Map Unit Description (MN)

St. Louis County, Minnesota, Virginia Part

[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]

1--1-Lc07-05-20, 0 to 2 percent slopes

7-1

Extent: 65 to 85 percent of the unit
Landform(s): depressions on moraines, drainageways on moraines
Slope gradient: 0 to 2 percent
Parent material: glaciofluvial sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated: 8s
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:

		Texture	*Permeability*	*Available water capacity*	*pH*
Oe --	0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A --	2 to 4 in	extremely stony sandy loam	moderate	0.08 to 0.16 in	4.5 to 6.0
Bg --	4 to 40 in	very stony loam	moderate	1.45 to 4.71 in	4.5 to 6.0
Cg --	40 to 80 in	cobbly sandy loam	moderately rapid	2.78 to 6.36 in	5.1 to 6.5

4--4-Lc07-05-06, 0 to 1 percent slopes

7-4

Extent: 70 to 90 percent of the unit
Landform(s): bogs on end moraines, bogs on outwash plains, bogs on till plains
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: 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 10 in	peat	very rapid	5.41 to 6.40 in	
Oe1	10 to 24 in	mucky peat	rapid	6.38 to 7.80 in	
Oe2	24 to 80 in	mucky peat	rapid	25.16 to 30.75 in	

5-7--7-Lc05, 0 to 4 percent slopes

5-7-2

Extent: 0 to 70 percent of the unit
Landform(s): rises on moraines
Slope gradient: 0 to 4 percent
Parent material: glaciofluvial sediments
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) .02
Land capability, nonirrigated: 2w
Hydric soil: no
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A -- 2 to 4 in	loam	moderate	0.39 to 0.43 in	5.1 to 6.5
Eg -- 4 to 9 in	fine sandy loam	moderate	0.77 to 0.97 in	5.1 to 6.5
E/B -- 9 to 22 in	very fine sandy loam	moderate	1.95 to 2.47 in	5.1 to 6.5
Btg -- 22 to 31 in	loam	moderate	1.27 to 1.99 in	5.1 to 6.5
Cg -- 31 to 80 in	stratified loamy fine sand to fine sandy loam to very fine sandy loam to loam to silt loam	moderate	6.35 to 9.28 in	6.6 to 7.8

5-7--7-Lc05, 0 to 4 percent slopes

5-7-1

Extent: 0 to 70 percent of the unit
Landform(s): rises on moraines
Slope gradient: 0 to 4 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe	0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A	2 to 5 in	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1	5 to 14 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2	14 to 30 in	gravelly sandy loam	moderate	1.10 to 2.36 in	5.1 to 6.5
2BC	30 to 50 in	very gravelly sandy loam	moderately slow	1.20 to 2.81 in	5.1 to 6.5
2Cd	50 to 80 in	very gravelly sandy loam	slow	0.60 to 1.50 in	5.1 to 6.5

5-8--8-Lc05, 0 to 3 percent slopes

5-8-1

Extent: 30 to 50 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 0 to 2 percent
Parent material: clayey glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 4w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 4 in	silty clay loam	moderately slow	0.66 to 0.72 in	5.1 to 6.5
Eg -- 4 to 7 in	clay	slow	0.31 to 0.60 in	5.1 to 7.3
Btg -- 7 to 34 in	clay	very slow	2.14 to 2.68 in	5.6 to 7.3
Bkg -- 34 to 50 in	clay	very slow	1.29 to 1.94 in	7.4 to 8.4
Cg -- 50 to 80 in	clay	very slow	2.39 to 3.59 in	7.4 to 8.4

5-8--8-Lc05, 0 to 3 percent slopes

5-8-2

Extent: 20 to 40 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 1 to 3 percent
Parent material: clayey glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 3w
Hydric soil: no
Hydrologic group: D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe --	0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A --	1 to 3 in	silty clay loam	moderately slow	0.41 to 0.45 in	5.1 to 6.5
Eg --	3 to 10 in	silty clay loam	moderately slow	0.92 to 1.42 in	5.1 to 7.3
Btg --	10 to 28 in	clay	very slow	1.45 to 1.81 in	5.6 to 7.3
Bkg --	28 to 60 in	clay	very slow	2.55 to 3.83 in	7.4 to 8.4
Cg --	60 to 80 in	clay	very slow	1.61 to 2.41 in	7.4 to 8.4

5-10A--10A-Lc05, 0 to 6 percent slopes

5-10A

Extent: 40 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe --	0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A --	1 to 3 in	stony loam	moderate	0.31 to 0.45 in	4.5 to 6.0
Bw1 --	3 to 6 in	stony loam	moderate	0.22 to 0.44 in	4.5 to 6.0
Bw2 --	6 to 20 in	stony sandy loam	moderate	0.99 to 2.13 in	5.1 to 6.5
Bw3 --	20 to 28 in	very stony sandy loam	moderate	0.47 to 1.02 in	5.1 to 6.5
2BC --	28 to 41 in	very cobbly sandy loam	moderately slow	0.52 to 1.17 in	5.1 to 6.5
2Cd --	41 to 80 in	very cobbly sandy loam	slow	0.78 to 1.95 in	5.1 to 6.5

5-10A--10A-Lc05, 0 to 6 percent slopes

5-67-1

Extent: 15 to 40 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: loamy material over glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 7s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe --	0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A --	1 to 3 in	stony loam	moderate	0.28 to 0.35 in	4.5 to 6.0
Bw1 --	3 to 13 in	stony loam	moderate	0.79 to 1.48 in	4.5 to 6.0
2Bw2 --	13 to 32 in	very gravelly coarse sandy loam	moderately rapid	1.13 to 1.70 in	5.1 to 6.5
2C --	32 to 80 in	extremely gravelly loamy coarse sand	rapid	1.44 to 3.84 in	5.1 to 6.5

5-10B--10B-Lc05, 6 to 18 percent slopes

5-10B

Extent: 30 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 35 to 55 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 4 in	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1 -- 4 to 13 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 13 to 23 in	cobbly loam	moderate	0.69 to 1.57 in	5.1 to 6.5
2BC -- 23 to 43 in	very gravelly sandy loam	moderately slow	0.80 to 1.81 in	5.1 to 6.5
2Cd -- 43 to 80 in	very gravelly sandy loam	slow	0.74 to 1.85 in	5.1 to 6.5

5-10B--10B-Lc05, 6 to 18 percent slopes

5-67-1

Extent: 25 to 45 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: loamy material over glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 7s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe --	0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A --	1 to 3 in	stony loam	moderate	0.28 to 0.35 in	4.5 to 6.0
Bw1 --	3 to 13 in	stony loam	moderate	0.79 to 1.48 in	4.5 to 6.0
2Bw2 --	13 to 32 in	very gravelly coarse sandy loam	moderately rapid	1.13 to 1.70 in	5.1 to 6.5
2C --	32 to 80 in	extremely gravelly loamy coarse sand	rapid	1.44 to 3.84 in	5.1 to 6.5

5-10C--10C-Lc05, 18 to 35 percent slopes

5-10B

Extent: 30 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 35 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 35 to 55 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 4 in	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1 -- 4 to 13 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 13 to 23 in	cobbly loam	moderate	0.69 to 1.57 in	5.1 to 6.5
2BC -- 23 to 43 in	very gravelly sandy loam	moderately slow	0.80 to 1.81 in	5.1 to 6.5
2Cd -- 43 to 80 in	very gravelly sandy loam	slow	0.74 to 1.85 in	5.1 to 6.5

5-10C--10C-Lc05, 18 to 35 percent slopes

5-67-1

Extent: 25 to 45 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 35 percent
Parent material: loamy material over glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A -- 1 to 3 in	stony loam	moderate	0.28 to 0.35 in	4.5 to 6.0
Bw1 -- 3 to 13 in	stony loam	moderate	0.79 to 1.48 in	4.5 to 6.0
2Bw2 -- 13 to 32 in	very gravelly coarse sandy loam	moderately rapid	1.13 to 1.70 in	5.1 to 6.5
2C -- 32 to 80 in	extremely gravelly loamy coarse sand	rapid	1.44 to 3.84 in	5.1 to 6.5

5-10D--10D-Lc05, 35 to 60 percent slopes

5-10B

Extent: 30 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 35 to 60 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 35 to 55 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 4 in	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1 -- 4 to 13 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 13 to 23 in	cobbly loam	moderate	0.69 to 1.57 in	5.1 to 6.5
2BC -- 23 to 43 in	very gravelly sandy loam	moderately slow	0.80 to 1.81 in	5.1 to 6.5
2Cd -- 43 to 80 in	very gravelly sandy loam	slow	0.74 to 1.85 in	5.1 to 6.5

5-10D--10D-Lc05, 35 to 60 percent slopes

5-67-1

Extent: 25 to 45 percent of the unit
Landform(s): moraines
Slope gradient: 35 to 60 percent
Parent material: loamy material over glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A -- 1 to 3 in	stony loam	moderate	0.28 to 0.35 in	4.5 to 6.0
Bw1 -- 3 to 13 in	stony loam	moderate	0.79 to 1.48 in	4.5 to 6.0
2Bw2 -- 13 to 32 in	very gravelly coarse sandy loam	moderately rapid	1.13 to 1.70 in	5.1 to 6.5
2C -- 32 to 80 in	extremely gravelly loamy coarse sand	rapid	1.44 to 3.84 in	5.1 to 6.5

5-17C--17C-Lc05, 18 to 35 percent slopes

5-17

Extent: 65 to 85 percent of the unit
Landform(s): outwash plains
Slope gradient: 18 to 35 percent
Parent material: sandy eolian, glaciolacustrine or outwash material and underlying loamy glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe --	0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A --	1 to 4 in	fine sandy loam	moderately rapid	0.44 to 0.50 in	4.5 to 6.0
Bw1 --	4 to 12 in	loamy fine sand	rapid	0.31 to 0.87 in	4.5 to 6.5
Bw2 --	12 to 32 in	fine sand	rapid	0.60 to 2.01 in	5.1 to 6.5
2Bw3 --	32 to 54 in	stratified loamy fine sand to loamy very fine sand to fine sandy loam to very fine sandy loam to silt loam	moderately rapid	3.75 to 4.85 in	5.1 to 6.5
2C --	54 to 80 in	stratified loamy fine sand to loamy very fine sand to fine sandy loam to very fine sandy loam to silt loam	moderately rapid	4.42 to 5.72 in	5.6 to 7.8

5-17C--17C-Lc05, 18 to 35 percent slopes

5-28-1

Extent: 15 to 30 percent of the unit
Landform(s): outwash plains
Slope gradient: 18 to 35 percent
Parent material: sandy 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) .02
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loamy sand	rapid	0.20 to 0.24 in	4.5 to 6.0
Bw -- 4 to 37 in	loamy sand	rapid	2.01 to 3.68 in	4.5 to 6.0
E and Bt -- 37 to 48 in	sand	rapid	0.55 to 0.99 in	5.1 to 6.0
C -- 48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

5-28D--28D-Lc05, 35 to 50 percent slopes

5-28-1

Extent: 40 to 60 percent of the unit
Landform(s): outwash plains
Slope gradient: 35 to 50 percent
Parent material: sandy 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) .02
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loamy sand	rapid	0.20 to 0.24 in	4.5 to 6.0
Bw -- 4 to 37 in	loamy sand	rapid	2.01 to 3.68 in	4.5 to 6.0
E and Bt -- 37 to 48 in	sand	rapid	0.55 to 0.99 in	5.1 to 6.0
C -- 48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

5-28D--28D-Lc05, 35 to 50 percent slopes

5-28-2

Extent: 30 to 45 percent of the unit
Landform(s): outwash plains
Slope gradient: 35 to 50 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	sandy loam	moderately rapid	0.24 to 0.30 in	4.5 to 6.0
Bw -- 4 to 9 in	gravelly sandy loam	moderately rapid	0.50 to 0.72 in	4.5 to 6.0
E -- 9 to 32 in	gravelly loamy sand	rapid	0.69 to 1.60 in	4.5 to 6.0
E and B -- 32 to 64 in	gravelly loamy sand	rapid	0.97 to 1.94 in	5.1 to 6.0
C -- 64 to 80 in	gravelly coarse sand	very rapid	0.31 to 0.94 in	5.1 to 6.5

5-47--47-Lc05-20-Ma19, 0 to 2 percent slopes

5-47

Extent: 45 to 70 percent of the unit
Landform(s): flats, -- error in exists on --
Slope gradient: 0 to 2 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A -- 2 to 5 in	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1 -- 5 to 14 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 14 to 30 in	gravelly sandy loam	moderate	1.10 to 2.36 in	5.1 to 6.5
2BC -- 30 to 50 in	very gravelly sandy loam	moderately slow	1.20 to 2.81 in	5.1 to 6.5
2Cd -- 50 to 80 in	very gravelly sandy loam	slow	0.60 to 1.50 in	5.1 to 6.5

5-47--47-Lc05-20-Ma19, 0 to 2 percent slopes

5-7

Extent: 15 to 30 percent of the unit
Landform(s): moraines, rises
Slope gradient: 0 to 4 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A -- 2 to 5 in	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1 -- 5 to 14 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 14 to 30 in	gravelly sandy loam	moderate	1.10 to 2.36 in	5.1 to 6.5
2BC -- 30 to 50 in	very gravelly sandy loam	moderately slow	1.20 to 2.81 in	5.1 to 6.5
2Cd -- 50 to 80 in	very gravelly sandy loam	slow	0.60 to 1.50 in	5.1 to 6.5

5-56C--56C-Lc05, 18 to 35 percent slopes

5-56B

Extent: 50 to 70 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 35 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:			*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe	--	0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A	--	1 to 3 in	loam	moderate	0.39 to 0.43 in	4.5 to 6.0
Bw	--	3 to 8 in	loam	moderate	0.61 to 0.97 in	4.5 to 6.0
Ex	--	8 to 12 in	loam	slow	0.47 to 0.75 in	4.5 to 6.5
B/E	--	12 to 17 in	clay loam	moderately slow	0.72 to 0.97 in	5.1 to 6.5
Bt	--	17 to 57 in	clay loam	moderately slow	5.62 to 7.63 in	5.1 to 6.5
BCd	--	57 to 80 in	loam	very slow	1.37 to 2.28 in	6.1 to 8.4

5-57A--57A-Lc05, 0 to 6 percent slopes

5-57

Extent: 40 to 60 percent of the unit
Landform(s): moraines, outwash plains
Slope gradient: 0 to 6 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loam	moderately rapid	0.39 to 0.43 in	4.5 to 6.0
Bw -- 4 to 22 in	loam	moderate	2.78 to 4.07 in	4.5 to 6.0
2C -- 22 to 80 in	very gravelly loamy coarse sand	rapid	0.58 to 2.31 in	5.1 to 6.5

5-67-1

Extent: 25 to 50 percent of the unit
Landform(s): moraines, outwash plains
Slope gradient: 0 to 6 percent
Parent material: loamy material over glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A -- 1 to 3 in	stony loam	moderate	0.28 to 0.35 in	4.5 to 6.0
Bw1 -- 3 to 13 in	stony loam	moderate	0.79 to 1.48 in	4.5 to 6.0
2Bw2 -- 13 to 32 in	very gravelly coarse sandy loam	moderately rapid	1.13 to 1.70 in	5.1 to 6.5
2C -- 32 to 80 in	extremely gravelly loamy coarse sand	rapid	1.44 to 3.84 in	5.1 to 6.5

5-57A--57A-Lc05, 0 to 6 percent slopes

5-57B--57B-Lc05, 6 to 18 percent slopes

5-57

Extent: 35 to 55 percent of the unit
Landform(s): moraines, outwash plains
Slope gradient: 6 to 18 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained
Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:			*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe	--	0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A	--	2 to 4 in	loam	moderately rapid	0.39 to 0.43 in	4.5 to 6.0
Bw	--	4 to 22 in	loam	moderate	2.78 to 4.07 in	4.5 to 6.0
2C	--	22 to 80 in	very gravelly loamy coarse sand	rapid	0.58 to 2.31 in	5.1 to 6.5

5-67-1

Extent: 30 to 50 percent of the unit
Landform(s): moraines, outwash plains
Slope gradient: 6 to 18 percent
Parent material: loamy material over glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained
Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:			*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe	--	0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A	--	1 to 3 in	stony loam	moderate	0.28 to 0.35 in	4.5 to 6.0
Bw1	--	3 to 13 in	stony loam	moderate	0.79 to 1.48 in	4.5 to 6.0
2Bw2	--	13 to 32 in	very gravelly coarse sandy loam	moderately rapid	1.13 to 1.70 in	5.1 to 6.5
2C	--	32 to 80 in	extremely gravelly loamy coarse sand	rapid	1.44 to 3.84 in	5.1 to 6.5

5-57B--57B-Lc05, 6 to 18 percent slopes

5-57C--57C-Lc05, 18 to 35 percent slopes

5-57

Extent: 35 to 55 percent of the unit
Landform(s): moraines, outwash plains
Slope gradient: 18 to 35 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loam	moderately rapid	0.39 to 0.43 in	4.5 to 6.0
Bw -- 4 to 22 in	loam	moderate	2.78 to 4.07 in	4.5 to 6.0
2C -- 22 to 80 in	very gravelly loamy coarse sand	rapid	0.58 to 2.31 in	5.1 to 6.5

5-67-1

Extent: 30 to 50 percent of the unit
Landform(s): moraines, outwash plains
Slope gradient: 18 to 35 percent
Parent material: loamy material over glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A -- 1 to 3 in	stony loam	moderate	0.28 to 0.35 in	4.5 to 6.0
Bw1 -- 3 to 13 in	stony loam	moderate	0.79 to 1.48 in	4.5 to 6.0
2Bw2 -- 13 to 32 in	very gravelly coarse sandy loam	moderately rapid	1.13 to 1.70 in	5.1 to 6.5
2C -- 32 to 80 in	extremely gravelly loamy coarse sand	rapid	1.44 to 3.84 in	5.1 to 6.5

5-57C--57C-Lc05, 18 to 35 percent slopes

5-57D--57D-Lc05, 35 to 50 percent slopes

5-57

Extent: 35 to 55 percent of the unit
Landform(s): moraines, outwash plains
Slope gradient: 35 to 50 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loam	moderately rapid	0.39 to 0.43 in	4.5 to 6.0
Bw -- 4 to 22 in	loam	moderate	2.78 to 4.07 in	4.5 to 6.0
2C -- 22 to 80 in	very gravelly loamy coarse sand	rapid	0.58 to 2.31 in	5.1 to 6.5

5-67-1

Extent: 30 to 50 percent of the unit
Landform(s): moraines, outwash plains
Slope gradient: 35 to 50 percent
Parent material: loamy material over glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A -- 1 to 3 in	stony loam	moderate	0.28 to 0.35 in	4.5 to 6.0
Bw1 -- 3 to 13 in	stony loam	moderate	0.79 to 1.48 in	4.5 to 6.0
2Bw2 -- 13 to 32 in	very gravelly coarse sandy loam	moderately rapid	1.13 to 1.70 in	5.1 to 6.5
2C -- 32 to 80 in	extremely gravelly loamy coarse sand	rapid	1.44 to 3.84 in	5.1 to 6.5

5-57D--57D-Lc05, 35 to 50 percent slopes

5-67D--67D-Lc05, 35 to 50 percent slopes

5-67-1

Extent: 60 to 80 percent of the unit
Landform(s): moraines
Slope gradient: 35 to 50 percent
Parent material: loamy material over glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A -- 1 to 3 in	stony loam	moderate	0.28 to 0.35 in	4.5 to 6.0
Bw1 -- 3 to 13 in	stony loam	moderate	0.79 to 1.48 in	4.5 to 6.0
2Bw2 -- 13 to 32 in	very gravelly coarse sandy loam	moderately rapid	1.13 to 1.70 in	5.1 to 6.5
2C -- 32 to 80 in	extremely gravelly loamy coarse sand	rapid	1.44 to 3.84 in	5.1 to 6.5

5A--5A-Lc07-05-20, 0 to 6 percent slopes

7-5

Extent: 45 to 70 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: loamy glacial drift
Restrictive feature(s): lithic bedrock at 4 to 10 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 7s
Hydric soil: no
Hydrologic group: D
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	fine sandy loam	moderately rapid	0.18 to 0.28 in	4.5 to 6.0
Bw -- 3 to 7 in	gravelly fine sandy loam	moderately rapid	0.35 to 0.56 in	4.5 to 6.0
R -- 7 to 80 in	bedrock	impermeable		

7-21

Extent: 15 to 35 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: loamy glacial drift
Restrictive feature(s): lithic bedrock at 10 to 20 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	gravelly sandy loam	moderate	0.21 to 0.33 in	4.5 to 6.0
Bw1 -- 3 to 11 in	gravelly sandy loam	moderate	0.63 to 1.26 in	4.5 to 6.0
Bw2 -- 11 to 17 in	gravelly fine sandy loam	moderate	0.41 to 0.89 in	5.1 to 6.5
R -- 17 to 80 in	bedrock	impermeable		

5B--5B-Lc07-05-20-Ma19, 6 to 18 percent slopes

7-5

Extent: 45 to 70 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: loamy glacial drift
Restrictive feature(s): lithic bedrock at 4 to 10 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 7s
Hydric soil: no
Hydrologic group: D
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	fine sandy loam	moderately rapid	0.18 to 0.28 in	4.5 to 6.0
Bw -- 3 to 7 in	gravelly fine sandy loam	moderately rapid	0.35 to 0.56 in	4.5 to 6.0
R -- 7 to 80 in	bedrock	impermeable		

7-21

Extent: 15 to 35 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: loamy glacial drift
Restrictive feature(s): lithic bedrock at 10 to 20 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	gravelly sandy loam	moderate	0.21 to 0.33 in	4.5 to 6.0
Bw1 -- 3 to 11 in	gravelly sandy loam	moderate	0.63 to 1.26 in	4.5 to 6.0
Bw2 -- 11 to 17 in	gravelly fine sandy loam	moderate	0.41 to 0.89 in	5.1 to 6.5
R -- 17 to 80 in	bedrock	impermeable		

5B--5B-Lc07-05-20-Ma19, 6 to 18 percent slopes

Rock outcrop

Extent: 5 to 30 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
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: 8s
Hydric soil: unranked
Hydrologic group:
Potential for frost action:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

5C--5C-Lc07-05-20-Ma19, 18 to 35 percent slopes

7-5

Extent: 45 to 70 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 35 percent
Parent material: loamy glacial drift
Restrictive feature(s): lithic bedrock at 4 to 10 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 7s
Hydric soil: no
Hydrologic group: D
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	fine sandy loam	moderately rapid	0.18 to 0.28 in	4.5 to 6.0
Bw -- 3 to 7 in	gravelly fine sandy loam	moderately rapid	0.35 to 0.56 in	4.5 to 6.0
R -- 7 to 80 in	bedrock	impermeable		

Rock outcrop

Extent: 15 to 40 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 35 percent
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: 8s
Hydric soil: unranked
Hydrologic group:
Potential for frost action:

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

5D--5D-Lc07-10, 35 to 50 percent slopes

7-5

Extent: 45 to 70 percent of the unit
Landform(s): moraines
Slope gradient: 35 to 50 percent
Parent material: loamy glacial drift
Restrictive feature(s): lithic bedrock at 4 to 10 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: D
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	fine sandy loam	moderately rapid	0.18 to 0.28 in	4.5 to 6.0
Bw -- 3 to 7 in	gravelly fine sandy loam	moderately rapid	0.35 to 0.56 in	4.5 to 6.0
R -- 7 to 80 in	bedrock	impermeable		

Rock outcrop

Extent: 15 to 40 percent of the unit
Landform(s): moraines
Slope gradient: 35 to 50 percent
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: 8s
Hydric soil: unranked
Hydrologic group:
Potential for frost action:

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

7--7-Lc07-06-10-Ma19, 0 to 4 percent slopes

7-7

Extent: 50 to 70 percent of the unit
Landform(s): rises on moraines
Slope gradient: 0 to 4 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe --	0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A --	2 to 5 in	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1 --	5 to 14 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 --	14 to 30 in	gravelly sandy loam	moderate	1.10 to 2.36 in	5.1 to 6.5
2BC --	30 to 50 in	very gravelly sandy loam	moderately slow	1.20 to 2.81 in	5.1 to 6.5
2Cd --	50 to 80 in	very gravelly sandy loam	slow	0.60 to 1.50 in	5.1 to 6.5

7--7-Lc07-06-10-Ma19, 0 to 4 percent slopes

7-47

Extent: 15 to 35 percent of the unit
Landform(s): flats on moraines
Slope gradient: 0 to 2 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A -- 2 to 5 in	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1 -- 5 to 14 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 14 to 30 in	gravelly sandy loam	moderate	1.10 to 2.36 in	5.1 to 6.5
2BC -- 30 to 50 in	very gravelly sandy loam	moderately slow	1.20 to 2.81 in	5.1 to 6.5
2Cd -- 50 to 80 in	very gravelly sandy loam	slow	0.60 to 1.50 in	5.1 to 6.5

7-8--8-Lc07, 0 to 3 percent slopes

7-8-2

Extent: 35 to 55 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 3 percent
Parent material: clayey glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 3w
Hydric soil: no
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	silty clay loam	moderately slow	0.41 to 0.45 in	5.1 to 6.5
Eg -- 3 to 10 in	silty clay loam	moderately slow	0.92 to 1.42 in	5.1 to 7.3
Btg -- 10 to 28 in	clay	very slow	1.45 to 1.81 in	5.6 to 7.3
Bkg -- 28 to 60 in	clay	very slow	2.55 to 3.83 in	7.4 to 8.4
Cg -- 60 to 80 in	clay	very slow	1.61 to 2.41 in	7.4 to 8.4

7-8--8-Lc07, 0 to 3 percent slopes

7-8-1

Extent: 20 to 40 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 2 percent
Parent material: clayey glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 4w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe --	0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A --	1 to 4 in	silty clay loam	moderately slow	0.66 to 0.72 in	5.1 to 6.5
Eg --	4 to 7 in	clay	slow	0.31 to 0.60 in	5.1 to 7.3
Btg --	7 to 34 in	clay	very slow	2.14 to 2.68 in	5.6 to 7.3
Bkg --	34 to 50 in	clay	very slow	1.29 to 1.94 in	7.4 to 8.4
Cg --	50 to 80 in	clay	very slow	2.39 to 3.59 in	7.4 to 8.4

7-21D--21D-Lc07, 35 to 50 percent slopes

7-21

Extent: 50 to 70 percent of the unit
Landform(s): moraines
Slope gradient: 35 to 50 percent
Parent material: loamy glacial drift
Restrictive feature(s): lithic bedrock at 10 to 20 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	gravelly sandy loam	moderate	0.21 to 0.33 in	4.5 to 6.0
Bw1 -- 3 to 11 in	gravelly sandy loam	moderate	0.63 to 1.26 in	4.5 to 6.0
Bw2 -- 11 to 17 in	gravelly fine sandy loam	moderate	0.41 to 0.89 in	5.1 to 6.5
R -- 17 to 80 in	bedrock	impermeable		

7-5

Extent: 14 to 25 percent of the unit
Landform(s): moraines
Slope gradient: 35 to 50 percent
Parent material: loamy glacial drift
Restrictive feature(s): lithic bedrock at 4 to 10 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: D
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	fine sandy loam	moderately rapid	0.18 to 0.28 in	4.5 to 6.0
Bw -- 3 to 7 in	gravelly fine sandy loam	moderately rapid	0.35 to 0.56 in	4.5 to 6.0
R -- 7 to 80 in	bedrock	impermeable		

7-21D--21D-Lc07, 35 to 50 percent slopes

Rock outcrop

Extent: 5 to 20 percent of the unit
Landform(s): moraines
Slope gradient: 35 to 50 percent
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: 8s
Hydric soil: unranked
Hydrologic group:
Potential for frost action:

Representative soil profile:

Texture	Permeability	Available water capacity	pH

7-52--52-Lc07, 0 to 2 percent slopes

7-52

Extent: 60 to 80 percent of the unit
Landform(s): depressions on moraines, drainageways on moraines
Slope gradient: 0 to 1 percent
Parent material: clayey glaciolacustrine sediments
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: D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oa --	0 to 12 in	muck	moderately rapid	4.13 to 5.31 in	
A --	12 to 17 in	mucky silty clay loam	moderately slow	0.92 to 1.23 in	6.1 to 7.3
Bg --	17 to 24 in	clay	very slow	0.99 to 1.20 in	6.6 to 7.8
Cg --	24 to 80 in	clay	very slow	7.83 to 9.50 in	7.4 to 8.4

7-53A--53A-Lc07, 0 to 6 percent slopes

7-53

Extent: 70 to 80 percent of the unit
Landform(s): lake plains
Slope gradient: 1 to 6 percent
Parent material: clayey glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe	0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A	2 to 4 in	silty clay loam	moderately slow	0.41 to 0.45 in	5.1 to 6.5
E	4 to 10 in	silty clay loam	moderately slow	0.77 to 1.18 in	5.1 to 7.3
B/E	10 to 14 in	silty clay	slow	0.56 to 0.87 in	5.6 to 7.3
Bt	14 to 30 in	clay	very slow	1.26 to 1.57 in	5.6 to 7.3
BC	30 to 38 in	clay	very slow	0.66 to 0.99 in	7.4 to 8.4
C	38 to 80 in	clay	very slow	3.34 to 5.01 in	7.4 to 8.4

7-53B--53B-Lco7, 6 to 18 percent slopes

7-53

Extent: 70 to 90 percent of the unit
Landform(s): lake plains
Slope gradient: 6 to 18 percent
Parent material: clayey glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A -- 2 to 4 in	silty clay loam	moderately slow	0.41 to 0.45 in	5.1 to 6.5
E -- 4 to 10 in	silty clay loam	moderately slow	0.77 to 1.18 in	5.1 to 7.3
B/E -- 10 to 14 in	silty clay	slow	0.56 to 0.87 in	5.6 to 7.3
Bt -- 14 to 30 in	clay	very slow	1.26 to 1.57 in	5.6 to 7.3
BC -- 30 to 38 in	clay	very slow	0.66 to 0.99 in	7.4 to 8.4
C -- 38 to 80 in	clay	very slow	3.34 to 5.01 in	7.4 to 8.4

7-57A--57A-Lc07, 0 to 6 percent slopes

7-57

Extent: 55 to 80 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loam	moderately rapid	0.39 to 0.43 in	4.5 to 6.0
Bw -- 4 to 22 in	loam	moderate	2.78 to 4.07 in	4.5 to 6.0
2C -- 22 to 80 in	very gravelly loamy coarse sand	rapid	0.58 to 2.31 in	5.1 to 6.5

7-57B--57B-Lc07, 6 to 18 percent slopes

7-57

Extent: 55 to 80 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loam	moderately rapid	0.39 to 0.43 in	4.5 to 6.0
Bw -- 4 to 22 in	loam	moderate	2.78 to 4.07 in	4.5 to 6.0
2C -- 22 to 80 in	very gravelly loamy coarse sand	rapid	0.58 to 2.31 in	5.1 to 6.5

7-57C--57C-Lco7, 18 to 35 percent slopes

7-57

Extent: 55 to 80 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 35 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loam	moderately rapid	0.39 to 0.43 in	4.5 to 6.0
Bw -- 4 to 22 in	loam	moderate	2.78 to 4.07 in	4.5 to 6.0
2C -- 22 to 80 in	very gravelly loamy coarse sand	rapid	0.58 to 2.31 in	5.1 to 6.5

7-59B--59B-Lc07, 6 to 18 percent slopes

7-59B

Extent: 65 to 80 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: sandy eolian, glaciolacustrine or outwash material and underlying loamy glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	fine sandy loam	moderately rapid	0.38 to 0.43 in	4.5 to 6.0
Bw1 -- 4 to 12 in	loamy fine sand	rapid	0.31 to 0.87 in	4.5 to 6.5
Bw2 -- 12 to 32 in	fine sand	rapid	0.60 to 2.01 in	5.1 to 6.5
2Bw3 -- 32 to 54 in	silt loam	moderate	3.75 to 4.85 in	5.6 to 6.5
2C -- 54 to 80 in	silt loam	moderate	4.42 to 5.72 in	5.6 to 7.8

7-64A--64A-Lc07, 0 to 6 percent slopes

7-64A

Extent: 60 to 80 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: sandy outwash and/or eloian material over dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 3 in	fine sandy loam	moderately rapid	0.22 to 0.28 in	4.5 to 6.0
Bw1 -- 3 to 17 in	sandy loam	moderately rapid	1.38 to 2.34 in	4.5 to 6.0
Bw2 -- 17 to 36 in	loamy sand	rapid	0.94 to 1.89 in	4.5 to 6.0
2BC -- 36 to 57 in	very cobbly sandy loam	moderately slow	0.85 to 1.91 in	5.1 to 6.5
2Cd -- 57 to 80 in	very cobbly sandy loam	slow	0.46 to 1.14 in	5.1 to 6.5

7-64B--64B-Lc07, 6 to 18 percent slopes

7-64B

Extent: 55 to 75 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: sandy outwash and/or eloian material over dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe	0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A	2 to 3 in	fine sandy loam	moderately rapid	0.22 to 0.28 in	4.5 to 6.0
Bw1	3 to 17 in	sandy loam	moderately rapid	1.38 to 2.34 in	4.5 to 6.0
Bw2	17 to 36 in	loamy sand	rapid	0.94 to 1.89 in	4.5 to 6.0
2BC	36 to 57 in	very cobbly sandy loam	moderately slow	0.85 to 1.91 in	5.1 to 6.5
2Cd	57 to 80 in	very cobbly sandy loam	slow	0.46 to 1.14 in	5.1 to 6.5

10A--10A-Lc07-06-10, 0 to 6 percent slopes

7-10A

Extent: 55 to 75 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe	0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A	1 to 3 in	stony loam	moderate	0.31 to 0.45 in	4.5 to 6.0
Bw1	3 to 6 in	stony loam	moderate	0.22 to 0.44 in	4.5 to 6.0
Bw2	6 to 20 in	stony sandy loam	moderate	0.99 to 2.13 in	5.1 to 6.5
Bw3	20 to 28 in	very stony sandy loam	moderate	0.47 to 1.02 in	5.1 to 6.5
2BC	28 to 41 in	very cobbly sandy loam	moderately slow	0.52 to 1.17 in	5.1 to 6.5
2Cd	41 to 80 in	very cobbly sandy loam	slow	0.78 to 1.95 in	5.1 to 6.5

10A--10A-Lc07-06-10, 0 to 6 percent slopes

7-18A

Extent: 15 to 30 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 15 to 35 inches
lithic bedrock at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s

Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe --	0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A --	2 to 4 in	stony loam	moderate	0.26 to 0.37 in	4.5 to 6.0
Bw1 --	4 to 9 in	stony loam	moderate	0.51 to 0.92 in	4.5 to 6.0
Bw2 --	9 to 17 in	gravelly loam	moderate	0.63 to 1.26 in	5.1 to 6.5
2Cd --	17 to 37 in	very gravelly sandy loam	slow	0.60 to 1.41 in	5.1 to 6.5
R --	37 to 80 in	bedrock	impermeable		

10B--10B-Lc07-06-10, 6 to 18 percent slopes

7-10B

Extent: 45 to 65 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 35 to 55 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 4 in	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1 -- 4 to 13 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 13 to 23 in	cobbly loam	moderate	0.69 to 1.57 in	5.1 to 6.5
2BC -- 23 to 43 in	very gravelly sandy loam	moderately slow	0.80 to 1.81 in	5.1 to 6.5
2Cd -- 43 to 80 in	very gravelly sandy loam	slow	0.74 to 1.85 in	5.1 to 6.5

10B--10B-Lc07-06-10, 6 to 18 percent slopes

7-18B

Extent: 15 to 35 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 12 to 30 inches
lithic bedrock at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s

Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe	0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A	2 to 4 in	stony loam	moderate	0.26 to 0.37 in	4.5 to 6.0
Bw1	4 to 9 in	stony loam	moderate	0.51 to 0.92 in	4.5 to 6.0
Bw2	9 to 17 in	gravelly loam	moderate	0.63 to 1.26 in	5.1 to 6.5
2Cd	17 to 37 in	very gravelly sandy loam	slow	0.60 to 1.41 in	5.1 to 6.5
R	37 to 80 in	bedrock	impermeable		

10C--10C-Lc07-10, 18 to 35 percent slopes

7-10B

Extent: 40 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 35 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 35 to 55 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 4 in	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1 -- 4 to 13 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 13 to 23 in	cobbly loam	moderate	0.69 to 1.57 in	5.1 to 6.5
2BC -- 23 to 43 in	very gravelly sandy loam	moderately slow	0.80 to 1.81 in	5.1 to 6.5
2Cd -- 43 to 80 in	very gravelly sandy loam	slow	0.74 to 1.85 in	5.1 to 6.5

10C--10C-Lc07-10, 18 to 35 percent slopes

7-18B

Extent: 25 to 45 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 35 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 12 to 30 inches
lithic bedrock at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6e

Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe --	0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A --	2 to 4 in	stony loam	moderate	0.26 to 0.37 in	4.5 to 6.0
Bw1 --	4 to 9 in	stony loam	moderate	0.51 to 0.92 in	4.5 to 6.0
Bw2 --	9 to 17 in	gravelly loam	moderate	0.63 to 1.26 in	5.1 to 6.5
2Cd --	17 to 37 in	very gravelly sandy loam	slow	0.60 to 1.41 in	5.1 to 6.5
R --	37 to 80 in	bedrock	impermeable		

13C--13C-Lc20-05-07, 18 to 35 percent slopes

20-14

Extent: 60 to 80 percent of the unit
Landform(s): eskers, kames
Slope gradient: 18 to 35 percent
Parent material: loamy material over outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A -- 2 to 5 in	sandy loam	moderately rapid	0.31 to 0.44 in	4.5 to 6.0
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.81 to 1.45 in	4.5 to 6.0
2BC -- 14 to 25 in	very gravelly sand	rapid	0.22 to 0.55 in	4.5 to 6.0
2C -- 25 to 80 in	very gravelly coarse sand	very rapid	0.55 to 2.74 in	5.1 to 6.5

13C--13C-Lc20-05-07, 18 to 35 percent slopes

20-67-2

Extent: 10 to 30 percent of the unit
Landform(s): eskers, kames
Slope gradient: 18 to 35 percent
Parent material: loamy material over outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .02
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 2 in	very stony loam	moderate	0.13 to 0.19 in	4.5 to 6.0
Bw1 -- 2 to 14 in	very stony sandy loam	moderately rapid	0.73 to 1.59 in	4.5 to 6.0
2Bw2 -- 14 to 22 in	extremely stony loamy coarse sand	rapid	0.08 to 0.39 in	4.5 to 6.0
2BC -- 22 to 46 in	extremely gravelly coarse sand	very rapid	0.24 to 0.96 in	4.5 to 6.5
2C -- 46 to 80 in	extremely cobbly coarse sand	very rapid	0.34 to 1.35 in	5.1 to 6.5

14A--14A-Lc05-07-20, 0 to 6 percent slopes

5-14

Extent: 55 to 75 percent of the unit
Landform(s): moraines, outwash plains
Slope gradient: 0 to 6 percent
Parent material: loamy material over outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A -- 2 to 5 in	sandy loam	moderately rapid	0.31 to 0.44 in	4.5 to 6.0
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.81 to 1.45 in	4.5 to 6.0
2BC -- 14 to 25 in	very gravelly sand	rapid	0.22 to 0.55 in	4.5 to 6.0
2C -- 25 to 80 in	very gravelly coarse sand	very rapid	0.55 to 2.74 in	5.1 to 6.5

14B--14B-Lc05-07-20, 6 to 18 percent slopes

5-14

Extent: 30 to 55 percent of the unit
Landform(s): kames, moraines, outwash plains
Slope gradient: 6 to 18 percent
Parent material: loamy material over outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A -- 2 to 5 in	sandy loam	moderately rapid	0.31 to 0.44 in	4.5 to 6.0
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.81 to 1.45 in	4.5 to 6.0
2BC -- 14 to 25 in	very gravelly sand	rapid	0.22 to 0.55 in	4.5 to 6.0
2C -- 25 to 80 in	very gravelly coarse sand	very rapid	0.55 to 2.74 in	5.1 to 6.5

14B--14B-Lc05-07-20, 6 to 18 percent slopes

5-67-2

Extent: 25 to 50 percent of the unit
Landform(s): kames, moraines, outwash plains
Slope gradient: 6 to 18 percent
Parent material: loamy material over outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .02
Land capability, nonirrigated: 7s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 2 in	very stony loam	moderate	0.13 to 0.19 in	4.5 to 6.0
Bw1 -- 2 to 14 in	very stony sandy loam	moderately rapid	0.73 to 1.59 in	4.5 to 6.0
2Bw2 -- 14 to 22 in	extremely stony loamy coarse sand	rapid	0.08 to 0.39 in	4.5 to 6.0
2BC -- 22 to 46 in	extremely gravelly coarse sand	very rapid	0.24 to 0.96 in	4.5 to 6.5
2C -- 46 to 80 in	extremely cobbly coarse sand	very rapid	0.34 to 1.35 in	5.1 to 6.5

14C--14C-Lc05-07-20, 18 to 35 percent slopes

5-14

Extent: 30 to 55 percent of the unit
Landform(s): kames, moraines, outwash plains
Slope gradient: 18 to 35 percent
Parent material: loamy material over outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A -- 2 to 5 in	sandy loam	moderately rapid	0.31 to 0.44 in	4.5 to 6.0
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.81 to 1.45 in	4.5 to 6.0
2BC -- 14 to 25 in	very gravelly sand	rapid	0.22 to 0.55 in	4.5 to 6.0
2C -- 25 to 80 in	very gravelly coarse sand	very rapid	0.55 to 2.74 in	5.1 to 6.5

14C--14C-Lc05-07-20, 18 to 35 percent slopes

5-67-2

Extent: 25 to 50 percent of the unit
Landform(s): kames, moraines, outwash plains
Slope gradient: 18 to 35 percent
Parent material: loamy material over outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .02
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 2 in	very stony loam	moderate	0.13 to 0.19 in	4.5 to 6.0
Bw1 -- 2 to 14 in	very stony sandy loam	moderately rapid	0.73 to 1.59 in	4.5 to 6.0
2Bw2 -- 14 to 22 in	extremely stony loamy coarse sand	rapid	0.08 to 0.39 in	4.5 to 6.0
2BC -- 22 to 46 in	extremely gravelly coarse sand	very rapid	0.24 to 0.96 in	4.5 to 6.5
2C -- 46 to 80 in	extremely cobbly coarse sand	very rapid	0.34 to 1.35 in	5.1 to 6.5

14D--14D-Lc05-07-20, 35 to 50 percent slopes

5-14

Extent: 30 to 55 percent of the unit
Landform(s): moraines, outwash plains
Slope gradient: 35 to 50 percent
Parent material: loamy material over outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A -- 2 to 5 in	sandy loam	moderately rapid	0.31 to 0.44 in	4.5 to 6.0
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.81 to 1.45 in	4.5 to 6.0
2BC -- 14 to 25 in	very gravelly sand	rapid	0.22 to 0.55 in	4.5 to 6.0
2C -- 25 to 80 in	very gravelly coarse sand	very rapid	0.55 to 2.74 in	5.1 to 6.5

14D--14D-Lc05-07-20, 35 to 50 percent slopes

5-67-2

Extent: 25 to 50 percent of the unit
Landform(s): moraines, outwash plains
Slope gradient: 35 to 50 percent
Parent material: loamy material over outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .02
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 2 in	very stony loam	moderate	0.13 to 0.19 in	4.5 to 6.0
Bw1 -- 2 to 14 in	very stony sandy loam	moderately rapid	0.73 to 1.59 in	4.5 to 6.0
2Bw2 -- 14 to 22 in	extremely stony loamy coarse sand	rapid	0.08 to 0.39 in	4.5 to 6.0
2BC -- 22 to 46 in	extremely gravelly coarse sand	very rapid	0.24 to 0.96 in	4.5 to 6.5
2C -- 46 to 80 in	extremely cobbly coarse sand	very rapid	0.34 to 1.35 in	5.1 to 6.5

16A--16A-Lc05-20, 0 to 6 percent slopes

5-16

Extent: 55 to 75 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 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) .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*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A -- 1 to 3 in	loamy sand	rapid	0.20 to 0.24 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

5-28-1

Extent: 15 to 30 percent of the unit
Landform(s): outwash plains
Slope gradient: 1 to 6 percent
Parent material: sandy 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) .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*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loamy sand	rapid	0.20 to 0.24 in	4.5 to 6.0
Bw -- 4 to 37 in	loamy sand	rapid	2.01 to 3.68 in	4.5 to 6.0
E and Bt -- 37 to 48 in	sand	rapid	0.55 to 0.99 in	5.1 to 6.0
C -- 48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

16A--16A-Lc05-20, 0 to 6 percent slopes

17A--17A-Lc05-07-20. 0 to 6 percent slopes

5-17

Extent: 60 to 80 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 6 percent
Parent material: sandy eolian, glaciolfluvial or outwash material and underlying loamy glaciofluvial sediments
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) .02
Land capability, nonirrigated: 2s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe --	0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A --	1 to 4 in	fine sandy loam	moderately rapid	0.44 to 0.50 in	4.5 to 6.0
Bw1 --	4 to 12 in	loamy fine sand	rapid	0.31 to 0.87 in	4.5 to 6.5
Bw2 --	12 to 32 in	fine sand	rapid	0.60 to 2.01 in	5.1 to 6.5
2Bw3 --	32 to 54 in	stratified loamy fine sand to loamy very fine sand to fine sandy loam to very fine sandy loam to silt loam	moderately rapid	3.75 to 4.85 in	5.1 to 6.5
2C --	54 to 80 in	stratified loamy fine sand to loamy very fine sand to fine sandy loam to very fine sandy loam to silt loam	moderately rapid	4.42 to 5.72 in	5.6 to 7.8

17A--17A-Lc05-07-20. 0 to 6 percent slopes

5-28-1

Extent: 10 to 30 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 6 percent
Parent material: sandy 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) .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*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loamy sand	rapid	0.20 to 0.24 in	4.5 to 6.0
Bw -- 4 to 37 in	loamy sand	rapid	2.01 to 3.68 in	4.5 to 6.0
E and Bt -- 37 to 48 in	sand	rapid	0.55 to 0.99 in	5.1 to 6.0
C -- 48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

17B--17B-Lc05-07-20, 6 to 18 percent slopes

5-17B

Extent: 60 to 80 percent of the unit
Landform(s): outwash plains
Slope gradient: 6 to 18 percent
Parent material: sandy eolian, glaciolfluvial or outwash material and underlying loamy glaciofluvial sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:			*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe	--	0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A	--	1 to 4 in	fine sandy loam	moderately rapid	0.44 to 0.50 in	4.5 to 6.0
Bw1	--	4 to 12 in	loamy fine sand	rapid	0.31 to 0.87 in	4.5 to 6.5
Bw2	--	12 to 32 in	fine sand	rapid	0.60 to 2.01 in	5.1 to 6.5
2Bw3	--	32 to 54 in	stratified loamy fine sand to loamy very fine sand to fine sandy loam to very fine sandy loam to silt loam	moderately rapid	3.75 to 4.85 in	5.1 to 6.5
2C	--	54 to 80 in	stratified loamy fine sand to loamy very fine sand to fine sandy loam to very fine sandy loam to silt loam	moderately rapid	4.42 to 5.72 in	5.6 to 7.8

17B--17B-Lc05-07-20, 6 to 18 percent slopes

5-28-1

Extent: 10 to 30 percent of the unit
Landform(s): outwash plains
Slope gradient: 6 to 18 percent
Parent material: sandy 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) .02
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loamy sand	rapid	0.20 to 0.24 in	4.5 to 6.0
Bw -- 4 to 37 in	loamy sand	rapid	2.01 to 3.68 in	4.5 to 6.0
E and Bt -- 37 to 48 in	sand	rapid	0.55 to 0.99 in	5.1 to 6.0
C -- 48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

18A--18A-Lc07-05-Ma19, 0 to 6 percent slopes

7-18A

Extent: 40 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 15 to 35 inches
lithic bedrock at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s

Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe --	0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A --	2 to 4 in	stony loam	moderate	0.26 to 0.37 in	4.5 to 6.0
Bw1 --	4 to 9 in	stony loam	moderate	0.51 to 0.92 in	4.5 to 6.0
Bw2 --	9 to 17 in	gravelly loam	moderate	0.63 to 1.26 in	5.1 to 6.5
2Cd --	17 to 37 in	very gravelly sandy loam	slow	0.60 to 1.41 in	5.1 to 6.5
R --	37 to 80 in	bedrock	impermeable		

18A--18A-Lc07-05-Ma19, 0 to 6 percent slopes

7-10A

Extent: 20 to 40 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe --	0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A --	2 to 3 in	stony loam	moderate	0.20 to 0.30 in	4.5 to 6.0
Bw1 --	3 to 6 in	stony loam	moderate	0.22 to 0.44 in	4.5 to 6.0
Bw2 --	6 to 20 in	stony sandy loam	moderate	0.99 to 2.13 in	5.1 to 6.5
Bw3 --	20 to 28 in	very stony sandy loam	moderate	0.47 to 1.02 in	5.1 to 6.5
2BC --	28 to 41 in	very cobbly sandy loam	moderately slow	0.52 to 1.17 in	5.1 to 6.5
2Cd --	41 to 80 in	very cobbly sandy loam	slow	0.78 to 1.95 in	5.1 to 6.5

18B--18B-Lc07-05-06-10-Ma19, 6 to 18 percent slopes

7-18B

Extent: 45 to 65 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 12 to 30 inches
lithic bedrock at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s

Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe	0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A	2 to 4 in	stony loam	moderate	0.26 to 0.37 in	4.5 to 6.0
Bw1	4 to 9 in	stony loam	moderate	0.51 to 0.92 in	4.5 to 6.0
Bw2	9 to 17 in	gravelly loam	moderate	0.63 to 1.26 in	5.1 to 6.5
2Cd	17 to 37 in	very gravelly sandy loam	slow	0.60 to 1.41 in	5.1 to 6.5
R	37 to 80 in	bedrock	impermeable		

18B--18B-Lc07-05-06-10-Ma19, 6 to 18 percent slopes

7-10B

Extent: 20 to 30 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 35 to 55 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 4 in	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1 -- 4 to 13 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 13 to 23 in	cobbly loam	moderate	0.69 to 1.57 in	5.1 to 6.5
2BC -- 23 to 43 in	very gravelly sandy loam	moderately slow	0.80 to 1.81 in	5.1 to 6.5
2Cd -- 43 to 80 in	very gravelly sandy loam	slow	0.74 to 1.85 in	5.1 to 6.5

18C--18C-Lc07-05-10-Ma19, 18 to 35 percent slopes

7-18B

Extent: 50 to 70 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 35 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 12 to 30 inches
lithic bedrock at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6e

Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe --	0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A --	2 to 4 in	stony loam	moderate	0.26 to 0.37 in	4.5 to 6.0
Bw1 --	4 to 9 in	stony loam	moderate	0.51 to 0.92 in	4.5 to 6.0
Bw2 --	9 to 17 in	gravelly loam	moderate	0.63 to 1.26 in	5.1 to 6.5
2Cd --	17 to 37 in	very gravelly sandy loam	slow	0.60 to 1.41 in	5.1 to 6.5
R --	37 to 80 in	bedrock	impermeable		

18C--18C-Lc07-05-10-Ma19, 18 to 35 percent slopes

7-10B

Extent: 15 to 35 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 35 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 35 to 55 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 4 in	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1 -- 4 to 13 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 13 to 23 in	cobbly loam	moderate	0.69 to 1.57 in	5.1 to 6.5
2BC -- 23 to 43 in	very gravelly sandy loam	moderately slow	0.80 to 1.81 in	5.1 to 6.5
2Cd -- 43 to 80 in	very gravelly sandy loam	slow	0.74 to 1.85 in	5.1 to 6.5

19-8--8-Ma19, 0 to 3 percent slopes

19-8-2

Extent: 40 to 60 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 1 to 3 percent
Parent material: clayey glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 3w
Hydric soil: no
Hydrologic group: D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe --	0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A --	1 to 2 in	silty clay loam	moderately slow	0.25 to 0.27 in	5.1 to 6.5
Eg --	2 to 10 in	silty clay loam	moderately slow	1.02 to 1.57 in	5.1 to 7.3
Btg --	10 to 28 in	clay	very slow	1.45 to 1.81 in	5.6 to 7.3
Bkg --	28 to 60 in	clay	very slow	2.55 to 3.83 in	7.4 to 8.4
Cg --	60 to 80 in	clay	very slow	1.61 to 2.41 in	7.4 to 8.4

19-8--8-Ma19, 0 to 3 percent slopes

19-8-1

Extent: 15 to 40 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 0 to 2 percent
Parent material: clayey glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 4w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 4 in	silty clay loam	moderately slow	0.66 to 0.72 in	5.1 to 6.5
Eg -- 4 to 7 in	clay	slow	0.31 to 0.60 in	5.1 to 7.3
Btg -- 7 to 34 in	clay	very slow	2.14 to 2.68 in	5.6 to 7.3
Bkg -- 34 to 50 in	clay	very slow	1.29 to 1.94 in	7.4 to 8.4
Cg -- 50 to 80 in	clay	very slow	2.39 to 3.59 in	7.4 to 8.4

19-10A--10A-Ma19, 0 to 6 percent slopes

19-10A

Extent: 50 to 70 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	stony loam	moderate	0.31 to 0.45 in	4.5 to 6.0
Bw1 -- 3 to 6 in	stony loam	moderate	0.22 to 0.44 in	4.5 to 6.0
Bw2 -- 6 to 20 in	stony sandy loam	moderate	0.99 to 2.13 in	5.1 to 6.5
Bw3 -- 20 to 28 in	very stony sandy loam	moderate	0.47 to 1.02 in	5.1 to 6.5
2BC -- 28 to 41 in	very cobbly sandy loam	moderately slow	0.52 to 1.17 in	5.1 to 6.5
2Cd -- 41 to 80 in	very cobbly sandy loam	slow	0.78 to 1.95 in	5.1 to 6.5

19-10A--10A-Ma19, 0 to 6 percent slopes

19-18A

Extent: 15 to 30 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 15 to 35 inches
lithic bedrock at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s

Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe --	0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A --	2 to 4 in	stony loam	moderate	0.26 to 0.37 in	4.5 to 6.0
Bw1 --	4 to 9 in	stony loam	moderate	0.51 to 0.92 in	4.5 to 6.0
Bw2 --	9 to 17 in	gravelly loam	moderate	0.63 to 1.26 in	5.1 to 6.5
2Cd --	17 to 37 in	very gravelly sandy loam	slow	0.60 to 1.41 in	5.1 to 6.5
R --	37 to 80 in	bedrock	impermeable		

19-10B--10B-Ma19, 6 to 18 percent slopes

19-10B

Extent: 45 to 65 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 35 to 55 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 4 in	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1 -- 4 to 13 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 13 to 23 in	cobbly loam	moderate	0.69 to 1.57 in	5.1 to 6.5
2BC -- 23 to 43 in	very gravelly sandy loam	moderately slow	0.80 to 1.81 in	5.1 to 6.5
2Cd -- 43 to 80 in	very gravelly sandy loam	slow	0.74 to 1.85 in	5.1 to 6.5

19-10B--10B-Ma19, 6 to 18 percent slopes

19-18B

Extent: 10 to 30 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 12 to 30 inches
lithic bedrock at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s

Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe	-- 0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A	-- 2 to 4 in	stony loam	moderate	0.26 to 0.37 in	4.5 to 6.0
Bw1	-- 4 to 9 in	stony loam	moderate	0.51 to 0.92 in	4.5 to 6.0
Bw2	-- 9 to 17 in	gravelly loam	moderate	0.63 to 1.26 in	5.1 to 6.5
2Cd	-- 17 to 37 in	very gravelly sandy loam	slow	0.60 to 1.41 in	5.1 to 6.5
R	-- 37 to 80 in	bedrock	impermeable		

19-14B--14B-Ma19, 6 to 18 percent slopes

19-14

Extent: 55 to 75 percent of the unit
Landform(s): kames
Slope gradient: 6 to 18 percent
Parent material: loamy material over outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A -- 2 to 5 in	sandy loam	moderately rapid	0.31 to 0.44 in	4.5 to 6.0
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.81 to 1.45 in	4.5 to 6.0
2BC -- 14 to 25 in	very gravelly sand	rapid	0.22 to 0.55 in	4.5 to 6.0
2C -- 25 to 80 in	very gravelly coarse sand	very rapid	0.55 to 2.74 in	5.1 to 6.5

19-14C--14C-Ma19, 18 to 35 percent slopes

5-14

Extent: 50 to 70 percent of the unit
Landform(s): kames
Slope gradient: 18 to 35 percent
Parent material: loamy material over outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A -- 2 to 5 in	sandy loam	moderately rapid	0.31 to 0.44 in	4.5 to 6.0
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.81 to 1.45 in	4.5 to 6.0
2BC -- 14 to 25 in	very gravelly sand	rapid	0.22 to 0.55 in	4.5 to 6.0
2C -- 25 to 80 in	very gravelly coarse sand	very rapid	0.55 to 2.74 in	5.1 to 6.5

19-16A--16A-Ma19, 0 to 6 percent slopes

19-16

Extent: 40 to 60 percent of the unit
Landform(s): lake plains
Slope gradient: 0 to 6 percent
Parent material: sandy outwash and/or beach 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) .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*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A -- 1 to 3 in	loamy sand	rapid	0.20 to 0.24 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

19-16A--16A-Ma19, 0 to 6 percent slopes

19-29

Extent: 20 to 40 percent of the unit
Landform(s): lake plains
Slope gradient: 1 to 6 percent
Parent material: sandy outwash and/or beach deposits over glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	loamy sand	rapid	0.24 to 0.28 in	5.1 to 6.5
Bw -- 3 to 29 in	loamy sand	rapid	1.56 to 2.86 in	5.1 to 6.5
2Bt1 -- 29 to 43 in	sandy clay loam	moderate	1.93 to 2.62 in	5.6 to 7.3
3Bt2 -- 43 to 50 in	clay	very slow	0.57 to 0.85 in	5.6 to 7.3
3C -- 50 to 80 in	clay	very slow	2.39 to 3.59 in	7.4 to 8.4

19-24--24-Ma19, 0 to 1 percent slopes

19-24

Extent: 70 to 90 percent of the unit
Landform(s): bogs on lake plains
Slope gradient: 0 to 1 percent
Parent material: 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 10 in	peat	very rapid	5.41 to 6.40 in	
Oe1 -- 10 to 24 in	mucky peat	rapid	6.38 to 7.80 in	
Oe2 -- 24 to 80 in	mucky peat	rapid	25.16 to 30.75 in	

19-28A--28A-Ma19, 0 to 6 percent slopes

19-28-1

Extent: 55 to 75 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 6 percent
Parent material: sandy 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) .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*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loamy sand	rapid	0.20 to 0.24 in	4.5 to 6.0
Bw -- 4 to 37 in	loamy sand	rapid	2.01 to 3.68 in	4.5 to 6.0
E and Bt -- 37 to 48 in	sand	rapid	0.55 to 0.99 in	5.1 to 6.0
C -- 48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

19-28B--28B-Ma19, 6 to 18 percent slopes

19-28-1

Extent: 55 to 75 percent of the unit
Landform(s): outwash plains
Slope gradient: 6 to 18 percent
Parent material: sandy 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) .02
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loamy sand	rapid	0.20 to 0.24 in	4.5 to 6.0
Bw -- 4 to 37 in	loamy sand	rapid	2.01 to 3.68 in	4.5 to 6.0
E and Bt -- 37 to 48 in	sand	rapid	0.55 to 0.99 in	5.1 to 6.0
C -- 48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

19-32--32-Ma19, 0 to 1 percent slopes

19-32

Extent: 65 to 85 percent of the unit
Landform(s): bogs on lake plains, swamps on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over clayey glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: occasional
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated: 7w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe --	0 to 6 in	mucky peat	rapid	2.66 to 3.25 in	
Oa --	6 to 22 in	muck	moderately rapid	5.65 to 7.26 in	
A --	22 to 26 in	mucky silty clay loam	moderately slow	0.71 to 0.94 in	6.1 to 7.3
Cg1 --	26 to 36 in	clay	very slow	1.38 to 1.67 in	6.6 to 7.8
Cg2 --	36 to 80 in	clay	very slow	6.17 to 7.50 in	7.4 to 8.4

19-34--34-Ma19, 0 to 3 percent slopes

19-34

Extent: 65 to 85 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 0 to 2 percent
Parent material: sandy outwash and/or beach 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) .02
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
Oe --	0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A --	2 to 3 in	loamy sand	rapid	0.16 to 0.19 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

19-52--52-Ma19, 0 to 2 percent slopes

19-52

Extent: 65 to 85 percent of the unit
Landform(s): depressions on lake plains, drainageways on lake plains
Slope gradient: 0 to 2 percent
Parent material: clayey glaciolacustrine sediments
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: D
Potential for frost action: high

Representative soil profile:

	Texture	Permeability	Available water capacity	pH
Oa -- 0 to 12 in	muck	moderately rapid	4.13 to 5.31 in	
A -- 12 to 17 in	mucky silty clay loam	moderately slow	0.92 to 1.23 in	6.1 to 7.3
Bg -- 17 to 24 in	clay	very slow	0.99 to 1.20 in	6.6 to 7.8
Cg -- 24 to 80 in	clay	very slow	7.83 to 9.50 in	7.4 to 8.4

19-67B--67B-Ma19, 6 to 18 percent slopes

19-67-1

Extent: 50 to 70 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: loamy material over glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 7s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A -- 1 to 3 in	stony loam	moderate	0.28 to 0.35 in	4.5 to 6.0
Bw1 -- 3 to 13 in	stony loam	moderate	0.79 to 1.48 in	4.5 to 6.0
2Bw2 -- 13 to 32 in	very gravelly coarse sandy loam	moderately rapid	1.13 to 1.70 in	5.1 to 6.5
2C -- 32 to 80 in	extremely gravelly loamy coarse sand	rapid	1.44 to 3.84 in	5.1 to 6.5

19-73--73-Ma19, 0 to 2 percent slopes

19-73

Extent: 45 to 65 percent of the unit
Landform(s): flats on beaches, flats on outwash plains
Slope gradient: 0 to 2 percent
Parent material: sandy outwash and/or beach 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) .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
Oe --	0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A --	2 to 4 in	loamy sand	rapid	0.12 to 0.22 in	4.5 to 6.0
Bg --	4 to 24 in	loamy sand	rapid	1.00 to 1.61 in	4.5 to 6.0
Cg1 --	24 to 48 in	sand	rapid	0.48 to 2.16 in	4.5 to 6.0
Cg2 --	48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

19-73--73-Ma19, 0 to 2 percent slopes

19-8-S

Extent: 15 to 30 percent of the unit
Landform(s): swales on beaches, swales on outwash plains
Slope gradient: 0 to 2 percent
Parent material: sandy outwash and/or beach deposits over glaciolacustrine sediments
Restrictive feature(s): abrupt textural change at 10 to 20 i
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated: 4w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe	0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A	1 to 2 in	loamy sand	rapid	0.12 to 0.14 in	5.1 to 6.5
Eg	2 to 16 in	loamy sand	rapid	1.13 to 1.56 in	5.1 to 6.5
Bg	16 to 28 in	loamy sand	rapid	0.57 to 0.91 in	4.5 to 6.0
2Btg1	28 to 33 in	sandy clay loam	moderate	0.72 to 0.97 in	5.6 to 7.3
3Btg2	33 to 37 in	clay	very slow	0.38 to 0.57 in	5.6 to 7.3
3BCg	37 to 80 in	clay	very slow	3.40 to 5.10 in	7.4 to 8.4

20-4--4-Lc20, 0 to 1 percent slopes

20-4

Extent: 70 to 90 percent of the unit
Landform(s): bogs 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: 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 10 in	peat	very rapid	5.41 to 6.40 in	
Oe1 --	10 to 24 in	mucky peat	rapid	6.38 to 7.80 in	
Oe2 --	24 to 80 in	mucky peat	rapid	25.16 to 30.75 in	

20-10A--10A-Lc20, 0 to 6 percent slopes

20-10A

Extent: 35 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe	0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A	1 to 3 in	stony loam	moderate	0.26 to 0.37 in	4.5 to 6.0
Bw1	3 to 6 in	stony loam	moderate	0.22 to 0.44 in	4.5 to 6.0
Bw2	6 to 20 in	stony sandy loam	moderate	0.99 to 2.13 in	5.1 to 6.5
Bw3	20 to 28 in	very stony sandy loam	moderate	0.47 to 1.02 in	5.1 to 6.5
2BC	28 to 41 in	very cobbly sandy loam	moderately slow	0.52 to 1.17 in	5.1 to 6.5
2Cd	41 to 80 in	very cobbly sandy loam	slow	0.78 to 1.95 in	5.1 to 6.5

20-10A--10A-Lc20, 0 to 6 percent slopes

20-56A

Extent: 5 to 35 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
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*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	loam	moderate	0.47 to 0.52 in	4.5 to 6.0
Bw -- 3 to 10 in	fine sandy loam	moderate	0.80 to 1.27 in	4.5 to 6.0
Ex -- 10 to 13 in	fine sandy loam	slow	0.38 to 0.60 in	4.5 to 6.5
B/E -- 13 to 26 in	clay loam	moderately slow	1.82 to 2.47 in	5.1 to 6.5
Bt -- 26 to 57 in	clay loam	moderately slow	4.35 to 5.91 in	5.1 to 6.5
BCd -- 57 to 80 in	loam	very slow	1.37 to 2.28 in	6.1 to 8.4

20-10B--10B-Lc20, 6 to 18 percent slopes

20-10B

Extent: 40 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 35 to 55 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A -- 2 to 4 in	stony loam	moderate	0.26 to 0.37 in	4.5 to 6.0
Bw1 -- 4 to 13 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 13 to 23 in	cobbly loam	moderate	0.69 to 1.57 in	5.1 to 6.5
2BC -- 23 to 43 in	very gravelly sandy loam	moderately slow	0.80 to 1.81 in	5.1 to 6.5
2Cd -- 43 to 80 in	very gravelly sandy loam	slow	0.74 to 1.85 in	5.1 to 6.5

20-10B--10B-Lc20, 6 to 18 percent slopes

20-56B

Extent: 10 to 30 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe	0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A	1 to 3 in	loam	moderate	0.39 to 0.43 in	4.5 to 6.0
Bw	3 to 8 in	loam	moderate	0.61 to 0.97 in	4.5 to 6.0
Ex	8 to 12 in	loam	slow	0.47 to 0.75 in	4.5 to 6.5
B/E	12 to 17 in	clay loam	moderately slow	0.72 to 0.97 in	5.1 to 6.5
Bt	17 to 57 in	clay loam	moderately slow	5.62 to 7.63 in	5.1 to 6.5
BCd	57 to 80 in	loam	very slow	1.37 to 2.28 in	6.1 to 8.4

20-13D--13D-Lc20, 35 to 50 percent slopes

20-14

Extent: 60 to 80 percent of the unit
Landform(s): eskers, kames
Slope gradient: 35 to 50 percent
Parent material: loamy material over outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A -- 2 to 5 in	sandy loam	moderately rapid	0.31 to 0.44 in	4.5 to 6.0
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.81 to 1.45 in	4.5 to 6.0
2BC -- 14 to 25 in	very gravelly sand	rapid	0.22 to 0.55 in	4.5 to 6.0
2C -- 25 to 80 in	very gravelly coarse sand	very rapid	0.55 to 2.74 in	5.1 to 6.5

20-13D--13D-Lc20, 35 to 50 percent slopes

20-67-2

Extent: 10 to 30 percent of the unit
Landform(s): eskers, kames
Slope gradient: 35 to 50 percent
Parent material: loamy material over outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .02
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 2 in	very stony loam	moderate	0.13 to 0.19 in	4.5 to 6.0
Bw1 -- 2 to 14 in	very stony sandy loam	moderately rapid	0.73 to 1.59 in	4.5 to 6.0
2Bw2 -- 14 to 22 in	extremely stony loamy coarse sand	rapid	0.08 to 0.39 in	4.5 to 6.0
2BC -- 22 to 46 in	extremely gravelly coarse sand	very rapid	0.24 to 0.96 in	4.5 to 6.5
2C -- 46 to 80 in	extremely cobbly coarse sand	very rapid	0.34 to 1.35 in	5.1 to 6.5

20-18A--18A-Lc20, 0 to 6 percent slopes

20-18A

Extent: 55 to 75 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 15 to 35 inches
lithic bedrock at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s

Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe --	0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A --	2 to 4 in	stony loam	moderate	0.26 to 0.37 in	4.5 to 6.0
Bw1 --	4 to 9 in	stony loam	moderate	0.51 to 0.92 in	4.5 to 6.0
Bw2 --	9 to 17 in	gravelly loam	moderate	0.63 to 1.26 in	5.1 to 6.5
2Cd --	17 to 37 in	very gravelly sandy loam	slow	0.60 to 1.41 in	5.1 to 6.5
R --	37 to 80 in	bedrock	impermeable		

20-18B--18B-Lc20, 6 to 18 percent slopes

20-18B

Extent: 50 to 70 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 12 to 30 inches
lithic bedrock at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s

Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe	0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A	2 to 4 in	stony loam	moderate	0.26 to 0.37 in	4.5 to 6.0
Bw1	4 to 9 in	stony loam	moderate	0.51 to 0.92 in	4.5 to 6.0
Bw2	9 to 17 in	gravelly loam	moderate	0.63 to 1.26 in	5.1 to 6.5
2Cd	17 to 37 in	very gravelly sandy loam	slow	0.60 to 1.41 in	5.1 to 6.5
R	37 to 80 in	bedrock	impermeable		

20-24--24-Lc20, 0 to 1 percent slopes

20-24

Extent: 70 to 90 percent of the unit
Landform(s): bogs on moraines
Slope gradient: 0 to 1 percent
Parent material: organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: occasional
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: 7w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe1 --	0 to 12 in	mucky peat	rapid	5.31 to 6.50 in	
Oe2 --	12 to 42 in	mucky peat	rapid	13.64 to 16.67 in	
Oa --	42 to 52 in	muck	moderately rapid	3.44 to 4.43 in	
Oe3 --	52 to 80 in	mucky peat	rapid	12.58 to 15.37 in	

20-32--32-Lc20. 0 to 1 percent slopes

20-32

Extent: 55 to 85 percent of the unit
Landform(s): bogs on moraines
Slope gradient: 0 to 1 percent
Parent material: organic material over colluvium and loamy dense till
Restrictive feature(s): densic material at 60 to 80 inches
Flooding: none
Ponding: occasional
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
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
Oe1 --	0 to 7 in	mucky peat	rapid	3.19 to 3.90 in	
Oe2 --	7 to 30 in	mucky peat	rapid	10.28 to 12.56 in	
Oa --	30 to 34 in	muck	moderately rapid	1.38 to 1.77 in	
BCg --	34 to 68 in	loam	moderate	4.80 to 6.51 in	5.1 to 6.5
BCd --	68 to 80 in	loam	very slow	0.71 to 1.18 in	6.1 to 8.4

20-56A--56A-Lc20, 0 to 6 percent slopes

20-56A

Extent: 40 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 6 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
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*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	loam	moderate	0.47 to 0.52 in	4.5 to 6.0
Bw -- 3 to 10 in	fine sandy loam	moderate	0.80 to 1.27 in	4.5 to 6.0
Ex -- 10 to 13 in	fine sandy loam	slow	0.38 to 0.60 in	4.5 to 6.5
B/E -- 13 to 26 in	clay loam	moderately slow	1.82 to 2.47 in	5.1 to 6.5
Bt -- 26 to 57 in	clay loam	moderately slow	4.35 to 5.91 in	5.1 to 6.5
BCd -- 57 to 80 in	loam	very slow	1.37 to 2.28 in	6.1 to 8.4

20-56A--56A-Lc20, 0 to 6 percent slopes

20-58

Extent: 30 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 3 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
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*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loam	moderate	0.47 to 0.52 in	4.5 to 6.0
E -- 4 to 12 in	loam	moderate	0.94 to 1.50 in	4.5 to 6.0
Ex -- 12 to 17 in	sandy loam	slow	0.61 to 0.97 in	4.5 to 6.5
B/E -- 17 to 34 in	clay loam	moderately slow	2.37 to 3.22 in	5.1 to 6.5
Bt -- 34 to 58 in	clay loam	moderately slow	3.36 to 4.56 in	5.1 to 6.5
BCd -- 58 to 80 in	loam	very slow	1.32 to 2.20 in	6.1 to 8.4

20-56B--56B-Lc20, 6 to 18 percent slopes

20-56A

Extent: 50 to 70 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 15 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
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*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	loam	moderate	0.47 to 0.52 in	4.5 to 6.0
Bw -- 3 to 10 in	fine sandy loam	moderate	0.80 to 1.27 in	4.5 to 6.0
Ex -- 10 to 13 in	fine sandy loam	slow	0.38 to 0.60 in	4.5 to 6.5
B/E -- 13 to 26 in	clay loam	moderately slow	1.82 to 2.47 in	5.1 to 6.5
Bt -- 26 to 57 in	clay loam	moderately slow	4.35 to 5.91 in	5.1 to 6.5
BCd -- 57 to 80 in	loam	very slow	1.37 to 2.28 in	6.1 to 8.4

20-56B--56B-Lc20, 6 to 18 percent slopes

20-56B

Extent: 15 to 30 percent of the unit
Landform(s): moraines
Slope gradient: 12 to 18 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:			*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe	--	0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A	--	1 to 3 in	loam	moderate	0.39 to 0.43 in	4.5 to 6.0
Bw	--	3 to 8 in	loam	moderate	0.61 to 0.97 in	4.5 to 6.0
Ex	--	8 to 12 in	loam	slow	0.47 to 0.75 in	4.5 to 6.5
B/E	--	12 to 17 in	clay loam	moderately slow	0.72 to 0.97 in	5.1 to 6.5
Bt	--	17 to 57 in	clay loam	moderately slow	5.62 to 7.63 in	5.1 to 6.5
BCd	--	57 to 80 in	loam	very slow	1.37 to 2.28 in	6.1 to 8.4

20-56C--56C-Lc20, 18 to 35 percent slopes

20-56B

Extent: 65 to 85 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 35 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:			*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe	--	0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A	--	1 to 3 in	loam	moderate	0.39 to 0.43 in	4.5 to 6.0
Bw	--	3 to 8 in	loam	moderate	0.61 to 0.97 in	4.5 to 6.0
Ex	--	8 to 12 in	loam	slow	0.47 to 0.75 in	4.5 to 6.5
B/E	--	12 to 17 in	clay loam	moderately slow	0.72 to 0.97 in	5.1 to 6.5
Bt	--	17 to 57 in	clay loam	moderately slow	5.62 to 7.63 in	5.1 to 6.5
BCd	--	57 to 80 in	loam	very slow	1.37 to 2.28 in	6.1 to 8.4

20-56D--56D-Lc20, 35 to 50 percent slopes

20-56B

Extent: 65 to 85 percent of the unit
Landform(s): moraines
Slope gradient: 35 to 50 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe --	0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A --	1 to 3 in	loam	moderate	0.39 to 0.43 in	4.5 to 6.0
Bw --	3 to 8 in	loam	moderate	0.61 to 0.97 in	4.5 to 6.0
Ex --	8 to 12 in	loam	slow	0.47 to 0.75 in	4.5 to 6.5
B/E --	12 to 17 in	clay loam	moderately slow	0.72 to 0.97 in	5.1 to 6.5
Bt --	17 to 57 in	clay loam	moderately slow	5.62 to 7.63 in	5.1 to 6.5
BCd --	57 to 80 in	loam	very slow	1.37 to 2.28 in	6.1 to 8.4

20-58--58-Lc20, 0 to 3 percent slopes

20-58

Extent: 55 to 75 percent of the unit
Landform(s): flats on moraines, rises on moraines
Slope gradient: 0 to 3 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
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*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loam	moderate	0.47 to 0.52 in	4.5 to 6.0
E -- 4 to 12 in	loam	moderate	0.94 to 1.50 in	4.5 to 6.0
Ex -- 12 to 17 in	sandy loam	slow	0.61 to 0.97 in	4.5 to 6.5
B/E -- 17 to 34 in	clay loam	moderately slow	2.37 to 3.22 in	5.1 to 6.5
Bt -- 34 to 58 in	clay loam	moderately slow	3.36 to 4.56 in	5.1 to 6.5
BCd -- 58 to 80 in	loam	very slow	1.32 to 2.20 in	6.1 to 8.4

20-58--58-Lc20, 0 to 3 percent slopes

20-72

Extent: 10 to 35 percent of the unit
Landform(s): swales on moraines
Slope gradient: 0 to 2 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 60 to 80 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 4w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:			*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe	--	0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A	--	2 to 6 in	loam	moderate	0.87 to 0.95 in	4.5 to 6.0
Eg	--	6 to 14 in	fine sandy loam	moderate	0.99 to 1.57 in	4.5 to 6.0
B/E	--	14 to 31 in	clay loam	moderately slow	2.37 to 3.22 in	5.1 to 6.5
Btg	--	31 to 68 in	clay loam	moderately slow	5.18 to 7.03 in	5.1 to 6.5
BCd	--	68 to 80 in	loam	very slow	0.71 to 1.18 in	6.1 to 8.4

20-64C--64C-Lc20, 18 to 35 percent slopes

20-64B

Extent: 60 to 80 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 35 percent
Parent material: outwash over loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:			*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe	--	0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A	--	1 to 3 in	sandy loam	moderately rapid	0.31 to 0.35 in	4.5 to 6.0
Bw	--	3 to 32 in	loamy coarse sand	rapid	1.44 to 3.16 in	4.5 to 6.0
2E/B	--	32 to 38 in	loam	moderate	1.01 to 1.32 in	5.1 to 6.5
2Bt	--	38 to 46 in	clay loam	moderately slow	1.10 to 1.50 in	5.1 to 6.5
2BCd	--	46 to 80 in	loam	very slow	2.03 to 3.39 in	6.1 to 8.4

20-67B--67B-Lc20, 6 to 18 percent slopes

20-67-1

Extent: 50 to 70 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: loamy material over glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 7s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A -- 1 to 3 in	stony loam	moderate	0.28 to 0.35 in	4.5 to 6.0
Bw1 -- 3 to 13 in	stony loam	moderate	0.79 to 1.48 in	4.5 to 6.0
2Bw2 -- 13 to 32 in	very gravelly coarse sandy loam	moderately rapid	1.13 to 1.70 in	5.1 to 6.5
2C -- 32 to 80 in	extremely gravelly loamy coarse sand	rapid	1.44 to 3.84 in	5.1 to 6.5

21A--21A-Lc07-20-Ma19, 0 to 6 percent slopes

7-21

Extent: 40 to 65 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: loamy glacial drift
Restrictive feature(s): lithic bedrock at 10 to 20 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	gravelly sandy loam	moderate	0.21 to 0.33 in	4.5 to 6.0
Bw1 -- 3 to 11 in	gravelly sandy loam	moderate	0.63 to 1.26 in	4.5 to 6.0
Bw2 -- 11 to 17 in	gravelly fine sandy loam	moderate	0.41 to 0.89 in	5.1 to 6.5
R -- 17 to 80 in	bedrock	impermeable		

21A--21A-Lc07-20-Ma19, 0 to 6 percent slopes

7-18A

Extent: 15 to 35 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 15 to 35 inches
lithic bedrock at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s

Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe --	0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A --	2 to 4 in	stony loam	moderate	0.26 to 0.37 in	4.5 to 6.0
Bw1 --	4 to 9 in	stony loam	moderate	0.51 to 0.92 in	4.5 to 6.0
Bw2 --	9 to 17 in	gravelly loam	moderate	0.63 to 1.26 in	5.1 to 6.5
2Cd --	17 to 37 in	very gravelly sandy loam	slow	0.60 to 1.41 in	5.1 to 6.5
R --	37 to 80 in	bedrock	impermeable		

21B--21B-Lc07-10-20-Ma19, 6 to 18 percent slopes

7-21

Extent: 45 to 65 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: loamy glacial drift
Restrictive feature(s): lithic bedrock at 10 to 20 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	gravelly sandy loam	moderate	0.21 to 0.33 in	4.5 to 6.0
Bw1 -- 3 to 11 in	gravelly sandy loam	moderate	0.63 to 1.26 in	4.5 to 6.0
Bw2 -- 11 to 17 in	gravelly fine sandy loam	moderate	0.41 to 0.89 in	5.1 to 6.5
R -- 17 to 80 in	bedrock	impermeable		

21B--21B-Lc07-10-20-Ma19, 6 to 18 percent slopes

7-18B

Extent: 10 to 30 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 12 to 30 inches
lithic bedrock at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s

Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe	0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A	2 to 4 in	stony loam	moderate	0.26 to 0.37 in	4.5 to 6.0
Bw1	4 to 9 in	stony loam	moderate	0.51 to 0.92 in	4.5 to 6.0
Bw2	9 to 17 in	gravelly loam	moderate	0.63 to 1.26 in	5.1 to 6.5
2Cd	17 to 37 in	very gravelly sandy loam	slow	0.60 to 1.41 in	5.1 to 6.5
R	37 to 80 in	bedrock	impermeable		

21C--21C-Lc07-10, 18 to 35 percent slopes

7-21

Extent: 50 to 70 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 35 percent
Parent material: loamy glacial drift
Restrictive feature(s): lithic bedrock at 10 to 20 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	gravelly sandy loam	moderate	0.21 to 0.33 in	4.5 to 6.0
Bw1 -- 3 to 11 in	gravelly sandy loam	moderate	0.63 to 1.26 in	4.5 to 6.0
Bw2 -- 11 to 17 in	gravelly fine sandy loam	moderate	0.41 to 0.89 in	5.1 to 6.5
R -- 17 to 80 in	bedrock	impermeable		

7-5

Extent: 15 to 25 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 35 percent
Parent material: loamy glacial drift
Restrictive feature(s): lithic bedrock at 4 to 10 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 7s
Hydric soil: no
Hydrologic group: D
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	fine sandy loam	moderately rapid	0.18 to 0.28 in	4.5 to 6.0
Bw -- 3 to 7 in	gravelly fine sandy loam	moderately rapid	0.35 to 0.56 in	4.5 to 6.0
R -- 7 to 80 in	bedrock	impermeable		

22--22-Ma19-05-07-20, 0 to 3 percent slopes

19-22

Extent: 25 to 85 percent of the unit
Landform(s): flats on flood plains
Slope gradient: 0 to 3 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

19-24

Extent: 25 to 85 percent of the unit
Landform(s): flats on flood plains
Slope gradient: 0 to 1 percent
Parent material: organic materials mixed with alluvium
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: 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 38 in	muck	moderately rapid	13.37 to 17.19 in	
Cg -- 38 to 47 in	stratified fine sand to loamy fine sand	rapid	0.43 to 0.87 in	5.6 to 7.3
O'a -- 47 to 80 in	muck	moderately rapid	11.57 to 14.88 in	

23A--23A-Lc05-07-20, 0 to 6 percent slopes

5-23B

Extent: 70 to 85 percent of the unit
Landform(s): moraines, outwash plains
Slope gradient: 0 to 6 percent
Parent material: eolian and/or glaciofluvial sand
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) .02
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe --	0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A --	1 to 5 in	loamy fine sand	rapid	0.39 to 0.51 in	4.5 to 6.0
Bw --	5 to 21 in	loamy fine sand	rapid	1.10 to 1.73 in	5.1 to 6.5
C --	21 to 80 in	fine sand	rapid	3.54 to 5.91 in	5.1 to 6.5

23B--23B-Lco5-07-20, 6 to 18 percent slopes

5-23B

Extent: 80 to 90 percent of the unit
Landform(s): moraines, outwash plains
Slope gradient: 6 to 18 percent
Parent material: eolian and/or glaciofluvial sand
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) .02
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A -- 1 to 5 in	loamy fine sand	rapid	0.39 to 0.51 in	4.5 to 6.0
Bw -- 5 to 21 in	loamy fine sand	rapid	1.10 to 1.73 in	5.1 to 6.5
C -- 21 to 80 in	fine sand	rapid	3.54 to 5.91 in	5.1 to 6.5

24--24-Lc07-05-06, 0 to 1 percent slopes

7-24

Extent: 70 to 90 percent of the unit
Landform(s): bogs on moraines, bogs on outwash plains
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): 5
Wind erodibility index (WEI): 56
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*
Oe1 -- 0 to 12 in	mucky peat	rapid	5.31 to 6.50 in	
Oe2 -- 12 to 42 in	mucky peat	rapid	13.64 to 16.67 in	
Oa -- 42 to 52 in	muck	moderately rapid	3.44 to 4.43 in	
Oe3 -- 52 to 80 in	mucky peat	rapid	12.58 to 15.37 in	

26A--26A-Lc07-10-20, 0 to 6 percent slopes

Rubble land

Extent: 100 percent of the unit
Landform(s):
Slope gradient: 0 to 6 percent
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*

28A--28A-Lc05-07-20, 0 to 6 percent slopes

5-28-1

Extent: 50 to 70 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 6 percent
Parent material: sandy 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) .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*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loamy sand	rapid	0.20 to 0.24 in	4.5 to 6.0
Bw -- 4 to 37 in	loamy sand	rapid	2.01 to 3.68 in	4.5 to 6.0
E and Bt -- 37 to 48 in	sand	rapid	0.55 to 0.99 in	5.1 to 6.0
C -- 48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

28A--28A-Lc05-07-20, 0 to 6 percent slopes

5-28-2

Extent: 25 to 40 percent of the unit
Landform(s): 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): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
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*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	sandy loam	moderately rapid	0.24 to 0.30 in	4.5 to 6.0
Bw -- 4 to 9 in	gravelly sandy loam	moderately rapid	0.50 to 0.72 in	4.5 to 6.0
E -- 9 to 32 in	gravelly loamy sand	rapid	0.69 to 1.60 in	4.5 to 6.0
E and B -- 32 to 64 in	gravelly loamy sand	rapid	0.97 to 1.94 in	5.1 to 6.0
C -- 64 to 80 in	gravelly coarse sand	very rapid	0.31 to 0.94 in	5.1 to 6.5

28B--28B-Lc05-07-20, 6 to 18 percent slopes

5-28-1

Extent: 40 to 60 percent of the unit
Landform(s): outwash plains
Slope gradient: 6 to 18 percent
Parent material: sandy 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) .02
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loamy sand	rapid	0.20 to 0.24 in	4.5 to 6.0
Bw -- 4 to 37 in	loamy sand	rapid	2.01 to 3.68 in	4.5 to 6.0
E and Bt -- 37 to 48 in	sand	rapid	0.55 to 0.99 in	5.1 to 6.0
C -- 48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

28B--28B-Lc05-07-20, 6 to 18 percent slopes

5-28-2

Extent: 30 to 45 percent of the unit
Landform(s): outwash plains
Slope gradient: 6 to 18 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	sandy loam	moderately rapid	0.24 to 0.30 in	4.5 to 6.0
Bw -- 4 to 9 in	gravelly sandy loam	moderately rapid	0.50 to 0.72 in	4.5 to 6.0
E -- 9 to 32 in	gravelly loamy sand	rapid	0.69 to 1.60 in	4.5 to 6.0
E and B -- 32 to 64 in	gravelly loamy sand	rapid	0.97 to 1.94 in	5.1 to 6.0
C -- 64 to 80 in	gravelly coarse sand	very rapid	0.31 to 0.94 in	5.1 to 6.5

28C--28C-Lc05-07-20, 18 to 35 percent slopes

5-28-1

Extent: 40 to 60 percent of the unit
Landform(s): outwash plains
Slope gradient: 18 to 35 percent
Parent material: sandy 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) .02
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loamy sand	rapid	0.20 to 0.24 in	4.5 to 6.0
Bw -- 4 to 37 in	loamy sand	rapid	2.01 to 3.68 in	4.5 to 6.0
E and Bt -- 37 to 48 in	sand	rapid	0.55 to 0.99 in	5.1 to 6.0
C -- 48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

28C--28C-Lc05-07-20, 18 to 35 percent slopes

5-28-2

Extent: 30 to 45 percent of the unit
Landform(s): outwash plains
Slope gradient: 18 to 35 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	sandy loam	moderately rapid	0.24 to 0.30 in	4.5 to 6.0
Bw -- 4 to 9 in	gravelly sandy loam	moderately rapid	0.50 to 0.72 in	4.5 to 6.0
E -- 9 to 32 in	gravelly loamy sand	rapid	0.69 to 1.60 in	4.5 to 6.0
E and B -- 32 to 64 in	gravelly loamy sand	rapid	0.97 to 1.94 in	5.1 to 6.0
C -- 64 to 80 in	gravelly coarse sand	very rapid	0.31 to 0.94 in	5.1 to 6.5

29A--29A-Ma19-05-07-20, 0 to 6 percent slopes

19-29

Extent: 40 to 60 percent of the unit
Landform(s): lake plains
Slope gradient: 1 to 6 percent
Parent material: sandy outwash and/or beach deposits over glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	loamy sand	rapid	0.24 to 0.28 in	5.1 to 6.5
Bw -- 3 to 29 in	loamy sand	rapid	1.56 to 2.86 in	5.1 to 6.5
2Bt1 -- 29 to 43 in	sandy clay loam	moderate	1.93 to 2.62 in	5.6 to 7.3
3Bt2 -- 43 to 50 in	clay	very slow	0.57 to 0.85 in	5.6 to 7.3
3C -- 50 to 80 in	clay	very slow	2.39 to 3.59 in	7.4 to 8.4

29A--29A-Ma19-05-07-20, 0 to 6 percent slopes

19-29-SP

Extent: 15 to 30 percent of the unit
Landform(s): lake plains
Slope gradient: 0 to 4 percent
Parent material: sandy outwash and/or beach deposits over glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 3w
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe --	0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A --	1 to 3 in	fine sandy loam	moderately rapid	0.38 to 0.43 in	5.1 to 6.5
E --	3 to 8 in	sandy loam	moderately rapid	0.47 to 0.76 in	5.1 to 6.5
Bw --	8 to 19 in	loamy sand	rapid	0.88 to 1.21 in	5.1 to 6.5
2B/E --	19 to 24 in	sandy clay loam	moderate	0.72 to 0.97 in	5.6 to 7.3
3Bt --	24 to 28 in	clay	very slow	0.31 to 0.47 in	5.6 to 7.3
3Bk --	28 to 44 in	clay	very slow	1.29 to 1.94 in	7.4 to 8.4
3C --	44 to 80 in	clay	very slow	2.87 to 4.30 in	7.4 to 8.4

29A--29A-Ma19-05-07-20, 0 to 6 percent slopes

19-16

Extent: 15 to 30 percent of the unit
Landform(s): lake plains
Slope gradient: 2 to 6 percent
Parent material: sandy outwash and/or beach 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) .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*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A -- 1 to 3 in	loamy sand	rapid	0.20 to 0.24 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

29B--29B-Ma19-05-07-20, 6 to 18 percent slopes

19-29

Extent: 50 to 70 percent of the unit
Landform(s): lake plains
Slope gradient: 6 to 18 percent
Parent material: sandy outwash and/or beach deposits over glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	loamy sand	rapid	0.24 to 0.28 in	5.1 to 6.5
Bw -- 3 to 29 in	loamy sand	rapid	1.56 to 2.86 in	5.1 to 6.5
2Bt1 -- 29 to 43 in	sandy clay loam	moderate	1.93 to 2.62 in	5.6 to 7.3
3Bt2 -- 43 to 50 in	clay	very slow	0.57 to 0.85 in	5.6 to 7.3
3C -- 50 to 80 in	clay	very slow	2.39 to 3.59 in	7.4 to 8.4

29B--29B-Ma19-05-07-20, 6 to 18 percent slopes

19-28-1

Extent: 15 to 30 percent of the unit
Landform(s): lake plains
Slope gradient: 6 to 18 percent
Parent material: sandy outwash and/or beach 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loamy sand	rapid	0.20 to 0.24 in	4.5 to 6.0
Bw -- 4 to 37 in	loamy sand	rapid	2.01 to 3.68 in	4.5 to 6.0
E and Bt -- 37 to 48 in	sand	rapid	0.55 to 0.99 in	5.1 to 6.0
C -- 48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

30A--30A-Lc05-06-07-20, 0 to 6 percent slopes

5-30A

Extent: 60 to 80 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A -- 1 to 3 in	stony loam	moderate	0.26 to 0.37 in	4.5 to 6.0
Bw1 -- 3 to 6 in	stony loam	moderate	0.22 to 0.44 in	4.5 to 6.0
Bw2 -- 6 to 20 in	stony sandy loam	moderate	0.99 to 2.13 in	5.1 to 6.5
Bw3 -- 20 to 28 in	very stony sandy loam	moderate	0.47 to 1.02 in	5.1 to 6.5
2BC -- 28 to 41 in	very cobbly sandy loam	moderately slow	0.52 to 1.17 in	5.1 to 6.5
2Cd -- 41 to 80 in	very cobbly sandy loam	slow	0.78 to 1.95 in	5.1 to 6.5

30B--30B-Lc05-06-07-20. 6 to 18 percent slopes

5-30B

Extent: 60 to 80 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 35 to 55 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A -- 2 to 4 in	stony loam	moderate	0.26 to 0.37 in	4.5 to 6.0
Bw1 -- 4 to 13 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 13 to 23 in	cobbly loam	moderate	0.69 to 1.57 in	5.1 to 6.5
2BC -- 23 to 43 in	very gravelly sandy loam	moderately slow	0.80 to 1.81 in	5.1 to 6.5
2Cd -- 43 to 80 in	very gravelly sandy loam	slow	0.74 to 1.85 in	5.1 to 6.5

30C--30C-Lc05-07-20, 18 to 35 percent slopes

5-30B

Extent: 75 to 85 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 35 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 35 to 55 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A -- 2 to 4 in	stony loam	moderate	0.26 to 0.37 in	4.5 to 6.0
Bw1 -- 4 to 13 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 13 to 23 in	cobbly loam	moderate	0.69 to 1.57 in	5.1 to 6.5
2BC -- 23 to 43 in	very gravelly sandy loam	moderately slow	0.80 to 1.81 in	5.1 to 6.5
2Cd -- 43 to 80 in	very gravelly sandy loam	slow	0.74 to 1.85 in	5.1 to 6.5

32--32-Lc07-05-06, 0 to 1 percent slopes

7-32

Extent: 65 to 85 percent of the unit
Landform(s): bogs on moraines, bogs on outwash plains
Slope gradient: 0 to 1 percent
Parent material: organic material over glaciofluvial sediments
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: B/D
Potential for frost action: high

Representative soil profile:

		Texture	*Permeability*	*Available water capacity*	*pH*
Oe1 --	0 to 12 in	mucky peat	rapid	5.31 to 6.50 in	
Oe2 --	12 to 32 in	mucky peat	rapid	9.04 to 11.04 in	
Oa --	32 to 36 in	muck	moderately rapid	1.38 to 1.77 in	
2Cg --	36 to 80 in	stratified loamy fine sand to loam	moderate	5.73 to 8.38 in	5.1 to 7.3

34--34-Lc05-07-20, 0 to 3 percent slopes

5-34

Extent: 50 to 70 percent of the unit
Landform(s): flats on outwash plains
Slope gradient: 0 to 2 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) .02
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*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 3 in	loamy sand	rapid	0.16 to 0.19 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

5-73

Extent: 10 to 30 percent of the unit
Landform(s): swales on outwash plains
Slope gradient: 0 to 1 percent
Parent material: sandy 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): 2
Wind erodibility index (WEI): 134
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*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A -- 2 to 4 in	loamy sand	rapid	0.12 to 0.22 in	4.5 to 6.0
Bg -- 4 to 24 in	loamy sand	rapid	1.00 to 1.61 in	4.5 to 6.0
Cg1 -- 24 to 48 in	sand	rapid	0.48 to 2.16 in	4.5 to 6.0
Cg2 -- 48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

34--34-Lc05-07-20, 0 to 3 percent slopes

35A--35A-Lc20-10, 0 to 6 percent slopes

20-35

Extent: 60 to 80 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 6 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
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*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loam	moderate	0.47 to 0.52 in	4.5 to 5.5
Bw -- 4 to 8 in	loam	moderate	0.59 to 0.83 in	4.5 to 5.5
2E/B -- 8 to 12 in	loam	moderate	0.55 to 0.75 in	5.1 to 6.0
2Bt1 -- 12 to 27 in	clay	slow	1.23 to 2.30 in	5.1 to 6.0
2Bt2 -- 27 to 36 in	clay	slow	0.69 to 1.30 in	5.1 to 6.5
2Bt3 -- 36 to 48 in	clay	slow	0.98 to 1.83 in	5.1 to 6.5
2BCd -- 48 to 80 in	clay	slow	1.28 to 2.55 in	6.1 to 8.4

35A--35A-Lc20-10, 0 to 6 percent slopes

20-42

Extent: 15 to 35 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 4 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
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*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 3 in	loam	moderate	0.31 to 0.35 in	4.5 to 5.5
E -- 3 to 13 in	loam	moderate	1.48 to 2.07 in	4.5 to 5.5
2B/E -- 13 to 18 in	clay loam	slow	0.41 to 0.77 in	5.1 to 6.0
2Bt1 -- 18 to 32 in	clay	slow	1.10 to 2.07 in	5.1 to 6.0
2Bt2 -- 32 to 58 in	clay	slow	2.08 to 3.90 in	5.1 to 6.5
2BCd -- 58 to 80 in	clay	slow	0.88 to 1.76 in	6.1 to 8.4

35B--35B-Lc20-10, 6 to 18 percent slopes

20-35

Extent: 70 to 90 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loam	moderate	0.47 to 0.52 in	4.5 to 5.5
Bw -- 4 to 8 in	loam	moderate	0.59 to 0.83 in	4.5 to 5.5
2E/B -- 8 to 12 in	loam	moderate	0.55 to 0.75 in	5.1 to 6.0
2Bt1 -- 12 to 27 in	clay	slow	1.23 to 2.30 in	5.1 to 6.0
2Bt2 -- 27 to 36 in	clay	slow	0.69 to 1.30 in	5.1 to 6.5
2Bt3 -- 36 to 48 in	clay	slow	0.98 to 1.83 in	5.1 to 6.5
2BCd -- 48 to 80 in	clay	slow	1.28 to 2.55 in	6.1 to 8.4

43--43-Lc20-10, 0 to 2 percent slopes

20-43

Extent: 50 to 70 percent of the unit
Landform(s): flats on moraines
Slope gradient: 0 to 2 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 4w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loam	moderate	0.47 to 0.52 in	4.5 to 5.5
Eg -- 4 to 8 in	loam	moderate	0.59 to 0.83 in	4.5 to 5.5
2B/E -- 8 to 17 in	clay loam	slow	0.72 to 1.36 in	5.1 to 6.0
2Bt -- 17 to 36 in	clay	slow	1.51 to 2.83 in	5.1 to 6.5
2BCt -- 36 to 52 in	clay	slow	1.29 to 2.42 in	5.6 to 7.3
2BCd -- 52 to 80 in	clay	slow	1.12 to 2.24 in	6.1 to 8.4

43--43-Lc20-10, 0 to 2 percent slopes

20-42

Extent: 20 to 40 percent of the unit
Landform(s): rises on moraines
Slope gradient: 0 to 4 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
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*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 3 in	loam	moderate	0.31 to 0.35 in	4.5 to 5.5
E -- 3 to 13 in	loam	moderate	1.48 to 2.07 in	4.5 to 5.5
2B/E -- 13 to 18 in	clay loam	slow	0.41 to 0.77 in	5.1 to 6.0
2Bt1 -- 18 to 32 in	clay	slow	1.10 to 2.07 in	5.1 to 6.0
2Bt2 -- 32 to 58 in	clay	slow	2.08 to 3.90 in	5.1 to 6.5
2BCd -- 58 to 80 in	clay	slow	0.88 to 1.76 in	6.1 to 8.4

47--47-Lc07-06-10, 0 to 2 percent slopes

7-47

Extent: 50 to 70 percent of the unit
Landform(s): flats on moraines
Slope gradient: 0 to 2 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 6s
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A -- 2 to 5 in	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1 -- 5 to 14 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 14 to 30 in	gravelly sandy loam	moderate	1.10 to 2.36 in	5.1 to 6.5
2BC -- 30 to 50 in	very gravelly sandy loam	moderately slow	1.20 to 2.81 in	5.1 to 6.5
2Cd -- 50 to 80 in	very gravelly sandy loam	slow	0.60 to 1.50 in	5.1 to 6.5

52--52-Ma19-Lc05, 0 to 2 percent slopes

19-52

Extent: 55 to 75 percent of the unit
Landform(s): depressions on lake plains, drainageways on lake plains
Slope gradient: 0 to 1 percent
Parent material: clayey glaciolacustrine sediments
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: D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oa --	0 to 12 in	muck	moderately rapid	4.13 to 5.31 in	
A --	12 to 17 in	mucky silty clay loam	moderately slow	0.92 to 1.23 in	6.1 to 7.3
Bg --	17 to 24 in	clay	very slow	0.99 to 1.20 in	6.6 to 7.8
Cg --	24 to 80 in	clay	very slow	7.83 to 9.50 in	7.4 to 8.4

53A--53A-Ma19-Lc05, 0 to 6 percent slopes

19-53

Extent: 50 to 70 percent of the unit
Landform(s): lake plains
Slope gradient: 1 to 6 percent
Parent material: clayey glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A -- 2 to 4 in	silty clay loam	moderately slow	0.41 to 0.45 in	5.1 to 6.5
E -- 4 to 10 in	silty clay loam	moderately slow	0.77 to 1.18 in	5.1 to 7.3
B/E -- 10 to 14 in	silty clay	slow	0.56 to 0.87 in	5.6 to 7.3
Bt -- 14 to 30 in	clay	very slow	1.26 to 1.57 in	5.6 to 7.3
BC -- 30 to 38 in	clay	very slow	0.66 to 0.99 in	7.4 to 8.4
C -- 38 to 80 in	clay	very slow	3.34 to 5.01 in	7.4 to 8.4

53A--53A-Ma19-Lc05, 0 to 6 percent slopes

19-8-2

Extent: 20 to 40 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 3 percent
Parent material: clayey glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 3w
Hydric soil: no
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	silty clay loam	moderately slow	0.41 to 0.45 in	5.1 to 6.5
Eg -- 3 to 10 in	silty clay loam	moderately slow	0.92 to 1.42 in	5.1 to 7.3
Btg -- 10 to 28 in	clay	very slow	1.45 to 1.81 in	5.6 to 7.3
Bkg -- 28 to 60 in	clay	very slow	2.55 to 3.83 in	7.4 to 8.4
Cg -- 60 to 80 in	clay	very slow	1.61 to 2.41 in	7.4 to 8.4

53B--53B-Ma19-Lc05, 6 to 18 percent slopes

19-53

Extent: 70 to 80 percent of the unit
Landform(s): lake plains
Slope gradient: 6 to 18 percent
Parent material: clayey glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A -- 2 to 4 in	silty clay loam	moderately slow	0.41 to 0.45 in	5.1 to 6.5
E -- 4 to 10 in	silty clay loam	moderately slow	0.77 to 1.18 in	5.1 to 7.3
B/E -- 10 to 14 in	silty clay	slow	0.56 to 0.87 in	5.6 to 7.3
Bt -- 14 to 30 in	clay	very slow	1.26 to 1.57 in	5.6 to 7.3
BC -- 30 to 38 in	clay	very slow	0.66 to 0.99 in	7.4 to 8.4
C -- 38 to 80 in	clay	very slow	3.34 to 5.01 in	7.4 to 8.4

56A--56A-Lc05-Ma19, 0 to 6 percent slopes

5-56A

Extent: 40 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
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*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	loam	moderate	0.47 to 0.52 in	4.5 to 6.0
Bw -- 3 to 10 in	fine sandy loam	moderate	0.80 to 1.27 in	4.5 to 6.0
Ex -- 10 to 13 in	fine sandy loam	slow	0.38 to 0.60 in	4.5 to 6.5
B/E -- 13 to 26 in	clay loam	moderately slow	1.82 to 2.47 in	5.1 to 6.5
Bt -- 26 to 57 in	clay loam	moderately slow	4.35 to 5.91 in	5.1 to 6.5
BCd -- 57 to 80 in	loam	very slow	1.37 to 2.28 in	6.1 to 8.4

56A--56A-Lc05-Ma19, 0 to 6 percent slopes

5-58

Extent: 20 to 30 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 4 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
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*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loam	moderate	0.47 to 0.52 in	4.5 to 6.0
E -- 4 to 12 in	loam	moderate	0.94 to 1.50 in	4.5 to 6.0
Ex -- 12 to 17 in	sandy loam	slow	0.61 to 0.97 in	4.5 to 6.5
B/E -- 17 to 34 in	clay loam	moderately slow	2.37 to 3.22 in	5.1 to 6.5
Bt -- 34 to 58 in	clay loam	moderately slow	3.36 to 4.56 in	5.1 to 6.5
BCd -- 58 to 80 in	loam	very slow	1.32 to 2.20 in	6.1 to 8.4

56B--56B-Lc05-Ma19, 6 to 18 percent slopes

20-56B

Extent: 50 to 70 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:			*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe	--	0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A	--	1 to 3 in	loam	moderate	0.39 to 0.43 in	4.5 to 6.0
Bw	--	3 to 8 in	loam	moderate	0.61 to 0.97 in	4.5 to 6.0
Ex	--	8 to 12 in	loam	slow	0.47 to 0.75 in	4.5 to 6.5
B/E	--	12 to 17 in	clay loam	moderately slow	0.72 to 0.97 in	5.1 to 6.5
Bt	--	17 to 57 in	clay loam	moderately slow	5.62 to 7.63 in	5.1 to 6.5
BCd	--	57 to 80 in	loam	very slow	1.37 to 2.28 in	6.1 to 8.4

58--58-Lc05-Ma19, 0 to 3 percent slopes

20-58

Extent: 50 to 70 percent of the unit
Landform(s): flats on moraines, rises on moraines
Slope gradient: 0 to 3 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
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*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loam	moderate	0.47 to 0.52 in	4.5 to 6.0
E -- 4 to 12 in	loam	moderate	0.94 to 1.50 in	4.5 to 6.0
Ex -- 12 to 17 in	sandy loam	slow	0.61 to 0.97 in	4.5 to 6.5
B/E -- 17 to 34 in	clay loam	moderately slow	2.37 to 3.22 in	5.1 to 6.5
Bt -- 34 to 58 in	clay loam	moderately slow	3.36 to 4.56 in	5.1 to 6.5
BCd -- 58 to 80 in	loam	very slow	1.32 to 2.20 in	6.1 to 8.4

58--58-Lc05-Ma19, 0 to 3 percent slopes

20-72

Extent: 10 to 35 percent of the unit
Landform(s): swales on moraines
Slope gradient: 0 to 2 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 60 to 80 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 4w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe	0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A	2 to 6 in	loam	moderate	0.87 to 0.95 in	4.5 to 6.0
Eg	6 to 14 in	fine sandy loam	moderate	0.99 to 1.57 in	4.5 to 6.0
B/E	14 to 31 in	clay loam	moderately slow	2.37 to 3.22 in	5.1 to 6.5
Btg	31 to 68 in	clay loam	moderately slow	5.18 to 7.03 in	5.1 to 6.5
BCd	68 to 80 in	loam	very slow	0.71 to 1.18 in	6.1 to 8.4

59A--59A-Lc07-05, 0 to 6 percent slopes

7-59A

Extent: 55 to 75 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: sandy eolian, glaciolacustrine or outwash material and underlying loamy glaciolacustrine sediments
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) .02
Land capability, nonirrigated: 2s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	fine sandy loam	moderately rapid	0.38 to 0.43 in	4.5 to 6.0
Bw1 -- 4 to 12 in	loamy fine sand	rapid	0.31 to 0.87 in	4.5 to 6.5
Bw2 -- 12 to 32 in	fine sand	rapid	0.60 to 2.01 in	5.1 to 6.5
2Bw3 -- 32 to 54 in	silt loam	moderate	3.75 to 4.85 in	5.6 to 6.5
2C -- 54 to 80 in	silt loam	moderate	4.42 to 5.72 in	5.6 to 7.8

64A--64A-Lc20-05, 0 to 6 percent slopes

20-64A

Extent: 45 to 65 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: outwash over loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A -- 1 to 3 in	sandy loam	moderately rapid	0.31 to 0.35 in	4.5 to 6.0
Bw -- 3 to 32 in	loamy coarse sand	rapid	1.44 to 3.16 in	4.5 to 6.0
2E/B -- 32 to 38 in	loam	moderate	1.01 to 1.32 in	5.1 to 6.5
2Bt -- 38 to 46 in	clay loam	moderately slow	1.10 to 1.50 in	5.1 to 6.5
2BCd -- 46 to 80 in	loam	very slow	2.03 to 3.39 in	6.1 to 8.4

64A--64A-Lc20-05, 0 to 6 percent slopes

20-28-1

Extent: 10 to 25 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 6 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) .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*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A -- 2 to 4 in	loamy sand	rapid	0.20 to 0.24 in	4.5 to 6.0
Bw -- 4 to 37 in	loamy sand	rapid	2.01 to 3.68 in	4.5 to 6.0
E and Bt -- 37 to 48 in	sand	rapid	0.55 to 0.99 in	5.1 to 6.0
C -- 48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

64A--64A-Lc20-05, 0 to 6 percent slopes

20-56A

Extent: 15 to 25 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
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*
Oe --	0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A --	1 to 3 in	loam	moderate	0.47 to 0.52 in	4.5 to 6.0
Bw --	3 to 10 in	fine sandy loam	moderate	0.80 to 1.27 in	4.5 to 6.0
Ex --	10 to 13 in	fine sandy loam	slow	0.38 to 0.60 in	4.5 to 6.5
B/E --	13 to 26 in	clay loam	moderately slow	1.82 to 2.47 in	5.1 to 6.5
Bt --	26 to 57 in	clay loam	moderately slow	4.35 to 5.91 in	5.1 to 6.5
BCd --	57 to 80 in	loam	very slow	1.37 to 2.28 in	6.1 to 8.4

64B--64B-Lc20-05, 6 to 18 percent slopes

20-64B

Extent: 55 to 75 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: outwash over loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe --	0 to 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	
A --	1 to 3 in	sandy loam	moderately rapid	0.31 to 0.35 in	4.5 to 6.0
Bw --	3 to 32 in	loamy coarse sand	rapid	1.44 to 3.16 in	4.5 to 6.0
2E/B --	32 to 38 in	loam	moderate	1.01 to 1.32 in	5.1 to 6.5
2Bt --	38 to 46 in	clay loam	moderately slow	1.10 to 1.50 in	5.1 to 6.5
2BCd --	46 to 80 in	loam	very slow	2.03 to 3.39 in	6.1 to 8.4

67A--67A-Lc05-07-20, 0 to 6 percent slopes

5-67-1

Extent: 60 to 80 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: loamy material over glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 7s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe --	0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A --	1 to 3 in	stony loam	moderate	0.28 to 0.35 in	4.5 to 6.0
Bw1 --	3 to 13 in	stony loam	moderate	0.79 to 1.48 in	4.5 to 6.0
2Bw2 --	13 to 32 in	very gravelly coarse sandy loam	moderately rapid	1.13 to 1.70 in	5.1 to 6.5
2C --	32 to 80 in	extremely gravelly loamy coarse sand	rapid	1.44 to 3.84 in	5.1 to 6.5

67B--67B-Lc05-07-10, 6 to 18 percent slopes

5-67-1

Extent: 60 to 80 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 18 percent
Parent material: loamy material over glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 7s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A -- 1 to 3 in	stony loam	moderate	0.28 to 0.35 in	4.5 to 6.0
Bw1 -- 3 to 13 in	stony loam	moderate	0.79 to 1.48 in	4.5 to 6.0
2Bw2 -- 13 to 32 in	very gravelly coarse sandy loam	moderately rapid	1.13 to 1.70 in	5.1 to 6.5
2C -- 32 to 80 in	extremely gravelly loamy coarse sand	rapid	1.44 to 3.84 in	5.1 to 6.5

67C--67C-Lc05-07-10, 18 to 35 percent slopes

5-67-1

Extent: 60 to 80 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 35 percent
Parent material: loamy material over glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe --	0 to 1 in	moderately decomposed plant material	rapid	0.53 to 0.65 in	
A --	1 to 3 in	stony loam	moderate	0.28 to 0.35 in	4.5 to 6.0
Bw1 --	3 to 13 in	stony loam	moderate	0.79 to 1.48 in	4.5 to 6.0
2Bw2 --	13 to 32 in	very gravelly coarse sandy loam	moderately rapid	1.13 to 1.70 in	5.1 to 6.5
2C --	32 to 80 in	extremely gravelly loamy coarse sand	rapid	1.44 to 3.84 in	5.1 to 6.5

72--72-Lc20-05-Ma19, 0 to 2 percent slopes

20-72

Extent: 65 to 85 percent of the unit
Landform(s): flats on moraines
Slope gradient: 0 to 2 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 60 to 80 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .02
Land capability, nonirrigated: 4w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe	0 to 2 in	moderately decomposed plant material	rapid	0.71 to 0.87 in	
A	2 to 6 in	loam	moderate	0.87 to 0.95 in	4.5 to 6.0
Eg	6 to 14 in	fine sandy loam	moderate	0.99 to 1.57 in	4.5 to 6.0
B/E	14 to 31 in	clay loam	moderately slow	2.37 to 3.22 in	5.1 to 6.5
Btg	31 to 68 in	clay loam	moderately slow	5.18 to 7.03 in	5.1 to 6.5
BCd	68 to 80 in	loam	very slow	0.71 to 1.18 in	6.1 to 8.4

73--73-Lc05-20, 0 to 2 percent slopes

5-73

Extent: 70 to 90 percent of the unit
Landform(s): swales on outwash plains
Slope gradient: 0 to 1 percent
Parent material: sandy 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): 2
Wind erodibility index (WEI): 134
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*
Oe -- 0 to 2 in	moderately decomposed plant material	rapid	0.89 to 1.08 in	
A -- 2 to 4 in	loamy sand	rapid	0.12 to 0.22 in	4.5 to 6.0
Bg -- 4 to 24 in	loamy sand	rapid	1.00 to 1.61 in	4.5 to 6.0
Cg1 -- 24 to 48 in	sand	rapid	0.48 to 2.16 in	4.5 to 6.0
Cg2 -- 48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

1003B--Udorthents, loamy (cut and fill land)

Udorthents, loamy, (cut and fill land)

Extent: 100 percent of the unit
Landform(s): fills on moraines, beveled cuts on moraines
Slope gradient: 0 to 6 percent
Parent material: variable soil material
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class: well drained

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

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

1007--Udorthents, shallow (sanitary landfill)

Udorthents, shallow (sanitary landfill)

Extent: 100 percent of the unit
Landform(s): sanitary landfills on moraines
Slope gradient:
Parent material: variable soil material
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class: well drained

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

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

1012A--Lobo-Waskish complex, 0 to 2 percent slopes

Lobo

Extent: 50 to 80 percent of the unit
Landform(s): raised bogs on end moraines, raised bogs on outwash plains, raised bogs on till plains
Slope gradient: 0 to 2 percent
Parent material: 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)
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 38 in	peat	very rapid	21.00 to 24.82 in	
Oe -- 38 to 80 in	mucky peat	rapid	18.78 to 22.95 in	

Waskish

Extent: 20 to 50 percent of the unit
Landform(s): raised bogs on end moraines, raised bogs on outwash plains, raised bogs on till plains
Slope gradient: 0 to 2 percent
Parent material: 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)
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 14 in	peat	very rapid	7.80 to 9.21 in	
Oa -- 14 to 16 in	muck	moderately rapid	0.69 to 0.89 in	
Oi -- 16 to 80 in	mucky peat	very rapid	35.08 to 41.46 in	

1014A--Uskabwanka peat, 0 to 1 percent slopes

Uskabwanka

Extent: 50 to 80 percent of the unit
Landform(s): closed depressions on lake plains, closed depressions 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): 1
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer)
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
Oi	0 to 10 in	peat	very rapid	5.41 to 6.40 in	
Oe1	10 to 40 in	mucky peat	rapid	13.64 to 16.67 in	
2Oe2	40 to 70 in	water	impermeable		
Oe3	70 to 80 in	mucky peat	rapid	4.43 to 5.41 in	

1020A--Bowstring and Fluvaquents, loamy, 0 to 2 percent slopes, frequently flooded

Bowstring, frequently flooded

Extent: 0 to 90 percent of the unit
Landform(s): flats on flood plains
Slope gradient: 0 to 1 percent
Parent material: organic materials mixed with alluvium
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)
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 38 in	muck	moderately rapid	13.37 to 17.19 in	
Cg -- 38 to 47 in	stratified fine sand to loamy fine sand	rapid	0.43 to 0.87 in	5.6 to 7.3
O'a -- 47 to 80 in	muck	moderately rapid	11.57 to 14.88 in	

Fluvaquents, frequently flooded

Extent: 0 to 90 percent of the unit
Landform(s): flats on flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: 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

1021A--Rifle soils, 0 to 1 percent slopes

Rifle

Extent: 0 to 95 percent of the unit
Landform(s): swamps on end moraines, swamps on outwash plains, swamps on till plains
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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer)
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*
Oe1 -- 0 to 12 in	mucky peat	rapid	5.31 to 6.50 in	
Oe2 -- 12 to 42 in	mucky peat	rapid	13.64 to 16.67 in	
Oa -- 42 to 52 in	muck	moderately rapid	3.44 to 4.43 in	
Oe3 -- 52 to 80 in	mucky peat	rapid	12.58 to 15.37 in	

Rifle, depressional

Extent: 0 to 95 percent of the unit
Landform(s): swamps on end moraines, swamps on outwash plains, swamps on till plains
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)
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*
Oe1 -- 0 to 12 in	mucky peat	rapid	5.31 to 6.50 in	
Oe2 -- 12 to 42 in	mucky peat	rapid	13.64 to 16.67 in	
Oa -- 42 to 52 in	muck	moderately rapid	3.44 to 4.43 in	
Oe3 -- 52 to 80 in	mucky peat	rapid	12.58 to 15.37 in	

1022A--Greenwood soils, 0 to 1 percent slopes

Greenwood

Extent: 0 to 95 percent of the unit
Landform(s): bogs on end moraines, bogs on outwash plains, bogs on till plains
Slope gradient: 0 to 1 percent
Parent material: 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)
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 10 in	peat	very rapid	5.41 to 6.40 in	
Oe1 -- 10 to 24 in	mucky peat	rapid	6.38 to 7.80 in	
Oe2 -- 24 to 80 in	mucky peat	rapid	25.16 to 30.75 in	

Greenwood, depressional

Extent: 0 to 95 percent of the unit
Landform(s): bogs on end moraines, bogs on outwash plains, bogs on till plains
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)
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 10 in	peat	very rapid	5.41 to 6.40 in	
Oe1 -- 10 to 24 in	mucky peat	rapid	6.38 to 7.80 in	
Oe2 -- 24 to 80 in	mucky peat	rapid	25.16 to 30.75 in	

1048--Dumps, iron mine

Dumps, iron mine

Extent: 100 percent of the unit
Landform(s): spoil piles on moraines
Slope gradient:
Parent material: variable soil 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: unranked
Hydrologic group:
Potential for frost action:

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

1049--Pits, iron mine

Pits, iron mine

Extent: 100 percent of the unit
Landform(s): openpit mines on moraines
Slope gradient:
Parent material: variable soil 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: unranked
Hydrologic group:
Potential for frost action:

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

1050--Tailings basin

Tailings basin

Extent: 100 percent of the unit
Landform(s): spoil piles on moraines
Slope gradient:
Parent material: metal ore extraction mine spoil
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*

A1B--Graycalm-Grayling complex, 1 to 8 percent slopes

Graycalm

Extent: 30 to 60 percent of the unit
Landform(s): outwash plains
Slope gradient: 1 to 8 percent
Parent material: sandy 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 2 in	loamy sand	rapid	0.20 to 0.24 in	4.5 to 6.0
Bw -- 2 to 37 in	loamy sand	rapid	2.10 to 3.85 in	4.5 to 6.0
E and Bt -- 37 to 48 in	sand	rapid	0.55 to 0.99 in	5.1 to 6.0
C -- 48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

Grayling

Extent: 30 to 50 percent of the unit
Landform(s): outwash plains
Slope gradient: 1 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) .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 3 in	loamy sand	rapid	0.25 to 0.38 in	4.5 to 6.0
Bw -- 3 to 22 in	coarse sand	very rapid	0.57 to 1.70 in	4.5 to 6.0
C -- 22 to 80 in	coarse sand	very rapid	1.16 to 4.05 in	5.1 to 6.5

A2D--Graycalm-Grayling-Leander complex, pitted, 0 to 18 percent slopes

Graycalm

Extent: 25 to 45 percent of the unit
Landform(s): pitted outwash plains
Slope gradient: 8 to 18 percent
Parent material: sandy 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: 4e
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 6.0
Bw -- 2 to 37 in	loamy sand	rapid	2.10 to 3.85 in	4.5 to 6.0
E and Bt -- 37 to 48 in	sand	rapid	0.55 to 0.99 in	5.1 to 6.0
C -- 48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

Grayling

Extent: 25 to 45 percent of the unit
Landform(s): pitted outwash plains
Slope gradient: 8 to 18 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) .10
Land capability, nonirrigated: 4e
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 0.38 in	4.5 to 6.0
Bw -- 3 to 22 in	coarse sand	very rapid	0.57 to 1.70 in	4.5 to 6.0
C -- 22 to 80 in	coarse sand	very rapid	1.16 to 4.05 in	5.1 to 6.5

A2D--Graycalm-Grayling-Leander complex, pitted, 0 to 18 percent slopes

Leander, depressional

Extent: 10 to 20 percent of the unit
Landform(s): depressions on pitted outwash plains
Slope gradient: 0 to 3 percent
Parent material: colluvium and underlying 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 2s
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	sandy loam	moderately rapid	0.26 to 0.30 in	4.5 to 6.5
BA --	2 to 8 in	sandy loam	moderately rapid	0.65 to 0.83 in	4.5 to 6.5
Bt --	8 to 44 in	coarse sandy loam	moderately rapid	3.98 to 5.80 in	5.1 to 6.5
C --	44 to 80 in	sand	rapid	1.07 to 3.22 in	5.6 to 7.3

A2E--Graycalm-Grayling-Leander complex, pitted, 0 to 45 percent slopes

Graycalm

Extent: 25 to 45 percent of the unit
Landform(s): pitted outwash plains
Slope gradient: 18 to 45 percent
Parent material: sandy 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: 6e
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 6.0
Bw -- 2 to 37 in	loamy sand	rapid	2.10 to 3.85 in	4.5 to 6.0
E and Bt -- 37 to 48 in	sand	rapid	0.55 to 0.99 in	5.1 to 6.0
C -- 48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

Grayling

Extent: 25 to 45 percent of the unit
Landform(s): pitted outwash plains
Slope gradient: 18 to 45 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) .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	0.25 to 0.38 in	4.5 to 6.0
Bw -- 3 to 22 in	coarse sand	very rapid	0.57 to 1.70 in	4.5 to 6.0
C -- 22 to 80 in	coarse sand	very rapid	1.16 to 4.05 in	5.1 to 6.5

A2E--Graycalm-Grayling-Leander complex, pitted, 0 to 45 percent slopes

Leander, depressional

Extent: 10 to 20 percent of the unit
Landform(s): depressions on pitted outwash plains
Slope gradient: 0 to 3 percent
Parent material: colluvium and underlying 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 2s
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	sandy loam	moderately rapid	0.26 to 0.30 in	4.5 to 6.5
BA -- 2 to 8 in	sandy loam	moderately rapid	0.65 to 0.83 in	4.5 to 6.5
Bt -- 8 to 44 in	coarse sandy loam	moderately rapid	3.98 to 5.80 in	5.1 to 6.5
C -- 44 to 80 in	sand	rapid	1.07 to 3.22 in	5.6 to 7.3

A3B--Wurtsmith-Friendship complex, 1 to 4 percent slopes

Wurtsmith

Extent: 30 to 60 percent of the unit
Landform(s): 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

Friendship

Extent: 30 to 55 percent of the unit
Landform(s): 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) .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 3 in	loamy sand	rapid	0.31 to 0.38 in	4.5 to 6.0
Bw1 -- 3 to 24 in	sand	rapid	0.63 to 2.30 in	4.5 to 6.0
Bw2 -- 24 to 40 in	sand	rapid	0.32 to 1.13 in	4.5 to 6.0
C -- 40 to 80 in	sand	rapid	0.80 to 2.78 in	5.1 to 6.5

A4A--Meehan loamy sand, 0 to 2 percent slopes

Meehan

Extent: 70 to 90 percent of the unit
Landform(s): flats on outwash plains, rises on outwash plains
Slope gradient: 0 to 2 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

A5A--Roscommon muck, depressional, 0 to 1 percent slopes

Roscommon, depressional

Extent: 70 to 85 percent of the unit
Landform(s): depressions on outwash plains, drainageways on outwash plains
Slope gradient: 0 to 1 percent
Parent material: sandy 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 3 in	muck	moderately rapid	1.10 to 1.42 in	4.5 to 6.0
Eg --	3 to 8 in	sand	rapid	0.14 to 0.52 in	4.5 to 6.0
Bg --	8 to 33 in	sand	rapid	0.50 to 2.52 in	4.5 to 6.0
Cg --	33 to 80 in	sand	rapid	0.94 to 3.28 in	5.1 to 6.5

A6A--Keewatin loam, 0 to 3 percent slopes, stony

Keewatin, stony

Extent: 75 to 90 percent of the unit
Landform(s): flats on drumlins, rises on till plains
Slope gradient: 0 to 3 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
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 4 in	loam	moderate	0.79 to 0.87 in	4.5 to 6.0
E -- 4 to 12 in	loam	moderate	0.94 to 1.50 in	4.5 to 6.0
Ex -- 12 to 17 in	sandy loam	slow	0.61 to 0.97 in	4.5 to 6.5
B/E -- 17 to 34 in	clay loam, sandy loam	moderately slow	2.37 to 3.22 in	5.1 to 6.5
Bt -- 34 to 58 in	clay loam	moderately slow	3.36 to 4.56 in	5.1 to 6.5
BCd -- 58 to 80 in	loam	very slow	1.32 to 2.20 in	6.1 to 8.4

A7B--Keewatin-Nashwauk complex, 0 to 8 percent slopes, stony

Keewatin, stony

Extent: 35 to 55 percent of the unit
Landform(s): drumlins, end moraines, till plains
Slope gradient: 0 to 3 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
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 4 in	loam	moderate	0.79 to 0.87 in	4.5 to 6.0
E -- 4 to 12 in	loam	moderate	0.94 to 1.50 in	4.5 to 6.0
Ex -- 12 to 17 in	sandy loam	slow	0.61 to 0.97 in	4.5 to 6.5
B/E -- 17 to 34 in	clay loam	moderately slow	2.37 to 3.22 in	5.1 to 6.5
Bt -- 34 to 58 in	clay loam	moderately slow	3.36 to 4.56 in	5.1 to 6.5
BCd -- 58 to 80 in	loam	very slow	1.32 to 2.20 in	6.1 to 8.4

Nashwauk, stony

Extent: 25 to 45 percent of the unit
Landform(s): drumlins, end moraines, till plains
Slope gradient: 3 to 8 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .37
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	loam	moderate	0.63 to 0.69 in	4.5 to 6.0
Bw -- 3 to 10 in	fine sandy loam	moderate	0.80 to 1.27 in	4.5 to 6.0
Ex -- 10 to 13 in	fine sandy loam	slow	0.38 to 0.60 in	4.5 to 6.5
B/E -- 13 to 26 in	clay loam	moderately slow	1.82 to 2.47 in	5.1 to 6.5
Bt -- 26 to 57 in	clay loam	moderately slow	4.35 to 5.91 in	5.1 to 6.5
BCd -- 57 to 80 in	loam	very slow	1.37 to 2.28 in	6.1 to 8.4

A7B--Keewatin-Nashwauk complex, 0 to 8 percent slopes, stony

A8D--Greatscott-Nashwauk-Balkan, depressional, complex, 0 to 18 percent slopes, stony

Greatscott, stony

Extent: 50 to 65 percent of the unit
Landform(s): end moraines
Slope gradient: 8 to 18 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained
Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 2 in	loam	moderate	0.39 to 0.43 in	4.5 to 6.0
Bw --	2 to 8 in	loam	moderate	0.71 to 1.12 in	4.5 to 6.0
Ex --	8 to 12 in	loam	slow	0.47 to 0.75 in	4.5 to 6.5
B/E --	12 to 17 in	clay loam	moderately slow	0.72 to 0.97 in	5.1 to 6.5
Bt --	17 to 57 in	clay loam	moderately slow	5.62 to 7.63 in	5.1 to 6.5
BCd --	57 to 80 in	loam	very slow	1.37 to 2.28 in	6.1 to 8.4

A8D--Greatscott-Nashwauk-Balkan, depressional, complex, 0 to 18 percent slopes, stony

Nashwauk, stony

Extent: 15 to 25 percent of the unit
Landform(s): end moraines
Slope gradient: 3 to 8 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained
Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .37
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	loam	moderate	0.63 to 0.69 in	4.5 to 6.0
Bw --	3 to 10 in	fine sandy loam	moderate	0.80 to 1.27 in	4.5 to 6.0
Ex --	10 to 13 in	fine sandy loam	slow	0.38 to 0.60 in	4.5 to 6.5
B/E --	13 to 26 in	clay loam	moderately slow	1.82 to 2.47 in	5.1 to 6.5
Bt --	26 to 57 in	clay loam	moderately slow	4.35 to 5.91 in	5.1 to 6.5
BCd --	57 to 80 in	loam	very slow	1.37 to 2.28 in	6.1 to 8.4

A8D--Greatscott-Nashwauk-Balkan, depressional, complex, 0 to 18 percent slopes, stony

Balkan, depressional, stony

Extent: 10 to 20 percent of the unit
Landform(s): depressions on end moraines
Slope gradient: 0 to 1 percent
Parent material: colluvium and loamy dense till
Restrictive feature(s): densic material at 60 to 80 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 6 in	loam	moderate	1.18 to 1.30 in	4.5 to 6.0
Eg --	6 to 22 in	loam	moderate	2.42 to 3.07 in	4.5 to 6.0
E/B --	22 to 34 in	clay loam	moderately slow	1.65 to 2.24 in	5.1 to 6.5
Btg --	34 to 50 in	silty clay loam	moderately slow	2.26 to 3.07 in	5.1 to 6.5
BC --	50 to 68 in	loam	moderate	2.54 to 3.44 in	5.1 to 6.5
BCd --	68 to 80 in	loam	very slow	0.71 to 1.18 in	6.1 to 8.4

A9D--Greatscott loam, 8 to 18 percent slopes, stony

Greatscott, stony

Extent: 75 to 90 percent of the unit
Landform(s): drumlins, end moraines
Slope gradient: 8 to 18 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	loam	moderate	0.39 to 0.43 in	4.5 to 6.0
Bw -- 2 to 8 in	loam	moderate	0.71 to 1.12 in	4.5 to 6.0
Ex -- 8 to 12 in	loam	slow	0.47 to 0.75 in	4.5 to 6.5
B/E -- 12 to 17 in	clay loam	moderately slow	0.72 to 0.97 in	5.1 to 6.5
Bt -- 17 to 57 in	clay loam	moderately slow	5.62 to 7.63 in	5.1 to 6.5
BCd -- 57 to 80 in	loam	very slow	1.37 to 2.28 in	6.1 to 8.4

A10E--Greatscott-Greatscott, sandy substratum complex, 18 to 45 percent slopes, stony

Greatscott, stony

Extent: 45 to 65 percent of the unit
Landform(s): end moraines
Slope gradient: 18 to 45 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
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 --	0 to 2 in	loam	moderate	0.39 to 0.43 in	4.5 to 6.0
Bw --	2 to 8 in	loam	moderate	0.71 to 1.12 in	4.5 to 6.0
Ex --	8 to 12 in	loam	slow	0.47 to 0.75 in	4.5 to 6.5
B/E --	12 to 17 in	clay loam	moderately slow	0.72 to 0.97 in	5.1 to 6.5
Bt --	17 to 57 in	clay loam	moderately slow	5.62 to 7.63 in	5.1 to 6.5
BCd --	57 to 80 in	loam	very slow	1.37 to 2.28 in	6.1 to 8.4

A10E--Greatscott-Greatscott, sandy substratum complex, 18 to 45 percent slopes, stony

Greatscott, sandy substratum, stony

Extent: 20 to 35 percent of the unit
Landform(s): end moraines
Slope gradient: 18 to 45 percent
Parent material: loamy dense till over outwash
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
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	0 to 2 in	loam	moderate	0.39 to 0.43 in	4.5 to 6.0
Bw	2 to 11 in	loam	moderate	1.09 to 1.72 in	4.5 to 6.0
Ex	11 to 16 in	loam	slow	0.61 to 0.97 in	4.5 to 6.5
B/E	16 to 25 in	clay loam	moderately slow	1.27 to 1.72 in	5.1 to 6.5
Bt	25 to 50 in	clay loam	moderately slow	3.47 to 4.71 in	5.1 to 6.5
BCd	50 to 62 in	loam	very slow	0.71 to 1.18 in	6.1 to 8.4
2C	62 to 80 in	gravelly coarse sand	very rapid	0.36 to 1.09 in	5.6 to 7.8

A11A--Keewatin-Balkan complex, 0 to 3 percent slopes, stony

Keewatin, stony

Extent: 35 to 50 percent of the unit
Landform(s): rises on till plains
Slope gradient: 1 to 3 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
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 4 in	loam	moderate	0.79 to 0.87 in	4.5 to 6.0
E -- 4 to 12 in	loam	moderate	0.94 to 1.50 in	4.5 to 6.0
Ex -- 12 to 17 in	sandy loam	slow	0.61 to 0.97 in	4.5 to 6.5
B/E -- 17 to 34 in	clay loam, sandy loam	moderately slow	2.37 to 3.22 in	5.1 to 6.5
Bt -- 34 to 58 in	clay loam	moderately slow	3.36 to 4.56 in	5.1 to 6.5
BCd -- 58 to 80 in	loam	very slow	1.32 to 2.20 in	6.1 to 8.4

Balkan, stony

Extent: 35 to 50 percent of the unit
Landform(s): flats on till plains
Slope gradient: 0 to 2 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 60 to 80 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated: 4w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	loam	moderate	1.18 to 1.30 in	4.5 to 6.0
Eg -- 6 to 14 in	fine sandy loam	moderate	0.99 to 1.57 in	4.5 to 6.0
B/E -- 14 to 31 in	clay loam	moderately slow	2.37 to 3.22 in	5.1 to 6.5
Btg -- 31 to 68 in	clay loam	moderately slow	5.18 to 7.03 in	5.1 to 6.5
BCd -- 68 to 80 in	loam	very slow	0.71 to 1.18 in	6.1 to 8.4

A11A--Keewatin-Balkan complex, 0 to 3 percent slopes, stony

A12B--Daybrook sandy loam, 1 to 8 percent slopes

Daybrook

Extent: 80 to 95 percent of the unit
Landform(s): end moraines, till plains
Slope gradient: 1 to 8 percent
Parent material: outwash over loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
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 -- 0 to 3 in	sandy loam	moderately rapid	0.41 to 0.47 in	4.5 to 6.0
Bw -- 3 to 32 in	loamy coarse sand	rapid	1.44 to 3.16 in	4.5 to 6.0
2E/B -- 32 to 38 in	loam	moderate	1.01 to 1.32 in	5.1 to 6.5
2Bt -- 38 to 46 in	clay loam	moderately slow	1.10 to 1.50 in	5.1 to 6.5
2BCd -- 46 to 80 in	loam	very slow	2.03 to 3.39 in	6.1 to 8.4

A13A--Shenango sandy loam, 0 to 2 percent slopes

Shenango

Extent: 75 to 90 percent of the unit
Landform(s): flats on end moraines, rises on till plains
Slope gradient: 0 to 3 percent
Parent material: outwash over loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .17
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	sandy loam	moderately rapid	0.26 to 0.30 in	4.5 to 6.0
E -- 2 to 8 in	loamy sand	rapid	0.53 to 0.94 in	4.5 to 6.0
Bw -- 8 to 22 in	loamy coarse sand	rapid	0.57 to 1.56 in	5.1 to 6.5
2E -- 22 to 28 in	loam	moderate	0.71 to 1.06 in	5.1 to 6.5
2E/B -- 28 to 34 in	loam	moderate	0.83 to 1.12 in	5.1 to 6.5
2Bt -- 34 to 48 in	clay loam	moderately slow	1.98 to 2.69 in	5.1 to 6.5
2BCd -- 48 to 80 in	loam	very slow	1.91 to 3.19 in	6.1 to 8.4

A14A--Balkan, depressional-Balkan complex, 0 to 2 percent slopes, stony

Balkan, depressional, stony

Extent: 50 to 70 percent of the unit
Landform(s): drainageways on till plains, depressions on till plains
Slope gradient: 0 to 1 percent
Parent material: colluvium and loamy dense till
Restrictive feature(s): densic material at 60 to 80 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained
Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	loam	moderate	1.18 to 1.30 in	4.5 to 6.0
Eg -- 6 to 22 in	loam	moderate	2.42 to 3.07 in	4.5 to 6.0
E/B -- 22 to 34 in	clay loam	moderately slow	1.65 to 2.24 in	5.1 to 6.5
Btg -- 34 to 50 in	silty clay loam	moderately slow	2.26 to 3.07 in	5.1 to 6.5
BC -- 50 to 68 in	loam	moderate	2.54 to 3.44 in	5.1 to 6.5
BCd -- 68 to 80 in	loam	very slow	0.71 to 1.18 in	6.1 to 8.4

Balkan, stony

Extent: 20 to 40 percent of the unit
Landform(s): flats on till plains
Slope gradient: 0 to 1 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 60 to 80 inches
Flooding: none
Ponding: none
Drainage class: poorly drained
Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated: 4w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	loam	moderate	1.18 to 1.30 in	4.5 to 6.0
Eg -- 6 to 14 in	fine sandy loam	moderate	0.99 to 1.57 in	4.5 to 6.0
B/E -- 14 to 31 in	clay loam	moderately slow	2.37 to 3.22 in	5.1 to 6.5
Btg -- 31 to 68 in	clay loam	moderately slow	5.18 to 7.03 in	5.1 to 6.5
BCd -- 68 to 80 in	loam	very slow	0.71 to 1.18 in	6.1 to 8.4

A14A--Balkan, depressional-Balkan complex, 0 to 2 percent slopes, stony

A21B--Graycalm-Keenan complex, 1 to 8 percent slopes

Graycalm

Extent: 30 to 60 percent of the unit
Landform(s): outwash plains
Slope gradient: 1 to 8 percent
Parent material: sandy 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 2 in	loamy sand	rapid	0.20 to 0.24 in	4.5 to 6.0
Bw -- 2 to 37 in	loamy sand	rapid	2.10 to 3.85 in	4.5 to 6.0
E and Bt -- 37 to 48 in	sand	rapid	0.55 to 0.99 in	5.1 to 6.0
C -- 48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

A21B--Graycalm-Keenan complex, 1 to 8 percent slopes

Keenan

Extent: 15 to 40 percent of the unit
Landform(s): outwash plains
Slope gradient: 1 to 6 percent
Parent material: sandy eolian, glaciolacustrine or outwash material and underlying loamy glaciolacustrine sediments
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: 2s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

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	4.5 to 6.0
Bw1 -- 4 to 12 in	loamy fine sand	rapid	0.31 to 0.87 in	4.5 to 6.5
Bw2 -- 12 to 32 in	fine sand	rapid	0.60 to 2.01 in	5.1 to 6.5
2Bw3 -- 32 to 54 in	stratified loamy fine sand to loamy very fine sand to fine sandy loam to very fine sandy loam to silt loam	moderately rapid	3.75 to 4.85 in	5.1 to 6.5
2C -- 54 to 80 in	stratified loamy fine sand to loamy very fine sand to fine sandy loam to very fine sandy loam to silt loam	moderately rapid	4.42 to 5.72 in	5.6 to 7.8

A23D--Nashwauk, stony-Keewatin, stony-Rock outcrop complex, 2 to 25 percent slopes

Nashwauk, stony

Extent: 30 to 50 percent of the unit
Landform(s): drumlins
Slope gradient: 4 to 10 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained
Soil loss tolerance (T factor): 3
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/D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 3 in	loam	moderate	0.63 to 0.69 in	4.5 to 6.0
Bw --	3 to 10 in	fine sandy loam	moderate	0.80 to 1.27 in	4.5 to 6.0
Ex --	10 to 13 in	fine sandy loam	slow	0.38 to 0.60 in	4.5 to 6.5
B/E --	13 to 26 in	clay loam	moderately slow	1.82 to 2.47 in	5.1 to 6.5
Bt --	26 to 57 in	clay loam	moderately slow	4.35 to 5.91 in	5.1 to 6.5
BCd --	57 to 80 in	loam	very slow	1.37 to 2.28 in	6.1 to 8.4

A23D--Nashwauk, stony-Keewatin, stony-Rock outcrop complex, 2 to 25 percent slopes

Keewatin, stony

Extent: 10 to 30 percent of the unit
Landform(s): drumlins
Slope gradient: 2 to 5 percent
Parent material: loamy dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
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 4 in	loam	moderate	0.79 to 0.87 in	4.5 to 6.0
E -- 4 to 12 in	loam	moderate	0.94 to 1.50 in	4.5 to 6.0
Ex -- 12 to 17 in	sandy loam	slow	0.61 to 0.97 in	4.5 to 6.5
B/E -- 17 to 34 in	clay loam, sandy loam	moderately slow	2.37 to 3.22 in	5.1 to 6.5
Bt -- 34 to 58 in	clay loam	moderately slow	3.36 to 4.56 in	5.1 to 6.5
BCd -- 58 to 80 in	loam	very slow	1.32 to 2.20 in	6.1 to 8.4

Rock outcrop

Extent: 5 to 20 percent of the unit
Landform(s): drumlins
Slope gradient: 5 to 25 percent
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: s
Hydric soil: unranked
Hydrologic group:
Potential for frost action:

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

A24A--Merwin peat, Greatscott catena, 0 to 1 percent slopes

Merwin

Extent: 60 to 90 percent of the unit
Landform(s): bogs on end moraines, bogs on till plains
Slope gradient: 0 to 1 percent
Parent material: organic material over colluvium and loamy dense till
Restrictive feature(s): densic material at 60 to 80 inches
Flooding: none
Ponding: none
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
Oi --	0 to 6 in	peat	very rapid	3.25 to 3.84 in	
Oe --	6 to 46 in	mucky peat	rapid	18.07 to 22.09 in	
BCg --	46 to 70 in	loam	moderate	3.36 to 4.56 in	5.1 to 6.5
BCd --	68 to 80 in	loam	very slow	0.71 to 1.18 in	6.1 to 8.4

A26A--Tacoosh mucky peat, Greatscott catena, 0 to 1 percent slopes

Tacoosh

Extent: 60 to 90 percent of the unit
Landform(s): swamps on end moraines, swamps on till plains
Slope gradient: 0 to 1 percent
Parent material: organic material over colluvium and loamy dense till
Restrictive feature(s): densic material at 60 to 80 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
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
Oe1 --	0 to 7 in	mucky peat	rapid	3.19 to 3.90 in	
Oe2 --	7 to 30 in	mucky peat	rapid	10.28 to 12.56 in	
Oa --	30 to 34 in	muck	moderately rapid	1.38 to 1.77 in	
BCg --	34 to 68 in	loam	moderate	4.80 to 6.51 in	5.1 to 6.5
BCd --	68 to 80 in	loam	very slow	0.71 to 1.18 in	6.1 to 8.4

A27A--Cathro muck, depressional, Greatscott catena, 0 to 1 percent slopes

Cathro, depressional

Extent: 60 to 90 percent of the unit
Landform(s): swamps on end moraines, swamps on till plains
Slope gradient: 0 to 1 percent
Parent material: organic material over colluvium and loamy dense till
Restrictive feature(s): densic material at 60 to 80 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: B/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	
A --	30 to 34 in	mucky silt loam	moderate	0.87 to 1.02 in	5.1 to 6.5
BCg --	34 to 68 in	loam	moderate	4.80 to 6.51 in	5.1 to 6.5
BCd --	68 to 80 in	loam	very slow	0.71 to 1.18 in	6.1 to 8.4

A28A--Rifle soils, Greatscott catena, 0 to 1 percent slopes

Rifle

Extent: 0 to 95 percent of the unit
Landform(s): swamps on end moraines, swamps on till plains
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): 5
Wind erodibility index (WEI): 56
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*
Oe1 -- 0 to 12 in	mucky peat	rapid	5.31 to 6.50 in	
Oe2 -- 12 to 42 in	mucky peat	rapid	13.64 to 16.67 in	
Oa -- 42 to 52 in	muck	moderately rapid	3.44 to 4.43 in	
Oe3 -- 52 to 80 in	mucky peat	rapid	12.58 to 15.37 in	

Rifle, depressional

Extent: 0 to 95 percent of the unit
Landform(s): swamps on end moraines, swamps on till plains
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: 7w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe1 -- 0 to 12 in	mucky peat	rapid	5.31 to 6.50 in	
Oe2 -- 12 to 42 in	mucky peat	rapid	13.64 to 16.67 in	
Oa -- 42 to 52 in	muck	moderately rapid	3.44 to 4.43 in	
Oe3 -- 52 to 80 in	mucky peat	rapid	12.58 to 15.37 in	

A29A--Greenwood soils, Greatscott catena, 0 to 1 percent slopes

Greenwood

Extent: 0 to 95 percent of the unit
Landform(s): bogs on end moraines, bogs on till plains
Slope gradient: 0 to 1 percent
Parent material: 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 10 in	peat	very rapid	5.41 to 6.40 in	
Oe1 -- 10 to 24 in	mucky peat	rapid	6.38 to 7.80 in	
Oe2 -- 24 to 80 in	mucky peat	rapid	25.16 to 30.75 in	

Greenwood, depressional

Extent: 0 to 95 percent of the unit
Landform(s): bogs on end moraines, bogs on till plains
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: 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 10 in	peat	very rapid	5.41 to 6.40 in	
Oe1 -- 10 to 24 in	mucky peat	rapid	6.38 to 7.80 in	
Oe2 -- 24 to 80 in	mucky peat	rapid	25.16 to 30.75 in	

B1C--Taylor silty clay loam, 4 to 12 percent slopes

Taylor

Extent: 75 to 90 percent of the unit
Landform(s): lake plains
Slope gradient: 4 to 12 percent
Parent material: clayey 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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .32
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silty clay loam	moderately slow	0.83 to 0.91 in	5.1 to 6.5
E -- 4 to 10 in	silty clay loam	moderately slow	0.77 to 1.18 in	5.1 to 7.3
B/E -- 10 to 14 in	silty clay	slow	0.56 to 0.87 in	5.6 to 7.3
Bt -- 14 to 30 in	clay	very slow	1.26 to 1.57 in	5.6 to 7.3
BC -- 30 to 38 in	clay	very slow	0.66 to 0.99 in	7.4 to 8.4
C -- 38 to 80 in	clay	very slow	3.34 to 5.01 in	7.4 to 8.4

B1D--Taylor silty clay loam, 12 to 25 percent slopes

Taylor

Extent: 75 to 90 percent of the unit
Landform(s): lake plains
Slope gradient: 12 to 25 percent
Parent material: clayey 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): 6
Wind erodibility index (WEI): 48
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 -- 0 to 4 in	silty clay loam	moderately slow	0.83 to 0.91 in	5.1 to 6.5
E -- 4 to 10 in	silty clay loam	moderately slow	0.77 to 1.18 in	5.1 to 7.3
B/E -- 10 to 14 in	silty clay	slow	0.56 to 0.87 in	5.6 to 7.3
Bt -- 14 to 30 in	clay	very slow	1.26 to 1.57 in	5.6 to 7.3
BC -- 30 to 38 in	clay	very slow	0.66 to 0.99 in	7.4 to 8.4
C -- 38 to 80 in	clay	very slow	3.34 to 5.01 in	7.4 to 8.4

B2A--Indus-Woodslake, depressional, complex, 0 to 1 percent slopes

Indus

Extent: 55 to 75 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 0 to 1 percent
Parent material: clayey 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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated: 4w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silty clay loam	moderately slow	0.83 to 0.91 in	5.1 to 6.5
Eg -- 4 to 7 in	clay	slow	0.31 to 0.60 in	5.1 to 7.3
Btg -- 7 to 34 in	clay	very slow	2.14 to 2.68 in	5.6 to 7.3
Bkg -- 34 to 50 in	clay	very slow	1.29 to 1.94 in	7.4 to 8.4
Cg -- 50 to 80 in	clay	very slow	2.39 to 3.59 in	7.4 to 8.4

Woodslake, depressional

Extent: 20 to 40 percent of the unit
Landform(s): depressions on lake plains, swales on lake plains
Slope gradient: 0 to 1 percent
Parent material: clayey 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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 7 in	silty clay loam	moderately slow	1.49 to 1.63 in	5.6 to 6.5
Bg -- 7 to 18 in	clay	very slow	0.88 to 1.21 in	5.6 to 7.3
Cg1 -- 18 to 36 in	clay	very slow	1.42 to 1.77 in	6.6 to 7.8
Cg2 -- 36 to 80 in	clay	very slow	3.53 to 5.29 in	7.4 to 8.4

B3B--Alango-Indus complex, 1 to 4 percent slopes

Alango

Extent: 50 to 75 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 1 to 4 percent
Parent material: clayey 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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated: 3w
Hydric soil: no
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	silty clay loam	moderately slow	0.41 to 0.45 in	5.1 to 6.5
Eg -- 2 to 10 in	silty clay loam	moderately slow	1.02 to 1.57 in	5.1 to 7.3
Btg -- 10 to 28 in	clay	very slow	1.45 to 1.81 in	5.6 to 7.3
Bkg -- 28 to 60 in	clay	very slow	2.55 to 3.83 in	7.4 to 8.4
Cg -- 60 to 80 in	clay	very slow	1.61 to 2.41 in	7.4 to 8.4

Indus

Extent: 15 to 35 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 1 to 2 percent
Parent material: clayey 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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated: 4w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silty clay loam	moderately slow	0.83 to 0.91 in	5.1 to 6.5
Eg -- 4 to 7 in	clay	slow	0.31 to 0.60 in	5.1 to 7.3
Btg -- 7 to 34 in	clay	very slow	2.14 to 2.68 in	5.6 to 7.3
Bkg -- 34 to 50 in	clay	very slow	1.29 to 1.94 in	7.4 to 8.4
Cg -- 50 to 80 in	clay	very slow	2.39 to 3.59 in	7.4 to 8.4

B4A--Indus-Dora, depressional, complex, 0 to 2 percent slopes

Indus

Extent: 55 to 80 percent of the unit
Landform(s): flats on lake plains, rises on lake plains
Slope gradient: 0 to 2 percent
Parent material: clayey 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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated: 4w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silty clay loam	moderately slow	0.83 to 0.91 in	5.1 to 6.5
Eg -- 4 to 7 in	clay	slow	0.31 to 0.60 in	5.1 to 7.3
Btg -- 7 to 34 in	clay	very slow	2.14 to 2.68 in	5.6 to 7.3
Bkg -- 34 to 50 in	clay	very slow	1.29 to 1.94 in	7.4 to 8.4
Cg -- 50 to 80 in	clay	very slow	2.39 to 3.59 in	7.4 to 8.4

Dora, depressional

Extent: 20 to 40 percent of the unit
Landform(s): drainageways on lake plains, depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material over clayey 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)
Land capability, nonirrigated: 7w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 6 in	mucky peat	rapid	2.66 to 3.25 in	
Oa -- 6 to 22 in	muck	moderately rapid	6.46 to 7.26 in	
A -- 22 to 26 in	mucky silty clay loam	slow	0.59 to 1.18 in	6.1 to 7.3
Cg1 -- 26 to 36 in	clay	very slow	0.79 to 0.98 in	6.6 to 7.8
Cg2 -- 36 to 80 in	clay	very slow	3.53 to 5.29 in	7.4 to 8.4

B4A--Indus-Dora, depressional, complex, 0 to 2 percent slopes

B5B--Alango-Taylor-Woodslake, depressional, complex, 0 to 6 percent slopes

Alango

Extent: 40 to 60 percent of the unit
Landform(s): lake plains
Slope gradient: 1 to 4 percent
Parent material: clayey 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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated: 3w
Hydric soil: no
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	silty clay loam	moderately slow	0.41 to 0.45 in	5.1 to 6.5
Eg -- 2 to 10 in	silty clay loam	moderately slow	1.02 to 1.57 in	5.1 to 7.3
Btg -- 10 to 28 in	clay	very slow	1.45 to 1.81 in	5.6 to 7.3
Bkg -- 28 to 60 in	clay	very slow	2.55 to 3.83 in	7.4 to 8.4
Cg -- 60 to 80 in	clay	very slow	1.61 to 2.41 in	7.4 to 8.4

Woodslake, depressional

Extent: 10 to 25 percent of the unit
Landform(s): depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: clayey 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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 7 in	silty clay loam	moderately slow	1.49 to 1.63 in	5.6 to 6.5
Bg -- 7 to 18 in	clay	very slow	0.88 to 1.21 in	5.6 to 7.3
Cg1 -- 18 to 36 in	clay	very slow	1.42 to 1.77 in	6.6 to 7.8
Cg2 -- 36 to 80 in	clay	very slow	3.53 to 5.29 in	7.4 to 8.4

B5B--Alango-Taylor-Woodslake, depressional, complex, 0 to 6 percent slopes

Taylor

Extent: 15 to 25 percent of the unit
Landform(s): lake plains
Slope gradient: 2 to 6 percent
Parent material: clayey 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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .32
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silty clay loam	moderately slow	0.83 to 0.91 in	5.1 to 6.5
E -- 4 to 10 in	silty clay loam	moderately slow	0.77 to 1.18 in	5.1 to 7.3
B/E -- 10 to 14 in	silty clay	slow	0.56 to 0.87 in	5.6 to 7.3
Bt -- 14 to 30 in	clay	very slow	1.26 to 1.57 in	5.6 to 7.3
BC -- 30 to 38 in	clay	very slow	0.66 to 0.99 in	7.4 to 8.4
C -- 38 to 80 in	clay	very slow	3.34 to 5.01 in	7.4 to 8.4

B6B--Morcom-Thistledew complex, 0 to 6 percent slopes

Morcom

Extent: 40 to 60 percent of the unit
Landform(s): lake plains
Slope gradient: 0 to 4 percent
Parent material: sandy outwash over clayey glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 3w
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	fine sandy loam	moderately rapid	0.50 to 0.57 in	5.1 to 6.5
E -- 3 to 8 in	sandy loam	moderately rapid	0.47 to 0.76 in	5.1 to 6.5
Bw -- 8 to 19 in	loamy sand	rapid	0.88 to 1.21 in	5.1 to 6.5
2B/E -- 19 to 24 in	sandy clay loam	moderate	0.72 to 0.97 in	5.6 to 7.3
3Bt -- 24 to 28 in	clay	very slow	0.31 to 0.47 in	5.6 to 7.3
3Bk -- 28 to 44 in	clay	very slow	1.29 to 1.94 in	7.4 to 8.4
3C -- 44 to 80 in	clay	very slow	2.87 to 4.30 in	7.4 to 8.4

B6B--Morcom-Thistledew complex, 0 to 6 percent slopes

Thistledew

Extent: 20 to 40 percent of the unit
Landform(s): lake plains
Slope gradient: 1 to 6 percent
Parent material: sandy outwash over clayey glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
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	5.1 to 6.5
Bw -- 3 to 29 in	loamy sand	rapid	1.56 to 2.86 in	5.1 to 6.5
2Bt1 -- 29 to 43 in	sandy clay loam	moderate	1.93 to 2.62 in	5.6 to 7.3
3Bt2 -- 43 to 50 in	clay	very slow	0.57 to 0.85 in	5.6 to 7.3
3C -- 50 to 80 in	clay	very slow	2.39 to 3.59 in	7.4 to 8.4

B7D--Udorthents, slumped-Thistledew-Taylor complex, 10 to 25 percent slopes

Udorthents, slumped

Extent: 40 to 60 percent of the unit
Landform(s): lake plains
Slope gradient: 10 to 25 percent
Parent material: glaciolacustrine sediments and outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .20
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loam	moderate	1.02 to 1.13 in	5.1 to 6.5
C1 -- 5 to 18 in	fine sandy loam	moderate	1.95 to 2.47 in	5.1 to 7.3
C2 -- 18 to 28 in	loamy fine sand	rapid	0.49 to 0.98 in	5.6 to 7.3
2C3 -- 28 to 50 in	stratified fine sandy loam to clay loam	moderately slow	3.09 to 4.19 in	5.6 to 7.8
3C4 -- 50 to 80 in	silty clay	very slow	2.39 to 3.59 in	7.4 to 8.4

Thistledew

Extent: 20 to 40 percent of the unit
Landform(s): lake plains
Slope gradient: 10 to 25 percent
Parent material: sandy outwash and/or beach deposits over glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: B/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	5.1 to 6.5
Bw -- 3 to 29 in	loamy sand	rapid	1.56 to 2.86 in	5.1 to 6.5
2Bt1 -- 29 to 43 in	sandy clay loam	moderate	1.93 to 2.62 in	5.6 to 7.3
3Bt2 -- 43 to 50 in	clay	very slow	0.57 to 0.85 in	5.6 to 7.3
3C -- 50 to 80 in	clay	very slow	2.39 to 3.59 in	7.4 to 8.4

B7D--Udorthents, slumped-Thistledew-Taylor complex, 10 to 25 percent slopes

Taylor

Extent: 10 to 20 percent of the unit
Landform(s): lake plains
Slope gradient: 10 to 25 percent
Parent material: clayey glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .32
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silty clay loam	moderately slow	0.83 to 0.91 in	5.1 to 6.5
E -- 4 to 10 in	silty clay loam	moderately slow	0.77 to 1.18 in	5.1 to 7.3
B/E -- 10 to 14 in	silty clay	slow	0.56 to 0.87 in	5.6 to 7.3
Bt -- 14 to 30 in	clay	very slow	1.26 to 1.57 in	5.6 to 7.3
BC -- 30 to 38 in	clay	very slow	0.66 to 0.99 in	7.4 to 8.4
C -- 38 to 80 in	clay	very slow	3.34 to 5.01 in	7.4 to 8.4

B8A--Bearville loamy sand, 0 to 2 percent slopes

Bearville

Extent: 65 to 85 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 0 to 2 percent
Parent material: sandy outwash and/or beach deposits over glaciolacustrine sediments
Restrictive feature(s): abrupt textural change at 10 to 20 i
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated: 4w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

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
Eg --	2 to 16 in	loamy sand	rapid	1.13 to 1.56 in	5.1 to 6.5
2Btg1 --	16 to 25 in	sandy clay loam	moderate	1.27 to 1.72 in	5.6 to 7.3
3Btg2 --	25 to 35 in	clay	very slow	0.79 to 1.18 in	5.6 to 7.3
3BCg --	35 to 80 in	clay	very slow	3.59 to 5.39 in	7.4 to 8.4

B9A--Greaney and Dora soils, 0 to 1 percent slopes, frequently flooded

Dora, frequently flooded

Extent: 0 to 95 percent of the unit
Landform(s): oxbows on flood plains, flats on flood plains
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material over clayey alluvium
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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer)
Land capability, nonirrigated: 7w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 6 in	mucky peat	rapid	2.66 to 3.25 in	
Oa -- 6 to 24 in	muck	moderately rapid	7.24 to 8.15 in	
A -- 24 to 36 in	mucky silty clay loam	slow	1.77 to 3.54 in	6.1 to 7.3
Cg -- 36 to 80 in	stratified clay loam to silty clay loam to silty clay to clay	slow	4.41 to 5.73 in	6.6 to 8.4

Greaney, frequently flooded

Extent: 0 to 95 percent of the unit
Landform(s): flats on flood plains
Slope gradient: 0 to 1 percent
Parent material: clayey 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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated: 7w
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	silty clay loam	moderately slow	0.83 to 0.91 in	5.1 to 6.5
Bg -- 4 to 30 in	silty clay	slow	2.86 to 5.20 in	5.6 to 7.3
Cg -- 30 to 80 in	stratified clay loam to silty clay loam to silty clay to clay	slow	5.00 to 6.50 in	6.6 to 8.4

B10B--Rollins sandy loam, 2 to 8 percent slopes

Rollins

Extent: 75 to 90 percent of the unit
Landform(s): kames
Slope gradient: 2 to 8 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 6s
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	sandy loam	moderately rapid	0.51 to 0.72 in	4.5 to 6.0
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.81 to 1.45 in	4.5 to 6.0
2BC -- 14 to 25 in	very gravelly sand	rapid	0.22 to 0.55 in	4.5 to 6.0
2C -- 25 to 80 in	very gravelly coarse sand	very rapid	0.55 to 2.74 in	5.1 to 6.5

B10D--Rollins sandy loam, 8 to 18 percent slopes

Rollins

Extent: 80 to 90 percent of the unit
Landform(s): kames
Slope gradient: 8 to 18 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 6s
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	sandy loam	moderately rapid	0.51 to 0.72 in	4.5 to 6.0
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.81 to 1.45 in	4.5 to 6.0
2BC -- 14 to 25 in	very gravelly sand	rapid	0.22 to 0.55 in	4.5 to 6.0
2C -- 25 to 80 in	very gravelly coarse sand	very rapid	0.55 to 2.74 in	5.1 to 6.5

B11B--Taylor-Taylor, sandy substratum complex, 2 to 6 percent slopes

Taylor

Extent: 40 to 60 percent of the unit
Landform(s): kames
Slope gradient: 2 to 6 percent
Parent material: clayey glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .32
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silty clay loam	moderately slow	0.83 to 0.91 in	5.1 to 6.5
E -- 4 to 10 in	silty clay loam	moderately slow	0.77 to 1.18 in	5.1 to 7.3
B/E -- 10 to 14 in	silty clay	slow	0.56 to 0.87 in	5.6 to 7.3
Bt -- 14 to 30 in	clay	very slow	1.26 to 1.57 in	5.6 to 7.3
BC -- 30 to 38 in	clay	very slow	0.66 to 0.99 in	7.4 to 8.4
C -- 38 to 80 in	clay	very slow	3.34 to 5.01 in	7.4 to 8.4

B11B--Taylor-Taylor, sandy substratum complex, 2 to 6 percent slopes

Taylor, sandy substratum

Extent: 30 to 50 percent of the unit
Landform(s): kames
Slope gradient: 2 to 6 percent
Parent material: clayey glaciolacustrine sediments over 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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .32
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silty clay loam	moderately slow	0.83 to 0.91 in	5.1 to 6.5
E -- 4 to 10 in	silty clay loam	moderately slow	0.77 to 1.18 in	5.1 to 7.3
B/E -- 10 to 14 in	silty clay	slow	0.56 to 0.87 in	5.6 to 7.3
Bt -- 14 to 30 in	clay	very slow	1.26 to 1.57 in	5.6 to 7.3
BC -- 30 to 63 in	clay	very slow	2.65 to 3.97 in	7.4 to 8.4
2C -- 63 to 80 in	gravelly coarse sand	very rapid	0.34 to 1.02 in	6.6 to 7.8

B11C--Taylor-Taylor, sandy substratum, complex, 6 to 12 percent slopes

Taylor

Extent: 40 to 60 percent of the unit
Landform(s): kames
Slope gradient: 6 to 12 percent
Parent material: clayey glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .32
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silty clay loam	moderately slow	0.83 to 0.91 in	5.1 to 6.5
E -- 4 to 10 in	silty clay loam	moderately slow	0.77 to 1.18 in	5.1 to 7.3
B/E -- 10 to 14 in	silty clay	slow	0.56 to 0.87 in	5.6 to 7.3
Bt -- 14 to 30 in	clay	very slow	1.26 to 1.57 in	5.6 to 7.3
BC -- 30 to 38 in	clay	very slow	0.66 to 0.99 in	7.4 to 8.4
C -- 38 to 80 in	clay	very slow	3.34 to 5.01 in	6.6 to 7.8

B11C--Taylor-Taylor, sandy substratum, complex, 6 to 12 percent slopes

Taylor, sandy substratum

Extent: 30 to 50 percent of the unit
Landform(s): kames
Slope gradient: 6 to 12 percent
Parent material: clayey glaciolacustrine sediments over 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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .32
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silty clay loam	moderately slow	0.83 to 0.91 in	5.1 to 6.5
E -- 4 to 10 in	silty clay loam	moderately slow	0.77 to 1.18 in	5.1 to 7.3
B/E -- 10 to 14 in	silty clay	slow	0.56 to 0.87 in	5.6 to 7.3
Bt -- 14 to 30 in	clay	very slow	1.26 to 1.57 in	5.6 to 7.3
BC -- 30 to 63 in	clay	very slow	2.65 to 3.97 in	7.4 to 8.4
2C -- 63 to 80 in	gravelly coarse sand	very rapid	0.34 to 1.02 in	7.4 to 8.4

B12D--Taylor-Greaney, frequently flooded complex, 0 to 25 percent slopes

Taylor

Extent: 40 to 60 percent of the unit
Landform(s): flood plains
Slope gradient: 8 to 25 percent
Parent material: clayey 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): 6
Wind erodibility index (WEI): 48
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 -- 0 to 4 in	silty clay loam	moderately slow	0.83 to 0.91 in	5.1 to 6.5
E -- 4 to 10 in	silty clay loam	moderately slow	0.77 to 1.18 in	5.1 to 7.3
B/E -- 10 to 14 in	silty clay	slow	0.56 to 0.87 in	5.6 to 7.3
Bt -- 14 to 30 in	clay	very slow	1.26 to 1.57 in	5.6 to 7.3
BC -- 30 to 38 in	clay	very slow	0.66 to 0.99 in	7.4 to 8.4
C -- 38 to 80 in	clay	very slow	3.34 to 5.01 in	7.4 to 8.4

Greaney, frequently flooded

Extent: 30 to 50 percent of the unit
Landform(s): flats on flood plains
Slope gradient: 0 to 1 percent
Parent material: clayey 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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated: 7w
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	silty clay loam	moderately slow	0.83 to 0.91 in	5.1 to 6.5
Bg -- 4 to 30 in	silty clay	slow	2.86 to 5.20 in	5.6 to 7.3
Cg -- 30 to 80 in	stratified clay loam to silty clay loam to silty clay to clay	slow	5.00 to 6.50 in	6.6 to 8.4

B14A--Greenwood soils, Upham basin, 0 to 1 percent slopes

Greenwood

Extent: 0 to 95 percent of the unit
Landform(s): bogs on lake plains
Slope gradient: 0 to 1 percent
Parent material: 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 10 in	peat	very rapid	5.41 to 6.40 in	
Oe1 -- 10 to 24 in	mucky peat	rapid	6.38 to 7.80 in	
Oe2 -- 24 to 80 in	mucky peat	rapid	25.16 to 30.75 in	

Greenwood, depressional

Extent: 0 to 95 percent of the unit
Landform(s): bogs on lake plains
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: 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 10 in	peat	very rapid	5.41 to 6.40 in	
Oe1 -- 10 to 24 in	mucky peat	rapid	6.38 to 7.80 in	
Oe2 -- 24 to 80 in	mucky peat	rapid	25.16 to 30.75 in	

B15A--Morph fine sandy loam, 0 to 2 percent slopes

Morph

Extent: 75 to 90 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 0 to 2 percent
Parent material: glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .20
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 4 in	fine sandy loam	moderately rapid	0.63 to 0.71 in	5.1 to 6.5
Eg --	4 to 9 in	fine sandy loam	moderate	0.77 to 0.97 in	5.1 to 6.5
E/B --	9 to 22 in	very fine sandy loam	moderate	1.95 to 2.47 in	5.1 to 6.5
Btg --	22 to 31 in	loam	moderate	1.27 to 1.99 in	5.1 to 6.5
Cg --	31 to 80 in	stratified loamy fine sand to fine sandy loam to very fine sandy loam to loam to silt loam	moderate	6.35 to 9.76 in	6.6 to 7.8

B16B--Westoo-Barber-Vasso complex, 0 to 6 percent slopes

Westoo

Extent: 20 to 40 percent of the unit
Landform(s): lake plains, outwash plains
Slope gradient: 1 to 6 percent
Parent material: eolian deposits and/or 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) .20
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 5 in	loamy fine sand	rapid	0.51 to 0.67 in	4.5 to 6.0
Bw1 -- 5 to 17 in	loamy fine sand	rapid	1.06 to 1.89 in	4.5 to 6.5
Bw2 -- 17 to 44 in	loamy fine sand	rapid	1.63 to 2.72 in	5.1 to 6.5
C -- 44 to 74 in	fine sand	rapid	1.80 to 2.99 in	5.1 to 6.5
Cg -- 74 to 80 in	fine sand	rapid	0.35 to 0.59 in	5.1 to 6.5

B16B--Westoo-Barber-Vasso complex, 0 to 6 percent slopes

Barber

Extent: 20 to 40 percent of the unit
Landform(s): lake plains, outwash plains
Slope gradient: 0 to 4 percent
Parent material: eolian deposits and/or 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: A/D
Potential for frost action: low

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 5 in	fine sandy loam	moderately rapid	0.82 to 0.92 in	4.5 to 6.0
E --	5 to 8 in	fine sandy loam	moderately rapid	0.28 to 0.47 in	4.5 to 6.0
Bw1 --	8 to 19 in	loamy fine sand	rapid	1.10 to 1.76 in	4.5 to 6.5
Bw2 --	19 to 27 in	loamy fine sand	rapid	0.50 to 0.83 in	5.1 to 6.5
Bg --	27 to 53 in	fine sand	rapid	1.56 to 2.60 in	5.1 to 6.5
C --	53 to 80 in	fine sand	rapid	1.61 to 2.68 in	5.1 to 6.5

B16B--Westoo-Barber-Vasso complex, 0 to 6 percent slopes

Vasso

Extent: 15 to 25 percent of the unit
Landform(s): lake plains, outwash plains
Slope gradient: 0 to 4 percent
Parent material: sandy eolian, glaciolacustrine or outwash material and underlying loamy glaciolacustrine sediments
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) .20
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: B/D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 4 in	fine sandy loam	moderately rapid	0.63 to 0.75 in	4.5 to 6.0
E --	4 to 6 in	fine sandy loam	moderately rapid	0.18 to 0.33 in	4.5 to 6.0
Bw1 --	6 to 18 in	loamy fine sand	rapid	0.37 to 1.22 in	4.5 to 6.5
Bw2 --	18 to 38 in	fine sand	rapid	0.60 to 2.01 in	5.1 to 6.5
2Bg --	38 to 50 in	silt loam	moderate	2.01 to 2.60 in	5.6 to 6.5
2Cg --	50 to 80 in	silt loam	moderate	5.09 to 6.58 in	5.6 to 7.8

B17B--Graycalm-Biwabik complex, 1 to 6 percent slopes

Graycalm

Extent: 45 to 65 percent of the unit
Landform(s): outwash plains
Slope gradient: 1 to 6 percent
Parent material: sandy 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 2 in	loamy sand	rapid	0.20 to 0.24 in	4.5 to 6.0
Bw -- 2 to 37 in	loamy sand	rapid	2.10 to 3.85 in	4.5 to 6.0
E and Bt -- 37 to 48 in	sand	rapid	0.55 to 0.99 in	5.1 to 6.0
C -- 48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

Biwabik

Extent: 30 to 50 percent of the unit
Landform(s): outwash plains
Slope gradient: 1 to 6 percent
Parent material: gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .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	sandy loam	moderately rapid	0.24 to 0.30 in	4.5 to 6.0
Bw -- 2 to 9 in	gravelly sandy loam	moderately rapid	0.64 to 0.92 in	4.5 to 6.0
E -- 9 to 32 in	gravelly loamy sand	rapid	0.69 to 1.60 in	4.5 to 6.0
E and B -- 32 to 64 in	gravelly loamy sand	rapid	0.97 to 1.94 in	5.1 to 6.0
C -- 64 to 80 in	gravelly coarse sand	very rapid	0.31 to 0.94 in	5.1 to 6.5

B17D--Graycalm-Biwabik complex, pitted, 6 to 25 percent slopes

Graycalm

Extent: 40 to 65 percent of the unit
Landform(s): pitted outwash plains
Slope gradient: 6 to 25 percent
Parent material: sandy 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 2 in	loamy sand	rapid	0.20 to 0.24 in	4.5 to 6.0
Bw -- 2 to 37 in	loamy sand	rapid	2.10 to 3.85 in	4.5 to 6.0
E and Bt -- 37 to 48 in	sand	rapid	0.55 to 0.99 in	5.1 to 6.0
C -- 48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

Biwabik

Extent: 20 to 50 percent of the unit
Landform(s): pitted outwash plains
Slope gradient: 6 to 25 percent
Parent material: gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .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	sandy loam	moderately rapid	0.24 to 0.30 in	4.5 to 6.0
Bw -- 2 to 9 in	gravelly sandy loam	moderately rapid	0.64 to 0.92 in	4.5 to 6.0
E -- 9 to 32 in	gravelly loamy sand	rapid	0.69 to 1.60 in	4.5 to 6.0
E and B -- 32 to 64 in	gravelly loamy sand	rapid	0.97 to 1.94 in	5.1 to 6.0
C -- 64 to 80 in	gravelly coarse sand	very rapid	0.31 to 0.94 in	5.1 to 6.5

B18A--Foglake-Hassman, depressional complex, 0 to 2 percent slopes

Foglake

Extent: 40 to 60 percent of the unit
Landform(s): rises on lake plains, flats on lake plains
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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .43
Land capability, nonirrigated: 4w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	silt loam	moderate	1.73 to 1.89 in	5.1 to 6.5
Eg -- 8 to 16 in	silt loam	moderate	1.41 to 1.82 in	5.1 to 7.3
Btg,BCg -- 16 to 47 in	silty clay loam	slow	2.76 to 5.83 in	5.1 to 7.3
Cg -- 47 to 80 in	silty clay loam	moderately slow	5.95 to 7.28 in	7.4 to 8.4

Hassman, depressional

Extent: 20 to 40 percent of the unit
Landform(s): depressions on lake plains, swales on lake plains
Slope gradient: 0 to 1 percent
Parent material: 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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
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*
A -- 0 to 10 in	silty clay loam	moderately slow	2.07 to 2.26 in	5.1 to 6.5
Bg -- 10 to 32 in	silty clay	slow	1.98 to 4.19 in	5.1 to 7.3
BCg -- 32 to 45 in	silty clay	slow	1.17 to 2.47 in	5.6 to 7.8
Cg -- 45 to 80 in	silty clay	slow	3.15 to 6.66 in	7.4 to 8.4

B19B--Longsiding-Foglake-Grasston complex, 0 to 6 percent slopes

Longsiding

Extent: 35 to 60 percent of the unit
Landform(s): lake plains
Slope gradient: 1 to 4 percent
Parent material: 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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .43
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*
Ap -- 0 to 9 in	silt loam	moderate	1.99 to 2.17 in	5.1 to 6.5
B/E -- 9 to 12 in	silty clay loam	moderately slow	0.30 to 0.55 in	5.1 to 7.3
Bt1,Bt3 -- 12 to 35 in	silty clay	slow	2.09 to 4.41 in	5.1 to 7.3
Bk,C -- 35 to 80 in	silty clay loam	moderately slow	8.08 to 9.87 in	7.4 to 8.4

Foglake

Extent: 15 to 35 percent of the unit
Landform(s): lake plains
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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .43
Land capability, nonirrigated: 4w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	silt loam	moderate	1.73 to 1.89 in	5.1 to 6.5
Eg -- 8 to 16 in	silt loam	moderate	1.41 to 1.82 in	5.1 to 7.3
Btg,BCg -- 16 to 47 in	silty clay loam	slow	2.76 to 5.83 in	5.1 to 7.3
Cg -- 47 to 80 in	silty clay loam	moderately slow	5.95 to 7.28 in	7.4 to 8.4

B19B--Longsiding-Foglake-Grasston complex, 0 to 6 percent slopes

Grasston

Extent: 10 to 20 percent of the unit
Landform(s): lake plains
Slope gradient: 3 to 6 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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .37
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	silt loam	moderate	1.99 to 2.17 in	5.1 to 6.5
B/E -- 9 to 14 in	silty clay loam	moderately slow	0.56 to 1.02 in	5.1 to 7.3
Bt1,Bt2 -- 14 to 42 in	silty clay	slow	2.52 to 5.31 in	5.1 to 7.3
Bk,C -- 42 to 80 in	silty clay loam	moderately slow	6.80 to 8.31 in	7.4 to 8.4

B23A--Effie-Ashlake complex, MLRA 88, 0 to 2 percent slopes

Effie

Extent: 50 to 65 percent of the unit
Landform(s): flats on moraines
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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated: 4w
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	5.1 to 7.3
Eg -- 2 to 5 in	loam	moderate	0.47 to 0.69 in	5.1 to 7.3
B/E -- 5 to 8 in	silty clay loam	slow	0.39 to 0.52 in	5.1 to 7.3
Btg -- 8 to 20 in	silty clay	slow	1.22 to 2.20 in	5.1 to 7.8
BCg -- 20 to 64 in	silty clay loam	moderately slow	6.17 to 7.94 in	7.4 to 8.4
Cg -- 64 to 80 in	clay loam	moderately slow	2.20 to 2.83 in	7.4 to 8.4

Ashlake

Extent: 30 to 45 percent of the unit
Landform(s): rises on moraines
Slope gradient: 1 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: 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 1 in	loam	moderate	0.24 to 0.26 in	5.1 to 7.3
E -- 1 to 4 in	loam	moderate	0.36 to 0.52 in	5.1 to 7.3
E/B -- 4 to 9 in	loam	moderate	0.72 to 0.97 in	5.1 to 7.3
Bt -- 9 to 26 in	silty clay	slow	1.69 to 3.05 in	5.1 to 7.3
Bk -- 26 to 80 in	clay loam	moderately slow	7.55 to 9.71 in	7.4 to 8.4

B23A--Effie-Ashlake complex, MLRA 88, 0 to 2 percent slopes

B24B--Ashlake-Suomi-Effie complex, MLRA 88, 1 to 4 percent slopes

Ashlake

Extent: 25 to 50 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: 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 1 in	loam	moderate	0.24 to 0.26 in	5.1 to 7.3
E -- 1 to 4 in	loam	moderate	0.36 to 0.52 in	5.1 to 7.3
E/B -- 4 to 9 in	loam	moderate	0.72 to 0.97 in	5.1 to 7.3
Bt -- 9 to 26 in	silty clay	slow	1.69 to 3.05 in	5.1 to 7.3
Bk -- 26 to 80 in	clay loam	moderately slow	7.55 to 9.71 in	7.4 to 8.4

Suomi

Extent: 30 to 40 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 4 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: 2e
Hydric soil: no
Hydrologic group: 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

B24B--Ashlake-Suomi-Effie complex, MLRA 88, 1 to 4 percent slopes

Effie

Extent: 15 to 30 percent of the unit
Landform(s): moraines
Slope gradient: 1 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: 4w
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	5.1 to 7.3
Eg --	2 to 5 in	loam	moderate	0.47 to 0.69 in	5.1 to 7.3
B/E --	5 to 8 in	silty clay loam	slow	0.39 to 0.52 in	5.1 to 7.3
Btg --	8 to 20 in	silty clay	slow	1.22 to 2.20 in	5.1 to 7.8
BCg --	20 to 64 in	silty clay loam	moderately slow	6.17 to 7.94 in	7.4 to 8.4
Cg --	64 to 80 in	clay loam	moderately slow	2.20 to 2.83 in	7.4 to 8.4

B25C--Suomi-Ashlake complex, MLRA 88, 6 to 15 percent slopes

Suomi

Extent: 70 to 90 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 15 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: 3e
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

Ashlake

Extent: 5 to 25 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 6 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: 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 1 in	loam	moderate	0.24 to 0.26 in	5.1 to 7.3
E -- 1 to 4 in	loam	moderate	0.36 to 0.52 in	5.1 to 7.3
E/B -- 4 to 9 in	loam	moderately slow	0.72 to 0.97 in	5.1 to 7.3
Bt -- 9 to 26 in	silty clay	slow	1.69 to 3.05 in	5.1 to 7.3
Bk -- 26 to 80 in	clay loam	moderately slow	7.55 to 9.71 in	7.4 to 8.4

B26A--Daisybay-Greenwood complex, 0 to 1 percent slopes

Daisybay

Extent: 45 to 80 percent of the unit
Landform(s): bogs on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over clayey glaciolacustrine sediments
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): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer)
Land capability, nonirrigated: 7w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oi -- 0 to 7 in	peat	very rapid	3.90 to 4.61 in	
Oe -- 7 to 30 in	mucky peat	rapid	10.28 to 12.56 in	
Oa -- 30 to 35 in	muck	moderately rapid	1.79 to 2.30 in	
Cg1 -- 35 to 42 in	clay	very slow	0.57 to 0.71 in	6.6 to 7.8
Cg2 -- 42 to 80 in	clay	very slow	3.02 to 4.54 in	7.4 to 8.4

Greenwood

Extent: 20 to 55 percent of the unit
Landform(s): bogs on lake plains
Slope gradient: 0 to 1 percent
Parent material: 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)
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 10 in	peat	very rapid	5.41 to 6.40 in	
Oe1 -- 10 to 24 in	mucky peat	rapid	6.38 to 7.80 in	
Oe2 -- 24 to 80 in	mucky peat	rapid	25.16 to 30.75 in	

B27A--McQuade-Buhl complex, 0 to 3 percent slopes

Mcquade

Extent: 40 to 60 percent of the unit
Landform(s): flats on till plains
Slope gradient: 0 to 2 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated: 4w
Hydric soil: yes
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	4.5 to 5.5
Eg -- 4 to 8 in	loam	moderate	0.59 to 0.83 in	4.5 to 5.5
2B/E -- 8 to 17 in	clay loam	slow	0.72 to 1.36 in	5.1 to 6.0
2Bt -- 17 to 36 in	clay	slow	1.51 to 2.83 in	5.1 to 6.5
2BCt -- 36 to 52 in	clay	slow	1.29 to 2.42 in	5.6 to 7.3
2BCd -- 52 to 80 in	clay	slow	1.12 to 2.24 in	6.1 to 8.4

Buhl

Extent: 25 to 45 percent of the unit
Landform(s): rises on till plains
Slope gradient: 1 to 3 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
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 3 in	loam	moderate	0.63 to 0.69 in	4.5 to 5.5
E -- 3 to 13 in	loam	moderate	1.48 to 2.07 in	4.5 to 5.5
2B/E -- 13 to 18 in	clay loam	slow	0.41 to 0.77 in	5.1 to 6.0
2Bt1 -- 18 to 32 in	clay	slow	1.10 to 2.07 in	5.1 to 6.0
2Bt2 -- 32 to 58 in	clay	slow	2.08 to 3.90 in	5.1 to 6.5
2BCd -- 58 to 80 in	clay	slow	0.88 to 1.76 in	6.1 to 8.4

B27A--McQuade-Buhl complex, 0 to 3 percent slopes

B28B--Buhl loam, 1 to 5 percent slopes

Buhl

Extent: 70 to 88 percent of the unit
Landform(s): drumlins, till plains
Slope gradient: 1 to 5 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
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 3 in	loam	moderate	0.63 to 0.69 in	4.5 to 5.5
E -- 3 to 13 in	loam	moderate	1.48 to 2.07 in	4.5 to 5.5
2B/E -- 13 to 18 in	clay loam	slow	0.41 to 0.77 in	5.1 to 6.0
2Bt1 -- 18 to 32 in	clay	slow	1.10 to 2.07 in	5.1 to 6.0
2Bt2 -- 32 to 58 in	clay	slow	2.08 to 3.90 in	5.1 to 6.5
2BCd -- 58 to 80 in	clay	slow	0.88 to 1.76 in	6.1 to 8.4

B29B--Hibbing-Buhl complex, 1 to 8 percent slopes

Hibbing

Extent: 35 to 60 percent of the unit
Landform(s): till plains
Slope gradient: 3 to 8 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: 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	4.5 to 5.5
Bw -- 4 to 8 in	loam	moderate	0.59 to 0.83 in	4.5 to 5.5
2E/B -- 8 to 12 in	loam	moderate	0.55 to 0.75 in	5.1 to 6.0
2Bt1 -- 12 to 27 in	clay	slow	1.23 to 2.30 in	5.1 to 6.0
2Bt2 -- 27 to 36 in	clay	slow	0.69 to 1.30 in	5.1 to 6.5
2Bt3 -- 36 to 48 in	clay	slow	0.98 to 1.83 in	5.1 to 6.5
2BCd -- 48 to 80 in	clay	slow	1.28 to 2.55 in	6.1 to 8.4

B29B--Hibbing-Buhl complex, 1 to 8 percent slopes

Buhl

Extent: 25 to 45 percent of the unit
Landform(s): till plains
Slope gradient: 1 to 4 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
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 3 in	loam	moderate	0.63 to 0.69 in	4.5 to 5.5
E -- 3 to 13 in	loam	moderate	1.48 to 2.07 in	4.5 to 5.5
2B/E -- 13 to 18 in	clay loam	slow	0.41 to 0.77 in	5.1 to 6.0
2Bt1 -- 18 to 32 in	clay	slow	1.10 to 2.07 in	5.1 to 6.0
2Bt2 -- 32 to 58 in	clay	slow	2.08 to 3.90 in	5.1 to 6.5
2BCd -- 58 to 80 in	clay	slow	0.88 to 1.76 in	6.1 to 8.4

B29D--Hibbing-Buhl complex, 1 to 18 percent slopes

Hibbing

Extent: 45 to 65 percent of the unit
Landform(s): moraines
Slope gradient: 5 to 18 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated: 4e
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	4.5 to 5.5
Bw -- 4 to 8 in	loam	moderate	0.59 to 0.83 in	4.5 to 5.5
2E/B -- 8 to 12 in	loam	moderate	0.55 to 0.75 in	5.1 to 6.0
2Bt1 -- 12 to 27 in	clay	slow	1.23 to 2.30 in	5.1 to 6.0
2Bt2 -- 27 to 36 in	clay	slow	0.69 to 1.30 in	5.1 to 6.5
2Bt3 -- 36 to 48 in	clay	slow	0.98 to 1.83 in	5.1 to 6.5
2BCd -- 48 to 80 in	clay	slow	1.28 to 2.55 in	6.1 to 8.4

B29D--Hibbing-Buhl complex, 1 to 18 percent slopes

Buhl

Extent: 20 to 30 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 5 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
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 3 in	loam	moderate	0.63 to 0.69 in	4.5 to 5.5
E -- 3 to 13 in	loam	moderate	1.48 to 2.07 in	4.5 to 5.5
2B/E -- 13 to 18 in	clay loam	slow	0.41 to 0.77 in	5.1 to 6.0
2Bt1 -- 18 to 32 in	clay	slow	1.10 to 2.07 in	5.1 to 6.0
2Bt2 -- 32 to 58 in	clay	slow	2.08 to 3.90 in	5.1 to 6.5
2BCd -- 58 to 80 in	clay	slow	0.88 to 1.76 in	6.1 to 8.4

B30A--Sago mucky peat, depressional, 0 to 1 percent slopes

Sago, depressional

Extent: 65 to 90 percent of the unit
Landform(s): -- error in exists on --
Slope gradient: 0 to 1 percent
Parent material: organic material over glaciolacustrine or glaciofluvial sediments
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): 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
Oe --	0 to 5 in	mucky peat	rapid	2.30 to 2.81 in	
Oa --	5 to 13 in	muck	moderately rapid	2.76 to 3.54 in	
A --	13 to 15 in	fine sandy loam	moderately rapid	0.22 to 0.41 in	4.5 to 6.0
Bg --	15 to 41 in	stratified loamy fine sand to silt loam	moderately rapid	3.38 to 4.94 in	5.1 to 6.5
Cg --	41 to 80 in	stratified loamy fine sand to silt loam	moderately rapid	5.07 to 7.41 in	5.6 to 7.8

B31D--Hibbing loam, 8 to 18 percent slopes

Hibbing

Extent: 75 to 95 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 18 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated: 4e
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	4.5 to 5.5
Bw -- 4 to 8 in	loam	moderate	0.59 to 0.83 in	4.5 to 5.5
2E/B -- 8 to 12 in	loam	moderate	0.55 to 0.75 in	5.1 to 6.0
2Bt1 -- 12 to 27 in	clay	slow	1.23 to 2.30 in	5.1 to 6.0
2Bt2 -- 27 to 36 in	clay	slow	0.69 to 1.30 in	5.1 to 6.5
2Bt3 -- 36 to 48 in	clay	slow	0.98 to 1.83 in	5.1 to 6.5
2BCd -- 48 to 80 in	clay	slow	1.28 to 2.55 in	6.1 to 8.4

B31E--Hibbing loam, 18 to 30 percent slopes

Hibbing

Extent: 85 to 95 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 30 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated: 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	4.5 to 5.5
Bw -- 4 to 8 in	loam	moderate	0.59 to 0.83 in	4.5 to 5.5
2E/B -- 8 to 12 in	loam	moderate	0.55 to 0.75 in	5.1 to 6.0
2Bt1 -- 12 to 27 in	clay	slow	1.23 to 2.30 in	5.1 to 6.0
2Bt2 -- 27 to 36 in	clay	slow	0.69 to 1.30 in	5.1 to 6.5
2Bt3 -- 36 to 48 in	clay	slow	0.98 to 1.83 in	5.1 to 6.5
2BCd -- 48 to 80 in	clay	slow	1.28 to 2.55 in	6.1 to 8.4

B32A--McQuade-Dora, depressional-Fayal, depressional complex, 0 to 2 percent slopes

Mcquade

Extent: 35 to 50 percent of the unit
Landform(s): flats on till plains
Slope gradient: 0 to 2 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated: 4w
Hydric soil: yes
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	4.5 to 5.5
Eg -- 4 to 8 in	loam	moderate	0.59 to 0.83 in	4.5 to 5.5
2B/E -- 8 to 17 in	clay loam	slow	0.72 to 1.36 in	5.1 to 6.0
2Bt -- 17 to 36 in	clay	slow	1.51 to 2.83 in	5.1 to 6.5
2BCt -- 36 to 52 in	clay	slow	1.29 to 2.42 in	5.6 to 7.3
2BCd -- 52 to 80 in	clay	slow	1.12 to 2.24 in	6.1 to 8.4

Dora, depressional

Extent: 20 to 40 percent of the unit
Landform(s): swales on till plains, depressions on till plains
Slope gradient: 0 to 1 percent
Parent material: organic deposits over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated: 7w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 8 in	mucky peat	rapid	3.54 to 4.33 in	
Oa -- 8 to 33 in	muck	moderately rapid	8.82 to 11.34 in	
2Cg -- 33 to 65 in	clay	slow	2.55 to 4.78 in	5.1 to 6.5
2Cd -- 65 to 80 in	clay	slow	0.60 to 1.20 in	6.1 to 7.8

B32A--McQuade-Dora, depressional-Fayal, depressional complex, 0 to 2 percent slopes

Fayal, depressional

Extent: 15 to 35 percent of the unit
Landform(s): swales on till plains
Slope gradient: 0 to 1 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
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
Oe --	0 to 5 in	mucky peat	rapid	2.30 to 2.81 in	
A --	5 to 9 in	mucky silt loam	moderate	0.79 to 1.02 in	4.5 to 5.5
Eg --	9 to 17 in	clay loam	moderately slow	0.63 to 1.18 in	4.5 to 5.5
2Btg --	17 to 29 in	clay	slow	0.98 to 1.83 in	5.1 to 6.5
2BC --	29 to 46 in	clay	slow	1.35 to 2.54 in	5.6 to 7.3
2BCd --	46 to 80 in	clay	slow	1.35 to 2.71 in	6.1 to 8.4

B33A--McQuade-Fayal, depressional complex, 0 to 2 percent slopes

Mcquade

Extent: 40 to 60 percent of the unit
Landform(s): flats on till plains
Slope gradient: 0 to 2 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated: 4w
Hydric soil: yes
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	4.5 to 5.5
Eg -- 4 to 8 in	loam	moderate	0.59 to 0.83 in	4.5 to 5.5
2B/E -- 8 to 17 in	clay loam	slow	0.72 to 1.36 in	5.1 to 6.0
2Bt -- 17 to 36 in	clay	slow	1.51 to 2.83 in	5.1 to 6.5
2BCt -- 36 to 52 in	clay	slow	1.29 to 2.42 in	5.6 to 7.3
2BCd -- 52 to 80 in	clay	slow	1.12 to 2.24 in	6.1 to 7.8

Fayal, depressional

Extent: 35 to 55 percent of the unit
Landform(s): swales on till plains
Slope gradient: 0 to 1 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
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*
Oe -- 0 to 5 in	mucky peat	rapid	2.30 to 2.81 in	
A -- 5 to 9 in	mucky silt loam	moderate	0.79 to 1.02 in	4.5 to 5.5
Eg -- 9 to 17 in	clay loam	moderately slow	0.63 to 1.18 in	4.5 to 5.5
2Btg -- 17 to 29 in	clay	slow	0.98 to 1.83 in	5.1 to 6.5
2BC -- 29 to 46 in	clay	slow	1.35 to 2.54 in	5.6 to 7.3
2BCd -- 46 to 80 in	clay	slow	1.35 to 2.71 in	6.1 to 8.4

B33A--McQuade-Fayal, depressional complex, 0 to 2 percent slopes

B34B--Majestic-Hibbing complex, 2 to 8 percent slopes

Majestic

Extent: 45 to 65 percent of the unit
Landform(s): till plains
Slope gradient: 2 to 8 percent
Parent material: sandy sediments over dense fine till
Restrictive feature(s): densic material at 45 to 70 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .17
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 4 in	sandy loam	moderately rapid	0.51 to 0.59 in	4.5 to 6.0
Bw1 -- 4 to 13 in	sandy loam	moderately rapid	1.09 to 1.54 in	4.5 to 6.0
Bw2 -- 13 to 34 in	loamy sand	rapid	1.04 to 2.30 in	4.5 to 6.0
2B/E -- 34 to 38 in	clay loam	slow	0.35 to 0.65 in	5.1 to 6.5
2Bt -- 38 to 59 in	clay	slow	1.67 to 3.13 in	5.1 to 6.5
2BCd -- 59 to 80 in	clay	slow	0.83 to 1.67 in	6.1 to 8.4

B34B--Majestic-Hibbing complex, 2 to 8 percent slopes

Hibbing

Extent: 15 to 30 percent of the unit
Landform(s): till plains
Slope gradient: 2 to 8 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: 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	4.5 to 5.5
Bw -- 4 to 8 in	loam	moderate	0.59 to 0.83 in	4.5 to 5.5
2E/B -- 8 to 12 in	loam	moderate	0.55 to 0.75 in	5.1 to 6.0
2Bt1 -- 12 to 27 in	clay	slow	1.23 to 2.30 in	5.1 to 6.0
2Bt2 -- 27 to 36 in	clay	slow	0.69 to 1.30 in	5.1 to 6.5
2Bt3 -- 36 to 48 in	clay	slow	0.98 to 1.83 in	5.1 to 6.5
2BCd -- 48 to 80 in	clay	slow	1.28 to 2.55 in	6.1 to 8.4

B35E--Hibbing-Udorthents complex, 18 to 45 percent slopes

Hibbing

Extent: 40 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 45 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated: 7e
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	4.5 to 5.5
Bw -- 4 to 8 in	loam	moderate	0.59 to 0.83 in	4.5 to 5.5
2E/B -- 8 to 12 in	loam	moderate	0.55 to 0.75 in	5.1 to 6.0
2Bt1 -- 12 to 27 in	clay	slow	1.23 to 2.30 in	5.1 to 6.0
2Bt2 -- 27 to 36 in	clay	slow	0.69 to 1.30 in	5.1 to 6.5
2Bt3 -- 36 to 48 in	clay	slow	0.98 to 1.83 in	5.1 to 6.5
2BCd -- 48 to 80 in	clay	slow	1.28 to 2.55 in	6.1 to 8.4

Udorthents

Extent: 20 to 40 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 45 percent
Parent material: loamy material over gravelly 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 7e
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	sandy loam	moderately rapid	0.56 to 0.72 in	4.5 to 6.0
Bw -- 5 to 9 in	gravelly sandy loam	moderately rapid	0.28 to 0.71 in	4.5 to 6.5
2C -- 9 to 80 in	gravelly coarse sand	very rapid	0.71 to 4.25 in	5.1 to 6.5

B36B--Lavell-Shawano complex, 1 to 6 percent slopes

Shawano

Extent: 25 to 55 percent of the unit
Landform(s): outwash plains, lake plains
Slope gradient: 1 to 6 percent
Parent material: eolian and/or glaciolacustrine sand
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) .20
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 5 in	loamy fine sand	rapid	0.51 to 0.67 in	4.5 to 6.0
Bw -- 5 to 21 in	loamy fine sand	rapid	1.10 to 1.73 in	5.1 to 6.5
C -- 21 to 80 in	fine sand	rapid	3.54 to 5.91 in	5.1 to 6.5

Lavell

Extent: 30 to 55 percent of the unit
Landform(s): outwash plains, lake plains
Slope gradient: 1 to 6 percent
Parent material: eolian and/or glaciolacustrine 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) .17
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 5 in	loamy fine sand	rapid	0.51 to 0.67 in	4.5 to 6.0
Bw1 -- 5 to 18 in	loamy fine sand	rapid	0.78 to 1.30 in	4.5 to 6.5
Bw2 -- 18 to 42 in	fine sand	rapid	1.44 to 2.40 in	5.1 to 6.5
C -- 42 to 80 in	fine sand	rapid	2.27 to 3.78 in	5.1 to 6.5

B37B--Westoo-Lavell complex, 0 to 6 percent slopes

Westoo

Extent: 30 to 50 percent of the unit
Landform(s): lake plains, outwash plains
Slope gradient: 0 to 4 percent
Parent material: eolian deposits and/or 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) .20
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 5 in	loamy fine sand	rapid	0.51 to 0.67 in	4.5 to 6.0
Bw1 -- 5 to 17 in	loamy fine sand	rapid	1.06 to 1.89 in	4.5 to 6.5
Bw2 -- 17 to 44 in	loamy fine sand	rapid	1.63 to 2.72 in	5.1 to 6.5
C -- 44 to 74 in	fine sand	rapid	1.80 to 2.99 in	5.1 to 6.5
Cg -- 74 to 80 in	fine sand	rapid	0.35 to 0.59 in	5.1 to 6.5

Lavell

Extent: 25 to 40 percent of the unit
Landform(s): lake plains, outwash plains
Slope gradient: 1 to 6 percent
Parent material: eolian and/or glaciolacustrine 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) .17
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 5 in	loamy fine sand	rapid	0.51 to 0.67 in	4.5 to 6.0
Bw1 -- 5 to 18 in	loamy fine sand	rapid	0.78 to 1.30 in	4.5 to 6.5
Bw2 -- 18 to 42 in	fine sand	rapid	1.44 to 2.40 in	5.1 to 6.5
C -- 42 to 80 in	fine sand	rapid	2.27 to 3.78 in	5.1 to 6.5

B39A--Meehan loamy sand, 0 to 3 percent slopes

Meehan

Extent: 75 to 90 percent of the unit
Landform(s): rises on lake plains, flats on lake plains, rises on outwash plains, flats 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

B40D--Shawano loamy fine sand, 6 to 18 percent slopes

Shawano

Extent: 75 to 90 percent of the unit
Landform(s): lake plains, outwash plains
Slope gradient: 6 to 18 percent
Parent material: eolian and/or glaciolacustrine sand
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) .20
Land capability, nonirrigated: 4e
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 fine sand	rapid	0.51 to 0.67 in	4.5 to 6.0
Bw -- 5 to 21 in	loamy fine sand	rapid	1.10 to 1.73 in	5.1 to 6.5
C -- 21 to 80 in	fine sand	rapid	3.54 to 5.91 in	5.1 to 6.5

B41B--Friendship loamy sand, 0 to 4 percent slopes

Friendship

Extent: 65 to 85 percent of the unit
Landform(s): rises on lake plains, rises on outwash plains
Slope gradient: 0 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) .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 3 in	loamy sand	rapid	0.31 to 0.38 in	4.5 to 6.0
Bw1 -- 3 to 24 in	sand	rapid	0.63 to 2.30 in	4.5 to 6.0
Bw2 -- 24 to 40 in	sand	rapid	0.32 to 1.13 in	4.5 to 6.0
C -- 40 to 80 in	sand	rapid	0.80 to 2.78 in	5.1 to 6.5

B45A--Dora muck, depressional, Taylor catena, 0 to 1 percent slopes

Dora, depressional

Extent: 60 to 90 percent of the unit
Landform(s): swamps on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over clayey glaciolacustrine sediments
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)
Land capability, nonirrigated: 7w
Hydric soil: yes
Hydrologic group: 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 12.58 in	
Cg1 -- 28 to 34 in	clay	very slow	0.47 to 0.59 in	6.6 to 7.8
Cg2 -- 34 to 80 in	clay	very slow	3.69 to 5.53 in	7.4 to 8.4

B46A--Dora mucky peat, Taylor catena, 0 to 1 percent slopes

Dora

Extent: 60 to 90 percent of the unit
Landform(s): depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material over clayey 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer)
Land capability, nonirrigated: 7w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oe --	0 to 6 in	mucky peat	rapid	2.66 to 3.25 in	
Oa --	6 to 22 in	muck	moderately rapid	5.65 to 7.26 in	
A --	22 to 26 in	mucky silty clay loam	slow	0.59 to 1.18 in	6.1 to 7.3
Cg1 --	26 to 36 in	clay	very slow	0.79 to 0.98 in	6.6 to 7.8
Cg2 --	36 to 80 in	clay	very slow	3.53 to 5.29 in	7.4 to 8.4

B47A--Daisybay peat, 0 to 1 percent slopes

Daisybay

Extent: 60 to 90 percent of the unit
Landform(s): bogs on moraines, bogs on till plains
Slope gradient: 0 to 1 percent
Parent material: organic material over dense fine 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): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated: 7w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oi -- 0 to 7 in	peat	very rapid	3.90 to 4.61 in	
Oe -- 7 to 30 in	mucky peat	rapid	10.28 to 12.56 in	
Oa -- 30 to 35 in	muck	moderately rapid	1.79 to 2.30 in	
2Cg -- 35 to 80 in	clay	slow	3.59 to 6.73 in	5.6 to 7.3

B48A--Mooseline-Turpela complex, 0 to 3 percent slopes

Mooseline

Extent: 35 to 55 percent of the unit
Landform(s): rises on till plains
Slope gradient: 0 to 3 percent
Parent material: sandy sediments over dense fine till
Restrictive feature(s): densic material at 45 to 70 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
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 3 in	sandy loam	moderately rapid	0.41 to 0.47 in	4.5 to 6.0
E -- 3 to 8 in	sandy loam	moderately rapid	0.47 to 0.80 in	4.5 to 6.0
Bw1 -- 8 to 23 in	loamy sand	rapid	1.05 to 2.24 in	5.1 to 6.5
Bw2 -- 23 to 34 in	sand	rapid	0.55 to 1.10 in	5.1 to 6.5
2B/E -- 34 to 39 in	clay loam	moderately slow	0.51 to 0.87 in	5.1 to 6.5
2Bt -- 39 to 56 in	clay	slow	1.35 to 2.54 in	5.1 to 6.5
2BCd -- 56 to 80 in	clay	slow	0.96 to 1.92 in	6.1 to 8.4

B48A--Mooseline-Turpela complex, 0 to 3 percent slopes

Turpela

Extent: 25 to 45 percent of the unit
Landform(s): flats on till plains
Slope gradient: 0 to 2 percent
Parent material: sandy sediments over dense fine till
Restrictive feature(s): densic material at 45 to 70 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 4w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	fine sandy loam	moderately rapid	0.82 to 0.92 in	4.5 to 6.0
Bg1 -- 5 to 21 in	loamy fine sand	rapid	1.57 to 2.68 in	4.5 to 6.0
Bg2 -- 21 to 28 in	loamy fine sand	rapid	0.35 to 0.78 in	5.1 to 6.5
2Bt1 -- 28 to 34 in	clay	slow	0.47 to 0.89 in	5.1 to 6.0
2Bt2 -- 34 to 55 in	clay	slow	1.70 to 3.19 in	5.1 to 6.5
2BCd -- 55 to 80 in	clay	slow	0.99 to 1.98 in	6.1 to 8.4

B52A--Dora muck, depressional, Hibbing catena, 0 to 1 percent slopes

Dora, depressional

Extent: 60 to 90 percent of the unit
Landform(s): swamps on moraines, swamps on till plains
Slope gradient: 0 to 1 percent
Parent material: organic material over dense fine till
Restrictive feature(s): densic material at 40 to 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: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 22 in	muck	moderately rapid	7.72 to 9.92 in	
2Cg -- 22 to 65 in	clay	slow	3.43 to 6.44 in	5.1 to 6.5
2Cd -- 65 to 80 in	clay	slow	0.60 to 1.20 in	6.1 to 7.8

B53A--Dora mucky peat, Hibbing catena, 0 to 1 percent slopes

Dora

Extent: 60 to 90 percent of the unit
Landform(s): swamps on moraines, swamps on till plains
Slope gradient: 0 to 1 percent
Parent material: organic material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated: 7w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 8 in	mucky peat	rapid	3.54 to 4.33 in	
Oa -- 8 to 33 in	muck	moderately rapid	8.82 to 11.34 in	
2Cg -- 33 to 65 in	clay	slow	2.55 to 4.78 in	5.1 to 6.5
2Cd -- 65 to 80 in	clay	slow	0.60 to 1.20 in	6.1 to 7.8

B54A--Spooner-Littleswan complex, 0 to 3 percent slopes

Spooner

Extent: 55 to 75 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 0 to 2 percent
Parent material: silty 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): 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*
Ap -- 0 to 5 in	silt loam	moderate	1.13 to 1.23 in	5.6 to 7.3
Eg -- 5 to 9 in	very fine sandy loam	moderate	0.67 to 0.87 in	5.6 to 7.3
Btg -- 9 to 30 in	silty clay loam	moderately slow	3.76 to 4.59 in	6.1 to 7.3
Bkg -- 30 to 57 in	silt loam	moderate	4.62 to 5.98 in	7.4 to 8.4
Cg -- 57 to 80 in	silt loam	moderate	3.88 to 5.02 in	7.4 to 8.4

Littleswan

Extent: 15 to 35 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 1 to 3 percent
Parent material: silty 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .43
Land capability, nonirrigated: 3w
Hydric soil: no
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 11 in	silt loam	moderate	1.20 to 1.56 in	5.6 to 7.3
Bt -- 11 to 32 in	silty clay loam	moderately slow	3.76 to 4.59 in	6.1 to 7.3
Cg1 -- 32 to 41 in	silt loam	moderate	1.54 to 1.99 in	7.4 to 8.4
Cg2 -- 41 to 80 in	silt loam	moderate	6.63 to 8.57 in	7.4 to 8.4

B56A--Spooner-Sax, depressional complex, 0 to 2 percent slopes

Spooner

Extent: 40 to 65 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 0 to 2 percent
Parent material: silty 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): 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*
Ap -- 0 to 5 in	silt loam	moderate	1.13 to 1.23 in	5.6 to 7.3
Eg -- 5 to 9 in	very fine sandy loam	moderate	0.67 to 0.87 in	5.6 to 7.3
Btg -- 9 to 30 in	silty clay loam	moderately slow	3.76 to 4.59 in	6.1 to 7.3
Bkg -- 30 to 57 in	silt loam	moderate	4.62 to 5.98 in	7.4 to 8.4
Cg -- 57 to 80 in	silt loam	moderate	3.88 to 5.02 in	7.4 to 8.4

Sax, depressional

Extent: 30 to 55 percent of the unit
Landform(s): depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: herbaceous 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 6.24 in	
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

B57B--Littleswan-Baudette complex, 1 to 6 percent slopes

Littleswan

Extent: 55 to 80 percent of the unit
Landform(s): lake plains
Slope gradient: 1 to 3 percent
Parent material: silty 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .43
Land capability, nonirrigated: 3w
Hydric soil: no
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 11 in	silt loam	moderate	1.20 to 1.56 in	5.6 to 7.3
Bt -- 11 to 32 in	silty clay loam	moderately slow	3.76 to 4.59 in	6.1 to 7.3
Cg1 -- 32 to 41 in	silt loam	moderate	1.54 to 1.99 in	7.4 to 8.4
Cg2 -- 41 to 80 in	silt loam	moderate	6.63 to 8.57 in	7.4 to 8.4

Baudette

Extent: 15 to 40 percent of the unit
Landform(s): lake plains
Slope gradient: 2 to 6 percent
Parent material: silty 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) .43
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	0.87 to 0.94 in	5.6 to 7.3
E -- 4 to 8 in	silt loam	moderate	0.74 to 0.95 in	5.6 to 7.3
B/E -- 8 to 13 in	silty clay loam	moderately slow	0.80 to 1.04 in	6.1 to 7.3
Bt -- 13 to 39 in	silty clay loam	moderately slow	4.35 to 5.63 in	6.1 to 7.8
C -- 39 to 80 in	silt loam	moderate	7.03 to 9.09 in	7.4 to 8.4

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

B61A--Cathro, depressional-Barber complex, 0 to 3 percent slopes

Cathro, depressional

Extent: 50 to 80 percent of the unit
Landform(s): depressions on lake plains, flats on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over glaciolacustrine sediments
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: 7w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 36 in	muck	moderately rapid	12.54 to 16.12 in	
A -- 36 to 40 in	mucky silt loam	moderate	0.95 to 1.13 in	5.1 to 6.5
Cg -- 40 to 80 in	stratified loamy fine sand to silt loam	moderately rapid	5.17 to 7.56 in	5.6 to 7.8

Barber

Extent: 15 to 35 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 1 to 3 percent
Parent material: eolian deposits and/or 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: A/D
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	fine sandy loam	moderately rapid	0.82 to 0.92 in	4.5 to 6.0
E -- 5 to 8 in	fine sandy loam	moderately rapid	0.28 to 0.47 in	4.5 to 6.0
Bw1 -- 8 to 19 in	loamy fine sand	rapid	1.10 to 1.76 in	4.5 to 6.5
Bw2 -- 19 to 27 in	loamy fine sand	rapid	0.50 to 0.83 in	5.1 to 6.5
Bg -- 27 to 53 in	fine sand	rapid	1.56 to 2.60 in	5.1 to 6.5
C -- 53 to 80 in	fine sand	rapid	1.61 to 2.68 in	5.1 to 6.5

B61A--Cathro, depressional-Barber complex, 0 to 3 percent slopes

B62A--Wabuse-Vasso complex, 0 to 3 percent slopes

Wabuse

Extent: 30 to 50 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 0 to 2 percent
Parent material: sandy eolian, glaciolacustrine or outwash material and underlying loamy glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

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

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Ap --	0 to 9 in	sandy loam	moderately rapid	1.18 to 1.36 in	4.5 to 6.0
Bg1 --	9 to 16 in	loamy fine sand	rapid	0.28 to 0.78 in	4.5 to 6.0
Bg2 --	16 to 27 in	loamy sand	rapid	0.44 to 1.21 in	5.1 to 6.5
Bg3 --	27 to 32 in	loamy coarse sand	rapid	0.19 to 0.52 in	5.1 to 6.5
2Bg4 --	32 to 54 in	silt loam	moderate	3.75 to 4.85 in	5.6 to 6.5
2Cg --	54 to 80 in	silt loam	moderate	4.42 to 5.72 in	5.6 to 7.8

B62A--Wabuse-Vasso complex, 0 to 3 percent slopes

Vasso

Extent: 15 to 35 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 1 to 3 percent
Parent material: sandy eolian, glaciolacustrine or outwash material and underlying loamy glaciolacustrine sediments
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) .20
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: B/D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 4 in	fine sandy loam	moderately rapid	0.63 to 0.75 in	4.5 to 6.0
E --	4 to 6 in	fine sandy loam	moderately rapid	0.18 to 0.33 in	4.5 to 6.0
Bw1 --	6 to 18 in	loamy fine sand	rapid	0.37 to 1.22 in	4.5 to 6.5
Bw2 --	18 to 38 in	fine sand	rapid	0.60 to 2.01 in	5.1 to 6.5
2Bg --	38 to 50 in	silt loam	moderate	2.01 to 2.60 in	5.6 to 6.5
2Cg --	50 to 80 in	silt loam	moderate	5.09 to 6.58 in	5.6 to 7.8

B63B--Urbanland-McQuade-Buhl complex, 0 to 12 percent slopes

Urban land

Extent: 40 to 65 percent of the unit
Landform(s): knolls on till plains, flats on till plains
Slope gradient: 0 to 12 percent
Parent material: human transported 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: unranked
Hydrologic group:
Potential for frost action:

Representative soil profile:

Texture	Permeability	Available water capacity	pH

Mcquade

Extent: 15 to 25 percent of the unit
Landform(s): till plains
Slope gradient: 0 to 2 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated: 4w
Hydric soil: yes
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	4.5 to 5.5
Eg --	4 to 8 in	loam	moderate	0.59 to 0.83 in	4.5 to 5.5
2B/E --	8 to 17 in	clay loam	slow	0.72 to 1.36 in	5.1 to 6.0
2Bt --	17 to 36 in	clay	slow	1.51 to 2.83 in	5.1 to 6.5
2BCt --	36 to 52 in	clay	slow	1.29 to 2.42 in	5.6 to 7.3
2BCd --	52 to 80 in	clay	slow	1.12 to 2.24 in	6.1 to 8.4

B63B--Urbanland-McQuade-Buhl complex, 0 to 12 percent slopes

Buhl

Extent: 15 to 25 percent of the unit
Landform(s): till plains
Slope gradient: 1 to 5 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
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 3 in	loam	moderate	0.63 to 0.69 in	4.5 to 5.5
E -- 3 to 13 in	loam	moderate	1.48 to 2.07 in	4.5 to 5.5
2B/E -- 13 to 18 in	clay loam	slow	0.41 to 0.77 in	5.1 to 6.0
2Bt1 -- 18 to 32 in	clay	slow	1.10 to 2.07 in	5.1 to 6.0
2Bt2 -- 32 to 58 in	clay	slow	2.08 to 3.90 in	5.1 to 6.5
2BCd -- 58 to 80 in	clay	slow	0.88 to 1.76 in	6.1 to 8.4

B64B--Vasso-Keenan complex, 1 to 6 percent slopes

Vasso

Extent: 30 to 50 percent of the unit
Landform(s): lake plains
Slope gradient: 1 to 3 percent
Parent material: sandy eolian, glaciolacustrine or outwash material and underlying loamy glaciolacustrine sediments
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) .20
Land capability, nonirrigated: 3w
Hydric soil: no
Hydrologic group: B/D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 4 in	fine sandy loam	moderately rapid	0.63 to 0.75 in	4.5 to 6.0
E --	4 to 6 in	fine sandy loam	moderately rapid	0.18 to 0.33 in	4.5 to 6.0
Bw1 --	6 to 18 in	loamy fine sand	rapid	0.37 to 1.22 in	4.5 to 6.5
Bw2 --	18 to 38 in	fine sand	rapid	0.60 to 2.01 in	5.1 to 6.5
2Bg --	38 to 50 in	silt loam	moderate	2.01 to 2.60 in	5.6 to 6.5
2Cg --	50 to 80 in	silt loam	moderate	5.09 to 6.58 in	5.6 to 7.8

B64B--Vasso-Keenan complex, 1 to 6 percent slopes

Keenan

Extent: 25 to 45 percent of the unit
Landform(s): lake plains
Slope gradient: 1 to 6 percent
Parent material: sandy eolian, glaciolacustrine or outwash material and underlying loamy glaciolacustrine sediments
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: 2s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

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	4.5 to 6.0
Bw1 --	4 to 12 in	loamy fine sand	rapid	0.31 to 0.87 in	4.5 to 6.5
Bw2 --	12 to 32 in	fine sand	rapid	0.60 to 2.01 in	5.1 to 6.5
2Bw3 --	32 to 54 in	silt loam	moderate	3.75 to 4.85 in	5.6 to 6.5
2C --	54 to 80 in	silt loam	moderate	4.42 to 5.72 in	5.6 to 7.8

B65A--Merwin peat, Upham basin, 0 to 1 percent slopes

Merwin

Extent: 60 to 90 percent of the unit
Landform(s): bogs on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over glaciolacustrine or glaciofluvial sediments
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): 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 6 in	peat	very rapid	3.25 to 3.84 in	
Oe --	6 to 46 in	mucky peat	rapid	18.07 to 22.09 in	
Cg --	46 to 80 in	stratified loamy fine sand to silty clay	moderate	3.39 to 6.09 in	5.6 to 7.8

B66C--Entisols, channeled, 0 to 20 percent slopes, rarely to frequently flooded

Udifluvents, occasionally flooded

Extent: 15 to 50 percent of the unit
Landform(s): levees on flood plains
Slope gradient: 2 to 10 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: occasional
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
Land capability, nonirrigated: 3w
Hydric soil: no
Hydrologic group: B/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	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	rapid	4.44 to 16.28 in	5.6 to 7.3

Udipsamments, rarely flooded

Extent: 10 to 35 percent of the unit
Landform(s): valley sides on flood plains
Slope gradient: 4 to 20 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: rare
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: 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 0.38 in	4.5 to 6.5
Bw -- 3 to 22 in	coarse sand	very rapid	0.76 to 1.32 in	4.5 to 6.5
C -- 22 to 80 in	coarse sand	very rapid	2.31 to 3.47 in	5.6 to 7.3

B66C--Entisols, channeled, 0 to 20 percent slopes, rarely to frequently flooded

Udifluvents, frequently flooded

Extent: 10 to 30 percent of the unit
Landform(s): flats on flood plains, rises on flood plains
Slope gradient: 0 to 6 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
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: 5w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: moderate

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
A --	0 to 6 in	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	rapid	4.44 to 16.28 in	5.6 to 7.3

Fluvaquents, frequently flooded

Extent: 10 to 25 percent of the unit
Landform(s): flats on flood plains
Slope gradient: 0 to 3 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
Land capability, nonirrigated: 5w
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	1.30 to 1.54 in	5.6 to 7.3
Cg --	6 to 80 in	stratified silt loam to loamy coarse sand	rapid	4.44 to 16.28 in	5.6 to 7.3

B67A--Rifle soils, Hibbing catena, 0 to 1 percent slopes

Rifle

Extent: 0 to 95 percent of the unit
Landform(s): swamps on moraines, swamps on till plains
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): 5
Wind erodibility index (WEI): 56
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*
Oe1 -- 0 to 12 in	mucky peat	rapid	5.31 to 6.50 in	
Oe2 -- 12 to 42 in	mucky peat	rapid	13.64 to 16.67 in	
Oa -- 42 to 52 in	muck	moderately rapid	3.44 to 4.43 in	
Oe3 -- 52 to 80 in	mucky peat	rapid	12.58 to 15.37 in	

Rifle, depressional

Extent: 0 to 95 percent of the unit
Landform(s): swamps on moraines, swamps on till plains
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: 7w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe1 -- 0 to 12 in	mucky peat	rapid	5.31 to 6.50 in	
Oe2 -- 12 to 42 in	mucky peat	rapid	13.64 to 16.67 in	
Oa -- 42 to 52 in	muck	moderately rapid	3.44 to 4.43 in	
Oe3 -- 52 to 80 in	mucky peat	rapid	12.58 to 15.37 in	

B68A--Roscommon, depressional-Roscommon complex, 0 to 1 percent slopes

Roscommon, depressional

Extent: 40 to 60 percent of the unit
Landform(s): drainageways on outwash plains, depressions on outwash plains
Slope gradient: 0 to 1 percent
Parent material: sandy 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 3 in	muck	moderately rapid	1.10 to 1.42 in	4.5 to 6.0
Eg -- 3 to 8 in	sand	rapid	0.14 to 0.52 in	4.5 to 6.0
Bg -- 8 to 33 in	sand	rapid	0.50 to 2.52 in	4.5 to 6.0
Cg -- 33 to 80 in	sand	rapid	0.94 to 3.28 in	5.1 to 6.5

Roscommon, depressional, silty substratum

Extent: 20 to 40 percent of the unit
Landform(s): drainageways on outwash plains, depressions on outwash plains
Slope gradient: 0 to 1 percent
Parent material: sandy outwash over loamy glaciofluvial or glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained
Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 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 3 in	muck	moderately rapid	1.10 to 1.42 in	4.5 to 6.0
Eg -- 3 to 8 in	sand	rapid	0.14 to 0.52 in	4.5 to 6.0
Bg -- 8 to 33 in	sand	rapid	0.50 to 2.52 in	4.5 to 6.0
Cg1 -- 33 to 63 in	sand	rapid	0.60 to 2.69 in	5.1 to 6.5
2Cg2 -- 63 to 80 in	silt loam	moderate	2.88 to 3.72 in	5.6 to 7.8

B68A--Roscommon, depressional-Roscommon complex, 0 to 1 percent slopes

B72A--Barber-Wabuse complex, 0 to 3 percent slopes

Barber

Extent: 45 to 65 percent of the unit
Landform(s): rises on lake plains, rises on outwash plains
Slope gradient: 1 to 3 percent
Parent material: eolian deposits and/or 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: A/D
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	fine sandy loam	moderately rapid	0.82 to 0.92 in	4.5 to 6.0
E -- 5 to 8 in	fine sandy loam	moderately rapid	0.28 to 0.47 in	4.5 to 6.0
Bw1 -- 8 to 19 in	loamy fine sand	rapid	1.10 to 1.76 in	4.5 to 6.5
Bw2 -- 19 to 27 in	loamy fine sand	rapid	0.50 to 0.83 in	5.1 to 6.5
Bg -- 27 to 53 in	fine sand	rapid	1.56 to 2.60 in	5.1 to 6.5
C -- 53 to 80 in	fine sand	rapid	1.61 to 2.68 in	5.1 to 6.5

B72A--Barber-Wabuse complex, 0 to 3 percent slopes

Wabuse

Extent: 25 to 45 percent of the unit
Landform(s): flats on lake plains, flats on outwash plains
Slope gradient: 0 to 1 percent
Parent material: sandy eolian, glaciolacustrine or outwash material and underlying loamy glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 3w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	fine sandy loam	moderately rapid	0.50 to 0.57 in	4.5 to 6.0
E -- 3 to 6 in	fine sandy loam	moderately rapid	0.30 to 0.50 in	4.5 to 6.0
Bg1 -- 6 to 28 in	loamy fine sand	rapid	1.98 to 3.31 in	5.1 to 6.5
2Bg2 -- 28 to 60 in	stratified loamy fine sand to loamy very fine sand to fine sandy loam to very fine sandy loam to silt loam	moderately rapid	3.51 to 5.10 in	5.1 to 6.5
2Cg -- 60 to 80 in	stratified loamy fine sand to loamy very fine sand to fine sandy loam to very fine sandy loam to silt loam	moderately rapid	2.21 to 3.21 in	5.6 to 7.8

B73A--Spooner-Buhl-Littleswan complex, 0 to 3 percent slopes

Spooner

Extent: 20 to 50 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 0 to 2 percent
Parent material: silty 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): 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*
Ap -- 0 to 5 in	silt loam	moderate	1.13 to 1.23 in	5.6 to 7.3
Eg -- 5 to 9 in	very fine sandy loam	moderate	0.67 to 0.87 in	5.6 to 7.3
Btg -- 9 to 30 in	silty clay loam	moderately slow	3.76 to 4.59 in	6.1 to 7.3
Bkg -- 30 to 57 in	silt loam	moderate	4.62 to 5.98 in	7.4 to 8.4
Cg -- 57 to 80 in	silt loam	moderate	3.88 to 5.02 in	7.4 to 8.4

Littleswan

Extent: 15 to 35 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 1 to 3 percent
Parent material: silty 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .43
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 -- 0 to 4 in	silt loam	moderate	0.87 to 0.94 in	5.6 to 7.3
E -- 4 to 11 in	silt loam	moderate	1.20 to 1.56 in	5.6 to 7.3
Bt -- 11 to 32 in	silty clay loam	moderately slow	3.76 to 4.59 in	6.1 to 7.3
Cg1 -- 32 to 41 in	silt loam	moderate	1.54 to 1.99 in	7.4 to 8.4
Cg2 -- 41 to 80 in	silt loam	moderate	6.63 to 8.57 in	7.4 to 8.4

B73A--Spooner-Buhl-Littleswan complex, 0 to 3 percent slopes

Buhl

Extent: 15 to 40 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 1 to 3 percent
Parent material: loamy material over dense fine till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
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 3 in	loam	moderate	0.63 to 0.69 in	4.5 to 5.5
E -- 3 to 13 in	loam	moderate	1.48 to 2.07 in	4.5 to 5.5
2B/E -- 13 to 18 in	clay loam	slow	0.41 to 0.77 in	5.1 to 6.0
2Bt1 -- 18 to 32 in	clay	slow	1.10 to 2.07 in	5.1 to 6.0
2Bt2 -- 32 to 58 in	clay	slow	2.08 to 3.90 in	5.1 to 6.5
2BCd -- 58 to 80 in	clay	slow	0.88 to 1.76 in	6.1 to 8.4

B74A--Kapla, depressional-Wabuse complex, 0 to 2 percent slopes

Kapla, depressional

Extent: 35 to 60 percent of the unit
Landform(s): depressions on lake plains, swales on lake plains, depressions on outwash plains, swales on outwash plains
Slope gradient: 0 to 1 percent
Parent material: eolian and/or glaciolacustrine materials
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): 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
Oe	0 to 5 in	mucky peat	rapid	2.30 to 2.81 in	
A	5 to 12 in	fine sandy loam	moderately rapid	0.80 to 1.41 in	4.5 to 6.0
Bg1	12 to 24 in	fine sandy loam	moderately rapid	1.46 to 2.44 in	4.5 to 6.5
Bg2	24 to 37 in	loamy very fine sand	moderately rapid	1.56 to 2.60 in	5.1 to 6.5
Cg	37 to 80 in	stratified loamy fine sand to loamy very fine sand to fine sandy loam to very fine sandy loam to silt loam	moderately rapid	5.58 to 7.30 in	5.6 to 7.8

B74A--Kapla, depressional-Wabuse complex, 0 to 2 percent slopes

Wabuse

Extent: 20 to 50 percent of the unit
Landform(s): flats on lake plains, flats on outwash plains
Slope gradient: 0 to 2 percent
Parent material: sandy eolian, glaciolacustrine or outwash material and underlying loamy glaciolacustrine sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 3w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 3 in	fine sandy loam	moderately rapid	0.50 to 0.57 in	4.5 to 6.0
E --	3 to 6 in	fine sandy loam	moderately rapid	0.30 to 0.50 in	4.5 to 6.0
Bg1 --	6 to 28 in	loamy fine sand	rapid	1.98 to 3.31 in	5.1 to 6.5
2Bg2 --	28 to 60 in	stratified loamy fine sand to loamy very fine sand to fine sandy loam to very fine sandy loam to silt loam	moderately rapid	3.51 to 5.10 in	5.1 to 6.5
2Cg --	60 to 80 in	stratified loamy fine sand to loamy very fine sand to fine sandy loam to very fine sandy loam to silt loam	moderately rapid	2.21 to 3.21 in	5.6 to 7.8

B80A--Rifle soils, Taylor catena, 0 to 1 percent slopes

Rifle

Extent: 0 to 95 percent of the unit
Landform(s): depressions on lake 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)
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*
Oe1 -- 0 to 12 in	mucky peat	rapid	5.31 to 6.50 in	
Oe2 -- 12 to 42 in	mucky peat	rapid	13.64 to 16.67 in	
Oa -- 42 to 52 in	muck	moderately rapid	3.44 to 4.43 in	
Oe3 -- 52 to 80 in	mucky peat	rapid	12.58 to 15.37 in	

Rifle, depressional

Extent: 0 to 95 percent of the unit
Landform(s): depressions on lake 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): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer)
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*
Oe1 -- 0 to 12 in	mucky peat	rapid	5.31 to 6.50 in	
Oe2 -- 12 to 42 in	mucky peat	rapid	13.64 to 16.67 in	
Oa -- 42 to 52 in	muck	moderately rapid	3.44 to 4.43 in	
Oe3 -- 52 to 80 in	mucky peat	rapid	12.58 to 15.37 in	

B82A--Greenwood soils, Taylor catena, 0 to 1 percent slopes

Greenwood

Extent: 0 to 95 percent of the unit
Landform(s): 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)
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 10 in	peat	very rapid	5.41 to 6.40 in	
Oe1 -- 10 to 24 in	mucky peat	rapid	6.38 to 7.80 in	
Oe2 -- 24 to 80 in	mucky peat	rapid	25.16 to 30.75 in	

Greenwood, depressional

Extent: 0 to 95 percent of the unit
Landform(s): 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: 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)
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 10 in	peat	very rapid	5.41 to 6.40 in	
Oe1 -- 10 to 24 in	mucky peat	rapid	6.38 to 7.80 in	
Oe2 -- 24 to 80 in	mucky peat	rapid	25.16 to 30.75 in	

B83A--Rifle-Tacoosh complex, depressional, 0 to 1 percent slopes

Rifle, depressional

Extent: 35 to 60 percent of the unit
Landform(s): swamps on lake plains
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: 7w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe1 -- 0 to 12 in	mucky peat	rapid	5.31 to 6.50 in	
Oe2 -- 12 to 42 in	mucky peat	rapid	13.64 to 16.67 in	
Oa -- 42 to 52 in	muck	moderately rapid	3.44 to 4.43 in	
Oe3 -- 52 to 80 in	mucky peat	rapid	12.58 to 15.37 in	

Tacoosh, depressional

Extent: 25 to 60 percent of the unit
Landform(s): swamps on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over glaciolacustrine sediments
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*
Oe1 -- 0 to 7 in	mucky peat	rapid	3.19 to 3.90 in	
Oe2 -- 7 to 30 in	mucky peat	rapid	10.28 to 12.56 in	
Oa -- 30 to 40 in	muck	moderately rapid	3.58 to 4.61 in	
Cg -- 40 to 80 in	stratified loamy fine sand to silty clay	moderate	3.98 to 7.16 in	6.1 to 7.8

B84B--Eutrudepts, occasionally flooded-Greaney, frequently flooded, complex, 0 to 4 percent slopes

Eutrudepts, occasionally flooded

Extent: 35 to 60 percent of the unit
Landform(s): bars on flood plains, flood-plain steps on flood plains
Slope gradient: 1 to 4 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: occasional
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .37
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 8 in	silt loam	moderate	1.73 to 1.89 in	5.1 to 6.5
Bg -- 8 to 52 in	stratified fine sandy loam to silt loam to silty clay loam to silty clay	moderately slow	4.85 to 8.82 in	5.6 to 7.3
Cg -- 52 to 80 in	stratified silt loam to silty clay loam to silty clay to clay	slow	2.80 to 3.63 in	6.6 to 8.4

Greaney, frequently flooded

Extent: 25 to 50 percent of the unit
Landform(s): flood-plain steps on flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated: 5w
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	silty clay loam	moderately slow	0.83 to 0.91 in	5.1 to 6.5
Bg -- 4 to 30 in	silty clay	slow	2.86 to 5.20 in	5.6 to 7.3
Cg -- 30 to 80 in	stratified silty clay loam to silty clay to clay loam to clay	slow	5.00 to 6.50 in	6.6 to 8.4

B99A--Cathro-Sago complex, depressional, 0 to 1 percent slopes

Cathro, depressional

Extent: 30 to 65 percent of the unit
Landform(s): swamps on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over glaciolacustrine sediments
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: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 36 in	muck	moderately rapid	12.54 to 16.12 in	
A -- 36 to 40 in	mucky silt loam	moderate	0.95 to 1.13 in	5.1 to 6.5
Cg -- 40 to 80 in	stratified loamy fine sand to silt loam	moderately rapid	5.17 to 7.56 in	5.6 to 7.8

Sago, depressional

Extent: 30 to 60 percent of the unit
Landform(s): swamps on lake plains, -- error in exists on --
Slope gradient: 0 to 1 percent
Parent material: organic material over glaciolacustrine sediments
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*
Oe -- 0 to 5 in	mucky peat	rapid	2.30 to 2.81 in	
Oa -- 5 to 13 in	muck	moderately rapid	2.76 to 3.54 in	
A -- 13 to 15 in	fine sandy loam	moderately rapid	0.22 to 0.41 in	4.5 to 6.0
Bg -- 15 to 41 in	stratified loamy fine sand to silt loam	moderately rapid	3.38 to 4.94 in	5.1 to 6.5
Cg -- 41 to 80 in	stratified loamy fine sand to silt loam	moderately rapid	5.07 to 7.41 in	5.6 to 7.8

B99A--Cathro-Sago complex, depressional, 0 to 1 percent slopes

B100A--Greenwood-Merwin complex, depressional, 0 to 1 percent slopes

Greenwood, depressional

Extent: 35 to 60 percent of the unit
Landform(s): bogs on lake plains
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: 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 10 in	peat	very rapid	5.41 to 6.40 in	
Oe1 -- 10 to 24 in	mucky peat	rapid	6.38 to 7.80 in	
Oe2 -- 24 to 80 in	mucky peat	rapid	25.16 to 30.75 in	

Merwin, depressional

Extent: 25 to 60 percent of the unit
Landform(s): bogs on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over glaciolacustrine sediments
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*
Oi -- 0 to 6 in	peat	very rapid	3.25 to 3.84 in	
Oe -- 6 to 46 in	mucky peat	rapid	18.07 to 22.09 in	
Cg -- 46 to 80 in	stratified loamy fine sand to silty clay	moderate	3.39 to 6.09 in	6.1 to 7.8

B108A--Cathro muck, depressional, Upham basin, 0 to 1 percent sloes

Cathro, depressional

Extent: 60 to 90 percent of the unit
Landform(s): swamps on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over glaciolacustrine or glaciofluvial sediments
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: B/D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Oa --	0 to 36 in	muck	moderately rapid	12.54 to 16.12 in	
A --	36 to 40 in	mucky silt loam	moderate	0.95 to 1.13 in	5.1 to 6.5
Cg --	40 to 80 in	stratified loamy fine sand to silty clay	moderate	3.98 to 7.16 in	5.6 to 7.8

B119A--Tacoosh mucky peat, Upham basin, 0 to 1 percent slopes

Tacoosh

Extent: 60 to 90 percent of the unit
Landform(s): swamps on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over glaciolacustrine or glaciofluvial sediments
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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
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
Oe1 --	0 to 12 in	mucky peat	rapid	5.31 to 6.50 in	
Oe2 --	12 to 32 in	mucky peat	rapid	9.04 to 11.04 in	
Oa --	32 to 36 in	muck	moderately rapid	1.38 to 1.77 in	
Cg --	36 to 80 in	stratified loamy fine sand to silty clay	moderate	4.41 to 7.94 in	6.1 to 7.8

B147A--Rifle soils, upham basin, 0 to 1 percent slopes

Rifle

Extent: 0 to 95 percent of the unit
Landform(s): swamps on lake plains
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): 5
Wind erodibility index (WEI): 56
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*
Oe1 -- 0 to 12 in	mucky peat	rapid	5.31 to 6.50 in	
Oe2 -- 12 to 42 in	mucky peat	rapid	13.64 to 16.67 in	
Oa -- 42 to 52 in	muck	moderately rapid	3.44 to 4.43 in	
Oe3 -- 52 to 80 in	mucky peat	rapid	12.58 to 15.37 in	

Rifle, depressional

Extent: 0 to 95 percent of the unit
Landform(s): swamps on lake plains
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: 7w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe1 -- 0 to 12 in	mucky peat	rapid	5.31 to 6.50 in	
Oe2 -- 12 to 42 in	mucky peat	rapid	13.64 to 16.67 in	
Oa -- 42 to 52 in	muck	moderately rapid	3.44 to 4.43 in	
Oe3 -- 52 to 80 in	mucky peat	rapid	12.58 to 15.37 in	

B152A--Greenwood soils (Hibbing catena), 0 to 1 percent slopes

Greenwood

Extent: 0 to 95 percent of the unit
Landform(s): bogs on moraines, bogs on till plains
Slope gradient: 0 to 1 percent
Parent material: 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 10 in	peat	very rapid	5.41 to 6.40 in	
Oe1 -- 10 to 24 in	mucky peat	rapid	6.38 to 7.80 in	
Oe2 -- 24 to 80 in	mucky peat	rapid	25.16 to 30.75 in	

Greenwood, depressional

Extent: 0 to 95 percent of the unit
Landform(s): bogs on moraines, bogs on till plains
Slope gradient: 0 to 0 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: 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 10 in	peat	very rapid	5.41 to 6.40 in	
Oe1 -- 10 to 24 in	mucky peat	rapid	6.38 to 7.80 in	
Oe2 -- 24 to 80 in	mucky peat	rapid	25.16 to 30.75 in	

F1C--Eaglesnest stony loam, 4 to 12 percent slopes, very bouldery

Eaglesnest, very bouldery

Extent: 75 to 90 percent of the unit
Landform(s): moraines
Slope gradient: 4 to 12 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .15
Land capability, nonirrigated: 6s
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	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1 -- 3 to 6 in	stony loam	moderate	0.22 to 0.44 in	4.5 to 6.0
Bw2 -- 6 to 20 in	stony sandy loam	moderate	0.99 to 2.13 in	5.1 to 6.5
Bw3 -- 20 to 28 in	very stony sandy loam	moderate	0.47 to 1.02 in	5.1 to 6.5
2BC -- 28 to 41 in	very cobbly sandy loam	moderately slow	0.52 to 1.17 in	5.1 to 6.5
2Cd -- 41 to 80 in	very cobbly sandy loam	slow	0.78 to 1.95 in	5.1 to 6.5

F2B--Eaglesnest-Wahlsten complex, 2 to 8 percent slopes, bouldery

Eaglesnest, bouldery

Extent: 30 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 2 to 8 percent
Parent material: loamy drift over dense gravelly lodgment till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .15
Land capability, nonirrigated: 6s
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	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1 -- 3 to 6 in	stony loam	moderate	0.22 to 0.44 in	4.5 to 6.0
Bw2 -- 6 to 20 in	stony sandy loam	moderate	0.99 to 2.13 in	5.1 to 6.5
Bw3 -- 20 to 28 in	very stony sandy loam	moderate	0.47 to 1.02 in	5.1 to 6.5
2BC -- 28 to 41 in	very cobbly sandy loam	moderately slow	0.52 to 1.17 in	5.1 to 6.5
2Cd -- 41 to 80 in	very cobbly sandy loam	slow	0.78 to 1.95 in	5.1 to 6.5

F2B--Eaglesnest-Wahlsten complex, 2 to 8 percent slopes, bouldery

Wahlsten, bouldery

Extent: 20 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 2 to 8 percent
Parent material: loamy drift over dense gravelly lodgment till over bedrock
Restrictive feature(s): densic material at 15 to 35 inches
lithic bedrock at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .20
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 3 in	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1 --	3 to 9 in	stony loam	moderate	0.59 to 1.06 in	4.5 to 6.0
Bw2 --	9 to 17 in	gravelly loam	moderate	0.63 to 1.26 in	5.1 to 6.5
2Cd --	17 to 37 in	very gravelly sandy loam	slow	0.60 to 1.41 in	5.1 to 6.5
R --	37 to 80 in	bedrock	very slow		

F3D--Eveleth-Eaglesnest-Conic complex, 6 to 18 percent slopes, bouldery

Eveleth, bouldery

Extent: 30 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 18 percent
Parent material: loamy drift over dense gravelly lodgment till
Restrictive feature(s): densic material at 35 to 55 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .15
Land capability, nonirrigated: 6s
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	stony loam	moderate	0.51 to 0.75 in	4.5 to 6.0
Bw1 -- 4 to 13 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 13 to 23 in	cobbly loam	moderate	0.69 to 1.57 in	5.1 to 6.5
2BC -- 23 to 43 in	very gravelly sandy loam	moderately slow	0.80 to 1.81 in	5.1 to 6.5
2Cd -- 43 to 80 in	very gravelly sandy loam	slow	0.74 to 1.85 in	5.1 to 6.5

Eaglesnest, bouldery

Extent: 15 to 35 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 10 percent
Parent material: loamy drift over dense gravelly lodgment till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .15
Land capability, nonirrigated: 6s
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	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1 -- 3 to 6 in	stony loam	moderate	0.22 to 0.44 in	4.5 to 6.0
Bw2 -- 6 to 20 in	stony sandy loam	moderate	0.99 to 2.13 in	5.1 to 6.5
Bw3 -- 20 to 28 in	very stony sandy loam	moderate	0.47 to 1.02 in	5.1 to 6.5
2BC -- 28 to 41 in	very cobbly sandy loam	moderately slow	0.52 to 1.17 in	5.1 to 6.5
2Cd -- 41 to 80 in	very cobbly sandy loam	slow	0.78 to 1.95 in	5.1 to 6.5

F3D--Eveleth-Eaglesnest-Conic complex, 6 to 18 percent slopes, bouldery

Conic, bouldery

Extent: 15 to 30 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 18 percent
Parent material: loamy drift over dense gravelly lodgment till over bedrock
Restrictive feature(s): densic material at 12 to 30 inches
lithic bedrock at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:

		Texture	*Permeability*	*Available water capacity*	*pH*
A --	0 to 3 in	stony loam	moderate	0.31 to 0.50 in	4.5 to 6.0
Bw --	3 to 9 in	stony loam	moderate	0.53 to 0.89 in	4.5 to 6.0
BC --	9 to 18 in	cobbly sandy loam	moderate	0.63 to 1.27 in	5.1 to 6.5
Cd --	18 to 29 in	very gravelly coarse sandy loam	slow	0.22 to 0.77 in	5.1 to 6.5
R --	29 to 80 in	bedrock	very slow		

F4E--Eveleth-Conic, bouldery-Rock outcrop complex, 18 to 30 percent slopes

Eveleth, bouldery

Extent: 45 to 65 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 30 percent
Parent material: loamy drift over dense gravelly lodgment till
Restrictive feature(s): densic material at 35 to 55 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .15
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 -- 0 to 4 in	stony loam	moderate	0.51 to 0.75 in	4.5 to 6.0
Bw1 -- 4 to 13 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 13 to 23 in	cobbly loam	moderate	0.69 to 1.57 in	5.1 to 6.5
2BC -- 23 to 43 in	very gravelly sandy loam	moderately slow	0.80 to 1.81 in	5.1 to 6.5
2Cd -- 43 to 80 in	very gravelly sandy loam	slow	0.74 to 1.85 in	5.1 to 6.5

Conic, bouldery

Extent: 20 to 35 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 30 percent
Parent material: loamy drift over dense gravelly lodgment till over bedrock
Restrictive feature(s): densic material at 12 to 30 inches lithic bedrock at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	stony loam	moderate	0.31 to 0.50 in	4.5 to 6.0
Bw -- 3 to 9 in	stony loam	moderate	0.53 to 0.89 in	4.5 to 6.0
BC -- 9 to 18 in	cobbly sandy loam	moderate	0.63 to 1.27 in	5.1 to 6.5
Cd -- 18 to 29 in	very gravelly coarse sandy loam	slow	0.22 to 0.77 in	5.1 to 6.5
R -- 29 to 80 in	bedrock	very slow		

F4E--Eveleth-Conic, bouldery-Rock outcrop complex, 18 to 30 percent slopes

Rock outcrop

Extent: 10 to 20 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 30 percent
Parent material:
Restrictive feature(s): lithic bedrock at 0 to 0 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: 8s
Hydric soil: unranked
Hydrologic group:
Potential for frost action:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

F5B--Babbitt, bouldery-Wahlsten, bouldery-Aquepts, rubbly, complex, 0 to 8 percent slopes

Babbitt, bouldery

Extent: 30 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 4 percent
Parent material: loamy drift over dense gravelly lodgment till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .17
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 5 in	stony loam	moderate	0.67 to 0.97 in	4.5 to 6.0
Bw1 --	5 to 14 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 --	14 to 30 in	gravelly sandy loam	moderate	1.10 to 2.36 in	5.1 to 6.5
2BC --	30 to 50 in	very gravelly sandy loam	moderately slow	1.20 to 2.81 in	5.1 to 6.5
2Cd --	50 to 80 in	very gravelly sandy loam	slow	0.60 to 1.50 in	5.1 to 6.5

F5B--Babbitt, bouldery-Wahlsten, bouldery-Aquepts, rubbly, complex, 0 to 8 percent slopes

Wahlsten, bouldery

Extent: 20 to 30 percent of the unit
Landform(s): moraines
Slope gradient: 3 to 8 percent
Parent material: loamy drift over dense gravelly lodgment till over bedrock
Restrictive feature(s): densic material at 15 to 35 inches lithic bedrock at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .20
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1 -- 3 to 9 in	stony loam	moderate	0.59 to 1.06 in	4.5 to 6.0
Bw2 -- 9 to 17 in	gravelly loam	moderate	0.63 to 1.26 in	5.1 to 6.5
2Cd -- 17 to 37 in	very gravelly sandy loam	slow	0.60 to 1.41 in	5.1 to 6.5
R -- 37 to 80 in	bedrock	very slow		

Aquepts, rubbly, depressional

Extent: 10 to 20 percent of the unit
Landform(s): drainageways on moraines
Slope gradient: 0 to 1 percent
Parent material: glaciofluvial sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .05
Land capability, nonirrigated: 8s
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	extremely stony sandy loam	moderate	0.16 to 0.31 in	4.5 to 6.0
Bg -- 4 to 40 in	very stony loam	moderate	1.45 to 4.71 in	4.5 to 6.0
Cg -- 40 to 80 in	cobbly sandy loam	moderately slow	2.78 to 6.36 in	5.1 to 6.5

F5B--Babbitt, bouldery-Wahlsten, bouldery-Aquepts, rubbly, complex, 0 to 8 percent slopes

F6B--Soudan-Eaglesnest-Babbitt complex, 1 to 8 percent slopes, bouldery

Soudan, bouldery

Extent: 35 to 55 percent of the unit
Landform(s): moraines
Slope gradient: 2 to 8 percent
Parent material: sandy outwash and/or eloian material over dense lodgment till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .17
Land capability, nonirrigated: 6s
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	0.44 to 0.57 in	4.5 to 6.0
Bw1 -- 3 to 17 in	sandy loam	moderately rapid	1.38 to 2.34 in	4.5 to 6.0
Bw2 -- 17 to 36 in	loamy sand	rapid	0.94 to 1.89 in	4.5 to 6.0
2BC -- 36 to 57 in	very cobbly sandy loam	moderately slow	0.85 to 1.91 in	5.1 to 6.5
2Cd -- 57 to 80 in	very cobbly sandy loam	slow	0.46 to 1.14 in	5.1 to 6.5

Eaglesnest, bouldery

Extent: 15 to 35 percent of the unit
Landform(s): moraines
Slope gradient: 2 to 8 percent
Parent material: loamy drift over dense gravelly lodgment till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .15
Land capability, nonirrigated: 6s
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	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1 -- 3 to 6 in	stony loam	moderate	0.22 to 0.44 in	4.5 to 6.0
Bw2 -- 6 to 20 in	stony sandy loam	moderate	0.99 to 2.13 in	5.1 to 6.5
Bw3 -- 20 to 28 in	very stony sandy loam	moderate	0.47 to 1.02 in	5.1 to 6.5
2BC -- 28 to 41 in	very cobbly sandy loam	moderately slow	0.52 to 1.17 in	5.1 to 6.5
2Cd -- 41 to 80 in	very cobbly sandy loam	slow	0.78 to 1.95 in	5.1 to 6.5

F6B--Soudan-Eaglesnest-Babbitt complex, 1 to 8 percent slopes, bouldery

Babbitt, bouldery

Extent: 15 to 35 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 4 percent
Parent material: loamy drift over dense gravelly lodgment till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .17
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 5 in	stony loam	moderate	0.67 to 0.97 in	4.5 to 6.0
Bw1 --	5 to 14 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 --	14 to 30 in	gravelly sandy loam	moderate	1.10 to 2.36 in	5.1 to 6.5
2BC --	30 to 50 in	very gravelly sandy loam	moderately slow	1.20 to 2.81 in	5.1 to 6.5
2Cd --	50 to 80 in	very gravelly sandy loam	slow	0.60 to 1.50 in	5.1 to 6.5

F7B--Biwabik-Graycalm complex, 1 to 8 percent slopes

Biwabik

Extent: 40 to 70 percent of the unit
Landform(s): outwash plains
Slope gradient: 1 to 8 percent
Parent material: gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .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	sandy loam	moderately rapid	0.24 to 0.30 in	4.5 to 6.0
Bw -- 2 to 9 in	gravelly sandy loam	moderately rapid	0.64 to 0.92 in	4.5 to 6.0
E -- 9 to 32 in	gravelly loamy sand	rapid	0.69 to 1.60 in	4.5 to 6.0
E and Bt -- 32 to 64 in	gravelly loamy sand	rapid	0.97 to 1.94 in	5.1 to 6.0
C -- 64 to 80 in	gravelly coarse sand	very rapid	0.31 to 0.94 in	5.1 to 6.5

Graycalm

Extent: 25 to 55 percent of the unit
Landform(s): outwash plains
Slope gradient: 1 to 8 percent
Parent material: sandy 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 2 in	loamy sand	rapid	0.20 to 0.24 in	4.5 to 6.0
Bw -- 2 to 37 in	loamy sand	rapid	2.10 to 3.85 in	4.5 to 6.0
E and Bt -- 37 to 48 in	sand	rapid	0.55 to 0.99 in	5.1 to 6.0
C -- 48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

F8D--Biwabik-Graycalm-Friendship complex, pitted, 0 to 18 percent slopes

Biwabik

Extent: 30 to 60 percent of the unit
Landform(s): pitted outwash plains
Slope gradient: 8 to 18 percent
Parent material: gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated: 4e
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	sandy loam	moderately rapid	0.24 to 0.30 in	4.5 to 6.0
Bw -- 2 to 9 in	gravelly sandy loam	moderately rapid	0.64 to 0.92 in	4.5 to 6.0
E -- 9 to 32 in	gravelly loamy sand	rapid	0.69 to 1.60 in	4.5 to 6.0
E and Bt -- 32 to 64 in	gravelly loamy sand	rapid	0.97 to 1.94 in	5.1 to 6.0
C -- 64 to 80 in	gravelly coarse sand	very rapid	0.31 to 0.94 in	5.1 to 6.5

Graycalm

Extent: 30 to 60 percent of the unit
Landform(s): pitted outwash plains
Slope gradient: 8 to 18 percent
Parent material: sandy 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: 4e
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 6.0
Bw -- 2 to 37 in	loamy sand	rapid	2.10 to 3.85 in	4.5 to 6.0
E and Bt -- 37 to 48 in	sand	rapid	0.55 to 0.99 in	5.1 to 6.0
C -- 48 to 80 in	coarse sand	very rapid	0.64 to 2.23 in	5.1 to 6.5

F8D--Biwabik-Graycalm-Friendship complex, pitted, 0 to 18 percent slopes

Friendship, depressional

Extent: 10 to 20 percent of the unit
Landform(s): depressions on pitted 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: 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: 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
Bw1 -- 3 to 24 in	sand	rapid	0.63 to 2.30 in	4.5 to 6.0
Bw2 -- 24 to 40 in	sand	rapid	0.32 to 1.13 in	4.5 to 6.0
C -- 40 to 80 in	sand	rapid	0.80 to 2.78 in	5.1 to 6.5

F9A--Cloquet loam, 0 to 2 percent slopes

Cloquet

Extent: 70 to 90 percent of the unit
Landform(s): flats on outwash plains
Slope gradient: 0 to 2 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
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 2 in	loam	moderately rapid	0.39 to 0.43 in	4.5 to 6.0
Bw -- 2 to 22 in	loam	moderate	3.01 to 4.42 in	4.5 to 6.0
2C -- 22 to 80 in	very gravelly loamy coarse sand	rapid	0.58 to 2.31 in	5.1 to 6.5

F9B--Cloquet loam, 2 to 8 percent slopes

Cloquet

Extent: 75 to 90 percent of the unit
Landform(s): outwash plains
Slope gradient: 2 to 8 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
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 2 in	loam	moderately rapid	0.39 to 0.43 in	4.5 to 6.0
Bw --	2 to 22 in	loam	moderate	3.01 to 4.42 in	4.5 to 6.0
2C --	22 to 80 in	very gravelly loamy coarse sand	rapid	0.58 to 2.31 in	5.1 to 6.5

F10D--Cloquet-Pequaywan complex, pitted, 0 to 18 percent slopes

Cloquet

Extent: 65 to 80 percent of the unit
Landform(s): pitted outwash plains
Slope gradient: 8 to 18 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	loam	moderately rapid	0.39 to 0.43 in	4.5 to 6.0
Bw -- 2 to 22 in	loam	moderate	3.01 to 4.42 in	4.5 to 6.0
2C -- 22 to 80 in	very gravelly loamy coarse sand	rapid	0.58 to 2.31 in	5.1 to 6.5

Pequaywan

Extent: 10 to 20 percent of the unit
Landform(s): depressions on pitted outwash plains
Slope gradient: 0 to 2 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
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 2 in	loam	moderately rapid	0.39 to 0.43 in	4.5 to 6.0
Bw1,Bw2 -- 2 to 20 in	loam	moderate	2.72 to 3.98 in	4.5 to 6.0
Bw3 -- 20 to 30 in	sandy loam	moderately rapid	0.79 to 1.77 in	4.5 to 6.0
2C -- 30 to 80 in	very gravelly sand	rapid	0.50 to 2.00 in	5.1 to 6.5

F10E--Cloquet-Pequaywan complex, pitted, 0 to 45 percent slopes

Cloquet

Extent: 60 to 80 percent of the unit
Landform(s): pitted outwash plains
Slope gradient: 18 to 45 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	loam	moderately rapid	0.39 to 0.43 in	4.5 to 6.0
Bw -- 2 to 22 in	loam	moderate	3.01 to 4.42 in	4.5 to 6.0
2C -- 22 to 80 in	very gravelly loamy coarse sand	rapid	0.58 to 2.31 in	5.1 to 6.5

Pequaywan

Extent: 10 to 20 percent of the unit
Landform(s): depressions on pitted outwash plains
Slope gradient: 0 to 3 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
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 2 in	loam	moderately rapid	0.39 to 0.43 in	4.5 to 6.0
Bw1,Bw2 -- 2 to 20 in	loam	moderate	2.72 to 3.98 in	4.5 to 6.0
Bw3 -- 20 to 30 in	sandy loam	moderately rapid	0.79 to 1.77 in	4.5 to 6.0
2C -- 30 to 80 in	very gravelly sand	rapid	0.50 to 2.00 in	5.1 to 6.5

F11B--Eaglesnest stony loam, 2 to 8 percent slopes, bouldery

Eaglesnest, bouldery

Extent: 70 to 90 percent of the unit
Landform(s): till plains
Slope gradient: 2 to 8 percent
Parent material: loamy drift over dense gravelly lodgment till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .15
Land capability, nonirrigated: 6s
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	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1 -- 3 to 6 in	stony loam	moderate	0.22 to 0.44 in	4.5 to 6.0
Bw2 -- 6 to 20 in	stony sandy loam	moderate	0.99 to 2.13 in	5.1 to 6.5
Bw3 -- 20 to 28 in	very stony sandy loam	moderate	0.47 to 1.02 in	5.1 to 6.5
2BC -- 28 to 41 in	very cobbly sandy loam	moderately slow	0.52 to 1.17 in	5.1 to 6.5
2Cd -- 41 to 80 in	very cobbly sandy loam	slow	0.78 to 1.95 in	5.1 to 6.5

F12B--Eaglesnest-Babbitt complex, 1 to 8 percent slopes, bouldery

Eaglesnest, bouldery

Extent: 35 to 55 percent of the unit
Landform(s): rises on till plains
Slope gradient: 2 to 8 percent
Parent material: loamy drift over dense gravelly lodgment till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .15
Land capability, nonirrigated: 6s
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	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1 -- 3 to 6 in	stony loam	moderate	0.22 to 0.44 in	4.5 to 6.0
Bw2 -- 6 to 20 in	stony sandy loam	moderate	0.99 to 2.13 in	5.1 to 6.5
Bw3 -- 20 to 28 in	very stony sandy loam	moderate	0.47 to 1.02 in	5.1 to 6.5
2BC -- 28 to 41 in	very cobbly sandy loam	moderately slow	0.52 to 1.17 in	5.1 to 6.5
2Cd -- 41 to 80 in	very cobbly sandy loam	slow	0.78 to 1.95 in	5.1 to 6.5

Babbitt, bouldery

Extent: 30 to 50 percent of the unit
Landform(s): flats on till plains
Slope gradient: 1 to 4 percent
Parent material: loamy drift over dense gravelly lodgment till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .17
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	stony loam	moderate	0.67 to 0.97 in	4.5 to 6.0
Bw1 -- 5 to 14 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 14 to 30 in	gravelly sandy loam	moderate	1.10 to 2.36 in	5.1 to 6.5
2BC -- 30 to 50 in	very gravelly sandy loam	moderately slow	1.20 to 2.81 in	5.1 to 6.5
2Cd -- 50 to 80 in	very gravelly sandy loam	slow	0.60 to 1.50 in	5.1 to 6.5

F12B--Eaglesnest-Babbitt complex, 1 to 8 percent slopes, bouldery

F13A--Babbitt, bouldery-Aquepts, rubbly, complex, 0 to 3 percent slopes

Babbitt, bouldery

Extent: 35 to 55 percent of the unit
Landform(s): rises on till plains
Slope gradient: 0 to 3 percent
Parent material: loamy drift over dense gravelly lodgment till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .17
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	stony loam	moderate	0.67 to 0.97 in	4.5 to 6.0
Bw1 -- 5 to 14 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 14 to 30 in	gravelly sandy loam	moderate	1.10 to 2.36 in	5.1 to 6.5
2BC -- 30 to 50 in	very gravelly sandy loam	moderately slow	1.20 to 2.81 in	5.1 to 6.5
2Cd -- 50 to 80 in	very gravelly sandy loam	slow	0.60 to 1.50 in	5.1 to 6.5

Aquepts, rubbly, depressional

Extent: 30 to 50 percent of the unit
Landform(s): drainageways on till plains, depressions on till plains
Slope gradient: 0 to 1 percent
Parent material: glaciofluvial sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .05
Land capability, nonirrigated: 8s
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	extremely stony sandy loam	moderate	0.16 to 0.31 in	4.5 to 6.0
Bg -- 4 to 40 in	very stony loam	moderate	1.45 to 4.71 in	4.5 to 6.0
Cg -- 40 to 80 in	cobbly sandy loam	moderately slow	2.78 to 6.36 in	5.1 to 6.5

F14D--Eveleth stony loam, 8 to 18 percent slopes, bouldery

Eveleth, bouldery

Extent: 80 to 95 percent of the unit
Landform(s): till plains
Slope gradient: 8 to 18 percent
Parent material: loamy drift over dense gravelly lodgment till
Restrictive feature(s): densic material at 35 to 55 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .15
Land capability, nonirrigated: 6s
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	stony loam	moderate	0.51 to 0.75 in	4.5 to 6.0
Bw1 -- 4 to 13 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 13 to 23 in	cobbly loam	moderate	0.69 to 1.57 in	5.1 to 6.5
2BC -- 23 to 43 in	very gravelly sandy loam	moderately slow	0.80 to 1.81 in	5.1 to 6.5
2Cd -- 43 to 80 in	very gravelly sandy loam	slow	0.74 to 1.85 in	5.1 to 6.5

F15E--Rollins cobbly sandy loam, 18 to 35 percent slopes, stony

Rollins, stony

Extent: 85 to 95 percent of the unit
Landform(s): eskers
Slope gradient: 18 to 35 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .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 5 in	cobbly sandy loam	moderately rapid	0.51 to 0.72 in	4.5 to 6.0
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.81 to 1.45 in	4.5 to 6.0
2BC -- 14 to 25 in	very gravelly sand	rapid	0.22 to 0.55 in	4.5 to 6.0
2C -- 25 to 80 in	very gravelly coarse sand	very rapid	0.55 to 2.74 in	5.1 to 6.5

F16B--Shawano loamy fine sand, 1 to 8 percent slopes

Shawano

Extent: 75 to 95 percent of the unit
Landform(s): end moraines
Slope gradient: 1 to 8 percent
Parent material: eolian sand
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) .20
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 5 in	loamy fine sand	rapid	0.51 to 0.67 in	4.5 to 6.0
Bw -- 5 to 21 in	loamy fine sand	rapid	1.10 to 1.73 in	5.1 to 6.5
C -- 21 to 80 in	fine sand	rapid	3.54 to 5.91 in	5.1 to 6.5

F17A--Aquepts, 0 to 2 percent slopes, rubbly

Aquepts, rubbly, depressional

Extent: 65 to 90 percent of the unit
Landform(s): depressions on till plains, drainageways on till plains
Slope gradient: 0 to 2 percent
Parent material: glaciofluvial sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .05
Land capability, nonirrigated: 8s
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	extremely stony sandy loam	moderate	0.16 to 0.31 in	4.5 to 6.0
Bg --	4 to 40 in	very stony loam	moderate	1.45 to 4.71 in	4.5 to 6.0
Cg --	40 to 80 in	cobbly sandy loam	moderately slow	2.78 to 6.36 in	5.1 to 6.5

F18A--Babbitt stony loam, 0 to 3 percent slopes, bouldery

Babbitt, bouldery

Extent: 70 to 90 percent of the unit
Landform(s): rises on till plains
Slope gradient: 0 to 3 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .15
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	stony loam	moderate	0.67 to 0.97 in	4.5 to 6.0
Bw1 -- 5 to 14 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 14 to 30 in	gravelly sandy loam	moderate	1.10 to 2.36 in	5.1 to 6.5
2BC -- 30 to 50 in	very gravelly sandy loam	moderately slow	1.20 to 2.81 in	5.1 to 6.5
2Cd -- 50 to 80 in	very gravelly sandy loam	slow	0.60 to 1.50 in	5.1 to 6.5

F19A--Pequaywan loam, 0 to 3 percent slopes

Pequaywan

Extent: 75 to 95 percent of the unit
Landform(s): flats on outwash plains, rises on outwash plains
Slope gradient: 0 to 3 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
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 2 in	loam	moderately rapid	0.39 to 0.43 in	4.5 to 6.0
Bw1,Bw2 -- 2 to 20 in	loam	moderate	2.72 to 3.98 in	4.5 to 6.0
Bw3 -- 20 to 30 in	sandy loam	moderately rapid	0.79 to 1.77 in	4.5 to 6.0
2C -- 30 to 80 in	very gravelly sand	rapid	0.50 to 2.00 in	5.1 to 6.5

F21D--Quetico, stony-Rock outcrop complex, 15 to 35 percent slopes

Quetico, stony

Extent: 30 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 15 to 35 percent
Parent material: loamy drift over bedrock
Restrictive feature(s): lithic bedrock at 4 to 10 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated: 7s
Hydric soil: no
Hydrologic group: D
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 1 in	fine sandy loam	moderately rapid	0.11 to 0.17 in	4.5 to 6.0
Bw -- 1 to 7 in	gravelly fine sandy loam	moderately rapid	0.47 to 0.77 in	4.5 to 6.0
R -- 7 to 80 in	bedrock	very slow		

Rock outcrop

Extent: 20 to 40 percent of the unit
Landform(s): moraines
Slope gradient: 15 to 35 percent
Parent material:
Restrictive feature(s): lithic bedrock at 0 to 0 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: 8s
Hydric soil: unranked
Hydrologic group:
Potential for frost action:

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

F21F--Quetico, stony-Rock outcrop complex, 35 to 60 percent slopes

Quetico, stony

Extent: 30 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 35 to 60 percent
Parent material: loamy drift over bedrock
Restrictive feature(s): lithic bedrock at 4 to 10 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: D
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 1 in	fine sandy loam	moderately rapid	0.11 to 0.17 in	4.5 to 6.0
Bw -- 1 to 7 in	gravelly fine sandy loam	moderately rapid	0.47 to 0.77 in	4.5 to 6.0
R -- 7 to 80 in	bedrock	very slow		

Rock outcrop

Extent: 25 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 35 to 60 percent
Parent material:
Restrictive feature(s): lithic bedrock at 0 to 0 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: 8s
Hydric soil: unranked
Hydrologic group:
Potential for frost action:

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

F22F--Eveleth-Conic complex, 20 to 50 percent slopes, very bouldery

Eveleth, very bouldery

Extent: 50 to 70 percent of the unit
Landform(s): moraines
Slope gradient: 20 to 50 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 35 to 55 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .15
Land capability, nonirrigated: 7e
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	stony loam	moderate	0.51 to 0.75 in	4.5 to 6.0
Bw1 -- 4 to 13 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 13 to 23 in	cobbly loam	moderate	0.69 to 1.57 in	5.1 to 6.5
2BC -- 23 to 43 in	very gravelly sandy loam	moderately slow	0.80 to 1.81 in	5.1 to 6.5
2Cd -- 43 to 80 in	very gravelly sandy loam	slow	0.74 to 1.85 in	5.1 to 6.5

Conic, very bouldery

Extent: 15 to 30 percent of the unit
Landform(s): moraines
Slope gradient: 20 to 50 percent
Parent material: loamy material over dense till
Restrictive feature(s): densic material at 12 to 30 inches
lithic bedrock at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	stony loam	moderate	0.31 to 0.50 in	4.5 to 6.0
Bw -- 3 to 9 in	stony loam	moderate	0.53 to 0.89 in	4.5 to 6.0
BC -- 9 to 18 in	cobbly sandy loam	moderate	0.63 to 1.27 in	5.1 to 6.5
C -- 18 to 29 in	very gravelly coarse sandy loam	slow	0.22 to 0.77 in	5.1 to 6.5
R -- 29 to 80 in	bedrock	impermeable		

F22F--Eveleth-Conic complex, 20 to 50 percent slopes, very bouldery

F23B--Rollins-Biwabik complex, 1 to 8 percent slopes

Rollins

Extent: 25 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 8 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 6s
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	sandy loam	moderately rapid	0.51 to 0.72 in	4.5 to 6.0
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.81 to 1.45 in	4.5 to 6.0
2BC -- 14 to 25 in	very gravelly sand	rapid	0.22 to 0.55 in	4.5 to 6.0
2C -- 25 to 80 in	very gravelly coarse sand	very rapid	0.55 to 2.74 in	5.1 to 6.5

Biwabik

Extent: 20 to 40 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 8 percent
Parent material: gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .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	sandy loam	moderately rapid	0.24 to 0.30 in	4.5 to 6.0
Bw -- 2 to 9 in	gravelly sandy loam	moderately rapid	0.64 to 0.92 in	4.5 to 6.0
E -- 9 to 32 in	gravelly loamy sand	rapid	0.69 to 1.60 in	4.5 to 6.0
E and B -- 32 to 64 in	gravelly loamy sand	rapid	0.97 to 1.94 in	5.1 to 6.0
C -- 64 to 80 in	gravelly coarse sand	very rapid	0.31 to 0.94 in	5.1 to 6.5

F23D--Rollins-Biwabik complex, 8 to 18 percent slopes

Rollins

Extent: 30 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 18 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 6s
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	sandy loam	moderately rapid	0.51 to 0.72 in	4.5 to 6.0
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.81 to 1.45 in	4.5 to 6.0
2BC -- 14 to 25 in	very gravelly sand	rapid	0.22 to 0.55 in	4.5 to 6.0
2C -- 25 to 80 in	very gravelly coarse sand	very rapid	0.55 to 2.74 in	5.1 to 6.5

Biwabik

Extent: 20 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 18 percent
Parent material: gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated: 4e
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	sandy loam	moderately rapid	0.24 to 0.30 in	4.5 to 6.0
Bw -- 2 to 9 in	gravelly sandy loam	moderately rapid	0.64 to 0.92 in	4.5 to 6.0
E -- 9 to 32 in	gravelly loamy sand	rapid	0.69 to 1.60 in	4.5 to 6.0
E and B -- 32 to 64 in	gravelly loamy sand	rapid	0.97 to 1.94 in	5.1 to 6.0
C -- 64 to 80 in	gravelly coarse sand	very rapid	0.31 to 0.94 in	5.1 to 6.5

F24A--Gnesen loam, 0 to 3 percent slopes

Gnesen

Extent: 75 to 90 percent of the unit
Landform(s): rises on outwash plains, flats on outwash plains
Slope gradient: 0 to 3 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .37
Land capability, nonirrigated: 3s
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	loam	moderately rapid	0.63 to 0.69 in	4.5 to 6.0
Bw --	3 to 30 in	sandy loam	moderately rapid	2.94 to 5.09 in	4.5 to 6.0
2C --	30 to 80 in	gravelly sand	rapid	0.50 to 3.50 in	5.1 to 6.5

F25D--Rollins-Cloquet complex, 8 to 18 percent slopes

Rollins

Extent: 45 to 65 percent of the unit
Landform(s): pitted outwash plains
Slope gradient: 8 to 18 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 6s
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	sandy loam	moderately rapid	0.51 to 0.72 in	4.5 to 6.0
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.81 to 1.45 in	4.5 to 6.0
2BC -- 14 to 25 in	very gravelly sand	rapid	0.22 to 0.55 in	4.5 to 6.0
2C -- 25 to 80 in	very gravelly coarse sand	very rapid	0.55 to 2.74 in	5.1 to 6.5

Cloquet

Extent: 25 to 35 percent of the unit
Landform(s): pitted outwash plains
Slope gradient: 8 to 18 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	loam	moderately rapid	0.39 to 0.43 in	4.5 to 6.0
Bw -- 2 to 22 in	loam	moderate	3.01 to 4.42 in	4.5 to 6.0
2C -- 22 to 80 in	very gravelly loamy coarse sand	rapid	0.58 to 2.31 in	5.1 to 6.5

F26C--Shagawa-Beargrease complex, 2 to 15 percent slopes, extremely bouldery

Shagawa, extremely bouldery

Extent: 30 to 60 percent of the unit
Landform(s): end moraines
Slope gradient: 2 to 15 percent
Parent material: loamy material over glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .17
Land capability, nonirrigated: 7s
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	stony loam	moderate	0.44 to 0.57 in	4.5 to 6.0
Bw1 -- 3 to 13 in	stony loam	moderate	0.79 to 1.48 in	4.5 to 6.0
2Bw2 -- 13 to 32 in	very gravelly coarse sandy loam	moderately rapid	1.13 to 1.70 in	5.1 to 6.5
2C -- 32 to 80 in	extremely gravelly loamy coarse sand	rapid	1.44 to 3.84 in	5.1 to 6.5

Beargrease, extremely bouldery

Extent: 25 to 50 percent of the unit
Landform(s): end moraines
Slope gradient: 2 to 15 percent
Parent material: loamy material over sandy-skeletal outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .10
Land capability, nonirrigated: 7s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	very stony loam	moderate	0.22 to 0.31 in	4.5 to 6.0
Bw1 -- 2 to 14 in	very stony sandy loam	moderately rapid	0.73 to 1.59 in	4.5 to 6.0
2Bw2 -- 14 to 22 in	extremely stony loamy coarse sand	rapid	0.08 to 0.39 in	4.5 to 6.0
2BC -- 22 to 46 in	extremely gravelly coarse sand	very rapid	0.24 to 0.96 in	4.5 to 6.5
2C -- 46 to 80 in	extremely cobbly coarse sand	very rapid	0.34 to 1.35 in	5.1 to 6.5

F26E--Shagawa-Beargrease complex, 8 to 30 percent slopes, extremely bouldery

Shagawa, extremely bouldery

Extent: 30 to 60 percent of the unit
Landform(s): end moraines
Slope gradient: 8 to 30 percent
Parent material: loamy material over glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .17
Land capability, nonirrigated: 7e
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	stony loam	moderate	0.44 to 0.57 in	4.5 to 6.0
Bw1 -- 3 to 13 in	stony loam	moderate	0.79 to 1.48 in	4.5 to 6.0
2Bw2 -- 13 to 32 in	very gravelly coarse sandy loam	moderately rapid	1.13 to 1.70 in	5.1 to 6.5
2C -- 32 to 80 in	extremely gravelly loamy coarse sand	rapid	1.44 to 3.84 in	5.1 to 6.5

Beargrease, extremely bouldery

Extent: 25 to 45 percent of the unit
Landform(s): end moraines
Slope gradient: 8 to 30 percent
Parent material: loamy material over sandy-skeletal outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .10
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	very stony loam	moderate	0.22 to 0.31 in	4.5 to 6.0
Bw1 -- 2 to 14 in	very stony sandy loam	moderately rapid	0.73 to 1.59 in	4.5 to 6.0
2Bw2 -- 14 to 22 in	extremely stony loamy coarse sand	rapid	0.08 to 0.39 in	4.5 to 6.0
2BC -- 22 to 46 in	extremely gravelly coarse sand	very rapid	0.24 to 0.96 in	4.5 to 6.5
2C -- 46 to 80 in	extremely cobbly coarse sand	very rapid	0.34 to 1.35 in	5.1 to 6.5

F28B--Oysterlake complex, 0 to 4 percent slopes, extremely stony

Oysterlake, extremely stony

Extent: 40 to 65 percent of the unit
Landform(s): rises on outwash plains
Slope gradient: 0 to 4 percent
Parent material: loamy material over sandy-skeletal outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained
Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .15
Land capability, nonirrigated: 7s
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	stony loam	moderate	0.55 to 0.75 in	4.5 to 6.0
Bw1 -- 4 to 16 in	stony loam	moderate	0.85 to 1.83 in	4.5 to 6.0
Bw2 -- 16 to 26 in	gravelly loam	moderate	0.59 to 1.38 in	4.5 to 6.5
2BC -- 26 to 42 in	extremely gravelly coarse sand	very rapid	0.16 to 0.65 in	5.1 to 6.5
2C -- 42 to 80 in	extremely cobbly coarse sand	very rapid	0.38 to 1.51 in	5.1 to 6.5

Oysterlake, wet, extremely stony

Extent: 20 to 45 percent of the unit
Landform(s): swales on outwash plains, flats on outwash plains
Slope gradient: 0 to 2 percent
Parent material: loamy material over sandy-skeletal outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained
Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .15
Land capability, nonirrigated: 7s
Hydric soil: no
Hydrologic group: B/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	stony loam	moderate	0.55 to 0.75 in	4.5 to 6.0
Bw1 -- 4 to 16 in	stony loam	moderate	0.85 to 1.83 in	4.5 to 6.0
Bw2 -- 16 to 26 in	gravelly loam	moderate	0.59 to 1.38 in	4.5 to 6.5
2BC -- 26 to 42 in	extremely gravelly coarse sand	very rapid	0.16 to 0.65 in	5.1 to 6.5
2C -- 42 to 80 in	extremely cobbly coarse sand	very rapid	0.38 to 1.51 in	5.1 to 6.5

F29E--Shagawa, extremely stony-Beargrease, extremely stony-Tacoosh complex, 0 to 35 percent slopes

Shagawa, extremely bouldery

Extent: 30 to 50 percent of the unit
Landform(s): end moraines
Slope gradient: 10 to 35 percent
Parent material: loamy material over glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .17
Land capability, nonirrigated: 7e
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	stony loam	moderate	0.44 to 0.57 in	4.5 to 6.0
Bw1 -- 3 to 13 in	stony loam	moderate	0.79 to 1.48 in	4.5 to 6.0
2Bw2 -- 13 to 32 in	very gravelly coarse sandy loam	moderately rapid	1.13 to 1.70 in	5.1 to 6.5
2C -- 32 to 80 in	extremely gravelly loamy coarse sand	rapid	1.44 to 3.84 in	5.1 to 6.5

Beargrease, extremely bouldery

Extent: 20 to 30 percent of the unit
Landform(s): end moraines
Slope gradient: 10 to 35 percent
Parent material: loamy material over sandy-skeletal outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .10
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	very stony loam	moderate	0.22 to 0.31 in	4.5 to 6.0
Bw1 -- 2 to 14 in	very stony sandy loam	moderately rapid	0.73 to 1.59 in	4.5 to 6.0
2Bw2 -- 14 to 22 in	extremely stony loamy coarse sand	rapid	0.08 to 0.39 in	4.5 to 6.0
2BC -- 22 to 46 in	extremely gravelly coarse sand	very rapid	0.24 to 0.96 in	4.5 to 6.5
2C -- 46 to 80 in	extremely cobbly coarse sand	very rapid	0.34 to 1.35 in	5.1 to 6.5

F29E--Shagawa, extremely stony-Beargrease, extremely stony-Tacoosh complex, 0 to 35 percent slopes

F29G--Shagawa, extremely stony-Beargrease, extremely stony-Tacoosh complex, 0 to 60 percent slopes

Shagawa, extremely bouldery

Extent: 30 to 60 percent of the unit
Landform(s): end moraines
Slope gradient: 25 to 60 percent
Parent material: loamy material over glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .17
Land capability, nonirrigated: 7e
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	stony loam	moderate	0.44 to 0.57 in	4.5 to 6.0
Bw1 -- 3 to 13 in	stony loam	moderate	0.79 to 1.48 in	4.5 to 6.0
2Bw2 -- 13 to 32 in	very gravelly coarse sandy loam	moderately rapid	1.13 to 1.70 in	5.1 to 6.5
2C -- 32 to 80 in	extremely gravelly loamy coarse sand	rapid	1.44 to 3.84 in	5.1 to 6.5

Beargrease, extremely bouldery

Extent: 20 to 40 percent of the unit
Landform(s): end moraines
Slope gradient: 25 to 60 percent
Parent material: loamy material over sandy-skeletal outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .10
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	very stony loam	moderate	0.22 to 0.31 in	4.5 to 6.0
Bw1 -- 2 to 14 in	very stony sandy loam	moderately rapid	0.73 to 1.59 in	4.5 to 6.0
2Bw2 -- 14 to 22 in	extremely stony loamy coarse sand	rapid	0.08 to 0.39 in	4.5 to 6.0
2BC -- 22 to 46 in	extremely gravelly coarse sand	very rapid	0.24 to 0.96 in	4.5 to 6.5
2C -- 46 to 80 in	extremely cobbly coarse sand	very rapid	0.34 to 1.35 in	5.1 to 6.5

F29G--Shagawa, extremely stony-Beargrease, extremely stony-Tacoosh complex, 0 to 60 percent slopes

F30G--Conic, very bouldery-Insula, very bouldery-Rock outcrop complex, 20 to 70 percent slopes

Conic, very bouldery

Extent: 30 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 20 to 50 percent
Parent material: loamy drift over dense gravelly lodgment till over bedrock
Restrictive feature(s): densic material at 12 to 30 inches
lithic bedrock at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	stony loam	moderate	0.31 to 0.50 in	4.5 to 6.0
Bw -- 3 to 9 in	stony loam	moderate	0.53 to 0.89 in	4.5 to 6.0
BC -- 9 to 18 in	cobbly sandy loam	moderate	0.63 to 1.27 in	5.1 to 6.5
Cd -- 18 to 29 in	very gravelly coarse sandy loam	slow	0.22 to 0.77 in	5.1 to 6.5
R -- 29 to 80 in	bedrock	very slow		

Insula, very bouldery

Extent: 15 to 40 percent of the unit
Landform(s): moraines
Slope gradient: 20 to 50 percent
Parent material: loamy drift over bedrock
Restrictive feature(s): lithic bedrock at 10 to 20 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .15
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	gravelly sandy loam	moderately rapid	0.28 to 0.44 in	4.5 to 6.0
Bw1 -- 3 to 11 in	gravelly sandy loam	moderately rapid	0.63 to 1.26 in	4.5 to 6.0
Bw2 -- 11 to 17 in	gravelly fine sandy loam	moderately rapid	0.41 to 0.89 in	5.1 to 6.5
R -- 17 to 80 in	bedrock	very slow		

F30G--Conic, very bouldery-Insula, very bouldery-Rock outcrop complex, 20 to 70 percent slopes

Rock outcrop

Extent: 10 to 40 percent of the unit
Landform(s): moraines
Slope gradient: 20 to 70 percent
Parent material:
Restrictive feature(s): lithic bedrock at 0 to 0 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: 8s
Hydric soil: unranked
Hydrologic group:
Potential for frost action:

Representative soil profile:

Texture	Permeability	Available water capacity	pH

F31B--Oysterlake, extremely stony-Tacoosh complex, 0 to 4 percent slopes

Oysterlake, extremely stony

Extent: 45 to 70 percent of the unit
Landform(s): rises on outwash plains
Slope gradient: 0 to 4 percent
Parent material: loamy material over sandy-skeletal outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .15
Land capability, nonirrigated: 7s
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	stony loam	moderate	0.55 to 0.75 in	4.5 to 6.0
Bw1 --	4 to 16 in	stony loam	moderate	0.85 to 1.83 in	4.5 to 6.0
Bw2 --	16 to 26 in	gravelly loam	moderate	0.59 to 1.38 in	4.5 to 6.5
2BC --	26 to 42 in	extremely gravelly coarse sand	very rapid	0.16 to 0.65 in	5.1 to 6.5
2C --	42 to 80 in	extremely cobbly coarse sand	very rapid	0.38 to 1.51 in	5.1 to 6.5

F34A--Cathro muck, depressional, 0 to 1 percent slopes

Cathro, depressional

Extent: 60 to 90 percent of the unit
Landform(s): swamps on end moraines, swamps on outwash plains, swamps on till plains
Slope gradient: 0 to 1 percent
Parent material: organic material over glaciofluvial sediments
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)
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
Oa --	0 to 36 in	muck	moderately rapid	12.54 to 16.12 in	
A --	36 to 40 in	mucky silt loam	moderate	0.95 to 1.13 in	5.1 to 6.5
2Cg --	40 to 80 in	stratified loamy fine sand to loam	moderate	5.17 to 7.56 in	5.1 to 7.3

F35D--Eveleth, bouldery-Conic, bouldery-Aquepts, rubbly, complex, 0 to 18 percent slopes

Eveleth, bouldery

Extent: 25 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 18 percent
Parent material: loamy drift over dense gravelly lodgment till
Restrictive feature(s): densic material at 35 to 55 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .17
Land capability, nonirrigated: 6s
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	stony loam	moderate	0.51 to 0.75 in	4.5 to 6.0
Bw1 --	4 to 13 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 --	13 to 23 in	cobbly loam	moderate	0.69 to 1.57 in	5.1 to 6.5
2BC --	23 to 43 in	very gravelly sandy loam	moderately slow	0.80 to 1.81 in	5.1 to 6.5
2Cd --	43 to 80 in	very gravelly sandy loam	slow	0.74 to 1.85 in	5.1 to 6.5

F35D--Eveleth, bouldery-Conic, bouldery-Aquepts, rubbly, complex, 0 to 18 percent slopes

Conic, bouldery

Extent: 15 to 30 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 18 percent
Parent material: loamy drift over dense gravelly lodgment till over bedrock
Restrictive feature(s): densic material at 12 to 30 inches lithic bedrock at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	stony loam	moderate	0.31 to 0.50 in	4.5 to 6.0
Bw -- 3 to 9 in	stony loam	moderate	0.53 to 0.89 in	4.5 to 6.0
BC -- 9 to 18 in	cobbly sandy loam	moderate	0.63 to 1.27 in	5.1 to 6.5
Cd -- 18 to 29 in	very gravelly coarse sandy loam	slow	0.22 to 0.77 in	5.1 to 6.5
R -- 29 to 80 in	bedrock	very slow		

Aquepts, rubbly, depressional

Extent: 15 to 30 percent of the unit
Landform(s): drainageways on moraines
Slope gradient: 0 to 2 percent
Parent material: glaciofluvial sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated: 8s
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	extremely stony sandy loam	moderate	0.16 to 0.31 in	4.5 to 6.0
Bg -- 4 to 40 in	very stony loam	moderate	1.45 to 4.71 in	4.5 to 6.0
Cg -- 40 to 80 in	cobbly sandy loam	moderately slow	2.78 to 6.36 in	5.1 to 6.5

F35D--Eveleth, bouldery-Conic, bouldery-Aquepts, rubbly, complex, 0 to 18 percent slopes

F36D--Conic, bouldery-Insula, bouldery-Rock outcrop complex, 8 to 25 percent slopes

Conic, bouldery

Extent: 30 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 25 percent
Parent material: loamy drift over dense gravelly lodgment till over bedrock
Restrictive feature(s): densic material at 12 to 30 inches
lithic bedrock at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	stony loam	moderate	0.31 to 0.50 in	4.5 to 6.0
Bw -- 3 to 9 in	stony loam	moderate	0.53 to 0.89 in	4.5 to 6.0
BC -- 9 to 18 in	cobbly sandy loam	moderate	0.63 to 1.27 in	5.1 to 6.5
Cd -- 18 to 29 in	very gravelly coarse sandy loam	slow	0.22 to 0.77 in	5.1 to 6.5
R -- 29 to 80 in	bedrock	very slow		

Insula, bouldery

Extent: 20 to 40 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 25 percent
Parent material: loamy drift over bedrock
Restrictive feature(s): lithic bedrock at 10 to 20 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .15
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	gravelly sandy loam	moderately rapid	0.28 to 0.44 in	4.5 to 6.0
Bw1 -- 3 to 11 in	gravelly sandy loam	moderately rapid	0.63 to 1.26 in	4.5 to 6.0
Bw2 -- 11 to 17 in	gravelly fine sandy loam	moderately rapid	0.41 to 0.89 in	5.1 to 6.5
R -- 17 to 80 in	bedrock	very slow		

F36D--Conic, bouldery-Insula, bouldery-Rock outcrop complex, 8 to 25 percent slopes

Rock outcrop

Extent: 15 to 30 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 25 percent
Parent material:
Restrictive feature(s): lithic bedrock at 0 to 0 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: 8s
Hydric soil: unranked
Hydrologic group:
Potential for frost action:

Representative soil profile:

Texture	Permeability	Available water capacity	pH

F37B--Foglake-Babbitt, bouldery, complex, 0 to 4 percent slopes

Foglake

Extent: 40 to 60 percent of the unit
Landform(s): flats on lake plains
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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .43
Land capability, nonirrigated: 4w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	silt loam	moderate	1.73 to 1.89 in	5.1 to 6.5
Eg -- 8 to 16 in	silt loam	moderate	1.41 to 1.82 in	5.1 to 7.3
Btg, BCg -- 16 to 47 in	silty clay loam	slow	2.76 to 5.83 in	5.1 to 7.3
Cg -- 47 to 80 in	silty clay loam	moderately slow	5.95 to 7.28 in	7.4 to 8.4

Babbitt, bouldery

Extent: 20 to 45 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 1 to 4 percent
Parent material: loamy drift over dense gravelly lodgment till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .17
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	stony loam	moderate	0.67 to 0.97 in	4.5 to 6.0
Bw1 -- 5 to 14 in	stony loam	moderate	0.72 to 1.45 in	4.5 to 6.0
Bw2 -- 14 to 30 in	gravelly sandy loam	moderate	1.10 to 2.36 in	5.1 to 6.5
2BC -- 30 to 50 in	very gravelly sandy loam	moderately slow	1.20 to 2.81 in	5.1 to 6.5
2Cd -- 50 to 80 in	very gravelly sandy loam	slow	0.60 to 1.50 in	5.1 to 6.5

F38B--Longsiding-Eaglesnest, bouldery, complex, 0 to 8 percent slopes

Longsiding

Extent: 40 to 60 percent of the unit
Landform(s): lake plains
Slope gradient: 1 to 8 percent
Parent material: 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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .43
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*
Ap -- 0 to 9 in	silt loam	moderate	1.99 to 2.17 in	5.1 to 6.5
B/E -- 9 to 12 in	silty clay loam	moderately slow	0.30 to 0.55 in	5.1 to 7.3
Bt1, Bt3 -- 12 to 35 in	silty clay	slow	2.09 to 4.41 in	5.1 to 7.3
Bk, C -- 35 to 80 in	silty clay loam	moderately slow	8.08 to 9.87 in	7.4 to 8.4

Eaglesnest, bouldery

Extent: 25 to 45 percent of the unit
Landform(s): lake plains
Slope gradient: 3 to 8 percent
Parent material: loamy drift over dense gravelly lodgment till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .15
Land capability, nonirrigated: 6s
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	stony loam	moderate	0.41 to 0.60 in	4.5 to 6.0
Bw1 -- 3 to 6 in	stony loam	moderate	0.22 to 0.44 in	4.5 to 6.0
Bw2 -- 6 to 20 in	stony sandy loam	moderate	0.99 to 2.13 in	5.1 to 6.5
Bw3 -- 20 to 28 in	very stony sandy loam	moderate	0.47 to 1.02 in	5.1 to 6.5
2BC -- 28 to 41 in	very cobbly sandy loam	moderately slow	0.52 to 1.17 in	5.1 to 6.5
2Cd -- 41 to 80 in	very cobbly sandy loam	slow	0.78 to 1.95 in	5.1 to 6.5

F39A--Foglake-Aquepts, rubbly-Hassman, depressional, complex, 0 to 2 percent slopes

Foglake, bouldery

Extent: 30 to 50 percent of the unit
Landform(s): flats on lake plains
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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .43
Land capability, nonirrigated: 4w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	silt loam	moderate	1.73 to 1.89 in	5.1 to 6.5
Eg -- 8 to 16 in	silt loam	moderate	1.41 to 1.82 in	5.1 to 7.3
Btg, BCg -- 16 to 47 in	silty clay loam	slow	2.76 to 5.83 in	5.1 to 7.3
Cg -- 47 to 80 in	silty clay loam	moderately slow	5.95 to 7.28 in	7.4 to 8.4

Aquepts, rubbly, depressional

Extent: 20 to 40 percent of the unit
Landform(s): drainageways on lake plains, swales on lake plains
Slope gradient: 0 to 1 percent
Parent material: glaciofluvial sediments
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated: 8s
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	extremely stony sandy loam	moderate	0.16 to 0.31 in	4.5 to 6.0
Bg -- 4 to 40 in	very stony loam	moderate	1.45 to 4.71 in	4.5 to 6.0
Cg -- 40 to 80 in	cobbly sandy loam	moderately slow	2.78 to 6.36 in	5.1 to 6.5

F39A--Foglake-Aquepts, rubbly-Hassman, depressional, complex, 0 to 2 percent slopes

Hassman, depressional

Extent: 15 to 30 percent of the unit
Landform(s): drainageways on lake plains, swales on lake plains
Slope gradient: 0 to 1 percent
Parent material: 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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
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
A --	0 to 10 in	silty clay loam	moderately slow	2.07 to 2.26 in	5.1 to 6.5
Bg --	10 to 32 in	silty clay	slow	1.98 to 4.19 in	5.1 to 7.3
BCg --	32 to 45 in	silty clay	slow	1.17 to 2.47 in	5.6 to 7.8
Cg --	45 to 80 in	silty clay	slow	3.15 to 6.66 in	7.4 to 8.4

F40B--Rollins cobbly sandy loam, 2 to 8 percent slopes

Rollins

Extent: 70 to 90 percent of the unit
Landform(s): kames, outwash plains
Slope gradient: 2 to 8 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .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 5 in	cobbly sandy loam	moderately rapid	0.51 to 0.72 in	4.5 to 6.0
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.81 to 1.45 in	4.5 to 6.0
2BC -- 14 to 25 in	very gravelly sand	rapid	0.22 to 0.55 in	4.5 to 6.0
2C -- 25 to 80 in	very gravelly coarse sand	very rapid	0.55 to 2.74 in	5.1 to 6.5

F40D--Rollins cobbly sandy loam, 8 to 18 percent slopes

Rollins

Extent: 70 to 90 percent of the unit
Landform(s): kames, outwash plains
Slope gradient: 8 to 18 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .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 5 in	cobbly sandy loam	moderately rapid	0.51 to 0.72 in	4.5 to 6.0
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.81 to 1.45 in	4.5 to 6.0
2BC -- 14 to 25 in	very gravelly sand	rapid	0.22 to 0.55 in	4.5 to 6.0
2C -- 25 to 80 in	very gravelly coarse sand	very rapid	0.55 to 2.74 in	5.1 to 6.5

F41B--Wurtsmith-Friendship complex, MLRA 93, 1 to 4 percent slopes

Wurtsmith

Extent: 30 to 60 percent of the unit
Landform(s): 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

Friendship

Extent: 30 to 55 percent of the unit
Landform(s): 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) .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 3 in	loamy sand	rapid	0.31 to 0.38 in	4.5 to 6.0
Bw1 -- 3 to 24 in	sand	rapid	0.63 to 2.30 in	4.5 to 6.0
Bw2 -- 24 to 40 in	sand	rapid	0.32 to 1.13 in	4.5 to 6.0
C -- 40 to 80 in	sand	rapid	0.80 to 2.78 in	5.1 to 6.5

F42A--Meehan sandy loam, 0 to 2 percent slopes

Meehan

Extent: 70 to 85 percent of the unit
Landform(s): rises on outwash plains, flats on outwash plains
Slope gradient: 0 to 2 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
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	sandy loam	moderately 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

F43A--Roscommon muck, depressional, MLRA 93, 0 to 1 percent slopes

Roscommon, depressional

Extent: 70 to 85 percent of the unit
Landform(s): drainageways on outwash plains, depressions on outwash plains
Slope gradient: 0 to 1 percent
Parent material: sandy 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 3 in	muck	moderately rapid	1.10 to 1.42 in	4.5 to 6.0
Eg -- 3 to 8 in	sand	rapid	0.14 to 0.52 in	4.5 to 6.0
Bg -- 8 to 33 in	sand	rapid	0.50 to 2.52 in	4.5 to 6.0
Cg -- 33 to 80 in	sand	very rapid	0.94 to 3.28 in	5.1 to 6.5

F116A--Mooselake muck, 0 to 1 percent slopes

Mooselake

Extent: 60 to 85 percent of the unit
Landform(s): swamps on end moraines, swamps on outwash plains, swamps on till plains
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer)
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 36 in	muck	moderately rapid	12.54 to 16.12 in	
Oe -- 36 to 80 in	mucky peat	rapid	19.84 to 24.25 in	

F129A--Tacoosh mucky peat, 0 to 1 percent slopes

Tacoosh

Extent: 60 to 90 percent of the unit
Landform(s): swamps on end moraines, swamps on outwash plains, swamps on till plains
Slope gradient: 0 to 1 percent
Parent material: organic material over glaciofluvial sediments
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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
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*
Oe1 -- 0 to 12 in	mucky peat	rapid	5.31 to 6.50 in	
Oe2 -- 12 to 32 in	mucky peat	rapid	9.04 to 11.04 in	
Oa -- 32 to 36 in	muck	moderately rapid	1.38 to 1.77 in	
2Cg -- 36 to 80 in	stratified loamy fine sand to loam	moderate	5.73 to 8.38 in	5.1 to 6.5

F164B--Beargrease-Biwabik-Rollins complex, 2 to 8 percent slopes, very stony

Beargrease, very stony

Extent: 35 to 60 percent of the unit
Landform(s): end moraines
Slope gradient: 2 to 8 percent
Parent material: loamy material over sandy-skeletal outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .10
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	very stony loam	moderate	0.22 to 0.31 in	4.5 to 6.0
Bw1 -- 2 to 14 in	very stony sandy loam	moderately rapid	0.73 to 1.59 in	4.5 to 6.0
2Bw2 -- 14 to 22 in	extremely stony loamy coarse sand	rapid	0.08 to 0.39 in	4.5 to 6.0
2BC -- 22 to 46 in	extremely gravelly coarse sand	very rapid	0.24 to 0.96 in	4.5 to 6.5
2C -- 46 to 80 in	extremely cobbly coarse sand	very rapid	0.34 to 1.35 in	5.1 to 6.5

Rollins, very stony

Extent: 15 to 35 percent of the unit
Landform(s): end moraines
Slope gradient: 2 to 8 percent
Parent material: loamy material over sandy-skeletal outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .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 5 in	cobbly sandy loam	moderately rapid	0.51 to 0.72 in	4.5 to 6.0
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.81 to 1.45 in	4.5 to 6.0
2BC -- 14 to 25 in	very gravelly sand	rapid	0.22 to 0.55 in	4.5 to 6.0
2C -- 25 to 80 in	very gravelly coarse sand	very rapid	0.55 to 2.74 in	5.1 to 6.5

F164B--Beargrease-Biwabik-Rollins complex, 2 to 8 percent slopes, very stony

Biwabik, very stony

Extent: 15 to 35 percent of the unit
Landform(s): end moraines
Slope gradient: 2 to 8 percent
Parent material: gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .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 2 in	sandy loam	moderately rapid	0.24 to 0.30 in	4.5 to 6.0
Bw -- 2 to 9 in	gravelly sandy loam	moderately rapid	0.64 to 0.92 in	4.5 to 6.0
E -- 9 to 32 in	gravelly loamy sand	rapid	0.69 to 1.60 in	4.5 to 6.0
E and B -- 32 to 64 in	gravelly loamy sand	rapid	0.97 to 1.94 in	5.1 to 6.0
C -- 64 to 80 in	gravelly coarse sand	very rapid	0.31 to 0.94 in	5.1 to 6.5

F164E--Beargrease-Biwabik-Rollins complex, 8 to 35 percent slopes, very stony

Beargrease, very stony

Extent: 35 to 60 percent of the unit
Landform(s): end moraines
Slope gradient: 8 to 35 percent
Parent material: loamy material over sandy-skeletal outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .10
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	very stony loam	moderate	0.22 to 0.31 in	4.5 to 6.0
Bw1 -- 2 to 14 in	very stony sandy loam	moderately rapid	0.73 to 1.59 in	4.5 to 6.0
2Bw2 -- 14 to 22 in	extremely stony loamy coarse sand	rapid	0.08 to 0.39 in	4.5 to 6.0
2BC -- 22 to 46 in	extremely gravelly coarse sand	very rapid	0.24 to 0.96 in	4.5 to 6.5
2C -- 46 to 80 in	extremely cobbly coarse sand	very rapid	0.34 to 1.35 in	5.1 to 6.5

Rollins, very stony

Extent: 15 to 35 percent of the unit
Landform(s): end moraines
Slope gradient: 8 to 35 percent
Parent material: loamy material over sandy-skeletal outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .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 5 in	cobbly sandy loam	moderately rapid	0.51 to 0.72 in	4.5 to 6.0
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.81 to 1.45 in	4.5 to 6.0
2BC -- 14 to 25 in	very gravelly sand	rapid	0.22 to 0.55 in	4.5 to 6.0
2C -- 25 to 80 in	very gravelly coarse sand	very rapid	0.55 to 2.74 in	5.1 to 6.5

F164E--Beargrease-Biwabik-Rollins complex, 8 to 35 percent slopes, very stony

Biwabik, very stony

Extent: 15 to 35 percent of the unit
Landform(s): end moraines
Slope gradient: 8 to 35 percent
Parent material: gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .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 2 in	sandy loam	moderately rapid	0.24 to 0.30 in	4.5 to 6.0
Bw -- 2 to 9 in	gravelly sandy loam	moderately rapid	0.64 to 0.92 in	4.5 to 6.0
E -- 9 to 32 in	gravelly loamy sand	rapid	0.69 to 1.60 in	4.5 to 6.0
E and B -- 32 to 64 in	gravelly loamy sand	rapid	0.97 to 1.94 in	5.1 to 6.0
C -- 64 to 80 in	gravelly coarse sand	very rapid	0.31 to 0.94 in	5.1 to 6.5

F176A--Sago muck, depressional, 0 to 1 percent slopes

Sago, depressional

Extent: 70 to 90 percent of the unit

Landform(s): depressions on outwash plains, drainageways on outwash plains, flats on outwash plains, depressions on till plains, drainageways on till plains, flats on till plains

Slope gradient: 0 to 1 percent

Parent material: organic material over glaciofluvial sediments

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)

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 13 in	muck	moderately rapid	4.55 to 5.85 in	
A -- 13 to 15 in	fine sandy loam	moderately rapid	0.22 to 0.41 in	4.5 to 6.0
Bg -- 15 to 41 in	stratified loamy fine sand to loamy very fine sand to fine sandy loam to very fine sandy loam to silt loam	moderately rapid	3.38 to 4.94 in	5.1 to 6.5
Cg -- 41 to 80 in	stratified loamy fine sand to silt loam	moderately rapid	5.07 to 7.41 in	5.6 to 7.3

GP--Pits, gravel-Udipsamments complex

Pits, gravel

Extent: 60 to 95 percent of the unit
Landform(s): borrow pits on moraines, gravel pits on outwash plains, gravel pits on stream terraces
Slope gradient: 0 to 50 percent
Parent material: sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class:

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

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

Udipsamments

Extent: 5 to 40 percent of the unit
Landform(s): moraines, outwash plains, stream terraces, -- error in exists on --
Slope gradient: 0 to 25 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class: well drained

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw factor (surface layer)
Land capability, nonirrigated:
Hydric soil: no
Hydrologic group:
Potential for frost action:

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

I-W--Water, intermittent

Water, intermittent

Extent: 100 percent of the unit
Landform(s): lakeshores on lakes
Slope gradient: 0 to 0 percent
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: unranked
Hydrologic group:
Potential for frost action:

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

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: unranked
Hydrologic group:
Potential for frost action:

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

W--Water

Water

Extent: 100 percent of the unit
Landform(s): lakes
Slope gradient: 0 to 0 percent
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: unranked
Hydrologic group:
Potential for frost action:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

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.