








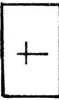







OPEN MATERIALS SITES; SAMPLED

LEGEND

	Trail or lane		Open materials sites; sampled
	Road		Open materials sites; not sampled
	Railroad		Center of section
	Hedge or trees		Dwelling
	Major streams		Cemetery
	Intermittent streams		School
	Pond or lake		Church
			Town or city

MATERIAL SITE DATA FORM

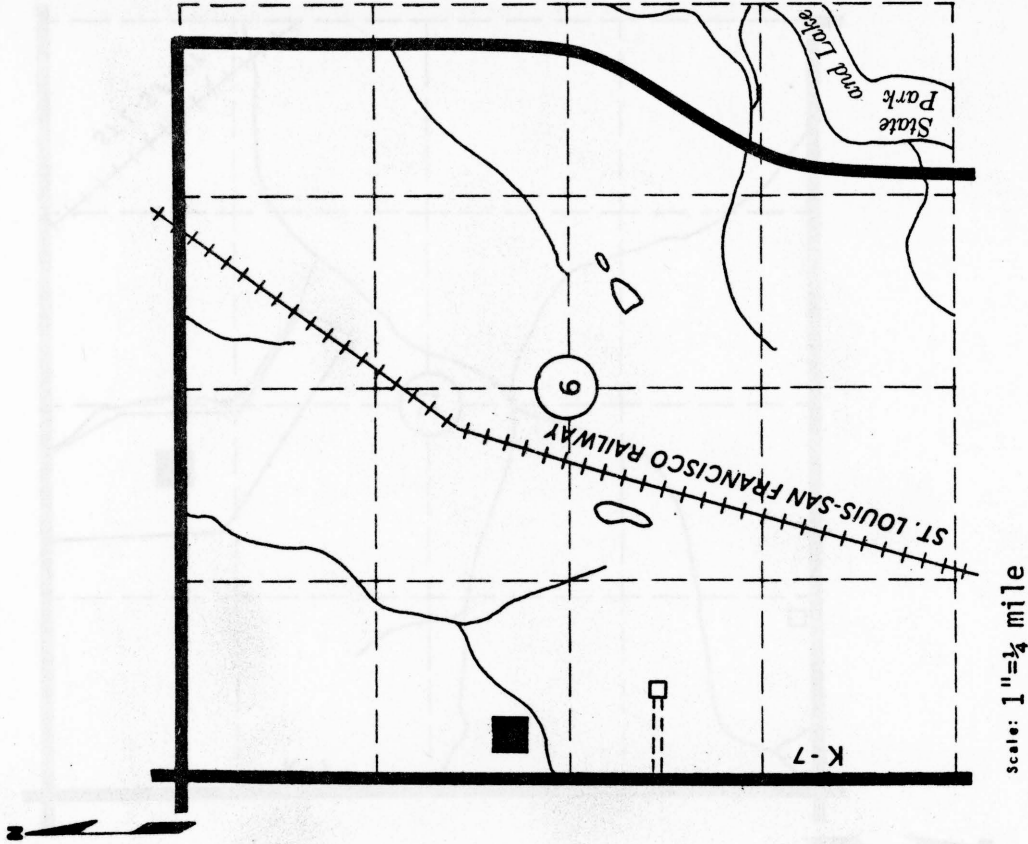
Site No. Ls+2 Date February, 1975
Pf
 Material Limestone County Crawford
 Location NW 1/4 Sec. 6 Twp. 28S Range 24E
 Owner Lazy D Corp. Rt. 1, Girard, Ks address
 Nature of Deposit Dry Accessibility Good Site Located on Plate II
 Status of Site Open Materials Site; Sampled

EXPLORATION DATA

Test Hole	Material at Bottom of Hole	Depth of over-burden	Depth of Material	Percent Retained							Wash 200	G.F.	L.L.	P.I.		
				1/2	3/4	1	1 1/4	1 1/2	2	3						

CORRELATION DATA

Geological Age Pennsylvanian
 Geological Source Pawnee ls. Fm. - Laberdie ls. Mbr.
 Material Similar To SHC Form 619, No. 19-12
 Specific Gravity (Sat.) 2.53 (Dry) 2.48
 Los Angeles Wear 35.1(B)
 Absorption 2.11 Soundness 0.98
 Mt. Cu.Ft. _____ Str. Ratio _____
 Remarks _____



MATERIAL SITE DATA FORM

Site No. LS+3 Pf Date February, 1975
 Material Limestone County Crawford
 Location NW¼ Sec. 25 Twp. 28S Range 24E
 Owner John Cukjati, Rt. 1, Mulberry, Ks
 Nature of Deposit Dry accessibility Good Site Located on Plate II
 Status of Site Open Materials Site; Sampled

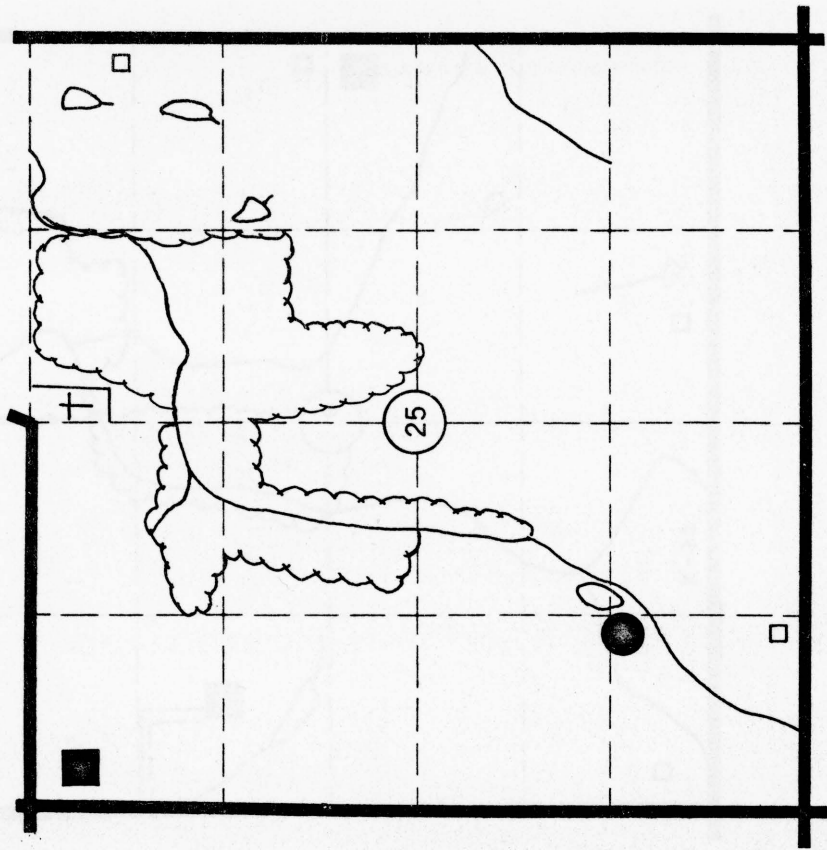
EXPLORATION DATA

Test Hole	Material at Bottom of Hole	Depth of over-Burden	Depth of Material	Percent Retained							Wash 200	G.F.	L.L.	P.I.		
				1/2	3/4	3/8	4	8	16	30					50	100

CORRELATION DATA

Geological Age Pennsylvanian
 Geological Source Fort Scott Ls. Fm. - Higginsville Ls. Mbr.
 Material Similar To SHC Form 619, No. 19-9

Specific Gravity (sat.) 2.61 (Dry) 2.56
 Los Angeles Wear 27.2(C)
 Absorption 2.10 Soundness 0.96
 Wt. Cu.Ft. _____ Str. Ratio _____
 Remarks _____



Scale: 1" = 1/4 mile

MATERIAL SITE DATA FORM

Site No. LS+4
PP Date February, 1975
 Material Limestone County Crawford
 Location SW $\frac{1}{4}$ Sec. 24 Twp. 29S Range 22E
 Owner Eugene F. Strasser & Wife, 708 W. Euclid, Pittsburg, Ks
 name address
 Nature of Deposit Dry Accessibility Good Site Located on Plate III
 Status of Site Open Materials Site; Sampled

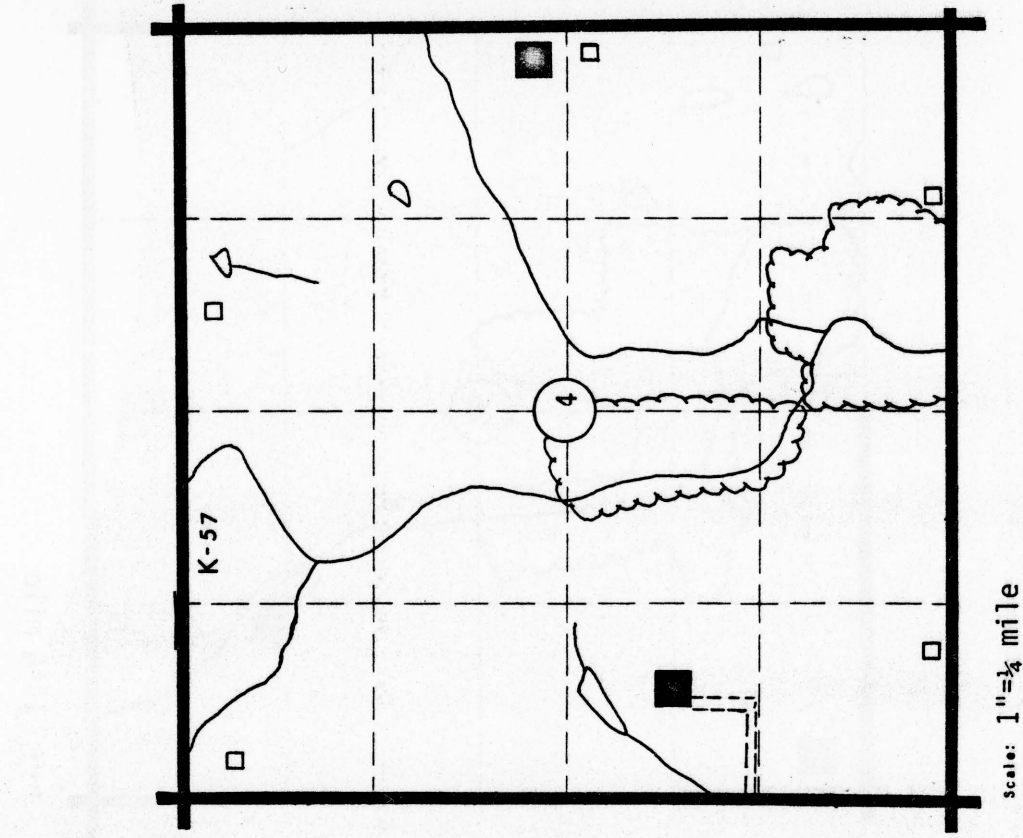
EXPLORATION DATA

Test Hole	Material at Bottom of Hole	Depth of over-burden	Depth of Material	Percent Retained						Wash 200	G.F.	L.L.	P.I.				
				1 1/2	3/4	3/8	4	8	16					30	50	100	

CORRELATION DATA

Geological Age Pennsylvanian
 Geological Source Pawnee Limestone Fm - Myrick Station Ls. Mbr.
 Material Similar To SHC Form 619, no. 19-11

Specific Gravity (Sat.) 2.62 (Dry) 2.57
 Los Angeles Near 26.6(B)
 Absorption 1.96 Soundness 0.99
 Wt. Cu.Ft. _____ Str. Ratio _____
 Remarks _____



MATERIAL SITE DATA FORM

Site No. Ls+5 Date February, 1975
PP
 Material Limestone County Crawford
 Location NE 1/4 Sec. 24 Twp. 29S Range 22E
 Owner Bill Oplatnik & Wife, Rt. 4, Girard, Ks
 Nature of Deposit Dry Accessibility Good Site Located on Plate III
 Status of Site Open Materials Site; Sampled

EXPLORATION DATA

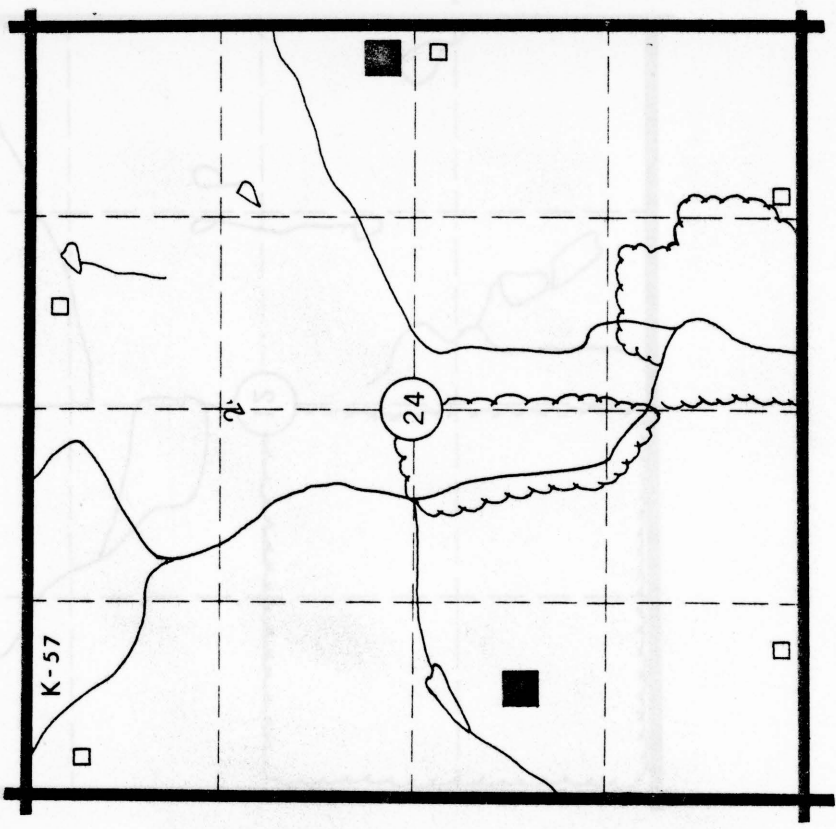
Test Hole	Material at Bottom of Hole	Depth of over-burden	Depth of Material	Percent Retained							Wash 200	G.F.	L.L.	P.I.			
				1 1/2	3/4	3/8	4	8	16	30					50	100	

CORRELATION DATA

Geological Age Pennsylvanian
 Geological Source Pawnee Limestone Fm.-Laberdie Ls. Mbr. (1)
 Material Similar To SHC Form 619, No. 19-10 Myrick Station Ls. Mbr. (2)

Specific Gravity (Sat.) (1) 2.61
(2) 2.60 (Dry)
 Los Angeles Wear (1) 28.9
(2) 25.3
 Absorption (1) 1.55
(2) 2.19 Soundness (1) 0.98
(2) 0.97

Mt. Cu.Ft. _____ Str. Ratio _____
 Remarks _____



Scale: 1" = 1/4 mile

MATERIAL SITE DATA FORM

Site No. Ls+6 Date February, 1975
Pf
 Material Limestone County Crawford
 Location SE 1/4 Sec. 12 Twp. 30S Range 22E
 Owner William T. Niggemann, 115 W. Buffalo, Girard, Ks
 address
 Nature of Deposit Dry Accessibility Good Site Located on Plate V
 Status of Site Open Materials Site; Sampled

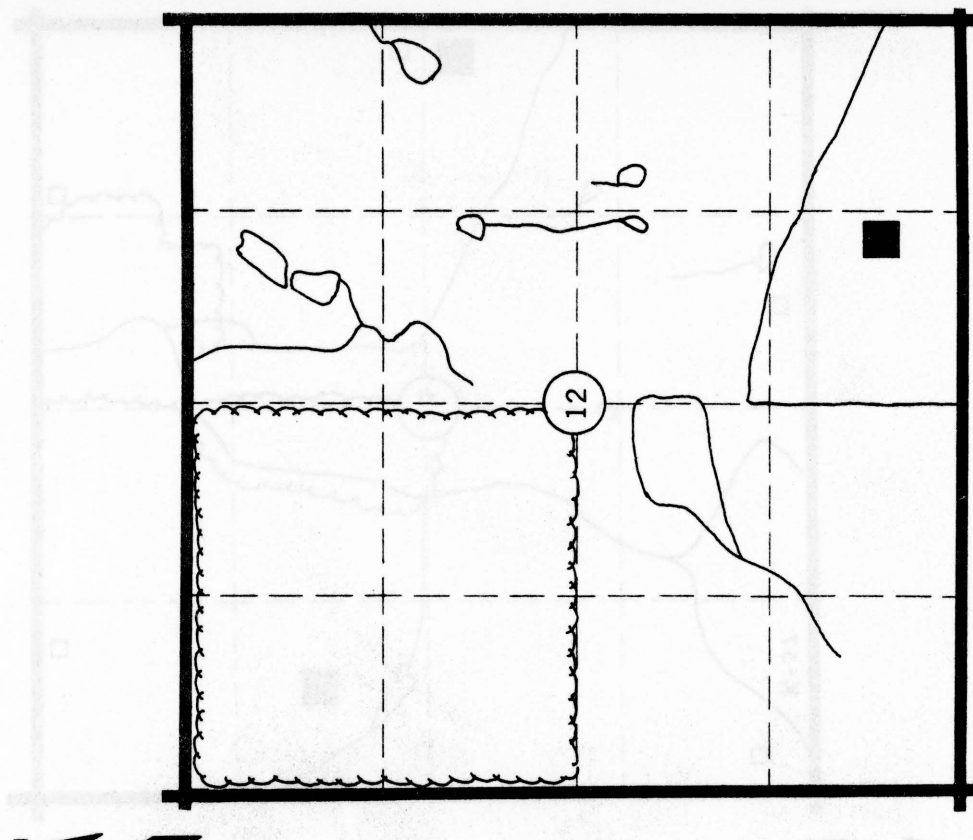
EXPLORATION DATA

Test Hole	Material at Bottom of Hole	Depth of over-burden	Depth of Material	Percent Retained							Wash 200	G.F.	L.L.	P.I.		
				1 1/2	3/4	3/8	4	8	16	30					50	100

CORRELATION DATA
















Geological Age Pennsylvanian
 Geological Source Fort Scott Limestone Fm. - Higginsville Ls. Mbr.
 Material Similar to SHC Form 619, No. 19-6

Specific Gravity (Sat.) 2.64 (Dry) 2.59
 Los Angeles Wear 26(b)
 Absorption 1.8 Soundness 0.97
 Wt. Cu.Ft. Str. Ratio
 Remarks



OPEN MATERIALS SITES; NOT SAMPLED

LEGEND

	Trail or lane		Open materials sites; not sampled
	Road		Open materials sites; sampled
	Railroad		Center of section
	Hedge or trees		Dwelling
	Major streams		Cemetery
	Intermittent streams		School
	Pond or lake		Church
			Town or city

MATERIAL SITE DATA FORM

Site No. Ls+7 Date September, 1975
Rf
 Material Limestone County Crawford
 Location NW 1/4 Sec. 14 Twp. 28S Range 24E
 Owner Lewis M. Boggs Rt. 1, Arcadia, Ks.
 address
 Nature of Deposit Accessibility Site Located on Plate II
 Status of Site Open Materials Site; Not Sampled

EXPLORATION DATA

Test Hole	Material at bottom of hole	Depth of over-burden	Depth of Material	Percent Retained							Wash 200	G.F.	L.L.	P.I.		
				1 1/2	3/4	3/8	4	8	16	30					50	100

CORRELATION DATA

Geological Age Pennsylvanian
 Geological Source Fort Scott Limestone Formation
 Material Similar to _____
 Specific Gravity (Sat.) _____ (Dry) _____
 Los Angeles Wear _____
 Absorption _____ Soundness _____
 Wt. Cu.Ft. _____ Str. Ratio _____
 Remarks _____



Scale: 1" = 1/4 mile

MATERIAL SITE DATA FORM

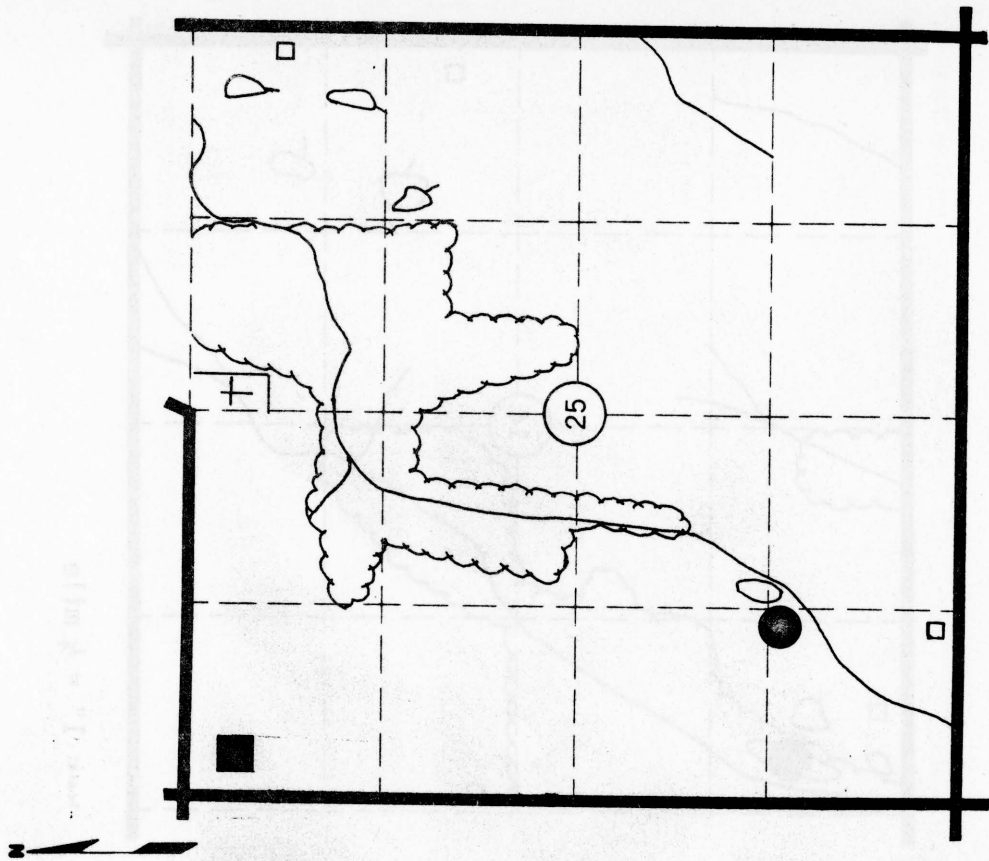
Site No. Ls+8 Date February, 1975
PF
 Material Limestone County Crawford
 Location SW 1/4 Sec. 25 Twp. 28S Range 24E
 Owner Joe Galichia & Wife Rt. 3, Girard, Ks.
 name address
 Nature of Deposit Dry Accessibility Good Site Located on Plate II
 Status of Site Open Materials Site; Not Sampled

EXPLORATION DATA

Test Hole	Material at bottom of Hole	Depth of over-Burden	Depth of Material	Percent Retained						Wash 200	G.F.	L.L.	P.I.			
				1 1/2	3/4	3/8	4	8	16					30	50	100

CORRELATION DATA

Geological Age Pennsylvanian
 Geological Source Fort Scott Limestone Formation
 Material Similar To _____
 Specific Gravity (Sat.) _____ (Dry) _____
 Los Angeles Wear _____
 Absorption _____ Soundness _____
 Wt. Cu.Ft. _____ Str. Ratio _____
 Remarks _____



MATERIAL SITE DATA FORM

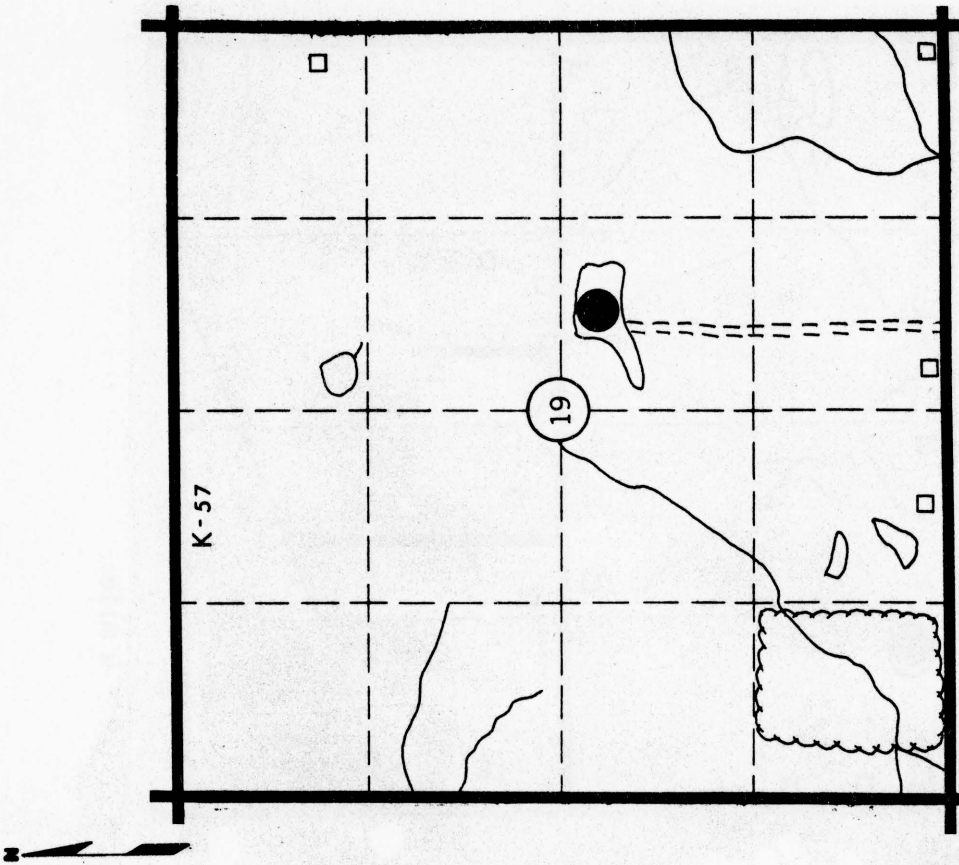
Site No. Ls+9 Date April, 1975
Pp
 Material Limestone County Crawford
 Location SE 1/4 Sec. 19 Twp. 29S Range 23E
 Owner Verdan DeLange Rt. 2, Girard, Ks address
 Nature of Deposit Dry Accessibility Good Site Located on Plate III
 Status of Site Open Materials Site; Not Sampled

EXPLORATION DATA

Test Hole	Material at Bottom of Hole	Depth of over-burden	Depth of Material	Percent Retained							Mash 200	G.F.	L.L.	P.I.			
				1/2	3/4	1	3/8	1/2	3/4	1							

CORRELATION DATA

Geological Age Pennsylvanian
 Geological Source Pawnee Limestone Formation
 Material Similar To _____
 Specific Gravity (Sat.) _____ (Dry) _____
 Los Angeles Wear _____
 Absorption _____ Soundness _____
 Wt. Co.Ft. _____ Str. Ratio _____
 Remarks _____



MATERIAL SITE DATA FORM

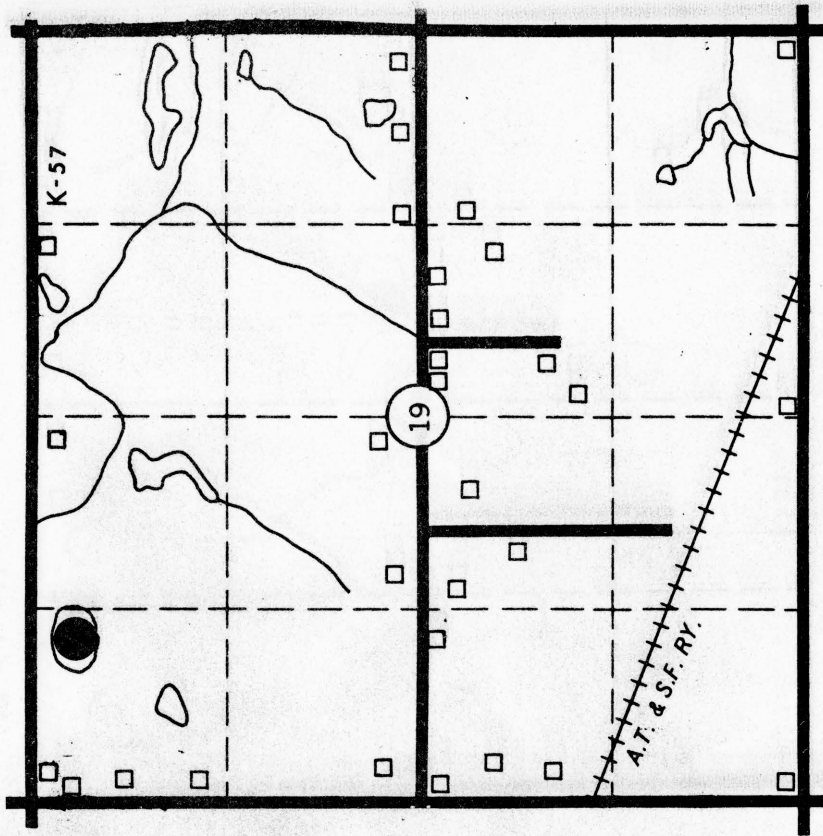
Site No. LS+10
PF Date April, 1975
 Material Limestone County Crawford
 Location NW 1/4 Sec. 19 Twp. 29S Range 24E
 Owner Kenneth Tersinar & Wife Rt. 4, Box 11A, Girard, Ks.
 address
 Nature of Deposit Dry Accessibility Good Site Located on Plate IV
 Status of Site Open Materials Site; Not Sampled

EXPLORATION DATA

Test Hole	Material at Bottom of Hole	Depth of over-burden	Depth of Material	Percent Retained					Mesh 200	G.F.	L.L.	P.I.
				1/2	3/4	1	16	30				

CORRELATION DATA

Geological Age Pennsylvanian
 Geological Source Fort Scott Limestone Formation
 Material Similar to _____
 Specific Gravity (sat.) _____ (dry) _____
 Los Angeles Wear _____
 Absorption _____ Soundness _____
 Wt. Cu.Ft. _____ Str. Ratio _____
 Remarks _____



Scale: 1" = 1/4 mile

MATERIAL SITE DATA FORM

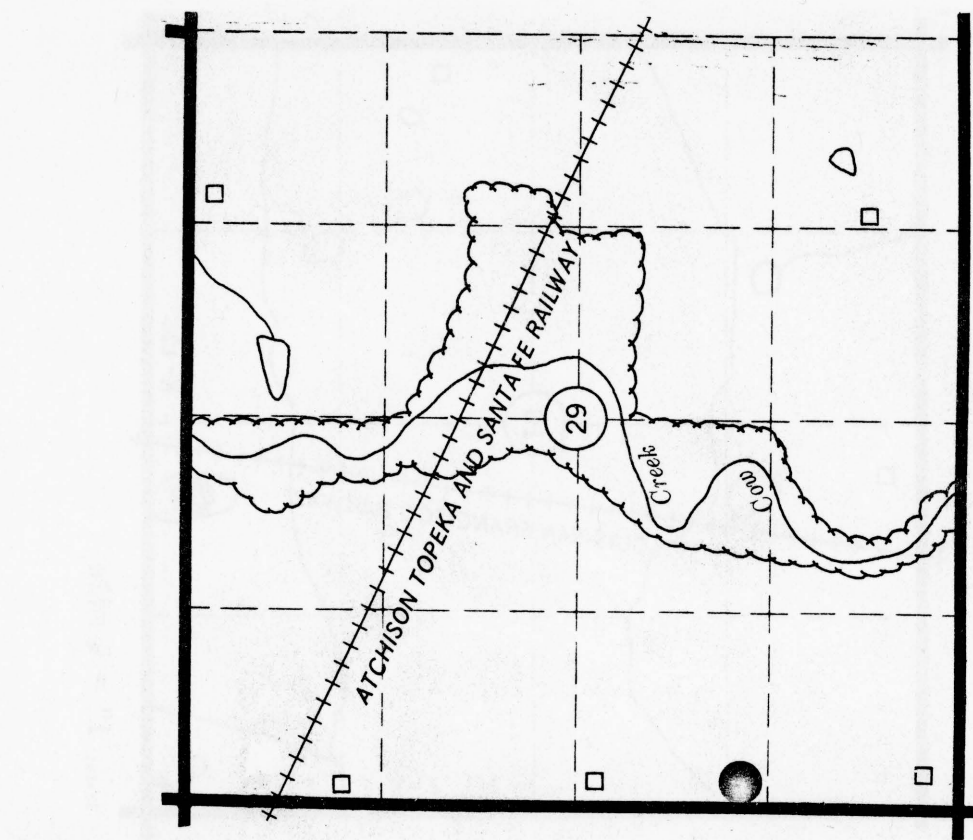
Site No. Ls+11 Date February, 1975
Pf
 Material Limestone County Crawford
 Location SW 1/4 Sec. 29 Twp. 29S Range 24E
 Owner R. Clayton Adaire, Sr. Rt. 4, Girard, KS
 address
 Nature of Deposit Dry Accessibility Good Site Located on Plate IV
 Status of Site Open Materials Site; Not Sampled

EXPLORATION DATA

Test Hole	Material at Bottom of Hole	Depth of over-Burden	Depth of Material	Percent Retained							Wash 200	G.F.	L.L.	P.I.	
				1/2	3/4	1	16	30	50	100					

CORRELATION DATA

Geological Age Pennsylvanian
 Geological Source Fort Scott Limestone Formation
 Material Similar To _____
 Specific Gravity (Sat.) _____ (Dry) _____
 Los Angeles Wear _____
 Absorption _____ Soundness _____
 Wt. Cu.Ft. _____ Str. Ratio _____
 Remarks _____



Scale: 1" = 1/4 mile

MATERIAL SITE DATA FORM

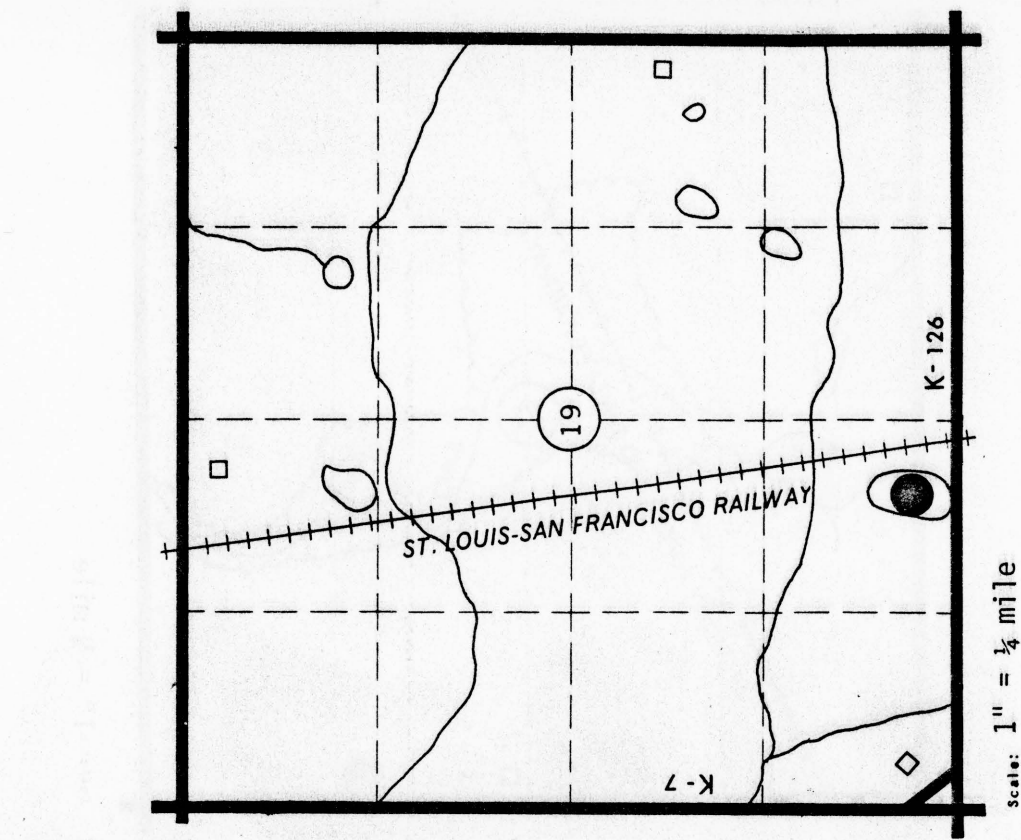
Site No. Ls+12 Date September, 1975
Pf
 Material Limestone County Crawford
 Location SW 1/4 Sec. 19 Twp. 30S Range 24E
 Owner Margaret M. Stephens, etal Rt. 2, Pittsburg, Ks
 name address
 Nature of Deposit Accessibility _____ Site Located on Plate VI
 Status of Site Open Materials Site; Not Sampled

EXPLORATION DATA

Test Hole	Material at Bottom of Hole	Depth of over-Burden	Depth of Material	Percent Retained						Wash 200	G.F.	L.L.	P.I.
				1 1/2	3/4	3/8	4	8	16				

CORRELATION DATA

Geological Age Pennsylvanian
 Geological Source Fort Scott Limestone Formation
 Material Similar To _____
 Specific Gravity (Sat.) _____ (Dry) _____
 Los Angeles Wear _____
 Absorption _____ Soundness _____
 Wt. Cu.Ft. _____ Str. Ratio _____
 Remarks _____



MATERIAL SITE DATA FORM

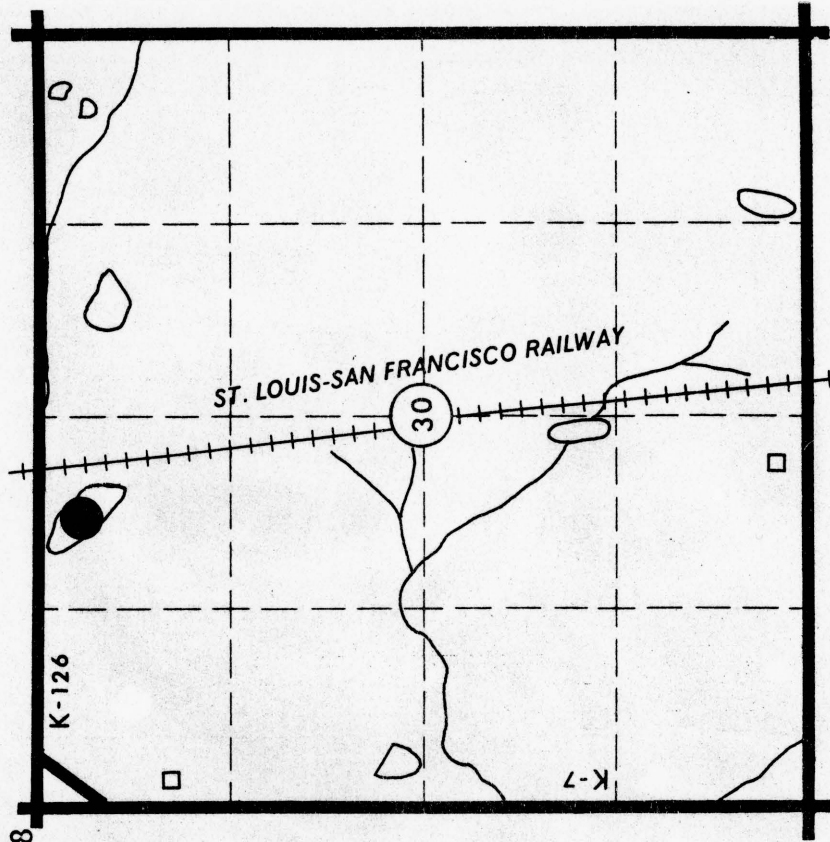
Site No. Ls+13 Date September, 1975
ff
 Material Limestone County Crawford
 Location NW 1/4 Sec. 30 Twp. 30S Range 24E
 Owner Cherokee & Pittsburg Coal Co., Am. Nat'l. Bank Bldg., Box 1208
address: Amarillo, Texas
 Nature of Deposit Accessibility Site Located on Plate VI
 Status of Site Open Materials Site; Not Sampled

EXPLORATION DATA

Test Hole	Material at Bottom of Hole	Depth of overburden	Depth of Material	Percent Retained							Wash 200	G.F.	L.L.	P.I.		
				1 1/2	3/4	3/8	4	8	16	30					50	100

CORRELATION DATA

Geological Age Pennsylvanian
 Geological Source Fort Scott Limestone Formation
 Material Similar To _____
 Specific Gravity (Sat.) _____ (Dry) _____
 Los Angeles Wear _____
 Absorption _____ Soundness _____
 Mt. Cu.Ft. _____ Str. Ratio _____
 Remarks _____



Scale: 1" = 1/4 mile

GLOSSARY

A.A.S.H.O.: American Association of State Highway Officials.

A.A.S.H.T.O.: American Association of State Highway and Transportation Officials.

Absorption: Determined by tests performed in accordance with A.A.S.H.O. designation T85.

Alluvium: A deposit of clay, silt, sand, or gravel deposited by a stream or other body of running water.

Aquifer: A body of rock that contains sufficient saturated permeable material to conduct ground water and to yield economically significant quantities of ground water to wells and springs.

Bedded: A characteristic of some rock units which shows distinct layers due to the manner in which they were deposited.

Brachiopod: Shelled animal of marine origin, having two unequal shells or valves each of which are normally bilaterally symmetrical.

Chaetetes colonies: Colonies of thin-walled, imperforate polygonal tubes having an average diameter of .2 to .5 mm and attaining mass of 4 feet or more in height or width.

Chat: Finely-crushed gangue remaining after the extraction of lead and zinc minerals.

Chert: A dull, flint-like, siliceous rock.

Construction Aggregate: Processed rock that will meet standard specifications for concrete and bituminous construction.

Crinoid columns: Fossils of an ancient group of sea-lily type animals belonging to the phylum *Echinodermata*.

Cross Bedding: Term applied to sedimentary deposits whose bedding is inclined at various angles to the stratification.

Detritus: Loose rock and mineral material that is worn off or removed directly by mechanical means, as by disintegration or abrasion; esp. fragmental material, such as sand, silt, and clay, derived from older rocks and moved from its place of origin.

Dolomitic limestone: A limestone in which the mineral dolomite ($\text{CaMg}(\text{CO}_3)_2$) is conspicuous but calcite is more abundant.

Exposure patterns: Topographic features formed on the land surface by the exposure of geologic units.

Flaggy: Descriptive of a sedimentary rock that splits into layers from 1 cm to 5 cm in thickness.

- Formation:** A persistent body of rocks, having easily recognizable upper and lower boundaries that can be traced in the field without recourse to detailed paleontologic or petrologic analysis, and large enough to be represented on a geologic map as a practical or convenient unit for mapping and description.
- Fossil:** Any remains, trace, or imprint of a plant or animal that has been preserved, by natural processes, in the Earth's crust since some past geologic time.
- Fossilinids:** Small marine fossils, about the size and shape of a grain of wheat, belonging to the *Foraminifera*.
- Geologic Era:** Largest unit of geologic time (e.g. Paleozoic, Mesozoic, and Cenozoic).
- Ground-water:** That part of the subsurface water that is the zone of saturation, including underground streams.
- Karst topography:** A type of topography that is formed over limestone, dolomite, or gypsum by dissolving or solution, and that is characterized by closed depressions or sink holes, caves, and underground drainage.
- Landform:** Any physical, recognizable form or feature of the Earth's surface, having a characteristic shape, and produced by natural causes; it includes major forms such as plain, plateau, mountain, hill, valley, slope, esker, and dune.
- Light type surfacing:** A surface course constructed from aggregate which is not bound by water, cement, or bituminous material.
- Los Angeles wear:** Determined by tests performed in accordance with A.A.S.H.O. designation T96 as modified by section 1001 of the State Highway Commission of Kansas Standard Specifications, 1973 edition.
- Marine deposits:** Deposits laid down in a sea.
- Material source bed:** A geologic unit from which construction material is being or can be produced.
- Member:** A division of a formation, generally of distinct lithologic character or of only local extent.
- Oolitic limestone:** A textural term for rock containing small, rounded grains that resemble fish eggs.
- Open materials site:** A pit or quarry from which material is produced for possible construction purposes.
- Physiographic division:** A division of the state, based on general geologic and (or) geographic features.

Plasticity index: The water-content range of a soil at which it is plastic; determined by tests performed in accordance with the Kansas Test Method KT-10 of the State Highway Commission of Kansas Construction Manual, Part V, 1969 edition.

Pleistocene Series: Deposits laid down during the Pleistocene Epoch.

Soundness: Determined by tests performed in accordance with section 1001 of the State Highway Commission of Kansas Standard Specifications, 1973 edition.

Specific gravity: Determined by tests performed in accordance with A.A.S.H.O. designation T84 for fine aggregate and T85 for coarse aggregate.

Stereoscopic vision: Three-dimensional vision by means of viewing identical images on two photographs exposed from equal distance but at different angles.

Stratigraphic position: The vertical position of a geologic unit in relation to other geologic units.

Unconsolidated deposits: A sediment that is loosely arranged or unstratified, or whose particles are not cemented together, occurring either at the surface or at depth.

Weathering: The disintegration (physical change) or decomposition (chemical change) of rock by atmospheric agents.

Selected References

- Abernathy, G.E., (1941) Ground-water resources of Mississippian and older rocks in Bourbon, Crawford, Cherokee, and Labette Counties, Southeastern, Kansas: Kansas Geological Survey Bull. 38, Pt. 8, 16 pp.
- Abernathy, G.E., Jewett, J.M., and Schoewe, W. H. (1947) Coal Reserves in Kansas: Kansas Geological Survey, Bull. 70, Pt. 1, 20 pp.
- American Association of State Highway Officials (1966) Standard Specifications for Highway Materials and Methods of Sampling and Testing: Pt. 1, 9th ed., 460 pp.
- American Association of State Highway Officials (1966) Standard Specifications for Highway Materials and Methods of Sampling and Testing: Pt. II, 9th ed., 693 pp.
- Branson, E.B. (1944) The Geology of Missouri, Missouri University Studies, vol. 19, no. 3., 535 pp.
- Cole, V.B., and Others (1961) Wells Drilled into Precambrian Rocks in Kansas: Kansas Geological Survey Bull. 150, 169 pp.
- Frye, John C and Leonard A.B. (1952) Pleistocene Geology of Kansas: Kansas Geological Survey Bull. 99, 230 pp.
- Jewett, J.M., and Schoewe, W.H. (1942) Kansas Mineral Resources for Wartime Industries: Kansas Geological Survey Bull. 41, Pt. 3, pp. 69-180.
- Jungmann, W.L. (1966) Geology and Ground-Water Resources of Neosho County, Kansas: Kansas Geological Survey Bull. 183, 46 pp.
- Lee, Wallace (1940), Subsurface Mississippian Rocks of Kansas: Kansas Geological Survey Bull. 33, 114 pp.
- Merriam, P.F. (1963) The Geologic History of Kansas: Kansas Geological Survey Bull. 162, 317 pp.
- Miller, D.E. (1969) Geology and Ground-Water Resources of Allen County, Kansas: Kansas Geological Survey Bull. 195, 50 pp.
- Moore, R.C. and Others (1951a) The Kansas Rock Column: Kansas Geological Survey Bull. 89, 132 pp.
- Myers, L.D. and Cummings, M.O. (1975) Construction Materials Inventory of Bourbon County, Kansas, no. 23: Kansas Department of Transportation, unpub.

- Pierce, W.B., and Courtier, W.H. (1937) Geology and Coal Resources of the Southeastern Kansas Coal Field in Crawford, Cherokee, and Labette Counties: Kansas Geological Survey Bull. 24, 122 pp.
- Plummer, Worman, and Hladik, W.B. (1951) The Manufacture of Lightweight Concrete Aggregate from Kansas Clays and Shales: Kansas Geological Survey Bull. 91, 100 pp.
- Risser, H.E. (1960) Kansas Building Stone: Kansas Geological Survey Bull. 142, pt. 2, pp. 53-122.
- Runnels, R.T. (1959) Cement Raw Materials in Kansas: Kansas Geological Survey Bull. 134, pt. 2, pp. 105-124.
- State Highway Commission of Kansas (1973) Standard Specifications for State Road and Bridge Construction, pp. 510-574.
- Stramel, G.L. (1951) The Hydrologic Properties of the Ordovician Rocks at Pittsburg, Kansas: Kansas Geological Survey Bull. 127, pt. 5, pp. 155-178.
- Whitla, R.E. (1940) Coal Resources of Kansas: Kansas Geological Survey Bull. 32, 64 pp.