Core Box

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 Rt NB E
GEOLOGIST R. Billinger	SCALE: 1:100 (10mm = 1 Meter)	DATE 7-8-98
DRILLER Rob Verwyvck / 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

NE 27-11-15E

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	STANDARD PENETRATION OR CASING DRIVE ELEV
					Top Hole 267.97 meters			
Casing	Alluvium		0.70	267.27	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
					262 to 260 mostly clay bound sand.		6 blows	261.76
				260			16 blows	260.24
							17 blows	258.72
			10.57	257.40	sand & gravel		26 blows	257.2
			11.79	256.18				
Carbide	Calhoun 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

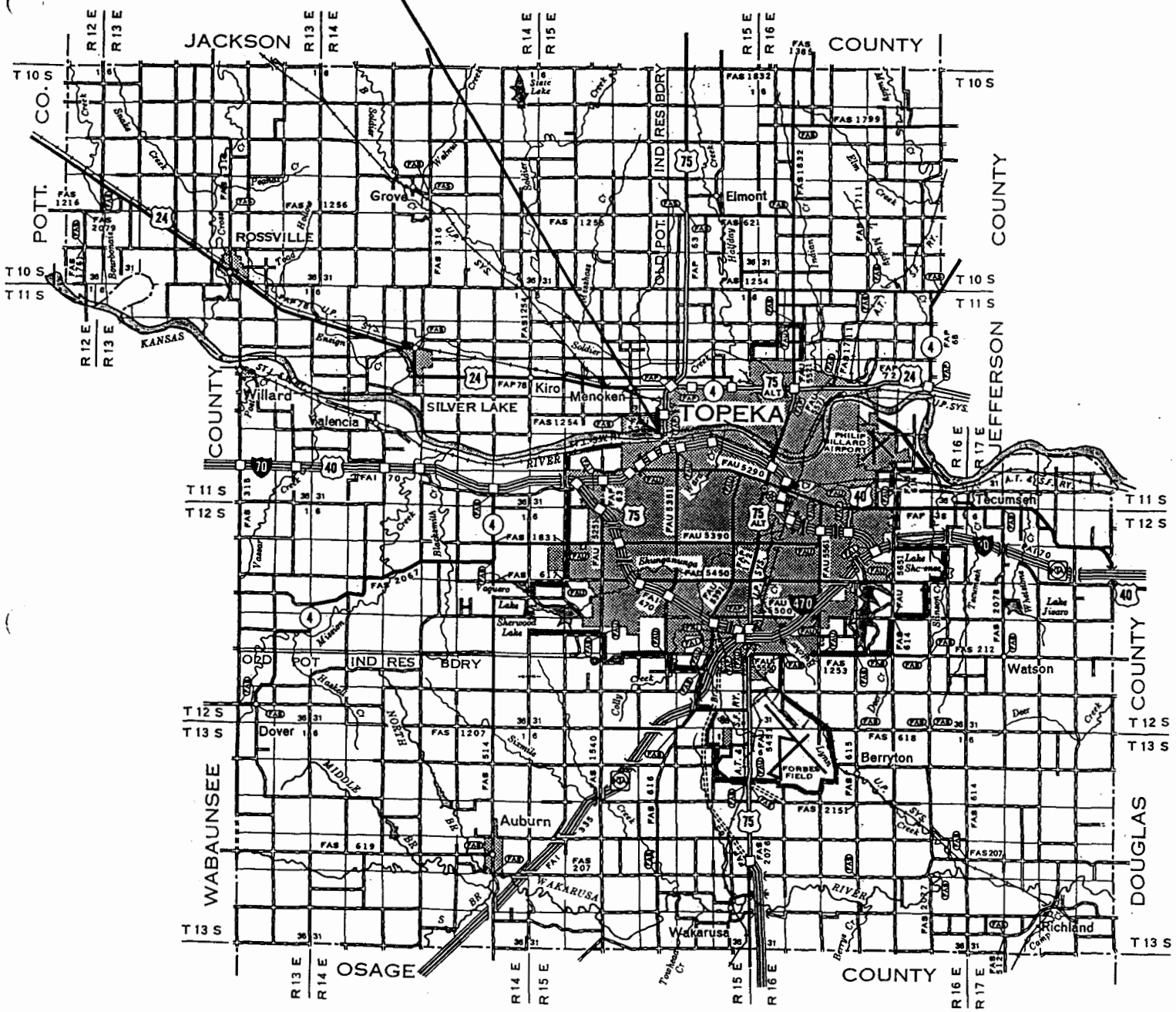
	SOUNDING NO. CD #2	PROJECT NO. K-5666-01	SHEET 2 OF 2
DATE 7-8-98	RTE./CO. 75-89	TOTAL DEPTH 25.84	THE 267.97

BIT TYPE	GEOLOGIC NAME	STRATIGRAPHIC COLUMN	DEPTH	ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION kPa	STANDARD PENETRATION OR CASING DRIVE BLOWS	STANDARD PENETRATION OR CASING DRIVE ELEV
Carbide	Calhoun Formation	core 3		252	Shale, sandy, gray. Thin Sandstone lenses.			
		core 4		250				
		core 5	18.37		249.6			
		core 6	19.25		Sandstone, shaly, gray. Thin sandy shale lenses 248.72			
		core 7			Sandstone, gray. a few shaly lenses.	5005.6	Sample 4	247.83
		core 8		245		3807.4	Sample 5	245.77
		core 9						
		core 10	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
- GRAVEL OR STONE ROAD WITH TABILIZED SURFACE
- BITUMINOUS ROAD—LOW TYPE
- PAVED ROAD
- DIVIDED HIGHWAY
- HIGHWAY WITH FULL CONTROL OF ACCESS AND INTERCHANGE

ROAD SYSTEM DESIGNATION

- FEDERAL-AID INTERSTATE HIGHWAY SYSTEM — FAI
- FEDERAL-AID PRIMARY HIGHWAY SYSTEM — FAP
- FEDERAL-AID SECONDARY HIGHWAY SYSTEM — FAS
- INTERSTATE NUMBERED HIGHWAY — 70
- U S NUMBERED HIGHWAY — 40
- STATE HIGHWAY SYSTEM OR STATE NUMBERED HIGHWAY — 24
- END OF DESIGNATED SYSTEM OR MARKED ROUTE

POLYCONIC PROJECTION

KEY TO COUNTIES

FA SYSTEM REVISED TO MAR. 15, 1966

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

Core 1	Core 2	Core 3	Core 4	Core 5
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%

Core 6	Core 7	Core 8	Core 9	Core 10
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/m³	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.

	tsf	lbs/ft³
#1	0.4	110.6
#2	0.37	94.2
#3	0.49	91.0

cc: L.S. Ingram
G.R. Koontz
Bridge Design
[redacted]
J.J. Brennan
Soil Section
File 18-3

Reported by: Walter C VonDemfange 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 SAMPLE	3807.4	1754	17.8

* Of Northbound Lane

	tsf	lbs/ft^3
#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

cc: L.S. Ingram
G.R. Koontz
[redacted]
J.J. Brennan
Soil Section
File

Reported by: Walter C VonDemfange for

Title James J. Brennan, Soils Engineer

Kansas Department of Transportatio

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
[redacted]
J..J. Brennan
Soil Section
File

Reported by: Marvin Hunt for

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 Vervynck
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
4.84 - 5.91

4.39

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 0.40 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 0.42 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 coarse grained clean Sand 3 blows
4.54 - 4.69 3 "
4.69 - 4.84 3 "
Sand, clay bound to clean in zones

11.7 m contact 256.91

267.97

may have hit a piece of gravel on this drive

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 ≈ 10.73 and kept anything else from going up inside

Split Spoon #2

5.91 – 6.06	clay bound sand, gray	3	blows
6.06 – 6.21	Sand, t 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 grained	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
10.26 – 10.77	LS gravel & shale a	18	blows
10.77 – 10.92	clay (See next page)	8	blows

19.1m SS

13.56 / 45 / 1.61	10.47 - 10.57	Sand, clean, coarse
	10.57 - 10.84	LS gravel with clay or shale
1.47 / .89 / .58		LS gravel plugged end of Split spoon ≈ 10.73
	10.84 - 11.44	Smooth, coarse sand,
	11.44 - 11.79	heavy gravel or LS rubble
12.61 0.95	11.79 - 11.95	Shale
	11.95 - 12.04	Shale, firmer
core #1	12.04 - 12.52	Shale, gray, clayey to sandy
12.04 - 13.56	12.52 - 13.12	Shale, very sandy, platy, gray
cut 1.52	13.12 - 13.56	Shale, gray, clayey, dry, firm
Rec. 1.48	13.56	End core #1
RQD 0.4/1.52		
RQD is probably higher but core is sticking in barrel causing it to break	13.15 - 13.34	Sample #1 shale, gray, clayey, firm
Core #2	13.56 - 14.43	Shale, gray, clayey to slightly silty, firm, dry
13.56 - 15.03	14.43 - 15.03	Lost
Cut 1.47	15.03	End Core #2
Recov. 0.89		
RQD = 0.89/1.47	14.01 - 14.21	Sample #2 Shale, gray, clayey Firm
RQD = 100% of what we recovered 0.89/0.89		

15.03
1.52
16.55

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 Shale, silty, gray
15.15 - 16.55 Shale, sandy, gray, thin SS stringers
16.55 End core #3

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 Sandstone, gray
16.76 - 18.02 Shale, very sandy, gray, numerous SS stringers platy
18.02 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 Shale, sandy, gray
18.37 - 18.71 Shale, very sandy to very shaly SS. Numerous SS. stringers, gray
18.71 - 18.93 Shale, sandy, gray
18.93 - 19.11 Shale/SS interbedded lenses, gray
19.11 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	Shale/SS interbedded lenses gray
19.25 - 19.57	SS, gray
19.57 - 19.97	SS, Shaly, gray, very platy
19.97 - 20.58	SS, gray, well cemented
20.58	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	SS, gray
21.02 - 21.21	Shale, gray, sandy
21.21 - 22.10	Lost. Slid out of barrel
22.10	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.

22.10
-23.62

core #8
22.10 - 23.62
cut 1.52
Recov. 1.45 Lost 0.07
RQD = 0% as seen but probably ≈ 95% in hole I think it breaks in the barrel

22.10 - 22.97 SS, gray
22.97 - 23.06 SS, shelly gray & black
23.06 - 23.62 SS, gray
23.62 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