

Soil Descriptions - Non Technical

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B27A--Mcquade-Buhl Complex, 0 To 3 Percent Slopes

Component Description

Mcquade and similar soils

Extent: 40 to 60 percent of the unit

Geomorphic description:

Till plain

Position on landform:

Flats

Slope range: 0 to 2 percent

Surface layer texture: Loam

Depth to restrictive feature:

Dense material: 40 to 60 inches

Drainage class: Poorly drained

Parent material:

Loamy material over dense fine till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet February August September

Ponding: None

Available water capacity to a depth of 60 inches: 8.2 inches

Content of organic matter in the upper 10 inches: 3.6 percent

Typical profile:

A--0 to 4 inches; loam

Eg--4 to 8 inches; loam

2B/E--8 to 17 inches; clay loam

2Bt--17 to 36 inches; clay

2BCt--36 to 52 inches; clay

2BCd--52 to 80 inches; clay

Buhl and similar soils

Extent: 25 to 45 percent of the unit

Geomorphic description:

Till plain

Position on landform:

Low rises

Slope range: 1 to 3 percent

Surface layer texture: Loam

Depth to restrictive feature:

Dense material: 40 to 60 inches

Drainage class: Somewhat poorly drained

Parent material:

Loamy material over dense fine till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot April November

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February July August  
September

Ponding: None  
Available water capacity to a depth of 60 inches: 8.8 inches  
Content of organic matter in the upper 10 inches: 2.1 percent  
Typical profile:  
A--0 to 3 inches; loam  
E--3 to 13 inches; loam  
2B/E--13 to 18 inches; clay loam  
2Bt1--18 to 32 inches; clay  
2Bt2--32 to 58 inches; clay  
2BCd--58 to 80 inches; clay

B28B--Buhl Loam, 1 To 5 Percent Slopes

Component Description

Buhl and similar soils

Extent: 70 to 90 percent of the unit  
Geomorphic description:  
Drumlin  
Position on landform:  
Backslopes, footslopes and summits  
Slope range: 1 to 5 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Dense material: 40 to 60 inches  
Drainage class: Somewhat poorly drained  
Parent material:  
Loamy material over dense fine till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
0.5 foot April November  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet January February July August  
September

Ponding: None  
Available water capacity to a depth of 60 inches: 8.8 inches  
Content of organic matter in the upper 10 inches: 2.1 percent  
Typical profile:  
A--0 to 3 inches; loam  
E--3 to 13 inches; loam  
2B/E--13 to 18 inches; clay loam  
2Bt1--18 to 32 inches; clay  
2Bt2--32 to 58 inches; clay  
2BCd--58 to 80 inches; clay

B29D--Hibbing-Buhl Complex, 1 To 18 Percent Slopes

Component Description

Hibbing and similar soils

Extent: 45 to 65 percent of the unit  
Geomorphic description:  
Moraine  
Position on landform:  
Backslopes, shoulders and convex summits  
Slope range: 6 to 18 percent  
Surface layer texture: Loam  
Depth to restrictive feature:

Dense material: 40 to 60 inches  
Drainage class: Moderately well drained  
Parent material:  
Loamy material over dense fine till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
1.5 feet April November  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet January February March July  
August September December  
Ponding: None  
Available water capacity to a depth of 60 inches: 7.9 inches  
Content of organic matter in the upper 10 inches: 2.4 percent  
Typical profile:  
A--0 to 4 inches; loam  
Bw--4 to 8 inches; loam  
2E/B--8 to 12 inches; loam  
2Bt1--12 to 27 inches; clay  
2Bt2--27 to 36 inches; clay  
2Bt3--36 to 48 inches; clay  
2BCd--48 to 80 inches; clay

#### Buhl and similar soils

Extent: 20 to 30 percent of the unit  
Geomorphic description:  
Moraine  
Position on landform:  
Foothills, backslopes and nearly level summits  
Slope range: 1 to 5 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Dense material: 40 to 60 inches  
Drainage class: Somewhat poorly drained  
Parent material:  
Loamy material over dense fine till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
0.5 foot April November  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet January February July August  
September  
Ponding: None  
Available water capacity to a depth of 60 inches: 8.8 inches  
Content of organic matter in the upper 10 inches: 2.1 percent  
Typical profile:  
A--0 to 3 inches; loam  
E--3 to 13 inches; loam  
2B/E--13 to 18 inches; clay loam  
2Bt1--18 to 32 inches; clay  
2Bt2--32 to 58 inches; clay  
2BCd--58 to 80 inches; clay

#### B31D--Hibbing Loam, 8 To 18 Percent Slopes

##### Component Description

#### Hibbing and similar soils

Extent: 75 to 95 percent of the unit  
Geomorphic description:

Moraine

Position on landform:

Sideslopes

Slope range: 8 to 18 percent

Surface layer texture: Loam

Depth to restrictive feature:

Dense material: 40 to 60 inches

Drainage class: Moderately well drained

Parent material:

Loamy material over dense fine till

Flooding: None

Wet soil moisture status is highest (depth, months):

1.5 feet April November

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March July

August September December

Ponding: None

Available water capacity to a depth of 60 inches: 7.9 inches

Content of organic matter in the upper 10 inches: 2.4 percent

Typical profile:

A--0 to 4 inches; loam

Bw--4 to 8 inches; loam

2E/B--8 to 12 inches; loam

2Bt1--12 to 27 inches; clay

2Bt2--27 to 36 inches; clay

2Bt3--36 to 48 inches; clay

2BCd--48 to 80 inches; clay

B31E--Hibbing Loam, 18 To 30 Percent Slopes

Component Description

Hibbing and similar soils

Extent: 85 to 95 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Sideslopes

Slope range: 18 to 30 percent

Surface layer texture: Loam

Depth to restrictive feature:

Dense material: 40 to 60 inches

Drainage class: Moderately well drained

Parent material:

Loamy material over dense fine till

Flooding: None

Wet soil moisture status is highest (depth, months):

1.5 feet April November

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March July

August September December

Ponding: None

Available water capacity to a depth of 60 inches: 7.9 inches

Content of organic matter in the upper 10 inches: 2.4 percent

Typical profile:

A--0 to 4 inches; loam

Bw--4 to 8 inches; loam

2E/B--8 to 12 inches; loam

2Bt1--12 to 27 inches; clay

2Bt2--27 to 36 inches; clay  
2Bt3--36 to 48 inches; clay  
2BCd--48 to 80 inches; clay

B32A--Mcquade-Daisybay, Depressional-Fayal, Depressional Complex, 0 To 2  
Percent Slopes

Component Description

Mcquade and similar soils

Extent: 35 to 50 percent of the unit

Geomorphic description:

Till plain

Position on landform:

Flats

Slope range: 0 to 2 percent

Surface layer texture: Loam

Depth to restrictive feature:

Dense material: 40 to 60 inches

Drainage class: Poorly drained

Parent material:

Loamy material over dense fine till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet February August September

Ponding: None

Available water capacity to a depth of 60 inches: 8.2 inches

Content of organic matter in the upper 10 inches: 3.6 percent

Typical profile:

A--0 to 4 inches; loam

Eg--4 to 8 inches; loam

2B/E--8 to 17 inches; clay loam

2Bt--17 to 36 inches; clay

2BCt--36 to 52 inches; clay

2BCd--52 to 80 inches; clay

Dora, depressional and similar soils

Extent: 20 to 40 percent of the unit

Geomorphic description:

Till plain

Position on landform:

Depressions

Slope range: 0 to 1 percent

Surface layer texture: Mucky peat

Depth to restrictive feature:

Dense material: 40 to 60 inches

Drainage class: Very poorly drained

Parent material:

Organic deposits over dense fine till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June November

Wet soil moisture status is lowest (depth, months):

1.5 feet February

Ponding does not occur (months):

January February March August September December

Ponding is deepest (depth, months):

0.5 foot

April May June July October  
November

Available water capacity to a depth of 60 inches: 17.5 inches

Content of organic matter in the upper 10 inches: 81.0 percent

Typical profile:

Oe--0 to 8 inches; mucky peat

Oa--8 to 33 inches; muck

2Cg--33 to 65 inches; clay

2Cd--65 to 80 inches; clay

Fayal, depressional and similar soils

Extent: 15 to 35 percent of the unit

Geomorphic description:

Till plain

Position on landform:

Depressions and swales

Slope range: 0 to 1 percent

Surface layer texture: Mucky peat

Depth to restrictive feature:

Dense material: 40 to 60 inches

Drainage class: Very poorly drained

Parent material:

Loamy material over dense fine till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June November

Wet soil moisture status is lowest (depth, months):

2.0 feet February

Ponding does not occur (months):

January February December

Ponding is deepest (depth, months):

0.5 foot March April May June July August  
September October November

Available water capacity to a depth of 60 inches: 9.8 inches

Content of organic matter in the upper 10 inches: 48.3 percent

Typical profile:

Oe--0 to 5 inches; mucky peat

A--5 to 9 inches; mucky silt loam

Eg--9 to 17 inches; clay loam

2Btg--17 to 29 inches; clay

2BC--29 to 46 inches; clay

2BCd--46 to 80 inches; clay

B33A--Mcquade-Fayal, Depressional Complex, 0 To 2 Percent Slopes

#### Component Description

Mcquade and similar soils

Extent: 40 to 60 percent of the unit

Geomorphic description:

Till plain

Position on landform:

Flats

Slope range: 0 to 2 percent

Surface layer texture: Loam

Depth to restrictive feature:

Dense material: 40 to 60 inches

Drainage class: Poorly drained

Parent material:

Loamy material over dense fine till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
At the surface April May  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet February August September  
Ponding: None  
Available water capacity to a depth of 60 inches: 8.2 inches  
Content of organic matter in the upper 10 inches: 3.6 percent  
Typical profile:  
A--0 to 4 inches; loam  
Eg--4 to 8 inches; loam  
2B/E--8 to 17 inches; clay loam  
2Bt--17 to 36 inches; clay  
2BCt--36 to 52 inches; clay  
2BCd--52 to 80 inches; clay

Fayal, depressional and similar soils  
Extent: 35 to 55 percent of the unit  
Geomorphic description:  
Till plain  
Position on landform:  
Swales  
Slope range: 0 to 1 percent  
Surface layer texture: Mucky peat  
Depth to restrictive feature:  
Dense material: 40 to 60 inches  
Drainage class: Very poorly drained  
Parent material:  
Loamy material over dense fine till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
At the surface April May June November  
Wet soil moisture status is lowest (depth, months):  
2.0 feet February  
Ponding does not occur (months):  
January February December  
Ponding is deepest (depth, months):  
0.5 foot March April May June July August  
September October November  
Available water capacity to a depth of 60 inches: 9.8 inches  
Content of organic matter in the upper 10 inches: 48.3 percent  
Typical profile:  
Oe--0 to 5 inches; mucky peat  
A--5 to 9 inches; mucky silt loam  
Eg--9 to 17 inches; clay loam  
2Btg--17 to 29 inches; clay  
2BC--29 to 46 inches; clay  
2BCd--46 to 80 inches; clay

#### B34B--Unnamed (majestic)-Hibbing Complex, 2 To 8 Percent Slopes

##### Component Description

Majestic and similar soils  
Extent: 45 to 65 percent of the unit  
Geomorphic description:  
Moraine  
Position on landform:

Backslopes, shoulders and summits  
Slope range: 2 to 8 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Dense material: 45 to 70 inches  
Drainage class: Moderately well drained  
Parent material:  
Sandy sediments over dense fine till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
2.0 feet April November  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet January February March July  
August September December  
Ponding: None  
Available water capacity to a depth of 60 inches: 6.2 inches  
Content of organic matter in the upper 10 inches: 2.4 percent  
Typical profile:  
A--0 to 4 inches; sandy loam  
Bw1--4 to 13 inches; sandy loam  
Bw2--13 to 34 inches; loamy sand  
2B/E--34 to 38 inches; clay loam  
2Bt--38 to 59 inches; clay  
2BCd--59 to 80 inches; clay

#### Hibbing and similar soils

Extent: 15 to 30 percent of the unit  
Geomorphic description:  
Moraine  
Position on landform:  
Backslopes, shoulders and summits  
Slope range: 2 to 8 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Dense material: 40 to 60 inches  
Drainage class: Moderately well drained  
Parent material:  
Loamy material over dense fine till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
1.0 foot April  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet January February March July  
August September December  
Ponding: None  
Available water capacity to a depth of 60 inches: 7.9 inches  
Content of organic matter in the upper 10 inches: 2.4 percent  
Typical profile:  
A--0 to 4 inches; loam  
Bw--4 to 8 inches; loam  
2E/B--8 to 12 inches; loam  
2Bt1--12 to 27 inches; clay  
2Bt2--27 to 36 inches; clay  
2Bt3--36 to 48 inches; clay  
2BCd--48 to 80 inches; clay

B47A--Daisybay Peat, 0 To 1 Percent Slopes

Component Description



Bw2--23 to 34 inches; sand  
2B/E--34 to 39 inches; clay loam  
2Bt--39 to 56 inches; clay  
2BCd--56 to 80 inches; clay

Turpela and similar soils

Extent: 20 to 45 percent of the unit

Geomorphic description:

Till plain

Position on landform:

Flats and toeslopes

Slope range: 0 to 2 percent

Surface layer texture: Fine sandy loam

Depth to restrictive feature:

Dense material: 45 to 70 inches

Drainage class: Poorly drained

Parent material:

Sandy sediments over dense fine till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet February August September

Ponding: None

Available water capacity to a depth of 60 inches: 6.9 inches

Content of organic matter in the upper 10 inches: 4.5 percent

Typical profile:

A--0 to 5 inches; fine sandy loam

Bg1--5 to 21 inches; loamy fine sand

Bg2--21 to 28 inches; loamy fine sand

2Bt1--28 to 34 inches; clay

2Bt2--34 to 55 inches; clay

2BCd--55 to 80 inches; clay

B53A--Dora Mucky Peat, Hibbing Catena, 0 To 1 Percent Slopes

Component Description

Dora and similar soils

Extent: 60 to 90 percent of the unit

Geomorphic description:

Till plain

Position on landform:

Depressions, drainageways and swales

Slope range: 0 to 1 percent

Surface layer texture: Mucky peat

Depth to restrictive feature:

Dense material: 40 to 60 inches

Drainage class: Very poorly drained

Parent material:

Organic deposits over dense fine till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June November

Wet soil moisture status is lowest (depth, months):

1.5 feet February

Ponding does not occur (months):

January February March August September December

Ponding is deepest (depth, months):

0.5 foot

April May June July October  
November

Available water capacity to a depth of 60 inches: 17.5 inches  
Content of organic matter in the upper 10 inches: 81.0 percent  
Typical profile:

Oe--0 to 8 inches; mucky peat  
Oa--8 to 33 inches; muck  
2Cg--33 to 65 inches; clay  
2Cd--65 to 80 inches; clay

B81A--Cathro Muck, Depressional, Duluth Catena, 0 To 1 Percent Slopes

#### Component Description

Cathro, depressional and similar soils

Extent: 60 to 90 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Flats and depressions

Slope range: 0 to 1 percent

Surface layer texture: Muck

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Organic material over fine loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface                      April May June July August  
   September October November  
   December

Wet soil moisture status is lowest (depth, months):

1.0 foot                                      February

Ponding: At 0.5 foot all year

Available water capacity to a depth of 60 inches: 19.1 inches

Content of organic matter in the upper 10 inches: 65.0 percent

Typical profile:

Oa--0 to 36 inches; muck  
A--36 to 40 inches; mucky silt loam  
2Cg--40 to 50 inches; stratified sandy loam to loam to silt  
loam  
to clay loam to silty clay loam  
2C--50 to 80 inches; loam

B101A--Schisler-Ellsburg-Baden Complex, 0 To 2 Percent Slopes

#### Component Description

Schisler and similar soils

Extent: 30 to 45 percent of the unit

Geomorphic description:

Till plain

Position on landform:

Flats and low rises

Slope range: 0 to 2 percent

Surface layer texture: Fine sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)  
Drainage class: Poorly drained  
Parent material:  
Stratified loamy material over loamy till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
At the surface April  
Wet soil moisture status is lowest (depth, months):  
6.3 feet August September  
Ponding: None  
Available water capacity to a depth of 60 inches: 8.4 inches  
Content of organic matter in the upper 10 inches: 3.8 percent  
Typical profile:

A--0 to 4 inches; fine sandy loam  
Bg,Bw--4 to 35 inches; stratified loamy sand to silt loam to  
fine sandy loam to loam  
2Bt--35 to 60 inches; clay loam  
2C--60 to 80 inches; loam

#### Ellsburg and similar soils

Extent: 20 to 40 percent of the unit  
Geomorphic description:  
Till plain  
Position on landform:  
Flats and low rises  
Slope range: 0 to 2 percent  
Surface layer texture: Silt loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Poorly drained  
Parent material:  
Loamy and or silty material over loamy till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
At the surface April  
Wet soil moisture status is lowest (depth, months):  
6.3 feet August September  
Ponding: None  
Available water capacity to a depth of 60 inches: 9.5 inches  
Content of organic matter in the upper 10 inches: 3.8 percent  
Typical profile:

A--0 to 4 inches; silt loam  
E,E/B,B/E--4 to 20 inches; silt loam  
2Bt,2B/E--20 to 65 inches; clay loam  
2C--65 to 80 inches; loam

#### Baden, depressional and similar soils

Extent: 10 to 20 percent of the unit  
Geomorphic description:  
Till plain  
Position on landform:  
Depressions and drainageways  
Slope range: 0 to 1 percent  
Surface layer texture: Muck  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Very poorly drained  
Parent material:  
Lakewashed silty material over loamy till

Flooding: None  
Wet soil moisture status is highest (depth, months):  
    At the surface                      April May June November  
Wet soil moisture status is lowest (depth, months):  
    1.7 feet                              February  
Ponding does not occur (months):  
    January February December  
Ponding is deepest (depth, months):  
    0.5 foot                              March April May June July August  
  September October November  
Available water capacity to a depth of 60 inches: 10.1 inches  
Content of organic matter in the upper 10 inches: 18.2 percent  
Typical profile:  
    Oa--0 to 2 inches; muck  
    A--2 to 6 inches; mucky silt loam  
    Eg, Bg--6 to 20 inches; silt loam  
    2Bw--20 to 45 inches; clay loam  
    2C--45 to 80 inches; clay loam

#### B102A--Hellwig-Ellsburg-Baden Complex, 0 To 2 Percent Slopes

##### Component Description

###### Hellwig and similar soils

Extent: 35 to 50 percent of the unit  
Geomorphic description:  
    Till plain  
Position on landform:  
    Flats and low rises  
Slope range: 0 to 2 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
    Very deep (more than 60 inches)  
Drainage class: Poorly drained  
Parent material:  
    Lakewashed sandy material over loamy till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
    At the surface                      April  
Wet soil moisture status is lowest (depth, months):  
    6.3 feet                              August September  
Ponding: None  
Available water capacity to a depth of 60 inches: 6.9 inches  
Content of organic matter in the upper 10 inches: 3.2 percent  
Typical profile:  
    A--0 to 3 inches; sandy loam  
    E,Bw--3 to 32 inches; sand  
    2Bt--32 to 60 inches; clay loam  
    2C--60 to 80 inches; loam

###### Ellsburg and similar soils

Extent: 15 to 30 percent of the unit  
Geomorphic description:  
    Till plain  
Position on landform:  
    Flats and low rises  
Slope range: 0 to 2 percent  
Surface layer texture: Silt loam  
Depth to restrictive feature:

Very deep (more than 60 inches)  
Drainage class: Poorly drained  
Parent material:  
Loamy and or silty material over loamy till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
At the surface April  
Wet soil moisture status is lowest (depth, months):  
6.3 feet August September  
Ponding: None  
Available water capacity to a depth of 60 inches: 9.5 inches  
Content of organic matter in the upper 10 inches: 3.8 percent  
Typical profile:  
A--0 to 4 inches; silt loam  
E,E/B,B/E--4 to 20 inches; silt loam  
2Bt,2B/E--20 to 65 inches; clay loam  
2C--65 to 80 inches; loam

Baden, depressional and similar soils

Extent: 10 to 30 percent of the unit  
Geomorphic description:  
Till plain  
Position on landform:  
Depressions and drainageways  
Slope range: 0 to 1 percent  
Surface layer texture: Muck  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Very poorly drained  
Parent material:  
Lakewashed silty material over loamy till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
At the surface April May June November  
Wet soil moisture status is lowest (depth, months):  
1.7 feet February  
Ponding does not occur (months):  
January February December  
Ponding is deepest (depth, months):  
0.5 foot March April May June July August  
September October November  
Available water capacity to a depth of 60 inches: 10.1 inches  
Content of organic matter in the upper 10 inches: 18.2 percent  
Typical profile:  
Oa--0 to 2 inches; muck  
A--2 to 6 inches; mucky silt loam  
Eg, Bg--6 to 20 inches; silt loam  
2Bw--20 to 45 inches; clay loam  
2C--45 to 80 inches; clay loam

B103A--Melrude-Schisler-Baden Complex, 0 To 2 Percent Slopes

Component Description

Melrude and similar soils

Extent: 40 to 60 percent of the unit  
Geomorphic description:  
Till plain  
Position on landform:

Flats and low rises  
Slope range: 0 to 2 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Poorly drained  
Parent material:  
Stratified loamy material  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
At the surface April  
Wet soil moisture status is lowest (depth, months):  
6.3 feet August September  
Ponding: None  
Available water capacity to a depth of 60 inches: 8.5 inches  
Content of organic matter in the upper 10 inches: 3.2 percent  
Typical profile:

A--0 to 3 inches; loam  
E, Bw--3 to 60 inches; stratified loamy sand to silt loam to  
fine  
sandy loam to loam  
2C--60 to 80 inches; loam

#### Schisler and similar soils

Extent: 20 to 40 percent of the unit  
Geomorphic description:  
Till plain  
Position on landform:  
Flats and low rises  
Slope range: 0 to 2 percent  
Surface layer texture: Fine sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Poorly drained  
Parent material:  
Stratified loamy material over loamy till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
At the surface April  
Wet soil moisture status is lowest (depth, months):  
6.3 feet August September  
Ponding: None  
Available water capacity to a depth of 60 inches: 8.4 inches  
Content of organic matter in the upper 10 inches: 3.8 percent  
Typical profile:

A--0 to 4 inches; fine sandy loam  
Bg, Bw--4 to 35 inches; stratified loamy sand to silt loam to  
fine  
sandy loam to loam  
2Bt--35 to 60 inches; clay loam  
2C--60 to 80 inches; loam

#### Baden, depressional and similar soils

Extent: 10 to 30 percent of the unit  
Geomorphic description:  
Till plain  
Position on landform:  
Depressions and drainageways  
Slope range: 0 to 1 percent  
Surface layer texture: Muck

Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Very poorly drained  
Parent material:  
Lakewashed silty material over loamy till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
At the surface April May June November  
Wet soil moisture status is lowest (depth, months):  
1.7 feet February  
Ponding does not occur (months):  
January February December  
Ponding is deepest (depth, months):  
0.5 foot March April May June July August  
September October November  
Available water capacity to a depth of 60 inches: 10.1 inches  
Content of organic matter in the upper 10 inches: 18.2 percent  
Typical profile:  
Oa--0 to 2 inches; muck  
A--2 to 6 inches; mucky silt loam  
Eg, Bg--6 to 20 inches; silt loam  
2Bw--20 to 45 inches; clay loam  
2C--45 to 80 inches; clay loam

#### B104A--Ellsburg-Baden Complex, 0 To 2 Percent Slopes

##### Component Description

###### Ellsburg and similar soils

Extent: 40 to 65 percent of the unit  
Geomorphic description:  
Till plain  
Position on landform:  
Flats and low rises  
Slope range: 0 to 2 percent  
Surface layer texture: Silt loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Poorly drained  
Parent material:  
Loamy and or silty material over loamy till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
At the surface April  
Wet soil moisture status is lowest (depth, months):  
6.3 feet August September  
Ponding: None  
Available water capacity to a depth of 60 inches: 9.5 inches  
Content of organic matter in the upper 10 inches: 3.8 percent  
Typical profile:  
A--0 to 4 inches; silt loam  
E,E/B,B/E--4 to 20 inches; silt loam  
2Bt,2B/E--20 to 65 inches; clay loam  
2C--65 to 80 inches; loam

###### Baden, depressional and similar soils

Extent: 15 to 35 percent of the unit  
Geomorphic description:  
Till plain

Position on landform:  
Depressions and drainageways  
Slope range: 0 to 1 percent  
Surface layer texture: Muck  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Very poorly drained  
Parent material:  
Lakewashed silty material over loamy till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
At the surface April May June November  
Wet soil moisture status is lowest (depth, months):  
1.7 feet February  
Ponding does not occur (months):  
January February December  
Ponding is deepest (depth, months):  
0.5 foot March April May June July August  
September October November  
Available water capacity to a depth of 60 inches: 10.1 inches  
Content of organic matter in the upper 10 inches: 18.2 percent  
Typical profile:  
Oa--0 to 2 inches; muck  
A--2 to 6 inches; mucky silt loam  
Eg, Bg--6 to 20 inches; silt loam  
2Bw--20 to 45 inches; clay loam  
2C--45 to 80 inches; clay loam

#### B107A--Baden Mucky Silt Loam, Depressional, 0 To 1 Percent Slopes

##### Component Description

Baden, depressional and similar soils  
Extent: 60 to 90 percent of the unit  
Geomorphic description:  
Till plain  
Position on landform:  
Depressions and drainageways  
Slope range: 0 to 1 percent  
Surface layer texture: Muck  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Very poorly drained  
Parent material:  
Lakewashed silty material over loamy till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
At the surface April May June November  
Wet soil moisture status is lowest (depth, months):  
1.7 feet February  
Ponding does not occur (months):  
January February December  
Ponding is deepest (depth, months):  
0.5 foot March April May June July August  
September October November  
Available water capacity to a depth of 60 inches: 10.1 inches  
Content of organic matter in the upper 10 inches: 18.2 percent  
Typical profile:  
Oa--0 to 2 inches; muck

A--2 to 6 inches; mucky silt loam  
Eg, Bg--6 to 20 inches; silt loam  
2Bw--20 to 45 inches; clay loam  
2C--45 to 80 inches; clay loam

B118A--Rifle Soils, Duluth Catena, 0 To 1 Percent Slopes

Component Description

Rifle and similar soils

Extent: 0 to 95 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Flats and depressions

Slope range: 0 to 1 percent

Surface layer texture: Peat

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Organic material

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June November

Wet soil moisture status is lowest (depth, months):

1.5 feet February

Ponding does not occur (months):

January February March August September December

Ponding is deepest (depth, months):

0.5 foot April May June July October  
November

Available water capacity to a depth of 60 inches: 30.5 inches

Content of organic matter in the upper 10 inches: 91.0 percent

Typical profile:

Oi--0 to 6 inches; peat

Oe--6 to 80 inches; mucky peat

Rifle, depressional and similar soils

Extent: 0 to 95 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Flats and depressions

Slope range: 0 to 1 percent

Surface layer texture: Mucky peat

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Organic material

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June July August  
September October November  
December

Wet soil moisture status is lowest (depth, months):

1.0 foot February

Ponding: At 0.5 foot all year

Available water capacity to a depth of 60 inches: 29.9 inches  
Content of organic matter in the upper 10 inches: 85.0 percent

Typical profile:

Oe1--0 to 5 inches; mucky peat  
Oe2--5 to 80 inches; mucky peat

B119A--Tacoosh Mucky Peat, Upham Basin, 0 To 1 Percent Slopes

Component Description

Tacoosh and similar soils

Extent: 65 to 90 percent of the unit

Geomorphic description:

Outwash plain

Lake plain

Position on landform:

Swales, depressions and drainageways

Slope range: 0 to 1 percent

Surface layer texture: Mucky peat

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Organic material over glaciolacustrine sediments

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June October November

Wet soil moisture status is lowest (depth, months):

1.5 feet January February August  
September

Ponding does not occur (months):

January February December

Ponding is deepest (depth, months):

0.5 foot March April May June July August  
September October November

Available water capacity to a depth of 60 inches: 19.1 inches

Typical profile:

Cg--

Oe1--0 to 7 inches; mucky peat

Oe2--7 to 30 inches; mucky peat

Oa--30 to 40 inches; muck

B121A--Merwin Peat, Duluth Catena, 0 To 1 Percent Slopes

Component Description

Merwin and similar soils

Extent: 60 to 90 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Flats and depressions

Slope range: 0 to 1 percent

Surface layer texture: Peat

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Organic material over fine loamy till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
0.5 foot April May June July October  
November  
Wet soil moisture status is lowest (depth, months):  
2.0 feet February  
Ponding: None  
Available water capacity to a depth of 60 inches: 26.4 inches  
Content of organic matter in the upper 10 inches: 91.0 percent  
Typical profile:  
Oi--0 to 6 inches; peat  
Oe--6 to 46 inches; mucky peat  
2Cg--46 to 56 inches; stratified sandy loam to loam to silt  
loam  
to clay loam to silty clay loam  
2C--56 to 80 inches; loam

#### B122A--Tacoosh Mucky Peat, Duluth Catena, 0 To 1 Percent Slopes

##### Component Description

##### Tacoosh and similar soils

Extent: 60 to 90 percent of the unit  
Geomorphic description:  
Moraine  
Position on landform:  
Depressions and bogs  
Slope range: 0 to 1 percent  
Surface layer texture: Mucky peat  
Depth to restrictive feature:  
Dense material: 40 to 80 inches  
Drainage class: Very poorly drained  
Parent material:  
Organic material over fine loamy till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
At the surface April May June November  
Wet soil moisture status is lowest (depth, months):  
1.5 feet February  
Ponding does not occur (months):  
January February March August September December  
Ponding is deepest (depth, months):  
0.5 foot April May June July October  
November  
Available water capacity to a depth of 60 inches: 22.8 inches  
Content of organic matter in the upper 10 inches: 85.0 percent  
Typical profile:  
Oe1--0 to 7 inches; mucky peat  
Oe2--7 to 30 inches; mucky peat  
Oa--30 to 40 inches; muck  
2Cg--40 to 50 inches; stratified sandy loam to loam to silt  
loam  
to clay loam to silty clay loam  
2C--50 to 80 inches; loam

#### B123A--Blackhoof-Cathro-Baden Complex, Depressional, 0 To 1 Percent Slopes

## Component Description

### Blackhoof, depressional and similar soils

Extent: 60 to 80 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Depressions

Slope range: 0 to 1 percent

Surface layer texture: Muck

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Thin highly decomposed organic material over loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June November

Wet soil moisture status is lowest (depth, months):

1.7 feet February

Ponding does not occur (months):

January February December

Ponding is deepest (depth, months):

0.5 foot March April May June July August  
September October November

Available water capacity to a depth of 60 inches: 12.6 inches

Content of organic matter in the upper 10 inches: 65.0 percent

Typical profile:

Oa--0 to 12 inches; muck

A--12 to 15 inches; silt loam

Bg--15 to 17 inches; silt loam

2Bw--17 to 42 inches; loam

2C,2BC--42 to 80 inches; loam

### Cathro, depressional and similar soils

Extent: 10 to 20 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Depressions

Slope range: 0 to 1 percent

Surface layer texture: Muck

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Organic material over fine loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June July August  
September October November  
December

Wet soil moisture status is lowest (depth, months):

1.0 foot February

Ponding: At 0.5 foot all year

Available water capacity to a depth of 60 inches: 19.1 inches

Content of organic matter in the upper 10 inches: 65.0 percent

Typical profile:

Oa--0 to 36 inches; muck

A--36 to 40 inches; mucky silt loam

loam 2Cg--40 to 50 inches; stratified sandy loam to loam to silt  
to clay loam to silty clay loam  
2C--50 to 80 inches; loam

Baden, depressional and similar soils

Extent: 10 to 20 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Depressions and drainageways

Slope range: 0 to 1 percent

Surface layer texture: Muck

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Lakewashed silty material over loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June November

Wet soil moisture status is lowest (depth, months):

1.7 feet February

Ponding does not occur (months):

January February December

Ponding is deepest (depth, months):

0.5 foot March April May June July August

September October November

Available water capacity to a depth of 60 inches: 10.1 inches

Content of organic matter in the upper 10 inches: 18.2 percent

Typical profile:

Oa--0 to 2 inches; muck

A--2 to 6 inches; mucky silt loam

Eg, Bg--6 to 20 inches; silt loam

2Bw--20 to 45 inches; clay loam

2C--45 to 80 inches; clay loam

B124A--Dusler-Ellsburg Complex, 0 To 3 Percent Slopes

Component Description

Dusler and similar soils

Extent: 40 to 55 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Summit

Footslope

Slope range: 1 to 3 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material:

Loamy and or silty material over loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet

January February March July  
August September December

Ponding: None

Available water capacity to a depth of 60 inches: 9.2 inches

Content of organic matter in the upper 10 inches: 3.1 percent

Typical profile:

A--0 to 5 inches; silt loam

E,E/B,B/E--5 to 15 inches; silt loam

2Bt,2B/E--15 to 66 inches; clay loam

2C--66 to 80 inches; loam

Ellsburg and similar soils

Extent: 30 to 45 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Toeslope

Slope range: 0 to 2 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material:

Loamy and or silty material over loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April

Wet soil moisture status is lowest (depth, months):

6.3 feet August September

Ponding: None

Available water capacity to a depth of 60 inches: 9.5 inches

Content of organic matter in the upper 10 inches: 3.8 percent

Typical profile:

A--0 to 4 inches; silt loam

E,E/B,B/E--4 to 20 inches; silt loam

2Bt,2B/E--20 to 65 inches; clay loam

2C--65 to 80 inches; loam

B125B--Culver Silt Loam, 3 To 8 Percent Slopes

#### Component Description

Culver and similar soils

Extent: 85 to 95 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Backslope

Slope range: 3 to 8 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Loamy and or silty material over loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

1.1 feet April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet

January February March June July  
August September October  
December

Ponding: None

Available water capacity to a depth of 60 inches: 9.4 inches

Content of organic matter in the upper 10 inches: 2.6 percent

Typical profile:

A--0 to 4 inches; silt loam

E,E/B,Bw--4 to 16 inches; silt loam

2Bt,2B/E--16 to 52 inches; clay loam

2C--52 to 80 inches; loam

## B126D--Duluth-Culver Complex, 3 To 18 Percent Slopes

### Component Description

#### Duluth and similar soils

Extent: 55 to 80 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Shoulder

Backslope

Slope range: 6 to 18 percent

Surface layer texture: Fine sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Loamy and or silty material over loamy till

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 9.5 inches

Content of organic matter in the upper 10 inches: 3.1 percent

Typical profile:

A--0 to 5 inches; fine sandy loam

E,E/B,B/E--5 to 18 inches; silt loam

2Bt,2B/E--18 to 38 inches; clay loam

2C,2BC--38 to 80 inches; loam

#### Culver and similar soils

Extent: 15 to 30 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Summit

Backslope

Slope range: 3 to 10 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Loamy and or silty material over loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

1.1 feet April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet

January February March June July  
August September October  
December

Ponding: None

Available water capacity to a depth of 60 inches: 9.4 inches

Content of organic matter in the upper 10 inches: 2.6 percent

Typical profile:

A--0 to 4 inches; silt loam

E,E/B,Bw--4 to 16 inches; silt loam

2Bt,2B/E--16 to 52 inches; clay loam

2C--52 to 80 inches; loam

#### B126E--Duluth Silt Loam, 18 To 45 Percent Slopes

##### Component Description

Duluth and similar soils

Extent: 70 to 95 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Shoulder

Backslope

Slope range: 18 to 45 percent

Surface layer texture: Fine sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Loamy and or silty material over loamy till

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 9.5 inches

Content of organic matter in the upper 10 inches: 3.1 percent

Typical profile:

A--0 to 5 inches; fine sandy loam

E,E/B,B/E--5 to 18 inches; silt loam

2Bt,2B/E--18 to 38 inches; clay loam

2C,2BC--38 to 80 inches; loam

#### B127B--Culver-Dusler-Ellsburg Complex, 0 To 8 Percent Slopes

##### Component Description

Culver and similar soils

Extent: 40 to 55 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Summit

Backslope

Slope range: 3 to 8 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Loamy and or silty material over loamy till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
1.1 feet April  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet January February March June July  
August September October  
December  
Ponding: None  
Available water capacity to a depth of 60 inches: 9.4 inches  
Content of organic matter in the upper 10 inches: 2.6 percent  
Typical profile:  
A--0 to 4 inches; silt loam  
E,E/B,Bw--4 to 16 inches; silt loam  
2Bt,2B/E--16 to 52 inches; clay loam  
2C--52 to 80 inches; loam

#### Dusler and similar soils

Extent: 20 to 30 percent of the unit  
Geomorphic description:  
Moraine  
Position on landform:  
Footslope  
Slope range: 1 to 3 percent  
Surface layer texture: Silt loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Somewhat poorly drained  
Parent material:  
Loamy and or silty material over loamy till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
0.5 foot April  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet January February March July  
August September December  
Ponding: None  
Available water capacity to a depth of 60 inches: 9.2 inches  
Content of organic matter in the upper 10 inches: 3.1 percent  
Typical profile:  
A--0 to 5 inches; silt loam  
E,E/B,B/E--5 to 15 inches; silt loam  
2Bt,2B/E--15 to 66 inches; clay loam  
2C--66 to 80 inches; loam

#### Ellsburg and similar soils

Extent: 10 to 25 percent of the unit  
Geomorphic description:  
Moraine  
Position on landform:  
Toeslope  
Slope range: 0 to 2 percent  
Surface layer texture: Silt loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Poorly drained  
Parent material:  
Loamy and or silty material over loamy till  
Flooding: None  
Wet soil moisture status is highest (depth, months):

At the surface April  
Wet soil moisture status is lowest (depth, months):  
6.3 feet August September  
Ponding: None  
Available water capacity to a depth of 60 inches: 9.5 inches  
Content of organic matter in the upper 10 inches: 3.8 percent  
Typical profile:  
A--0 to 4 inches; silt loam  
E,E/B,B/E--4 to 20 inches; silt loam  
2Bt,2B/E--20 to 65 inches; clay loam  
2C--65 to 80 inches; loam

## B128D--Duluth-Culver-Cathro, Depressional Complex, 0 To 18 Percent Slopes

### Component Description

#### Duluth and similar soils

Extent: 40 to 50 percent of the unit  
Geomorphic description:  
Moraine  
Position on landform:  
Shoulder  
Backslope  
Slope range: 8 to 18 percent  
Surface layer texture: Fine sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Loamy and or silty material over loamy till  
Flooding: None  
Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 9.5 inches  
Content of organic matter in the upper 10 inches: 3.1 percent  
Typical profile:  
A--0 to 5 inches; fine sandy loam  
E,E/B,B/E--5 to 18 inches; silt loam  
2Bt,2B/E--18 to 38 inches; clay loam  
2C,2BC--38 to 80 inches; loam

#### Culver and similar soils

Extent: 20 to 30 percent of the unit  
Geomorphic description:  
Moraine  
Position on landform:  
Summit  
Backslope  
Slope range: 3 to 8 percent  
Surface layer texture: Silt loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Moderately well drained  
Parent material:  
Loamy and or silty material over loamy till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
1.1 feet April  
Wet soil moisture status is lowest (depth, months):

More than 6.7 feet

January February March June July  
August September October  
December

Ponding: None

Available water capacity to a depth of 60 inches: 9.4 inches

Content of organic matter in the upper 10 inches: 2.6 percent

Typical profile:

A--0 to 4 inches; silt loam

E,E/B,Bw--4 to 16 inches; silt loam

2Bt,2B/E--16 to 52 inches; clay loam

2C--52 to 80 inches; loam

B129B--Culver-Culver, Coarse Substratum-Ellsburg Complex, 0 To 8 Percent Slopes

#### Component Description

Culver and similar soils

Extent: 35 to 55 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Summit

Backslope

Slope range: 3 to 8 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Loamy and or silty material over loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

1.1 feet

April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet

January February March June July

August September October

December

Ponding: None

Available water capacity to a depth of 60 inches: 9.4 inches

Content of organic matter in the upper 10 inches: 2.6 percent

Typical profile:

A--0 to 4 inches; silt loam

E,E/B,Bw--4 to 16 inches; silt loam

2Bt,2B/E--16 to 52 inches; clay loam

2C--52 to 80 inches; loam

Culver coarse substratum and similar soils

Extent: 20 to 30 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Summit

Backslope

Slope range: 3 to 8 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Loamy and or silty material over loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

1.1 feet April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March June July  
August September October  
December

Ponding: None

Available water capacity to a depth of 60 inches: 9.4 inches

Content of organic matter in the upper 10 inches: 2.3 percent

Typical profile:

A--0 to 3 inches; silt loam  
E,E/B,Bw--3 to 15 inches; silt loam  
2Bt,2B/E--15 to 48 inches; clay loam  
2BC--48 to 62 inches; loam  
3C--62 to 80 inches; very gravelly sand

Ellsburg and similar soils

Extent: 5 to 20 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Toeslope

Slope range: 0 to 2 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material:

Loamy and or silty material over loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April

Wet soil moisture status is lowest (depth, months):

6.3 feet August September

Ponding: None

Available water capacity to a depth of 60 inches: 9.5 inches

Content of organic matter in the upper 10 inches: 3.8 percent

Typical profile:

A--0 to 4 inches; silt loam  
E,E/B,B/E--4 to 20 inches; silt loam  
2Bt,2B/E--20 to 65 inches; clay loam  
2C--65 to 80 inches; loam

B130D--Duluth-Duluth, Coarse Substratum Complex, 8 To 18 Percent Slopes

Component Description

Duluth and similar soils

Extent: 35 to 55 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Shoulder

Backslope

Slope range: 8 to 18 percent

Surface layer texture: Fine sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Loamy and or silty material over loamy till

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 9.5 inches

Content of organic matter in the upper 10 inches: 3.1 percent

Typical profile:

A--0 to 5 inches; fine sandy loam

E,E/B,B/E--5 to 18 inches; silt loam

2Bt,2B/E--18 to 38 inches; clay loam

2C,2BC--38 to 80 inches; loam

Duluth coarse substratum and similar soils

Extent: 20 to 30 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Shoulder

Backslope

Slope range: 8 to 18 percent

Surface layer texture: Fine sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Loamy and or silty material over loamy till

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 9.0 inches

Content of organic matter in the upper 10 inches: 2.6 percent

Typical profile:

A--0 to 4 inches; fine sandy loam

E,E/B,B/E--4 to 16 inches; silt loam

2Bt,2B/E--16 to 69 inches; clay loam

3C--69 to 80 inches; very gravelly sand

Ellsburg and similar soils

Extent: 5 to 20 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Toeslope

Slope range: 0 to 2 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material:

Loamy and or silty material over loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April

Wet soil moisture status is lowest (depth, months):

6.3 feet August September

Ponding: None

Available water capacity to a depth of 60 inches: 9.5 inches  
Content of organic matter in the upper 10 inches: 3.8 percent  
Typical profile:

A--0 to 4 inches; silt loam  
E,E/B,B/E--4 to 20 inches; silt loam  
2Bt,2B/E--20 to 65 inches; clay loam  
2C--65 to 80 inches; loam

## B131F--Duluth-Duluth, Coarse Substratum Complex, 18 To 45 Percent Slopes

### Component Description

#### Duluth and similar soils

Extent: 40 to 60 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Summit

Shoulder

Backslope

Slope range: 8 to 45 percent

Surface layer texture: Fine sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Loamy and or silty material over loamy till

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 9.5 inches

Content of organic matter in the upper 10 inches: 3.1 percent

Typical profile:

A--0 to 5 inches; fine sandy loam  
E,E/B,B/E--5 to 18 inches; silt loam  
2Bt,2B/E--18 to 38 inches; clay loam  
2C,2BC--38 to 80 inches; loam

#### Duluth coarse substratum and similar soils

Extent: 20 to 40 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Summit

Shoulder

Backslope

Slope range: 8 to 45 percent

Surface layer texture: Fine sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Loamy and or silty material over loamy till

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 9.0 inches

Content of organic matter in the upper 10 inches: 2.6 percent

Typical profile:

A--0 to 4 inches; fine sandy loam  
E,E/B,B/E--4 to 16 inches; silt loam  
2Bt,2B/E--16 to 69 inches; clay loam  
3C--69 to 80 inches; very gravelly sand

B143B--Dinham-Dusler Complex, 0 To 8 Percent Slopes

Component Description

Dinham and similar soils

Extent: 20 to 90 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Shoulder

Summit

Backslope

Slope range: 3 to 8 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Sandy drift over loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

2.7 feet May

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March June July  
August September October  
November December

Ponding: None

Available water capacity to a depth of 60 inches: 5.7 inches

Content of organic matter in the upper 10 inches: 3.1 percent

Typical profile:

A--0 to 5 inches; sandy loam

Bw1--5 to 10 inches; sandy loam

Bw2-Bw4--10 to 38 inches; sand

2Bt,2B/E--38 to 80 inches; clay loam

Dusler and similar soils

Extent: 20 to 40 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Footslope

Slope range: 0 to 4 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material:

Loamy and or silty material over loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March July  
August September December

Ponding: None

Available water capacity to a depth of 60 inches: 9.2 inches

Content of organic matter in the upper 10 inches: 3.1 percent

Typical profile:

A--0 to 5 inches; silt loam

E,E/B,B/E--5 to 15 inches; silt loam

2Bt,2B/E--15 to 66 inches; clay loam

2C--66 to 80 inches; loam

## B144A--Ellsburg-Dusler Complex, 0 To 3 Percent Slopes

### Component Description

#### Ellsburg and similar soils

Extent: 50 to 70 percent of the unit

Geomorphic description:

Drumlin

Position on landform:

Summit

Slope range: 0 to 2 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material:

Loamy and or silty material over loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April

Wet soil moisture status is lowest (depth, months):

6.3 feet August September

Ponding: None

Available water capacity to a depth of 60 inches: 9.5 inches

Content of organic matter in the upper 10 inches: 3.8 percent

Typical profile:

A--0 to 4 inches; silt loam

E,E/B,B/E--4 to 20 inches; silt loam

2Bt,2B/E--20 to 65 inches; clay loam

2C--65 to 80 inches; loam

#### Dusler and similar soils

Extent: 30 to 50 percent of the unit

Geomorphic description:

Drumlin

Position on landform:

Backslope

Slope range: 1 to 3 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material:

Loamy and or silty material over loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March July  
August September December

Ponding: None

Available water capacity to a depth of 60 inches: 9.2 inches

Content of organic matter in the upper 10 inches: 3.1 percent

Typical profile:

A--0 to 5 inches; silt loam

E,E/B,B/E--5 to 15 inches; silt loam

2Bt,2B/E--15 to 66 inches; clay loam

2C--66 to 80 inches; loam

## B145B--Dusler-Culver Complex, 0 To 8 Percent Slopes

### Component Description

#### Dusler and similar soils

Extent: 20 to 90 percent of the unit

Geomorphic description:

Drumlin

Position on landform:

Toeslope

Footslope

Slope range: 1 to 3 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material:

Loamy and or silty material over loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March July

August September December

Ponding: None

Available water capacity to a depth of 60 inches: 9.2 inches

Content of organic matter in the upper 10 inches: 3.1 percent

Typical profile:

A--0 to 5 inches; silt loam

E,E/B,B/E--5 to 15 inches; silt loam

2Bt,2B/E--15 to 66 inches; clay loam

2C--66 to 80 inches; loam

#### Culver and similar soils

Extent: 5 to 25 percent of the unit

Geomorphic description:

Drumlin

Position on landform:

Backslope

Slope range: 4 to 8 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Loamy and or silty material over loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

1.1 feet April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet

January February March June July  
August September October  
December

Ponding: None

Available water capacity to a depth of 60 inches: 9.4 inches

Content of organic matter in the upper 10 inches: 2.6 percent

Typical profile:

A--0 to 4 inches; silt loam

E,E/B,Bw--4 to 16 inches; silt loam

2Bt,2B/E--16 to 52 inches; clay loam

2C--52 to 80 inches; loam

#### B148A--Greenwood Soils, Duluth Catena, 0 To 1 Percent Slopes

##### Component Description

###### Greenwood and similar soils

Extent: 0 to 95 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Flats and depressions

Slope range: 0 to 1 percent

Surface layer texture: Peat

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Organic deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot

April May June July October  
November

Wet soil moisture status is lowest (depth, months):

1.7 feet

February

Ponding: None

Available water capacity to a depth of 60 inches: 30.5 inches

Content of organic matter in the upper 10 inches: 91.0 percent

Typical profile:

Oi--0 to 6 inches; peat

Oe1--6 to 24 inches; mucky peat

Oe2--24 to 80 inches; mucky peat

###### Greenwood, depressional and similar soils

Extent: 0 to 95 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Flats and depressions

Slope range: 0 to 1 percent

Surface layer texture: Peat

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Organic deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface

April May June November

Wet soil moisture status is lowest (depth, months):  
1.7 feet February  
Ponding does not occur (months):  
January February March August September December  
Ponding is deepest (depth, months):  
0.5 foot April May June July October  
November  
Available water capacity to a depth of 60 inches: 31.3 inches  
Content of organic matter in the upper 10 inches: 95.0 percent  
Typical profile:  
Oi--0 to 14 inches; peat  
Oe1--14 to 80 inches; mucky peat

#### B150D--Dinham-Duluth Complex, 8 To 18 Percent Slopes

##### Component Description

###### Dinham and similar soils

Extent: 20 to 50 percent of the unit  
Geomorphic description:  
Moraine  
Position on landform:  
Summit  
Shoulder  
Backslope  
Slope range: 8 to 18 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Moderately well drained  
Parent material:  
Sandy drift over loamy till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
3.0 feet April  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet January February March May June  
July August September October  
November December  
Ponding: None  
Available water capacity to a depth of 60 inches: 5.7 inches  
Content of organic matter in the upper 10 inches: 3.1 percent  
Typical profile:  
A--0 to 5 inches; sandy loam  
Bw1--5 to 10 inches; sandy loam  
Bw2-Bw4--10 to 38 inches; sand  
2Bt,2B/E--38 to 80 inches; clay loam

###### Duluth and similar soils

Extent: 20 to 50 percent of the unit  
Geomorphic description:  
Moraine  
Position on landform:  
Shoulder  
Backslope  
Slope range: 8 to 25 percent  
Surface layer texture: Fine sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)

Drainage class: Well drained  
Parent material:  
    Loamy and or silty material over loamy till  
Flooding: None  
Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 9.5 inches  
Content of organic matter in the upper 10 inches: 3.1 percent  
Typical profile:  
    A--0 to 5 inches; fine sandy loam  
    E,E/B,B/E--5 to 18 inches; silt loam  
    2Bt,2B/E--18 to 38 inches; clay loam  
    2C,2BC--38 to 80 inches; loam

### E3A--Cuttre-Complex, 0 To 3 Percent Slopes

#### Component Description

Cuttre somewhat poorly drained and similar soils

Extent: 50 to 90 percent of the unit

Geomorphic description:

    Lake plain

Position on landform:

    Flats

Slope range: 1 to 3 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

    Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material:

    Very fine till

Flooding: None

Wet soil moisture status is highest (depth, months):

    0.5 foot                      May June November

Wet soil moisture status is lowest (depth, months):

    More than 6.7 feet          January February March August  
                                  September October December

Ponding: None

Available water capacity to a depth of 60 inches: 6.4 inches

Content of organic matter in the upper 10 inches: 2.7 percent

Typical profile:

    A--0 to 5 inches; silt loam

    BE,EB--5 to 8 inches; silty clay loam

    Bt--8 to 26 inches; clay

    Btk--26 to 65 inches; clay

    BC,C--65 to 80 inches; clay

Cuttre poorly drained and similar soils

Extent: 20 to 50 percent of the unit

Geomorphic description:

    Lake plain

Position on landform:

    Flats and slight depressions

Slope range: 0 to 2 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

    Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material:

Very fine till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
At the surface April May June  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet January February September  
October December  
Ponding: None  
Available water capacity to a depth of 60 inches: 6.0 inches  
Content of organic matter in the upper 10 inches: 2.6 percent  
Typical profile:  
A--0 to 3 inches; silt loam  
BE,EB--3 to 5 inches; silty clay loam  
Bt--5 to 20 inches; clay  
Btk--20 to 56 inches; clay  
BC,C--56 to 80 inches; clay

### E3B--Cuttre Complex, 0 To 8 Percent Slopes

#### Component Description

Cuttre somewhat poorly drained and similar soils  
Extent: 60 to 80 percent of the unit  
Geomorphic description:  
Lake plain  
Position on landform:  
Backslope  
Shoulder  
Summit  
Slope range: 2 to 8 percent  
Surface layer texture: Silt loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Somewhat poorly drained  
Parent material:  
Very fine till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
0.5 foot May June November  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet January February March August  
September October December  
Ponding: None  
Available water capacity to a depth of 60 inches: 6.4 inches  
Content of organic matter in the upper 10 inches: 2.7 percent  
Typical profile:  
A--0 to 5 inches; silt loam  
BE,EB--5 to 8 inches; silty clay loam  
Bt--8 to 26 inches; clay  
Btk--26 to 65 inches; clay  
BC,C--65 to 80 inches; clay

Cuttre poorly drained and similar soils  
Extent: 20 to 40 percent of the unit  
Geomorphic description:  
Lake plain  
Position on landform:  
Flats and slight depressions  
Slope range: 0 to 2 percent

Surface layer texture: Silt loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Poorly drained  
Parent material:  
Very fine till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
At the surface April May June  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet January February September  
October December  
Ponding: None  
Available water capacity to a depth of 60 inches: 6.0 inches  
Content of organic matter in the upper 10 inches: 2.6 percent  
Typical profile:  
A--0 to 3 inches; silt loam  
BE,EB--3 to 5 inches; silty clay loam  
Bt--5 to 20 inches; clay  
Btk--20 to 56 inches; clay  
BC,C--56 to 80 inches; clay

#### E4B--Cuttre-Aftad, Clayey Substratum, Complex, 0 To 8 Percent Slopes

##### Component Description

Cuttre somewhat poorly drained and similar soils  
Extent: 20 to 50 percent of the unit  
Geomorphic description:  
Lake plain  
Position on landform:  
Backslope  
Shoulder  
Summit  
Slope range: 2 to 8 percent  
Surface layer texture: Silt loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Somewhat poorly drained  
Parent material:  
Very fine till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
0.5 foot May June November  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet January February March August  
September October December  
Ponding: None  
Available water capacity to a depth of 60 inches: 6.4 inches  
Content of organic matter in the upper 10 inches: 2.7 percent  
Typical profile:  
A--0 to 5 inches; silt loam  
BE,EB--5 to 8 inches; silty clay loam  
Bt--8 to 26 inches; clay  
Btk--26 to 65 inches; clay  
BC,C--65 to 80 inches; clay

Aftad-clay substratum and similar soils  
Extent: 20 to 40 percent of the unit

Geomorphic description:

Lake plain

Position on landform:

Backslope

Summit

Slope range: 3 to 8 percent

Surface layer texture: Fine sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Loamy material over very fine glacial till

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March May June  
July August September October  
November December

Ponding: None

Available water capacity to a depth of 60 inches: 7.2 inches

Content of organic matter in the upper 10 inches: 2.1 percent

Typical profile:

A--0 to 4 inches; fine sandy loam

Bw--4 to 30 inches; fine sandy loam

2Bt--30 to 45 inches; clay

2Btk--45 to 60 inches; clay

2BC, 2C--60 to 80 inches; clay

Cuttre poorly drained and similar soils

Extent: 10 to 30 percent of the unit

Geomorphic description:

Lake plain

Position on landform:

Flats and slight depressions

Slope range: 0 to 2 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material:

Very fine till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February September  
October December

Ponding: None

Available water capacity to a depth of 60 inches: 6.0 inches

Content of organic matter in the upper 10 inches: 2.6 percent

Typical profile:

A--0 to 3 inches; silt loam

BE,EB--3 to 5 inches; silty clay loam

Bt--5 to 20 inches; clay

Btk--20 to 56 inches; clay

BC,C--56 to 80 inches; clay

## Component Description

### Bergland, depressional and similar soils

Extent: 40 to 90 percent of the unit

Geomorphic description:

Lake plain

Position on landform:

Depressions

Slope range: 0 to 1 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Very fine till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface                      March April May June November

Wet soil moisture status is lowest (depth, months):

1.5 feet                              February September

Ponding does not occur (months):

January February July August September October November  
December

Ponding is deepest (depth, months):

0.5 foot                              March April May June

Available water capacity to a depth of 60 inches: 6.9 inches

Content of organic matter in the upper 10 inches: 9.0 percent

Typical profile:

A--0 to 11 inches; silt loam

Bw--11 to 37 inches; clay

Bk--37 to 62 inches; clay

BC,C--62 to 80 inches; clay

### Cuttre poorly drained and similar soils

Extent: 10 to 60 percent of the unit

Geomorphic description:

Lake plain

Position on landform:

Flats

Slope range: 0 to 1 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material:

Very fine till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface                      April May June

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet                  January February September  
October December

Ponding: None

Available water capacity to a depth of 60 inches: 6.0 inches

Content of organic matter in the upper 10 inches: 2.6 percent

Typical profile:

A--0 to 3 inches; silt loam

BE,EB--3 to 5 inches; silty clay loam

Bt--5 to 20 inches; clay

Btk--20 to 56 inches; clay  
BC,C--56 to 80 inches; clay

E6D--Amnicon-Cuttre Complex, 0 To 18 Percent Slopes

Component Description

Amnicon and similar soils

Extent: 35 to 60 percent of the unit

Geomorphic description:

Lake plain

Position on landform:

Backslope

Shoulder

Slope range: 8 to 18 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Very fine till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot May

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March June July  
August September October  
November December

Ponding: None

Available water capacity to a depth of 60 inches: 6.9 inches

Content of organic matter in the upper 10 inches: 2.4 percent

Typical profile:

A--0 to 4 inches; silt loam

E--4 to 8 inches; silt loam

BE,EB--8 to 13 inches; silty clay loam

Bt--13 to 30 inches; clay

Btk--30 to 45 inches; clay

BC,C--45 to 80 inches; clay

Cuttre somewhat poorly drained and similar soils

Extent: 25 to 45 percent of the unit

Geomorphic description:

Lake plain

Position on landform:

Footslope

Summit

Slope range: 0 to 8 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material:

Very fine till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot May June November

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March August  
September October December

Ponding: None

Available water capacity to a depth of 60 inches: 6.4 inches

Content of organic matter in the upper 10 inches: 2.7 percent

Typical profile:

A--0 to 5 inches; silt loam

BE,EB--5 to 8 inches; silty clay loam

Bt--8 to 26 inches; clay

Btk--26 to 65 inches; clay

BC,C--65 to 80 inches; clay

#### E7B--Cuttre Silt Loam, 3 To 8 Percent Slopes

##### Component Description

Cuttre somewhat poorly drained and similar soils

Extent: 80 to 95 percent of the unit

Geomorphic description:

Lake plain

Position on landform:

Backslope

Summit

Slope range: 3 to 8 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material:

Very fine till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot

May June November

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet

January February March August

September October December

Ponding: None

Available water capacity to a depth of 60 inches: 6.4 inches

Content of organic matter in the upper 10 inches: 2.7 percent

Typical profile:

A--0 to 5 inches; silt loam

BE,EB--5 to 8 inches; silty clay loam

Bt--8 to 26 inches; clay

Btk--26 to 65 inches; clay

BC,C--65 to 80 inches; clay

#### E11E--Miskoaki-Bedrock, Frequently Flooded, Complex, 0 To 70 Percent Slopes

##### Component Description

Miskoaki and similar soils

Extent: 35 to 60 percent of the unit

Geomorphic description:

Lake plain

Position on landform:

Shoulder

Backslope

Slope range: 18 to 45 percent

Surface layer texture: Silt loam

Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Very fine till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
1.0 foot May  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet January February March April  
June July August September  
October November December  
Ponding: None  
Available water capacity to a depth of 60 inches: 6.1 inches  
Content of organic matter in the upper 10 inches: 1.7 percent  
Typical profile:  
A--0 to 3 inches; silt loam  
BE,EB--3 to 6 inches; silty clay loam  
Bt--6 to 19 inches; clay  
Btk--19 to 48 inches; clay  
BC,C--48 to 80 inches; clay

E14B--Barto-Unnamed (mw-Mesaba)-Rock Outcrop Complex, 0 To 8 Percent Slopes

Component Description

Barto and similar soils

Extent: 20 to 60 percent of the unit  
Geomorphic description:  
Moraine  
Position on landform:  
Backslope  
Slope range: 3 to 8 percent  
Surface layer texture: Gravelly sandy loam  
Depth to restrictive feature:  
Bedrock (lithic): 8 to 20 inches  
Drainage class: Well drained  
Parent material:  
Loamy material over bedrock  
Flooding: None  
Ponding: None  
Available water capacity to a depth of 60 inches: 1.3 inches  
Content of organic matter in the upper 10 inches: 1.1 percent  
Typical profile:  
A--0 to 2 inches; gravelly sandy loam  
Bw--2 to 13 inches; gravelly sandy loam  
2R--13 to 80 inches;

Talmadge and similar soils

Extent: 10 to 50 percent of the unit  
Geomorphic description:  
Moraine  
Position on landform:  
Backslope  
Slope range: 3 to 8 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Bedrock (lithic): 20 to 40 inches

Drainage class: Moderately well drained  
Parent material:  
    Loamy material over bedrock  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
    1.5 feet                      April  
Wet soil moisture status is lowest (depth, months):  
    More than 6.7 feet            January February March June July  
                                    August September October  
                                    December  
Ponding: None  
Available water capacity to a depth of 60 inches: 2.6 inches  
Content of organic matter in the upper 10 inches: 1.7 percent  
Typical profile:  
    A--0 to 3 inches; sandy loam  
    Bw--3 to 25 inches; gravelly sandy loam  
    2R--25 to 80 inches;

#### Bedrock

Extent: 5 to 20 percent of the unit  
Geomorphic description:  
    Moraine  
Position on landform:  
    Bedrock protrusion  
Slope range: 0 to 8 percent

### E14D--Barto-Unnamed (mw-Mesaba)-Rock Outcrop Complex, 0 To 18 Percent Slopes

#### Component Description

##### Barto and similar soils

Extent: 20 to 60 percent of the unit  
Geomorphic description:  
    Moraine  
Position on landform:  
    Backslope  
Slope range: 8 to 18 percent  
Surface layer texture: Gravelly sandy loam  
Depth to restrictive feature:  
    Bedrock (lithic): 8 to 20 inches  
Drainage class: Well drained  
Parent material:  
    Loamy material over bedrock  
Flooding: None  
Ponding: None  
Available water capacity to a depth of 60 inches: 1.3 inches  
Content of organic matter in the upper 10 inches: 1.1 percent  
Typical profile:  
    A--0 to 2 inches; gravelly sandy loam  
    Bw--2 to 13 inches; gravelly sandy loam  
    2R--13 to 80 inches;

##### Talmadge and similar soils

Extent: 10 to 50 percent of the unit  
Geomorphic description:  
    Moraine  
Position on landform:  
    Backslope





## Component Description

Badriver somewhat poorly drained and similar soils

Extent: 60 to 80 percent of the unit

Geomorphic description:

Lake plain

Position on landform:

Backslope

Shoulder

Summit

Slope range: 2 to 8 percent

Surface layer texture: Clay loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material:

Fine till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot

May June November

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet

January February March August

September October December

Ponding: None

Available water capacity to a depth of 60 inches: 7.4 inches

Content of organic matter in the upper 10 inches: 3.8 percent

Typical profile:

A--0 to 3 inches; clay loam

E/B--3 to 10 inches; clay loam

B/E--10 to 24 inches; clay

Btk--24 to 53 inches; clay

C--53 to 60 inches; clay loam

Badriver poorly drained and similar soils

Extent: 20 to 40 percent of the unit

Geomorphic description:

Lake plain

Position on landform:

Flats and slight depressions

Slope range: 0 to 2 percent

Surface layer texture: Clay loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Poorly drained

Parent material:

Fine till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface

April May June

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet

January February September

October December

Ponding: None

Available water capacity to a depth of 60 inches: 7.4 inches

Content of organic matter in the upper 10 inches: 3.8 percent

Typical profile:

A--0 to 3 inches; clay loam

E/B--3 to 10 inches; clay loam

B/E--10 to 24 inches; clay

Btk--24 to 53 inches; clay  
C--53 to 60 inches; clay loam

E16D--Amnicon-Cuttre Complex, 3 To 18 Percent Slopes

Component Description

Amnicon and similar soils

Extent: 50 to 70 percent of the unit

Geomorphic description:

Lake plain

Position on landform:

Backslope

Shoulder

Slope range: 8 to 18 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Very fine till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.2 foot May

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March June July  
August September October  
November December

Ponding: None

Available water capacity to a depth of 60 inches: 6.9 inches

Content of organic matter in the upper 10 inches: 2.4 percent

Typical profile:

A--0 to 4 inches; silt loam

E--4 to 8 inches; silt loam

BE,EB--8 to 13 inches; silty clay loam

Bt--13 to 30 inches; clay

Btk--30 to 45 inches; clay

BC,C--45 to 80 inches; clay

Cuttre somewhat poorly drained and similar soils

Extent: 25 to 55 percent of the unit

Geomorphic description:

Lake plain

Position on landform:

Footslope

Slope range: 3 to 8 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material:

Very fine till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot May June November

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March August  
September October December

Ponding: None

Available water capacity to a depth of 60 inches: 6.4 inches  
Content of organic matter in the upper 10 inches: 2.7 percent

Typical profile:

A--0 to 5 inches; silt loam  
BE,EB--5 to 8 inches; silty clay loam  
Bt--8 to 26 inches; clay  
Btk--26 to 65 inches; clay  
BC,C--65 to 80 inches; clay

E22D--Sanborg-Badriver Complex, 0 To 18 Percent Slopes

Component Description

Sanborg and similar soils

Extent: 35 to 60 percent of the unit

Geomorphic description:

Lake plain

Position on landform:

Backslope

Shoulder

Slope range: 8 to 18 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Fine till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot May

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March June July  
August September October  
November December

Ponding: None

Available water capacity to a depth of 60 inches: 7.5 inches

Content of organic matter in the upper 10 inches: 2.4 percent

Typical profile:

A--0 to 4 inches; silt loam  
E--4 to 5 inches; silt loam  
E/B--5 to 9 inches; silt loam  
B/E--9 to 17 inches; silty clay loam  
Bt--17 to 35 inches; clay  
Btk--35 to 49 inches; silty clay  
BC--49 to 80 inches; silty clay

Badriver somewhat poorly drained and similar soils

Extent: 25 to 45 percent of the unit

Geomorphic description:

Lake plain

Position on landform:

Footslope

Summit

Slope range: 0 to 8 percent

Surface layer texture: Clay loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat poorly drained

Parent material:



Slope range: 3 to 8 percent  
Surface layer texture: Silt loam  
Depth to restrictive feature:  
    Very deep (more than 60 inches)  
Drainage class: Somewhat poorly drained  
Parent material:  
    Very fine till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
    0.5 foot                      May June November  
Wet soil moisture status is lowest (depth, months):  
    More than 6.7 feet          January February March August  
                                    September October December  
Ponding: None  
Available water capacity to a depth of 60 inches: 6.4 inches  
Content of organic matter in the upper 10 inches: 2.7 percent  
Typical profile:  
    A--0 to 5 inches; silt loam  
    BE,EB--5 to 8 inches; silty clay loam  
    Bt--8 to 26 inches; clay  
    Btk--26 to 65 inches; clay  
    BC,C--65 to 80 inches; clay

#### F9A--Cloquet Loam, 0 To 2 Percent Slopes

##### Component Description

###### Cloquet and similar soils

Extent: 70 to 90 percent of the unit  
Geomorphic description:  
    Outwash plain  
Position on landform:  
    Flats  
Slope range: 0 to 2 percent  
Surface layer texture: Fine sandy loam  
Depth to restrictive feature:  
    Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
    Loamy material over gravelly outwash  
Flooding: None  
Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 3.5 inches  
Content of organic matter in the upper 10 inches: 1.4 percent  
Typical profile:  
    A--0 to 2 inches; fine sandy loam  
    Bw--2 to 22 inches; loam  
    2C--22 to 80 inches; very gravelly loamy coarse sand

#### F9B--Cloquet Loam, 2 To 8 Percent Slopes

##### Component Description

###### Cloquet and similar soils

Extent: 75 to 90 percent of the unit  
Geomorphic description:  
    Outwash plain

Position on landform:  
Backslopes, shoulders and summits  
Slope range: 2 to 8 percent  
Surface layer texture: Fine sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Loamy material over gravelly outwash  
Flooding: None  
Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 3.5 inches  
Content of organic matter in the upper 10 inches: 1.4 percent  
Typical profile:  
A--0 to 2 inches; fine sandy loam  
Bw--2 to 22 inches; loam  
2C--22 to 80 inches; very gravelly loamy coarse sand

#### F32A--Merwin Peat, 0 To 1 Percent Slopes

##### Component Description

###### Merwin and similar soils

Extent: 60 to 90 percent of the unit  
Geomorphic description:  
Till plain  
Outwash plain  
End moraine  
Position on landform:  
Depressions  
Slope range: 0 to 1 percent  
Surface layer texture: Peat  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Very poorly drained  
Parent material:  
Organic material over glaciofluvial sediments  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
0.5 foot April May June July October  
November  
Wet soil moisture status is lowest (depth, months):  
2.0 feet February  
Ponding: None  
Available water capacity to a depth of 60 inches: 25.3 inches  
Content of organic matter in the upper 10 inches: 91.0 percent  
Typical profile:  
Oi--0 to 6 inches; peat  
Oe--6 to 46 inches; mucky peat  
Cg--46 to 80 inches; stratified loamy fine sand to sandy loam  
to  
fine sandy loam to loam

#### F34A--Cathro Muck, Depressional, 0 To 1 Percent Slopes

##### Component Description

Cathro, depressional and similar soils

Extent: 60 to 90 percent of the unit

Geomorphic description:

Till plain

End moraine

Outwash plain

Position on landform:

Depressions and drainageways

Slope range: 0 to 1 percent

Surface layer texture: Muck

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Organic material over glaciofluvial sediments

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface	April	May	June	July	August
	September	October	November	December	

Wet soil moisture status is lowest (depth, months):

1.0 foot	February
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Ponding: At 0.5 foot all year

Available water capacity to a depth of 60 inches: 17.7 inches

Content of organic matter in the upper 10 inches: 65.0 percent

Typical profile:

Oa--0 to 36 inches; muck

A--36 to 40 inches; mucky silt loam

Cg--40 to 80 inches; stratified loamy fine sand to sandy loam

to

fine sandy loam to loam

F101A--Bugcreek Extremely Stony Sandy Loam, 0 To 1 Percent Slopes, Rubbly

#### Component Description

Bugcreek, rubbly and similar soils

Extent: 90 to 100 percent of the unit

Geomorphic description:

Drumlin

Position on landform:

Drainageways and bog edges

Slope range: 0 to 1 percent

Surface layer texture: Extremely stony sandy loam

Depth to restrictive feature:

Dense material: 40 to 60 inches

Drainage class: Very poorly drained

Parent material:

Coarse-loamy melt-out till over dense gravelly lodgement till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface	April	May	June	November
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Wet soil moisture status is lowest (depth, months):

1.8 feet	February
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Ponding does not occur (months):

January February December

Ponding is deepest (depth, months):

0.5 foot	March	April	May	June	July	August
	September	October	November			

Available water capacity to a depth of 60 inches: 7.9 inches  
Content of organic matter in the upper 10 inches: 5.8 percent

Typical profile:

A--0 to 6 inches; extremely stony sandy loam  
Bw1,Bw2--6 to 20 inches; extremely stony sandy loam  
Bw3-Bw5--20 to 58 inches; stony fine sandy loam  
2BCd,2Cd--58 to 80 inches; gravelly sandy loam

F102A--Nevens Stony Loam, 0 To 2 Percent Slopes, Very Stony

Component Description

Nevens, very stony and similar soils

Extent: 70 to 90 percent of the unit

Geomorphic description:

Drumlin

Position on landform:

Summit

Toeslope

Slope range: 0 to 2 percent

Surface layer texture: Stony loam

Depth to restrictive feature:

Dense material: 20 to 40 inches

Drainage class: Poorly drained

Parent material:

Coarse-loamy melt-out till over dense gravelly lodgement till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February August  
September

Ponding: None

Available water capacity to a depth of 60 inches: 7.5 inches

Content of organic matter in the upper 10 inches: 4.4 percent

Typical profile:

A--0 to 5 inches; stony loam

Bw--5 to 37 inches; stony fine sandy loam

2BCd,2Cd--37 to 80 inches; gravelly sandy loam

F103B--Brimson Stony Fine Sandy Loam, 2 To 5 Percent Slopes, Very Stony

Component Description

Brimson, very stony and similar soils

Extent: 50 to 85 percent of the unit

Geomorphic description:

Drumlin

Position on landform:

Summit

Footslope

Backslope

Slope range: 2 to 5 percent

Surface layer texture: Stony fine sandy loam

Depth to restrictive feature:

Dense material: 20 to 40 inches

Drainage class: Somewhat poorly drained

Parent material:

Coarse-loamy melt out till over dense gravelly lodgement till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot April May

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March August  
September December

Ponding: None

Available water capacity to a depth of 60 inches: 7.2 inches

Content of organic matter in the upper 10 inches: 2.8 percent

Typical profile:

A--0 to 5 inches; stony fine sandy loam

Bw--5 to 35 inches; stony fine sandy loam

2BCd,2Cd--35 to 80 inches; gravelly sandy loam

F104B--Toimi Stony Loam, 3 To 8 Percent Slopes, Very Stony

#### Component Description

Toimi, very stony and similar soils

Extent: 60 to 85 percent of the unit

Geomorphic description:

Drumlin

Position on landform:

Shoulder

Backslope

Summit

Slope range: 3 to 8 percent

Surface layer texture: Stony loam

Depth to restrictive feature:

Dense material: 20 to 40 inches

Drainage class: Moderately well drained

Parent material:

Coarse-loamy melt out till over dense gravelly lodgement till

Flooding: None

Wet soil moisture status is highest (depth, months):

1.5 feet April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March June July  
August September October  
December

Ponding: None

Available water capacity to a depth of 60 inches: 7.3 inches

Content of organic matter in the upper 10 inches: 2.3 percent

Typical profile:

A--0 to 4 inches; stony loam

Bw--4 to 35 inches; stony fine sandy loam

2BCd,2Cd--35 to 80 inches; gravelly sandy loam

F104D--Toimi Stony Loam, 8 To 18 Percent Slopes, Very Stony

#### Component Description

Toimi, very stony and similar soils

Extent: 50 to 70 percent of the unit

Geomorphic description:

Drumlin

Position on landform:

Shoulder  
Backslope  
Summit  
Slope range: 8 to 18 percent  
Surface layer texture: Stony loam  
Depth to restrictive feature:  
Dense material: 20 to 40 inches  
Drainage class: Moderately well drained  
Parent material:  
Coarse-loamy melt out till over dense gravelly lodgement till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
1.5 feet April  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet January February March June July  
August September October  
December  
Ponding: None  
Available water capacity to a depth of 60 inches: 7.3 inches  
Content of organic matter in the upper 10 inches: 2.3 percent  
Typical profile:  
A--0 to 4 inches; stony loam  
Bw--4 to 35 inches; stony fine sandy loam  
2BCd,2Cd--35 to 80 inches; gravelly sandy loam

F104E--Toimi Stony Loam, 18 To 45 Percent Slopes, Very Stony

Component Description

Toimi, very stony and similar soils  
Extent: 60 to 90 percent of the unit  
Geomorphic description:  
Drumlin  
Position on landform:  
Backslope  
Summit  
Shoulder  
Slope range: 18 to 45 percent  
Surface layer texture: Stony loam  
Depth to restrictive feature:  
Dense material: 20 to 40 inches  
Drainage class: Moderately well drained  
Parent material:  
Coarse-loamy melt out till over dense gravelly lodgement till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
1.5 feet April  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet January February March June July  
August September October  
December  
Ponding: None  
Available water capacity to a depth of 60 inches: 7.3 inches  
Content of organic matter in the upper 10 inches: 2.3 percent  
Typical profile:  
A--0 to 4 inches; stony loam  
Bw--4 to 35 inches; stony fine sandy loam  
2BCd,2Cd--35 to 80 inches; gravelly sandy loam

F105D--Toimi-Walhsten-Rock Outcrop Complex, 0 To 20 Percent Slopes

Component Description

Toimi, very stony and similar soils

Extent: 30 to 60 percent of the unit

Geomorphic description:

Drumlin

Position on landform:

Shoulder

Backslope

Summit

Slope range: 3 to 20 percent

Surface layer texture: Stony loam

Depth to restrictive feature:

Dense material: 20 to 40 inches

Drainage class: Moderately well drained

Parent material:

Coarse-loamy melt out till over dense gravelly lodgement till

Flooding: None

Wet soil moisture status is highest (depth, months):

1.5 feet April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March June July  
August September October  
December

Ponding: None

Available water capacity to a depth of 60 inches: 7.3 inches

Content of organic matter in the upper 10 inches: 2.3 percent

Typical profile:

A--0 to 4 inches; stony loam

Bw--4 to 35 inches; stony fine sandy loam

2BCd,2Cd--35 to 80 inches; gravelly sandy loam

Brimson, very stony and similar soils

Extent: 15 to 50 percent of the unit

Geomorphic description:

Drumlin

Position on landform:

Backslope

Footslope

Summit

Slope range: 0 to 5 percent

Surface layer texture: Stony fine sandy loam

Depth to restrictive feature:

Dense material: 20 to 40 inches

Drainage class: Somewhat poorly drained

Parent material:

Coarse-loamy melt out till over dense gravelly lodgement till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot April May

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March August  
September December

Ponding: None

Available water capacity to a depth of 60 inches: 7.2 inches

Content of organic matter in the upper 10 inches: 2.8 percent

Typical profile:

A--0 to 5 inches; stony fine sandy loam  
Bw--5 to 35 inches; stony fine sandy loam  
2BCd,2Cd--35 to 80 inches; gravelly sandy loam

F106B--Toimi-Nevens-Brimson Complex, 0 To 8 Percent Slopes, Very Stony

Component Description

Toimi, very stony and similar soils

Extent: 25 to 50 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Shoulder

Backslope

Summit

Slope range: 3 to 8 percent

Surface layer texture: Stony loam

Depth to restrictive feature:

Dense material: 20 to 40 inches

Drainage class: Moderately well drained

Parent material:

Coarse-loamy melt out till over dense gravelly lodgement till

Flooding: None

Wet soil moisture status is highest (depth, months):

1.5 feet April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March June July  
August September October  
December

Ponding: None

Available water capacity to a depth of 60 inches: 7.3 inches

Content of organic matter in the upper 10 inches: 2.3 percent

Typical profile:

A--0 to 4 inches; stony loam

Bw--4 to 35 inches; stony fine sandy loam

2BCd,2Cd--35 to 80 inches; gravelly sandy loam

Nevens, very stony and similar soils

Extent: 20 to 40 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Summit

Toeslope

Slope range: 0 to 2 percent

Surface layer texture: Stony loam

Depth to restrictive feature:

Dense material: 20 to 40 inches

Drainage class: Poorly drained

Parent material:

Coarse-loamy melt-out till over dense gravelly lodgement till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February August  
September

Ponding: None

Available water capacity to a depth of 60 inches: 7.5 inches  
Content of organic matter in the upper 10 inches: 4.4 percent

Typical profile:

A--0 to 5 inches; stony loam  
Bw--5 to 37 inches; stony fine sandy loam  
2BCd,2Cd--37 to 80 inches; gravelly sandy loam

Brimson, very stony and similar soils

Extent: 15 to 50 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Summit

Footslope

Backslope

Slope range: 2 to 5 percent

Surface layer texture: Stony fine sandy loam

Depth to restrictive feature:

Dense material: 20 to 40 inches

Drainage class: Somewhat poorly drained

Parent material:

Coarse-loamy melt out till over dense gravelly lodgement till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot April May

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March August  
September December

Ponding: None

Available water capacity to a depth of 60 inches: 7.2 inches

Content of organic matter in the upper 10 inches: 2.8 percent

Typical profile:

A--0 to 5 inches; stony fine sandy loam  
Bw--5 to 35 inches; stony fine sandy loam  
2BCd,2Cd--35 to 80 inches; gravelly sandy loam

F107D--Toimi-Nevens Complex, 0 To 18 Percent Slopes, Very Stony

Component Description

Toimi, very stony and similar soils

Extent: 40 to 65 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Shoulder

Backslope

Summit

Slope range: 8 to 18 percent

Surface layer texture: Stony loam

Depth to restrictive feature:

Dense material: 20 to 40 inches

Drainage class: Moderately well drained

Parent material:

Coarse-loamy melt out till over dense gravelly lodgement till

Flooding: None

Wet soil moisture status is highest (depth, months):

1.5 feet April

Wet soil moisture status is lowest (depth, months):



Wet soil moisture status is highest (depth, months):  
0.5 foot April May  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet January February March August  
September December

Ponding: None

Available water capacity to a depth of 60 inches: 7.2 inches  
Content of organic matter in the upper 10 inches: 2.8 percent

Typical profile:

A--0 to 5 inches; stony fine sandy loam  
Bw--5 to 35 inches; stony fine sandy loam  
2BCd,2Cd--35 to 80 inches; gravelly sandy loam

Bugcreek, rubbly and similar soils

Extent: 20 to 40 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Depressions

Slope range: 0 to 1 percent

Surface layer texture: Extremely stony sandy loam

Depth to restrictive feature:

Dense material: 40 to 60 inches

Drainage class: Very poorly drained

Parent material:

Coarse-loamy melt-out till over dense gravelly lodgement till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June November

Wet soil moisture status is lowest (depth, months):

1.8 feet February

Ponding does not occur (months):

January February December

Ponding is deepest (depth, months):

0.5 foot March April May June July August  
September October November

Available water capacity to a depth of 60 inches: 7.9 inches

Content of organic matter in the upper 10 inches: 5.8 percent

Typical profile:

A--0 to 6 inches; extremely stony sandy loam  
Bw1,Bw2--6 to 20 inches; extremely stony sandy loam  
Bw3-Bw5--20 to 58 inches; stony fine sandy loam  
2BCd,2Cd--58 to 80 inches; gravelly sandy loam

F116A--Mooselake Mucky Peat, 0 To 1 Percent Slopes

Component Description

Mooselake and similar soils

Extent: 60 to 90 percent of the unit

Geomorphic description:

Till plain

Outwash plain

End moraine

Position on landform:

Depressions, drainageways and flats

Slope range: 0 to 1 percent

Surface layer texture: Peat

Depth to restrictive feature:

Very deep (more than 60 inches)  
Drainage class: Very poorly drained  
Parent material:  
Organic material  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
At the surface April May June November  
Wet soil moisture status is lowest (depth, months):  
1.5 feet February  
Ponding does not occur (months):  
January February March August September December  
Ponding is deepest (depth, months):  
0.5 foot April May June July October  
November  
Available water capacity to a depth of 60 inches: 30.3 inches  
Content of organic matter in the upper 10 inches: 89.0 percent  
Typical profile:  
Oi--0 to 4 inches; peat  
Oe--4 to 80 inches; mucky peat

#### F117A--Rollins Sandy Loam, 0 To 2 Percent Slopes

##### Component Description

###### Rollins and similar soils

Extent: 70 to 90 percent of the unit  
Geomorphic description:  
Outwash plain  
Position on landform:  
Flats  
Slope range: 0 to 2 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Somewhat excessively drained  
Parent material:  
Loamy material over gravelly outwash  
Flooding: None  
Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 2.5 inches  
Content of organic matter in the upper 10 inches: 1.8 percent  
Typical profile:  
A--0 to 5 inches; sandy loam  
Bw--5 to 14 inches; gravelly sandy loam  
2BC, 2C--14 to 80 inches; extremely gravelly sand

#### F117B--Rollins Sandy Loam, 2 T 8 Percent Slopes

##### Component Description

###### Rollins and similar soils

Extent: 80 to 95 percent of the unit  
Geomorphic description:  
Outwash plain  
Position on landform:  
Shoulder  
Backslope

Summit

Slope range: 2 to 8 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat excessively drained

Parent material:

Loamy material over gravelly outwash

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 2.5 inches

Content of organic matter in the upper 10 inches: 1.8 percent

Typical profile:

A--0 to 5 inches; sandy loam

Bw--5 to 14 inches; gravelly sandy loam

2BC, 2C--14 to 80 inches; extremely gravelly sand

F117D--Rollins Sandy Loam, 8 To 18 Percent Slopes

Component Description

Rollins and similar soils

Extent: 70 to 80 percent of the unit

Geomorphic description:

Outwash plain

Position on landform:

Shoulder

Backslope

Summit

Slope range: 8 to 18 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat excessively drained

Parent material:

Loamy material over gravelly outwash

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 2.5 inches

Content of organic matter in the upper 10 inches: 1.8 percent

Typical profile:

A--0 to 5 inches; sandy loam

Bw--5 to 14 inches; gravelly sandy loam

2BC, 2C--14 to 80 inches; extremely gravelly sand

F117F--Rollins Sandy Loam, 18 To 45 Percent Slopes

Component Description

Rollins and similar soils

Extent: 80 to 90 percent of the unit

Geomorphic description:

Esker

Position on landform:

Shoulder

Backslope

Summit

Slope range: 18 to 45 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Somewhat excessively drained  
Parent material:  
Loamy material over gravelly outwash  
Flooding: None  
Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 2.5 inches  
Content of organic matter in the upper 10 inches: 1.8 percent  
Typical profile:  
A--0 to 5 inches; sandy loam  
Bw--5 to 14 inches; gravelly sandy loam  
2BC, 2C--14 to 80 inches; extremely gravelly sand

F118B--Aldenlake-Pequaywan Complex, 0 To 6 Percent Slopes

Component Description

Aldenlake and similar soils

Extent: 50 to 80 percent of the unit  
Geomorphic description:  
Outwash plain  
Position on landform:  
Shoulder  
Summit  
Backslope  
Slope range: 2 to 6 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Loamy material over gravelly outwash  
Flooding: None  
Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.9 inches  
Content of organic matter in the upper 10 inches: 1.8 percent  
Typical profile:  
A--0 to 5 inches; sandy loam  
Bw--5 to 34 inches; sandy loam  
2BC, 2C--34 to 80 inches; very gravelly sand

Pequaywan and similar soils

Extent: 20 to 40 percent of the unit  
Geomorphic description:  
Outwash plain  
Position on landform:  
Flats and slight concave  
Slope range: 0 to 2 percent  
Surface layer texture: Fine sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Moderately well drained  
Parent material:

Loamy material over gravelly outwash  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
2.5 feet April  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet February March August September  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.5 inches  
Content of organic matter in the upper 10 inches: 1.0 percent  
Typical profile:  
A--0 to 2 inches; fine sandy loam  
Bw--2 to 30 inches; sandy loam  
2BC, 2C--30 to 80 inches; very gravelly sand

#### F120A--Grayling-Cromwell Complex, 0 To 2 Percent Slopes

##### Component Description

###### Grayling and similar soils

Extent: 40 to 60 percent of the unit  
Geomorphic description:  
Outwash plain  
Position on landform:  
Flats  
Slope range: 0 to 2 percent  
Surface layer texture: Loamy sand  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Excessively drained  
Parent material:  
Sandy outwash  
Flooding: None  
Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.3 inches  
Content of organic matter in the upper 10 inches: 1.8 percent  
Typical profile:  
A--0 to 5 inches; loamy sand  
Bw--5 to 17 inches; loamy sand  
C--17 to 80 inches; sand

###### Cromwell and similar soils

Extent: 35 to 55 percent of the unit  
Geomorphic description:  
Outwash plain  
Position on landform:  
Flats  
Slope range: 0 to 2 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Somewhat excessively drained  
Parent material:  
Loamy material over sandy outwash  
Flooding: None  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.4 inches  
Content of organic matter in the upper 10 inches: 1.3 percent  
Typical profile:

A--0 to 3 inches; sandy loam  
Bw--3 to 15 inches; sandy loam  
2C--15 to 80 inches; sand

F120B--Grayling-Cromwell Complex, 2 To 8 Percent Slopes

Component Description

Grayling and similar soils

Extent: 35 to 75 percent of the unit

Geomorphic description:

Outwash plain

Position on landform:

Summit

Backslope

Shoulder

Slope range: 2 to 8 percent

Surface layer texture: Loamy sand

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material:

Sandy outwash

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.3 inches

Content of organic matter in the upper 10 inches: 1.8 percent

Typical profile:

A--0 to 5 inches; loamy sand

Bw--5 to 17 inches; loamy sand

C--17 to 80 inches; sand

Cromwell and similar soils

Extent: 25 to 50 percent of the unit

Geomorphic description:

Outwash plain

Position on landform:

Backslope

Shoulder

Summit

Slope range: 2 to 8 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat excessively drained

Parent material:

Loamy material over sandy outwash

Flooding: None

Ponding: None

Available water capacity to a depth of 60 inches: 4.4 inches

Content of organic matter in the upper 10 inches: 1.3 percent

Typical profile:

A--0 to 3 inches; sandy loam

Bw--3 to 15 inches; sandy loam

2C--15 to 80 inches; sand

F120D--Grayling-Cromwell Complex, 8 To 18 Percent Slopes

## Component Description

### Grayling and similar soils

Extent: 35 to 75 percent of the unit

Geomorphic description:

Outwash plain

Position on landform:

Summit

Shoulder

Backslope

Slope range: 8 to 18 percent

Surface layer texture: Loamy sand

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material:

Sandy outwash

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.3 inches

Content of organic matter in the upper 10 inches: 1.8 percent

Typical profile:

A--0 to 5 inches; loamy sand

Bw--5 to 17 inches; loamy sand

C--17 to 80 inches; sand

### Cromwell and similar soils

Extent: 25 to 50 percent of the unit

Geomorphic description:

Outwash plain

Position on landform:

Backslope

Shoulder

Summit

Slope range: 8 to 18 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat excessively drained

Parent material:

Loamy material over sandy outwash

Flooding: None

Ponding: None

Available water capacity to a depth of 60 inches: 4.4 inches

Content of organic matter in the upper 10 inches: 1.3 percent

Typical profile:

A--0 to 3 inches; sandy loam

Bw--3 to 15 inches; sandy loam

2C--15 to 80 inches; sand

## F120F--Grayling-Cromwell Complex, 18 To 45 Percent Slopes

### Component Description

#### Grayling and similar soils

Extent: 45 to 65 percent of the unit

Geomorphic description:

Outwash plain  
Position on landform:  
Shoulder  
Summit  
Backslope  
Slope range: 18 to 45 percent  
Surface layer texture: Loamy sand  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Excessively drained  
Parent material:  
Sandy outwash  
Flooding: None  
Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.3 inches  
Content of organic matter in the upper 10 inches: 1.8 percent  
Typical profile:  
A--0 to 5 inches; loamy sand  
Bw--5 to 17 inches; loamy sand  
C--17 to 80 inches; sand

#### Cromwell and similar soils

Extent: 35 to 55 percent of the unit  
Geomorphic description:  
Outwash plain  
Position on landform:  
Backslope  
Shoulder  
Summit  
Slope range: 18 to 45 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Somewhat excessively drained  
Parent material:  
Loamy material over sandy outwash  
Flooding: None  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.4 inches  
Content of organic matter in the upper 10 inches: 1.3 percent  
Typical profile:  
A--0 to 3 inches; sandy loam  
Bw--3 to 15 inches; sandy loam  
2C--15 to 80 inches; sand

#### F121A--Aldenlake Sandy Loam, 0 To 3 Percent Slopes

##### Component Description

#### Aldenlake and similar soils

Extent: 75 to 95 percent of the unit  
Geomorphic description:  
Outwash plain  
Position on landform:  
Flats  
Slope range: 0 to 2 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:

Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Loamy material over gravelly outwash  
Flooding: None  
Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.9 inches  
Content of organic matter in the upper 10 inches: 1.8 percent  
Typical profile:  
A--0 to 5 inches; sandy loam  
Bw--5 to 34 inches; sandy loam  
2BC, 2C--34 to 80 inches; very gravelly sand

#### F121B--Aldenlake Sandy Loam, 3 To 8 Percent Slopes

##### Component Description

###### Aldenlake and similar soils

Extent: 75 to 90 percent of the unit

Geomorphic description:

Outwash plain

Position on landform:

Shoulder

Backslope

Summit

Slope range: 2 to 8 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Loamy material over gravelly outwash

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 1.8 percent

Typical profile:

A--0 to 5 inches; sandy loam

Bw--5 to 34 inches; sandy loam

2BC, 2C--34 to 80 inches; very gravelly sand

#### F121D--Aldenlake Sandy Loam, 8 To 18 Percent Slopes

##### Component Description

###### Aldenlake and similar soils

Extent: 60 to 80 percent of the unit

Geomorphic description:

Outwash plain

Position on landform:

Shoulder

Summit

Backslope

Slope range: 8 to 18 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Loamy material over gravelly outwash  
Flooding: None  
Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.9 inches  
Content of organic matter in the upper 10 inches: 1.8 percent  
Typical profile:  
A--0 to 5 inches; sandy loam  
Bw--5 to 34 inches; sandy loam  
2BC, 2C--34 to 80 inches; very gravelly sand

#### F121E--Aldenlake Sandy Loam, 18 To 45 Percent Slopes

##### Component Description

###### Aldenlake and similar soils

Extent: 70 to 95 percent of the unit  
Geomorphic description:  
Outwash plain  
Position on landform:  
Shoulder  
Backslope  
Summit  
Slope range: 18 to 45 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Loamy material over gravelly outwash  
Flooding: None  
Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.9 inches  
Content of organic matter in the upper 10 inches: 1.8 percent  
Typical profile:  
A--0 to 5 inches; sandy loam  
Bw--5 to 34 inches; sandy loam  
2BC, 2C--34 to 80 inches; very gravelly sand

#### F122B--Aldenlake-Pequaywan Complex, Pitted, 0 To 8 Percent Slopes

##### Component Description

###### Aldenlake and similar soils

Extent: 35 to 60 percent of the unit  
Geomorphic description:  
Pitted outwash plain  
Position on landform:  
Shoulder  
Summit  
Backslope  
Slope range: 2 to 8 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:

Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Loamy material over gravelly outwash  
Flooding: None  
Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.9 inches  
Content of organic matter in the upper 10 inches: 1.8 percent  
Typical profile:  
A--0 to 5 inches; sandy loam  
Bw--5 to 34 inches; sandy loam  
2BC, 2C--34 to 80 inches; very gravelly sand

Pequawayan, pitted and similar soils

Extent: 15 to 30 percent of the unit  
Geomorphic description:  
Pitted outwash plain  
Position on landform:  
ERROR - YOU HAVE POPULATED HILLSLOPE POSITION TWICE  
Slope range: 0 to 2 percent  
Surface layer texture: Fine sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Moderately well drained  
Parent material:  
Loamy material over gravelly outwash  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
2.5 feet April  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet February March August September  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.5 inches  
Content of organic matter in the upper 10 inches: 1.0 percent  
Typical profile:  
A--0 to 2 inches; fine sandy loam  
Bw--2 to 30 inches; sandy loam  
2BC, 2C--30 to 80 inches; very gravelly sand

Aldenlake and similar soils

Extent: 10 to 20 percent of the unit  
Geomorphic description:  
Pitted outwash plain  
Position on landform:  
ERROR - YOU HAVE POPULATED HILLSLOPE POSITION TWICE  
Slope range: 0 to 2 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Well drained  
Parent material:  
Loamy material over gravelly outwash  
Flooding: None  
Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.9 inches  
Content of organic matter in the upper 10 inches: 1.8 percent  
Typical profile:  
A--0 to 5 inches; sandy loam

Bw--5 to 34 inches; sandy loam  
2BC, 2C--34 to 80 inches; very gravelly sand

F122D--Aldenlake-Pequaywan Complex, Pitted, 0 To 18 Percent Slopes

Component Description

Aldenlake and similar soils

Extent: 45 to 70 percent of the unit

Geomorphic description:

Pitted outwash plain

Position on landform:

Backslope

Shoulder

Summit

Slope range: 8 to 18 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Loamy material over gravelly outwash

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 1.8 percent

Typical profile:

A--0 to 5 inches; sandy loam

Bw--5 to 34 inches; sandy loam

2BC, 2C--34 to 80 inches; very gravelly sand

Pequaywan, pitted and similar soils

Extent: 10 to 25 percent of the unit

Geomorphic description:

Pitted outwash plain

Position on landform:

ERROR - YOU HAVE POPULATED HILLSLOPE POSITION TWICE

Slope range: 0 to 2 percent

Surface layer texture: Fine sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Loamy material over gravelly outwash

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet February March August September

Ponding: None

Available water capacity to a depth of 60 inches: 4.5 inches

Content of organic matter in the upper 10 inches: 1.0 percent

Typical profile:

A--0 to 2 inches; fine sandy loam

Bw--2 to 30 inches; sandy loam

2BC, 2C--30 to 80 inches; very gravelly sand

F122F--Aldenlake-Pequaywan Complex, Pitted, 0 To 45 Percent Slopes

Component Description

Aldenlake and similar soils

Extent: 50 to 80 percent of the unit

Geomorphic description:

Pitted outwash plain

Position on landform:

Shoulder

Summit

Backslope

Slope range: 18 to 45 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Loamy material over gravelly outwash

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 1.8 percent

Typical profile:

A--0 to 5 inches; sandy loam

Bw--5 to 34 inches; sandy loam

2BC, 2C--34 to 80 inches; very gravelly sand

Pequaywan, pitted and similar soils

Extent: 10 to 25 percent of the unit

Geomorphic description:

Pitted outwash plain

Position on landform:

ERROR - YOU HAVE POPULATED HILLSLOPE POSITION TWICE

Slope range: 0 to 2 percent

Surface layer texture: Fine sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Loamy material over gravelly outwash

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet February March August September

Ponding: None

Available water capacity to a depth of 60 inches: 4.5 inches

Content of organic matter in the upper 10 inches: 1.0 percent

Typical profile:

A--0 to 2 inches; fine sandy loam

Bw--2 to 30 inches; sandy loam

2BC, 2C--30 to 80 inches; very gravelly sand

F123B--Grayling-Grytal-Cromwell Complex, Pitted, 0 To 8 Percent Slopes

Component Description

Grayling and similar soils

Extent: 30 to 50 percent of the unit

Geomorphic description:

Pitted outwash plain

Position on landform:

Shoulder

Summit

Backslope

Slope range: 2 to 8 percent

Surface layer texture: Loamy sand

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Excessively drained

Parent material:

Sandy outwash

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.3 inches

Content of organic matter in the upper 10 inches: 1.8 percent

Typical profile:

A--0 to 5 inches; loamy sand

Bw--5 to 17 inches; loamy sand

C--17 to 80 inches; sand

Grytal and similar soils

Extent: 25 to 40 percent of the unit

Geomorphic description:

Pitted outwash plain

Position on landform:

ERROR - YOU HAVE POPULATED HILLSLOPE POSITION TWICE

Slope range: 0 to 2 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Outwash

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet February March August September

Ponding: None

Available water capacity to a depth of 60 inches: 5.0 inches

Content of organic matter in the upper 10 inches: 1.0 percent

Typical profile:

A--0 to 2 inches; sandy loam

Bw,E--2 to 20 inches; sandy loam

C--20 to 80 inches; sand

Cromwell and similar soils

Extent: 20 to 30 percent of the unit

Geomorphic description:

Pitted outwash plain

Position on landform:

Shoulder

Summit

Backslope

Slope range: 2 to 8 percent

Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Somewhat excessively drained  
Parent material:  
Loamy material over sandy outwash  
Flooding: None  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.4 inches  
Content of organic matter in the upper 10 inches: 1.3 percent  
Typical profile:  
A--0 to 3 inches; sandy loam  
Bw--3 to 15 inches; sandy loam  
2C--15 to 80 inches; sand

## F123D--Grayling-Grytal-Cromwell Complex, Pitted, 0 To 18 Percent Slopes

### Component Description

#### Grayling and similar soils

Extent: 30 to 50 percent of the unit  
Geomorphic description:  
Pitted outwash plain  
Position on landform:  
Shoulder  
Summit  
Backslope  
Slope range: 8 to 18 percent  
Surface layer texture: Loamy sand  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Excessively drained  
Parent material:  
Sandy outwash  
Flooding: None  
Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.3 inches  
Content of organic matter in the upper 10 inches: 1.8 percent  
Typical profile:  
A--0 to 5 inches; loamy sand  
Bw--5 to 17 inches; loamy sand  
C--17 to 80 inches; sand

#### Grytal and similar soils

Extent: 20 to 30 percent of the unit  
Geomorphic description:  
Pitted outwash plain  
Position on landform:  
ERROR - YOU HAVE POPULATED HILLSLOPE POSITION TWICE  
Slope range: 0 to 2 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Moderately well drained  
Parent material:  
Outwash  
Flooding: None  
Wet soil moisture status is highest (depth, months):

2.5 feet April  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet February March August September  
Ponding: None  
Available water capacity to a depth of 60 inches: 5.0 inches  
Content of organic matter in the upper 10 inches: 1.0 percent  
Typical profile:  
A--0 to 2 inches; sandy loam  
Bw,E--2 to 20 inches; sandy loam  
C--20 to 80 inches; sand

Cromwell and similar soils

Extent: 20 to 30 percent of the unit  
Geomorphic description:  
Pitted outwash plain  
Position on landform:  
Shoulder  
Summit  
Backslope  
Slope range: 8 to 18 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Somewhat excessively drained  
Parent material:  
Loamy material over sandy outwash  
Flooding: None  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.4 inches  
Content of organic matter in the upper 10 inches: 1.3 percent  
Typical profile:  
A--0 to 3 inches; sandy loam  
Bw--3 to 15 inches; sandy loam  
2C--15 to 80 inches; sand

F124B--Rollins-Pequaywan Complex, Pitted, 0 To 8 Percent Slopes

Component Description

Rollins and similar soils

Extent: 35 to 60 percent of the unit  
Geomorphic description:  
Pitted outwash plain  
Position on landform:  
Shoulder  
Summit  
Backslope  
Slope range: 2 to 8 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Somewhat excessively drained  
Parent material:  
Loamy material over gravelly outwash  
Flooding: None  
Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 2.5 inches  
Content of organic matter in the upper 10 inches: 1.8 percent

Typical profile:

A--0 to 5 inches; sandy loam  
Bw--5 to 14 inches; gravelly sandy loam  
2BC, 2C--14 to 80 inches; extremely gravelly sand

Pequawaywan, pitted and similar soils

Extent: 10 to 30 percent of the unit

Geomorphic description:

Pitted outwash plain

Position on landform:

ERROR - YOU HAVE POPULATED HILLSLOPE POSITION TWICE

Slope range: 0 to 2 percent

Surface layer texture: Fine sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Moderately well drained

Parent material:

Loamy material over gravelly outwash

Flooding: None

Wet soil moisture status is highest (depth, months):

2.5 feet April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet February March August September

Ponding: None

Available water capacity to a depth of 60 inches: 4.5 inches

Content of organic matter in the upper 10 inches: 1.0 percent

Typical profile:

A--0 to 2 inches; fine sandy loam

Bw--2 to 30 inches; sandy loam

2BC, 2C--30 to 80 inches; very gravelly sand

Rollins and similar soils

Extent: 10 to 30 percent of the unit

Geomorphic description:

Pitted outwash plain

Position on landform:

ERROR - YOU HAVE POPULATED HILLSLOPE POSITION TWICE

Slope range: 0 to 2 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Somewhat excessively drained

Parent material:

Loamy material over gravelly outwash

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 2.5 inches

Content of organic matter in the upper 10 inches: 1.8 percent

Typical profile:

A--0 to 5 inches; sandy loam

Bw--5 to 14 inches; gravelly sandy loam

2BC, 2C--14 to 80 inches; extremely gravelly sand

F124D--Rollins-Pequawaywan Complex, Pitted, 0 To 18 Percent Slopes

Component Description

Rollins and similar soils



Shoulder  
Summit  
Backslope  
Slope range: 18 to 45 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Somewhat excessively drained  
Parent material:  
Loamy material over gravelly outwash  
Flooding: None  
Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 2.5 inches  
Content of organic matter in the upper 10 inches: 1.8 percent  
Typical profile:  
A--0 to 5 inches; sandy loam  
Bw--5 to 14 inches; gravelly sandy loam  
2BC, 2C--14 to 80 inches; extremely gravelly sand

Pequawaywan, pitted and similar soils  
Extent: 10 to 25 percent of the unit  
Geomorphic description:  
Pitted outwash plain  
Position on landform:  
ERROR - YOU HAVE POPULATED HILLSLOPE POSITION TWICE  
Slope range: 0 to 2 percent  
Surface layer texture: Fine sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Moderately well drained  
Parent material:  
Loamy material over gravelly outwash  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
2.5 feet April  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet February March August September  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.5 inches  
Content of organic matter in the upper 10 inches: 1.0 percent  
Typical profile:  
A--0 to 2 inches; fine sandy loam  
Bw--2 to 30 inches; sandy loam  
2BC, 2C--30 to 80 inches; very gravelly sand

#### F125A--Pequawaywan Loam, 0 To 3 Percent Slopes

##### Component Description

Pequawaywan, pitted and similar soils  
Extent: 70 to 95 percent of the unit  
Geomorphic description:  
Outwash plain  
Position on landform:  
Flats  
Slope range: 0 to 3 percent  
Surface layer texture: Fine sandy loam  
Depth to restrictive feature:

Very deep (more than 60 inches)  
Drainage class: Moderately well drained  
Parent material:  
Loamy material over gravelly outwash  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
2.5 feet April  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet February March August September  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.5 inches  
Content of organic matter in the upper 10 inches: 1.0 percent  
Typical profile:  
A--0 to 2 inches; fine sandy loam  
Bw--2 to 30 inches; sandy loam  
2BC, 2C--30 to 80 inches; very gravelly sand

#### F126A--Grytal Sandy Loam, 0 To 3 Percent Slopes

##### Component Description

###### Grytal and similar soils

Extent: 70 to 95 percent of the unit  
Geomorphic description:  
Outwash plain  
Position on landform:  
Flats  
Slope range: 0 to 3 percent  
Surface layer texture: Sandy loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Moderately well drained  
Parent material:  
Outwash  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
2.5 feet April  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet February March August September  
Ponding: None  
Available water capacity to a depth of 60 inches: 5.0 inches  
Content of organic matter in the upper 10 inches: 1.0 percent  
Typical profile:  
A--0 to 2 inches; sandy loam  
Bw,E--2 to 20 inches; sandy loam  
C--20 to 80 inches; sand

#### F127A--Hulligan Mucky Fine Sandy Loam, Depressional, 0 To 2 Percent Slopes

##### Component Description

###### Hulligan, depressional and similar soils

Extent: 70 to 90 percent of the unit  
Geomorphic description:  
Outwash plain  
Position on landform:  
Depressions and drainways  
Slope range: 0 to 1 percent

Surface layer texture: Mucky fine sandy loam  
Depth to restrictive feature:  
    Very deep (more than 60 inches)  
Drainage class: Very poorly drained  
Parent material:  
    Loamy material over gravelly outwash  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
    At the surface                   April  
Wet soil moisture status is lowest (depth, months):  
    1.7 feet                         February  
Ponding does not occur (months):  
    January February December  
Ponding is deepest (depth, months):  
    0.5 foot                         March April May June July August  
                                      September October November  
Available water capacity to a depth of 60 inches: 6.0 inches  
Content of organic matter in the upper 10 inches: 8.8 percent  
Typical profile:  
    A--0 to 7 inches; mucky fine sandy loam  
    Bw--7 to 45 inches; sandy loam  
    2BC, 2C--45 to 80 inches; very gravelly sand

#### F128A--Hulligan Fine Sandy Loam, 0 To 2 Percent Slopes

##### Component Description

###### Hulligan and similar soils

Extent: 70 to 90 percent of the unit  
Geomorphic description:  
    Outwash plain  
Position on landform:  
    Flats  
Slope range: 0 to 2 percent  
Surface layer texture: Fine sandy loam  
Depth to restrictive feature:  
    Very deep (more than 60 inches)  
Drainage class: Poorly drained  
Parent material:  
    Loamy material over gravelly outwash  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
    0.3 foot                         April  
Wet soil moisture status is lowest (depth, months):  
    3.3 feet                         February  
Ponding: None  
Available water capacity to a depth of 60 inches: 5.6 inches  
Content of organic matter in the upper 10 inches: 2.3 percent  
Typical profile:  
    A--0 to 5 inches; fine sandy loam  
    Bw--5 to 41 inches; sandy loam  
    2BC, 2C--41 to 80 inches; very gravelly sand

#### F129A--Tacoosh Mucky Peat, 0 To 1 Percent Slopes

##### Component Description

###### Tacoosh and similar soils

Extent: 60 to 90 percent of the unit

Geomorphic description:

Till plain

End moraine

Outwash plain

Position on landform:

Depressions and drainageways

Slope range: 0 to 1 percent

Surface layer texture: Mucky peat

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Organic material over glaciofluvial sediments

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June November

Wet soil moisture status is lowest (depth, months):

1.5 feet February

Ponding does not occur (months):

January February March August September December

Ponding is deepest (depth, months):

0.5 foot April May June July October  
November

Available water capacity to a depth of 60 inches: 21.4 inches

Content of organic matter in the upper 10 inches: 85.0 percent

Typical profile:

Oe1--0 to 7 inches; mucky peat

Oe2--7 to 30 inches; mucky peat

Oa--30 to 40 inches; muck

Cg--40 to 80 inches; stratified loamy fine sand to sandy loam

to

fine sandy loam to loam

F134A--Giese Mucky Loam, Depressional, 0 To 1 Percent Slope

#### Component Description

Giese, depressional and similar soils

Extent: 70 to 90 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Depressions

Slope range: 0 to 1 percent

Surface layer texture: Muck

Depth to restrictive feature:

Dense material: 30 to 60 inches

Drainage class: Very poorly drained

Parent material:

Loamy material over dense loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June November

Wet soil moisture status is lowest (depth, months):

1.8 feet February

Ponding does not occur (months):

January February December

Ponding is deepest (depth, months):

0.5 foot

March April May June July August  
September October November

Available water capacity to a depth of 60 inches: 7.4 inches

Content of organic matter in the upper 10 inches: 12.5 percent

Typical profile:

Oa--0 to 1 inches; muck

A--1 to 6 inches; silt loam

Eg, E--6 to 11 inches; silt loam

Bg, Bw--11 to 30 inches; gravelly sandy loam

2Bw, 2BC--30 to 36 inches; gravelly sandy loam

2BCd, 2Cd--36 to 80 inches; gravelly sandy loam

F135A--Hermantown-Canosia-Giese, Depressional Complex, 0 To 3 Percent Slopes

#### Component Description

##### Hermantown and similar soils

Extent: 35 to 55 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Flats and low rises

Slope range: 1 to 3 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Dense material: 30 to 60 inches

Drainage class: Somewhat poorly drained

Parent material:

Loamy material over dense loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot April May

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March August  
September December

Ponding: None

Available water capacity to a depth of 60 inches: 6.7 inches

Content of organic matter in the upper 10 inches: 2.3 percent

Typical profile:

A--0 to 4 inches; silt loam

E--4 to 7 inches; silt loam

Bw--7 to 31 inches; gravelly sandy loam

2Bw, 2BC--31 to 53 inches; gravelly sandy loam

2BCd--53 to 80 inches; gravelly sandy loam

##### Canosia and similar soils

Extent: 25 to 45 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Toeslopes and slight depressions

Slope range: 0 to 2 percent

Surface layer texture: Loam

Depth to restrictive feature:

Dense material: 30 to 60 inches

Drainage class: Poorly drained

Parent material:

Loamy material over dense loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February August  
September

Ponding: None

Available water capacity to a depth of 60 inches: 6.4 inches

Content of organic matter in the upper 10 inches: 4.2 percent

Typical profile:

A--0 to 5 inches; loam

Bw--5 to 25 inches; gravelly sandy loam

2Bw, 2BC--25 to 34 inches; gravelly sandy loam

2BCd--34 to 80 inches; gravelly sandy loam

Giese, depressional and similar soils

Extent: 10 to 20 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Depressions

Slope range: 0 to 1 percent

Surface layer texture: Muck

Depth to restrictive feature:

Dense material: 30 to 60 inches

Drainage class: Very poorly drained

Parent material:

Loamy material over dense loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June November

Wet soil moisture status is lowest (depth, months):

1.8 feet February

Ponding does not occur (months):

January February December

Ponding is deepest (depth, months):

0.5 foot March April May June July August  
September October November

Available water capacity to a depth of 60 inches: 7.4 inches

Content of organic matter in the upper 10 inches: 12.5 percent

Typical profile:

Oa--0 to 1 inches; muck

A--1 to 6 inches; silt loam

Eg, E--6 to 11 inches; silt loam

Bg, Bw--11 to 30 inches; gravelly sandy loam

2Bw, 2BC--30 to 36 inches; gravelly sandy loam

2BCd, 2Cd--36 to 80 inches; gravelly sandy loam

F136A--Hermantown Silt Loam, 1 To 3 Percent Slopes

#### Component Description

Hermantown and similar soils

Extent: 70 to 90 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Broad flats and low rises

Slope range: 1 to 3 percent

Surface layer texture: Silt loam  
Depth to restrictive feature:  
Dense material: 30 to 60 inches  
Drainage class: Somewhat poorly drained  
Parent material:  
Loamy material over dense loamy till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
0.5 foot April May  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet January February March August  
September December  
Ponding: None  
Available water capacity to a depth of 60 inches: 6.7 inches  
Content of organic matter in the upper 10 inches: 2.3 percent  
Typical profile:  
A--0 to 4 inches; silt loam  
E--4 to 7 inches; silt loam  
Bw--7 to 31 inches; gravelly sandy loam  
2Bw, 2BC--31 to 53 inches; gravelly sandy loam  
2BCd--53 to 80 inches; gravelly sandy loam

#### F137B--Normanna-Canosia Complex, 0 To 8 Percent Slopes

##### Component Description

###### Normanna and similar soils

Extent: 30 to 60 percent of the unit  
Geomorphic description:  
Moraine  
Position on landform:  
Summit  
Backslope  
Slope range: 3 to 8 percent  
Surface layer texture: Loam  
Depth to restrictive feature:  
Dense material: 30 to 60 inches  
Drainage class: Moderately well drained  
Parent material:  
Loamy material over dense loamy till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
1.5 feet April  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet January February March June July  
August September October  
December  
Ponding: None  
Available water capacity to a depth of 60 inches: 6.3 inches  
Content of organic matter in the upper 10 inches: 2.1 percent  
Typical profile:  
A--0 to 4 inches; loam  
Bw--4 to 45 inches; gravelly sandy loam  
2Bw,BC,2BC--45 to 48 inches; gravelly sandy loam  
2BCd--48 to 80 inches; gravelly sandy loam

###### Canosia and similar soils

Extent: 10 to 40 percent of the unit  
Geomorphic description:

Moraine

Position on landform:

Toeslopes and slight depressions

Slope range: 0 to 2 percent

Surface layer texture: Loam

Depth to restrictive feature:

Dense material: 30 to 60 inches

Drainage class: Poorly drained

Parent material:

Loamy material over dense loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February August  
September

Ponding: None

Available water capacity to a depth of 60 inches: 6.4 inches

Content of organic matter in the upper 10 inches: 4.2 percent

Typical profile:

A--0 to 5 inches; loam

Bw--5 to 25 inches; gravelly sandy loam

2Bw, 2BC--25 to 34 inches; gravelly sandy loam

2BCd--34 to 80 inches; gravelly sandy loam

Hermantown and similar soils

Extent: 15 to 30 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Footslope

Slope range: 2 to 5 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Dense material: 30 to 60 inches

Drainage class: Somewhat poorly drained

Parent material:

Loamy material over dense loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot April May

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March August  
September December

Ponding: None

Available water capacity to a depth of 60 inches: 6.7 inches

Content of organic matter in the upper 10 inches: 2.3 percent

Typical profile:

A--0 to 4 inches; silt loam

E--4 to 7 inches; silt loam

Bw--7 to 31 inches; gravelly sandy loam

2Bw, 2BC--31 to 53 inches; gravelly sandy loam

2BCd--53 to 80 inches; gravelly sandy loam

F138D--Ahmeek-Normanna-Canosia Complex, 0 To 18 Percent Slopes

Component Description

Ahmeek and similar soils

Extent: 40 to 60 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Shoulder

Backslope

Slope range: 8 to 18 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Dense material: 30 to 60 inches

Drainage class: Well drained

Parent material:

Loamy material over dense loamy till

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 6.4 inches

Content of organic matter in the upper 10 inches: 1.3 percent

Typical profile:

A--0 to 2 inches; silt loam

E--2 to 4 inches; silt loam

Bw--4 to 14 inches; gravelly sandy loam

2Bw, 2BC--14 to 33 inches; gravelly sandy loam

2BCd--33 to 80 inches; gravelly sandy loam

#### Normanna and similar soils

Extent: 20 to 40 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Summit

Backslope

Slope range: 3 to 8 percent

Surface layer texture: Loam

Depth to restrictive feature:

Dense material: 30 to 60 inches

Drainage class: Moderately well drained

Parent material:

Loamy material over dense loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

1.5 feet April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March June July

August September October

December

Ponding: None

Available water capacity to a depth of 60 inches: 6.3 inches

Content of organic matter in the upper 10 inches: 2.1 percent

Typical profile:

A--0 to 4 inches; loam

Bw--4 to 45 inches; gravelly sandy loam

2Bw,BC,2BC--45 to 48 inches; gravelly sandy loam

2BCd--48 to 80 inches; gravelly sandy loam

#### F139F--Ahmeek Fine Sandy Loam, 18 To 45 Percent Slopes

##### Component Description

Ahmeek and similar soils

Extent: 60 to 80 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Shoulder

Backslope

Slope range: 18 to 45 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Dense material: 30 to 60 inches

Drainage class: Well drained

Parent material:

Loamy material over dense loamy till

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 6.4 inches

Content of organic matter in the upper 10 inches: 1.3 percent

Typical profile:

A--0 to 2 inches; silt loam

E--2 to 4 inches; silt loam

Bw--4 to 14 inches; gravelly sandy loam

2Bw, 2BC--14 to 33 inches; gravelly sandy loam

2BCd--33 to 80 inches; gravelly sandy loam

F140B--Normanna-Giese, Depressional Complex, Pitted, 0 To 8 Percent Slopes

Component Description

Normanna and similar soils

Extent: 40 to 60 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Summit

Backslope

Slope range: 3 to 8 percent

Surface layer texture: Loam

Depth to restrictive feature:

Dense material: 30 to 60 inches

Drainage class: Moderately well drained

Parent material:

Loamy material over dense loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

1.5 feet April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March June July

August September October

December

Ponding: None

Available water capacity to a depth of 60 inches: 6.3 inches

Content of organic matter in the upper 10 inches: 2.1 percent

Typical profile:

A--0 to 4 inches; loam

Bw--4 to 45 inches; gravelly sandy loam

2Bw,BC,2BC--45 to 48 inches; gravelly sandy loam

2BCd--48 to 80 inches; gravelly sandy loam

Giесе, depressional and similar soils

Extent: 15 to 30 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Depressions

Slope range: 0 to 1 percent

Surface layer texture: Muck

Depth to restrictive feature:

Dense material: 30 to 60 inches

Drainage class: Very poorly drained

Parent material:

Loamy material over dense loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June November

Wet soil moisture status is lowest (depth, months):

1.8 feet February

Ponding does not occur (months):

January February December

Ponding is deepest (depth, months):

0.5 foot March April May June July August  
September October November

Available water capacity to a depth of 60 inches: 7.4 inches

Content of organic matter in the upper 10 inches: 12.5 percent

Typical profile:

Oa--0 to 1 inches; muck

A--1 to 6 inches; silt loam

Eg, E--6 to 11 inches; silt loam

Bg, Bw--11 to 30 inches; gravelly sandy loam

2Bw, 2BC--30 to 36 inches; gravelly sandy loam

2BCd, 2Cd--36 to 80 inches; gravelly sandy loam

F141D--Ahmeek-Normanna-Cathro, Complex, Pitted, 0 To 18 Percent Slopes

Component Description

Ahmeek d and similar soils

Extent: 45 to 60 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Shoulder

Backslope

Slope range: 8 to 18 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Dense material: 30 to 60 inches

Drainage class: Well drained

Parent material:

Loamy material over dense loamy till

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 6.4 inches

Content of organic matter in the upper 10 inches: 1.3 percent

Typical profile:

A--0 to 2 inches; silt loam

E--2 to 4 inches; silt loam  
Bw--4 to 14 inches; gravelly sandy loam  
2Bw, 2BC--14 to 33 inches; gravelly sandy loam  
2BCd--33 to 80 inches; gravelly sandy loam

Normanna and similar soils

Extent: 10 to 35 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Summit

Backslope

Slope range: 3 to 8 percent

Surface layer texture: Loam

Depth to restrictive feature:

Dense material: 30 to 60 inches

Drainage class: Moderately well drained

Parent material:

Loamy material over dense loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

1.5 feet April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February March June July  
August September October  
December

Ponding: None

Available water capacity to a depth of 60 inches: 6.3 inches

Content of organic matter in the upper 10 inches: 2.1 percent

Typical profile:

A--0 to 4 inches; loam

Bw--4 to 45 inches; gravelly sandy loam

2Bw,BC,2BC--45 to 48 inches; gravelly sandy loam

2BCd--48 to 80 inches; gravelly sandy loam

Cathro, depressional and similar soils

Extent: 10 to 25 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Depressions

Slope range: 0 to 1 percent

Surface layer texture: Muck

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Organic material over dense loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June July August  
September October November  
December

Wet soil moisture status is lowest (depth, months):

1.0 foot February

Ponding: At 0.5 foot all year

Available water capacity to a depth of 60 inches: 16.9 inches

Content of organic matter in the upper 10 inches: 65.0 percent

Typical profile:

Oa--0 to 36 inches; muck

A--36 to 40 inches; mucky silt loam  
Cg--40 to 48 inches; stratified loamy fine sand to sandy loam  
to  
fine sandy loam to loam  
2Cd--48 to 80 inches; gravelly sandy loam

F142A--Canosia Fine Sandy Loam, 0 To 2 Percent Slopes

Component Description

Canosia and similar soils

Extent: 80 to 98 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Broad flats

Slope range: 0 to 2 percent

Surface layer texture: Loam

Depth to restrictive feature:

Dense material: 30 to 60 inches

Drainage class: Poorly drained

Parent material:

Loamy material over dense loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February August

September

Ponding: None

Available water capacity to a depth of 60 inches: 6.4 inches

Content of organic matter in the upper 10 inches: 4.2 percent

Typical profile:

A--0 to 5 inches; loam

Bw--5 to 25 inches; gravelly sandy loam

2Bw, 2BC--25 to 34 inches; gravelly sandy loam

2BCd--34 to 80 inches; gravelly sandy loam

F143B--Normanna-Aldenlake-Canosia Complex, 0 To 8 Percent Slopes

Component Description

Normanna and similar soils

Extent: 25 to 60 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Summit

Backslope

Slope range: 3 to 8 percent

Surface layer texture: Loam

Depth to restrictive feature:

Dense material: 30 to 60 inches

Drainage class: Moderately well drained

Parent material:

Loamy material over dense loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

1.5 feet April  
Wet soil moisture status is lowest (depth, months):  
More than 6.7 feet January February March June July  
August September October  
December

Ponding: None

Available water capacity to a depth of 60 inches: 6.3 inches

Content of organic matter in the upper 10 inches: 2.1 percent

Typical profile:

A--0 to 4 inches; loam

Bw--4 to 45 inches; gravelly sandy loam

2Bw,BC,2BC--45 to 48 inches; gravelly sandy loam

2BCd--48 to 80 inches; gravelly sandy loam

Aldenlake and similar soils

Extent: 10 to 50 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Shoulder

Summit

Backslope

Slope range: 0 to 8 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Loamy material over gravelly outwash

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 1.8 percent

Typical profile:

A--0 to 5 inches; sandy loam

Bw--5 to 34 inches; sandy loam

2BC, 2C--34 to 80 inches; very gravelly sand

F144D--Aldenlake-Ahmeek Complex, 8 To 18 Percent Slopes

Component Description

Aldenlake and similar soils

Extent: 20 to 50 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Shoulder

Summit

Backslope

Slope range: 8 to 18 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Loamy material over gravelly outwash

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.9 inches  
Content of organic matter in the upper 10 inches: 1.8 percent  
Typical profile:  
A--0 to 5 inches; sandy loam  
Bw--5 to 34 inches; sandy loam  
2BC, 2C--34 to 80 inches; very gravelly sand

#### Ahmeek and similar soils

Extent: 20 to 50 percent of the unit  
Geomorphic description:  
Moraine  
Position on landform:  
Shoulder  
Backslope  
Slope range: 8 to 18 percent  
Surface layer texture: Silt loam  
Depth to restrictive feature:  
Dense material: 30 to 60 inches  
Drainage class: Well drained  
Parent material:  
Loamy material over dense loamy till  
Flooding: None  
Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 6.4 inches  
Content of organic matter in the upper 10 inches: 1.3 percent  
Typical profile:  
A--0 to 2 inches; silt loam  
E--2 to 4 inches; silt loam  
Bw--4 to 14 inches; gravelly sandy loam  
2Bw, 2BC--14 to 33 inches; gravelly sandy loam  
2BCd--33 to 80 inches; gravelly sandy loam

#### F145F--Ahmeek-Aldenlake Complex, 18 To 45 Percent Slopes

##### Component Description

#### Ahmeek and similar soils

Extent: 20 to 50 percent of the unit  
Geomorphic description:  
Moraine  
Position on landform:  
Shoulder  
Backslope  
Slope range: 18 to 45 percent  
Surface layer texture: Silt loam  
Depth to restrictive feature:  
Dense material: 30 to 60 inches  
Drainage class: Well drained  
Parent material:  
Loamy material over dense loamy till  
Flooding: None  
Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 6.4 inches  
Content of organic matter in the upper 10 inches: 1.3 percent  
Typical profile:

A--0 to 2 inches; silt loam  
E--2 to 4 inches; silt loam  
Bw--4 to 14 inches; gravelly sandy loam  
2Bw, 2BC--14 to 33 inches; gravelly sandy loam  
2BCd--33 to 80 inches; gravelly sandy loam

Aldenlake and similar soils

Extent: 20 to 50 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Shoulder

Summit

Backslope

Slope range: 18 to 45 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Loamy material over gravelly outwash

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 4.9 inches

Content of organic matter in the upper 10 inches: 1.8 percent

Typical profile:

A--0 to 5 inches; sandy loam

Bw--5 to 34 inches; sandy loam

2BC, 2C--34 to 80 inches; very gravelly sand

F146A--Giese Mucky Loam, 0 To 2 Percent Slopes, Rubbly

Component Description

Giese, rubbly and similar soils

Extent: 60 to 90 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Broad flats

Slope range: 0 to 2 percent

Surface layer texture: Muck

Depth to restrictive feature:

Dense material: 30 to 60 inches

Drainage class: Very poorly drained

Parent material:

Loamy material over dense loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June November

Wet soil moisture status is lowest (depth, months):

1.8 feet February

Ponding does not occur (months):

January February December

Ponding is deepest (depth, months):

0.5 foot March April May June July August  
September October November

Available water capacity to a depth of 60 inches: 7.4 inches

Content of organic matter in the upper 10 inches: 12.5 percent

Typical profile:

Oa--0 to 1 inches; muck

A--1 to 6 inches; silt loam

Eg, E--6 to 11 inches; silt loam

Bg, Bw--11 to 30 inches; gravelly sandy loam

2Bw, 2BC--30 to 36 inches; gravelly sandy loam

2BCd, 2Cd--36 to 80 inches; gravelly sandy loam

F147D--Ahmeek-Canosia-Rock Outcrop Complex, 0 To 25 Percent Slopes

#### Component Description

##### Ahmeek and similar soils

Extent: 30 to 60 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Shoulder

Backslope

Slope range: 8 to 25 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Dense material: 30 to 60 inches

Drainage class: Well drained

Parent material:

Loamy material over dense loamy till

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 6.4 inches

Content of organic matter in the upper 10 inches: 1.3 percent

Typical profile:

A--0 to 2 inches; silt loam

E--2 to 4 inches; silt loam

Bw--4 to 14 inches; gravelly sandy loam

2Bw, 2BC--14 to 33 inches; gravelly sandy loam

2BCd--33 to 80 inches; gravelly sandy loam

##### Canosia and similar soils

Extent: 10 to 20 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Toeslopes and slight depressions

Slope range: 0 to 2 percent

Surface layer texture: Loam

Depth to restrictive feature:

Dense material: 30 to 60 inches

Drainage class: Poorly drained

Parent material:

Loamy material over dense loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet January February August  
September

Ponding: None

Available water capacity to a depth of 60 inches: 6.4 inches  
Content of organic matter in the upper 10 inches: 4.2 percent  
Typical profile:

A--0 to 5 inches; loam  
Bw--5 to 25 inches; gravelly sandy loam  
2Bw, 2BC--25 to 34 inches; gravelly sandy loam  
2BCd--34 to 80 inches; gravelly sandy loam

F148E--Ahmeek-Bedrock Outcrop-Fluvaquents, Frequently Flooded, Complex, 0  
To 50 Percent Slopes

#### Component Description

Ahmeek and similar soils

Extent: 40 to 80 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Shoulder

Backslope

Slope range: 18 to 50 percent

Surface layer texture: Silt loam

Depth to restrictive feature:

Dense material: 30 to 60 inches

Drainage class: Well drained

Parent material:

Loamy material over dense loamy till

Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None

Available water capacity to a depth of 60 inches: 6.4 inches

Content of organic matter in the upper 10 inches: 1.3 percent

Typical profile:

A--0 to 2 inches; silt loam

E--2 to 4 inches; silt loam

Bw--4 to 14 inches; gravelly sandy loam

2Bw, 2BC--14 to 33 inches; gravelly sandy loam

2BCd--33 to 80 inches; gravelly sandy loam

F149D--Aldenlake-Rock Outcrop Complex, 3 To 20 Percent Slopes

#### Component Description

Aldenlake and similar soils

Extent: 60 to 85 percent of the unit

Geomorphic description:

Outwash plain

Position on landform:

Shoulder

Summit

Backslope

Slope range: 8 to 18 percent

Surface layer texture: Sandy loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Well drained

Parent material:

Loamy material over gravelly outwash

Flooding: None  
Depth to wet soil moisture status: More than 6.7 feet all year  
Ponding: None  
Available water capacity to a depth of 60 inches: 4.9 inches  
Content of organic matter in the upper 10 inches: 1.8 percent  
Typical profile:  
A--0 to 5 inches; sandy loam  
Bw--5 to 34 inches; sandy loam  
2BC, 2C--34 to 80 inches; very gravelly sand

F150A--Twig-Tacoosh-Giese Complex, Depressional, 0 To 1 Percent Slopes

Component Description

Twig, depressional and similar soils  
Extent: 30 to 75 percent of the unit  
Geomorphic description:  
Moraine  
Position on landform:  
Depressions  
Slope range: 0 to 1 percent  
Surface layer texture: Mucky peat  
Depth to restrictive feature:  
Dense material: 30 to 60 inches  
Drainage class: Very poorly drained  
Parent material:  
Organic material over loamy material over dense loamy till  
Flooding: None  
Wet soil moisture status is highest (depth, months):  
At the surface April May June November  
Wet soil moisture status is lowest (depth, months):  
1.8 feet February  
Ponding does not occur (months):  
January February December  
Ponding is deepest (depth, months):  
0.5 foot March April May June July August  
September October November  
Available water capacity to a depth of 60 inches: 11.6 inches  
Content of organic matter in the upper 10 inches: 85.0 percent  
Typical profile:  
Oe--0 to 12 inches; mucky peat  
A1--12 to 18 inches; mucky silt loam  
A2--18 to 20 inches; silt loam  
Eg, 2Btg, 2Bw--20 to 48 inches; gravelly sandy loam  
2BCd, 2Cd--48 to 80 inches; gravelly sandy loam

Tacoosh, depressional and similar soils  
Extent: 20 to 60 percent of the unit  
Geomorphic description:  
Moraine  
Position on landform:  
Depression  
Slope range: 0 to 1 percent  
Surface layer texture: Mucky peat  
Depth to restrictive feature:  
Dense material: 40 to 80 inches  
Drainage class: Very poorly drained  
Parent material:  
Organic material over dense loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June November

Wet soil moisture status is lowest (depth, months):

1.5 feet February

Ponding does not occur (months):

January February March August September December

Ponding is deepest (depth, months):

0.5 foot April May June July October  
November

Available water capacity to a depth of 60 inches: 20.6 inches

Content of organic matter in the upper 10 inches: 85.0 percent

Typical profile:

Oe1--0 to 7 inches; mucky peat

Oe2--7 to 30 inches; mucky peat

Oa--30 to 40 inches; muck

Cg--40 to 48 inches; stratified loamy fine sand to sandy loam

to

fine sandy loam to loam

2Cd--48 to 80 inches; gravelly sandy loam

Giese, depressional and similar soils

Extent: 5 to 20 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Depressions

Slope range: 0 to 1 percent

Surface layer texture: Muck

Depth to restrictive feature:

Dense material: 30 to 60 inches

Drainage class: Very poorly drained

Parent material:

Loamy material over dense loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June November

Wet soil moisture status is lowest (depth, months):

1.8 feet February

Ponding does not occur (months):

January February December

Ponding is deepest (depth, months):

0.5 foot March April May June July August  
September October November

Available water capacity to a depth of 60 inches: 7.4 inches

Content of organic matter in the upper 10 inches: 12.5 percent

Typical profile:

Oa--0 to 1 inches; muck

A--1 to 6 inches; silt loam

Eg, E--6 to 11 inches; silt loam

Bg, Bw--11 to 30 inches; gravelly sandy loam

2Bw, 2BC--30 to 36 inches; gravelly sandy loam

2BCd, 2Cd--36 to 80 inches; gravelly sandy loam

F151A--Tacoosh Mucky Peat, Dense Substratum, 0 To 1 Percent Slopes

Component Description

Tacoosh and similar soils

Extent: 60 to 90 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Flats and depressions

Slope range: 0 to 1 percent

Surface layer texture: Mucky peat

Depth to restrictive feature:

Dense material: 40 to 80 inches

Drainage class: Very poorly drained

Parent material:

Organic material over dense loamy till

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June November

Wet soil moisture status is lowest (depth, months):

1.5 feet February

Ponding does not occur (months):

January February March August September December

Ponding is deepest (depth, months):

0.5 foot April May June July October  
November

Available water capacity to a depth of 60 inches: 20.6 inches

Content of organic matter in the upper 10 inches: 85.0 percent

Typical profile:

Oe1--0 to 7 inches; mucky peat

Oe2--7 to 30 inches; mucky peat

Oa--30 to 40 inches; muck

Cg--40 to 48 inches; stratified loamy fine sand to sandy loam

to

fine sandy loam to loam

2Cd--48 to 80 inches; gravelly sandy loam

F170A--Rifle Soils, Dense Substratum, 0 To 1 Percent Slopes

#### Component Description

Rifle and similar soils

Extent: 0 to 95 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Flats and depressions

Slope range: 0 to 1 percent

Surface layer texture: Peat

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Organic material

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface May June November December

Wet soil moisture status is lowest (depth, months):

1.3 feet February

Ponding: None

Available water capacity to a depth of 60 inches: 30.5 inches

Content of organic matter in the upper 10 inches: 91.0 percent

Typical profile:

Oi--0 to 6 inches; peat  
Oe--6 to 80 inches; mucky peat

Rifle, depressional and similar soils

Extent: 0 to 95 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Flats and depressions

Slope range: 0 to 1 percent

Surface layer texture: Mucky peat

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Organic material

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June July November

Wet soil moisture status is lowest (depth, months):

1.0 foot February September

Ponding: None

Available water capacity to a depth of 60 inches: 29.9 inches

Content of organic matter in the upper 10 inches: 85.0 percent

Typical profile:

Oe1--0 to 5 inches; mucky peat

Oe2--5 to 80 inches; mucky peat

F175A--Greenwood Soils, Dense Substratum, 0 To 1 Percent Slopes

Component Description

Greenwood and similar soils

Extent: 0 to 95 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Flats and depressions

Slope range: 0 to 1 percent

Surface layer texture: Peat

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Organic deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot April May June July October  
November

Wet soil moisture status is lowest (depth, months):

1.7 feet February

Ponding: None

Available water capacity to a depth of 60 inches: 30.5 inches

Content of organic matter in the upper 10 inches: 91.0 percent

Typical profile:

Oi--0 to 6 inches; peat

Oe1--6 to 24 inches; mucky peat

Oe2--24 to 80 inches; mucky peat

Greenwood, depressional and similar soils

Extent: 0 to 95 percent of the unit

Geomorphic description:

Moraine

Position on landform:

Flats and depressions

Slope range: 0 to 1 percent

Surface layer texture: Peat

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Organic deposits

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June November

Wet soil moisture status is lowest (depth, months):

1.7 feet February

Ponding does not occur (months):

January February March August September December

Ponding is deepest (depth, months):

0.5 foot April May June July October  
November

Available water capacity to a depth of 60 inches: 31.3 inches

Content of organic matter in the upper 10 inches: 95.0 percent

Typical profile:

Oi--0 to 14 inches; peat

Oe1--14 to 80 inches; mucky peat

U14A--Uskabwanka Peat, 0 To 1 Percent Slopes

Component Description

Uskabwanka and similar soils

Extent: 80 to 100 percent of the unit

Geomorphic description:

Till plain

Outwash plain

End moraine

Position on landform:

Depressions, drainageways and flats

Slope range: 0 to 0 percent

Surface layer texture: Peat

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Organic material

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot April May June July October  
November

Wet soil moisture status is lowest (depth, months):

2.0 feet February

Ponding: None

Available water capacity to a depth of 60 inches: 21.1 inches

Content of organic matter in the upper 10 inches: 95.0 percent

Typical profile:

Oi--0 to 10 inches; peat

Oe1--10 to 40 inches; mucky peat  
2Oe2--40 to 70 inches; water  
Oe3--70 to 80 inches; mucky peat

U20A--Bowstring And Fluvaquents Loamy, 0 To 2 Percent Slopes, Frequently  
Flooded

#### Component Description

Bowstring, frequently flooded and similar soils

Extent: 50 percent of the unit

Geomorphic description:

Alluvial flat

Slope range: 0 to 1 percent

Surface layer texture: Muck

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Organic materials mixed with alluvium

Flooding does not occur (months):

January February December

Flooding is most likely (frequency, months):

Frequent April May June

Wet soil moisture status is highest (depth, months):

At the surface March April May June July August

Wet soil moisture status is lowest (depth, months):

0.5 foot January February September

October November December

Ponding: None

Available water capacity to a depth of 60 inches: 21.0 inches

Content of organic matter in the upper 10 inches: 65.0 percent

Typical profile:

Oa--0 to 38 inches; muck

Cg--38 to 47 inches; stratified fine sand to loamy fine sand

O'a--47 to 80 inches; muck

Fluvaquents vp, frequently flooded and similar soils

Extent: 30 percent of the unit

Geomorphic description:

Alluvial flat

Slope range: 0 to 1 percent

Surface layer texture: Mucky silt loam

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Alluvium

Flooding does not occur (months):

January February December

Flooding is most likely (frequency, months):

Frequent April May June

Wet soil moisture status is highest (depth, months):

At the surface April May June July

Wet soil moisture status is lowest (depth, months):

1.0 foot February October

Ponding: None

Available water capacity to a depth of 60 inches: 8.9 inches

Content of organic matter in the upper 10 inches: 8.5 percent

Typical profile:

A--0 to 6 inches; mucky silt loam

Cg--6 to 80 inches; stratified silt loam to loamy coarse sand

U21A--Rifle Soils, 0 To 1 Percent Slopes

Component Description

Rifle and similar soils

Extent: 0 to 95 percent of the unit

Geomorphic description:

Till plain

Outwash plain

End moraine

Position on landform:

Depressions, drainageways and flats

Slope range: 0 to 1 percent

Surface layer texture: Peat

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Organic material

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June November

Wet soil moisture status is lowest (depth, months):

1.5 feet February

Ponding does not occur (months):

January February March August September December

Ponding is deepest (depth, months):

0.5 foot April May June July October  
November

Available water capacity to a depth of 60 inches: 30.5 inches

Content of organic matter in the upper 10 inches: 91.0 percent

Typical profile:

Oi--0 to 6 inches; peat

Oe--6 to 80 inches; mucky peat

Rifle, depressional and similar soils

Extent: 0 to 95 percent of the unit

Geomorphic description:

Till plain

Outwash plain

End moraine

Position on landform:

Depressions, drainageways and flats

Slope range: 0 to 1 percent

Surface layer texture: Mucky peat

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Organic material

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June July August  
September October November  
December

Wet soil moisture status is lowest (depth, months):  
1.0 foot February  
Ponding: At 0.5 foot all year  
Available water capacity to a depth of 60 inches: 29.9 inches  
Content of organic matter in the upper 10 inches: 85.0 percent  
Typical profile:  
Oe1--0 to 5 inches; mucky peat  
Oe2--5 to 80 inches; mucky peat

## U22A--Greenwood Soils, 0 To 1 Percent Slopes

### Component Description

#### Greenwood and similar soils

Extent: 0 to 95 percent of the unit

Geomorphic description:

Till plain

Outwash plain

End moraine

Position on landform:

Flats and depressions

Slope range: 0 to 1 percent

Surface layer texture: Peat

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Organic material

Flooding: None

Wet soil moisture status is highest (depth, months):

0.5 foot April May June July October  
November

Wet soil moisture status is lowest (depth, months):

2.0 feet February

Ponding: None

Available water capacity to a depth of 60 inches: 30.5 inches

Content of organic matter in the upper 10 inches: 91.0 percent

Typical profile:

Oi--0 to 6 inches; peat

Oe1--6 to 24 inches; mucky peat

Oe2--24 to 80 inches; mucky peat

#### Greenwood, depressional and similar soils

Extent: 0 to 95 percent of the unit

Geomorphic description:

Till plain

Outwash plain

End moraine

Position on landform:

Flats and depressions

Slope range: 0 to 1 percent

Surface layer texture: Peat

Depth to restrictive feature:

Very deep (more than 60 inches)

Drainage class: Very poorly drained

Parent material:

Organic material

Flooding: None

Wet soil moisture status is highest (depth, months):

At the surface April May June November  
Wet soil moisture status is lowest (depth, months):  
1.5 feet February  
Ponding: At 0.5 foot all year  
Available water capacity to a depth of 60 inches: 31.3 inches  
Content of organic matter in the upper 10 inches: 95.0 percent  
Typical profile:  
Oi--0 to 14 inches; peat  
Oe1--14 to 80 inches; mucky peat

U26A--Udifluvents, Loamy, 0 To 2 Percent Slopes, Occasionally Flooded

Component Description

Udifluvents, occas. flooded, moderately well drained and similar soils

Extent: 45 percent of the unit  
Geomorphic description:  
Alluvial flat  
Slope range: 0 to 2 percent  
Surface layer texture: Silt loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Moderately well drained  
Parent material:  
Alluvium  
Flooding does not occur (months):  
January February September October November December  
Flooding is most likely (frequency, months):  
Occasional April May June  
Wet soil moisture status is highest (depth, months):  
1.0 foot April May June  
Wet soil moisture status is lowest (depth, months):  
2.6 feet February September  
Ponding: None  
Available water capacity to a depth of 60 inches: 8.9 inches  
Content of organic matter in the upper 10 inches: 3.7 percent  
Typical profile:  
A--0 to 6 inches; silt loam  
Cg--6 to 80 inches; stratified silt loam to loamy coarse sand

Udifluvents, occas. flooded, somewhat poorly drained and similar soils

Extent: 30 percent of the unit  
Geomorphic description:  
Alluvial flat  
Slope range: 0 to 2 percent  
Surface layer texture: Silt loam  
Depth to restrictive feature:  
Very deep (more than 60 inches)  
Drainage class: Somewhat poorly drained  
Parent material:  
Alluvium  
Flooding does not occur (months):  
January February September October November December  
Flooding is most likely (frequency, months):  
Occasional April May June  
Wet soil moisture status is highest (depth, months):  
0.5 foot April May June

Wet soil moisture status is lowest (depth, months):

More than 6.7 feet            July

Ponding: None

Available water capacity to a depth of 60 inches: 8.9 inches

Content of organic matter in the upper 10 inches: 3.7 percent

Typical profile:

A--0 to 6 inches; silt loam

Cg--6 to 80 inches; stratified silt loam to loamy coarse sand

## U35--Urban Land

### Component Description

#### Urban land

Extent: 90 to 100 percent of the unit

Geomorphic description:

Moraine

Slope range: 0 to 8 percent

Parent material:

Variable fill material from surrounding uplands, gravel pits  
blasted bedrock.

Flooding: None

Ponding: None

The Urban land component is commercial with 90 to 100 percent of the mapunit covered by impervious surfaces. The majority of the area has been disturbed to some degree by construction activity. Because of the variability of the component in this map unit, interpretations for specific uses are not available. Onsite investigation is needed.