gravelly coarse sand	rapid	0.34 to 0.68 in	6.6 to 8.4
2C2 -- 39 to 55 in	gravelly coarse sand	rapid	0.32 to 0.65 in	6.6 to 8.4
3C -- 55 to 80 in	loam	moderate	3.97 to 5.46 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L157A--Lowlein loam, 0 to 2 percent slopes

#### Lowlein

*Extent:* 65 to 85 percent of the unit

*Landform(s):* flats on moraines, rises on moraines, flats on stream terraces, rises on stream terraces

*Slope gradient:* 0 to 2 percent

*Parent material:* outwash over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 1

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

*Representative soil profile:*

	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 14 in	loam	moderately rapid	1.84 to 2.13 in	6.1 to 7.3
Bw1 -- 14 to 24 in	loam	moderately rapid	1.18 to 1.38 in	6.1 to 7.3
Bw2 -- 24 to 31 in	loamy sand	rapid	0.43 to 0.78 in	6.1 to 7.3
2C -- 31 to 60 in	loam	moderate	4.31 to 5.46 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L158B--Round lake sandy loam, 1 to 6 percent slopes

#### Round Lake

*Extent:* 70 to 85 percent of the unit

*Landform(s):* hills on moraines

*Slope gradient:* 1 to 6 percent

*Parent material:* outwash over lacustrine silty sediments

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 3s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 11 in	sandy loam	moderately rapid	1.43 to 1.98 in	5.6 to 7.3
Bw -- 11 to 14 in	sandy loam	moderately rapid	0.41 to 0.57 in	5.6 to 7.3
2Bw -- 14 to 26 in	loamy coarse sand	rapid	0.24 to 0.47 in	5.6 to 7.3
2Bk -- 26 to 35 in	gravelly coarse sand	rapid	0.18 to 0.36 in	6.6 to 8.4
2C -- 35 to 48 in	coarse sand	rapid	0.26 to 0.52 in	6.6 to 8.4
3Cg -- 48 to 80 in	silt loam	moderate	5.10 to 7.02 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L159A--Knoke mucky silty clay loam, depressional, 0 to 1 percent slopes

#### Knoke, depressional

*Extent:* 70 to 90 percent of the unit

*Landform(s):* depressions on lake plains, depressions on moraines

*Slope gradient:* 0 to 1 percent

*Parent material:* lacustrine sediments

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 3w

*Hydric soil:* yes

*Hydrologic group:* C/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	mucky silty clay loam	moderately slow	2.07 to 2.26 in	7.4 to 8.4
A -- 10 to 42 in	silty clay loam	moderately slow	6.78 to 7.43 in	7.4 to 8.4
Cg -- 42 to 80 in	silty clay loam	moderately slow	6.80 to 7.56 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L160B--Dickinson sandy loam, loamy substratum, 1 to 6 percent slopes

#### Dickinson, loamy substratum

*Extent:* 70 to 90 percent of the unit

*Landform(s):* hills on moraines, hills on outwash plains

*Slope gradient:* 1 to 6 percent

*Parent material:* outwash over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 3e

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,AB -- 0 to 16 in	sandy loam	moderately rapid	1.94 to 2.42 in	5.6 to 7.3
Bw -- 16 to 30 in	fine sandy loam	moderately rapid	1.65 to 2.07 in	5.1 to 6.5
C1 -- 30 to 47 in	loamy sand	rapid	0.34 to 0.68 in	5.6 to 7.8
C2 -- 47 to 76 in	sand	rapid	0.58 to 1.17 in	5.6 to 7.8
2C -- 76 to 80 in	loam	moderate	0.59 to 0.75 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L161C--Estherville-Pilot Grove complex, 6 to 12 percent slopes

#### Estherville

<i>Extent:</i> 15 to 65 percent of the unit	<i>Soil loss tolerance (T factor):</i> 2
<i>Landform(s):</i> moraines, hills on outwash plains, hills on stream terraces	<i>Wind erodibility group (WEG):</i> 3
<i>Slope gradient:</i> 6 to 12 percent	<i>Wind erodibility index (WEI):</i> 86
<i>Parent material:</i> outwash	<i>Kw factor (surface layer)</i> .20
<i>Restrictive feature(s):</i> greater than 60 inches	<i>Land capability, nonirrigated</i> 4s
<i>Flooding:</i> none	<i>Hydric soil:</i> no
<i>Ponding:</i> none	<i>Hydrologic group:</i> A
<i>Drainage class:</i> somewhat excessively drained	<i>Potential for frost action:</i> low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 13 in	sandy loam	moderately rapid	1.69 to 2.34 in	5.6 to 7.3
Bw1 -- 13 to 18 in	sandy loam	moderately rapid	0.61 to 0.85 in	5.6 to 7.3
2Bw2 -- 18 to 23 in	loamy coarse sand	rapid	0.10 to 0.20 in	5.6 to 7.3
2C -- 23 to 60 in	gravelly coarse sand	rapid	0.74 to 1.48 in	6.6 to 8.4

#### Pilot Grove

<i>Extent:</i> 15 to 65 percent of the unit	<i>Soil loss tolerance (T factor):</i> 5
<i>Landform(s):</i> hills on moraines	<i>Wind erodibility group (WEG):</i> 3
<i>Slope gradient:</i> 6 to 12 percent	<i>Wind erodibility index (WEI):</i> 86
<i>Parent material:</i> outwash over till	<i>Kw factor (surface layer)</i> .20
<i>Restrictive feature(s):</i> greater than 60 inches	<i>Land capability, nonirrigated</i> 4s
<i>Flooding:</i> none	<i>Hydric soil:</i> no
<i>Ponding:</i> none	<i>Hydrologic group:</i> A
<i>Drainage class:</i> somewhat excessively drained	<i>Potential for frost action:</i> low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	sandy loam	moderately rapid	1.18 to 1.63 in	5.6 to 7.3
Bw -- 9 to 17 in	sandy loam	moderately rapid	1.02 to 1.42 in	5.6 to 7.3
2Bw -- 17 to 22 in	loamy coarse sand	rapid	0.10 to 0.20 in	5.6 to 7.3
2C1 -- 22 to 39 in	gravelly coarse sand	rapid	0.34 to 0.68 in	6.6 to 8.4
2C2 -- 39 to 55 in	gravelly coarse sand	rapid	0.32 to 0.65 in	6.6 to 8.4
3C -- 55 to 80 in	silt loam	moderate	3.97 to 5.46 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L162B--Clarion-Round lake complex, 2 to 6 percent slopes

#### Clarion

*Extent:* 40 to 60 percent of the unit

*Landform(s):* hills on moraines

*Slope gradient:* 2 to 5 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 14 in	loam	moderate	2.83 to 3.12 in	5.6 to 7.3
Bw -- 14 to 33 in	loam	moderate	3.21 to 3.59 in	5.6 to 7.3
Bk -- 33 to 60 in	loam	moderate	4.02 to 5.09 in	7.4 to 8.4

#### Round Lake

*Extent:* 15 to 50 percent of the unit

*Landform(s):* hills on moraines

*Slope gradient:* 2 to 6 percent

*Parent material:* outwash over lacustrine silty sediments

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 3s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 11 in	sandy loam	moderately rapid	1.43 to 1.98 in	5.6 to 7.3
Bw -- 11 to 14 in	sandy loam	moderately rapid	0.41 to 0.57 in	5.6 to 7.3
2Bw -- 14 to 26 in	loamy coarse sand	rapid	0.24 to 0.47 in	5.6 to 7.3
2Bk -- 26 to 35 in	gravelly coarse sand	rapid	0.18 to 0.36 in	6.6 to 8.4
2C -- 35 to 48 in	coarse sand	rapid	0.26 to 0.52 in	6.6 to 8.4
3Cg -- 48 to 80 in	silt loam	moderate	5.10 to 7.02 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L163A--Okoboji silty clay loam, depressional, 0 to 1 percent slopes

#### Okoboji, depressional

*Extent:* 70 to 95 percent of the unit

*Landform(s):* depressions on lake plains, depressions on moraines

*Slope gradient:* 0 to 1 percent

*Parent material:* alluvium/lacustrine sediments over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* frequent

*Drainage class:* very poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 3w

*Hydric soil:* yes

*Hydrologic group:* C/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 26 in	silty clay loam	moderately slow	5.46 to 5.98 in	6.1 to 7.8
Bg -- 26 to 42 in	silty clay	moderately slow	2.91 to 3.23 in	6.6 to 7.8
Cg -- 42 to 60 in	silty clay loam	moderately slow	3.19 to 3.54 in	6.6 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### L170B--Estherville-Round lake complex, 2 to 6 percent slopes

#### Estherville

*Extent:* 35 to 70 percent of the unit

*Landform(s):* hills on moraines

*Slope gradient:* 2 to 6 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat excessively drained

*Soil loss tolerance (T factor):* 2

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 3s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 13 in	sandy loam	moderately rapid	1.69 to 2.34 in	5.6 to 7.3
Bw1 -- 13 to 18 in	sandy loam	moderately rapid	0.61 to 0.85 in	5.6 to 7.3
2Bw2 -- 18 to 23 in	loamy coarse sand	rapid	0.10 to 0.20 in	5.6 to 7.3
2C -- 23 to 60 in	gravelly coarse sand	rapid	0.74 to 1.48 in	6.6 to 8.4

#### Round Lake

*Extent:* 15 to 50 percent of the unit

*Landform(s):* hills on moraines

*Slope gradient:* 2 to 6 percent

*Parent material:* outwash over lacustrine silty sediments

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 3s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 11 in	sandy loam	moderately rapid	1.43 to 1.98 in	5.6 to 7.3
Bw -- 11 to 14 in	sandy loam	moderately rapid	0.41 to 0.57 in	5.6 to 7.3
2Bw -- 14 to 26 in	loamy coarse sand	rapid	0.24 to 0.47 in	5.6 to 7.3
2Bk -- 26 to 35 in	gravelly coarse sand	rapid	0.18 to 0.36 in	6.6 to 8.4
2C -- 35 to 48 in	coarse sand	rapid	0.26 to 0.52 in	6.6 to 8.4
3Cg -- 48 to 80 in	silt loam	moderate	5.10 to 7.02 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### M-W--Water, miscellaneous

#### Water, miscellaneous

*Extent:* 100 percent of the unit

*Landform(s):*

*Slope gradient:*

*Parent material:*

*Restrictive feature(s):* greater than 60 inches

*Flooding:*

*Ponding:*

*Drainage class:*

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):*

*Wind erodibility index (WEI):*

*Kw factor (surface layer)*

*Land capability, nonirrigated*

*Hydric soil:*

*Hydrologic group:*

*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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### P1B--Annieville silty clay loam, 2 to 5 percent slopes

#### Annieville

*Extent:* 75 to 85 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 2 to 5 percent

*Parent material:* loess over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A,AB -- 0 to 11 in	silty clay loam	moderate	2.31 to 2.54 in	6.1 to 7.3
Bw1-3 -- 11 to 52 in	silty clay loam	moderate	7.37 to 8.19 in	6.1 to 7.3
2BC1 -- 52 to 57 in	sandy loam	moderately rapid	0.41 to 0.67 in	6.6 to 7.8
2BC2,2BC3 -- 57 to 80 in	clay loam	moderately slow	3.20 to 4.11 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### P2A--McCreath silty clay loam, 1 to 3 percent slopes

#### McCreath

*Extent:* 75 to 85 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 1 to 3 percent

*Parent material:* loess

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 1

*Hydric soil:* no

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1,A2 -- 0 to 17 in	silty clay loam	moderate	3.56 to 3.89 in	6.1 to 7.3
Bw1,2 -- 17 to 35 in	silty clay loam	moderate	3.26 to 3.62 in	6.1 to 7.3
Bk -- 35 to 44 in	silt loam	moderate	1.54 to 1.81 in	7.4 to 8.4
2BC -- 44 to 49 in	gravelly loam	moderately rapid	0.41 to 0.67 in	6.6 to 7.8
2C -- 49 to 80 in	clay loam	moderately slow	4.30 to 5.53 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### P3A--Biscay silty clay loam, 0 to 2 percent slopes, occasionally flooded

#### Biscay, occasionally flooded

*Extent:* 80 to 90 percent of the unit

*Landform(s):* flats on outwash plains

*Slope gradient:* 0 to 2 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* occasional

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 2w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1 -- 0 to 16 in	silty clay loam	moderate	3.23 to 3.55 in	6.1 to 7.3
A2 -- 16 to 21 in	clay loam	moderate	0.80 to 0.90 in	6.6 to 7.3
Bg -- 21 to 31 in	clay loam	moderate	1.74 to 1.94 in	6.6 to 7.3
2Cg -- 31 to 60 in	coarse sand	rapid	0.57 to 1.15 in	7.4 to 8.4

### P7A--Comfrey clay loam, 0 to 2 percent slopes, occasionally flooded

#### Comfrey, occasionally flooded

*Extent:* 75 to 85 percent of the unit

*Landform(s):* flats on flood plains

*Slope gradient:* 0 to 2 percent

*Parent material:* alluvium

*Restrictive feature(s):* greater than 60 inches

*Flooding:* occasional

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .10

*Land capability, nonirrigated* 2w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A1,A2 -- 0 to 26 in	clay loam	moderate	4.68 to 5.72 in	6.6 to 7.3
Bg -- 26 to 35 in	clay loam	moderate	1.45 to 1.81 in	6.6 to 7.3
BCg,Cg -- 35 to 60 in	clay loam	moderate	3.72 to 4.71 in	6.6 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### P9A--Gillett Grove silty clay loam, 0 to 2 percent slopes

#### Gillett Grove

*Extent:* 80 to 90 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 0 to 2 percent

*Parent material:* loess

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 2w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap, A1,2 -- 0 to 17 in	silty clay loam	moderate	3.56 to 3.89 in	6.1 to 7.3
BA,Bg1-3 -- 17 to 44 in	silty clay loam	moderate	4.89 to 5.43 in	6.1 to 7.3
BCg -- 44 to 57 in	silt loam	moderate	2.60 to 2.86 in	7.9 to 8.4
2Cg -- 57 to 80 in	loam	moderately slow	3.20 to 4.11 in	7.4 to 8.4

### P12B--Everly silty clay loam, 2 to 6 percent slopes

#### Everly

*Extent:* 75 to 85 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 2 to 6 percent

*Parent material:* loess over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	silty clay loam	moderate	1.67 to 1.87 in	6.1 to 7.3
Bw -- 10 to 18 in	silty clay loam	moderate	1.24 to 1.41 in	6.1 to 7.3
2Bk,2BC -- 18 to 80 in	clay loam	moderately slow	8.65 to 11.13 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### P12C2--Everly silty clay loam, 6 to 12 percent slopes, moderately eroded

#### Everly, moderately eroded

*Extent:* 75 to 85 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 6 to 12 percent

*Parent material:* loess over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 3e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	silty clay loam	moderate	1.20 to 1.35 in	6.1 to 7.3
Bw -- 7 to 16 in	silty clay loam	moderate	1.36 to 1.54 in	6.1 to 7.3
2Bk,2BC -- 16 to 80 in	clay loam	moderately slow	8.93 to 11.48 in	7.4 to 8.4

### P15B--Galva silty clay loam, 2 to 5 percent slopes

#### Galva

*Extent:* 75 to 85 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 2 to 5 percent

*Parent material:* loess

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 11 in	silty clay loam	moderate	2.09 to 2.43 in	6.1 to 7.3
BA,Bw1,2 -- 11 to 31 in	silty clay loam	moderate	3.41 to 4.02 in	6.1 to 7.3
BC -- 31 to 45 in	silt loam	moderate	2.34 to 2.76 in	6.1 to 7.3
C -- 45 to 60 in	silt loam	moderate	2.54 to 2.99 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### P20B--Judson silt loam, 3 to 8 percent slopes

#### Judson

*Extent:* 75 to 85 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 3 to 8 percent

*Parent material:* colluvium

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 36 in	silt loam	moderate	6.81 to 7.88 in	6.1 to 7.3
Bw1,Bw2 -- 36 to 56 in	silty clay loam	moderate	3.81 to 4.42 in	6.1 to 7.3
C -- 56 to 60 in	silty clay loam	moderate	0.67 to 0.79 in	6.6 to 7.8

### P21A--Marcus silty clay loam, 0 to 2 percent slopes

#### Marcus

*Extent:* 75 to 85 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 0 to 2 percent

*Parent material:* loess

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 2w

*Hydric soil:* yes

*Hydrologic group:* C/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap, A1,2 -- 0 to 17 in	silty clay loam	moderately slow	3.56 to 3.89 in	6.1 to 7.3
BA,Bg1-3 -- 17 to 44 in	silty clay loam	moderately slow	4.89 to 5.43 in	6.1 to 7.3
Cg1 -- 44 to 57 in	silt loam	moderately slow	2.60 to 2.86 in	7.9 to 8.4
2Cg2 -- 57 to 60 in	loam	moderately slow	0.47 to 0.52 in	7.9 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### P27A--Primghar silty clay loam, 1 to 3 percent slopes

#### Primghar

*Extent:* 75 to 85 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 1 to 3 percent

*Parent material:* loess

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 1

*Hydric soil:* no

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1,A2 -- 0 to 21 in	silty clay loam	moderate	3.96 to 4.59 in	6.1 to 7.3
Bw1,Bw2,Bw3 -- 21 to 42 in	silty clay loam	moderate	3.61 to 4.25 in	6.1 to 7.3
C -- 42 to 60 in	silty clay loam	moderate	3.01 to 3.54 in	7.4 to 8.4

### P28A--Ransom silty clay loam, 1 to 3 percent slopes

#### Ransom

*Extent:* 75 to 85 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 1 to 3 percent

*Parent material:* loess over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 1

*Hydric soil:* no

*Hydrologic group:* C/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A,AB -- 0 to 16 in	silty clay loam	moderate	2.91 to 3.55 in	6.6 to 7.3
Bw1,Bw2,Bw3 -- 16 to 33 in	silty clay loam	moderate	2.71 to 3.22 in	6.6 to 7.3
2BCK,2BC -- 33 to 80 in	clay loam	moderately slow	6.56 to 8.43 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### P29A--Rushmore silty clay loam, 0 to 2 percent slopes

#### Rushmore

*Extent:* 75 to 85 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 0 to 2 percent

*Parent material:* loess over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 2w

*Hydric soil:* yes

*Hydrologic group:* C/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A,AB -- 0 to 18 in	silty clay loam	moderate	3.26 to 3.98 in	6.6 to 7.3
Bg1,Bg2 -- 18 to 24 in	silty clay loam	moderate	0.94 to 1.12 in	6.6 to 7.3
BCg -- 24 to 32 in	silty clay loam	moderate	1.26 to 1.50 in	7.4 to 7.8
2BCkg,2BCg -- 32 to 80 in	clay loam	moderately slow	6.72 to 8.65 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### P30B--Sac silty clay loam, 2 to 5 percent slopes

#### Sac

*Extent:* 75 to 85 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 2 to 5 percent

*Parent material:* loess over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 11 in	silty clay loam	moderate	2.31 to 2.54 in	6.1 to 7.3
BA,Bw1 -- 11 to 28 in	silty clay loam	moderate	3.05 to 3.39 in	6.1 to 7.3
2Bw2 -- 28 to 33 in	clay loam	moderately slow	0.72 to 0.92 in	6.1 to 7.3
2BCK,2BC -- 33 to 60 in	clay loam	moderately slow	3.75 to 4.82 in	7.4 to 8.4

### P31A--Spicer silty clay loam, 0 to 2 percent slopes

#### Spicer

*Extent:* 80 to 90 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 0 to 2 percent

*Parent material:* loess

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 2w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A,AB -- 0 to 17 in	silty clay loam	moderate	3.05 to 4.06 in	7.4 to 8.4
Bg1,Bg2 -- 17 to 35 in	silty clay loam	moderate	2.90 to 3.98 in	7.4 to 8.4
Cg -- 35 to 60 in	silty clay loam	moderate	3.97 to 5.46 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### P33A--Spillco silt loam, 0 to 2 percent slopes, occasionally flooded

#### Spillco, occasionally flooded

*Extent:* 80 to 90 percent of the unit

*Landform(s):* flats on flood plains

*Slope gradient:* 0 to 2 percent

*Parent material:* alluvium

*Restrictive feature(s):* greater than 60 inches

*Flooding:* occasional

*Ponding:* none

*Drainage class:* moderately well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 1

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A1 -- 0 to 10 in	silt loam	moderate	1.87 to 2.07 in	6.6 to 7.3
A2,A3,A4 -- 10 to 35 in	silt loam	moderate	4.79 to 5.29 in	6.6 to 8.4
C -- 35 to 60 in	loam	moderate	4.71 to 5.21 in	6.6 to 8.4

### P36A--Talcot silty clay loam, 0 to 2 percent slopes, occasionally flooded

#### Talcot, occasionally flooded

*Extent:* 80 to 90 percent of the unit

*Landform(s):* flats on outwash plains

*Slope gradient:* 0 to 2 percent

*Parent material:* alluvium over outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* occasional

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 2w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1,A2 -- 0 to 22 in	silty clay loam	moderate	3.97 to 4.85 in	7.4 to 8.4
Bg -- 22 to 33 in	silty clay loam	moderate	1.87 to 2.20 in	7.4 to 8.4
2Cg -- 33 to 60 in	coarse sand	rapid	0.54 to 1.07 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### P37D--Talmo gravelly sandy loam, 6 to 35 percent slopes

#### Talmo

*Extent:* 85 to 95 percent of the unit

*Landform(s):* hills on outwash plains

*Slope gradient:* 6 to 35 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .10

*Land capability, nonirrigated* 7s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 9 in	gravelly sandy loam	moderately rapid	0.91 to 1.09 in	6.1 to 8.4
AC -- 9 to 12 in	gravelly loamy sand	rapid	0.06 to 0.11 in	7.4 to 8.4
C1,C2 -- 12 to 60 in	very gravelly sand	rapid	0.96 to 1.92 in	7.4 to 8.4

### P38B--Thurman sandy loam, 2 to 6 percent slopes

#### Thurman

*Extent:* 85 to 95 percent of the unit

*Landform(s):* hills on outwash plains

*Slope gradient:* 2 to 6 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat excessively drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 3e

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 10 in	sandy loam	moderately rapid	1.28 to 1.48 in	6.1 to 6.5
AC -- 10 to 20 in	sandy loam	moderately rapid	1.23 to 1.43 in	6.1 to 7.3
C1,C2 -- 20 to 60 in	sand	rapid	0.80 to 2.78 in	6.1 to 7.8

## Map Unit Description (MN)

Nobles County, Minnesota

### P38C--Thurman sandy loam, 6 to 12 percent slopes

#### Thurman

*Extent:* 85 to 95 percent of the unit

*Landform(s):* hills on outwash plains

*Slope gradient:* 6 to 12 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat excessively drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 3

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 4e

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 10 in	sandy loam	moderately rapid	1.28 to 1.48 in	6.1 to 6.5
AC -- 10 to 20 in	sandy loam	moderately rapid	1.23 to 1.43 in	6.1 to 7.3
C1,C2 -- 20 to 60 in	sand	rapid	0.80 to 2.78 in	6.1 to 7.8

## Map Unit Description (MN)

Nobles County, Minnesota

### P43A--Wilmonton silty clay loam, 1 to 3 percent slopes

#### Wilmonton

*Extent:* 80 to 90 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 1 to 3 percent

*Parent material:* loess over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* somewhat poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 1

*Hydric soil:* no

*Hydrologic group:* C/D

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 15 in	silty clay loam	moderate	2.99 to 3.89 in	6.1 to 7.3
Bw -- 15 to 20 in	loam	moderate	0.92 to 1.23 in	6.1 to 7.3
2Bw -- 20 to 25 in	clay loam	moderately slow	0.72 to 0.92 in	6.1 to 7.3
2Bk -- 25 to 55 in	clay loam	moderately slow	4.19 to 5.39 in	7.4 to 8.4
2BC1,2BC2 -- 55 to 80 in	clay loam	moderately slow	3.47 to 4.46 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### P45E--Moneta clay loam, 15 to 45 percent slopes

#### Moneta

*Extent:* 80 to 90 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 15 to 45 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 7e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 9 in	clay loam	moderately slow	1.27 to 1.63 in	7.4 to 8.4
BA -- 9 to 13 in	clay loam	moderately slow	0.55 to 0.71 in	7.4 to 8.4
Bk,BC1 -- 13 to 53 in	clay loam	moderately slow	5.62 to 7.23 in	7.4 to 8.4
BC2 -- 53 to 80 in	clay loam	moderately slow	3.75 to 4.82 in	7.4 to 8.4

### P48A--Allendorf silty clay loam, 0 to 2 percent slopes

#### Allendorf

*Extent:* 80 to 90 percent of the unit

*Landform(s):* flats on outwash plains

*Slope gradient:* 0 to 2 percent

*Parent material:* loess over outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 2s

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 14 in	silty clay loam	moderate	2.69 to 3.12 in	6.1 to 7.3
Bw1,Bw2,Bw3 -- 14 to 34 in	silty clay loam	moderate	3.35 to 3.94 in	6.1 to 7.3
2BC,2C1 -- 34 to 60 in	very gravelly loamy coarse sand	very rapid	0.52 to 1.04 in	6.1 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### P48B--Allendorf silty clay loam, 2 to 6 percent slopes

#### Allendorf

*Extent:* 80 to 90 percent of the unit

*Landform(s):* hills on outwash plains

*Slope gradient:* 2 to 6 percent

*Parent material:* loess over outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 14 in	silty clay loam	moderate	2.69 to 3.12 in	6.1 to 7.3
Bw1,Bw2,Bw3 -- 14 to 34 in	silty clay loam	moderate	3.35 to 3.94 in	6.1 to 7.3
2BC,2C1 -- 34 to 60 in	very gravelly loamy coarse sand	very rapid	0.52 to 1.04 in	6.1 to 8.4

### P49A--Comfrey clay loam, 0 to 2 percent slopes, frequently flooded

#### Comfrey, frequently flooded

*Extent:* 80 to 90 percent of the unit

*Landform(s):* flats on flood plains

*Slope gradient:* 0 to 2 percent

*Parent material:* alluvium

*Restrictive feature(s):* greater than 60 inches

*Flooding:* frequent

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .20

*Land capability, nonirrigated* 5w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 40 in	clay loam	moderate	7.23 to 8.83 in	6.6 to 7.3
Cg -- 40 to 60 in	clay loam	moderate	2.95 to 3.74 in	6.6 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### P50B--Everly-Kanaranzi complex, 2 to 6 percent slopes

#### Everly

*Extent:* 55 to 65 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 2 to 6 percent

*Parent material:* loess over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 15 in	silty clay loam	moderate	2.54 to 2.84 in	6.1 to 7.3
Bw -- 15 to 26 in	silty clay loam	moderate	1.65 to 1.87 in	6.1 to 7.3
2Bw -- 26 to 44 in	clay loam	moderately slow	2.54 to 3.26 in	6.1 to 7.3
2Bk,2Bck -- 44 to 80 in	clay loam	moderately slow	5.02 to 6.45 in	7.4 to 8.4

#### Kanaranzi

*Extent:* 20 to 30 percent of the unit

*Landform(s):* hills on outwash plains

*Slope gradient:* 2 to 6 percent

*Parent material:* loess over outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 2

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 2e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 10 in	silt loam	moderate	2.17 to 2.36 in	6.1 to 7.3
Bw -- 10 to 16 in	loam	moderate	1.26 to 1.39 in	6.1 to 7.3
2C -- 16 to 80 in	very gravelly sand	rapid	1.28 to 2.55 in	6.1 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### P51C2--Everly-Moneta-Talmo complex, 6 to 12 percent slopes, moderately eroded

#### Everly, moderately eroded

*Extent:* 35 to 45 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 6 to 12 percent

*Parent material:* loess over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 3e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	silty clay loam	moderate	1.34 to 1.50 in	6.1 to 7.3
Bw -- 8 to 26 in	silty clay loam	moderate	2.72 to 3.08 in	6.1 to 7.3
2Bk,2BC -- 26 to 80 in	clay loam	moderately slow	7.55 to 9.71 in	7.4 to 8.4

#### Moneta, moderately eroded

*Extent:* 15 to 25 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 8 to 12 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 3e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	clay loam	moderately slow	1.10 to 1.42 in	7.4 to 8.4
Bk -- 8 to 38 in	clay loam	moderately slow	4.24 to 5.46 in	7.4 to 8.4
BC -- 38 to 80 in	clay loam	moderately slow	5.84 to 7.51 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### P51C2--Everly-Moneta-Talmo complex, 6 to 12 percent slopes, moderately eroded

#### Talmo, moderately eroded

*Extent:* 15 to 25 percent of the unit

*Landform(s):* hills on outwash plains

*Slope gradient:* 6 to 12 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .10

*Land capability, nonirrigated* 4s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 6 in	gravelly sandy loam	moderately rapid	0.59 to 0.71 in	6.1 to 8.4
C -- 6 to 60 in	very gravelly sand	rapid	1.08 to 2.16 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### P52D2--Moneta-Everly-Talmo complex, 12 to 18 percent slopes, moderately eroded

#### Moneta, moderately eroded

*Extent:* 35 to 45 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 12 to 18 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 4e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 7 in	clay loam	moderately slow	0.99 to 1.28 in	7.4 to 8.4
Bk -- 7 to 30 in	clay loam	moderately slow	3.20 to 4.11 in	7.4 to 8.4
Bck -- 30 to 80 in	clay loam	moderately slow	7.00 to 9.00 in	7.4 to 8.4

#### Everly, moderately eroded

*Extent:* 15 to 25 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 12 to 18 percent

*Parent material:* loess over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 4e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	silty clay loam	moderate	1.34 to 1.50 in	6.1 to 7.3
Bw -- 8 to 16 in	silty clay loam	moderate	1.24 to 1.41 in	6.1 to 7.3
2Bw -- 16 to 38 in	clay loam	moderately slow	3.09 to 3.97 in	6.7 to 7.3
2Bk,2BC -- 38 to 80 in	clay loam	moderately slow	5.84 to 7.51 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### P52D2--Moneta-Everly-Talmo complex, 12 to 18 percent slopes, moderately eroded

#### Talmo, moderately eroded

*Extent:* 15 to 25 percent of the unit

*Landform(s):* hills on outwash plains

*Slope gradient:* 12 to 18 percent

*Parent material:* outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* excessively drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 5

*Wind erodibility index (WEI):* 56

*Kw factor (surface layer)* .10

*Land capability, nonirrigated* 6s

*Hydric soil:* no

*Hydrologic group:* A

*Potential for frost action:* low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 8 in	gravelly sandy loam	moderately rapid	0.79 to 0.94 in	6.1 to 8.4
C -- 8 to 60 in	very gravelly sand	rapid	1.04 to 2.08 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### P53C2--Everly-Moneta complex, 6 to 12 percent slopes, moderately eroded

#### Everly, moderately eroded

*Extent:* 50 to 60 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 6 to 12 percent

*Parent material:* loess over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .28

*Land capability, nonirrigated* 3e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	silty clay loam	moderate	1.67 to 1.87 in	6.1 to 7.3
Bw -- 10 to 18 in	silty clay loam	moderate	1.24 to 1.41 in	6.1 to 7.3
2Bk,2BC -- 18 to 80 in	clay loam	moderately slow	8.65 to 11.13 in	7.4 to 8.4

#### Moneta, moderately eroded

*Extent:* 20 to 30 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 8 to 12 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 3e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	clay loam	moderately slow	0.99 to 1.28 in	7.4 to 8.4
Bk -- 7 to 33 in	clay loam	moderately slow	3.64 to 4.68 in	7.4 to 8.4
BC -- 33 to 80 in	clay loam	moderately slow	6.56 to 8.43 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### P54D2--Moneta-Everyly complex, 12 to 18 percent slopes, moderately eroded

#### Moneta, moderately eroded

*Extent:* 40 to 50 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 12 to 18 percent

*Parent material:* till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 4L

*Wind erodibility index (WEI):* 86

*Kw factor (surface layer)* .24

*Land capability, nonirrigated* 4e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 9 in	clay loam	moderately slow	1.27 to 1.63 in	7.4 to 8.4
BA -- 9 to 13 in	clay loam	moderately slow	0.55 to 0.71 in	7.4 to 8.4
Bk,BC1 -- 13 to 53 in	clay loam	moderately slow	5.62 to 7.23 in	7.4 to 8.4
BC2 -- 53 to 80 in	clay loam	moderately slow	3.75 to 4.82 in	7.4 to 8.4

#### Everyly, moderately eroded

*Extent:* 35 to 45 percent of the unit

*Landform(s):* hills on till plains

*Slope gradient:* 12 to 18 percent

*Parent material:* loess over till

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 5

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 4e

*Hydric soil:* no

*Hydrologic group:* C

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	silty clay loam	moderate	1.67 to 1.87 in	6.1 to 7.3
Bw -- 10 to 15 in	silty clay loam	moderate	0.77 to 0.87 in	6.1 to 7.3
2Bw -- 15 to 44 in	clay loam	moderately slow	4.08 to 5.24 in	6.7 to 7.3
2Bk,2BC -- 44 to 80 in	clay loam	moderately slow	5.02 to 6.45 in	7.4 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### P55A--Kato silty clay loam, 0 to 2 percent slopes

#### Kato

*Extent:* 85 to 95 percent of the unit

*Landform(s):* flats on outwash plains

*Slope gradient:* 0 to 2 percent

*Parent material:* loess over outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* poorly drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 2w

*Hydric soil:* yes

*Hydrologic group:* B/D

*Potential for frost action:* high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A,AB -- 0 to 21 in	silty clay loam	moderate	4.17 to 4.59 in	6.1 to 7.3
Bg1,Bg2 -- 21 to 31 in	silty clay loam	moderate	2.05 to 2.25 in	6.1 to 7.3
BCg -- 31 to 35 in	sandy loam	rapid	0.47 to 0.55 in	6.1 to 7.3
2Cg1,2Cg2 -- 35 to 60 in	coarse sand	rapid	0.50 to 0.99 in	7.4 to 8.4

### P56A--Kanananzi silt loam, 0 to 2 percent slopes

#### Kanananzi

*Extent:* 75 to 85 percent of the unit

*Landform(s):* flats on outwash plains

*Slope gradient:* 0 to 2 percent

*Parent material:* loess over outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 3s

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	silt loam	moderate	1.56 to 1.70 in	6.1 to 7.3
BA,Bw -- 7 to 20 in	loam	moderate	2.60 to 2.86 in	6.1 to 7.3
2C1-3 -- 20 to 80 in	very gravelly coarse sand	rapid	1.20 to 2.39 in	6.1 to 8.4

## Map Unit Description (MN)

Nobles County, Minnesota

### P56B--Kanaranzi silt loam, 2 to 6 percent slopes

#### Kanaranzi

*Extent:* 75 to 85 percent of the unit

*Landform(s):* hills on outwash plains

*Slope gradient:* 2 to 6 percent

*Parent material:* loess over outwash

*Restrictive feature(s):* greater than 60 inches

*Flooding:* none

*Ponding:* none

*Drainage class:* well drained

*Soil loss tolerance (T factor):* 3

*Wind erodibility group (WEG):* 6

*Wind erodibility index (WEI):* 48

*Kw factor (surface layer)* .32

*Land capability, nonirrigated* 3e

*Hydric soil:* no

*Hydrologic group:* B

*Potential for frost action:* moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	silt loam	moderate	1.56 to 1.70 in	6.1 to 7.3
BA,Bw -- 7 to 20 in	loam	moderate	2.60 to 2.86 in	6.1 to 7.3
2C1-3 -- 20 to 80 in	very gravelly coarse sand	rapid	1.20 to 2.39 in	6.1 to 8.4

### W--Water

#### Water

*Extent:* 100 percent of the unit

*Landform(s):*

*Slope gradient:*

*Parent material:*

*Restrictive feature(s):* greater than 60 inches

*Flooding:*

*Ponding:*

*Drainage class:*

*Soil loss tolerance (T factor):*

*Wind erodibility group (WEG):*

*Wind erodibility index (WEI):*

*Kw factor (surface layer)*

*Land capability, nonirrigated*

*Hydric soil:*

*Hydrologic group:*

*Potential for frost action:*

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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This report provides a semitabular listing of some soil and site properties and interpretations that are valuable in communicating the concept of a map unit. The report also provides easy access to the commonly used conservation planning information in one place. The major soil components in each map unit are displayed. Minor components may be displayed if they are included in the database and are selected at the time the report is generated.