Map Unit Description (MN)

St. Louis County, Minnesota, Meadowlands 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]

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

Udorthents, loamy, (cut and fill land)

Extent: 100 percent of the unit
Landform(s):
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): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer)
Land capability, nonirrigated
Hydric soil: unranked
Hydrologic group: B
Potential for frost action:

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): 3
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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*
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): 3
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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*
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 slope

Uskabwanka

Extent: 80 to 100 percent of the unit

Landform(s): bogs on till plains, bogs on outwash plains, bogs on end moraines

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): 1

Wind erodibility group (WEG): 7

Wind erodibility index (WEI): 38

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
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 muck and Fluvaquents, loamy, 0 to 1 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): 3
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
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 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, very poorly drained

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

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: 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): 3
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*
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): 3
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*
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): 3
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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*
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): 3
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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*
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	

1026A--Udifluvents, loamy, 0 to 2 percent slopes, occasionally flooded

Udifluvents, occas. flooded, moderately well drained

Extent: 25 to 65 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: occasional
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: B
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
C -- 6 to 80 in	stratified silt loam to gravelly loamy coarse sand	rapid	4.44 to 16.28 in	5.6 to 7.3

Udifluvents, occas. flooded, somewhat poorly drained

Extent: 15 to 50 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 2 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: B
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 gravelly loamy coarse sand	rapid	4.44 to 16.28 in	5.6 to 7.3

1050--Tailings basin

Tailings basin

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

Soil loss tolerance (T factor): 5
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

A41E--Itasca silt loam, 18 to 45 percent slopes

Itasca, stony

Extent: 85 to 95 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 45 percent
Parent material: local loess over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .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	0.35 to 0.43 in	5.6 to 6.5
E	1 to 4 in	silt loam	moderately rapid	0.47 to 0.69 in	5.6 to 6.5
Bw,E	4 to 20 in	silt loam	moderate	1.45 to 3.55 in	5.1 to 6.0
2E/B,B/E,Bt	20 to 56 in	fine sandy loam	moderately rapid	5.02 to 6.81 in	6.1 to 8.4
2C	56 to 80 in	fine sandy loam	moderately rapid	3.36 to 4.56 in	6.6 to 8.4

A42B--Itasca-Goodland-Aquepts complex, pitted, 0 to 8 percent slopes

Itasca, stony

Extent: 30 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 4 to 8 percent
Parent material: local loess over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated 2e
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	5.6 to 6.5
E	--	1 to 4 in	silt loam	moderately rapid	0.47 to 0.69 in	5.6 to 6.5
Bw,E	--	4 to 20 in	silt loam	moderate	1.45 to 3.55 in	5.1 to 6.0
2E/B,B/E,Bt	--	20 to 56 in	fine sandy loam	moderately rapid	5.02 to 6.81 in	6.1 to 8.4
2C	--	56 to 80 in	fine sandy loam	moderately rapid	3.36 to 4.56 in	6.6 to 8.4

A42B--Itasca-Goodland-Aquepts complex, pitted, 0 to 8 percent slopes

Goodland, stony

Extent: 20 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 4 to 8 percent
Parent material: local loess over loamy drift over sandy deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well 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 2e
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	0.89 to 1.08 in	5.1 to 6.5
E -- 2 to 5 in	silt loam	moderate	0.54 to 0.69 in	5.1 to 6.5
Bw,E -- 5 to 14 in	silt loam	moderate	1.54 to 1.99 in	5.1 to 6.5
2E/B,2Bt -- 14 to 30 in	fine sandy loam	moderately rapid	1.73 to 3.46 in	5.1 to 6.5
3Bt2 -- 30 to 36 in	gravelly loamy coarse sand	rapid	0.47 to 0.77 in	5.1 to 6.5
3C -- 36 to 80 in	gravelly sand	rapid	0.88 to 3.09 in	5.6 to 7.8

Endoaquepts, depressional

Extent: 10 to 20 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: loamy drift over 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): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .32
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	silt loam	moderate	0.50 to 0.76 in	5.1 to 6.5
Bw1,Bw2 -- 3 to 30 in	sandy loam	moderately rapid	3.21 to 5.89 in	5.1 to 6.5
2Bw3,2C -- 30 to 80 in	sand	rapid	2.50 to 5.00 in	5.6 to 7.8

A42D--Itasca-Goodland-Aquepts complex, pitted, 0 to 18 percent slopes

Itasca, stony

Extent: 30 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 18 percent
Parent material: local loess over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .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 1 in	moderately decomposed plant material	rapid	0.35 to 0.43 in	5.6 to 6.5
E	--	1 to 4 in	silt loam	moderately rapid	0.47 to 0.69 in	5.6 to 6.5
Bw,E	--	4 to 20 in	silt loam	moderate	1.45 to 3.55 in	5.1 to 6.0
2E/B,B/E,Bt	--	20 to 56 in	fine sandy loam	moderately rapid	5.02 to 6.81 in	6.1 to 8.4
2C	--	56 to 80 in	fine sandy loam	moderately rapid	3.36 to 4.56 in	6.6 to 8.4

A42D--Itasca-Goodland-Aquepts complex, pitted, 0 to 18 percent slopes

Goodland, stony

Extent: 20 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 4 to 18 percent
Parent material: local loess over loamy drift over sandy deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well 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 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	0.89 to 1.08 in	5.1 to 6.5
E -- 2 to 5 in	silt loam	moderate	0.54 to 0.69 in	5.1 to 6.5
Bw,E -- 5 to 14 in	silt loam	moderate	1.54 to 1.99 in	5.1 to 6.5
2E/B,2Bt -- 14 to 30 in	fine sandy loam	moderately rapid	1.73 to 3.46 in	5.1 to 6.5
3Bt2 -- 30 to 36 in	gravelly loamy coarse sand	rapid	0.47 to 0.77 in	5.1 to 6.5
3C -- 36 to 80 in	gravelly sand	rapid	0.88 to 3.09 in	5.6 to 7.8

Endoaquepts, depressional

Extent: 10 to 20 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: loamy drift over 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): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .32
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	silt loam	moderate	0.50 to 0.76 in	5.1 to 6.5
Bw1,Bw2 -- 3 to 30 in	sandy loam	moderately rapid	3.21 to 5.89 in	5.1 to 6.5
2Bw3,2C -- 30 to 80 in	sand	rapid	2.50 to 5.00 in	5.6 to 7.8

A42E--Itasca-Goodland-Aquepts complex, pitted, 0 to 45 percent slopes

Itasca, stony

Extent: 30 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 45 percent
Parent material: local loess over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .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	0.35 to 0.43 in	5.6 to 6.5
E	--	1 to 4 in	silt loam	moderately rapid	0.47 to 0.69 in	5.6 to 6.5
Bw,E	--	4 to 20 in	silt loam	moderate	1.45 to 3.55 in	5.1 to 6.0
2E/B,B/E,Bt	--	20 to 56 in	fine sandy loam	moderately rapid	5.02 to 6.81 in	6.1 to 8.4
2C	--	56 to 80 in	fine sandy loam	moderately rapid	3.36 to 4.56 in	6.6 to 8.4

A42E--Itasca-Goodland-Aquepts complex, pitted, 0 to 45 percent slopes

Goodland, stony

Extent: 20 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 45 percent
Parent material: local loess over loamy drift over sandy deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well 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 7e
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	0.89 to 1.08 in	5.1 to 6.5
E -- 2 to 5 in	silt loam	moderate	0.54 to 0.69 in	5.1 to 6.5
Bw,E -- 5 to 14 in	silt loam	moderate	1.54 to 1.99 in	5.1 to 6.5
2E/B,2Bt -- 14 to 30 in	fine sandy loam	moderately rapid	1.73 to 3.46 in	5.1 to 6.5
3Bt2 -- 30 to 36 in	gravelly loamy coarse sand	rapid	0.47 to 0.77 in	5.1 to 6.5
3C -- 36 to 80 in	gravelly sand	rapid	0.88 to 3.09 in	5.6 to 7.8

Endoaquepts, depressional

Extent: 10 to 20 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: loamy drift over 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): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .32
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	silt loam	moderate	0.50 to 0.76 in	5.1 to 6.5
Bw1,Bw2 -- 3 to 30 in	sandy loam	moderately rapid	3.21 to 5.89 in	5.1 to 6.5
2Bw3,2C -- 30 to 80 in	sand	rapid	2.50 to 5.00 in	5.6 to 7.8

A43D--Warba very fine sandy loam, 8 to 18 percent slopes

Warba

Extent: 80 to 100 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 18 percent
Parent material: loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .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	0.89 to 1.08 in	5.1 to 6.5
A -- 2 to 3 in	very fine sandy loam	moderate	0.19 to 0.28 in	5.1 to 6.5
E -- 3 to 13 in	very fine sandy loam	moderate	1.48 to 2.17 in	5.1 to 6.5
E/B -- 13 to 17 in	very fine sandy loam	moderate	0.31 to 0.87 in	5.1 to 7.3
B/E -- 17 to 20 in	clay loam	moderately slow	0.25 to 0.69 in	5.1 to 7.3
Bt -- 20 to 39 in	clay loam	moderately slow	2.65 to 3.59 in	5.1 to 7.3
C -- 39 to 80 in	loam	moderate	5.73 to 7.78 in	6.6 to 8.4

A44B--Udalfs-Cathro complex, 0 to 8 percent slopes

Glossudalfs

Extent: 40 to 70 percent of the unit
Landform(s): moraines
Slope gradient: 4 to 8 percent
Parent material: eolian sands over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .32
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	very fine sandy loam	moderate	0.51 to 1.13 in	5.6 to 7.3
E -- 5 to 8 in	loamy very fine sand	moderately rapid	0.17 to 0.30 in	5.6 to 7.3
Bw,E' -- 8 to 24 in	loamy very fine sand	moderately rapid	0.81 to 3.07 in	5.6 to 7.3
2B/E,2E/B -- 24 to 55 in	clay loam	moderately slow	2.49 to 6.84 in	5.1 to 7.3
2BC,2C -- 55 to 80 in	loam	moderate	3.47 to 4.71 in	6.6 to 8.4

Hapludalfs, nearly level

Extent: 15 to 40 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 3 percent
Parent material: eolian sands over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .32
Land capability, nonirrigated 3w
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	very fine sandy loam	moderate	0.59 to 1.30 in	5.6 to 7.3
E -- 6 to 8 in	very fine sandy loam	moderate	0.12 to 0.37 in	5.6 to 7.3
Bw1,Bw2 -- 8 to 34 in	loamy very fine sand	moderately rapid	1.30 to 4.94 in	5.6 to 7.3
2Bt -- 34 to 46 in	clay loam	moderately slow	1.71 to 2.32 in	5.1 to 7.3
2C -- 46 to 80 in	clay loam	moderately slow	4.74 to 6.43 in	5.1 to 7.3

A44B--Udalfs-Cathro complex, 0 to 8 percent slopes

Cathro, depressional

Extent: 10 to 20 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: organic material over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: 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	loam	moderate	5.57 to 7.56 in	6.6 to 8.4

A44D--Udalfs-Cathro complex, 0 to 18 percent slopes

Glossudalfs

Extent: 40 to 70 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 18 percent
Parent material: eolian sands over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .32
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	loamy very fine sand	moderately rapid	0.59 to 1.30 in	5.6 to 7.3
Bw -- 6 to 15 in	very fine sand	rapid	0.54 to 1.72 in	5.6 to 7.3
2B/E -- 15 to 31 in	clay loam	moderately slow	1.29 to 3.55 in	5.1 to 7.3
2C -- 31 to 80 in	loam	moderate	6.83 to 9.28 in	6.6 to 8.4

Hapludalfs, undulating

Extent: 15 to 40 percent of the unit
Landform(s): moraines
Slope gradient: 3 to 8 percent
Parent material: eolian sands over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .32
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	very fine sandy loam	moderate	0.51 to 1.13 in	5.6 to 7.3
E -- 5 to 8 in	loamy very fine sand	moderately rapid	0.17 to 0.30 in	5.6 to 7.3
Bw,E' -- 8 to 24 in	loamy very fine sand	moderately rapid	0.81 to 3.07 in	5.6 to 7.3
2B/E,2E/B -- 24 to 55 in	clay loam	moderately slow	2.49 to 6.84 in	5.1 to 7.3
2BC,2C -- 55 to 80 in	loam	moderate	3.47 to 4.71 in	6.6 to 8.4

A44D--Udalfs-Cathro complex, 0 to 18 percent slopes

Cathro, depressional

Extent: 10 to 20 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: organic material over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: 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	loam	moderate	5.57 to 7.56 in	6.6 to 8.4

A45B--Eutrudepts-Itasca-Endoaqualfs, depressional, complex, 0 to 8 percent slopes

Eutrudepts, stony

Extent: 30 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 3 to 8 percent
Parent material: coarse-loamy over fine-loamy 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: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	loam	moderate	0.77 to 1.42 in	5.6 to 6.5
Bw1,Bw2 -- 6 to 25 in	sandy loam	moderately rapid	2.31 to 4.24 in	5.6 to 6.5
2Bw3 -- 25 to 35 in	loam	moderate	1.38 to 1.87 in	5.1 to 7.3
2C -- 35 to 80 in	clay loam	moderately slow	6.28 to 8.53 in	5.1 to 7.3

Itasca, stony

Extent: 20 to 40 percent of the unit
Landform(s): moraines
Slope gradient: 3 to 8 percent
Parent material: local loess over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated 2e
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	5.6 to 6.5
E -- 1 to 4 in	silt loam	moderately rapid	0.47 to 0.69 in	5.6 to 6.5
Bw,E -- 4 to 20 in	silt loam	moderate	1.45 to 3.55 in	5.1 to 6.0
2E/B,B/E,Bt -- 20 to 56 in	fine sandy loam	moderately rapid	5.02 to 6.81 in	6.1 to 8.4
2C -- 56 to 80 in	fine sandy loam	moderately rapid	3.36 to 4.56 in	6.6 to 8.4

A45B--Eutrudepts-Itasca-Endoaqualfs, depressional, complex, 0 to 8 percent slopes

Endoaqualfs, depressional

Extent: 10 to 20 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: organic material over coarse-loamy over fine-loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: B
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	5.6 to 6.5
A --	6 to 12 in	loam	moderate	0.77 to 1.42 in	5.6 to 6.5
Bw --	12 to 22 in	sandy loam	moderately rapid	1.23 to 2.25 in	5.6 to 6.5
2Bt --	22 to 41 in	clay loam	moderately slow	2.65 to 3.59 in	5.1 to 7.3
2C --	41 to 80 in	clay loam	moderately slow	5.46 to 7.41 in	5.1 to 7.3

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): 3
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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*
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): 3
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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*
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	

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) .17
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 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: C
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: C
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) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 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) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 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) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 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) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 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

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): dense 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) .28
Land capability, nonirrigated 4w
Hydric soil: yes
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	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): dense 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: 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): dense 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: 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): dense 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) .28
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 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): dense 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: 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): dense 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) .28
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 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): dense 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: 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): 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: 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): dense 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) .28
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 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): dense 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) .28
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 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): dense 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) .28
Land capability, nonirrigated 4w
Hydric soil: yes
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	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): dense material at 40 to 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: 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): dense 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: 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): dense 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) .28
Land capability, nonirrigated 4w
Hydric soil: yes
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	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): dense 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: 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): dense 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) .20
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 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): dense 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) .28
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 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): dense 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) .28
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	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): 3
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): 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: somewhat excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 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): 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

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) .17
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 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, flats on outwash plains, 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) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 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) .17
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) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 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

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): 2
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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*
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): dense 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) .20
Land capability, nonirrigated 2w
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	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): dense 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: 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): dense material at 40 to 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: 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): dense material at 40 to 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: 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) .32
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: 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) .32
Land capability, nonirrigated 2w
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 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) .32
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: 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, swales on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over silty glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .43
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: 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) .32
Land capability, nonirrigated 2w
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 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) .32
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silt loam	moderate	0.87 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) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 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, 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) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 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): 5
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*
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
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) .20
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: 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: C
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): flats on till plains, knolls 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): dense 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) .28
Land capability, nonirrigated 4w
Hydric soil: yes
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	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): dense 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: 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 3s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A	0 to 4 in	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): 2
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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
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) .24
Land capability, nonirrigated 3w
Hydric soil: no
Hydrologic group: B
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) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.25 to 0.38 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) .24
Land capability, nonirrigated 5w
Hydric soil: yes
Hydrologic group: B
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) .24
Land capability, nonirrigated 5w
Hydric soil: yes
Hydrologic group: 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): 3
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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*
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): 3
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*
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-Roscommon, silty substratum, complex, depressional, 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: 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

B68A--Roscommon-Roscommon, silty substratum, complex, depressional, 0 to 1 percent slopes

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: 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

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
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: 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) .32
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: 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) .32
Land capability, nonirrigated 2w
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 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): dense 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) .24
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	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): swales on lake plains, depressions 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: 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: 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

B81A--Cathro muck, depressional, duluth catena, 0 to 1 percent slopes

Cathro, depressional

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

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: 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	moderately slow	0.95 to 1.04 in	5.1 to 6.5
2Cg -- 40 to 50 in	stratified sandy loam to silty clay loam	slow	1.67 to 2.36 in	5.6 to 7.3
2C,2BC -- 50 to 80 in	loam	slow	3.89 to 5.69 in	6.1 to 7.8

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): 3
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*
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): 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: 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

B85A--Mooselake mucky peat, upham basin, 0 to 1 percent slopes

Mooselake

Extent: 60 to 90 percent of the unit
Landform(s): swamps on lake plains, swamps 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): 3
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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 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	

B86A--Meadowlands-Leeora-Alborn complex, clayey substratum, 0 to 2 percent slopes

Meadowlands, clayey substratum

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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
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 7 in	loam	moderate	1.13 to 1.70 in	5.6 to 7.3
Bg --	7 to 20 in	stratified fine sandy loam to loamy very fine sand to very fine sandy loam to sandy loam to loam to silt loam	moderately rapid	1.17 to 2.86 in	5.6 to 7.3
Bw --	20 to 35 in	stratified loam to very fine sandy loam to fine sandy loam to silt loam to silty clay loam	moderate	2.09 to 3.29 in	6.1 to 7.3
C1 --	35 to 40 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	0.87 to 1.13 in	6.1 to 7.3
C2 --	40 to 70 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	5.02 to 6.50 in	7.4 to 8.4
2C --	70 to 80 in	silty clay	slow	0.82 to 2.05 in	7.4 to 8.4

B86A--Meadowlands-Leeora-Alborn complex, clayey substratum, 0 to 2 percent slopes

Leeora, depressional, clayey substratum

Extent: 15 to 35 percent of the unit
Landform(s): swales on lake plains, depressions 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): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Oi --	0 to 1 in	peat	very rapid	0.65 to 0.77 in	3.0 to 4.4
Ap --	1 to 10 in	silt loam	moderate	1.39 to 2.08 in	5.6 to 7.3
Bg1,Bg2,Bg3 --	10 to 43 in	stratified fine sandy loam to loamy very fine sand to very fine sandy loam to sandy loam to loam to silt loam	moderately rapid	2.98 to 7.28 in	5.6 to 7.3
Cg1,Cg2 --	43 to 70 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	4.55 to 5.89 in	7.4 to 8.4
2C --	70 to 80 in	silty clay	slow	0.82 to 2.05 in	7.4 to 8.4

B86A--Meadowlands-Leeora-Alborn complex, clayey substratum, 0 to 2 percent slopes

Alborn, clayey substratum

Extent: 10 to 25 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
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 8 in	silt loam	moderate	1.57 to 1.89 in	5.6 to 7.3
Bg1 --	8 to 23 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	2.54 to 3.29 in	5.6 to 7.3
Bg2 --	23 to 33 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	1.74 to 2.25 in	6.1 to 7.3
Bkg --	33 to 54 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	3.55 to 4.59 in	7.4 to 8.4
Cg --	54 to 70 in	stratified silt loam to silty clay loam to very fine sandy loam	moderate	2.68 to 3.46 in	7.4 to 8.4
2C --	70 to 80 in	silty clay	slow	0.82 to 2.05 in	7.4 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): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
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 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): 5
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 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): 3
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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*
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): 5
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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*
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

B101A--Schisler-Ellsburg-Baden, depressional, complex, 0 to 2 percent slopes

Schisler

Extent: 30 to 45 percent of the unit
Landform(s): flats on till plains, rises on till plains
Slope gradient: 0 to 2 percent
Parent material: loamy material over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .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 4 in	fine sandy loam	moderately rapid	0.55 to 0.94 in	4.5 to 6.0
Bg,Bw -- 4 to 35 in	stratified loamy sand to silt loam	moderately rapid	2.49 to 6.84 in	4.5 to 6.0
2Bt -- 35 to 60 in	clay loam	slow	3.22 to 4.71 in	5.1 to 6.5
2C -- 60 to 80 in	loam	slow	2.61 to 3.81 in	6.1 to 7.8

Ellsburg

Extent: 20 to 40 percent of the unit
Landform(s): flats on till plains, rises on till plains
Slope gradient: 0 to 2 percent
Parent material: loamy and or silty material over loamy 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) .24
Land capability, nonirrigated 3w
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	silt loam	moderate	0.55 to 0.94 in	4.5 to 6.0
E,E/B,B/E -- 4 to 20 in	silt loam	moderate	2.26 to 3.55 in	4.5 to 6.0
2Bt,2B/E -- 20 to 65 in	clay loam	slow	5.83 to 8.53 in	5.1 to 6.5
2C -- 65 to 80 in	loam	slow	1.94 to 2.84 in	6.1 to 7.8

B101A--Schisler-Ellsburg-Baden, depressional, complex, 0 to 2 percent slopes

Baden, depressional

Extent: 10 to 20 percent of the unit
Landform(s): depressions on till plains, drainageways on till plains
Slope gradient: 0 to 1 percent
Parent material: silty material over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 2 in	muck	moderately rapid	0.69 to 0.89 in	
A -- 2 to 6 in	mucky silt loam	moderate	0.75 to 0.94 in	4.5 to 6.0
Eg,Bg -- 6 to 20 in	silt loam	moderate	2.13 to 3.12 in	4.5 to 6.0
2Bw -- 20 to 45 in	loam	slow	3.22 to 4.71 in	5.6 to 7.3
2C -- 45 to 80 in	loam	slow	4.56 to 6.66 in	6.1 to 7.8

B102A--Hellwig-Ellsburg-Baden, depressional, complex, 0 to 2 percent slopes

Hellwig

Extent: 35 to 50 percent of the unit
Landform(s): flats on till plains, rises on till plains
Slope gradient: 0 to 2 percent
Parent material: sandy material over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .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 3 in	sandy loam	moderately rapid	0.38 to 0.76 in	4.5 to 6.0
E,Bw -- 3 to 32 in	sand	rapid	1.44 to 3.16 in	4.5 to 6.0
2Bt -- 32 to 60 in	clay loam	slow	3.63 to 5.31 in	5.1 to 6.5
2C -- 60 to 80 in	loam	slow	2.61 to 3.81 in	6.1 to 7.8

Ellsburg

Extent: 15 to 30 percent of the unit
Landform(s): flats on till plains, rises on till plains
Slope gradient: 0 to 2 percent
Parent material: loamy and or silty material over loamy 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) .24
Land capability, nonirrigated 3w
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	silt loam	moderate	0.55 to 0.94 in	4.5 to 6.0
E,E/B,B/E -- 4 to 20 in	silt loam	moderate	2.26 to 3.55 in	4.5 to 6.0
2Bt,2B/E -- 20 to 65 in	clay loam	slow	5.83 to 8.53 in	5.1 to 6.5
2C -- 65 to 80 in	loam	slow	1.94 to 2.84 in	6.1 to 7.8

B102A--Hellwig-Ellsburg-Baden, depressional, complex, 0 to 2 percent slopes

Baden, depressional

Extent: 10 to 30 percent of the unit
Landform(s): depressions on till plains, drainageways on till plains
Slope gradient: 0 to 1 percent
Parent material: silty material over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 2 in	muck	moderately rapid	0.69 to 0.89 in	
A -- 2 to 6 in	mucky silt loam	moderate	0.75 to 0.94 in	4.5 to 6.0
Eg,Bg -- 6 to 20 in	silt loam	moderate	2.13 to 3.12 in	4.5 to 6.0
2Bw -- 20 to 45 in	loam	slow	3.22 to 4.71 in	5.6 to 7.3
2C -- 45 to 80 in	loam	slow	4.56 to 6.66 in	6.1 to 7.8

B103A--Melrude-Schisler-Baden, depressional, complex, 0 to 2 percent slopes

Melrude

Extent: 40 to 60 percent of the unit
Landform(s): flats on till plains, rises on till plains
Slope gradient: 0 to 2 percent
Parent material: statified loamy material
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) .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 3 in	loam	moderate	0.44 to 0.76 in	4.5 to 6.0
E,Bw -- 3 to 60 in	stratified loamy sand to silt loam	moderately rapid	4.54 to 12.47 in	4.5 to 6.0
2C -- 60 to 80 in	loam	slow	2.61 to 3.81 in	6.1 to 7.8

Schisler

Extent: 20 to 40 percent of the unit
Landform(s): flats on till plains, rises on till plains
Slope gradient: 0 to 2 percent
Parent material: loamy material over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .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 4 in	fine sandy loam	moderately rapid	0.55 to 0.94 in	4.5 to 6.0
Bg,Bw -- 4 to 35 in	stratified loamy sand to silt loam	moderately rapid	2.49 to 6.84 in	4.5 to 6.0
2Bt -- 35 to 60 in	clay loam	slow	3.22 to 4.71 in	5.1 to 6.5
2C -- 60 to 80 in	loam	slow	2.61 to 3.81 in	6.1 to 7.8

B103A--Melrude-Schisler-Baden, depressional, complex, 0 to 2 percent slopes

Baden, depressional

Extent: 10 to 30 percent of the unit
Landform(s): depressions on till plains, drainageways on till plains
Slope gradient: 0 to 1 percent
Parent material: silty material over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 2 in	muck	moderately rapid	0.69 to 0.89 in	
A -- 2 to 6 in	mucky silt loam	moderate	0.75 to 0.94 in	4.5 to 6.0
Eg,Bg -- 6 to 20 in	silt loam	moderate	2.13 to 3.12 in	4.5 to 6.0
2Bw -- 20 to 45 in	loam	slow	3.22 to 4.71 in	5.6 to 7.3
2C -- 45 to 80 in	loam	slow	4.56 to 6.66 in	6.1 to 7.8

B104A--Ellsburg-Baden complex, 0 to 2 percent slopes

Ellsburg

Extent: 40 to 65 percent of the unit
Landform(s): flats on till plains, rises on till plains, flats on moraines, drainageways on moraines
Slope gradient: 0 to 2 percent
Parent material: loamy and or silty material over loamy 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) .24
Land capability, nonirrigated 3w
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	silt loam	moderate	0.55 to 0.94 in	4.5 to 6.0
E,E/B,B/E -- 4 to 20 in	silt loam	moderate	2.26 to 3.55 in	4.5 to 6.0
2Bt,2B/E -- 20 to 65 in	clay loam	slow	5.83 to 8.53 in	5.1 to 6.5
2C -- 65 to 80 in	loam	slow	1.94 to 2.84 in	6.1 to 7.8

Baden, depressional

Extent: 15 to 35 percent of the unit
Landform(s): depressions on till plains, drainageways on till plains, depressions on moraines, drainageways on moraines
Slope gradient: 0 to 1 percent
Parent material: silty material over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 2 in	muck	moderately rapid	0.69 to 0.89 in	
A -- 2 to 6 in	mucky silt loam	moderate	0.75 to 0.94 in	4.5 to 6.0
Eg,Bg -- 6 to 20 in	silt loam	moderate	2.13 to 3.12 in	4.5 to 6.0
2Bw -- 20 to 45 in	loam	slow	3.22 to 4.71 in	5.6 to 7.3
2C -- 45 to 80 in	loam	slow	4.56 to 6.66 in	6.1 to 7.8

B104A--Ellsburg-Baden complex, 0 to 2 percent slopes

B107A--Baden muck, depressional, 0 to 1 percent slopes

Baden, depressional

Extent: 60 to 90 percent of the unit
Landform(s): depressions on till plains, drainageways on till plains, depressions on moraines, drainageways on moraines
Slope gradient: 0 to 1 percent
Parent material: silty material over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained
Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 2 in	muck	moderately rapid	0.69 to 0.89 in	
A -- 2 to 6 in	mucky silt loam	moderate	0.75 to 0.94 in	4.5 to 6.0
Eg,Bg -- 6 to 20 in	silt loam	moderate	2.13 to 3.12 in	4.5 to 6.0
2Bw -- 20 to 45 in	loam	slow	3.22 to 4.71 in	5.6 to 7.3
2C -- 45 to 80 in	loam	slow	4.56 to 6.66 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): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: 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

B118A--Rifle soils, duluth catena, 0 to 1 percent slopes

Rifle, depressional

Extent: 0 to 95 percent of the unit
Landform(s): swamps on till plains, swamps 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): 3
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*
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

Extent: 0 to 95 percent of the unit
Landform(s): swamps on till plains, swamps 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): 3
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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*
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	

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): 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: 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

B120A--Mooselake mucky peat, duluth catena, 0 to 1 percent slopes

Mooselake

Extent: 60 to 90 percent of the unit
Landform(s): swamps on till plains, swamps 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): 3
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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 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	

B121A--Merwin peat, duluth catena, 0 to 1 percent slopes

Merwin

Extent: 60 to 90 percent of the unit
Landform(s): bogs on till plains, bogs on moraines
Slope gradient: 0 to 1 percent
Parent material: organic material over loamy till
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): 7
Wind erodibility index (WEI): 38
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*
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	
2Cg -- 46 to 56 in	stratified sandy loam to silty clay loam	slow	1.67 to 2.36 in	5.6 to 7.3
2C,2BC -- 56 to 80 in	loam	slow	3.12 to 4.56 in	6.1 to 7.8

B122A--Tacoosh mucky peat, duluth catena, 0 to 1 percent slopes

Tacoosh

Extent: 60 to 90 percent of the unit
Landform(s): swamps on till plains, swamps on moraines
Slope gradient: 0 to 1 percent
Parent material: organic material over loamy till
Restrictive feature(s): dense material at 40 to 80 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: 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 50 in	stratified sandy loam to silty clay loam	slow	2.41 to 3.40 in	5.6 to 7.3
2C,2BC -- 50 to 80 in	loam	slow	3.89 to 5.69 in	6.1 to 7.8

B123A--Blackhoof-Cathro-Baden complex, depressional, 0 to 1 percent slopes

Blackhoof, depressional

Extent: 60 to 80 percent of the unit
Landform(s): depressions on till plains, depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: thin highly decomposed organic material over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very 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 6w
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 15 in	silt loam	moderate	0.63 to 0.76 in	4.5 to 6.0
Bg --	15 to 17 in	silt loam	moderate	0.30 to 0.43 in	4.5 to 6.0
2Bw --	17 to 42 in	loam	moderate	3.28 to 4.79 in	5.1 to 6.5
2C --	42 to 80 in	loam	slow	4.54 to 7.18 in	6.1 to 7.8

B123A--Blackhoof-Cathro-Baden complex, depressional, 0 to 1 percent slopes

Baden, depressional

Extent: 10 to 20 percent of the unit
Landform(s): depressions on till plains, drainageways on till plains, depressions on moraines, drainageways on moraines
Slope gradient: 0 to 1 percent
Parent material: silty material over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 2 in	muck	moderately rapid	0.69 to 0.89 in	
A -- 2 to 6 in	mucky silt loam	moderate	0.75 to 0.94 in	4.5 to 6.0
Eg,Bg -- 6 to 20 in	silt loam	moderate	2.13 to 3.12 in	4.5 to 6.0
2Bw -- 20 to 45 in	loam	slow	3.22 to 4.71 in	5.6 to 7.3
2C -- 45 to 80 in	loam	slow	4.56 to 6.66 in	6.1 to 7.8

Cathro, depressional

Extent: 10 to 20 percent of the unit
Landform(s): depressions on till plains, depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: organic material over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: 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	moderately slow	0.95 to 1.04 in	5.1 to 6.5
2Cg -- 40 to 50 in	stratified sandy loam to silty clay loam	slow	1.08 to 2.26 in	5.6 to 7.3
2C -- 50 to 80 in	loam	slow	3.89 to 5.69 in	6.1 to 7.8

B123A--Blackhoof-Cathro-Baden complex, depressional, 0 to 1 percent slopes

B124A--Dusler-Ellsburg complex, 0 to 3 percent slopes

Dusler

Extent: 40 to 55 percent of the unit
Landform(s): rises on moraines
Slope gradient: 1 to 3 percent
Parent material: loamy and or silty material over loamy 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) .24
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	silt loam	moderate	0.72 to 1.23 in	4.5 to 6.0
E,E/B,B/E -- 5 to 15 in	silt loam	moderate	1.38 to 2.17 in	4.5 to 6.0
2Bt,2B/E -- 15 to 66 in	clay loam	slow	6.65 to 9.72 in	5.1 to 6.5
2C -- 66 to 80 in	loam	slow	1.79 to 2.62 in	6.1 to 7.8

Ellsburg

Extent: 30 to 45 percent of the unit
Landform(s): flats on moraines, drainageways on moraines
Slope gradient: 0 to 2 percent
Parent material: loamy and or silty material over loamy 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) .24
Land capability, nonirrigated 3w
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	silt loam	moderate	0.55 to 0.94 in	4.5 to 6.0
E,E/B,B/E -- 4 to 20 in	silt loam	moderate	2.26 to 3.55 in	4.5 to 6.0
2Bt,2B/E -- 20 to 65 in	clay loam	slow	5.83 to 8.53 in	5.1 to 6.5
2C -- 65 to 80 in	loam	slow	1.94 to 2.84 in	6.1 to 7.8

B125B--Culver silt loam, 3 to 8 percent slopes

Culver

Extent: 85 to 95 percent of the unit
Landform(s): moraines
Slope gradient: 3 to 8 percent
Parent material: loamy and or silty material over loamy 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) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silt loam	moderate	0.55 to 0.94 in	4.5 to 6.0
E,E/B,Bw -- 4 to 16 in	silt loam	moderate	1.71 to 2.69 in	4.5 to 6.0
2Bt,2B/E -- 16 to 52 in	clay loam	slow	4.66 to 6.81 in	5.1 to 6.5
2C -- 52 to 80 in	loam	slow	3.63 to 5.31 in	6.1 to 7.8

B126D--Duluth-Culver complex, 3 to 18 percent slopes

Duluth

Extent: 55 to 80 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 18 percent
Parent material: loamy and or silty material over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .17
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	fine sandy loam	moderately rapid	0.72 to 1.23 in	4.5 to 6.0
E,E/B,B/E -- 5 to 18 in	silt loam	moderate	1.82 to 2.86 in	4.5 to 6.0
2Bt,2B/E -- 18 to 38 in	clay loam	slow	2.61 to 3.81 in	5.1 to 6.5
2C,2BC -- 38 to 80 in	loam	slow	5.43 to 7.93 in	6.1 to 7.8

Culver

Extent: 15 to 30 percent of the unit
Landform(s): moraines
Slope gradient: 3 to 8 percent
Parent material: loamy and or silty material over loamy 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) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silt loam	moderate	0.55 to 0.94 in	4.5 to 6.0
E,E/B,Bw -- 4 to 16 in	silt loam	moderate	1.71 to 2.69 in	4.5 to 6.0
2Bt,2B/E -- 16 to 52 in	clay loam	slow	4.66 to 6.81 in	5.1 to 6.5
2C -- 52 to 80 in	loam	slow	3.63 to 5.31 in	6.1 to 7.8

B126E--Duluth silt loam, 18 to 45 percent slopes

Duluth

Extent: 70 to 90 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 45 percent
Parent material: loamy and or silty material over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .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 5 in	fine sandy loam	moderately rapid	0.72 to 1.23 in	4.5 to 6.0
E,E/B,B/E -- 5 to 18 in	silt loam	moderate	1.82 to 2.86 in	4.5 to 6.0
2Bt,2B/E -- 18 to 38 in	clay loam	slow	2.61 to 3.81 in	5.1 to 6.5
2C,2BC -- 38 to 80 in	loam	slow	5.43 to 7.93 in	6.1 to 7.8

B127B--Culver-Dusler-Ellsburg complex, 0 to 8 percent slopes

Culver

Extent: 40 to 55 percent of the unit
Landform(s): moraines
Slope gradient: 3 to 8 percent
Parent material: loamy and or silty material over loamy 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) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silt loam	moderate	0.55 to 0.94 in	4.5 to 6.0
E,E/B,Bw -- 4 to 16 in	silt loam	moderate	1.71 to 2.69 in	4.5 to 6.0
2Bt,2B/E -- 16 to 52 in	clay loam	slow	4.66 to 6.81 in	5.1 to 6.5
2C -- 52 to 80 in	loam	slow	3.63 to 5.31 in	6.1 to 7.8

Dusler

Extent: 20 to 30 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 3 percent
Parent material: loamy and or silty material over loamy 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) .24
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	silt loam	moderate	0.72 to 1.23 in	4.5 to 6.0
E,E/B,B/E -- 5 to 15 in	silt loam	moderate	1.38 to 2.17 in	4.5 to 6.0
2Bt,2B/E -- 15 to 66 in	clay loam	slow	6.65 to 9.72 in	5.1 to 6.5
2C -- 66 to 80 in	loam	slow	1.79 to 2.62 in	6.1 to 7.8

B127B--Culver-Dusler-Ellsburg complex, 0 to 8 percent slopes

Ellsburg

Extent: 10 to 25 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 2 percent
Parent material: loamy and or silty material over loamy 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) .24
Land capability, nonirrigated 3w
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	silt loam	moderate	0.55 to 0.94 in	4.5 to 6.0
E,E/B,B/E -- 4 to 20 in	silt loam	moderate	2.26 to 3.55 in	4.5 to 6.0
2Bt,2B/E -- 20 to 65 in	clay loam	slow	5.83 to 8.53 in	5.1 to 6.5
2C -- 65 to 80 in	loam	slow	1.94 to 2.84 in	6.1 to 7.8

B128D--Duluth-Culver-Cathro, depressional, complex, 0 to 18 percent slopes

Duluth

Extent: 40 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 18 percent
Parent material: loamy and or silty material over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .17
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	fine sandy loam	moderately rapid	0.72 to 1.23 in	4.5 to 6.0
E,E/B,B/E -- 5 to 18 in	silt loam	moderate	1.82 to 2.86 in	4.5 to 6.0
2Bt,2B/E -- 18 to 38 in	clay loam	slow	2.61 to 3.81 in	5.1 to 6.5
2C,2BC -- 38 to 80 in	loam	slow	5.43 to 7.93 in	6.1 to 7.8

Culver

Extent: 20 to 30 percent of the unit
Landform(s): moraines
Slope gradient: 3 to 8 percent
Parent material: loamy and or silty material over loamy 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) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silt loam	moderate	0.55 to 0.94 in	4.5 to 6.0
E,E/B,Bw -- 4 to 16 in	silt loam	moderate	1.71 to 2.69 in	4.5 to 6.0
2Bt,2B/E -- 16 to 52 in	clay loam	slow	4.66 to 6.81 in	5.1 to 6.5
2C -- 52 to 80 in	loam	slow	3.63 to 5.31 in	6.1 to 7.8

B128D--Duluth-Culver-Cathro, depressional, complex, 0 to 18 percent slopes

Cathro, depressional

Extent: 5 to 20 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: organic material over loamy till
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: 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	moderately slow	0.95 to 1.04 in	5.1 to 6.5
2Cg -- 40 to 50 in	stratified sandy loam to silty clay loam	slow	1.08 to 2.26 in	5.6 to 7.3
2C -- 50 to 80 in	loam	slow	3.89 to 5.69 in	6.1 to 7.8

B129B--Culver-Culver, coarse substratum-Ellsburg complex, 0 to 8 percent slopes

Culver

Extent: 35 to 55 percent of the unit
Landform(s): moraines
Slope gradient: 3 to 8 percent
Parent material: loamy and or silty material over loamy 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) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silt loam	moderate	0.55 to 0.94 in	4.5 to 6.0
E,E/B,Bw -- 4 to 16 in	silt loam	moderate	1.71 to 2.69 in	4.5 to 6.0
2Bt,2B/E -- 16 to 52 in	clay loam	slow	4.66 to 6.81 in	5.1 to 6.5
2C -- 52 to 80 in	loam	slow	3.63 to 5.31 in	6.1 to 7.8

Culver, coarse substratum

Extent: 20 to 30 percent of the unit
Landform(s): moraines
Slope gradient: 3 to 8 percent
Parent material: loamy and or silty material over loamy till over 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	silt loam	moderate	0.44 to 0.76 in	4.5 to 6.0
E,E/B,Bw -- 3 to 15 in	silt loam	moderate	1.65 to 2.60 in	4.5 to 6.0
2Bt,2B/E -- 15 to 48 in	clay loam	slow	4.30 to 6.28 in	5.1 to 6.5
2BC -- 48 to 62 in	loam	slow	1.79 to 2.62 in	6.1 to 7.8
3C -- 62 to 80 in	very gravelly sand	very rapid	0.18 to 1.63 in	5.6 to 6.5

B129B--Culver-Culver, coarse substratum-Ellsburg complex, 0 to 8 percent slopes

Ellsburg

Extent: 5 to 25 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 2 percent
Parent material: loamy and or silty material over loamy 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) .24
Land capability, nonirrigated 3w
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	silt loam	moderate	0.55 to 0.94 in	4.5 to 6.0
E,E/B,B/E -- 4 to 20 in	silt loam	moderate	2.26 to 3.55 in	4.5 to 6.0
2Bt,2B/E -- 20 to 65 in	clay loam	slow	5.83 to 8.53 in	5.1 to 6.5
2C -- 65 to 80 in	loam	slow	1.94 to 2.84 in	6.1 to 7.8

B130D--Duluth-Duluth, coarse substratum-Ellsburg complex, 0 to 18 percent slopes

Duluth

Extent: 35 to 55 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 18 percent
Parent material: loamy and or silty material over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .17
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	fine sandy loam	moderately rapid	0.72 to 1.23 in	4.5 to 6.0
E,E/B,B/E -- 5 to 18 in	silt loam	moderate	1.82 to 2.86 in	4.5 to 6.0
2Bt,2B/E -- 18 to 38 in	clay loam	slow	2.61 to 3.81 in	5.1 to 6.5
2C,2BC -- 38 to 80 in	loam	slow	5.43 to 7.93 in	6.1 to 7.8

Duluth, coarse substratum

Extent: 20 to 30 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 18 percent
Parent material: loamy and or silty material over loamy till over outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .17
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	fine sandy loam	moderately rapid	0.55 to 0.94 in	4.5 to 6.0
E,E/B,B/E -- 4 to 16 in	silt loam	moderate	1.71 to 2.69 in	4.5 to 6.0
2Bt,2B/E -- 16 to 69 in	clay loam	slow	6.86 to 10.02 in	5.1 to 6.5
3C -- 69 to 80 in	very gravelly sand	very rapid	0.11 to 0.99 in	5.6 to 6.5

B130D--Duluth-Duluth, coarse substratum-Ellsburg complex, 0 to 18 percent slopes

Ellsburg

Extent: 5 to 20 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 2 percent
Parent material: loamy and or silty material over loamy 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) .24
Land capability, nonirrigated 3w
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	silt loam	moderate	0.55 to 0.94 in	4.5 to 6.0
E,E/B,B/E -- 4 to 20 in	silt loam	moderate	2.26 to 3.55 in	4.5 to 6.0
2Bt,2B/E -- 20 to 65 in	clay loam	slow	5.83 to 8.53 in	5.1 to 6.5
2C -- 65 to 80 in	loam	slow	1.94 to 2.84 in	6.1 to 7.8

B131F--Duluth-Duluth, coarse substratum, complex, 18 to 45 percent slopes

Duluth

Extent: 40 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 45 percent
Parent material: loamy and or silty material over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .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 5 in	fine sandy loam	moderately rapid	0.72 to 1.23 in	4.5 to 6.0
E,E/B,B/E -- 5 to 18 in	silt loam	moderate	1.82 to 2.86 in	4.5 to 6.0
2Bt,2B/E -- 18 to 38 in	clay loam	slow	2.61 to 3.81 in	5.1 to 6.5
2C,2BC -- 38 to 80 in	loam	slow	5.43 to 7.93 in	6.1 to 7.8

Duluth, coarse substratum

Extent: 20 to 40 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 45 percent
Parent material: loamy and or silty material over loamy till over outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
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 4 in	fine sandy loam	moderately rapid	0.55 to 0.94 in	4.5 to 6.0
E,E/B,B/E -- 4 to 16 in	silt loam	moderate	1.71 to 2.69 in	4.5 to 6.0
2Bt,2B/E -- 16 to 69 in	clay loam	slow	6.86 to 10.02 in	5.1 to 6.5
3C -- 69 to 80 in	very gravelly sand	very rapid	0.11 to 0.99 in	5.6 to 6.5

B135A--McDavitt, depressional-Zimm, complex, 0 to 2 percent slopes

Mcdavitt, depressional

Extent: 55 to 75 percent of the unit
Landform(s): depressions on lake plains, swales on lake plains
Slope gradient: 0 to 1 percent
Parent material: loamy glaciolacustrine deposits 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): 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: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	mucky peat	rapid	0.89 to 1.08 in	
A -- 2 to 7 in	mucky silt loam	moderate	0.82 to 1.23 in	5.6 to 7.3
Eg -- 7 to 15 in	loamy very fine sand	moderately rapid	0.71 to 1.34 in	5.6 to 7.3
Bg1 -- 15 to 22 in	stratified loamy very fine sand to very fine sandy loam to fine sandy loam to sandy loam to loam to silt loam	moderate	0.85 to 1.56 in	5.6 to 7.3
Bg2 -- 22 to 30 in	stratified loamy very fine sand to very fine sandy loam to fine sandy loam to sandy loam to loam to silt loam	moderate	0.87 to 1.73 in	6.1 to 7.3
2Cg1 -- 30 to 45 in	silty clay loam	slow	1.20 to 2.99 in	7.4 to 8.4
2Cg2 -- 45 to 80 in	silty clay	slow	2.80 to 7.01 in	7.4 to 8.4

B135A--McDavitt, depressional-Zimm, complex, 0 to 2 percent slopes

Zimm

Extent: 10 to 25 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 0 to 2 percent
Parent material: loamy glaciolacustrine deposits over 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): 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
Ap --	0 to 4 in	loam	moderate	0.63 to 0.94 in	5.6 to 7.3
Eg --	4 to 6 in	fine sandy loam	moderately rapid	0.18 to 0.33 in	5.6 to 7.3
Bw --	6 to 26 in	stratified sandy loam to loamy very fine sand to very fine sandy loam to fine sandy loam to loam to silt loam	moderately rapid	1.81 to 4.42 in	5.6 to 7.3
2Bkg --	26 to 39 in	clay	slow	1.04 to 2.60 in	7.4 to 8.4
2Cg --	39 to 80 in	clay	slow	3.28 to 8.19 in	7.4 to 8.4

B143B--Dinham-Dusler complex, 1 to 8 percent slopes

Dinham

Extent: 20 to 80 percent of the unit
Landform(s): moraines
Slope gradient: 3 to 8 percent
Parent material: sandy material over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	sandy loam	moderately rapid	0.56 to 1.13 in	4.5 to 6.0
Bw1 -- 5 to 10 in	sandy loam	moderately rapid	0.47 to 0.66 in	4.5 to 6.0
Bw2,Bw3,Bw4 -- 10 to 38 in	sand	rapid	1.13 to 3.12 in	4.5 to 6.0
2Bt,2B/E -- 38 to 80 in	clay loam	slow	5.43 to 7.93 in	5.1 to 6.5

Dusler

Extent: 10 to 40 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 3 percent
Parent material: loamy and or silty material over loamy 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) .24
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	silt loam	moderate	0.72 to 1.23 in	4.5 to 6.0
E,E/B,B/E -- 5 to 15 in	silt loam	moderate	1.38 to 2.17 in	4.5 to 6.0
2Bt,2B/E -- 15 to 66 in	clay loam	slow	6.65 to 9.72 in	5.1 to 6.5
2C -- 66 to 80 in	loam	slow	1.79 to 2.62 in	6.1 to 7.8

B144A--Ellsburg-Dusler complex, 0 to 3 percent slopes

Ellsburg

Extent: 50 to 70 percent of the unit
Landform(s): drumlins
Slope gradient: 0 to 2 percent
Parent material: loamy and or silty material over loamy 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) .24
Land capability, nonirrigated 3w
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	silt loam	moderate	0.55 to 0.94 in	4.5 to 6.0
E,E/B,B/E -- 4 to 20 in	silt loam	moderate	2.26 to 3.55 in	4.5 to 6.0
2Bt,2B/E -- 20 to 65 in	clay loam	slow	5.83 to 8.53 in	5.1 to 6.5
2C -- 65 to 80 in	loam	slow	1.94 to 2.84 in	6.1 to 7.8

Dusler

Extent: 30 to 50 percent of the unit
Landform(s): drumlins
Slope gradient: 1 to 3 percent
Parent material: loamy and or silty material over loamy 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) .24
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	silt loam	moderate	0.72 to 1.23 in	4.5 to 6.0
E,E/B,B/E -- 5 to 15 in	silt loam	moderate	1.38 to 2.17 in	4.5 to 6.0
2Bt,2B/E -- 15 to 66 in	clay loam	slow	6.65 to 9.72 in	5.1 to 6.5
2C -- 66 to 80 in	loam	slow	1.79 to 2.62 in	6.1 to 7.8

B145B--Dusler-Culver complex, 1 to 8 percent slopes

Dusler

Extent: 35 to 90 percent of the unit
Landform(s): drumlins
Slope gradient: 1 to 3 percent
Parent material: loamy and or silty material over loamy 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) .24
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	silt loam	moderate	0.72 to 1.23 in	4.5 to 6.0
E,E/B,B/E -- 5 to 15 in	silt loam	moderate	1.38 to 2.17 in	4.5 to 6.0
2Bt,2B/E -- 15 to 66 in	clay loam	slow	6.65 to 9.72 in	5.1 to 6.5
2C -- 66 to 80 in	loam	slow	1.79 to 2.62 in	6.1 to 7.8

Culver

Extent: 5 to 25 percent of the unit
Landform(s): drumlins
Slope gradient: 4 to 8 percent
Parent material: loamy and or silty material over loamy 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) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silt loam	moderate	0.55 to 0.94 in	4.5 to 6.0
E,E/B,Bw -- 4 to 16 in	silt loam	moderate	1.71 to 2.69 in	4.5 to 6.0
2Bt,2B/E -- 16 to 52 in	clay loam	slow	4.66 to 6.81 in	5.1 to 6.5
2C -- 52 to 80 in	loam	slow	3.63 to 5.31 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): 3
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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*
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): 3
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*
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	

B148A--Greenwood soils, duluth catena, 0 to 1 percent slopes

Greenwood

Extent: 0 to 95 percent of the unit
Landform(s): bogs on till plains, bogs on moraines
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): 3
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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*
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 till plains, 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): 3
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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*
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	

B149A--Zimm-McDavitt, depressional-Brickton complex, 0 to 2 percent slopes

Zimm

Extent: 45 to 65 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 0 to 2 percent
Parent material: loamy glaciolacustrine deposits over 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): 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*
Ap -- 0 to 4 in	loam	moderate	0.63 to 0.94 in	5.6 to 7.3
Eg -- 4 to 6 in	fine sandy loam	moderately rapid	0.18 to 0.33 in	5.6 to 7.3
Bw -- 6 to 26 in	stratified sandy loam to loamy very fine sand to very fine sandy loam to fine sandy loam to loam to silt loam	moderately rapid	1.81 to 4.42 in	5.6 to 7.3
2Bkg -- 26 to 39 in	clay	slow	1.04 to 2.60 in	7.4 to 8.4
2Cg -- 39 to 80 in	clay	slow	3.28 to 8.19 in	7.4 to 8.4

B149A--Zimm-McDavitt, depressional-Brickton complex, 0 to 2 percent slopes

Mcdavitt, depressional

Extent: 15 to 35 percent of the unit
Landform(s): depressions on lake plains, swales on lake plains
Slope gradient: 0 to 1 percent
Parent material: loamy glaciolacustrine deposits 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): 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: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	mucky peat	rapid	0.89 to 1.08 in	
A -- 2 to 7 in	mucky silt loam	moderate	0.82 to 1.23 in	5.6 to 7.3
Eg -- 7 to 15 in	loamy very fine sand	moderately rapid	0.71 to 1.34 in	5.6 to 7.3
Bg1 -- 15 to 22 in	stratified loamy very fine sand to very fine sandy loam to fine sandy loam to sandy loam to loam to silt loam	moderate	0.85 to 1.56 in	5.6 to 7.3
Bg2 -- 22 to 30 in	stratified loamy very fine sand to very fine sandy loam to fine sandy loam to sandy loam to loam to silt loam	moderate	0.87 to 1.73 in	6.1 to 7.3
2Cg1 -- 30 to 45 in	silty clay loam	slow	1.20 to 2.99 in	7.4 to 8.4
2Cg2 -- 45 to 80 in	silty clay	slow	2.80 to 7.01 in	7.4 to 8.4

B149A--Zimm-McDavitt, depressional-Brickton complex, 0 to 2 percent slopes

Brickton

Extent: 5 to 25 percent of the unit
Landform(s): flats 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: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	silty clay loam	moderately slow	2.07 to 2.36 in	5.6 to 7.3
Bt -- 10 to 30 in	silty clay	slow	1.81 to 4.02 in	5.6 to 7.3
BC -- 30 to 42 in	silty clay	slow	0.98 to 2.44 in	6.1 to 7.3
Ck -- 42 to 68 in	silty clay	slow	2.08 to 5.20 in	7.4 to 8.4
C -- 68 to 80 in	silty clay	slow	0.94 to 2.36 in	7.4 to 8.4

B150D--Dinham-Duluth complex, 8 to 18 percent slopes

Duluth

Extent: 20 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 18 percent
Parent material: loamy and or silty material over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .17
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	fine sandy loam	moderately rapid	0.72 to 1.23 in	4.5 to 6.0
E,E/B,B/E -- 5 to 18 in	silt loam	moderate	1.82 to 2.86 in	4.5 to 6.0
2Bt,2B/E -- 18 to 38 in	clay loam	slow	2.61 to 3.81 in	5.1 to 6.5
2C,2BC -- 38 to 80 in	loam	slow	5.43 to 7.93 in	6.1 to 7.8

Dinham

Extent: 20 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 18 percent
Parent material: sandy material over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	sandy loam	moderately rapid	0.56 to 1.13 in	4.5 to 6.0
Bw1 -- 5 to 10 in	sandy loam	moderately rapid	0.47 to 0.66 in	4.5 to 6.0
Bw2,Bw3,Bw4 -- 10 to 38 in	sand	rapid	1.13 to 3.12 in	4.5 to 6.0
2Bt,2B/E -- 38 to 80 in	clay loam	slow	5.43 to 7.93 in	5.1 to 6.5

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): 3
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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*
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): 3
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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*
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	

B153B--Aerie-Zimm complex, 0 to 3 percent slopes

Aerie

Extent: 60 to 85 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 1 to 3 percent
Parent material: loamy glaciolacustrine deposits 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): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 2w
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	fine sandy loam	moderately rapid	0.63 to 0.94 in	5.6 to 7.3
E/B -- 4 to 25 in	loamy sand	rapid	1.91 to 3.61 in	5.6 to 7.3
Bt1 -- 25 to 35 in	loam	moderate	1.38 to 1.87 in	5.6 to 7.3
2Bt2 -- 35 to 42 in	clay	slow	0.57 to 1.42 in	6.1 to 7.3
2Bk -- 42 to 65 in	clay	slow	1.83 to 4.57 in	7.4 to 8.4
2C -- 65 to 80 in	silty clay loam	slow	1.20 to 2.99 in	7.4 to 8.4

B153B--Aerie-Zimm complex, 0 to 3 percent slopes

Zimm

Extent: 10 to 25 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 0 to 2 percent
Parent material: loamy glaciolacustrine deposits over 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): 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*
Ap -- 0 to 4 in	loam	moderate	0.63 to 0.94 in	5.6 to 7.3
Eg -- 4 to 6 in	fine sandy loam	moderately rapid	0.18 to 0.33 in	5.6 to 7.3
Bw -- 6 to 26 in	stratified sandy loam to loamy very fine sand to very fine sandy loam to fine sandy loam to loam to silt loam	moderately rapid	1.81 to 4.42 in	5.6 to 7.3
2Bkg -- 26 to 39 in	clay	slow	1.04 to 2.60 in	7.4 to 8.4
2Cg -- 39 to 80 in	clay	slow	3.28 to 8.19 in	7.4 to 8.4

B212A--Brickton-Hassman, depressional, complex, 0 to 2 percent slopes

Brickton

Extent: 60 to 80 percent of the unit
Landform(s): flats 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: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	silty clay loam	moderately slow	2.07 to 2.36 in	5.6 to 7.3
Bt -- 10 to 30 in	silty clay	slow	1.81 to 4.02 in	5.6 to 7.3
BC -- 30 to 42 in	silty clay	slow	0.98 to 2.44 in	6.1 to 7.3
Ck -- 42 to 68 in	silty clay	slow	2.08 to 5.20 in	7.4 to 8.4
C -- 68 to 80 in	silty clay	slow	0.94 to 2.36 in	7.4 to 8.4

Hassman, depressional

Extent: 10 to 30 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): 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: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 4 in	mucky peat	rapid	1.77 to 2.17 in	
A -- 4 to 8 in	silty clay loam	moderately slow	0.83 to 0.94 in	5.6 to 7.3
Bg -- 8 to 26 in	silty clay	slow	1.63 to 3.62 in	5.6 to 7.3
BCg -- 26 to 45 in	silty clay	slow	1.70 to 3.78 in	7.4 to 8.4
Cg -- 45 to 80 in	silty clay loam	moderately slow	2.80 to 7.01 in	7.4 to 8.4

B213A--Hassman, depressional-Brickton comkplex, 0 to 1 percent slopes

Hassman, depressional

Extent: 60 to 90 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): 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: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 4 in	mucky peat	rapid	1.77 to 2.17 in	
A -- 4 to 8 in	silty clay loam	moderately slow	0.83 to 0.94 in	5.6 to 7.3
Bg -- 8 to 26 in	silty clay	slow	1.63 to 3.62 in	5.6 to 7.3
BCg -- 26 to 45 in	silty clay	slow	1.70 to 3.78 in	7.4 to 8.4
Cg -- 45 to 80 in	silty clay loam	moderately slow	2.80 to 7.01 in	7.4 to 8.4

Brickton

Extent: 10 to 30 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: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	silty clay loam	moderately slow	2.07 to 2.36 in	5.6 to 7.3
Bt -- 10 to 30 in	silty clay	slow	1.81 to 4.02 in	5.6 to 7.3
BC -- 30 to 42 in	silty clay	slow	0.98 to 2.44 in	6.1 to 7.3
Ck -- 42 to 68 in	silty clay	slow	2.08 to 5.20 in	7.4 to 8.4
C -- 68 to 80 in	silty clay	slow	0.94 to 2.36 in	7.4 to 8.4

B220A--Meadowlands-Leeora-Alborn complex, 0 to 2 percent slopes

Meadowlands

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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
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 7 in	loam	moderate	1.13 to 1.70 in	5.6 to 7.3
Bg -- 7 to 20 in	stratified fine sandy loam to loamy very fine sand to very fine sandy loam to sandy loam to loam to silt loam	moderately rapid	1.17 to 2.86 in	5.6 to 7.3
Bw -- 20 to 35 in	stratified loam to very fine sandy loam to fine sandy loam to silt loam to silty clay loam	moderate	2.09 to 3.29 in	6.1 to 7.3
C1 -- 35 to 40 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	0.87 to 1.13 in	6.1 to 7.3
C2 -- 40 to 80 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	6.76 to 8.75 in	7.4 to 8.4

B220A--Meadowlands-Leeora-Alborn complex, 0 to 2 percent slopes

Leeora, depressional

Extent: 15 to 35 percent of the unit
Landform(s): swales on lake plains, depressions 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): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oi -- 0 to 1 in	peat	very rapid	0.65 to 0.77 in	3.0 to 4.4
Ap -- 1 to 10 in	silt loam	moderate	1.39 to 2.08 in	5.6 to 7.3
Bg1,Bg2,Bg3 -- 10 to 43 in	stratified fine sandy loam to loamy very fine sand to very fine sandy loam to sandy loam to loam to silt loam	moderately rapid	2.98 to 7.28 in	5.6 to 7.3
Cg1,Cg2 -- 43 to 80 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	6.29 to 8.14 in	7.4 to 8.4

B220A--Meadowlands-Leeora-Alborn complex, 0 to 2 percent slopes

Alborn

Extent: 10 to 25 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
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 8 in	silt loam	moderate	1.57 to 1.89 in	5.6 to 7.3
Bg1 -- 8 to 23 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	2.54 to 3.29 in	5.6 to 7.3
Bg2 -- 23 to 33 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	1.74 to 2.25 in	6.1 to 7.3
Bkg -- 33 to 54 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	3.55 to 4.59 in	7.4 to 8.4
Cg -- 54 to 80 in	stratified silt loam to silty clay loam to very fine sandy loam	moderate	4.42 to 5.72 in	7.4 to 8.4

B221A--Leeora-Meadowlands-Sago complex, 0 to 1 percent slopes

Leeora, depressional

Extent: 50 to 90 percent of the unit
Landform(s): swales on lake plains, depressions 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): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oi -- 0 to 1 in	peat	very rapid	0.65 to 0.77 in	3.0 to 4.4
Ap -- 1 to 10 in	silt loam	moderate	1.39 to 2.08 in	5.6 to 7.3
Bg1,Bg2,Bg3 -- 10 to 43 in	stratified fine sandy loam to loamy very fine sand to very fine sandy loam to sandy loam to loam to silt loam	moderately rapid	2.98 to 7.28 in	5.6 to 7.3
Cg1,Cg2 -- 43 to 80 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	6.29 to 8.14 in	7.4 to 8.4

B221A--Leeora-Meadowlands-Sago complex, 0 to 1 percent slopes

Meadowlands

Extent: 10 to 30 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 0 to 1 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
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 7 in	loam	moderate	1.13 to 1.70 in	5.6 to 7.3
Bg -- 7 to 20 in	stratified fine sandy loam to loamy very fine sand to very fine sandy loam to sandy loam to loam to silt loam	moderately rapid	1.17 to 2.86 in	5.6 to 7.3
Bw -- 20 to 35 in	stratified loam to very fine sandy loam to fine sandy loam to silt loam to silty clay loam	moderate	2.09 to 3.29 in	6.1 to 7.3
C1 -- 35 to 40 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	0.87 to 1.13 in	6.1 to 7.3
C2 -- 40 to 80 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	6.76 to 8.75 in	7.4 to 8.4

B221A--Leeora-Meadowlands-Sago complex, 0 to 1 percent slopes

Sago, depressional

Extent: 10 to 20 percent of the unit
Landform(s): swales on lake plains, depressions 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): 5
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: 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

B230A--Joki-McDavitt, depressional-Little White complex, 0 to 2 percent slopes

Joki

Extent: 40 to 60 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 0 to 2 percent
Parent material: sandy glaciolacustrine deposits over 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loamy sand	rapid	0.28 to 0.87 in	5.6 to 7.3
Bw -- 4 to 30 in	stratified loamy sand to fine sand to sand to loamy fine sand to very fine sandy loam to fine sandy loam to sandy loam	rapid	1.56 to 4.94 in	5.6 to 7.3
2Cg -- 30 to 80 in	clay	slow	4.00 to 10.00 in	7.4 to 8.4

B230A--Joki-McDavitt, depressional-Little White complex, 0 to 2 percent slopes

Mcdavitt, depressional

Extent: 15 to 30 percent of the unit
Landform(s): depressions on lake plains, swales on lake plains
Slope gradient: 0 to 1 percent
Parent material: loamy glaciolacustrine deposits 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): 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: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 2 in	mucky peat	rapid	0.89 to 1.08 in	
A -- 2 to 7 in	mucky silt loam	moderate	0.82 to 1.23 in	5.6 to 7.3
Eg -- 7 to 15 in	loamy very fine sand	moderately rapid	0.71 to 1.34 in	5.6 to 7.3
Bg1 -- 15 to 22 in	stratified loamy very fine sand to very fine sandy loam to fine sandy loam to sandy loam to loam to silt loam	moderate	0.85 to 1.56 in	5.6 to 7.3
Bg2 -- 22 to 30 in	stratified loamy very fine sand to very fine sandy loam to fine sandy loam to sandy loam to loam to silt loam	moderate	0.87 to 1.73 in	6.1 to 7.3
2Cg1 -- 30 to 45 in	silty clay loam	slow	1.20 to 2.99 in	7.4 to 8.4
2Cg2 -- 45 to 80 in	silty clay	slow	2.80 to 7.01 in	7.4 to 8.4

B230A--Joki-McDavitt, depressional-Little White complex, 0 to 2 percent slopes

Little white

Extent: 10 to 20 percent of the unit

Landform(s): rises on lake plains

Slope gradient: 1 to 3 percent

Parent material: sandy glaciolacustrine deposits 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): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .10

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 3 in	loamy sand	rapid	0.19 to 0.69 in	5.6 to 7.3
E -- 3 to 4 in	stratified loamy sand to fine sand to sand to loamy fine sand to very fine sandy loam to fine sandy loam to sandy loam	rapid	0.05 to 0.15 in	5.6 to 7.3
Bw1,Bw2 -- 4 to 25 in	stratified loamy sand to fine sand to sand to loamy fine sand to sandy loam to very fine sandy loam to fine sandy loam	rapid	1.06 to 4.04 in	6.1 to 7.3
2Cg -- 25 to 80 in	clay	slow	4.38 to 10.94 in	7.4 to 8.4

B234A--Joula-Meadowlands-Leeora complex, 0 to 3 percent slopes

Joula

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

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: C
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	loam	moderate	1.45 to 2.17 in	5.6 to 7.3
Bw -- 9 to 14 in	stratified sandy loam to loamy very fine sand to very fine sandy loam to fine sandy loam to loam to silt loam	moderately rapid	0.46 to 1.13 in	5.6 to 7.3
Bg -- 14 to 29 in	stratified sandy loam to loamy very fine sand to very fine sandy loam to fine sandy loam to loam to silt loam	moderately rapid	1.35 to 3.29 in	5.6 to 7.3
C -- 29 to 80 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	8.63 to 11.17 in	7.4 to 8.4

B234A--Joula-Meadowlands-Leeora complex, 0 to 3 percent slopes

Meadowlands

Extent: 15 to 35 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
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 7 in	loam	moderate	1.13 to 1.70 in	5.6 to 7.3
Bg -- 7 to 20 in	stratified fine sandy loam to loamy very fine sand to very fine sandy loam to sandy loam to loam to silt loam	moderately rapid	1.17 to 2.86 in	5.6 to 7.3
Bw -- 20 to 35 in	stratified loam to very fine sandy loam to fine sandy loam to silt loam to silty clay loam	moderate	2.09 to 3.29 in	6.1 to 7.3
C1 -- 35 to 40 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	0.87 to 1.13 in	6.1 to 7.3
C2 -- 40 to 80 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	6.76 to 8.75 in	7.4 to 8.4

B234A--Joula-Meadowlands-Leeora complex, 0 to 3 percent slopes

Leeora, depressional

Extent: 15 to 35 percent of the unit
Landform(s): swales on lake plains, depressions 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): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oi -- 0 to 1 in	peat	very rapid	0.65 to 0.77 in	3.0 to 4.4
Ap -- 1 to 10 in	silt loam	moderate	1.39 to 2.08 in	5.6 to 7.3
Bg1,Bg2,Bg3 -- 10 to 43 in	stratified fine sandy loam to loamy very fine sand to very fine sandy loam to sandy loam to loam to silt loam	moderately rapid	2.98 to 7.28 in	5.6 to 7.3
Cg1,Cg2 -- 43 to 80 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	6.29 to 8.14 in	7.4 to 8.4

B235A--Skunkcreek-Meadowlands-Kapla, depressional, complex, 0 to 2 percent slopes

Skunkcreek

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

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap --	0 to 7 in	loam	moderate	1.13 to 1.70 in	5.6 to 7.3
Bg1 --	7 to 18 in	stratified coarse sand to sand to fine sand to loamy sand to loamy fine sand to very fine sandy loam to loam to silt loam	moderate	0.33 to 2.43 in	5.6 to 7.3
Bg2 --	18 to 40 in	stratified coarse sand to sand to fine sand to loamy sand to loamy fine sand to very fine sandy loam to loam to silt loam	moderate	0.44 to 4.85 in	6.1 to 7.3
Cg1,Cg2,Cg3 --	40 to 80 in	stratified coarse sand to sand to fine sand to loamy sand to loamy fine sand to very fine sandy loam to loam to silt loam	moderately rapid	0.80 to 8.75 in	7.4 to 8.4

B235A--Skunkcreek-Meadowlands-Kapla, depressional, complex, 0 to 2 percent slopes

Meadowlands

Extent: 20 to 40 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
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 10 in	loam	moderate	1.57 to 2.36 in	5.6 to 7.3
Bg --	10 to 20 in	stratified fine sandy loam to loamy very fine sand to very fine sandy loam to sandy loam to loam to silt loam	moderately rapid	0.92 to 2.25 in	5.6 to 7.3
Bw --	20 to 35 in	stratified loam to very fine sandy loam to fine sandy loam to silt loam to silty clay loam	moderate	2.09 to 3.29 in	6.1 to 7.3
C1 --	35 to 40 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	0.87 to 1.13 in	6.1 to 7.3
C2 --	40 to 80 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	6.76 to 8.75 in	7.4 to 8.4

B235A--Skunkcreek-Meadowlands-Kapla, depressional, complex, 0 to 2 percent slopes

Kapla, depressional

Extent: 10 to 25 percent of the unit
Landform(s): depressions on lake plains, swales on lake plains
Slope gradient: 0 to 1 percent
Parent material: loamy 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: 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

B236A--Skunkcreek-Louis-Meadowlands complex, 0 to 3 percent slopes

Skunkcreek

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

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
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 7 in	loam	moderate	1.13 to 1.70 in	5.6 to 7.3
Bg1 -- 7 to 18 in	stratified coarse sand to sand to fine sand to loamy sand to loamy fine sand to very fine sandy loam to loam to silt loam	moderate	0.33 to 2.43 in	5.6 to 7.3
Bg2 -- 18 to 40 in	stratified coarse sand to sand to fine sand to loamy sand to loamy fine sand to very fine sandy loam to loam to silt loam	moderate	0.44 to 4.85 in	6.1 to 7.3
Cg1,Cg2,Cg3 -- 40 to 80 in	stratified coarse sand to sand to fine sand to loamy sand to loamy fine sand to very fine sandy loam to loam to silt loam	moderately rapid	0.80 to 8.75 in	7.4 to 8.4

B236A--Skunkcreek-Louis-Meadowlands complex, 0 to 3 percent slopes

Louis

Extent: 20 to 50 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 1 to 3 percent
Parent material: loamy 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) .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*
Ap -- 0 to 8 in	loam	moderate	1.26 to 1.89 in	5.6 to 7.3
Bt -- 8 to 21 in	loam	moderate	1.95 to 2.47 in	6.1 to 7.3
Bk -- 21 to 45 in	stratified loamy fine sand to very fine sandy loam to loam to silt loam to loamy sand to fine sand to sand to coarse sand	moderate	0.48 to 5.28 in	7.4 to 8.4
C -- 45 to 80 in	stratified loamy fine sand to very fine sandy loam to loam to silt loam to loamy sand to fine sand to sand to coarse sand	moderately rapid	0.70 to 7.71 in	7.4 to 8.4

B236A--Skunkcreek-Louis-Meadowlands complex, 0 to 3 percent slopes

Meadowlands

Extent: 5 to 20 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
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 10 in	loam	moderate	1.57 to 2.36 in	5.6 to 7.3
Bg --	10 to 20 in	stratified fine sandy loam to loamy very fine sand to very fine sandy loam to sandy loam to loam to silt loam	moderately rapid	0.92 to 2.25 in	5.6 to 7.3
Bw --	20 to 35 in	stratified loam to very fine sandy loam to fine sandy loam to silt loam to silty clay loam	moderate	2.09 to 3.29 in	6.1 to 7.3
C1 --	35 to 40 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	0.87 to 1.13 in	6.1 to 7.3
C2 --	40 to 80 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	6.76 to 8.75 in	7.4 to 8.4

B237A--Onega-Kapla, depressional, complex, 0 to 1 percent slopes

Onega

Extent: 50 to 80 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 0 to 1 percent
Parent material: eolian sands
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) .32
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 6 in	mucky very fine sandy loam	moderate	0.59 to 1.30 in	5.6 to 7.3
Bg1 -- 6 to 9 in	very fine sandy loam	moderate	0.19 to 0.60 in	5.6 to 7.3
Bg2 -- 9 to 32 in	loamy very fine sand	moderately rapid	1.14 to 4.34 in	5.6 to 7.3
Bw -- 32 to 39 in	very fine sandy loam	moderate	0.35 to 1.35 in	5.6 to 7.3
Cg -- 39 to 80 in	loamy very fine sand	moderately rapid	2.05 to 7.78 in	6.1 to 7.3

Kapla, depressional

Extent: 15 to 40 percent of the unit
Landform(s): depressions on lake plains, swales on lake plains
Slope gradient: 0 to 1 percent
Parent material: eolian sands
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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oi -- 0 to 1 in	peat	very rapid	0.65 to 0.77 in	3.0 to 4.4
A -- 1 to 4 in	very fine sandy loam	moderate	0.28 to 0.61 in	5.6 to 7.3
Bw1 -- 4 to 11 in	very fine sandy loam	moderate	0.43 to 1.35 in	5.6 to 7.3
Bw2 -- 11 to 33 in	very fine sandy loam	moderate	1.08 to 4.11 in	5.6 to 7.3
C1 -- 33 to 58 in	very fine sandy loam	moderate	1.26 to 4.79 in	6.1 to 7.3
C2 -- 58 to 80 in	loamy very fine sand	moderately rapid	1.10 to 4.19 in	6.1 to 7.3

B237A--Onega-Kapla, depressional, complex, 0 to 1 percent slopes

B238A--Cowhorn-Onega-Sago, depressional, complex, 0 to 2 percent slopes

Cowhorn

Extent: 30 to 70 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 1 to 2 percent
Parent material: eolian sands
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) .37
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	loamy very fine sand	moderately rapid	0.79 to 1.73 in	5.6 to 7.3
Bw1 -- 8 to 9 in	loamy very fine sand	moderately rapid	0.07 to 0.22 in	5.6 to 7.3
Bw2,Bw3,Bw4 -- 9 to 51 in	loamy very fine sand	moderately rapid	2.11 to 8.00 in	5.6 to 7.3
C -- 51 to 80 in	very fine sand	very rapid	1.44 to 2.87 in	6.1 to 7.3

Onega

Extent: 20 to 60 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 0 to 1 percent
Parent material: eolian sands
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) .32
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 6 in	mucky very fine sandy loam	moderate	0.59 to 1.30 in	5.6 to 7.3
Bg1 -- 6 to 9 in	very fine sandy loam	moderate	0.19 to 0.60 in	5.6 to 7.3
Bg2 -- 9 to 32 in	loamy very fine sand	moderately rapid	1.14 to 4.34 in	5.6 to 7.3
Bw -- 32 to 39 in	very fine sandy loam	moderate	0.35 to 1.35 in	5.6 to 7.3
Cg -- 39 to 80 in	loamy very fine sand	moderately rapid	2.05 to 7.78 in	6.1 to 7.3

B238A--Cowhorn-Onega-Sago, depressional, complex, 0 to 2 percent slopes

Sago, depressional

Extent: 5 to 15 percent of the unit
Landform(s): swales on lake plains, depressions 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): 5
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: 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

B239B--Cedar Valley-Wawina-Cowhorn complex, 1 to 6 percent slopes

Cedar valley

Extent: 25 to 50 percent of the unit
Landform(s): -- error in exists on --
Slope gradient: 1 to 5 percent
Parent material: eolian sands
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) .37
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 7 in	very fine sandy loam	moderate	0.71 to 1.56 in	5.6 to 7.3
Bw1 -- 7 to 29 in	very fine sand	rapid	1.32 to 4.19 in	5.6 to 7.3
Bw2 -- 29 to 49 in	very fine sand	rapid	0.98 to 3.74 in	6.1 to 7.3
Cg -- 49 to 80 in	very fine sand	rapid	1.56 to 5.91 in	7.4 to 8.4

Wawina

Extent: 20 to 45 percent of the unit
Landform(s): -- error in exists on --
Slope gradient: 3 to 6 percent
Parent material: eolian sands
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) .32
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 5 in	very fine sandy loam	moderate	0.51 to 1.13 in	5.6 to 7.3
E -- 5 to 6 in	loamy very fine sand	moderately rapid	0.05 to 0.09 in	5.6 to 7.3
Bw1 -- 6 to 15 in	loamy very fine sand	moderately rapid	0.54 to 1.00 in	5.6 to 7.3
Bw2 -- 15 to 25 in	loamy very fine sand	moderately rapid	0.51 to 1.02 in	5.6 to 7.3
Bt -- 25 to 26 in	loamy very fine sand	moderately rapid	0.03 to 0.07 in	5.6 to 7.3
C -- 26 to 80 in	loamy very fine sand	moderately rapid	2.72 to 5.43 in	6.1 to 7.3

B239B--Cedar Valley-Wawina-Cowhorn complex, 1 to 6 percent slopes

Cowhorn

Extent: 10 to 30 percent of the unit
Landform(s): -- error in exists on --
Slope gradient: 1 to 2 percent
Parent material: eolian sands
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) .37
Land capability, nonirrigated 3w
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:			*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap	--	0 to 8 in	loamy very fine sand	moderately rapid	0.79 to 1.73 in	5.6 to 7.3
Bw1	--	8 to 9 in	loamy very fine sand	moderately rapid	0.07 to 0.22 in	5.6 to 7.3
Bw2,Bw3,Bw4	--	9 to 51 in	loamy very fine sand	moderately rapid	2.11 to 8.00 in	5.6 to 7.3
C	--	51 to 80 in	very fine sand	rapid	1.44 to 2.87 in	6.1 to 7.3

B240D--Wawina-Cedar Valley complex, 1 to 18 percent slopes

Wawina

Extent: 40 to 65 percent of the unit
Landform(s): -- error in exists on --
Slope gradient: 5 to 18 percent
Parent material: eolian sands
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) .32
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 5 in	very fine sandy loam	moderate	0.51 to 1.13 in	5.6 to 7.3
E -- 5 to 6 in	loamy very fine sand	moderately rapid	0.05 to 0.09 in	5.6 to 7.3
Bw1 -- 6 to 15 in	loamy very fine sand	moderately rapid	0.54 to 1.00 in	5.6 to 7.3
Bw2 -- 15 to 25 in	loamy very fine sand	moderately rapid	0.51 to 1.02 in	5.6 to 7.3
Bt -- 25 to 26 in	loamy very fine sand	moderately rapid	0.03 to 0.07 in	5.6 to 7.3
C -- 26 to 80 in	loamy very fine sand	moderately rapid	2.72 to 5.43 in	6.1 to 7.3

Cedar valley

Extent: 20 to 50 percent of the unit
Landform(s): -- error in exists on --
Slope gradient: 1 to 5 percent
Parent material: eolian sands
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) .37
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 7 in	very fine sandy loam	moderate	0.71 to 1.56 in	5.6 to 7.3
Bw1 -- 7 to 29 in	very fine sand	rapid	1.32 to 4.19 in	5.6 to 7.3
Bw2 -- 29 to 49 in	very fine sand	rapid	0.98 to 3.74 in	6.1 to 7.3
Cg -- 49 to 80 in	very fine sand	rapid	1.56 to 5.91 in	7.4 to 8.4

B241A--Wabuse-Vasso-Leeora, depressional, complex, 0 to 3 percent slopes

Wabuse

Extent: 30 to 70 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) .20
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: 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	stratified silt loam to silty clay loam to very fine sandy loam	moderate	3.75 to 4.85 in	5.6 to 6.5
2Cg --	54 to 80 in	stratified silt loam to silty clay loam to very fine sandy loam	moderate	4.42 to 5.72 in	5.6 to 7.8

B241A--Wabuse-Vasso-Leeora, depressional, 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: C
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	stratified silt loam to silty clay loam to very fine sandy loam	moderate	2.01 to 2.60 in	5.6 to 6.5
2Cg --	50 to 80 in	stratified silt loam to silty clay loam to very fine sandy loam	moderate	5.09 to 6.58 in	5.6 to 7.8

B241A--Wabuse-Vasso-Leeora, depressional, complex, 0 to 3 percent slopes

Leeora, depressional

Extent: 10 to 30 percent of the unit
Landform(s): depressions on lake plains, swales on lake plains
Slope gradient: 0 to 1 percent
Parent material: loamy glaciolacustrine deposits and/or silty 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): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oi -- 0 to 1 in	peat	very rapid	0.65 to 0.77 in	3.0 to 4.4
Ap -- 1 to 10 in	silt loam	moderate	1.39 to 2.08 in	5.6 to 7.3
Bg1,Bg2,Bg3 -- 10 to 43 in	stratified fine sandy loam to loamy very fine sand to very fine sandy loam to sandy loam to loam to silt loam	moderately rapid	2.98 to 7.28 in	5.6 to 7.3
Cg1,Cg2 -- 43 to 80 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	6.29 to 8.14 in	7.4 to 8.4

B266A--Gowan-Alborn-Sax complex, 0 to 2 percent slopes

Gowan

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

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
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 11 in	silt loam	moderate	2.20 to 2.65 in	5.6 to 7.3
Btg --	11 to 18 in	silty clay loam	moderately slow	1.28 to 1.56 in	6.1 to 7.3
Bg --	18 to 25 in	silt loam	moderate	1.20 to 1.56 in	7.4 to 8.4
2C --	25 to 80 in	loamy very fine sand	moderately rapid	2.74 to 12.04 in	7.4 to 8.4

B266A--Gowan-Alborn-Sax complex, 0 to 2 percent slopes

Alborn

Extent: 20 to 40 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
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 8 in	silt loam	moderate	1.57 to 1.89 in	5.6 to 7.3
Bg1 -- 8 to 23 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	2.54 to 3.29 in	5.6 to 7.3
Bg2 -- 23 to 33 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	1.74 to 2.25 in	6.1 to 7.3
Bkg -- 33 to 54 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	3.55 to 4.59 in	7.4 to 8.4
Cg -- 54 to 80 in	stratified silt loam to silty clay loam to very fine sandy loam	moderate	4.42 to 5.72 in	7.4 to 8.4

B266A--Gowan-Alborn-Sax complex, 0 to 2 percent slopes

Sax, depressional

Extent: 5 to 25 percent of the unit
Landform(s): swales on lake plains, depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over silty glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .43
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: 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

B267B--Lahti-Gowan-Littleswan complex,1 to 3 percent slopes

Lahti

Extent: 30 to 60 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 1 to 3 percent
Parent material: silty glaciolacustrine deposits over sandy glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .37
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*
Ap -- 0 to 11 in	very fine sandy loam	moderate	1.87 to 2.65 in	5.6 to 7.3
E -- 11 to 14 in	fine sandy loam	moderately rapid	0.25 to 0.50 in	5.6 to 7.3
Bt -- 14 to 26 in	silty clay loam	moderately slow	2.13 to 2.60 in	6.1 to 7.3
Bk -- 26 to 44 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	3.08 to 3.98 in	7.4 to 8.4
2C -- 44 to 80 in	stratified loamy fine sand to very fine sand to fine sand to sand to loamy very fine sand to very fine sandy loam	rapid	1.79 to 7.88 in	7.4 to 8.4

B267B--Lahti-Gowan-Littleswan complex,1 to 3 percent slopes

Gowan

Extent: 20 to 50 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 1 to 2 percent
Parent material: silty glaciolacustrine deposits over sandy glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
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 11 in	silt loam	moderate	2.20 to 2.65 in	5.6 to 7.3
Btg -- 11 to 18 in	silty clay loam	moderately slow	1.28 to 1.56 in	6.1 to 7.3
Bg -- 18 to 25 in	silt loam	moderate	1.20 to 1.56 in	7.4 to 8.4
2C -- 25 to 80 in	loamy very fine sand	moderately rapid	2.74 to 12.04 in	7.4 to 8.4

Littleswan

Extent: 10 to 40 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) .32
Land capability, nonirrigated 2w
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 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

B268B--Eutrudepts-Fluvaquents complex, 0 to 8 percent slopes, flooded

Eutrudepts, fine-silty

Extent: 20 to 40 percent of the unit
Landform(s): drainageways on glacial lakes (relict)
Slope gradient: 4 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: C
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 7 in	silt loam	moderate	0.31 to 0.47 in	5.6 to 7.3
Bw1 -- 7 to 11 in	stratified very fine sandy loam to silt loam to silty clay loam	moderate	0.67 to 0.87 in	5.6 to 7.3
Bw2 -- 11 to 17 in	stratified fine sandy loam to loamy very fine sand to very fine sandy loam to sandy loam to loam to silt loam	moderately rapid	0.53 to 1.30 in	5.6 to 7.3
Bw3,Bw4 -- 17 to 28 in	stratified very fine sandy loam to silt loam to silty clay loam	moderate	1.87 to 2.43 in	6.1 to 7.3
C1 -- 28 to 48 in	stratified very fine sandy loam to silt loam to silty clay loam	moderate	3.41 to 4.42 in	6.1 to 7.3
C2 -- 48 to 53 in	stratified loamy sand to fine sand to sand to loamy fine sand to sandy loam to very fine sandy loam to fine sandy loam	rapid	0.26 to 0.97 in	6.1 to 7.3
C3 -- 53 to 80 in	stratified very fine sandy loam to silt loam to silty clay loam	moderate	4.55 to 5.89 in	6.1 to 7.3

B268B--Eutrudepts-Fluvaquents complex, 0 to 8 percent slopes, flooded

Fluvaquents, frequently flooded, very poorly drained

Extent: 10 to 40 percent of the unit
Landform(s): flats on flood plains
Slope gradient: 0 to 1 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: 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

B268B--Eutrudepts-Fluvaquents complex, 0 to 8 percent slopes, flooded

Eutrudepts, coarse-loamy

Extent: 10 to 30 percent of the unit
Landform(s): drainageways on glacial lakes (relict)
Slope gradient: 4 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: C
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 7 in	silt loam	moderate	0.31 to 0.47 in	5.6 to 7.3
Bw1 -- 7 to 11 in	stratified very fine sandy loam to silt loam to silty clay loam	moderate	0.67 to 0.87 in	5.6 to 7.3
Bw2 -- 11 to 17 in	stratified fine sandy loam to loamy very fine sand to very fine sandy loam to sandy loam to loam to silt loam	moderately rapid	0.53 to 1.30 in	5.6 to 7.3
Bw3,Bw4 -- 17 to 28 in	stratified very fine sandy loam to silt loam to silty clay loam	moderate	1.87 to 2.43 in	6.1 to 7.3
C1 -- 28 to 48 in	stratified very fine sandy loam to silt loam to silty clay loam	moderate	3.41 to 4.42 in	6.1 to 7.3
C2 -- 48 to 53 in	stratified loamy sand to fine sand to sand to loamy fine sand to sandy loam to very fine sandy loam to fine sandy loam	rapid	0.26 to 0.97 in	6.1 to 7.3
C3 -- 53 to 80 in	stratified very fine sandy loam to silt loam to silty clay loam	moderate	4.55 to 5.89 in	6.1 to 7.3

B268D--Fluvaquents-Eutrudepts-Udifluvents complex, 0 to 18 percent slopes, flooded

Fluvaquents, frequently flooded, very poorly drained

Extent: 10 to 40 percent of the unit
Landform(s): flats on flood plains
Slope gradient: 0 to 1 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: 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

B268D--Fluvaquents-Eutrudepts-Udifluvents complex, 0 to 18 percent slopes, flooded

Eutrudepts, fine-silty

Extent: 20 to 40 percent of the unit
Landform(s): drainageways on glacial lakes (relict)
Slope gradient: 6 to 18 percent
Parent material: glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: C
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 7 in	silt loam	moderate	0.31 to 0.47 in	5.6 to 7.3
Bw1 -- 7 to 11 in	stratified very fine sandy loam to silt loam to silty clay loam	moderate	0.67 to 0.87 in	5.6 to 7.3
Bw2 -- 11 to 17 in	stratified fine sandy loam to loamy very fine sand to very fine sandy loam to sandy loam to loam to silt loam	moderately rapid	0.53 to 1.30 in	5.6 to 7.3
Bw3,Bw4 -- 17 to 28 in	stratified very fine sandy loam to silt loam to silty clay loam	moderate	1.87 to 2.43 in	6.1 to 7.3
C1 -- 28 to 48 in	stratified very fine sandy loam to silt loam to silty clay loam	moderate	3.41 to 4.42 in	6.1 to 7.3
C2 -- 48 to 53 in	stratified loamy sand to fine sand to sand to loamy fine sand to sandy loam to very fine sandy loam to fine sandy loam	rapid	0.26 to 0.97 in	6.1 to 7.3
C3 -- 53 to 80 in	stratified very fine sandy loam to silt loam to silty clay loam	moderate	4.55 to 5.89 in	6.1 to 7.3

B268D--Fluvaquents-Eutrudepts-Udifluvents complex, 0 to 18 percent slopes, flooded

Udifluvents, occasionally flooded

Extent: 10 to 30 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 2 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: B
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

B268E--Fluvaqents-Eutrudepts-Udifluvents complex, 0 to 35 percent slopes, flooded

Fluvaquents, frequently flooded, very poorly drained

Extent: 10 to 40 percent of the unit
Landform(s): flats on flood plains
Slope gradient: 0 to 1 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: 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

B268E--Fluvaqents-Eutrudepts-Udifluvents complex, 0 to 35 percent slopes, flooded

Eutrudepts, fine-silty

Extent: 20 to 40 percent of the unit
Landform(s): drainageways on glacial lakes (relict)
Slope gradient: 18 to 35 percent
Parent material: glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: C
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 7 in	silt loam	moderate	0.31 to 0.47 in	5.6 to 7.3
Bw1 -- 7 to 11 in	stratified very fine sandy loam to silt loam to silty clay loam	moderate	0.67 to 0.87 in	5.6 to 7.3
Bw2 -- 11 to 17 in	stratified fine sandy loam to loamy very fine sand to very fine sandy loam to sandy loam to loam to silt loam	moderately rapid	0.53 to 1.30 in	5.6 to 7.3
Bw3,Bw4 -- 17 to 28 in	stratified very fine sandy loam to silt loam to silty clay loam	moderate	1.87 to 2.43 in	6.1 to 7.3
C1 -- 28 to 48 in	stratified very fine sandy loam to silt loam to silty clay loam	moderate	3.41 to 4.42 in	6.1 to 7.3
C2 -- 48 to 53 in	stratified loamy sand to fine sand to sand to loamy fine sand to sandy loam to very fine sandy loam to fine sandy loam	rapid	0.26 to 0.97 in	6.1 to 7.3
C3 -- 53 to 80 in	stratified very fine sandy loam to silt loam to silty clay loam	moderate	4.55 to 5.89 in	6.1 to 7.3

B268E--Fluvaqents-Eutrudepts-Udifluvents complex, 0 to 35 percent slopes, flooded

Udifluvents, occasionally flooded

Extent: 10 to 30 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 2 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: B
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

B269A--Sax muck, depressional, 0 to 1 percent slopes

Sax, depressional

Extent: 65 to 90 percent of the unit
Landform(s): swales on lake plains, depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over silty glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .43
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: 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

B270A--Alborn-Littleswan complex, 0 to 3 percent slopes

Alborn

Extent: 55 to 75 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
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 8 in	silt loam	moderate	1.57 to 1.89 in	5.6 to 7.3
Bg1 -- 8 to 23 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	2.54 to 3.29 in	5.6 to 7.3
Bg2 -- 23 to 33 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	1.74 to 2.25 in	6.1 to 7.3
Bkg -- 33 to 54 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	3.55 to 4.59 in	7.4 to 8.4
Cg -- 54 to 80 in	stratified silt loam to silty clay loam to very fine sandy loam	moderate	4.42 to 5.72 in	7.4 to 8.4

B270A--Alborn-Littleswan complex, 0 to 3 percent slopes

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) .32
Land capability, nonirrigated 3w
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 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
C --	32 to 80 in	stratified silt loam to silty clay loam to very fine sandy loam	moderate	8.17 to 10.57 in	7.4 to 8.4

B271A--Alborn-Sax complex, 0 to 2 percent slopes

Alborn

Extent: 55 to 75 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
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 8 in	silt loam	moderate	1.57 to 1.89 in	5.6 to 7.3
Bg1 -- 8 to 23 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	2.54 to 3.29 in	5.6 to 7.3
Bg2 -- 23 to 33 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	1.74 to 2.25 in	6.1 to 7.3
Bkg -- 33 to 54 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	3.55 to 4.59 in	7.4 to 8.4
Cg -- 54 to 80 in	stratified silt loam to silty clay loam to very fine sandy loam	moderate	4.42 to 5.72 in	7.4 to 8.4

B271A--Alborn-Sax complex, 0 to 2 percent slopes

Sax, depressional

Extent: 15 to 35 percent of the unit
Landform(s): swales on lake plains, depressions 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): 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: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 4 in	mucky peat	rapid	1.77 to 2.17 in	
Ap -- 4 to 9 in	silt loam	moderate	1.02 to 1.23 in	5.6 to 7.3
Bw1 -- 9 to 37 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	4.75 to 6.15 in	5.6 to 7.3
Bw2 -- 37 to 80 in	stratified silt loam to very fine sandy loam to silty clay loam	moderate	7.30 to 9.44 in	6.1 to 7.3

DA--Denied access

Denied Acess

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*

F32A--Merwin peat, 0 to 1 percent slopes

Merwin

Extent: 60 to 90 percent of the unit
Landform(s): bogs on till plains, bogs on outwash plains, bogs on end moraines
Slope gradient: 0 to 1 percent
Parent material: organic material over glaciofluvial sediments
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): 7
Wind erodibility index (WEI): 38
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
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	
2Cg --	46 to 80 in	stratified loamy fine sand to loam	moderate	4.40 to 6.43 in	5.1 to 7.3

F33A--Cathro muck, depressional, dense substratum, 0 to 1 percent slopes

Cathro, depressional

Extent: 60 to 90 percent of the unit
Landform(s): swamps on moraines, swamps on interdrumlins
Slope gradient: 0 to 1 percent
Parent material: organic material over dense loamy till
Restrictive feature(s): dense material at 40 to 80 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: 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 1.04 in	5.1 to 6.5
Cg -- 40 to 48 in	stratified loamy fine sand to loam	moderate	1.02 to 1.50 in	5.1 to 7.3
2Cd -- 48 to 80 in	gravelly sandy loam	very slow	1.28 to 2.87 in	5.6 to 6.8

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): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: 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

F101A--Bugcreek extremely stony sandy loam, 0 to 1 percent slopes, rubbly

Bugcreek, rubbly

Extent: 85 to 95 percent of the unit
Landform(s): drainageways on interdrumlins, rims on bogs, rims on swamps
Slope gradient: 0 to 1 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense 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): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .15
Land capability, nonirrigated 8s
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	extremely stony sandy loam	moderately rapid	0.65 to 1.12 in	4.5 to 6.0
Bw1,Bw2 -- 6 to 20 in	extremely stony sandy loam	moderately rapid	1.42 to 2.41 in	4.5 to 6.0
Bw3,Bw4,Bw5 -- 20 to 58 in	stony fine sandy loam	moderately rapid	3.40 to 6.43 in	4.5 to 6.0
2BCd,2Cd -- 58 to 80 in	gravelly sandy loam	very slow	0.88 to 1.32 in	5.1 to 6.5

F102A--Nevens stony loam, 0 to 2 percent slopes, very stony

Nevens, very stony

Extent: 70 to 90 percent of the unit
Landform(s): drumlins
Slope gradient: 0 to 2 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 48
Kw factor (surface layer) .15
Land capability, nonirrigated 6s
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	stony loam	moderate	0.56 to 1.02 in	4.5 to 6.0
Bw -- 5 to 37 in	stony fine sandy loam	moderately rapid	2.87 to 5.74 in	4.5 to 6.0
2BCd,2Cd -- 37 to 80 in	gravelly sandy loam	very slow	1.72 to 2.57 in	5.1 to 6.5

F103B--Brimson stony fine sandy loam, 2 to 5 percent slopes, very stony

Brimson, very stony

Extent: 50 to 85 percent of the unit
Landform(s): drumlins
Slope gradient: 2 to 5 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 20 to 40 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): 56
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 5 in	stony fine sandy loam	moderately rapid	0.56 to 1.02 in	4.5 to 6.0
Bw -- 5 to 35 in	stony fine sandy loam	moderately rapid	2.69 to 5.39 in	4.5 to 6.0
2BCd,2Cd -- 35 to 80 in	gravelly sandy loam	very slow	1.80 to 2.69 in	5.1 to 6.5

F104B--Toimi stony loam, 3 to 8 percent slopes, very stony

Toimi, very stony

Extent: 60 to 85 percent of the unit
Landform(s): drumlins
Slope gradient: 3 to 8 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
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	0.43 to 0.79 in	4.5 to 6.0
Bw -- 4 to 35 in	stony fine sandy loam	moderately rapid	2.80 to 5.60 in	4.6 to 6.0
2BCd,2Cd -- 35 to 80 in	gravelly sandy loam	very slow	1.80 to 2.69 in	5.1 to 6.5

F104D--Toimi stony loam, 8 to 18 percent slopes, very stony

Toimi, very stony

Extent: 50 to 70 percent of the unit
Landform(s): drumlins
Slope gradient: 8 to 18 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
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	0.43 to 0.79 in	4.5 to 6.0
Bw -- 4 to 35 in	stony fine sandy loam	moderately rapid	2.80 to 5.60 in	4.6 to 6.0
2BCd,2Cd -- 35 to 80 in	gravelly sandy loam	very slow	1.80 to 2.69 in	5.1 to 6.5

F104E--Toimi stony loam, 18 to 45 percent slopes, very stony

Toimi, very stony

Extent: 60 to 90 percent of the unit
Landform(s): drumlins
Slope gradient: 18 to 45 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
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	0.43 to 0.79 in	4.5 to 6.0
Bw -- 4 to 35 in	stony fine sandy loam	moderately rapid	2.80 to 5.60 in	4.6 to 6.0
2BCd,2Cd -- 35 to 80 in	gravelly sandy loam	very slow	1.80 to 2.69 in	5.1 to 6.5

F106B--Toimi-Nevens-Brimson complex, 0 to 8 percent slopes, very stony

Toimi, very stony

Extent: 25 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 3 to 8 percent
Parent material: loamy material over dense till
Restrictive feature(s): dense material at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
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	0.43 to 0.79 in	4.5 to 6.0
Bw -- 4 to 35 in	stony fine sandy loam	moderately rapid	2.80 to 5.60 in	4.6 to 6.0
2BCd,2Cd -- 35 to 80 in	gravelly sandy loam	very slow	1.80 to 2.69 in	5.1 to 6.5

Nevens, very stony

Extent: 20 to 40 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 2 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 48
Kw factor (surface layer) .15
Land capability, nonirrigated 6s
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	stony loam	moderate	0.56 to 1.02 in	4.5 to 6.0
Bw -- 5 to 37 in	stony fine sandy loam	moderately rapid	2.87 to 5.74 in	4.5 to 6.0
2BCd,2Cd -- 37 to 80 in	gravelly sandy loam	very slow	1.72 to 2.57 in	5.1 to 6.5

F106B--Toimi-Nevens-Brimson complex, 0 to 8 percent slopes, very stony

Brimson, very stony

Extent: 15 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 2 to 5 percent
Parent material: loamy material over dense till
Restrictive feature(s): dense material at 20 to 40 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): 56
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 5 in	stony fine sandy loam	moderately rapid	0.56 to 1.02 in	4.5 to 6.0
Bw -- 5 to 35 in	stony fine sandy loam	moderately rapid	2.69 to 5.39 in	4.5 to 6.0
2BCd,2Cd -- 35 to 80 in	gravelly sandy loam	very slow	1.80 to 2.69 in	5.1 to 6.5

F107D--Toimi-Nevens complex, 0 to 18 percent slopes, very stony

Toimi, very stony

Extent: 40 to 65 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 18 percent
Parent material: loamy material over dense till
Restrictive feature(s): dense material at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
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	0.43 to 0.79 in	4.5 to 6.0
Bw -- 4 to 35 in	stony fine sandy loam	moderately rapid	2.80 to 5.60 in	4.6 to 6.0
2BCd,2Cd -- 35 to 80 in	gravelly sandy loam	very slow	1.80 to 2.69 in	5.1 to 6.5

Nevens, very stony

Extent: 15 to 35 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 2 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 20 to 40 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 48
Kw factor (surface layer) .15
Land capability, nonirrigated 6s
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	stony loam	moderate	0.56 to 1.02 in	4.5 to 6.0
Bw -- 5 to 37 in	stony fine sandy loam	moderately rapid	2.87 to 5.74 in	4.5 to 6.0
2BCd,2Cd -- 37 to 80 in	gravelly sandy loam	very slow	1.72 to 2.57 in	5.1 to 6.5

F108B--Brimson, very stony-Bugcreek, rubbly complex, 0 to 5 percent slopes

Brimson, very stony

Extent: 30 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 2 to 5 percent
Parent material: loamy material over dense till
Restrictive feature(s): dense material at 20 to 40 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): 56
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 5 in	stony fine sandy loam	moderately rapid	0.56 to 1.02 in	4.5 to 6.0
Bw -- 5 to 35 in	stony fine sandy loam	moderately rapid	2.69 to 5.39 in	4.5 to 6.0
2BCd,2Cd -- 35 to 80 in	gravelly sandy loam	very slow	1.80 to 2.69 in	5.1 to 6.5

Bugcreek, rubbly

Extent: 20 to 40 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: loamy material over dense till
Restrictive feature(s): dense 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): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .15
Land capability, nonirrigated 8s
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	extremely stony sandy loam	moderately rapid	0.65 to 1.12 in	4.5 to 6.0
Bw1,Bw2 -- 6 to 20 in	extremely stony sandy loam	moderately rapid	1.42 to 2.41 in	4.5 to 6.0
Bw3,Bw4,Bw5 -- 20 to 58 in	stony fine sandy loam	moderately rapid	3.40 to 6.43 in	4.5 to 6.0
2BCd,2Cd -- 58 to 80 in	gravelly sandy loam	very slow	0.88 to 1.32 in	5.1 to 6.5

F109A--Wahbegon, depressional-Eldes complex, 0 to 2 percent slopes

Wahbegon, depressional

Extent: 65 to 95 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: friable loamy till over dense loamy till
Restrictive feature(s): dense 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .37
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A1 -- 0 to 12 in	mucky silt loam	moderate	2.13 to 2.83 in	4.5 to 6.0
A2 -- 12 to 15 in	loam	moderate	0.44 to 0.76 in	4.5 to 6.0
Bw -- 15 to 48 in	loam	moderate	4.96 to 7.28 in	4.5 to 6.5
BC -- 48 to 60 in	loam	moderate	1.77 to 2.60 in	5.6 to 7.3
2Cd -- 60 to 80 in	gravelly sandy loam	very slow	0.80 to 1.81 in	5.6 to 7.3

Eldes

Extent: 5 to 35 percent of the unit
Landform(s): rises on moraines
Slope gradient: 0 to 2 percent
Parent material: loamy and/or silty material over friable loamy till over dense loamy till
Restrictive feature(s): dense material at 60 to 80 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) .37
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	loam	moderate	0.55 to 0.94 in	4.5 to 6.0
Bw,B/E,E/B -- 4 to 15 in	loam	moderate	1.54 to 2.43 in	4.5 to 5.5
2Bt -- 15 to 50 in	loam	moderate	5.26 to 7.71 in	5.1 to 6.0
2BC -- 50 to 60 in	loam	moderate	1.48 to 2.17 in	5.6 to 6.5
3C -- 60 to 80 in	gravelly sandy loam	very slow	1.61 to 3.41 in	5.6 to 7.3

F110A--Hegberg-Eldes complex, 0 to 3 percent slopes

Hegberg

Extent: 40 to 65 percent of the unit
Landform(s): rises on moraines
Slope gradient: 0 to 3 percent
Parent material: loamy and/or silty material over friable loamy till over dense loamy till
Restrictive feature(s): dense material at 60 to 80 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) .37
Land capability, nonirrigated 3w
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	loam	moderate	0.83 to 1.42 in	4.5 to 6.0
Bw,B/E,E/B -- 6 to 17 in	loam	moderate	1.54 to 2.43 in	4.5 to 6.0
2Bt -- 17 to 45 in	loam	moderate	4.19 to 6.15 in	5.1 to 6.0
2BC -- 45 to 65 in	loam	moderate	3.01 to 4.42 in	5.6 to 6.5
3BCd -- 65 to 80 in	gravelly sandy loam	very slow	0.60 to 1.35 in	5.6 to 7.3

Eldes

Extent: 20 to 50 percent of the unit
Landform(s): flats on moraines
Slope gradient: 0 to 2 percent
Parent material: loamy and/or silty material over friable loamy till over dense loamy till
Restrictive feature(s): dense material at 60 to 80 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) .37
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	loam	moderate	0.55 to 0.94 in	4.5 to 6.0
Bw,B/E,E/B -- 4 to 15 in	loam	moderate	1.54 to 2.43 in	4.5 to 5.5
2Bt -- 15 to 48 in	loam	moderate	4.96 to 7.28 in	5.1 to 6.0
2BC -- 48 to 72 in	loam	moderate	3.60 to 5.28 in	5.6 to 6.5
3C -- 72 to 80 in	gravelly sandy loam	very slow	0.63 to 1.34 in	5.6 to 7.3

F110A--Hegberg-Eldes complex, 0 to 3 percent slopes

F111B--Augustana-Hegberg complex, 1 to 8 percent slopes

Augustana

Extent: 30 to 70 percent of the unit
Landform(s): moraines
Slope gradient: 3 to 8 percent
Parent material: loamy and/or silty material over friable loamy till over dense loamy till
Restrictive feature(s): dense material at 60 to 80 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .37
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	silt loam	moderate	1.10 to 1.89 in	4.5 to 6.0
E/B,B/E,Bw -- 8 to 12 in	very fine sandy loam	moderate	0.55 to 0.87 in	4.5 to 5.5
2Bt -- 12 to 30 in	loam	moderate	2.72 to 3.98 in	5.1 to 6.0
2BC,2C -- 30 to 79 in	loam	moderate	7.38 to 10.83 in	5.6 to 6.5
3Cd -- 79 to 80 in	gravelly sandy loam	very slow	0.03 to 0.07 in	5.6 to 7.3

Hegberg

Extent: 20 to 55 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 3 percent
Parent material: loamy and/or silty material over friable loamy till over dense loamy till
Restrictive feature(s): dense material at 60 to 80 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) .37
Land capability, nonirrigated 3w
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	loam	moderate	0.83 to 1.42 in	4.5 to 6.0
Bw,B/E,E/B -- 6 to 17 in	loam	moderate	1.54 to 2.43 in	4.5 to 6.0
2Bt -- 17 to 45 in	loam	moderate	4.19 to 6.15 in	5.1 to 6.0
2BC -- 45 to 65 in	loam	moderate	3.01 to 4.42 in	5.6 to 6.5
3BCd -- 65 to 80 in	gravelly sandy loam	very slow	0.60 to 1.35 in	5.6 to 7.3

F111B--Augustana-Hegberg complex, 1 to 8 percent slopes

F112D--Forbay-Augustana complex, 3 to 18 percent slopes

Forbay

Extent: 40 to 70 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 18 percent
Parent material: loamy and/or silty material over friable loamy till over dense loamy till
Restrictive feature(s): dense material at 60 to 80 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .37
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 7 in	loam	moderate	0.99 to 1.70 in	4.5 to 6.0
E/B,B/E,Bw -- 7 to 15 in	loam	moderate	1.10 to 1.73 in	4.5 to 5.5
2Bt -- 15 to 55 in	loam	moderate	6.02 to 8.83 in	5.1 to 6.0
2C -- 55 to 79 in	loam	moderate	3.60 to 5.28 in	5.6 to 6.5
3Cd -- 79 to 80 in	gravelly sandy loam	very slow	0.03 to 0.07 in	5.6 to 7.3

Augustana

Extent: 20 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 4 to 8 percent
Parent material: loamy and/or silty material over friable loamy till over dense loamy till
Restrictive feature(s): dense material at 60 to 80 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .37
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	silt loam	moderate	1.10 to 1.89 in	4.5 to 6.0
E/B,B/E,Bw -- 8 to 12 in	loam	moderate	0.55 to 0.87 in	4.5 to 5.5
2Bt -- 12 to 30 in	loam	moderate	2.72 to 3.98 in	5.1 to 6.0
2BC,2C -- 30 to 79 in	loam	moderate	7.38 to 10.83 in	5.6 to 6.5
3Cd -- 79 to 80 in	gravelly sandy loam	very slow	0.03 to 0.07 in	5.6 to 7.3

F112D--Forbay-Augustana complex, 3 to 18 percent slopes

F115A--Merwin peat, dense substratum, 0 to 1 percent slopes

Merwin

Extent: 60 to 90 percent of the unit
Landform(s): bogs on moraines, bogs on interdrumlins
Slope gradient: 0 to 1 percent
Parent material: organic material over dense loamy till
Restrictive feature(s): dense material at 40 to 80 inches
Flooding: none
Ponding: none
Drainage class: very poorly 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 7w
Hydric soil: yes
Hydrologic group: 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	
2Cg -- 46 to 56 in	stratified loamy fine sand to loam	moderate	1.28 to 1.87 in	5.1 to 7.3
3Cd -- 56 to 80 in	gravelly sandy loam	very slow	0.96 to 2.16 in	5.6 to 6.8

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): 3
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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 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	

F117A--Rollins sandy loam, 0 to 3 percent slopes

Rollins

Extent: 70 to 90 percent of the unit
Landform(s): 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 excessively drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	sandy loam	moderately rapid	0.51 to 1.02 in	5.1 to 6.5
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.63 to 1.63 in	5.1 to 6.5
2BC,2C -- 14 to 80 in	extremely gravelly sand	very rapid	0.66 to 4.60 in	5.6 to 6.5

F117B--Rollins sandy loam, 2 t 8 percent slopes

Rollins

Extent: 80 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: somewhat excessively drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	sandy loam	moderately rapid	0.51 to 1.02 in	5.1 to 6.5
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.63 to 1.63 in	5.1 to 6.5
2BC,2C -- 14 to 80 in	extremely gravelly sand	very rapid	0.66 to 4.60 in	5.6 to 6.5

F117D--Rollins sandy loam, 8 to 18 percent slopes

Rollins

Extent: 70 to 80 percent of the unit
Landform(s): 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): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	sandy loam	moderately rapid	0.51 to 1.02 in	5.1 to 6.5
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.63 to 1.63 in	5.1 to 6.5
2BC,2C -- 14 to 80 in	extremely gravelly sand	very rapid	0.66 to 4.60 in	5.6 to 6.5

F117F--Rollins sandy loam, 18 to 45 percent slopes

Rollins

Extent: 80 to 90 percent of the unit
Landform(s): eskers
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): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 7s
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 1.02 in	5.1 to 6.5
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.63 to 1.63 in	5.1 to 6.5
2BC,2C -- 14 to 80 in	extremely gravelly sand	very rapid	0.66 to 4.60 in	5.6 to 6.5

F118B--Aldenlake-Pequaywan complex, 0 to 6 percent slopes

Aldenlake

Extent: 50 to 80 percent of the unit
Landform(s): outwash plains
Slope gradient: 2 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): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	sandy loam	moderately rapid	0.51 to 1.02 in	5.1 to 6.5
Bw -- 5 to 34 in	sandy loam	moderately rapid	2.30 to 5.17 in	5.1 to 6.5
2BC,2C -- 34 to 80 in	very gravelly sand	very rapid	0.46 to 4.15 in	5.6 to 6.5

Pequaywan

Extent: 20 to 40 percent of the unit
Landform(s): 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: moderately well 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 4s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.20 to 0.39 in	5.1 to 6.5
Bw -- 2 to 30 in	sandy loam	moderately rapid	2.24 to 5.03 in	5.1 to 6.5
2BC,2C -- 30 to 80 in	very gravelly sand	very rapid	0.50 to 4.50 in	5.6 to 6.5

F120A--Grayling-Cromwell complex, 0 to 3 percent slopes

Grayling

Extent: 40 to 60 percent of the unit
Landform(s): 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: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loamy sand	rapid	0.26 to 0.61 in	5.1 to 6.5
Bw -- 5 to 17 in	loamy sand	rapid	0.59 to 1.30 in	5.1 to 6.5
C -- 17 to 80 in	sand	very rapid	1.26 to 6.30 in	5.6 to 6.5

Cromwell

Extent: 35 to 55 percent of the unit
Landform(s): flats on outwash plains
Slope gradient: 0 to 3 percent
Parent material: loamy material over sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 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	sandy loam	moderately rapid	0.31 to 0.57 in	5.1 to 6.5
Bw -- 3 to 15 in	sandy loam	moderately rapid	1.06 to 2.01 in	5.1 to 6.5
2C -- 15 to 80 in	sand	very rapid	1.30 to 4.55 in	5.6 to 6.5

F120B--Grayling-Cromwell complex, 2 to 8 percent slopes

Grayling

Extent: 35 to 75 percent of the unit
Landform(s): outwash plains
Slope gradient: 2 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) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loamy sand	rapid	0.26 to 0.61 in	5.1 to 6.5
Bw -- 5 to 17 in	loamy sand	rapid	0.59 to 1.30 in	5.1 to 6.5
C -- 17 to 80 in	sand	very rapid	1.26 to 6.30 in	5.6 to 6.5

Cromwell

Extent: 25 to 50 percent of the unit
Landform(s): outwash plains
Slope gradient: 2 to 8 percent
Parent material: loamy material over sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 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	sandy loam	moderately rapid	0.31 to 0.57 in	5.1 to 6.5
Bw -- 3 to 15 in	sandy loam	moderately rapid	1.06 to 2.01 in	5.1 to 6.5
2C -- 15 to 80 in	sand	very rapid	1.30 to 4.55 in	5.6 to 6.5

F120D--Grayling-Cromwell complex, 8 to 18 percent slopes

Grayling

Extent: 35 to 75 percent of the unit
Landform(s): 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) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loamy sand	rapid	0.26 to 0.61 in	5.1 to 6.5
Bw -- 5 to 17 in	loamy sand	rapid	0.59 to 1.30 in	5.1 to 6.5
C -- 17 to 80 in	sand	very rapid	1.26 to 6.30 in	5.6 to 6.5

Cromwell

Extent: 25 to 50 percent of the unit
Landform(s): outwash plains
Slope gradient: 8 to 18 percent
Parent material: loamy material over sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 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	sandy loam	moderately rapid	0.31 to 0.57 in	5.1 to 6.5
Bw -- 3 to 15 in	sandy loam	moderately rapid	1.06 to 2.01 in	5.1 to 6.5
2C -- 15 to 80 in	sand	very rapid	1.30 to 4.55 in	5.6 to 6.5

F120F--Grayling-Cromwell complex, 18 to 45 percent slopes

Grayling

Extent: 45 to 65 percent of the unit
Landform(s): 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) .15
Land capability, nonirrigated 7s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loamy sand	rapid	0.26 to 0.61 in	5.1 to 6.5
Bw -- 5 to 17 in	loamy sand	rapid	0.59 to 1.30 in	5.1 to 6.5
C -- 17 to 80 in	sand	very rapid	1.26 to 6.30 in	5.6 to 6.5

Cromwell

Extent: 35 to 55 percent of the unit
Landform(s): outwash plains
Slope gradient: 18 to 45 percent
Parent material: loamy material over sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 7s
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	sandy loam	moderately rapid	0.31 to 0.57 in	5.1 to 6.5
Bw -- 3 to 15 in	sandy loam	moderately rapid	1.06 to 2.01 in	5.1 to 6.5
2C -- 15 to 80 in	sand	very rapid	1.30 to 4.55 in	5.6 to 6.5

F121A--Aldenlake sandy loam, 0 to 3 percent slopes

Aldenlake

Extent: 80 to 95 percent of the unit
Landform(s): 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: well 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 2e
Hydric soil: no
Hydrologic group: B
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 1.02 in	5.1 to 6.5
Bw -- 5 to 34 in	sandy loam	moderately rapid	2.30 to 5.17 in	5.1 to 6.5
2BC,2C -- 34 to 80 in	very gravelly sand	very rapid	0.46 to 4.15 in	5.6 to 6.5

F121B--Aldenlake sandy loam, 2 to 8 percent slopes

Aldenlake

Extent: 80 to 95 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): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	sandy loam	moderately rapid	0.51 to 1.02 in	5.1 to 6.5
Bw -- 5 to 34 in	sandy loam	moderately rapid	2.30 to 5.17 in	5.1 to 6.5
2BC,2C -- 34 to 80 in	very gravelly sand	very rapid	0.46 to 4.15 in	5.6 to 6.5

F121D--Aldenlake sandy loam, 8 to 18 percent slopes

Aldenlake

Extent: 60 to 80 percent of the unit
Landform(s): 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): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
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 5 in	sandy loam	moderately rapid	0.51 to 1.02 in	5.1 to 6.5
Bw -- 5 to 34 in	sandy loam	moderately rapid	2.30 to 5.17 in	5.1 to 6.5
2BC,2C -- 34 to 80 in	very gravelly sand	very rapid	0.46 to 4.15 in	5.6 to 6.5

F121F--Aldenlake sandy loam, 18 to 45 percent slopes

Aldenlake

Extent: 70 to 95 percent of the unit
Landform(s): 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): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
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 5 in	sandy loam	moderately rapid	0.51 to 1.02 in	5.1 to 6.5
Bw -- 5 to 34 in	sandy loam	moderately rapid	2.30 to 5.17 in	5.1 to 6.5
2BC,2C -- 34 to 80 in	very gravelly sand	very rapid	0.46 to 4.15 in	5.6 to 6.5

F122B--Aldenlake-Pequaywan complex, pitted, 0 to 8 percent slopes

Aldenlake

Extent: 35 to 60 percent of the unit
Landform(s): pitted 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): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	sandy loam	moderately rapid	0.51 to 1.02 in	5.1 to 6.5
Bw -- 5 to 34 in	sandy loam	moderately rapid	2.30 to 5.17 in	5.1 to 6.5
2BC,2C -- 34 to 80 in	very gravelly sand	very rapid	0.46 to 4.15 in	5.6 to 6.5

Pequaywan

Extent: 15 to 30 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): 4
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
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.20 to 0.39 in	5.1 to 6.5
Bw -- 2 to 30 in	sandy loam	moderately rapid	2.24 to 5.03 in	5.1 to 6.5
2BC,2C -- 30 to 80 in	very gravelly sand	very rapid	0.50 to 4.50 in	5.6 to 6.5

F122D--Aldenlake-Pequaywan complex, pitted, 0 to 18 percent slopes

Aldenlake

Extent: 45 to 70 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): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
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 5 in	sandy loam	moderately rapid	0.51 to 1.02 in	5.1 to 6.5
Bw -- 5 to 34 in	sandy loam	moderately rapid	2.30 to 5.17 in	5.1 to 6.5
2BC,2C -- 34 to 80 in	very gravelly sand	very rapid	0.46 to 4.15 in	5.6 to 6.5

Pequaywan

Extent: 10 to 25 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): 4
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
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.20 to 0.39 in	5.1 to 6.5
Bw -- 2 to 30 in	sandy loam	moderately rapid	2.24 to 5.03 in	5.1 to 6.5
2BC,2C -- 30 to 80 in	very gravelly sand	very rapid	0.50 to 4.50 in	5.6 to 6.5

F122F--Aldenlake-Pequaywan complex, pitted, 0 to 45 percent slopes

Aldenlake

Extent: 50 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): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
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 5 in	sandy loam	moderately rapid	0.51 to 1.02 in	5.1 to 6.5
Bw -- 5 to 34 in	sandy loam	moderately rapid	2.30 to 5.17 in	5.1 to 6.5
2BC,2C -- 34 to 80 in	very gravelly sand	very rapid	0.46 to 4.15 in	5.6 to 6.5

Pequaywan, pitted

Extent: 10 to 25 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): 4
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
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.20 to 0.39 in	5.1 to 6.5
Bw -- 2 to 30 in	sandy loam	moderately rapid	2.24 to 5.03 in	5.1 to 6.5
2BC,2C -- 30 to 80 in	very gravelly sand	very rapid	0.50 to 4.50 in	5.6 to 6.5

F123B--Grayling-Grytal-Cromwell complex, pitted, 0 to 8 percent slopes

Grayling

Extent: 30 to 50 percent of the unit
Landform(s): pitted outwash plains
Slope gradient: 2 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) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loamy sand	rapid	0.26 to 0.61 in	5.1 to 6.5
Bw -- 5 to 17 in	loamy sand	rapid	0.59 to 1.30 in	5.1 to 6.5
C -- 17 to 80 in	sand	very rapid	1.26 to 6.30 in	5.6 to 6.5

Grytal

Extent: 25 to 40 percent of the unit
Landform(s): depressions on pitted outwash plains
Slope gradient: 0 to 3 percent
Parent material: loamy material over sandy 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	sandy loam	moderately rapid	0.22 to 0.35 in	5.1 to 6.5
Bw,E -- 2 to 20 in	sandy loam	moderately rapid	1.99 to 3.08 in	5.1 to 6.5
2C -- 20 to 80 in	sand	very rapid	1.20 to 5.98 in	5.6 to 6.5

F123B--Grayling-Grytal-Cromwell complex, pitted, 0 to 8 percent slopes

Cromwell

Extent: 20 to 30 percent of the unit
Landform(s): pitted outwash plains
Slope gradient: 2 to 8 percent
Parent material: loamy material over sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 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	sandy loam	moderately rapid	0.31 to 0.57 in	5.1 to 6.5
Bw -- 3 to 15 in	sandy loam	moderately rapid	1.06 to 2.01 in	5.1 to 6.5
2C -- 15 to 80 in	sand	very rapid	1.30 to 4.55 in	5.6 to 6.5

F123D--Grayling-Grytal-Cromwell complex, pitted, 0 to 18 percent slopes

Grayling

Extent: 30 to 50 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) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loamy sand	rapid	0.26 to 0.61 in	5.1 to 6.5
Bw -- 5 to 17 in	loamy sand	rapid	0.59 to 1.30 in	5.1 to 6.5
C -- 17 to 80 in	sand	very rapid	1.26 to 6.30 in	5.6 to 6.5

Grytal

Extent: 20 to 30 percent of the unit
Landform(s): depressions on pitted outwash plains
Slope gradient: 0 to 3 percent
Parent material: loamy material over sandy 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	sandy loam	moderately rapid	0.22 to 0.35 in	5.1 to 6.5
Bw,E -- 2 to 20 in	sandy loam	moderately rapid	1.99 to 3.08 in	5.1 to 6.5
2C -- 20 to 80 in	sand	very rapid	1.20 to 5.98 in	5.6 to 6.5

F123D--Grayling-Grytal-Cromwell complex, pitted, 0 to 18 percent slopes

Cromwell

Extent: 20 to 30 percent of the unit
Landform(s): pitted outwash plains
Slope gradient: 8 to 18 percent
Parent material: loamy material over sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 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	sandy loam	moderately rapid	0.31 to 0.57 in	5.1 to 6.5
Bw --	3 to 15 in	sandy loam	moderately rapid	1.06 to 2.01 in	5.1 to 6.5
2C --	15 to 80 in	sand	very rapid	1.30 to 4.55 in	5.6 to 6.5

F124B--Rollins-Pequaywan complex, pitted, 0 to 8 percent slopes

Rollins

Extent: 35 to 60 percent of the unit
Landform(s): pitted 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): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	sandy loam	moderately rapid	0.51 to 1.02 in	5.1 to 6.5
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.63 to 1.63 in	5.1 to 6.5
2BC,2C -- 14 to 80 in	extremely gravelly sand	very rapid	0.66 to 4.60 in	5.6 to 6.5

Pequaywan

Extent: 10 to 30 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): 4
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
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.20 to 0.39 in	5.1 to 6.5
Bw -- 2 to 30 in	sandy loam	moderately rapid	2.24 to 5.03 in	5.1 to 6.5
2BC,2C -- 30 to 80 in	very gravelly sand	very rapid	0.50 to 4.50 in	5.6 to 6.5

F124D--Rollins-Pequaywan complex, pitted, 0 to 18 percent slopes

Rollins

Extent: 40 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: somewhat excessively drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	sandy loam	moderately rapid	0.51 to 1.02 in	5.1 to 6.5
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.63 to 1.63 in	5.1 to 6.5
2BC,2C -- 14 to 80 in	extremely gravelly sand	very rapid	0.66 to 4.60 in	5.6 to 6.5

Pequaywan

Extent: 10 to 25 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): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.20 to 0.39 in	5.1 to 6.5
Bw -- 2 to 30 in	sandy loam	moderately rapid	2.24 to 5.03 in	5.1 to 6.5
2BC,2C -- 30 to 80 in	very gravelly sand	very rapid	0.50 to 4.50 in	5.6 to 6.5

F124F--Rollins-Pequaywan complex, pitted, 0 to 45 percent slopes

Rollins

Extent: 50 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: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 7s
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 1.02 in	5.1 to 6.5
Bw -- 5 to 14 in	gravelly sandy loam	moderately rapid	0.63 to 1.63 in	5.1 to 6.5
2BC,2C -- 14 to 80 in	extremely gravelly sand	very rapid	0.66 to 4.60 in	5.6 to 6.5

Pequaywan

Extent: 10 to 25 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): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.20 to 0.39 in	5.1 to 6.5
Bw -- 2 to 30 in	sandy loam	moderately rapid	2.24 to 5.03 in	5.1 to 6.5
2BC,2C -- 30 to 80 in	very gravelly sand	very rapid	0.50 to 4.50 in	5.6 to 6.5

F125A--Pequaywan fine sandy loam, 0 to 3 percent slopes

Pequaywan

Extent: 70 to 95 percent of the unit
Landform(s): 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: moderately well 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 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.20 to 0.39 in	5.1 to 6.5
Bw -- 2 to 30 in	sandy loam	moderately rapid	2.24 to 5.03 in	5.1 to 6.5
2BC,2C -- 30 to 80 in	very gravelly sand	very rapid	0.50 to 4.50 in	5.6 to 6.5

F126A--Grytal sandy loam, 0 to 3 percent slopes

Grytal

Extent: 70 to 95 percent of the unit
Landform(s): flats on outwash plains
Slope gradient: 0 to 3 percent
Parent material: loamy material over sandy 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	sandy loam	moderately rapid	0.22 to 0.35 in	5.1 to 6.5
Bw,E -- 2 to 20 in	sandy loam	moderately rapid	1.99 to 3.08 in	5.1 to 6.5
2C -- 20 to 80 in	sand	very rapid	1.20 to 5.98 in	5.6 to 6.5

F127A--Hulligan mucky fine sandy loam, depressional, 0 to 1 percent slopes

Hulligan, depressional

Extent: 75 to 95 percent of the unit
Landform(s): depressions on outwash plains, drainageways on outwash plains
Slope gradient: 0 to 1 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very 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 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	mucky fine sandy loam	moderately rapid	0.99 to 1.20 in	5.1 to 6.5
Bw -- 7 to 45 in	sandy loam	moderately rapid	2.65 to 6.80 in	5.1 to 6.5
2BC,2C -- 45 to 80 in	very gravelly sand	very rapid	0.35 to 3.15 in	5.6 to 6.5

F128A--Hulligan fine sandy loam, 0 to 1 percent slopes

Hulligan

Extent: 70 to 90 percent of the unit
Landform(s): flats on outwash plains
Slope gradient: 0 to 1 percent
Parent material: loamy material over gravelly outwash
Restrictive feature(s): greater than 60 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: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	fine sandy loam	moderately rapid	0.72 to 0.87 in	5.1 to 6.5
Bw -- 5 to 41 in	sandy loam	moderately rapid	2.51 to 6.45 in	5.1 to 6.5
2BC,2C -- 41 to 80 in	very gravelly sand	very rapid	0.39 to 3.51 in	5.6 to 6.5

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): 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: 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

F134A--Giese muck, depressional, 0 to 1 percent slope

Giese, depressional

Extent: 70 to 90 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly 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 6w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 1 in	muck	moderately rapid	0.41 to 0.53 in	
A -- 1 to 6 in	silt loam	moderate	0.52 to 1.13 in	4.5 to 6.0
Eg,E -- 6 to 11 in	silt loam	moderate	0.72 to 1.02 in	4.5 to 6.0
Bg,Bw -- 11 to 30 in	gravelly sandy loam	moderately rapid	1.70 to 3.78 in	5.1 to 6.0
2Bw,2BC -- 30 to 36 in	gravelly sandy loam	slow	0.47 to 1.00 in	5.6 to 6.8
2BCd,2Cd -- 36 to 80 in	gravelly sandy loam	very slow	1.76 to 3.97 in	5.6 to 6.8

F135A--Hermantown-Canosia-Giese, depressional, complex, 0 to 3 percent slopes

Hermantown

Extent: 35 to 55 percent of the unit
Landform(s): flats on moraines, rises on moraines
Slope gradient: 1 to 3 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silt loam	moderate	0.55 to 0.94 in	4.5 to 6.0
E -- 4 to 7 in	silt loam	moderate	0.41 to 0.63 in	4.5 to 6.0
Bw -- 7 to 31 in	gravelly sandy loam	moderately rapid	2.16 to 4.80 in	5.1 to 6.0
2Bw,2BC -- 31 to 53 in	gravelly sandy loam	slow	1.76 to 3.75 in	5.6 to 6.8
2BCd -- 53 to 80 in	gravelly sandy loam	very slow	1.07 to 2.41 in	5.6 to 6.8

Canosia

Extent: 25 to 45 percent of the unit
Landform(s): flats on moraines, depressions on moraines
Slope gradient: 0 to 2 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .17
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loam	moderate	0.72 to 1.23 in	4.5 to 6.0
Bw -- 5 to 25 in	gravelly sandy loam	moderately rapid	1.81 to 4.02 in	5.1 to 6.0
2Bw,2BC -- 25 to 34 in	gravelly sandy loam	slow	0.69 to 1.47 in	5.6 to 6.8
2BCd -- 34 to 80 in	gravelly sandy loam	very slow	1.84 to 4.15 in	5.6 to 6.8

F135A--Hermantown-Canosia-Giese, depressional, complex, 0 to 3 percent slopes

Giese, depressional

Extent: 10 to 20 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly 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 6w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 1 in	muck	moderately rapid	0.41 to 0.53 in	
A -- 1 to 6 in	silt loam	moderate	0.52 to 1.13 in	4.5 to 6.0
Eg,E -- 6 to 11 in	silt loam	moderate	0.72 to 1.02 in	4.5 to 6.0
Bg,Bw -- 11 to 30 in	gravelly sandy loam	moderately rapid	1.70 to 3.78 in	5.1 to 6.0
2Bw,2BC -- 30 to 36 in	gravelly sandy loam	slow	0.47 to 1.00 in	5.6 to 6.8
2BCd,2Cd -- 36 to 80 in	gravelly sandy loam	very slow	1.76 to 3.97 in	5.6 to 6.8

F136A--Hermantown silt loam, 1 to 3 percent slopes

Hermantown

Extent: 70 to 90 percent of the unit
Landform(s): flats on moraines, rises on moraines
Slope gradient: 1 to 3 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silt loam	moderate	0.55 to 0.94 in	4.5 to 6.0
E -- 4 to 7 in	silt loam	moderate	0.41 to 0.63 in	4.5 to 6.0
Bw -- 7 to 31 in	gravelly sandy loam	moderately rapid	2.16 to 4.80 in	5.1 to 6.0
2Bw,2BC -- 31 to 53 in	gravelly sandy loam	slow	1.76 to 3.75 in	5.6 to 6.8
2BCd -- 53 to 80 in	gravelly sandy loam	very slow	1.07 to 2.41 in	5.6 to 6.8

F137B--Normanna-Canosia-Hermantown complex, 0 to 8 percent slopes

Normanna

Extent: 30 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 3 to 8 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .17
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loam	moderate	0.55 to 0.94 in	4.5 to 6.0
Bw -- 4 to 45 in	gravelly sandy loam	moderately rapid	3.69 to 8.19 in	5.1 to 6.0
2Bw,BC,2BC -- 45 to 48 in	gravelly sandy loam	slow	0.25 to 0.54 in	5.6 to 6.8
2BCd -- 48 to 80 in	gravelly sandy loam	very slow	1.28 to 2.87 in	5.6 to 6.8

Canosia

Extent: 10 to 40 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 2 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .17
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loam	moderate	0.72 to 1.23 in	4.5 to 6.0
Bw -- 5 to 25 in	gravelly sandy loam	moderately rapid	1.81 to 4.02 in	5.1 to 6.0
2Bw,2BC -- 25 to 34 in	gravelly sandy loam	slow	0.69 to 1.47 in	5.6 to 6.8
2BCd -- 34 to 80 in	gravelly sandy loam	very slow	1.84 to 4.15 in	5.6 to 6.8

F137B--Normanna-Canosia-Hermantown complex, 0 to 8 percent slopes

Hermantown

Extent: 10 to 30 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 3 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silt loam	moderate	0.55 to 0.94 in	4.5 to 6.0
E -- 4 to 7 in	silt loam	moderate	0.41 to 0.63 in	4.5 to 6.0
Bw -- 7 to 31 in	gravelly sandy loam	moderately rapid	2.16 to 4.80 in	5.1 to 6.0
2Bw,2BC -- 31 to 53 in	gravelly sandy loam	slow	1.76 to 3.75 in	5.6 to 6.8
2BCd -- 53 to 80 in	gravelly sandy loam	very slow	1.07 to 2.41 in	5.6 to 6.8

F138D--Ahmeek-Normanna-Canosia complex, 0 to 18 percent slopes

Ahmeek

Extent: 40 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 18 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
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	silt loam	moderate	0.28 to 0.47 in	4.5 to 6.0
E -- 2 to 4 in	silt loam	moderate	0.24 to 0.39 in	4.5 to 6.0
Bw -- 4 to 14 in	gravelly sandy loam	moderately rapid	0.92 to 2.05 in	5.1 to 6.0
2Bw,2BC -- 14 to 33 in	gravelly sandy loam	slow	1.51 to 3.21 in	5.6 to 6.8
2BCd -- 33 to 80 in	gravelly sandy loam	very slow	1.87 to 4.22 in	5.6 to 6.8

Normanna

Extent: 20 to 40 percent of the unit
Landform(s): moraines
Slope gradient: 3 to 8 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .17
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loam	moderate	0.55 to 0.94 in	4.5 to 6.0
Bw -- 4 to 45 in	gravelly sandy loam	moderately rapid	3.69 to 8.19 in	5.1 to 6.0
2Bw,BC,2BC -- 45 to 48 in	gravelly sandy loam	slow	0.25 to 0.54 in	5.6 to 6.8
2BCd -- 48 to 80 in	gravelly sandy loam	very slow	1.28 to 2.87 in	5.6 to 6.8

F138D--Ahmeek-Normanna-Canosia complex, 0 to 18 percent slopes

Canosia

Extent: 5 to 15 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 2 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .17
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loam	moderate	0.72 to 1.23 in	4.5 to 6.0
Bw -- 5 to 25 in	gravelly sandy loam	moderately rapid	1.81 to 4.02 in	5.1 to 6.0
2Bw,2BC -- 25 to 34 in	gravelly sandy loam	slow	0.69 to 1.47 in	5.6 to 6.8
2BCd -- 34 to 80 in	gravelly sandy loam	very slow	1.84 to 4.15 in	5.6 to 6.8

F139F--Ahmeek silt loam, 18 to 45 percent slopes

Ahmeek

Extent: 60 to 80 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 45 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
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 2 in	silt loam	moderate	0.28 to 0.47 in	4.5 to 6.0
E -- 2 to 4 in	silt loam	moderate	0.24 to 0.39 in	4.5 to 6.0
Bw -- 4 to 14 in	gravelly sandy loam	moderately rapid	0.92 to 2.05 in	5.1 to 6.0
2Bw,2BC -- 14 to 33 in	gravelly sandy loam	slow	1.51 to 3.21 in	5.6 to 6.8
2BCd -- 33 to 80 in	gravelly sandy loam	very slow	1.87 to 4.22 in	5.6 to 6.8

F140B--Normanna-Giese, depressional, complex, pitted, 0 to 8 percent slopes

Normanna

Extent: 40 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 3 to 8 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .17
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loam	moderate	0.55 to 0.94 in	4.5 to 6.0
Bw -- 4 to 45 in	gravelly sandy loam	moderately rapid	3.69 to 8.19 in	5.1 to 6.0
2Bw,BC,2BC -- 45 to 48 in	gravelly sandy loam	slow	0.25 to 0.54 in	5.6 to 6.8
2BCd -- 48 to 80 in	gravelly sandy loam	very slow	1.28 to 2.87 in	5.6 to 6.8

Giese, depressional

Extent: 15 to 30 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly 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 6w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 1 in	muck	moderately rapid	0.41 to 0.53 in	
A -- 1 to 6 in	silt loam	moderate	0.52 to 1.13 in	4.5 to 6.0
Eg,E -- 6 to 11 in	silt loam	moderate	0.72 to 1.02 in	4.5 to 6.0
Bg,Bw -- 11 to 30 in	gravelly sandy loam	moderately rapid	1.70 to 3.78 in	5.1 to 6.0
2Bw,2BC -- 30 to 36 in	gravelly sandy loam	slow	0.47 to 1.00 in	5.6 to 6.8
2BCd,2Cd -- 36 to 80 in	gravelly sandy loam	very slow	1.76 to 3.97 in	5.6 to 6.8

F141D--Ahmeek-Normanna-Cathro, depressional, complex, pitted, 0 to 25 percent slopes

Ahmeek

Extent: 45 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 25 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
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	silt loam	moderate	0.28 to 0.47 in	4.5 to 6.0
E -- 2 to 4 in	silt loam	moderate	0.24 to 0.39 in	4.5 to 6.0
Bw -- 4 to 14 in	gravelly sandy loam	moderately rapid	0.92 to 2.05 in	5.1 to 6.0
2Bw,2BC -- 14 to 33 in	gravelly sandy loam	slow	1.51 to 3.21 in	5.6 to 6.8
2BCd -- 33 to 80 in	gravelly sandy loam	very slow	1.87 to 4.22 in	5.6 to 6.8

Normanna

Extent: 10 to 35 percent of the unit
Landform(s): moraines
Slope gradient: 3 to 8 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .17
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loam	moderate	0.55 to 0.94 in	4.5 to 6.0
Bw -- 4 to 45 in	gravelly sandy loam	moderately rapid	3.69 to 8.19 in	5.1 to 6.0
2Bw,BC,2BC -- 45 to 48 in	gravelly sandy loam	slow	0.25 to 0.54 in	5.6 to 6.8
2BCd -- 48 to 80 in	gravelly sandy loam	very slow	1.28 to 2.87 in	5.6 to 6.8

F141D--Ahmeek-Normanna-Cathro, depressional, complex, pitted, 0 to 25 percent slopes

Cathro, depressional

Extent: 10 to 25 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: organic material over dense loamy till
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: 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 48 in	stratified loamy fine sand to loam	moderate	1.02 to 1.50 in	5.1 to 7.3
2Cd --	48 to 80 in	gravelly sandy loam	very slow	1.28 to 2.55 in	5.6 to 6.8

F142A--Canosia loam, 0 to 2 percent slopes

Canosia

Extent: 80 to 95 percent of the unit
Landform(s): flats on moraines
Slope gradient: 0 to 2 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .17
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loam	moderate	0.72 to 1.23 in	4.5 to 6.0
Bw -- 5 to 25 in	gravelly sandy loam	moderately rapid	1.81 to 4.02 in	5.1 to 6.0
2Bw,2BC -- 25 to 34 in	gravelly sandy loam	slow	0.69 to 1.47 in	5.6 to 6.8
2BCd -- 34 to 80 in	gravelly sandy loam	very slow	1.84 to 4.15 in	5.6 to 6.8

F143B--Normanna-Aldenlake-Canosia complex, 0 to 8 percent slopes

Normanna

Extent: 25 to 60 percent of the unit
Landform(s): moraines
Slope gradient: 3 to 8 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .17
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loam	moderate	0.55 to 0.94 in	4.5 to 6.0
Bw -- 4 to 45 in	gravelly sandy loam	moderately rapid	3.69 to 8.19 in	5.1 to 6.0
2Bw,BC,2BC -- 45 to 48 in	gravelly sandy loam	slow	0.25 to 0.54 in	5.6 to 6.8
2BCd -- 48 to 80 in	gravelly sandy loam	very slow	1.28 to 2.87 in	5.6 to 6.8

Aldenlake

Extent: 10 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 0 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): 4
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
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 1.02 in	5.1 to 6.5
Bw -- 5 to 34 in	sandy loam	moderately rapid	2.30 to 5.17 in	5.1 to 6.5
2BC,2C -- 34 to 80 in	very gravelly sand	very rapid	0.46 to 4.15 in	5.6 to 6.5

F143B--Normanna-Aldenlake-Canosia complex, 0 to 8 percent slopes

Canosia

Extent: 2 to 15 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 2 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .17
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loam	moderate	0.72 to 1.23 in	4.5 to 6.0
Bw -- 5 to 25 in	gravelly sandy loam	moderately rapid	1.81 to 4.02 in	5.1 to 6.0
2Bw,2BC -- 25 to 34 in	gravelly sandy loam	slow	0.69 to 1.47 in	5.6 to 6.8
2BCd -- 34 to 80 in	gravelly sandy loam	very slow	1.84 to 4.15 in	5.6 to 6.8

F144D--Aldenlake-Ahmeek complex, 8 to 18 percent slopes

Aldenlake

Extent: 20 to 50 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: well 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 4e
Hydric soil: no
Hydrologic group: B
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 1.02 in	5.1 to 6.5
Bw -- 5 to 34 in	sandy loam	moderately rapid	2.30 to 5.17 in	5.1 to 6.5
2BC,2C -- 34 to 80 in	very gravelly sand	very rapid	0.46 to 4.15 in	5.6 to 6.5

Ahmeek

Extent: 20 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 8 to 18 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
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	silt loam	moderate	0.28 to 0.47 in	4.5 to 6.0
E -- 2 to 4 in	silt loam	moderate	0.24 to 0.39 in	4.5 to 6.0
Bw -- 4 to 14 in	gravelly sandy loam	moderately rapid	0.92 to 2.05 in	5.1 to 6.0
2Bw,2BC -- 14 to 33 in	gravelly sandy loam	slow	1.51 to 3.21 in	5.6 to 6.8
2BCd -- 33 to 80 in	gravelly sandy loam	very slow	1.87 to 4.22 in	5.6 to 6.8

F145F--Ahmeek-Aldenlake complex, 18 to 45 percent slopes

Ahmeek

Extent: 20 to 50 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 45 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
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 2 in	silt loam	moderate	0.28 to 0.47 in	4.5 to 6.0
E -- 2 to 4 in	silt loam	moderate	0.24 to 0.39 in	4.5 to 6.0
Bw -- 4 to 14 in	gravelly sandy loam	moderately rapid	0.92 to 2.05 in	5.1 to 6.0
2Bw,2BC -- 14 to 33 in	gravelly sandy loam	slow	1.51 to 3.21 in	5.6 to 6.8
2BCd -- 33 to 80 in	gravelly sandy loam	very slow	1.87 to 4.22 in	5.6 to 6.8

Aldenlake

Extent: 20 to 50 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: well 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 7e
Hydric soil: no
Hydrologic group: B
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 1.02 in	5.1 to 6.5
Bw -- 5 to 34 in	sandy loam	moderately rapid	2.30 to 5.17 in	5.1 to 6.5
2BC,2C -- 34 to 80 in	very gravelly sand	very rapid	0.46 to 4.15 in	5.6 to 6.5

F146A--Giese muck, 0 to 2 percent slopes, rubbly

Giese, rubbly

Extent: 60 to 90 percent of the unit
Landform(s): flats on moraines
Slope gradient: 0 to 2 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly 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 8s
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 1 in	muck	moderately rapid	0.41 to 0.53 in	
A -- 1 to 6 in	silt loam	moderate	0.52 to 1.13 in	4.5 to 6.0
Eg,E -- 6 to 11 in	silt loam	moderate	0.72 to 1.02 in	4.5 to 6.0
Bg,Bw -- 11 to 30 in	gravelly sandy loam	moderately rapid	1.70 to 3.78 in	5.1 to 6.0
2Bw,2BC -- 30 to 36 in	gravelly sandy loam	slow	0.47 to 1.00 in	5.6 to 6.8
2BCd,2Cd -- 36 to 80 in	gravelly sandy loam	very slow	1.76 to 3.97 in	5.6 to 6.8

F148F--Ahmeek-Rock outcrop-Fluvaquents, frequently flooded, complex, 0 to 50 percent slopes

Ahmeek

Extent: 40 to 80 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 50 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
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 2 in	silt loam	moderate	0.28 to 0.47 in	4.5 to 6.0
E -- 2 to 4 in	silt loam	moderate	0.24 to 0.39 in	4.5 to 6.0
Bw -- 4 to 14 in	gravelly sandy loam	moderately rapid	0.92 to 2.05 in	5.1 to 6.0
2Bw,2BC -- 14 to 33 in	gravelly sandy loam	slow	1.51 to 3.21 in	5.6 to 6.8
2BCd -- 33 to 80 in	gravelly sandy loam	very slow	1.87 to 4.22 in	5.6 to 6.8

Rock outcrop

Extent: 5 to 20 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 50 percent
Parent material: bedrock
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
Hydric soil: unranked
Hydrologic group:
Potential for frost action:

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

F148F--Ahmeek-Rock outcrop-Fluvaquents, frequently flooded, complex, 0 to 50 percent slopes

Fluvaquents, frequently flooded

Extent: 5 to 20 percent of the unit
Landform(s): moraines
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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated 5w
Hydric soil: yes
Hydrologic group: 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 gravelly loamy coarse sand	rapid	4.44 to 16.28 in	5.6 to 7.3

F150A--Twig-Tacoosh-Giese complex, depressional, 0 to 1 percent slopes

Twig, depressional

Extent: 30 to 75 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: organic material over loamy material over dense loamy till
Restrictive feature(s): dense material at 30 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: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 12 in	mucky peat	rapid	5.31 to 6.50 in	
A1 -- 12 to 18 in	mucky silt loam	moderate	1.13 to 1.51 in	4.5 to 6.0
A2 -- 18 to 20 in	silt loam	moderate	0.35 to 0.47 in	4.5 to 6.0
Eg,2Btg,2Bw -- 20 to 48 in	gravelly sandy loam	slow	2.52 to 5.87 in	5.1 to 6.0
2BCd,2Cd -- 48 to 80 in	gravelly sandy loam	very slow	1.28 to 2.87 in	5.6 to 6.8

Tacoosh, depressional

Extent: 20 to 60 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: organic material over loamy material over dense loamy till
Restrictive feature(s): dense material at 40 to 80 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: 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 48 in	stratified loamy fine sand to loam	moderate	1.10 to 1.95 in	5.1 to 7.3
2Cd -- 48 to 80 in	gravelly sandy loam	very slow	1.28 to 2.87 in	5.6 to 6.8

F150A--Twig-Tacoosh-Giese complex, depressional, 0 to 1 percent slopes

Giese, depressional

Extent: 5 to 20 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: loamy material over dense loamy till
Restrictive feature(s): dense material at 30 to 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly 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 6w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 1 in	muck	moderately rapid	0.41 to 0.53 in	
A -- 1 to 6 in	silt loam	moderate	0.52 to 1.13 in	4.5 to 6.0
Eg,E -- 6 to 11 in	silt loam	moderate	0.72 to 1.02 in	4.5 to 6.0
Bg,Bw -- 11 to 30 in	gravelly sandy loam	moderately rapid	1.70 to 3.78 in	5.1 to 6.0
2Bw,2BC -- 30 to 36 in	gravelly sandy loam	slow	0.47 to 1.00 in	5.6 to 6.8
2BCd,2Cd -- 36 to 80 in	gravelly sandy loam	very slow	1.76 to 3.97 in	5.6 to 6.8

F151A--Tacoosh mucky peat, dense substratum, 0 to 1 percent slopes

Tacoosh

Extent: 60 to 90 percent of the unit
Landform(s): swamps on moraines, swamps on interdrumlins
Slope gradient: 0 to 1 percent
Parent material: organic material over loamy material over dense loamy till
Restrictive feature(s): dense material at 50 to 80 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: 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	
2Cg --	40 to 48 in	stratified loamy fine sand to loam	moderate	1.02 to 1.50 in	5.1 to 7.3
3Cd --	48 to 80 in	gravelly sandy loam	very slow	1.28 to 2.87 in	5.6 to 6.8

F161A--Mooselake muck, dense substratum, 0 to 1 percent slopes

Mooselake

Extent: 60 to 90 percent of the unit
Landform(s): swamps on moraines, swamps on interdrumlins
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): 3
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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 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	

F162A--Spidercreek sandy loam, 0 to 1 percent slopes

Spidercreek

Extent: 85 to 100 percent of the unit
Landform(s): flats 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: 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 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	sandy loam	moderately rapid	0.35 to 0.71 in	5.1 to 6.5
Bw,E -- 4 to 9 in	sandy loam	moderately rapid	0.41 to 0.87 in	5.1 to 6.5
C -- 9 to 80 in	coarse sand	very rapid	1.42 to 7.09 in	5.6 to 6.5

F170A--Rifle soils, dense substratum, 0 to 1 percent slopes

Rifle

Extent: 0 to 95 percent of the unit
Landform(s): swamps on moraines, swamps on interdrumlins
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): 3
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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*
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 interdrumlins
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): 3
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*
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	

F175A--Greenwood soils, dense substratum, 0 to 1 percent slopes

Greenwood

Extent: 0 to 95 percent of the unit
Landform(s): bogs on moraines, bogs on interdrumlins
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): 3
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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*
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 interdrumlins
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): 3
Wind erodibility group (WEG): 7
Wind erodibility index (WEI): 38
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*
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	

F188A--Marl

Marl

Extent: 60 to 90 percent of the unit
Landform(s): swamps on end moraines
Slope gradient: 0 to 1 percent
Parent material: marl over glaciofluvial material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .43
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Lma1 -- 0 to 6 in	marl	moderately rapid	1.18 to 1.30 in	
Lma2 -- 6 to 24 in	marl	moderately rapid	3.62 to 3.98 in	
2Cg -- 24 to 80 in	loamy fine sand	moderate	7.27 to 10.62 in	5.1 to 6.5

GP--Pits, gravel-Udipsamments complex

Pits, gravel

Extent: 60 to 95 percent of the unit
Landform(s): moraines, outwash plains, 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
Slope gradient: 0 to 25 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw factor (surface layer)
Land capability, nonirrigated
Hydric soil: unranked
Hydrologic group: B
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): 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*

Map Unit Description (MN)

St. Louis County, Minnesota, Meadowlands Part

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.