

CONSTRUCTION MATERIALS
Chase County, Kansas

Construction Materials

The following tables give information about the soils as potential sources of gravel, sand, topsoil, reclamation material, and roadfill. Normal compaction, minor processing, and other standard construction practices are assumed.

The soils are rated good, fair, or poor as potential sources of topsoil, reclamation material, and roadfill. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of topsoil, reclamation material, or roadfill. The lower the number, the greater the limitation.

The soils are rated as a probable or improbable source of sand and gravel. A rating of probable means that the source material is likely to be in or below the soil. The numerical ratings in these columns indicate the degree of probability. The number 0.00 indicates that the soil is an improbable source. A number between 0.00 and 1.00 indicates the degree to which the soil is a probable source of sand or gravel.

Sand and gravel are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In these tables, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the lowest layer of the soil contains sand or gravel, the soil is rated as a probable source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

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(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Potential source of gravel | | Potential source of sand | |
|-----------------------------|---------------------------|--|--------------|--|--------------|
| | | Rating class | Value | Rating class | Value |
| 015CS: Clime----- | 67 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Sogn----- | 30 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| 015FC: Florence----- | 85 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| 015TU: Tully----- | 90 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| 073LD: Labette----- | 65 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Dwight----- | 30 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| 073LS: Labette----- | 50 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Sogn----- | 35 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| 111LD: Labette----- | 60 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Dwight----- | 40 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| 111OA: Olpe----- | 70 | Fair Thickest layer Bottom layer | 0.00 0.25 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Kenoma----- | 30 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| 111TA: Tully----- | 100 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| 111ZA: Zaar----- | 100 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| 115CR: Clime, rocky----- | 80 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| 115FC: Florence----- | 85 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| 115IC: Irwin----- | 90 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |

CONSTRUCTION MATERIALS--Continued
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(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Potential source of gravel | | Potential source of sand | |
|------------------------------|---------------------------|--|--------------|--|--------------|
| | | Rating class | Value | Rating class | Value |
| 115LG: Labette----- | 65 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Sogn----- | 25 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| 115TU: Tully----- | 90 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| 127FC: Florence----- | 90 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| 127LB: Labette----- | 90 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| AED: Arents, Earthen Dam- | 100 | Not rated | | Not rated | |
| Ar: Ivan----- | 80 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| BOP: Borrow Pits----- | 100 | Not rated | | Not rated | |
| Ch: Chase----- | 90 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Cs: Clime----- | 47 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Sogn----- | 20 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| CSS: Clime----- | 60 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Sogn----- | 20 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| DT: Dwight----- | 90 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Dw: Dwight----- | 85 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Fa: Florence----- | 47 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Labette----- | 34 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |

CONSTRUCTION MATERIALS--Continued
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(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Potential source of gravel | | Potential source of sand | |
|-----------------------------|---------------------------|--|--------------|--|--------------|
| | | Rating class | Value | Rating class | Value |
| Fm: Florence----- | 70 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Matfield----- | 25 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| GRP: Gravel Pits----- | 100 | Not rated | | Not rated | |
| Ic: Irwin----- | 85 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| In: Irwin, eroded----- | 95 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| INT: Aquolls----- | 100 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Ir: Irwin----- | 90 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Is: Irwin, eroded----- | 90 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Iv: Ivan----- | 85 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Ka: Kahola----- | 85 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| La: Labette----- | 85 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| LAA: Labette----- | 90 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Lb: Labette----- | 85 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Lc: Labette, eroded----- | 90 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Ld: Labette----- | 50 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Dwight----- | 41 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |

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(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Potential source of gravel | | Potential source of sand | |
|------------------------------|---------------------------|--|--------------|--|--------------|
| | | Rating class | Value | Rating class | Value |
| Le: Labette----- | 47 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Sogn----- | 38 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| LEE: Labette----- | 70 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Sogn----- | 20 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Lm: Ladysmith----- | 85 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Lo: Ladysmith----- | 85 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Ls: Ladysmith, eroded--- | 85 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| LSS: Ladysmith----- | 90 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| M-W: Miscellaneous Water- | 100 | Not rated | | Not rated | |
| Ma: Martin----- | 85 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| MBB: Martin----- | 100 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Mc: Martin, eroded----- | 85 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Mg: Martin, eroded----- | 80 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Gullied Land----- | 20 | Not rated | | Not rated | |
| Om: Olpe----- | 60 | Fair Thickest layer Bottom layer | 0.00 0.25 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Smolan----- | 40 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Os: Osage----- | 90 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |

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(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Potential source of gravel | | Potential source of sand | |
|-----------------------------|---------------------------|--|--------------|--|--------------|
| | | Rating class | Value | Rating class | Value |
| QUA: Quarries----- | 100 | Not rated | | Not rated | |
| Ra: Reading----- | 85 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| RAA: Reading----- | 90 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Rd: Reading----- | 90 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Re: Reading, eroded---- | 90 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Sm: Smolan----- | 90 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| So: Solomon----- | 100 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| St: Clime----- | 100 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Tc: Tully----- | 85 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Ts: Tully, eroded----- | 85 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Tu: Tully----- | 70 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| W: Water Areas----- | 100 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Za: Zaar----- | 85 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Zd: Zaar----- | 55 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |
| Dwight----- | 45 | Poor Bottom layer Thickest layer | 0.00 0.00 | Poor Bottom layer Thickest layer | 0.00 0.00 |

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(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Potential source of reclamation material | | Potential source of roadfill | | Potential source of topsoil | |
|-----------------------------|---------------------------|--|--------------------------------------|---|----------------------|--|----------------------|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| 015CS: Cline----- | 67 | Poor Too clayey Droughty Depth to bedrock | 0.00 0.71 0.79 | Poor Depth to bedrock Shrink-swell | 0.00 0.12 | Poor Too Clayey Depth to bedrock Slope | 0.00 0.79 0.96 |
| Sogn----- | 30 | Poor Droughty Depth to bedrock Too clayey | 0.00 0.00 0.98 | Poor Depth to bedrock | 0.00 | Poor Depth to bedrock Too Clayey Slope | 0.00 0.93 0.96 |
| 015FC: Florence----- | 85 | Poor Too clayey Droughty | 0.00 0.37 | Fair Depth to bedrock Shrink-swell No cobble limitation | 0.16 0.19 0.99 | Poor Too Clayey Rock fragments Hard to reclaim | 0.00 0.00 0.00 |
| 015TU: Tully----- | 90 | Poor Too clayey Low content of organic matter No water erosion limitation | 0.00 0.82 0.99 | Fair Shrink-swell | 0.12 | Poor Too Clayey Rock fragments | 0.00 0.88 |
| 073LD: Labette----- | 65 | Poor Too clayey Depth to bedrock Too acid No water erosion limitation | 0.00 0.93 0.95 0.99 | Poor Depth to bedrock Shrink-swell | 0.00 0.12 | Poor Rock fragments Too Clayey Depth to bedrock | 0.00 0.00 0.93 |
| Dwight----- | 30 | Poor Too clayey Sodium content Low content of organic matter Water erosion | 0.00 0.00 0.88 0.90 | Fair Depth to bedrock Shrink-swell | 0.12 0.12 | Poor Too Clayey Sodium content | 0.00 0.00 |
| 073LS: Labette----- | 50 | Poor Too clayey Depth to bedrock Droughty Too acid No water erosion limitation | 0.00 0.21 0.56 0.95 0.99 | Poor Depth to bedrock Shrink-swell | 0.00 0.12 | Poor Rock fragments Too Clayey Depth to bedrock | 0.00 0.00 0.21 |
| Sogn----- | 35 | Poor Depth to bedrock Droughty Too clayey | 0.00 0.00 0.98 | Poor Depth to bedrock Shrink-swell | 0.00 0.87 | Poor Depth to bedrock Too Clayey | 0.00 0.93 |
| 111LD: Labette----- | 60 | Poor Too clayey Too acid Depth to bedrock No water erosion limitation | 0.00 0.95 0.99 0.99 | Poor Depth to bedrock Shrink-swell | 0.00 0.12 | Poor Rock fragments Too Clayey Depth to bedrock | 0.00 0.00 0.99 |
| Dwight----- | 40 | Poor Too clayey Sodium content Water erosion | 0.00 0.00 0.90 | Fair Shrink-swell Depth to bedrock | 0.12 0.46 | Poor Too Clayey Sodium content | 0.00 0.00 |
| 111OA: Olpe----- | 70 | Poor Droughty Low content of organic matter Too acid | 0.00 0.12 0.84 | Fair Shrink-swell | 0.92 | Poor Hard to reclaim Rock fragments Slope | 0.00 0.00 0.96 |

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(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Potential source of reclamation material | | Potential source of roadfill | | Potential source of topsoil | |
|------------------------------|---------------------------|--|--------------------------------------|--|----------------------|--|------------------------------|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| Kenoma----- | 30 | Poor Too clayey Too acid Water erosion | 0.00 0.84 0.90 | Poor Depth to saturated zone Shrink-swell | 0.00 0.12 | Poor Too Clayey Depth to saturated zone | 0.00 0.00 |
| 111TA: Tully----- | 100 | Poor Too clayey No water erosion limitation | 0.00 0.99 | Fair Shrink-swell | 0.21 | Poor Too Clayey Rock fragments | 0.00 0.88 |
| 111ZA: Zaar----- | 100 | Poor Too clayey Too acid | 0.00 0.95 | Fair Shrink-swell Depth to saturated zone | 0.12 0.14 | Poor Too Clayey Depth to saturated zone | 0.00 0.14 |
| 115CR: Cline, rocky----- | 80 | Poor Too clayey Depth to bedrock Droughty | 0.00 0.05 0.33 | Poor Depth to bedrock Slope Shrink-swell | 0.00 0.08 0.87 | Poor Slope Too Clayey Depth to bedrock | 0.00 0.00 0.05 |
| 115FC: Florence----- | 85 | Poor Too clayey Droughty | 0.00 0.90 | Fair Depth to bedrock Shrink-swell Cobble content | 0.16 0.23 0.98 | Poor Too Clayey Rock fragments Hard to reclaim Slope | 0.00 0.00 0.00 0.96 |
| 115IC: Irwin----- | 90 | Poor Too clayey No water erosion limitation | 0.00 0.99 | Fair Shrink-swell | 0.16 | Poor Too Clayey | 0.00 |
| 115LG: Labette----- | 65 | Poor Too clayey Depth to bedrock Too acid No water erosion limitation | 0.00 0.93 0.95 0.99 | Poor Depth to bedrock Shrink-swell | 0.00 0.12 | Poor Rock fragments Too Clayey Depth to bedrock | 0.00 0.00 0.93 |
| Sogn----- | 25 | Poor Droughty Depth to bedrock Too clayey | 0.00 0.00 0.98 | Poor Depth to bedrock Shrink-swell | 0.00 0.87 | Poor Depth to bedrock Slope Too Clayey | 0.00 0.37 0.93 |
| 115TU: Tully----- | 90 | Poor Too clayey No water erosion limitation | 0.00 0.99 | Fair Shrink-swell | 0.21 | Poor Too Clayey Rock fragments | 0.00 0.88 |
| 127FC: Florence----- | 90 | Poor Too clayey Droughty | 0.00 0.24 | Fair Depth to bedrock Shrink-swell Cobble content | 0.12 0.21 0.88 | Poor Too Clayey Rock fragments Hard to reclaim Slope | 0.00 0.00 0.00 0.84 |
| 127LB: Labette----- | 90 | Poor Too clayey Depth to bedrock Droughty Too acid No water erosion limitation | 0.00 0.21 0.53 0.95 0.99 | Poor Depth to bedrock Shrink-swell | 0.00 0.12 | Poor Rock fragments Too Clayey Depth to bedrock | 0.00 0.00 0.21 |
| AED: Arents, Earthen Dam- | 100 | Not rated | | Not rated | | Not rated | |
| Ar: Ivan----- | 80 | Good | | Fair Shrink-swell | 0.87 | Good | |

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(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Potential source of reclamation material | | Potential source of roadfill | | Potential source of topsoil | |
|-----------------------------|---------------------------|--|------------------------------|--|----------------------|--|------------------------------|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| BOP: Borrow Pits----- | 100 | Not rated | | Not rated | | Not rated | |
| Ch: Chase----- | 90 | Poor Too clayey No water erosion limitation | 0.00 0.99 | Fair Shrink-swell | 0.17 | Poor Too Clayey | 0.00 |
| Cs: Clime----- | 47 | Poor Too clayey Droughty Depth to bedrock | 0.00 0.28 0.79 | Poor Depth to bedrock Shrink-swell | 0.00 0.87 | Poor Too Clayey Slope Depth to bedrock | 0.00 0.04 0.79 |
| Sogn----- | 20 | Poor Droughty Depth to bedrock Too clayey | 0.00 0.00 0.98 | Poor Depth to bedrock | 0.00 | Poor Depth to bedrock Slope Too Clayey | 0.00 0.37 0.93 |
| CSS: Clime----- | 60 | Poor Too clayey Droughty Depth to bedrock | 0.00 0.50 0.79 | Poor Depth to bedrock Shrink-swell | 0.00 0.15 | Poor Too Clayey Slope Depth to bedrock | 0.00 0.16 0.79 |
| Sogn----- | 20 | Poor Droughty Depth to bedrock Too clayey | 0.00 0.00 0.98 | Poor Depth to bedrock | 0.00 | Poor Depth to bedrock Slope Too Clayey | 0.00 0.16 0.93 |
| DT: Dwight----- | 90 | Poor Too clayey Sodium content Water erosion | 0.00 0.00 0.90 | Fair Shrink-swell Depth to bedrock | 0.12 0.95 | Poor Too Clayey Sodium content | 0.00 0.00 |
| Dw: Dwight----- | 85 | Poor Too clayey Low content of organic matter Water erosion Droughty | 0.00 0.50 0.90 0.99 | Fair Depth to bedrock Shrink-swell | 0.04 0.12 | Poor Too Clayey | 0.00 |
| Fa: Florence----- | 47 | Poor Too clayey Droughty | 0.00 0.23 | Fair Depth to bedrock Shrink-swell Cobble content | 0.04 0.18 0.99 | Poor Too Clayey Rock fragments Hard to reclaim | 0.00 0.00 0.00 |
| Labette----- | 34 | Poor Too clayey Too acid Depth to bedrock No water erosion limitation | 0.00 0.95 0.99 0.99 | Poor Depth to bedrock Shrink-swell | 0.00 0.12 | Poor Rock fragments Too Clayey Depth to bedrock | 0.00 0.00 0.99 |
| Fm: Florence----- | 70 | Poor Too clayey Droughty | 0.00 0.23 | Fair Depth to bedrock Shrink-swell Cobble content | 0.04 0.18 0.99 | Poor Too Clayey Rock fragments Hard to reclaim Slope | 0.00 0.00 0.00 0.96 |
| Matfield----- | 25 | Fair Cobble content Droughty | 0.03 0.28 | Poor Cobble content | 0.00 | Poor Hard to reclaim Rock fragments | 0.00 0.00 |
| GRP: Gravel Pits----- | 100 | Not rated | | Not rated | | Not rated | |
| Ic: Irwin----- | 85 | Poor Too clayey No water erosion limitation | 0.00 0.99 | Fair Shrink-swell | 0.14 | Poor Too Clayey | 0.00 |

CONSTRUCTION MATERIALS--Continued
Chase County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

| Map symbol and soil name | Pct. of map unit | Potential source of reclamation material | | Potential source of roadfill | | Potential source of topsoil | |
|-----------------------------|---------------------------|--|--------------------------------------|--|--------------|--|----------------------|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| In: Irwin, eroded----- | 95 | Poor Too clayey No water erosion limitation | 0.00 0.99 | Fair Shrink-swell | 0.12 | Poor Too Clayey | 0.00 |
| INT: Aguolls----- | 100 | Poor Low content of organic matter | 0.00 | Poor Depth to saturated zone | 0.00 | Poor Depth to saturated zone | 0.00 |
| Ir: Irwin----- | 90 | Poor Too clayey No water erosion limitation | 0.00 0.99 | Fair Shrink-swell | 0.14 | Poor Too Clayey | 0.00 |
| Is: Irwin, eroded----- | 90 | Poor Too clayey No water erosion limitation | 0.00 0.99 | Fair Shrink-swell | 0.12 | Poor Too Clayey | 0.00 |
| Iv: Ivan----- | 85 | Good | | Fair Shrink-swell | 0.96 | Good | |
| Ka: Kahola----- | 85 | Good | | Fair Shrink-swell | 0.87 | Good | |
| La: Labette----- | 85 | Poor Too clayey Too acid Depth to bedrock No water erosion limitation | 0.00 0.95 0.99 0.99 | Poor Depth to bedrock Shrink-swell | 0.00 0.12 | Poor Rock fragments Too Clayey Depth to bedrock | 0.00 0.00 0.99 |
| LAA: Labette----- | 90 | Poor Too clayey Depth to bedrock Droughty Too acid No water erosion limitation | 0.00 0.65 0.93 0.95 0.99 | Poor Depth to bedrock Shrink-swell | 0.00 0.12 | Poor Rock fragments Too Clayey Depth to bedrock | 0.00 0.00 0.65 |
| Lb: Labette----- | 85 | Poor Too clayey Too acid Depth to bedrock No water erosion limitation | 0.00 0.95 0.99 0.99 | Poor Depth to bedrock Shrink-swell | 0.00 0.12 | Poor Rock fragments Too Clayey Depth to bedrock | 0.00 0.00 0.99 |
| Lc: Labette, eroded---- | 90 | Poor Too clayey Too acid Depth to bedrock No water erosion limitation | 0.00 0.95 0.99 0.99 | Poor Depth to bedrock Shrink-swell | 0.00 0.12 | Poor Rock fragments Too Clayey Depth to bedrock | 0.00 0.00 0.99 |
| Ld: Labette----- | 50 | Poor Too clayey Too acid Depth to bedrock No water erosion limitation | 0.00 0.95 0.99 0.99 | Poor Depth to bedrock Shrink-swell | 0.00 0.12 | Poor Rock fragments Too Clayey Depth to bedrock | 0.00 0.00 0.99 |
| Dwight----- | 41 | Poor Too clayey Low content of organic matter Water erosion Droughty | 0.00 0.50 0.90 0.99 | Fair Depth to bedrock Shrink-swell | 0.04 0.12 | Poor Too Clayey | 0.00 |

CONSTRUCTION MATERIALS--Continued
Chase County, Kansas

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| Map symbol and soil name | Pct. of map unit | Potential source of reclamation material | | Potential source of roadfill | | Potential source of topsoil | |
|------------------------------|---------------------------|--|--------------------------------------|--|--------------|--|----------------------|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| Le: Labette----- | 47 | Poor Too clayey Too acid Depth to bedrock No water erosion limitation | 0.00 0.95 0.99 0.99 | Poor Depth to bedrock Shrink-swell | 0.00 0.12 | Poor Rock fragments Too Clayey Depth to bedrock | 0.00 0.00 0.99 |
| Sogn----- | 38 | Poor Droughty Depth to bedrock Too clayey | 0.00 0.00 0.98 | Poor Depth to bedrock | 0.00 | Poor Depth to bedrock Too Clayey | 0.00 0.86 |
| LEE: Labette----- | 70 | Poor Too clayey Depth to bedrock Droughty Too acid No water erosion limitation | 0.00 0.21 0.53 0.95 0.99 | Poor Depth to bedrock Shrink-swell | 0.00 0.12 | Poor Rock fragments Too Clayey Depth to bedrock | 0.00 0.00 0.21 |
| Sogn----- | 20 | Poor Droughty Depth to bedrock Too clayey | 0.00 0.00 0.98 | Poor Depth to bedrock | 0.00 | Poor Depth to bedrock Too Clayey | 0.00 0.93 |
| Lm: Ladysmith----- | 85 | Poor Too clayey No water erosion limitation | 0.00 0.99 | Fair Shrink-swell | 0.45 | Poor Too Clayey | 0.00 |
| Lo: Ladysmith----- | 85 | Poor Too clayey No water erosion limitation | 0.00 0.99 | Fair Shrink-swell | 0.45 | Poor Too Clayey | 0.00 |
| Ls: Ladysmith, eroded--- | 85 | Poor Too clayey No water erosion limitation | 0.00 0.99 | Fair Shrink-swell | 0.45 | Poor Too Clayey | 0.00 |
| LSS: Ladysmith----- | 90 | Poor Too clayey No water erosion limitation | 0.00 0.99 | Fair Shrink-swell | 0.12 | Poor Too Clayey | 0.00 |
| M-W: Miscellaneous Water- | 100 | Not rated | | Not rated | | Not rated | |
| Ma: Martin----- | 85 | Poor Too clayey Low content of organic matter Too acid No water erosion limitation | 0.00 0.50 0.95 0.99 | Fair Shrink-swell | 0.18 | Poor Too Clayey | 0.00 |
| MBB: Martin----- | 100 | Poor Too clayey Too acid No water erosion limitation | 0.00 0.95 0.99 | Fair Shrink-swell Depth to saturated zone | 0.15 0.89 | Poor Too Clayey Depth to saturated zone | 0.00 0.89 |
| Mc: Martin, eroded----- | 85 | Poor Too clayey Low content of organic matter Too acid No water erosion limitation | 0.00 0.50 0.95 0.99 | Fair Shrink-swell | 0.15 | Poor Too Clayey | 0.00 |

CONSTRUCTION MATERIALS--Continued
Chase County, Kansas

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| Map symbol and soil name | Pct. of map unit | Potential source of reclamation material | | Potential source of roadfill | | Potential source of topsoil | |
|-----------------------------|---------------------------|--|------------------------------|--|----------------------|---|----------------------|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| Mg: Martin, eroded----- | 80 | Poor Too clayey Low content of organic matter Too acid No water erosion limitation | 0.00 0.50 0.95 0.99 | Fair Shrink-swell | 0.15 | Poor Too Clayey | 0.00 |
| Gullied Land----- | 20 | Not rated | | Not rated | | Not rated | |
| Om: Olpe----- | 60 | Poor Too clayey Droughty Low content of organic matter Too acid | 0.00 0.00 0.08 0.84 | Fair Shrink-swell | 0.22 | Poor Too Clayey Hard to reclaim Rock fragments | 0.00 0.00 0.00 |
| Smolan----- | 40 | Poor Too clayey No water erosion limitation | 0.00 0.99 | Fair Shrink-swell | 0.23 | Poor Too Clayey | 0.00 |
| Os: Osage----- | 90 | Poor Too clayey | 0.00 | Poor Depth to saturated zone Shrink-swell | 0.00 0.00 | Poor Too Clayey Depth to saturated zone | 0.00 0.00 |
| QUA: Quarries----- | 100 | Not rated | | Not rated | | Not rated | |
| Ra: Reading----- | 85 | Fair Water erosion Too acid Too clayey | 0.90 0.95 0.98 | Fair Shrink-swell | 0.87 | Fair Too Clayey | 0.89 |
| RAA: Reading----- | 90 | Fair Water erosion Too clayey | 0.90 0.98 | Fair Shrink-swell | 0.87 | Fair Too Clayey | 0.89 |
| Rd: Reading----- | 90 | Fair Water erosion Too acid Too clayey | 0.90 0.95 0.98 | Fair Shrink-swell | 0.94 | Fair Too Clayey | 0.89 |
| Re: Reading, eroded---- | 90 | Fair Water erosion Too acid Too clayey | 0.90 0.95 0.98 | Fair Shrink-swell | 0.87 | Fair Too Clayey Slope | 0.89 0.96 |
| Sm: Smolan----- | 90 | Poor Too clayey No water erosion limitation | 0.00 0.99 | Fair Shrink-swell | 0.23 | Poor Too Clayey | 0.00 |
| So: Solomon----- | 100 | Poor Too clayey | 0.00 | Poor Depth to saturated zone Shrink-swell | 0.00 0.12 | Poor Too Clayey Depth to saturated zone | 0.00 0.00 |
| St: Cline----- | 100 | Poor Too clayey Depth to bedrock Low content of organic matter Droughty | 0.00 0.79 0.88 0.90 | Poor Depth to bedrock Slope Shrink-swell | 0.00 0.00 0.12 | Poor Slope Too Clayey Depth to bedrock | 0.00 0.00 0.79 |

CONSTRUCTION MATERIALS--Continued
Chase County, Kansas

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| Map symbol and soil name | Pct. of map unit | Potential source of reclamation material | | Potential source of roadfill | | Potential source of topsoil | |
|-----------------------------|---------------------------|--|----------------------|--|--------------|--|----------------------|
| | | Rating class and limiting features | Value | Rating class and limiting features | Value | Rating class and limiting features | Value |
| Tc: Tully----- | 85 | Poor Too clayey Low content of organic matter No water erosion limitation | 0.00 0.82 0.99 | Fair Shrink-swell | 0.17 | Poor Too Clayey Rock fragments | 0.00 0.88 |
| Ts: Tully, eroded----- | 85 | Poor Too clayey Low content of organic matter No water erosion limitation | 0.00 0.82 0.99 | Fair Shrink-swell | 0.12 | Poor Too Clayey Rock fragments | 0.00 0.88 |
| Tu: Tully----- | 70 | Poor Too clayey Low content of organic matter No water erosion limitation | 0.00 0.82 0.99 | Fair Shrink-swell | 0.17 | Poor Too Clayey Slope Rock fragments | 0.00 0.84 0.88 |
| W: Water Areas----- | 100 | Poor Low content of organic matter | 0.00 | Poor Slope Low strength | 0.00 0.00 | Poor Slope | 0.00 |
| Za: Zaar----- | 85 | Poor Too clayey | 0.00 | Fair Shrink-swell Depth to saturated zone | 0.12 0.14 | Poor Too Clayey Depth to saturated zone | 0.00 0.14 |
| Zd: Zaar----- | 55 | Poor Too clayey | 0.00 | Fair Shrink-swell Depth to saturated zone | 0.12 0.14 | Poor Too Clayey Depth to saturated zone | 0.00 0.14 |
| Dwight----- | 45 | Poor Too clayey Water erosion Droughty | 0.00 0.90 0.99 | Fair Depth to bedrock Shrink-swell | 0.04 0.12 | Poor Too Clayey | 0.00 |

