

Map Unit Description (MN)

Cook 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]

21A--Hermantown loam

Hermantown

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s): dense material at 30 to 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

loamy till *Kw (surface layer):* .32

Land capability class, nonirrigated: 3w

Hydric soil: no

Hydrologic group: C

Potential frost action: high

Representative soil profile:

Texture

A --	0 to 4 in	loam
E,Bw1 --	4 to 14 in	fine sandy loam
Bw2,Bw3 --	14 to 31 in	sandy loam
2Bw4 --	31 to 53 in	sandy loam
2Cd --	53 to 80 in	sandy loam

Permeability

*Available water
capacity*

pH

moderate	0.8 to 1.0 in	5.1 to 6.0
moderate	1.5 to 2.0 in	5.1 to 6.0
moderate	2.0 to 3.0 in	5.1 to 6.5
slow	2.2 to 3.1 in	5.1 to 6.5
impermeable	0.3 to 1.9 in	6.1 to 7.3

21B--Ahmeek loam, 2 to 6 percent slopes

Ahmeek

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 6 percent

Parent material:

Restrictive feature(s): dense material at 26 to 55 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

loamy till *Kw (surface layer):* .28

Land capability class, nonirrigated: 2e

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 2 in	loam
E,Bw1,Bw2 --	2 to 14 in	fine sandy loam
2Bw3,2Bw4 --	14 to 33 in	fine sandy loam
2Cd --	33 to 60 in	fine sandy loam

Permeability

*Available water
capacity*

pH

moderate	0.4 to 0.4 in	4.5 to 6.0
moderate	1.8 to 2.4 in	4.5 to 6.0
moderately slow	2.3 to 3.2 in	5.1 to 6.5
impermeable	1.3 to 2.7 in	6.1 to 7.3

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21B--Ahmeek loam, 2 to 6 percent slopes

21BC--Ahmeek loam, 2 to 12 percent slopes

Ahmeek

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 12 percent

Parent material:

Restrictive feature(s): dense material at 26 to 55 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

loamy till *Kw (surface layer):* .28

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 2 in	loam
E,Bw1,Bw2 --	2 to 14 in	fine sandy loam
2Bw3,2Bw4 --	14 to 33 in	fine sandy loam
2Cd --	33 to 60 in	fine sandy loam

Permeability

Available water

capacity

pH

moderate	0.4 to 0.4 in	4.5 to 6.0
moderate	1.8 to 2.4 in	4.5 to 6.0
moderately slow	2.3 to 3.2 in	5.1 to 6.5
impermeable	1.3 to 2.7 in	6.1 to 7.3

21C--Ahmeek loam, 6 to 12 percent slopes

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21C--Ahmeek loam, 6 to 12 percent slopes

Ahmeek

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 6 to 12 percent

Parent material:

Restrictive feature(s): dense material at 26 to 55 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

loamy till *Kw (surface layer):* .28

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A -- 0 to 2 in	loam	moderate	0.4 to 0.4 in	4.5 to 6.0
E,Bw1,Bw2 -- 2 to 14 in	fine sandy loam	moderate	1.8 to 2.4 in	4.5 to 6.0
2Bw3,2Bw4 -- 14 to 33 in	fine sandy loam	moderately slow	2.3 to 3.2 in	5.1 to 6.5
2Cd -- 33 to 60 in	fine sandy loam	impermeable	1.3 to 2.7 in	6.1 to 7.3

21D--Ahmeek loam, 12 to 18 percent slopes

Ahmeek

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 12 to 18 percent

Parent material:

Restrictive feature(s): dense material at 26 to 55 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

loamy till *Kw (surface layer):* .28

Land capability class, nonirrigated: 4e

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A -- 0 to 2 in	loam	moderate	0.4 to 0.4 in	4.5 to 6.0
E,2Bw1,2Bw2 -- 2 to 14 in	fine sandy loam	moderate	1.8 to 2.4 in	4.5 to 6.0
2Bw3,2Bw4 -- 14 to 33 in	fine sandy loam	moderately slow	2.3 to 3.2 in	5.1 to 6.5
2Cd -- 33 to 60 in	fine sandy loam	impermeable	1.3 to 2.7 in	6.1 to 7.3

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21D--Ahmeek loam, 12 to 18 percent slopes

21DE--Ahmeek loam, 12 to 25 percent slopes

Ahmeek

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 12 to 25 percent

Parent material:

Restrictive feature(s): dense material at 26 to 55 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

loamy till *Kw (surface layer):* .28

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 2 in	loam
E,Bw1,Bw2 --	2 to 14 in	fine sandy loam
2Bw3,2Bw4 --	14 to 33 in	fine sandy loam
2Cd --	33 to 60 in	fine sandy loam

Permeability

moderate
moderate
moderately slow
impermeable

Available water

capacity

0.4 to 0.4 in
1.8 to 2.4 in
2.3 to 3.2 in
1.3 to 2.7 in

pH

4.5 to 6.0
4.5 to 6.0
5.1 to 6.5
6.1 to 7.3

21E--Ahmeek loam, 18 to 25 percent slopes

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21E--Ahmeek loam, 18 to 25 percent slopes

Ahmeek

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 18 to 25 percent

Parent material:

Restrictive feature(s): dense material at 26 to 55 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

loamy till *Kw (surface layer):* .28

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A -- 0 to 2 in	loam	moderate	0.4 to 0.4 in	4.5 to 6.0
E,Bw1,Bw2 -- 2 to 14 in	fine sandy loam	moderate	1.8 to 2.4 in	4.5 to 6.0
2Bw3,2Bw4 -- 14 to 33 in	fine sandy loam	moderately slow	2.3 to 3.2 in	5.1 to 6.5
2Cd -- 33 to 60 in	fine sandy loam	impermeable	1.3 to 2.7 in	6.1 to 7.3

21F--Ahmeek loam, 25 to 40 percent slopes

Ahmeek

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 25 to 40 percent

Parent material:

Restrictive feature(s): dense material at 26 to 55 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

loamy till *Kw (surface layer):* .28

Land capability class, nonirrigated: 7e

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A -- 0 to 2 in	loam	moderate	0.4 to 0.4 in	4.5 to 6.0
E,Bw1,Bw2 -- 2 to 14 in	fine sandy loam	moderate	1.8 to 2.4 in	4.5 to 6.0
2Bw3,2Bw4 -- 14 to 33 in	fine sandy loam	moderately slow	2.3 to 3.2 in	5.1 to 6.5
2Cd -- 33 to 60 in	fine sandy loam	impermeable	1.3 to 2.7 in	6.1 to 7.3

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21F--Ahmeek loam, 25 to 40 percent slopes

22--Allendale loamy sand

Allendale

Extent: 85 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

loamy till *Kw (surface layer):* .17

Land capability class, nonirrigated: 3w

Hydric soil: no

Hydrologic group: C

Potential frost action: high

Representative soil profile:

Texture

A --	0 to 3 in	loamy sand
E,Bhs,Bs,E' --	3 to 28 in	sand
2Bt,2C --	28 to 60 in	silty clay

Permeability

Available water capacity

pH

rapid	0.3 to 0.4 in	4.5 to 7.3
rapid	1.5 to 2.5 in	4.5 to 7.3
impermeable	2.6 to 3.8 in	6.1 to 8.4

166--Ronneby loam

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166--Ronneby loam

Ronneby

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s): dense material at 39 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

loamy till *Kw (surface layer):* .28

Land capability class, nonirrigated: 3w

Hydric soil: no

Hydrologic group: C

Potential frost action: high

Representative soil profile:

Texture

A --	0 to 4 in	loam
E --	4 to 12 in	fine sandy loam
B/E, Bt --	12 to 33 in	fine sandy loam
BC --	33 to 45 in	fine sandy loam
Cd --	45 to 60 in	fine sandy loam

Available water

Permeability	capacity	pH
moderate	0.7 to 0.9 in	5.1 to 6.5
moderately rapid	0.9 to 1.5 in	5.1 to 6.5
moderate	2.6 to 4.0 in	5.6 to 6.5
slow	0.4 to 0.9 in	5.6 to 7.3
impermeable	0.0 to 0.6 in	5.6 to 7.3

186--Nemadji loamy fine sand

Nemadji

Extent: 85 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

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

sandy outwash *Kw (surface layer):* .17

Land capability class, nonirrigated: 3w

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 5 in	loamy fine sand
Bhir --	5 to 33 in	fine sand
C --	33 to 60 in	fine sand

Available water

Permeability	capacity	pH
rapid	0.5 to 0.7 in	4.5 to 5.5
rapid	1.4 to 3.1 in	4.5 to 6.0
rapid	1.3 to 1.9 in	4.5 to 6.0

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186--Nemadji loamy fine sand

254B--Hibbing loam, 2 to 6 percent slopes

Hibbing

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 2 to 6 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
 clayey till *Kw (surface layer):* .28
Land capability class, nonirrigated: 2e
Hydric soil: no
Hydrologic group: C
Potential frost action: moderate

Representative soil profile:

	Texture
A -- 0 to 4 in	loam
Bw,2E/B,2Bt -- 4 to 34 in	clay
2BCd,2Cd -- 34 to 60 in	clay

Texture

Permeability

moderate
 slow
 slow

Available water

capacity

0.7 to 0.9 in
 3.0 to 4.8 in
 2.3 to 3.9 in

pH

3.5 to 6.0
 5.1 to 7.8
 7.4 to 8.4

254BC--Hibbing loam, 2 to 12 percent slopes

Hibbing

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 2 to 12 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
 clayey till *Kw (surface layer):* .28
Land capability class, nonirrigated: 3e
Hydric soil: no
Hydrologic group: C
Potential frost action: moderate

Representative soil profile:

	Texture
A -- 0 to 4 in	loam
Bw,2E/B,2Bt -- 4 to 34 in	clay
2BCd,2Cd -- 34 to 60 in	clay

Texture

Permeability

moderate
 slow
 slow

Available water

capacity

0.7 to 0.9 in
 3.0 to 4.8 in
 2.3 to 3.9 in

pH

3.5 to 6.0
 5.1 to 7.8
 7.4 to 8.4

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254BC--Hibbing loam, 2 to 12 percent slopes

254C--Hibbing loam, 6 to 12 percent slopes

Hibbing

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 12 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
 clayey till *Kw (surface layer):* .28
Land capability class, nonirrigated: 3e
Hydric soil: no
Hydrologic group: C
Potential frost action: moderate

Representative soil profile:

	Texture
A -- 0 to 4 in	loam
Bw,2E/B,2Bt -- 4 to 34 in	clay
2BCd,2Cd -- 34 to 60 in	clay

Texture

Permeability

moderate
 slow
 slow

Available water capacity

0.7 to 0.9 in
 3.0 to 4.8 in
 2.3 to 3.9 in

pH

3.5 to 6.0
 5.1 to 7.8
 7.4 to 8.4

254D--Hibbing loam, 12 to 18 percent slopes

Hibbing

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 12 to 18 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
 clayey till *Kw (surface layer):* .28
Land capability class, nonirrigated: 4e
Hydric soil: no
Hydrologic group: C
Potential frost action: moderate

Representative soil profile:

	Texture
A -- 0 to 4 in	loam
Bw,2E/B,2Bt -- 4 to 34 in	clay
2BCd,2Cd -- 34 to 60 in	clay

Texture

Permeability

moderate
 slow
 slow

Available water capacity

0.7 to 0.9 in
 3.0 to 4.8 in
 2.3 to 3.9 in

pH

3.5 to 6.0
 5.1 to 7.8
 7.4 to 8.4

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254D--Hibbing loam, 12 to 18 percent slopes

254DE--Hibbing loam, 12 to 25 percent slopes

Hibbing

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 12 to 25 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
 clayey till *Kw (surface layer):* .28
Land capability class, nonirrigated: 6e
Hydric soil: no
Hydrologic group: C
Potential frost action: moderate

Representative soil profile:

	Texture
A -- 0 to 4 in	loam
Bw,2E/B,2Bt -- 4 to 34 in	clay
2BCd,2Cd -- 34 to 60 in	clay

Texture

Permeability

moderate
slow
slow

Available water

capacity

0.7 to 0.9 in
3.0 to 4.8 in
2.3 to 3.9 in

pH

3.5 to 6.0
5.1 to 7.8
7.4 to 8.4

254E--Hibbing loam, 18 to 25 percent slopes

Hibbing

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 25 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
 clayey till *Kw (surface layer):* .28
Land capability class, nonirrigated: 6e
Hydric soil: no
Hydrologic group: C
Potential frost action: moderate

Representative soil profile:

	Texture
A -- 0 to 4 in	loam
Bw,2E/B,2Bt -- 4 to 34 in	clay
2BCd,2Cd -- 34 to 60 in	clay

Texture

Permeability

moderate
slow
slow

Available water

capacity

0.7 to 0.9 in
3.0 to 4.8 in
2.3 to 3.9 in

pH

3.5 to 6.0
5.1 to 7.8
7.4 to 8.4

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254E--Hibbing loam, 18 to 25 percent slopes

254F--Hibbing loam, 25 to 40 percent slopes

Hibbing

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 25 to 40 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
 clayey till *Kw (surface layer):* .28
Land capability class, nonirrigated: 7e
Hydric soil: no
Hydrologic group: C
Potential frost action: moderate

Representative soil profile:

	Texture
A -- 0 to 4 in	loam
Bw,2E/B,2Bt -- 4 to 34 in	clay
2BCd,2Cd -- 34 to 60 in	clay

Texture

Permeability

moderate
 slow
 slow

Available water

capacity

0.7 to 0.9 in
 3.0 to 4.8 in
 2.3 to 3.9 in

pH

3.5 to 6.0
 5.1 to 7.8
 7.4 to 8.4

274--Newson loamy sand

Newson

Extent: 85 percent of the unit
Landform(s): depressions on outwash plains
Slope gradient: 0 to 1 percent
Parent material:
Restrictive feature(s):
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
 sandy outwash *Kw (surface layer):* .15
Land capability class, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: A/D
Potential frost action: moderate

Representative soil profile:

	Texture
A -- 0 to 7 in	loamy sand
Bg,BCg -- 7 to 23 in	loamy sand
C -- 23 to 60 in	sand

Texture

Permeability

rapid
 rapid
 rapid

Available water

capacity

0.6 to 0.9 in
 0.8 to 1.7 in
 1.5 to 4.1 in

pH

3.5 to 7.3
 3.5 to 5.5
 4.5 to 6.5

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274--Newson loamy sand

303A--Ontonagon silty clay, 0 to 2 percent slopes

Ontonagon

Extent: 85 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 2 percent

Parent material:

layer): .28

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

clayey lacustrine deposits *Kw (surface*

Land capability class, nonirrigated: 3s

Hydric soil: no

Hydrologic group: D

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 7 in	silty clay
B/E --	7 to 13 in	silty clay
Bt,BC --	13 to 32 in	clay
C --	32 to 60 in	clay

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>
slow	0.9 to 1.0 in	4.5 to 6.5
moderately slow	1.2 to 1.3 in	4.5 to 6.5
impermeable	2.1 to 2.5 in	4.5 to 7.3
impermeable	3.1 to 3.6 in	7.4 to 8.4

303B--Ontonagon silty clay, 2 to 6 percent slopes

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303B--Ontonagon silty clay, 2 to 6 percent slopes

Ontonagon

Extent: 85 percent of the unit

Landform(s): lake plains

Slope gradient: 2 to 6 percent

Parent material:

layer): .28

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

clayey lacustrine deposits *Kw (surface*

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: D

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 7 in	silty clay
B/E --	7 to 13 in	silty clay
Bt,BC --	13 to 32 in	clay
C --	32 to 60 in	clay

Permeability

slow
moderately slow
impermeable
impermeable

Available water

capacity

0.9 to 1.0 in
1.2 to 1.3 in
2.1 to 2.5 in
3.1 to 3.6 in

pH

4.5 to 6.5
4.5 to 6.5
4.5 to 7.3
7.4 to 8.4

303BC--Ontonagon silty clay, 2 to 12 percent slopes

Ontonagon

Extent: 85 percent of the unit

Landform(s): lake plains

Slope gradient: 2 to 12 percent

Parent material:

layer): .28

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

clayey lacustrine deposits *Kw (surface*

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: D

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 7 in	silty clay
B/E --	7 to 13 in	silty clay
Bt,BC --	13 to 32 in	clay
C --	32 to 60 in	clay

Permeability

slow
moderately slow
impermeable
impermeable

Available water

capacity

0.9 to 1.0 in
1.2 to 1.3 in
2.1 to 2.5 in
3.1 to 3.6 in

pH

4.5 to 6.5
4.5 to 6.5
4.5 to 7.3
7.4 to 8.4

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

303BC--Ontonagon silty clay, 2 to 12 percent slopes

303C--Ontonagon silty clay, 6 to 12 percent slopes

Ontonagon

Extent: 85 percent of the unit
Landform(s): lake plains
Slope gradient: 6 to 12 percent
Parent material:
layer): .28
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 4
Wind erodibility index (WEI): 86
 clayey lacustrine deposits *Kw (surface*

Land capability class, nonirrigated: 3e
Hydric soil: no
Hydrologic group: D
Potential frost action: moderate

Representative soil profile:

		<i>Texture</i>
A --	0 to 7 in	silty clay
B/E --	7 to 13 in	silty clay
Bt,BC --	13 to 32 in	clay
C --	32 to 60 in	clay

Texture

<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
slow	0.9 to 1.0 in	4.5 to 6.5
moderately slow	1.2 to 1.3 in	4.5 to 6.5
impermeable	2.1 to 2.5 in	4.5 to 7.3
impermeable	3.1 to 3.6 in	7.4 to 8.4

303D--Ontonagon silty clay, 12 to 18 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

303D--Ontonagon silty clay, 12 to 18 percent slopes

Ontonagon

Extent: 85 percent of the unit

Landform(s): lake plains

Slope gradient: 12 to 18 percent

Parent material:

layer): .28

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

clayey lacustrine deposits *Kw (surface*

Land capability class, nonirrigated: 4e

Hydric soil: no

Hydrologic group: D

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 7 in	silty clay
B/E --	7 to 13 in	silty clay
Bt,BC --	13 to 32 in	clay
C --	32 to 60 in	clay

Permeability

slow
moderately slow
impermeable
impermeable

Available water

capacity

0.9 to 1.0 in
1.2 to 1.3 in
2.1 to 2.5 in
3.1 to 3.6 in

pH

4.5 to 6.5
4.5 to 6.5
4.5 to 7.3
7.4 to 8.4

303DE--Ontonagon silty clay, 12 to 25 percent slopes

Ontonagon

Extent: 85 percent of the unit

Landform(s): lake plains

Slope gradient: 12 to 25 percent

Parent material:

layer): .28

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

clayey lacustrine deposits *Kw (surface*

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: D

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 7 in	silty clay
B/E --	7 to 13 in	silty clay
Bt,BC --	13 to 32 in	clay
C --	32 to 60 in	clay

Permeability

slow
moderately slow
impermeable
impermeable

Available water

capacity

0.9 to 1.0 in
1.2 to 1.3 in
2.1 to 2.5 in
3.1 to 3.6 in

pH

4.5 to 6.5
4.5 to 6.5
4.5 to 7.3
7.4 to 8.4

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

303DE--Ontonagon silty clay, 12 to 25 percent slopes

303E--Ontonagon silty clay, 18 to 25 percent slopes

Ontonagon

Extent: 85 percent of the unit

Landform(s): lake plains

Slope gradient: 18 to 25 percent

Parent material:

layer): .28

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

clayey lacustrine deposits *Kw (surface*

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: D

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 7 in	silty clay
B/E --	7 to 13 in	silty clay
Bt,BC --	13 to 32 in	clay
C --	32 to 60 in	clay

Permeability

slow
moderately slow
impermeable
impermeable

Available water

capacity

0.9 to 1.0 in
1.2 to 1.3 in
2.1 to 2.5 in
3.1 to 3.6 in

pH

4.5 to 6.5
4.5 to 6.5
4.5 to 7.3
7.4 to 8.4

303F--Ontonagon silty clay, 25 to 40 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

303F--Ontonagon silty clay, 25 to 40 percent slopes

Ontonagon

Extent: 85 percent of the unit

Landform(s): lake plains

Slope gradient: 25 to 40 percent

Parent material:

layer): .28

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

clayey lacustrine deposits *Kw (surface*

Land capability class, nonirrigated: 7e

Hydric soil: no

Hydrologic group: D

Potential frost action: moderate

Representative soil profile:

	Texture
A -- 0 to 7 in	silty clay
B/E -- 7 to 13 in	silty clay
Bt,BC -- 13 to 32 in	clay
C -- 32 to 60 in	clay

Texture

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>
slow	0.9 to 1.0 in	4.5 to 6.5
moderately slow	1.2 to 1.3 in	4.5 to 6.5
impermeable	2.1 to 2.5 in	4.5 to 7.3
impermeable	3.1 to 3.6 in	7.4 to 8.4

305--Bergland clay

Bergland

Extent: 85 percent of the unit

Landform(s): depressions on lake plains

Slope gradient: 0 to 1 percent

Parent material:

layer): .28

Restrictive feature(s):

Flooding: none

Ponding: frequent

Drainage class: poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

clayey lacustrine deposits *Kw (surface*

Land capability class, nonirrigated: 5w

Hydric soil: yes

Hydrologic group: D

Potential frost action: moderate

Representative soil profile:

	Texture
A -- 0 to 3 in	clay
Eg,Bg,Bw -- 3 to 25 in	clay
C -- 25 to 60 in	clay

Texture

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>
slow	0.4 to 0.4 in	5.1 to 7.8
impermeable	2.0 to 2.9 in	5.1 to 7.8
impermeable	2.8 to 4.2 in	7.4 to 8.4

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

355A--Cloquet fine sandy loam, 0 to 2 percent slopes

Cloquet

Extent: 85 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 2 percent

Parent material:

Kw (surface layer):

Restrictive feature(s):

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

loamy drift over sandy and gravelly outwash
.24

Land capability class, nonirrigated: 3s

Hydric soil: no

Hydrologic group: A

Potential frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.3 to 0.4 in	4.5 to 6.0
E,Bw -- 2 to 14 in	sandy loam	moderate	1.5 to 2.2 in	4.5 to 6.0
2Bw,2BC -- 14 to 36 in	gravelly loamy coarse sand	very rapid	0.4 to 0.9 in	5.6 to 6.5
2C -- 36 to 60 in	stratified very gravelly coarse sand to sand	very rapid	0.5 to 1.0 in	5.6 to 6.5

355B--Cloquet fine sandy loam, 2 to 6 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

355B--Cloquet fine sandy loam, 2 to 6 percent slopes

Cloquet

Extent: 85 percent of the unit

Landform(s): outwash plains

Slope gradient: 2 to 6 percent

Parent material:

Kw (surface layer):

Restrictive feature(s):

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

loamy drift over sandy and gravelly outwash
.24

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: A

Potential frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.3 to 0.4 in	4.5 to 6.0
E,Bw -- 2 to 14 in	sandy loam	moderate	1.5 to 2.2 in	4.5 to 6.0
2Bw,2BC -- 14 to 36 in	gravelly loamy coarse sand	very rapid	0.4 to 0.9 in	5.6 to 6.5
2C -- 36 to 60 in	stratified very gravelly coarse sand to sand	very rapid	0.5 to 1.0 in	5.6 to 6.5

355BC--Cloquet fine sandy loam, 2 to 12 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

355BC--Cloquet fine sandy loam, 2 to 12 percent slopes

Cloquet

Extent: 85 percent of the unit

Landform(s): outwash plains

Slope gradient: 2 to 12 percent

Parent material:

Kw (surface layer):

Restrictive feature(s):

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

loamy drift over sandy and gravelly outwash
.24

Land capability class, nonirrigated: 4e

Hydric soil: no

Hydrologic group: A

Potential frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.3 to 0.4 in	4.5 to 6.0
E,Bw -- 2 to 14 in	sandy loam	moderate	1.5 to 2.2 in	4.5 to 6.0
2Bw,2BC -- 14 to 36 in	gravelly loamy coarse sand	very rapid	0.4 to 0.9 in	5.6 to 6.5
2C -- 36 to 60 in	stratified very gravelly coarse sand to sand	very rapid	0.5 to 1.0 in	5.6 to 6.5

355C--Cloquet fine sandy loam, 6 to 12 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

355C--Cloquet fine sandy loam, 6 to 12 percent slopes

Cloquet

Extent: 85 percent of the unit

Landform(s): outwash plains

Slope gradient: 6 to 12 percent

Parent material:

Kw (surface layer):

Restrictive feature(s):

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

loamy drift over sandy and gravelly outwash
.24

Land capability class, nonirrigated: 4e

Hydric soil: no

Hydrologic group: A

Potential frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.3 to 0.4 in	4.5 to 6.0
E,Bw -- 2 to 14 in	sandy loam	moderate	1.5 to 2.2 in	4.5 to 6.0
2bw,2BC -- 14 to 36 in	gravelly loamy coarse sand	very rapid	0.4 to 0.9 in	5.6 to 6.5
2C -- 36 to 60 in	stratified very gravelly coarse sand to sand	very rapid	0.5 to 1.0 in	5.6 to 6.5

355D--Cloquet fine sandy loam, 12 to 18 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

355D--Cloquet fine sandy loam, 12 to 18 percent slopes

Cloquet

Extent: 85 percent of the unit

Landform(s): outwash plains

Slope gradient: 12 to 18 percent

Parent material:

Kw (surface layer):

Restrictive feature(s):

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

loamy drift over sandy and gravelly outwash
.24

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: A

Potential frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.3 to 0.4 in	4.5 to 6.0
E,Bw -- 2 to 14 in	sandy loam	moderate	1.5 to 2.2 in	4.5 to 6.0
2Bw,2BC -- 14 to 36 in	gravelly loamy coarse sand	very rapid	0.4 to 0.9 in	5.6 to 6.5
2C -- 36 to 60 in	stratified very gravelly coarse sand to sand	very rapid	0.5 to 1.0 in	5.6 to 6.5

355DE--Cloquet fine sandy loam, 12 to 25 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

355DE--Cloquet fine sandy loam, 12 to 25 percent slopes

Cloquet

Extent: 85 percent of the unit

Landform(s): outwash plains

Slope gradient: 12 to 25 percent

Parent material:

Kw (surface layer):

Restrictive feature(s):

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

loamy drift over sandy and gravelly outwash
.24

Land capability class, nonirrigated: 7e

Hydric soil: no

Hydrologic group: A

Potential frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.3 to 0.4 in	4.5 to 6.0
E,Bw -- 2 to 14 in	sandy loam	moderate	1.5 to 2.2 in	4.5 to 6.0
2Bw,2BC -- 14 to 36 in	gravelly loamy coarse sand	very rapid	0.4 to 0.9 in	5.6 to 6.5
2C -- 36 to 60 in	stratified very gravelly coarse sand to sand	very rapid	0.5 to 1.0 in	5.6 to 6.5

355E--Cloquet fine sandy loam, 18 to 25 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

355E--Cloquet fine sandy loam, 18 to 25 percent slopes

Cloquet

Extent: 85 percent of the unit

Landform(s): outwash plains

Slope gradient: 18 to 25 percent

Parent material:

Kw (surface layer):

Restrictive feature(s):

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

loamy drift over sandy and gravelly outwash
.24

Land capability class, nonirrigated: 7e

Hydric soil: no

Hydrologic group: A

Potential frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 2 in	fine sandy loam	moderately rapid	0.3 to 0.4 in	4.5 to 6.0
E,Bw -- 2 to 14 in	sandy loam	moderate	1.5 to 2.2 in	4.5 to 6.0
2Bw,2BC -- 14 to 36 in	gravelly loamy coarse sand	very rapid	0.4 to 0.9 in	5.6 to 6.5
2C -- 36 to 60 in	stratified very gravelly coarse sand to sand	very rapid	0.5 to 1.0 in	5.6 to 6.5

355F--Cloquet fine sandy loam, 25 to 40 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

355F--Cloquet fine sandy loam, 25 to 40 percent slopes

Cloquet

Extent: 85 percent of the unit

Landform(s): outwash plains

Slope gradient: 25 to 40 percent

Parent material:

Kw (surface layer):

Restrictive feature(s):

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

loamy drift over sandy and gravelly outwash
.24

Land capability class, nonirrigated: 7e

Hydric soil: no

Hydrologic group: A

Potential frost action: low

Representative soil profile:

Texture

A --	0 to 2 in	fine sandy loam
E,Bw --	2 to 14 in	sandy loam
2Bw,2BC --	14 to 36 in	gravelly loamy coarse sand
2C --	36 to 60 in	stratified very gravelly coarse sand to sand

<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
moderately rapid	0.3 to 0.4 in	4.5 to 6.0
moderate	1.5 to 2.2 in	4.5 to 6.0
very rapid	0.4 to 0.9 in	5.6 to 6.5
very rapid	0.5 to 1.0 in	5.6 to 6.5

407--Brimson loam, rubbly

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

407--Brimson loam, rubbly

Brimson, rubbly

Extent: 85 percent of the unit

Landform(s): drumlins

Slope gradient: 0 to 4 percent

Parent material:

Restrictive feature(s): dense material at 20 to 50 inches

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

loamy till *Kw (surface layer):* .17

Land capability class, nonirrigated: 6s

Hydric soil: no

Hydrologic group: C

Potential frost action: high

Representative soil profile:

Texture

A --	0 to 5 in	stony loam
Bw1 --	5 to 11 in	stony sandy loam
Bw2,Bw3,Bw4 --	11 to 35 in	sandy loam
2Cd --	35 to 80 in	gravelly sandy loam

Permeability

moderate
moderate
moderate
impermeable

Available water capacity

0.3 to 1.0 in
0.2 to 0.9 in
2.4 to 4.6 in
0.9 to 4.5 in

pH

5.1 to 6.5
5.1 to 6.5
5.1 to 6.5
5.6 to 7.3

420--Twig muck

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

420--Twig muck

Twig

Extent: 85 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material:
 layer): .02
Restrictive feature(s): dense material at 39 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
 organic material over loamy till *Kw (surface*

Land capability class, nonirrigated: 7w
Hydric soil: yes
Hydrologic group: D
Potential frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oa -- 0 to 12 in	muck	moderately rapid	4.1 to 6.5 in	
A -- 12 to 20 in	silt loam	moderately slow	1.7 to 1.8 in	3.5 to 5.5
Eg -- 20 to 26 in	loam	impermeable	0.4 to 0.6 in	3.5 to 5.5
2Btg,2Bt -- 26 to 48 in	fine sandy loam	moderately slow	2.4 to 3.5 in	3.5 to 5.5
2BCd -- 48 to 72 in	fine sandy loam	impermeable	0.0 to 1.0 in	3.5 to 6.0

454AC--Mahtomedi loamy sand, 0 to 12 percent slopes

Mahtomedi

Extent: 85 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 12 percent
Parent material:
 layer): .15
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
 sandy and gravelly outwash *Kw (surface*

Land capability class, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 5 in	loamy sand	rapid	0.5 to 0.6 in	5.1 to 6.5
E -- 5 to 8 in	sand	rapid	0.2 to 0.2 in	5.1 to 6.5
Bw -- 8 to 30 in	gravelly sand	rapid	1.1 to 1.5 in	5.1 to 6.5
C -- 30 to 60 in	gravelly sand	rapid	1.2 to 2.7 in	5.1 to 7.8

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

454AC--Mahtomedi loamy sand, 0 to 12 percent slopes

454DE--Mahtomedi loamy sand, 12 to 25 percent slopes

Mahtomedi

<p><i>Extent:</i> 85 percent of the unit</p> <p><i>Landform(s):</i> outwash plains</p> <p><i>Slope gradient:</i> 12 to 25 percent</p> <p><i>Parent material:</i></p> <p><i>layer):</i> .15</p> <p><i>Restrictive feature(s):</i></p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> excessively drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</p> <p><i>Wind erodibility group (WEG):</i> 2</p> <p><i>Wind erodibility index (WEI):</i> 134</p> <p>sandy and gravelly outwash <i>Kw (surface</i></p> <p><i>Land capability class, nonirrigated:</i> 6s</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> A</p> <p><i>Potential frost action:</i> low</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 5 in	loamy sand	rapid	0.5 to 0.6 in	5.1 to 6.5
E -- 5 to 8 in	sand	rapid	0.2 to 0.2 in	5.1 to 6.5
Bw -- 8 to 30 in	gravelly sand	rapid	1.1 to 1.5 in	5.1 to 6.5
C -- 30 to 60 in	gravelly sand	rapid	1.2 to 2.7 in	5.1 to 7.8

454F--Mahtomedi loamy sand, 25 to 40 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

454F--Mahtomedi loamy sand, 25 to 40 percent slopes

Mahtomedi

Extent: 85 percent of the unit

Landform(s): outwash plains

Slope gradient: 25 to 40 percent

Parent material:

layer): .15

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: excessively drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

sandy and gravelly outwash *Kw (surface*

Land capability class, nonirrigated: 7s

Hydric soil: no

Hydrologic group: A

Potential frost action: low

Representative soil profile:

Texture

A --	0 to 5 in	loamy sand
E --	5 to 8 in	sand
Bw --	8 to 30 in	gravelly sand
C --	30 to 60 in	gravelly sand

Permeability

Available water

capacity

pH

rapid	0.5 to 0.6 in	5.1 to 6.5
rapid	0.2 to 0.2 in	5.1 to 6.5
rapid	1.1 to 1.5 in	5.1 to 6.5
rapid	1.2 to 2.7 in	5.1 to 7.8

502--Dusler silt loam

Dusler

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 48

loamy till *Kw (surface layer):* .24

Land capability class, nonirrigated: 2w

Hydric soil: no

Hydrologic group: C

Potential frost action: high

Representative soil profile:

Texture

A --	0 to 4 in	silt loam
E,E/B --	4 to 22 in	silt loam
Bt --	22 to 55 in	clay loam
C --	55 to 80 in	loam

Permeability

Available water

capacity

pH

moderate	0.8 to 0.9 in	4.5 to 6.0
moderate	2.9 to 4.0 in	4.5 to 6.0
moderately slow	5.0 to 6.3 in	5.1 to 7.3
slow	2.5 to 3.7 in	6.6 to 7.8

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

502--Dusler silt loam

504A--Dusler very fine sandy loam, 0 to 2 percent slopes

Dusler

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

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

loamy till *Kw (surface layer):* .24

Land capability class, nonirrigated: 2w

Hydric soil: no

Hydrologic group: C

Potential frost action: high

Representative soil profile:

Texture

A --	0 to 4 in	very fine sandy loam
E,E/B --	4 to 22 in	silt loam
Bt --	22 to 55 in	clay loam
C --	55 to 60 in	loam

Permeability

moderate
moderate
moderately slow
slow

Available water

capacity

0.6 to 0.9 in
2.9 to 4.0 in
5.0 to 6.3 in
0.5 to 0.7 in

pH

4.5 to 6.0
4.5 to 6.0
5.1 to 7.3
6.6 to 7.8

504B--Duluth very fine sandy loam, 1 to 6 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

504B--Duluth very fine sandy loam, 1 to 6 percent slopes

Duluth

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 1 to 6 percent

Parent material:

Restrictive feature(s):

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

loamy till *Kw (surface layer):* .24

Land capability class, nonirrigated: 2e

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A -- 0 to 4 in	very fine sandy loam	moderate	0.6 to 0.9 in	4.5 to 6.0
E,Bw -- 4 to 12 in	silt loam	moderate	1.3 to 1.7 in	4.5 to 6.0
2B/E,2Bt -- 12 to 56 in	clay loam	moderately slow	6.6 to 8.4 in	4.5 to 6.5
2C -- 56 to 60 in	loam	moderately slow	0.6 to 0.7 in	6.1 to 7.8

504BC--Duluth very fine sandy loam, 2 to 12 percent slopes

Duluth

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 12 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

loamy till *Kw (surface layer):* .24

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A -- 0 to 4 in	very fine sandy loam	moderate	0.6 to 0.9 in	4.5 to 6.0
E,Bw -- 4 to 12 in	silt loam	moderate	1.3 to 1.7 in	4.5 to 6.0
2B/E,2Bt -- 12 to 49 in	clay loam	moderately slow	5.6 to 7.0 in	4.5 to 6.5
2C -- 49 to 60 in	loam	moderately slow	1.5 to 2.1 in	6.1 to 7.8

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

504BC--Duluth very fine sandy loam, 2 to 12 percent slopes

504C--Duluth very fine sandy loam, 6 to 12 percent slopes

Duluth

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 12 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	very fine sandy loam	moderate	0.6 to 0.9 in	4.5 to 6.0
E,Bw -- 4 to 12 in	silt loam	moderate	1.3 to 1.7 in	4.5 to 6.0
2B/E,2Bt -- 12 to 49 in	clay loam	moderately slow	5.6 to 7.0 in	4.5 to 6.5
2C -- 49 to 60 in	loam	moderately slow	1.5 to 2.1 in	6.1 to 7.8

504D--Duluth very fine sandy loam, 12 to 18 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

504D--Duluth very fine sandy loam, 12 to 18 percent slopes

Duluth

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 12 to 18 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	very fine sandy loam	moderate	0.6 to 0.9 in	4.5 to 6.0
E,Bw -- 4 to 12 in	silt loam	moderate	1.3 to 1.7 in	4.5 to 6.0
2B/E,2Bt -- 12 to 49 in	clay loam	moderately slow	5.6 to 7.0 in	4.5 to 6.5
2C -- 49 to 60 in	loam	moderately slow	1.5 to 2.1 in	6.1 to 7.8

504DE--Duluth very fine sandy loam, 12 to 25 percent slopes

Duluth

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 12 to 25 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	very fine sandy loam	moderate	0.6 to 0.9 in	4.5 to 6.0
E,Bw -- 4 to 12 in	silt loam	moderate	1.3 to 1.7 in	4.5 to 6.0
2B/E,2Bt -- 12 to 49 in	clay loam	moderately slow	5.6 to 7.0 in	4.5 to 6.5
2C -- 49 to 60 in	loam	moderately slow	1.5 to 2.1 in	6.1 to 7.8

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

504DE--Duluth very fine sandy loam, 12 to 25 percent slopes

504E--Duluth very fine sandy loam, 18 to 25 percent slopes

Duluth

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 25 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	very fine sandy loam	moderate	0.6 to 0.9 in	4.5 to 6.0
E,Bw -- 4 to 12 in	silt loam	moderate	1.3 to 1.7 in	4.5 to 6.0
2B/E,2Bt -- 12 to 49 in	clay loam	moderately slow	5.6 to 7.0 in	4.5 to 6.5
2C -- 49 to 60 in	loam	moderately slow	1.5 to 2.1 in	6.1 to 7.8

504F--Duluth very fine sandy loam, 25 to 35 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

504F--Duluth very fine sandy loam, 25 to 35 percent slopes

Duluth

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 25 to 35 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
 loamy till *Kw (surface layer):* .24
Land capability class, nonirrigated: 7e
Hydric soil: no
Hydrologic group: C
Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	very fine sandy loam	moderate	0.6 to 0.9 in	4.5 to 6.0
E,Bw -- 4 to 12 in	silt loam	moderate	1.3 to 1.7 in	4.5 to 6.0
2B/E,2Bt -- 12 to 49 in	clay loam	moderately slow	5.6 to 7.0 in	4.5 to 6.5
2C -- 49 to 60 in	loam	moderately slow	1.5 to 2.1 in	6.1 to 7.8

512A--Amasa fine sandy loam, 0 to 2 percent slopes

Amasa

Extent: 85 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 2 percent
Parent material:
Kw (surface layer):
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
 loamy drift over sandy and gravelly outwash
 .24
Land capability class, nonirrigated: 2s
Hydric soil: no
Hydrologic group: B
Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
E -- 0 to 3 in	fine sandy loam	moderate	0.5 to 0.6 in	3.6 to 6.0
Bhs,Bs -- 3 to 27 in	silt loam	moderate	3.3 to 5.2 in	3.6 to 6.0
2C -- 27 to 60 in	stratified gravelly coarse sand to sand	very rapid	0.7 to 1.3 in	3.6 to 6.5

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

512B--Amasa fine sandy loam, 2 to 6 percent slopes

Amasa

Extent: 85 percent of the unit
Landform(s): outwash plains
Slope gradient: 2 to 6 percent
Parent material:
Kw (surface layer):
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
 loamy drift over sandy and gravelly outwash
 .24
Land capability class, nonirrigated: 2e
Hydric soil: no
Hydrologic group: B
Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
E -- 0 to 3 in	fine sandy loam	moderate	0.5 to 0.6 in	3.6 to 6.0
Bhs,Bs -- 3 to 27 in	silt loam	moderate	3.3 to 5.2 in	3.6 to 6.0
2C -- 27 to 60 in	stratified gravelly coarse sand to sand	very rapid	0.7 to 1.3 in	3.6 to 6.5

512C--Amasa fine sandy loam, 6 to 12 percent slopes

Amasa

Extent: 85 percent of the unit
Landform(s): outwash plains
Slope gradient: 6 to 12 percent
Parent material:
Kw (surface layer):
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
 loamy drift over sandy and gravelly outwash
 .24
Land capability class, nonirrigated: 3e
Hydric soil: no
Hydrologic group: B
Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
E -- 0 to 3 in	fine sandy loam	moderate	0.5 to 0.6 in	3.6 to 6.0
Bhs,Bs -- 3 to 27 in	silt loam	moderate	3.3 to 5.2 in	3.6 to 6.0
2C -- 27 to 60 in	stratified gravelly coarse sand to sand	very rapid	0.7 to 1.3 in	3.6 to 6.5

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

515A--Newfound gravelly sandy loam, 0 to 2 percent slopes

Newfound

<p><i>Extent:</i> 85 percent of the unit</p> <p><i>Landform(s):</i> moraines</p> <p><i>Slope gradient:</i> 0 to 2 percent</p> <p><i>Parent material:</i></p> <p>layer): .15</p> <p><i>Restrictive feature(s):</i> dense material at 14 to 28 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> well drained</p>	<p><i>Soil loss tolerance (T factor):</i> 3</p> <p><i>Wind erodibility group (WEG):</i> 8</p> <p><i>Wind erodibility index (WEI):</i> 0</p> <p>gravelly and/or loamy till <i>Kw (surface</i></p> <p><i>Land capability class, nonirrigated:</i> 4s</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> C</p> <p><i>Potential frost action:</i> moderate</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>	
E --	0 to 5 in	gravelly sandy loam	moderately rapid	0.5 to 0.7 in	4.5 to 6.0
Bhir,Bx,Cx --	5 to 60 in	gravelly sandy loam	impermeable	0.0 to 2.2 in	4.5 to 6.0

515B--Newfound gravelly sandy loam, 2 to 6 percent slopes

Newfound

<p><i>Extent:</i> 85 percent of the unit</p> <p><i>Landform(s):</i> moraines</p> <p><i>Slope gradient:</i> 2 to 6 percent</p> <p><i>Parent material:</i></p> <p>layer): .15</p> <p><i>Restrictive feature(s):</i> dense material at 14 to 28 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> well drained</p>	<p><i>Soil loss tolerance (T factor):</i> 3</p> <p><i>Wind erodibility group (WEG):</i> 8</p> <p><i>Wind erodibility index (WEI):</i> 0</p> <p>gravelly and/or loamy till <i>Kw (surface</i></p> <p><i>Land capability class, nonirrigated:</i> 4s</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> C</p> <p><i>Potential frost action:</i> moderate</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>	
E --	0 to 5 in	gravelly sandy loam	moderately rapid	0.5 to 0.7 in	4.5 to 6.0
Bhir,Bx,Cx --	5 to 60 in	gravelly sandy loam	impermeable	0.0 to 2.2 in	4.5 to 6.0

515BC--Newfound gravelly sandy loam, 2 to 12 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

515BC--Newfound gravelly sandy loam, 2 to 12 percent slopes

Newfound

<p><i>Extent:</i> 85 percent of the unit</p> <p><i>Landform(s):</i> moraines</p> <p><i>Slope gradient:</i> 2 to 12 percent</p> <p><i>Parent material:</i></p> <p>layer): .15</p> <p><i>Restrictive feature(s):</i> dense material at 14 to 28 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> well drained</p>	<p><i>Soil loss tolerance (T factor):</i> 3</p> <p><i>Wind erodibility group (WEG):</i> 8</p> <p><i>Wind erodibility index (WEI):</i> 0</p> <p>gravelly and/or loamy till <i>Kw (surface</i></p> <p><i>Land capability class, nonirrigated:</i> 4s</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> C</p> <p><i>Potential frost action:</i> moderate</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>	
E --	0 to 1 in	gravelly sandy loam	moderately rapid	0.1 to 0.2 in	4.5 to 6.0
Bhir,Bx,Cx --	5 to 60 in	gravelly sandy loam	impermeable	0.0 to 2.2 in	4.5 to 6.0

515C--Newfound gravelly sandy loam, 6 to 12 percent slopes

Newfound

<p><i>Extent:</i> 85 percent of the unit</p> <p><i>Landform(s):</i> moraines</p> <p><i>Slope gradient:</i> 6 to 12 percent</p> <p><i>Parent material:</i></p> <p>layer): .15</p> <p><i>Restrictive feature(s):</i> dense material at 14 to 28 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> well drained</p>	<p><i>Soil loss tolerance (T factor):</i> 3</p> <p><i>Wind erodibility group (WEG):</i> 8</p> <p><i>Wind erodibility index (WEI):</i> 0</p> <p>gravelly and/or loamy till <i>Kw (surface</i></p> <p><i>Land capability class, nonirrigated:</i> 4s</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> C</p> <p><i>Potential frost action:</i> moderate</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>	
E --	0 to 5 in	gravelly sandy loam	moderately rapid	0.5 to 0.7 in	4.5 to 6.0
Bhir,Bx,Cx --	5 to 60 in	gravelly sandy loam	impermeable	0.0 to 2.2 in	4.5 to 6.0

515D--Newfound gravelly sandy loam, 12 to 20 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

515D--Newfound gravelly sandy loam, 12 to 20 percent slopes

Newfound

<p><i>Extent:</i> 85 percent of the unit</p> <p><i>Landform(s):</i> moraines</p> <p><i>Slope gradient:</i> 12 to 20 percent</p> <p><i>Parent material:</i></p> <p>layer): .15</p> <p><i>Restrictive feature(s):</i> dense material at 14 to 28 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> well drained</p>	<p><i>Soil loss tolerance (T factor):</i> 3</p> <p><i>Wind erodibility group (WEG):</i> 8</p> <p><i>Wind erodibility index (WEI):</i> 0</p> <p>gravelly and/or loamy till <i>Kw (surface</i></p> <p><i>Land capability class, nonirrigated:</i> 6e</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> C</p> <p><i>Potential frost action:</i> moderate</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>	
E --	0 to 5 in	gravelly sandy loam	moderately rapid	0.5 to 0.7 in	4.5 to 6.0
Bhir,Bx,Cx --	5 to 60 in	gravelly sandy loam	impermeable	0.0 to 2.2 in	4.5 to 6.0

515DE--Newfound gravelly sandy loam, 12 to 25 percent slopes

Newfound

<p><i>Extent:</i> 85 percent of the unit</p> <p><i>Landform(s):</i> moraines</p> <p><i>Slope gradient:</i> 12 to 25 percent</p> <p><i>Parent material:</i></p> <p>layer): .15</p> <p><i>Restrictive feature(s):</i> dense material at 14 to 28 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> well drained</p>	<p><i>Soil loss tolerance (T factor):</i> 3</p> <p><i>Wind erodibility group (WEG):</i> 8</p> <p><i>Wind erodibility index (WEI):</i> 0</p> <p>gravelly and/or loamy till <i>Kw (surface</i></p> <p><i>Land capability class, nonirrigated:</i> 6e</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> C</p> <p><i>Potential frost action:</i> moderate</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>	
E --	0 to 5 in	gravelly sandy loam	moderately rapid	0.5 to 0.7 in	4.5 to 6.0
Bhir,Bx,Cx --	5 to 60 in	gravelly sandy loam	impermeable	0.0 to 2.2 in	4.5 to 6.0

515EF--Newfound gravelly sandy loam, 18 to 35 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

515EF--Newfound gravelly sandy loam, 18 to 35 percent slopes

Newfound

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 35 percent
Parent material:
 layer): .15
Restrictive feature(s): dense material at 14 to 28 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
 gravelly and/or loamy till *Kw (surface)*

Land capability class, nonirrigated: 7e
Hydric soil: no
Hydrologic group: C
Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
E -- 0 to 5 in	gravelly sandy loam	moderately rapid	0.5 to 0.7 in	4.5 to 6.0
Bhir,Bx,Cx -- 5 to 60 in	gravelly sandy loam	impermeable	0.0 to 2.2 in	4.5 to 6.0

515F--Newfound gravelly sandy loam, 25 to 40 percent slopes

Newfound

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 25 to 40 percent
Parent material:
 layer): .15
Restrictive feature(s): dense material at 14 to 28 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
 gravelly and/or loamy till *Kw (surface)*

Land capability class, nonirrigated: 7e
Hydric soil: no
Hydrologic group: C
Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
E -- 0 to 5 in	gravelly sandy loam	moderately rapid	0.5 to 0.7 in	4.5 to 6.0
Bhir,Bx,Cx -- 5 to 60 in	gravelly sandy loam	impermeable	0.0 to 2.2 in	4.5 to 6.0

530--Greenwood mucky peat

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

530--Greenwood mucky peat

Greenwood

Extent: 85 percent of the unit
Landform(s): bogs
Slope gradient: 0 to 1 percent
Parent material:
 layer): .02
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
 herbaceous organic material *Kw (surface*

Land capability class, nonirrigated: 7w
Hydric soil: yes
Hydrologic group: A/D
Potential frost action: high

Representative soil profile:

	Texture
Oe -- 0 to 6 in	mucky peat
Oe2 -- 6 to 60 in	mucky peat

Permeability	Available water capacity	pH
rapid	2.7 to 3.2 in	
rapid	24.3 to 29.7 in	

531--Beseman muck

Beseman

Extent: 85 percent of the unit
Landform(s): bogs
Slope gradient: 0 to 1 percent
Parent material:
 layer): .02
Restrictive feature(s):
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
 organic material over loamy till *Kw (surface*

Land capability class, nonirrigated: 7w
Hydric soil: yes
Hydrologic group: A/D
Potential frost action: high

Representative soil profile:

	Texture
Oa -- 0 to 8 in	muck
Oa2 -- 8 to 36 in	muck
Cg -- 36 to 60 in	loam

Permeability	Available water capacity	pH
moderately rapid	2.8 to 3.5 in	
moderately rapid	9.8 to 12.6 in	
moderately slow	2.6 to 4.3 in	

533--Loxley muck

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

533--Loxley muck

Loxley

Extent: 85 percent of the unit
Landform(s): bogs
Slope gradient: 0 to 1 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
organic material Kw (surface layer): .02
Land capability class, nonirrigated: 7w
Hydric soil: yes
Hydrologic group: A/D
Potential frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oa -- 0 to 13 in	muck	moderately rapid	4.5 to 5.8 in	
Oa2 -- 13 to 60 in	muck	moderately rapid	16.4 to 21.1 in	

534--Mooselake mucky peat

Mooselake

Extent: 85 percent of the unit
Landform(s): swamps
Slope gradient: 0 to 1 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
herbaceous organic material Kw (surface layer): .02
Land capability class, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: A/D
Potential frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oe -- 0 to 6 in	mucky peat	rapid	2.7 to 3.2 in	
Oe2 -- 6 to 72 in	mucky peat	rapid	29.8 to 36.4 in	

537--Lobo peat

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook County, Minnesota

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537--Lobo peat

Lobo

Extent: 85 percent of the unit

Landform(s): bogs

Slope gradient: 0 to 1 percent

Parent material:

.02

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: very poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

mossy organic material *Kw (surface layer):*

Land capability class, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: D

Potential frost action: high

Representative soil profile:

Oi --	0 to 38 in	peat
Oe --	38 to 60 in	mucky peat

Texture

Permeability

very rapid
rapid

Available water capacity

20.8 to 24.6 in
9.9 to 12.1 in

pH

540--Seelyeville muck

Seelyeville

Extent: 85 percent of the unit

Landform(s): swamps

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

organic material *Kw (surface layer):* .02

Land capability class, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: A/D

Potential frost action: high

Representative soil profile:

Oa --	0 to 10 in	muck
Oa2 --	10 to 60 in	muck

Texture

Permeability

moderately rapid
moderately rapid

Available water capacity

3.4 to 4.4 in
17.5 to 22.5 in

pH

544--Cathro muck

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

544--Cathro muck

Cathro

Extent: 85 percent of the unit

Landform(s): swamps

Slope gradient: 0 to 1 percent

Parent material:

layer): .02

Restrictive feature(s):

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

organic material over loamy till *Kw (surface*

Land capability class, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: A/D

Potential frost action: high

Representative soil profile:

Texture

Oa --	0 to 11 in	muck
Oa2 --	11 to 23 in	muck
Cg --	23 to 60 in	loam

Permeability

moderately rapid
moderately rapid
moderate

Available water capacity

3.9 to 5.0 in
4.1 to 5.3 in
4.1 to 8.1 in

pH

555AD--Barto gravelly loam, 0 to 18 percent slopes

Barto

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 0 to 18 percent

Parent material:

Restrictive feature(s): lithic bedrock at 8 to 20 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

loamy drift *Kw (surface layer):* .24

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: D

Potential frost action: moderate

Representative soil profile:

Texture

Bhir --	0 to 8 in	gravelly loam
Bw --	8 to 15 in	gravelly coarse sandy loam
R --	15 to 60 in	unweathered bedrock

Permeability

moderately rapid
moderately rapid
impermeable

Available water capacity

1.2 to 1.4 in
0.6 to 0.9 in

pH

4.5 to 6.5
4.5 to 6.5

556AD--Insula gravelly sandy loam, 0 to 18 percent slopes

This report shows only the major soils in each map unit

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Map Unit Description (MN)

Cook 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]

556AD--Insula gravelly sandy loam, 0 to 18 percent slopes

Insula

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 0 to 18 percent

Parent material:

Restrictive feature(s): lithic bedrock at 8 to 20 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

loamy drift *Kw (surface layer):* .15

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: D

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
E -- 0 to 3 in	gravelly sandy loam	moderately rapid	0.3 to 0.4 in	4.5 to 6.5
Bw,BC -- 3 to 15 in	gravelly sandy loam	moderately rapid	0.9 to 1.5 in	4.5 to 6.5
R -- 15 to 60 in	unweathered bedrock	impermeable		

556DE--Insula gravelly sandy loam, 12 to 25 percent slopes

Insula

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 12 to 25 percent

Parent material:

Restrictive feature(s): lithic bedrock at 8 to 20 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

loamy drift *Kw (surface layer):* .15

Land capability class, nonirrigated: 7e

Hydric soil: no

Hydrologic group: D

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
E -- 0 to 3 in	gravelly sandy loam	moderately rapid	0.3 to 0.4 in	4.5 to 6.5
Bw,BC -- 3 to 15 in	gravelly sandy loam	moderately rapid	0.9 to 1.5 in	4.5 to 6.5
R -- 15 to 60 in	unweathered bedrock	impermeable		

557AD--Conic gravelly sandy loam, 0 to 18 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

557AD--Conic gravelly sandy loam, 0 to 18 percent slopes

Conic

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 0 to 18 percent

Parent material:

layer): .15

Restrictive feature(s): dense material at 12 to 30 inches
lithic bedrock at 20 to 40 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

loamy drift over loamy till *Kw (surface*

Land capability class, nonirrigated: 4s

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

Representative soil profile:

Texture

E --	0 to 3 in	gravelly sandy loam
Bw,BC,BCd --	3 to 30 in	gravelly sandy loam
R --	30 to 60 in	unweathered bedrock

Permeability

moderately rapid
slow
impermeable

Available water

capacity

0.3 to 0.5 in
1.3 to 2.4 in

pH

3.5 to 6.0
4.5 to 6.0

557DF--Conic gravelly sandy loam, 12 to 35 percent slopes

Conic

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 12 to 35 percent

Parent material:

layer): .15

Restrictive feature(s): dense material at 12 to 30 inches
lithic bedrock at 20 to 40 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

loamy drift over loamy till *Kw (surface*

Land capability class, nonirrigated: 7e

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

Representative soil profile:

Texture

E --	0 to 3 in	gravelly sandy loam
Bw,BC,BCd --	3 to 30 in	gravelly sandy loam
R --	30 to 60 in	unweathered bedrock

Permeability

moderately rapid
slow
impermeable

Available water

capacity

0.3 to 0.5 in
1.3 to 2.4 in

pH

3.5 to 6.0
4.5 to 6.0

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

557DF--Conic gravelly sandy loam, 12 to 35 percent slopes

614--Blackhoof muck

Blackhoof

Extent: 85 percent of the unit

Landform(s): depressions on moraines

Slope gradient: 0 to 1 percent

Parent material:

layer): .02

Restrictive feature(s):

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

organic material over loamy till *Kw (surface*

Land capability class, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: D

Potential frost action: high

Representative soil profile:

Texture

Oa --	0 to 11 in	muck
A --	11 to 15 in	silty clay loam
Bg,Bw,C --	15 to 60 in	clay loam

Permeability

moderately rapid
slow
slow

Available water

capacity

6.1 to 7.2 in
0.6 to 0.8 in
6.3 to 7.6 in

pH

5.1 to 6.5
5.1 to 7.8

685--Oesterle fine sandy loam

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

685--Oesterle fine sandy loam

Oesterle

Extent: 85 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 3 percent

Parent material:

(surface layer): .20

Restrictive feature(s):

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

loamy alluvium over sandy outwash *Kw*

Land capability class, nonirrigated: 3w

Hydric soil: no

Hydrologic group: C

Potential frost action: high

Representative soil profile:

Texture

A --	0 to 7 in	fine sandy loam
E/B --	7 to 11 in	sandy loam
Bt --	11 to 31 in	gravelly sandy loam
2C --	31 to 60 in	gravelly sand

Available water

<i>Permeability</i>	<i>capacity</i>	<i>pH</i>
moderately rapid	0.7 to 1.3 in	4.5 to 6.5
moderately rapid	0.4 to 0.8 in	4.5 to 6.5
moderately rapid	1.0 to 3.6 in	4.5 to 6.5
rapid	0.3 to 2.0 in	5.1 to 6.5

695B--Finland loam, 2 to 6 percent slopes

Finland

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 6 percent

Parent material:

Restrictive feature(s): dense material at 14 to 27 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

loamy till *Kw (surface layer):* .28

Land capability class, nonirrigated: 2e

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 4 in	loam
Bhs,Bs --	4 to 20 in	loam
2Bw --	20 to 39 in	gravelly fine sandy loam
2Cd --	39 to 60 in	gravelly fine sandy loam

Available water

<i>Permeability</i>	<i>capacity</i>	<i>pH</i>
moderate	0.8 to 0.9 in	4.5 to 6.0
moderate	2.4 to 3.2 in	5.1 to 6.0
slow	0.0 to 1.1 in	5.1 to 6.5
impermeable	0.0 to 0.8 in	5.6 to 7.3

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

695B--Finland loam, 2 to 6 percent slopes

695C--Finland loam, 6 to 12 percent slopes

Finland

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 6 to 12 percent

Parent material:

Restrictive feature(s): dense material at 14 to 27 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

loamy till *Kw (surface layer):* .28

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 4 in	loam
Bhs,Bs --	4 to 20 in	loam
2Bw --	20 to 39 in	gravelly fine sandy loam
2Cd --	39 to 60 in	gravelly fine sandy loam

Permeability

Available water capacity

pH

moderate	0.8 to 0.9 in	4.5 to 6.0
moderate	2.4 to 3.2 in	5.1 to 6.0
slow	0.0 to 1.1 in	5.1 to 6.5
impermeable	0.0 to 0.8 in	5.6 to 7.3

695D--Finland loam, 12 to 18 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

695D--Finland loam, 12 to 18 percent slopes

Finland

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 12 to 18 percent

Parent material:

Restrictive feature(s): dense material at 14 to 27 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

loamy till *Kw (surface layer):* .28

Land capability class, nonirrigated: 4e

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 4 in	loam
Bhs,Bs --	4 to 20 in	loam
2Bw --	20 to 39 in	gravelly fine sandy loam
2Cd --	39 to 60 in	gravelly fine sandy loam

Permeability

moderate
moderate
slow
impermeable

Available water

capacity

0.8 to 0.9 in	4.5 to 6.0
2.4 to 3.2 in	5.1 to 6.0
0.0 to 1.1 in	5.1 to 6.5
0.0 to 0.8 in	5.6 to 7.3

pH

695E--Finland loam, 18 to 25 percent slopes

Finland

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 18 to 25 percent

Parent material:

Restrictive feature(s): dense material at 14 to 27 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

loamy till *Kw (surface layer):* .28

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 4 in	loam
Bhs,Bs --	4 to 20 in	loam
2Bw --	20 to 39 in	gravelly fine sandy loam
2Cd --	39 to 60 in	gravelly fine sandy loam

Permeability

moderate
moderate
slow
impermeable

Available water

capacity

0.8 to 0.9 in	4.5 to 6.0
2.4 to 3.2 in	5.1 to 6.0
0.0 to 1.1 in	5.1 to 6.5
0.0 to 0.8 in	5.6 to 7.3

pH

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

695E--Finland loam, 18 to 25 percent slopes

695F--Finland loam, 25 to 40 percent slopes

Finland

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 25 to 40 percent

Parent material:

Restrictive feature(s): dense material at 14 to 27 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

loamy till *Kw (surface layer):* .28

Land capability class, nonirrigated: 7e

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 4 in	loam
Bhs,Bs --	4 to 20 in	loam
2Bw --	20 to 39 in	gravelly fine sandy loam
2Cd --	39 to 60 in	gravelly fine sandy loam

Permeability

Available water

capacity

pH

moderate	0.8 to 0.9 in	4.5 to 6.0
moderate	2.4 to 3.2 in	5.1 to 6.0
slow	0.0 to 1.1 in	5.1 to 6.5
impermeable	0.0 to 0.8 in	5.6 to 7.3

696--Hermantown silt loam

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

696--Hermantown silt loam

Hermantown

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s): dense material at 30 to 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

loamy till *Kw (surface layer):* .32

Land capability class, nonirrigated: 3w

Hydric soil: no

Hydrologic group: C

Potential frost action: high

Representative soil profile:

Texture

A --	0 to 4 in	silt loam
E,Bw1 --	4 to 14 in	fine sandy loam
Bw2,Bw3 --	14 to 31 in	sandy loam
2Bw4 --	31 to 53 in	sandy loam
2Cd --	53 to 80 in	sandy loam

Permeability

moderate
moderate
moderate
slow
impermeable

Available water

capacity

0.8 to 1.0 in
1.5 to 2.0 in
2.0 to 3.0 in
2.2 to 3.1 in
0.3 to 1.9 in

pH

5.1 to 6.0
5.1 to 6.0
5.1 to 6.5
5.1 to 6.5
6.1 to 7.3

697B--Toimi sandy loam, 2 to 6 percent slopes

Toimi

Extent: 85 percent of the unit

Landform(s): drumlins

Slope gradient: 2 to 6 percent

Parent material:

Restrictive feature(s): dense material at 20 to 50 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

loamy till *Kw (surface layer):* .20

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 4 in	sandy loam
EB,Bw1 --	4 to 15 in	stony fine sandy loam
Bw2,BC --	15 to 35 in	sandy loam
2Cd --	35 to 80 in	gravelly sandy loam

Permeability

moderate
moderate
moderate
impermeable

Available water

capacity

0.4 to 0.8 in
0.4 to 1.8 in
1.6 to 3.2 in
1.8 to 4.9 in

pH

5.1 to 6.5
5.1 to 6.5
5.1 to 6.5
5.6 to 7.3

This report shows only the major soils in each map unit

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Map Unit Description (MN)

Cook 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]

697B--Toimi sandy loam, 2 to 6 percent slopes

697C--Toimi sandy loam, 6 to 12 percent slopes

Toimi

Extent: 85 percent of the unit

Landform(s): drumlins

Slope gradient: 6 to 12 percent

Parent material:

Restrictive feature(s): dense material at 20 to 50 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

loamy till *Kw (surface layer):* .20

Land capability class, nonirrigated: 4e

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 4 in	sandy loam
EB,Bw1 --	4 to 15 in	stony fine sandy loam
Bw2,BC --	15 to 35 in	sandy loam
2Cd --	35 to 80 in	gravelly sandy loam

Permeability

Available water

capacity

pH

moderate	0.4 to 0.8 in	5.1 to 6.5
moderate	0.4 to 1.8 in	5.1 to 6.5
moderate	1.6 to 3.2 in	5.1 to 6.5
impermeable	1.8 to 4.9 in	5.6 to 7.3

697D--Toimi sandy loam, 12 to 18 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

697D--Toimi sandy loam, 12 to 18 percent slopes

Toimi

Extent: 85 percent of the unit

Landform(s): drumlins

Slope gradient: 12 to 18 percent

Parent material:

Restrictive feature(s): dense material at 20 to 50 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

loamy till *Kw (surface layer):* .20

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 4 in	sandy loam
EB,Bw1 --	4 to 15 in	stony fine sandy loam
Bw2,BC --	15 to 35 in	sandy loam
2Cd --	35 to 80 in	gravelly sandy loam

Permeability

moderate
moderate
moderate
impermeable

Available water

capacity

0.4 to 0.8 in	5.1 to 6.5
0.4 to 1.8 in	5.1 to 6.5
1.6 to 3.2 in	5.1 to 6.5
1.8 to 4.9 in	5.6 to 7.3

pH

714--Buhl loam

Buhl

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 0 to 2 percent

Parent material:

layer): .32

Restrictive feature(s):

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

loamy loess over clayey till *Kw (surface*

Land capability class, nonirrigated: 3w

Hydric soil: no

Hydrologic group: C

Potential frost action: high

Representative soil profile:

Texture

A --	0 to 3 in	loam
E,2Bt --	3 to 48 in	clay
2BCd,2Cd --	48 to 60 in	clay

Permeability

moderate
slow
slow

Available water

capacity

0.6 to 0.8 in	4.5 to 5.5
4.5 to 7.2 in	5.1 to 6.5
1.1 to 1.8 in	6.6 to 7.8

pH

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

872--Pengilly and Winterfield soils

Pengilly, frequently flooded

Extent: 50 percent of the unit

Landform(s): swales on flood plains

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

Flooding: frequent

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

loamy alluvium *Kw (surface layer):* .24

Land capability class, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: D

Potential frost action: high

Representative soil profile:

Texture

A --	0 to 4 in	fine sandy loam
Cg --	4 to 60 in	stratified loamy very fine sand to silt loam

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>
moderately rapid	0.5 to 0.9 in	5.6 to 7.3
moderate	6.7 to 11.2 in	6.1 to 8.4

Winterfield, occasionally flooded

Extent: 50 percent of the unit

Landform(s): flood plains

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

Flooding: occasional

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

sandy alluvium *Kw (surface layer):* .17

Land capability class, nonirrigated: 4w

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 7 in	loamy sand
C1,C2 --	7 to 31 in	coarse sand
C3 --	31 to 60 in	sand

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>
rapid	0.7 to 0.9 in	5.6 to 7.8
rapid	1.4 to 2.6 in	5.6 to 7.8
rapid	1.1 to 2.9 in	5.6 to 8.4

890B--Barto-Mesaba complex, 2 to 6 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

890B--Barto-Mesaba complex, 2 to 6 percent slopes

Barto

Extent: 50 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 6 percent

Parent material:

Restrictive feature(s): lithic bedrock at 8 to 20 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

loamy drift *Kw (surface layer):* .24

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: D

Potential frost action: moderate

Representative soil profile:

Texture

Bhir --	0 to 8 in	gravelly loam
Bw --	8 to 15 in	gravelly coarse sandy loam
R --	15 to 60 in	unweathered bedrock

Permeability

moderately rapid
moderately rapid
impermeable

Available water capacity

1.2 to 1.4 in	4.5 to 6.5
0.6 to 0.9 in	4.5 to 6.5

pH

Mesaba

Extent: 40 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 6 percent

Parent material:

Restrictive feature(s): lithic bedrock at 20 to 40 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

loamy drift *Kw (surface layer):* .17

Land capability class, nonirrigated: 4s

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

Representative soil profile:

Texture

Bhs --	0 to 4 in	gravelly loam
Bs,Bw --	4 to 28 in	gravelly coarse sandy loam
R --	28 to 60 in	unweathered bedrock

Permeability

moderately rapid
moderately rapid
impermeable

Available water capacity

0.4 to 0.6 in	5.1 to 6.5
2.4 to 3.6 in	5.1 to 6.5

pH

890BD--Barto-Mesaba complex, 2 to 18 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook County, Minnesota

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890BD--Barto-Mesaba complex, 2 to 18 percent slopes

Barto

Extent: 50 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 18 percent

Parent material:

Restrictive feature(s): lithic bedrock at 8 to 20 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

loamy drift *Kw (surface layer):* .24

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: D

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Bhir -- 0 to 8 in	gravelly loam	moderately rapid	1.2 to 1.4 in	4.5 to 6.5
Bw -- 8 to 15 in	gravelly coarse sandy loam	moderately rapid	0.6 to 0.9 in	4.5 to 6.5
R -- 15 to 60 in	unweathered bedrock	impermeable		

Mesaba

Extent: 40 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 18 percent

Parent material:

Restrictive feature(s): lithic bedrock at 20 to 40 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

loamy drift *Kw (surface layer):* .17

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Bhs -- 0 to 4 in	gravelly loam	moderately rapid	0.4 to 0.6 in	5.1 to 6.5
Bs,Bw -- 4 to 28 in	gravelly coarse sandy loam	moderately rapid	2.4 to 3.6 in	5.1 to 6.5
R -- 28 to 60 in	unweathered bedrock	impermeable		

890EF--Barto-Mesaba complex, 18 to 35 percent slopes

This report shows only the major soils in each map unit

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Map Unit Description (MN)

Cook 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]

890EF--Barto-Mesaba complex, 18 to 35 percent slopes

Barto

Extent: 50 percent of the unit

Landform(s): moraines

Slope gradient: 18 to 35 percent

Parent material:

Restrictive feature(s): lithic bedrock at 8 to 20 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

loamy drift *Kw (surface layer):* .24

Land capability class, nonirrigated: 7e

Hydric soil: no

Hydrologic group: D

Potential frost action: moderate

Representative soil profile:

Texture

Bhir --	0 to 8 in	gravelly loam
Bw --	8 to 15 in	gravelly coarse sandy loam
R --	15 to 60 in	unweathered bedrock

Permeability

moderately rapid
moderately rapid
impermeable

Available water capacity

1.2 to 1.4 in
0.6 to 0.9 in

pH

4.5 to 6.5
4.5 to 6.5

Mesaba

Extent: 40 percent of the unit

Landform(s): moraines

Slope gradient: 18 to 35 percent

Parent material:

Restrictive feature(s): lithic bedrock at 20 to 40 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

loamy drift *Kw (surface layer):* .17

Land capability class, nonirrigated: 7e

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

Representative soil profile:

Texture

Bhs --	0 to 4 in	gravelly loam
Bs,Bw --	4 to 28 in	gravelly coarse sandy loam
R --	28 to 60 in	unweathered bedrock

Permeability

moderately rapid
moderately rapid
impermeable

Available water capacity

0.4 to 0.6 in
2.4 to 3.6 in

pH

5.1 to 6.5
5.1 to 6.5

952AD--Quetico-Rock outcrop complex, 0 to 18 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

952AD--Quetico-Rock outcrop complex, 0 to 18 percent slopes

Quetico

<p><i>Extent:</i> 60 percent of the unit</p> <p><i>Landform(s):</i> moraines</p> <p><i>Slope gradient:</i> 2 to 18 percent</p> <p><i>Parent material:</i></p> <p><i>Restrictive feature(s):</i> lithic bedrock at 4 to 10 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> somewhat excessively drained</p>	<p><i>Soil loss tolerance (T factor):</i> 1</p> <p><i>Wind erodibility group (WEG):</i> 8</p> <p><i>Wind erodibility index (WEI):</i> 0</p> <p>loamy drift <i>Kw (surface layer):</i> .24</p> <p><i>Land capability class, nonirrigated:</i> 7s</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> D</p> <p><i>Potential frost action:</i> low</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>	
Bs --	0 to 5 in	gravelly loam	moderate	0.7 to 1.0 in	4.5 to 5.5
R --	5 to 60 in	unweathered bedrock	impermeable		

Rock outcrop

<p><i>Extent:</i> 30 percent of the unit</p> <p><i>Landform(s):</i> moraines</p> <p><i>Slope gradient:</i> 0 to 18 percent</p> <p><i>Parent material:</i></p> <p><i>Restrictive feature(s):</i></p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i></p>	<p><i>Soil loss tolerance (T factor):</i></p> <p><i>Wind erodibility group (WEG):</i></p> <p><i>Wind erodibility index (WEI):</i></p> <p><i>Kw (surface layer):</i></p> <p><i>Land capability class, nonirrigated:</i></p> <p><i>Hydric soil:</i></p> <p><i>Hydrologic group:</i></p> <p><i>Potential frost action:</i></p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

952EF--Quetico-Rock outcrop complex, 12 to 40 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

952EF--Quetico-Rock outcrop complex, 12 to 40 percent slopes

Quetico

Extent: 60 percent of the unit

Landform(s): moraines

Slope gradient: 12 to 40 percent

Parent material:

Restrictive feature(s): lithic bedrock at 4 to 10 inches

Flooding: none

Ponding: none

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

loamy drift *Kw (surface layer):* .24

Land capability class, nonirrigated: 7s

Hydric soil: no

Hydrologic group: D

Potential frost action: low

Representative soil profile:

Texture

Bs --	0 to 5 in	gravelly loam
R --	5 to 60 in	unweathered bedrock

<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
moderate	0.7 to 1.0 in	4.5 to 5.5
impermeable		

Rock outcrop

Extent: 30 percent of the unit

Landform(s): moraines

Slope gradient: 12 to 40 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw (surface layer):

Land capability class, nonirrigated:

Hydric soil:

Hydrologic group:

Potential frost action:

Representative soil profile:

Texture

<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

980--Blackhoof and Mahtowa soils

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

980--Blackhoof and Mahtowa soils

Blackhoof

Extent: 50 percent of the unit

Landform(s): depressions on moraines

Slope gradient: 0 to 1 percent

Parent material:

layer): .02

Restrictive feature(s):

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

organic material over loamy till *Kw (surface*

Land capability class, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: D

Potential frost action: high

Representative soil profile:

Oa --	0 to 11 in	muck
A --	11 to 15 in	clay loam
Bg,Bw,C --	15 to 60 in	clay loam

Texture

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>
moderately rapid	6.1 to 7.2 in	
slow	0.6 to 0.8 in	5.1 to 6.5
slow	6.3 to 7.6 in	5.1 to 7.8

Mahtowa

Extent: 50 percent of the unit

Landform(s): depressions on moraines

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

loamy till *Kw (surface layer):* .28

Land capability class, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: C/D

Potential frost action: high

Representative soil profile:

A --	0 to 12 in	silt loam
Bg --	12 to 21 in	loam
Bw,C --	21 to 60 in	loam

Texture

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>
moderate	2.1 to 2.8 in	5.1 to 6.5
moderately slow	1.5 to 1.7 in	6.1 to 7.3
moderately rapid	5.5 to 7.4 in	6.6 to 7.8

990--Twig and Parent soils

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

990--Twig and Parent soils

Twig

Extent: 50 percent of the unit

Landform(s): depressions on moraines

Slope gradient: 0 to 1 percent

Parent material:

layer): .02

Restrictive feature(s): dense material at 39 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

organic material over loamy till *Kw (surface*

Land capability class, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: D

Potential frost action: high

Representative soil profile:

Texture

Oa --	0 to 12 in	muck
A --	12 to 20 in	silt loam
Eg --	20 to 26 in	loam
2Btg,2Bt --	26 to 48 in	sandy loam
2BCd --	48 to 72 in	sandy loam

Permeability

Available water

capacity

pH

moderately rapid	4.1 to 6.5 in	
moderately slow	1.7 to 1.8 in	3.5 to 5.5
impermeable	0.4 to 0.6 in	3.5 to 5.5
moderately slow	2.4 to 3.5 in	3.5 to 5.5
impermeable	0.0 to 1.0 in	3.5 to 6.0

Parent

Extent: 50 percent of the unit

Landform(s): depressions on moraines

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s): dense material at 39 to 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

loamy till *Kw (surface layer):* .28

Land capability class, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: C/D

Potential frost action: high

Representative soil profile:

Texture

A --	0 to 7 in	loam
AB,Bg --	7 to 28 in	fine sandy loam
BC --	28 to 40 in	fine sandy loam
BCd --	40 to 60 in	fine sandy loam

Permeability

Available water

capacity

pH

moderate	1.4 to 1.6 in	5.6 to 7.3
moderate	2.5 to 3.5 in	5.6 to 7.3
slow	0.0 to 1.0 in	6.1 to 7.3
impermeable	0.0 to 0.8 in	6.1 to 8.4

995--Borosaprists undifferentiated

This report shows only the major soils in each map unit

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Map Unit Description (MN)

Cook 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]

995--Borosaprists undifferentiated

Borosaprists

Extent: 85 percent of the unit

Landform(s): depressions

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

organic material *Kw (surface layer):* .02

Land capability class, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: D

Potential frost action:

Representative soil profile:

Texture

Oa -- 0 to 80 in muck

<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
moderately rapid	28.0 to 36.0 in	

1001--Alluvial land, occasionally flooded

Alluvial land, occasionally flooded

Extent: 90 percent of the unit

Landform(s): flood plains

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: occasional

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

alluvium *Kw (surface layer):* .28

Land capability class, nonirrigated: 4w

Hydric soil: no

Hydrologic group: B

Potential frost action:

Representative soil profile:

Texture

A -- 0 to 6 in silt loam
C -- 6 to 80 in stratified gravelly loamy coarse sand to silt loam

<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
moderate	1.1 to 1.4 in	5.1 to 6.5
moderately rapid	5.9 to 17.8 in	5.1 to 6.5

1002--Alluvial land, frequently flooded

This report shows only the major soils in each map unit

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Map Unit Description (MN)

Cook 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]

1002--Alluvial land, frequently flooded

Alluvial land, frequently flooded

Extent: 90 percent of the unit
Landform(s): swales on flood plains
Slope gradient: 0 to 2 percent
Parent material:
Restrictive feature(s):
Flooding: frequent
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
 alluvium *Kw (surface layer):* .28
Land capability class, nonirrigated: 8w
Hydric soil: yes
Hydrologic group: D
Potential frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 16 in	silt loam	moderate	2.9 to 3.9 in	5.6 to 7.8
Cg -- 16 to 80 in	stratified loamy sand to silt	rapid	2.6 to 12.8 in	5.6 to 7.8

1020F--Udorthents, very steep

Udorthents, very steep

Extent: 100 percent of the unit
Landform(s): moraines
Slope gradient: 25 to 75 percent
Parent material:
Restrictive feature(s):
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 (surface layer): .24
Land capability class, nonirrigated: 7e
Hydric soil: no
Hydrologic group: B
Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
C -- 0 to 60 in	loam	moderately rapid	4.8 to 8.4 in	6.6 to 9.0

1022--Dumps

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

1022--Dumps

Dumps

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

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw (surface layer):
Land capability class, nonirrigated: 8s
Hydric soil:
Hydrologic group:
Potential frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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1334B--Eveleth stony loam, 2 to 6 percent slopes

Eveleth

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 2 to 6 percent
Parent material:
(surface layer): .24
Restrictive feature(s): dense material at 24 to 39 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
loamy drift over sandy and gravelly till *Kw*
Land capability class, nonirrigated: 3s
Hydric soil: no
Hydrologic group: C
Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	stony loam	moderate	0.3 to 0.5 in	4.5 to 6.0
Bw -- 3 to 28 in	stony loam	moderate	1.7 to 3.5 in	5.1 to 6.5
2BC -- 28 to 41 in	very gravelly loamy sand	moderate	0.3 to 0.9 in	5.1 to 6.5
2Cd -- 41 to 80 in	very gravelly fine sandy loam	slow	0.8 to 2.7 in	5.1 to 6.5

1334C--Eveleth stony loam, 6 to 12 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

1334C--Eveleth stony loam, 6 to 12 percent slopes

Eveleth

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 6 to 12 percent

Parent material:

(surface layer): .24

Restrictive feature(s): dense material at 24 to 39 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

sandy and gravelly till over loamy drift *Kw*

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 3 in	stony loam
Bw --	3 to 18 in	stony loam
2BC --	18 to 36 in	very gravelly sandy loam
2Cd --	36 to 80 in	very gravelly loamy sand

Permeability

moderate
moderate
moderate
slow

Available water

capacity

0.3 to 0.5 in	4.5 to 6.0
1.0 to 2.1 in	5.1 to 6.5
0.4 to 1.2 in	5.1 to 6.5
0.9 to 3.1 in	5.1 to 6.5

pH

1335BC--Eveleth stony loam, 2 to 12 percent slopes

Eveleth

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 12 percent

Parent material:

(surface layer): .24

Restrictive feature(s): dense material at 24 to 39 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

sandy and gravelly till over loamy drift *Kw*

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 3 in	stony loam
Bw --	3 to 18 in	stony loam
2BC --	18 to 36 in	very gravelly sandy loam
2Cd --	36 to 80 in	very gravelly loamy sand

Permeability

moderate
moderate
moderate
slow

Available water

capacity

0.3 to 0.5 in	4.5 to 6.0
1.0 to 2.1 in	5.1 to 6.5
0.4 to 1.2 in	5.1 to 6.5
0.9 to 3.1 in	5.1 to 6.5

pH

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

1335BC--Eveleth stony loam, 2 to 12 percent slopes

1336--Bugcreek stony loam

Bugcreek

Extent: 85 percent of the unit

Landform(s): depressions on drumlins

Slope gradient: 0 to 1 percent

Parent material:

layer): .15

Restrictive feature(s): dense material at 39 to 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

loamy drift over loamy till *Kw (surface*

Land capability class, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: D

Potential frost action: high

Representative soil profile:

Texture

A --	0 to 6 in	stony loam
Bw1,Bw2 --	6 to 20 in	stony sandy loam
Bw3,Bw4,Bw5	20 to 58 in	sandy loam
--		
2Cd --	58 to 80 in	gravelly sandy loam

Permeability

Available water capacity

pH

moderate	0.6 to 0.6 in	5.1 to 6.5
moderately rapid	1.0 to 1.4 in	5.1 to 6.5
moderate	4.2 to 6.8 in	5.1 to 6.5
impermeable	0.4 to 2.2 in	5.6 to 7.3

1340A--Ontonagon-Omega complex, 0 to 2 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

1340A--Ontonagon-Omega complex, 0 to 2 percent slopes

Ontonagon

Extent: 50 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 2 percent

Parent material:

layer): .28

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

clayey glaciolacustrine deposits *Kw (surface*

Land capability class, nonirrigated: 3s

Hydric soil: no

Hydrologic group: D

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 7 in	silty clay
B/E --	7 to 13 in	silty clay
Bt,BC --	13 to 32 in	clay
C --	32 to 60 in	clay

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>
slow	0.9 to 1.0 in	4.5 to 6.5
moderately slow	1.2 to 1.3 in	4.5 to 6.5
impermeable	2.1 to 2.5 in	4.5 to 7.3
impermeable	3.1 to 3.6 in	7.4 to 8.4

Omega

Extent: 40 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

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

sandy outwash *Kw (surface layer):* .17

Land capability class, nonirrigated: 3s

Hydric soil: no

Hydrologic group: A

Potential frost action: low

Representative soil profile:

Texture

E --	0 to 3 in	loamy fine sand
Bs,BC,C --	3 to 60 in	sand

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>
rapid	0.3 to 0.4 in	4.5 to 5.5
rapid	2.8 to 4.0 in	5.1 to 7.3

1340B--Ontonagon-Omega complex, 2 to 6 percent slopes

This report shows only the major soils in each map unit

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Map Unit Description (MN)

Cook 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]

1340B--Ontonagon-Omega complex, 2 to 6 percent slopes

Ontonagon

Extent: 50 percent of the unit

Landform(s): lake plains

Slope gradient: 2 to 6 percent

Parent material:

layer): .28

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

clayey glaciolacustrine deposits *Kw (surface*

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: D

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 7 in	silty clay
B/E --	7 to 13 in	silty clay
Bt,BC --	13 to 32 in	clay
C --	32 to 60 in	clay

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>
slow	0.9 to 1.0 in	4.5 to 6.5
moderately slow	1.2 to 1.3 in	4.5 to 6.5
impermeable	2.1 to 2.5 in	4.5 to 7.3
impermeable	3.1 to 3.6 in	7.4 to 8.4

Omega

Extent: 40 percent of the unit

Landform(s): lake plains

Slope gradient: 2 to 6 percent

Parent material:

Restrictive feature(s):

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

sandy outwash *Kw (surface layer):* .17

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: A

Potential frost action: low

Representative soil profile:

Texture

E --	0 to 3 in	loamy fine sand
Bs,BC,C --	3 to 60 in	sand

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>
rapid	0.3 to 0.4 in	4.5 to 5.5
rapid	2.8 to 4.0 in	5.1 to 7.3

1340C--Ontonagon-Omega complex, 6 to 12 percent slopes

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Map Unit Description (MN)

Cook 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]

1340C--Ontonagon-Omega complex, 6 to 12 percent slopes

Ontonagon

Extent: 50 percent of the unit

Landform(s): lake plains

Slope gradient: 6 to 12 percent

Parent material:

layer): .28

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

clayey glaciolacustrine deposits *Kw (surface*

Land capability class, nonirrigated: 4e

Hydric soil: no

Hydrologic group: D

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 7 in	silty clay
B/E --	7 to 13 in	silty clay
Bt,BC --	13 to 32 in	clay
C --	32 to 60 in	clay

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>
slow	0.9 to 1.0 in	4.5 to 6.5
moderately slow	1.2 to 1.3 in	4.5 to 6.5
impermeable	2.1 to 2.5 in	4.5 to 7.3
impermeable	3.1 to 3.6 in	7.4 to 8.4

Omega

Extent: 40 percent of the unit

Landform(s): lake plains

Slope gradient: 6 to 12 percent

Parent material:

Restrictive feature(s):

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

sandy outwash *Kw (surface layer):* .17

Land capability class, nonirrigated: 4e

Hydric soil: no

Hydrologic group: A

Potential frost action: low

Representative soil profile:

Texture

E --	0 to 3 in	loamy fine sand
Bs,BC,C --	3 to 60 in	sand

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>
rapid	0.3 to 0.4 in	4.5 to 5.5
rapid	2.8 to 4.0 in	5.1 to 7.3

1340D--Ontonagon-Omega complex, 12 to 18 percent slopes

This report shows only the major soils in each map unit

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Map Unit Description (MN)

Cook 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]

1340D--Ontonagon-Omega complex, 12 to 18 percent slopes

Ontonagon

Extent: 50 percent of the unit

Landform(s): lake plains

Slope gradient: 12 to 18 percent

Parent material:

layer): .28

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

clayey glaciolacustrine deposits *Kw (surface*

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: D

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 7 in	silty clay
B/E --	7 to 13 in	silty clay
Bt,BC --	13 to 32 in	clay
C --	32 to 60 in	clay

Permeability

slow
moderately slow
impermeable
impermeable

Available water

capacity

0.9 to 1.0 in	4.5 to 6.5
1.2 to 1.3 in	4.5 to 6.5
2.1 to 2.5 in	4.5 to 7.3
3.1 to 3.6 in	7.4 to 8.4

pH

Omega

Extent: 40 percent of the unit

Landform(s): lake plains

Slope gradient: 12 to 18 percent

Parent material:

Restrictive feature(s):

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

sandy outwash *Kw (surface layer):* .17

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: A

Potential frost action: low

Representative soil profile:

Texture

E --	0 to 3 in	loamy fine sand
Bs,BC,C --	3 to 60 in	sand

Permeability

rapid
rapid

Available water

capacity

0.3 to 0.4 in	4.5 to 5.5
2.8 to 4.0 in	5.1 to 7.3

pH

1340E--Ontonagon-Omega complex, 18 to 25 percent slopes

This report shows only the major soils in each map unit

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Map Unit Description (MN)

Cook 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]

1340E--Ontonagon-Omega complex, 18 to 25 percent slopes

Ontonagon

Extent: 50 percent of the unit

Landform(s): lake plains

Slope gradient: 18 to 25 percent

Parent material:

layer): .28

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

clayey glaciolacustrine deposits *Kw (surface*

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: D

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 7 in	silty clay
B/E --	7 to 13 in	silty clay
Bt,BC --	13 to 32 in	clay
C --	32 to 60 in	clay

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>
slow	0.9 to 1.0 in	4.5 to 6.5
moderately slow	1.2 to 1.3 in	4.5 to 6.5
impermeable	2.1 to 2.5 in	4.5 to 7.3
impermeable	3.1 to 3.6 in	7.4 to 8.4

Omega

Extent: 40 percent of the unit

Landform(s): lake plains

Slope gradient: 18 to 25 percent

Parent material:

Restrictive feature(s):

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

sandy outwash *Kw (surface layer):* .17

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: A

Potential frost action: low

Representative soil profile:

Texture

E --	0 to 3 in	loamy fine sand
Bs,BC,C --	3 to 60 in	sand

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>
rapid	0.3 to 0.4 in	4.5 to 5.5
rapid	2.8 to 4.0 in	5.1 to 7.3

1340F--Ontonagon-Omega complex, 25 to 40 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

1340F--Ontonagon-Omega complex, 25 to 40 percent slopes

Ontonagon

Extent: 50 percent of the unit

Landform(s): lake plains

Slope gradient: 25 to 40 percent

Parent material:

layer): .28

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

clayey glaciolacustrine deposits *Kw (surface*

Land capability class, nonirrigated: 7e

Hydric soil: no

Hydrologic group: D

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 7 in	silty clay
B/E --	7 to 13 in	silty clay
Bt,BC --	13 to 32 in	clay
C --	32 to 60 in	clay

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>
slow	0.9 to 1.0 in	4.5 to 6.5
moderately slow	1.2 to 1.3 in	4.5 to 6.5
impermeable	2.1 to 2.5 in	4.5 to 7.3
impermeable	3.1 to 3.6 in	7.4 to 8.4

Omega

Extent: 40 percent of the unit

Landform(s): lake plains

Slope gradient: 25 to 40 percent

Parent material:

Restrictive feature(s):

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

sandy outwash *Kw (surface layer):* .17

Land capability class, nonirrigated: 7e

Hydric soil: no

Hydrologic group: A

Potential frost action: low

Representative soil profile:

Texture

E --	0 to 3 in	loamy fine sand
Bs,BC,C --	3 to 60 in	sand

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>
rapid	0.3 to 0.4 in	4.5 to 5.5
rapid	2.8 to 4.0 in	5.1 to 7.3

1823--Mesaba variant, 2 to 12 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Cook 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]

1823--Mesaba variant, 2 to 12 percent slopes

Mesaba, variant

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 12 percent

Parent material:

Restrictive feature(s): lithic bedrock at 40 to 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

loamy till *Kw (surface layer):* .17

Land capability class, nonirrigated: 4s

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Representative soil profile:

Texture

Bhs --	0 to 4 in	gravelly loam
Bs,Bw,BC --	4 to 50 in	gravelly coarse sand
R --	50 to 60 in	unweathered bedrock

Available water

<i>Permeability</i>	<i>capacity</i>	<i>pH</i>
moderately rapid	0.4 to 0.6 in	4.5 to 6.5
rapid	2.3 to 4.6 in	5.6 to 7.8
impermeable		

W--Water

Water

Extent: 100 percent of the unit

Landform(s):

Slope gradient:

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw (surface layer):

Land capability class, nonirrigated:

Hydric soil:

Hydrologic group:

Potential frost action:

Representative soil profile:

Texture

<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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This report provides a semi tabular listing of some soil and site properties and interpretations valuable in communicating the concept of a map unit. It also includes commonly used conservation planning information in one place for easy access. Major soil components are always displayed and minor components are also displayed if they are included in the database and they are selected at the time the report is generated.

This report shows only the major soils in each map unit