Map Unit Description (MN)

Beltrami 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]

32B--Nebish sandy loam, 1 to 6 percent slopes

Nebish

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 6 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	sandy loam	moderately rapid	0.41 to 0.57 in	5.6 to 7.3
E -- 3 to 9 in	fine sandy loam	moderately rapid	0.65 to 1.12 in	5.6 to 7.3
Bt -- 9 to 24 in	clay loam	moderate	2.24 to 2.84 in	5.6 to 7.8
C -- 24 to 60 in	loam	moderate	3.94 to 6.81 in	7.4 to 8.4

32C--Nebish fine sandy loam, 6 to 12 percent slopes

Nebish

Extent: 85 percent of the unit
Landform(s): hillslopes 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 3 in	fine sandy loam	moderately rapid	0.41 to 0.57 in	5.6 to 7.3
E --	3 to 8 in	fine sandy loam	moderately rapid	0.52 to 0.90 in	5.6 to 7.3
Bt --	8 to 26 in	clay loam	moderate	2.72 to 3.44 in	5.6 to 7.8
C --	26 to 60 in	loam	moderate	3.72 to 6.43 in	7.4 to 8.4

32D--Nebish fine sandy loam, 12 to 25 percent slopes

Nebish

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 12 to 25 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 3 in	fine sandy loam	moderately rapid	0.41 to 0.57 in	5.6 to 7.3
E --	3 to 8 in	fine sandy loam	moderately rapid	0.52 to 0.90 in	5.6 to 7.3
Bt --	8 to 25 in	clay loam	moderate	2.60 to 3.29 in	5.6 to 7.8
C --	25 to 60 in	loam	moderate	3.81 to 6.58 in	7.4 to 8.4

48--Hiwood loamy fine sand

Hiwood

Extent: 90 percent of the unit
Landform(s): flats on lake plains, rises on lake plains, flats on outwash plains, rises on outwash plains
Slope gradient: 1 to 3 percent
Parent material: sandy glaciolacustrine deposits
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 6 in	loamy fine sand	rapid	0.47 to 0.71 in	4.5 to 6.0
Bw1,Bw2 -- 6 to 26 in	fine sand	rapid	1.41 to 2.01 in	5.1 to 6.0
Bw3,C -- 26 to 60 in	fine sand	rapid	1.69 to 2.71 in	5.6 to 7.8

72--Shooker loam

Shooker

Extent: 70 percent of the unit
Landform(s): swales on moraines
Slope gradient: 0 to 2 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: occasional
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	loam	moderate	0.39 to 0.43 in	5.6 to 7.3
E -- 2 to 11 in	very fine sandy loam	moderate	1.36 to 1.81 in	5.6 to 7.3
Btg -- 11 to 27 in	clay loam	moderately slow	2.42 to 3.07 in	5.6 to 7.3
Cg -- 27 to 60 in	loam	moderate	4.57 to 6.21 in	7.4 to 8.4

77--Garnes loam

Garnes

Extent: 85 percent of the unit
Landform(s): flats on lake plains, rises on lake plains
Slope gradient: 1 to 3 percent
Parent material: 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) .32
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 7 in	loam	moderate	1.28 to 1.42 in	6.1 to 7.8
Bt1,Bt2 -- 7 to 20 in	clay loam	moderate	2.21 to 2.60 in	6.6 to 7.8
Cg -- 20 to 60 in	loam	moderate	5.57 to 7.56 in	7.4 to 8.4

116--Redby loamy fine sand

Redby

Extent: 90 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 1 to 3 percent
Parent material: sandy glaciolacustrine deposits
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated 3w
Hydric soil: no
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy fine sand	rapid	0.25 to 0.38 in	5.1 to 6.5
E -- 3 to 8 in	fine sand	rapid	0.33 to 0.47 in	5.1 to 6.5
Bw,C -- 8 to 60 in	fine sand	rapid	3.12 to 4.16 in	6.1 to 7.8

117--Cormant loamy fine sand

Cormant

Extent: 90 percent of the unit
Landform(s): flats on outwash plains, swales on outwash plains
Slope gradient: 0 to 2 percent
Parent material: sandy glaciolacustrine deposits
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	loamy fine sand	rapid	0.63 to 0.94 in	6.1 to 7.3
Cg -- 8 to 60 in	fine sand	rapid	3.12 to 5.20 in	6.1 to 7.8

121--Wykeham fine sandy loam

Wykeham

Extent: 70 percent of the unit
Landform(s): 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: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 1
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 7 in	fine sandy loam	moderately rapid	1.13 to 1.28 in	5.1 to 7.3
E -- 7 to 11 in	fine sandy loam	moderate	0.35 to 0.55 in	5.1 to 6.5
BE -- 11 to 19 in	fine sandy loam	moderately rapid	1.10 to 1.50 in	5.1 to 7.3
Bt -- 19 to 28 in	sandy clay loam	moderate	1.09 to 1.63 in	5.6 to 7.3
C -- 28 to 71 in	fine sandy loam	moderate	4.72 to 7.72 in	7.4 to 8.4

125--Beltrami fine sandy loam

Beltrami

Extent: 70 percent of the unit
Landform(s): 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 3w
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 6 in	fine sandy loam	moderate	0.89 to 1.06 in	6.1 to 7.3
E --	6 to 11 in	fine sandy loam	moderate	0.41 to 0.87 in	5.1 to 7.3
Bt --	11 to 34 in	clay loam	moderately slow	3.20 to 4.34 in	5.6 to 7.3
C --	34 to 60 in	loam	moderate	3.64 to 4.94 in	7.4 to 8.4

147--Spooner silt loam

Spooner

Extent: 85 percent of the unit
Landform(s): flats on moraines, swales on moraines
Slope gradient: 0 to 2 percent
Parent material: glaciolacustrine deposits
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) .37
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silt loam	moderate	0.79 to 0.94 in	5.6 to 7.8
E -- 4 to 7 in	very fine sandy loam	moderately rapid	0.54 to 0.60 in	5.6 to 7.8
Btg1,Btg2 -- 7 to 25 in	silty clay loam	moderate	3.08 to 3.98 in	6.1 to 7.8
Cg -- 25 to 60 in	loam	moderate	5.89 to 7.62 in	7.4 to 8.4

158B--Zimmerman loamy fine sand, 1 to 6 percent slopes

Zimmerman

Extent: 90 percent of the unit
Landform(s): hillslopes on beach ridges, hillslopes on outwash plains
Slope gradient: 1 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 16 in	loamy fine sand	rapid	1.61 to 1.94 in	5.1 to 6.5
Bw..E&Bt -- 16 to 60 in	fine sand	rapid	2.62 to 4.37 in	5.1 to 7.3

158C--Zimmerman loamy fine sand, 6 to 12 percent slopes

Zimmerman

Extent: 90 percent of the unit
Landform(s): hillslopes on beach ridges, hillslopes 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 12 in	loamy fine sand	rapid	1.18 to 1.42 in	5.1 to 6.5
Bw..E&Bt -- 12 to 60 in	fine sand	rapid	2.88 to 4.80 in	5.1 to 7.3

167--Baudette silt loam

Baudette

Extent: 85 percent of the unit
Landform(s): flats on moraines, rises on moraines
Slope gradient: 1 to 3 percent
Parent material: glaciolacustrine deposits
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) .37
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silt loam	moderate	0.79 to 0.87 in	5.6 to 7.3
E -- 4 to 8 in	very fine sandy loam	moderate	0.55 to 0.79 in	5.6 to 7.3
Bt1,Bt2 -- 8 to 35 in	silty clay loam	moderate	4.62 to 6.52 in	5.6 to 7.8
C -- 35 to 60 in	silt loam	moderate	4.22 to 5.46 in	7.4 to 8.4

191--Epoufette sandy loam

Epoufette

Extent: 90 percent of the unit
Landform(s): flats on outwash plains, swales on outwash plains
Slope gradient: 0 to 2 percent
Parent material: outwash
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) .15
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 4 in	sandy loam	moderately rapid	0.35 to 0.55 in	6.1 to 7.3
Eg --	4 to 13 in	loamy sand	rapid	0.45 to 0.63 in	6.1 to 7.3
Btg --	13 to 18 in	sandy loam	moderately rapid	0.41 to 0.72 in	6.6 to 7.8
2Cg --	18 to 60 in	gravelly coarse sand	very rapid	0.42 to 1.25 in	7.4 to 8.4

199B--Sol cobbly sandy loam, 1 to 6 percent slopes

Sol

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 6 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 4 in	cobbly sandy loam	moderate	0.47 to 0.79 in	5.1 to 6.5
E --	4 to 13 in	cobbly loamy sand	moderately rapid	0.81 to 1.18 in	5.1 to 6.5
B/E..Bt2 --	13 to 52 in	loam	moderately slow	6.24 to 7.80 in	5.6 to 7.3
C --	52 to 60 in	fine sandy loam	moderately slow	0.87 to 1.26 in	7.4 to 7.8

199C--Sol cobbly sandy loam, 6 to 12 percent slopes

Sol

Extent: 85 percent of the unit
Landform(s): hillslopes 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 3 in	cobbly sandy loam	moderate	0.38 to 0.63 in	5.1 to 6.5
E --	3 to 10 in	cobbly loamy sand	moderately rapid	0.60 to 0.87 in	5.1 to 6.5
B/E..Bt2 --	10 to 18 in	sandy clay loam	moderately slow	1.32 to 1.65 in	5.6 to 7.3
C --	18 to 60 in	fine sandy loam	moderately slow	4.59 to 6.68 in	7.4 to 7.8

202--Meehan loamy sand

Meehan

Extent: 90 percent of the unit
Landform(s): flats on outwash plains, swales on outwash plains
Slope gradient: 0 to 3 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): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated 4w
Hydric soil: no
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:

		Texture	*Permeability*	*Available water capacity*	*pH*
A --	0 to 5 in	loamy sand	moderately rapid	0.51 to 0.61 in	3.5 to 7.3
Bw,BC --	5 to 30 in	sand	rapid	1.49 to 2.73 in	3.5 to 6.5
C --	30 to 60 in	sand	rapid	0.60 to 2.09 in	3.5 to 7.3

205--Karlstad loamy sand

Karlstad

Extent: 90 percent of the unit
Landform(s): flats on beach ridges, rises on beach ridges, flats on outwash plains, rises on outwash plains
Slope gradient: 1 to 3 percent
Parent material: sandy glaciolacustrine deposits
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A,E	0 to 7 in	loamy sand	rapid	0.71 to 0.85 in	4.5 to 7.3
Bt1	7 to 12 in	coarse sandy loam	moderately rapid	0.61 to 0.85 in	6.1 to 7.3
2Bt2	12 to 18 in	gravelly coarse sandy loam	moderately rapid	0.76 to 1.01 in	6.1 to 7.8
2C	18 to 60 in	stratified gravelly coarse sand to loamy fine sand	very rapid	0.83 to 1.67 in	7.4 to 8.4

240B--Warba fine sandy loam, 1 to 6 percent slopes

Warba

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 6 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E,E/B -- 0 to 16 in	fine sandy loam	moderately rapid	2.91 to 3.71 in	5.1 to 6.5
B/E,Bt -- 16 to 35 in	clay loam	moderately slow	3.02 to 3.59 in	5.1 to 7.3
C -- 35 to 60 in	loam	moderate	3.97 to 4.71 in	6.6 to 8.4

240C--Warba fine sandy loam, 6 to 12 percent slopes

Warba

Extent: 85 percent of the unit
Landform(s): hillslopes 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E,E/B -- 0 to 16 in	fine sandy loam	moderately rapid	2.91 to 3.71 in	5.1 to 6.5
B/E,Bt -- 16 to 44 in	clay loam	moderately slow	4.47 to 5.31 in	5.1 to 7.3
C -- 44 to 60 in	loam	moderate	2.52 to 2.99 in	6.6 to 8.4

242B--Marquette loamy sand, 1 to 6 percent slopes

Marquette

Extent: 90 percent of the unit
Landform(s): hillslopes on beach ridges, hillslopes on outwash plains
Slope gradient: 1 to 6 percent
Parent material: sandy glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A,E --	0 to 13 in	loamy sand	rapid	1.30 to 1.82 in	5.6 to 7.3
Bt --	13 to 18 in	very gravelly sandy loam	moderately rapid	0.51 to 0.82 in	6.6 to 8.4
C --	18 to 60 in	stratified extremely gravelly coarse sand to fine sand	very rapid	0.83 to 1.67 in	7.4 to 8.4

242C--Marquette loamy sand, 6 to 12 percent slopes

Marquette

Extent: 90 percent of the unit
Landform(s): hillslopes on beach ridges, hillslopes on outwash plains
Slope gradient: 6 to 12 percent
Parent material: sandy glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 12 in	loamy sand	rapid	1.18 to 1.65 in	5.6 to 7.3
Bt -- 12 to 17 in	very gravelly coarse sandy loam	moderately rapid	0.51 to 0.82 in	6.6 to 8.4
C -- 17 to 60 in	stratified extremely gravelly coarse sand to fine sand	very rapid	0.86 to 1.72 in	7.4 to 8.4

243--Stuntz fine sandy loam

Stuntz

Extent: 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: somewhat poorly 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 2w
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E.E/B -- 0 to 16 in	fine sandy loam	moderately rapid	2.91 to 3.71 in	4.5 to 6.5
B/E..Btg2 -- 16 to 35 in	clay loam	moderately slow	3.02 to 3.59 in	5.1 to 7.8
C -- 35 to 60 in	loam	moderately slow	3.97 to 4.71 in	6.6 to 8.4

267B--Snellman fine sandy loam, 1 to 6 percent slopes

Snellman

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 6 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	fine sandy loam	moderately rapid	0.41 to 0.57 in	5.1 to 6.5
E -- 3 to 12 in	fine sandy loam	moderate	0.78 to 1.21 in	5.1 to 6.5
B/E,Bt -- 12 to 29 in	sandy clay loam	moderate	2.08 to 3.12 in	5.6 to 7.3
C -- 29 to 60 in	fine sandy loam	moderate	3.38 to 4.91 in	7.4 to 8.4

267C--Snellman fine sandy loam, 6 to 12 percent slopes

Snellman

Extent: 85 percent of the unit
Landform(s): hillslopes 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	fine sandy loam	moderately rapid	0.41 to 0.57 in	5.1 to 6.5
E -- 3 to 14 in	fine sandy loam	moderate	0.99 to 1.54 in	5.1 to 6.5
B/E,Bt -- 14 to 30 in	sandy clay loam	moderate	1.89 to 2.83 in	5.6 to 7.3
C -- 30 to 60 in	fine sandy loam	moderate	3.29 to 4.79 in	7.4 to 8.4

267D--Snellman fine sandy loam, 12 to 25 percent slopes

Snellman

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 12 to 25 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	fine sandy loam	moderately rapid	0.41 to 0.57 in	5.1 to 6.5
E -- 3 to 10 in	fine sandy loam	moderate	0.60 to 0.94 in	5.1 to 6.5
B/E,Bt -- 10 to 29 in	sandy clay loam	moderate	2.31 to 3.47 in	5.6 to 7.3
C -- 29 to 60 in	fine sandy loam	moderate	3.38 to 4.91 in	7.4 to 8.4

272--Bemidji loamy sand

Bemidji

Extent: 85 percent of the unit
Landform(s): flats on moraines, rises on moraines
Slope gradient: 1 to 3 percent
Parent material: glaciolacustrine deposits 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .05
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 4 in	loamy sand	rapid	0.31 to 0.47 in	5.6 to 6.5
E1,E2 --	4 to 26 in	sand	rapid	0.88 to 1.76 in	5.6 to 6.5
2B/E,2Bt --	26 to 44 in	fine sandy loam	moderately slow	1.81 to 2.17 in	6.1 to 7.3
2C --	44 to 60 in	fine sandy loam	moderately slow	2.20 to 2.52 in	7.4 to 8.4

280--Pelan sandy loam

Pelan

Extent: 85 percent of the unit
Landform(s): flats on lake plains, rises on lake plains
Slope gradient: 1 to 3 percent
Parent material: glaciolacustrine deposits 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 3 in	sandy loam	moderately rapid	0.31 to 0.41 in	6.1 to 7.3
E --	3 to 12 in	sand	rapid	0.35 to 1.04 in	6.1 to 7.3
Bt --	12 to 17 in	very gravelly sandy loam	rapid	0.26 to 0.56 in	6.1 to 7.8
C1 --	17 to 24 in	very gravelly sand	rapid	0.14 to 0.64 in	7.4 to 8.4
2C2 --	24 to 60 in	loam	moderate	5.02 to 6.45 in	7.4 to 8.4

328B--Sartell loamy fine sand, 1 to 6 percent slopes

Sartell

Extent: 90 percent of the unit
Landform(s): hillslopes on lake plains, hillslopes on outwash plains
Slope gradient: 1 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	loamy fine sand	rapid	0.59 to 0.71 in	5.1 to 6.0
Bw -- 6 to 40 in	fine sand	rapid	2.06 to 3.43 in	5.1 to 6.0
C -- 40 to 60 in	fine sand	rapid	0.98 to 1.77 in	5.6 to 7.3

404--Chilgren loam

Chilgren

Extent: 85 percent of the unit
Landform(s): flats on lake plains, swales on lake plains
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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loam	moderate	0.63 to 0.82 in	6.1 to 7.3
E -- 3 to 11 in	fine sandy loam	moderate	1.02 to 1.73 in	6.1 to 7.3
Btg1,Btg2 -- 11 to 18 in	loam	moderate	1.28 to 1.56 in	6.1 to 7.8
Cg -- 18 to 60 in	loam	moderate	5.84 to 7.93 in	7.4 to 8.4

432--Strandquist loam

Strandquist

Extent: 85 percent of the unit
Landform(s): flats on lake plains, swales on lake plains
Slope gradient: 0 to 1 percent
Parent material: glaciolacustrine deposits 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 3w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	loam	moderate	1.27 to 1.63 in	6.6 to 8.4
2Cg1 -- 9 to 32 in	very gravelly sand	rapid	0.69 to 1.14 in	7.4 to 8.4
3Cg2,3Cg3 -- 32 to 60 in	loam	moderate	3.35 to 5.31 in	7.4 to 8.4

439--Rockwell fine sandy loam

Rockwell

Extent: 85 percent of the unit
Landform(s): flats on lake plains, swales on lake plains
Slope gradient: 0 to 1 percent
Parent material: glaciolacustrine deposits 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) .10
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	fine sandy loam	moderately rapid	1.45 to 1.63 in	7.4 to 8.4
Bk -- 9 to 17 in	fine sandy loam	moderately rapid	1.18 to 1.34 in	7.9 to 8.4
Cg1 -- 17 to 26 in	sand	rapid	0.45 to 0.63 in	7.4 to 7.8
2Cg2 -- 26 to 60 in	loam	moderate	6.09 to 7.45 in	7.4 to 7.8

458B--Menahga loamy sand, 1 to 6 percent slopes

Menahga

Extent: 90 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 1 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	4.5 to 6.5
Bw -- 3 to 30 in	sand	rapid	1.34 to 1.87 in	4.5 to 6.5
C -- 30 to 60 in	sand	rapid	1.50 to 2.09 in	5.6 to 7.8

458C--Menahga loamy sand 6 to 12 percent slopes

Menahga

Extent: 90 percent of the unit
Landform(s): hillslopes 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	4.5 to 6.5
Bw -- 3 to 24 in	sand	rapid	1.04 to 1.46 in	4.5 to 6.5
C -- 24 to 60 in	sand	rapid	1.79 to 2.51 in	5.6 to 7.8

458D--Menahga loamy sand, 12 to 25 percent slopes

Menahga

Extent: 90 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 12 to 25 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	4.5 to 6.5
Bw -- 3 to 27 in	sand	rapid	1.18 to 1.65 in	4.5 to 6.5
C -- 27 to 60 in	sand	rapid	1.65 to 2.31 in	5.6 to 7.8

481--Kratka fine sandy loam

Kratka

Extent: 85 percent of the unit
Landform(s): flats on lake plains, swales on lake plains
Slope gradient: 0 to 1 percent
Parent material: glaciolacustrine deposits 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:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	fine sandy loam	moderately rapid	1.28 to 1.77 in	5.6 to 7.8
Bg,Cg1 -- 10 to 28 in	fine sand	rapid	1.09 to 1.99 in	5.6 to 7.8
2Cg2 -- 28 to 60 in	loam	moderate	3.51 to 6.06 in	6.1 to 8.4

482--Grygla loamy fine sand

Grygla

Extent: 85 percent of the unit
Landform(s): flats on lake plains, swales on lake plains
Slope gradient: 0 to 2 percent
Parent material: glaciolacustrine deposits 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 7 in	loamy fine sand	rapid	0.92 to 1.06 in	6.1 to 7.3
Cg1,Cg2 -- 7 to 25 in	fine sand	rapid	1.09 to 1.99 in	6.6 to 7.8
2Cg3 -- 25 to 60 in	loam	moderate	5.89 to 6.58 in	7.4 to 8.4

496B--Andrusia loamy sand, 1 to 6 percent slopes

Andrusia

Extent: 85 percent of the unit
Landform(s): hillslopes on beach ridges, hillslopes on outwash plains
Slope gradient: 1 to 6 percent
Parent material: outwash
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	5.6 to 7.3
E1,E2 -- 3 to 29 in	sand	rapid	1.82 to 2.60 in	5.6 to 7.3
Bt -- 29 to 39 in	sandy loam	moderately rapid	1.08 to 1.57 in	5.6 to 7.3
C1,C2 -- 39 to 60 in	coarse sand	rapid	0.83 to 1.88 in	7.4 to 8.4

496C--Andrusia loamy sand, 6 to 12 percent slopes

Andrusia

Extent: 85 percent of the unit
Landform(s): hillslopes on beach ridges, hillslopes 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: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	5.6 to 7.3
E1,E2 -- 3 to 31 in	sand	rapid	1.96 to 2.80 in	5.6 to 7.3
Bt -- 31 to 43 in	gravelly sandy loam	moderately rapid	1.30 to 1.89 in	5.6 to 7.3
C1,C2 -- 43 to 60 in	sand	rapid	0.68 to 1.52 in	7.4 to 8.4

496D--Andrusia loamy sand, 12 to 25 percent slopes

Andrusia

Extent: 85 percent of the unit
Landform(s): hillslopes on beach ridges, hillslopes on outwash plains
Slope gradient: 12 to 25 percent
Parent material: outwash
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	5.6 to 7.3
E1,E2 -- 3 to 24 in	sand	rapid	1.46 to 2.09 in	5.6 to 7.3
Bt -- 24 to 32 in	gravelly sandy loam	moderately rapid	0.87 to 1.26 in	5.6 to 7.3
C1,C2 -- 32 to 60 in	sand	rapid	1.12 to 2.52 in	7.4 to 8.4

503B--Balmlake fine sandy loam, 1 to 6 percent slopes

Balmlake

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 6 percent
Parent material: glaciolacustrine deposits
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) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 3 in	fine sandy loam	moderately rapid	0.41 to 0.57 in	5.1 to 6.5
E --	3 to 11 in	fine sandy loam	moderately rapid	0.79 to 1.34 in	5.1 to 6.5
Bt --	11 to 24 in	fine sandy loam	moderate	1.69 to 2.60 in	5.6 to 6.5
2C --	24 to 60 in	stratified fine sand to silt loam	moderate	3.58 to 7.88 in	7.4 to 8.4

503C--Balmlake fine sandy loam, 6 to 12 percent slopes

Balmlake

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 6 to 12 percent
Parent material: glaciolacustrine deposits
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) .24
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 3 in	fine sandy loam	moderately rapid	0.41 to 0.57 in	5.1 to 6.5
E --	3 to 14 in	loamy fine sand	moderately rapid	1.10 to 1.87 in	5.1 to 6.5
Bt --	14 to 22 in	fine sandy loam	moderate	1.02 to 1.57 in	5.6 to 6.5
2C --	22 to 60 in	stratified fine sand to silt loam	moderate	3.78 to 8.31 in	7.4 to 8.4

503D--Balmlake fine sandy loam, 12 to 25 percent slopes

Balmlake

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 12 to 25 percent
Parent material: glaciolacustrine deposits
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) .24
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 3 in	fine sandy loam	moderately rapid	0.41 to 0.57 in	5.1 to 6.5
E --	3 to 11 in	loamy fine sand	moderately rapid	0.79 to 1.34 in	5.1 to 6.5
Bt --	11 to 21 in	fine sandy loam	moderate	1.28 to 1.97 in	5.6 to 6.5
2C --	21 to 60 in	stratified fine sand to silt loam	moderate	3.90 to 8.57 in	7.4 to 8.4

505B--Debs silt loam, 1 to 6 percent slopes

Debs

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 6 percent
Parent material: glaciolacustrine deposits
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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .37
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 4 in	silt loam	moderate	0.71 to 0.94 in	6.1 to 7.3
E --	4 to 12 in	very fine sandy loam	moderately rapid	1.18 to 1.57 in	6.1 to 7.3
Bt --	12 to 24 in	silty clay loam	moderate	1.95 to 2.69 in	6.1 to 7.3
C --	24 to 60 in	silt loam	moderate	5.02 to 7.88 in	7.4 to 8.4

505C--Debs silt loam, 6 to 12 percent slopes

Debs

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 6 to 12 percent
Parent material: glaciolacustrine deposits
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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .37
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 2 in	silt loam	moderate	0.35 to 0.47 in	6.1 to 7.3
E --	2 to 10 in	loamy fine sand	moderately rapid	1.18 to 1.57 in	6.1 to 7.3
Bt --	10 to 23 in	silty clay loam	moderate	2.08 to 2.86 in	6.1 to 7.3
C --	23 to 60 in	silt loam	moderate	5.18 to 8.14 in	7.4 to 8.4

514--Tacoosh muck

Tacoosh

Extent: 85 percent of the unit
Landform(s): depressions on bogs on lake plains, bogs on moraines
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 7 in	muck	moderately rapid	2.48 to 3.19 in	
Oe -- 7 to 41 in	mucky peat	moderately rapid	15.24 to 18.62 in	
Cg -- 41 to 60 in	loam	moderate	2.27 to 3.78 in	

534--Mooselake mucky peat

Mooselake

Extent: 85 percent of the unit
Landform(s): depressions on bogs on moraines, bogs on outwash plains
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe1 -- 0 to 40 in	mucky peat	moderately rapid	14.06 to 22.09 in	
Oe2 -- 40 to 60 in	mucky peat	moderately rapid	7.87 to 9.84 in	

538--Waskish peat

Waskish

Extent: 85 percent of the unit
Landform(s): depressions on raised bogs on lake plains
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oi1..Oi3 -- 0 to 60 in	peat	rapid	32.91 to 38.90 in	

540--Seelyeville muck

Seelyeville

Extent: 85 percent of the unit
Landform(s): depressions on bogs on lake plains, bogs on moraines
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 10 in	muck	moderately rapid	3.44 to 4.43 in	
Oa2 -- 10 to 60 in	muck	moderately rapid	17.50 to 22.50 in	

541--Rifle mucky peat

Rifle

Extent: 85 percent of the unit
Landform(s): depressions on bogs on lake plains, bogs on moraines
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe1 -- 0 to 18 in	mucky peat	moderately rapid	8.69 to 10.50 in	
Oe2 -- 18 to 60 in	mucky peat	moderately rapid	20.03 to 24.20 in	

543--Markey muck

Markey

Extent: 85 percent of the unit
Landform(s): depressions on bogs on lake plains, bogs on outwash plains
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material over sandy glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 24 in	muck	moderately rapid	8.41 to 10.81 in	
C -- 24 to 60 in	sand	rapid	1.07 to 2.87 in	

544--Cathro muck

Cathro

Extent: 85 percent of the unit
Landform(s): depressions on bogs on lake plains, bogs on moraines
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 8 in	muck	moderately rapid	3.54 to 4.33 in	
Oa2 -- 8 to 30 in	muck	moderately rapid	7.72 to 9.92 in	
A,Cg -- 30 to 60 in	loam	moderate	3.29 to 5.69 in	

545--Rondeau muck

Rondeau

Extent: 85 percent of the unit
Landform(s): lakebeds on moraines, drainageways on outwash plains
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material over marl
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 18 in	muck	moderately rapid	6.34 to 8.69 in	
Cg1,Cg2 -- 18 to 60 in	marl	slow	8.35 to 9.18 in	

546--Lupton muck

Lupton

Extent: 85 percent of the unit
Landform(s): depressions on bogs on lake plains, bogs on moraines
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 25 in	muck	moderately rapid	8.82 to 11.34 in	
Oa2 -- 25 to 60 in	muck	moderately rapid	12.13 to 15.59 in	

547--Deerwood muck

Deerwood

Extent: 85 percent of the unit
Landform(s): depressions on lake plains, depressions on outwash plains
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material over sandy glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 12 in	muck	moderately rapid	4.13 to 5.31 in	5.6 to 7.8
A -- 12 to 16 in	fine sandy loam	rapid	0.39 to 0.74 in	6.1 to 8.4
Cg -- 16 to 60 in	fine sand	rapid	0.87 to 3.06 in	7.4 to 8.4

549--Greenwood peat

Greenwood

Extent: 85 percent of the unit
Landform(s): depressions on bogs on lake plains
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Oi --	0 to 4 in	peat	rapid	2.17 to 2.56 in	
Oe --	4 to 63 in	mucky peat	moderately rapid	26.57 to 32.48 in	

560--Greenwood-Lobo complex

Greenwood

Extent: 50 percent of the unit
Landform(s): depressions on bogs on lake plains
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oi -- 0 to 8 in	peat	rapid	4.33 to 5.12 in	
Oe -- 8 to 60 in	mucky peat	moderately rapid	23.39 to 28.58 in	

Lobo

Extent: 40 percent of the unit
Landform(s): depressions on raised bogs on lake plains
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oi -- 0 to 37 in	peat	rapid	20.35 to 24.06 in	
Oe -- 37 to 84 in	mucky peat	moderately rapid	21.08 to 25.77 in	

561--Bullwinkle muck

Bullwinkle

Extent: 85 percent of the unit
Landform(s): depressions on bogs on lake plains, bogs on moraines
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 17 in	muck	moderately rapid	5.93 to 8.13 in	
Oa2,Oa3 -- 17 to 41 in	muck	moderately rapid	8.41 to 11.53 in	
A -- 41 to 45 in	loam	moderate	0.55 to 0.71 in	
Cg -- 45 to 60 in	loam	moderate	1.65 to 2.69 in	

563--Northwood muck

Northwood

Extent: 85 percent of the unit
Landform(s): bogs on lake plains, depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material over sandy glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 9 in	muck	moderately rapid	3.17 to 4.07 in	5.1 to 7.8
A -- 9 to 14 in	fine sandy loam	rapid	0.46 to 0.87 in	5.6 to 7.8
Bg1,Bg2 -- 14 to 24 in	loamy fine sand	rapid	0.59 to 1.08 in	5.6 to 8.4
Cg -- 24 to 60 in	loam	moderate	5.02 to 6.81 in	7.4 to 8.4

565--Eckvoll loamy fine sand

Eckvoll

Extent: 85 percent of the unit
Landform(s): flats on lake plains, rises on lake plains
Slope gradient: 1 to 3 percent
Parent material: glaciolacustrine deposits
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: A
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loamy fine sand	rapid	0.39 to 0.47 in	6.1 to 7.3
E1,E2 -- 4 to 25 in	fine sand	rapid	1.28 to 1.70 in	6.1 to 7.3
2Bt -- 25 to 32 in	clay loam	moderate	1.07 to 1.20 in	6.6 to 7.8
2C -- 32 to 60 in	loam	moderate	4.75 to 5.31 in	7.4 to 8.4

582--Roliss loam

Roliss

Extent: 85 percent of the unit
Landform(s): flats on lake plains, swales on lake plains
Slope gradient: 0 to 1 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) .20
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 8 in	loam	moderate	1.34 to 1.89 in	6.6 to 8.4
Bg -- 8 to 12 in	loam	moderate	0.59 to 0.75 in	7.4 to 8.4
Cg -- 12 to 60 in	loam	moderate	7.20 to 9.13 in	7.4 to 8.4

607--Pengilly very fine sandy loam

Pengilly, frequently flooded

Extent: 85 percent of the unit
Landform(s): flats on flood plains, swales 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .37
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	very fine sandy loam	moderately rapid	0.51 to 0.87 in	5.6 to 7.3
Cg1..Cg4 -- 4 to 60 in	stratified loamy very fine sand to silt loam	moderate	6.71 to 11.18 in	6.1 to 8.4

616--Effie silt loam

Effie

Extent: 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .49
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 8 in	silt loam	moderate	1.57 to 1.89 in	5.6 to 7.3
B/E..Btg2 -- 8 to 28 in	silty clay	slow	2.41 to 3.81 in	5.1 to 8.4
Cg -- 28 to 60 in	silty clay loam	slow	3.83 to 6.06 in	7.9 to 8.4

620B--Cutaway loamy fine sand, 1 to 6 percent slopes

Cutaway

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
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): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy fine sand	rapid	0.31 to 0.38 in	5.1 to 6.5
E,Bw,E' -- 3 to 28 in	loamy fine sand	rapid	1.49 to 2.73 in	5.1 to 6.5
2B/E..2Bt2 -- 28 to 45 in	sandy clay loam	moderate	2.03 to 3.22 in	5.1 to 7.8
2C -- 45 to 60 in	sandy loam	moderate	1.80 to 2.84 in	6.1 to 8.4

620C--Cutaway loamy fine sand, 6 to 12 percent slopes

Cutaway

Extent: 85 percent of the unit
Landform(s): hillslopes 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: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy fine sand	rapid	0.31 to 0.38 in	5.1 to 6.5
E,Bw,E' -- 3 to 28 in	loamy fine sand	rapid	1.49 to 2.73 in	5.1 to 6.5
2B/E..2Bt2 -- 28 to 45 in	sandy clay loam	moderate	2.08 to 3.29 in	5.1 to 7.8
2C -- 45 to 60 in	sandy loam	moderate	1.75 to 2.77 in	6.1 to 8.4

621--Morph fine sandy loam

Morph

Extent: 85 percent of the unit
Landform(s): flats on lake plains, swales on lake plains, flats on moraines, swales on moraines
Slope gradient: 0 to 2 percent
Parent material: glaciolacustrine deposits
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) .20
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	fine sandy loam	moderately rapid	0.51 to 0.87 in	5.1 to 6.5
Eg -- 4 to 13 in	very fine sandy loam	moderate	1.00 to 1.72 in	5.1 to 6.5
B/E..Btg2 -- 13 to 35 in	loam	moderate	2.43 to 4.19 in	5.1 to 7.3
Cg -- 35 to 60 in	stratified loamy sand to silty clay loam	moderate	2.73 to 4.71 in	6.6 to 8.4

624--Rosy sandy loam

Rosy

Extent: 90 percent of the unit
Landform(s): flats on lake plains, rises on lake plains, flats on moraines, rises on moraines
Slope gradient: 0 to 3 percent
Parent material: glaciolacustrine deposits
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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 15 in	sandy loam	moderate	2.09 to 2.84 in	5.1 to 7.3
B/E,Bt -- 15 to 36 in	sandy loam	moderate	2.92 to 3.96 in	5.1 to 7.3
E&Bt..C2 -- 36 to 60 in	stratified sand to silty clay loam	moderate	2.64 to 4.08 in	5.6 to 8.4

625--Sandwick loamy fine sand

Sandwick

Extent: 90 percent of the unit
Landform(s): flats on moraines, swales on moraines
Slope gradient: 0 to 2 percent
Parent material: outwash 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 8 in	loamy fine sand	rapid	0.63 to 0.79 in	5.1 to 6.5
E1,E2 -- 8 to 22 in	fine sand	rapid	0.85 to 1.28 in	5.1 to 6.5
2B/E..2Btg2 -- 22 to 48 in	loam	moderately slow	2.60 to 4.16 in	5.6 to 7.3
2Cg -- 48 to 60 in	loam	moderately slow	0.24 to 1.18 in	6.6 to 8.4

626B--Suomi loam, 1 to 6 percent slopes

Suomi

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 6 percent
Parent material: 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) .32
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 6 in	loam	moderate	1.18 to 1.42 in	5.1 to 7.3
Bt1,Bt2 -- 6 to 23 in	clay	slow	1.69 to 3.22 in	5.1 to 7.3
Bkg -- 23 to 60 in	silty clay	slow	4.07 to 6.29 in	7.4 to 8.4

626C--Suomi loam, 6 to 12 percent slopes

Suomi

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 6 to 12 percent
Parent material: 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) .32
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 8 in	loam	moderate	1.57 to 1.89 in	5.1 to 7.3
Bt1,Bt2 -- 8 to 28 in	silty clay	slow	2.01 to 3.81 in	5.1 to 7.3
Bkg -- 28 to 60 in	silty clay	slow	3.51 to 5.42 in	7.4 to 8.4

626D--Suomi loam, 12 to 25 percent slopes

Suomi

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 12 to 25 percent
Parent material: 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) .32
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 5 in	loam	moderate	1.02 to 1.23 in	5.1 to 7.3
Bt1,Bt2 -- 5 to 21 in	silty clay	slow	1.57 to 2.99 in	5.1 to 7.3
Bkg -- 21 to 60 in	silty clay	slow	4.29 to 6.63 in	7.4 to 8.4

627--Tawas muck

Tawas

Extent: 85 percent of the unit
Landform(s): depressions on bogs on lake plains, bogs on outwash plains
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material over sandy glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 6 in	muck	moderately rapid	2.07 to 2.66 in	
Oa2 -- 6 to 33 in	muck	moderately rapid	9.51 to 12.22 in	
Cg -- 33 to 60 in	sand	rapid	0.80 to 2.68 in	

628--Talmoon muck

Talmoon

Extent: 85 percent of the unit
Landform(s): depressions on moraines, swales 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 4 in	muck	moderately rapid	0.98 to 1.57 in	5.1 to 7.3
A,Eg -- 4 to 14 in	fine sandy loam	moderate	1.33 to 2.25 in	5.1 to 7.3
Btg1,Btg@ -- 14 to 24 in	clay loam	moderately slow	1.57 to 1.87 in	5.6 to 7.3
Cg -- 24 to 60 in	loam	moderately slow	5.37 to 6.81 in	7.4 to 8.4

653--Smiley muck

Smiley

Extent: 85 percent of the unit
Landform(s): depressions on lake plains
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 4 in	muck	moderate	1.38 to 1.89 in	6.6 to 7.8
A -- 4 to 11 in	loam	moderate	0.92 to 1.28 in	6.6 to 7.8
Bt1 -- 11 to 18 in	clay loam	moderate	1.06 to 1.35 in	6.6 to 8.4
Bt2 -- 18 to 41 in	loam	moderate	3.20 to 4.34 in	7.9 to 8.4
Cg -- 41 to 60 in	loam	moderate	2.65 to 3.59 in	7.4 to 8.4

676B--Kost loamy fine sand, 0 to 6 percent slopes

Kost

Extent: 80 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 0 to 6 percent
Parent material: eolian sands and 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 14 in	loamy fine sand	rapid	1.56 to 2.13 in	5.1 to 7.3
Bw -- 14 to 33 in	fine sand	rapid	0.94 to 1.70 in	5.1 to 7.3
C -- 33 to 60 in	fine sand	rapid	1.34 to 1.87 in	5.6 to 7.3

702--Bullwinkle-Cathro complex

Bullwinkle

Extent: 50 percent of the unit
Landform(s): depressions on bogs on lake plains, bogs on moraines
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 12 in	muck	moderately rapid	4.13 to 5.67 in	
Oa2,Oa3 -- 12 to 34 in	muck	moderately rapid	7.72 to 10.58 in	
A -- 34 to 40 in	loam	moderate	0.88 to 1.13 in	
Cg -- 40 to 60 in	loam	moderate	2.17 to 3.54 in	

Cathro

Extent: 40 percent of the unit
Landform(s): depressions on bogs on lake plains, bogs on moraines
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1,Oa2 -- 0 to 20 in	muck	moderately rapid	9.04 to 11.04 in	
A,Cg -- 20 to 60 in	loam	moderate	4.37 to 7.56 in	

709B--Lengby sandy loam, 1 to 6 percent slopes

Lengby

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 6 percent
Parent material: glaciolacustrine deposits
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) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	sandy loam	moderately rapid	0.61 to 0.92 in	6.1 to 7.3
E1,E2 -- 5 to 18 in	loamy fine sand	rapid	1.04 to 1.56 in	5.6 to 7.3
Bt -- 18 to 28 in	sandy clay loam	moderate	1.48 to 1.87 in	6.1 to 7.3
C1..C3 -- 28 to 41 in	stratified coarse sand to silt loam	moderately rapid	1.04 to 2.08 in	7.4 to 8.4
C4 -- 41 to 60 in	stratified sand to loamy very fine sand	rapid	1.13 to 2.27 in	7.4 to 8.4

709C--Lengby sandy loam, 6 to 12 percent slopes

Lengby

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 6 to 12 percent
Parent material: glaciolacustrine deposits
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) .24
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	sandy loam	moderately rapid	0.38 to 0.57 in	6.1 to 7.3
E1,E2 -- 3 to 11 in	loamy fine sand	rapid	0.63 to 0.94 in	5.6 to 7.3
Bt -- 11 to 19 in	loam	moderate	1.18 to 1.50 in	6.1 to 7.3
C1..C4 -- 19 to 60 in	stratified coarse sand to loamy very fine sand	rapid	2.46 to 4.91 in	7.4 to 8.4

709D--Lengby sandy loam, 12 to 25 percent slopes

Lengby

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 12 to 25 percent
Parent material: glaciolacustrine deposits
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) .24
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	sandy loam	moderately rapid	0.38 to 0.57 in	6.1 to 7.3
E1,E2 -- 3 to 11 in	loamy fine sand	rapid	0.63 to 0.94 in	5.6 to 7.3
Bt -- 11 to 19 in	loam	moderate	1.18 to 1.50 in	6.1 to 7.3
C1..C4 -- 19 to 60 in	stratified coarse sand to loamy very fine sand	rapid	2.46 to 4.91 in	7.4 to 8.4

712--Rosewood fine sandy loam

Rosewood

Extent: 90 percent of the unit
Landform(s): flats on lake plains, swales on lake plains
Slope gradient: 0 to 2 percent
Parent material: sandy glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 7 in	fine sandy loam	moderately rapid	0.92 to 1.28 in	7.4 to 8.4
ABk,Bkg -- 7 to 18 in	loamy fine sand	moderately rapid	1.21 to 1.65 in	7.4 to 8.4
Cg -- 18 to 60 in	fine sand	rapid	2.09 to 3.34 in	7.4 to 8.4

765--Smiley loam

Smiley

Extent: 85 percent of the unit
Landform(s): flats on lake plains, swales on lake plains
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) .32
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Ap --	0 to 8 in	loam	moderate	1.57 to 1.89 in	6.6 to 7.8
Btg --	8 to 13 in	clay loam	moderate	0.77 to 0.97 in	6.6 to 8.4
Cg --	13 to 60 in	loam	moderate	6.56 to 8.90 in	7.4 to 8.4

799--Seelyeville and Bowstring soils

Seelyeville, frequently flooded

Extent: 50 percent of the unit
Landform(s): depressions on bogs on flood plains
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 28 in	muck	moderately rapid	9.78 to 12.58 in	
Oa2 -- 28 to 60 in	muck	moderately rapid	11.16 to 14.35 in	

Bowstring, frequently flooded

Extent: 40 percent of the unit
Landform(s): flats, bogs on flood plains
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 35 in	muck	moderately rapid	12.26 to 15.77 in	
C -- 35 to 43 in	stratified sand to fine sandy loam	rapid	0.63 to 1.10 in	
O'a -- 43 to 60 in	muck	moderately rapid	5.93 to 7.62 in	

867B--Graycalm-Menahga complex, 1 to 6 percent slopes

Graycalm

Extent: 50 percent of the unit
Landform(s): hillslopes on outwash plains
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): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loamy sand	rapid	0.31 to 0.61 in	3.5 to 6.5
Bw1,Bw2 -- 5 to 32 in	sand	rapid	1.34 to 2.68 in	3.5 to 7.3
E&Bt -- 32 to 46 in	sand	rapid	0.57 to 1.28 in	3.5 to 7.3
C -- 46 to 60 in	sand	rapid	0.55 to 0.83 in	3.5 to 8.4

Menahga

Extent: 40 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 1 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	4.5 to 6.5
Bw -- 3 to 36 in	sand	rapid	1.63 to 2.29 in	4.5 to 6.5
C -- 36 to 60 in	sand	rapid	1.20 to 1.68 in	5.6 to 7.8

867C--Graycalm-Menahga complex, 6 to 12 percent slopes

Graycalm

Extent: 50 percent of the unit
Landform(s): hillslopes 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): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.19 to 0.38 in	3.5 to 6.5
Bw1,Bw2 -- 3 to 30 in	sand	rapid	1.34 to 2.68 in	3.5 to 7.3
E&Bt -- 30 to 50 in	sand	rapid	0.80 to 1.81 in	3.5 to 7.3
C -- 50 to 60 in	sand	rapid	0.39 to 0.59 in	3.5 to 8.4

Menahga

Extent: 40 percent of the unit
Landform(s): hillslopes 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	loamy sand	rapid	0.20 to 0.24 in	4.5 to 6.5
Bw -- 2 to 30 in	sand	rapid	1.40 to 1.96 in	4.5 to 6.5
C -- 30 to 60 in	sand	rapid	1.50 to 2.09 in	5.6 to 7.8

1033--Aquic Udipsamments-Aquents complex, 0 to 3 percent slopes

Oxyaquic Udipsamments

Extent: 55 percent of the unit
Landform(s): beaches on lakeshores
Slope gradient: 1 to 3 percent
Parent material: beach sand
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated 3w
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy fine sand	rapid	0.31 to 0.47 in	6.1 to 7.3
C -- 3 to 60 in	fine sand	rapid	2.83 to 5.10 in	6.1 to 7.8

Aquents

Extent: 30 percent of the unit
Landform(s): beaches on lakeshores
Slope gradient: 0 to 2 percent
Parent material: beach sand
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: occasional
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 8 in	loamy fine sand	rapid	0.87 to 1.18 in	6.1 to 7.3
Cg -- 8 to 60 in	fine sand	rapid	2.60 to 4.68 in	6.1 to 7.8

1057--Fluvaquents, frequently flooded-Hapludalfs complex, 0 to 35 percent slopes

Fluvaquents, frequently flooded, loamy

Extent: 35 to 65 percent of the unit
Landform(s): flats on flood plains
Slope gradient: 0 to 1 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
A --	0 to 6 in	mucky silt loam	moderate	1.18 to 1.42 in	5.6 to 7.3
Cg --	6 to 80 in	stratified silt loam to loamy coarse sand	moderately rapid	4.44 to 16.28 in	5.6 to 7.3

Hapludalfs

Extent: 30 to 55 percent of the unit
Landform(s): flood plains
Slope gradient: 15 to 35 percent
Parent material: 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) .28
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
A --	0 to 4 in	loam	moderate	0.79 to 0.87 in	5.1 to 7.3
E --	4 to 7 in	silt loam	moderate	0.47 to 0.69 in	5.1 to 7.3
B/E --	7 to 11 in	silty clay loam	slow	0.55 to 0.75 in	5.1 to 7.3
Bt --	11 to 39 in	silty clay	slow	2.80 to 5.03 in	5.1 to 7.3
BC --	39 to 80 in	clay loam	moderately slow	5.73 to 7.37 in	7.4 to 8.4

1085B--Urban land-Graycalm complex, 1 to 6 percent slopes

Urban land

Extent: 80 percent of the unit
Landform(s): outwash plains
Slope gradient:
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class:

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

Representative soil profile:

Texture	Permeability	Available water capacity	pH

Graycalm

Extent: 20 percent of the unit
Landform(s): hillslopes on outwash plains
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): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 3 in	loamy sand	rapid	0.19 to 0.38 in	3.5 to 6.5
Bw1..E&Bt --	3 to 13 in	sand	rapid	0.49 to 0.98 in	3.5 to 7.3
C --	13 to 60 in	sand	rapid	1.87 to 4.22 in	3.5 to 7.3

1085C--Urban land-Graycalm complex, 6 to 12 percent slopes

Urban land

Extent: 65 percent of the unit
Landform(s): outwash plains
Slope gradient:
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class:

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

Representative soil profile:

Texture	Permeability	Available water capacity	pH

Graycalm

Extent: 25 percent of the unit
Landform(s): hillslopes 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): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 3 in	loamy sand	rapid	0.19 to 0.38 in	3.5 to 6.5
Bw1..E&Bt --	3 to 13 in	sand	rapid	0.49 to 0.98 in	3.5 to 7.3
C --	13 to 60 in	sand	rapid	1.87 to 4.22 in	3.5 to 7.3

1086--Urban land-Cormant complex

Urban land

Extent: 55 percent of the unit
Landform(s): outwash plains
Slope gradient:
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class:

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

Representative soil profile:

		Texture	Permeability	Available water capacity	pH

Cormant

Extent: 35 percent of the unit
Landform(s): flats on outwash plains, swales on outwash plains
Slope gradient: 0 to 2 percent
Parent material: sandy glaciolacustrine deposits
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .05
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 7 in	loamy sand	rapid	0.57 to 0.85 in	6.1 to 7.3
Cg --	7 to 60 in	sand	rapid	3.17 to 5.28 in	6.1 to 7.8

1113--Haslie, Seelyeville and Cathro soils, ponded

Haslie, ponded

Extent: 0 to 90 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: organic material over coprogenic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated 8w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 30 in	muck	moderately rapid	10.47 to 13.46 in	
Cg -- 30 to 60 in	coprogenous earth	slow	5.39 to 7.18 in	

Cathro, ponded

Extent: 0 to 90 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: organic material over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated 8w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 23 in	muck	moderately rapid	7.99 to 10.28 in	5.1 to 7.3
Cg -- 23 to 60 in	fine sandy loam	moderate	4.07 to 6.66 in	7.4 to 8.4

1113--Haslie, Seelyeville and Cathro soils, ponded

Seelyeville, ponded

Extent: 0 to 90 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated 8w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 80 in	muck	moderately rapid	27.97 to 35.96 in	

1200--Egglake loam, 0 to 2 percent slopes

Egglake

Extent: 75 percent of the unit
Landform(s): swales on moraines
Slope gradient: 0 to 2 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: occasional
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loam	moderate	0.79 to 0.87 in	5.6 to 7.3
E -- 4 to 9 in	fine sandy loam	moderately rapid	0.56 to 0.87 in	5.6 to 7.3
Btg -- 9 to 25 in	sandy clay loam	moderate	1.94 to 2.91 in	5.6 to 6.5
Cg -- 25 to 80 in	fine sandy loam	moderate	6.02 to 9.85 in	7.4 to 8.4

1206--Cormant-Redby complex, 0 to 2 percent slopes

Cormant

Extent: 55 percent of the unit
Landform(s): swales on lake plains
Slope gradient: 0 to 2 percent
Parent material: sandy glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: occasional
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	loamy fine sand	rapid	0.65 to 0.89 in	6.1 to 7.3
Cg -- 6 to 60 in	fine sand	rapid	2.16 to 5.39 in	6.1 to 7.8

Redby

Extent: 35 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 1 to 2 percent
Parent material: sandy glaciolacustrine deposits
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated 3w
Hydric soil: no
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loamy fine sand	rapid	0.46 to 0.77 in	5.6 to 6.5
E -- 5 to 10 in	fine sand	rapid	0.28 to 0.47 in	5.6 to 6.5
Bw -- 10 to 35 in	fine sand	rapid	1.01 to 2.27 in	5.6 to 7.3
C -- 35 to 80 in	fine sand	rapid	1.80 to 3.14 in	6.1 to 7.8

1804--Hamre muck, ponded

Hamre, ponded

Extent: 85 percent of the unit
Landform(s): depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated 8w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 8 in	muck	moderate	2.76 to 3.78 in	5.1 to 7.8
A -- 8 to 18 in	loam	moderate	1.74 to 1.94 in	5.1 to 7.8
Cg -- 18 to 60 in	loam	moderate	7.09 to 7.93 in	7.4 to 8.4

1807--Cathro muck, ponded

Cathro, ponded

Extent: 85 percent of the unit
Landform(s): depressions on lake plains, depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated 8w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 24 in	muck	moderately rapid	10.81 to 13.21 in	
Oa2 -- 24 to 30 in	muck	moderately rapid	2.07 to 2.66 in	
A,Cg -- 30 to 60 in	loam	moderate	3.29 to 6.58 in	

1808--Markey muck, ponded

Markey, ponded

Extent: 85 percent of the unit
Landform(s): depressions on lake plains, depressions on outwash plains
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material over sandy glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated 8w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 20 in	muck	moderately rapid	7.03 to 9.04 in	
C -- 20 to 60 in	sand	rapid	1.19 to 3.18 in	

1878--Hamre muck

Hamre

Extent: 85 percent of the unit
Landform(s): bogs on lake plains, depressions on lake plains, bogs on moraines, depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 9 in	muck	moderate	3.17 to 4.35 in	5.1 to 7.8
A -- 9 to 13 in	loam	moderate	0.67 to 0.75 in	5.1 to 7.8
Cg -- 13 to 60 in	loam	moderate	7.96 to 8.90 in	7.4 to 8.4

1922--Chilgren sandy loam, very stony

Chilgren, very stony

Extent: 85 percent of the unit
Landform(s): flats on lake plains, swales on lake plains
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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 6s
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	sandy loam	moderately rapid	0.44 to 0.50 in	6.1 to 7.3
E -- 3 to 11 in	loamy fine sand	moderate	1.02 to 1.73 in	6.1 to 7.3
Btg1,Btg2 -- 11 to 18 in	clay loam	moderate	1.28 to 1.56 in	6.1 to 7.8
Cg -- 18 to 60 in	loam	moderate	5.84 to 7.93 in	7.4 to 8.4

1923--Garnes fine sandy loam, very stony

Garnes, very stony

Extent: 85 percent of the unit
Landform(s): flats on lake plains, rises on lake plains
Slope gradient: 0 to 2 percent
Parent material: 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .17
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: C
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 8 in	fine sandy loam	moderately rapid	1.10 to 1.42 in	6.1 to 7.8
Bt1,Bt2 -- 8 to 17 in	sandy clay loam	moderate	1.54 to 1.81 in	6.6 to 7.8
Cg -- 17 to 60 in	loam	moderate	6.01 to 8.15 in	7.4 to 8.4

1924--Grygla loamy fine sand, very stony

Grygla, very stony

Extent: 85 percent of the unit
Landform(s): flats on lake plains, swales on lake plains
Slope gradient: 0 to 2 percent
Parent material: glaciolacustrine deposits 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 6s
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 11 in	loamy fine sand	rapid	1.43 to 1.65 in	6.1 to 7.3
Cg1,Cg2 -- 11 to 27 in	fine sand	rapid	0.94 to 1.73 in	6.6 to 7.8
2Cg3 -- 27 to 60 in	loam	moderate	5.62 to 6.28 in	7.4 to 8.4

1925--Eckvoll loamy fine sand, very stony

Eckvoll, very stony

Extent: 85 percent of the unit
Landform(s): flats on lake plains, rises on lake plains
Slope gradient: 1 to 3 percent
Parent material: glaciolacustrine deposits
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loamy fine sand	rapid	0.31 to 0.39 in	6.1 to 7.3
E1,E2 -- 4 to 25 in	fine sand	rapid	1.28 to 1.70 in	6.1 to 7.3
2Bt -- 25 to 32 in	sandy clay loam	moderate	1.07 to 1.20 in	6.6 to 7.8
2C -- 32 to 60 in	loam	moderate	4.75 to 5.31 in	7.4 to 8.4

1935--Epoufette muck

Epoufette

Extent: 90 percent of the unit
Landform(s): depressions on outwash plains
Slope gradient: 0 to 1 percent
Parent material: outwash
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oa --	0 to 4 in	muck	moderately rapid	1.38 to 1.89 in	6.1 to 7.3
A --	4 to 8 in	sandy loam	moderately rapid	0.35 to 0.55 in	6.1 to 7.3
Eg --	8 to 18 in	loamy sand	rapid	0.51 to 0.72 in	6.1 to 7.3
Btg --	18 to 30 in	sandy loam	moderately rapid	0.94 to 1.65 in	6.6 to 7.8
2Cg --	30 to 60 in	coarse sand	very rapid	0.30 to 0.90 in	7.4 to 8.4

1939--Northwood muck, very stony

Northwood, very stony

Extent: 85 percent of the unit
Landform(s): bogs on lake plains, depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material over sandy glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6s
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 11 in	muck	moderately rapid	3.31 to 4.41 in	5.1 to 7.8
A -- 11 to 15 in	fine sandy loam	rapid	0.35 to 0.67 in	5.6 to 7.8
Bg1,Bg2 -- 15 to 25 in	loamy fine sand	rapid	0.61 to 1.13 in	5.6 to 8.4
2Cg -- 25 to 60 in	loam	moderate	4.85 to 6.58 in	7.4 to 8.4

1959--Nary cobbly fine sandy loam

Nary

Extent: 85 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: moderately well 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 3s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	cobbly fine sandy loam	moderate	0.39 to 0.67 in	5.1 to 6.0
E -- 4 to 14 in	cobbly fine sandy loam	moderately rapid	0.72 to 1.13 in	5.1 to 6.0
B/E..Bt2 -- 14 to 45 in	sandy clay loam	moderately slow	4.91 to 6.14 in	5.6 to 6.5
C -- 45 to 60 in	fine sandy loam	moderate	1.65 to 2.39 in	7.4 to 7.8

1991--Stuntz loam

Stuntz

Extent: 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: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E,E/B -- 0 to 12 in	loam	moderate	2.24 to 2.83 in	4.5 to 6.5
B/E..C -- 12 to 60 in	loam	moderately slow	7.69 to 9.13 in	5.1 to 7.8

1993B--Snellman-Wykeham complex, 1 to 6 percent slopes

Snellman

Extent: 55 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 6 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	fine sandy loam	moderately rapid	0.67 to 0.92 in	5.1 to 6.5
E -- 5 to 18 in	fine sandy loam	moderate	1.17 to 1.82 in	5.1 to 6.5
B/E,Bt -- 18 to 28 in	sandy clay loam	moderate	1.18 to 1.77 in	5.6 to 7.3
C -- 28 to 60 in	fine sandy loam	moderate	3.51 to 5.10 in	7.4 to 8.4

Wykeham

Extent: 40 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: moderately well 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 1
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	fine sandy loam	moderately rapid	1.02 to 1.42 in	5.1 to 6.5
E -- 8 to 16 in	fine sandy loam	moderate	0.83 to 1.41 in	5.1 to 6.5
B/E,Bt -- 16 to 32 in	loam	moderate	1.89 to 2.83 in	5.6 to 7.3
C -- 32 to 60 in	fine sandy loam	moderate	3.07 to 4.47 in	7.4 to 8.4

2017B--Zimmerman-Andrusia complex, 1 to 8 percent slopes

Zimmerman

Extent: 45 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 8 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy fine sand	rapid	0.31 to 0.38 in	5.1 to 6.5
E -- 3 to 16 in	fine sand	rapid	0.78 to 1.43 in	5.1 to 7.3
Bw -- 16 to 35 in	fine sand	rapid	1.13 to 2.08 in	5.1 to 7.3
E and Bt -- 35 to 60 in	fine sand	rapid	1.24 to 2.48 in	5.1 to 7.3

Andrusia

Extent: 35 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 8 percent
Parent material: outwash
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	5.6 to 7.3
E -- 3 to 29 in	sand	rapid	1.82 to 2.60 in	5.6 to 7.3
Bt -- 29 to 39 in	gravelly sandy loam	moderately rapid	1.08 to 1.57 in	5.6 to 7.3
C -- 39 to 60 in	sand	rapid	0.83 to 1.88 in	7.4 to 8.4

2017C--Zimmerman-Andrusia complex, 8 to 15 percent slopes

Zimmerman, rolling

Extent: 45 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 15 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy fine sand	rapid	0.31 to 0.38 in	5.1 to 6.5
E -- 3 to 16 in	fine sand	rapid	0.78 to 1.43 in	5.1 to 7.3
Bw -- 16 to 35 in	fine sand	rapid	1.13 to 2.08 in	5.1 to 7.3
E and Bt -- 35 to 60 in	fine sand	rapid	1.24 to 2.48 in	5.1 to 7.3

Andrusia, rolling

Extent: 35 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 15 percent
Parent material: outwash
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	5.6 to 7.3
E -- 3 to 29 in	sand	rapid	1.82 to 2.60 in	5.6 to 7.3
Bt -- 29 to 39 in	gravelly sandy loam	moderately rapid	1.08 to 1.57 in	5.6 to 7.3
C -- 39 to 60 in	sand	rapid	0.83 to 1.88 in	7.4 to 8.4

2017E--Zimmerman-Andrusia complex, 15 to 30 percent slopes

Zimmerman, hilly

Extent: 45 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 12 to 30 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy fine sand	rapid	0.31 to 0.38 in	5.1 to 6.5
E -- 3 to 16 in	fine sand	rapid	0.78 to 1.43 in	5.1 to 7.3
Bw -- 16 to 35 in	fine sand	rapid	1.13 to 2.08 in	5.1 to 7.3
E and Bt -- 35 to 60 in	fine sand	rapid	1.24 to 2.48 in	5.1 to 7.3

Andrusia, hilly

Extent: 35 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 15 to 30 percent
Parent material: outwash
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	5.6 to 7.3
E -- 3 to 29 in	sand	rapid	1.82 to 2.60 in	5.6 to 7.3
Bt -- 29 to 39 in	gravelly sandy loam	moderately rapid	1.08 to 1.57 in	5.6 to 7.3
C -- 39 to 60 in	sand	rapid	0.83 to 1.88 in	7.4 to 8.4

2018B--Eagleview-Two Inlets complex, 1 to 8 percent slopes, pitted

Eagleview

Extent: 45 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 8 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): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loamy sand	rapid	0.35 to 0.47 in	5.6 to 7.3
E -- 4 to 11 in	sand	rapid	0.28 to 0.78 in	5.6 to 7.3
Bw -- 11 to 28 in	sand	rapid	0.68 to 1.35 in	5.6 to 7.3
E and Bt -- 28 to 45 in	loamy sand	rapid	0.68 to 1.69 in	6.1 to 7.3
C -- 45 to 80 in	sand	very rapid	0.70 to 2.10 in	6.1 to 8.4

Two Inlets

Extent: 35 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 8 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	loamy sand	rapid	0.18 to 0.24 in	5.6 to 7.3
E -- 2 to 10 in	loamy coarse sand	rapid	0.39 to 0.87 in	5.6 to 7.3
Bt -- 10 to 33 in	gravelly loamy coarse sand	rapid	1.16 to 2.56 in	6.1 to 7.3
C -- 33 to 60 in	gravelly coarse sand	very rapid	0.54 to 1.07 in	7.4 to 8.4

2018C--Eagleview-Two Inlets complex, 8 to 15 percent slopes, pitted

Eagleview, rolling

Extent: 45 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 15 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): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loamy sand	rapid	0.35 to 0.47 in	5.6 to 7.3
E -- 4 to 11 in	sand	rapid	0.28 to 0.78 in	5.6 to 7.3
Bw -- 11 to 28 in	sand	rapid	0.68 to 1.35 in	5.6 to 7.3
E and Bt -- 28 to 45 in	loamy sand	rapid	0.68 to 1.69 in	6.1 to 7.3
C -- 45 to 80 in	sand	very rapid	0.70 to 2.10 in	6.1 to 8.4

Two Inlets, rolling

Extent: 35 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 15 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	loamy sand	rapid	0.18 to 0.24 in	5.6 to 7.3
E -- 2 to 10 in	loamy coarse sand	rapid	0.39 to 0.87 in	5.6 to 7.3
Bt -- 10 to 33 in	gravelly loamy coarse sand	rapid	1.16 to 2.56 in	6.1 to 7.3
C -- 33 to 60 in	gravelly coarse sand	very rapid	0.54 to 1.07 in	7.4 to 8.4

2018E--Eagleview-Two Inlets complex, 15 to 30 percent slopes

Eagleview, hilly

Extent: 45 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 15 to 30 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): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loamy sand	rapid	0.35 to 0.47 in	5.6 to 7.3
E -- 4 to 11 in	sand	rapid	0.28 to 0.78 in	5.6 to 7.3
Bw -- 11 to 28 in	sand	rapid	0.68 to 1.35 in	5.6 to 7.3
E and Bt -- 28 to 45 in	loamy sand	rapid	0.68 to 1.69 in	6.1 to 7.3
C -- 45 to 80 in	sand	very rapid	0.70 to 2.10 in	6.1 to 8.4

Two Inlets, hilly

Extent: 35 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 15 to 30 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	loamy sand	rapid	0.18 to 0.24 in	5.6 to 7.3
E -- 2 to 10 in	loamy coarse sand	rapid	0.39 to 0.87 in	5.6 to 7.3
Bt -- 10 to 33 in	gravelly loamy coarse sand	rapid	1.16 to 2.56 in	6.1 to 7.3
C -- 33 to 60 in	gravelly coarse sand	very rapid	0.54 to 1.07 in	7.4 to 8.4

2020B--Zimmerman-Snellman complex, 1 to 8 percent slopes

Zimmerman

Extent: 40 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 8 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy fine sand	rapid	0.31 to 0.38 in	5.1 to 6.5
E -- 3 to 16 in	fine sand	rapid	0.78 to 1.43 in	5.1 to 7.3
Bw -- 16 to 35 in	fine sand	rapid	1.13 to 2.08 in	5.1 to 7.3
E and Bt -- 35 to 60 in	fine sand	rapid	1.24 to 2.48 in	5.1 to 7.3

Snellman

Extent: 30 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 8 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.31 to 0.35 in	5.1 to 7.3
E -- 2 to 16 in	loamy sand	moderate	1.28 to 1.98 in	5.1 to 7.3
Bt -- 16 to 31 in	sandy clay loam	moderate	1.80 to 2.69 in	5.6 to 6.5
C -- 31 to 80 in	fine sandy loam	moderate	5.37 to 8.79 in	7.4 to 8.4

2020C--Zimmerman-Snellman complex, 8 to 15 percent slopes

Zimmerman, rolling

Extent: 45 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 15 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy fine sand	rapid	0.31 to 0.38 in	5.1 to 6.5
E -- 3 to 16 in	fine sand	rapid	0.78 to 1.43 in	5.1 to 7.3
Bw -- 16 to 35 in	fine sand	rapid	1.13 to 2.08 in	5.1 to 7.3
E and Bt -- 35 to 60 in	fine sand	rapid	1.24 to 2.48 in	5.1 to 7.3

Snellman, rolling

Extent: 30 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 15 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.31 to 0.35 in	5.1 to 7.3
E -- 2 to 16 in	loamy sand	moderate	1.28 to 1.98 in	5.1 to 7.3
Bt -- 16 to 31 in	sandy clay loam	moderate	1.80 to 2.69 in	5.6 to 6.5
C -- 31 to 80 in	fine sandy loam	moderate	5.37 to 8.79 in	7.4 to 8.4

2020E--Zimmerman-Snellman complex, 15 to 30 percent slopes

Zimmerman, hilly

Extent: 45 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 12 to 30 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy fine sand	rapid	0.31 to 0.38 in	5.1 to 6.5
E -- 3 to 16 in	fine sand	rapid	0.78 to 1.43 in	5.1 to 7.3
Bw -- 16 to 35 in	fine sand	rapid	1.13 to 2.08 in	5.1 to 7.3
E and Bt -- 35 to 60 in	fine sand	rapid	1.24 to 2.48 in	5.1 to 7.3

Snellman, hilly

Extent: 30 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 15 to 30 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.31 to 0.35 in	5.1 to 7.3
E -- 2 to 16 in	loamy sand	moderate	1.28 to 1.98 in	5.1 to 7.3
Bt -- 16 to 31 in	sandy clay loam	moderate	1.80 to 2.69 in	5.6 to 6.5
C -- 31 to 80 in	fine sandy loam	moderate	5.37 to 8.79 in	7.4 to 8.4

2021B--Debs, till substratum-Snellman complex, 1 to 8 percent slopes

Debs, till substratum

Extent: 40 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 8 percent
Parent material: silty glaciolacustrine deposits 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .37
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	silt loam	moderate	0.39 to 0.47 in	6.1 to 7.3
E -- 2 to 12 in	very fine sandy loam	moderate	1.38 to 1.97 in	6.1 to 7.3
Bt -- 12 to 35 in	silty clay loam	moderately slow	4.18 to 5.11 in	6.1 to 7.3
C -- 35 to 50 in	silt loam	moderate	2.54 to 3.29 in	7.4 to 8.4
2C -- 50 to 60 in	fine sandy loam	moderate	1.08 to 1.77 in	7.4 to 8.4

Snellman

Extent: 30 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 8 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.31 to 0.35 in	5.1 to 7.3
E -- 2 to 16 in	loamy sand	moderate	1.28 to 1.98 in	5.1 to 7.3
Bt -- 16 to 31 in	sandy clay loam	moderate	1.80 to 2.69 in	5.6 to 6.5
C -- 31 to 80 in	fine sandy loam	moderate	5.37 to 8.79 in	7.4 to 8.4

2021C--Debs, till substratum-Snellman complex, 8 to 15 percent slopes

Debs, till substratum, rolling

Extent: 40 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 15 percent
Parent material: silty glaciolacustrine deposits 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .37
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: C
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	silt loam	moderate	0.39 to 0.47 in	6.1 to 7.3
E -- 2 to 12 in	very fine sandy loam	moderate	1.38 to 1.97 in	6.1 to 7.3
Bt -- 12 to 35 in	silty clay loam	moderately slow	4.18 to 5.11 in	6.1 to 7.3
C -- 35 to 50 in	silt loam	moderate	2.54 to 3.29 in	7.4 to 8.4
2C -- 50 to 60 in	fine sandy loam	moderate	1.08 to 1.77 in	7.4 to 8.4

Snellman, rolling

Extent: 30 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 15 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.31 to 0.35 in	5.1 to 7.3
E -- 2 to 16 in	loamy sand	moderate	1.28 to 1.98 in	5.1 to 7.3
Bt -- 16 to 31 in	sandy clay loam	moderate	1.80 to 2.69 in	5.6 to 6.5
C -- 31 to 80 in	fine sandy loam	moderate	5.37 to 8.79 in	7.4 to 8.4

2021E--Debs, till substratum-Snellman complex, 15 to 30 percent slopes

Debs, till substratum, hilly

Extent: 45 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 15 to 30 percent
Parent material: silty glaciolacustrine deposits 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .37
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: C
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	silt loam	moderate	0.39 to 0.47 in	6.1 to 7.3
E -- 2 to 12 in	very fine sandy loam	moderate	1.38 to 1.97 in	6.1 to 7.3
Bt -- 12 to 35 in	silty clay loam	moderately slow	4.18 to 5.11 in	6.1 to 7.3
C -- 35 to 50 in	silt loam	moderate	2.54 to 3.29 in	7.4 to 8.4
2C -- 50 to 60 in	fine sandy loam	moderate	1.08 to 1.77 in	7.4 to 8.4

Snellman, hilly

Extent: 35 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 15 to 30 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.31 to 0.35 in	5.1 to 7.3
E -- 2 to 16 in	loamy sand	moderate	1.28 to 1.98 in	5.1 to 7.3
Bt -- 16 to 31 in	sandy clay loam	moderate	1.80 to 2.69 in	5.6 to 6.5
C -- 31 to 80 in	fine sandy loam	moderate	5.37 to 8.79 in	7.4 to 8.4

2022B--Wykeham-Baudette, till substratum complex, 1 to 4 percent slopes

Wykeham

Extent: 40 percent of the unit
Landform(s): 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: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 1
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 7 in	fine sandy loam	moderately rapid	1.13 to 1.28 in	5.1 to 7.3
E -- 7 to 11 in	fine sandy loam	moderate	0.35 to 0.55 in	5.1 to 6.5
BE -- 11 to 19 in	fine sandy loam	moderately rapid	1.10 to 1.50 in	5.1 to 7.3
Bt -- 19 to 28 in	sandy clay loam	moderate	1.09 to 1.63 in	5.6 to 7.3
C -- 28 to 71 in	fine sandy loam	moderate	4.72 to 7.72 in	7.4 to 8.4

Baudette, till substratum

Extent: 35 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 3 percent
Parent material: silty glaciolacustrine deposits 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) .37
Land capability, nonirrigated 1
Hydric soil: no
Hydrologic group: C
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silt loam	moderate	0.79 to 0.94 in	5.6 to 7.3
E -- 4 to 8 in	very fine sandy loam	moderate	0.55 to 0.79 in	5.6 to 7.3
Bt -- 8 to 35 in	silty clay loam	moderately slow	4.89 to 5.98 in	6.1 to 7.3
C -- 35 to 50 in	silt loam	moderate	2.54 to 3.29 in	7.4 to 8.4
2C -- 50 to 60 in	fine sandy loam	moderate	1.08 to 1.77 in	7.4 to 8.4

2023A--Egglake-Spooner, till substratum complex, 0 to 2 percent slopes

Egglake

Extent: 40 percent of the unit
Landform(s): swales on moraines
Slope gradient: 0 to 2 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: occasional
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loam	moderate	0.79 to 0.87 in	5.6 to 7.3
E -- 4 to 9 in	fine sandy loam	moderately rapid	0.56 to 0.87 in	5.6 to 7.3
Btg -- 9 to 25 in	sandy clay loam	moderate	1.94 to 2.91 in	5.6 to 6.5
Cg -- 25 to 80 in	fine sandy loam	moderate	6.02 to 9.85 in	7.4 to 8.4

Spooner, till substratum

Extent: 35 percent of the unit
Landform(s): swales on moraines
Slope gradient: 0 to 2 percent
Parent material: silty glaciolacustrine deposits over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: occasional
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .43
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silt loam	moderate	0.87 to 0.94 in	5.6 to 7.3
E -- 4 to 7 in	very fine sandy loam	moderate	0.54 to 0.69 in	5.6 to 7.3
Btg -- 7 to 25 in	silty clay loam	moderately slow	3.26 to 3.98 in	6.1 to 7.3
Cg -- 25 to 50 in	silt loam	moderate	4.22 to 5.46 in	7.4 to 8.4
C -- 50 to 80 in	fine sandy loam	moderate	3.29 to 5.39 in	7.4 to 8.4

2024B--Snellman-Zimmerman complex, 1 to 8 percent slopes, pitted

Snellman

Extent: 55 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 8 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.31 to 0.35 in	5.1 to 7.3
E -- 2 to 16 in	loamy sand	moderate	1.28 to 1.98 in	5.1 to 7.3
Bt -- 16 to 31 in	sandy clay loam	moderate	1.80 to 2.69 in	5.6 to 6.5
C -- 31 to 80 in	fine sandy loam	moderate	5.37 to 8.79 in	7.4 to 8.4

Zimmerman

Extent: 25 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 8 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy fine sand	rapid	0.31 to 0.38 in	5.1 to 6.5
E -- 3 to 16 in	fine sand	rapid	0.78 to 1.43 in	5.1 to 7.3
Bw -- 16 to 35 in	fine sand	rapid	1.13 to 2.08 in	5.1 to 7.3
E and Bt -- 35 to 60 in	fine sand	rapid	1.24 to 2.48 in	5.1 to 7.3

2025A--Fluvaquents, frequently flooded-Egglake-Sax complex, 0 to 2 percent slopes

Fluvaquents, frequently flooded

Extent: 40 percent of the unit
Landform(s): drainageways
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: frequent
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 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 16 in	fine sandy loam	moderately rapid	2.58 to 2.91 in	6.6 to 7.8
Cg -- 16 to 80 in	stratified loamy sand to silt loam	rapid	5.10 to 15.31 in	6.6 to 7.8

Egglake

Extent: 25 percent of the unit
Landform(s): swales on moraines
Slope gradient: 0 to 2 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: occasional
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loam	moderate	0.79 to 0.87 in	5.6 to 7.3
E -- 4 to 9 in	fine sandy loam	moderately rapid	0.56 to 0.87 in	5.6 to 7.3
Btg -- 9 to 25 in	sandy clay loam	moderate	1.94 to 2.91 in	5.6 to 6.5
Cg -- 25 to 80 in	fine sandy loam	moderate	6.02 to 9.85 in	7.4 to 8.4

2025A--Fluvaquents, frequently flooded-Egglake-Sax complex, 0 to 2 percent slopes

Sax, depressional

Extent: 20 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: organic material over silty glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oa	0 to 13 in	muck	moderately rapid	4.55 to 5.85 in	5.1 to 6.5
A	13 to 15 in	silt loam	moderate	0.43 to 0.51 in	5.6 to 7.3
Bg	15 to 36 in	silt loam	moderate	3.76 to 4.59 in	5.6 to 7.3
Cg	36 to 80 in	silt loam	moderate	7.50 to 9.70 in	7.4 to 8.4

2026B--Lengby-Snellman complex, 1 to 8 percent slopes

Lengby

Extent: 45 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 8 percent
Parent material: stratified glaciofluvial deposits
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 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	fine sandy loam	moderately rapid	0.47 to 0.57 in	6.1 to 7.3
E -- 3 to 11 in	loamy fine sand	rapid	0.31 to 0.87 in	5.6 to 7.3
B/E -- 11 to 15 in	sandy clay loam	moderate	0.31 to 0.71 in	6.1 to 7.3
Bt -- 15 to 26 in	sandy clay loam	moderate	1.54 to 2.09 in	6.1 to 7.3
C -- 26 to 60 in	stratified sand to loamy very fine sand	rapid	1.69 to 5.76 in	7.4 to 8.4

Snellman

Extent: 30 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 8 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.31 to 0.35 in	5.1 to 7.3
E -- 2 to 16 in	loamy sand	moderate	1.28 to 1.98 in	5.1 to 7.3
Bt -- 16 to 31 in	sandy clay loam	moderate	1.80 to 2.69 in	5.6 to 6.5
C -- 31 to 80 in	fine sandy loam	moderate	5.37 to 8.79 in	7.4 to 8.4

2026C--Lengby-Snellman complex, 8 to 15 percent slopes

Lengby

Extent: 45 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 15 percent
Parent material: stratified glaciofluvial deposits
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 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	fine sandy loam	moderately rapid	0.47 to 0.57 in	6.1 to 7.3
E -- 3 to 11 in	loamy fine sand	rapid	0.31 to 0.87 in	5.6 to 7.3
B/E -- 11 to 15 in	sandy clay loam	moderate	0.31 to 0.71 in	6.1 to 7.3
Bt -- 15 to 26 in	sandy clay loam	moderate	1.54 to 2.09 in	6.1 to 7.3
C -- 26 to 60 in	stratified sand to loamy very fine sand	rapid	1.69 to 5.76 in	7.4 to 8.4

Snellman, rolling

Extent: 30 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 15 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.31 to 0.35 in	5.1 to 7.3
E -- 2 to 16 in	loamy sand	moderate	1.28 to 1.98 in	5.1 to 7.3
Bt -- 16 to 31 in	sandy clay loam	moderate	1.80 to 2.69 in	5.6 to 6.5
C -- 31 to 80 in	fine sandy loam	moderate	5.37 to 8.79 in	7.4 to 8.4

2026E--Lengby-Snellman complex, 15 to 30 percent slopes

Lengby

Extent: 45 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 15 to 30 percent
Parent material: stratified glaciofluvial deposits
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 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	fine sandy loam	moderately rapid	0.47 to 0.57 in	6.1 to 7.3
E -- 3 to 11 in	loamy fine sand	rapid	0.31 to 0.87 in	5.6 to 7.3
B/E -- 11 to 15 in	sandy clay loam	moderate	0.31 to 0.71 in	6.1 to 7.3
Bt -- 15 to 26 in	sandy clay loam	moderate	1.54 to 2.09 in	6.1 to 7.3
C -- 26 to 60 in	stratified sand to loamy very fine sand	rapid	1.69 to 5.76 in	7.4 to 8.4

Snellman, hilly

Extent: 30 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 15 to 30 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.31 to 0.35 in	5.1 to 7.3
E -- 2 to 16 in	loamy sand	moderate	1.28 to 1.98 in	5.1 to 7.3
Bt -- 16 to 31 in	sandy clay loam	moderate	1.80 to 2.69 in	5.6 to 6.5
C -- 31 to 80 in	fine sandy loam	moderate	5.37 to 8.79 in	7.4 to 8.4

2030A--Hiwood fine sand, 1 to 6 percent slopes

Hiwood

Extent: 75 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 1 to 6 percent
Parent material: sandy glaciolacustrine deposits
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): 1
Wind erodibility index (WEI): 250
Kw factor (surface layer) .10
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sand	rapid	0.14 to 0.20 in	5.1 to 6.0
E -- 2 to 5 in	fine sand	rapid	0.19 to 0.31 in	5.1 to 6.5
Bw -- 5 to 46 in	fine sand	rapid	1.64 to 3.69 in	5.1 to 6.5
C -- 46 to 60 in	fine sand	rapid	0.55 to 0.96 in	5.6 to 7.8

2031A--Redby loamy fine sand, 1 to 3 percent slopes

Redby

Extent: 75 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 1 to 3 percent
Parent material: sandy glaciolacustrine deposits
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated 3w
Hydric soil: no
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loamy fine sand	rapid	0.46 to 0.77 in	5.6 to 6.5
E -- 5 to 10 in	fine sand	rapid	0.28 to 0.47 in	5.6 to 6.5
Bw -- 10 to 35 in	fine sand	rapid	1.01 to 2.27 in	5.6 to 7.3
C -- 35 to 80 in	fine sand	rapid	1.80 to 3.14 in	6.1 to 7.8

2032A--Cormant loamy fine sand, 0 to 2 percent slopes

Cormant

Extent: 75 percent of the unit
Landform(s): swales on lake plains
Slope gradient: 0 to 2 percent
Parent material: sandy glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: occasional
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	loamy fine sand	rapid	0.65 to 0.89 in	6.1 to 7.3
Cg -- 6 to 60 in	fine sand	rapid	2.16 to 5.39 in	6.1 to 7.8

2034B--Zimmerman fine sand, 0 to 6 percent slopes

Zimmerman

Extent: 80 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 0 to 6 percent
Parent material: sandy glaciolacustrine deposits
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): 1
Wind erodibility index (WEI): 250
Kw factor (surface layer) .02
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	fine sand	rapid	0.22 to 0.31 in	5.1 to 6.5
E -- 3 to 16 in	fine sand	rapid	0.78 to 1.43 in	5.1 to 7.3
Bw -- 16 to 35 in	fine sand	rapid	1.13 to 2.08 in	5.1 to 7.3
E and Bt -- 35 to 60 in	fine sand	rapid	1.24 to 2.48 in	5.1 to 7.3

2035A--Epoufette sandy loam, 0 to 2 percent slopes

Epoufette

Extent: 75 percent of the unit
Landform(s): swales on lake plains
Slope gradient: 0 to 2 percent
Parent material: sandy and gravelly glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: occasional
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	sandy loam	moderately rapid	0.51 to 0.59 in	6.1 to 7.3
Eg -- 4 to 13 in	loamy sand	rapid	0.45 to 0.63 in	6.1 to 7.3
Btg -- 13 to 18 in	sandy loam	moderately rapid	0.41 to 0.72 in	6.6 to 7.8
2Cg -- 18 to 60 in	gravelly coarse sand	very rapid	0.42 to 1.25 in	7.4 to 8.4

2036A--Meehan loamy sand, 0 to 3 percent slopes

Meehan

Extent: 75 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 0 to 3 percent
Parent material: sandy glaciolacustrine deposits
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated 4w
Hydric soil: no
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loamy sand	rapid	0.35 to 0.47 in	5.6 to 6.5
Bw -- 4 to 29 in	sand	rapid	0.76 to 2.77 in	5.6 to 6.5
C -- 29 to 60 in	sand	very rapid	0.61 to 2.15 in	5.5 to 7.3

2037A--Karlstad loamy sand, 0 to 3 percent slopes

Karlstad

Extent: 75 percent of the unit
Landform(s): beach ridges on lake plains
Slope gradient: 0 to 3 percent
Parent material: sandy and gravelly glaciolacustrine deposits
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 3 in	loamy sand	rapid	0.25 to 0.30 in	5.6 to 7.3
E --	3 to 9 in	loamy sand	rapid	0.31 to 0.82 in	5.6 to 7.3
Bt --	9 to 16 in	sandy loam	moderately rapid	0.78 to 1.13 in	6.1 to 7.8
2Bt --	16 to 19 in	gravelly sandy loam	moderately rapid	0.19 to 0.39 in	6.1 to 7.8
2C --	19 to 60 in	stratified gravelly coarse sand to loamy fine sand	rapid	0.82 to 4.09 in	7.4 to 8.4

2038B--Marquette loamy sand, 1 to 6 percent slopes, MLRA 88

Marquette

Extent: 65 percent of the unit
Landform(s): beach ridges on lake plains
Slope gradient: 1 to 6 percent
Parent material: sandy and gravelly glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 3 in	loamy sand	rapid	0.25 to 0.30 in	5.6 to 7.3
E --	3 to 13 in	sand	rapid	0.51 to 1.13 in	5.6 to 7.3
Bt --	13 to 19 in	very gravelly sandy loam	moderately rapid	0.24 to 0.53 in	6.6 to 8.4
C --	19 to 60 in	stratified very gravelly coarse sand to fine sand	very rapid	0.82 to 1.64 in	7.4 to 8.4

2038C--Marquette loamy sand, 6 to 12 percent slopes, MLRA 88

Marquette

Extent: 75 percent of the unit
Landform(s): beach ridges on lake plains
Slope gradient: 6 to 12 percent
Parent material: sandy and gravelly glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 3 in	loamy sand	rapid	0.25 to 0.30 in	5.6 to 7.3
E --	3 to 13 in	sand	rapid	0.51 to 1.13 in	5.6 to 7.3
Bt --	13 to 19 in	very gravelly sandy loam	moderately rapid	0.24 to 0.53 in	6.6 to 8.4
C --	19 to 60 in	stratified very gravelly coarse sand to fine sand	very rapid	0.82 to 1.64 in	7.4 to 8.4

B43A--Northwood-Berner complex, mlra 88, 0 to 1 percent slopes

Northwood

Extent: 60 to 80 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material over sandy glaciolacustrine deposits over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 9 in	muck	moderately rapid	3.17 to 4.07 in	5.1 to 7.8
A -- 9 to 14 in	loamy sand	moderately rapid	0.51 to 0.61 in	5.1 to 6.5
Bg -- 14 to 24 in	loamy sand	moderately rapid	0.30 to 1.08 in	5.6 to 8.4
2Bk -- 24 to 64 in	clay loam	moderately slow	5.62 to 7.23 in	7.4 to 8.4
2Cg -- 64 to 80 in	clay loam	moderately slow	2.20 to 2.83 in	7.4 to 8.4

Berner

Extent: 10 to 30 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material over sandy outwash over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 29 in	muck	moderately rapid	10.06 to 12.93 in	
A -- 29 to 31 in	loamy sand	moderately rapid	0.24 to 0.28 in	5.1 to 6.5
Bg -- 31 to 44 in	loamy sand	moderately rapid	0.39 to 1.43 in	5.6 to 8.4
2Bk -- 44 to 66 in	clay loam	moderately slow	3.09 to 3.97 in	7.4 to 8.4
2Cg -- 66 to 80 in	clay loam	moderately slow	1.93 to 2.48 in	7.4 to 8.4

B43A--Northwood-Berner complex, mlra 88, 0 to 1 percent slopes

B58B--Wurtsmith-Meehan complex, 0 to 4 percent slopes

Wurtsmith

Extent: 35 to 55 percent of the unit
Landform(s): rises on outwash plains
Slope gradient: 1 to 4 percent
Parent material: sandy outwash
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	4.5 to 6.0
Bw -- 3 to 18 in	sand	rapid	0.45 to 1.65 in	4.5 to 6.0
BC -- 18 to 33 in	sand	rapid	0.30 to 1.05 in	4.5 to 6.0
C -- 33 to 80 in	sand	rapid	0.94 to 3.28 in	5.1 to 6.5

Meehan

Extent: 30 to 50 percent of the unit
Landform(s): rises on outwash plains
Slope gradient: 0 to 3 percent
Parent material: sandy outwash
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A/D
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	4.5 to 6.0
Bw1 -- 3 to 12 in	loamy sand	rapid	0.52 to 0.95 in	4.5 to 6.0
Bw2 -- 12 to 47 in	sand	rapid	0.70 to 3.15 in	4.5 to 6.0
C -- 47 to 80 in	coarse sand	very rapid	0.66 to 2.31 in	5.1 to 6.5

B60B--Ricelake-Cutaway complex, mlra 88, 1 to 4 percent slopes

Ricelake

Extent: 50 to 75 percent of the unit
Landform(s): moraines on flats
Slope gradient: 1 to 3 percent
Parent material: sandy outwash 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): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .20
Land capability, nonirrigated 3w
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	loamy sand	rapid	0.20 to 0.24 in	5.1 to 6.5
E -- 2 to 23 in	loamy sand	rapid	1.25 to 2.30 in	5.1 to 6.5
Bt -- 23 to 30 in	sandy loam	moderately rapid	0.78 to 1.35 in	5.6 to 7.3
Bw -- 30 to 35 in	sand	rapid	0.10 to 0.51 in	5.6 to 7.3
2C -- 35 to 80 in	clay loam	moderately slow	6.28 to 8.08 in	7.4 to 8.4

Cutaway

Extent: 20 to 40 percent of the unit
Landform(s): rises on moraines
Slope gradient: 2 to 4 percent
Parent material: sandy 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): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .20
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	5.1 to 6.5
E -- 3 to 14 in	loamy sand	rapid	0.33 to 1.21 in	5.1 to 6.5
E/B -- 14 to 31 in	loamy sand	rapid	1.02 to 3.05 in	5.6 to 6.5
2Bt -- 31 to 39 in	clay loam	moderate	1.18 to 1.50 in	5.6 to 7.3
2Bk -- 39 to 50 in	clay loam	moderately slow	1.54 to 2.20 in	7.4 to 8.4
2C -- 50 to 80 in	clay loam	moderately slow	4.19 to 5.39 in	7.4 to 8.4

B60B--Ricelake-Cutaway complex, mlra 88, 1 to 4 percent slopes

B70A--Ricelake-Blomford complex, mlra 88, 0 to 3 percent slopes

Ricelake

Extent: 40 to 70 percent of the unit
Landform(s): flats on moraines
Slope gradient: 0 to 3 percent
Parent material: sandy outwash 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): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .20
Land capability, nonirrigated 3w
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	loamy sand	rapid	0.20 to 0.24 in	5.1 to 6.5
E -- 2 to 23 in	loamy sand	rapid	1.25 to 2.30 in	5.1 to 6.5
Bt -- 23 to 30 in	sandy loam	moderately rapid	0.78 to 1.35 in	5.6 to 7.3
Bw -- 30 to 35 in	sand	rapid	0.10 to 0.51 in	5.6 to 7.3
2C -- 35 to 80 in	clay loam	moderately slow	6.28 to 8.08 in	7.4 to 8.4

Blomford

Extent: 20 to 40 percent of the unit
Landform(s): drainageways on moraines
Slope gradient: 0 to 2 percent
Parent material: sandy outwash over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: occasional
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .24
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loamy fine sand	rapid	0.51 to 0.61 in	5.1 to 6.5
Eg -- 5 to 23 in	loamy fine sand	rapid	0.53 to 1.95 in	5.1 to 6.5
2Btg -- 23 to 55 in	clay loam	moderate	4.84 to 6.13 in	5.6 to 7.3
2BCg -- 55 to 65 in	silty clay loam	moderately slow	1.38 to 1.97 in	7.4 to 8.4
2Cg -- 65 to 80 in	clay loam	moderately slow	2.09 to 2.69 in	7.4 to 8.4

B76A--Deford-Leafriver complex, 0 to 2 percent slopes

Deford

Extent: 50 to 65 percent of the unit
Landform(s): flats on beach ridges
Slope gradient: 0 to 2 percent
Parent material: sandy glaciofluvial deposits
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): 1
Wind erodibility index (WEI): 250
Kw factor (surface layer) .02
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	fine sand	rapid	0.28 to 0.47 in	4.5 to 7.8
C -- 4 to 32 in	fine sand	rapid	1.40 to 2.80 in	5.1 to 8.4
Cg -- 32 to 80 in	fine sand	rapid	2.40 to 4.80 in	5.1 to 8.4

Leafriver

Extent: 20 to 35 percent of the unit
Landform(s): depressions on beach ridges
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material over sandy glaciofluvial deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 9 in	muck	moderately rapid	3.17 to 4.07 in	5.1 to 7.8
A -- 9 to 14 in	sandy loam	moderately rapid	0.36 to 1.13 in	3.5 to 7.3
Cg -- 14 to 80 in	loamy sand	rapid	3.29 to 6.57 in	3.5 to 7.3

B77A--Meehan-Deford complex, 0 to 3 percent slopes

Meehan

Extent: 50 to 70 percent of the unit
Landform(s): beach ridges, outwash plains
Slope gradient: 1 to 3 percent
Parent material: sandy glaciofluvial deposits
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A/D
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	4.5 to 6.0
Bw1 -- 3 to 12 in	loamy sand	rapid	0.52 to 0.95 in	4.5 to 6.0
Bw2 -- 12 to 47 in	sand	rapid	0.70 to 3.15 in	4.5 to 6.0
C -- 47 to 80 in	coarse sand	very rapid	0.66 to 2.31 in	5.1 to 6.5

Deford

Extent: 25 to 35 percent of the unit
Landform(s): flats on beach ridges, swales on beach ridges
Slope gradient: 0 to 2 percent
Parent material: sandy glaciofluvial deposits
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): 1
Wind erodibility index (WEI): 250
Kw factor (surface layer) .02
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	fine sand	rapid	0.28 to 0.47 in	4.5 to 7.8
C -- 4 to 32 in	fine sand	rapid	1.40 to 2.80 in	5.1 to 8.4
Cg -- 32 to 80 in	fine sand	rapid	2.40 to 4.80 in	5.1 to 8.4

B78B--Graycalm-Grettum complex, 1 to 8 percent slopes

Graycalm

Extent: 50 to 65 percent of the unit
Landform(s): beach ridges
Slope gradient: 4 to 8 percent
Parent material: sandy glaciofluvial deposits
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): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .02
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	sand	rapid	0.22 to 0.28 in	3.5 to 6.5
Bw -- 3 to 22 in	sand	rapid	1.13 to 2.08 in	3.5 to 7.3
E -- 22 to 35 in	sand	rapid	0.78 to 1.43 in	3.5 to 7.3
E and Bt -- 35 to 60 in	sand	rapid	1.24 to 3.97 in	3.5 to 7.3
C -- 60 to 80 in	sand	rapid	0.40 to 1.41 in	5.6 to 8.4

Grettum

Extent: 25 to 45 percent of the unit
Landform(s): beach ridges
Slope gradient: 1 to 6 percent
Parent material: sandy glaciofluvial deposits
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	moderately rapid	0.31 to 0.38 in	4.5 to 5.0
Bw -- 3 to 31 in	sand	rapid	1.70 to 3.12 in	4.5 to 5.0
E and Bt -- 31 to 74 in	sand	rapid	2.55 to 7.23 in	6.1 to 6.5
C -- 74 to 80 in	sand	rapid	0.30 to 0.41 in	6.6 to 7.3

B109A--Bowstring and Fluvaquents soils, des moines, 0 to 2 percent slopes, frequently flooded

Bowstring, mlra 88, frequently flooded

Extent: 45 percent of the unit
Landform(s): swales on flood plains
Slope gradient: 0 to 1 percent
Parent material: organic material over alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1-2 -- 0 to 38 in	muck	moderately rapid	13.37 to 17.19 in	
Cg -- 38 to 47 in	stratified sand to fine sandy loam	rapid	0.69 to 1.21 in	
O'a1 -- 47 to 80 in	muck	moderately rapid	11.57 to 14.88 in	

Fluvaquents, mlra 88, frequently flooded

Extent: 40 percent of the unit
Landform(s): flats on flood plains, swales on flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 16 in	fine sandy loam	moderately rapid	2.58 to 3.87 in	6.6 to 7.8
Cg -- 16 to 80 in	stratified loamy sand to silt loam	rapid	2.55 to 12.76 in	6.6 to 7.8

B200A--Garnes fine sandy loam, des moines, 0 to 3 percent slopes

Garnes

Extent: 70 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 0 to 3 percent
Parent material: glaciolacustrine deposits and/or 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 1
Hydric soil: no
Hydrologic group: C
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 6 in	fine sandy loam	moderately rapid	0.94 to 1.06 in	6.1 to 7.3
E -- 6 to 9 in	loamy fine sand	rapid	0.16 to 0.38 in	6.1 to 7.3
Bt -- 9 to 14 in	clay loam	moderate	0.87 to 1.02 in	6.6 to 7.8
Bk1-2 -- 14 to 72 in	loam	moderate	8.68 to 11.00 in	7.4 to 8.4
C -- 72 to 80 in	loam	moderate	1.18 to 1.50 in	7.4 to 8.4

B201A--Chilgren fine sandy loam, des moines, 0 to 2 percent slopes

Chilgren

Extent: 75 percent of the unit
Landform(s): flats on lake plains, swales on lake plains
Slope gradient: 0 to 2 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: occasional
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	fine sandy loam	moderately rapid	0.63 to 0.71 in	6.1 to 7.3
E -- 4 to 10 in	fine sandy loam	rapid	0.30 to 0.71 in	6.1 to 7.3
Btg -- 10 to 18 in	clay loam	moderate	1.41 to 1.65 in	6.1 to 7.8
Bkg1-2 -- 18 to 72 in	loam	moderate	8.09 to 10.25 in	7.4 to 8.4
Cg -- 72 to 80 in	loam	moderate	1.18 to 1.50 in	7.4 to 8.4

B202A--Cathro muck, depressional, des moines, 0 to 1 percent slopes

Cathro, depressional, mlra 88

Extent: 80 percent of the unit
Landform(s): depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1-Oa2 -- 0 to 11 in	muck	moderately rapid	3.86 to 5.29 in	
Oa3 -- 11 to 23 in	muck	moderately rapid	4.13 to 5.67 in	
Cg -- 23 to 60 in	loam	moderate	5.55 to 7.03 in	7.4 to 8.4

B203A--Northwood muck, depressional, des moines, 0 to 1 percent slopes

Northwood, depressional, mlra 88

Extent: 75 percent of the unit
Landform(s): depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over glaciolacustrine deposits and/or till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oa --	0 to 9 in	muck	moderately rapid	3.17 to 4.35 in	5.1 to 7.8
A --	9 to 14 in	loamy fine sand	rapid	0.51 to 0.92 in	5.6 to 7.8
Bg1-2 --	14 to 24 in	loamy fine sand	rapid	0.59 to 1.08 in	5.6 to 8.4
2BCkg-2Cg --	24 to 80 in	loam	moderate	8.39 to 10.62 in	7.4 to 8.4

B204A--Roliss loam, des moines, 0 to 2 percent slopes

Roliss, mlra 88

Extent: 75 percent of the unit
Landform(s): flats on lake plains, swales on lake plains
Slope gradient: 0 to 2 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: occasional
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Ap,A --	0 to 14 in	loam	moderate	2.41 to 3.40 in	6.6 to 8.4
Bg --	14 to 20 in	loam	moderate	0.89 to 1.12 in	7.4 to 8.4
Cg1-4 --	20 to 80 in	loam	moderate	8.98 to 11.37 in	7.4 to 8.4

B205A--Berner muck, depressional, des moines, 0 to 1 percent slopes

Berner, depressional, mlra 88

Extent: 80 percent of the unit
Landform(s): depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over glaciolacustrine deposits and/or till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oa1-2 --	0 to 28 in	muck	moderately rapid	9.78 to 13.42 in	
A --	28 to 31 in	sandy loam	moderately rapid	0.31 to 0.57 in	
Bg --	31 to 44 in	sand	rapid	0.65 to 1.30 in	
2CBkg --	44 to 80 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

B206A--Hamre muck, depressional, des moines, 0 to 1 percent slopes

Hamre, depressional, mlra 88

Extent: 80 percent of the unit
Landform(s): depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 13 in	muck	moderately rapid	4.55 to 6.24 in	5.1 to 7.8
A -- 13 to 18 in	loam	moderate	0.87 to 1.13 in	5.1 to 7.8
Bg -- 18 to 35 in	loam	moderate	2.54 to 3.22 in	6.6 to 8.4
BCg-Cg -- 35 to 80 in	loam	moderate	6.73 to 8.53 in	7.4 to 8.4

B207A--Pelan sandy loam, des moines, 0 to 3 percent slopes

Pelan

Extent: 70 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 0 to 3 percent
Parent material: glaciolacustrine deposits 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 6 in	sandy loam	moderately rapid	0.77 to 0.89 in	6.1 to 7.3
E -- 6 to 9 in	sand	rapid	0.16 to 0.38 in	6.1 to 7.3
Bt -- 9 to 14 in	very gravelly sandy loam	rapid	0.15 to 0.56 in	6.1 to 7.8
Bw -- 14 to 20 in	very gravelly coarse sand	rapid	0.12 to 0.41 in	7.4 to 8.4
2Bw -- 20 to 60 in	loam	moderate	5.96 to 7.56 in	7.4 to 8.4

B208A--Grygla loamy fine sand, des moines, 0 to 2 percent slopes

Grygla

Extent: 75 percent of the unit
Landform(s): flats on lake plains, swales on lake plains
Slope gradient: 0 to 2 percent
Parent material: glaciolacustrine deposits over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: occasional
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 6 in	loamy fine sand	rapid	0.77 to 0.89 in	6.1 to 7.3
Bg -- 6 to 26 in	fine sand	rapid	1.20 to 2.21 in	6.6 to 7.8
2Bkg-2Cg -- 26 to 80 in	loam	moderate	8.09 to 10.25 in	7.4 to 8.4

B210A--Eckvoll loamy fine sand, des moines, 0 to 3 percent slopes

Eckvoll

Extent: 70 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 0 to 3 percent
Parent material: glaciolacustrine deposits 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .28
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	loamy fine sand	rapid	0.91 to 1.09 in	6.1 to 7.3
E1-2 -- 9 to 25 in	fine sand	rapid	0.81 to 1.94 in	6.1 to 7.3
2Bt -- 25 to 32 in	sandy clay loam	moderate	1.07 to 1.20 in	6.6 to 7.8
2BCk-2C1-2 -- 32 to 80 in	loam	moderate	7.20 to 9.13 in	7.4 to 8.4

B211A--Berner and Cathro soils, ponded, des moines, 0 to 1 percent slopes

Berner, Ponded

Extent: 0 to 90 percent of the unit
Landform(s): depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over glaciolacustrine deposits and/or till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated 8w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1-2 -- 0 to 28 in	muck	moderately rapid	9.78 to 13.42 in	
A -- 28 to 31 in	sandy loam	moderately rapid	0.31 to 0.57 in	
Bg -- 31 to 44 in	sand	rapid	0.65 to 1.30 in	
2CBkg -- 44 to 80 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

Cathro, Ponded

Extent: 0 to 90 percent of the unit
Landform(s): depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated 8w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1-Oa2 -- 0 to 11 in	muck	moderately rapid	3.86 to 5.29 in	
Oa3 -- 11 to 23 in	muck	moderately rapid	4.13 to 5.67 in	
Cg -- 23 to 60 in	loam	moderate	5.55 to 7.03 in	7.4 to 8.4

GP--Pits, gravel-Udipsamments complex

Pits, gravel

Extent: 70 to 90 percent of the unit
Landform(s): moraines, stream terraces, outwash plains
Slope gradient: 0 to 45 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
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:

Representative soil profile:

Texture	Permeability	Available water capacity	pH

Udipsamments

Extent: 10 to 30 percent of the unit
Landform(s): moraines, stream terraces, outwash plains
Slope gradient: 0 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):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw factor (surface layer)
Land capability, nonirrigated
Hydric soil:
Hydrologic group:
Potential for frost action:

Representative soil profile:

Texture	Permeability	Available water capacity	pH

H87--Suomi-Aeric Glossaqualfs, loamy association, nearly level and undulating

Suomi, nearly level and undulating

Extent: 45 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 0 to 8 percent
Parent material: 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) .32
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	loam	moderate	1.18 to 1.42 in	5.1 to 7.3
E,Bt1,Bt2 -- 6 to 23 in	clay	slow	1.69 to 3.22 in	5.1 to 7.3
Bkg -- 23 to 60 in	silty clay	slow	4.07 to 6.29 in	7.4 to 8.4

Aeric glossaqualfs, nearly level and undulating

Extent: 30 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 2 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 1 in	loam	moderate	0.24 to 0.26 in	5.1 to 7.3
E -- 1 to 4 in	loam	moderate	0.33 to 0.52 in	5.1 to 7.3
E/B -- 4 to 9 in	loam	moderate	0.77 to 1.02 in	5.1 to 7.3
Bt -- 9 to 26 in	silty clay	slow	1.35 to 3.39 in	5.1 to 7.3
Bk -- 26 to 80 in	clay loam	moderately slow	7.55 to 10.79 in	7.4 to 8.4

H88--Suomi-Aeric Glossaqualfs, loamy association, gently undulating to hilly

Suomi, gently undulating to hilly

Extent: 45 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 25 percent
Parent material: 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) .32
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 5 in	loam	moderate	1.02 to 1.23 in	5.1 to 7.3
Bt1,Bt2 -- 5 to 21 in	silty clay	slow	1.57 to 2.99 in	5.1 to 7.3
Bkg -- 21 to 60 in	silty clay	slow	4.29 to 6.63 in	7.4 to 8.4

Aeric glossaqualfs, gently undulating to hilly

Extent: 30 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 1 in	loam	moderate	0.24 to 0.26 in	5.1 to 7.3
E -- 1 to 4 in	loam	moderate	0.33 to 0.52 in	5.1 to 7.3
E/B -- 4 to 9 in	loam	moderate	0.77 to 1.02 in	5.1 to 7.3
Bt -- 9 to 26 in	silty clay	slow	1.35 to 3.39 in	5.1 to 7.3
Bk -- 26 to 80 in	clay loam	moderately slow	7.55 to 10.79 in	7.4 to 8.4

I8A--Cathro muck, 0 to 1 percent slopes

Cathro

Extent: 80 percent of the unit
Landform(s): depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 11 in	muck	moderately rapid	3.86 to 5.29 in	
Oa2 -- 11 to 23 in	muck	moderately rapid	4.13 to 5.67 in	
Cg -- 23 to 60 in	loam	moderate	5.55 to 7.03 in	7.4 to 8.4

I12A--Eckvoll loamy fine sand, 0 to 3 percent slopes

Eckvoll

Extent: 70 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 0 to 3 percent
Parent material: glaciolacustrine deposits 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .28
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	loamy fine sand	rapid	0.91 to 1.09 in	6.1 to 7.3
E -- 9 to 25 in	fine sand	rapid	0.81 to 1.94 in	6.1 to 7.3
2Bt -- 25 to 32 in	sandy clay loam	moderate	1.07 to 1.20 in	6.6 to 7.8
2BCk -- 32 to 80 in	loam	moderate	7.20 to 9.13 in	7.4 to 8.4

I27A--Hamre muck, 0 to 1 percent slopes

Hamre

Extent: 80 percent of the unit
Landform(s): depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 13 in	muck	moderately rapid	4.55 to 6.24 in	5.1 to 7.8
A -- 13 to 18 in	loam	moderate	0.87 to 1.13 in	5.1 to 7.8
Bg -- 18 to 71 in	loam	moderate	7.91 to 10.02 in	6.6 to 8.4
Cg -- 71 to 80 in	loam	moderate	1.36 to 1.72 in	7.4 to 8.4

I38A--Kratka fine sandy loam, 0 to 2 percent slopes

Kratka

Extent: 70 percent of the unit
Landform(s): flats on lake plains, swales on lake plains
Slope gradient: 0 to 2 percent
Parent material: glaciolacustrine deposits over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: occasional
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 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 11 in	fine sandy loam	moderately rapid	1.76 to 1.98 in	5.6 to 7.8
Bg -- 11 to 18 in	loamy fine sand	rapid	0.43 to 0.78 in	5.6 to 7.8
Cg1 -- 18 to 25 in	fine sand	rapid	0.43 to 0.85 in	6.6 to 7.8
2Cg2 -- 25 to 80 in	loam	moderate	8.21 to 10.40 in	7.4 to 8.4

I45A--Northwood muck, 0 to 1 percent slopes

Northwood

Extent: 75 percent of the unit
Landform(s): depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over glaciolacustrine deposits and/or till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oa --	0 to 9 in	muck	moderately rapid	3.17 to 4.35 in	5.1 to 7.8
A --	9 to 14 in	loamy fine sand	rapid	0.51 to 0.92 in	5.6 to 7.8
Bg --	14 to 24 in	fine sand	rapid	0.59 to 1.08 in	5.6 to 8.4
2BCkg --	24 to 80 in	loam	moderate	8.39 to 10.62 in	7.4 to 8.4

I50A--Reiner fine sandy loam, 0 to 3 percent slopes

Reiner

Extent: 70 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 0 to 3 percent
Parent material: 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 1
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 7 in	fine sandy loam	moderately rapid	1.13 to 1.28 in	6.6 to 7.3
Bt -- 7 to 17 in	clay loam	moderate	1.48 to 1.87 in	6.6 to 7.3
Bw -- 17 to 21 in	loam	moderate	0.59 to 0.75 in	7.4 to 8.4
Bk -- 21 to 35 in	loam	moderate	2.13 to 2.69 in	7.4 to 8.4
C -- 35 to 80 in	loam	moderate	6.73 to 8.53 in	7.4 to 8.4

I53A--Roliss loam, 0 to 2 percent slopes

Roliss

Extent: 75 percent of the unit
Landform(s): flats on lake plains, swales on lake plains
Slope gradient: 0 to 2 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: occasional
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	loam	moderate	1.54 to 2.17 in	6.6 to 8.4
A -- 9 to 14 in	loam	moderate	0.87 to 1.23 in	6.6 to 8.4
Bg -- 14 to 20 in	loam	moderate	0.89 to 1.12 in	7.4 to 8.4
Cg -- 20 to 80 in	loam	moderate	8.98 to 11.37 in	7.4 to 8.4

I59A--Smiley loam, 0 to 2 percent slopes

Smiley

Extent: 65 percent of the unit
Landform(s): flats on lake plains, swales on lake plains
Slope gradient: 0 to 2 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: occasional
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

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Ap --	0 to 12 in	loam	moderate	2.36 to 2.83 in	6.6 to 7.8
Btg --	12 to 19 in	clay loam	moderate	1.06 to 1.35 in	6.6 to 8.4
Bkg --	19 to 42 in	loam	moderate	3.48 to 4.41 in	7.4 to 8.4
Cg --	42 to 80 in	loam	moderate	5.67 to 7.18 in	7.4 to 8.4

I60A--Smiley mucky loam, depressional, 0 to 1 percent slopes

Smiley, depressional

Extent: 80 percent of the unit
Landform(s): depressions on lake plains
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) .28
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 12 in	mucky loam	moderate	2.36 to 3.54 in	6.6 to 7.8
Btg -- 12 to 19 in	clay loam	moderate	1.06 to 1.35 in	6.6 to 8.4
Bkg -- 19 to 42 in	loam	moderate	3.48 to 4.41 in	7.4 to 8.4
Cg -- 42 to 80 in	loam	moderate	5.67 to 7.18 in	7.4 to 8.4

I61A--Strandquist loam, 0 to 2 percent slopes

Strandquist

Extent: 70 percent of the unit
Landform(s): flats on lake plains, swales on lake plains
Slope gradient: 0 to 2 percent
Parent material: glaciolacustrine deposits over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: occasional
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 3w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	loam	moderately rapid	1.97 to 2.17 in	6.6 to 8.4
2Bg -- 10 to 20 in	very gravelly sand	rapid	0.20 to 0.72 in	7.4 to 8.4
3BCg -- 20 to 60 in	loam	moderate	5.96 to 7.56 in	7.4 to 8.4

I71A--Berner and Cathro soils, ponded, mlra 56, 0 to 1 percent slopes

Berner, Ponded

Extent: 0 to 90 percent of the unit
Landform(s): depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over glaciolacustrine deposits and/or till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated 8w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 28 in	muck	moderately rapid	9.78 to 13.42 in	
A -- 28 to 31 in	sandy loam	moderately rapid	0.31 to 0.57 in	
Bg -- 31 to 44 in	sand	rapid	0.65 to 1.30 in	
2CBkg -- 44 to 60 in	loam	moderate	2.36 to 2.99 in	7.4 to 8.4

Cathro, ponded

Extent: 0 to 90 percent of the unit
Landform(s): depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated 8w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 11 in	muck	moderately rapid	3.86 to 5.29 in	
Oa2 -- 11 to 23 in	muck	moderately rapid	4.13 to 5.67 in	
Cg -- 23 to 60 in	loam	moderate	5.55 to 7.03 in	7.4 to 8.4

I72A--Pelan sandy loam, mlra 56, 0 to 3 percent slopes

Pelan

Extent: 65 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 0 to 3 percent
Parent material: glaciolacustrine deposits 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Ap --	0 to 6 in	sandy loam	moderately rapid	0.77 to 0.89 in	6.1 to 7.3
E --	6 to 9 in	sand	rapid	0.16 to 0.38 in	6.1 to 7.3
Bt --	9 to 14 in	very gravelly sandy loam	rapid	0.15 to 0.56 in	6.1 to 7.8
Bw --	14 to 20 in	very gravelly coarse sand	rapid	0.12 to 0.41 in	7.4 to 8.4
2Bw --	20 to 60 in	loam	moderate	5.96 to 7.56 in	7.4 to 8.4

J5--Alfic Udipsamments, nearly level and undulating

Alfic udipsamments

Extent: 80 percent of the unit
Landform(s): hillslopes on beach ridges, hillslopes on outwash plains
Slope gradient: 0 to 8 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A,E --	0 to 16 in	loamy fine sand	rapid	1.61 to 1.94 in	5.1 to 6.5
Bw,E&Bt --	16 to 60 in	fine sand	rapid	2.62 to 4.37 in	5.1 to 7.3

J6--Graycalm-Typic Udipsamments association, nearly level and undulating

Graycalm

Extent: 50 percent of the unit
Landform(s): moraines, hillslopes on outwash plains
Slope gradient: 0 to 8 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): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loamy sand	rapid	0.31 to 0.61 in	3.5 to 6.5
Bw1,Bw2 -- 5 to 32 in	sand	rapid	1.34 to 2.68 in	3.5 to 7.3
E&Bt -- 32 to 46 in	sand	rapid	0.57 to 1.28 in	3.5 to 7.3
C -- 46 to 60 in	sand	rapid	0.55 to 0.83 in	3.5 to 8.4

Typic udipsamments

Extent: 35 percent of the unit
Landform(s): moraines, hillslopes on outwash plains
Slope gradient: 0 to 8 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	4.5 to 6.5
Bw -- 3 to 36 in	sand	rapid	1.63 to 2.29 in	4.5 to 6.5
C -- 36 to 60 in	sand	rapid	1.20 to 1.68 in	5.6 to 7.8

J7--Warba-Stuntz association, nearly level and undulating

Warba

Extent: 45 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 8 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E,E/B -- 0 to 16 in	fine sandy loam	moderately rapid	2.91 to 3.71 in	5.1 to 6.5
B/E,Bt -- 16 to 35 in	clay loam	moderately slow	3.02 to 3.59 in	5.1 to 7.3
C -- 35 to 60 in	loam	moderate	3.97 to 4.71 in	6.6 to 8.4

Stuntz

Extent: 35 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: somewhat poorly 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 2w
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E.E/B -- 0 to 16 in	fine sandy loam	moderately rapid	2.91 to 3.71 in	4.5 to 6.5
B/E..Btg2 -- 16 to 35 in	clay loam	moderately slow	3.02 to 3.59 in	5.1 to 7.8
C -- 35 to 60 in	loam	moderately slow	3.97 to 4.71 in	6.6 to 8.4

J8--Glossic Eutroboralfs, loamy, rolling and hilly

Glossic eutroboralfs

Extent: 80 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 20 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E,E/B -- 0 to 16 in	fine sandy loam	moderately rapid	2.91 to 3.71 in	5.1 to 6.5
B/E,Bt -- 16 to 44 in	loam	moderately slow	4.47 to 5.31 in	5.1 to 7.3
C -- 44 to 60 in	loam	moderate	2.52 to 2.99 in	6.6 to 8.4

J9--Aeric Glossaqualfs, clayey subsoil

Aeric glossaqualfs, clayey subsoil

Extent: 80 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 2 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 1 in	fine sandy loam	moderate	0.24 to 0.26 in	5.1 to 7.3
E --	1 to 4 in	fine sandy loam	moderate	0.33 to 0.52 in	5.1 to 7.3
E/B --	4 to 9 in	loam	moderate	0.77 to 1.02 in	5.1 to 7.3
Bt --	9 to 26 in	silty clay	slow	1.35 to 3.39 in	5.1 to 7.3
Bk --	26 to 80 in	loam	moderately slow	7.55 to 10.79 in	7.4 to 8.4

J10--Aqualfs

Aqualfs

Extent: 85 percent of the unit
Landform(s): flats on moraines, swales on moraines
Slope gradient: 0 to 2 percent
Parent material: sandy glaciolacustrine deposits 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 7 in	loamy fine sand	rapid	0.92 to 1.06 in	6.1 to 7.3
Cg1,Cg2 -- 7 to 25 in	fine sand	rapid	1.09 to 1.99 in	6.6 to 7.8
2Cg3 -- 25 to 60 in	loam	moderate	5.89 to 6.58 in	7.4 to 8.4

J11--Warba-Stuntz-Arenic Eutroboralfs association, nearly level and undulating

Warba

Extent: 40 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 8 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E,E/B -- 0 to 16 in	fine sandy loam	moderately rapid	2.91 to 3.71 in	5.1 to 6.5
B/E,Bt -- 16 to 35 in	clay loam	moderately slow	3.02 to 3.59 in	5.1 to 7.3
C -- 35 to 60 in	loam	moderate	3.97 to 4.71 in	6.6 to 8.4

Stuntz

Extent: 30 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: somewhat poorly 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 2w
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E.E/B -- 0 to 16 in	fine sandy loam	moderately rapid	2.91 to 3.71 in	4.5 to 6.5
B/E..Btg2 -- 16 to 35 in	clay loam	moderately slow	3.02 to 3.59 in	5.1 to 7.8
C -- 35 to 60 in	loam	moderately slow	3.97 to 4.71 in	6.6 to 8.4

J11--Warba-Stuntz-Arenic Eutroboralfs association, nearly level and undulating

Arenic eutroboralfs

Extent: 20 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 0 to 8 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): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy fine sand	rapid	0.31 to 0.38 in	5.1 to 6.5
E,Bw,E' -- 3 to 28 in	loamy fine sand	rapid	1.49 to 2.73 in	5.1 to 6.5
2B/E..2Bt2 -- 28 to 45 in	sandy clay loam	moderate	2.03 to 3.22 in	5.1 to 7.8
2C -- 45 to 60 in	sandy loam	moderate	1.80 to 2.84 in	6.1 to 8.4

J19--Aquic Eutroboralfs, loamy, nearly level and undulating

Aquic eutroboralfs

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines, outwash plains
Slope gradient: 0 to 8 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: A
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loamy fine sand	rapid	0.39 to 0.47 in	6.1 to 7.3
E1,E2 -- 4 to 25 in	fine sand	rapid	1.28 to 1.70 in	6.1 to 7.3
2Bt -- 25 to 32 in	clay loam	moderate	1.07 to 1.20 in	6.6 to 7.8
2C -- 32 to 60 in	loam	moderate	4.75 to 5.31 in	7.4 to 8.4

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

N77--Udipsamments, nearly level and undulating

Udipsamments

Extent: 85 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 0 to 8 percent
Parent material: sandy 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	loamy fine sand	rapid	0.59 to 0.71 in	5.1 to 6.0
Bw -- 6 to 40 in	fine sand	rapid	2.06 to 3.43 in	5.1 to 6.0
C -- 40 to 60 in	fine sand	rapid	0.98 to 1.77 in	5.6 to 7.3

N78--Psammentic Eutroboralfs, sandy, nearly level and undulating

Psammentic eutroboralfs, sandy, nearly level

Extent: 85 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 0 to 8 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): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loamy sand	rapid	0.31 to 0.61 in	3.5 to 6.5
Bw -- 5 to 32 in	sand	rapid	1.34 to 2.68 in	3.5 to 7.3
E&Bt -- 32 to 46 in	sand	rapid	0.57 to 1.28 in	3.5 to 7.3
C -- 46 to 60 in	sand	rapid	0.55 to 0.83 in	3.5 to 8.4

N79--Psammentic Eutroboralfs, sandy, rolling and hilly

Psammentic eutroboralfs, sandy, rolling

Extent: 85 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 8 to 20 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): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.19 to 0.38 in	3.5 to 6.5
Bw -- 3 to 30 in	sand	rapid	1.34 to 2.68 in	3.5 to 7.3
E&Bt -- 30 to 50 in	sand	rapid	0.80 to 1.81 in	3.5 to 7.3
C -- 50 to 60 in	sand	rapid	0.39 to 0.59 in	3.5 to 8.4

N80--Cutaway-Hiwood association, nearly level and undulating

Cutaway

Extent: 50 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 0 to 8 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): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy fine sand	rapid	0.31 to 0.38 in	5.1 to 6.5
E,Bw,E' -- 3 to 28 in	loamy fine sand	rapid	1.49 to 2.73 in	5.1 to 6.5
2B/E,2Bt -- 28 to 45 in	sandy clay loam	moderate	2.03 to 3.22 in	5.1 to 7.8
2C -- 45 to 60 in	sandy loam	moderate	1.80 to 2.84 in	6.1 to 8.4

Hiwood

Extent: 30 percent of the unit
Landform(s): flats on outwash plains
Slope gradient: 0 to 2 percent
Parent material: sandy glaciolacustrine deposits
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 6 in	loamy fine sand	rapid	0.47 to 0.71 in	4.5 to 6.0
Bw1,Bw2 -- 6 to 26 in	fine sand	rapid	1.41 to 2.01 in	5.1 to 6.0
Bw3,C -- 26 to 60 in	fine sand	rapid	1.69 to 2.71 in	5.6 to 7.8

N84--Humaquepts

Humaquepts

Extent: 85 percent of the unit
Landform(s): depressions on outwash plains
Slope gradient: 0 to 2 percent
Parent material: outwash
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 4 in	muck	moderately rapid	1.38 to 1.89 in	6.1 to 7.3
A -- 4 to 8 in	sandy loam	moderately rapid	0.35 to 0.55 in	6.1 to 7.3
Eg -- 8 to 18 in	loamy sand	rapid	0.51 to 0.72 in	6.1 to 7.3
Btg -- 18 to 30 in	sandy loam	moderately rapid	0.94 to 1.65 in	6.6 to 7.8
2Cg -- 30 to 60 in	coarse sand	very rapid	0.30 to 0.90 in	7.4 to 8.4

O92--Hiwood-Zimmerman association, nearly level to hilly

Hiwood

Extent: 40 percent of the unit
Landform(s): flats on outwash plains
Slope gradient: 0 to 3 percent
Parent material: sandy glaciolacustrine deposits
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 6 in	loamy fine sand	rapid	0.47 to 0.71 in	4.5 to 6.0
Bw1,Bw2 -- 6 to 26 in	fine sand	rapid	1.41 to 2.01 in	5.1 to 6.0
Bw3,C -- 26 to 60 in	fine sand	rapid	1.69 to 2.71 in	5.6 to 7.8

Zimmerman

Extent: 35 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 0 to 20 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 12 in	loamy fine sand	rapid	1.18 to 1.42 in	5.1 to 6.5
Bw,E&Bt -- 12 to 60 in	fine sand	rapid	2.88 to 4.80 in	5.1 to 7.3

O94--Redby fine sand

Redby

Extent: 80 percent of the unit
Landform(s): flats on outwash plains
Slope gradient: 0 to 2 percent
Parent material: sandy glaciolacustrine deposits
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated 3w
Hydric soil: no
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
A --	0 to 3 in	loamy fine sand	rapid	0.25 to 0.38 in	5.1 to 6.5
E --	3 to 8 in	fine sand	rapid	0.33 to 0.47 in	5.1 to 6.5
Bw,C --	8 to 60 in	fine sand	rapid	3.12 to 4.16 in	6.1 to 7.8

O97--Humaquepts, sandy

Humaquepts, sandy

Extent: 85 percent of the unit
Landform(s): depressions on outwash plains
Slope gradient: 0 to 2 percent
Parent material: herbaceous organic material over sandy glaciolacustrine deposits
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa --	0 to 4 in	muck	moderately rapid	1.38 to 1.77 in	
C --	4 to 60 in	sand	rapid	1.68 to 4.47 in	

W--Water

Water

Extent: 100 percent of the unit
Landform(s):
Slope gradient:
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
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:

Representative soil profile:

Texture	Permeability	Available water capacity	pH

X01--Histosols, depressional

Histosols, depressional

Extent: 85 percent of the unit
Landform(s): depressions on moraines, depressions on outwash plains
Slope gradient: 0 to 2 percent
Parent material: herbaceous organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:

	Texture	Permeability	Available water capacity	pH
Oa1 -- 0 to 10 in	muck	moderately rapid	3.44 to 4.43 in	
Oa2 -- 10 to 60 in	muck	moderately rapid	17.50 to 22.50 in	

X02--Typic Borohemists, acid

Borohemists, acid

Extent: 85 percent of the unit
Landform(s): depressions on moraines, depressions on outwash plains
Slope gradient: 0 to 2 percent
Parent material: herbaceous organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oi --	0 to 4 in	peat	rapid	2.17 to 2.56 in	
Oe --	4 to 63 in	mucky peat	moderately rapid	26.57 to 32.48 in	

X03--Typic Borohemists, nonacid-Typic Borosaprists association

Borohemists, nonacid

Extent: 50 percent of the unit
Landform(s): depressions on moraines, depressions on outwash plains
Slope gradient: 0 to 2 percent
Parent material: herbaceous organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe1 -- 0 to 18 in	mucky peat	moderately rapid	8.69 to 10.50 in	
Oe2 -- 18 to 60 in	mucky peat	moderately rapid	20.03 to 24.20 in	

Borosaprists

Extent: 35 percent of the unit
Landform(s): depressions on moraines, depressions on outwash plains
Slope gradient: 0 to 2 percent
Parent material: herbaceous organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 10 in	muck	moderately rapid	3.44 to 4.43 in	
Oa2 -- 10 to 60 in	muck	moderately rapid	17.50 to 22.50 in	

X04--Typic Borosaprist-Bowstring association

Borosaprists, frequently flooded

Extent: 50 percent of the unit
Landform(s): depressions, flood plains
Slope gradient: 0 to 2 percent
Parent material: herbaceous organic material
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 10 in	muck	moderately rapid	3.44 to 4.43 in	
Oa2 -- 10 to 60 in	muck	moderately rapid	17.50 to 22.50 in	

Bowstring, frequently flooded

Extent: 35 percent of the unit
Landform(s): flats, flood plains
Slope gradient: 0 to 2 percent
Parent material: herbaceous organic material
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 35 in	muck	moderately rapid	12.26 to 15.77 in	
C -- 35 to 43 in	stratified sand to fine sandy loam	rapid	0.63 to 1.10 in	
O'a -- 43 to 60 in	muck	moderately rapid	5.93 to 7.62 in	

X05--Typic Borohemists, nonacid

Borohemists, nonacid

Extent: 85 percent of the unit

Landform(s): depressions on moraines, depressions on outwash plains

Slope gradient: 0 to 2 percent

Parent material: herbaceous organic material

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .02

Land capability, nonirrigated 6w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe1 --	0 to 18 in	mucky peat	moderately rapid	8.69 to 10.50 in	
Oe2 --	18 to 60 in	mucky peat	moderately rapid	20.03 to 24.20 in	

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.