

## 007AE—Albion and Shellabarger Soils, 4 to 15 percent slopes

### Map Unit Composition

Albion: 65 percent  
Shellabarger: 35 percent

### Component Descriptions

#### Albion

*MLRA:* 79 - Great Bend Sand Plains, 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Loamy alluvium

*Slope:* 4 to 15 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderately rapid (About 2.00 in/hr)

*Available water capacity:* Moderate (About 6.1 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

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

*Runoff class:* Medium

*Ecological site:* Sandy (pe20-25)

*Land capability (nonirrigated):* 6e

#### Typical Profile:

H1—0 to 11 inches; sandy loam  
H2—11 to 24 inches; sandy loam  
H3—24 to 60 inches; sand

#### Shellabarger

*MLRA:* 79 - Great Bend Sand Plains, 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Loamy alluvium

*Slope:* 4 to 15 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 10.0 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

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

*Runoff class:* Medium

*Ecological site:* Sandy (pe20-25)

*Land capability (nonirrigated):* 6e

#### Typical Profile:

H1—0 to 12 inches; sandy loam

H2—12 to 60 inches; sandy clay loam

#### Minor Components

##### Unnamed Wet Soils

*Phase:* Sandy, Drainageway

## 007CC—Case-Clark clay loams, 2 to 6 percent slopes

### Map Unit Composition

Case: 50 percent

Clark: 50 percent

### Component Descriptions

#### Case

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Calcareous, old alluvium

*Slope:* 2 to 6 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 10.2 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 (pe24-32)

*Land capability (nonirrigated):* 4e

#### Typical Profile:

H1—0 to 6 inches; clay loam  
H2—6 to 60 inches; clay loam

#### Clark

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Loamy alluvium

*Slope:* 2 to 6 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 10.3 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 (pe24-32)

*Land capability (nonirrigated):* 4e

*Typical Profile:*

H1—0 to 10 inches; clay loam

H2—10 to 60 inches; clay loam

## **007LN—Lincoln Soils, frequently flooded**

### **Map Unit Composition**

Lincoln: 100 percent

### **Component Descriptions**

#### **Lincoln**

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Flood plain on river valley

*Parent material:* Alluvium

*Slope:* 0 to 1 percent

*Drainage class:* Somewhat excessively drained

*Slowest permeability:* Rapid (About 5.95 in/hr)

*Available water capacity:* Low (About 3.4 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* Frequent

*Depth to seasonal water saturation:* About 60 to 72 inches

*Runoff class:* Negligible

*Ecological site:* Sandy Lowland (pe20-25)

*Land capability (nonirrigated):* 6w

*Typical Profile:*

H1—0 to 6 inches; fine sandy loam

H2—6 to 60 inches; stratified fine sand to clay loam

#### **Minor Components**

#### **Kanza**

## **007SB—Shellabarger sandy loam, 3 to 6 percent slopes**

### **Map Unit Composition**

Shellabarger: 100 percent

### **Component Descriptions**

#### **Shellabarger**

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Loamy alluvium

*Slope:* 3 to 6 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 9.4 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

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

*Runoff class:* Very low

*Ecological site:* Sandy (pe20-25)

*Land capability (nonirrigated):* 3e

*Typical Profile:*

H1—0 to 14 inches; sandy loam

H2—14 to 48 inches; sandy clay loam

H3—48 to 60 inches; coarse sandy loam

## **047PG—Pratt loamy fine sand, 1 to 4 percent slopes**

### **Map Unit Composition**

Pratt: 100 percent

### **Component Descriptions**

#### **Pratt**

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Dune on paleoterrace on river valley

*Parent material:* Sandy eolian deposits

*Slope:* 1 to 4 percent

*Drainage class:* Well drained

*Slowest permeability:* Rapid (About 5.95 in/hr)

*Available water capacity:* Moderate (About 6.3 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

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

*Runoff class:* Negligible

*Ecological site:* Sands (pe21-28)

*Land capability (irrigated):* 3e

*Land capability (nonirrigated):* 3e

*Typical Profile:*

- H1—0 to 13 inches; loamy fine sand
- H2—13 to 30 inches; loamy fine sand
- H3—30 to 60 inches; loamy fine sand

**Minor Components****Carwile****Unnamed Wet Soils**

*Phase:* Sandy, Depression

## 095AB—Albion sandy loam, 1 to 3 percent slopes

### Map Unit Composition

Albion: 100 percent

### Component Descriptions

**Albion**

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Loamy alluvium

*Slope:* 1 to 3 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderately rapid (About 2.00 in/hr)

*Available water capacity:* Low (About 5.8 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

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

*Runoff class:* Very low

*Ecological site:* Sandy (pe24-32)

*Land capability (nonirrigated):* 3e

*Typical Profile:*

- H1—0 to 8 inches; sandy loam
- H2—8 to 16 inches; sandy loam
- H3—16 to 26 inches; coarse sandy loam
- H4—26 to 60 inches; sand

## 095DA—Dillwyn-Plevna complex, occasionally flooded

### Map Unit Composition

Dillwyn: 60 percent

Plevna: 40 percent

### Component Descriptions

**Dillwyn**

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Interdune on paleoterrace on river valley, dune on paleoterrace on river valley

*Parent material:* Sandy eolian deposits

*Slope:* 0 to 1 percent

*Drainage class:* Somewhat poorly drained

*Slowest permeability:* Rapid (About 5.95 in/hr)

*Available water capacity:* Low (About 4.9 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* Occasional

*Depth to seasonal water saturation:* About 12 to 36 inches

*Runoff class:* Negligible

*Ecological site:* Subirrigated (pe24-32)

*Land capability (nonirrigated):* 4w

*Typical Profile:*

- H1—0 to 8 inches; loamy fine sand
- H2—8 to 60 inches; loamy fine sand

**Plevna**

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Flood plain on river valley

*Parent material:* Alluvium

*Slope:* 0 to 1 percent

*Drainage class:* Poorly drained

*Slowest permeability:* Moderately rapid (About 2.00 in/hr)

*Available water capacity:* Moderate (About 6.5 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* Frequent

*Depth to seasonal water saturation:* About 0 to 24 inches

*Runoff class:* Negligible

*Ecological site:* Subirrigated (pe24-32)

*Land capability (nonirrigated):* 5w

*Typical Profile:*

- H1—0 to 11 inches; fine sandy loam
- H2—11 to 36 inches; fine sandy loam
- H3—36 to 60 inches; sand

**Minor Components****Unnamed Wet Soils**

*Phase:* Sandy, Depression

## 097AS—Albion-Shellabarger sandy loams, 4 to 15 percent slopes

### Map Unit Composition

Albion: 65 percent  
Shellabarger: 35 percent

### Component Descriptions

#### Albion

*MLRA:* 79 - Great Bend Sand Plains, 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Loamy alluvium

*Slope:* 4 to 15 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderately rapid (About 2.00 in/hr)

*Available water capacity:* Moderate (About 6.1 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

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

*Runoff class:* Medium

*Ecological site:* Sandy (pe20-25)

*Land capability (nonirrigated):* 6e

#### Typical Profile:

H1—0 to 11 inches; sandy loam  
H2—11 to 24 inches; sandy loam  
H3—24 to 60 inches; sand

#### Shellabarger

*MLRA:* 79 - Great Bend Sand Plains, 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Loamy alluvium

*Slope:* 4 to 15 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 10.0 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

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

*Runoff class:* Medium

*Ecological site:* Sandy (pe20-25)

*Land capability (nonirrigated):* 6e

#### Typical Profile:

H1—0 to 12 inches; sandy loam  
H2—12 to 60 inches; sandy clay loam

#### Minor Components

#### Unnamed Wet Soils

*Phase:* Sandy, Drainageway

## 097CE—Case clay loam, 2 to 7 percent slopes

### Map Unit Composition

Case: 100 percent

### Component Descriptions

#### Case

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Alluvium

*Slope:* 2 to 7 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 10.2 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 (pe20-25)

*Land capability (nonirrigated):* 4e

#### Typical Profile:

H1—0 to 6 inches; clay loam  
H2—6 to 60 inches; clay loam

## 097CK—Clark loam, 1 to 3 percent slopes

### Map Unit Composition

Clark: 100 percent

## Component Descriptions

### Clark

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Loamy alluvium

*Slope:* 1 to 3 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 10.2 inches)

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

*Flooding hazard:* None

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

*Runoff class:* Low

*Ecological site:* Limy Upland (pe20-25)

*Land capability (nonirrigated):* 3e

### Typical Profile:

H1—0 to 5 inches; loam

H2—5 to 60 inches; clay loam

## 097CM—Clark loam, 3 to 7 percent slopes

### Map Unit Composition

Clark: 100 percent

## Component Descriptions

### Clark

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Loamy alluvium

*Slope:* 3 to 7 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 10.3 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 (pe20-25)

*Land capability (nonirrigated):* 4e

### Typical Profile:

H1—0 to 10 inches; loam

H2—10 to 60 inches; clay loam

## 1005—Albion sandy loam, 1 to 3 percent slopes

*Mapunit Information:* The Albion soils are generally located on the steeper upper portion of the side slopes.

### Map Unit Composition

Albion: 75 percent

Minor components: 25 percent

## Component Descriptions

### Albion

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Loamy alluvium

*Slope:* 1 to 3 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderately rapid (About 2.00 in/hr)

*Available water capacity:* Moderate (About 7.3 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

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

*Runoff class:* Low

*Ecological site:* Sandy (pe21-28)

*Land capability (nonirrigated):* 3e

### Typical Profile:

Ap—0 to 9 inches; sandy loam

Bt1—9 to 16 inches; sandy loam

Bt2—16 to 27 inches; sandy loam

BC—27 to 48 inches; loamy coarse sand

C—48 to 80 inches; sand

*Component note:* Included with this soil in mapping are small areas with a gravelly sandy loam, coarse sandy loam, loamy sand, or loamy coarse sand surface texture. Also included with this soil are soils that contain several discontinuous clay lenses occurring within the soil profile between 20 and 80 inches. The clay lenses range in thickness from 1 to 12 inches thick and in texture from silty clay to sandy clay loam. About 10 to 25 percent of the Albion soils

have been subject to moderate erosion, which results in thinner surface layers and low and very low organic matter content. The eroded soils generally have loamy sand, loamy coarse sand, or gravelly loamy coarse sand surface textures.

### Minor Components

#### Shellabarger

*Composition:* About 25 percent

*Slope:* 1 to 3 percent

*Drainage class:* Well drained

*Ecological site:* Sandy (pe21-28)

### Unnamed Wet Soils

*General Considerations:* Most areas are used as cropland, but some areas are in pasture or range. This map unit is moderately well suited to all of the commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn are the main crops. The hazard of wind erosion is severe and the hazard of water erosion is moderate for these soils. Ephemeral gully erosion potential is moderate for these soils. Wind and water erosion can be controlled maintaining plant residue through the use of a conservation tillage system, strip cropping, field windbreaks, contour farming, tall grass barriers, terraces and grassed waterways. The moderate water holding capacity of these soils can limit production. This problem can be minimized by increasing organic matter, leaving plant residue, and conservation tillage. In some places, soil test results may show soil reaction (pH) in the strongly acid range. Additions of lime may be required for optimum nutrient balance. The moderately rapid permeability and relatively shallow depths to sandy textures can limit some of the engineering uses of these soils.

### 1006—Albion sandy loam, 3 to 7 percent slopes, eroded

*Mapunit Information:* The Albion soils are generally located on the steeper upper portion of the side slopes.

### Map Unit Composition

Albion: 100 percent

### Component Descriptions

#### Albion

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Loamy alluvium

*Slope:* 3 to 7 percent

*Drainage class:* Well drained

*Slowest permeability:* Moderately rapid (About 2.00 in/hr)

*Available water capacity:* Moderate (About 7.3 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

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

*Runoff class:* Low

*Ecological site:* Sandy (pe21-28)

*Land capability (nonirrigated):* 3e

#### Typical Profile:

Ap—0 to 9 inches; sandy loam

Bt1—9 to 16 inches; sandy loam

Bt2—16 to 27 inches; sandy loam

BC—27 to 48 inches; loamy coarse sand

C—48 to 80 inches; sand

*Component note:* Included with this soil in mapping are small areas that have a gravelly sandy loam, coarse sandy loam, loamy sand, or loamy coarse sand surface texture. Also included with this soil are soils that contain several discontinuous clay lenses occurring within the soil profile between 20 and 80 inches. The clay lenses range in thickness from 1 to 12 inches thick and in texture from silty clay to sandy clay loam.

*General Considerations:* Most areas are used as cropland, but some areas are in pasture or range. This map unit is moderately well suited to all of the commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn are the main crops. The hazard of wind erosion is severe and the hazard of water erosion is moderate for these soils. Ephemeral gully erosion potential is moderate for these soils. Wind and water erosion can be controlled maintaining plant residue through the use of a conservation tillage system, strip cropping, field windbreaks, contour farming, tall grass barriers, terraces and grassed waterways. The moderate water holding capacity of these soils can limit production. This problem can be minimized by increasing organic matter, leaving plant residue, and

conservation tillage. In some places, soil test results may show soil reaction (pH) in the strongly acid range. Additions of lime may be required for optimum nutrient balance. The moderately rapid permeability and relatively shallow depths to sandy textures can limit some of the engineering uses of these soils.

## 1017—Albion and Shellabarger Soils, 7 to 15 percent slopes

*Mapunit Information:* The Shellabarger soils are located on the lower side slopes below the Albion soils.

### Map Unit Composition

Albion: 45 percent  
Shellabarger: 40 percent  
Minor components: 15 percent

### Component Descriptions

#### Albion

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Loamy alluvium  
*Slope:* 7 to 15 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately rapid (About 2.00 in/hr)  
*Available water capacity:* Moderate (About 7.3 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very high  
*Ecological site:* Sandy (pe21-28)  
*Land capability (nonirrigated):* 3e

#### Typical Profile:

Ap—0 to 9 inches; sandy loam  
Bt1—9 to 16 inches; sandy loam  
Bt2—16 to 27 inches; sandy loam  
BC—27 to 48 inches; loamy coarse sand  
C—48 to 80 inches; sand

*Component note:* Included with this soil in mapping are small areas that have a gravelly sandy loam, coarse sandy loam, loamy sand, or loamy coarse sand surface texture. Also included with this soil are soils that contain several discontinuous clay lenses occurring within the soil profile between 20

and 80 inches. The clay lenses range in thickness from 1 to 12 inches thick and in texture from silty clay to sandy clay loam. Also included are small areas with slopes of less than 7 percent.

#### Shellabarger

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Loamy alluvium  
*Slope:* 7 to 15 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* Moderate (About 8.5 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very high  
*Ecological site:* Sandy (pe21-28)  
*Land capability (nonirrigated):* 2e

#### Typical Profile:

Ap—0 to 5 inches; sandy loam  
Bt1—5 to 11 inches; sandy clay loam  
Bt2—11 to 19 inches; sandy clay loam  
Bt3—19 to 33 inches; sandy loam  
BC—33 to 47 inches; coarse sandy loam  
C1—47 to 59 inches; loamy sand  
C2—59 to 73 inches; sand  
C3—73 to 80 inches; sand

*Component note:* This soil is on a similar landscape position as the Albion soils. These soils have a sandy loam or coarse sandy loam surface texture. The Shellabarger soils contain more clay in the subsoil than Albion soils. Also included are soils that contain several discontinuous clay lenses occurring between 30 to 80 inches within the soil profile. The lenses vary in thickness from 1 to 12 inches thick and range in texture from silty clay to sandy clay loam. Also included in this map unit are small areas with slopes of less than 7 percent.

### Minor Components

#### Clark

*Composition:* About 15 percent  
*Slope:* 7 to 15 percent  
*Drainage class:* Well drained  
*Ecological site:* Limy Upland (pe21-28)

### Unnamed Wet Soils

*General Considerations:* Most areas are used for pasture or range. This map unit is poorly suited for cropland. The steep slopes of this map unit will limit most engineering practices for this soil.

## 1324—Carway And Carbika Soils, 0 to 1 percent slopes

*Mapunit Information:* Carway soils are in the interdunal areas which sit higher than the Carbika soils in the depressional areas on the paleoterrace.

### Map Unit Composition

Carway: 50 percent  
Carbika: 30 percent  
Minor components: 20 percent

### Component Descriptions

#### Carway

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Interdune on depression on paleoterrace on river valley

*Parent material:* Loamy eolian deposits over alluvium

*Slope:* 0 to 1 percent

*Drainage class:* Somewhat poorly drained

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

*Available water capacity:* High (About 9.0 inches)

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

*Flooding hazard:* None

*Ponding hazard:* Frequent

*Depth to seasonal water saturation:* About 0 to 0 inches

*Runoff class:* Very low

*Ecological site:* Subirrigated (pe21-28)

*Land capability (nonirrigated):* 2w

#### Typical Profile:

Ap—0 to 7 inches; fine sandy loam  
Bt1—7 to 10 inches; sandy clay loam  
Bt2—10 to 15 inches; sandy clay loam  
Bt3—15 to 22 inches; fine sandy loam  
Bt4—22 to 35 inches; fine sandy loam  
2Btb1—35 to 40 inches; clay loam  
2Btb2—40 to 54 inches; clay loam  
2Btb3—54 to 63 inches; clay loam  
2Btb4—63 to 72 inches; clay loam  
2Btkb—72 to 80 inches; clay loam

*Component note:* This soil was formerly mapped as Carwile. Included with this soil in mapping

are small areas with a loamy fine sand surface texture.

#### Carbika

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Interdune on depression on paleoterrace on river valley

*Parent material:* Loamy eolian deposits over alluvium

*Slope:* 0 to 1 percent

*Drainage class:* Poorly drained

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

*Available water capacity:* High (About 9.6 inches)

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

*Flooding hazard:* None

*Ponding hazard:* Frequent

*Depth to seasonal water saturation:* About 0 to 0 inches

*Runoff class:* Very low

*Ecological site:* Subirrigated (pe21-28)

*Land capability (nonirrigated):* 2w

#### Typical Profile:

A—0 to 11 inches; silt loam  
Bt1—11 to 15 inches; clay  
Bt2—15 to 22 inches; clay loam  
Bt3—22 to 34 inches; clay loam  
Bt4—34 to 41 inches; clay loam  
Bt5—41 to 60 inches; clay loam  
Btk—60 to 80 inches; clay loam

*Component note:* This soil was formerly mapped as Carwile.

### Minor Components

#### Solvay

*Composition:* About 20 percent

*Slope:* 0 to 1 percent

*Drainage class:* Somewhat poorly drained

*Ecological site:* Subirrigated (pe21-28)

*General Considerations:* Most areas are in cropland but, some are in pasture or range. This mapunit is poorly suited for the most commonly grown crops. Wheat and grain sorghum are the predominant crops. The hazard for wind and water erosion is slight. The presence of water tables and potential for high shrink-swell limit most engineering uses for this mapunit.



### 1340—Case-Clark complex, 3 to 7 percent slopes

*Mapunit Information:* Case soils occur slightly higher on the paleoterrace than Clark soils.

#### Map Unit Composition

Case: 70 percent  
Clark: 30 percent

#### Component Descriptions

##### Case

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Calcareous, old alluvium

*Slope:* 3 to 7 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 10.2 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 (pe24-32)

*Land capability (nonirrigated):* 4e

##### Typical Profile:

Ap—0 to 6 inches; loam

Bk—6 to 20 inches; loam

Bk—20 to 35 inches; loam

Ck—35 to 80 inches; very fine sandy loam

##### Clark

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Loamy alluvium

*Slope:* 3 to 7 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 10.4 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 (pe21-28)

*Land capability (nonirrigated):* 4e

##### Typical Profile:

Ap—0 to 11 inches; loam

Bw—11 to 16 inches; loam

Bk1—16 to 28 inches; loam

Bk2—28 to 45 inches; fine sandy loam

Bck1—45 to 65 inches; fine sandy loam

Ck2—65 to 80 inches; very fine sandy loam

*Component note:* These soils are very deep, well drained, moderately permeable soils formed in loamy calcareous alluvium. Some areas may have a fine sandy loam surface texture. Some areas have inclusions of less than 3 percent slopes.

*General Considerations:* Most areas are used as pasture or rangeland. Some areas are used as cropland. This mapunit is moderately well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the predominant crops. The hazard of wind and water erosion is moderately severe. This mapunit is well suited for most engineering practices. The slopes and amount of calcium carbonates can limit some practices.

### 1341—Case-Clark complex, 7 to 15 percent slopes

*Mapunit Information:* Case soils occur slightly higher on the paleoterrace than Clark soils.

#### Map Unit Composition

Case: 60 percent  
Clark: 40 percent

#### Component Descriptions

##### Case

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Alluvium

*Slope:* 7 to 15 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 10.2 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 (pe24-32)

*Land capability (nonirrigated):* 6e

*Typical Profile:*

Ap—0 to 6 inches; loam

Bk—6 to 20 inches; loam

Bk—20 to 35 inches; loam

Ck—35 to 80 inches; very fine sandy loam

**Clark**

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Loamy alluvium

*Slope:* 7 to 15 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 10.4 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 (pe21-28)

*Land capability (nonirrigated):* 4e

*Typical Profile:*

Ap—0 to 11 inches; loam

Bw—11 to 16 inches; loam

Bk1—16 to 28 inches; loam

Bk2—28 to 45 inches; fine sandy loam

BCk1—45 to 65 inches; fine sandy loam

Ck2—65 to 80 inches; very fine sandy loam

*Component note:* These soils are very deep, well drained, moderately permeable soils formed in loamy calcareous alluvium. Some areas may have a fine sandy loam surface texture. Some areas have inclusions of less than 7 percent slopes.

*General Considerations:* Most areas are used as pasture or rangeland. The hazard of wind and water erosion is severe. This mapunit is well suited for most engineering practices. The slopes and amount of calcium carbonates can limit most practices.

## 1725—Funmar And Farnum loams, 0-1 Percent Slopes

*Mapunit Information:* The Funmar and Farnum soils are interfingering upon the landscape.

### Map Unit Composition

Funmar: 40 percent

Farnum: 40 percent

Minor components: 20 percent

### Component Descriptions

#### Funmar

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Loamy alluvium over alluvium

*Slope:* 0 to 1 percent

*Drainage class:* Moderately well drained

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

*Available water capacity:* High (About 10.3 inches)

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

*Flooding hazard:* None

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

*Runoff class:* Very low

*Ecological site:* Loamy Upland (pe21-28)

*Land capability (irrigated):* 1

*Land capability (nonirrigated):* 2c

*Typical Profile:*

Ap—0 to 6 inches; loam

A—6 to 12 inches; loam

Bt1—12 to 17 inches; loam

Bt2—17 to 26 inches; clay loam

Bt3—26 to 32 inches; loam

2Ab—32 to 38 inches; silty clay loam

2Btb—38 to 54 inches; silty clay loam

2Btkb1—54 to 66 inches; silty clay loam

2Btkb2—66 to 80 inches; silty clay loam

*Component note:* This soil was formerly mapped as Farnum and Tabler. Included with this soil are small areas with a surface texture of fine sandy loam. A buried soil occurs below a depth of 32 inches and varies in thickness. The texture of the buried soil varies from sandy clay loam to silty clay and increases in sand content with depth.

#### Farnum

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Alluvium

*Slope:* 0 to 1 percent

*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* High (About 10.7 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very low  
*Ecological site:* Loamy Upland (pe21-28)  
*Land capability (irrigated):* 1  
*Land capability (nonirrigated):* 2c

*Typical Profile:*

Ap—0 to 5 inches; loam  
 A—5 to 15 inches; loam  
 Bt1—15 to 21 inches; loam  
 Bt2—21 to 34 inches; sandy clay loam  
 Bt3—34 to 48 inches; loam  
 Bt4—48 to 61 inches; clay loam  
 Bt5—61 to 73 inches; clay loam  
 Btk—73 to 80 inches; loam

*Component note:* Included with this soil are small areas with a fine sandy loam surface texture.

**Minor Components**

**Naron**

*Composition:* About 20 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Ecological site:* Sandy (pe21-28)

**Carway**

*Slope:* 0 to 1 percent  
*Drainage class:* Somewhat poorly drained  
*Ecological site:* Subirrigated (pe21-28)

**Carbika**

*Slope:* 0 to 1 percent  
*Drainage class:* Poorly drained  
*Ecological site:* Subirrigated (pe21-28)

*General Considerations:* Most areas are in cropland, but some areas are in pasture or range. This mapunit is well suited for the most commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn are the predominant crops grown. The hazard for wind and water erosion is slight. The potential for high shrink-swell may limit some of the engineering practices of this mapunit.

**1726—Funmar and Farnum loams, 1 to 3 percent slopes**

*Mapunit Information:* The Funmar and Farnum soils are interfingering upon the landscape.

**Map Unit Composition**

Farnum: 40 percent  
 Funmar: 40 percent  
 Minor components: 20 percent

**Component Descriptions**

**Farnum**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Alluvium  
*Slope:* 1 to 3 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* High (About 10.7 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Loamy Upland (pe21-28)  
*Land capability (irrigated):* 1  
*Land capability (nonirrigated):* 2c

*Typical Profile:*

Ap—0 to 5 inches; loam  
 A—5 to 15 inches; loam  
 Bt1—15 to 21 inches; loam  
 Bt2—21 to 34 inches; sandy clay loam  
 Bt3—34 to 48 inches; loam  
 Bt4—48 to 61 inches; clay loam  
 Bt5—61 to 73 inches; clay loam  
 Btk—73 to 80 inches; loam

*Component note:* Included with this soil are small areas with a fine sandy loam surface texture.

**Funmar**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Loamy alluvium over alluvium  
*Slope:* 1 to 3 percent  
*Drainage class:* Moderately well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* High (About 10.3 inches)

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

*Flooding hazard:* None

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

*Runoff class:* Low

*Ecological site:* Loamy Upland (pe21-28)

*Land capability (irrigated):* 1

*Land capability (nonirrigated):* 2c

**Typical Profile:**

Ap—0 to 6 inches; loam

A—6 to 12 inches; loam

Bt1—12 to 17 inches; loam

Bt2—17 to 26 inches; clay loam

Bt3—26 to 32 inches; loam

2Ab—32 to 38 inches; silty clay loam

2Btb—38 to 54 inches; silty clay loam

2Btkb1—54 to 66 inches; silty clay loam

2Btkb2—66 to 80 inches; silty clay loam

**Component note:** This soil was formerly mapped as Farnum and Tabler. Included with this soil are small areas with a surface texture of fine sandy loam. A buried soil occurs below a depth of 32 inches and varies in thickness. The texture of the buried soil varies from sandy clay loam to silty clay and increases in sand content with depth.

**Minor Components**

**Naron**

*Composition:* About 20 percent

*Slope:* 1 to 3 percent

*Drainage class:* Well drained

*Ecological site:* Sandy (pe21-28)

**Carbika**

*Slope:* 0 to 1 percent

*Drainage class:* Poorly drained

*Ecological site:* Subirrigated (pe21-28)

**Carway**

*Slope:* 0 to 1 percent

*Drainage class:* Somewhat poorly drained

*Ecological site:* Subirrigated (pe21-28)

**General Considerations:** Most areas are in cropland, but some areas are in pasture or range. This mapunit is well suited for the most commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn are the predominant crops grown. The hazard for wind and water erosion is slight. The potential for high shrink-swell may limit some of the engineering practices of this mapunit.

## 1985—Hayes loamy fine sand, 1 to 5 percent slopes

**Mapunit Information:** Hayes soils are usually located higher on the dune than the Attica soils.

### Map Unit Composition

Hayes: 60 percent

Minor components: 40 percent

### Component Descriptions

**Hayes**

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Dune on paleoterrace on river valley

*Parent material:* Loamy eolian deposits over clayey alluvium

*Slope:* 1 to 5 percent

*Drainage class:* Well drained

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

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

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

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

*Runoff class:* Low

*Ecological site:* Sandy (pe21-28)

*Land capability (irrigated):* 3e

*Land capability (nonirrigated):* 3e

**Typical Profile:**

Ap—0 to 8 inches; fine sandy loam

Bt1—8 to 14 inches; fine sandy loam

Bt2—14 to 23 inches; fine sandy loam

Bt3—23 to 34 inches; fine sandy loam

Bt4—34 to 42 inches; fine sandy loam

Ab—42 to 47 inches; fine sandy loam

2Btb1—47 to 56 inches; sandy clay loam

2Btb2—56 to 69 inches; silty clay

2Btb3—69 to 80 inches; clay loam

**Component note:** This soil was formerly mapped as Naron or Pratt. A buried soil exists below 40 inches. The buried soil varies in thickness and the texture ranges from sandy clay loam to silty clay. The texture of the buried soil generally increases in sand content with increasing depth. Included in this unit are small areas of slopes greater than 2 percent.

**Minor Components**

**Attica**

*Composition:* About 25 percent

*Slope:* 1 to 5 percent

*Drainage class:* Well drained  
*Ecological site:* Sandy (pe21-28)

### **Saltcreek**

*Composition:* About 15 percent  
*Slope:* 1 to 5 percent  
*Drainage class:* Well drained  
*Ecological site:* Sandy (pe21-28)

*General Considerations:* Most areas are used for cropland, but some areas are in pasture or range. This mapunit is moderately well suited for most commonly grown crops. Wheat, grain sorghum, and irrigated corn are the predominant crops. The hazard for wind erosion is moderate and water erosion is slight. The high shrink-swell potential may limit some of the engineering uses of the soil.

## **1986—Hayes-Solvay loamy fine sands, 0 to 5 percent slopes**

*Mapunit Information:* Hayes soils occur on the mid to upper parts of the dunes. The Solvay soils are in interdunal positions on the paleoterrace.

### **Map Unit Composition**

Hayes: 55 percent  
 Solvay: 20 percent  
 Minor components: 25 percent

### **Component Descriptions**

#### **Hayes**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Dune on paleoterrace on river valley  
*Parent material:* Loamy eolian deposits over clayey alluvium  
*Slope:* 0 to 5 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* Moderate (About 7.8 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Sandy (pe21-28)  
*Land capability (irrigated):* 3e  
*Land capability (nonirrigated):* 3e

#### *Typical Profile:*

Ap—0 to 8 inches; loamy fine sand  
 Bt1—8 to 14 inches; fine sandy loam  
 Bt2—14 to 23 inches; fine sandy loam  
 Bt3—23 to 34 inches; fine sandy loam  
 Bt4—34 to 42 inches; fine sandy loam  
 Ab—42 to 47 inches; fine sandy loam  
 2Btb1—47 to 56 inches; sandy clay loam  
 2Btb2—56 to 69 inches; silty clay  
 2Btb3—69 to 80 inches; clay loam

*Component note:* This soil was formerly mapped as Naron or Pratt. A buried soil exists below 40 inches. The buried soil varies in thickness and the texture ranges from sandy clay loam to silty clay. The texture of the buried soil generally increases in sand content with increasing depth. Included in this unit are small areas of slopes greater than 2 percent.

#### **Solvay**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Interdune on paleoterrace on river valley  
*Parent material:* Loamy eolian deposits over alluvium  
*Slope:* 0 to 2 percent  
*Drainage class:* Somewhat poorly drained  
*Slowest permeability:* Moderately slow (About 0.20 in/hr)  
*Available water capacity:* Moderate (About 9.0 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* About 24 to 48 inches  
*Runoff class:* Very low  
*Ecological site:* Subirrigated (pe21-28)  
*Land capability (nonirrigated):* 2e

#### *Typical Profile:*

A—0 to 5 inches; loamy fine sand  
 2Bt1—5 to 14 inches; fine sandy loam  
 2Bt2—14 to 23 inches; fine sandy loam  
 2Bt3—23 to 37 inches; fine sandy loam  
 2BC1—37 to 58 inches; fine sandy loam  
 2BC2—58 to 76 inches; loamy fine sand  
 2BC3—76 to 80 inches; loamy fine sand

*Component note:* This soil was formerly mapped as Carwile and Farnum. Included with this soil in mapping are small areas with a loamy fine sand surface texture.

### **Minor Components**

#### **Carway**

*Composition:* About 15 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Somewhat poorly drained

*Ecological site:* Subirrigated (pe21-28)

### **Farnum**

*Composition:* About 10 percent

*Slope:* 0 to 1 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe21-28)

*General Considerations:* Most areas are used for cropland, but some areas are in pasture or range. This mapunit is somewhat poorly suited for most commonly grown crops. Wheat and grain sorghum are the predominant crops grown. The hazard for wind erosion is severe and water erosion is slight. Wind erosion can be controlled by plant residue management, conservation tillage, and tall grass barriers. The high water tables, high shrink-swell potential, and sandy textures will limit most engineering uses of this mapunit.

## **1987—Hayes-Turon complex, 0 to 5 percent slopes**

*Mapunit Information:* Hayes soils occur on the mid to upper parts of the dunes. The Turon soils usually occur higher on the dune. Naron soils occur on the flatter parts of the dune.

### **Map Unit Composition**

Hayes: 40 percent

Turon: 35 percent

Minor components: 25 percent

### **Component Descriptions**

#### **Hayes**

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Dune on paleoterrace on river valley

*Parent material:* Loamy eolian deposits over clayey alluvium

*Slope:* 0 to 5 percent

*Drainage class:* Well drained

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

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

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

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

*Runoff class:* Low

*Ecological site:* Sandy (pe21-28)

*Land capability (irrigated):* 3e

*Land capability (nonirrigated):* 3e

#### *Typical Profile:*

Ap—0 to 8 inches; loamy fine sand

Bt1—8 to 14 inches; fine sandy loam

Bt2—14 to 23 inches; fine sandy loam

Bt3—23 to 34 inches; fine sandy loam

Bt4—34 to 42 inches; fine sandy loam

Ab—42 to 47 inches; fine sandy loam

2Btb1—47 to 56 inches; sandy clay loam

2Btb2—56 to 69 inches; silty clay

2Btb3—69 to 80 inches; clay loam

*Component note:* This soil was formerly mapped as Naron or Pratt. A buried soil exists below 40 inches. The buried soil varies in thickness and the texture ranges from sandy clay loam to silty clay. The texture of the buried soil generally increases in sand content with increasing depth. Included in this unit are small areas of slopes greater than 5 percent.

#### **Turon**

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Dune on paleoterrace on river valley

*Parent material:* Sandy eolian deposits over alluvium

*Slope:* 0 to 5 percent

*Drainage class:* Well drained

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

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

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

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

*Runoff class:* Low

*Ecological site:* Sands (pe21-28)

*Land capability (irrigated):* 3e

*Land capability (nonirrigated):* 3e

#### *Typical Profile:*

Ap—0 to 8 inches; fine sand

Bt—8 to 28 inches; loamy fine sand

E&Bt—28 to 40 inches; stratified loamy fine sand to fine sandy loam

2Btb1—40 to 58 inches; silty clay

2Btb2—58 to 75 inches; silty clay

2Btb3—75 to 80 inches; silty clay

*Component note:* This soil was formerly mapped as Pratt. A buried soil occurs below a depth of 40 inches. The buried soil varies in thickness and in texture. The texture varies from sandy clay loam to silty clay. The texture of the buried soil generally increases in sand content with increasing depth.

### Minor Components

#### Naron

*Composition:* About 15 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Sandy (pe21-28)

#### Solvay

*Composition:* About 10 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Somewhat poorly drained  
*Ecological site:* Subirrigated (pe21-28)

#### Carway

*Slope:* 0 to 1 percent  
*Drainage class:* Somewhat poorly drained  
*Ecological site:* Subirrigated (pe21-28)

*General Considerations:* Most areas are used for cropland, but some areas are in pasture or range. This mapunit is somewhat poorly suited for most commonly grown crops. Wheat and grain sorghum are the predominant crops grown. The hazard for wind erosion is severe and water erosion is slight. Wind erosion can be controlled by plant residue management, conservation tillage, and tall grass barriers. The high shrink-swell potential, and sandy textures will limit most engineering uses of this mapunit.

### 1988—Hayes loamy fine sand, 5 to 10 percent slopes

*Mapunit Information:* Hayes soils are usually located higher on the dune than the Attica soils.

### Map Unit Composition

Hayes: 70 percent  
 Minor components: 30 percent

### Component Descriptions

#### Hayes

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Dune on paleoterrace on river valley  
*Parent material:* Loamy eolian deposits over clayey alluvium  
*Slope:* 5 to 10 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* Moderate (About 8.1 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

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

*Runoff class:* Low

*Ecological site:* Sandy (pe21-28)

*Land capability (irrigated):* 3e

*Land capability (nonirrigated):* 3e

#### Typical Profile:

Ap—0 to 8 inches; fine sandy loam  
 Bt1—8 to 14 inches; fine sandy loam  
 Bt2—14 to 23 inches; fine sandy loam  
 Bt3—23 to 34 inches; fine sandy loam  
 Bt4—34 to 42 inches; fine sandy loam  
 Ab—42 to 47 inches; fine sandy loam  
 2Btb1—47 to 56 inches; sandy clay loam  
 2Btb2—56 to 69 inches; silty clay  
 2Btb3—69 to 80 inches; clay loam

*Component note:* This soil was formerly mapped as Naron or Pratt. A buried soil exists below 40 inches. The buried soil varies in thickness and the texture ranges from sandy clay loam to silty clay. The texture of the buried soil generally increases in sand content with increasing depth. Included in this unit are small areas of slopes less than 5 percent.

### Minor Components

#### Pratt

*Composition:* About 30 percent  
*Slope:* 5 to 10 percent  
*Drainage class:* Well drained  
*Ecological site:* Sands (pe21-28)

*General Considerations:* Most areas are used for pasture or range. The hazard for wind erosion is and and water erosion is moderate. The high shrink-swell potential and slope may limit some of the engineering uses of the soil.

### 2556—Langdon fine sand, 0 to 15 percent slopes

*Mapunit Information:* Langdon soils occur on mid to upper parts of the dunes. Tivin soils occur on the upper parts of the dunes. Turon soils occur on the lower part of the dune. Turon soils have a paleosol below 40 inches.

### Map Unit Composition

Langdon: 50 percent

Minor components: 50 percent

### Component Descriptions

#### Langdon

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Dune on paleoterrace on river valley

*Parent material:* Sandy eolian deposits

*Slope:* 0 to 15 percent

*Drainage class:* Somewhat excessively drained

*Slowest permeability:* Rapid (About 6.00 in/hr)

*Available water capacity:* Low (About 3.2 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

*Ponding hazard:* None

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

*Runoff class:* Medium

*Ecological site:* Choppy Sands (pe21-28)

*Land capability (nonirrigated):* 6e

#### Typical Profile:

A—0 to 8 inches; fine sand

E&Bt—8 to 47 inches; stratified sand to loamy sand

C—47 to 64 inches; fine sand

E&Btb—64 to 80 inches; stratified sand to loamy sand

*Component note:* This soil was formerly mapped as Tivoli or Pratt. Typically, this map unit is not cropped, although, in some places the soils occurring on the lower dunes are cultivated.

### Minor Components

#### Turon

*Composition:* About 25 percent

*Slope:* 0 to 10 percent

*Drainage class:* Well drained

*Ecological site:* Sands (pe21-28)

#### Tivin

*Composition:* About 25 percent

*Slope:* 1 to 15 percent

*Drainage class:* Somewhat excessively drained

*Ecological site:* Choppy Sands (pe21-28)

#### Carway

*Slope:* 0 to 1 percent

*Drainage class:* Somewhat poorly drained

*Ecological site:* Subirrigated (pe21-28)

#### Warnut

*Slope:* 0 to 1 percent

*Drainage class:* Poorly drained

*Ecological site:* Subirrigated (pe21-28)

*General Considerations:* Most areas are in pasture or range. This mapunit is poorly suited for the most commonly grown crops. The hazard for wind erosion is severe and water erosion is moderate. The sandy textures limit most engineering practices.

## 2948—Nalim loam, 0 to 1 percent slopes

### Map Unit Composition

Nalim: 80 percent

Minor components: 20 percent

### Component Descriptions

#### Nalim

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Loamy alluvium

*Slope:* 0 to 1 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 10.4 inches)

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

*Flooding hazard:* None

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

*Runoff class:* Very low

*Ecological site:* Loamy Upland (pe24-32)

*Land capability (irrigated):* 2e

*Land capability (nonirrigated):* 2e

#### Typical Profile:

Ap—0 to 6 inches; loam

Bt1—6 to 9 inches; loam

Bt2—9 to 13 inches; clay loam

Bt3—13 to 21 inches; clay loam

Bt4—21 to 31 inches; clay loam

Bt5—31 to 39 inches; sandy clay loam

Bt6—39 to 44 inches; gravelly sandy clay loam

Bt7—44 to 52 inches; sandy clay loam

BC—52 to 62 inches; loamy coarse sand

C1—62 to 72 inches; gravelly loamy coarse sand

C2—72 to 80 inches; stratified sand to gravelly loamy coarse sand

*Component note:* This soil was formerly mapped as Farnum in the southern third of Reno county. Included with this soil in mapping



are small areas with a fine sandy loam surface texture. Also included are a few small areas with slopes of greater than 1 percent and areas that contain several discontinuous clay lenses occurring within the soil profile between 40 and 80 inches. The clay lenses vary in thickness from 1 to 12 inches thick and range in texture from silty clay to sandy clay loam.

#### Minor Components

##### Farnum

*Composition:* About 20 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Ecological site:* Loamy Upland (pe21-28)

#### Unnamed Wet Soils

*General Considerations:* Most areas are used as cropland. This mapunit is well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the major crops. A few areas are planted to irrigated corn. The hazard of water erosion is slight and wind erosion is moderate. This problem can be overcome by using conservation tillage and residue management. This mapunit is moderately well suited for most engineering uses.

### 3051—Ost loam, 0 to 1 percent slope

#### Map Unit Composition

Ost: 90 percent  
Minor components: 10 percent

#### Component Descriptions

##### Ost

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Loamy alluvium  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately slow (About 0.20 in/hr)  
*Available water capacity:* High (About 10.0 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None

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

*Runoff class:* Very low

*Ecological site:* Loamy Upland (pe24-32)

*Land capability (nonirrigated):* 2c

##### Typical Profile:

Ap—0 to 8 inches; loam  
Bt1—8 to 12 inches; loam  
Bt2—12 to 18 inches; loam  
Bk1—18 to 23 inches; clay loam  
Bk2—23 to 38 inches; clay loam  
BCk—38 to 54 inches; loam  
C—54 to 80 inches; loam

*Component note:* Included with this soil in mapping are areas that may have a fine sandy loam surface texture.

#### Minor Components

##### Clark

*Composition:* About 10 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Ecological site:* Limy Upland (pe21-28)

#### Unnamed Wet Soils

*General Considerations:* Most areas are used as cropland. This mapunit is well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the predominant crops. The hazard of wind and water erosion is slight. This mapunit is well suited for most engineering practices.

### 3053—Ost loam, 1 to 3 percent slopes

*Mapunit Information:* Ost soils occur slightly higher on the paleoterrace than Clark soils.

#### Map Unit Composition

Ost: 85 percent  
Minor components: 15 percent

#### Component Descriptions

##### Ost

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Loamy alluvium  
*Slope:* 1 to 3 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately slow (About 0.20 in/hr)

*Available water capacity:* High (About 10.0 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Loamy Upland (pe24-32)  
*Land capability (nonirrigated):* 2c

*Typical Profile:*

Ap—0 to 8 inches; loam  
 Bt1—8 to 12 inches; loam  
 Bt2—12 to 18 inches; loam  
 Bk1—18 to 23 inches; clay loam  
 Bk2—23 to 38 inches; clay loam  
 Bck—38 to 54 inches; loam  
 C—54 to 80 inches; loam

*Component note:* Included in mapping are small areas with a fine sandy loam surface texture. Also included are small areas that have slope of less than 1 percent.

**Minor Components**

**Shellabarger**

*Composition:* About 15 percent  
*Slope:* 1 to 3 percent  
*Drainage class:* Well drained  
*Ecological site:* Sandy (pe21-28)

**Unnamed Wet Soils**

**Clark**

*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Ecological site:* Limy Upland (pe21-28)

*General Considerations:* Most areas are used as cropland. This mapunit is well suited to all commonly grown crops. Wheat, grain sorghum, and soybeans are the predominant crops. The hazard of wind erosion is moderate and water erosion is slight. This mapunit is well suited for most engineering practices.

**3180—Pratt fine sand, 5 to 10 percent slopes**

**Map Unit Composition**

Pratt: 85 percent  
 Minor components: 15 percent

**Component Descriptions**

**Pratt**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Dune on paleoterrace on river valley  
*Parent material:* Sandy eolian deposits  
*Slope:* 5 to 10 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Rapid (About 5.95 in/hr)  
*Available water capacity:* Moderate (About 6.3 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Sands (pe21-28)  
*Land capability (irrigated):* 3e  
*Land capability (nonirrigated):* 3e

*Typical Profile:*

Ap—0 to 8 inches; fine sand  
 Bt—8 to 24 inches; loamy fine sand  
 E&Bt—24 to 64 inches; stratified fine sand to loamy fine sand  
 C—64 to 80 inches; fine sand

*Component note:* Included with this soil in mapping are some areas with a loamy fine sand surface texture. Also included are small areas with slopes of less than 5 percent.

**Minor Components**

**Attica**

*Composition:* About 15 percent  
*Slope:* 5 to 10 percent  
*Drainage class:* Well drained  
*Ecological site:* Sandy (pe21-28)

*General Considerations:* Most areas are in pasture or range, but some are in cropland. This mapunit is poorly suited for the most commonly grown crops. The hazard for wind erosion is severe and water erosion is moderate. This mapunit is poorly suited for most engineering practices due to the sandy textures.

**3181—Pratt-Turon fine sands, 1 to 5 percent slopes**

*Mapunit Information:* Pratt and Turon soils are on similar positions on dunes. Turon soils have a paleosol below 40 inches.

## Map Unit Composition

Pratt: 45 percent  
 Turon: 30 percent  
 Minor components: 25 percent

## Component Descriptions

### Pratt

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Dune on paleoterrace on river valley  
*Parent material:* Sandy eolian deposits  
*Slope:* 1 to 5 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Rapid (About 5.95 in/hr)  
*Available water capacity:* Moderate (About 6.3 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Sands (pe21-28)  
*Land capability (irrigated):* 3e  
*Land capability (nonirrigated):* 3e

#### Typical Profile:

Ap—0 to 8 inches; fine sand  
 Bt—8 to 24 inches; loamy fine sand  
 E&Bt—24 to 64 inches; stratified fine sand to loamy fine sand  
 C—64 to 80 inches; fine sand  
*Component note:* Included with this soil are small areas with a loamy fine sand surface texture.

### Turon

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Dune on paleoterrace on river valley  
*Parent material:* Sandy eolian deposits over alluvium  
*Slope:* 1 to 5 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Very slow (About 0.00 in/hr)  
*Available water capacity:* Moderate (About 7.1 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Sands (pe21-28)  
*Land capability (irrigated):* 3e  
*Land capability (nonirrigated):* 3e

#### Typical Profile:

Ap—0 to 8 inches; fine sand  
 Bt—8 to 28 inches; loamy fine sand  
 E&Bt—28 to 40 inches; stratified loamy fine sand to fine sandy loam  
 2Btb1—40 to 58 inches; silty clay  
 2Btb2—58 to 75 inches; silty clay  
 2Btb3—75 to 80 inches; silty clay

*Component note:* This soil was formerly mapped as Pratt. A buried soil occurs below a depth of 40 inches. The buried soil varies in thickness and in texture. The texture varies from sandy clay loam to silty clay. The texture of the buried soil generally increases in sand content with increasing depth.

## Minor Components

### Hayes

*Composition:* About 25 percent  
*Slope:* 1 to 5 percent  
*Drainage class:* Well drained  
*Ecological site:* Sandy (pe21-28)

### Carway

*Slope:* 0 to 1 percent  
*Drainage class:* Somewhat poorly drained  
*Ecological site:* Subirrigated (pe21-28)

### Warnut

*Slope:* 0 to 1 percent  
*Drainage class:* Poorly drained  
*Ecological site:* Subirrigated (pe21-28)

*General Considerations:* Most areas are in cropland, but some are in pasture and range. Some areas are also in the Conservation Reserve Program. This mapunit is somewhat poorly suited for the most commonly grown crops. Wheat, grain sorghum, and irrigated corn are the predominant crops. The hazard for wind erosion is severe and water erosion is slight. Wind erosion can be controlled by plant residue management, conservation tillage, and tall grass barriers. This mapunit is moderately well suited for most engineering practices.

## 3445—Shellabarger fine sandy loam, 3 to 7 percent slopes, eroded

## Map Unit Composition

Shellabarger: 100 percent

## Component Descriptions

### Shellabarger

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Loamy alluvium

*Slope:* 3 to 7 percent

*Drainage class:* Well drained

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

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

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

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

*Runoff class:* Medium

*Ecological site:* Sandy (pe21-28)

*Land capability (nonirrigated):* 2e

#### Typical Profile:

Ap—0 to 6 inches; sandy loam  
Bt1—6 to 11 inches; sandy clay loam  
Bt2—11 to 19 inches; sandy clay loam  
Bt3—19 to 33 inches; sandy loam  
BC—33 to 47 inches; coarse sandy loam  
C1—47 to 59 inches; loamy sand  
C2—59 to 73 inches; sand  
C3—73 to 80 inches; sand

*Component note:* In some places, several laterally discontinuous clay lenses occur within the soil profile between 30 to 80 inches. The lenses range in thickness from 1 to 12 inches thick and also range in texture from silty clay to sandy clay loam. About 20 to 45 percent of Shellabarger soils have been severely eroded. These soils generally have coarser surface textures (coarse sandy loam, gravelly sandy loam, gravelly coarse sandy loam, gravelly loamy coarse sands); thinner surface horizons, and low or very low organic matter.

*General Considerations:* Most areas are used as cropland or hayland, but some areas are in pasture or range. This map unit is moderately well suited to all of the commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn are the main crops. The hazard of wind erosion is slight and water erosion is severe for these soils. Ephemeral gully erosion potential is moderate for these soils. Wind and water erosion can be controlled by maintaining plant residue through the use of a conservation tillage system, strip cropping, field windbreaks, contour farming, tall grass

barriers, terraces and grassed waterways. The moderate water holding capacity of these soils can limit production. This problem can be minimized by increasing organic matter, leaving plant residue, and conservation tillage. These soils are moderately well suited for most engineering uses of these soils, except where steep slopes can limit the practice.

## 3510—Saltcreek-Funmar-Farnum complex, 1 to 3 percent slopes

*Mapunit Information:* Saltcreek soils are on convex dunes that are slightly higher on the landscape the Funmar and Farnum soils, which are on the level paleoterrace.

## Map Unit Composition

Saltcreek: 50 percent

Funmar: 30 percent

Farnum: 20 percent

## Component Descriptions

### Saltcreek

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Dune on paleoterrace on river valley

*Parent material:* Loamy eolian deposits over alluvium

*Slope:* 1 to 3 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 9.0 inches)

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

*Flooding hazard:* None

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

*Runoff class:* Low

*Ecological site:* Sandy (pe21-28)

*Land capability (irrigated):* 1

*Land capability (nonirrigated):* 3e

#### Typical Profile:

Ap—0 to 5 inches; fine sandy loam  
Bt1—5 to 10 inches; sandy clay loam  
Bt2—10 to 26 inches; sandy clay loam  
Bt3—26 to 39 inches; fine sandy loam  
2Btb—39 to 56 inches; silty clay  
2Btkb1—56 to 66 inches; silty clay loam  
2Btkb2—66 to 80 inches; silty clay loam

*Component note:* This soil was formerly mapped as Naron. A buried soil occurs from 25 to 60 inches. The buried soil varies in thickness and in texture. The texture ranges from sandy clay loam to silty clay generally increases in sand content with increasing depth. In some areas the buried soil has a higher content of sand.

### **Funmar**

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Loamy alluvium over alluvium

*Slope:* 1 to 3 percent

*Drainage class:* Moderately well drained

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

*Available water capacity:* High (About 10.3 inches)

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

*Flooding hazard:* None

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

*Runoff class:* Low

*Ecological site:* Loamy Upland (pe21-28)

*Land capability (irrigated):* 1

*Land capability (nonirrigated):* 2c

#### *Typical Profile:*

Ap—0 to 6 inches; loam

A—6 to 12 inches; loam

Bt1—12 to 17 inches; loam

Bt2—17 to 26 inches; clay loam

Bt3—26 to 32 inches; loam

2Ab—32 to 38 inches; silty clay loam

2Btb—38 to 54 inches; silty clay loam

2Btkb1—54 to 66 inches; silty clay loam

2Btkb2—66 to 80 inches; silty clay loam

*Component note:* This soil was formerly mapped as Farnum and Tabler. A buried soil occurs below a depth of 32 inches and varies in thickness. The texture of the buried soil varies from sandy clay loam to silty clay and increases in sand content with depth. Included with this soil are small areas with a the surface texture may be fine sandy loam.

### **Farnum**

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Alluvium

*Slope:* 1 to 3 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 10.7 inches)

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

*Flooding hazard:* None

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

*Runoff class:* Low

*Ecological site:* Loamy Upland (pe21-28)

*Land capability (irrigated):* 1

*Land capability (nonirrigated):* 2c

#### *Typical Profile:*

Ap—0 to 5 inches; loam

A—5 to 15 inches; loam

Bt1—15 to 21 inches; loam

Bt2—21 to 34 inches; sandy clay loam

Bt3—34 to 48 inches; loam

Bt4—48 to 61 inches; clay loam

Bt5—61 to 73 inches; clay loam

Btk—73 to 80 inches; loam

*Component note:* Included with this soil in mapping are small areas with a be fine sandy loam surface texture.

### **Minor Components**

#### **Carway**

*Slope:* 0 to 1 percent

*Drainage class:* Somewhat poorly drained

*Ecological site:* Subirrigated (pe21-28)

#### **Carbika**

*Slope:* 0 to 1 percent

*Drainage class:* Poorly drained

*Ecological site:* Subirrigated (pe21-28)

*General Considerations:* Most areas are in cropland, but some areas are in pasture or range. This mapunit is well suited for most commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn. The hazard for wind and water erosion is slight. The potential for high shrink-swell may limit some engineering practices for this mapunit.

## **3512—Saltcreek and Naron fine sandy loams, 1 to 3 percent slopes**

*Mapunit Information:* Saltcreek and Naron soils are interfingering upon the landscape. Both soils occur in similar positions.

### **Map Unit Composition**

Saltcreek: 50 percent

Naron: 50 percent

Minor components: 10 percent

## Component Descriptions

### Saltcreek

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Dune on paleoterrace on river valley

*Parent material:* Loamy eolian deposits over alluvium

*Slope:* 1 to 3 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 9.0 inches)

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

*Flooding hazard:* None

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

*Runoff class:* Low

*Ecological site:* Sandy (pe21-28)

*Land capability (irrigated):* 1

*Land capability (nonirrigated):* 3e

#### Typical Profile:

Ap—0 to 5 inches; fine sandy loam  
Bt1—5 to 10 inches; sandy clay loam  
Bt2—10 to 26 inches; sandy clay loam  
Bt3—26 to 39 inches; fine sandy loam  
2Btb—39 to 56 inches; silty clay  
2Btkb1—56 to 66 inches; silty clay loam  
2Btkb2—66 to 80 inches; silty clay loam

*Component note:* This series was formerly mapped as Naron. A buried soil varies laterally in thickness and in texture. The texture of the buried soil varies from sandy clay loam to silty clay and generally increases in sand content with depth. Some areas contain a higher content of sand.

### Naron

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Dune on paleoterrace on river valley

*Parent material:* Loamy eolian deposits

*Slope:* 1 to 3 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 9.7 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

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

*Runoff class:* Low

*Ecological site:* Sandy (pe21-28)

*Land capability (irrigated):* 3e

*Land capability (nonirrigated):* 3e

#### Typical Profile:

Ap—0 to 8 inches; fine sandy loam  
A—8 to 14 inches; fine sandy loam  
Bt1—14 to 28 inches; sandy clay loam  
Bt2—28 to 39 inches; sandy clay loam  
Bt3—39 to 55 inches; sandy clay loam  
BC—55 to 66 inches; fine sandy loam  
C—66 to 80 inches; loamy fine sand

## Minor Components

### Funmar

*Composition:* About 10 percent

*Slope:* 0 to 1 percent

*Drainage class:* Moderately well drained

*Ecological site:* Loamy Upland (pe21-28)

### Carway

*Slope:* 0 to 1 percent

*Drainage class:* Somewhat poorly drained

*Ecological site:* Subirrigated (pe21-28)

### Carbika

*Slope:* 0 to 1 percent

*Drainage class:* Poorly drained

*Ecological site:* Subirrigated (pe21-28)

### Taver

*Slope:* 0 to 1 percent

*Drainage class:* Moderately well drained

*Ecological site:* Clay Upland (pe21-28)

*General Considerations:* Most areas are in cropland, but some areas are in pasture or range. This mapunit is well suited for most commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn. The hazard for wind and water erosion is slight. The depth to sand and potential for high shrink-swell may limit some engineering practices for this mapunit.

## 3533—Shellabarger sandy loam, 0 to 1 percent slopes

### Map Unit Composition

Shellabarger: 85 percent

Minor components: 15 percent

## Component Descriptions

### Shellabarger

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Loamy alluvium

*Slope:* 0 to 1 percent

*Drainage class:* Well drained

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

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

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

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

*Runoff class:* Very low

*Ecological site:* Sandy (pe21-28)

*Land capability (nonirrigated):* 2e

*Typical Profile:*

Ap—0 to 7 inches; sandy loam  
Bt1—7 to 11 inches; sandy clay loam  
Bt2—11 to 19 inches; sandy clay loam  
Bt3—19 to 33 inches; sandy loam  
BC—33 to 47 inches; coarse sandy loam  
C1—47 to 59 inches; loamy sand  
C2—59 to 73 inches; sand  
C3—73 to 80 inches; sand

*Component note:* This soil is on a similar landscape position as the Nalim soils. The Nalim soils have a sandy loam or coarse sandy loam surface texture. The Shellabarger soils have a lower clay content in the subsoil than Nalim soils. Also included are soils that contain several discontinuous clay lenses occurring between 30 to 80 inches within the soil profile. The lenses vary in thickness from 1 to 12 inches thick and range in texture from silty clay to sandy clay loam.

### Minor Components

#### Nalim

*Composition:* About 15 percent

*Slope:* 0 to 1 percent

*Drainage class:* Well drained

*Ecological site:* Loamy Upland (pe24-32)

### Unnamed Wet Soils

*General Considerations:* Most areas are used as cropland, but some areas are in pasture or range. This map unit is moderately well suited to all of the commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn are the main crops. The hazard of wind erosion is severe and the hazard of water erosion is slight. Wind erosion can be controlled by maintaining plant residue through the use of a conservation tillage system. The moderate water holding capacity can hurt production. This problem can be minimized by increasing organic matter, leaving plant residue, and conservation tillage. In some places, soil test results may show soil

reaction (pH) in the strongly acid range. Additions of lime may be required for optimum nutrient balance. The moderately rapid permeability and relatively shallow depths to sandy textures can limit some of the engineering uses of this soil.

## 3534—Shellabarger sandy loam, 1 to 3 percent slopes

*Mapunit Information:* The Albion soils are generally located on the steeper upper parts of the side slopes. The Shellabarger soils are generally located on the less steep lower side slopes.

### Map Unit Composition

Shellabarger: 85 percent

Minor components: 15 percent

### Component Descriptions

#### Shellabarger

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Loamy alluvium

*Slope:* 1 to 3 percent

*Drainage class:* Well drained

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

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

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

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

*Runoff class:* Low

*Ecological site:* Sandy (pe21-28)

*Land capability (nonirrigated):* 2e

*Typical Profile:*

Ap—0 to 7 inches; sandy loam  
Bt1—7 to 11 inches; sandy clay loam  
Bt2—11 to 19 inches; sandy clay loam  
Bt3—19 to 33 inches; sandy loam  
BC—33 to 47 inches; coarse sandy loam  
C1—47 to 59 inches; loamy sand  
C2—59 to 73 inches; sand  
C3—73 to 80 inches; sand

*Component note:* This soil is on a similar landscape position as the Albion soils. The Albion soils have a sandy loam or coarse sandy loam surface texture. The Shellabarger soils have a higher clay content in the subsoil than Albion soils. Also

included in the soils are a few small areas of Nalim soils and soils that contain several discontinuous clay lenses occurring within the soil profile between 30 to 80 inches. The lenses vary in thickness from 1 to 12 inches thick and range in texture from silty clay to sandy clay loam. About 10 to 25 percent of the Shellabarger soils have been subject to moderate erosion. The eroded soils generally have coarse sandy loam, gravelly sandy loam, gravelly coarse sandy loam, gravelly loamy coarse sand surface textures, thinner surface layers and low or very low organic matter levels.

#### Minor Components

##### Albion

*Composition:* About 15 percent  
*Slope:* 1 to 3 percent  
*Drainage class:* Well drained  
*Ecological site:* Sandy (pe21-28)

#### Unnamed Wet Soils

*General Considerations:* Most areas are used as cropland, but some areas are in pasture or range. This map unit is moderately well suited to all of the commonly grown crops. Wheat, grain sorghum, soybeans, and irrigated corn are the main crops. The hazard of wind erosion is severe and the hazard of water erosion is moderate for these soils. Ephemeral gully erosion potential is moderate for these soils. Wind and water erosion can be controlled by maintaining plant residue through the use of a conservation tillage system, strip cropping, field windbreaks, contour farming, tall grass barriers, terraces and grassed waterways. The moderate water holding capacity of these soils can limit production. This problem can be minimized by increasing organic matter, leaving plant residue, and conservation tillage. In some places, soil test results may show soil reaction (pH) in the strongly acid range. Additions of lime may be required for optimum nutrient balance. The moderately rapid permeability and relatively shallow depths to sandy textures can limit some of the engineering uses of these soils.

## 3540—Solvay loamy fine sand, 0 to 2 percent slopes

### Map Unit Composition

Solvay: 90 percent  
 Minor components: 10 percent

### Component Descriptions

#### Solvay

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Interdune on paleoterrace on river valley

*Parent material:* Loamy eolian deposits over alluvium

*Slope:* 0 to 2 percent

*Drainage class:* Somewhat poorly drained

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

*Available water capacity:* Moderate (About 9.0 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

*Depth to seasonal water saturation:* About 24 to 48 inches

*Runoff class:* Very low

*Ecological site:* Subirrigated (pe21-28)

*Land capability (nonirrigated):* 2e

#### Typical Profile:

A—0 to 5 inches; loamy fine sand  
 2Bt1—5 to 14 inches; fine sandy loam  
 2Bt2—14 to 23 inches; fine sandy loam  
 2Bt3—23 to 37 inches; fine sandy loam  
 2BC1—37 to 58 inches; fine sandy loam  
 2BC2—58 to 76 inches; loamy fine sand  
 2BC3—76 to 80 inches; loamy fine sand

*Component note:* This soil was formerly mapped as Carwile and Farnum. Included with this soil in mapping are small areas with a fine sandy loam surface texture. These soils occur in depressions on the floodplain.

#### Minor Components

##### Hayes

*Composition:* About 10 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Well drained  
*Ecological site:* Sandy (pe21-28)

##### Carway

*Slope:* 0 to 1 percent  
*Drainage class:* Somewhat poorly drained  
*Ecological site:* Subirrigated (pe21-28)



**Carbika**

*Slope:* 0 to 1 percent  
*Drainage class:* Poorly drained  
*Ecological site:* Subirrigated (pe21-28)

*General Considerations:* Most areas are in cropland, but some areas are used for pasture and range. Many areas are in the Conservation Reserve Program. This mapunit is somewhat poorly suited for the most commonly grown crops. Wheat, grain sorghum and irrigated corn are the predominant crops. The hazard for wind erosion is severe and water erosion is slight. Conservation tillage, residue management, and tall grass barriers are ways to control wind erosion. The depth to water tables will limit many engineering practices.

**3639—Taver loam, 0 to 1 percent slopes****Map Unit Composition**

Taver: 90 percent  
 Minor components: 10 percent

**Component Descriptions****Taver**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Clayey alluvium  
*Slope:* 0 to 1 percent  
*Drainage class:* Moderately well drained  
*Slowest permeability:* Very slow (About 0.00 in/hr)  
*Available water capacity:* High (About 9.4 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very low  
*Ecological site:* Clay Upland (pe21-28)  
*Land capability (nonirrigated):* 2s

*Typical Profile:*

Ap—0 to 7 inches; loam  
 2Bt1—7 to 17 inches; silty clay loam  
 2Bt2—17 to 33 inches; silty clay  
 2Btk1—33 to 53 inches; silty clay loam  
 2Btk2—53 to 64 inches; clay loam  
 3Bt—64 to 80 inches; sandy clay loam

*Component note:* This series was formerly mapped as Tabler.

**Minor Components****Saltcreek**

*Composition:* About 10 percent  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Ecological site:* Sandy (pe21-28)

**Carbika**

*Slope:* 0 to 1 percent  
*Drainage class:* Poorly drained  
*Ecological site:* Subirrigated (pe21-28)

*General Considerations:* Most areas are used for cropland, but some areas are in pasture or range. This mapunit is well suited for the most commonly grown crops such as wheat, grain sorghum, soybeans, and irrigated corn. The hazard for wind and water erosion is slight. This mapunit is moderately well suited for most engineering practices. The potential for high shrink-swell may limit some practices.

**3640—Tivin fine sand, 10 to 30 percent slopes****Map Unit Composition**

Tivin: 95 percent  
 Minor components: 5 percent

**Component Descriptions****Tivin**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Dune on paleoterrace on river valley  
*Parent material:* Sandy eolian deposits  
*Slope:* 10 to 30 percent  
*Drainage class:* Somewhat excessively drained  
*Slowest permeability:* Rapid (About 5.95 in/hr)  
*Available water capacity:* Low (About 3.2 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Medium  
*Ecological site:* Choppy Sands (pe21-28)  
*Land capability (nonirrigated):* 6e

*Typical Profile:*

A—0 to 7 inches; fine sand  
 AC—7 to 18 inches; fine sand  
 C—18 to 80 inches; fine sand

*Component note:* This series was formerly mapped as Tivoli.

**Minor Components****Langdon**

*Composition:* About 5 percent  
*Slope:* 10 to 30 percent  
*Drainage class:* Somewhat excessively drained  
*Ecological site:* Choppy Sands (pe21-28)

**Plev**

*Slope:* 0 to 1 percent  
*Drainage class:* Poorly drained  
*Ecological site:* Subirrigated (pe21-28)

*General Considerations:* Most areas are in pasture or range. This mapunit is poorly suited for the most commonly grown crops. The hazard for wind erosion is severe and water erosion is moderate. The sandy textures will limit most engineering practices.

**3644—Turon-Carway complex, 0 to 5 percent slopes**

*Mapunit Information:* Turon soils occur on the mid to upper parts of the dunes. The Solvay soils are in interdunal positions on the paleoterrace. The Carway soils are on interdunes and also in depressional areas on the paleoterrace.

**Map Unit Composition**

Turon: 65 percent  
 Carway: 20 percent  
 Minor components: 15 percent

**Component Descriptions****Turon**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Dune on paleoterrace on river valley  
*Parent material:* Sandy eolian deposits over alluvium  
*Slope:* 0 to 5 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Very slow (About 0.00 in/hr)  
*Available water capacity:* Moderate (About 7.1 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

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

*Runoff class:* Very low

*Ecological site:* Sands (pe21-28)

*Land capability (irrigated):* 3e

*Land capability (nonirrigated):* 3e

*Typical Profile:*

Ap—0 to 8 inches; fine sand  
 Bt—8 to 28 inches; loamy fine sand  
 E&Bt—28 to 40 inches; stratified loamy fine sand to fine sandy loam  
 2Btb1—40 to 58 inches; silty clay  
 2Btb2—58 to 75 inches; silty clay  
 2Btb3—75 to 80 inches; silty clay

*Component note:* This soil was formerly mapped as Pratt. A buried soil occurs below a depth of 40 inches. The buried soil varies in thickness and in texture. The texture varies from sandy clay loam to silty clay. The texture of the buried soil generally increases in sand content with increasing depth.

**Carway**

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Interdune on depression on paleoterrace on river valley

*Parent material:* Loamy eolian deposits over alluvium

*Slope:* 0 to 1 percent

*Drainage class:* Somewhat poorly drained

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

*Available water capacity:* Moderate (About 8.6 inches)

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

*Flooding hazard:* None

*Ponding hazard:* Frequent

*Depth to seasonal water saturation:* About 0 to 0 inches

*Runoff class:* Very low

*Ecological site:* Subirrigated (pe21-28)

*Land capability (nonirrigated):* 2w

*Typical Profile:*

Ap—0 to 7 inches; loamy fine sand  
 Bt1—7 to 10 inches; sandy clay loam  
 Bt2—10 to 15 inches; sandy clay loam  
 Bt3—15 to 22 inches; fine sandy loam  
 Bt4—22 to 35 inches; fine sandy loam  
 2Btb1—35 to 40 inches; clay loam  
 2Btb2—40 to 54 inches; clay loam  
 2Btb3—54 to 63 inches; clay loam  
 2Btb4—63 to 72 inches; clay loam  
 2Btkb—72 to 80 inches; clay loam

*Component note:* This soil was formerly mapped as Carwile. Included with this soil in mapping are small areas with a fine sandy loam surface texture.

### Minor Components

#### Solvay

*Composition:* About 15 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Somewhat poorly drained  
*Ecological site:* Subirrigated (pe21-28)

*General Considerations:* Most areas are used for cropland, but some areas are in pasture or range. This mapunit is somewhat poorly suited for most commonly grown crops. Wheat and grain sorghum are the predominant crops grown. The hazard for wind erosion is severe and water erosion is slight. Wind erosion can be controlled by plant residue management, conservation tillage, and tall grass barriers. The high water tables, high shrink-swell potential, and sandy textures will limit most engineering uses of this mapunit.

## 3926—Water

### 4005—Yaggy-Saxman loamy sand, 0 to 2 percent slopes, occasionally flooded

*Mapunit Information:* Yaggy soils usually occur lower on the floodplain than the Saxman soils.

### Map Unit Composition

Yaggy: 60 percent  
 Saxman: 30 percent  
 Minor components: 10 percent

### Component Descriptions

#### Yaggy

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Flood plain on river valley  
*Parent material:* Loamy alluvium over sandy alluvium  
*Slope:* 0 to 2 percent  
*Drainage class:* Somewhat poorly drained

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

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

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* Occasional

*Depth to seasonal water saturation:* About 24 to 48 inches

*Runoff class:* Very low

*Ecological site:* Sandy Lowland (pe21-28)

*Land capability (irrigated):* 2e

*Land capability (nonirrigated):* 3e

#### Typical Profile:

Ap1—0 to 5 inches; fine sandy loam  
 Ap2—5 to 11 inches; fine sandy loam  
 2C1—11 to 14 inches; stratified very fine sandy loam to silt loam  
 3C2—14 to 24 inches; fine sand  
 3C3—24 to 31 inches; fine sand  
 3C4—31 to 42 inches; fine sand  
 3C5—42 to 53 inches; stratified gravelly coarse sand  
 3C6—53 to 69 inches; stratified gravelly coarse sand to sand  
 3C7—69 to 80 inches; stratified gravelly coarse sand to sand

*Component note:* This soil was formerly mapped as Platte. Included with this soil are small areas with a loamy fine sands surface texture.

#### Saxman

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Flood plain on river valley

*Parent material:* Sandy alluvium

*Slope:* 0 to 2 percent

*Drainage class:* Moderately well drained

*Slowest permeability:* Rapid (About 5.95 in/hr)

*Available water capacity:* Low (About 4.4 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* Rare

*Depth to seasonal water saturation:* About 24 to 36 inches

*Runoff class:* Very low

*Ecological site:* Sandy Lowland (pe21-28)

*Land capability (irrigated):* 2e

*Land capability (nonirrigated):* 3e

#### Typical Profile:

Ap1—0 to 4 inches; loamy sand  
 Ap2—4 to 8 inches; loamy sand  
 A—8 to 13 inches; loamy sand  
 AC—13 to 22 inches; loamy sand  
 C1—22 to 30 inches; sand  
 C2—30 to 37 inches; sand  
 C3—37 to 48 inches; sand  
 C4—48 to 54 inches; fine sand  
 C5—54 to 80 inches; stratified gravelly coarse sand

*Component note:* This soil was formerly mapped as Canadian and Wann. Included with this soil are small areas with a loamy fine sand surface texture.

### Minor Components

#### Solvay

*Composition:* About 10 percent  
*Slope:* 0 to 2 percent  
*Drainage class:* Somewhat poorly drained  
*Ecological site:* Subirrigated (pe21-28)

#### Kanza

*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained  
*Ecological site:* Subirrigated (pe21-28)

#### Ninnescah

*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained  
*Ecological site:* Subirrigated (pe21-28)

*General Considerations:* Most areas are used for pasture or range, some areas are used for hay production. This map unit is poorly suited for most commonly grown crops. The hazard for water erosion is slight and wind erosion is severe. Depth to sand and water tables can limit most engineering uses for this map unit.

## Ab—Albion sandy loam, 1 to 4 percent slopes

### Map Unit Composition

Albion: 100 percent

### Component Descriptions

#### Albion

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Loamy alluvium  
*Slope:* 1 to 4 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately rapid (About 2.00 in/hr)  
*Available water capacity:* Moderate (About 6.0 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet

*Runoff class:* Very low

*Ecological site:* Sandy (pe24-32)

*Land capability (nonirrigated):* 3e

#### Typical Profile:

H1—0 to 8 inches; sandy loam  
 H2—8 to 18 inches; sandy loam  
 H3—18 to 29 inches; coarse sandy loam  
 H4—29 to 60 inches; gravelly sand

### Minor Components

#### Unnamed Wet Soils

*Phase:* Sandy, Drainageway

## Ao—Albion sandy loam, 3 to 7 percent slopes, eroded

### Map Unit Composition

Albion: 100 percent

### Component Descriptions

#### Albion

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Loamy alluvium  
*Slope:* 3 to 7 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately rapid (About 2.00 in/hr)  
*Available water capacity:* Moderate (About 6.0 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Sandy (pe24-32)  
*Land capability (nonirrigated):* 4e

#### Typical Profile:

H1—0 to 8 inches; sandy loam  
 H2—8 to 18 inches; sandy loam  
 H3—18 to 29 inches; coarse sandy loam  
 H4—29 to 60 inches; gravelly sand

## As—Albion and Shellabarger Soils, 7 to 15 percent slopes

### Map Unit Composition

Albion: 50 percent  
Shellabarger: 50 percent

### Component Descriptions

#### Albion

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Loamy alluvium  
*Slope:* 7 to 15 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately rapid (About 2.00 in/hr)  
*Available water capacity:* Moderate (About 6.0 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Medium  
*Ecological site:* Sandy (pe24-32)  
*Land capability (nonirrigated):* 6e

#### Typical Profile:

H1—0 to 8 inches; sandy loam  
H2—8 to 18 inches; sandy loam  
H3—18 to 29 inches; coarse sandy loam  
H4—29 to 60 inches; gravelly sand

#### Shellabarger

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Loamy alluvium  
*Slope:* 7 to 15 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* Moderate (About 8.5 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Medium  
*Ecological site:* Sandy (pe24-32)  
*Land capability (nonirrigated):* 6e

#### Typical Profile:

H1—0 to 11 inches; fine sandy loam

H2—11 to 34 inches; sandy clay loam  
H3—34 to 60 inches; coarse sandy loam

## Bc—Blanket silty clay loam, 1 to 4 percent slopes, eroded

### Map Unit Composition

Blanket: 100 percent

### Component Descriptions

#### Blanket

*MLRA:* 80A - Central Rolling Red Prairies  
*Landform:* Paleoterrace on river valley  
*Parent material:* Clayey alluvium  
*Slope:* 1 to 4 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately slow (About 0.20 in/hr)  
*Available water capacity:* High (About 9.2 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:* Loamy Upland (pe21-28)  
*Land capability (nonirrigated):* 3e

#### Typical Profile:

H1—0 to 13 inches; silty clay loam  
H2—13 to 46 inches; silty clay  
H3—46 to 60 inches; silty clay loam

## Be—Blanket silt loam, 0 to 1 percent slopes

### Map Unit Composition

Blanket: 100 percent

### Component Descriptions

#### Blanket

*MLRA:* 80A - Central Rolling Red Prairies  
*Landform:* Paleoterrace on river valley

*Parent material:* Clayey alluvium  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately slow (About 0.20 in/hr)  
*Available water capacity:* High (About 9.2 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Loamy Upland (pe21-28)  
*Land capability (nonirrigated):* 1

*Typical Profile:*  
 H1—0 to 13 inches; silt loam  
 H2—13 to 46 inches; silty clay  
 H3—46 to 60 inches; silty clay loam

## **Bh—Blanket silt loam, 1 to 3 percent slopes**

### **Map Unit Composition**

Blanket: 100 percent

### **Component Descriptions**

#### **Blanket**

*MLRA:* 80A - Central Rolling Red Prairies  
*Landform:* Paleoterrace on river valley  
*Parent material:* Clayey alluvium  
*Slope:* 1 to 3 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately slow (About 0.20 in/hr)  
*Available water capacity:* High (About 9.2 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:* Loamy Upland (pe21-28)  
*Land capability (nonirrigated):* 2e

*Typical Profile:*  
 H1—0 to 13 inches; silt loam  
 H2—13 to 46 inches; silty clay  
 H3—46 to 60 inches; silty clay loam

## **Br—Fluvents, frequently flooded**

## **Ca—Carwile fine sandy loam, 0 to 1 percent slopes**

### **Map Unit Composition**

Carwile: 100 percent

### **Component Descriptions**

#### **Carwile**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Depression on paleoterrace on river valley  
*Parent material:* Alluvium  
*Slope:* 0 to 1 percent  
*Drainage class:* Somewhat poorly drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* High (About 9.4 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None  
*Ponding hazard:* Frequent  
*Depth to seasonal water saturation:* About 0 to 0 inches  
*Runoff class:* Negligible  
*Ecological site:* Sandy (pe21-28)  
*Land capability (nonirrigated):* 2w

*Typical Profile:*  
 H1—0 to 10 inches; fine sandy loam  
 H2—10 to 18 inches; sandy clay loam  
 H3—18 to 46 inches; clay  
 H4—46 to 60 inches; clay

#### **Minor Components**

#### **Unnamed Wet Soils**

*Phase:* Loamy, Depression

**Cc—Case-Clark complex, 3 to 7 percent slopes****Map Unit Composition**

Case: 70 percent

Clark: 30 percent

**Component Descriptions****Case***MLRA:* 80A - Central Rolling Red Prairies*Landform:* Paleoterrace on river valley*Parent material:* Calcareous, old alluvium*Slope:* 3 to 7 percent*Drainage class:* Well drained*Slowest permeability:* Moderate (About 0.60 in/hr)*Available water capacity:* Moderate (About 8.7 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 (pe24-32)*Land capability (nonirrigated):* 4e*Typical Profile:*

H1—0 to 6 inches; clay loam

H2—6 to 50 inches; clay loam

**Clark***MLRA:* 80A - Central Rolling Red Prairies*Landform:* Paleoterrace on river valley*Parent material:* Loamy alluvium*Slope:* 3 to 7 percent*Drainage class:* Well drained*Slowest permeability:* Moderate (About 0.60 in/hr)*Available water capacity:* High (About 10.3 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 (pe24-32)*Land capability (nonirrigated):* 4e*Typical Profile:*

H1—0 to 8 inches; clay loam

H2—8 to 60 inches; clay loam

**Ck—Case-Clark complex, 7 to 15 percent slopes****Map Unit Composition**

Case: 60 percent

Clark: 40 percent

**Component Descriptions****Case***MLRA:* 80A - Central Rolling Red Prairies*Landform:* Paleoterrace on river valley*Parent material:* Alluvium*Slope:* 7 to 15 percent*Drainage class:* Well drained*Slowest permeability:* Moderate (About 0.60 in/hr)*Available water capacity:* High (About 10.2 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 (pe24-32)*Land capability (nonirrigated):* 6e*Typical Profile:*

H1—0 to 6 inches; clay loam

H2—6 to 60 inches; clay loam

**Clark***MLRA:* 80A - Central Rolling Red Prairies*Landform:* Paleoterrace on river valley*Parent material:* Loamy alluvium*Slope:* 7 to 12 percent*Drainage class:* Well drained*Slowest permeability:* Moderate (About 0.60 in/hr)*Available water capacity:* High (About 10.3 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 (pe24-32)

*Land capability (nonirrigated): 6e*

*Typical Profile:*

H1—0 to 8 inches; clay loam  
H2—8 to 60 inches; clay loam

**Cm—Clark clay loam, 1 to 4 percent slopes**

**Map Unit Composition**

Clark: 100 percent

**Component Descriptions**

**Clark**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Loamy alluvium  
*Slope:* 1 to 4 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* High (About 10.3 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Limy Upland (pe21-28)  
*Land capability (nonirrigated):* 3e

*Typical Profile:*

H1—0 to 8 inches; clay loam  
H2—8 to 60 inches; clay loam

**Minor Components**

**Unnamed Wet Soils**

*Phase:* Loamy, Depression

**Unnamed Wet Soils**

*Phase:* Loamy, Drainageway

**Cn—Clark fine sandy loam, 1 to 3 percent slopes**

**Map Unit Composition**

Clark: 100 percent

**Component Descriptions**

**Clark**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Loamy alluvium  
*Slope:* 1 to 3 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* High (About 10.0 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Limy Upland (pe24-32)  
*Land capability (nonirrigated):* 3e

*Typical Profile:*

H1—0 to 8 inches; fine sandy loam  
H2—8 to 60 inches; clay loam

**Co—Clark-Ost clay loams, 0 to 1 percent slopes**

**Map Unit Composition**

Clark: 70 percent  
Ost: 30 percent

**Component Descriptions**

**Clark**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Loamy alluvium  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* High (About 10.3 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low



*Ecological site:* Limy Upland (pe24-32)  
*Land capability (nonirrigated):* 2c

*Typical Profile:*

H1—0 to 8 inches; clay loam  
 H2—8 to 60 inches; clay loam

**Ost**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Loamy alluvium  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately slow (About 0.20 in/hr)  
*Available water capacity:* High (About 10.3 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Loamy Upland (pe24-32)  
*Land capability (nonirrigated):* 2c

*Typical Profile:*

H1—0 to 9 inches; clay loam  
 H2—9 to 14 inches; clay loam  
 H3—14 to 23 inches; clay loam  
 H4—23 to 60 inches; clay loam

**Cs—Lincoln loamy sand, occasionally flooded**

**Map Unit Composition**

Lincoln: 100 percent

**Component Descriptions**

**Lincoln**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Flood plain on river valley  
*Parent material:* Alluvium  
*Slope:* 0 to 2 percent  
*Drainage class:* Somewhat excessively drained  
*Slowest permeability:* Rapid (About 5.95 in/hr)  
*Available water capacity:* Low (About 3.3 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* Occasional

*Depth to seasonal water saturation:* About 60 to 72 inches

*Runoff class:* Negligible

*Ecological site:* Sandy Lowland (pe24-32)  
*Land capability (nonirrigated):* 6w

*Typical Profile:*

H1—0 to 10 inches; loamy fine sand  
 H2—10 to 60 inches; stratified fine sand to clay loam

**Minor Components**

**Unnamed Wet Soils**

*Phase:* Sandy, Drainageway

**Fa—Farnum clay loam, 3 to 6 percent slopes, eroded**

**Map Unit Composition**

Farnum: 100 percent

**Component Descriptions**

**Farnum**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Alluvium  
*Slope:* 3 to 6 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* High (About 9.9 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:* Loamy Upland (pe21-28)  
*Land capability (nonirrigated):* 4e

*Typical Profile:*

H1—0 to 7 inches; clay loam  
 H2—7 to 37 inches; clay loam  
 H3—37 to 60 inches; fine sandy loam

## Fe—Farnum fine sandy loam, 0 to 1 percent slopes

### Map Unit Composition

Farnum: 100 percent

### Component Descriptions

#### Farnum

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Alluvium

*Slope:* 0 to 1 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 9.6 inches)

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

*Flooding hazard:* None

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

*Runoff class:* Very low

*Ecological site:* Sandy (pe21-28)

*Land capability (irrigated):* 1

*Land capability (nonirrigated):* 2e

#### Typical Profile:

H1—0 to 11 inches; fine sandy loam

H2—11 to 41 inches; clay loam

H3—41 to 60 inches; fine sandy loam

#### Minor Components

##### Carwile

#### Unnamed Wet Soils

*Phase:* Loamy, Depression

## Fm—Farnum loam, 0 to 1 percent slopes

### Map Unit Composition

Farnum: 100 percent

### Component Descriptions

#### Farnum

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Alluvium

*Slope:* 0 to 1 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 10.4 inches)

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

*Flooding hazard:* None

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

*Runoff class:* Very low

*Ecological site:* Loamy Upland (pe21-28)

*Land capability (irrigated):* 1

*Land capability (nonirrigated):* 2c

#### Typical Profile:

H1—0 to 14 inches; loam

H2—14 to 26 inches; loam

H3—26 to 42 inches; clay loam

H4—42 to 60 inches; fine sandy loam

#### Minor Components

##### Unnamed Wet Soils

*Phase:* Loamy, Depression

## Fn—Farnum loam, 1 to 3 percent slopes

### Map Unit Composition

Farnum: 100 percent

### Component Descriptions

#### Farnum

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Paleoterrace on river valley

*Parent material:* Alluvium

*Slope:* 1 to 3 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 10.3 inches)

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

*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very low  
*Ecological site:* Loamy Upland (pe21-28)  
*Land capability (irrigated):* 2e  
*Land capability (nonirrigated):* 2e

*Typical Profile:*  
 H1—0 to 12 inches; loam  
 H2—12 to 48 inches; clay loam  
 H3—48 to 60 inches; fine sandy loam

**Minor Components**  
**Unnamed Wet Soils**  
*Phase:* Loamy, Depression

## **Fu—Farnum loam, 3 to 6 percent slopes**

### **Map Unit Composition**

Farnum: 100 percent

### **Component Descriptions**

**Farnum**  
*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Alluvium  
*Slope:* 3 to 6 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* High (About 10.3 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:* Loamy Upland (pe21-28)  
*Land capability (nonirrigated):* 3e

*Typical Profile:*  
 H1—0 to 12 inches; loam  
 H2—12 to 48 inches; clay loam  
 H3—48 to 60 inches; fine sandy loam

## **Fw—Farnum-Carwile complex, 0 to 1 percent slopes**

### **Map Unit Composition**

Farnum: 60 percent  
 Carwile: 40 percent

### **Component Descriptions**

**Farnum**  
*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Alluvium  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* High (About 10.3 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Negligible  
*Ecological site:* Loamy Upland (pe21-28)  
*Land capability (irrigated):* 1  
*Land capability (nonirrigated):* 2c

*Typical Profile:*  
 H1—0 to 12 inches; loam  
 H2—12 to 48 inches; clay loam  
 H3—48 to 60 inches; fine sandy loam

**Carwile**  
*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Depression on paleoterrace on river valley  
*Parent material:* Alluvium  
*Slope:* 0 to 1 percent  
*Drainage class:* Somewhat poorly drained  
*Slowest permeability:* Slow (About 0.06 in/hr)  
*Available water capacity:* High (About 9.4 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* About 0 to 0 inches  
*Runoff class:* Negligible  
*Ecological site:* Sandy (pe21-28)  
*Land capability (nonirrigated):* 2w

*Typical Profile:*

H1—0 to 12 inches; fine sandy loam  
 H2—12 to 20 inches; sandy clay loam  
 H3—20 to 33 inches; clay  
 H4—33 to 60 inches; sandy clay loam

## GRP—Gravel Pit

## INT—Aquolls

*General Considerations:* This map unit was formerly labeled as an Intermittent Water spot symbol. These depressional areas contain soils that are occasionally ponded for long duration.

## Kp—Kanza-Plevna complex, frequently flooded

### Map Unit Composition

Kanza: 50 percent  
 Plevna: 50 percent

### Component Descriptions

#### Kanza

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Flood plain on river valley  
*Parent material:* Alluvium  
*Slope:* 0 to 2 percent  
*Drainage class:* Poorly drained  
*Slowest permeability:* Rapid (About 5.95 in/hr)  
*Available water capacity:* Low (About 3.8 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* Frequent  
*Depth to seasonal water saturation:* About 0 to 36 inches  
*Runoff class:* Negligible  
*Land capability (nonirrigated):* 5w

#### *Typical Profile:*

H1—0 to 11 inches; loamy fine sand  
 H2—11 to 40 inches; fine sand

#### Plevna

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Flood plain on river valley  
*Parent material:* Alluvium  
*Slope:* 0 to 1 percent

*Drainage class:* Poorly drained  
*Slowest permeability:* Moderately rapid (About 2.00 in/hr)  
*Available water capacity:* Moderate (About 6.9 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* Frequent  
*Depth to seasonal water saturation:* About 0 to 24 inches  
*Runoff class:* Negligible  
*Ecological site:* Subirrigated (pe21-28)  
*Land capability (nonirrigated):* 5w

#### *Typical Profile:*

H1—0 to 10 inches; fine sandy loam  
 H2—10 to 40 inches; fine sandy loam  
 H3—40 to 60 inches; fine sand

## Ks—Elandco silt loam, occasionally flooded

### Map Unit Composition

Elandco: 100 percent

### Component Descriptions

#### Elandco

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Flood plain on river valley  
*Parent material:* Alluvium  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* High (About 11.2 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 (pe21-28)  
*Land capability (nonirrigated):* 2w

#### *Typical Profile:*

H1—0 to 18 inches; silt loam  
 H2—18 to 60 inches; silty clay loam

**Kw—Elandco silt loam, frequently flooded****Map Unit Composition**

Elandco: 100 percent

**Component Descriptions****Elandco**

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Flood plain on river valley

*Parent material:* Alluvium

*Slope:* 0 to 1 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 11.2 inches)

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

*Flooding hazard:* Frequent

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

*Runoff class:* Negligible

*Ecological site:* Loamy Lowland (pe21-28)

*Land capability (nonirrigated):* 5w

*Typical Profile:*

H1—0 to 18 inches; silt loam

H2—18 to 60 inches; silty clay loam

*Available water capacity:* High (About 9.1 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

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

*Runoff class:* Negligible

*Ecological site:* Sandy (pe21-28)

*Land capability (irrigated):* 1

*Land capability (nonirrigated):* 2e

*Typical Profile:*

H1—0 to 8 inches; fine sandy loam

H2—8 to 38 inches; fine sandy loam

H3—38 to 60 inches; fine sandy loam

**Nf—Naron fine sandy loam, 1 to 3 percent slopes****Map Unit Composition**

Naron: 100 percent

**Component Descriptions****Naron**

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Dune on paleoterrace on river valley

*Parent material:* Loamy eolian deposits

*Slope:* 1 to 3 percent

*Drainage class:* Well drained

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

*Available water capacity:* High (About 9.1 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

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

*Runoff class:* Very low

*Ecological site:* Sandy (pe21-28)

*Land capability (irrigated):* 2e

*Land capability (nonirrigated):* 3e

*Typical Profile:*

H1—0 to 8 inches; fine sandy loam

H2—8 to 38 inches; fine sandy loam

H3—38 to 60 inches; fine sandy loam

**Nd—Naron fine sandy loam, 0 to 1 percent slopes****Map Unit Composition**

Naron: 100 percent

**Component Descriptions****Naron**

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Dune on paleoterrace on river valley

*Parent material:* Loamy eolian deposits

*Slope:* 0 to 1 percent

*Drainage class:* Well drained

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

**Minor Components****Carwile****Unnamed Wet Soils***Phase:* Loamy, Depression**Ng—Naron fine sandy loam, 3 to 6 percent slopes****Map Unit Composition**

Naron: 100 percent

**Component Descriptions****Naron***MLRA:* 79 - Great Bend Sand Plains*Landform:* Dune on paleoterrace on river valley*Parent material:* Loamy eolian deposits*Slope:* 3 to 6 percent*Drainage class:* Well drained*Slowest permeability:* Moderate (About 0.60 in/hr)*Available water capacity:* High (About 9.1 inches)*Shrink-swell potential:* Low (About 1.5 LEP)*Flooding hazard:* None*Depth to seasonal water saturation:* More than 6 feet*Runoff class:* Low*Ecological site:* Sandy (pe21-28)*Land capability (nonirrigated):* 4e*Typical Profile:*

H1—0 to 8 inches; fine sandy loam

H2—8 to 38 inches; fine sandy loam

H3—38 to 60 inches; fine sandy loam

**Minor Components****Carwile****Nk—Naron loam, 0 to 1 percent slopes****Map Unit Composition**

Naron: 100 percent

**Component Descriptions****Naron***MLRA:* 79 - Great Bend Sand Plains*Landform:* Dune on paleoterrace on river valley*Parent material:* Loamy eolian deposits*Slope:* 0 to 1 percent*Drainage class:* Well drained*Slowest permeability:* Moderate (About 0.60 in/hr)*Available water capacity:* High (About 9.4 inches)*Shrink-swell potential:* Low (About 1.5 LEP)*Flooding hazard:* None*Depth to seasonal water saturation:* More than 6 feet*Runoff class:* Negligible*Ecological site:* Sandy (pe21-28)*Land capability (irrigated):* 1*Land capability (nonirrigated):* 2c*Typical Profile:*

H1—0 to 11 inches; loam

H2—11 to 38 inches; fine sandy loam

H3—38 to 60 inches; fine sandy loam

**Minor Components****Carwile****Unnamed Wet Soils***Phase:* Loamy, Depression**Nm—Naron loam, 1 to 3 percent slopes****Map Unit Composition**

Naron: 100 percent

**Component Descriptions****Naron***MLRA:* 79 - Great Bend Sand Plains*Landform:* Dune on paleoterrace on river valley*Parent material:* Loamy eolian deposits*Slope:* 1 to 3 percent*Drainage class:* Well drained*Slowest permeability:* Moderate (About 0.60 in/hr)*Available water capacity:* High (About 9.4 inches)*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very low  
*Ecological site:* Sandy (pe21-28)  
*Land capability (irrigated):* 2e  
*Land capability (nonirrigated):* 2e

*Typical Profile:*

H1—0 to 11 inches; loam  
 H2—11 to 38 inches; fine sandy loam  
 H3—38 to 60 inches; fine sandy loam

**Minor Components**

**Carwile**

**Unnamed Wet Soils**

*Phase:* Loamy, Depression

**Unnamed Wet Soils**

*Phase:* Loamy, Drainageway

**Nn—Naron-Farnum complex, 0 to 3 percent slopes**

**Map Unit Composition**

Naron: 55 percent  
 Farnum: 45 percent

**Component Descriptions**

**Naron**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Dune on paleoterrace on river valley  
*Parent material:* Loamy eolian deposits  
*Slope:* 1 to 3 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* High (About 9.1 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very low  
*Ecological site:* Sandy (pe21-28)  
*Land capability (irrigated):* 2e  
*Land capability (nonirrigated):* 3e

*Typical Profile:*

H1—0 to 11 inches; fine sandy loam  
 H2—11 to 38 inches; fine sandy loam  
 H3—38 to 60 inches; fine sandy loam

**Farnum**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Alluvium  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* High (About 10.3 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very low  
*Ecological site:* Loamy Lowland (pe21-28)  
*Land capability (irrigated):* 1  
*Land capability (nonirrigated):* 2c

*Typical Profile:*

H1—0 to 12 inches; loam  
 H2—12 to 48 inches; clay loam  
 H3—48 to 60 inches; fine sandy loam

**Minor Components**

**Carwile**

**Unnamed Wet Soils**

*Phase:* Loamy, Depression

**Unnamed Wet Soils**

*Phase:* Loamy, Drainageway

**Oc—Ost clay loam, 0 to 1 percent slopes**

**Map Unit Composition**

Ost: 100 percent

**Component Descriptions**

**Ost**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Loamy alluvium  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained

*Slowest permeability:* Moderately slow (About 0.20 in/hr)  
*Available water capacity:* High (About 10.3 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Loamy Lowland (pe21-28)  
*Land capability (nonirrigated):* 2c

*Typical Profile:*

H1—0 to 9 inches; clay loam  
 H2—9 to 14 inches; clay loam  
 H3—14 to 23 inches; clay loam  
 H4—23 to 60 inches; clay loam

## **Os—Ost clay loam, 1 to 4 percent slopes**

### **Map Unit Composition**

Ost: 100 percent

### **Component Descriptions**

#### **Ost**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Loamy alluvium  
*Slope:* 1 to 4 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately slow (About 0.20 in/hr)  
*Available water capacity:* High (About 10.3 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:* Loamy Upland (pe21-28)  
*Land capability (nonirrigated):* 2e

*Typical Profile:*

H1—0 to 9 inches; clay loam  
 H2—9 to 14 inches; clay loam  
 H3—14 to 23 inches; clay loam  
 H4—23 to 60 inches; clay loam

#### **Minor Components** **Unnamed Wet Soils**

*Phase:* Loamy, Depression

#### **Unnamed Wet Soils**

*Phase:* Loamy, Drainageway

## **Pm—Pratt loamy fine sand, 3 to 8 percent slopes**

### **Map Unit Composition**

Pratt: 100 percent

### **Component Descriptions**

#### **Pratt**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Dune on paleoterrace on river valley  
*Parent material:* Sandy eolian deposits  
*Slope:* 3 to 8 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Rapid (About 5.95 in/hr)  
*Available water capacity:* Moderate (About 6.4 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very low  
*Ecological site:* Sands (pe21-28)  
*Land capability (irrigated):* 3e  
*Land capability (nonirrigated):* 4e

*Typical Profile:*

H1—0 to 10 inches; loamy fine sand  
 H2—10 to 40 inches; loamy fine sand  
 H3—40 to 60 inches; loamy fine sand

#### **Minor Components** **Carwile**

#### **Unnamed Wet Soils**

*Phase:* Sandy, Depression



**Pn—Pratt loamy fine sand, 8 to 12 percent slopes****Map Unit Composition**

Pratt: 100 percent

**Component Descriptions****Pratt**

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Dune on paleoterrace on river valley

*Parent material:* Sandy eolian deposits

*Slope:* 8 to 12 percent

*Drainage class:* Well drained

*Slowest permeability:* Rapid (About 5.95 in/hr)

*Available water capacity:* Moderate (About 6.4 inches)

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

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

*Runoff class:* Low

*Ecological site:* Sands (pe21-28)

*Land capability (nonirrigated):* 6e

*Typical Profile:*

H1—0 to 10 inches; loamy fine sand

H2—10 to 40 inches; loamy fine sand

H3—40 to 60 inches; loamy fine sand

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None

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

*Runoff class:* Very low

*Ecological site:* Sands (pe21-28)

*Land capability (irrigated):* 3e

*Land capability (nonirrigated):* 4e

*Typical Profile:*

H1—0 to 10 inches; loamy fine sand

H2—10 to 40 inches; loamy fine sand

H3—40 to 60 inches; loamy fine sand

**Carwile**

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Depression on paleoterrace on river valley

*Parent material:* Alluvium

*Slope:* 0 to 1 percent

*Drainage class:* Somewhat poorly drained

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

*Available water capacity:* High (About 9.4 inches)

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

*Flooding hazard:* None

*Depth to seasonal water saturation:* About 0 to 0 inches

*Runoff class:* Very low

*Ecological site:* Sandy (pe21-28)

*Land capability (nonirrigated):* 2w

*Typical Profile:*

H1—0 to 12 inches; fine sandy loam

H2—12 to 20 inches; sandy clay loam

H3—20 to 33 inches; clay

H4—33 to 60 inches; sandy clay loam

**Po—Pratt-Carwile complex, 0 to 8 percent slopes****Map Unit Composition**

Pratt: 60 percent

Carwile: 40 percent

**Component Descriptions****Pratt**

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Dune on paleoterrace on river valley

*Parent material:* Sandy eolian deposits

*Slope:* 3 to 8 percent

*Drainage class:* Well drained

*Slowest permeability:* Rapid (About 5.95 in/hr)

*Available water capacity:* Moderate (About 6.4 inches)

**Minor Components****Unnamed Wet Soils**

*Phase:* Sandy, Depression

**PRR—Pratt loamy fine sand, 1 to 5 percent slopes****Map Unit Composition**

Pratt: 100 percent

**Component Descriptions****Pratt**

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Dune on paleoterrace on river valley  
*Parent material:* Sandy eolian deposits  
*Slope:* 1 to 5 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Rapid (About 5.95 in/hr)  
*Available water capacity:* Moderate (About 6.4 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very low  
*Ecological site:* Sands (pe21-28)  
*Land capability (irrigated):* 3e  
*Land capability (nonirrigated):* 3e

**Typical Profile:**

H1—0 to 12 inches; loamy fine sand  
 H2—12 to 36 inches; loamy fine sand  
 H3—36 to 60 inches; loamy fine sand

**Minor Components**  
**Carwile**

**Unnamed Wet Soils**  
*Phase:* Sandy, Depression

**PSS—Pratt loamy fine sand, 5 to 10 percent slopes**

**Map Unit Composition**

Pratt: 100 percent

**Component Descriptions**

**Pratt**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Dune on paleoterrace on river valley  
*Parent material:* Sandy eolian deposits  
*Slope:* 5 to 10 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Rapid (About 5.95 in/hr)  
*Available water capacity:* Moderate (About 6.3 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very low  
*Ecological site:* Sands (pe21-28)  
*Land capability (irrigated):* 3e

*Land capability (nonirrigated):* 4e

**Typical Profile:**

H1—0 to 8 inches; loamy fine sand  
 H2—8 to 28 inches; loamy fine sand  
 H3—28 to 60 inches; loamy fine sand

**Minor Components**  
**Carwile**

**Unnamed Wet Soils**  
*Phase:* Sandy, Depression

**Pt—Pratt-Tivoli loamy fine sands, 8 to 15 percent slopes**  
**Map Unit Composition**

Pratt: 60 percent  
 Tivoli: 40 percent

**Component Descriptions**

**Pratt**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Dune on paleoterrace on river valley  
*Parent material:* Sandy eolian deposits  
*Slope:* 8 to 12 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Rapid (About 5.95 in/hr)  
*Available water capacity:* Moderate (About 6.4 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Sands (pe21-28)  
*Land capability (nonirrigated):* 6e

**Typical Profile:**

H1—0 to 10 inches; loamy fine sand  
 H2—10 to 40 inches; loamy fine sand  
 H3—40 to 60 inches; loamy fine sand

**Tivoli**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Dune on paleoterrace on river valley  
*Parent material:* Sandy eolian deposits  
*Slope:* 8 to 15 percent  
*Drainage class:* Excessively drained  
*Slowest permeability:* Rapid (About 5.95 in/hr)  
*Available water capacity:* Low (About 3.2 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Land capability (nonirrigated):* 7e

*Typical Profile:*  
 H1—0 to 6 inches; loamy fine sand  
 H2—6 to 60 inches; fine sand

## **PTT—Pratt-Tivoli loamy fine sands, 5 to 15 percent slopes**

### **Map Unit Composition**

Pratt: 60 percent  
 Tivoli: 40 percent

### **Component Descriptions**

#### **Pratt**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Dune on paleoterrace on river valley  
*Parent material:* Sandy eolian deposits  
*Slope:* 5 to 15 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Rapid (About 5.95 in/hr)  
*Available water capacity:* Moderate (About 6.3 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Sands (pe21-28)  
*Land capability (nonirrigated):* 6e

*Typical Profile:*  
 H1—0 to 10 inches; loamy fine sand  
 H2—10 to 32 inches; loamy fine sand  
 H3—32 to 60 inches; fine sand

#### **Tivoli**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Dune on paleoterrace on river valley  
*Parent material:* Sandy eolian deposits  
*Slope:* 5 to 15 percent  
*Drainage class:* Excessively drained  
*Slowest permeability:* Rapid (About 5.95 in/hr)  
*Available water capacity:* Low (About 3.2 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None

*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Sands (pe21-28)  
*Land capability (nonirrigated):* 7e

*Typical Profile:*  
 H1—0 to 7 inches; loamy fine sand  
 H2—7 to 60 inches; fine sand

## **Sa—Albion-Kaski complex, 0 to 15 percent slopes**

### **Map Unit Composition**

Albion: 70 percent  
 Kaski: 30 percent

### **Component Descriptions**

#### **Albion**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Loamy alluvium  
*Slope:* 7 to 15 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderately rapid (About 2.00 in/hr)  
*Available water capacity:* Moderate (About 6.0 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Medium  
*Ecological site:* Sandy (pe21-28)  
*Land capability (nonirrigated):* 6e

*Typical Profile:*  
 H1—0 to 8 inches; fine sandy loam  
 H2—8 to 18 inches; sandy loam  
 H3—18 to 29 inches; coarse sandy loam  
 H4—29 to 60 inches; gravelly sand

#### **Kaski**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Flood plain on river valley  
*Parent material:* Alluvium  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)

*Available water capacity:* High (About 10.5 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 (pe21-28)  
*Land capability (nonirrigated):* 2w

*Typical Profile:*

H1—0 to 26 inches; loam  
 H2—26 to 40 inches; loam  
 H3—40 to 60 inches; sandy loam

**Sb—Shellabarger fine sandy loam,  
0 to 1 percent slopes**

**Map Unit Composition**

Shellabarger: 100 percent

**Component Descriptions**

**Shellabarger**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Loamy alluvium  
*Slope:* 0 to 1 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* Moderate (About 8.5 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Negligible  
*Ecological site:* Sandy (pe24-32)  
*Land capability (nonirrigated):* 2e

*Typical Profile:*

H1—0 to 11 inches; fine sandy loam  
 H2—11 to 34 inches; sandy clay loam  
 H3—34 to 60 inches; coarse sandy loam

**Se—Shellabarger fine sandy loam,  
1 to 4 percent slopes**

**Map Unit Composition**

Shellabarger: 100 percent

**Component Descriptions**

**Shellabarger**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Loamy alluvium  
*Slope:* 1 to 4 percent  
*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* Moderate (About 8.5 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very low  
*Ecological site:* Sandy (pe21-28)  
*Land capability (nonirrigated):* 2e

*Typical Profile:*

H1—0 to 11 inches; fine sandy loam  
 H2—11 to 34 inches; sandy clay loam  
 H3—34 to 60 inches; coarse sandy loam

**Minor Components**

**Unnamed Wet Soils**

*Phase:* Sandy, Drainageway

**Sf—Shellabarger fine sandy loam,  
3 to 7 percent slopes, eroded**

**Map Unit Composition**

Shellabarger: 100 percent

**Component Descriptions**

**Shellabarger**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Loamy alluvium  
*Slope:* 3 to 7 percent

*Drainage class:* Well drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* Moderate (About 8.5 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Sandy (pe24-32)  
*Land capability (nonirrigated):* 3e

*Typical Profile:*

H1—0 to 11 inches; fine sandy loam  
 H2—11 to 34 inches; sandy clay loam  
 H3—34 to 60 inches; coarse sandy loam

**Minor Components**

**Unnamed Wet Soils**

*Phase:* Sandy, Drainageway

**Ta—Tabler clay loam, 0 to 1 percent slopes**

**Map Unit Composition**

Tabler: 100 percent

**Component Descriptions**

**Tabler**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Paleoterrace on river valley  
*Parent material:* Clayey alluvium  
*Slope:* 0 to 1 percent  
*Drainage class:* Moderately well drained  
*Slowest permeability:* Very slow (About 0.00 in/hr)  
*Available water capacity:* High (About 9.6 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Very low  
*Ecological site:* Clay Upland (pe21-28)  
*Land capability (nonirrigated):* 2s

*Typical Profile:*

H1—0 to 10 inches; clay loam  
 H2—10 to 40 inches; silty clay

H3—40 to 60 inches; silty clay

**Minor Components**

**Carwile**

**Unnamed Wet Soils**

*Phase:* Clayey, Depression

**Unnamed Wet Soils**

*Phase:* Clayey, Drainageway

**Tf—Tivoli fine sand, 12 to 25 percent slopes**

**Map Unit Composition**

Tivoli: 100 percent

**Component Descriptions**

**Tivoli**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Dune on paleoterrace on river valley  
*Parent material:* Sandy eolian deposits  
*Slope:* 12 to 25 percent  
*Drainage class:* Excessively drained  
*Slowest permeability:* Rapid (About 5.95 in/hr)  
*Available water capacity:* Very low (About 3.0 inches)  
*Shrink-swell potential:* Low (About 1.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* More than 6 feet  
*Runoff class:* Low  
*Ecological site:* Choppy Sands (pe21-28)  
*Land capability (nonirrigated):* 7e

*Typical Profile:*

H1—0 to 6 inches; fine sand  
 H2—6 to 60 inches; fine sand

**W—Water**

*General Considerations:* Water includes streams, lakes, ponds, and estuaries. These areas are covered with water in most years, at least during the period that is warm enough for plants to grow. Many areas are covered throughout the year.

## **Wa—Waldeck fine sandy loam, occasionally flooded**

### **Map Unit Composition**

Waldeck: 100 percent

### **Component Descriptions**

#### **Waldeck**

*MLRA:* 80A - Central Rolling Red Prairies

*Landform:* Flood plain on river valley

*Parent material:* Alluvium

*Slope:* 0 to 2 percent

*Drainage class:* Somewhat poorly drained

*Slowest permeability:* Moderately rapid (About 2.00 in/hr)

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

*Shrink-swell potential:* Low (About 1.5 LEP)

*Flooding hazard:* Occasional

*Depth to seasonal water saturation:* About 24 to 48 inches

*Runoff class:* Negligible

*Ecological site:* Subirrigated (pe24-32)

*Land capability (nonirrigated):* 3w

#### *Typical Profile:*

H1—0 to 15 inches; fine sandy loam

H2—15 to 46 inches; fine sandy loam

H3—46 to 60 inches; fine sand

#### **Minor Components**

**Plevna**

## **Wd—Kingman clay loam, occasionally flooded**

### **Map Unit Composition**

Kingman: 100 percent

### **Component Descriptions**

#### **Kingman**

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Flood plain

*Parent material:* Alluvium

*Slope:* 0 to 1 percent

*Drainage class:* Poorly drained

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

*Available water capacity:* High (About 10.0 inches)

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

*Flooding hazard:* Occasional

*Depth to seasonal water saturation:* About 0 to 24 inches

*Runoff class:* Negligible

*Ecological site:* Subirrigated (pe21-28)

*Land capability (nonirrigated):* 5w

#### *Typical Profile:*

H1—0 to 10 inches; silty clay loam

H2—10 to 60 inches; sandy loam

## **Ze—Zenda clay loam, occasionally flooded**

### **Map Unit Composition**

Zenda: 100 percent

### **Component Descriptions**

#### **Zenda**

*MLRA:* 79 - Great Bend Sand Plains

*Landform:* Dune on paleoterrace on river valley

*Parent material:* Sandy eolian deposits

*Slope:* 0 to 1 percent

*Drainage class:* Somewhat poorly drained

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

*Available water capacity:* High (About 10.5 inches)

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

*Flooding hazard:* Occasional

*Depth to seasonal water saturation:* About 24 to 48 inches

*Runoff class:* Very low

*Ecological site:* Subirrigated (pe21-28)

*Land capability (nonirrigated):* 2w

#### *Typical Profile:*

H1—0 to 14 inches; clay loam

H2—14 to 60 inches; clay loam

#### **Minor Components**

##### **Unnamed Wet Soils**

*Phase:* Clayey, Depression

## **Zs—Zenda-Drummond complex, occasionally flooded**

### **Map Unit Composition**

Drummond: 50 percent  
Zenda: 50 percent

### **Component Descriptions**

#### **Zenda**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Dune on paleoterrace on river valley  
*Parent material:* Sandy eolian deposits  
*Slope:* 0 to 2 percent  
*Drainage class:* Somewhat poorly drained  
*Slowest permeability:* Moderate (About 0.60 in/hr)  
*Available water capacity:* High (About 10.5 inches)  
*Shrink-swell potential:* Moderate (About 4.5 LEP)  
*Flooding hazard:* Occasional  
*Depth to seasonal water saturation:* About 24 to 48 inches  
*Runoff class:* Very low  
*Ecological site:* Subirrigated (pe21-28)  
*Land capability (nonirrigated):* 4s

#### *Typical Profile:*

H1—0 to 14 inches; clay loam  
H2—14 to 60 inches; clay loam

#### **Drummond**

*MLRA:* 79 - Great Bend Sand Plains  
*Landform:* Terrace on river valley  
*Parent material:* Clayey and/or loamy alluvium  
*Slope:* 0 to 2 percent  
*Drainage class:* Somewhat poorly drained  
*Slowest permeability:* Very slow (About 0.00 in/hr)  
*Available water capacity:* Very low (About 2.8 inches)  
*Shrink-swell potential:* High (About 7.5 LEP)  
*Flooding hazard:* None  
*Depth to seasonal water saturation:* About 24 to 48 inches  
*Runoff class:* Very low  
*Ecological site:* Saline Lowland (pe21-28)  
*Land capability (nonirrigated):* 6s

#### *Typical Profile:*

H1—0 to 8 inches; clay loam  
H2—8 to 30 inches; clay  
H3—30 to 60 inches; variable

#### **Minor Components**

##### **Unnamed Wet Soils**

*Phase:* Clayey, Depression