

**017IN—Irwin silty clay loam, 1 to 3 percent slopes, eroded****Map Unit Composition**

Irwin: 95 percent  
 Minor components: 5 percent

**Component Descriptions****Irwin**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Hillslope on upland  
*Parent material:* Silty and clayey residuum weathered from clayey shale  
*Slope:* 1 to 3 percent  
*Drainage class:* Moderately well drained  
*Slowest permeability:* Very slow (About 0.00 in/hr)  
*Available water capacity:* Moderate (About 7.6 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very high  
*Ecological site:* Clay Upland (pe30-36)  
*Land capability (nonirrigated):* 4e

*Typical Profile:*

H1—0 to 4 inches; silty clay loam  
 H2—4 to 53 inches; silty clay  
 H3—53 to 60 inches; silty clay

**Minor Components****Dwight**

*Composition:* About 5 percent  
*Slope:* 1 to 3 percent  
*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Pan (pe30-36)

**017IS—Irwin silty clay loam, 3 to 5 percent slopes, eroded****Map Unit Composition**

Irwin: 90 percent  
 Minor components: 10 percent

**Component Descriptions****Irwin**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Hillslope on upland  
*Parent material:* Silty and clayey residuum weathered from clayey shale  
*Slope:* 3 to 5 percent  
*Drainage class:* Moderately well drained  
*Slowest permeability:* Very slow (About 0.00 in/hr)  
*Available water capacity:* Moderate (About 7.6 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very high  
*Ecological site:* Clay Upland (pe30-36)  
*Land capability (nonirrigated):* 4e

*Typical Profile:*

H1—0 to 4 inches; silty clay loam  
 H2—4 to 53 inches; silty clay  
 H3—53 to 60 inches; silty clay

**Minor Components****Tully**

*Composition:* About 10 percent  
*Slope:* 3 to 7 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**017RA—Reading silt loam, 0 to 1 percent slopes, rarely flooded****Map Unit Composition**

Reading: 85 percent  
 Minor components: 15 percent

**Component Descriptions****Reading**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Terrace on river valley  
*Parent material:* Silty alluvium  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately slow (About 0.20 in/hr)  
*Available water capacity:* High (About 11.7 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* Rare

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Low

*Ecological site:* Loamy Lowland (pe30-36)

*Land capability (nonirrigated):* 1

*Typical Profile:*

H1—0 to 17 inches; silt loam

H2—17 to 48 inches; silty clay loam

H3—48 to 60 inches; silty clay loam

### Minor Components

#### Kahola

*Composition:* About 8 percent

*Slope:* 0 to 2 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Lowland (pe30-36)

#### Chase

*Composition:* About 7 percent

*Slope:* 0 to 2 percent

*Drainage class:* Somewhat poorly drained

*Ecological site:* Loamy Lowland (pe30-36)

## 017TU—Tully cherty silty clay loam, 5 to 15 percent slopes

### Map Unit Composition

Tully: 70 percent

Minor components: 30 percent

### Component Descriptions

#### Tully

*MLRA:* 76 - Bluestem Hills

*Landform:* Hillslope on upland

*Parent material:* Clayey colluvium

*Slope:* 5 to 15 percent

*Drainage class:* Well drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* Moderate (About 7.8 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Very high

*Ecological site:* Loamy Upland (pe30-36)

*Land capability (nonirrigated):* 4e

*Typical Profile:*

H1—0 to 14 inches; gravelly silty clay loam

H2—14 to 60 inches; silty clay

### Minor Components

#### Martin

*Composition:* About 15 percent

*Slope:* 2 to 6 percent

*Drainage class:* Moderately well drained

*Ecological site:* Loamy Upland (pe30-36)

#### Clime

*Composition:* About 15 percent

*Slope:* 3 to 25 percent

*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Ecological site:* Limy Upland (pe30-36)

## 041HA—Hobbs silt loam, occasionally flooded

### Map Unit Composition

Hobbs: 93 percent

Minor components: 7 percent

### Component Descriptions

#### Hobbs

*MLRA:* 75 - Central Loess Plains

*Landform:* Flood plain on alluvial plain

*Parent material:* Fine-silty alluvium

*Slope:* 0 to 3 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* High (About 11.9 inches)

*Shrink-swell potential:* Moderate (About 3.3 LEP)

*Flooding hazard:* Occasional

*Ponding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Low

*Ecological site:* Loamy Lowland (pe25-34)

*Land capability (nonirrigated):* 2w

*Typical Profile:*

A—0 to 8 inches; silt loam

C1—8 to 24 inches; silt loam

C2—24 to 44 inches; silt loam

C3—44 to 60 inches; silt loam

**Minor Components****Sutphen**

*Composition:* About 5 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Lowland (pe30-36)

**Unnamed Hydric Soil (ponding)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**Unnamed Hydric Soil (saturation)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**041HB—Hobbs silt loam,  
channeled****Map Unit Composition**

Hobbs: 89 percent  
 Minor components: 11 percent

**Component Descriptions****Hobbs**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Flood plain on meander belt  
*Parent material:* Fine-silty alluvium  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* High (About 11.9 inches)  
*Shrink-swell potential:* Moderate (About 3.3 LEP)  
*Flooding hazard:* Frequent  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Loamy Lowland (pe25-34)  
*Land capability (nonirrigated):* 5w

*Typical Profile:*

A—0 to 8 inches; silt loam  
 C1—8 to 24 inches; silt loam  
 C2—24 to 44 inches; silt loam  
 C3—44 to 60 inches; silt loam

**Minor Components****Calcareous, Fine-Loamy, Cumulic Hapludolls**

*Composition:* About 5 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Muir**

*Composition:* About 2 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Terrace (pe25-34)

**Crete**

*Composition:* About 1 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 3 to 8 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe25-34)

**Geary**

*Composition:* About 1 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 7 to 15 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe25-34)

**Unnamed Hydric Soil (ponding)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**Unnamed Hydric Soil (saturation)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**061BE—Benfield-Florence  
complex, 5 to 30 percent slopes****Map Unit Composition**

Benfield: 42 percent  
 Florence: 28 percent  
 Minor components: 30 percent

**Component Descriptions****Benfield**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Hillslope position:* Backslope  
*Parent material:* Clayey pedisegment derived from limestone and shale over clayey residuum  
 weathered from calcareous shale

*Slope:* 5 to 30 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* Low (About 5.7 inches)  
*Shrink-swell potential:* High (About 8.9 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very high  
*Ecological site:* Loamy Upland (pe30-36)  
*Land capability (nonirrigated):* 6e

*Typical Profile:*

A1—0 to 5 inches; silty clay loam  
 A2—5 to 10 inches; silty clay loam  
 Bt1—10 to 19 inches; gravelly silty clay  
 Bt2—19 to 34 inches; silty clay  
 2Btk—34 to 38 inches; silty clay  
 2Cr—38 to 56 inches; weathered bedrock

**Florence**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Hillslope position:* Backslope  
*Parent material:* Gravelly residuum weathered from cherty limestone  
*Slope:* 5 to 15 percent  
*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately slow (About 0.20 in/hr)  
*Available water capacity:* Low (About 4.6 inches)  
*Shrink-swell potential:* Very high (About 9.2 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* High  
*Ecological site:* Loamy Upland (pe30-36)  
*Land capability (nonirrigated):* 6e

*Typical Profile:*

A1—0 to 5 inches; gravelly silt loam  
 A2—5 to 14 inches; very gravelly silty clay  
 Bt—14 to 48 inches; very cobbly clay  
 Btk—48 to 56 inches; extremely cobbly silty clay  
 R—56 to 60 inches; unweathered bedrock

**Minor Components**

**Clime**

*Composition:* About 10 percent  
*Geomorphic Position:* hillslope on upland

*Slope:* 20 to 40 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Limy Upland (pe30-36)

**Konza**

*Composition:* About 10 percent  
*Geomorphic Position:* ridge on upland  
*Slope:* 1 to 3 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Pan (pe30-36)

**Labette**

*Composition:* About 3 percent  
*Slope:* 0 to 4 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**Irwin**

*Composition:* About 2 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 3 to 7 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe30-36)

**Tully**

*Composition:* About 2 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 8 to 15 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**Kahola**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Calcareous, Fine-Loamy, Cumulic Hapludolls**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Rock outcrop**

*Composition:* About 1 percent

**061CF—Clime-Sogn silty clay loams, 5 to 20 percent slopes**

**Map Unit Composition**

Clime: 60 percent  
 Sogn: 20 percent  
 Minor components: 20 percent

## Component Descriptions

### Clime

*MLRA:* 76 - Bluestem Hills

*Landform:* Hillslope on upland

*Parent material:* Silty and clayey residuum weathered from shale, calcareous

*Slope:* 5 to 20 percent

*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* Low (About 5.2 inches)

*Shrink-swell potential:* High (About 8.4 LEP)

*Flooding hazard:* None

*Ponding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Very high

*Ecological site:* Limy Upland (pe30-36)

*Land capability (nonirrigated):* 6e

#### *Typical Profile:*

A—0 to 12 inches; silty clay loam

Bw—12 to 26 inches; silty clay

C—26 to 30 inches; silty clay

Cr—30 to 34 inches; weathered bedrock

### Sogn

*MLRA:* 76 - Bluestem Hills

*Landform:* Upland, hillslope

*Parent material:* Loamy residuum weathered from limestone, unspecified

*Slope:* 1 to 20 percent

*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)

*Drainage class:* Somewhat excessively drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* Very low (About 2.0 inches)

*Shrink-swell potential:* Moderate (About 4.9 LEP)

*Flooding hazard:* None

*Ponding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Medium

*Ecological site:* Shallow Limy (pe30-36)

*Land capability (nonirrigated):* 6s

#### *Typical Profile:*

A—0 to 9 inches; silty clay loam

R—9 to 13 inches; unweathered bedrock

## Minor Components

### Tully

*Composition:* About 12 percent

*Geomorphic Position:* hillslope on upland

*Slope:* 8 to 15 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe30-36)

### Tuttle

*Composition:* About 2 percent

*Geomorphic Position:* hillslope on upland

*Slope:* 20 to 40 percent

*Depth to restrictive feature:* 40 to 60 inches to bedrock (paralithic)

*Drainage class:* Somewhat excessively drained

### Irwin

*Composition:* About 2 percent

*Geomorphic Position:* hillslope on upland

*Slope:* 3 to 7 percent

*Drainage class:* Moderately well drained

*Ecological site:* Clay Upland (pe30-36)

### Ivan

*Composition:* About 1 percent

*Slope:* 0 to 2 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Lowland (pe30-36)

### Konza

*Composition:* About 1 percent

*Geomorphic Position:* ridge on upland

*Slope:* 1 to 3 percent

*Drainage class:* Moderately well drained

*Ecological site:* Clay Pan (pe30-36)

### Kahola

*Composition:* About 1 percent

*Slope:* 0 to 2 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Lowland (pe30-36)

### Unnamed Hydric Soil (saturation)

*Composition:* About 1 percent

*Slope:* 0 to 2 percent

*Drainage class:* Poorly drained

## 061ID—Irwin silty clay loam, 3 to 7 percent slopes

## Map Unit Composition

Irwin: 85 percent

Minor components: 15 percent

## Component Descriptions

### Irwin

*MLRA:* 75 - Central Loess Plains

*Landform:* Hillslope on upland

*Hillslope position:* Backslope

*Parent material:* Silty and clayey alluvium over clayey residuum weathered from limestone and shale

*Slope:* 3 to 7 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Very slow (About 0.00 in/hr)

*Available water capacity:* Moderate (About 8.7 inches)

*Shrink-swell potential:* High (About 8.9 LEP)

*Flooding hazard:* None

*Ponding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Very high

*Ecological site:* Clay Upland (pe30-36)

*Land capability (nonirrigated):* 4e

#### Typical Profile:

A—0 to 6 inches; silty clay loam

BA—6 to 13 inches; silty clay loam

Bt1—13 to 30 inches; silty clay

Btk—30 to 41 inches; silty clay

2Bt2—41 to 72 inches; silty clay

### Minor Components

#### Konza

*Composition:* About 10 percent

*Geomorphic Position:* ridge on upland

*Slope:* 1 to 3 percent

*Drainage class:* Moderately well drained

*Ecological site:* Clay Pan (pe30-36)

#### Florence

*Composition:* About 2 percent

*Geomorphic Position:* hillslope on upland

*Slope:* 5 to 10 percent

*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe30-36)

#### Clime

*Composition:* About 2 percent

*Slope:* 3 to 8 percent

*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Ecological site:* Limy Upland (pe30-36)

### Unnamed Hydric Soil (saturation)

*Composition:* About 1 percent

*Slope:* 0 to 2 percent

*Drainage class:* Poorly drained

## 061KB—Kahola silt loam, occasionally flooded

### Map Unit Composition

Kahola: 75 percent

Minor components: 25 percent

### Component Descriptions

#### Kahola

*MLRA:* 76 - Bluestem Hills

*Landform:* Flood plain on valley

*Parent material:* Silty alluvium

*Slope:* 0 to 2 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* Very high (About 12.9 inches)

*Shrink-swell potential:* Moderate (About 4.0 LEP)

*Flooding hazard:* Occasional

*Ponding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Low

*Ecological site:* Loamy Lowland (pe30-36)

*Land capability (nonirrigated):* 2w

#### Typical Profile:

A1—0 to 24 inches; silt loam

A2—24 to 36 inches; silt loam

AC—36 to 44 inches; silt loam

C—44 to 60 inches; silt loam

### Minor Components

#### Ivan

*Composition:* About 10 percent

*Slope:* 0 to 2 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Lowland (pe30-36)

#### Tully

*Composition:* About 8 percent

*Geomorphic Position:* hillslope on upland

*Slope:* 3 to 8 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe30-36)

### Reading

*Composition:* About 5 percent

*Slope:* 0 to 2 percent

*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Unnamed Hydric Soil (ponding)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**Unnamed Hydric Soil (saturation)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**061KO—Konza silty clay loam, 1 to 3 percent slopes**

**Map Unit Composition**

Konza: 85 percent  
 Minor components: 15 percent

**Component Descriptions**

**Konza**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Ridge on upland  
*Hillslope position:* Shoulder, summit  
*Parent material:* Silty and clayey loess over silty and clayey pedisegment over clayey residuum  
 weathered from limestone and shale  
*Slope:* 1 to 3 percent  
*Drainage class:* Moderately well drained  
*Slowest permeability:* Very slow (About 0.00 in/hr)  
*Available water capacity:* Moderate (About 8.8 inches)  
*Shrink-swell potential:* Very high (About 10.0 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very high  
*Ecological site:* Clay Pan (pe30-36)  
*Land capability (nonirrigated):* 3e

*Typical Profile:*

A—0 to 6 inches; silty clay loam  
 Bt1—6 to 28 inches; silty clay  
 Bt2—28 to 42 inches; silty clay  
 Bt3—42 to 50 inches; silty clay loam  
 2Bt4—50 to 70 inches; silty clay loam  
 3Bt5—70 to 89 inches; clay

**Minor Components**

**Irwin**

*Composition:* About 5 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 3 to 7 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe30-36)

**Ladysmith**

*Composition:* About 3 percent  
*Geomorphic Position:* ridge on upland  
*Slope:* 0 to 2 percent  
*Drainage class:* Somewhat poorly drained  
*Ecological site:* Clay Upland (pe30-36)

**Labette**

*Composition:* About 3 percent  
*Slope:* 0 to 4 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**Clime**

*Composition:* About 2 percent  
*Slope:* 3 to 8 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Limy Upland (pe30-36)

**Florence**

*Composition:* About 2 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 5 to 10 percent  
*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**061RA—Reading silt loam, 0 to 1 percent slopes**

**Map Unit Composition**

Reading: 85 percent  
 Minor components: 15 percent

**Component Descriptions**

**Reading**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Flood plain on valley  
*Parent material:* Silty alluvium  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained

*Slowest permeability:* Moderately slow (About 0.20 in/hr)  
*Available water capacity:* High (About 11.8 inches)  
*Shrink-swell potential:* Moderate (About 5.1 LEP)  
*Flooding hazard:* Rare  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Loamy Lowland (pe30-36)  
*Land capability (nonirrigated):* 1

*Typical Profile:*

Ap—0 to 8 inches; silt loam  
 A—8 to 20 inches; silty clay loam  
 Bt1—20 to 52 inches; silty clay loam  
 Bt2—52 to 60 inches; silty clay loam

**Minor Components**

**Tully**

*Composition:* About 10 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 1 to 4 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**Kahola**

*Composition:* About 5 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**061TN—Tully silty clay loam, 1 to 4 percent slopes**

**Map Unit Composition**

Tully: 85 percent  
 Minor components: 15 percent

**Component Descriptions**

**Tully**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Hillslope position:* Footslope  
*Parent material:* Clayey colluvium  
*Slope:* 1 to 4 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* High (About 9.1 inches)

*Shrink-swell potential:* High (About 8.0 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* High  
*Ecological site:* Loamy Upland (pe30-36)  
*Land capability (nonirrigated):* 2e

*Typical Profile:*

A—0 to 12 inches; silty clay loam  
 BA—12 to 21 inches; silty clay loam  
 Bt1—21 to 31 inches; silty clay  
 Bt2—31 to 40 inches; silty clay  
 Bt3—40 to 52 inches; silty clay  
 BC—52 to 60 inches; silty clay

**Minor Components**

**Kahola**

*Composition:* About 6 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Reading**

*Composition:* About 5 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Florence**

*Composition:* About 2 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 5 to 8 percent  
*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**Clime**

*Composition:* About 2 percent  
*Slope:* 1 to 4 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Limy Upland (pe30-36)

**111RA—Reading silt loam, 0 to 2 percent slopes, rarely flooded**

**Map Unit Composition**

Reading: 100 percent



## Component Descriptions

### Reading

*MLRA:* 76 - Bluestem Hills

*Landform:* Stream terrace on valley

*Parent material:* Silty alluvium

*Slope:* 0 to 2 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderately slow (About 0.20 in/hr)

*Available water capacity:* High (About 11.6 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* Rare

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Low

*Ecological site:* Loamy Lowland (pe30-36)

*Land capability (nonirrigated):* 1

### Typical Profile:

H1—0 to 17 inches; silt loam

H2—17 to 45 inches; silty clay loam

H3—45 to 60 inches; silty clay loam

## 115CS—Clime-Sogn silty clay loams, 3 to 20 percent slopes

## Map Unit Composition

Clime: 65 percent

Sogn: 20 percent

Minor components: 15 percent

## Component Descriptions

### Clime

*MLRA:* 75 - Central Loess Plains

*Landform:* Hillslope on upland

*Parent material:* Silty and clayey residuum weathered from calcareous shale

*Slope:* 8 to 20 percent

*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)

*Drainage class:* Well drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* Low (About 4.6 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Very high

*Ecological site:* Limy Upland (pe25-34)

*Land capability (nonirrigated):* 6e

### Typical Profile:

H1—0 to 7 inches; silty clay loam

H2—7 to 27 inches; silty clay

Cr—27 to 31 inches; unweathered bedrock

### Sogn

*MLRA:* 75 - Central Loess Plains

*Landform:* Hillslope on upland

*Parent material:* Loamy residuum weathered from limestone

*Slope:* 3 to 15 percent

*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)

*Drainage class:* Somewhat excessively drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* Very low (About 1.6 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Medium

*Ecological site:* Shallow Limy (pe25-34)

*Land capability (nonirrigated):* 6s

### Typical Profile:

H1—0 to 8 inches; silty clay loam

R—8 to 12 inches; unweathered bedrock

## Minor Components

### Labette

*Composition:* About 10 percent

*Slope:* 2 to 8 percent

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe25-34)

### Tully

*Composition:* About 5 percent

*Slope:* 3 to 6 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe25-34)

**115LA—Labette silty clay loam, 1 to 4 percent slopes****Map Unit Composition**

Labette: 90 percent  
 Minor components: 10 percent

**Component Descriptions****Labette**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Hillslope on upland  
*Parent material:* Silty and clayey residuum weathered from limestone and shale  
*Slope:* 1 to 4 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* Moderate (About 6.0 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* High  
*Ecological site:* Loamy Upland (pe25-34)  
*Land capability (nonirrigated):* 2e

*Typical Profile:*

H1—0 to 8 inches; silty clay loam  
 H2—8 to 36 inches; silty clay  
 R—36 to 40 inches; unweathered bedrock

**Minor Components****Dwight**

*Composition:* About 5 percent  
*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Pan (pe30-36)

**Sogn**

*Composition:* About 5 percent  
*Slope:* 8 to 15 percent  
*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)  
*Drainage class:* Somewhat excessively drained  
*Ecological site:* Shallow Limy (pe25-34)

**197CE—Chase silty clay loam, rarely flooded****Map Unit Composition**

Chase: 85 percent  
 Minor components: 15 percent

**Component Descriptions****Chase**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Stream terrace on river valley  
*Parent material:* Silty and clayey alluvium  
*Slope:* 0 to 1 percent  
*Drainage class:* Somewhat poorly drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* High (About 9.7 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* Rare  
*Depth to seasonal water saturation:* About 22 to 26 inches  
*Runoff class:* High  
*Ecological site:* Loamy Lowland (pe30-36)  
*Land capability (nonirrigated):* 2w

*Typical Profile:*

H1—0 to 12 inches; silty clay loam  
 H2—12 to 56 inches; silty clay  
 H3—56 to 60 inches; silty clay

**Minor Components****Ivan**

*Composition:* About 5 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Reading**

*Composition:* About 5 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Wabash**

*Composition:* About 4 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Poorly drained  
*Ecological site:* Clay Lowland (pe30-37)

**Unnamed Hydric Soil (saturation)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

## 197FL—Florence-Labette complex, 3 to 15 percent slopes

### Map Unit Composition

Florence: 40 percent  
Labette: 30 percent  
Minor components: 30 percent

### Component Descriptions

#### Florence

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Hillslope position:* Backslope  
*Parent material:* Clayey residuum weathered from cherty limestone  
*Slope:* 3 to 15 percent  
*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately slow (About 0.20 in/hr)  
*Available water capacity:* Low (About 5.3 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* High  
*Ecological site:* Loamy Upland (pe30-36)  
*Land capability (nonirrigated):* 6e

#### Typical Profile:

H1—0 to 14 inches; gravelly silt loam  
H2—14 to 18 inches; gravelly silty clay loam  
H3—18 to 56 inches; very gravelly clay  
R—56 to 60 inches; unweathered bedrock

#### Labette

*MLRA:* 76 - Bluestem Hills  
*Landform:* Ridge on upland  
*Hillslope position:* Shoulder  
*Parent material:* Silty and clayey residuum weathered from limestone and shale  
*Slope:* 3 to 5 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* Moderate (About 6.1 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* High

*Ecological site:* Loamy Upland (pe30-36)

*Land capability (nonirrigated):* 6e

#### Typical Profile:

H1—0 to 7 inches; silt loam  
H2—7 to 35 inches; silty clay  
R—35 to 39 inches; unweathered bedrock

### Minor Components

#### Clime

*Composition:* About 10 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 3 to 7 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Ecological site:* Limy Upland (pe30-36)

#### Martin

*Composition:* About 10 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 3 to 7 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe35-42)

#### Sogn

*Composition:* About 5 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 5 to 20 percent  
*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)  
*Drainage class:* Somewhat excessively drained  
*Ecological site:* Shallow Limy (pe30-36)

#### Irwin

*Composition:* About 5 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 1 to 3 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe30-36)

## 197IX—Ivan silty clay loam, channeled

### Map Unit Composition

Ivan: 80 percent  
Minor components: 20 percent

## Component Descriptions

### Ivan

*MLRA:* 76 - Bluestem Hills

*Landform:* Flood plain on valley

*Parent material:* Calcareous fine-silty alluvium

*Slope:* 0 to 2 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* Very high (About 12.8 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* Frequent

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Low

*Ecological site:* Loamy Lowland (pe30-36)

*Land capability (nonirrigated):* 5w

#### Typical Profile:

H1—0 to 40 inches; silty clay loam

H2—40 to 60 inches; silt loam

### Minor Components

#### Martin

*Composition:* About 10 percent

*Geomorphic Position:* hillslope on upland

*Slope:* 3 to 7 percent

*Drainage class:* Moderately well drained

*Ecological site:* Loamy Upland (pe30-36)

#### Reading

*Composition:* About 10 percent

*Slope:* 0 to 1 percent

*Drainage class:* Moderately well drained

*Ecological site:* Loamy Lowland (pe30-36)

#### Unnamed Hydric Soil

*Slope:* 0 to 2 percent

*Drainage class:* Poorly drained

## 197RE—Reading silty clay loam, 0 to 2 percent slopes, rarely flooded

### Map Unit Composition

Reading: 90 percent

Minor components: 10 percent

### Component Descriptions

#### Reading

*MLRA:* 76 - Bluestem Hills

*Landform:* Stream terrace on valley

*Parent material:* Fine-silty alluvium

*Slope:* 0 to 2 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderately slow (About 0.20 in/hr)

*Available water capacity:* High (About 11.3 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* Rare

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Medium

*Ecological site:* Loamy Lowland (pe30-36)

*Land capability (nonirrigated):* 1

#### Typical Profile:

H1—0 to 13 inches; silty clay loam

H2—13 to 45 inches; silty clay loam

H3—45 to 60 inches; silty clay loam

### Minor Components

#### Chase

*Composition:* About 5 percent

*Slope:* 0 to 2 percent

*Drainage class:* Somewhat poorly drained

*Ecological site:* Loamy Lowland (pe35-42)

#### Ivan

*Composition:* About 5 percent

*Slope:* 0 to 2 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Lowland (pe30-36)

## AED—Arents, Earthen Dam

## Ar—Ivan silt loam, channeled

### Map Unit Composition

Ivan: 75 percent

Minor components: 25 percent

### Component Descriptions

#### Ivan

*MLRA:* 76 - Bluestem Hills

*Landform:* Flood plain on valley

*Parent material:* Fine-silty alluvium

*Slope:* 0 to 3 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* Very high (About 13.0 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* Frequent  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Loamy Lowland (pe30-36)  
*Land capability (nonirrigated):* 5w

*Typical Profile:*  
 H1—0 to 30 inches; silt loam  
 H2—30 to 60 inches; silty clay loam

#### **Minor Components**

##### **Reading**

*Composition:* About 25 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

### **BOA—Borrow Areas**

*General Considerations:* An open excavation from which soil and underlying material have been removed usually for construction purposes.

### **Ch—Chase silty clay loam, occasionally flooded**

#### **Map Unit Composition**

Chase: 85 percent  
 Minor components: 15 percent

#### **Component Descriptions**

##### **Chase**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Stream terrace on river valley  
*Parent material:* Silty and clayey alluvium  
*Slope:* 0 to 1 percent  
*Drainage class:* Moderately well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* High (About 9.9 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* Occasional

*Depth to seasonal water saturation:* About 24 to 48 inches  
*Runoff class:* High  
*Ecological site:* Loamy Lowland (pe30-36)  
*Land capability (nonirrigated):* 2w

##### *Typical Profile:*

H1—0 to 14 inches; silty clay loam  
 H2—14 to 44 inches; silty clay  
 H3—44 to 60 inches; silty clay loam

#### **Minor Components**

##### **Mason**

*Composition:* About 5 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

##### **Reading**

*Composition:* About 5 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

##### **Osage**

*Composition:* About 5 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Poorly drained  
*Ecological site:* Clay Lowland (pe30-36)

### **Cs—Clime-Sogn complex, 5 to 20 percent slopes**

#### **Map Unit Composition**

Clime: 45 percent  
 Sogn: 20 percent  
 Minor components: 25 percent

#### **Component Descriptions**

##### **Clime**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Parent material:* Silty and clayey residuum weathered from calcareous shale  
*Slope:* 5 to 20 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* Low (About 3.9 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* High

*Ecological site:* Limy Upland (pe30-36)

*Land capability (nonirrigated):* 6e

**Typical Profile:**

H1—0 to 8 inches; silty clay

H2—8 to 17 inches; silty clay

H3—17 to 30 inches; silty clay

Cr—30 to 34 inches; unweathered bedrock

**Sogn**

*MLRA:* 76 - Bluestem Hills

*Landform:* Hillslope on upland

*Parent material:* Loamy residuum weathered from limestone

*Slope:* 5 to 20 percent

*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)

*Drainage class:* Well drained

*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* Very low (About 1.6 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Medium

*Ecological site:* Shallow Limy (pe30-36)

*Land capability (nonirrigated):* 7s

**Typical Profile:**

H1—0 to 8 inches; silty clay loam

R—8 to 12 inches; unweathered bedrock

**Minor Components**

**Irwin**

*Composition:* About 5 percent

*Slope:* 3 to 5 percent

*Drainage class:* Moderately well drained

*Ecological site:* Clay Upland (pe25-34)

**Kipson**

*Composition:* About 5 percent

*Slope:* 3 to 15 percent

*Depth to restrictive feature:* 7 to 20 inches to bedrock (paralithic)

*Drainage class:* Somewhat excessively drained

*Ecological site:* Limy Upland (pe30-36)

**Labette**

*Composition:* About 5 percent

*Slope:* 2 to 5 percent

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe30-36)

**Tully**

*Composition:* About 5 percent

*Geomorphic Position:* hillslope on upland

*Slope:* 3 to 7 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe30-36)

**Dwight**

*Composition:* About 4 percent

*Slope:* 1 to 3 percent

*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)

*Drainage class:* Moderately well drained

*Ecological site:* Clay Pan (pe30-36)

**Unnamed Hydric Soil (saturation)**

*Composition:* About 1 percent

*Slope:* 0 to 2 percent

*Drainage class:* Poorly drained

**Dh—Dwight silt loam, 1 to 3 percent slopes**

**Map Unit Composition**

Dwight: 85 percent

Minor components: 15 percent

**Component Descriptions**

**Dwight**

*MLRA:* 76 - Bluestem Hills

*Landform:* Hillslope on upland

*Parent material:* Silty and clayey residuum weathered from cherty limestone

*Slope:* 1 to 3 percent

*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)

*Drainage class:* Moderately well drained

*Slowest permeability:* Very slow (About 0.00 in/hr)

*Available water capacity:* Moderate (About 7.1 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Very high

*Ecological site:* Clay Pan (pe30-36)

*Land capability (nonirrigated):* 4e

*Typical Profile:*

H1—0 to 5 inches; silt loam  
 H2—5 to 22 inches; clay  
 H3—22 to 52 inches; silty clay  
 R—52 to 56 inches; unweathered bedrock

**Minor Components****Irwin**

*Composition:* About 5 percent  
*Slope:* 3 to 5 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe25-34)

**Labette**

*Composition:* About 5 percent  
*Slope:* 2 to 5 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**Ladysmith**

*Composition:* About 5 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Somewhat poorly drained  
*Ecological site:* Clay Upland (pe25-34)

**Fc—Florence cherty silt loam, 5 to 15 percent slopes****Map Unit Composition**

Florence: 90 percent  
 Minor components: 10 percent

**Component Descriptions****Florence**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Parent material:* Clayey residuum weathered from cherty limestone and/or clayey residuum weathered from clayey shale  
*Slope:* 5 to 15 percent  
*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately slow (About 0.20 in/hr)  
*Available water capacity:* Low (About 4.0 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* High

*Ecological site:* Loamy Upland (pe30-36)

*Land capability (nonirrigated):* 6e

*Typical Profile:*

H1—0 to 4 inches; gravelly silt loam  
 H2—4 to 11 inches; extremely gravelly silty clay loam  
 H3—11 to 15 inches; extremely gravelly silty clay loam  
 H4—15 to 44 inches; extremely cobbly clay  
 R—44 to 48 inches; unweathered bedrock

**Minor Components****Dwight**

*Composition:* About 5 percent  
*Slope:* 1 to 3 percent  
*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Pan (pe30-36)

**Tully**

*Composition:* About 5 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 3 to 7 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**Fe—Florence-Labette complex, 2 to 12 percent slopes****Map Unit Composition**

Labette: 23 percent  
 Florence: 20 percent  
 Minor components: 57 percent

**Minor Components****Florence**

*Phase:* Moderately Deep  
*Composition:* About 28 percent  
*Slope:* 2 to 12 percent  
*Depth to restrictive feature:* 25 to 40 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**Component Descriptions****Labette**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland

*Parent material:* Silty and clayey residuum weathered from limestone and shale

*Slope:* 2 to 8 percent

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Well drained

*Slowest permeability:* Slow (About 0.06 in/hr)

*Available water capacity:* Low (About 4.5 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Medium

*Ecological site:* Loamy Upland (pe30-36)

*Land capability (nonirrigated):* 4e

*Typical Profile:*

H1—0 to 8 inches; silty clay loam

H2—8 to 26 inches; silty clay loam

R—26 to 30 inches; unweathered bedrock

**Florence**

*MLRA:* 76 - Bluestem Hills

*Landform:* Hillslope on upland

*Parent material:* Clayey residuum weathered from cherty limestone and/or clayey residuum weathered from clayey shale

*Slope:* 2 to 12 percent

*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)

*Drainage class:* Well drained

*Slowest permeability:* Moderately slow (About 0.20 in/hr)

*Available water capacity:* Low (About 4.0 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Very high

*Ecological site:* Loamy Upland (pe30-36)

*Land capability (nonirrigated):* 6e

*Typical Profile:*

H1—0 to 4 inches; gravelly silt loam

H2—4 to 11 inches; extremely gravelly silty clay loam

H3—11 to 15 inches; extremely gravelly silty clay loam

H4—15 to 44 inches; extremely cobbly clay loam

R—44 to 48 inches; unweathered bedrock

**Minor Components**

**Labette**

*Phase:* Shallow

*Composition:* About 15 percent

*Slope:* 2 to 8 percent

*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe30-36)

**Dwight**

*Composition:* About 5 percent

*Slope:* 1 to 3 percent

*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)

*Drainage class:* Moderately well drained

*Ecological site:* Clay Pan (pe30-36)

**Tully**

*Composition:* About 5 percent

*Geomorphic Position:* hillslope on upland

*Slope:* 3 to 7 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe30-36)

**Sogn**

*Composition:* About 4 percent

*Slope:* 5 to 20 percent

*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)

*Drainage class:* Well drained

*Ecological site:* Shallow Limy (pe30-36)

**Ic—Irwin silty clay loam, 0 to 1 percent slopes**

**Map Unit Composition**

Irwin: 90 percent

Minor components: 10 percent

**Component Descriptions**

**Irwin**

*MLRA:* 75 - Central Loess Plains

*Landform:* Hillslope on upland

*Parent material:* Clayey residuum weathered from shale

*Slope:* 0 to 1 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Very slow (About 0.00 in/hr)

*Available water capacity:* Moderate (About 8.1 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* High

*Ecological site:* Clay Upland (pe25-34)

*Land capability (nonirrigated):* 2s



*Typical Profile:*

H1—0 to 10 inches; silty clay loam  
H2—10 to 60 inches; silty clay

**Minor Components****Ladysmith**

*Composition:* About 10 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Somewhat poorly drained  
*Ecological site:* Clay Upland (pe25-34)

*Composition:* About 5 percent

*Slope:* 1 to 3 percent

*Depth to restrictive feature:* 40 to 60 inches  
to bedrock (lithic)

*Drainage class:* Moderately well drained

*Ecological site:* Clay Pan (pe30-36)

**Ladysmith**

*Composition:* About 4 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Somewhat poorly drained  
*Ecological site:* Clay Upland (pe25-34)

## **Id—Irwin silty clay loam, 1 to 3 percent slopes**

### **Map Unit Composition**

Irwin: 85 percent

Minor components: 15 percent

### **Component Descriptions**

**Irwin**

*MLRA:* 75 - Central Loess Plains

*Landform:* Hillslope on upland

*Parent material:* Clayey residuum weathered  
from shale

*Slope:* 1 to 3 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Very slow (About 0.00  
in/hr)

*Available water capacity:* Moderate (About 8.1  
inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6  
feet

*Runoff class:* Very high

*Ecological site:* Clay Upland (pe25-34)

*Land capability (nonirrigated):* 3e

*Typical Profile:*

H1—0 to 10 inches; silty clay loam  
H2—10 to 60 inches; silty clay

**Minor Components****Labette**

*Composition:* About 5 percent

*Slope:* 2 to 5 percent

*Depth to restrictive feature:* 20 to 40 inches  
to bedrock (lithic)

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe30-36)

**Dwight**

**Unnamed Hydric Soil (saturation)***Composition:* About 1 percent*Slope:* 1 to 3 percent*Drainage class:* Poorly drained**le—Irwin silty clay loam, 3 to 5 percent slopes****Map Unit Composition**

Irwin: 90 percent

Minor components: 10 percent

**Component Descriptions****Irwin***MLRA:* 75 - Central Loess Plains*Landform:* Hillslope on upland*Parent material:* Clayey residuum weathered from shale*Slope:* 3 to 5 percent*Drainage class:* Moderately well drained*Slowest permeability:* Very slow (About 0.00 in/hr)*Available water capacity:* Moderate (About 8.1 inches)*Shrink-swell potential:* High (About 7.5 LEP)*Flooding hazard:* None*Depth to seasonal water saturation:* More than 6 feet*Runoff class:* Very high*Ecological site:* Clay Upland (pe25-34)*Land capability (nonirrigated):* 4e*Typical Profile:*

H1—0 to 10 inches; silty clay loam

H2—10 to 60 inches; silty clay

**Minor Components****Tully***Composition:* About 5 percent*Geomorphic Position:* hillslope on upland*Slope:* 3 to 7 percent*Drainage class:* Well drained*Ecological site:* Loamy Upland (pe30-36)**Labette***Composition:* About 5 percent*Slope:* 2 to 5 percent*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)*Drainage class:* Well drained*Ecological site:* Loamy Upland (pe30-36)**In—Irwin Soils, 1 to 3 percent slopes, eroded****Map Unit Composition**

Irwin: 85 percent

Minor components: 15 percent

**Component Descriptions****Irwin***MLRA:* 75 - Central Loess Plains*Landform:* Hillslope on upland*Parent material:* Clayey residuum weathered from shale*Slope:* 1 to 3 percent*Drainage class:* Moderately well drained*Slowest permeability:* Very slow (About 0.00 in/hr)*Available water capacity:* Moderate (About 7.1 inches)*Shrink-swell potential:* High (About 7.5 LEP)*Flooding hazard:* None*Depth to seasonal water saturation:* More than 6 feet*Runoff class:* Very high*Ecological site:* Clay Upland (pe25-34)*Land capability (nonirrigated):* 4e*Typical Profile:*

H1—0 to 5 inches; silty clay

H2—5 to 60 inches; silty clay

**Minor Components****Dwight***Composition:* About 5 percent*Slope:* 1 to 3 percent*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)*Drainage class:* Moderately well drained*Ecological site:* Clay Pan (pe30-36)**Labette***Composition:* About 5 percent*Slope:* 2 to 5 percent*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)*Drainage class:* Well drained*Ecological site:* Loamy Upland (pe30-36)**Ladysmith***Composition:* About 4 percent*Slope:* 0 to 2 percent*Drainage class:* Somewhat poorly drained*Ecological site:* Clay Upland (pe25-34)

**Unnamed Hydric Soil (saturation)***Composition:* About 1 percent*Slope:* 1 to 3 percent*Drainage class:* Poorly drained**Io—Irwin Soils, 3 to 5 percent slopes, eroded****Map Unit Composition**

Irwin: 90 percent

Minor components: 10 percent

**Component Descriptions****Irwin***MLRA:* 75 - Central Loess Plains*Landform:* Hillslope on upland*Parent material:* Clayey residuum weathered from shale*Slope:* 3 to 5 percent*Drainage class:* Moderately well drained*Slowest permeability:* Very slow (About 0.00 in/hr)*Available water capacity:* Moderate (About 7.1 inches)*Shrink-swell potential:* High (About 7.5 LEP)*Flooding hazard:* None*Depth to seasonal water saturation:* More than 6 feet*Runoff class:* Very high*Ecological site:* Clay Upland (pe25-34)*Land capability (nonirrigated):* 4e*Typical Profile:*

H1—0 to 5 inches; silty clay

H2—5 to 60 inches; silty clay

**Minor Components****Tully***Composition:* About 5 percent*Geomorphic Position:* hillslope on upland*Slope:* 3 to 7 percent*Drainage class:* Well drained*Ecological site:* Loamy Upland (pe30-36)**Labette***Composition:* About 5 percent*Slope:* 2 to 5 percent*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)*Drainage class:* Well drained*Ecological site:* Loamy Upland (pe30-36)**Iv—Ivan and Kennebec silt loams, occasionally flooded****Map Unit Composition**

Ivan: 50 percent

Kennebec: 40 percent

Minor components: 10 percent

**Component Descriptions****Ivan***MLRA:* 76 - Bluestem Hills*Landform:* Flood plain on valley*Parent material:* Calcareous fine-silty alluvium*Slope:* 0 to 1 percent*Drainage class:* Well drained*Slowest permeability:* Moderate (About 0.60 in/hr)*Available water capacity:* Very high (About 13.0 inches)*Shrink-swell potential:* Moderate (About 4.5 LEP)*Flooding hazard:* Occasional*Depth to seasonal water saturation:* More than 6 feet*Runoff class:* Negligible*Ecological site:* Loamy Lowland (pe30-36)*Land capability (nonirrigated):* 2w*Typical Profile:*

H1—0 to 30 inches; silt loam

H2—30 to 60 inches; silt loam

**Kennebec***MLRA:* 76 - Bluestem Hills*Landform:* Flood plain on river valley*Parent material:* Silty alluvium*Slope:* 0 to 2 percent*Drainage class:* Moderately well drained*Slowest permeability:* Moderate (About 0.60 in/hr)*Available water capacity:* Very high (About 13.5 inches)*Shrink-swell potential:* Moderate (About 4.5 LEP)*Flooding hazard:* Frequent*Depth to seasonal water saturation:* About 36 to 60 inches*Runoff class:* Low*Ecological site:* Loamy Lowland (pe30-37)*Land capability (nonirrigated):* 5w

*Typical Profile:*

H1—0 to 54 inches; silt loam  
H2—54 to 60 inches; silt loam

**Minor Components****Mason**

*Composition:* About 4 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Reading**

*Composition:* About 4 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Unnamed Hydric Soil (ponding)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**Unnamed Hydric Soil (saturation)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**IVV—Ivan silt loam, occasionally flooded****Map Unit Composition**

Ivan: 90 percent  
Minor components: 10 percent

**Component Descriptions****Ivan**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Flood plain on valley  
*Parent material:* Calcareous fine-silty alluvium  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* Very high (About 13.1 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* Occasional  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Loamy Lowland (pe30-36)  
*Land capability (nonirrigated):* 2w

*Typical Profile:*

H1—0 to 36 inches; silt loam  
H2—36 to 60 inches; silt loam

**Minor Components****Chase**

*Composition:* About 5 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Somewhat poorly drained  
*Ecological site:* Loamy Lowland (pe35-42)

**Reading**

*Composition:* About 4 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Lowland (pe30-36)

**Unnamed Hydric Soil (saturation)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

**Ks—Kipson-Sogn complex, 3 to 15 percent slopes****Map Unit Composition**

Kipson: 40 percent  
Sogn: 20 percent  
Minor components: 40 percent

**Component Descriptions****Kipson**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Parent material:* Calcareous loamy residuum weathered from shale  
*Slope:* 3 to 15 percent  
*Depth to restrictive feature:* 7 to 20 inches to bedrock (paralithic)  
*Drainage class:* Somewhat excessively drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* Low (About 3.1 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Medium  
*Ecological site:* Limy Upland (pe30-36)  
*Land capability (nonirrigated):* 6e

*Typical Profile:*

H1—0 to 8 inches; silt loam  
 H2—8 to 15 inches; silt loam  
 Cr—15 to 19 inches; weathered bedrock

**Minor Components****Kipson**

*Phase:* Moderately Deep  
*Composition:* About 25 percent  
*Slope:* 3 to 15 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)  
*Drainage class:* Somewhat excessively drained  
*Ecological site:* Limy Upland (pe30-36)

**Component Descriptions****Sogn**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Parent material:* Loamy residuum weathered from limestone  
*Slope:* 3 to 15 percent  
*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)  
*Drainage class:* Somewhat excessively drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* Very low (About 1.6 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Medium  
*Ecological site:* Shallow Limy (pe30-36)  
*Land capability (nonirrigated):* 7s

*Typical Profile:*

H1—0 to 8 inches; silty clay loam  
 R—8 to 12 inches; unweathered bedrock

**Minor Components****Tully**

*Composition:* About 10 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 3 to 7 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**Labette**

*Composition:* About 5 percent  
*Slope:* 2 to 5 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

**Lb—Labette silty clay loam, 2 to 5 percent slopes****Map Unit Composition**

Labette: 90 percent  
 Minor components: 10 percent

**Component Descriptions****Labette**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Parent material:* Silty and clayey residuum weathered from limestone and shale  
*Slope:* 2 to 5 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* Low (About 4.5 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* High  
*Ecological site:* Loamy Upland (pe30-36)  
*Land capability (nonirrigated):* 3e

*Typical Profile:*

H1—0 to 8 inches; silty clay loam  
 H2—8 to 26 inches; silty clay  
 R—26 to 30 inches; unweathered bedrock

**Minor Components****Dwight**

*Composition:* About 5 percent  
*Slope:* 1 to 3 percent  
*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Pan (pe30-36)

**Irwin**

*Composition:* About 5 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe25-34)

## Ld—Labette-Dwight complex, 1 to 3 percent slopes

### Map Unit Composition

Labette: 55 percent  
Dwight: 40 percent  
Minor components: 5 percent

### Component Descriptions

#### Labette

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Parent material:* Silty and clayey residuum weathered from limestone and shale  
*Slope:* 1 to 3 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* Low (About 4.5 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* High  
*Ecological site:* Loamy Upland (pe30-36)  
*Land capability (nonirrigated):* 3e

#### Typical Profile:

H1—0 to 8 inches; silty clay loam  
H2—8 to 26 inches; silty clay  
R—26 to 30 inches; unweathered bedrock

#### Dwight

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Parent material:* Silty and clayey residuum weathered from cherty limestone  
*Slope:* 1 to 3 percent  
*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)  
*Drainage class:* Moderately well drained  
*Slowest permeability:* Very slow (About 0.00 in/hr)  
*Available water capacity:* Moderate (About 7.1 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very high  
*Ecological site:* Clay Pan (pe30-36)  
*Land capability (nonirrigated):* 4e

#### Typical Profile:

H1—0 to 5 inches; silt loam  
H2—5 to 22 inches; clay  
H3—22 to 52 inches; silty clay  
R—52 to 56 inches; unweathered bedrock

### Minor Components

#### Irwin

*Composition:* About 5 percent  
*Slope:* 3 to 5 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe25-34)

## Le—Labette-Sogn complex, 2 to 8 percent slopes

### Map Unit Composition

Labette: 70 percent  
Sogn: 20 percent  
Minor components: 10 percent

### Component Descriptions

#### Labette

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Parent material:* Silty and clayey residuum weathered from limestone and shale  
*Slope:* 2 to 8 percent  
*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* Low (About 4.5 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* High  
*Ecological site:* Loamy Upland (pe30-36)  
*Land capability (nonirrigated):* 6e

#### Typical Profile:

H1—0 to 8 inches; silty clay loam  
H2—8 to 26 inches; silty clay  
R—26 to 30 inches; unweathered bedrock

#### Sogn

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Parent material:* Loamy residuum weathered from limestone

*Slope:* 2 to 8 percent  
*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)  
*Drainage class:* Somewhat excessively drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* Very low (About 1.6 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Medium  
*Ecological site:* Shallow Limy (pe30-36)  
*Land capability (nonirrigated):* 7s

*Typical Profile:*  
 H1—0 to 8 inches; silty clay loam  
 R—8 to 12 inches; unweathered bedrock

#### **Minor Components**

##### **Dwight**

*Composition:* About 3 percent  
*Slope:* 1 to 3 percent  
*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Pan (pe30-36)

##### **Kipson**

*Composition:* About 3 percent  
*Slope:* 3 to 15 percent  
*Depth to restrictive feature:* 7 to 20 inches to bedrock (paralithic)  
*Drainage class:* Somewhat excessively drained  
*Ecological site:* Limy Upland (pe30-36)

##### **Florence**

*Composition:* About 3 percent  
*Slope:* 2 to 12 percent  
*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

##### **Unnamed Hydric Soil (saturation)**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained

## **Ls—Ladysmith silty clay loam, 0 to 2 percent slopes**

### **Map Unit Composition**

Ladysmith: 90 percent  
 Minor components: 10 percent

### **Component Descriptions**

#### **Ladysmith**

*MLRA:* 75 - Central Loess Plains  
*Landform:* Paleoterrace on upland  
*Parent material:* Clayey alluvium  
*Slope:* 0 to 2 percent  
*Drainage class:* Somewhat poorly drained  
*Slowest permeability:* Very slow (About 0.00 in/hr)  
*Available water capacity:* Moderate (About 8.9 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* High  
*Ecological site:* Clay Upland (pe25-34)  
*Land capability (nonirrigated):* 3s

#### *Typical Profile:*

H1—0 to 8 inches; silty clay loam  
 H2—8 to 35 inches; silty clay  
 H3—35 to 60 inches; silty clay

#### **Minor Components**

##### **Dwight**

*Composition:* About 5 percent  
*Slope:* 1 to 3 percent  
*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Pan (pe30-36)

##### **Irwin**

*Composition:* About 5 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe25-34)

## **Lt—Ladysmith silty clay loam, 1 to 2 percent slopes, eroded**

### **Map Unit Composition**

Ladysmith: 90 percent  
 Minor components: 10 percent

### Component Descriptions

#### Ladysmith

*MLRA:* 75 - Central Loess Plains

*Landform:* Paleoterrace on upland

*Parent material:* Clayey alluvium

*Slope:* 1 to 2 percent

*Drainage class:* Somewhat poorly drained

*Slowest permeability:* Very slow (About 0.00 in/hr)

*Available water capacity:* Moderate (About 8.5 inches)

*Shrink-swell potential:* High (About 7.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Very high

*Ecological site:* Clay Upland (pe25-34)

*Land capability (nonirrigated):* 4e

#### Typical Profile:

H1—0 to 4 inches; silty clay loam

H2—4 to 35 inches; silty clay

H3—35 to 60 inches; silty clay

#### Minor Components

##### Dwight

*Composition:* About 5 percent

*Slope:* 1 to 3 percent

*Depth to restrictive feature:* 40 to 60 inches to bedrock (lithic)

*Drainage class:* Moderately well drained

*Ecological site:* Clay Pan (pe30-36)

##### Irwin

*Composition:* About 5 percent

*Slope:* 0 to 1 percent

*Drainage class:* Moderately well drained

*Ecological site:* Clay Upland (pe25-34)

### M-W—Miscellaneous Water

### Mr—Mason and Reading silt loams, 0 to 1 percent slopes, rarely flooded

### Map Unit Composition

Mason: 60 percent

Reading: 35 percent

Minor components: 5 percent

### Component Descriptions

#### Mason

*MLRA:* 76 - Bluestem Hills

*Landform:* Flood plain on river valley

*Parent material:* Silty alluvium

*Slope:* 0 to 1 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderately slow (About 0.20 in/hr)

*Available water capacity:* High (About 10.6 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* Occasional

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Low

*Ecological site:* Loamy Lowland (pe30-36)

*Land capability (nonirrigated):* 1

#### Typical Profile:

H1—0 to 14 inches; silt loam

H2—14 to 60 inches; silty clay loam

#### Reading

*MLRA:* 76 - Bluestem Hills

*Landform:* Stream terrace on valley

*Parent material:* Silty alluvium

*Slope:* 0 to 1 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderately slow (About 0.20 in/hr)

*Available water capacity:* High (About 11.7 inches)

*Shrink-swell potential:* Moderate (About 4.5 LEP)

*Flooding hazard:* Rare

*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Low

*Ecological site:* Loamy Lowland (pe30-36)

*Land capability (nonirrigated):* 1

#### Typical Profile:

H1—0 to 15 inches; silt loam

H2—15 to 54 inches; silty clay loam

H3—54 to 60 inches; silty clay

#### Minor Components

##### Unnamed Hydric Soil (ponding)

*Composition:* About 1 percent

*Slope:* 0 to 2 percent

*Drainage class:* Poorly drained

##### Unnamed Hydric Soil (saturation)

*Composition:* About 1 percent

*Slope:* 0 to 2 percent



*Drainage class:* Poorly drained

#### **Ivan**

*Composition:* About 1 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

#### **Kennebec**

*Composition:* About 1 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Lowland (pe30-37)

#### **Chase**

*Composition:* About 1 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Lowland (pe30-36)

### **Os—Osage silty clay, occasionally flooded**

#### **Map Unit Composition**

Osage: 90 percent  
 Minor components: 10 percent

#### **Component Descriptions**

##### **Osage**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Flood plain on river valley  
*Parent material:* Clayey alluvium  
*Slope:* 0 to 1 percent  
*Drainage class:* Poorly drained  
*Slowest permeability:* Very slow (About 0.00 in/hr)  
*Available water capacity:* Moderate (About 6.5 inches)  
*Shrink-swell potential:* Very high (About 17.0 LEP)  
*Flooding hazard:* Occasional  
*Depth to seasonal water saturation:* About 0 to 12 inches  
*Runoff class:* High  
*Ecological site:* Clay Lowland (pe30-36)  
*Land capability (nonirrigated):* 3w

##### *Typical Profile:*

H1—0 to 20 inches; silty clay  
 H2—20 to 60 inches; silty clay

#### **Minor Components**

##### **Chase**

*Composition:* About 10 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Lowland (pe30-36)

### **QUA—Quarries**

### **Rd—Reading silt loam, 1 to 3 percent slopes, rarely flooded**

#### **Map Unit Composition**

Reading: 90 percent  
 Minor components: 10 percent

#### **Component Descriptions**

##### **Reading**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Stream terrace on valley  
*Parent material:* Silty alluvium  
*Slope:* 1 to 3 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately slow (About 0.20 in/hr)  
*Available water capacity:* High (About 11.7 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* Rare  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Medium  
*Ecological site:* Loamy Lowland (pe30-36)  
*Land capability (nonirrigated):* 2e

##### *Typical Profile:*

H1—0 to 15 inches; silt loam  
 H2—15 to 54 inches; silty clay loam  
 H3—54 to 60 inches; silty clay

#### **Minor Components**

##### **Tully**

*Composition:* About 10 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 3 to 7 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

## Sm—Smolan silt loam, 1 to 3 percent slopes

### Map Unit Composition

Smolan: 90 percent  
Minor components: 10 percent

### Component Descriptions

#### Smolan

*MLRA:* 75 - Central Loess Plains  
*Landform:* Paleoterrace on upland  
*Parent material:* Silty and clayey loess  
*Slope:* 1 to 3 percent  
*Drainage class:* Moderately well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* High (About 11.4 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* High  
*Ecological site:* Loamy Upland (pe25-34)  
*Land capability (nonirrigated):* 2e

#### Typical Profile:

H1—0 to 7 inches; silt loam  
H2—7 to 32 inches; silty clay loam  
H3—32 to 60 inches; silty clay

#### Minor Components

##### Irwin

*Composition:* About 5 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe25-34)

##### Tully

*Composition:* About 5 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 3 to 7 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

## Sn—Smolan silty clay loam, 2 to 6 percent slopes, eroded

### Map Unit Composition

Smolan: 90 percent

Minor components: 10 percent

### Component Descriptions

#### Smolan

*MLRA:* 75 - Central Loess Plains  
*Landform:* Paleoterrace on upland  
*Parent material:* Silty and clayey loess  
*Slope:* 2 to 6 percent  
*Drainage class:* Moderately well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* High (About 11.2 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* High  
*Ecological site:* Loamy Upland (pe25-34)  
*Land capability (nonirrigated):* 3e

#### Typical Profile:

H1—0 to 7 inches; silty clay loam  
H2—7 to 30 inches; silty clay loam  
H3—30 to 60 inches; silty clay

#### Minor Components

##### Irwin

*Composition:* About 5 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Clay Upland (pe25-34)

##### Tully

*Composition:* About 5 percent  
*Geomorphic Position:* hillslope on upland  
*Slope:* 3 to 7 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe30-36)

## Ts—Tully silty clay loam, 3 to 7 percent slopes

### Map Unit Composition

Tully: 90 percent  
Minor components: 10 percent

### Component Descriptions

#### Tully

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Parent material:* Clayey colluvium  
*Slope:* 5 to 15 percent

*Drainage class:* Well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* Moderate (About 7.5 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very high  
*Ecological site:* Loamy Upland (pe30-36)  
*Land capability (nonirrigated):* 6e

*Typical Profile:*  
 H1—0 to 17 inches; silty clay loam  
 H2—17 to 44 inches; silty clay  
 H3—44 to 60 inches; silty clay

#### **Minor Components**

##### **Smolan**

*Composition:* About 5 percent  
*Slope:* 1 to 3 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe25-34)

##### **Reading**

*Composition:* About 5 percent  
*Slope:* 1 to 3 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

### **Tt—Tully silty clay loam, 3 to 7 percent slopes, eroded**

#### **Map Unit Composition**

Tully: 90 percent  
 Minor components: 10 percent

#### **Component Descriptions**

##### **Tully**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Parent material:* Clayey colluvium  
*Slope:* 5 to 15 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* Moderate (About 7.4 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very high

*Ecological site:* Loamy Upland (pe30-36)  
*Land capability (nonirrigated):* 6e

##### *Typical Profile:*

H1—0 to 7 inches; silty clay loam  
 H2—7 to 44 inches; silty clay  
 H3—44 to 60 inches; silty clay

#### **Minor Components**

##### **Smolan**

*Composition:* About 5 percent  
*Slope:* 1 to 3 percent  
*Drainage class:* Moderately well drained  
*Ecological site:* Loamy Upland (pe25-34)

##### **Reading**

*Composition:* About 5 percent  
*Slope:* 1 to 3 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Lowland (pe30-36)

### **Ty—Tully Soils, 5 to 15 percent slopes**

#### **Map Unit Composition**

Tully: 45 percent  
 Tully: 45 percent  
 Minor components: 10 percent

#### **Component Descriptions**

##### **Tully**

*MLRA:* 76 - Bluestem Hills  
*Landform:* Hillslope on upland  
*Parent material:* Clayey colluvium  
*Slope:* 5 to 15 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* Moderate (About 7.5 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very high  
*Ecological site:* Loamy Upland (pe30-36)  
*Land capability (nonirrigated):* 6e

##### *Typical Profile:*

H1—0 to 17 inches; gravelly silty clay loam  
 H2—17 to 44 inches; gravelly silty clay  
 H3—44 to 60 inches; gravelly silty clay

**Tully***Ecological site:* Loamy Upland (pe30-36)*MLRA:* 76 - Bluestem Hills*Landform:* Hillslope on upland*Parent material:* Clayey colluvium*Slope:* 5 to 15 percent*Drainage class:* Well drained*Slowest permeability:* Slow (About 0.06 in/hr)*Available water capacity:* Moderate (About 7.5 inches)*Shrink-swell potential:* High (About 7.5 LEP)*Flooding hazard:* None*Depth to seasonal water saturation:* More than 6 feet*Runoff class:* Very high*Ecological site:* Loamy Upland (pe30-36)*Land capability (nonirrigated):* 6e*Typical Profile:*

H1—0 to 17 inches; silty clay loam

H2—17 to 44 inches; silty clay

H3—44 to 60 inches; silty clay

**W—Water****Minor Components****Irwin***Composition:* About 2 percent*Slope:* 0 to 1 percent*Drainage class:* Moderately well drained*Ecological site:* Clay Upland (pe25-34)**Kipson***Composition:* About 2 percent*Slope:* 3 to 15 percent*Depth to restrictive feature:* 7 to 20 inches to bedrock (paralithic)*Drainage class:* Somewhat excessively drained*Ecological site:* Limy Upland (pe30-36)**Clime***Composition:* About 2 percent*Slope:* 5 to 20 percent*Depth to restrictive feature:* 20 to 40 inches to bedrock (paralithic)*Drainage class:* Well drained*Ecological site:* Limy Upland (pe30-36)**Sogn***Composition:* About 2 percent*Slope:* 5 to 20 percent*Depth to restrictive feature:* 4 to 20 inches to bedrock (lithic)*Drainage class:* Well drained*Ecological site:* Shallow Limy (pe30-36)**Labette***Composition:* About 2 percent*Slope:* 2 to 5 percent*Depth to restrictive feature:* 20 to 40 inches to bedrock (lithic)*Drainage class:* Well drained