

BUILDING SITE DEVELOPMENT  
Anderson County, Kansas

### Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. The following tables show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. Slightly limited indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

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Anderson County, Kansas

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Map symbol and soil name	Pct of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
001CA: Catoosa-----	90	Somewhat limited Depth to hard bedrock Shrink-swell	0.71 0.50	Very limited Depth to hard bedrock Shrink-swell	1.00 0.50	Somewhat limited Depth to hard bedrock Shrink-swell	0.71 0.50
001CB: Catoosa-----	58	Somewhat limited Depth to hard bedrock Shrink-swell	0.71 0.50	Very limited Depth to hard bedrock Shrink-swell	1.00 0.50	Somewhat limited Depth to hard bedrock Shrink-swell Slope	0.71 0.50 0.12
Rock Outcrop-----	29	Not rated		Not rated		Not rated	
001CC: Collinsville-----	50	Very limited Depth to hard bedrock Slope	1.00 0.04	Very limited Depth to hard bedrock Slope	1.00 0.04	Very limited Depth to hard bedrock Slope	1.00 1.00
Bates-----	41	Not limited		Somewhat limited Depth to soft bedrock	0.29	Somewhat limited Slope	0.12
001EC: Eram, eroded-----	90	Very limited Shrink-swell Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Shrink-swell Depth to soft bedrock	1.00 1.00 0.46	Very limited Shrink-swell Depth to saturated zone Slope	1.00 1.00 0.12
031EB: Eram-----	85	Very limited Shrink-swell Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Shrink-swell Depth to soft bedrock	1.00 1.00 0.35	Very limited Shrink-swell Depth to saturated zone	1.00 1.00
031EC: Eram-----	85	Very limited Shrink-swell Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Shrink-swell Depth to soft bedrock	1.00 1.00 0.64	Very limited Shrink-swell Depth to saturated zone Slope	1.00 1.00 0.12
031EP: Eram-----	50	Very limited Shrink-swell Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Shrink-swell Depth to soft bedrock	1.00 1.00 0.79	Very limited Shrink-swell Depth to saturated zone Slope	1.00 1.00 0.48
Apperson-----	35	Very limited Shrink-swell Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Shrink-swell Depth to hard bedrock	1.00 1.00 0.96	Very limited Shrink-swell Depth to saturated zone Slope	1.00 1.00 0.12
031ER: Eram-----	65	Very limited Shrink-swell Depth to saturated zone Slope	1.00 1.00 0.04	Very limited Depth to saturated zone Shrink-swell Depth to soft bedrock Slope	1.00 1.00 0.64 0.04	Very limited Shrink-swell Depth to saturated zone Slope	1.00 1.00 1.00
Collinsville-----	20	Very limited Depth to hard bedrock Slope	1.00 0.16	Very limited Depth to hard bedrock Slope	1.00 0.16	Very limited Depth to hard bedrock Slope	1.00 1.00
031LU: Lula-----	85	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to hard bedrock Shrink-swell	0.61 0.50	Somewhat limited Shrink-swell	0.50

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Map symbol and soil name	Pct of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
059CM: Clareson-----	55	Very limited Shrink-swell Content of large stones Depth to hard bedrock Slope	1.00 0.81 0.79 0.04	Very limited Shrink-swell Depth to hard bedrock Content of large stones Slope	1.00 1.00 0.81 0.04	Very limited Shrink-swell Slope Content of large stones Depth to hard bedrock	1.00 1.00 0.81 0.79
Eram-----	30	Very limited Depth to saturated zone Shrink-swell Slope	1.00 1.00 0.00	Very limited Depth to saturated zone Shrink-swell Depth to soft bedrock Slope	1.00 1.00 0.01 0.00	Very limited Depth to saturated zone Shrink-swell Slope	1.00 1.00 1.00
059DN: Dennis-----	60	Very limited Shrink-swell Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Shrink-swell Depth to saturated zone Slope	1.00 1.00 0.00
Bates-----	30	Not limited		Somewhat limited Depth to soft bedrock	0.15	Somewhat limited Slope	0.00
059EA: Eram-----	55	Very limited Depth to saturated zone Shrink-swell Slope	1.00 1.00 0.16	Very limited Depth to saturated zone Shrink-swell Slope Depth to soft bedrock	1.00 1.00 0.16 0.01	Very limited Depth to saturated zone Shrink-swell Slope	1.00 1.00 1.00
Lebo-----	35	Somewhat limited Shrink-swell Slope	0.50 0.16	Somewhat limited Depth to soft bedrock Shrink-swell Slope	0.64 0.50 0.16	Very limited Slope Shrink-swell	1.00 0.50
059EC: Eram-----	60	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Shrink-swell Depth to soft bedrock	1.00 1.00 0.01	Very limited Depth to saturated zone Shrink-swell Slope	1.00 1.00 0.12
Lula-----	25	Very limited Shrink-swell	1.00	Very limited Shrink-swell Depth to hard bedrock	1.00 0.88	Very limited Shrink-swell Slope	1.00 0.00
059LN: Lebo-----	75	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Depth to soft bedrock Shrink-swell	1.00 0.64 0.50	Very limited Slope Shrink-swell	1.00 0.50
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
059OV: Osage-----	90	Very limited Ponding Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00 1.00	Very limited Ponding Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00 1.00	Very limited Ponding Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00
602CM: Clareson-----	60	Very limited Shrink-swell Content of large stones Slope Depth to hard bedrock	1.00 0.91 0.37 0.20	Very limited Shrink-swell Depth to hard bedrock Content of large stones Slope	1.00 1.00 0.91 0.37	Very limited Shrink-swell Slope Content of large stones Depth to hard bedrock	1.00 1.00 0.91 0.20
Rock Outcrop-----	20	Not rated		Not rated		Not rated	

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Map symbol and soil name	Pct of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
602EF: Eram-----	55	Very limited Shrink-swell	1.00	Very limited Depth to saturated zone	1.00	Very limited Shrink-swell	1.00
		Depth to saturated zone	1.00	Shrink-swell	1.00	Depth to saturated zone	1.00
		Slope	0.04	Depth to soft bedrock	0.71	Slope	1.00
Lebo-----	35	Somewhat limited Slope	0.96	Somewhat limited Slope	0.04	Very limited Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.01		
602LB: Lebo-----	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.01		
AED: Arents, Earthen Dam-	100	Not rated		Not rated		Not rated	
BOP: Borrow Pits-----	100	Not rated		Not rated		Not rated	
Cb: Catoosa-----	85	Somewhat limited Depth to hard bedrock	0.64	Very limited Depth to hard bedrock	1.00	Somewhat limited Depth to hard bedrock	0.64
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Cc: Clareson-----	60	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
		Content of large stones	1.00	Depth to hard bedrock	1.00	Content of large stones	1.00
		Depth to hard bedrock	0.90	Content of large stones	1.00	Depth to hard bedrock	0.90
Rock Outcrop-----	20	Not rated		Not rated		Not rated	
Cd: Collinsville-----	65	Very limited Depth to hard bedrock	1.00	Very limited Depth to hard bedrock	1.00	Very limited Depth to hard bedrock	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
Bates-----	20	Not limited		Somewhat limited Depth to soft bedrock	0.06	Somewhat limited Slope	0.12
Db: Dennis-----	85	Very limited Shrink-swell	1.00	Very limited Depth to saturated zone	1.00	Very limited Shrink-swell	1.00
		Depth to saturated zone	1.00	Shrink-swell	1.00	Depth to saturated zone	1.00
De: Dennis, eroded-----	85	Very limited Shrink-swell	1.00	Very limited Depth to saturated zone	1.00	Very limited Shrink-swell	1.00
		Depth to saturated zone	1.00	Shrink-swell	1.00	Depth to saturated zone	1.00
Eb: Eram-----	85	Very limited Shrink-swell	1.00	Very limited Depth to saturated zone	1.00	Very limited Shrink-swell	1.00
		Depth to saturated zone	1.00	Shrink-swell	1.00	Depth to saturated zone	1.00
				Depth to soft bedrock	0.20		
Ec: Eram-----	85	Very limited Shrink-swell	1.00	Very limited Depth to saturated zone	1.00	Very limited Shrink-swell	1.00
		Depth to saturated zone	1.00	Shrink-swell	1.00	Depth to saturated zone	1.00
				Depth to soft bedrock	0.20	Slope	0.48

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Map symbol and soil name	Pct of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ed: Eram, eroded-----	85	Very limited Shrink-swell	1.00	Very limited Depth to saturated zone	1.00	Very limited Shrink-swell	1.00
		Depth to saturated zone	1.00	Shrink-swell	1.00	Depth to saturated zone	1.00
				Depth to soft bedrock	0.20		
Eh: Eram, eroded-----	85	Very limited Shrink-swell	1.00	Very limited Depth to saturated zone	1.00	Very limited Shrink-swell	1.00
		Depth to saturated zone	1.00	Shrink-swell	1.00	Depth to saturated zone	1.00
				Depth to soft bedrock	0.20	Slope	0.48
Ek: Eram-----	60	Very limited Shrink-swell	1.00	Very limited Depth to saturated zone	1.00	Very limited Shrink-swell	1.00
		Depth to saturated zone	1.00	Shrink-swell	1.00	Depth to saturated zone	1.00
		Slope	0.00	Depth to soft bedrock	0.20	Slope	1.00
				Slope	0.00		
Clareson-----	20	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
		Content of large stones	1.00	Depth to hard bedrock	1.00	Content of large stones	1.00
		Depth to hard bedrock	0.90	Content of large stones	1.00	Slope	1.00
		Slope	0.00	Slope	0.00	Depth to hard bedrock	0.90
Eo: Eram, eroded-----	40	Very limited Shrink-swell	1.00	Very limited Depth to saturated zone	1.00	Very limited Shrink-swell	1.00
		Depth to saturated zone	1.00	Shrink-swell	1.00	Depth to saturated zone	1.00
				Depth to soft bedrock	0.20	Slope	0.12
Gullied Land-----	40	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Ep: Eram-----	45	Very limited Shrink-swell	1.00	Very limited Depth to saturated zone	1.00	Very limited Shrink-swell	1.00
		Depth to saturated zone	1.00	Shrink-swell	1.00	Depth to saturated zone	1.00
		Slope	0.84	Slope	0.84	Slope	1.00
				Depth to soft bedrock	0.20		
Talihina-----	35	Very limited Depth to soft bedrock	1.00	Very limited Shrink-swell	1.00	Very limited Depth to soft bedrock	1.00
		Shrink-swell	1.00	Depth to soft bedrock	1.00	Shrink-swell	1.00
		Slope	0.84	Slope	0.84	Slope	1.00
Ev: Eram-----	50	Very limited Shrink-swell	1.00	Very limited Depth to saturated zone	1.00	Very limited Shrink-swell	1.00
		Depth to saturated zone	1.00	Shrink-swell	1.00	Depth to saturated zone	1.00
				Depth to soft bedrock	0.20	Slope	0.12
Verdigris-----	15	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
GRP: Gravel Pits-----	100	Not rated		Not rated		Not rated	
Kb: Kenoma-----	85	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
Kd: Kenoma, eroded-----	85	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00

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Map symbol and soil name	Pct of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Kh: Kenoma-----	40	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
Olpe-----	35	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Slope Very limited Shrink-swell	0.12 1.00
La: Lanton-----	85	Very limited Ponding Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00 0.50	Very limited Ponding Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00 0.50	Very limited Ponding Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00 0.50
Le: Leanna, drained----	85	Very limited Flooding Shrink-swell  Depth to saturated zone	1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00	Very limited Flooding Shrink-swell  Depth to saturated zone	1.00 1.00 1.00
Lh: Lula-----	85	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to hard bedrock Shrink-swell	0.54 0.50	Somewhat limited Shrink-swell	0.50
LIQ: Limestone Quarry----	100	Not rated		Not rated		Not rated	
Me: Mason-----	85	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50
Mf: Mayes-----	85	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 1.00
Ok: Okemah-----	85	Very limited Shrink-swell  Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Shrink-swell  Depth to saturated zone	1.00 1.00
Op: Olpe-----	85	Very limited Shrink-swell Slope	1.00 0.04	Very limited Shrink-swell Slope	1.00 0.04	Very limited Shrink-swell Slope	1.00 1.00
Os: Osage-----	85	Very limited Ponding Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00 1.00	Very limited Ponding Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00 1.00	Very limited Ponding Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00 1.00
Se: Stony Land-----	60	Not rated		Not rated		Not rated	
Talihina-----	20	Very limited Depth to soft bedrock Shrink-swell  Slope	1.00 1.00 0.37	Very limited Shrink-swell  Depth to soft bedrock Slope	1.00 1.00 0.37	Very limited Depth to soft bedrock Shrink-swell  Slope	1.00 1.00 1.00
Sf: Summit-----	85	Very limited Shrink-swell	1.00	Very limited Shrink-swell Depth to saturated zone	1.00 1.00	Very limited Shrink-swell	1.00
Sh: Summit-----	85	Very limited Shrink-swell	1.00	Very limited Shrink-swell Depth to saturated zone	1.00 1.00	Very limited Shrink-swell Slope	1.00 0.48

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Map symbol and soil name	Pct of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Sk: Summit, eroded-----	85	Very limited Shrink-swell	1.00	Very limited Shrink-swell Depth to saturated zone	1.00 1.00	Very limited Shrink-swell	1.00
So: Summit, eroded-----	55	Very limited Shrink-swell	1.00	Very limited Shrink-swell Depth to saturated zone	1.00 1.00	Very limited Shrink-swell Slope	1.00 0.48
Eram, eroded-----	30	Very limited Shrink-swell	1.00	Very limited Depth to saturated zone	1.00	Very limited Shrink-swell	1.00
		Depth to saturated zone	1.00	Shrink-swell	1.00	Depth to saturated zone	1.00
				Depth to soft bedrock	0.20	Slope	0.48
VC: Verdigris-----	85	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50
Vf: Verdigris-----	85	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50
Vx: Verdigris-----	55	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50
W: Water-----	100	Not rated		Not rated		Not rated	
Wb: Welda-----	85	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00
Wc: Welda-----	85	Very limited Shrink-swell	1.00	Very limited Shrink-swell	1.00	Very limited Shrink-swell Slope	1.00 0.00
Wd: Woodson-----	85	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 1.00
Wf: Woodson-----	85	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 1.00
Wh: Woodson, eroded----	85	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Shrink-swell	1.00 1.00

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Map symbol and soil name	Pct of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
001CA: Catoosa-----	90	Somewhat limited Depth to hard bedrock Shrink-swell	0.71 0.50	Very limited Depth to hard bedrock Cutbanks cave	1.00 0.10	Somewhat limited Depth to bedrock	0.71
001CB: Catoosa-----	58	Somewhat limited Depth to hard bedrock Shrink-swell	0.71 0.50	Very limited Depth to hard bedrock Cutbanks cave	1.00 0.10	Somewhat limited Depth to bedrock	0.71
Rock Outcrop-----	29	Not rated		Not rated		Not rated	
001CC: Collinsville-----	50	Very limited Depth to hard bedrock Slope	1.00 0.04	Very limited Depth to hard bedrock Cutbanks cave Slope	1.00 0.10 0.04	Very limited Depth to bedrock  Droughty Slope Content of large stones	1.00 0.04 0.03
Bates-----	41	Not limited		Somewhat limited Depth to soft bedrock Cutbanks cave	0.29 0.10	Somewhat limited Depth to bedrock	0.29
001EC: Eram, eroded-----	90	Very limited Shrink-swell  Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Depth to soft bedrock Too clayey Cutbanks cave	1.00 0.46 0.12 0.10	Very limited Depth to saturated zone Depth to bedrock	1.00 0.46
031EB: Eram-----	85	Very limited Shrink-swell  Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Depth to soft bedrock Too clayey Cutbanks cave	1.00 0.35 0.12 0.10	Very limited Depth to saturated zone Depth to bedrock	1.00 0.35
031EC: Eram-----	85	Very limited Shrink-swell  Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Depth to soft bedrock Too clayey Cutbanks cave	1.00 0.64 0.12 0.10	Very limited Depth to saturated zone Depth to bedrock	1.00 0.65
031EP: Eram-----	50	Very limited Shrink-swell  Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Depth to soft bedrock Too clayey Cutbanks cave	1.00 0.79 0.12 0.10	Very limited Depth to saturated zone Depth to bedrock  Droughty	1.00 0.80 0.00
Apperson-----	35	Very limited Shrink-swell  Depth to saturated zone	1.00 0.94	Very limited Depth to saturated zone Depth to hard bedrock Too clayey Cutbanks cave	1.00 0.96 0.50 0.10	Somewhat limited Depth to saturated zone	0.94

BUILDING SITE DEVELOPMENT--Continued  
Anderson County, Kansas

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		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
031ER: Eram-----	65	Very limited Shrink-swell	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to soft bedrock	0.64	Depth to bedrock	0.65
		Slope	0.04	Too clayey Cutbanks cave Slope	0.12 0.10 0.04	Slope	0.04
Collinsville-----	20	Very limited Depth to hard bedrock	1.00	Very limited Depth to hard bedrock	1.00	Very limited Depth to bedrock	1.00
		Slope	0.16	Slope Cutbanks cave	0.16 0.10	Droughty Slope Content of large stones	0.90 0.16 0.03
031LU: Lula-----	85	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to hard bedrock Cutbanks cave	0.61 0.10	Not limited	
059CM: Clareson-----	55	Very limited Shrink-swell	1.00	Very limited Depth to hard bedrock	1.00	Somewhat limited Depth to bedrock	0.80
		Content of large stones	0.81	Content of large stones	0.81	Droughty	0.31
		Depth to hard bedrock	0.79	Cutbanks cave	0.10	Content of large stones	0.20
		Slope	0.04	Slope	0.04	Slope	0.04
Eram-----	30	Very limited Shrink-swell	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Too clayey	0.12	Depth to bedrock	0.01
		Slope	0.00	Cutbanks cave Depth to soft bedrock Slope	0.10 0.01 0.00	Slope	0.00
059DN: Dennis-----	60	Very limited Shrink-swell	1.00	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.94
		Depth to saturated zone	0.94	Too clayey	0.12		
				Cutbanks cave	0.10		
Bates-----	30	Not limited		Very limited Cutbanks cave Depth to soft bedrock	1.00 0.15	Somewhat limited Depth to bedrock	0.16
059EA: Eram-----	55	Very limited Shrink-swell	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slope	0.16	Slope	0.16
		Slope	0.16	Too clayey Cutbanks cave Depth to soft bedrock	0.12 0.10 0.01	Depth to bedrock	0.01
Lebo-----	35	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to soft bedrock	0.64	Somewhat limited Depth to bedrock	0.65
		Slope	0.16	Slope Cutbanks cave	0.16 0.10	Slope	0.16
059EC: Eram-----	60	Very limited Shrink-swell	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Too clayey	0.12	Depth to bedrock	0.01
				Cutbanks cave Depth to soft bedrock	0.10 0.01		
Lula-----	25	Very limited Shrink-swell	1.00	Somewhat limited Depth to hard bedrock Cutbanks cave	0.88 0.10	Not limited	

BUILDING SITE DEVELOPMENT--Continued  
Anderson County, Kansas

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		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
059LN: Lebo-----	75	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Depth to soft bedrock Cutbanks cave	1.00 0.64 0.10	Very limited Slope Content of large stones Depth to bedrock Droughty	1.00 1.00 0.65 0.18
Rock Outcrop-----	15	Not rated		Not rated		Not rated	
059OV: Osage-----	90	Very limited Shrink-swell Ponding  Depth to saturated zone Flooding	1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Flooding Too clayey Cutbanks cave	1.00 1.00 0.60 0.32 0.10	Very limited Ponding Depth to saturated zone Too clayey Flooding	1.00 1.00 1.00 0.60
602CM: Clareson-----	60	Very limited Shrink-swell  Content of large stones Slope  Depth to hard bedrock	1.00 0.91 0.37 0.20	Very limited Depth to hard bedrock Content of large stones Slope Cutbanks cave Too clayey	1.00 0.91 0.37 0.10 0.04	Somewhat limited Slope Depth to bedrock Content of large stones Droughty	0.37 0.20 0.20 0.04
Rock Outcrop-----	20	Not rated		Not rated		Not rated	
602EF: Eram-----	55	Very limited Shrink-swell  Depth to saturated zone Slope	1.00 1.00 0.04	Very limited Depth to saturated zone Depth to soft bedrock Too clayey Cutbanks cave Slope	1.00 0.71 0.12 0.10 0.04	Very limited Depth to saturated zone Depth to bedrock Slope	1.00 0.71 0.04
Lebo-----	35	Somewhat limited Slope Shrink-swell	0.96 0.50	Somewhat limited Slope Cutbanks cave Depth to soft bedrock	0.96 0.10 0.01	Somewhat limited Slope Depth to bedrock	0.96 0.01
602LB: Lebo-----	85	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope Cutbanks cave Depth to soft bedrock	1.00 0.10 0.01	Very limited Slope Gravel content Depth to bedrock	1.00 0.25 0.01
AED: Arents, Earthen Dam-	100	Not rated		Not rated		Not rated	
BOP: Borrow Pits-----	100	Not rated		Not rated		Not rated	
Cb: Catoosa-----	85	Somewhat limited Depth to hard bedrock Shrink-swell	0.64 0.50	Very limited Depth to hard bedrock Cutbanks cave	1.00 0.10	Somewhat limited Depth to bedrock	0.65
Cc: Clareson-----	60	Very limited Shrink-swell  Content of large stones Depth to hard bedrock	1.00 1.00 0.90	Very limited Depth to hard bedrock Content of large stones Cutbanks cave Too clayey	1.00 1.00 0.10 0.04	Very limited Content of large stones Droughty Depth to bedrock	1.00 1.00 0.90
Rock Outcrop-----	20	Not rated		Not rated		Not rated	

BUILDING SITE DEVELOPMENT--Continued  
Anderson County, Kansas

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		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Cd: Collinsville-----	65	Very limited Depth to hard bedrock Slope	1.00  0.04	Very limited Depth to hard bedrock Cutbanks cave Slope	1.00  0.10 0.04	Very limited Depth to bedrock  Droughty Slope Content of large stones	1.00  1.00 0.04 0.03
Bates-----	20	Not limited		Very limited Cutbanks cave Depth to soft bedrock	1.00 0.06	Somewhat limited Depth to bedrock	0.06
Db: Dennis-----	85	Very limited Shrink-swell  Depth to saturated zone	1.00  0.94	Very limited Depth to saturated zone Too clayey  Cutbanks cave	1.00  0.12  0.10	Somewhat limited Depth to saturated zone	0.94
De: Dennis, eroded-----	85	Very limited Shrink-swell  Depth to saturated zone	1.00  0.94	Very limited Depth to saturated zone Too clayey  Cutbanks cave	1.00  0.12  0.10	Somewhat limited Depth to saturated zone	0.94
Eb: Eram-----	85	Very limited Shrink-swell  Depth to saturated zone	1.00  1.00	Very limited Depth to saturated zone Depth to soft bedrock Too clayey Cutbanks cave	1.00  0.20  0.12 0.10	Very limited Depth to saturated zone Depth to bedrock	1.00  0.20
Ec: Eram-----	85	Very limited Shrink-swell  Depth to saturated zone	1.00  1.00	Very limited Depth to saturated zone Depth to soft bedrock Too clayey Cutbanks cave	1.00  0.20  0.12 0.10	Very limited Depth to saturated zone Depth to bedrock	1.00  0.20
Ed: Eram, eroded-----	85	Very limited Shrink-swell  Depth to saturated zone	1.00  1.00	Very limited Depth to saturated zone Depth to soft bedrock Too clayey Cutbanks cave	1.00  0.20  0.12 0.10	Very limited Depth to saturated zone Depth to bedrock	1.00  0.20
Eh: Eram, eroded-----	85	Very limited Shrink-swell  Depth to saturated zone	1.00  1.00	Very limited Depth to saturated zone Depth to soft bedrock Too clayey Cutbanks cave	1.00  0.20  0.12 0.10	Very limited Depth to saturated zone Depth to bedrock	1.00  0.20
Ek: Eram-----	60	Very limited Shrink-swell  Depth to saturated zone Slope	1.00  1.00 0.00	Very limited Depth to saturated zone Depth to soft bedrock Too clayey Cutbanks cave Slope	1.00  0.20  0.12 0.10 0.00	Very limited Depth to saturated zone Depth to bedrock  Slope	1.00  0.20  0.00
Clareson-----	20	Very limited Shrink-swell  Content of large stones Depth to hard bedrock Slope	1.00  1.00 0.90 0.00	Very limited Depth to hard bedrock Content of large stones Cutbanks cave  Too clayey Slope	1.00  1.00 0.10  0.04 0.00	Very limited Content of large stones Droughty  Depth to bedrock  Slope	1.00  1.00  0.90  0.00

BUILDING SITE DEVELOPMENT--Continued  
Anderson County, Kansas

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		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Eo: Eram, eroded-----	40	Very limited Shrink-swell  Depth to saturated zone	1.00  1.00	Very limited Depth to saturated zone Depth to soft bedrock Too clayey Cutbanks cave	1.00  0.20  0.12 0.10	Very limited Depth to saturated zone Depth to bedrock	1.00  0.20
Gullied Land-----	40	Very limited Slope Low strength	1.00 1.00	Very limited Slope Cutbanks cave	1.00 0.10	Very limited Slope	1.00
Ep: Eram-----	45	Very limited Shrink-swell  Depth to saturated zone Slope	1.00  1.00 0.84	Very limited Depth to saturated zone Slope  Depth to soft bedrock Too clayey Cutbanks cave	1.00  0.84  0.20 0.12 0.10	Very limited Depth to saturated zone Slope  Depth to bedrock	1.00  0.84  0.20
Talihina-----	35	Very limited Depth to soft bedrock Shrink-swell Slope	1.00 1.00 0.84	Very limited Depth to soft bedrock Slope Cutbanks cave	1.00  0.84 0.10	Very limited Depth to bedrock  Slope Droughty Content of large stones	1.00  0.84 0.83 0.03
Ev: Eram-----	50	Very limited Shrink-swell  Depth to saturated zone	1.00  1.00	Very limited Depth to saturated zone Depth to soft bedrock Too clayey Cutbanks cave	1.00  0.20  0.12 0.10	Very limited Depth to saturated zone Depth to bedrock	1.00  0.20
Verdigris-----	15	Very limited Flooding Shrink-swell	1.00 0.50	Somewhat limited Flooding Cutbanks cave	0.80 0.10	Very limited Flooding	1.00
GRP: Gravel Pits-----	100	Not rated		Not rated		Not rated	
Kb: Kenoma-----	85	Very limited Shrink-swell	1.00	Somewhat limited Too clayey Cutbanks cave	0.50 0.10	Not limited	
Kd: Kenoma, eroded-----	85	Very limited Shrink-swell	1.00	Somewhat limited Too clayey Cutbanks cave	0.50 0.10	Not limited	
Kh: Kenoma-----	40	Very limited Shrink-swell	1.00	Somewhat limited Too clayey Cutbanks cave	0.50 0.10	Not limited	
Olpe-----	35	Very limited Shrink-swell	1.00	Very limited Cutbanks cave Too clayey	1.00 0.12	Very limited Droughty Gravel content	1.00 0.50
La: Lanton-----	85	Very limited Ponding Flooding  Depth to saturated zone Shrink-swell	1.00 1.00  0.75 0.50	Very limited Ponding Depth to saturated zone Flooding  Cutbanks cave	1.00 1.00  0.60 0.10	Very limited Ponding Depth to saturated zone Flooding	1.00 0.75  0.60
Le: Leanna, drained-----	85	Very limited Flooding  Shrink-swell Depth to saturated zone	1.00  1.00 0.94	Very limited Depth to saturated zone Flooding Too clayey  Cutbanks cave	1.00  0.60 0.12 0.10	Somewhat limited Depth to saturated zone Flooding	0.94  0.60

BUILDING SITE DEVELOPMENT--Continued  
Anderson County, Kansas

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Lh: Lula-----	85	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to hard bedrock Cutbanks cave	0.54 0.10	Not limited	
LIQ: Limestone Quarry----	100	Not rated		Not rated		Not rated	
Me: Mason-----	85	Somewhat limited Shrink-swell Flooding	0.50 0.40	Somewhat limited Cutbanks cave	0.10	Not limited	
Mf: Mayes-----	85	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Cutbanks cave Too clayey	1.00 0.10 0.04	Very limited Depth to saturated zone	1.00
Ok: Okemah-----	85	Very limited Shrink-swell  Depth to saturated zone	1.00  0.75	Very limited Depth to saturated zone Too clayey  Cutbanks cave	1.00  0.12 0.10	Somewhat limited Depth to saturated zone	0.75
Op: Olpe-----	85	Very limited Shrink-swell Slope	1.00 0.04	Very limited Cutbanks cave Too clayey Slope	1.00 0.12 0.04	Very limited Droughty Gravel content Slope	1.00 0.50 0.04
Os: Osage-----	85	Very limited Shrink-swell Ponding  Depth to saturated zone Flooding	1.00 1.00  1.00 1.00	Very limited Ponding Depth to saturated zone Flooding  Too clayey Cutbanks cave	1.00 1.00  0.60 0.32 0.10	Very limited Ponding Depth to saturated zone Flooding	1.00 1.00  0.60
Se: Stony Land-----	60	Not rated		Not rated		Not rated	
Talihina-----	20	Very limited Depth to soft bedrock Shrink-swell Slope	1.00 1.00 0.37	Very limited Depth to soft bedrock Slope Cutbanks cave	1.00 0.37 0.10	Very limited Depth to bedrock  Droughty Slope Content of large stones	1.00  0.83 0.37 0.03
Sf: Summit-----	85	Very limited Shrink-swell	1.00	Very limited Depth to saturated zone Too clayey Cutbanks cave	1.00 0.12 0.10	Not limited	
Sh: Summit-----	85	Very limited Shrink-swell	1.00	Very limited Depth to saturated zone Too clayey Cutbanks cave	1.00 0.12 0.10	Not limited	
Sk: Summit, eroded-----	85	Very limited Shrink-swell	1.00	Very limited Depth to saturated zone Too clayey Cutbanks cave	1.00 0.12 0.10	Not limited	

BUILDING SITE DEVELOPMENT--Continued  
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		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
So: Summit, eroded-----	55	Very limited Shrink-swell	1.00	Very limited Depth to saturated zone Too clayey Cutbanks cave	1.00 0.12 0.10	Not limited	
Eram, eroded-----	30	Very limited Shrink-swell  Depth to saturated zone	1.00  1.00	Very limited Depth to saturated zone Depth to soft bedrock Too clayey Cutbanks cave	1.00 0.20 0.12 0.10	Very limited Depth to saturated zone Depth to bedrock	1.00 0.20
VC: Verdigris-----	85	Very limited Flooding Shrink-swell	1.00 0.50	Somewhat limited Flooding Cutbanks cave	0.80 0.10	Very limited Flooding	1.00
Vf: Verdigris-----	85	Very limited Flooding Shrink-swell	1.00 0.50	Somewhat limited Flooding Cutbanks cave	0.60 0.10	Somewhat limited Flooding	0.60
Vx: Verdigris-----	55	Very limited Flooding Shrink-swell	1.00 0.50	Somewhat limited Flooding Cutbanks cave	0.80 0.10	Very limited Flooding	1.00
W: Water-----	100	Not rated		Not rated		Not rated	
Wb: Welda-----	85	Very limited Shrink-swell Frost action	1.00 0.50	Somewhat limited Cutbanks cave Too clayey	0.10 0.01	Not limited	
Wc: Welda-----	85	Very limited Shrink-swell Frost action	1.00 0.50	Somewhat limited Cutbanks cave	0.10	Not limited	
Wd: Woodson-----	85	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Too clayey Cutbanks cave	1.00 0.50 0.10	Very limited Depth to saturated zone	1.00
Wf: Woodson-----	85	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Too clayey Cutbanks cave	1.00 0.92 0.10	Very limited Depth to saturated zone	1.00
Wh: Woodson, eroded----	85	Very limited Depth to saturated zone Shrink-swell	1.00 1.00	Very limited Depth to saturated zone Too clayey Cutbanks cave	1.00 0.50 0.10	Very limited Depth to saturated zone	1.00

