



KANSAS DEPARTMENT OF TRANSPORTATION

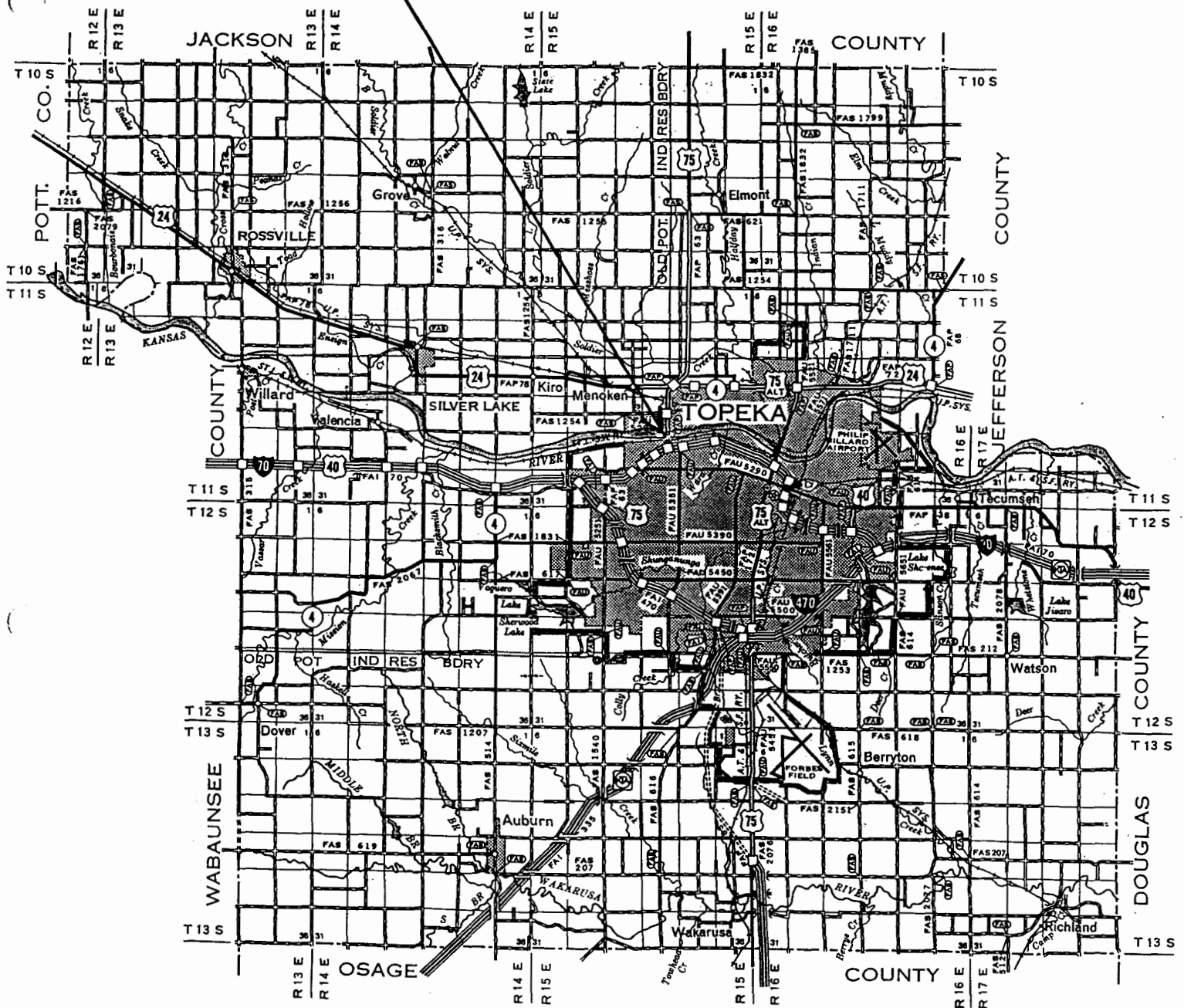
RTE./CO. 75-89	SOUNDING NO. CD #2	SHEET 1 OF 2
BRIDGE STA. 99+490.118	PROJ. NO. K-5666-01	BRIDGE NO. 75-89-18.01
SITE NAME N.B. US-75 over KS River		HOLE STA. 99+645.5, 10m R+ NB E
GEOLOGIST R. Billinger	SCALE: 1:100 (10mm = 1 Meter)	DATE 7-8-98
DRILLER Rob Vervynck / Bob Bergman	RIG TYPE Mobile B-61	TOP HOLE ELEV. 267.97
GROUNDWATER ELEV 264.27	TOTAL DEPTH 25.84 m	M/B ELEV. 256.18

BIT TYPE	GEOLOGIC NAME	STRATIGRAPHIC COLUMN	DEPTH	ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION kPa	STANDARD PENETRATION OR CASING DRIVE	
							BLOWS Per 300mm	ELEV
Casing	Alluvium		0.70	267.27	Top Hole 267.97 meters Silt, Sandy	38.7	Shelby 1	267.57
					Sand, fine to coarse grained. Some sand is clay bound in zones. Some light gravel in zones.	36.1	Shelby 2	266.22
				265		47.0	Shelby 3	264.68
							6 blows	263.4
							6 blows	261.76
				260			16 blows	260.24
							17 blows	258.72
			10.57	257.40			26 blows	257.2
					sand & gravel			
			11.79	256.18				
Carbide	Calloway Fm			255	Shale, clayey to very sandy, gray. Numerous thin sandstone lenses in the very sandy zones.	643.8	Sample 1	254.63
						569.7	Sample 2	253.76
						1257.1	Sample 3	252.24

				SOUNDING NO. <u>CD #2</u>	PROJECT NO. <u>K-5666-01</u>	SHEET <u>2</u> OF <u>2</u>	
DATE <u>7-8-98</u>				RTE./CO. <u>75-89</u>	TOTAL DEPTH <u>25.84</u>	THE <u>267.97</u>	
BIT TYPE	GEOLOGIC NAME	STRATIGRAPHIC COLUMN	DEPTH	ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION kPa	STANDARD PENETRATION OR CASING DRIVE
							BLOWS ELEV
Carbide	Calhoun Formation	3		252	Shale, sandy, gray. Thin Sandstone lenses.		
		4		250			
		5	18.37	249.6	Sandstone, shaly, gray. Thin sandy shale lenses		
		6	19.25	248.72			
		7			Sandstone, gray. a few shaly lenses.	5005.6	Sample 4 247.83
		8					
		9					
		10				3807.4	Sample 5 245.77
		11					
		12					
			25.84		242.13 Total Depth		
				240			

75-89 K-5666-01
N.B. US-75 over the Kansas River

Core Box



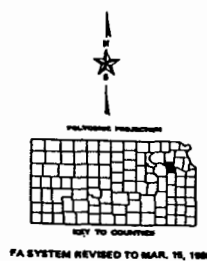
LEGEND

ROADS AND ROADWAY FEATURES

- PRIMITIVE ROAD
- UNIMPROVED ROAD
- GRADED AND DRAINED ROAD
- SOIL SURFACED ROAD
- GRAVEL OR STONE ROAD—NOT GRADED OR DRAINED
- GRAVEL OR STONE ROAD—GRADED AND DRAINED
- LEVEL OR STONE ROAD WITH TABULARIZED SURFACE
- TURNPIKE ROAD—LOW TYPE
- PAVED ROAD
- DIVIDED HIGHWAY
- HIGHWAY WITH FULL CONTROL OF ACCESS AND INTERCHANGE

ROAD SYSTEM DESIGNATION

- FEDERAL-AID INTERSTATE HIGHWAY SYSTEM
- FEDERAL-AID PRIMARY HIGHWAY SYSTEM
- FEDERAL-AID SECONDARY HIGHWAY SYSTEM
- INTERSTATE NUMBERED HIGHWAY
- U.S. NUMBERED HIGHWAY
- STATE HIGHWAY SYSTEM OR STATE NUMBERED HIGHWAY
- END OF DESIGNATED SYSTEM OR MARKED ROUTE



GENERAL HIGHWAY MAP SHAWNEE COUNTY KANSAS

PREPARED BY THE
KANSAS DEPARTMENT OF TRANSPORTATION
BUREAU OF TRANSPORTATION PLANNING
IN COOPERATION WITH THE
U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

SCALE
1966

Date: 7/08/98

Project No. 75-89 K-5666-01

Bridge No. 75-89-18.01(263)

Location: N.B. US-75 over the Kansas River

Core Hole #2

<u>Core 1</u>	<u>Core 2</u>	<u>Core 3</u>	<u>Core 4</u>	<u>Core 5</u>
12.04 to 13.56	13.56 to 15.03	15.03 to 16.55	16.55 to 18.02	18.02 to 19.11
255.93 to 254.41	254.41 to 252.94	252.94 to 251.42	251.42 to 249.95	249.95 to 248.86
Cut 1.52	Cut 1.47	Cut 1.52	Cut 1.47	Cut 1.09
Recov. 1.48	Recov. 0.89	Recov. 1.57	Recov. 1.50	Recov. 1.09
RQD= 26%	RQD= 61%	RQD= 43%	RQD= 34%	RQD= 53%

<u>Core 6</u>	<u>Core 7</u>	<u>Core 8</u>	<u>Core 9</u>	<u>Core 10</u>
19.11 to 20.58	20.58 to 22.10	22.10 to 23.62	23.62 to 25.14	25.14 to 25.84
248.86 to 247.39	247.39 to 245.87	245.87 to 244.35	244.35 to 242.83	242.83 to 242.13
Cut 1.47	Cut 1.52	Cut 1.52	Cut 1.52	Cut 0.70
Recov. 1.33	Recov. 0.63	Recov. 1.45	Recov. 1.22	Recov. 0.67
RQD= 39%	RQD= 0%	RQD= 0%	RQD= 0%	RQD= 0%

Note: The RQD for the above cores is probably much higher than recorded. Some of the low RQD values are partially due to trouble with the core barrel.

Kansas Department of Transportation

Report of sample of Shelby Tubes

Laboratory No. 98-2707

Date Reported. Aug 6, 1998

Date Received. July 10, 1998

Specification No. -- Quantity ---

Source of material Project

Sample from Project

Submitted by Delmar Thompson, Lawrence Geology Office

Identification marks Tags with Samples

Project or POV 75-89 K-5666-01

Type of construction Bridge # 75-89-18.01

TEST RESULTS

Sample No.	Station	CL Dist. m	Depth m	Description	Qu. kPa	Dry Unit Weight kg/m ³	Moisture (% of Dry Wt.)
				T.H.E.=267.968			
SH1	99 + 645.5	10m RT	0.00-0.40	Fine Grained Sandy Silt	38.7	1772	11.8
SH2	"	"	1.35-1.75	Fine Grained Sand w/ silt binder	36.1	1509	24.7
SH3	"	"	2.87-3.29	Sandy Silt / Sand	47.0	1458	32.4

See attached routine and gradation test results for scour analysis.

$\pm 5\%$ $165/\text{ft}^3$

cc: L.S. Ingram
G.R. Koontz
Bridge Design
~~Delmar Thompson~~
J.J. Brennan
Soil Section
File 18-3

#1 0.4 110.6

#2 0.37 94.2

#3 0.49 91.0

Reported by: Walter C VonDempfang, for

Title James J. Brennan, Soils Engineer

Kansas Department of Transportation

Report of sample of Geology Cores

Laboratory No. 98-2812

Date Reported. July 31, 1998

Date Received. July 17, 1998

Specification No. --

Quantity ---

Source of material Project

Sample from Project

Submitted by Delmar Thompson, Lawrence Geology Office

Identification marks Tags with Samples

Project or POV 75-89 K-5666-01

Type of construction Bridge #75-89-18.01

CD #2

TEST RESULTS

Sample No.	Station	CL Dist. m	Depth m	Description	Qu. kPa	Dry Unit Weight kg/m ³	Moisture (% of Dry Wt.)
T.H.E.=267.968							
S1	99+645.5	*10m RT	13.15-13.34	Shale, Gry, Clayey, Firm	643.8	1993	12.7
S2	"	"	14.01-14.21	Shale, Gry, Clayey, Firm	569.7	2071	11.3
S3	"	"	15.53-15.73	Shale, Sandy, Gry	1257.1	2087	10.5
S4	"	"	19.99-20.14	Sandstone, Gry	5005.6	1788	17.4
S5	"	"	22.10-22.20	Sandstone, Gry, SHORT	3807.4	1754	17.8

SAMPLE

* Of Northbound Lane

cc: L.S. Ingram
G.R. Koontz
~~D. Thompson~~
J.J. Brennan
Soil Section
File

	<u>tsf</u>	<u>lbs/ft³</u>
#1	6.7	124.4
#2	5.9	129.2
#3	13.1	130.2
#4	52.2	111.6
#5	39.7	109.5

Reported by: Walter C VonDranfange for

Title James J. Brennan, Soils Engineer

Kansas Department of Transportation

Report of sample of Scour Samples

Laboratory No. 98-2811

Date Reported. July 27, 1998

Date Received. July 17, 1998

Specification No. --

Quantity ---

Source of material Project

Sample from Project

Submitted by Delmar Thompson, Lawrence Regional Geologist

Identification marks Tags with Samples

Project or POV 75-89 K-5666-01

Type of construction Bridge #18.01

TEST RESULTS

See attached scour gradation test results.

CD #2
Samples from split spoons

cc: L.S. Ingram
Bridge Design Office
~~_____~~
J.J. Brennan
Soil Section
File

Reported by: *James J. Brennan*

Title: James J. Brennan, Soils Engineer

7-8-98

5.3 East
3.6 North

Core Hole #2

Sta 99+645.5, 10 m Rt of NB lane

Bob Bergman

Rob Uervynck

Mike Law

Don Kerl

Rusty Boyd

Randy Billing

Elevation
meters

267.968 0.00 - 0.40

0.40 - 0.70

0.70 - 1.35

1.35 - 1.75

1.75 - 1.83

1.83 - 2.87

2.87 - 3.29

3.29 - 4.39

4.39 - 4.84

4.39

4.84 - 5.91

Shelby #1: pushed 0.40m recov. 0.40m

fine grained sandy silt, gray-brown

Sandy silt

fine grained sand with silty binder, gray-brown

Shelby #2 pushed 0.40m recov. 0.38

fine grained sand with silt binder grading to

silt

Silty gray

Sand with clay binder, some zones of
fine grained clean sand

Shelby #3 pushed 0.42m recov. 0.42

Sandy silt grading to clean medium to
coarse grained sand.

Sand, medium to coarse grained, clean

Split Spoon #1

4.39 - 4.54

Medium to

3 blows

4.54 - 4.69

Clean

3 "

4.69 - 4.84

Sand

coarse grained

3 "

Sand, clay bound to clean in zones

may have hit a piece
of gravel on this drive

267.97

5.91 - 6.36

6.36 - 7.43

7.43 - 7.88

7.88 - 8.95

8.95 - 9.40

9.40 - 10.47

10.47 - 10.92

think a ls rock
plugged off split spoon
at $\approx$ 10.73 and kept
anything else from
going up inside

11.7 m contact

256.21

Split Spoon #2

5.91 - 6.06 clay bound sand, gray 3 blows

6.06 - 6.21 Sand, + gravel 16 blows

6.21 - 6.36 silt to silt bound sand, gray 5 blows

Note: when we went on down, drilled like
there was gravel. 5.91 - 6.05 gravel & coarse
Sand. 6.05 - smoothed out

Split Spoon #3

7.43 - 7.58 silt bound fine grained sand gray 6 blows

7.58 - 7.73 sand medium to coarse 8 "

7.73 - 7.78 with some silt binder gray 8 "

Split Spoon #4

8.95 - 9.10 medium to coarse 3 blows

9.10 - 9.25 sand, some silt binder 6 "

9.25 - 9.40 but mostly clean 11 "

Split Spoon #5

10.47 - 10.62 sand 26 blows

10.62 - 10.77 ls gravel & shale or 18 blows

10.77 - 10.92 clay (See next page) 8 blows

13.56
45
1.01
1.37
89
58

12.04 0.95

Core #1

12.04 - 13.56

cut 1.52

Rec. 1.48

RQD 0.4/1.52

RQD is probably higher
but core is sticking in
barrel causing it to break

Core #2

13.56 - 15.03

cut 1.47

Recov. 0.89

RQD = 0.89/1.47

RQD = 100% of what
we recovered

0.89/0.89

10.47 - 10.57

10.57 - 10.84

10.84 - 11.44

11.44 - 11.79

11.79 - 11.95

11.95 - 12.04

12.04 - 12.52

12.52 - 13.12

13.12 - 13.56

13.56

13.15 - 13.34

13.56 - 14.43

14.43 - 15.03

15.03

14.01 - 14.21

19.1 m SS

Sand, clean, coarse

LS gravel with clay or shale

LS gravel plugged end of Split spoon $\approx$ 10.73

Smooth, coarse sand,

heavy gravel or LS rubble

Shale

Shale, firmer

Shale, gray, clayey to sandy

Shale, very sandy, platy, gray

Shale, gray, clayey, dry, firm

End Core #1

Sample #1 shale, gray, clayey, firm

Shale, gray, clayey to slightly silty, firm, dry

Last

End Core #2

Sample #2 Shale, gray, clayey Firm

Core #3

15.03 - 16.55

cut 1.52

Recov. 1.57?

RQD = 0.65/1.52

(RQD is probably higher but
core sticking to barrel &
causing it to twist & break)

15.03 - 15.15

15.15 - 16.55

16.55

Shale, silt-f. gray

Shale, sandy, gray, thin SS stringers

End core #3

15.03
1.52
16.55

15.53 - 15.73

Sample #3 shale sandy gray, SS lenses

Core #4

16.55 - 18.02

cut 1.47

Recov. 1.50

RQD = 0.5/1.47

(Note: RQD is probably
higher)

16.55 - 16.76

16.76 - 18.02

18.02

Sandstone, gray

Shale, very sandy, gray, numerous SS
stringers, platy

End core #4

Core #5

18.02 - 19.11

cut 1.09

Recov. 1.09

RQD = 0.58/1.09

probably higher?

18.02 - 18.37

18.37 - 18.71

18.71 - 18.93

18.93 - 19.11

19.11

Shale, sandy, gray

Shale, very sandy to very shaly SS.

Numerous SS, stringers, gray

Shale, sandy, gray

Shale/SS interbedded lenses, gray

End core #5

19.11
1.47
20.58

LS = 29.5 m

Core #6

19.11 - 20.58

cut 1.47

Recov. 1.33 lost 0.14

RQD 0.57/1.47

RQD may be slightly higher?

19.11 - 19.25

19.25 - 19.57

19.57 - 19.97

19.97 - 20.58

20.58

Shale/SS interbedded lenses gray

SS, gray

SS, Shale, gray, very platy

SS, gray, well cemented

End Core #6

19.99 - 20.14

Sample #4

SS, gray

Core #7

20.58 - 22.10

cut 1.52

Recov. 0.63

RQD = 0%

may actually be 100% of what we recovered, but busted up in barrel + core slid out.

20.58 - 21.02

21.02 - 21.21

21.21 - 22.10

22.10

SS, gray

Shale, gray, sandy

lost. Slid out of barrel

End Core #7

lost 0.89, Slid out of barrel

Note: went in with Hawthorne bit to clean out core that fell into the hole. cleaned out hole to 22.10.

Core #8

22.10 - 23.62

Cut 1.52

Recov. 1.45 Lost 0.07

RQD = 0% as seen but
probably $\approx 95\%$ in hole
I think it breaks in the
barrel

22.10 - 22.97

22.97 - 23.06

23.06 - 23.62

23.62

SS, gray

SS, shaly gray & black

SS, gray

End core #8

22.10 - 22.20

Sample #5

SS, gray

Core #9

23.62 - 25.14

Cut 1.52

Recov. 1.22

RQD = 0% as seen
but probably much more
like 90 to 100% in hole

23.62 - 25.14

SS, gray

Core #10

25.14 - 25.84

Cut 0.70

Recov. 0.67

RQD = 0% as seen
but probably higher in
the hole

25.14 - 25.84

SS, gray

25.84

End core #10

Total Depth End Hole #2

22.10
1.52
23.62