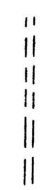
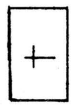


OPEN MATERIALS SITES; SAMPLED

LEGEND

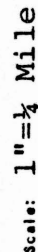
	Trail or lane		Open materials sites; sampled
	Road		Open materials sites; not sampled
	Railroad		Center of section
	Hedge or trees		Dwelling
	Major streams		Cemetery
	Intermittent streams		School
	Pond or lake		Church
			Town or city

MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

For remaining tests see Figure No. 14.



MATERIAL SURVEY REPORT

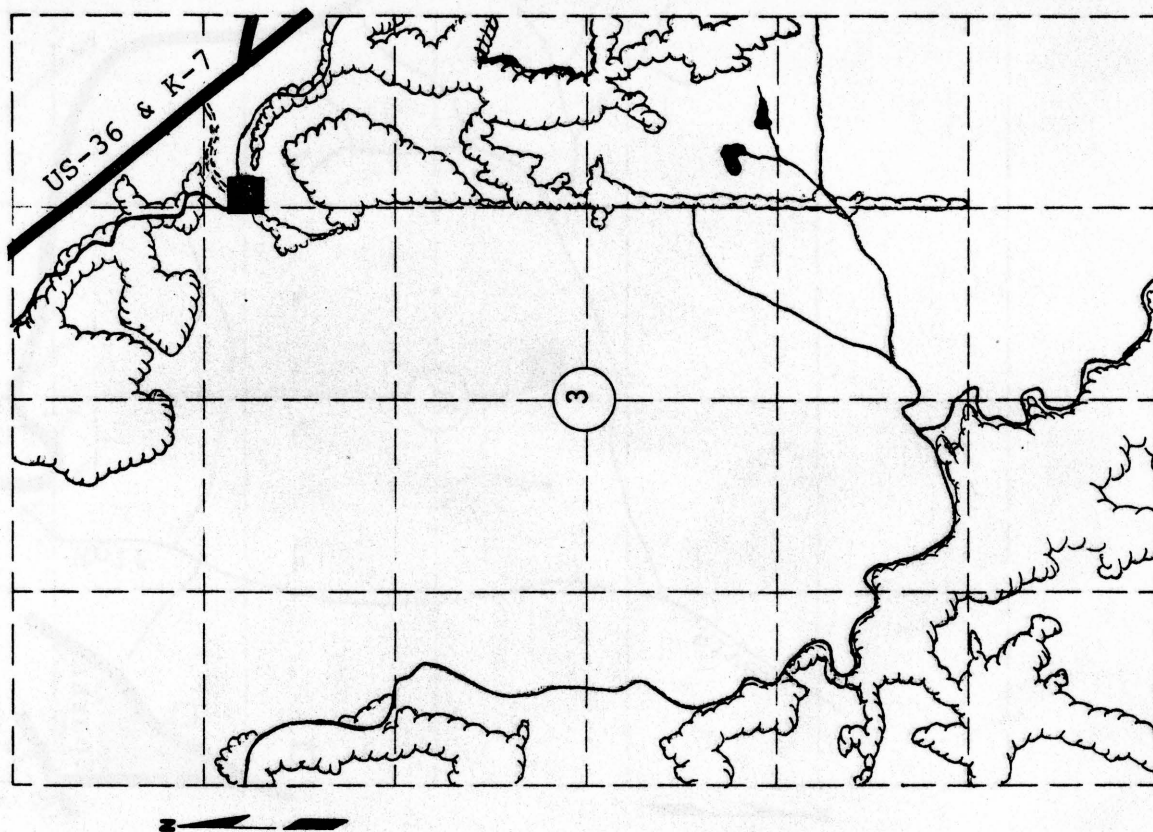
LS+2
Pdc
Site No. Date Sept. 1968
Material Limestone County Doniphan
Location NE $\frac{1}{4}$ Sec. 3 Twp. 3 S Range 20 E
Owner William A. Fuhrman & Wife, Severance, Kansas
name address
Dry Good II
Nature of Deposit Accessibility Site Located on Plate
Status of Site Open Site - Sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Pennsylvanian
Geological Source Deer Creek Formation-Ervine Creek Member
Material Similar To SHC Form 619 No. 22-7 & 22-10
Specific Gravity (Sat.) 2.50 (Dry) 2.38
Los Angeles Wear 44.0 (B)
Absorption 5.16 Soundness 0.91
Wt. Cu.Ft. _____ Str. Ratio _____
Remarks Latest available test 8/5/63, Lab. No. 29718.
For remaining tests see Figure No. 14.



Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

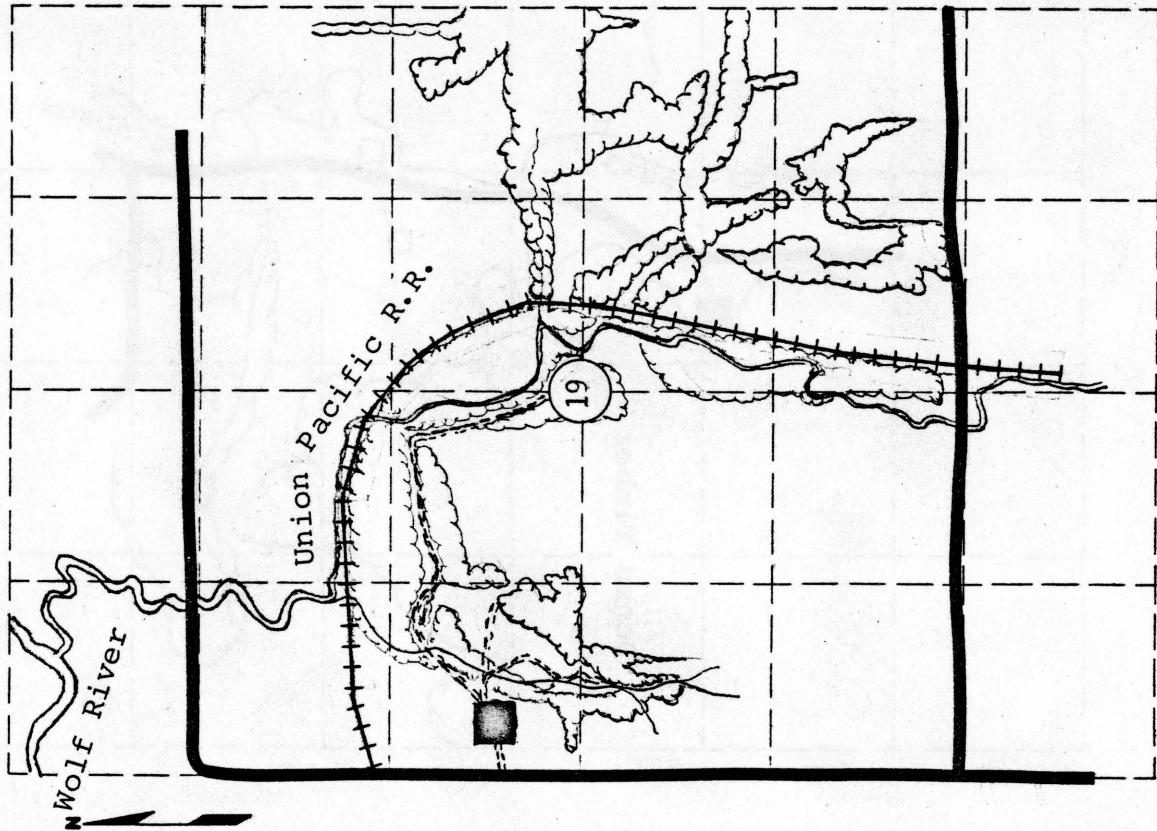
LS+3
 Site No. Pdc Date Sept. 1968
 Material Limestone County Doniphan
 Location NW 1/4 Sec. 19 Twp. 3 S Range 20 E
 Owner Donald Boos, Route 1, Severance, Kansas
 Nature of Deposit Dry Accessibility Good Site Located on Plate II
 Status of Site Open Site - Sampled

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				

CORRELATION DATA

Geological Age Pennsylvanian
 Geological Source Deer Creek Formation-Ervine Creek Member
 Material Similar To SHC Form 619, No. 22-9
 Specific Gravity (Sat.) 2.58 (Dry) 2.48
 Los Angeles Wear 37.3 (B)
 Absorption 4.01 Soundness 0.95
 Wt. Cu.ft. Str. Ratio
 Remarks Latest test available 5/9/68, Lab. No. 68-1307.
For remaining tests see Figure No. 14.



Scale: 1" = 1/4 Mile

EXPLORATION DATA

CORRELATION DATA

Mat. Cu.Ft.	Str. Ratio
Latest available test-12-6-45, Lab. No. 48931.	
For remaining tests see Figure No. 14	



MATERIAL SURVEY REPORT

LS+5
Pop
Site No. Sept. 1968
Date
Material Limestone County Doniphan
Location SW $\frac{1}{4}$ Sec. 35 Twp. 2 S Range 22 E
Owner Oliver Prophet et al c/o Oliver Prophet, Wathena
name
Mature of Deposit Dry Accessibility Good Site Located on Plate III Ks.
Status of Site Open Site - Sampled

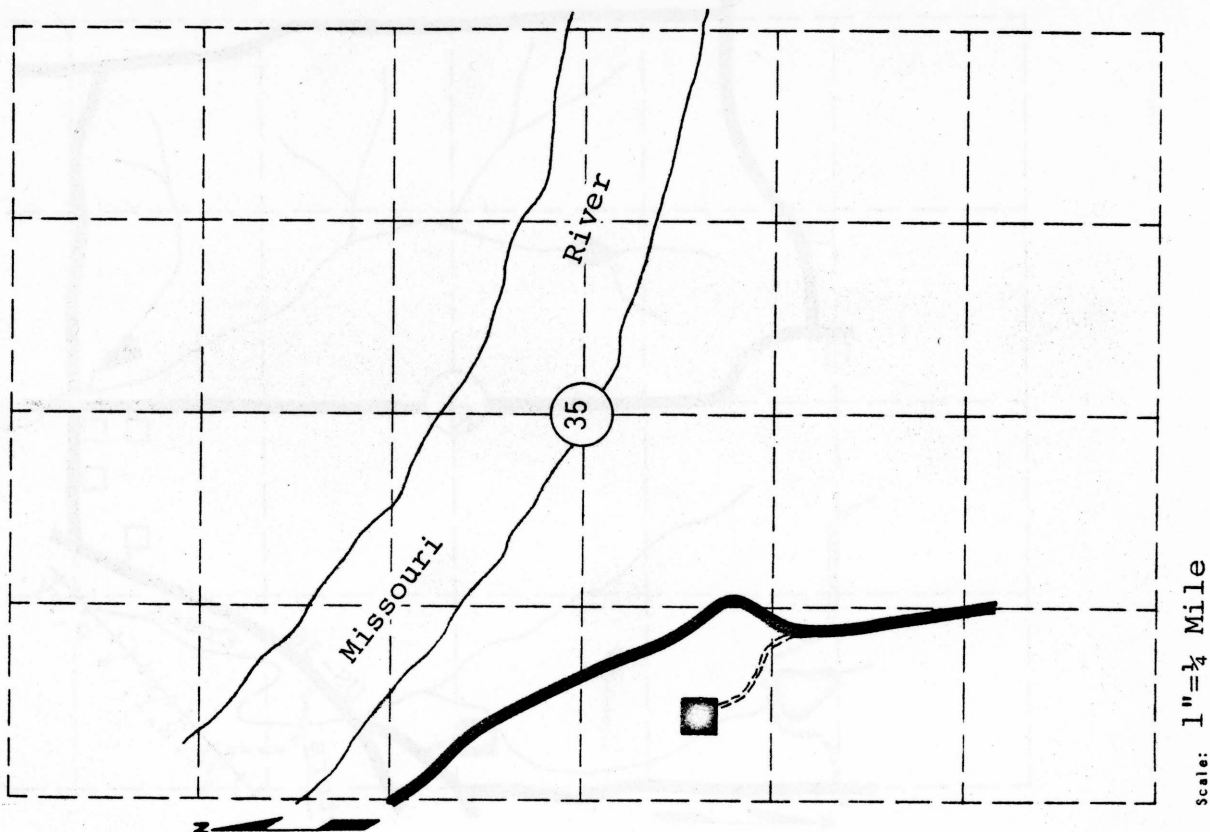
EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Pennsylvanian
Geological Source Oread Formation-Plattsmouth Limestone Member
Material Similar To SHC Lab Nos. 31362 & 65-5215

Specific Gravity (Sat.) 2.62 (Dry) _____
 Los Angeles Wear 28.6 (D) _____
 Absorption 3.68 Soundness 0.99 _____
 Mt. Cu.Ft. 111.25 Str. Ratio _____
 Remarks Latest Available test 12/13/65. Lab No. 65-5215.
For remaining test see Figure No. 14.



MATERIAL SURVEY REPORT

LS-6
Pop
 Site No. _____ Date Sept. 1968
 Material Limestone County Doniphan
 Location N1/4 Sec. 21 Twp. 3 S Range 22 E
 Owner _____
 Doniphan County
 name
Dry
 Nature of Deposit _____ accessibility Good
 address
Troy, Kansas
 Site Located on Plate III
 Status of Site _____
Open Site - Sampled

EXPLORATION DATA

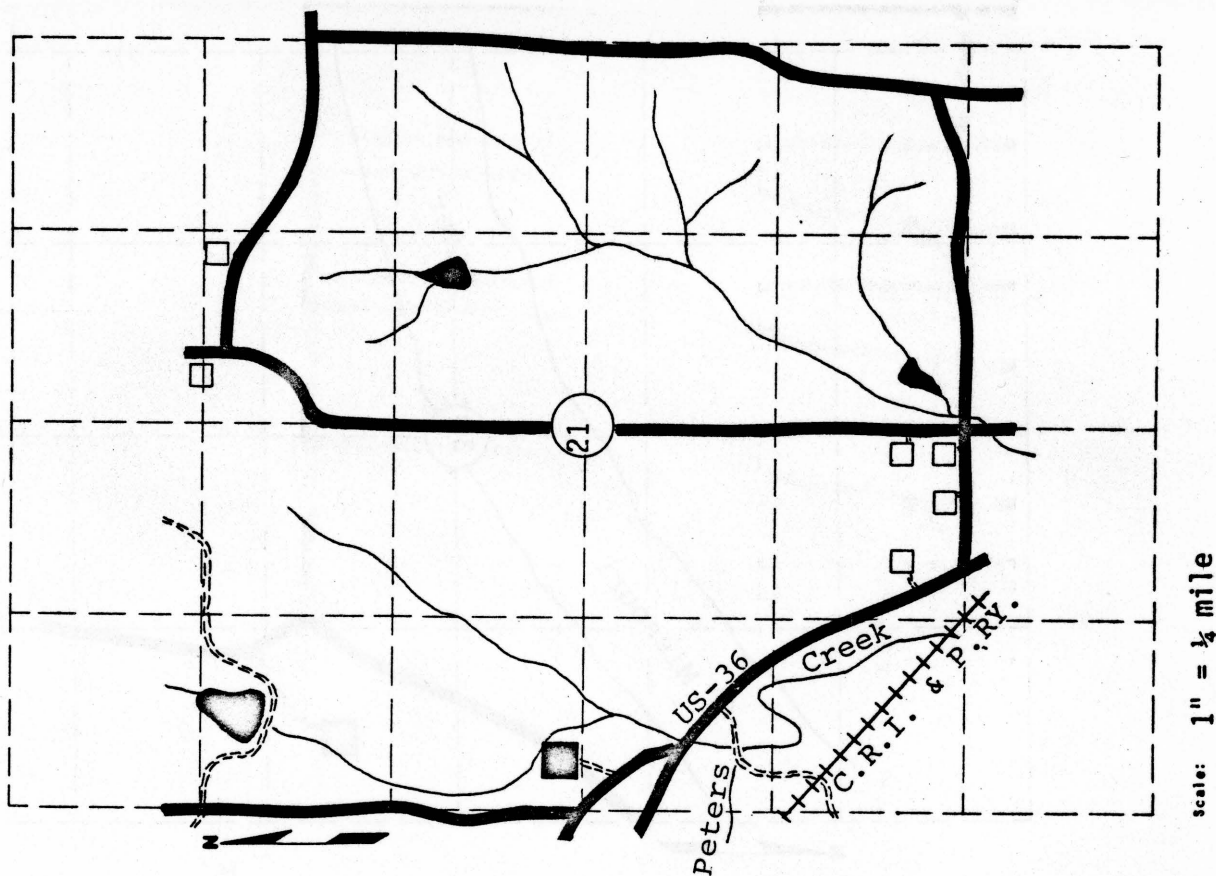
[illegible]

CORRELATION DATA

Geological Age Pennsylvanian
Geological Source Oread Formation - Plattsmouth Limestone Member
Material Similar To SHC Form 619, No. 22-11

Specific Gravity (Sat.) 2.53 (Dry) 2.46
Los Angeles Wear 25.0 (B)
Absorption 3.13 Soundness 0.96
Wt. Co.Ft. Str. Ratio

Latest test available 1/4/61. Lab No. 14665. For remaining tests, see figure no. 14.



MATERIAL SURVEY REPORT

Site No. LS+7 Date Sept. 1968
Pop
 Material Limestone County Doniphan
 Location SE 1/4 Sec. 20 Twp. 3 S Range 22 E
 Owner Audrey Clinton Wathena, Kansas
 name
 Nature of Deposit Dry Accessibility Good Site Located on Plate III
 Status of Site Open Site - Sampled

EXPLORATION DATA

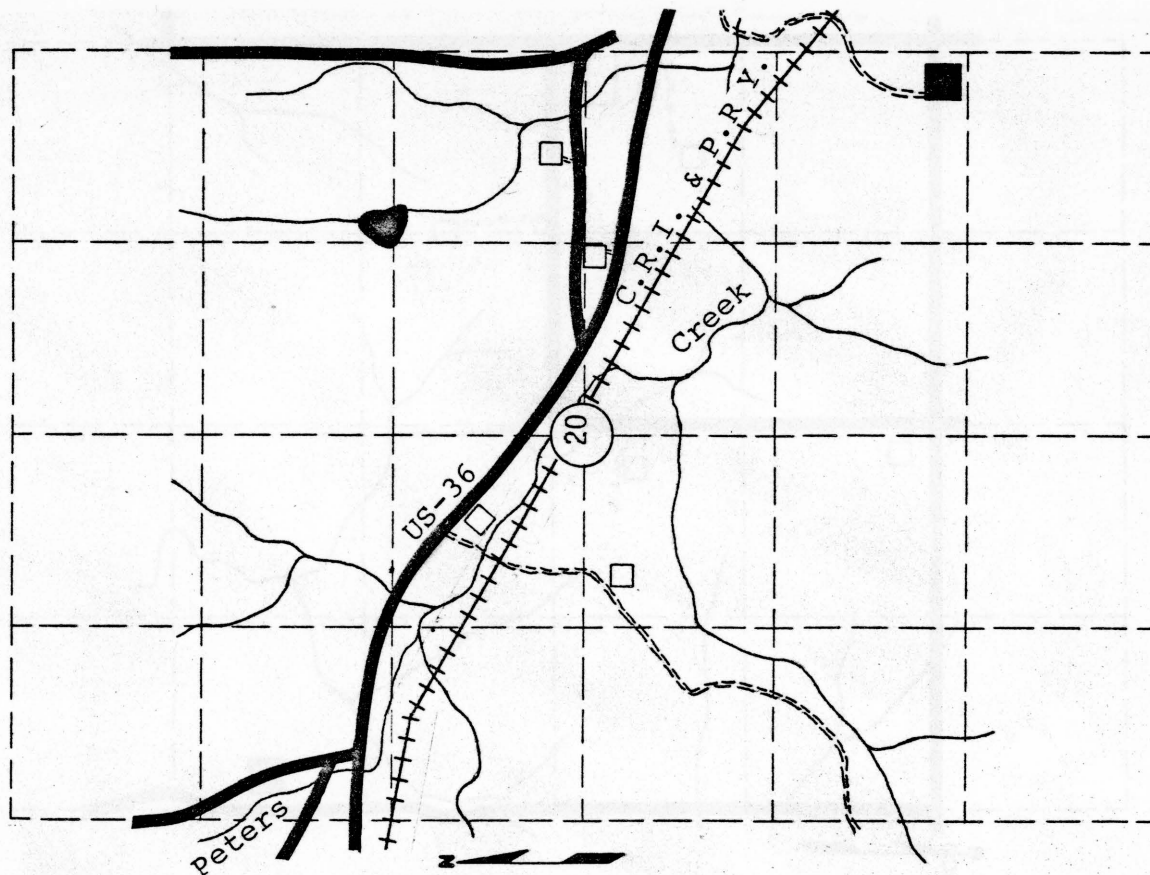
Test Hole	Material at Bottom of Hole	Depth of over-Burden	Depth of Material	Percent Retained								Wash 200	G.F.	L.L.	P.I.
				1 1/2	3/4	3/8	4	8	16	30	50				
										</					

CORRELATION DATA

Geological Age Pennsylvanian
 Geological Source Oread Formation - Plattsmouth Limestone Member
 Material Similar To SHC Form 619, No. 22-8

Specific Gravity (sat.) 2.53 (dry) 2.43
 Los Angeles Wear 33.5 (B)
 Absorption 4.15 Soundness 0.83
 Wt. Cu.Ft. Str. Ratio

Remarks Extends into NE 1/4, 29-3-22 & NW 1/4, 21-3-22. Latest test available 3/8/66. Lab. No. 66-538. For remaining tests see figure no. 14.



Scale: 1" = 1/4 mile

Site No. PDC Date Sept. 1968

Material Limestone County Doniphan

Location SW $\frac{1}{4}$ Sec. 12 Twp. 4 S Range 19 E

Owner Mrs. J. H. Lacy %Mrs. Helen Lacy O'Neil, 2111 W. 69 Ter

Mature of Deposit Dry ^{name} Shawnee Mission, Kansas IV

Accessability Good Site Located on Plate _____

Open Site - Sampled

Status of Site _____

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Pennsylvanian
Geological Source Deer Creek Formation - Ervine Creek Member
Material Similar To SHC Form 619, No. 22-15

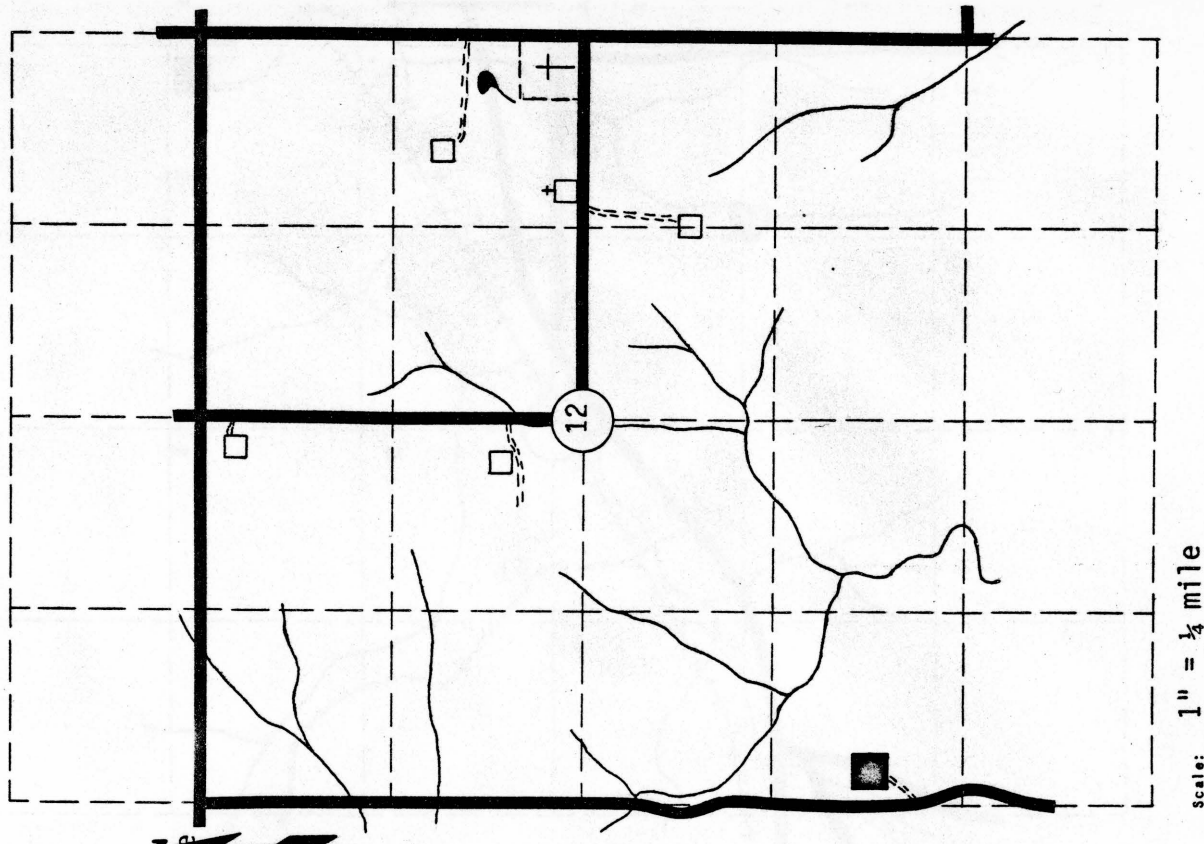
Specific Gravity (Sat.) 2.53 (Dry) 2.43

Los Angeles, Calif. 90001

Absorption	4.29	Soundness	0.84
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Wt. Cu. Ft. _____ Str. Ratio _____

Remarks Extends into SE $\frac{1}{4}$, sec. 11, T4S, R19E. Latest available test 4/19/68, Lab. No. 68-967. For remaining tests see figure no. 14.



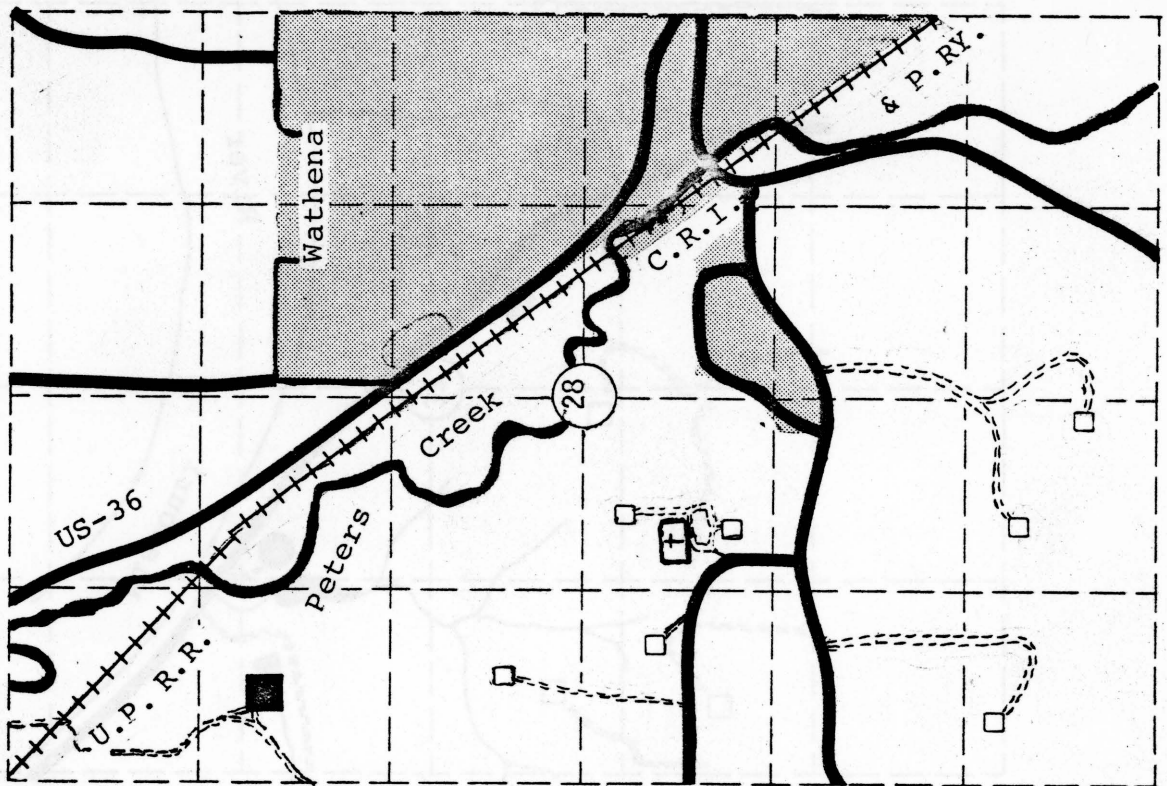
EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Pennsylvanian
Geological Source Lawrence Shale Formation, Amazonian Limestone Member

Material Similar To			
Specific Gravity (Sat.)	2.58	(Dry)	2.51
Los Angeles Wear	30.4 (B)		
Absorption	2.63	Soundness	0.97
Wt. Cu.Ft.		Str. Ratio	
Remarks	Latest available test 3/27/68, Lab. No. 68-804. See figure no. 14 for remaining available test.		



scale: 1" = $\frac{1}{4}$ mile

MATERIAL SURVEY REPORT

LS+11
Pla
 Site No. _____ Date Sept. 1968
 Material Limestone County Doniphan
 NW $\frac{1}{4}$ _____ Sec. 5 Twp. 4 S Range 22 E
 Location W. J. Meugnoit, Rt. 1, Troy
 Owner _____ name _____ address _____
 Dry _____ Good _____
 Nature of Deposit _____ Accessibility _____ Site Located on Plate _____
Open Site - Sampled
 Status of Site _____

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Pennsylvanian
Geological Source Lawrence Shale Formation - Amazonian Limestone Member
Material similar to SHC Form 619, No. 22-14

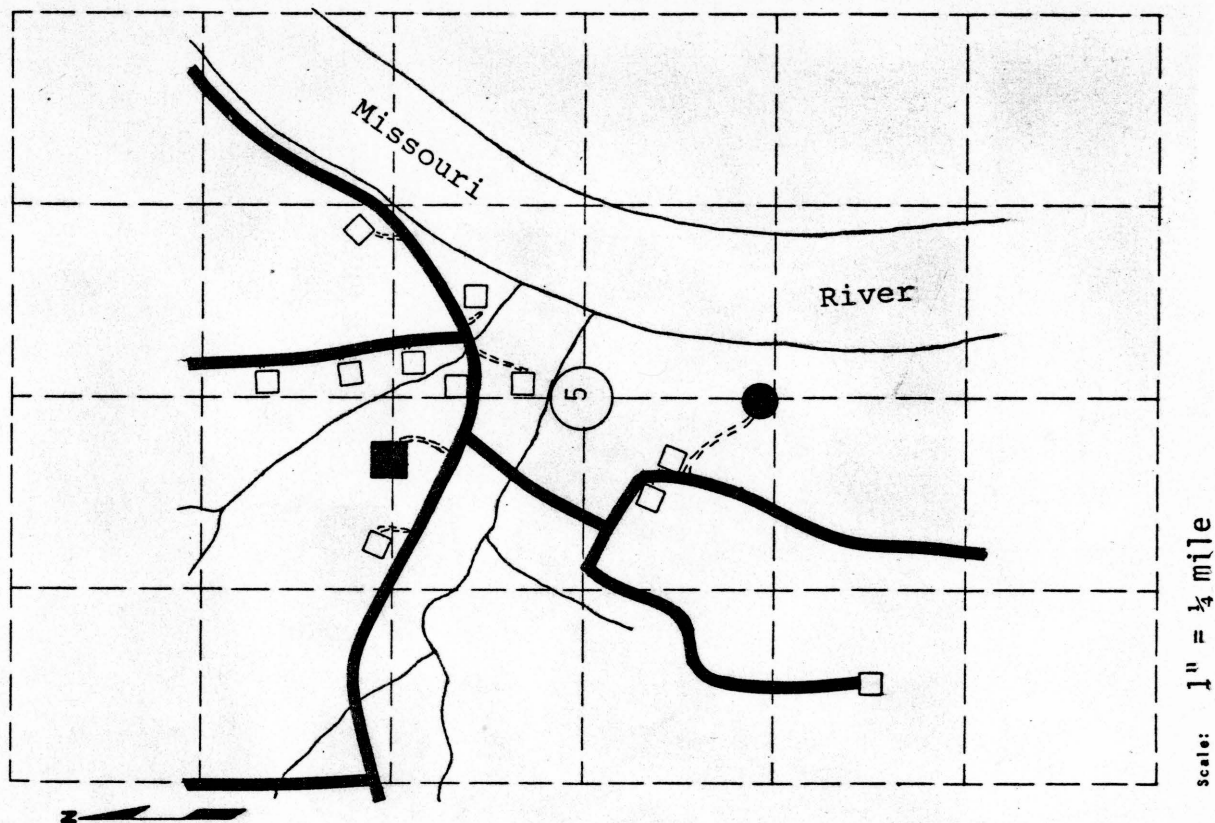
Specific Gravity (Sat.)	2.65	(Dry)	2.61
-------------------------	------	-------	------

Los Angeles Year 26.1 (B)

Absorption	1.52	Soundness	0.98
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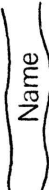
wt. Cu. Ft. _____ Str. Ratio _____

Latest available test 3/20/64, Lab. No. 33166. For remaining tests, see figure no. 14.



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 SURVEY REPORT

Pt

Pt _____
Site No. _____
Date Sept. 1968

Material Limestone County Doniphan

Location NE 1/4 Sec. 36 Twp. 1 S Range 19 E

Owner B. J. John McKennon, Grand Hotel #1, Hotel Way Anaheim, Calif.
name address

Nature of Deposit Dry Accessibility Fair Site Located on Plate I

Open Site - Not Sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age _____ Pennsylvanian

Topeka Limestone Formation

Material Similar To _____

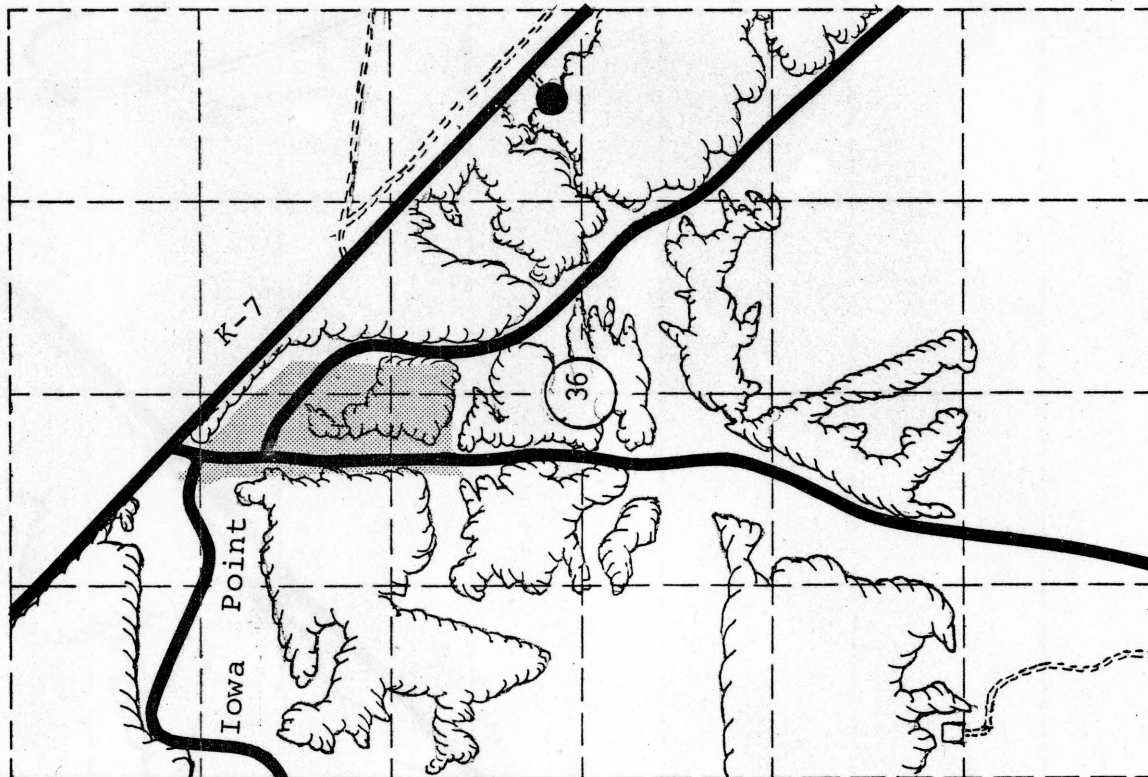
Specific Gravity (Sat.) _____ (Dry) _____

Los Angeles Near _____

Absorption _____ Soundness _____

Wt. Cu. Ft. _____ Str. Ratio _____

Remarks



Scale: $1'' = \frac{1}{4}$ mile

MATERIAL SURVEY REPORT

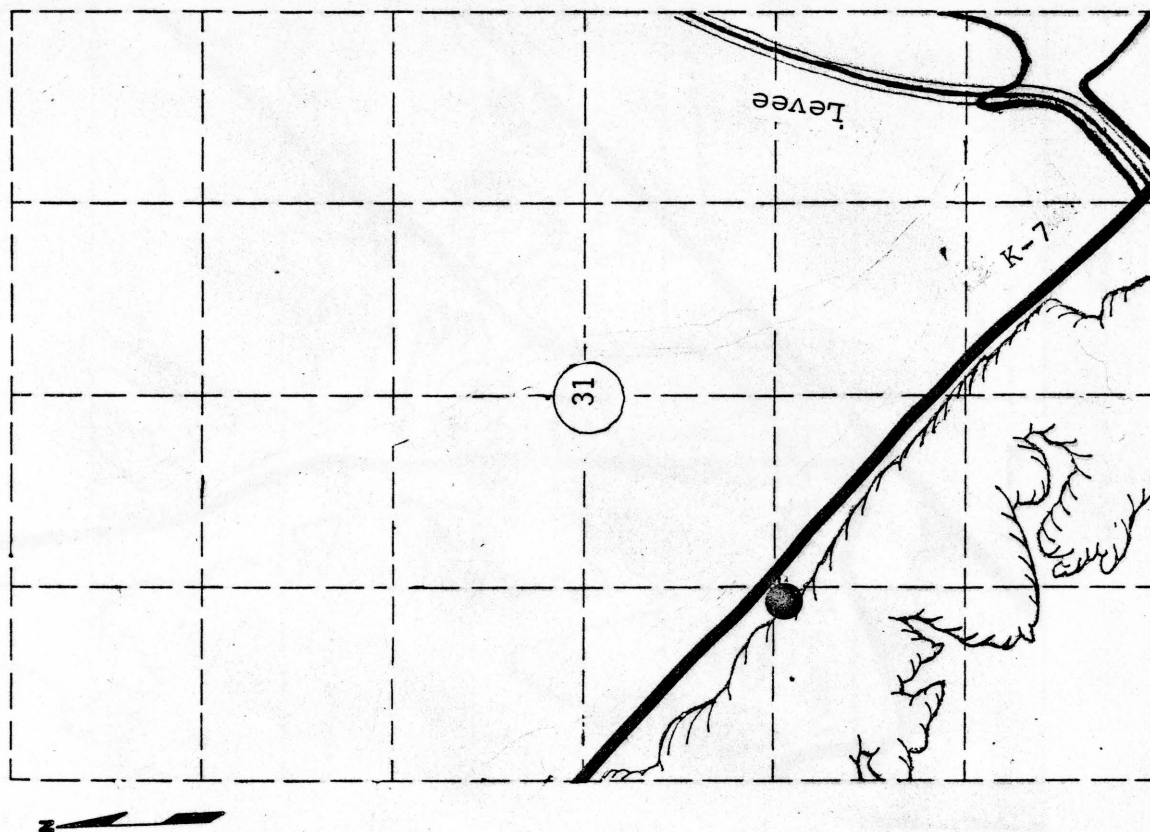
LS+13
Pt _____ Date Sept. 1968
 Limestone _____ County Doniphan
 SW $\frac{1}{4}$ _____ Sec. 31 Twp. 1 S Range 20 E
 John McKennon, Grand Hotel, Anaheim, Calif.
 _____ name _____ address _____
 Dry _____ Accessibility _____ Fair _____ Site Located on Plate I
 Open Site - Not Sampled
 _____ Status of Site _____

EXPLORATION DATA

[illegible]

CORRELATION DATA

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



Scale: $1'' = \frac{1}{4}$ mile

Pt. _____ Sept. 1968
 Site No. _____ Date _____
 Limestone _____ County _____
 Material _____ Doniphan _____
 NE $\frac{1}{4}$ _____ Sec. 6 _____ Twp. 2 S _____ Range 20 E _____
 Location _____
 Owner _____ H. D. Whetstone & Sons, c/o Hugh Dale Whetstone, Highland
 name _____ address _____
 Mature of Deposit _____ Good _____ Site Located on Plate _____ I _____
 Open Site - Not Sampled _____
 Status of Site _____

EXPLORATION DATA

[illegible]

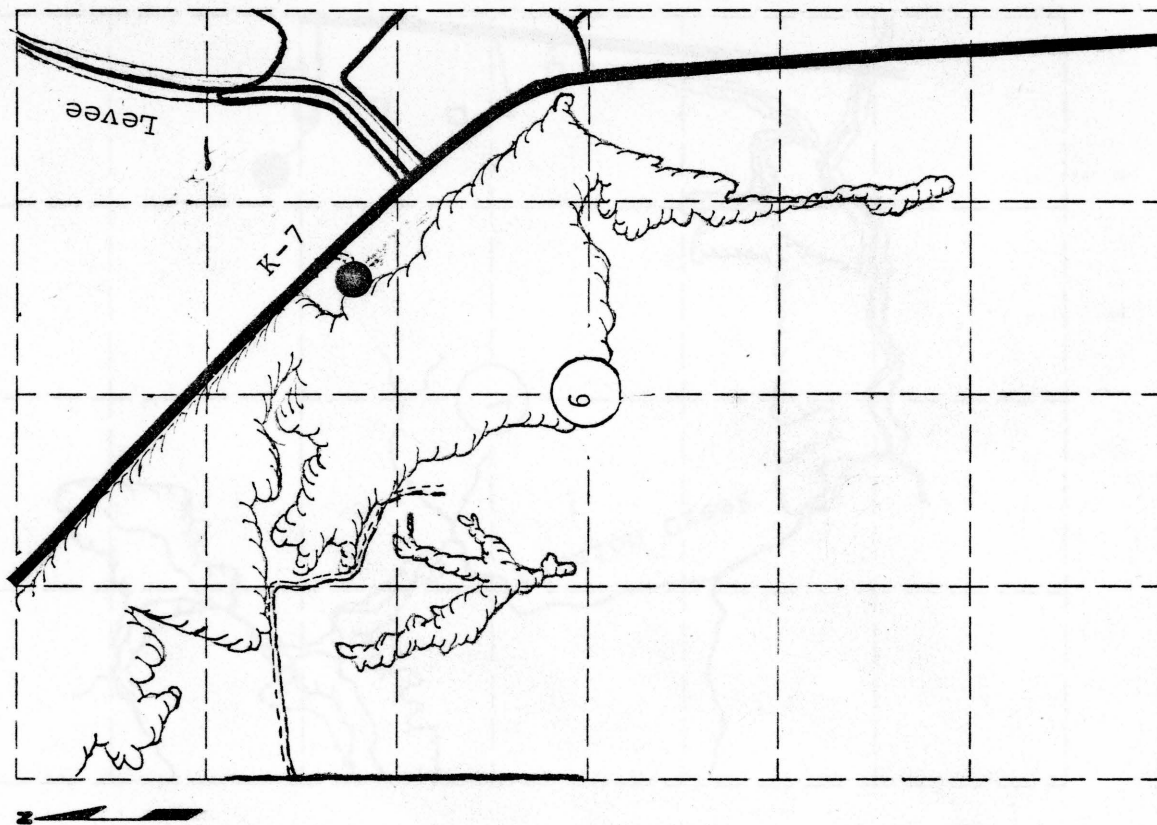
CORRELATION DATA

Geological Age Pennsylvanian
 Geological Source Topeka Limestone Formation
 Material Similar To _____

 Specific Gravity (Sat.) _____ (Dry) _____

 Los Angeles Wear _____
 Absorption _____ Soundness _____

 Wt. Cu.Ft. _____ Str. Ratio _____
 Remarks Limited Production from Deer Creek Limestone Formation



Scale: 1" = $\frac{1}{4}$ mile

MATERIAL SURVEY REPORT

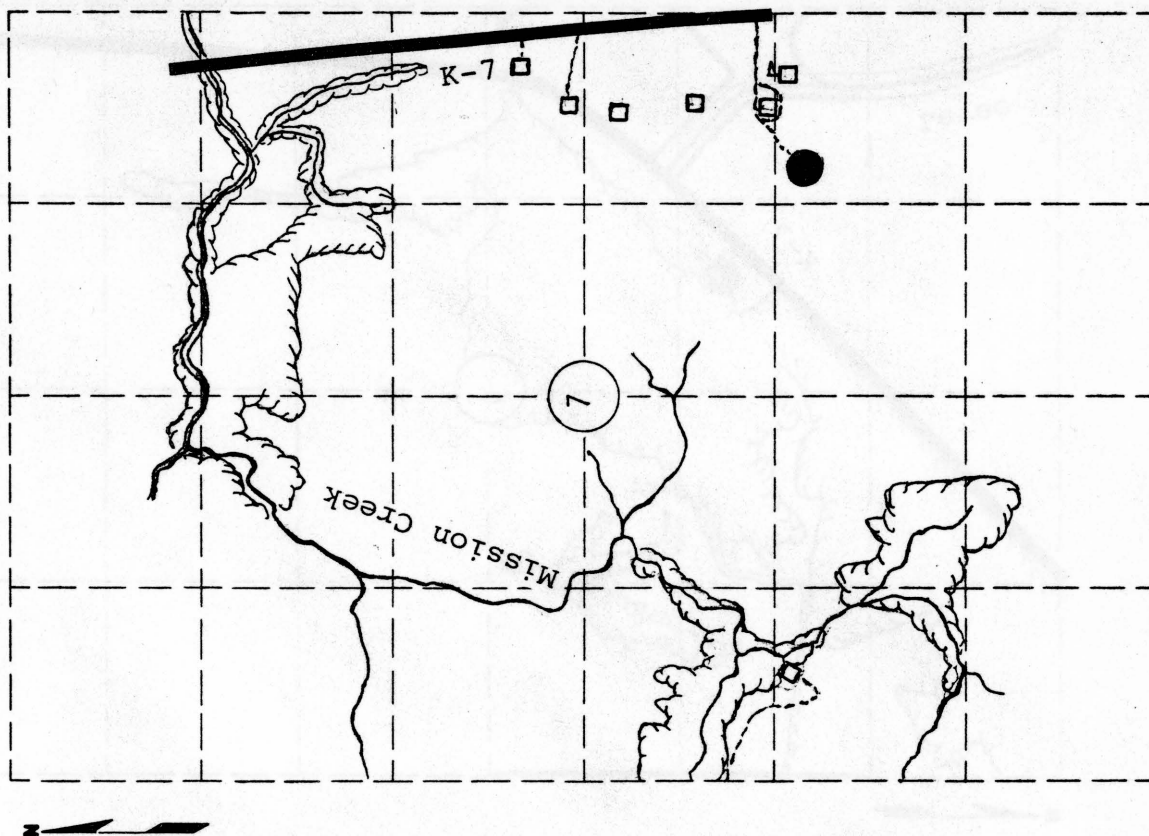
LS+15
 Site No. Pdc Date Sept. 1968
 Material Limestone County Doniphan
 Location SE 1/4 Sec. 7 Twp. 2 S Range 20 E
 Owner Ward Gilmore, Rt. 1, Highland, Kansas
 Name Dry Accessability Fair address I
 Nature of Deposit Open Site - Not Sampled Site Located on Plate
 Status of Site Open Site - Not Sampled

EXPLORATION DATA

Test Hole	Material at Bottom of Hole	Depth of over- Burdan	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				

CORRELATION DATA

Geological Age Pennsylvanian
 Geological Source Deer Creek Formation - Ervine Creek Member
 Material Similar To _____
 Specific Gravity (Sat.) _____ (Dry)
 Los Angeles Wear _____
 Absorption _____ Soundness _____
 Wt. Cu.Ft. _____ Str. Ratio _____
 Remarks _____



Scale: 1" = 1/4 mile

STATE HIGHWAY COMMISSION OF KANSAS

MATERIAL SURVEY REPORT

LS+16
Pt

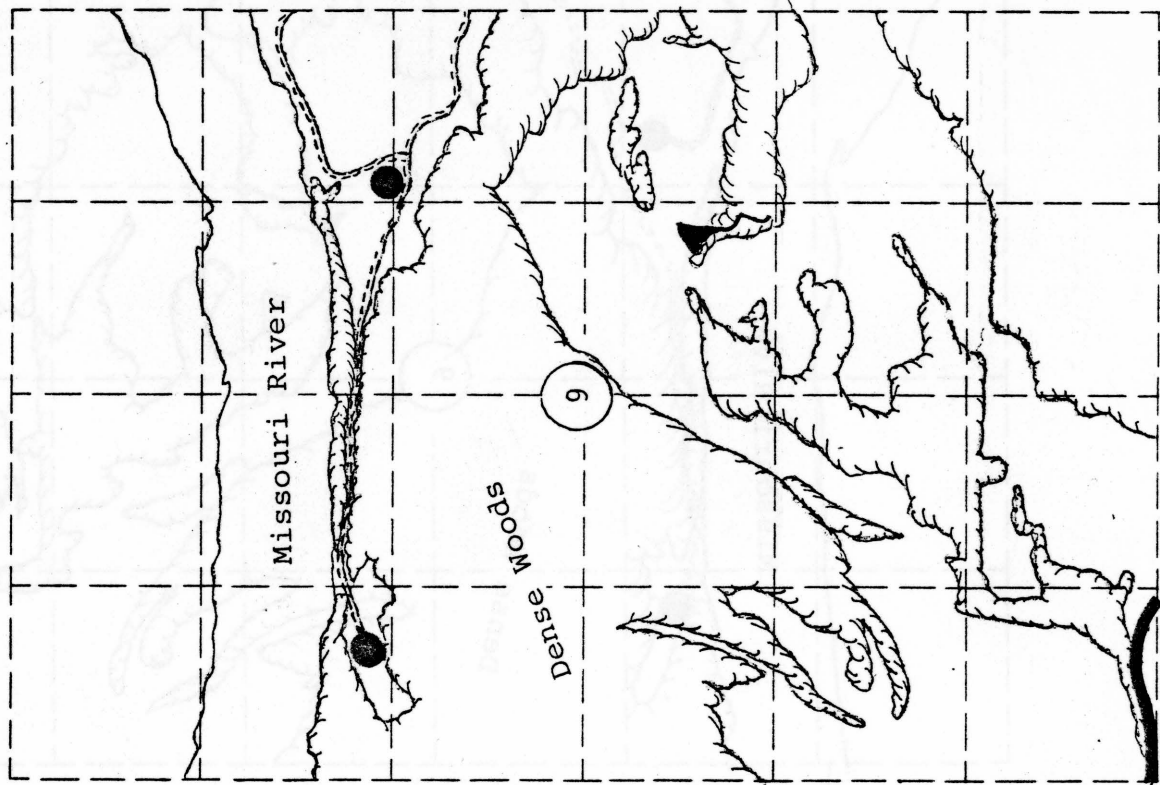
Site No. _____ Date Sept. 1968
 Material Limestone County Doniphan
 Location N1/4 Sec. 9 Twp. 2 S Range 20 E
 Owner B. Walters Highland, Kansas
 name address
 Nature of Deposit Dry Accessibility Fair Site Located on Plate I
 Status of Site Open Site - Not Sampled

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.L.
				1 1/2	3/4	3/8	1/4	8	16	30	50				

CORRELATION DATA

Geological Age Pennsylvanian
 Geological Source Topeka Limestone Formation
 Material Similar To _____
 Specific Gravity (Sat.) _____ (Dry)
 Los Angeles Wear _____
 Absorption _____ Soundness _____
 Wt. Cu.Ft. _____ Str. Ratio _____
 Remarks Also contains Ervine Creek Limestone Member



Scale: 1" = 1/4 mile

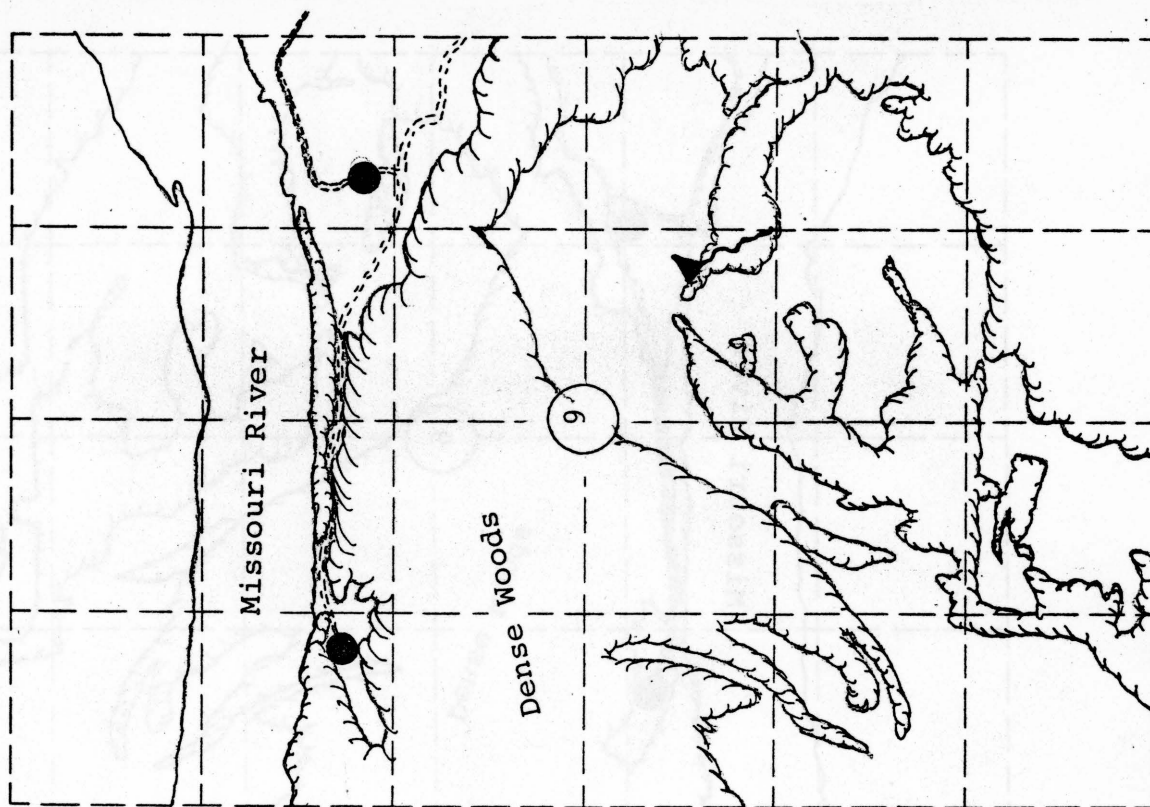
Pt _____ Date Sept., 1968
 Site No. _____
 Material Limestone County Doniphan
 NE $\frac{1}{4}$ Sec. 9 Twp. 2 S Range 20 E
 Location _____
 Owner C. W. Schneider, Buffalo Hollow Ranch, Inc., Troy, Kansas
 name _____ address _____
 Nature of Deposit Dry Accessibility Good Site Located on Plate I
 Status of Site Open Site - Not Sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Pennsylvania
 Geological Age
 Topeka Limestone Formation
 Geological Source
 Material Similar To
 Specific Gravity (Sat.) (Dry)
 Los Angeles Wear
 Absorption Soundness
 Wt. Cu. Ft. Str. Ratio
 Remarks: Extends into Section 10. Also contains Ervine Creek Limestone Member.



scale: $1'' = \frac{1}{4}$ mile

Pt _____ Date Sept. 1968

Site No. _____

Material Limestone County Doniphan

Location NW $\frac{1}{4}$ Sec. 14 Twp. 2 S Range 20 E

Owner Gerald Schneider et al Sparks, Kansas address _____

Nature of Deposit Dry Accessibility Poor Site Located on Plate II

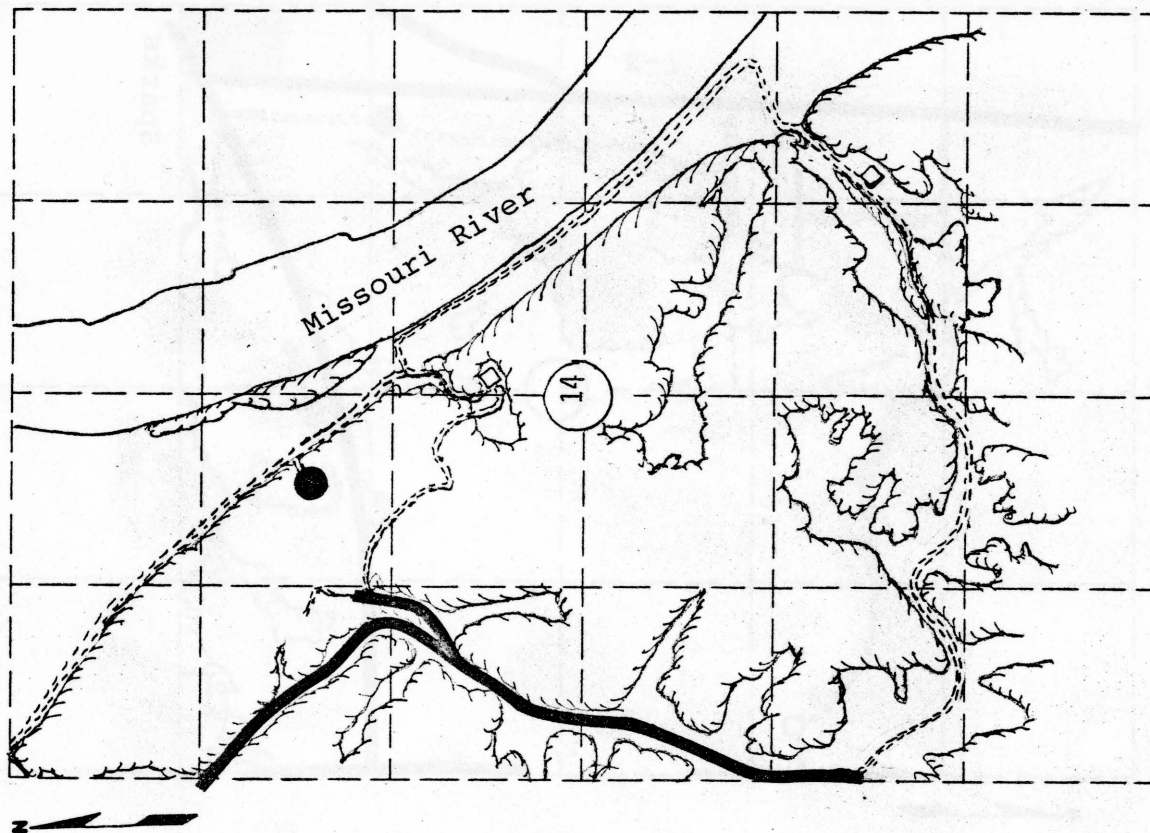
Status of Site Open Site - Not Sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

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

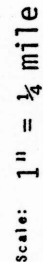


Scale: 1" = $\frac{1}{4}$ mile

EXPLORATION DATA

CORRELATION DATA

Remarks

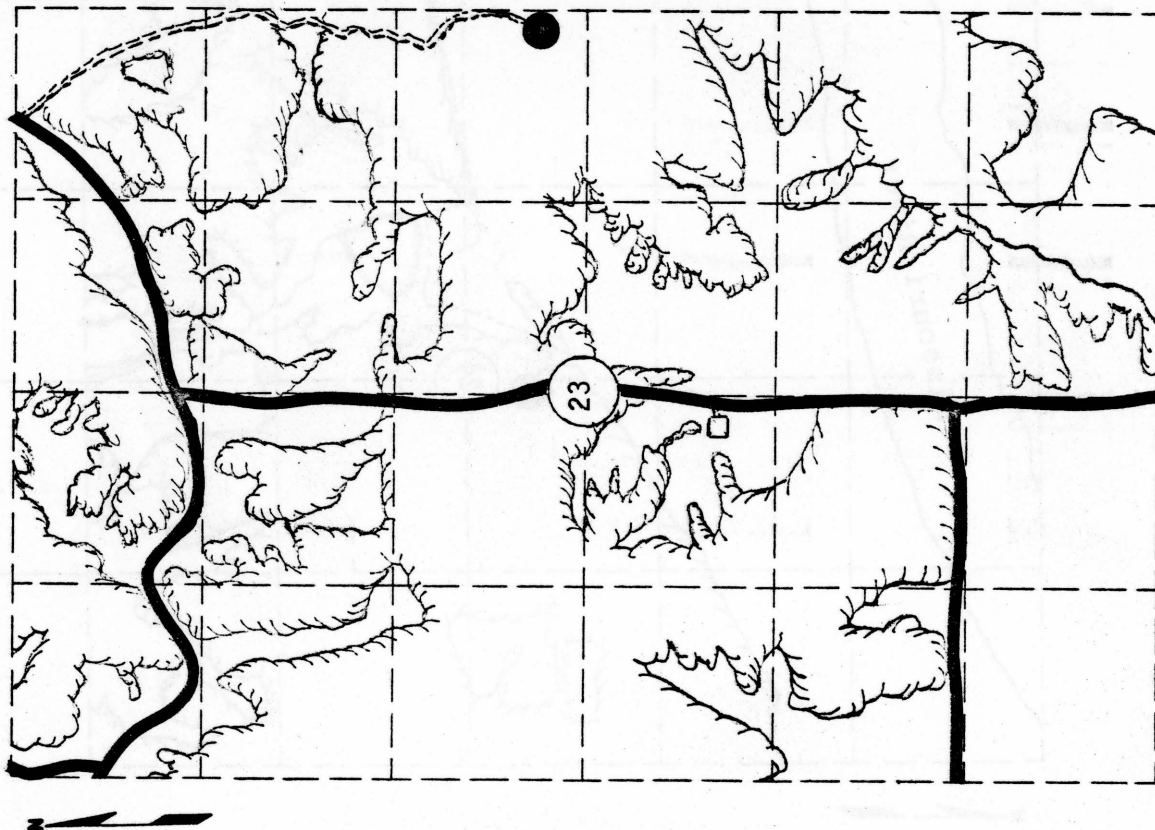


MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

scale: 1" = $\frac{1}{4}$ mile



MATERIAL SURVEY REPORT

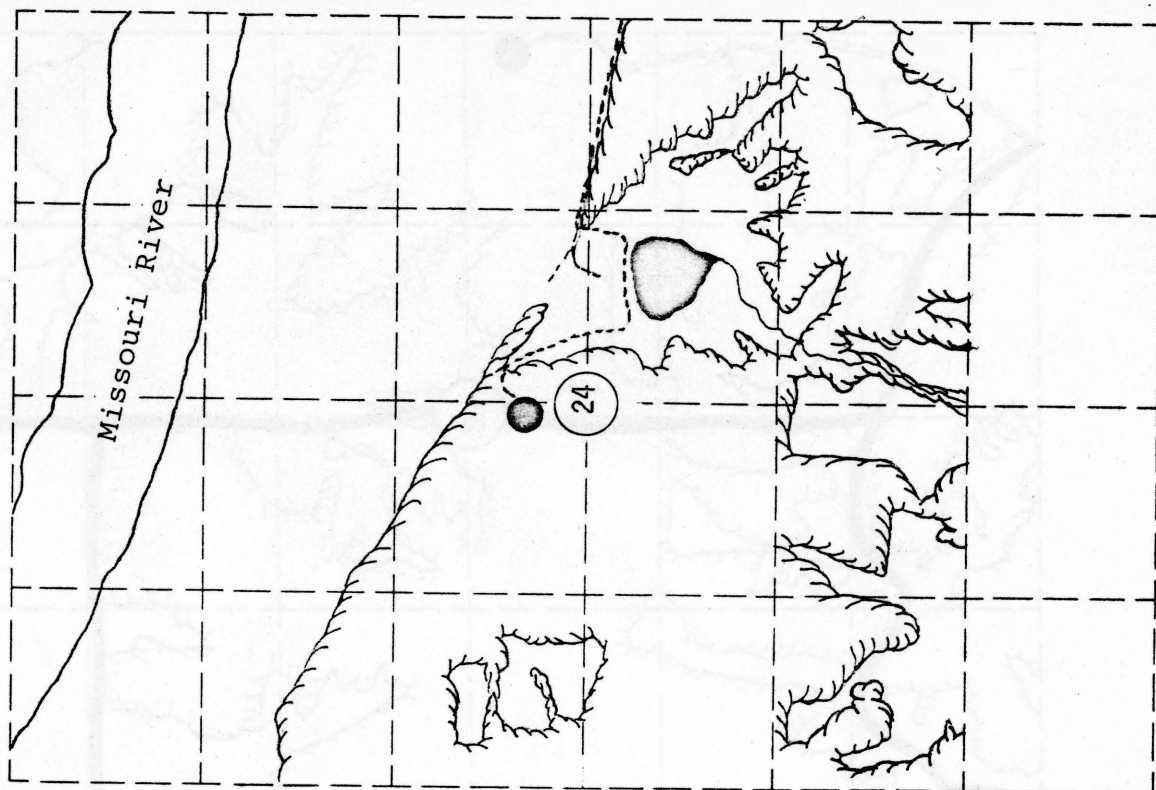
LS+21
Pdc
 Site No. _____ Date Sept. 1968
 Material Limestone County Doniphan
 NE $\frac{1}{4}$ _____ Sec. 24 Twp. 2 S Range 20 E
 Location _____
 Owner H. D. Whetstone Highland, Kansas address _____
 Nature of Deposit _____ Accessibility Poor Site Located on Plate II
 Status of Site _____ Open Site - Not Sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Pennsylvanian
Geological Source Deer Creek Formation - Ervine Creek Member
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu.Ft. _____ Str. Ratio _____
Remarks _____



scale: $1'' = \frac{1}{4}$ mile

MATERIAL SURVEY REPORT

LS+22
Pdc
 Site No. _____ Date Sept. 1968
 Material Limestone County Doniphan
 Location SE $\frac{1}{4}$ Sec. 19 Twp. 2 S Range 21 E
 Owner M. R. Cooke, % Mt. Vernon Ranch, Troy, Kansas
 name address
 Nature of Deposit Dry Accessibility Fair Site Located on Plate III
 Status of Site Open Site - Not Sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Pennsylvanian
Geological Source Deer Creek Formation - Ervine Creek Member
rock quarried in site
Material Similar To LS+2
Pdg.

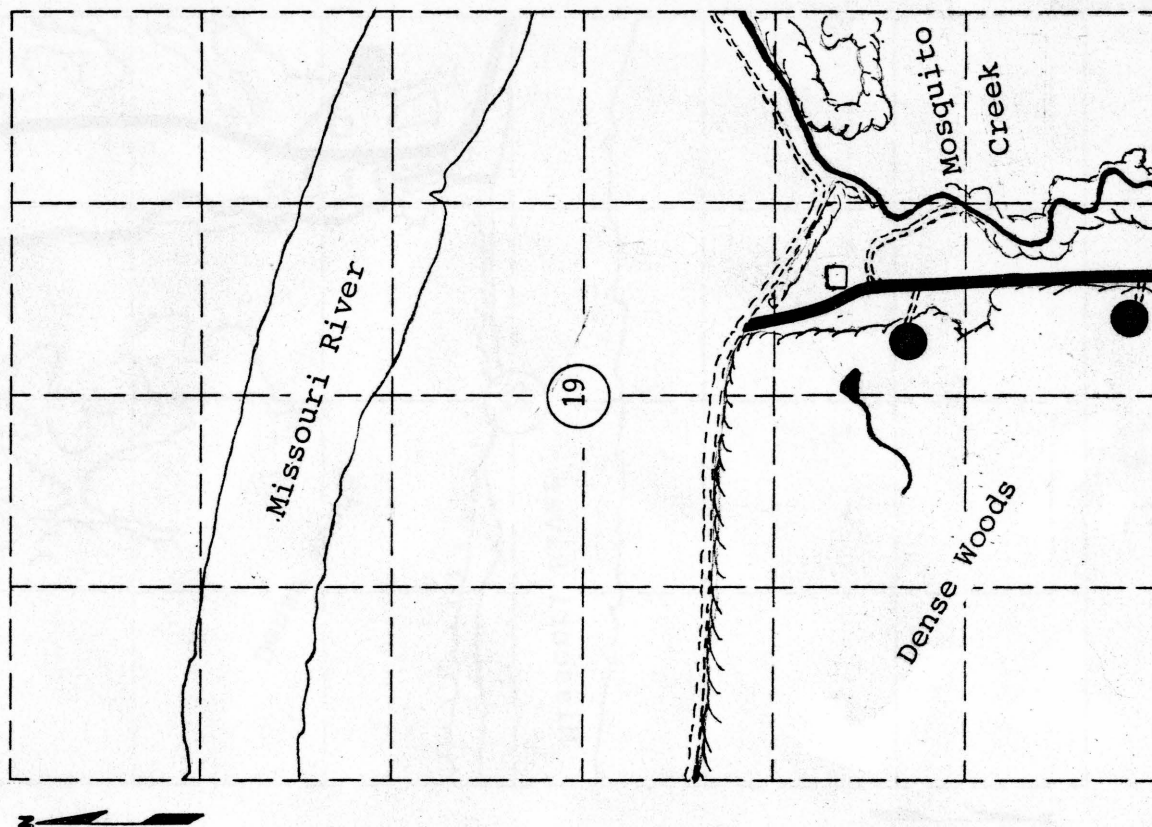
Specific Gravity (Sat.) _____ (Dry) _____

Los Angeles Wear _____

Absorption _____ Soundness _____

Wt. Cu.Ft. _____ Str. Ratio _____

Remarks _____



Scale: 1" = $\frac{1}{4}$ mile

EXPLORATION DATA

CORRELATION DATA

Material Similar To _____

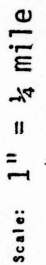
Specific Gravity (Sat.) _____ (Dry) _____

Los Angeles Wear _____

Absorption _____ Soundness _____

Wt. Cu. Ft. _____ Str. Ratio _____

Remarks _____



MATERIAL SURVEY REPORT

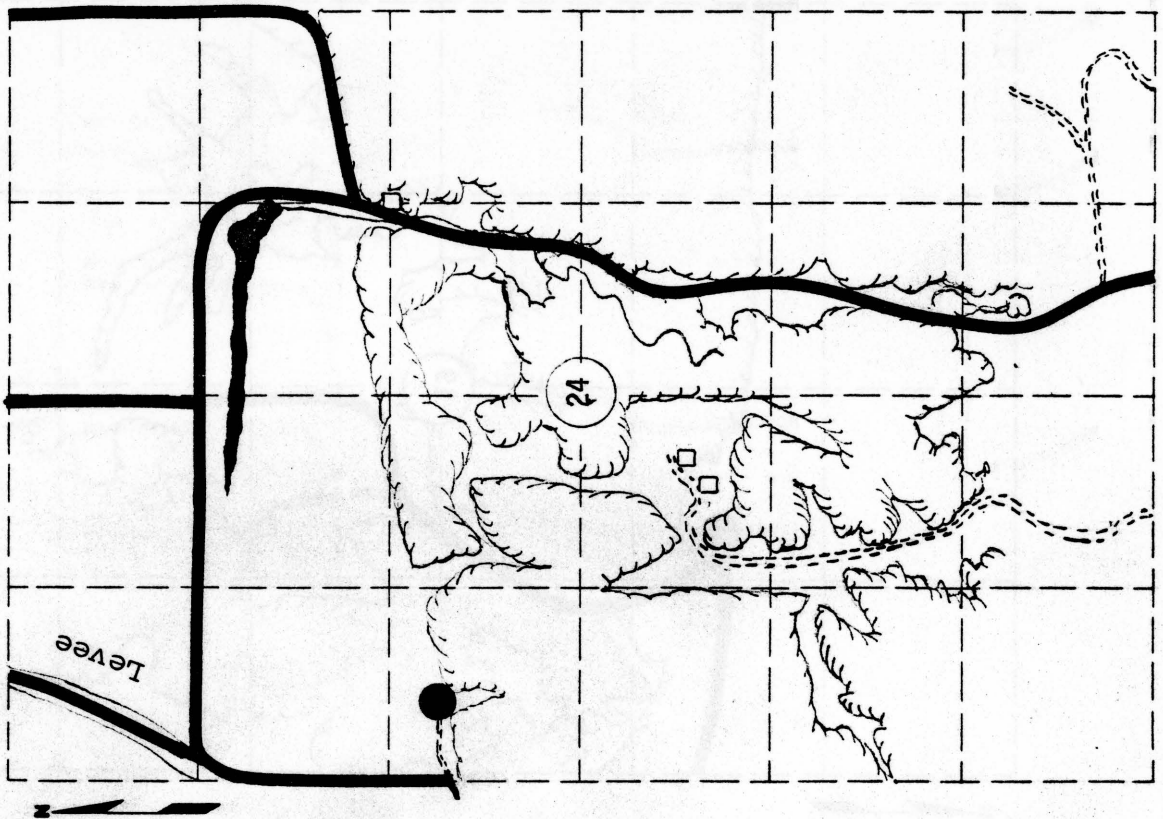
Site No. LS+24 Pop Date Sept. 1968
 Material Limestone County Doniphan
 Location NW 1/4 Sec. 24 Twp. 2S Range 21E
 Owner Benny Brandt address Wathena, Kansas
 Nature of Deposit Dry Accessibility Good Site Located on Plate III
 Status of Site Open Site - Not Sampled

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 Oread Formation - Plattsmouth Member
 Material Similar To LS+5 rock quarried in site Pop.
 Specific Gravity (Sat.) _____ (Dry) _____
 Los Angeles Wear _____
 Absorption _____ Soundness _____
 Wt. Cu.Ft. _____ Str. Ratio _____
 Remarks _____



Scale: 1" = 1/4 mile

MATERIAL SURVEY REPORT

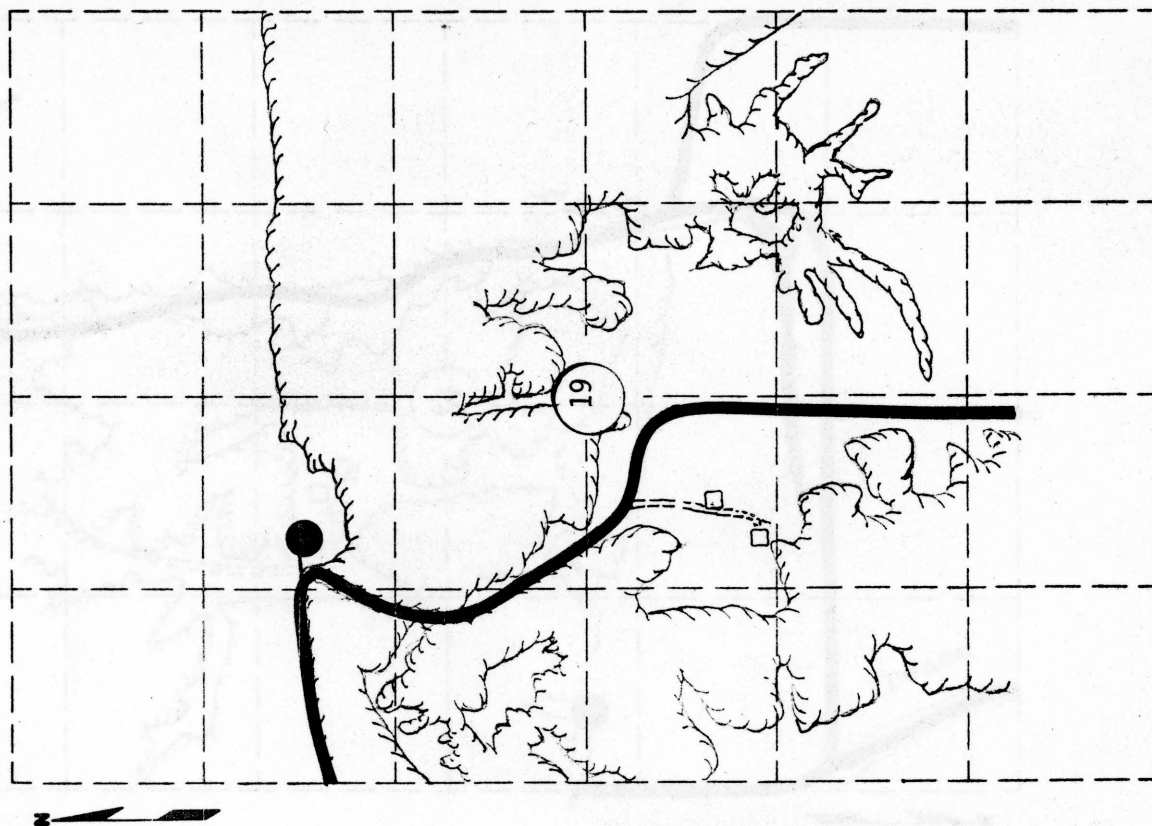
LS+25
Pop _____ Date Sept., 1968
Limestone _____ County Doniphan
NW 1/4 _____ Sec. 19 Twp. 2 S Range 22 E
William Schultz _____ Route 1 Wathena, Kansas
name _____ address _____
_____ Dry _____ accessibility Good _____ Site Located on Plate III
_____ Open Site - Not Sampled
Status of Site _____

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Pennsylvanian
Geological Source Oread Limestone Formation - Plattsmouth Member
Material Similar To LS+5 rock quarried in site Rep
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu.ft. _____ Str. Ratio _____
Remarks _____



Scale: $1'' = \frac{1}{4}$ mile

MATERIAL SURVEY REPORT

LS+26
Pop
 Site No. _____ Date Sept. 1968
 Material Limestone County Doniphan
 Location SE $\frac{1}{4}$ Sec. 21 Twp. 2 S Range 22 E
 Owner Mrs. Christine Jager Mathena, Kansas
 name address
 Nature of Deposit Dry accessibility Poor Site Located on Plate III
 Status of Site Open Site - Not Sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Pennsylvanian
Geological Source Oread Limestone Formation - Plattsmouth Limestone Member

Material Similar To _____

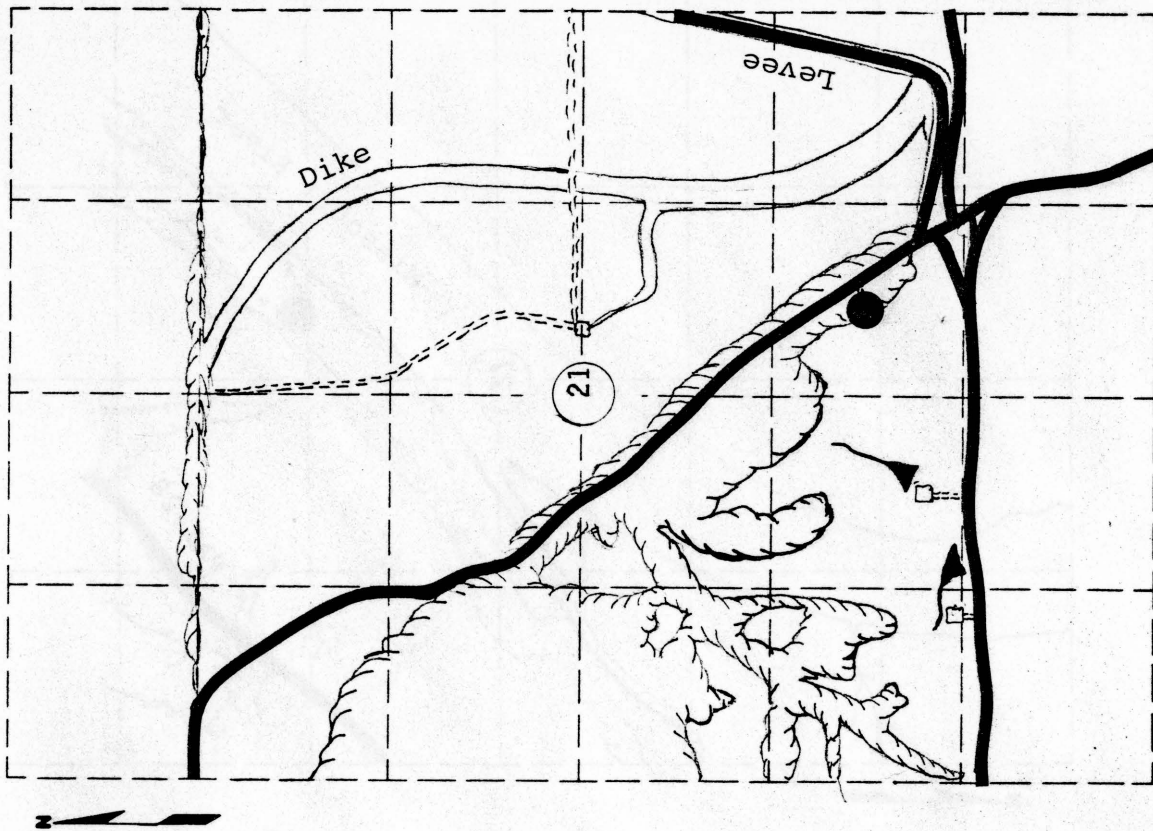
Specific Gravity (Sat.) _____ (Dry) _____

Los Angeles Wear _____

Absorption _____ Soundness _____

Wt. Cu. Ft. _____ Str. Ratio _____

Remarks _____



Scale: $1'' = \frac{1}{4}$ mile

Site No. Pop Date Sept. 1968

Material Limestone County Doniphan

Location SE $\frac{1}{4}$ Sec. 27 Twp. 2 S Range 22 E

Owner Bernard J. Studer & Wife name Wathena, Kansas address III

Nature of Deposit Dry Accessibility Poor Site Located on Pl. III

Status of Site Open Site - Not Sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Pennsylvanian
Geological Source Oread Limestone Formation - Plattsmouth Limestone Member

Material Similar To _____

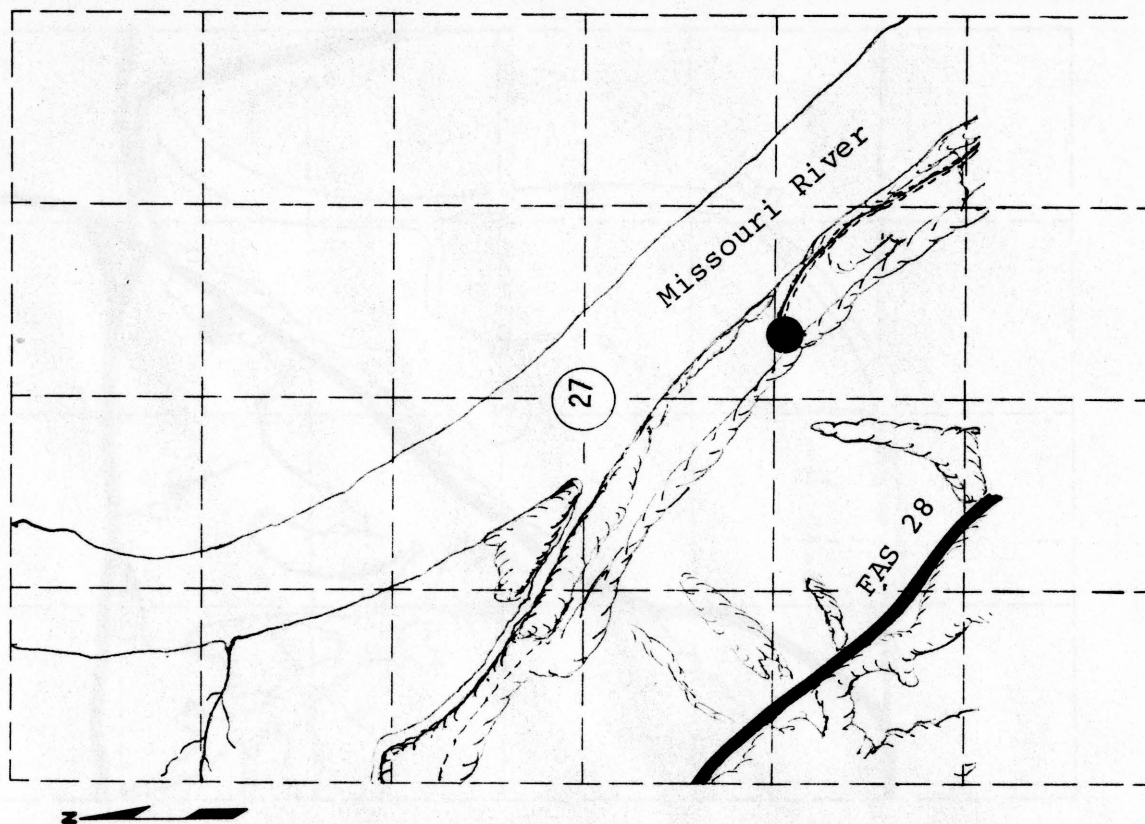
Specific Gravity (Sat.) _____ (Dry) _____

Los Angeles Wear _____

Absorption _____ Soundness _____

Wt. Cu. Ft. _____ Str. Ratio _____

Remarks _____



Scale: $1'' = \frac{1}{4}$ mile

MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

Material Similar To _____

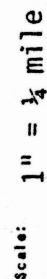
Specific Gravity (Sat.) _____ (Dry) _____

Los Angeles Wear _____

Absorption _____ Soundness _____

Wt. Cu.Ft. _____ Str. Ratio _____

Remarks _____



MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

scale: 1" = $\frac{1}{4}$ mile

MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

scale: 1" = $\frac{1}{4}$ mile

MATERIAL SURVEY REPORT

LS+31
Pdc
Site No. _____ Date Sept. 1968
Material Limestone County Doniphan
Location NE $\frac{1}{4}$ Sec. 1 Twp. 4 S Range 20 E
Owner William Foley Route 3 Troy, Kansas
name address
Mature of Deposit Dry Accessibility Good Site Located on Plate IV
Status of Site Open Site - Not Sampled

[illegible]

CORRELATION DATA

Geological Age Pennsylvanian
Geological Source Deer Creek Formation - Ervine Creek Member
Material Similar To rock quarried in site ^{LS+1} pdc

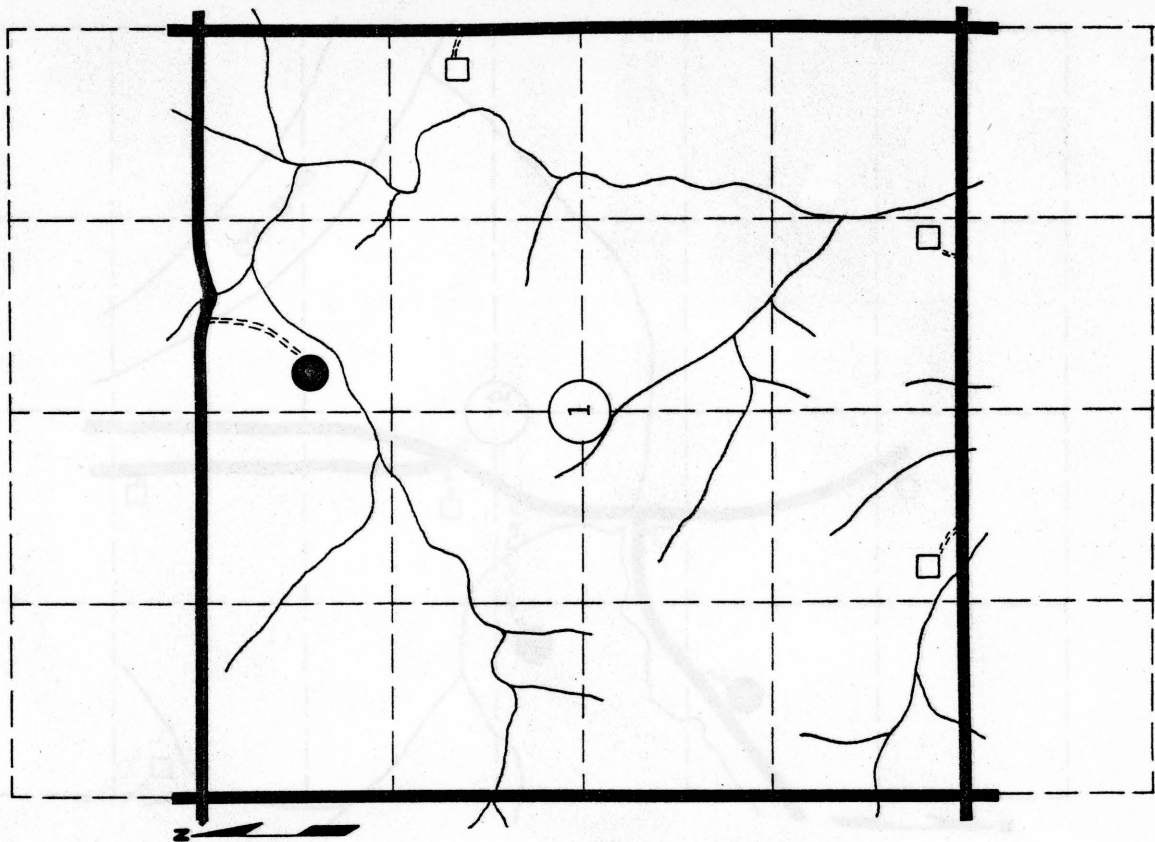
Specific Gravity (Sat.) _____ (Dry) _____

Los Angeles Wear _____

Absorption _____ Soundness _____

Wt. Cu.Ft. _____ Str. Ratio _____

Remarks _____



scale: 1" = $\frac{1}{4}$ mile

MATERIAL SURVEY REPORT

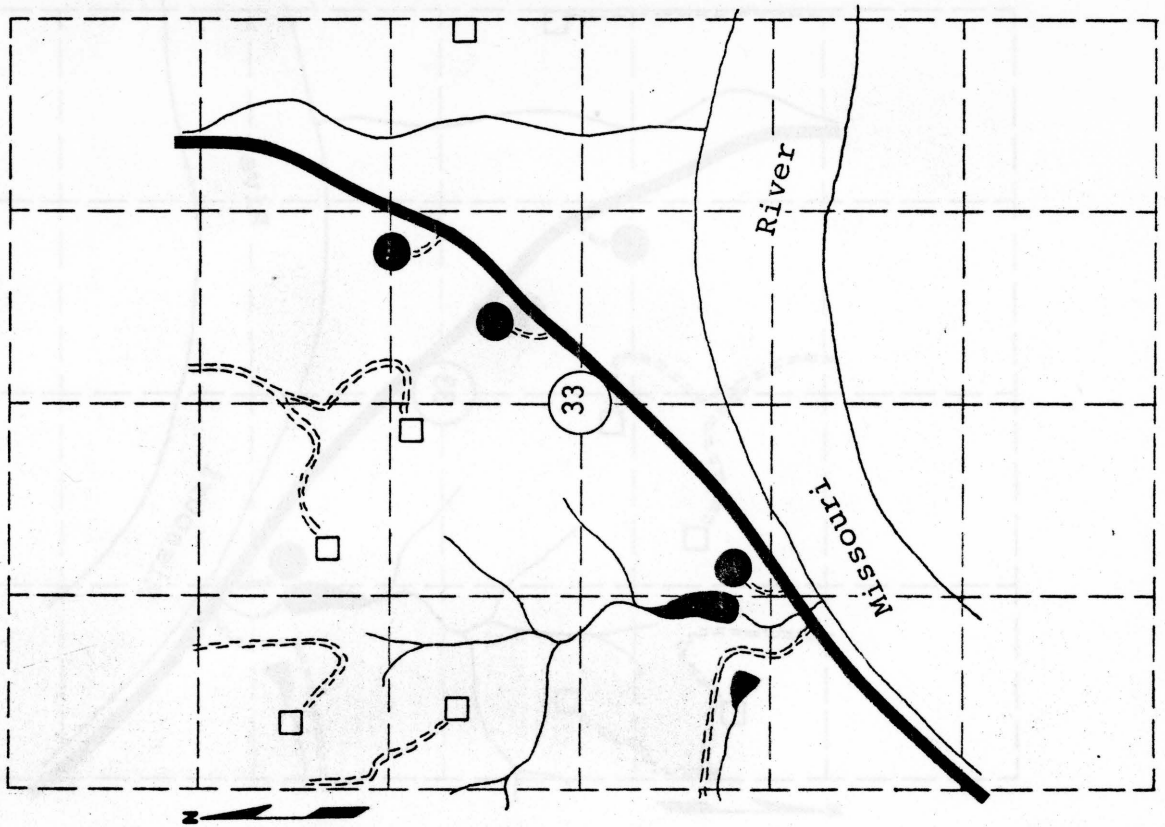
Site No. SG+32 Date Sept. 1968
Qt
 Material Sand & Gravel County Doniphan
 Location SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 33 Twp. 3 S Range 22E
 Owner James & Marcena Herring Box 423 Mathena, Kansas
name address
 Nature of Deposit Dry Accessibility Fair Site Located on Plate V
 Status of Site Open Site - Not Sampled

EXPLORATION DATA

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

CORRELATION DATA

Geological Age Quaternary
 Geological Source Terrace Deposits
 Material Similar To _____
 Specific Gravity (Sat.) _____ (Dry)
 Los Angeles Wear _____
 Absorption _____ Soundness _____
 Wt. Cu.Ft. _____ Str. Ratio _____
 Remarks This site includes two adjacent pits producing



Scale: 1" = $\frac{1}{4}$ mile

MATERIAL SURVEY REPORT

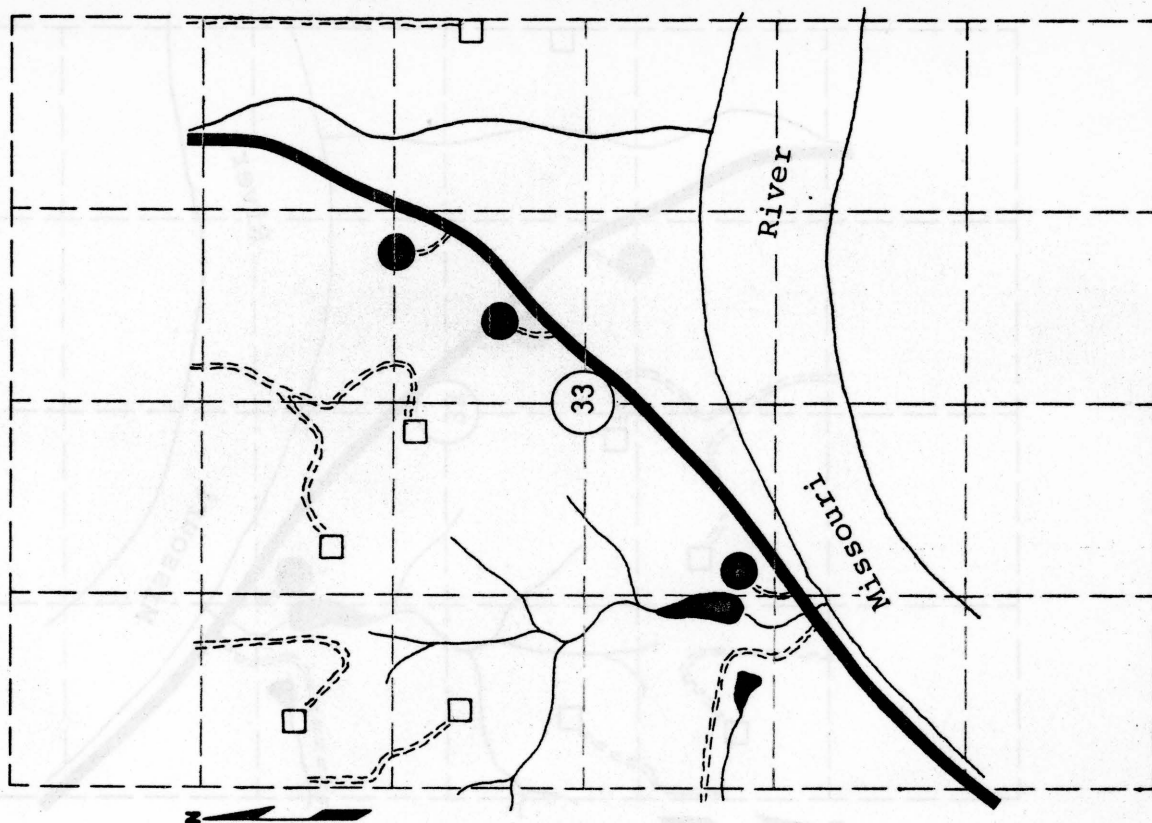
SG+33
Qt
Site No. _____ Date Sept. 1968
Material Sand & Gravel County Doniphan
Location SW $\frac{1}{4}$ Sec. 33 Twp. 3S Range 22E
Owner James & Marcena Herring, Box 423, Mathena, Kansas
name _____ address _____
Mature of Deposit Dry Accessibility Fair Site Located on Plate V
Status of Site Open Site - Not Sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Quaternary
 Geological Source Terrace Deposits
 Material Similar To _____
 Specific Gravity (Sat.) _____ (Dry) _____
 Los Angeles Wear _____
 Absorption _____ Soundness _____
 Wt. Cu.Ft. _____ Str. Ratio _____
 Remarks _____



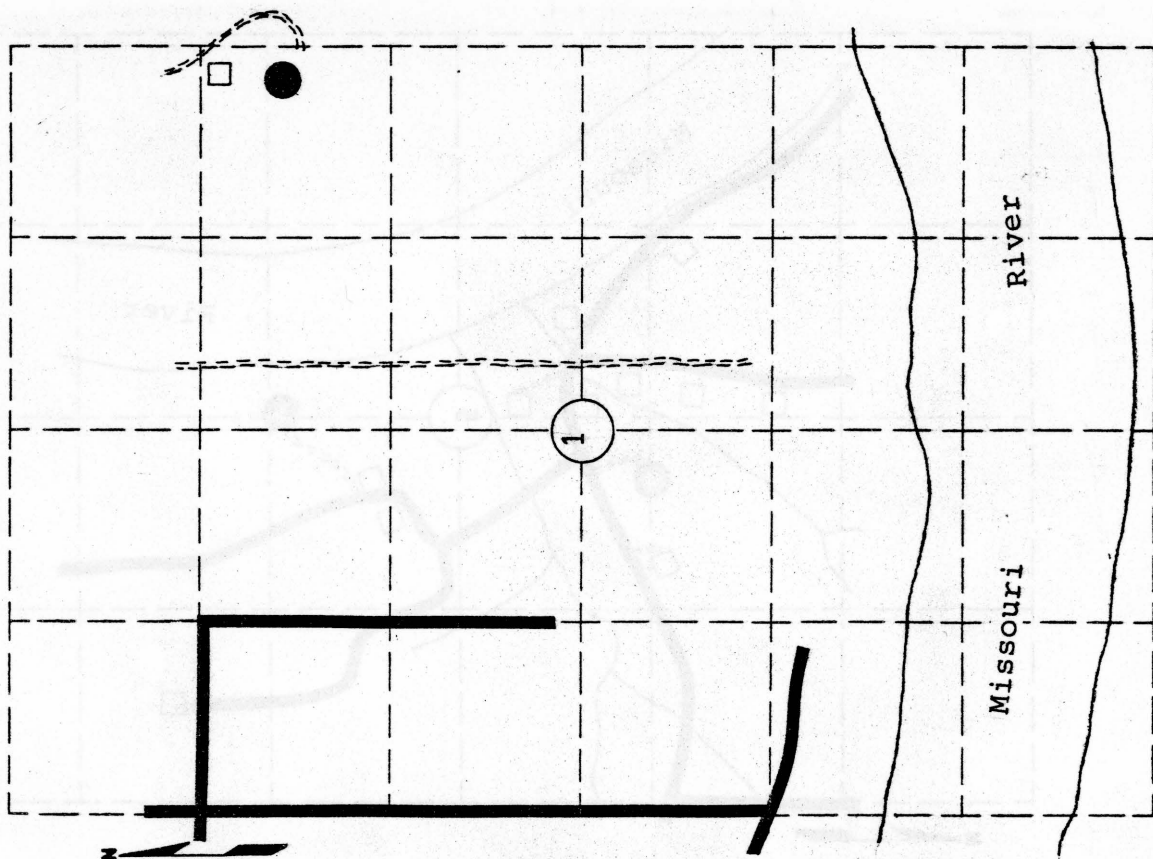
scale: 1" = $\frac{1}{4}$ mile

MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

Scale: 1" = $\frac{1}{4}$ mile



MATERIAL SURVEY REPORT

LS+35
 Site No. Pla Date Sept. 1968
 Material Limestone County Doniphan
 Location SE 1/4 Sec. 5 Twp. 4 S Range 22 E
 Owner August L. Greub Wathena, Kansas
 Nature of Deposit Dry Accessibility Fair Site Located on Plate V
 Status of Site Open Site - Not Sampled

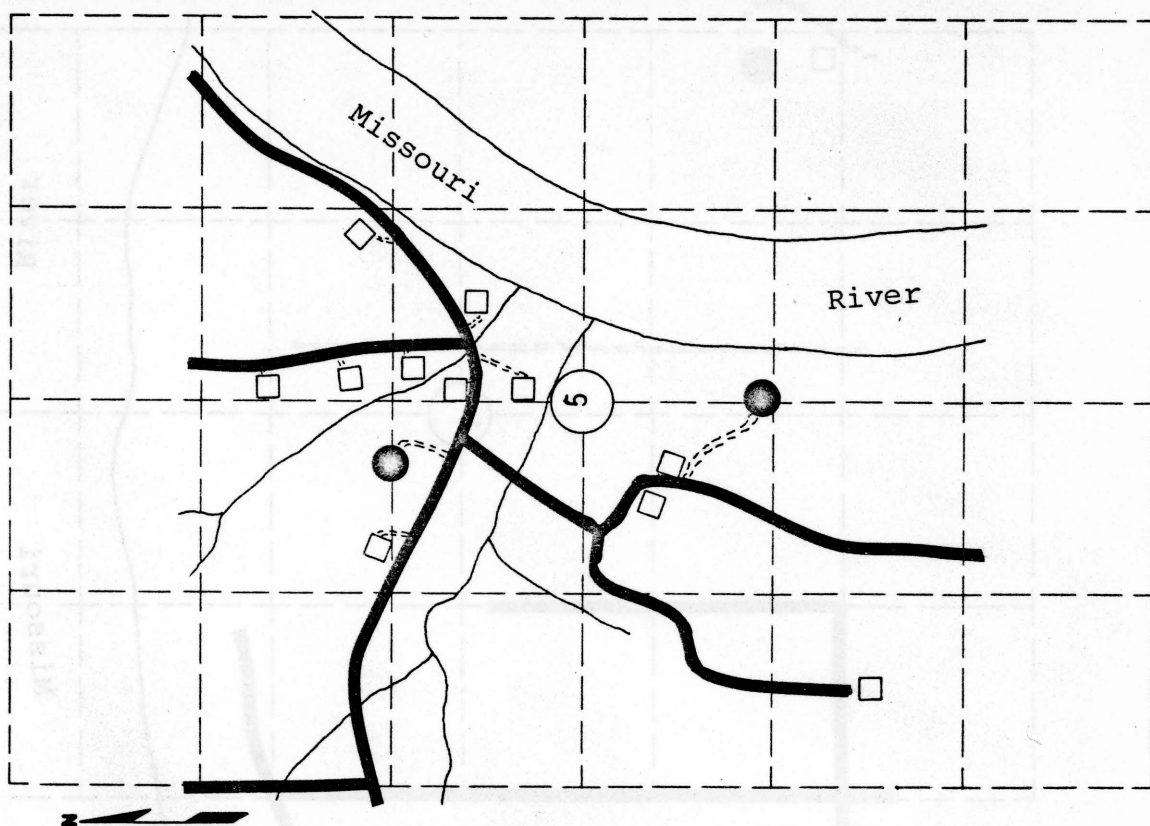
EXPLORATION DATA

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				

CORRELATION DATA

Geological Age Pennsylvanian
 Geological Source Lawrence Formation - Amazonian Member
 Material Similar To Open Site - Sampled Pla

Specific Gravity (Sat.) _____ (Dry) _____
 Los Angeles Wear _____
 Absorption _____ Soundness _____
 Mt. Cu.Ft. _____ Str. Ratio _____
 Remarks _____



Scale: 1" = 1/4 mile

MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

Specific Gravity (Sat.) _____ (Dry) _____
 Los Angeles Wear _____
 Absorption _____ Soundness _____
 Wet. Cu. Ft. _____ Str. Ratio _____
 Remarks _____



MATERIAL SURVEY REPORT

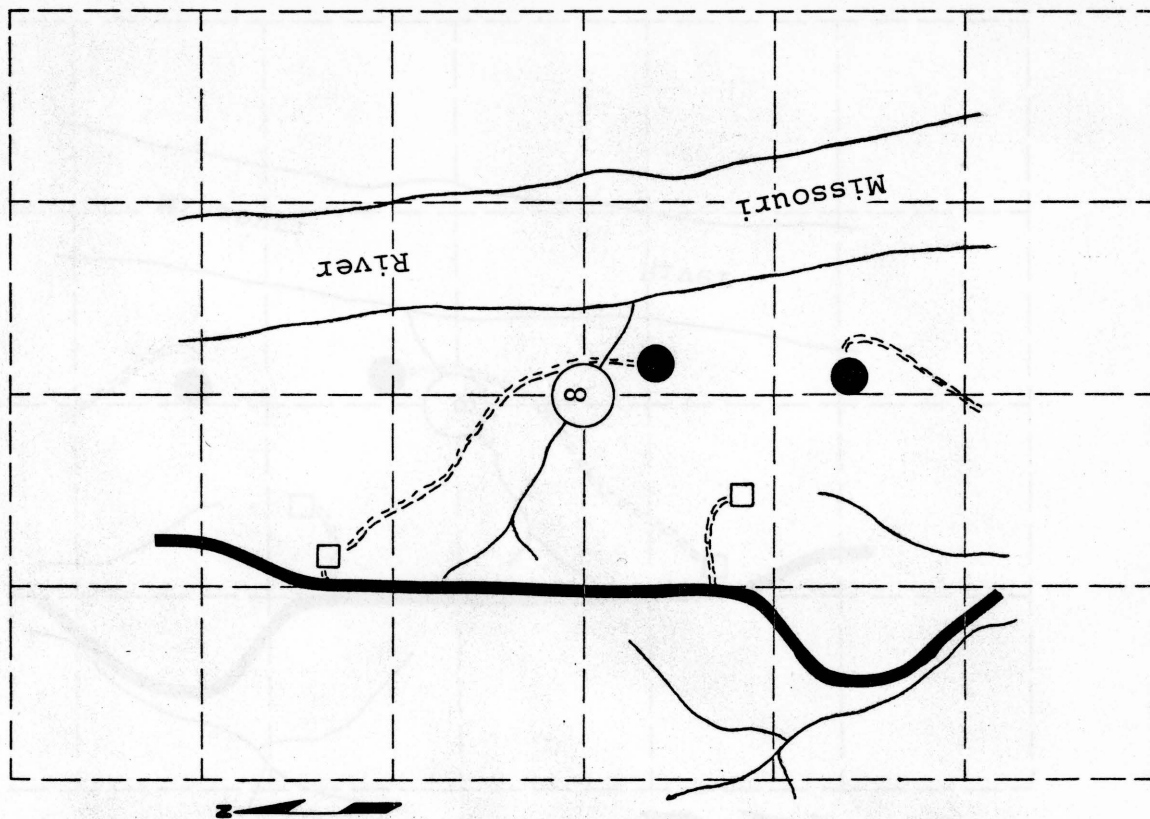
LS+37
 Site No. Pla Date Sept. 1968
 Material Limestone County Doniphan
 Location SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 8 Twp. 4 S Range 22E
 Owner John Kirkland Wathena, Kansas
 Nature of Deposit Dry Accessibility Fair Site Located on Plate V
 Status of Site Open Site - Not Sampled

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				

CORRELATION DATA

Geological Age Pennsylvanian
 Geological Source Lawrence Formation - Amazonian Member
 Material Similar To rock quarried in site LS+11
 Specific Gravity (Sat.) _____ (Dry) _____
 Los Angeles Wear _____
 Absorption _____ Soundness _____
 Wt. Cu. Ft. _____ Str. Ratio _____
 Remarks _____



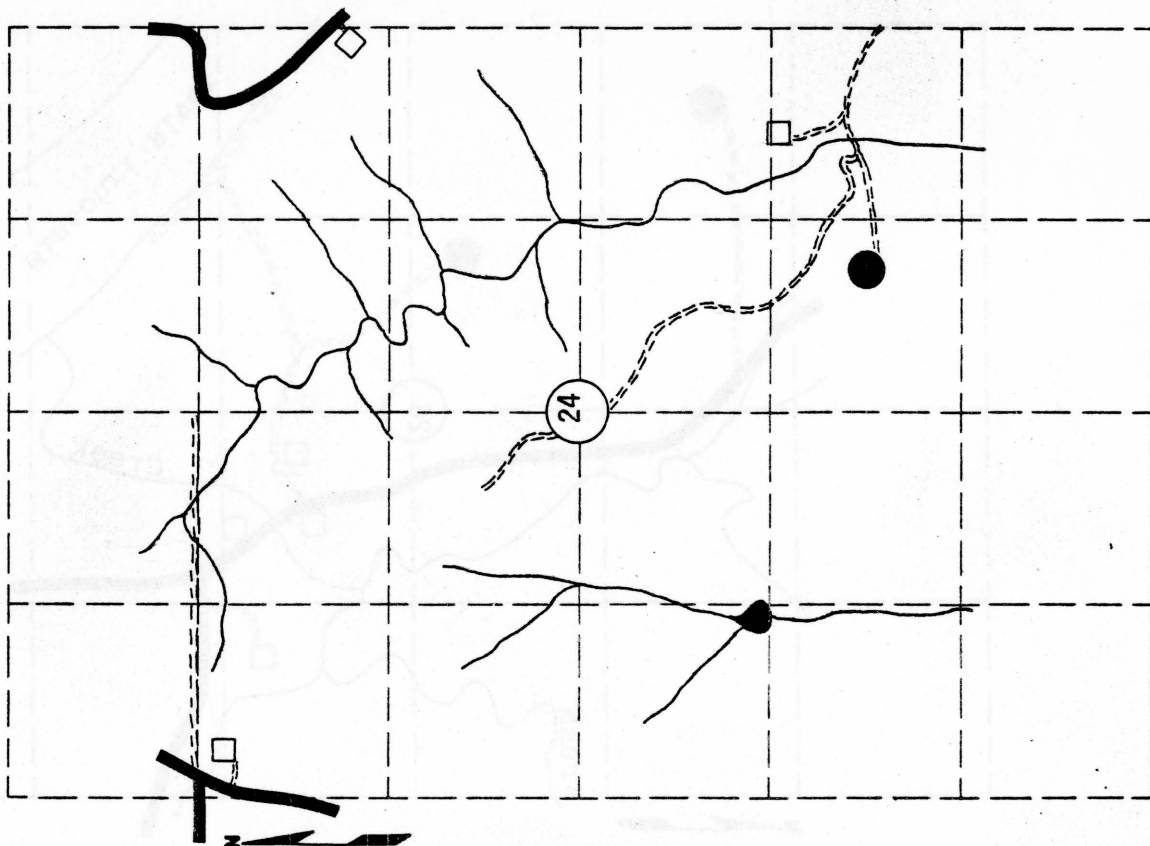
Scale: 1" = 1/4 mile

MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

Scale: $1'' = \frac{1}{4}$ mile



MATERIAL SURVEY REPORT

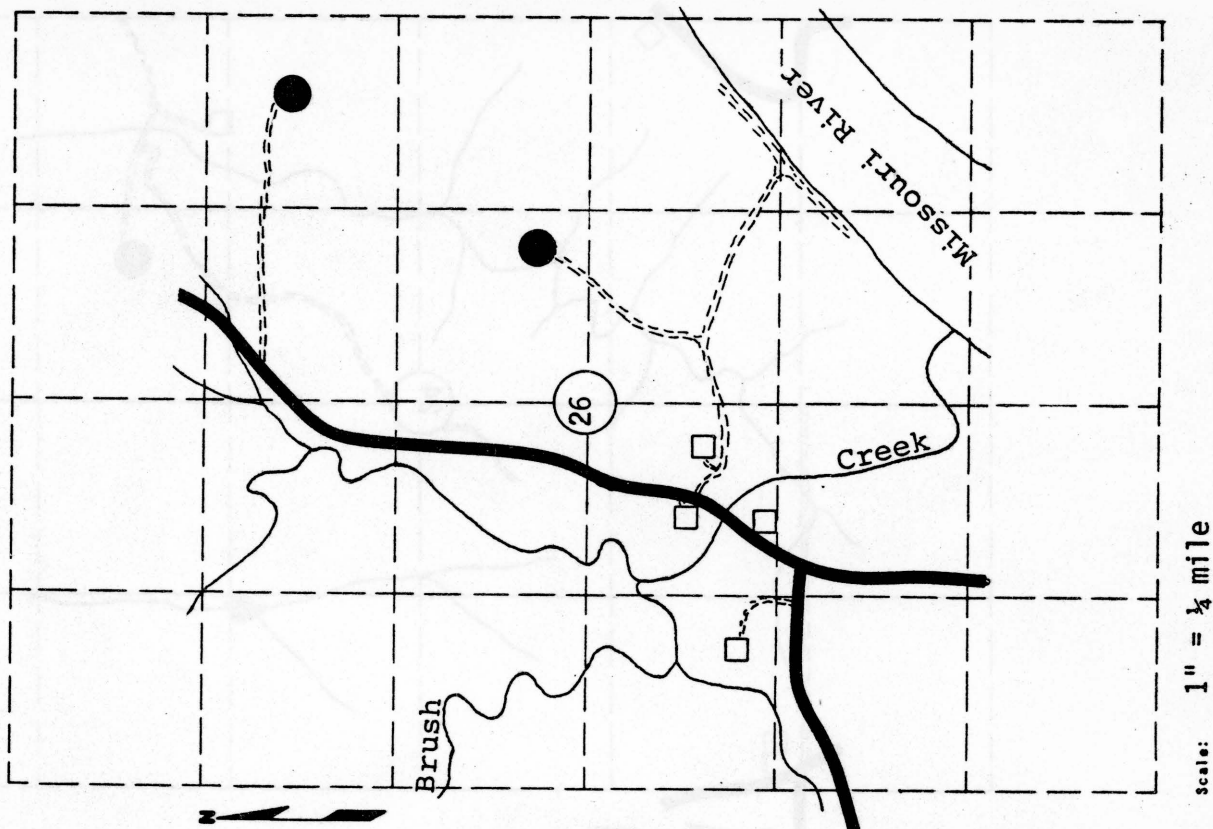
Cg+39
Site No. Qt Date Sept. 1968
Material Chert Gravel County Doniphan
Location NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 26 Twp. 4 S Range 21 E
Owner Milton Roundy estate c/o Mrs. Frank Whittaker, Rt. 2
name Atchison, Ks. address
Nature of Deposit Dry Accessibility Fair Site Located on Plate V
Status of Site Open Site - Not Sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Nebraskan
Geological Source Quaternary Terrace
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu.Ft. _____ Str. Ratio _____
Remarks _____

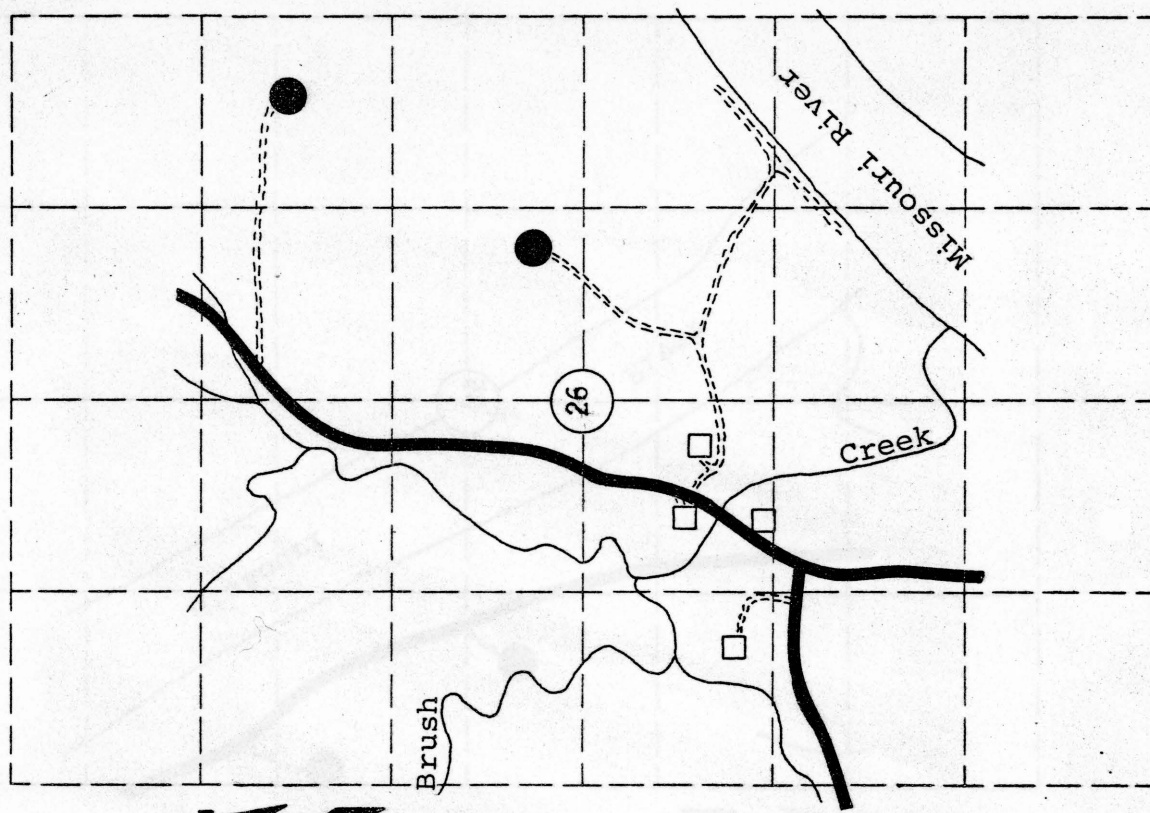


EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Pennsylvanian
Geological Source Lawrence Formation - Amazonia Member
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
wt. Cu.Ft. _____ Str. Ratio _____
Remarks _____



Scale: 1" = $\frac{1}{4}$ mile

MATERIAL SURVEY REPORT

LS+41

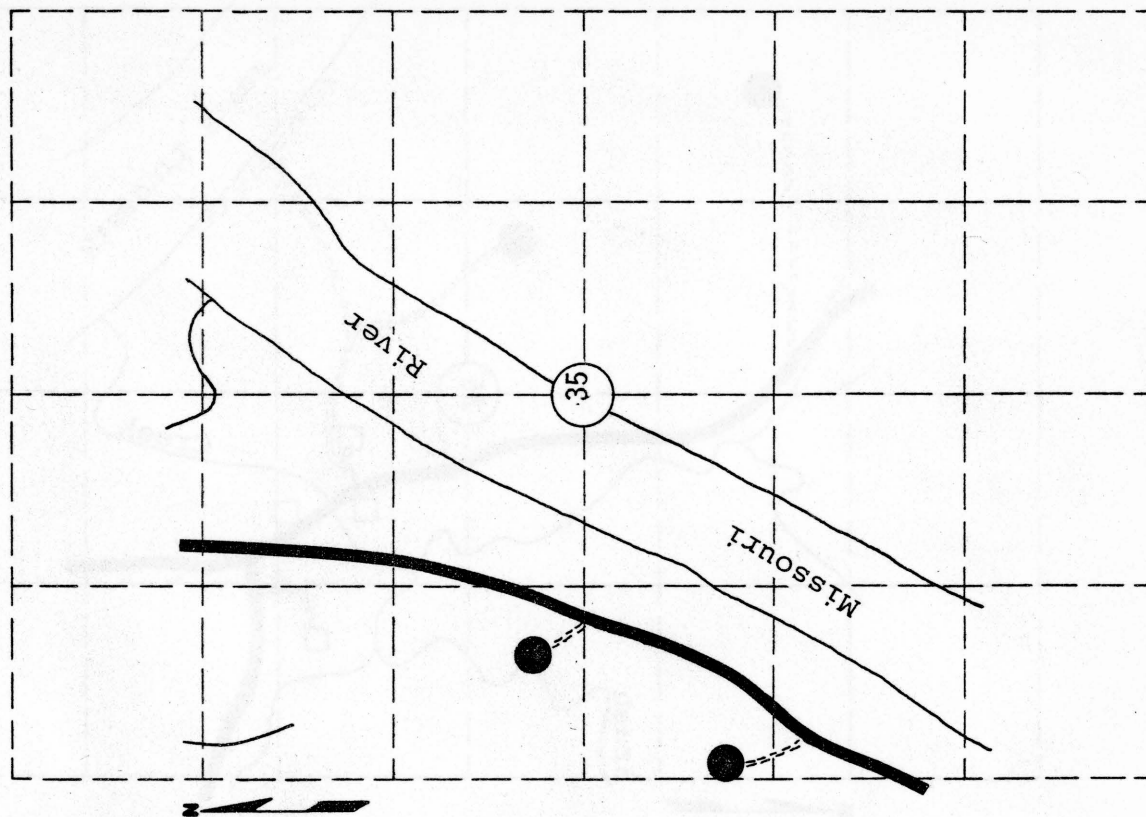
Site No. Pop Date Sept. 1968
 Material Limestone County Doniphan
 Location NW $\frac{1}{4}$ Sec. 35 Twp. 4 S Range 21 E
 Owner Milton Roundy (estate) Mrs. Frank Whittaker, Rt. 2, Atchison
 Name address Ks.
 Nature of Deposit Dry Accessibility Fair Site Located on Plate V
 Status of Site Open Site - Not Sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

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



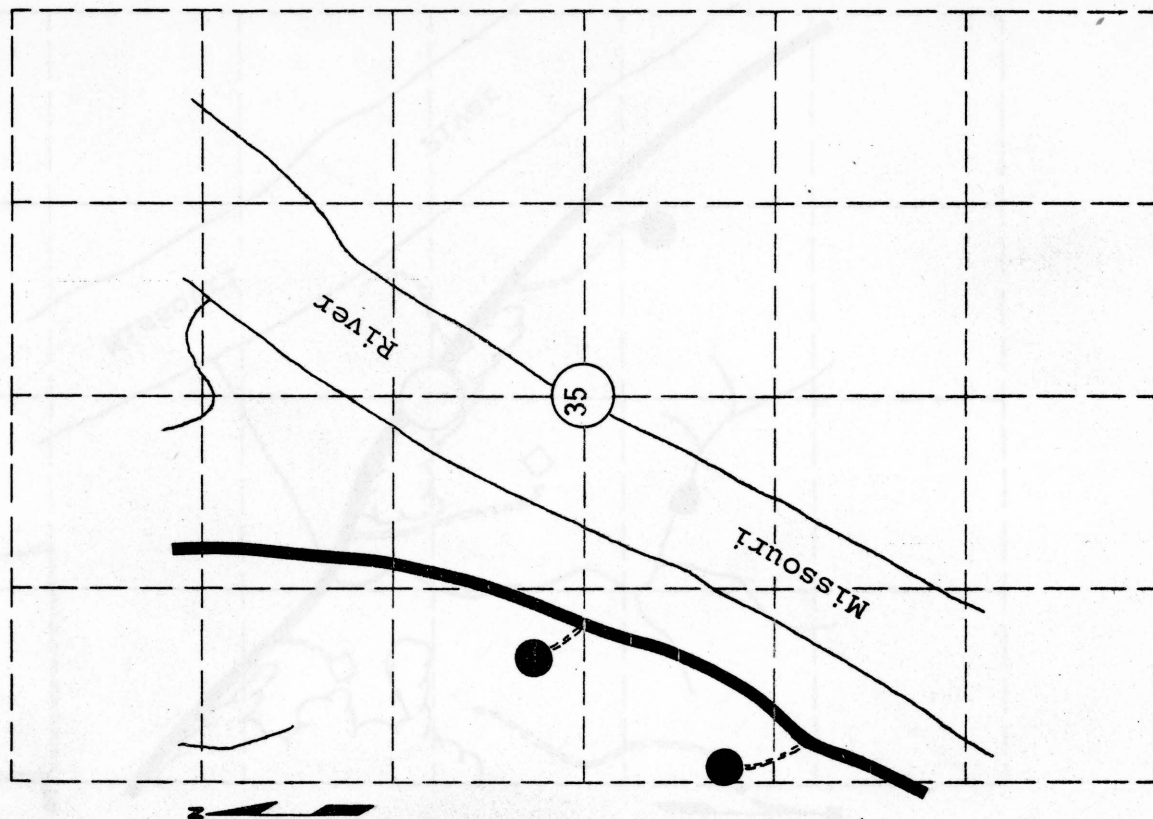
Scale: $1'' = \frac{1}{4}$ mile

MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

Scale: $1'' = \frac{1}{4}$ mile

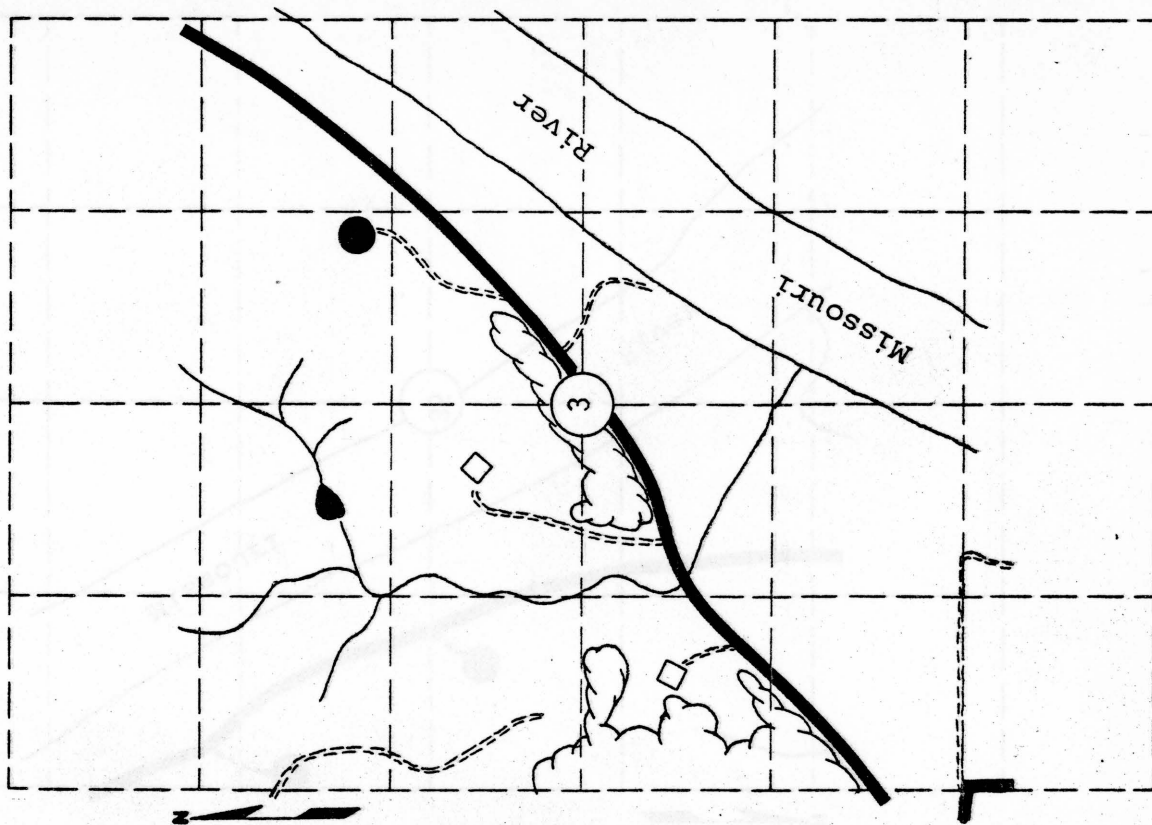


MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

scale: 1" = $\frac{1}{4}$ mile



MATERIAL SURVEY REPORT

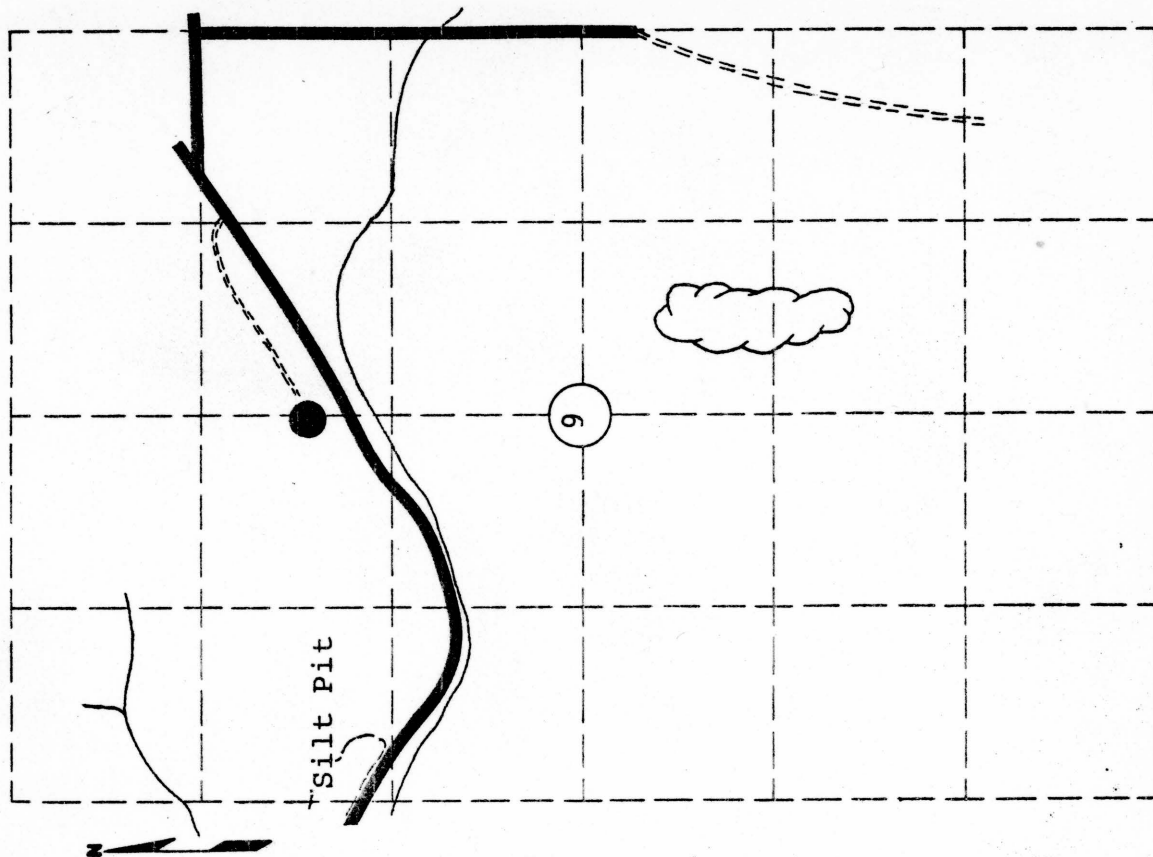
LS+44
 Site No. Pop Date Sept. 1968
 Material Limestone County Doniphan
 Location N 1/2 Sec. 9 Twp. 5 S Range 21 E
 Owner Edward B. & Marie Ford Troy, Kansas
 name address
 Nature of Deposit Dry Accessibility Fair Site Located on Plate V
 Status of Site Open Site - Not Sampled

-EXPLORATION DATA

[illegible]

CORRELATION DATA

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



scale: 1" = $\frac{1}{4}$ mile

GLOSSARY

- A.A.S.H.O.:** American Association of State Highway 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 laid down by flowing water.
- Aquifer:** Water-bearing geologic unit.
- Bedding:** A characteristic of some rock units which shows distinct layers due to the manner in which they are deposited.
- Chert:** A dull, flint-like, siliceous rock.
- Construction Aggregate:** Processed rock that will meet standard specifications for concrete and bituminous construction.
- Cross bedding:** Term applied to sedimentary deposits whose bedding is inclined at various angles to the general stratification.
- Eolian deposits:** Wind deposited sediments such as Loess or Dune Sand.
- Exposure pattern:** Topographic feature formed on the land surface by the exposure of geologic units.
- Facies change:** Lateral change in the physical properties of a given bed as a result of a gradual change in its depositional environment and (or) parent material. For example, a shale unit may grade into a sandstone and still maintain its relative stratigraphic position.
- Fine sand:** An aggregate of unconsolidated minerals or rock particles the dimensions of which are not less than 0.05 of a millimeter and not more than 0.42 of a millimeter. The term refers to size of grain and not to composition; however, since most sands are composed of quartz and feldspar, and the term is used without qualifications, a siliceous composition is implied.
- Flaggy:** Thin, horizontal-bedded.
- Fluvial cycle:** The stream-action cycle involving periods of deposition, erosion, and return to deposition.
- Fluvial deposit:** Deposits laid down by a river or stream.
- Formation:** A layer of persistent strata of one general kind of rock.
- Fusulinids:** Small marine fossils, about the shape and size of a grain of wheat, belonging to the Foraminifera.

Geologic era: Largest unit of geologic time (e.g. Paleozoic, Mesozoic, and Cenozoic).

Geologic period: A unit of geologic time, shorter than an era and longer than an epoch (e.g. Cambrian, Cretaceous, and Tertiary).

Geologic process: Term pertaining to erosion, deposition, and disastrophic methods by which the earth's surface has been shaped.

Geologic structure: The attitude of the rock units. (i.e. whether they are horizontal or tilted).

Geologic system: A term that refers to rocks or deposits that were laid down during a particular geologic period (e.g. the Pennsylvanian, Permian, and Quaternary).

Geologic unit: A *general* term used to denote a geologic formation, member, or an unconsolidated deposit.

Glacial drift: A *general* term for all rock debris which has been transported and deposited either directly by the ice or from the accompanying meltwater of the glacier.

Glaciolacustrine: Term applied to deposits laid down in glacial lakes.

Gpm: Gallons per minute.

Gradation factor: The value obtained by adding the percentages of material retained on the 1½", ¾", 3/8", 4, 8, 16, 30, 50, and 100 sieves, respectively, and dividing the sum by 100.

Grading A, B, C, and D: Determined by the abrasive charge for the Los Angeles wear test as specified in A.A.S.H.O. designation T96 and section 1001 of the State Highway Commission of Kansas Standard Specifications, 1973 edition.

Ground-water: Water in the zone of saturation, that is, below the water table.

Light type surfacing: A surface course constructed from aggregate which is not bound by water, cement, or bituminous material.

Lithology: Physical properties of rocks such as grain size, mineral content, and color.

Loess: Material generally composed of silt-sized particles deposited by wind.

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.

Matrix: The fine components of a rock that binds the larger components, sometimes called groundmass.

Member: A division of a formation, generally of distinct lithologic character or of only local extent.

Open materials site: A pit or quarry from which material is produced for possible construction purposes.

Outwash: Material that is transported and deposited by glacial meltwater.

Physiographic division: A division of the state, based on general geologic and (or) geographic features.

Pleistocene Series: Deposits laid down during the Pleistocene Epoch.

Pliocene Epoch: The youngest major subdivision of the Tertiary Period.

Prospective materials site: A location where the geologic conditions are favorable for finding construction material.

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.

Stream meander: One of a series of bends or curves in the course of a stream caused by lateral movement of a stream in its valley.

Stream scour: Downward erosion of a stream through its alluvium.

Strength ratio: Determined by tests performed in accordance with A.A.S.H.O. designation T19.

Terrace: A plain built up by the deposition of sediments by water.

Trunk stream: A major drainage channel in a given area.

Unconsolidated deposits: Deposits of clay, silt, sand, or gravel that are not cemented together.

Wash: (Material passing the no. 200 sieve). Determined by tests performed in accordance with A.A.S.H.O. designation T11.

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

Weight per cubic foot: Determined by tests performed in accordance with A.A.S.H.O. designation T19.

SELECTED REFERENCES

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2. American Association of State Highway Officials (1966) Standard Specifications for highway materials and methods of sampling and testing, pt. II, 9th ed., 693 p.
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4. Bayne, Charles K. (1968) Geohydrology of Doniphan County, northeastern Kansas: Hydrologic Investigations Atlas HA-462.
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8. Merriam, D. F. (1963) The geologic history of Kansas: Kansas Geological Survey Bull. 162, pp. 13-254.
9. Moore, R. C. and others (1951) The Kansas rock column: Kansas Geological Survey Bull. 89, pp. 7-69.
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