Map Unit Description (MN)

Cass County, Minnesota

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

7A--Hubbard loamy sand, 0 to 3 percent slopes

Hubbard

Extent: 90 percent of the unit
Landform(s): flats on outwash plains
Slope gradient: 0 to 3 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .05
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 16 in	loamy sand	rapid	1.29 to 1.94 in	5.1 to 7.3
Bw1 -- 16 to 24 in	loamy sand	rapid	0.24 to 0.55 in	5.1 to 7.3
Bw2,C -- 24 to 60 in	sand	rapid	1.07 to 2.51 in	5.6 to 7.8

Friendship

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

7A--Hubbard loamy sand, 0 to 3 percent slopes

Meehan

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

Menahga

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

7B--Hubbard loamy sand, 3 to 8 percent slopes

Hubbard

Extent: 90 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 3 to 8 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .05
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,Bw1 -- 0 to 19 in	loamy sand	rapid	1.51 to 2.27 in	5.1 to 7.3
Bw2 -- 19 to 45 in	sand	rapid	0.78 to 1.82 in	5.1 to 7.3
C -- 45 to 60 in	sand	rapid	0.45 to 1.05 in	5.6 to 7.8

Friendship

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

7B--Hubbard loamy sand, 3 to 8 percent slopes

Meehan

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

Menahga

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

48--Hiwood loamy fine sand

Hiwood

Extent: 85 percent of the unit
Landform(s): rises on outwash plains, rises on till-floored lake plains
Slope gradient: 0 to 2 percent
Parent material: sandy glacial outwash 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) .28
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 5 in	loamy fine sand	rapid	0.41 to 0.61 in	4.5 to 6.0
Bw -- 5 to 30 in	loamy fine sand	rapid	1.74 to 2.48 in	5.1 to 6.0
C -- 30 to 60 in	fine sand	rapid	1.50 to 2.39 in	5.6 to 7.8

SWP Sands

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

48--Hiwood loamy fine sand

Zimmerman

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Roscommon

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

82B--Redeye loamy sand, 1 to 6 percent slopes

Redeye

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins
Slope gradient: 1 to 6 percent
Parent material: sandy outwash over dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
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*
Ap -- 0 to 6 in	loamy sand	rapid	0.59 to 0.71 in	5.1 to 7.3
E -- 6 to 15 in	loamy fine sand	rapid	0.63 to 0.91 in	5.1 to 6.5
Bw -- 15 to 33 in	sand	rapid	1.27 to 1.81 in	5.6 to 6.5
2Bt -- 33 to 55 in	sandy loam	moderately slow	2.43 to 2.87 in	5.1 to 7.3
2Cd -- 55 to 60 in	sandy loam	slow	0.00 to 0.19 in	7.4 to 8.4

Paddock

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

82B--Redeye loamy sand, 1 to 6 percent slopes

Meehan

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

Very Poorly Drained soils in depressions

Extent: 3 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

82B--Redeye loamy sand, 1 to 6 percent slopes

Staples

Extent: 3 percent of the unit
Landform(s): swales on interdrumlins
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: yes
Hydrologic group:
Potential for frost action:

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

Roscommon

Extent: 3 percent of the unit
Landform(s): swales on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

82C--Redeye loamy sand, 6 to 12 percent slopes

Redeye

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins
Slope gradient: 6 to 12 percent
Parent material: sandy outwash over dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
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	loamy sand	rapid	0.39 to 0.47 in	5.1 to 7.3
E -- 4 to 7 in	sand	rapid	0.22 to 0.31 in	5.1 to 6.5
Bw -- 7 to 31 in	sand	rapid	1.68 to 2.40 in	5.6 to 6.5
2Bt -- 31 to 48 in	sandy loam	moderately slow	1.86 to 2.20 in	5.1 to 7.3
2Cd -- 48 to 60 in	sandy loam	slow	0.00 to 0.47 in	7.4 to 8.4

Huntersville

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

82C--Redeye loamy sand, 6 to 12 percent slopes

Blowers

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Poorly drained sandy and gravelly soils

Extent: 5 percent of the unit
Landform(s): swales on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

119B--Pomroy loamy sand, 3 to 8 percent slopes

Pomroy

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins
Slope gradient: 3 to 8 percent
Parent material: sandy outwash over dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
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 4 in	loamy sand	rapid	0.39 to 0.47 in	5.1 to 6.5
Bw.E -- 4 to 24 in	fine sand	rapid	1.20 to 1.81 in	5.1 to 6.5
2Bt -- 24 to 31 in	sandy loam	moderately slow	0.00 to 0.57 in	5.1 to 6.5
2BC -- 31 to 42 in	sandy loam	slow	0.00 to 0.88 in	5.6 to 7.3
2Cd -- 42 to 60 in	sandy loam	moderately slow	0.00 to 0.71 in	5.6 to 7.3

Watab

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

119B--Pomroy loamy sand, 3 to 8 percent slopes

Wabedo

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

Bushville

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

119B--Pomroy loamy sand, 3 to 8 percent slopes

Flak

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

119C--Pomroy loamy sand, 8 to 15 percent slopes

Pomroy

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins
Slope gradient: 8 to 15 percent
Parent material: sandy outwash over dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: C
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	5.1 to 6.5
E,Bw -- 3 to 34 in	sand	rapid	1.84 to 2.76 in	5.1 to 6.5
2Bt,2BC -- 34 to 40 in	sandy loam	moderately slow	0.00 to 0.50 in	5.1 to 6.5
2Cd -- 40 to 60 in	sandy loam	moderately slow	0.00 to 0.79 in	5.6 to 7.3

Watab

Extent: 8 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: no
Hydrologic group:
Potential for frost action:

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

119C--Pomroy loamy sand, 8 to 15 percent slopes

Menahga

Extent: 7 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

126B--Graycalm loamy sand, 1 to 8 percent slopes

Graycalm

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines, hillslopes on outwash plains
Slope gradient: 1 to 8 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,Bw -- 0 to 8 in	loamy sand	rapid	0.47 to 0.94 in	3.5 to 6.5
E -- 8 to 16 in	sand	rapid	0.41 to 0.83 in	3.5 to 7.3
E&Bt -- 16 to 52 in	sand	rapid	1.43 to 3.22 in	3.5 to 7.3
C -- 52 to 60 in	sand	rapid	0.31 to 0.47 in	3.5 to 8.4

Meehan

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

126B--Graycalm loamy sand, 1 to 8 percent slopes

Friendship

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Demontreville

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

126C--Graycalm loamy sand, 8 to 15 percent slopes

Graycalm

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines, hillslopes on outwash plains
Slope gradient: 8 to 15 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loamy sand	rapid	0.24 to 0.47 in	3.5 to 6.5
E,Bw -- 4 to 27 in	sand	rapid	1.14 to 2.28 in	3.5 to 7.3
E&Bt -- 27 to 50 in	sand	rapid	0.93 to 2.09 in	3.5 to 7.3
C -- 50 to 60 in	sand	rapid	0.39 to 0.59 in	3.5 to 8.4

Meehan

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

126C--Graycalm loamy sand, 8 to 15 percent slopes

Friendship

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Demontreville

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

139B--Huntersville loamy fine sand, 1 to 6 percent slopes

Huntersville

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins
Slope gradient: 1 to 6 percent
Parent material: sandy outwash over dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .28
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 7 in	loamy fine sand	rapid	0.71 to 0.85 in	6.1 to 7.3
E/B -- 7 to 12 in	loamy sand	rapid	0.19 to 0.47 in	6.1 to 7.3
Bw -- 12 to 24 in	cobbly loamy sand	moderately slow	1.34 to 1.59 in	6.1 to 7.3
2Bt,2Cd -- 24 to 60 in	sandy loam	slow	0.00 to 1.43 in	6.6 to 7.8

Staples

Extent: 5 percent of the unit
Landform(s): swales on drumlins
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: yes
Hydrologic group:
Potential for frost action:

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

139B--Huntersville loamy fine sand, 1 to 6 percent slopes

Runeberg

Extent: 4 percent of the unit
Landform(s): interdrumlins, -- error in exists on --
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: yes
Hydrologic group:
Potential for frost action:

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

Paddock

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

139B--Huntersville loamy fine sand, 1 to 6 percent slopes

Friendship

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

142--Nokay loam

Nokay

Extent: 85 percent of the unit
Landform(s): flats on interdrumlins, hillslopes on moraines
Slope gradient: 0 to 2 percent
Parent material: dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated: 2w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loam	moderate	0.92 to 1.13 in	4.5 to 5.5
E -- 5 to 17 in	sandy loam	moderately rapid	1.42 to 2.24 in	4.5 to 5.5
Bt -- 17 to 32 in	sandy loam	moderate	1.80 to 2.84 in	5.1 to 6.5
BC -- 32 to 44 in	loamy coarse sand	slow	0.00 to 0.98 in	5.6 to 7.3
Cd -- 44 to 60 in	loamy coarse sand	impermeable	0.00 to 0.63 in	5.6 to 7.3

Wabedo

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

142--Nokay loam

Flak

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Very Poorly drained Organic soils

Extent: 5 percent of the unit
Landform(s): depressions on interdrumlins
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: yes
Hydrologic group:
Potential for frost action:

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

144B--Flak sandy loam, 3 to 8 percent slopes

Flak

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins, hillslopes on moraines
Slope gradient: 3 to 8 percent
Parent material: dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .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*
Ap -- 0 to 4 in	sandy loam	moderately rapid	0.51 to 0.71 in	4.5 to 6.5
E -- 4 to 16 in	sandy loam	moderately rapid	1.46 to 1.95 in	5.1 to 6.5
Bt -- 16 to 30 in	sandy loam	moderate	1.65 to 2.20 in	5.1 to 6.5
Cd -- 30 to 60 in	sandy loam	impermeable	0.00 to 1.20 in	5.6 to 7.3

Wabedo

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

144B--Flak sandy loam, 3 to 8 percent slopes

Nokay

Extent: 5 percent of the unit
Landform(s): swales on drumlins
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: yes
Hydrologic group:
Potential for frost action:

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

Very Poorly drained Organic soils

Extent: 5 percent of the unit
Landform(s): depressions on interdrumlins
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: yes
Hydrologic group:
Potential for frost action:

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

144C--Flak sandy loam, 8 to 15 percent slopes

Flak

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins, hillslopes on moraines
Slope gradient: 8 to 15 percent
Parent material: dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated: 3e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 6 in	sandy loam	moderately rapid	0.77 to 1.06 in	4.5 to 6.5
E -- 6 to 14 in	sandy loam	moderately rapid	0.99 to 1.32 in	5.1 to 6.5
Bt -- 14 to 26 in	sandy loam	moderate	1.42 to 1.89 in	5.1 to 6.5
BC -- 26 to 41 in	sandy loam	slow	0.00 to 0.90 in	5.1 to 7.3
Cd -- 41 to 60 in	sandy loam	impermeable	0.00 to 0.76 in	5.6 to 7.3

Wabedo

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

144C--Flak sandy loam, 8 to 15 percent slopes

Nokay

Extent: 5 percent of the unit
Landform(s): swales on drumlins
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: yes
Hydrologic group:
Potential for frost action:

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

Very Poorly drained Organic soils

Extent: 5 percent of the unit
Landform(s): depressions on interdrumlins
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: yes
Hydrologic group:
Potential for frost action:

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

146B--Wabedo sandy loam, 1 to 6 percent slopes

Wabedo

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins, hillslopes on moraines
Slope gradient: 1 to 6 percent
Parent material: dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 5 in	sandy loam	moderately rapid	0.67 to 0.92 in	4.5 to 6.0
Bw -- 5 to 27 in	sandy loam	moderate	2.60 to 3.46 in	4.5 to 6.5
BC -- 27 to 47 in	sandy loam	slow	0.60 to 1.61 in	5.1 to 7.3
Cd -- 47 to 60 in	sandy loam	impermeable	0.00 to 0.52 in	5.1 to 7.3

Flak

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

146B--Wabedo sandy loam, 1 to 6 percent slopes

Nokay

Extent: 5 percent of the unit
Landform(s): swales on drumlins
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: yes
Hydrologic group:
Potential for frost action:

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

Very Poorly drained Organic soils

Extent: 5 percent of the unit
Landform(s): depressions on interdrumlins
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: yes
Hydrologic group:
Potential for frost action:

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

147--Spooner very fine sandy loam

Spooner

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 6 in	very fine sandy loam	moderately rapid	1.18 to 1.30 in	5.6 to 7.8
E -- 6 to 14 in	very fine sandy loam	moderately rapid	1.41 to 1.57 in	5.6 to 7.8
Btg -- 14 to 22 in	silt loam	moderate	1.34 to 1.73 in	6.1 to 7.8
Cg -- 22 to 60 in	very fine sandy loam	moderate	6.43 to 8.31 in	7.4 to 8.4

Cathro

Extent: 5 percent of the unit
Landform(s): -- error in exists on --
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: yes
Hydrologic group:
Potential for frost action:

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

147--Spooner very fine sandy loam

Sandwick

Extent: 5 percent of the unit
Landform(s): swales on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

Baudette

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

158B--Zimmerman fine sand, 1 to 8 percent slopes

Zimmerman

Extent: 85 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 1 to 8 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 1
Wind erodibility index (WEI): 250
Kw factor (surface layer) .10
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E --	0 to 9 in	fine sand	rapid	0.63 to 0.81 in	5.1 to 6.5
E,E&Bt --	9 to 60 in	fine sand	rapid	3.05 to 5.08 in	5.1 to 7.3

Hiwood

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

158B--Zimmerman fine sand, 1 to 8 percent slopes

SWP sandy soils

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

Very Poorly drained Organic soils

Extent: 3 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

158B--Zimmerman fine sand, 1 to 8 percent slopes

Roscommon

Extent: 3 percent of the unit
Landform(s): depressions on outwash plains, drainageways on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

167B--Baudette silt loam, 1 to 6 percent slopes

Baudette

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	silt loam	moderate	0.63 to 0.69 in	5.6 to 7.3
E -- 3 to 10 in	silt loam	moderate	0.94 to 1.34 in	5.6 to 7.3
Bt,BC -- 10 to 32 in	silty clay loam	moderate	3.75 to 5.29 in	5.6 to 7.8
C -- 32 to 60 in	silt loam	moderate	4.75 to 6.15 in	7.4 to 8.4

Friendship

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

167B--Baudette silt loam, 1 to 6 percent slopes

Stuntz

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

Spooner

Extent: 5 percent of the unit
Landform(s): swales on lake plains
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: yes
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

202--Meehan loamy sand

Meehan

Extent: 85 percent of the unit
Landform(s): flats on outwash plains
Slope gradient: 0 to 2 percent
Parent material: sandy outwash 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) .17
Land capability, nonirrigated: 4w
Hydric soil: no
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 7 in	loamy sand	moderately rapid	0.71 to 0.85 in	3.5 to 7.3
E,Bw -- 7 to 24 in	sand	rapid	1.02 to 1.86 in	3.5 to 6.5
C -- 24 to 60 in	sand	rapid	0.72 to 2.51 in	3.5 to 7.3

Roscommon

Extent: 8 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

202--Meehan loamy sand

Friendship

Extent: 7 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: no
Hydrologic group:
Potential for frost action:

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

204B--Cushing loam, 2 to 8 percent slopes

Cushing

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 2 to 8 percent
Parent material: loamy glacial 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) .32
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	loam	moderate	1.57 to 2.36 in	5.1 to 7.8
E,B/E -- 10 to 20 in	loam	moderate	1.02 to 2.25 in	5.1 to 7.8
Bt -- 20 to 31 in	loam	moderate	1.10 to 2.09 in	5.1 to 7.8
C -- 31 to 60 in	sandy loam	moderately slow	2.59 to 5.46 in	5.1 to 8.4

Very Poorly drained Organic soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

204B--Cushing loam, 2 to 8 percent slopes

Mohtomedi

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Alstad

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

204C--Cushing loam, 8 to 15 percent slopes

Cushing

Extent: 90 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 15 percent
Parent material: loamy glacial 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) .32
Land capability, nonirrigated: 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loam	moderate	0.82 to 1.23 in	5.1 to 7.8
E,B/E -- 5 to 24 in	sandy loam	moderate	1.89 to 4.16 in	5.1 to 7.8
Bt -- 24 to 49 in	clay loam	moderate	2.48 to 4.71 in	5.1 to 7.8
C -- 49 to 60 in	sandy clay loam	moderately slow	0.99 to 2.09 in	5.1 to 8.4

Very Poorly drained Organic soils

Extent: 2 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

204C--Cushing loam, 8 to 15 percent slopes

Menahga

Extent: 2 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: no
Hydrologic group:
Potential for frost action:

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

Mahtomedi

Extent: 2 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: no
Hydrologic group:
Potential for frost action:

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

204C--Cushing loam, 8 to 15 percent slopes

Demontreville

Extent: 2 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

Alstad

Extent: 2 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

204E--Cushing loam, 15 to 30 percent slopes

Cushing

Extent: 90 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 15 to 30 percent
Parent material: loamy glacial 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) .32
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loam	moderate	0.50 to 0.76 in	5.1 to 7.8
E,B/E -- 3 to 20 in	fine sandy loam	moderate	1.69 to 3.72 in	5.1 to 7.8
Bt -- 20 to 38 in	loam	moderate	1.77 to 3.37 in	5.1 to 7.8
C -- 38 to 60 in	fine sandy loam	moderately slow	1.98 to 4.19 in	5.1 to 8.4

Alstad

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

204E--Cushing loam, 15 to 30 percent slopes

Very Poorly drained Organic soils

Extent: 3 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

Poorly drained mineral soils

Extent: 3 percent of the unit
Landform(s): swales on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

217--Nokasippi loamy fine sand

Nokasippi

Extent: 85 percent of the unit
Landform(s): drainageways on interdrumlins, drainageways on moraines
Slope gradient: 0 to 1 percent
Parent material: sandy outwash over dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 10 in	loamy fine sand	rapid	0.98 to 1.18 in	4.5 to 6.5
Bg1 -- 10 to 21 in	loamy sand	rapid	0.66 to 1.32 in	4.5 to 7.3
Bg2 -- 21 to 32 in	loamy sand	moderately rapid	1.21 to 1.98 in	4.5 to 7.3
2Bg3,2BC -- 32 to 41 in	sandy loam	slow	0.00 to 0.72 in	4.5 to 7.3
2Cd -- 41 to 60 in	sandy loam	impermeable	0.00 to 0.76 in	5.1 to 7.3

Very Poorly drained Organic soils

Extent: 5 percent of the unit
Landform(s): depressions on drumlins
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: yes
Hydrologic group:
Potential for frost action:

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

217--Nokasippi loamy fine sand

Nokay

Extent: 5 percent of the unit
Landform(s): flats on drumlins
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: yes
Hydrologic group:
Potential for frost action:

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

Watab

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

218--Watab loamy sand

Watab

Extent: 85 percent of the unit
Landform(s): drainageways on interdrumlins, swales on moraines
Slope gradient: 0 to 2 percent
Parent material: sandy outwash over dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loamy sand	rapid	0.51 to 0.61 in	5.1 to 6.0
E -- 5 to 21 in	loamy sand	rapid	0.94 to 1.42 in	5.1 to 6.5
Bw -- 21 to 30 in	loamy sand	moderately rapid	0.72 to 1.09 in	5.1 to 6.5
2Bt,2BC -- 30 to 41 in	fine sandy loam	slow	0.33 to 0.88 in	5.6 to 7.3
2Cd -- 41 to 60 in	sandy loam	impermeable	0.00 to 0.76 in	5.6 to 7.3

Nokasippi

Extent: 15 percent of the unit
Landform(s): depressions on drumlins
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: yes
Hydrologic group:
Potential for frost action:

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

240A--Warba very fine sandy loam, 1 to 3 percent slopes moderately wet

Warba, moderately wet

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 3 percent
Parent material: loamy glacial 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) .43
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 14 in	very fine sandy loam	moderately rapid	2.55 to 3.26 in	5.1 to 6.5
E/B,B/E,Bt -- 14 to 40 in	loam	moderately slow	4.16 to 4.94 in	5.1 to 7.3
C -- 40 to 60 in	loam	moderate	3.15 to 3.74 in	6.6 to 8.4

Very Poorly drained Orgainc soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

240A--Warba very fine sandy loam, 1 to 3 percent slopes moderately wet

Stuntz

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Cutaway

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

240B--Warba very fine sandy loam, 3 to 8 percent slopes

Warba

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 3 to 8 percent
Parent material: loamy glacial 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) .43
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 11 in	very fine sandy loam	moderately rapid	1.98 to 2.54 in	5.1 to 6.5
E/B,B/E,Bt -- 11 to 37 in	clay loam	moderately slow	4.16 to 4.94 in	5.1 to 7.3
C -- 37 to 60 in	loam	moderate	3.65 to 4.34 in	6.6 to 8.4

Stuntz

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

240B--Warba very fine sandy loam, 3 to 8 percent slopes

Warba

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

Menahga

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

240B--Warba very fine sandy loam, 3 to 8 percent slopes

Very Poorly drained Organic soils

Extent: 3 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

240C--Warba very fine sandy loam, 8 to 15 percent slopes

Warba

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 15 percent
Parent material: loamy glacial 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) .43
Land capability, nonirrigated: 3e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 10 in	very fine sandy loam	moderately rapid	1.77 to 2.26 in	5.1 to 6.5
B/E,Bt -- 10 to 36 in	clay loam	moderately slow	4.16 to 4.94 in	5.1 to 7.3
C -- 36 to 60 in	clay loam	moderate	3.84 to 4.56 in	6.6 to 8.4

Very Poorly drained Organic soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

240C--Warba very fine sandy loam, 8 to 15 percent slopes

Cutaway

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Stuntz

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

243--Stuntz very fine sandy loam

Stuntz

Extent: 90 percent of the unit
Landform(s): flats on moraines
Slope gradient: 0 to 2 percent
Parent material: loamy glacial 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) .43
Land capability, nonirrigated: 2w
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E,E/B -- 0 to 17 in	very fine sandy loam	moderately rapid	3.05 to 3.89 in	4.5 to 6.5
B/E,Btg -- 17 to 39 in	sandy clay loam	moderately slow	3.53 to 4.19 in	5.1 to 7.8
C -- 39 to 60 in	loam	moderately slow	3.34 to 3.96 in	6.6 to 8.4

Warba

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

243--Stuntz very fine sandy loam

Very Poorly drained mineral soils

Extent: 3 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

Very Poorly drained organic soils

Extent: 3 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

268B--Cromwell sandy loam, 1 to 8 percent slopes

Cromwell

Extent: 92 percent of the unit
Landform(s): hillslopes on moraines, hillslopes on outwash plains
Slope gradient: 1 to 8 percent
Parent material: loamy mantled outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated: 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,Bw -- 0 to 17 in	sandy loam	moderate	2.71 to 3.05 in	4.5 to 6.0
2Bw,2BC,2C -- 17 to 60 in	sand	rapid	2.15 to 3.00 in	5.1 to 7.3

Meehan

Extent: 2 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: no
Hydrologic group:
Potential for frost action:

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

268B--Cromwell sandy loam, 1 to 8 percent slopes

Cromwell, moderately well drained

Extent: 2 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: no
Hydrologic group:
Potential for frost action:

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

Menahga

Extent: 2 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: no
Hydrologic group:
Potential for frost action:

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

268B--Cromwell sandy loam, 1 to 8 percent slopes

Demontreville

Extent: 2 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

268C--Cromwell sandy loam, 8 to 15 percent slopes

Cromwell

Extent: 92 percent of the unit
Landform(s): hillslopes on moraines, hillslopes on outwash plains
Slope gradient: 8 to 15 percent
Parent material: loamy mantled outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
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,Bw -- 0 to 15 in	sandy loam	moderate	2.39 to 2.69 in	4.5 to 6.0
2Bw,2BC,2C -- 15 to 60 in	sand	rapid	2.24 to 3.14 in	5.1 to 7.3

Very Poorly drained organic soils

Extent: 2 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

268C--Cromwell sandy loam, 8 to 15 percent slopes

Cromwell, moderately well drained

Extent: 2 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

Menahga

Extent: 2 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

268C--Cromwell sandy loam, 8 to 15 percent slopes

Demontreville

Extent: 2 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

292--Alstad fine sandy loam

Alstad

Extent: 85 percent of the unit
Landform(s): flats on moraines
Slope gradient: 0 to 2 percent
Parent material: loamy glacial 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) .20
Land capability, nonirrigated: 2w
Hydric soil: no
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	fine sandy loam	moderate	0.61 to 0.92 in	4.5 to 7.8
E -- 5 to 15 in	fine sandy loam	moderate	0.89 to 2.17 in	4.5 to 7.8
B/E -- 15 to 20 in	sandy loam	moderate	0.46 to 0.92 in	4.5 to 7.8
Bt -- 20 to 31 in	sandy loam	moderate	0.99 to 1.98 in	4.5 to 7.8
BC,C -- 31 to 60 in	sandy loam	moderate	2.59 to 5.17 in	7.4 to 8.4

Poorly drained mineral soils

Extent: 5 percent of the unit
Landform(s): swales on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

292--Alstad fine sandy loam

Demontreville

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Cushing

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

453B--DeMontreville loamy sand, 2 to 8 percent slopes

DeMontreville

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 2 to 8 percent
Parent material: sandy outwash over loamy glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loamy sand	rapid	0.39 to 0.47 in	5.1 to 7.3
Bw -- 4 to 25 in	loamy sand	rapid	1.28 to 1.91 in	5.1 to 7.3
2B/E,2Bt -- 25 to 47 in	sandy loam	moderately slow	1.73 to 3.03 in	5.6 to 6.5
2C -- 47 to 60 in	sandy loam	moderately slow	0.78 to 1.30 in	5.6 to 7.3

Mahtomedi

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

453B--DeMontreville loamy sand, 2 to 8 percent slopes

Menahga

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

Cathro

Extent: 3 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

453B--DeMontreville loamy sand, 2 to 8 percent slopes

Cushing

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

453C--DeMontreville loamy sand, 8 to 15 percent slopes

DeMontreville

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 15 percent
Parent material: sandy outwash over loamy glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: C
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	5.1 to 7.3
Bw -- 2 to 33 in	sand	rapid	1.87 to 2.80 in	5.1 to 7.3
2B/E,2Bt -- 33 to 40 in	loamy sand	moderately slow	0.57 to 0.99 in	5.6 to 6.5
2C -- 40 to 60 in	sandy loam	moderately slow	1.18 to 1.97 in	5.6 to 7.3

Mahtomedi

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

453C--DeMontreville loamy sand, 8 to 15 percent slopes

Menahga

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

Cathro

Extent: 3 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

453C--DeMontreville loamy sand, 8 to 15 percent slopes

Cushing

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

453E--DeMontreville loamy sand, 15 to 40 percent slopes

DeMontreville

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 15 to 40 percent
Parent material: sandy outwash over loamy glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: C
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	5.1 to 7.3
Bw -- 2 to 36 in	loamy sand	rapid	2.03 to 3.05 in	5.1 to 7.3
2B/E,2Bt -- 36 to 45 in	sandy loam	moderately slow	0.72 to 1.27 in	5.6 to 6.5
2C -- 45 to 60 in	sandy loam	moderately slow	0.90 to 1.50 in	5.6 to 7.3

Mahtomedi

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

453E--DeMontreville loamy sand, 15 to 40 percent slopes

Menahga

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

Cathro

Extent: 3 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

453E--DeMontreville loamy sand, 15 to 40 percent slopes

Cushing

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

454B--Mahtomedi loamy sand, 1 to 8 percent slopes

Mahtomedi

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines, hillslopes on outwash plains
Slope gradient: 1 to 8 percent
Parent material: sandy and gravelly outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	loamy sand	rapid	0.20 to 0.24 in	5.1 to 6.5
E -- 2 to 6 in	loamy sand	rapid	0.24 to 0.31 in	5.1 to 6.5
Bw -- 6 to 20 in	coarse sand	rapid	0.71 to 0.99 in	5.1 to 6.5
C -- 20 to 60 in	coarse sand	rapid	1.59 to 3.58 in	5.1 to 7.4

Sanburn

Extent: 8 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: no
Hydrologic group:
Potential for frost action:

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

454B--Mahtomedi loamy sand, 1 to 8 percent slopes

Demontreville

Extent: 7 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: no
Hydrologic group:
Potential for frost action:

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

454C--Mahtomedi loamy sand, 8 to 15 percent slopes

Mahtomedi

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines, hillslopes on outwash plains
Slope gradient: 8 to 15 percent
Parent material: sandy and gravelly outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	loamy sand	rapid	0.20 to 0.24 in	5.1 to 6.5
E -- 2 to 6 in	gravelly loamy sand	rapid	0.24 to 0.31 in	5.1 to 6.5
Bw -- 6 to 22 in	sand	rapid	0.81 to 1.13 in	5.1 to 6.5
C -- 22 to 60 in	gravelly sand	rapid	1.51 to 3.40 in	5.1 to 7.4

Sanburn

Extent: 8 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: no
Hydrologic group:
Potential for frost action:

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

454C--Mahtomedi loamy sand, 8 to 15 percent slopes

Demontreville

Extent: 7 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: no
Hydrologic group:
Potential for frost action:

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

454E--Mahtomedi loamy sand, 15 to 40 percent slopes

Mahtomedi

Extent: 90 percent of the unit
Landform(s): ridges on moraines, hillslopes on outwash plains
Slope gradient: 15 to 40 percent
Parent material: sandy and gravelly outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 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 1 in	loamy sand	rapid	0.08 to 0.09 in	5.1 to 6.5
E -- 1 to 9 in	loamy sand	rapid	0.50 to 0.66 in	5.1 to 6.5
Bw -- 9 to 14 in	sand	rapid	0.26 to 0.36 in	5.1 to 6.5
C -- 14 to 60 in	gravelly sand	rapid	1.83 to 4.11 in	5.1 to 7.4

Demontreville

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

454E--Mahtomedi loamy sand, 15 to 40 percent slopes

Sanburn

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

458A--Menahga loamy sand, 0 to 3 percent slopes

Menahga

Extent: 90 percent of the unit
Landform(s): flats on outwash plains
Slope gradient: 0 to 3 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	4.5 to 6.5
Bw -- 3 to 25 in	coarse sand	rapid	1.10 to 1.54 in	4.5 to 6.5
C -- 25 to 60 in	coarse sand	rapid	1.73 to 2.43 in	5.6 to 7.8

Meehan

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

458A--Menahga loamy sand, 0 to 3 percent slopes

Friendship

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

Roscommon

Extent: 2 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

458A--Menahga loamy sand, 0 to 3 percent slopes

Demontreville

Extent: 2 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

458B--Menahga loamy sand, 3 to 8 percent slopes

Menahga

Extent: 90 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 3 to 8 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	4.5 to 6.5
Bw -- 3 to 20 in	sand	rapid	0.85 to 1.19 in	4.5 to 6.5
C -- 20 to 60 in	sand	rapid	1.99 to 2.78 in	5.6 to 7.8

Roscommon

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

458B--Menahga loamy sand, 3 to 8 percent slopes

Meehan

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

458C--Menahga loamy sand, 8 to 15 percent slopes

Menahga

Extent: 90 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 8 to 15 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

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

Meehan

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

458C--Menahga loamy sand, 8 to 15 percent slopes

Roscommon

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

458E--Menahga loamy sand, 15 to 40 percent slopes

Menahga

Extent: 90 percent of the unit
Landform(s): hillslopes on outwash plains, ridges on outwash plains
Slope gradient: 15 to 40 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
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	0.51 to 0.61 in	4.5 to 6.5
E -- 5 to 22 in	sand	rapid	0.85 to 1.19 in	4.5 to 6.5
C -- 22 to 60 in	sand	rapid	1.89 to 2.65 in	5.6 to 7.8

Roscommon

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

458E--Menahga loamy sand, 15 to 40 percent slopes

Meehan

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

540--Seelyeville muck

Seelyeville

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

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 20 in	muck	moderately rapid	7.03 to 9.04 in	
Oa2,Oa3 -- 20 to 60 in	muck	moderately rapid	13.92 to 17.89 in	

Very Poorly drained mineral soils

Extent: 8 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

540--Seelyeville muck

Greenwood

Extent: 7 percent of the unit
Landform(s): -- error in exists on --
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: yes
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

541--Rifle mucky peat

Rifle

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

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe1 -- 0 to 11 in	mucky peat	rapid	5.29 to 6.39 in	
Oe2,Oe3,Oe4 -- 11 to 60 in	mucky peat	rapid	23.43 to 28.31 in	

Very Poorly drained mineral soils

Extent: 8 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

541--Rifle mucky peat

Greenwood

Extent: 7 percent of the unit
Landform(s): raised bogs on moraines
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: yes
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

543--Markey muck

Markey

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

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 30 in	muck	moderately rapid	10.47 to 13.46 in	
Cg -- 30 to 60 in	sand	rapid	0.90 to 2.39 in	

Roscommon

Extent: 8 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

543--Markey muck

Meehan

Extent: 7 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

544--Cathro muck

Cathro

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

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1,Oa2 -- 0 to 40 in	muck	moderately rapid	18.07 to 22.09 in	
Cg -- 40 to 60 in	loam	moderate	2.17 to 3.74 in	

Nokay

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

544--Cathro muck

Staples

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

Runeberg

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

549--Greenwood peat

Greenwood

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

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

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Oi	0 to 8 in	peat	very rapid	4.33 to 5.12 in	
Oe1,Oe2	8 to 60 in	mucky peat	rapid	23.39 to 28.58 in	

Roscommon

Extent: 5 percent of the unit
Landform(s): -- error in exists on --
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: yes
Hydrologic group:
Potential for frost action:

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

549--Greenwood peat

Nokasippi

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

Cathro

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

564--Friendship loamy sand

Friendship

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines, flats on outwash plains
Slope gradient: 0 to 3 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loamy sand	rapid	0.31 to 0.47 in	4.5 to 7.3
Bw1 -- 4 to 9 in	sand	rapid	0.26 to 0.56 in	4.5 to 6.5
Bw2,BC -- 9 to 37 in	sand	rapid	1.40 to 2.24 in	4.5 to 7.3
C -- 37 to 60 in	sand	rapid	0.91 to 1.60 in	5.1 to 7.8

Roscommon

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

564--Friendship loamy sand

Huntersville

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Menahga

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

620B--Cutaway loamy sand, 1 to 10 percent slopes

Cutaway

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 10 percent
Parent material: sandy outwash over loamy glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 2 in	loamy sand	rapid	0.20 to 0.24 in	5.1 to 6.5
Bw -- 2 to 27 in	sand	rapid	1.49 to 2.73 in	5.1 to 6.5
2E/B,2Bt,2BC -- 27 to 42 in	loam	moderate	1.84 to 2.92 in	5.1 to 7.8
2C -- 42 to 60 in	sandy loam	moderate	2.13 to 3.37 in	6.1 to 8.4

Sandwick

Extent: 5 percent of the unit
Landform(s): drainageways on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

620B--Cutaway loamy sand, 1 to 10 percent slopes

Menahga

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Warba

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

620D--Cutaway loamy sand, 10 to 25 percent slopes

Cutaway

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 10 to 25 percent
Parent material: sandy outwash over loamy glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	5.1 to 6.5
Bw -- 3 to 31 in	loamy sand	rapid	1.68 to 3.07 in	5.1 to 6.5
2E/B.2Bt,2BC -- 31 to 43 in	loam	moderate	1.42 to 2.24 in	5.1 to 7.8
2C -- 43 to 60 in	sandy loam	moderate	2.03 to 3.22 in	6.1 to 8.4

Sandwick

Extent: 5 percent of the unit
Landform(s): -- error in exists on --
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: yes
Hydrologic group:
Potential for frost action:

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

620D--Cutaway loamy sand, 10 to 25 percent slopes

Menahga

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Warba

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

625--Sandwick loamy sand

Sandwick

Extent: 85 percent of the unit
Landform(s): drainageways on moraines, swales on moraines
Slope gradient: 0 to 2 percent
Parent material: sandy outwash over loamy glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated: 3w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loamy sand	rapid	0.41 to 0.51 in	5.1 to 6.5
E,Bw -- 5 to 28 in	loamy sand	rapid	1.37 to 2.06 in	5.1 to 6.5
2B/E,2Btg -- 28 to 43 in	clay loam	moderately slow	1.50 to 2.39 in	5.6 to 7.3
2Cg -- 43 to 60 in	loam	moderately slow	0.34 to 1.69 in	6.6 to 8.4

Stuntz

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

625--Sandwick loamy sand

Warba

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Cutaway

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

665B--Menahga loamy sand, moraine, 3 to 8 percent slopes

Menahga, moraine

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 3 to 8 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	4.5 to 6.5
Bw -- 3 to 30 in	loamy sand	rapid	1.87 to 2.41 in	4.5 to 6.5
C -- 30 to 60 in	coarse sand	rapid	1.50 to 2.09 in	5.6 to 6.5

Demontreville

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

665B--Menahga loamy sand, moraine, 3 to 8 percent slopes

Cushing

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

Cutaway

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

665B--Menahga loamy sand, moraine, 3 to 8 percent slopes

Warba

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

665C--Menahga loamy sand, moraine, 8 to 15 percent slopes

Menahga, moraine

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 15 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 5 in	loamy sand	rapid	0.51 to 0.61 in	4.5 to 6.5
Bw -- 5 to 25 in	sand	rapid	1.41 to 1.81 in	4.5 to 6.5
C -- 25 to 60 in	sand	rapid	1.73 to 2.43 in	5.6 to 6.5

Demontreville

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

665C--Menahga loamy sand, moraine, 8 to 15 percent slopes

Cushing

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

Cutaway

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

665C--Menahga loamy sand, moraine, 8 to 15 percent slopes

Warba

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

665E--Menahga loamy sand, moraine, 15 to 40 percent slopes

Menahga, moraine

Extent: 90 percent of the unit
Landform(s): hillslopes on moraines, ridges on moraines
Slope gradient: 15 to 40 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
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,E -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	4.5 to 6.5
Bw -- 3 to 20 in	sand	rapid	1.19 to 1.52 in	4.5 to 6.5
C -- 20 to 60 in	sand	rapid	1.99 to 2.78 in	5.6 to 6.5

Demontreville

Extent: 10 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: no
Hydrologic group:
Potential for frost action:

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

679B--Menahga loamy sand, loamy substratum, 2 to 8 percent slopes

Menahga, loamy substratum

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines, hillslopes on outwash plains
Slope gradient: 2 to 8 percent
Parent material: sandy outwash deposits over loamy glacial 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) .15
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	5.1 to 7.3
E -- 3 to 9 in	loamy sand	rapid	0.41 to 0.59 in	5.1 to 6.5
Bw -- 9 to 54 in	sand	rapid	3.14 to 4.49 in	5.1 to 6.5
2C -- 54 to 60 in	sandy loam	moderate	0.53 to 0.83 in	5.1 to 7.8

Cutaway

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

679B--Menahga loamy sand, loamy substratum, 2 to 8 percent slopes

Warba

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

Cushing

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

679B--Menahga loamy sand, loamy substratum, 2 to 8 percent slopes

Demontreville

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

Friendship

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

679C--Menahga loamy sand, loamy substratum, 8 to 15 percent slopes

Menahga, loamy substratum

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines, hillslopes on outwash plains
Slope gradient: 8 to 15 percent
Parent material: sandy outwash deposits over loamy glacial 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) .15
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	5.1 to 7.3
E,Bw1 -- 3 to 27 in	loamy sand	rapid	1.65 to 2.36 in	5.1 to 6.5
Bw2 -- 27 to 35 in	sand	rapid	0.58 to 0.83 in	5.1 to 6.5
2C -- 35 to 60 in	sandy loam	moderate	2.23 to 3.47 in	5.1 to 7.8

Cutaway

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

679C--Menahga loamy sand, loamy substratum, 8 to 15 percent slopes

Warba

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

Cushing

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

679C--Menahga loamy sand, loamy substratum, 8 to 15 percent slopes

Demontreville

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

Friendship

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

684--Bergkeller sandy loam, moderately wet

Bergkeller, moderately wet

Extent: 90 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 0 to 1 percent
Parent material: loamy glacial till over sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 2s
Hydric soil: no
Hydrologic group: B/D
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	sandy loam	moderately rapid	0.82 to 0.92 in	4.5 to 6.0
Bw -- 5 to 20 in	sandy loam	moderately rapid	1.35 to 1.94 in	4.5 to 6.0
2Bt -- 20 to 33 in	sandy loam	moderate	1.26 to 2.02 in	5.1 to 6.0
3BC,3C -- 33 to 60 in	gravelly coarse sand	rapid	1.36 to 1.90 in	5.6 to 7.3

Friendship

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

684--Bergkeller sandy loam, moderately wet

Roscommon

Extent: 3 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

Meehan

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

701--Runeberg mucky loam, depressional

Runeberg, depressional

Extent: 85 percent of the unit
Landform(s): drainageways on interdrumlins, depressions on moraines
Slope gradient: 0 to 2 percent
Parent material: loamy glacial 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A1 -- 0 to 3 in	mucky loam	moderate	0.57 to 0.79 in	6.1 to 7.3
A2,A3,Bg -- 3 to 26 in	loam	moderately slow	2.74 to 4.11 in	6.1 to 7.3
Cg -- 26 to 60 in	sandy loam	moderately slow	2.03 to 4.40 in	7.4 to 8.4

Huntersville

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

701--Runeberg mucky loam, depressional

Paddock

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

Roscommon

Extent: 3 percent of the unit
Landform(s): drainageways on drumlins
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: yes
Hydrologic group:
Potential for frost action:

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

701--Runeberg mucky loam, depressional

Cathro

Extent: 3 percent of the unit
Landform(s): depressions on drumlins
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: yes
Hydrologic group:
Potential for frost action:

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

Staples

Extent: 3 percent of the unit
Landform(s): swales on drumlins
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: yes
Hydrologic group:
Potential for frost action:

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

703--Paddock loam

Paddock

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins
Slope gradient: 0 to 2 percent
Parent material: loamy dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
Land capability, nonirrigated: 2w
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 7 in	loam	moderate	1.42 to 1.56 in	5.6 to 7.3
E,BE -- 7 to 20 in	sandy loam	moderate	1.56 to 2.08 in	5.6 to 6.5
Bt, BC -- 20 to 45 in	sandy loam	moderately slow	2.98 to 3.97 in	6.6 to 7.3
Cd -- 45 to 60 in	sandy loam	impermeable	0.00 to 0.60 in	6.6 to 8.4

Huntersville

Extent: 8 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: no
Hydrologic group:
Potential for frost action:

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

703--Paddock loam

Runeberg

Extent: 7 percent of the unit
Landform(s): depressions on drumlins
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: yes
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

720B--Blowers soils, 1 to 5 percent slopes

Blowers, stony

Extent: 0 to 85 percent of the unit
Landform(s): drumlins on till plains
Slope gradient: 1 to 5 percent
Parent material: coarse-loamy till over dense coarse-loamy basal till
Restrictive feature(s): densic material at 40 to 57 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: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	sandy loam	moderate	0.38 to 0.47 in	5.1 to 7.3
E/B -- 3 to 19 in	sandy loam	moderate	1.57 to 2.20 in	5.1 to 6.5
B/E -- 19 to 26 in	sandy loam	moderate	0.75 to 1.05 in	5.6 to 7.3
Bt -- 26 to 35 in	sandy loam	moderate	0.91 to 1.27 in	5.6 to 7.3
BC -- 35 to 45 in	sandy loam	moderately slow	0.85 to 1.23 in	6.1 to 8.4
Cd -- 45 to 79 in	sandy loam	impermeable	2.03 to 3.05 in	6.6 to 8.4

720B--Blowers soils, 1 to 5 percent slopes

Blowers

Extent: 0 to 85 percent of the unit
Landform(s): drumlins on till plains
Slope gradient: 1 to 5 percent
Parent material: coarse-loamy till over dense coarse-loamy basal till
Restrictive feature(s): densic material at 40 to 57 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: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 7 in	sandy loam	moderate	0.78 to 1.06 in	5.1 to 7.3
E/B -- 7 to 19 in	sandy loam	moderate	1.18 to 1.65 in	5.1 to 6.5
B/E -- 19 to 26 in	sandy loam	moderate	0.75 to 1.05 in	5.6 to 7.3
Bt -- 26 to 35 in	sandy loam	moderate	0.91 to 1.27 in	5.6 to 7.3
BC -- 35 to 45 in	sandy loam	moderately slow	0.85 to 1.23 in	6.1 to 8.4
Cd -- 45 to 79 in	sandy loam	impermeable	2.03 to 3.05 in	6.6 to 8.4

720B--Blowers soils, 1 to 5 percent slopes

Rockwood

Extent: 8 percent of the unit
Landform(s): drumlins on till plains
Slope gradient: 2 to 6 percent
Parent material: coarse-loamy till over dense coarse-loamy basal till
Restrictive feature(s): densic material
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) .24
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	sandy loam	moderate	1.02 to 1.42 in	5.1 to 6.5
E -- 8 to 16 in	sandy loam	moderate	0.99 to 1.24 in	5.1 to 6.5
BE -- 16 to 37 in	sandy loam	moderate	2.50 to 3.13 in	5.6 to 7.3
Bt -- 37 to 46 in	sandy loam	moderately slow	1.09 to 1.36 in	5.6 to 7.3
Cd -- 46 to 79 in	sandy loam	impermeable	0.00 to 1.31 in	6.1 to 8.4

Paddock

Extent: 4 percent of the unit
Landform(s): drumlins on till plains, drumlins on till plains
Slope gradient: 0 to 2 percent
Parent material: loamy dense basal till
Restrictive feature(s): densic material
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated: 2w
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	sandy loam	moderate	1.18 to 1.63 in	5.6 to 7.3
BE -- 9 to 22 in	sandy loam	moderate	1.56 to 2.08 in	5.6 to 6.5
Bt -- 22 to 43 in	sandy loam	moderately slow	2.50 to 3.34 in	6.6 to 7.3
Cd -- 43 to 79 in	sandy loam	impermeable	0.00 to 1.43 in	6.6 to 8.4

720B--Blowers soils, 1 to 5 percent slopes

Becida

Extent: 2 percent of the unit
Landform(s): flats on drumlins on till plains, swales on drumlins on till plains
Slope gradient: 0 to 2 percent
Parent material: loamy dense basal till
Restrictive feature(s): densic material
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) .32
Land capability, nonirrigated: 2w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 8 in	loam	moderate	1.57 to 1.73 in	5.6 to 7.3
E -- 8 to 13 in	fine sandy loam	moderate	0.61 to 0.82 in	5.6 to 6.5
E/B -- 13 to 27 in	sandy loam	moderate	1.70 to 2.27 in	5.1 to 6.5
Btg -- 27 to 58 in	sandy loam	slow	0.61 to 1.84 in	5.1 to 6.5
Cd -- 58 to 79 in	sandy loam	very slow	0.42 to 1.25 in	6.6 to 8.4

Runeberg

Extent: 1 percent of the unit
Landform(s): depressions on interdrumlins on till plains
Slope gradient: 0 to 2 percent
Parent material: loamy glacial 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 10 in	sandy loam	moderate	1.28 to 2.17 in	6.1 to 7.3
Bg -- 10 to 26 in	sandy loam	moderately slow	1.94 to 2.91 in	6.1 to 7.3
Cg -- 26 to 79 in	sandy loam	moderately slow	3.17 to 6.86 in	7.4 to 8.4

730A--Sanburn sandy loam, 1 to 3 percent slopes

Sanburn

Extent: 85 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 1 to 3 percent
Parent material: loamy mantled outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 3e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	sandy loam	moderately rapid	0.38 to 0.47 in	5.1 to 6.5
E -- 3 to 16 in	sandy loam	moderately rapid	0.91 to 1.17 in	5.1 to 6.5
Bt -- 16 to 22 in	gravelly sandy loam	moderately rapid	0.41 to 0.71 in	5.1 to 6.5
2BC,2C -- 22 to 60 in	gravelly sand	rapid	0.76 to 1.51 in	5.1 to 6.5

Cromwell

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

730A--Sanburn sandy loam, 1 to 3 percent slopes

Meehan

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

Menahga

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

730A--Sanburn sandy loam, 1 to 3 percent slopes

Mahtomedi

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

Flak

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

730B--Sanburn sandy loam, 3 to 8 percent slopes

Sanburn

Extent: 85 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 3 to 8 percent
Parent material: loamy mantled outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 3e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	sandy loam	moderately rapid	0.61 to 0.77 in	5.1 to 6.5
E -- 5 to 16 in	sandy loam	moderately rapid	0.77 to 0.99 in	5.1 to 6.5
2Bt -- 16 to 21 in	gravelly sandy loam	moderately rapid	0.33 to 0.57 in	5.1 to 6.5
2C -- 21 to 60 in	gravelly coarse sand	rapid	0.78 to 1.56 in	5.1 to 6.5

Flak

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

730B--Sanburn sandy loam, 3 to 8 percent slopes

Mahtomedi

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

Cromwell

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

730B--Sanburn sandy loam, 3 to 8 percent slopes

menahga

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

730C--Sanburn sandy loam, 8 to 15 percent slopes

Sanburn

Extent: 85 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 8 to 15 percent
Parent material: loamy mantled outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 7 in	sandy loam	moderately rapid	0.85 to 1.06 in	5.1 to 6.5
E -- 7 to 16 in	sandy loam	moderately rapid	0.63 to 0.81 in	5.1 to 6.5
Bt -- 16 to 23 in	sandy loam	moderately rapid	0.47 to 0.80 in	5.1 to 6.5
2C -- 23 to 60 in	coarse sand	rapid	0.74 to 1.48 in	5.1 to 6.5

Menahga

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

730C--Sanburn sandy loam, 8 to 15 percent slopes

Mahtomedi

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Flak

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

731A--Sanburn loamy sand, 0 to 3 percent slopes

Sanburn

Extent: 85 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 0 to 3 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .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,E1 -- 0 to 6 in	loamy sand	moderately rapid	0.53 to 0.65 in	5.1 to 6.5
E2 -- 6 to 15 in	loamy sand	moderately rapid	0.66 to 0.85 in	5.1 to 6.5
Bt -- 15 to 26 in	sandy loam	moderately rapid	0.74 to 1.28 in	5.1 to 6.5
2BC,2C -- 26 to 60 in	sand	rapid	0.68 to 1.35 in	5.1 to 6.5

Roscommon

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

731A--Sanburn loamy sand, 0 to 3 percent slopes

Menahga

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Friendship

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

731B--Sanburn loamy sand, 3 to 8 percent slopes

Sanburn

Extent: 85 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 3 to 8 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .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 8 in	loamy sand	moderately rapid	0.71 to 0.87 in	5.1 to 6.5
E -- 8 to 19 in	loamy sand	moderately rapid	0.77 to 0.99 in	5.1 to 6.5
Bt -- 19 to 30 in	sandy loam	moderately rapid	0.77 to 1.32 in	5.1 to 6.5
2C -- 30 to 60 in	sand	rapid	0.60 to 1.20 in	5.1 to 6.5

Roscommon

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

731B--Sanburn loamy sand, 3 to 8 percent slopes

Menahga

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Friendship

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

731C--Sanburn loamy sand, 8 to 15 percent slopes

Sanburn

Extent: 85 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 8 to 15 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 8 in	loamy sand	moderately rapid	0.71 to 0.87 in	5.1 to 6.5
E -- 8 to 14 in	loamy sand	moderately rapid	0.44 to 0.57 in	5.1 to 6.5
Bt -- 14 to 22 in	sandy loam	moderately rapid	0.55 to 0.94 in	5.1 to 6.5
C -- 22 to 60 in	coarse sand	rapid	0.76 to 1.51 in	5.1 to 6.5

Roscommon

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains
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: no
Hydrologic group:
Potential for frost action:

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

731C--Sanburn loamy sand, 8 to 15 percent slopes

Menahga

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Frienship

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

732--Bushville loamy sand, 1 to 3 percent slopes

Bushville

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins, hillslopes on moraines
Slope gradient: 1 to 3 percent
Parent material: sandy outwash over dense basal 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loamy sand	rapid	0.51 to 0.61 in	5.1 to 6.5
E -- 5 to 27 in	loamy fine sand	rapid	1.30 to 1.95 in	5.1 to 6.5
2Bt -- 27 to 38 in	sandy loam	moderate	1.10 to 1.65 in	5.1 to 6.5
2BC -- 38 to 48 in	sandy loam	slow	0.31 to 0.82 in	5.1 to 7.3
2Cd -- 48 to 60 in	sandy loam	impermeable	0.00 to 0.47 in	5.6 to 7.3

Nokay

Extent: 5 percent of the unit
Landform(s): swales on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

732--Bushville loamy sand, 1 to 3 percent slopes

Nokasippi

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

Watab

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

739B--Wabedo sandy loam, 1 to 6 percent slopes, very stony

Wabedo, very stony

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins
Slope gradient: 1 to 6 percent
Parent material: loamy dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	sandy loam	moderately rapid	0.67 to 0.92 in	4.5 to 6.0
Bw -- 5 to 27 in	sandy loam	moderate	2.65 to 3.53 in	4.5 to 6.5
BC -- 27 to 47 in	sandy loam	slow	0.59 to 1.57 in	5.1 to 7.3
Cd -- 47 to 60 in	sandy loam	impermeable	0.00 to 0.52 in	5.1 to 7.3

Nokay

Extent: 8 percent of the unit
Landform(s): swales on drumlins
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: yes
Hydrologic group:
Potential for frost action:

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

739B--Wabedo sandy loam, 1 to 6 percent slopes, very stony

Very Poorly drained organic soils

Extent: 7 percent of the unit
Landform(s): depressions on drumlins
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: yes
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

742B--Flak sandy loam, 3 to 8 percent slopes, very stony

Flak, very stony

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins, hillslopes on moraines
Slope gradient: 3 to 8 percent
Parent material: loamy dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
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	sandy loam	moderately rapid	0.51 to 0.71 in	4.5 to 6.5
E -- 4 to 13 in	sandy loam	moderately rapid	1.09 to 1.45 in	5.1 to 6.5
Bt -- 13 to 22 in	sandy loam	moderate	1.09 to 1.45 in	5.1 to 6.5
BC -- 22 to 41 in	sandy loam	slow	0.00 to 1.13 in	5.1 to 7.3
Cd -- 41 to 60 in	sandy loam	impermeable	0.00 to 0.76 in	5.6 to 7.3

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

742B--Flak sandy loam, 3 to 8 percent slopes, very stony

Nokay

Extent: 5 percent of the unit
Landform(s): swales on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

Wabedo

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

742C--Flak sandy loam, 8 to 15 percent slopes, very stony

Flak, very stony

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins, hillslopes on moraines
Slope gradient: 8 to 15 percent
Parent material: loamy dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated: 7s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	sandy loam	moderately rapid	0.51 to 0.71 in	4.5 to 6.5
E -- 4 to 15 in	sandy loam	moderately rapid	1.32 to 1.76 in	5.1 to 6.5
Bt -- 15 to 24 in	sandy loam	moderate	1.09 to 1.45 in	5.1 to 6.5
BC -- 24 to 30 in	sandy loam	slow	0.00 to 0.35 in	5.1 to 7.3
Cd -- 30 to 60 in	sandy loam	impermeable	0.00 to 1.20 in	5.6 to 7.3

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

742C--Flak sandy loam, 8 to 15 percent slopes, very stony

Nokay

Extent: 5 percent of the unit
Landform(s): swales on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

Wabedo

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

750B--Pomroy loamy sand, 3 to 8 percent slopes, very stony

Pomroy, very stony

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins
Slope gradient: 3 to 8 percent
Parent material: sandy outwash over dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loamy sand	rapid	0.39 to 0.47 in	5.1 to 6.5
Bw,E1 -- 4 to 14 in	loamy fine sand	rapid	0.61 to 0.92 in	5.1 to 6.5
E2 -- 14 to 24 in	fine sand	moderately slow	0.00 to 0.79 in	5.1 to 6.5
2Bt -- 24 to 42 in	sandy loam	slow	0.00 to 1.45 in	5.6 to 7.3
2Cd -- 42 to 60 in	sandy loam	moderately slow	0.00 to 0.71 in	5.6 to 7.3

Watab

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

750B--Pomroy loamy sand, 3 to 8 percent slopes, very stony

Wabedo

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Flak

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

750C--Pomroy loamy sand, 8 to 15 percent slopes, very stony

Pomroy, very stony

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins
Slope gradient: 8 to 15 percent
Parent material: sandy outwash over dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: C
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	5.1 to 6.5
E -- 3 to 7 in	sand	rapid	0.24 to 0.35 in	5.1 to 6.5
Bw -- 7 to 34 in	sand	moderately slow	0.00 to 2.14 in	5.1 to 6.5
2Bt -- 34 to 40 in	sandy loam	slow	0.00 to 0.50 in	5.6 to 7.3
2Cd -- 40 to 60 in	sandy loam	moderately slow	0.00 to 0.79 in	5.6 to 7.3

Menahga

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

750C--Pomroy loamy sand, 8 to 15 percent slopes, very stony

Slopes of 1 to 3 percent

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Watab

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

773B--Warba-Cromwell complex, 1 to 8 percent slopes

Warba

Extent: 45 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 3 to 8 percent
Parent material: loamy glacial 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) .43
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 17 in	very fine sandy loam	moderately rapid	3.05 to 3.89 in	5.1 to 6.5
E/B,B/E,Bt -- 17 to 36 in	loam	moderately slow	3.02 to 3.59 in	5.1 to 7.3
C -- 36 to 60 in	loam	moderate	3.84 to 4.56 in	6.6 to 8.4

Cromwell

Extent: 40 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 8 percent
Parent material: loamy mantled outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated: 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,Bw -- 0 to 16 in	sandy loam	moderate	2.58 to 2.91 in	4.5 to 6.0
2Bw,2BC,2C -- 16 to 60 in	sand	rapid	2.19 to 3.06 in	5.1 to 7.3

773B--Warba-Cromwell complex, 1 to 8 percent slopes

Mahtomedi

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Cutaway

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

773B--Warba-Cromwell complex, 1 to 8 percent slopes

Very Poorly drained organic soils

Extent: 3 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

Stuntz

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

773E--Warba-Cromwell complex, 8 to 25 percent slopes

Warba

Extent: 45 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 25 percent
Parent material: loamy glacial 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) .43
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 11 in	very fine sandy loam	moderately rapid	1.98 to 2.54 in	5.1 to 6.5
B/E,Bt -- 11 to 45 in	clay loam	moderately slow	5.42 to 6.43 in	5.1 to 7.3
C -- 45 to 60 in	loam	moderate	2.39 to 2.84 in	6.6 to 8.4

Cromwell

Extent: 40 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 25 percent
Parent material: loamy mantled outwash deposits
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) .24
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,Bw -- 0 to 23 in	sandy loam	moderate	3.65 to 4.11 in	4.5 to 6.0
2Bw,2BC,2C -- 23 to 60 in	sand	rapid	1.85 to 2.59 in	5.1 to 7.3

773E--Warba-Cromwell complex, 8 to 25 percent slopes

Mahtomedi

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Cutaway

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

773E--Warba-Cromwell complex, 8 to 25 percent slopes

Very Poorly drained organic soils

Extent: 3 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

Stuntz

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

788--Cathro-Seelyeville complex

Cathro

Extent: 45 percent of the unit
Landform(s): depressions on moraines, depressions on till-floored lake plains
Slope gradient: 0 to 2 percent
Parent material: herbaceous organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 32 in	muck	moderately rapid	14.35 to 17.54 in	
Cg -- 32 to 60 in	very fine sandy loam	moderate	3.07 to 5.31 in	

Seelyeville

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

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 56 in	muck	moderately rapid	19.57 to 25.16 in	
Oa2 -- 56 to 60 in	fine sandy loam	moderate	0.43 to 0.75 in	

788--Cathro-Seelyeville complex

Greenwood

Extent: 8 percent of the unit
Landform(s): raised bogs
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: yes
Hydrologic group:
Potential for frost action:

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

Very Poorly drained mineral soils

Extent: 7 percent of the unit
Landform(s): depressions
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: yes
Hydrologic group:
Potential for frost action:

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

797--Mooselake and Lupton soils

Mooselake

Extent: 45 percent of the unit
Landform(s): depressions on moraines, depressions on outwash plains, depressions on till-floored lake plains
Slope gradient: 0 to 1 percent
Parent material: moderately decomposed woody organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

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

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe --	0 to 29 in	mucky peat	rapid	10.20 to 16.02 in	
Oa,O'e1,O'e2 --	29 to 60 in	mucky peat	rapid	12.28 to 15.35 in	

Lupton

Extent: 45 percent of the unit
Landform(s): depressions on moraines, depressions on outwash plains, depressions on till-floored lake plains
Slope gradient: 0 to 2 percent
Parent material: highly decomposed woody organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

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

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

797--Mooselake and Lupton soils

Very Poorly drained mineral soils

Extent: 5 percent of the unit
Landform(s): depressions
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: yes
Hydrologic group:
Potential for frost action:

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

Greenwood

Extent: 5 percent of the unit
Landform(s): raised bogs
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: yes
Hydrologic group:
Potential for frost action:

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

799--Bowstring-Seelyeville complex, frequently flooded

Bowstring, frequently flooded

Extent: 45 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: very poorly drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 32 in	muck	moderately rapid	11.16 to 14.35 in	
Cg -- 32 to 40 in	stratified sand to fine sandy loam	rapid	0.66 to 1.16 in	
Oa2 -- 40 to 60 in	muck	moderately rapid	6.89 to 8.86 in	

Seelyeville, frequently flooded

Extent: 40 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 2 percent
Parent material: herbaceous organic material
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: very poorly drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 10 in	muck	moderately rapid	3.44 to 4.43 in	
Oa2,Oa3 -- 10 to 60 in	muck	moderately rapid	17.50 to 22.50 in	

799--Bowstring-Seelyeville complex, frequently flooded

Markey

Extent: 5 percent of the unit
Landform(s): depressions
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: yes
Hydrologic group:
Potential for frost action:

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

Cathro

Extent: 5 percent of the unit
Landform(s): depressions
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: yes
Hydrologic group:
Potential for frost action:

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

799--Bowstring-Seelyeville complex, frequently flooded

Greenwood

Extent: 5 percent of the unit
Landform(s): raised bogs
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: yes
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

870B--Itasca-Goodland complex, 1 to 8 percent slopes

Itasca

Extent: 45 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 8 percent
Parent material: silty mantled loamy glacial 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) .55
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
E,Bw -- 0 to 12 in	silt loam	moderate	2.60 to 2.83 in	5.1 to 6.5
E' -- 12 to 20 in	silt loam	moderate	1.41 to 1.82 in	5.1 to 6.0
E/B,2Bt -- 20 to 43 in	sandy loam	moderate	2.51 to 4.34 in	5.6 to 7.3
2C -- 43 to 60 in	sandy loam	moderate	1.86 to 3.22 in	6.6 to 8.4

Goodland

Extent: 40 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 8 percent
Parent material: silty mantled loamy sediments over outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .55
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,E,Bw,E' -- 0 to 13 in	silt loam	moderate	2.60 to 3.12 in	5.1 to 6.5
E/B,2Bt -- 13 to 27 in	sandy loam	moderate	1.65 to 2.62 in	5.1 to 6.5
3BC -- 27 to 35 in	loamy coarse sand	moderately rapid	0.50 to 0.83 in	5.1 to 6.5
3C -- 35 to 60 in	coarse sand	rapid	0.50 to 1.74 in	5.6 to 7.8

870B--Itasca-Goodland complex, 1 to 8 percent slopes

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

Stuntz

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

870B--Itasca-Goodland complex, 1 to 8 percent slopes

Sandy Mantle soils

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

870C--Itasca-Goodland complex, 8 to 15 percent slopes

Itasca

Extent: 45 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 15 percent
Parent material: silty mantled loamy glacial 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) .55
Land capability, nonirrigated: 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:			*Texture*	*Permeability*	*Available water capacity*	*pH*
E,Bw	--	0 to 6 in	silt loam	moderate	1.30 to 1.42 in	5.1 to 6.5
E'	--	6 to 20 in	very fine sandy loam	moderate	2.41 to 3.12 in	5.1 to 6.0
E/B,2Bt	--	20 to 48 in	sandy loam	moderate	3.07 to 5.31 in	5.6 to 7.3
2C	--	48 to 60 in	sandy loam	moderate	1.30 to 2.24 in	6.6 to 8.4

Goodland

Extent: 40 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 15 percent
Parent material: silty mantled loamy sediments over 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .55
Land capability, nonirrigated: 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:			*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E,Bw,E'	--	0 to 6 in	silt loam	moderate	1.18 to 1.42 in	5.1 to 6.5
E/B,2Bt	--	6 to 40 in	sandy loam	moderate	4.11 to 6.51 in	5.1 to 6.5
3BC	--	40 to 46 in	gravelly loamy sand	moderately rapid	0.35 to 0.59 in	5.1 to 6.5
3C	--	46 to 60 in	gravelly sand	rapid	0.28 to 0.96 in	5.6 to 7.8

870C--Itasca-Goodland complex, 8 to 15 percent slopes

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

Stuntz

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

870C--Itasca-Goodland complex, 8 to 15 percent slopes

Sandy Mantle soils

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

928B--DeMontreville-Mahtomedi-Cushing complex, 2 to 8 percent slopes

DeMontreville

Extent: 40 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 2 to 8 percent
Parent material: sandy outwash over loamy glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: C
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	5.1 to 7.3
Bw -- 2 to 22 in	loamy sand	rapid	1.20 to 1.81 in	5.1 to 7.3
2B/E,2Bt -- 22 to 39 in	sandy loam	moderately slow	1.35 to 2.37 in	5.6 to 6.5
2C -- 39 to 60 in	sandy loam	moderately slow	1.25 to 2.09 in	5.6 to 7.3

Mahtomedi

Extent: 25 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 2 to 8 percent
Parent material: sandy and gravelly outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	loamy sand	rapid	0.20 to 0.24 in	5.1 to 6.5
E -- 2 to 9 in	loamy sand	rapid	0.43 to 0.57 in	5.1 to 6.5
Bw -- 9 to 16 in	loamy sand	rapid	0.35 to 0.50 in	5.1 to 6.5
C -- 16 to 60 in	gravelly sand	rapid	1.75 to 3.93 in	5.1 to 7.4

928B--DeMontreville-Mahtomedi-Cushing complex, 2 to 8 percent slopes

Cushing

Extent: 20 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 2 to 8 percent
Parent material: loamy glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	fine sandy loam	moderate	0.31 to 0.69 in	5.1 to 7.8
E,B/E -- 3 to 19 in	sandy loam	moderate	1.57 to 3.46 in	5.1 to 7.8
Bt -- 19 to 32 in	loam	moderate	1.30 to 2.47 in	5.1 to 7.8
C -- 32 to 60 in	sandy loam	moderately slow	2.52 to 5.31 in	5.1 to 8.4

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

928B--DeMontreville-Mahtomedi-Cushing complex, 2 to 8 percent slopes

Meehan

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Alstad

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

928C--DeMontreville-Mahtomedi-Cushing complex, 8 to 15 percent slopes

DeMontreville

Extent: 40 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 15 percent
Parent material: sandy outwash over loamy glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: C
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 1 in	loamy sand	rapid	0.08 to 0.09 in	5.1 to 7.3
Bw -- 1 to 31 in	loamy sand	rapid	1.82 to 2.73 in	5.1 to 7.3
2B/E,2Bt -- 31 to 46 in	sandy loam	moderately slow	1.20 to 2.09 in	5.6 to 6.5
2C -- 46 to 60 in	sandy loam	moderately slow	0.83 to 1.38 in	5.6 to 7.3

Mahtomedi

Extent: 25 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 15 percent
Parent material: sandy and gravelly outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	loamy sand	rapid	0.20 to 0.24 in	5.1 to 6.5
E,B/E -- 2 to 4 in	loamy sand	rapid	0.12 to 0.16 in	5.1 to 6.5
Bw -- 4 to 19 in	loamy sand	rapid	0.75 to 1.05 in	5.1 to 6.5
C -- 19 to 60 in	gravelly coarse sand	rapid	1.64 to 3.69 in	5.1 to 7.4

928C--DeMontreville-Mahtomedi-Cushing complex, 8 to 15 percent slopes

Cushing

Extent: 20 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 15 percent
Parent material: loamy glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated: 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	fine sandy loam	moderate	0.31 to 0.69 in	5.1 to 7.8
E,B/E -- 3 to 21 in	sandy loam	moderate	1.77 to 3.90 in	5.1 to 7.8
Bt -- 21 to 40 in	loam	moderate	1.93 to 3.67 in	5.1 to 7.8
C -- 40 to 60 in	sandy loam	moderately slow	1.77 to 3.74 in	5.1 to 8.4

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: no
Hydrologic group:
Potential for frost action:

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

928C--DeMontreville-Mahtomedi-Cushing complex, 8 to 15 percent slopes

Meehan

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Alstad

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

928E--DeMontreville-Mahtomedi-Cushing complex, 15 to 40 percent slopes

DeMontreville

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

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated: 7e
Hydric soil: no
Hydrologic group: C
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loamy sand	rapid	0.39 to 0.47 in	5.1 to 7.3
Bw -- 4 to 33 in	sand	rapid	1.75 to 2.62 in	5.1 to 7.3
2B/E,2Bt -- 33 to 42 in	fine sandy loam	moderately slow	0.72 to 1.27 in	5.6 to 6.5
2C -- 42 to 60 in	sandy loam	moderately slow	1.06 to 1.77 in	5.6 to 7.3

Mahtomedi

Extent: 25 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 15 to 40 percent
Parent material: sandy and gravelly outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 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 3 in	loamy sand	rapid	0.31 to 0.38 in	5.1 to 6.5
Bw -- 3 to 23 in	sand	rapid	1.18 to 1.57 in	5.1 to 6.5
C -- 23 to 60 in	gravelly sand	rapid	1.48 to 3.33 in	5.1 to 7.4

928E--DeMontreville-Mahtomedi-Cushing complex, 15 to 40 percent slopes

Cushing

Extent: 20 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 15 to 30 percent
Parent material: loamy glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 7 in	fine sandy loam	moderate	0.71 to 1.56 in	5.1 to 7.8
E,B/E -- 7 to 16 in	loam	moderate	0.91 to 1.99 in	5.1 to 7.8
Bt -- 16 to 49 in	clay loam	moderate	3.27 to 6.21 in	5.1 to 7.8
C -- 49 to 60 in	sandy clay loam	moderately slow	0.99 to 2.09 in	5.1 to 8.4

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: no
Hydrologic group:
Potential for frost action:

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

928E--DeMontreville-Mahtomedi-Cushing complex, 15 to 40 percent slopes

Meehan

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Alstad

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

1002--Fluvaquents, frequently flooded

Fluvaquents, frequently flooded

Extent: 85 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 2 percent
Parent material: loamy and sandy alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .37
Land capability, nonirrigated: 8w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,Cg1 -- 0 to 12 in	silt loam	moderate	2.13 to 2.83 in	5.6 to 7.8
Cg2 -- 12 to 60 in	stratified loamy sand to silt loam	rapid	1.92 to 9.61 in	5.6 to 7.8

Staples

Extent: 8 percent of the unit
Landform(s): flats on flood plains
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: yes
Hydrologic group:
Potential for frost action:

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

1002--Fluvaquents, frequently flooded

Meehan

Extent: 7 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

1141--Runeberg loam, acid substratum, depressional

Runeberg, acid substratum, depressional

Extent: 85 percent of the unit
Landform(s): depressions on interdrumlins, drainageways on interdrumlins, depressions on moraines
Slope gradient: 0 to 2 percent
Parent material: loamy glacial 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: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A1 -- 0 to 10 in	loam	moderate	1.77 to 2.17 in	6.1 to 7.3
A2,Bg -- 10 to 27 in	sandy loam	moderately slow	2.03 to 3.05 in	6.1 to 7.3
Cg -- 27 to 60 in	sandy loam	moderately slow	1.98 to 4.30 in	6.1 to 7.3

Roscommon

Extent: 5 percent of the unit
Landform(s): depressions on drumlins
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: yes
Hydrologic group:
Potential for frost action:

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

1141--Runeberg loam, acid substratum, depressional

Staples

Extent: 4 percent of the unit
Landform(s): swales on drumlins
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: yes
Hydrologic group:
Potential for frost action:

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

Huntersville

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

1141--Runeberg loam, acid substratum, depressional

Cathro

Extent: 3 percent of the unit
Landform(s): depressions on drumlins
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: yes
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

1151B--Blowers sandy loam, acid substratum, 1 to 5 percent slopes

Blowers, acid substratum

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins
Slope gradient: 1 to 5 percent
Parent material: loamy dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .17
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	sandy loam	moderate	0.67 to 0.92 in	5.1 to 6.5
E,E/B -- 5 to 17 in	sandy loam	moderate	1.42 to 1.77 in	5.1 to 6.5
Bt1 -- 17 to 23 in	sandy loam	moderate	0.71 to 0.89 in	5.1 to 6.5
BC -- 23 to 35 in	sandy loam	moderately slow	1.46 to 1.83 in	5.1 to 6.5
Cd -- 35 to 60 in	sandy loam	impermeable	0.00 to 0.99 in	5.1 to 6.5

Paddock

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

1151B--Blowers sandy loam, acid substratum, 1 to 5 percent slopes

Redeye

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Huntersville

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

1153B--Huntersville loamy sand, acid substratum, 1 to 6 percent slopes

Huntersville, acid substratum

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins
Slope gradient: 1 to 6 percent
Parent material: sandy outwash over dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 14 in	loamy sand	rapid	1.42 to 1.70 in	5.1 to 6.5
E/B,Bw -- 14 to 26 in	loamy sand	rapid	0.47 to 1.18 in	5.1 to 6.5
2Bt -- 26 to 58 in	sandy loam	moderately slow	3.51 to 4.15 in	5.1 to 6.5
2Cd -- 58 to 60 in	sandy loam	impermeable	0.00 to 0.08 in	5.1 to 6.5

Layers of sand and gravel

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

1153B--Huntersville loamy sand, acid substratum, 1 to 6 percent slopes

Paddock

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

Friendship

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

1153B--Huntersville loamy sand, acid substratum, 1 to 6 percent slopes

Runeberg

Extent: 3 percent of the unit
Landform(s): depressions on drumlins
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: yes
Hydrologic group:
Potential for frost action:

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

Staples

Extent: 3 percent of the unit
Landform(s): swales on drumlins
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: yes
Hydrologic group:
Potential for frost action:

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

1155--Staples loamy sand, acid substratum

Staples, acid substratum

Extent: 85 percent of the unit
Landform(s): drainageways on interdrumlins, hillslopes on interdrumlins, drainageways on interdrumlins
Slope gradient: 0 to 2 percent
Parent material: sandy outwash over dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated: 3w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 4 in	loamy sand	rapid	0.39 to 0.47 in	5.1 to 6.5
Eg -- 4 to 27 in	loamy sand	rapid	1.60 to 2.28 in	5.1 to 6.5
2Btg -- 27 to 35 in	sandy loam	moderately slow	0.50 to 1.07 in	5.1 to 6.5
2BC,2Cd -- 35 to 60 in	sandy loam	impermeable	0.00 to 0.99 in	5.1 to 6.5

Huntersville

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

1155--Staples loamy sand, acid substratum

Paddock

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

Markey

Extent: 3 percent of the unit
Landform(s): depressions on drumlins
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: yes
Hydrologic group:
Potential for frost action:

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

1155--Staples loamy sand, acid substratum

Cathro

Extent: 3 percent of the unit
Landform(s): depressions on drumlins
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: yes
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

1157--Paddock loam, acid substratum

Paddock, acid substratum

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins
Slope gradient: 0 to 2 percent
Parent material: sandy outwash over dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
Land capability, nonirrigated: 2w
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 7 in	loam	moderate	1.42 to 1.56 in	5.1 to 7.3
E,BE -- 7 to 20 in	sandy loam	moderate	1.56 to 2.08 in	5.1 to 6.5
Bt,BC -- 20 to 41 in	sandy loam	moderately slow	2.50 to 3.34 in	5.1 to 6.5
Cd -- 41 to 60 in	sandy loam	impermeable	0.00 to 0.76 in	5.1 to 6.5

Runeberg

Extent: 8 percent of the unit
Landform(s): depressions on drumlins
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: yes
Hydrologic group:
Potential for frost action:

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

1157--Paddock loam, acid substratum

Huntersville

Extent: 7 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: no
Hydrologic group:
Potential for frost action:

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

1160B--Redeye loamy sand, acid substratum, 1 to 6 percent slopes

Redeye, acid substratum

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins
Slope gradient: 1 to 6 percent
Parent material: sandy outwash over dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
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 6 in	loamy sand	rapid	0.59 to 0.71 in	5.1 to 7.3
E -- 6 to 15 in	loamy fine sand	rapid	0.63 to 0.91 in	5.1 to 6.5
Bw -- 15 to 33 in	sand	rapid	1.27 to 1.81 in	5.1 to 6.5
2Bt -- 33 to 55 in	sandy loam	moderately slow	2.43 to 2.87 in	5.1 to 6.5
2Cd -- 55 to 60 in	sandy loam	impermeable	0.00 to 0.19 in	5.1 to 6.5

Poorly drained sandy soils

Extent: 5 percent of the unit
Landform(s): swales on drumlins
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: yes
Hydrologic group:
Potential for frost action:

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

1160B--Redeye loamy sand, acid substratum, 1 to 6 percent slopes

Blowers

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Huntersville

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

1160C--Redeye loamy sand, acid substratum, 6 to 12 percent slopes

Redeye, acid substratum

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins
Slope gradient: 6 to 12 percent
Parent material: sandy outwash over dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
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 7 in	loamy sand	rapid	0.71 to 0.85 in	5.1 to 7.3
E -- 7 to 14 in	loamy sand	rapid	0.50 to 0.71 in	5.1 to 6.5
Bw -- 14 to 27 in	loamy sand	rapid	0.88 to 1.26 in	5.1 to 6.5
2Bt -- 27 to 44 in	sandy loam	moderately slow	1.91 to 2.25 in	5.1 to 6.5
2Cd -- 44 to 60 in	sandy loam	impermeable	0.00 to 0.63 in	5.1 to 6.5

Poorly drained sandy and gravelly soils

Extent: 5 percent of the unit
Landform(s): swales on drumlins
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: yes
Hydrologic group:
Potential for frost action:

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

1160C--Redeye loamy sand, acid substratum, 6 to 12 percent slopes

Blowers

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Huntersville

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

1943--Roscommon loamy sand

Roscommon

Extent: 85 percent of the unit
Landform(s): depressions on outwash plains, drainageways on till-floored lake plains
Slope gradient: 0 to 2 percent
Parent material: sandy outwash 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) .05
Land capability, nonirrigated: 5w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	loamy sand	rapid	0.47 to 1.18 in	5.6 to 7.8
Cg -- 6 to 60 in	sand	rapid	2.70 to 4.85 in	5.6 to 8.4

Markey

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

1943--Roscommon loamy sand

Friendship

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Meehan

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

1956--Staples loamy sand

Staples

Extent: 85 percent of the unit
Landform(s): drainageways on interdrumlins
Slope gradient: 0 to 2 percent
Parent material: sandy outwash over dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 7 in	loamy sand	rapid	0.71 to 0.85 in	5.1 to 7.3
Eg -- 7 to 36 in	sand	rapid	2.01 to 2.87 in	5.1 to 7.3
2Btg -- 36 to 44 in	sandy loam	moderately slow	0.50 to 1.07 in	5.1 to 7.3
2BC,2Cd -- 44 to 60 in	sandy loam	slow	0.00 to 0.63 in	6.6 to 7.8

Paddock

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

1956--Staples loamy sand

Huntersville

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

Markey

Extent: 3 percent of the unit
Landform(s): depressions on drumlins
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: yes
Hydrologic group:
Potential for frost action:

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

1956--Staples loamy sand

Cathro

Extent: 3 percent of the unit
Landform(s): depressions on drumlins
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: yes
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

1957B--Friendship loamy sand, loamy substratum, 1 to 6 percent slopes

Friendship, loamy substratum

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins, hillslopes on moraines, hillslopes on outwash plains
Slope gradient: 1 to 6 percent
Parent material: sandy outwash over loamy glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 8 in	loamy sand	rapid	0.63 to 0.94 in	5.1 to 7.3
Bw,BC -- 8 to 48 in	sand	rapid	2.01 to 4.42 in	5.1 to 6.5
2C -- 48 to 60 in	loam	moderate	0.83 to 1.54 in	4.5 to 7.3

Roscommon

Extent: 8 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

1957B--Friendship loamy sand, loamy substratum, 1 to 6 percent slopes

Blowers

Extent: 7 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: no
Hydrologic group:
Potential for frost action:

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

1970B--Menahga loamy sand, till substratum, 2 to 8 percent slopes

Menahga, till substratum

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins, hillslopes on moraines
Slope gradient: 2 to 8 percent
Parent material: sandy outwash over loamy glacial 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) .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 4 in	loamy sand	rapid	0.39 to 0.47 in	5.1 to 7.3
E -- 4 to 9 in	loamy sand	rapid	0.51 to 0.61 in	5.1 to 6.5
Bw -- 9 to 49 in	sand	rapid	2.78 to 3.98 in	5.1 to 6.5
2C -- 49 to 60 in	sandy loam	impermeable	0.00 to 0.44 in	5.1 to 7.8

Friendship

Extent: 15 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: no
Hydrologic group:
Potential for frost action:

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

1970C--Menahga loamy sand, till substratum, 8 to 15 percent slopes

Menahga, till substratum

Extent: 85 percent of the unit
Landform(s): hillslopes on drumlins, hillslopes on moraines
Slope gradient: 8 to 15 percent
Parent material: sandy outwash over loamy glacial 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) .15
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	5.1 to 7.3
E -- 3 to 7 in	sand	rapid	0.39 to 0.47 in	5.1 to 6.5
Bw -- 7 to 48 in	sand	rapid	2.87 to 4.09 in	5.1 to 6.5
2C -- 48 to 60 in	sandy loam	impermeable	0.00 to 0.47 in	5.1 to 7.8

Friendship

Extent: 15 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: no
Hydrologic group:
Potential for frost action:

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

1978--Nokay loam, very stony

Nokay, very stony

Extent: 85 percent of the unit
Landform(s): drainageways on interdrumlins, flats on interdrumlins
Slope gradient: 0 to 2 percent
Parent material: dense basal till
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated: 6s
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	loam	moderate	0.92 to 1.13 in	4.5 to 5.5
E -- 5 to 17 in	sandy loam	moderately rapid	1.42 to 2.24 in	4.5 to 5.5
Bt -- 17 to 33 in	sandy loam	moderate	1.94 to 3.07 in	5.1 to 6.5
BC -- 33 to 41 in	sandy loam	slow	0.00 to 0.63 in	5.6 to 7.3
Cd -- 41 to 60 in	sandy loam	impermeable	0.00 to 0.76 in	5.6 to 7.3

Cathro

Extent: 5 percent of the unit
Landform(s): depressions on interdrumlins
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: yes
Hydrologic group:
Potential for frost action:

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

1978--Nokay loam, very stony

Wabedo

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Flak

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

1995B--Bergkeller sandy loam, 1 to 6 percent slopes

Bergkeller

Extent: 85 percent of the unit
Landform(s): flats on moraines
Slope gradient: 1 to 6 percent
Parent material: loamy glacial till over sandy and gravelly 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) .20
Land capability, nonirrigated: 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	sandy loam	moderately rapid	0.50 to 0.57 in	4.5 to 6.0
Bw -- 3 to 21 in	loamy sand	moderately rapid	1.59 to 2.30 in	4.5 to 6.0
2Bt -- 21 to 32 in	sandy loam	moderate	1.10 to 1.76 in	5.1 to 6.0
3BC,3C -- 32 to 60 in	sand	rapid	1.40 to 1.96 in	5.6 to 7.3

Sanburn

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

1995B--Bergkeller sandy loam, 1 to 6 percent slopes

Menahga

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

Cromwell

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

1995B--Bergkeller sandy loam, 1 to 6 percent slopes

Mahtomedi

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

1996--Cromwell sandy loam, moderately wet

Cromwell, moderately wet

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines, hillslopes on outwash plains
Slope gradient: 0 to 2 percent
Parent material: loamy mantled outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: B/D
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,Bw -- 0 to 17 in	sandy loam	moderate	2.71 to 3.05 in	4.5 to 6.0
2Bw,2BC,2C -- 17 to 60 in	sand	rapid	2.15 to 3.00 in	5.1 to 6.5

Cromwell, excessively drained

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

1996--Cromwell sandy loam, moderately wet

Roscommon

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

Watab

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

A10--Glossaqualfs

Glossaqualfs

Extent: 85 percent of the unit
Landform(s): flats on moraines, swales on moraines
Slope gradient: 0 to 2 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated: 4w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loam	moderate	0.63 to 0.76 in	5.6 to 7.3
Eg,E/B -- 3 to 28 in	fine sandy loam	moderate	2.98 to 4.71 in	5.1 to 6.5
Btg -- 28 to 36 in	loam	moderate	1.18 to 1.50 in	5.6 to 7.8
Cg -- 36 to 60 in	sandy loam	moderate	2.64 to 4.56 in	7.4 to 8.4

Very Poorly drained mineral soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

A10--Glossaqualfs

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

Warba

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

A12--Warba-Aquic Eutroboralfs, loamy-Aeric Glossaqualfs, loamy, association, nearly level to gently rolling

Warba

Extent: 40 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 0 to 10 percent
Parent material: loamy glacial 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) .43
Land capability, nonirrigated: 3e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 11 in	very fine sandy loam	moderately rapid	1.98 to 2.54 in	5.1 to 6.5
E/B,B/E,Bt -- 11 to 37 in	clay loam	moderately slow	4.16 to 4.94 in	5.1 to 7.3
C -- 37 to 60 in	loam	moderate	3.65 to 4.34 in	6.6 to 8.4

Aquic eutroboralfs, loamy

Extent: 30 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 2 percent
Parent material: outwash over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: 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: C
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	loamy fine sand	rapid	0.59 to 0.71 in	6.1 to 7.3
E -- 6 to 12 in	loamy fine sand	rapid	0.35 to 0.47 in	6.1 to 7.3
2Bt -- 12 to 32 in	clay loam	moderate	3.21 to 3.61 in	6.6 to 7.8
2C -- 32 to 60 in	loam	moderate	4.75 to 5.31 in	7.4 to 8.4

A12--Warba-Aquic Eutroboralfs, loamy-Aeric Glossaqualfs, loamy, association, nearly level to gently rolling

Aeric glossaqualfs, loamy

Extent: 15 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 2 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 2w
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

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

Cutaway

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

A12--Warba-Aquic Eutroboralfs, loamy-Aeric Glossaqualfs, loamy, association, nearly level to gently rolling

Menahga

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

Very Poorly drained mineral soils

Extent: 3 percent of the unit
Landform(s): depressions on moraines, drainageways on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

A12--Warba-Aquic Eutroboralfs, loamy-Aeric Glossaqualfs, loamy, association, nearly level to gently rolling

Cathro

Extent: 3 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

A13--Warba-Aquic Eutroboralfs, loamy-Aeric Glossaqualfs, loamy, association, nearly level to hilly

Warba

Extent: 40 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 10 to 25 percent
Parent material: loamy glacial 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) .43
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,E -- 0 to 11 in	very fine sandy loam	moderately rapid	1.98 to 2.54 in	5.1 to 6.5
E/B,B/E,Bt -- 11 to 37 in	clay loam	moderately slow	4.16 to 4.94 in	5.1 to 7.3
C -- 37 to 60 in	loam	moderate	3.65 to 4.34 in	6.6 to 8.4

Aquic eutroboralfs, loamy

Extent: 30 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 2 percent
Parent material: outwash over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: 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: C
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	loamy fine sand	rapid	0.59 to 0.71 in	6.1 to 7.3
E -- 6 to 12 in	loamy fine sand	rapid	0.35 to 0.47 in	6.1 to 7.3
2Bt -- 12 to 32 in	clay loam	moderate	3.21 to 3.61 in	6.6 to 7.8
2C -- 32 to 60 in	loam	moderate	4.75 to 5.31 in	7.4 to 8.4

A13--Warba-Aquic Eutroboralfs, loamy-Aeric Glossaqualfs, loamy, association, nearly level to hilly

Aeric glossaqualfs, loamy

Extent: 15 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 2 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated: 2w
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

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

Cutaway

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

A13--Warba-Aquic Eutroboralfs, loamy-Aeric Glossaqualfs, loamy, association, nearly level to hilly

Menahga

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

Very Poorly drained mineral soils

Extent: 3 percent of the unit
Landform(s): depressions on moraines, drainageways on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

A13--Warba-Aquic Eutroboralfs, loamy-Aeric Glossaqualfs, loamy, association, nearly level to hilly

Cathro

Extent: 3 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

A15--Typic Udipsamments-Arenic Eutroboralfs-Alfic Udispamments association, nearly level to gently rolling

Typic udipsamments

Extent: 45 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 0 to 10 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	4.5 to 6.5
Bw -- 3 to 20 in	sand	rapid	0.85 to 1.19 in	4.5 to 6.5
C -- 20 to 60 in	sand	rapid	1.99 to 2.78 in	5.6 to 7.8

Alfic udipsamments

Extent: 20 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 0 to 10 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 1
Wind erodibility index (WEI): 250
Kw factor (surface layer) .10
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 9 in	fine sand	rapid	0.63 to 0.81 in	5.1 to 6.5
E&Bt -- 9 to 60 in	fine sand	rapid	3.05 to 5.08 in	5.1 to 7.3

A15--Typic Udipsamments-Arenic Eutroboralfs-Alfic Udispamments association, nearly level to gently rolling

Arenic eutroboralfs

Extent: 20 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 0 to 10 percent
Parent material: sandy outwash over loamy glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 2 in	loamy sand	rapid	0.20 to 0.24 in	5.1 to 6.5
Bw -- 2 to 27 in	loamy sand	rapid	1.49 to 2.73 in	5.1 to 6.5
2E/B,2Bt,2BC -- 27 to 42 in	loam	moderate	1.84 to 2.92 in	5.1 to 7.8
2C -- 42 to 60 in	sandy loam	moderate	2.13 to 3.37 in	6.1 to 8.4

Warba

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

A15--Typic Udipsamments-Arenic Eutroboralfs-Alfic Udispamments association, nearly level to gently rolling

Somewhat Poorly drained soils

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

Very Poorly drained mineral soils

Extent: 3 percent of the unit
Landform(s): depressions on moraines, drainageways on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

A15--Typic Udipsamments-Arenic Eutroboralfs-Alfic Udispamments association, nearly level to gently rolling

Very Poorly drained organic soils

Extent: 3 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

A16--Warba-Dystric Eutrochrepts-Typic Udispamments association, nearly level to gently rolling

Warba

Extent: 50 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 0 to 10 percent
Parent material: loamy glacial 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) .37
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 28 in	very fine sandy loam	moderately rapid	5.03 to 6.43 in	5.1 to 6.5
E/B,B/E,Bt -- 28 to 40 in	clay loam	moderately slow	1.95 to 2.32 in	5.1 to 7.3
C -- 40 to 60 in	loam	moderate	3.15 to 3.74 in	6.6 to 8.4

Dystric eutrochrepts

Extent: 20 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 0 to 10 percent
Parent material: loamy mantled outwash deposits
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) .24
Land capability, nonirrigated: 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,Bw -- 0 to 33 in	sandy loam	moderate	5.29 to 5.95 in	4.5 to 6.0
2Bw,2BC,2C -- 33 to 60 in	sand	rapid	1.34 to 1.87 in	5.1 to 7.3

A16--Warba-Dystric Eutrochrepts-Typic Udispamments association, nearly level to gently rolling

Typic udipsamments

Extent: 15 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 0 to 10 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	loamy sand	rapid	0.20 to 0.24 in	4.5 to 6.5
Bw -- 2 to 16 in	sand	rapid	0.71 to 0.99 in	4.5 to 6.5
C -- 16 to 60 in	sand	rapid	2.19 to 3.06 in	5.6 to 7.8

Very Poorly drained mineral soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines, drainageways on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

A16--Warba-Dystric Eutrochrepts-Typic Udispamments association, nearly level to gently rolling

Hiwood

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Redby

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

A17--Menahga-Cutaway-Glossic Eutroboralfs association, rolling and hilly

Menahga

Extent: 40 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 10 to 25 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

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

Cutaway

Extent: 25 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 10 to 25 percent
Parent material: sandy outwash over loamy glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	5.1 to 6.5
Bw -- 3 to 31 in	loamy sand	rapid	1.68 to 3.07 in	5.1 to 6.5
2E/B,2Bt,2BC -- 31 to 43 in	loam	moderate	1.42 to 2.24 in	5.1 to 7.8
2C -- 43 to 60 in	sandy loam	moderate	2.03 to 3.22 in	6.1 to 8.4

A17--Menahga-Cutaway-Glossic Eutroboralfs association, rolling and hilly

Glossic eutroboralfs

Extent: 20 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 10 to 25 percent
Parent material: silty mantled loamy glacial 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) .55
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
E,Bw -- 0 to 6 in	silt loam	moderate	1.30 to 1.42 in	5.1 to 6.5
E' -- 6 to 20 in	very fine sandy loam	moderate	2.41 to 3.12 in	5.1 to 6.0
E/B,2Bt -- 20 to 48 in	sandy loam	moderate	3.07 to 5.31 in	5.6 to 7.3
2C -- 48 to 60 in	sandy loam	moderate	1.30 to 2.24 in	6.6 to 8.4

Warba

Extent: 15 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: no
Hydrologic group:
Potential for frost action:

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

A18--Arenic Eutroboralfs, nearly level to gently rolling

Arenic eutroboralfs

Extent: 80 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 0 to 10 percent
Parent material: sandy outwash over loamy glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 2 in	loamy sand	rapid	0.20 to 0.24 in	5.1 to 6.5
Bw -- 2 to 27 in	loamy sand	rapid	1.49 to 2.73 in	5.1 to 6.5
2E/B,2Bt,2BC -- 27 to 42 in	loam	moderate	1.84 to 2.92 in	5.1 to 7.8
2C -- 42 to 60 in	sandy loam	moderate	2.13 to 3.37 in	6.1 to 8.4

Warba

Extent: 10 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: no
Hydrologic group:
Potential for frost action:

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

A18--Arenic Eutroboralfs, nearly level to gently rolling

Stuntz

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Menahga

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

A19--Menahga loamy coarse sand, moraine, rolling and hilly

Menahga, moraine

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 10 to 25 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .10
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 5 in	loamy sand	rapid	0.51 to 0.61 in	4.5 to 6.5
Bw -- 5 to 20 in	sand	rapid	1.05 to 1.35 in	4.5 to 6.5
C -- 20 to 60 in	sand	rapid	1.99 to 2.78 in	5.6 to 6.5

Cutaway

Extent: 8 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: no
Hydrologic group:
Potential for frost action:

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

A19--Menahga loamy coarse sand, moraine, rolling and hilly

Warba

Extent: 7 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

A20--Typic Udipsamments, gravelly, rolling to very hilly

Typic udipsamments, gravelly

Extent: 80 percent of the unit
Landform(s): ridges on moraines, hillslopes on outwash plains
Slope gradient: 15 to 40 percent
Parent material: sandy and gravelly outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 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 2 in	loamy sand	rapid	0.20 to 0.24 in	5.1 to 6.5
E -- 2 to 6 in	loamy sand	rapid	0.24 to 0.31 in	5.1 to 6.5
Bw -- 6 to 20 in	sand	rapid	0.71 to 0.99 in	5.1 to 6.5
C -- 20 to 60 in	gravelly sand	rapid	1.59 to 3.58 in	5.1 to 7.4

Loamy till substratum

Extent: 20 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: no
Hydrologic group:
Potential for frost action:

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

E57--Zimmerman loamy fine sand, nearly level and undulating

Zimmerman

Extent: 85 percent of the unit
Landform(s): hillslopes on lake plains, hillslopes on outwash plains
Slope gradient: 0 to 8 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 1
Wind erodibility index (WEI): 250
Kw factor (surface layer) .10
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E --	0 to 9 in	fine sand	rapid	0.63 to 0.81 in	5.1 to 6.5
E&Bt --	9 to 60 in	fine sand	rapid	3.05 to 5.08 in	5.1 to 7.3

Hiwood

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

E57--Zimmerman loamy fine sand, nearly level and undulating

Somewhat Poorly drained soils

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

Very Poorly drained organic soils

Extent: 3 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

E57--Zimmerman loamy fine sand, nearly level and undulating

Very Poorly drained mineral soils

Extent: 3 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

E58--Graycalm-Typic Udipsamments association, nearly level and undulating

Graycalm

Extent: 60 percent of the unit
Landform(s): hillslopes on moraines, hillslopes on outwash plains
Slope gradient: 0 to 8 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,Bw -- 0 to 8 in	loamy sand	rapid	0.47 to 0.94 in	3.5 to 6.5
E -- 8 to 32 in	sand	rapid	1.20 to 2.40 in	3.5 to 7.3
E&Bt -- 32 to 46 in	sand	rapid	0.57 to 1.28 in	3.5 to 7.3
C -- 46 to 60 in	sand	rapid	0.55 to 0.83 in	3.5 to 8.4

Typic udipsamments

Extent: 20 percent of the unit
Landform(s): hillslopes on moraines, hillslopes on outwash plains
Slope gradient: 0 to 8 percent
Parent material: sandy and gravelly outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	5.1 to 6.5
E -- 3 to 6 in	loamy sand	rapid	0.17 to 0.22 in	5.1 to 6.5
Bw -- 6 to 36 in	coarse sand	rapid	1.50 to 2.09 in	5.1 to 6.5
C -- 36 to 60 in	coarse sand	rapid	0.96 to 2.16 in	5.1 to 7.4

E58--Graycalm-Typic Udipsamments association, nearly level and undulating

Very Poorly drained mineral soils

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

Warba

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

E58--Graycalm-Typic Udipsamments association, nearly level and undulating

Redby

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Hiwood

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

E59--Warba-Stuntz-Arenic Eutroboralfs association, nearly level and undulating

Warba

Extent: 40 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 0 to 8 percent
Parent material: loamy glacial 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) .43
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 11 in	very fine sandy loam	moderately rapid	1.98 to 2.54 in	5.1 to 6.5
E/B,B/E,Bt -- 11 to 35 in	clay loam	moderately slow	3.84 to 4.56 in	5.1 to 7.3
C -- 35 to 60 in	loam	moderate	3.97 to 4.71 in	6.6 to 8.4

Stuntz

Extent: 30 percent of the unit
Landform(s): flats on moraines
Slope gradient: 0 to 2 percent
Parent material: loamy glacial 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) .43
Land capability, nonirrigated: 2w
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E,E/B -- 0 to 17 in	very fine sandy loam	moderately rapid	3.05 to 3.89 in	4.5 to 6.5
B/E,Btg -- 17 to 39 in	sandy clay loam	moderately slow	3.53 to 4.19 in	5.1 to 7.8
C -- 39 to 60 in	loam	moderately slow	3.34 to 3.96 in	6.6 to 8.4

E59--Warba-Stuntz-Arenic Eutroboralfs association, nearly level and undulating

Arenic eutroboralfs

Extent: 15 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 0 to 8 percent
Parent material: sandy outwash over loamy glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 10 in	loamy sand	rapid	0.98 to 1.18 in	5.1 to 6.5
Bw -- 10 to 30 in	loamy sand	rapid	1.20 to 2.21 in	5.1 to 6.5
2E/B,2Bt,2BC -- 30 to 36 in	loam	moderate	0.71 to 1.12 in	5.1 to 7.8
2C -- 36 to 60 in	sandy loam	moderate	2.88 to 4.56 in	6.1 to 8.4

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

E59--Warba-Stuntz-Arenic Eutroboralfs association, nearly level and undulating

Very Poorly drained mineral soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines, drainageways on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

Somewhat Poorly drained sandy soils

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

E60--Warba-Stuntz association, nearly level and undulating

Warba

Extent: 45 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 8 percent
Parent material: loamy glacial 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) .43
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 18 in	very fine sandy loam	moderately rapid	3.26 to 4.17 in	5.1 to 6.5
E/B,B/E,Bt -- 18 to 40 in	clay loam	moderately slow	3.53 to 4.19 in	5.1 to 7.3
C -- 40 to 60 in	loam	moderate	3.15 to 3.74 in	6.6 to 8.4

Stuntz

Extent: 35 percent of the unit
Landform(s): flats on moraines
Slope gradient: 0 to 2 percent
Parent material: loamy glacial 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) .43
Land capability, nonirrigated: 2w
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E,E/B -- 0 to 17 in	very fine sandy loam	moderately rapid	3.05 to 3.89 in	4.5 to 6.5
B/E,Btg -- 17 to 39 in	sandy clay loam	moderately slow	3.53 to 4.19 in	5.1 to 7.8
C -- 39 to 60 in	loam	moderately slow	3.34 to 3.96 in	6.6 to 8.4

E60--Warba-Stuntz association, nearly level and undulating

Very Poorly drained organic soils

Extent: 10 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

Sand capped soils

Extent: 10 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: no
Hydrologic group:
Potential for frost action:

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

E61--Glossic Eutroboralfs, loamy, rolling and hilly

Glossic eutroboralfs, loamy

Extent: 80 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 20 percent
Parent material: silty mantled loamy glacial 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) .55
Land capability, nonirrigated: 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
E,Bw -- 0 to 6 in	silt loam	moderate	1.30 to 1.42 in	5.1 to 6.5
E' -- 6 to 23 in	very fine sandy loam	moderate	2.88 to 3.72 in	5.1 to 6.0
E/B,2Bt -- 23 to 48 in	sandy loam	moderate	2.77 to 4.79 in	5.6 to 7.3
2C -- 48 to 60 in	sandy loam	moderate	1.30 to 2.24 in	6.6 to 8.4

Stuntz

Extent: 10 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: no
Hydrologic group:
Potential for frost action:

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

E61--Glossic Eutroboralfs, loamy, rolling and hilly

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

Cutaway

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

E62--Warba-Histosols association, nearly level to gently rolling

Warba

Extent: 55 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 1 to 12 percent
Parent material: loamy glacial 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) .43
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

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

Histosols

Extent: 30 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 2 percent
Parent material: herbaceous organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe1 -- 0 to 32 in	mucky peat	rapid	15.31 to 18.50 in	
Oa1,Oa2 -- 32 to 60 in	muck	moderately rapid	9.78 to 12.58 in	

E62--Warba-Histosols association, nearly level to gently rolling

Cutaway

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Stuntz

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

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

E62--Warba-Histosols association, nearly level to gently rolling

Very Poorly drained sandy soils

Extent: 3 percent of the unit
Landform(s): depressions on moraines
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: no
Hydrologic group:
Potential for frost action:

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

Menahga

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

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

E63--Aquic Eutroboralfs, clayey subsoil, nearly level and undulating

Aquic eutroboralfs, clayey subsoil

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

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.26 to 0.35 in	6.1 to 7.3
E -- 2 to 20 in	loam	moderately rapid	1.99 to 3.44 in	5.6 to 7.3
B/E,Bt -- 20 to 23 in	clay	slow	0.33 to 0.52 in	5.1 to 8.4
C -- 23 to 60 in	silty clay loam	slow	4.44 to 7.03 in	7.9 to 8.4

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

E63--Aquic Eutroboralfs, clayey subsoil, nearly level and undulating

Very Poorly drained mineral soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines, drainageways on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

Somewhat Poorly drained soils

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

E63--Aquic Eutroboralfs, clayey subsoil, nearly level and undulating

Warba

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

E65--Aeric Glossaqualf, loamy

Aeric glossaqualfs, loamy

Extent: 75 percent of the unit
Landform(s): flats on moraines
Slope gradient: 0 to 2 percent
Parent material: loamy glacial 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) .43
Land capability, nonirrigated: 2w
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E,E/B -- 0 to 17 in	very fine sandy loam	moderately rapid	3.05 to 3.89 in	4.5 to 6.5
B/E,Btg -- 17 to 39 in	clay loam	moderately slow	3.53 to 4.19 in	5.1 to 7.8
C -- 39 to 60 in	loam	moderately slow	3.34 to 3.96 in	6.6 to 8.4

Very Poorly drained mineral soils

Extent: 10 percent of the unit
Landform(s): depressions on moraines, drainageways on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

E65--Aeric Glossaqualf, loamy

Warba

Extent: 10 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: no
Hydrologic group:
Potential for frost action:

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

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

F76--Warba very fine sandy loam, nearly level and undulating

Warba, nearly level

Extent: 75 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 0 to 8 percent
Parent material: loamy glacial 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) .43
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 18 in	very fine sandy loam	moderately rapid	3.26 to 4.17 in	5.1 to 6.5
E/B,B/E,Bt -- 18 to 40 in	loam	moderately slow	3.53 to 4.19 in	5.1 to 7.3
C -- 40 to 60 in	loam	moderate	3.15 to 3.74 in	6.6 to 8.4

Cutaway

Extent: 10 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: no
Hydrologic group:
Potential for frost action:

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

F76--Warba very fine sandy loam, nearly level and undulating

Stuntz

Extent: 10 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: no
Hydrologic group:
Potential for frost action:

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

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

F77--Warba very fine sandy loam, rolling and hilly

Warba, rolling

Extent: 75 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 8 to 25 percent
Parent material: loamy glacial 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) .43
Land capability, nonirrigated: 6e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 11 in	very fine sandy loam	moderately rapid	1.98 to 2.54 in	5.1 to 6.5
B/E,Bt -- 11 to 45 in	clay loam	moderately slow	5.42 to 6.43 in	5.1 to 7.3
C -- 45 to 60 in	loam	moderate	2.39 to 2.84 in	6.6 to 8.4

Cutaway

Extent: 10 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: no
Hydrologic group:
Potential for frost action:

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

F77--Warba very fine sandy loam, rolling and hilly

Stuntz

Extent: 10 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: no
Hydrologic group:
Potential for frost action:

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

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

K22--Alfic Udipsamments, nearly level and undulating

Alfic udipsamments

Extent: 75 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 0 to 8 percent
Parent material: sandy outwash deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,Bw -- 0 to 4 in	loamy sand	rapid	0.24 to 0.47 in	3.5 to 6.5
E -- 4 to 28 in	sand	rapid	1.20 to 2.40 in	3.5 to 7.3
E&Bt -- 28 to 42 in	sand	rapid	0.57 to 1.28 in	3.5 to 7.3
C -- 42 to 60 in	sand	rapid	0.71 to 1.06 in	3.5 to 8.4

Hiwood

Extent: 10 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: no
Hydrologic group:
Potential for frost action:

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

K22--Alfic Udipsamments, nearly level and undulating

Cutaway

Extent: 10 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: no
Hydrologic group:
Potential for frost action:

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

Redby

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

K25--Eutroboralfs-Typic Ochraqualfs association, nearly level and undulating

Eutroboralfs

Extent: 50 percent of the unit
Landform(s): hillslopes on lake plains
Slope gradient: 0 to 8 percent
Parent material: sandy outwash over loamy glacial 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) .28
Land capability, nonirrigated: 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	loamy sand	rapid	0.20 to 0.24 in	5.1 to 6.5
Bw -- 2 to 13 in	loamy sand	rapid	0.66 to 1.21 in	5.1 to 6.5
2B/E,2Bt -- 13 to 28 in	loam	moderate	1.80 to 2.84 in	5.1 to 7.8
2C -- 28 to 60 in	sandy loam	moderate	3.83 to 6.06 in	6.1 to 8.4

Typic ochraqualfs

Extent: 35 percent of the unit
Landform(s): flats on lake plains, swales 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .37
Land capability, nonirrigated: 3w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	very fine sandy loam	moderately rapid	0.63 to 0.69 in	5.6 to 7.8
E -- 3 to 15 in	very fine sandy loam	moderately rapid	2.01 to 2.24 in	5.6 to 7.8
Btg -- 15 to 48 in	silty clay loam	moderate	5.62 to 7.28 in	6.1 to 7.8
Cg -- 48 to 60 in	silt loam	moderate	2.01 to 2.60 in	7.4 to 8.4

K25--Eutroboralfs-Typic Ochraqualfs association, nearly level and undulating

Sand capped soils

Extent: 8 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: no
Hydrologic group:
Potential for frost action:

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

Very Poorly drained organic soils

Extent: 7 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

K27--Aquic Eutroboralfs, loamy, nearly level and undulating

Aquic eutroboralfs, loamy

Extent: 85 percent of the unit
Landform(s): rises on moraines
Slope gradient: 0 to 8 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	fine sandy loam	moderately rapid	0.51 to 0.71 in	6.1 to 7.3
E -- 4 to 8 in	loamy sand	moderately rapid	0.43 to 0.75 in	5.6 to 7.3
Bt -- 8 to 47 in	loam	moderate	5.85 to 7.41 in	5.6 to 7.8
C -- 47 to 60 in	sandy loam	moderate	1.56 to 2.47 in	6.1 to 8.4

Warba

Extent: 8 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: no
Hydrologic group:
Potential for frost action:

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

K27--Aquic Eutroboralfs, loamy, nearly level and undulating

Cutaway

Extent: 7 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

K28--Aquic Eutroboralfs, silty, nearly level and undulating

Aquic eutroboralfs, silty

Extent: 75 percent of the unit
Landform(s): rises on lake plains
Slope gradient: 0 to 8 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) .37
Land capability, nonirrigated: 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	silt loam	moderate	0.63 to 0.69 in	5.6 to 7.3
E -- 3 to 10 in	silt loam	moderate	0.94 to 1.34 in	5.6 to 7.3
Bt,BC -- 10 to 32 in	silty clay loam	moderate	3.75 to 5.29 in	5.6 to 7.8
C -- 32 to 60 in	silt loam	moderate	4.75 to 6.15 in	7.4 to 8.4

Stuntz

Extent: 10 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: no
Hydrologic group:
Potential for frost action:

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

K28--Aquic Eutroboralfs, silty, nearly level and undulating

Poorly drained mineral soils

Extent: 10 percent of the unit
Landform(s): swales on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

Hiwood

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

K30--Typic Ochraqualfs, clayey

Typic ochraqualfs, clayey

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

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .49
Land capability, nonirrigated: 2w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 12 in	silt loam	moderate	2.36 to 2.83 in	5.6 to 7.3
B/E,Btg2 -- 12 to 26 in	silty clay	slow	1.70 to 2.69 in	5.1 to 8.4
Cg -- 26 to 60 in	clay loam	slow	4.06 to 6.43 in	7.9 to 8.4

Very Poorly drained organic soils

Extent: 15 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

K30--Typic Ochraqualfs, clayey

Very Poorly drained sandy soils

Extent: 10 percent of the unit
Landform(s): moraines, -- error in exists on --
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: yes
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

K31--Suomi-Aeric Glossaqualfs, loamy, association, nearly level and undulating

Suomi

Extent: 45 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 0 to 8 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,E -- 0 to 23 in	loam	moderate	4.57 to 5.48 in	5.1 to 7.3
Bt1,Bt2 -- 23 to 37 in	silty clay loam	slow	1.42 to 2.69 in	5.1 to 7.3
Bkg -- 37 to 60 in	clay loam	slow	2.51 to 3.88 in	7.4 to 8.4

Aeric glossaqualfs, loamy

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

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated: 2w
Hydric soil: no
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	fine sandy loam	moderate	1.02 to 1.13 in	5.1 to 7.3
E -- 5 to 13 in	fine sandy loam	moderate	0.94 to 1.50 in	5.1 to 7.3
E/B -- 13 to 24 in	clay loam	moderate	1.65 to 2.20 in	5.1 to 7.3
Bt -- 24 to 35 in	clay loam	slow	0.88 to 2.20 in	5.1 to 7.3
Bk -- 35 to 80 in	silty clay loam	moderately slow	6.28 to 8.98 in	7.4 to 8.4

K31--Suomi-Aeric Glossaqualfs, loamy, association, nearly level and undulating

Very Poorly drained mineral soils

Extent: 10 percent of the unit
Landform(s): depressions on moraines, swales on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

Warba

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

K31--Suomi-Aeric Glossaqualfs, loamy, association, nearly level and undulating

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

K35--Typic Ochraqualfs, ponded

Typic ochraqualfs, ponded

Extent: 85 percent of the unit
Landform(s): depressions on lake plains
Slope gradient: 0 to 2 percent
Parent material: loamy glaciolacustrine deposits 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .37
Land capability, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	very fine sandy loam	moderately rapid	1.02 to 1.13 in	5.6 to 7.8
E -- 5 to 10 in	very fine sandy loam	moderately rapid	0.80 to 0.90 in	5.6 to 7.8
Btg -- 10 to 35 in	clay loam	moderate	3.78 to 4.79 in	5.6 to 7.8
Cg -- 35 to 60 in	loam	moderate	2.73 to 4.71 in	7.4 to 8.4

Very Poorly drained organic soils

Extent: 15 percent of the unit
Landform(s): depressions on moraines
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: yes
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:
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

N77--Udipsamments, nearly level and undulating

Udipsamments

Extent: 85 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 0 to 8 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

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

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

N77--Udipsamments, nearly level and undulating

Very Poorly drained mineral soils

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains, drainageways on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

Redby

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

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

Psammentic eutroboralfs, sandy, nearly level

Extent: 85 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 0 to 8 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

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

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

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

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

Very Poorly drained mineral soils

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains, drainageways on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

Redby

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

N79--Psammentic eutroboralfs, sandy, rolling and hilly

Psammentic eutroboralfs, sandy, rolling

Extent: 85 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 8 to 20 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

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

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

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

N79--Psammentic eutroboralfs, sandy, rolling and hilly

Very poorly drained mineral soils

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains, drainageways on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

Redby

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

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

Cutaway

Extent: 50 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 0 to 8 percent
Parent material: outwash over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

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

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

Hiwood

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

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

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

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

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

Very Poorly drained mineral soils

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains, drainageways on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

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

Menahga

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Warba

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

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

Hiwood

Extent: 40 percent of the unit
Landform(s): flats on outwash plains
Slope gradient: 0 to 3 percent
Parent material: sandy glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

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

Zimmerman

Extent: 35 percent of the unit
Landform(s): hillslopes on outwash plains
Slope gradient: 0 to 20 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated: 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

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

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

Somewht Poorly drained soils

Extent: 10 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: no
Hydrologic group:
Potential for frost action:

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

Loamy soils

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

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

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

Very Poorly drained mineral soils

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains, drainageways on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

O93--Eutroboralfs, nearly level and undulating

Eutroboralfs

Extent: 75 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 0 to 8 percent
Parent material: sandy outwash over loamy glacial till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .24
Land capability, nonirrigated: 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	loamy sand	rapid	0.20 to 0.24 in	5.1 to 6.5
E -- 2 to 21 in	loamy sand	rapid	1.13 to 2.08 in	5.1 to 6.5
2BE,2Bt -- 21 to 28 in	loam	moderate	0.85 to 1.35 in	5.1 to 7.8
2C -- 28 to 60 in	sandy loam	moderate	3.83 to 6.06 in	6.1 to 8.4

Stuntz

Extent: 10 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: no
Hydrologic group:
Potential for frost action:

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

O93--Eutroboralfs, nearly level and undulating

Cutaway

Extent: 10 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: no
Hydrologic group:
Potential for frost action:

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

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

O94--Redby fine sand

Redby

Extent: 80 percent of the unit
Landform(s): flats on outwash plains
Slope gradient: 0 to 2 percent
Parent material: sandy glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

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

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

Very Poorly drained mineral soils

Extent: 10 percent of the unit
Landform(s): depressions on outwash plains, drainageways on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

O94--Redby fine sand

Well or Excessively drained soils

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

O95--Humaquepts

Humaquepts

Extent: 85 percent of the unit
Landform(s): depressions on outwash plains
Slope gradient: 0 to 2 percent
Parent material: sandy outwash over loamy glaciofluvial deposits
Restrictive feature(s): densic material at 40 to 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 4 in	muck	moderately rapid	1.38 to 1.77 in	
A -- 4 to 8 in	loamy fine sand	rapid	0.39 to 0.47 in	4.5 to 6.5
Bg -- 8 to 29 in	fine sand	rapid	1.28 to 2.55 in	4.5 to 7.3
2Bg -- 29 to 60 in	fine sandy loam	slow	0.00 to 2.46 in	4.5 to 7.3

Very Poorly drained organic soils

Extent: 8 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

O95--Humaquepts

Soils better drained

Extent: 7 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

O96--Mollic Fluvaquents, frequently flooded

Mollic fluvaquents, frequently flooded

Extent: 80 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: frequent
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 8 in	fine sandy loam	moderately rapid	0.87 to 1.42 in	5.1 to 7.3
Cg -- 8 to 15 in	sandy loam	moderately rapid	0.71 to 1.56 in	5.1 to 7.3
2Cg -- 15 to 60 in	sand	rapid	1.80 to 4.49 in	5.6 to 7.3

Soils better drained, non flooded

Extent: 10 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: no
Hydrologic group:
Potential for frost action:

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

O96--Mollic Fluvaquents, frequently flooded

Very Poorly drained organic soils, non flooded

Extent: 10 percent of the unit
Landform(s): flats on flood plains
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: yes
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

O97--Humaquepts, sandy

Humaquepts, sandy

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

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

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

Better drained soils

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

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

O97--Humaquepts, sandy

Very Poorly drained loamy soils

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains, drainageways on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

W--Water

Water

Extent: 100 percent of the unit
Landform(s):
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:
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

X01--Histosols, depressional

Histosols, depressional

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

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

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

Better drained soils

Extent: 15 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: no
Hydrologic group:
Potential for frost action:

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

X02--Typic borohemists, acid

Borohemists, acid

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

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

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

Very Poorly drained mineral soils

Extent: 15 percent of the unit
Landform(s): depressions on outwash plains, drainageways on outwash plains
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: yes
Hydrologic group:
Potential for frost action:

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

X03--Typic borohemists, nonacid-typic borosaprists association

Borohemists, nonacid

Extent: 45 percent of the unit
Landform(s): depressions on moraines, depressions on outwash plains
Slope gradient: 0 to 2 percent
Parent material: herbaceous organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

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

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

Borosaprists

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

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

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

X03--Typic borohemists, nonacid-typic borosaprists association

Very Poorly drained organic acid soils

Extent: 10 percent of the unit
Landform(s): raised bogs
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: yes
Hydrologic group:
Potential for frost action:

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

Very Poorly drained mineral soils

Extent: 10 percent of the unit
Landform(s): depressions
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: yes
Hydrologic group:
Potential for frost action:

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

X04--Typic borosaprist-bowstring association

Borosaprists, frequently flooded

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

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

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

Bowstring, frequently flooded

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

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

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

X04--Typic borosaprist-bowstring association

Organic soils not subject to flooding

Extent: 15 percent of the unit
Landform(s): knolls on flood plains
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: yes
Hydrologic group:
Potential for frost action:

Representative soil profile:

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

X05--Typic borohemists, nonacid

Borohemists, nonacid

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

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

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

Very Poorly drained mineral soils

Extent: 8 percent of the unit
Landform(s): depressions
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: yes
Hydrologic group:
Potential for frost action:

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

X05--Typic borohemists, nonacid

Very Poorly drained organic acid soils

Extent: 7 percent of the unit
Landform(s): raised bogs
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: yes
Hydrologic group:
Potential for frost action:

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

XW1--Aqualfs

Aqualfs

Extent: 85 percent of the unit
Landform(s): flats on moraines, swales on moraines
Slope gradient: 0 to 2 percent
Parent material: sandy glaciolacustrine deposits over till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated: 4w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy fine sand	rapid	0.41 to 0.47 in	6.1 to 7.3
Bg -- 3 to 17 in	loamy fine sand	rapid	0.83 to 1.52 in	6.6 to 7.8
Btg,Cg -- 17 to 60 in	clay loam	moderate	7.30 to 8.15 in	7.4 to 8.4

Very Poorly drained organic soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

XW1--Aqualfs

Very Poorly drained mineral soils

Extent: 5 percent of the unit
Landform(s): depressions on moraines, swales on moraines
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: yes
Hydrologic group:
Potential for frost action:

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

Warba

Extent: 5 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: no
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.