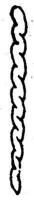


OPEN MATERIALS SITES; NOT SAMPLED

LEGEND

=====	Trail or lane		Open materials site; not sampled
—————	Road		Prospective material site; sampled
+++++	Railroad		Prospective materials site; not sampled
	Hedge or trees		Open materials site; sampled
—x—x—x—	Fence		Shaded area is approximate limits of site
	Major stream		
	Intermittent streams		
	Pond or lake		
			Town or city

MATERIAL SURVEY REPORT

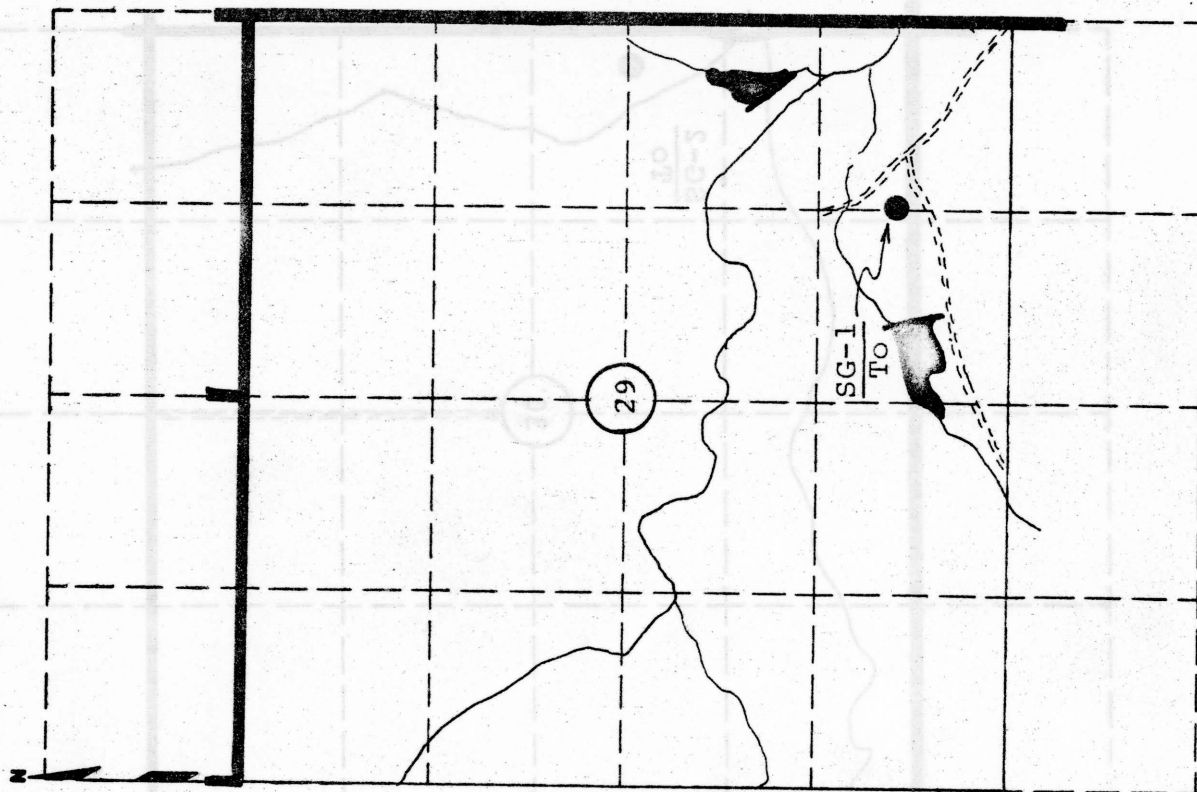
SG-1
To _____ Date October, 1967
Material Sand and Gravel County Morton
Location SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 29 Twp. 31S Range 42W
Owner James Bitner name Manter, Kansas address _____
Nature of Deposit Dry Accessibility Good Site located on Plate I
Status of Site Open site; not sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age _____ Tertiary _____
Geological Source _____ Ogallala Formation _____
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Near _____
Absorption _____ Soundness _____
Mt. Cu.Ft. _____ Str. Ratio _____
Remarks _____



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

SG-2

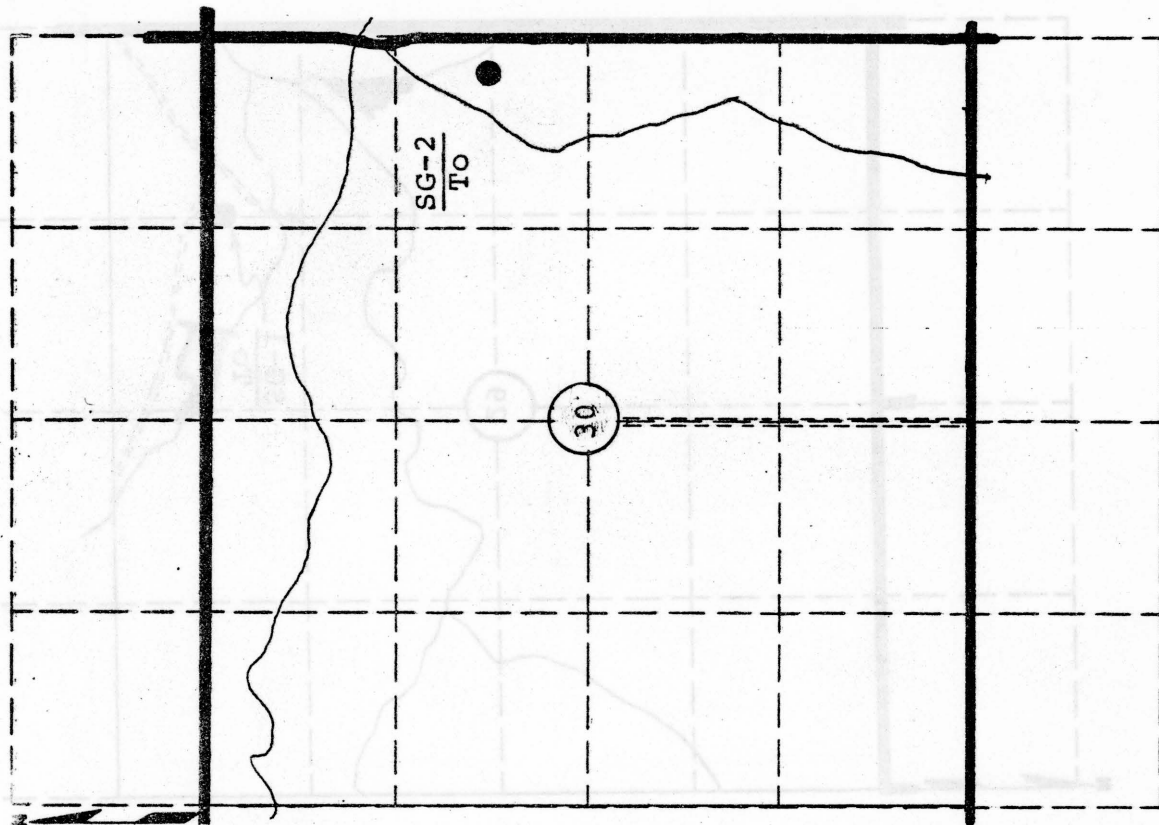
41W

[illegible]

Geological Age Tertiary
Geological Source Ogallala Formation
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu.Ft. _____ Str. Ratio _____
Remarks Boulders, caliche, some mortar bed and chunks of sandstone embedded.
Helen Hulme estate, & Clyde O. Burnside, Jr.
Box 1129, Great Bend, Kansas

Str. Ratio.

Geog. Loc. Str. Sect.
Boulders, caliche, some mortar bed and chunks of
sandstone embedded.
Helen Hulme estate, & Clyde O. Burnside, Jr.
Box 1129, Great Bend, Kansas



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

MATERIAL SURVEY REPORT

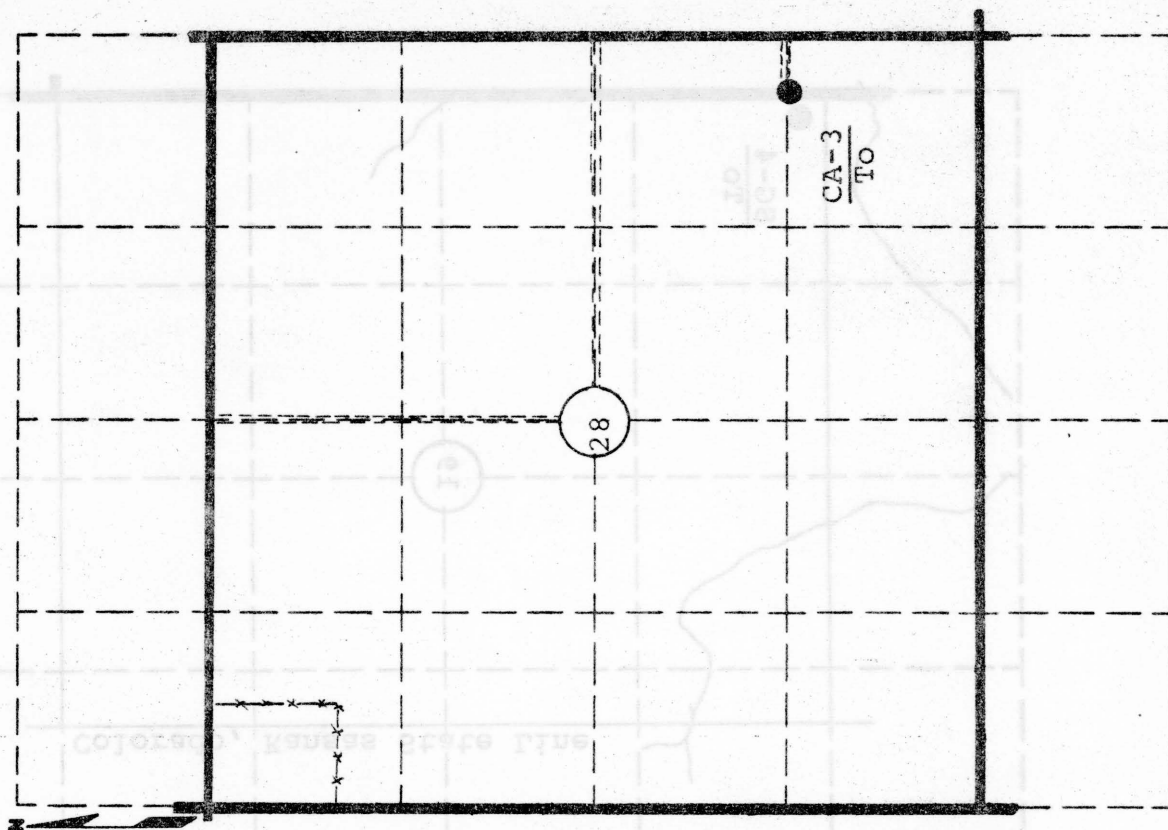
CA-3
To _____ Date October, 1967
Material Caliche County Morton
Location E½ SE¼ Sec. 28 Twp. 31S Range 43W
Owner Max Hume name _____ address _____
Nature of Deposit Dry Accessibility Fair Site Located on Plate I
Status of Site Open site; not sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Tertiary
Geological Source Ogallala Formation
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Mi. Cu. Ft. _____ Str. Ratio _____
Remarks This pit is located in the Ogallala Formation
but has some Loess cover.



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

MATERIAL SURVEY REPORT

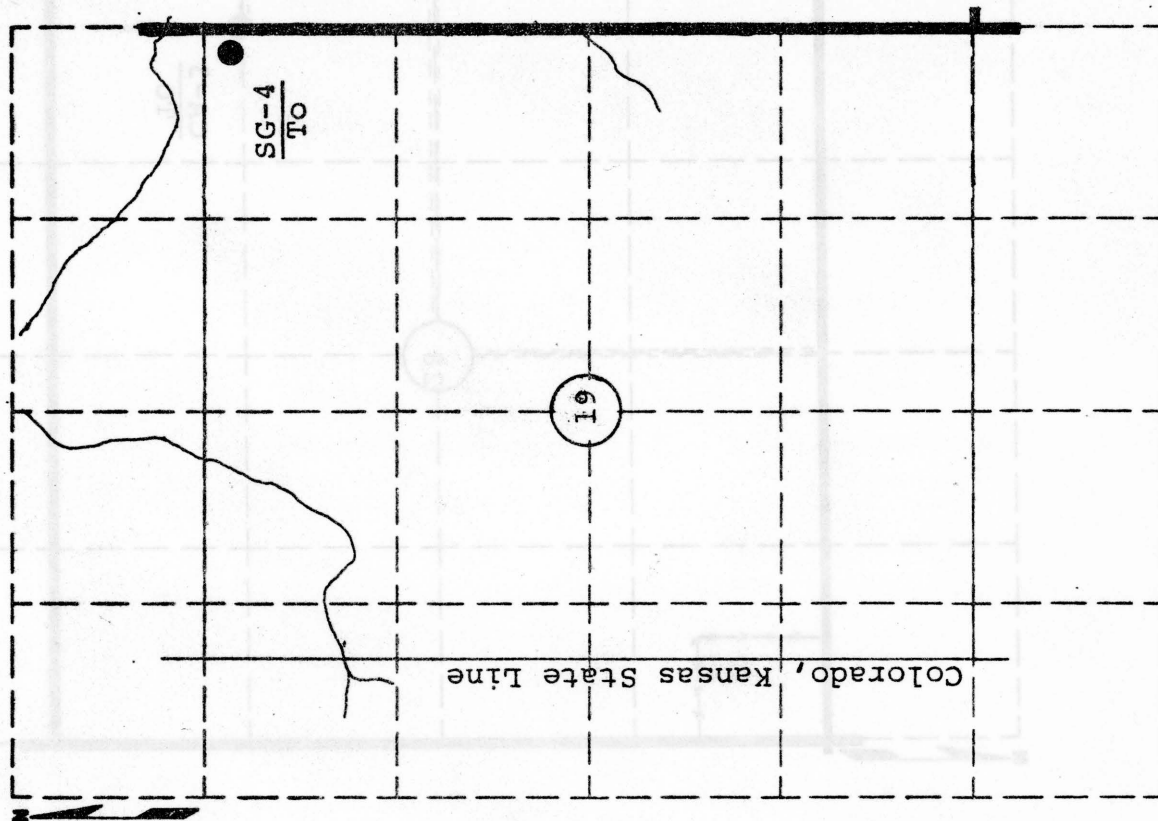
SG-4
To _____ Date October, 1967
Material Sand and Gravel County Morton
Location NE 1/4 NE 1/4 Sec. 19 Twp. 32S Range 43W
Owner United States Government name _____ address _____
Nature of Deposit DRY Accessibility Good Site Located on Plate III
Status of Site Open site; not sampled

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age _____ Tertiary _____
Geological Source _____ Ogallala 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

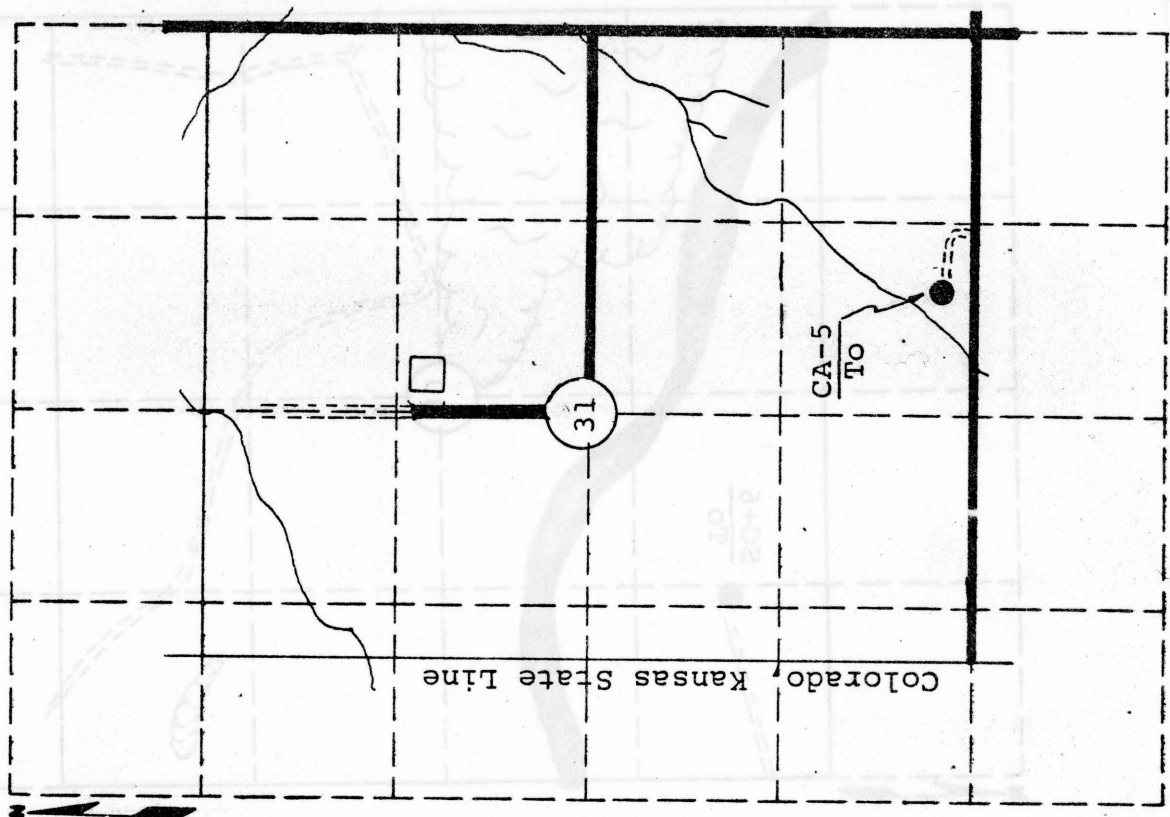
MATERIAL SURVEY REPORT

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Tertiary
Geological Source Ogallala Formation
Material Similar To _____
Specific Gravity (Det.) 2 (Dry)
Loc. Los Angeles Weir
Vegetation _____ Soundness _____
Hgt. Ca. Ft. Str. Betw
Remarks _____



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

SURVEY REVEALS

SG+6

EXPLORATION DATA

CORRELATION DATA

Material Similar To-

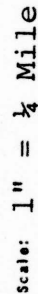
(Dry) -

Los Angeles Wear.

SOUNDINGS

Str. 10010

This site is in the Ogallala Formation but



A hand-drawn map on a grid showing a route from a starting point to a destination. The route is marked with a thick black line. A dashed line shows an alternative path. A circle with the number 35 is on the route. Labels "SG+7 To" and "SG+8 To" are present.

Scale: 1" = 1/4 Mile

[illegible]

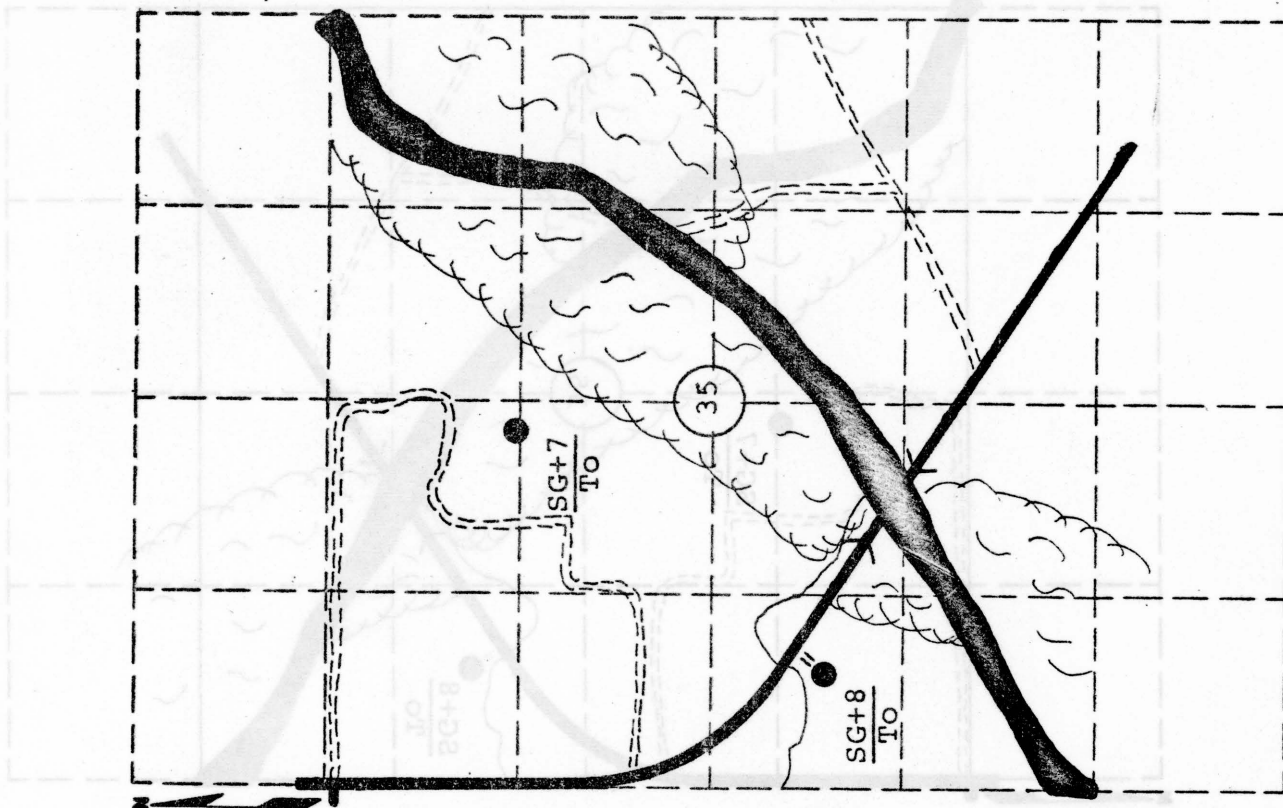
Geological Age Tertiary
Geological Source Ogallala Formation
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu. Ft. _____ Str. Settle _____
Remarks _____

MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

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



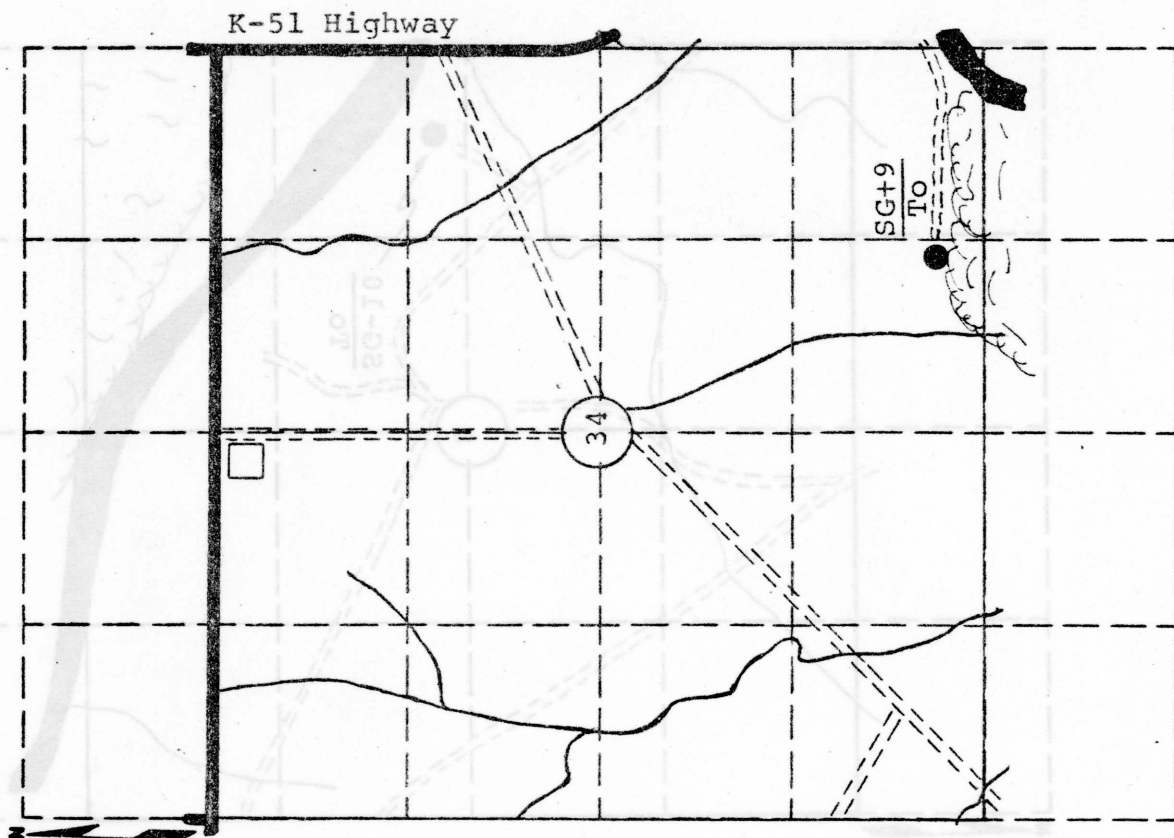
MATERIAL SURVEY REPORT

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Tertiary
Geological Source Ogallala Formation
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Near _____
Absorption _____ Soundness _____
Wt. Cu. Ft. _____ Str. Ratio _____
Remarks D. K. Blucher 4597 Van Dyke Ave.
San Diego, California



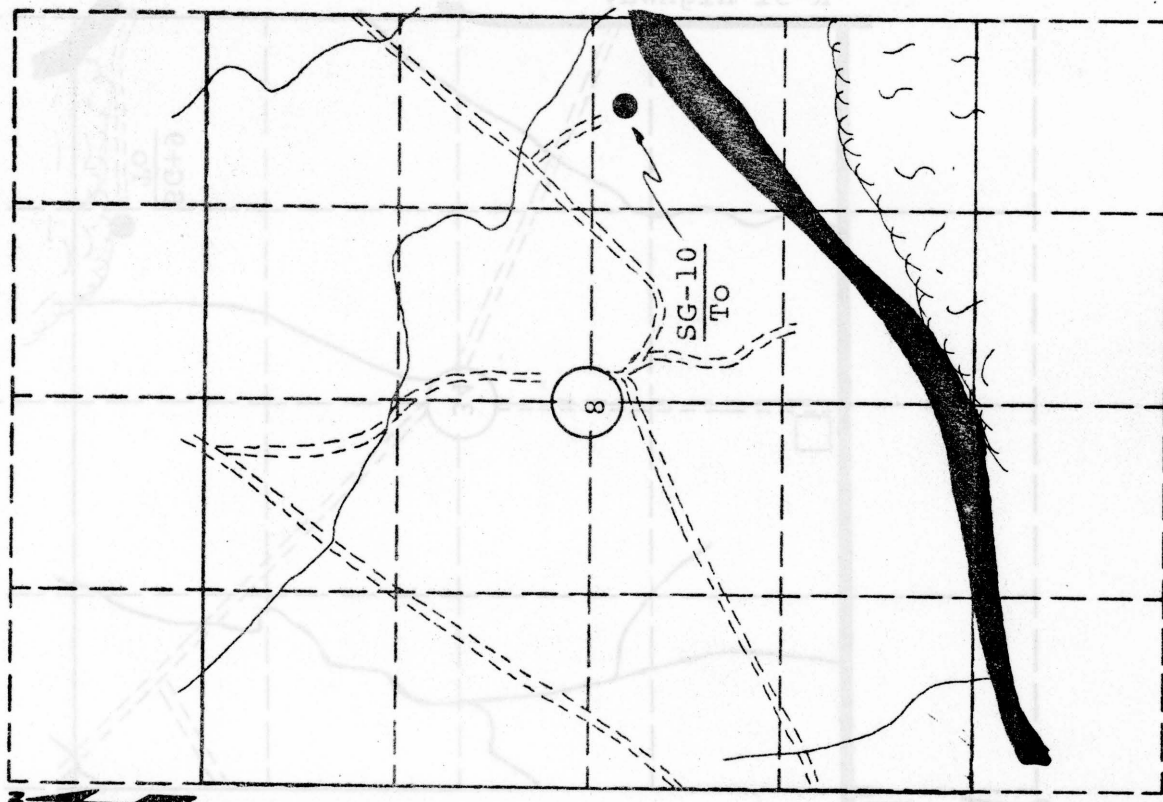
Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

EXPLORATION DATA

[illegible]

Geological Age _____ Tertiary _____
Geological Source _____ Ogallala 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

MATERIAL SURVEY REPORT

To _____ Date _____
October, 1967

Material	Sand and Gravel	County	Morton
----------	-----------------	--------	--------

Location SE $\frac{1}{4}$ 14. 33S 41W
 Sec. 14. Twp. 33S Range 41W

Donor United States Government
name address

Nature of Deposit: Dry Accessibility: Fair Site Located on Plate IV

State of site	Open site; not sampled
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33
34	34
35	35
36	36
37	37
38	38
39	39
40	40
41	41
42	42
43	43
44	44
45	45
46	46
47	47
48	48
49	49
50	50
51	51
52	52
53	53
54	54
55	55
56	56
57	57
58	58
59	59
60	60
61	61
62	62
63	63
64	64
65	65
66	66
67	67
68	68
69	69
70	70
71	71
72	72
73	73
74	74
75	75
76	76
77	77
78	78
79	79
80	80
81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

EXPLORATION GAYA

[illegible]

CORRELATION DATA

Tertiary

Geo | o | g | r | a | p | h | y | Qgallala Formation

Material Similar To -

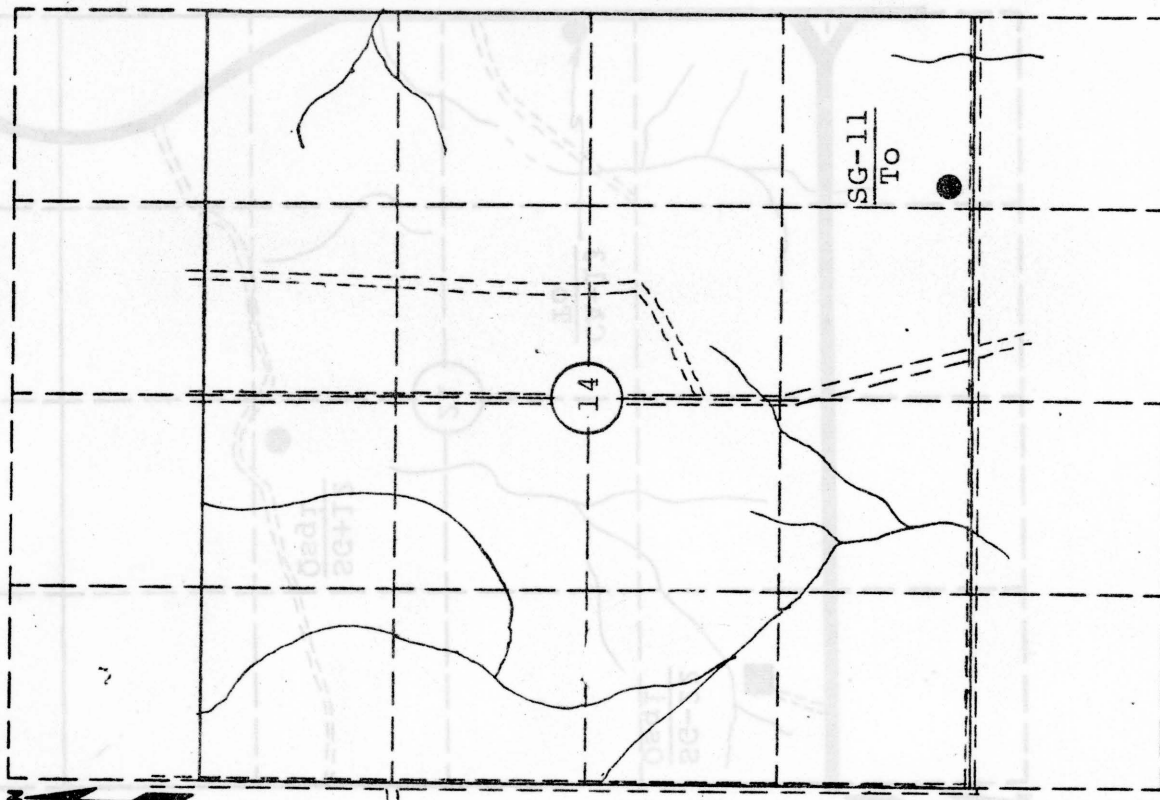
Specific Gravity (Sat.) _____ (Dry) _____

Lou Angeles Hear.

Absorption _____ Soundness _____

Wt. Cu. Ft. _____ Str. Ratio _____

Remarks



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

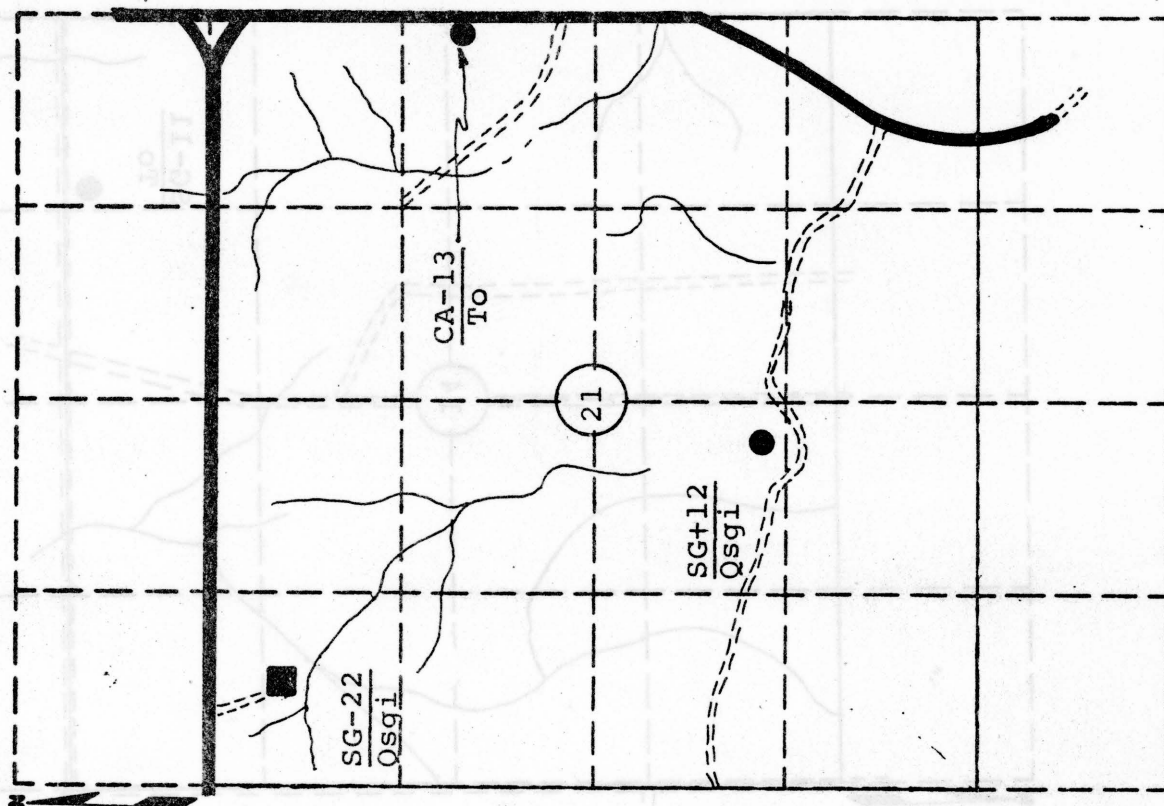
MATERIAL SURVEY REPORT

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Quaternary
Geological Source Grand Island Formation
Material Similar To _____
Apparent Gravity (Lat.) _____ (dry) _____
Los Angeles Year _____
Absorption _____ Soundness _____
Wt. Cu. Ft. _____ Str. Ratio _____
Remarks _____



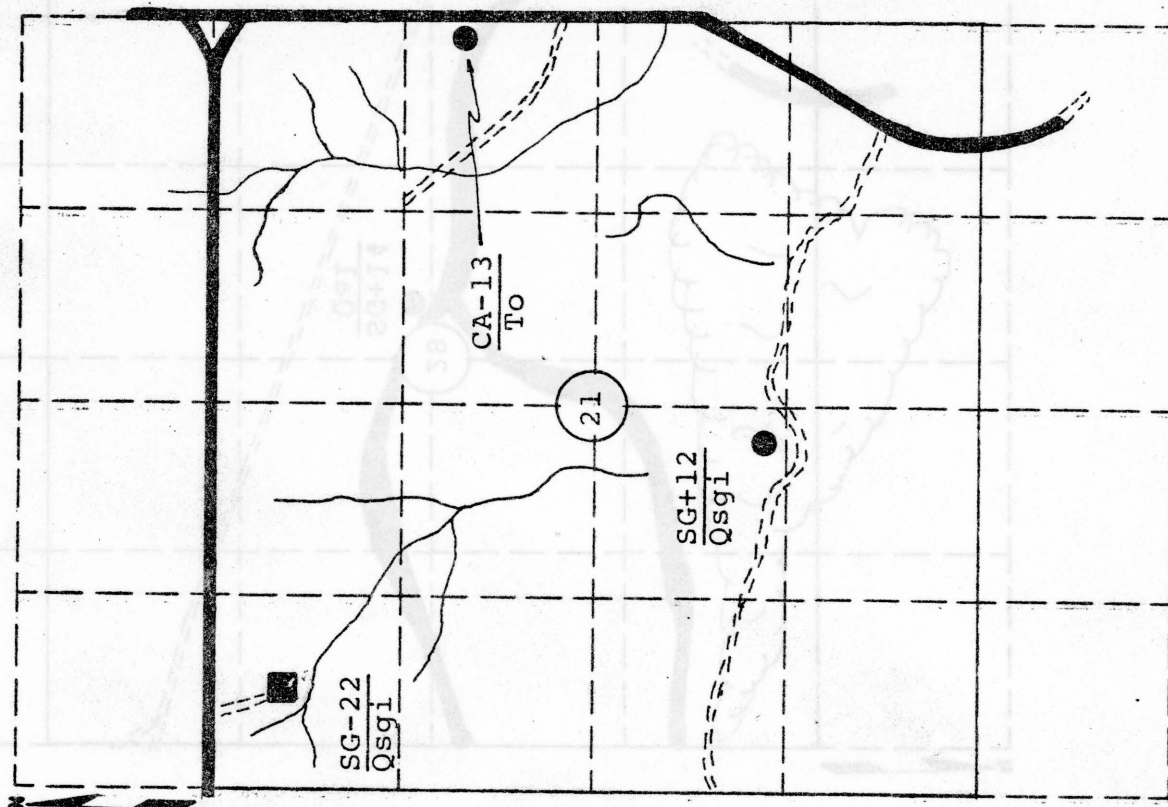
Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

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



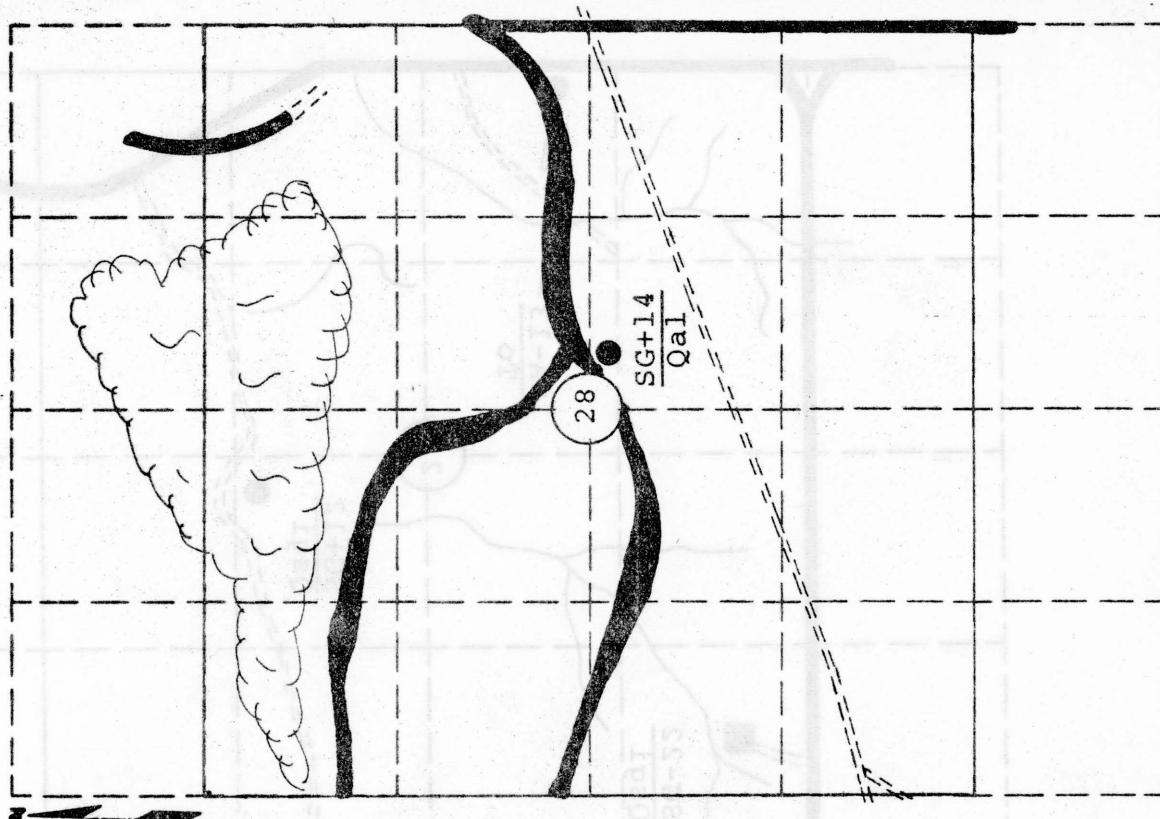
MATERIAL SURVEY REPORT

EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Recent
Geological Source Alluvium
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Wt. Cu.-Ft. _____ Str. Ratio _____
Remarks According to the Morton County Engineer sand and gravel has been pumped from the river at this location.



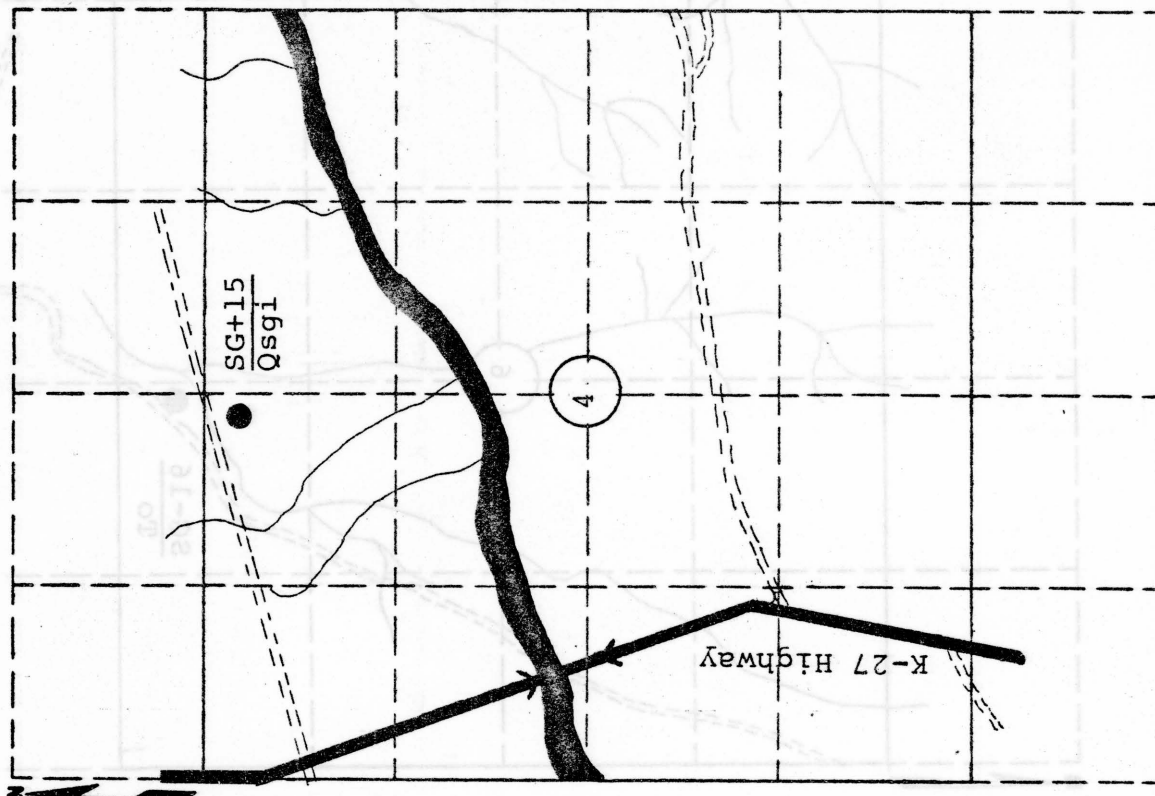
Scale: 1" = $\frac{1}{4}$ Mile

MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

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



MATERIAL SURVEY REPORT

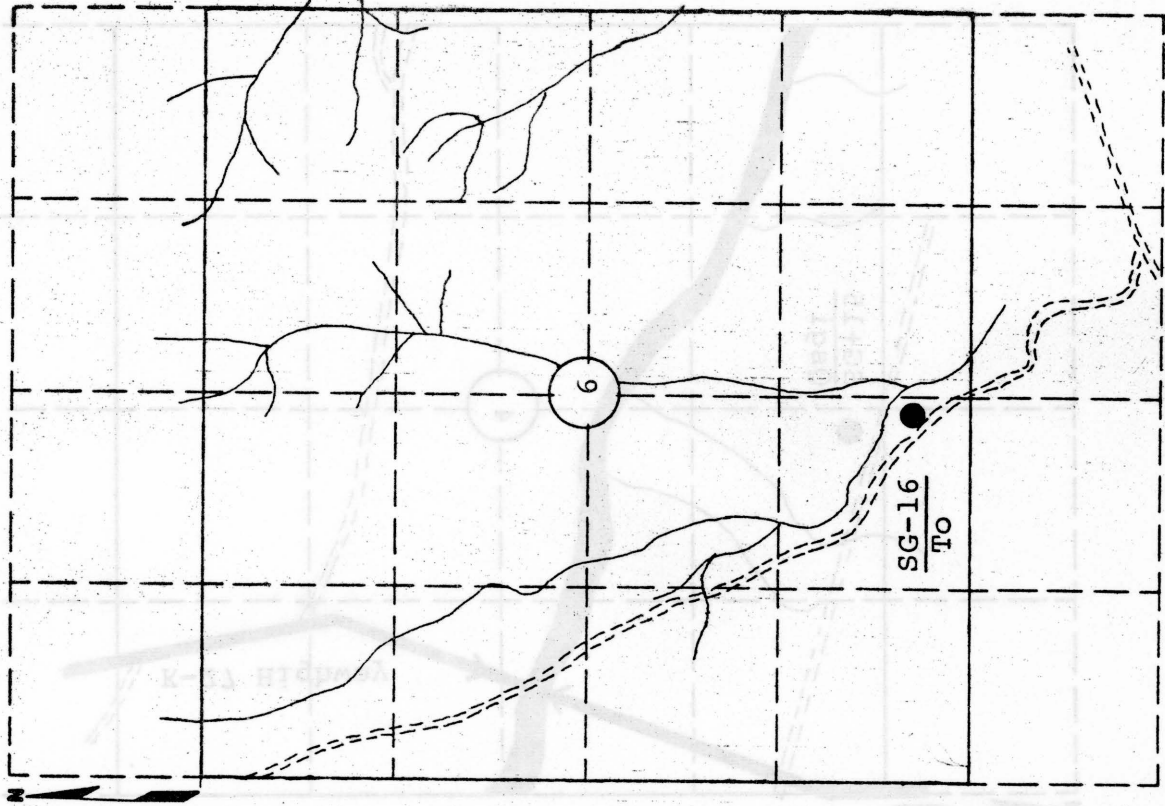
SG-16
 Site No. Date October, 1967
 Material Sand and Gravel County Morton
 Location SE 1/4 SW 1/4 Sec. 6 Twp. 34S Range 42W
 Owner United States Government
 Nature of Deposit Dry Accessibility Poor Site located on Plate V
 Status of Site Open site; not sampled

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	1/4	16	30				

CORRELATION DATA

Geological Age Tertiary
 Geological Source Ogallala Formation
 Material Similar To
 Specific Gravity (Sat.) (Dry)
 Los Angeles Wear
 Absorption Soundness
 Wt. Co. ft. Str. Ratio
 Remarks



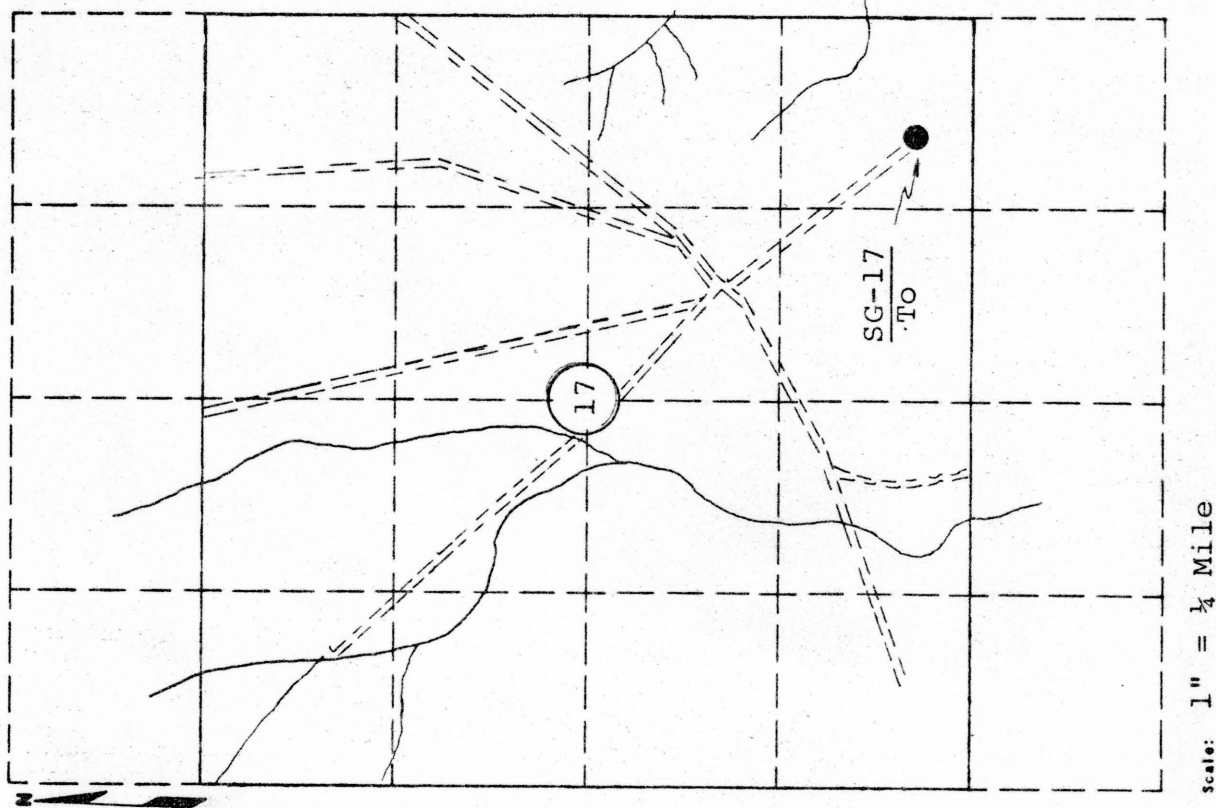
Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

EXPLORATION DATA

CORRELATION DATA

Geological Age Tertiary
Geological Source Ogallala Formation
Material Similar To _____
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear _____
Absorption _____ Soundness _____
Mt. Co. Ft. _____ Str. Ratio _____
Remarks This pit has a considerable amount of caliche.



OPEN MATERIALS SITES; SAMPLED

LEGEND

Trail or lane	=====	Open materials site; sampled
Road	—————	Open materials site; not sampled
Railroad	+++++	Prospective materials site; sampled
Hedge or trees	~~~~~	Prospective materials site; not sampled
Fence	—x—x—x—	Shaded area is approximate limits of site
Major stream	—————	
Intermittent streams	~~~~~	
Pond or lake	~~~~~	
		Center of section
		Dwelling
		Cemetery
		School
		Church
		Town or city

STATE HIGHWAY COMMISSION OF KANSAS

MATERIAL SURVEY REPORT

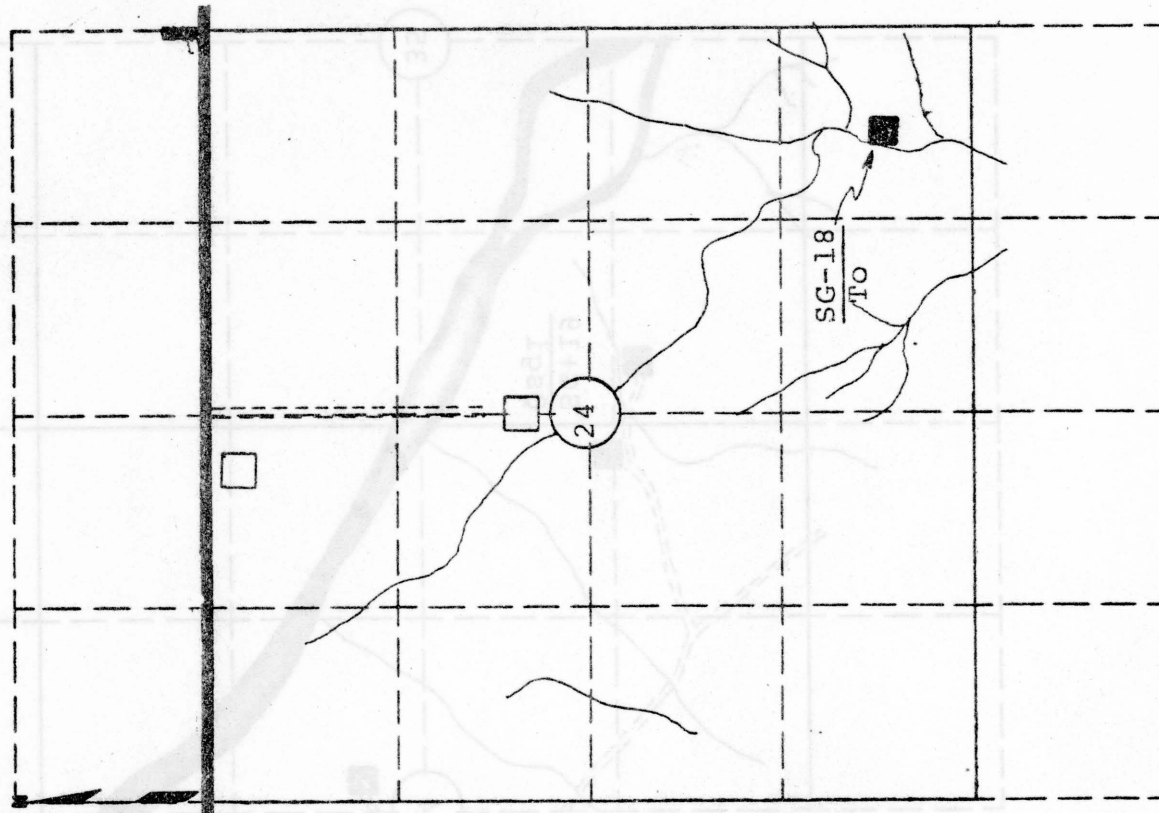
Site No. SG-18 To October, 1967
 Material Sand and Gravel County Morton
 Location SE 1/4 Sec. 24 Twp. 33S Range 42W
 Owner United States Government address III
 Nature of Deposit Dry Accessibility Poor Site Located on Plate III
 Status of Site Open site; sampled

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
				5	1831	39	43	57	70	91	98	1	4.52	

CORRELATION DATA

Geological Age Tertiary
 Geological Source Ogallala Formation
 Material Similar to Material reported on SHC form 633
 Lab. No. 66383
 Specific Gravity (Sat.) 2.62 (Dry)
 Los Angeles Wear 32.1 (B)
 Absorption 0.98
 wt. Cu.ft. 125.3 Str. Ratio 1 day-1.90, 3 day-1.50
 Remarks



Scale: 1" = 1/4 Mile

STATE HIGHWAY COMMISSION OF KANSAS

MATERIAL SURVEY REPORT

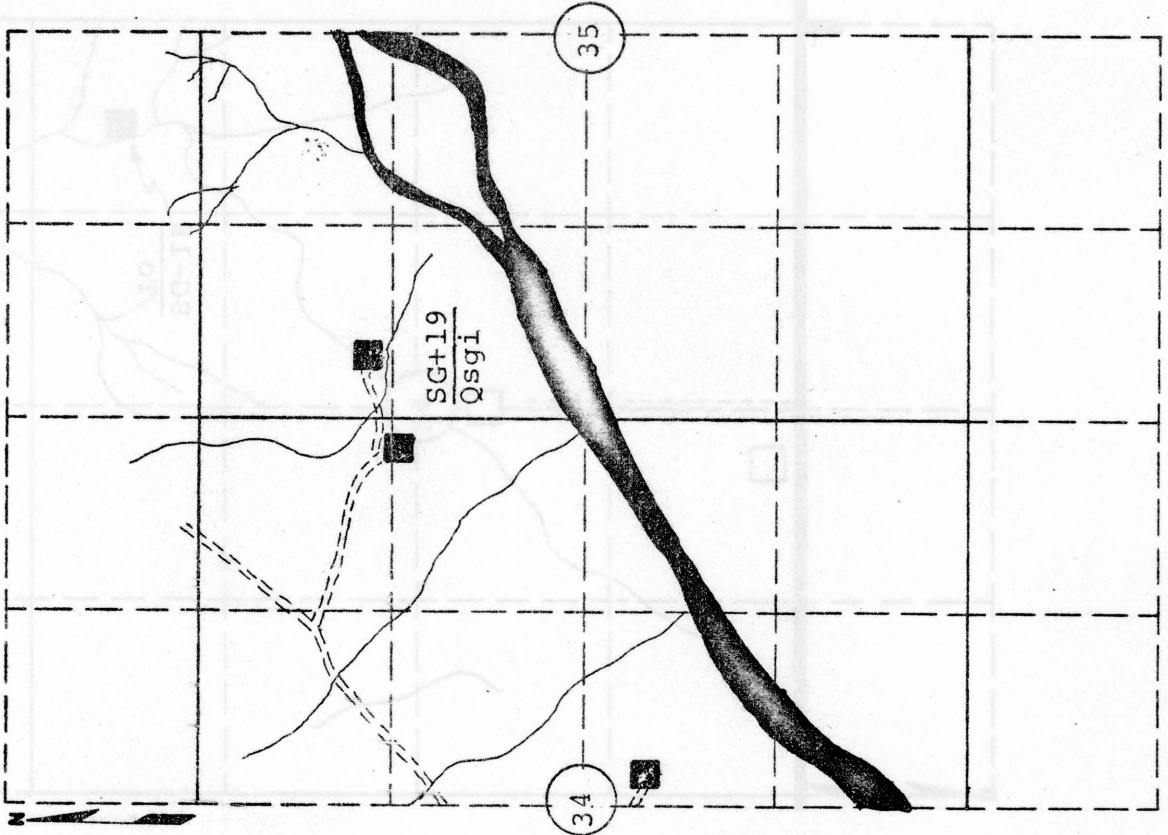
SG+19
Qsgl
Site No. _____ Date October, 1967
Material Sand and Gravel County Morton
Location NE 1/4 Sec. 34 Twp. 33S Range 42W
Owner United States Government
Name _____ Address _____
Nature of Deposit Dry Accessibility Good Site Located on Plate III
Status of Site Open site; sampled

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	100
						14	32	44	55	69	87	96	4	3.97		

CORRELATION DATA

Geological Age Quaternary
Geological Source Grand Island Formation
Material Similar To Material reported on SHC form 633
Lab. No. 42779
Specific Gravity (Sat.) _____ (Dry) _____
Los Angeles Wear 35.0 (B)
Absorption _____ Soundness _____
Wt. Cu. Ft. _____ Str. Ratio _____
Remarks This site covers a band across the NE 1/4 sec. 34 and part of the NW 1/4 sec. 35.



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

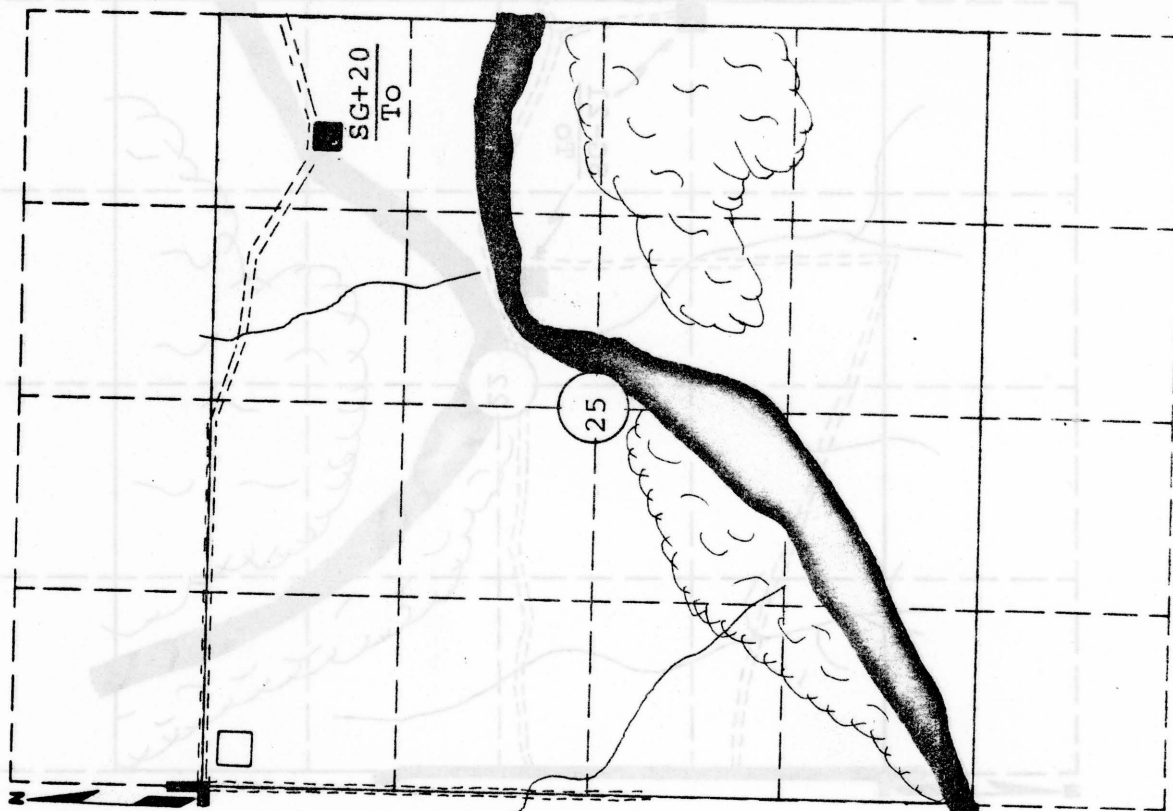
SG+20
TO
Site No. _____ Date October, 1967
Material Sand and Gravel County Morton
Location NE $\frac{1}{4}$ Sec. 25 Twp. 32S Range 40W
Owner Ivan Myers Rolla, Kansas
Nature of Deposit Dry Accessibility Fair address IV
Status of Site Open site; sampled Site located on Plate _____

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			
AV.				0	3	9	14	19	27	48	86	97	3	3.05	17 0
2		2	7	0	2	10	18	25	35	53	88	98	4	3.29	17 0
4		1	7	0	2	9	13	17	23	37	68	95	3	2.64	17 0

CORRELATION DATA

Geological Age Tertiary
Geological Source Ogallala Formation
Material Similar To Material reported on SHC form 619
No. 65-1, Lab. No. 66386
Specific Gravity (Sat.) 2.61 (Dry) _____
Los Angeles Wear 32.8 (B)
Absorption _____ Soundness 0.98
St. Cu. Ft. 117.2 Str. Ratio 1 day-1.12, 3 day-1.08
Remarks Gradation data for test holes two and four represents the coarsest and finest material tested at this site.



Scale: 1" = 1/4 Mile

STATE HIGHWAY COMMISSION OF KANSAS

MATERIAL SURVEY REPORT

SG-21

To _____ Date October, 1967

Material Sand and Gravel County Morton

location NE $\frac{1}{4}$ 22 33S 41W
Sec. 22 33S 41W Range

Owner United States Government name

Nature of Deposit — Dry — Accessibility — Good — IV
 Site Located on Plate —

status of site	Open site; sampled
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
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68	68
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81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

EXPLORATION DATA

[illegible]

CORRELATION DATA

Tertiary

Ogallala Formation

Material reported on SHC form 245

Lab No. 22480

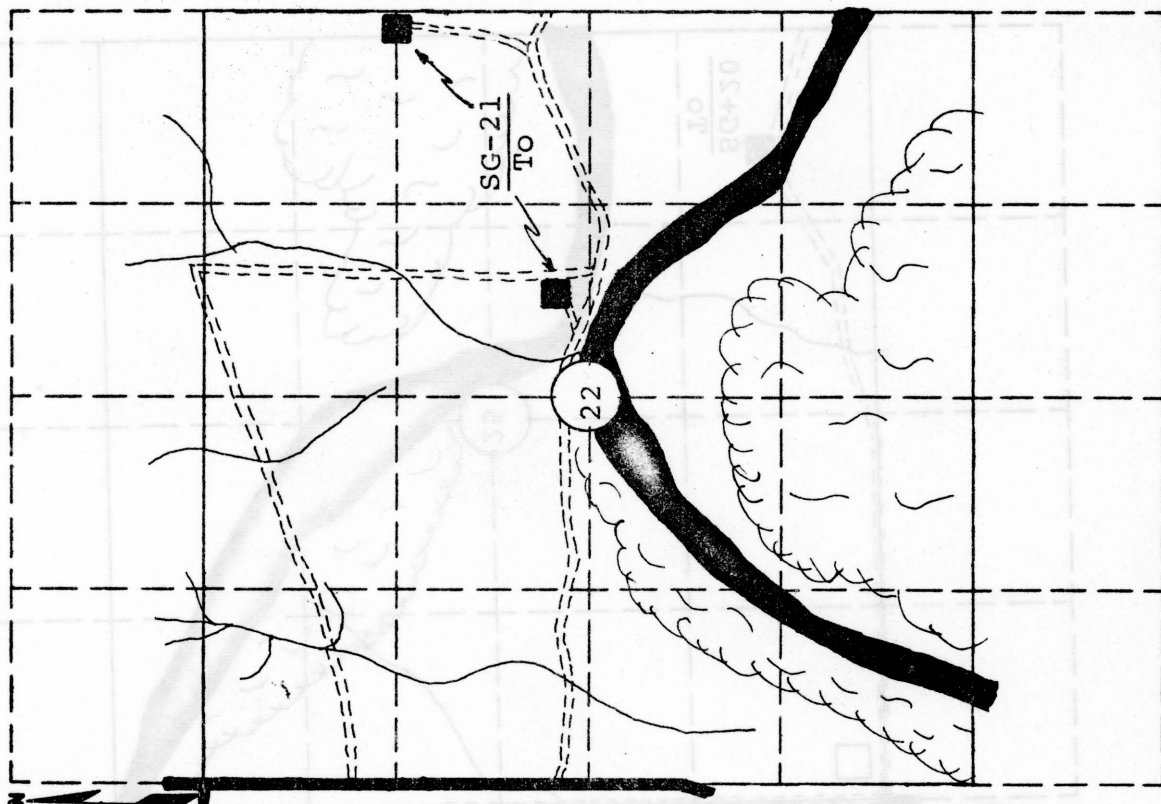
Specific Gravity (Sat.) 2.59 (899)

Los Angeles Wear.

Absorption _____ **Soundness** _____

ht. Cu.Ft. _____ Str. Ratio. _____

Remarks



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

MATERIAL SURVEY REPORT

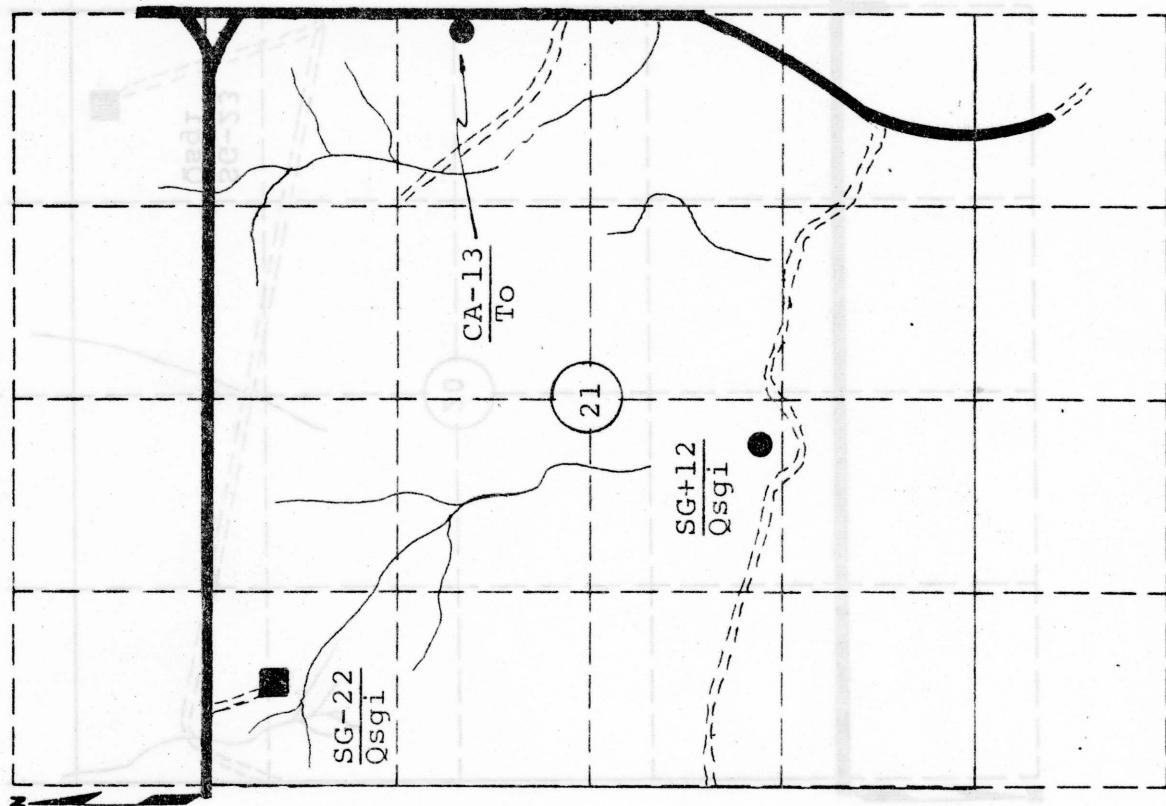
EXPLORATION DATA

[illegible]

CORRELATION DATA

Geological Age Quaternary
Geological Source Grand Island Formation
Material Similar To Material reported on SHC form 645
Lab. No. 15242

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



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

MATERIAL SURVEY REPORT

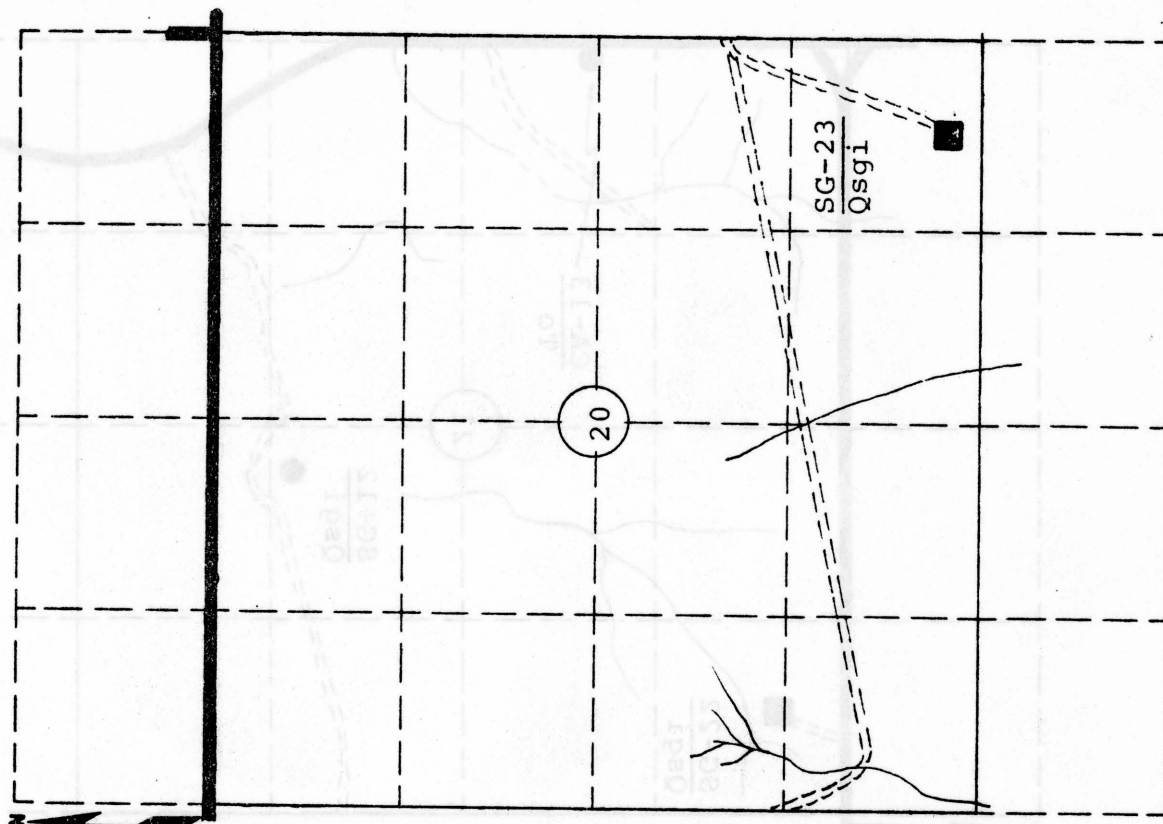
SG-23
 Site No. Qsg1 Date October, 1967
 Material Sand and Gravel County Morton
 Location SE 1/4 Sec. 20 Twp. 33S Range 41W
 Owner United States Government
 Name _____ address _____
 Nature of Deposit Dry Accessibility Fair Site Located on Plate IV
 Status of Site Open site; sampled

EXPLORATION DATA

Test Hole	Material at Bottom of Hole	Depth of over-burden	Depth of Material	Percent Retained						Wash 200	S.F.	L.L.	P.L.	
				1 1/2	3/4	3/8	4	8	16					30
				2	12	19	27	39	58	83	94	4	3.34	

CORRELATION DATA

Geological Age Quaternary
 Geological Source Grand Island Formation
 Material Similar to Material reported on SHC form 633
 Lab. No. 36308
 Specific Gravity (sat.) 2.58 (dry) 2.56
 Los Angeles Wear 31.9 (C)
 Absorption _____ Soundness 0.98
 Wt. Cu.ft. 116.0 Str. Ratio 1 day-1.30, 3 day-1.32
 Remarks _____



Scale: 1" = 1/4 Mile

STATE HIGHWAY COMMISSION OF KANSAS

MATERIAL SURVEY REPORT

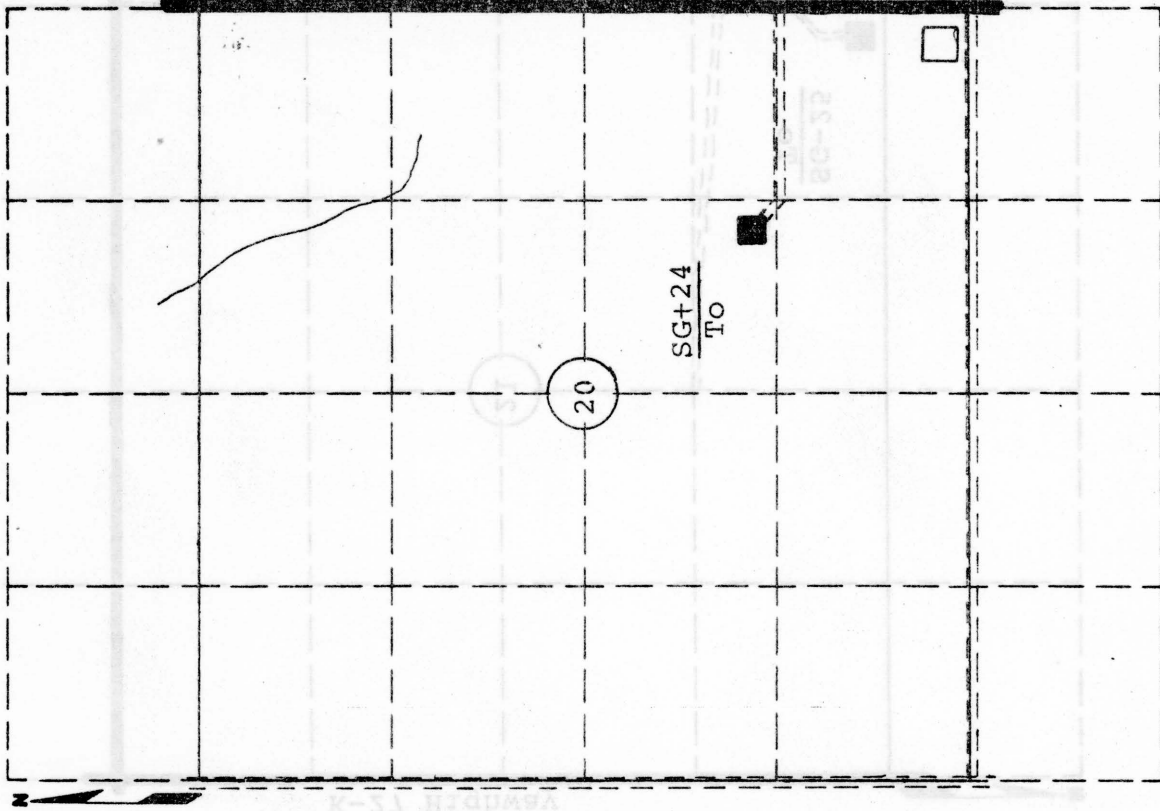
Site No. SG+24 To October, 1967
 Material Sand and Gravel County Morton
 Location SE 1/4 Sec. 20 Twp. 34S Range 42W
 Owner Forest D. Fullerton Elkhart, Kansas
 Nature of Deposit Dry Accessibility Good Site Located on Plate V
 Status of Site Open site; sampled

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	100
				9	19	30	40	47	54	67	84	92	9	4.42		

CORRELATION DATA

Geological Age Tertiary
 Geological Source Ogallala Formation
 Material Similar To Material reported on SHC form 633
 Lab. No. 65-350
 Specific Gravity (Sat.) 2.59 (Dry) 2.54
 Los Angeles Wear 29.1 (C)
 Absorption 1.88 Soundness 0.97
 wt. Cu.Ft. 116.12 Str. Ratio 1 day-0.69, 3 day-0.89
 Remarks Contains large boulders



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

SG-25
TO
Site No. _____ Date October, 1967
Material Sand and Gravel County Morton
Location NE 1/4 Sec. 21 Twp. 34S Range 42W
Owner United States Government address _____
Nature of Deposit Dry Accessibility Good Site Located on Plate V
Status of Site Open site; sampled

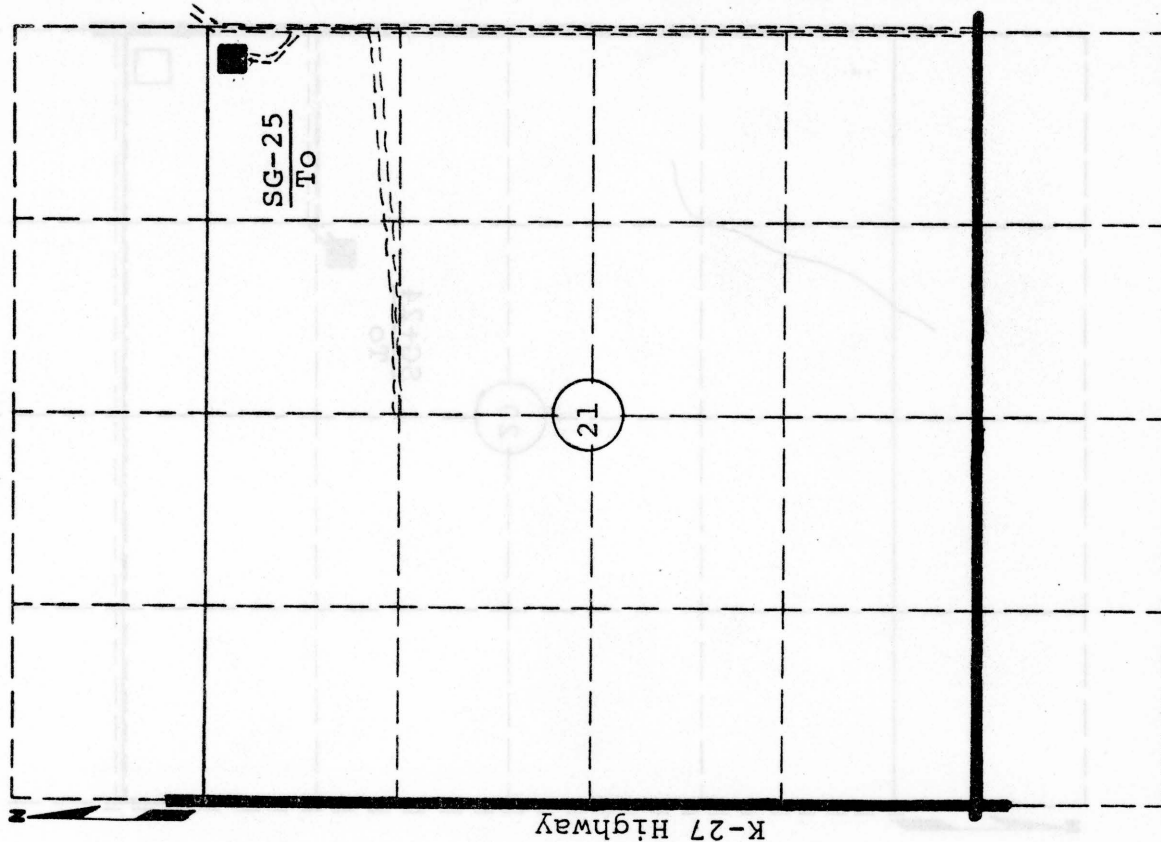
EXPLORATION DATA

Test Hole	Material at Bottom of Hole	Depth of over-Burden	Depth of Material	Percent Retained								Wash 200	G.F.	L.L.	P.L.
				1/2	3/4	3/8	4	8	16	30	50				
Av. Rock	2.5	7		9	17	26	34	42	60	88	97	3	3.73	16	1

CORRELATION DATA

Geological Age Tertiary
Geological Source Ogallala Formation
Material Similar To Material reported on SHC form 619
No. 65-3, Lab. No. 66390
Specific Gravity (sat.) 2.56 (dry) _____
Los Angeles Wear 30.0 (B)
Absorption _____ Soundness 0.98
wt. Cu.ft. 119.1 str. Ratio 1 day-1.10, 3 day-1.01

Remarks Contains some large boulders. Gradation data for test holes one and three represents the coarsest and finest material tested at this site.



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

SG+26
Qal

Site No. _____ Date October, 1967

Material Sand and Gravel County Morton

Location SW $\frac{1}{4}$ Sec. 14 Twp. 34S Range 43W

Owner United States Government address _____

Nature of Deposit Wet Accessibility Poor Site Located on Plate V

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.L.
				1 1/2	3/4	3/8	1/4	16	30	50	100		
				7	10	35	46	65	98	99	4.83.60		

CORRELATION DATA

Geological Age Recent

Geological Source Alluvium

Material Similar To Material reported on SHC form 633

Lab. No. 42149

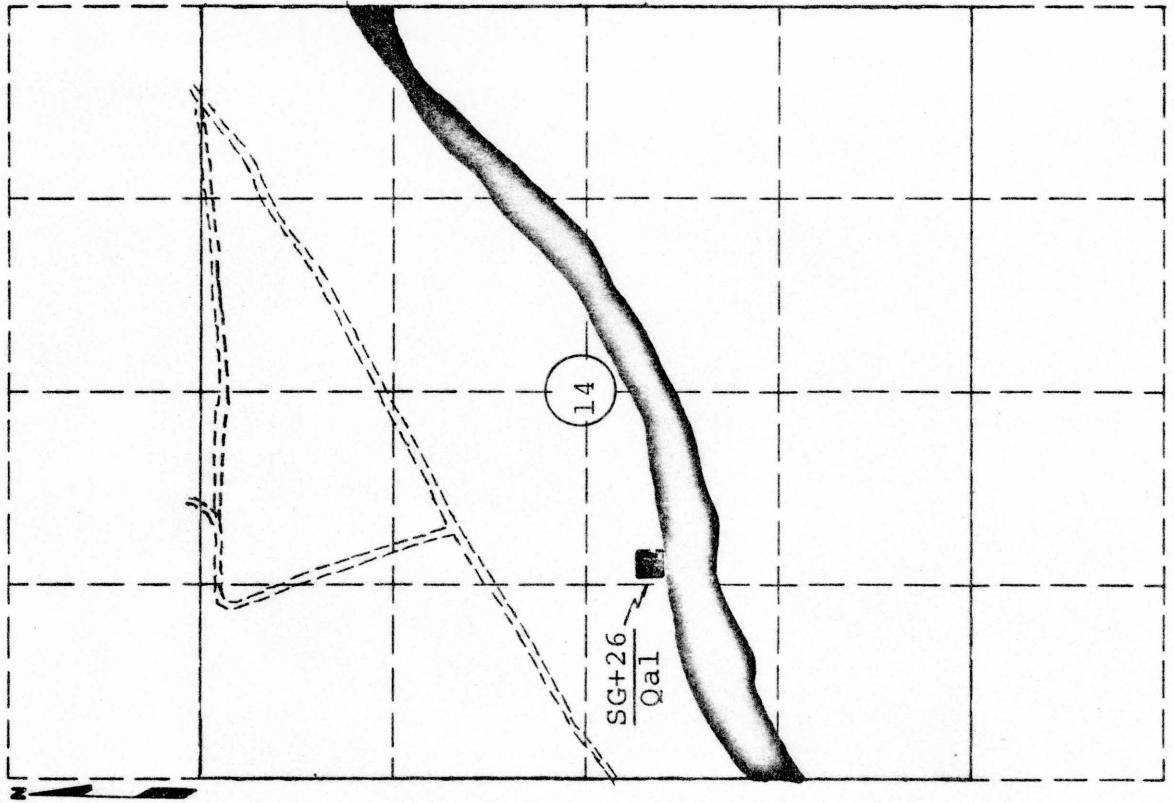
Specific Gravity (Sat.) _____ (Dry) _____

Los Angeles Wear 34.8 (B)

Absorption _____ Soundness _____

Wt. Cu.Ft. _____ Str. Ratio _____

Remarks This site was sampled in 1941 and the exact location is not certain.



Scale: 1" = 1/4 Mile

PROSPECTIVE MATERIALS SITES; SAMPLED

LEGEND

=====	Trail or lane		Prospective materials site; sampled
	Road		Prospective materials site; not sampled
+ + + + +	Railroad		Open materials site; sampled
	Hedge or trees		Open materials site; not sampled
- x - x - x -	Fence		Shaded area is approximate limits of site
	Major stream		Center of section
	Intermittent streams		Dwelling
	Pond or lake		Cemetery
			School
			Church
			Town or city

STATE HIGHWAY COMMISSION OF KANSAS

MATERIAL SURVEY REPORT

SI-27
Qds

Site No. _____ Date October, 1967

Material Silt County Morton

Location NE 1/4 Sec. 6 Twp. 33S Range 39W

Owner Langdon Morgan Hugoton, Kansas

Nature of Deposit Dry Accessibility Fair Site located on Plate IV

Status of Site Prospective site; sampled

EXPLORATION DATA

Test Hole	Material at Bottom of Hole	Depth of over-burden	Depth of Material	Percent Retained							Wash 200	S.F.	L.L.	P.L.		
				1 1/2	3/4	3/8	1/4	16	30	50					100	
				0	0	0	0	0	1	5	19	75				

CORRELATION DATA

Geological Age Quaternary

Geological Source Dune Sand

Material Similar To Material reported on SHC form 645

Lab. No. 53884

Specific Gravity (Sat.) 2.63 (Dry) _____

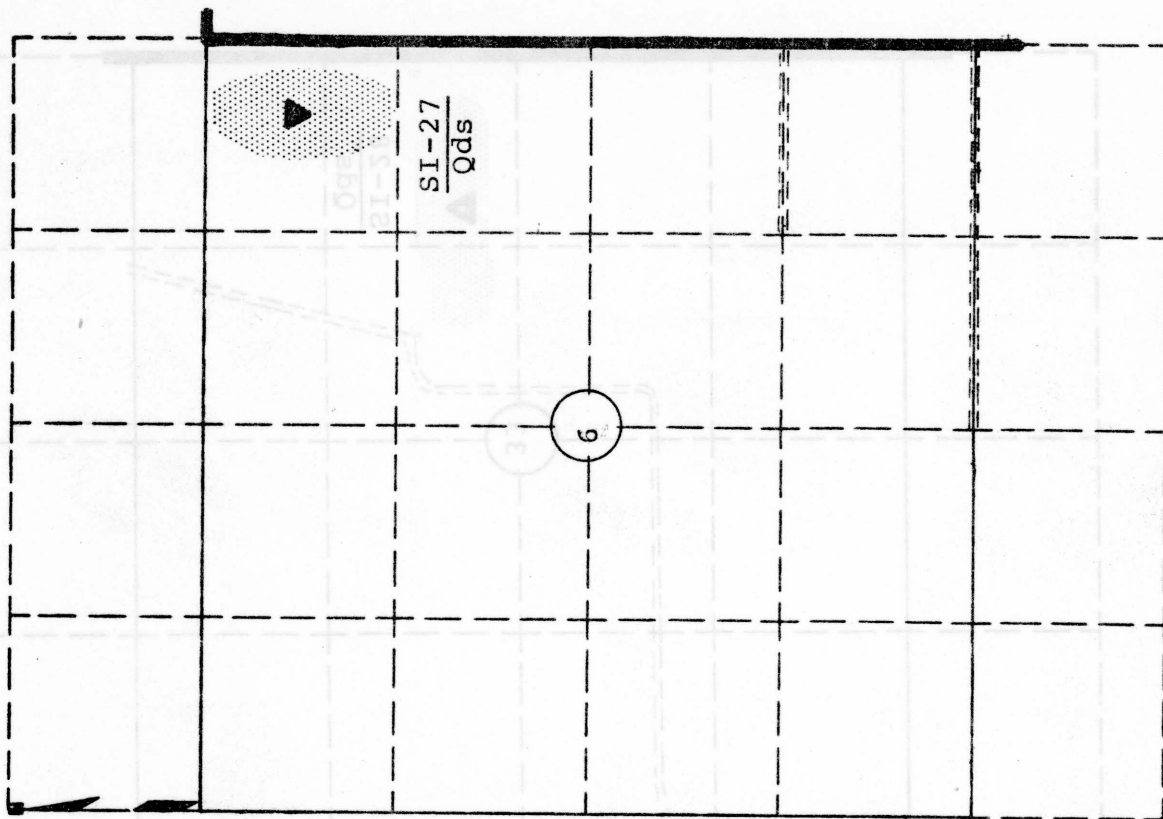
Los Angeles Wear _____

Absorption _____ Soundness _____

St. Cu. Ft. 84.9 Str. Ratio _____

Remarks Test data for this site were taken in 1947.

The site location on the chart should be considered approximate.



Scale: 1" = 1/4 Mile

MATERIAL SURVEY REPORT

33

4

SI-28
Qds

EXPLORATION DATA

CORRELATION DATA

PROSPECTIVE MATERIALS SITES; NOT SAMPLED

LEGEND

=====	Trail or lane		Prospective materials site; not sampled
—————	Road		Open materials site; sampled
+ + + + +	Railroad		Open materials site; not sampled
~~~~~	Hedge or trees		Prospective materials site; sampled
—x—x—x—	Fence		Shaded area is approximate limits of site
—————	Major stream		Center of section
	Intermittent streams		Dwelling
	Pond or lake		Cemetery
			School
			Church
			Town or city



# MATERIAL SURVEY REPORT

SG+29. TO October, 1967

Site No.                      Date                     

Material Sand and Gravel County Morton

Location N $\frac{1}{2}$  Sec. 19 Twp. 33S Range 40W

Owner United States Government name                      address                     

Mature of Deposit Dry Accessibility Fair Site Located on Plate IV

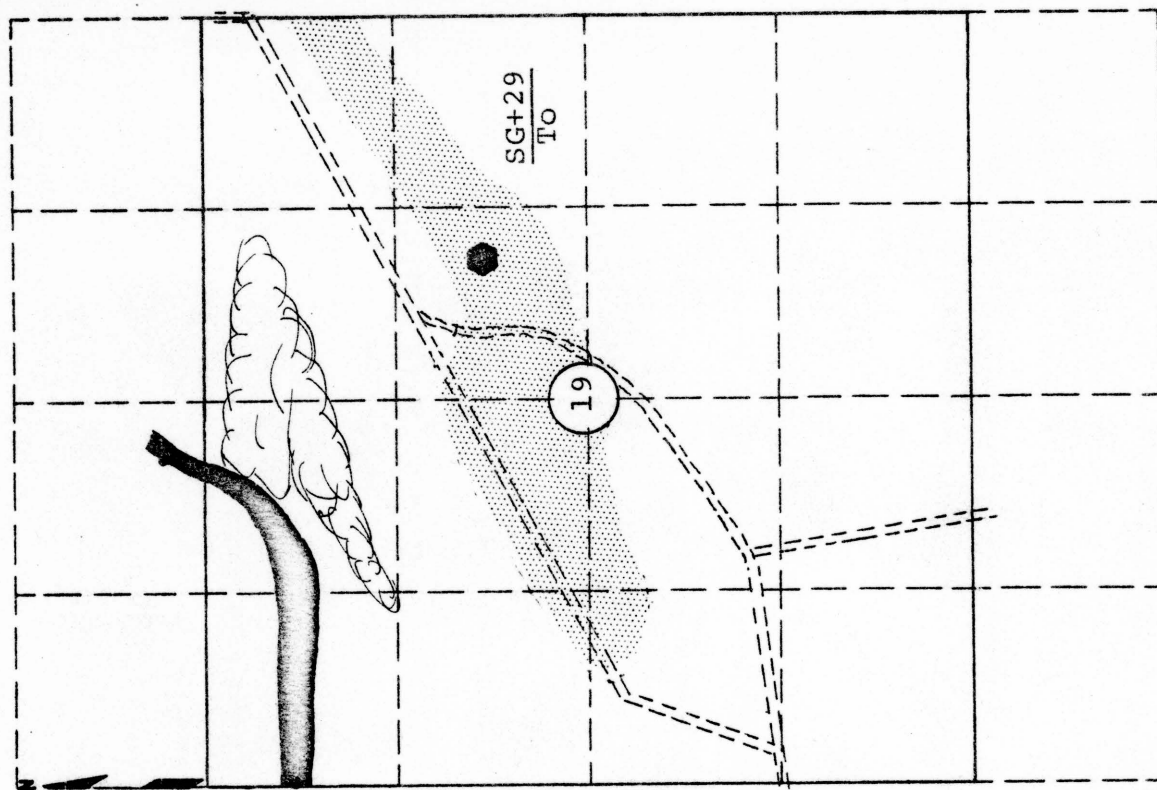
Status of Site Prospective site; not sampled

### EXPLANATION DATA

[illegible]

### CORRELATION DATA

Tertiary  
 Geological Age _____  
 Geological Source _____  
 Ogallala 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





## GLOSSARY OF SIGNIFICANT TERMS

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

**Aggrade:** To raise the grade or level of a river valley or stream bed by depositing particles of clay, silt, sand, and gravel.

**Algal limestone:** Limestone formed by algae. In the case of algal limestone in the Ogallala, it is considered of fresh water origin.

**Alluvium:** A deposit of clay, silt, sand, or gravel laid down by flowing water.

**Aquifer:** Water bearing geologic unit.

**Arkosic gravel:** Gravel composed of mineral fragments derived from weathered granite.

**Caliche:** Term used for secondary accumulation of calcium carbonate in unconsolidated deposits.

**Coarse sand:** An aggregate of unconsolidated mineral or rock particles the dimensions of which are not less than 0.42 millimeters and not larger than 2.00 millimeters.

**Cobble:** Rounded stones ranging from about two and one-half to ten inches in diameter.

**Colluvial deposits:** Heterogeneous aggregates of rock debris resulting from the transporting action of gravity.

**Consolidated deposit:** Deposit of limestone, shale, or sandstone. In Kansas, this term generally applies to rock older than Pliocene age.

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

**Evaporites:** Group of sedimentary deposits that owe their origin mainly to the evaporation of restricted bodies of sea water.

**Fine sand:** An aggregate of unconsolidated minerals or rock particles the dimensions of which are not less than 0.05 millimeters and not more than 0.42 millimeters. The term refers to size of grain and not composition; however, since most sands are composed of quartz and feldspar, and the term is used without qualifications, a siliceous composition is implied.

**Formation:** A layer of persistent strata of one general kind of rock.

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

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

Gradation factor: The value obtained by adding the percentages of material retained on the  $1\frac{1}{2}$ ",  $3/4$ ",  $3/8$ ", 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 Y1-14 of the State Highway Commission of Kansas Standard Specifications, 1966 edition.

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

Igneous rocks: Rocks produced under conditions involving great heat; as rocks crystallized from a molten material.

Lava: Igneous rock that has been poured out upon the surface of the earth and there solidified.

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

Liquid limit: Determined by tests performed in accordance with section Y1-18 of the State Highway Commission of Kansas Standard Specifications, 1966 edition.

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 Y1-14 of the State Highway Commission of Kansas Standard Specifications, 1966 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.

Metamorphic rock: Rock which has been recrystallized or otherwise altered by intense heat and (or) pressure.

Mortar bed: A calcium cemented sand in the Ogallala Formation.

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: Determined by tests performed in accordance with section Y1-18 of the State Highway Commission of Kansas Standard Specifications, 1966 edition.

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.

Red beds: Red sandstone, siltstone, and silty shale containing thin zones of limestone, dolomite and gypsum.

Siltstone: A very fine-grained stone composed of silt-sized particles.

Soundness: Determined by tests performed in accordance with section Y1-15 of the State Highway Commission of Kansas Standard Specifications, 1966 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: That application of binocular vision which enables the observer to view an object simultaneously from two different perspectives (or two photographs taken from different camera stations) to obtain the mental impression of a three dimensional model.

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

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.

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

Volcanic ash: The finely divided, fragmental, silica rock material blown from volcanoes during explosive eruptions.

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

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



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