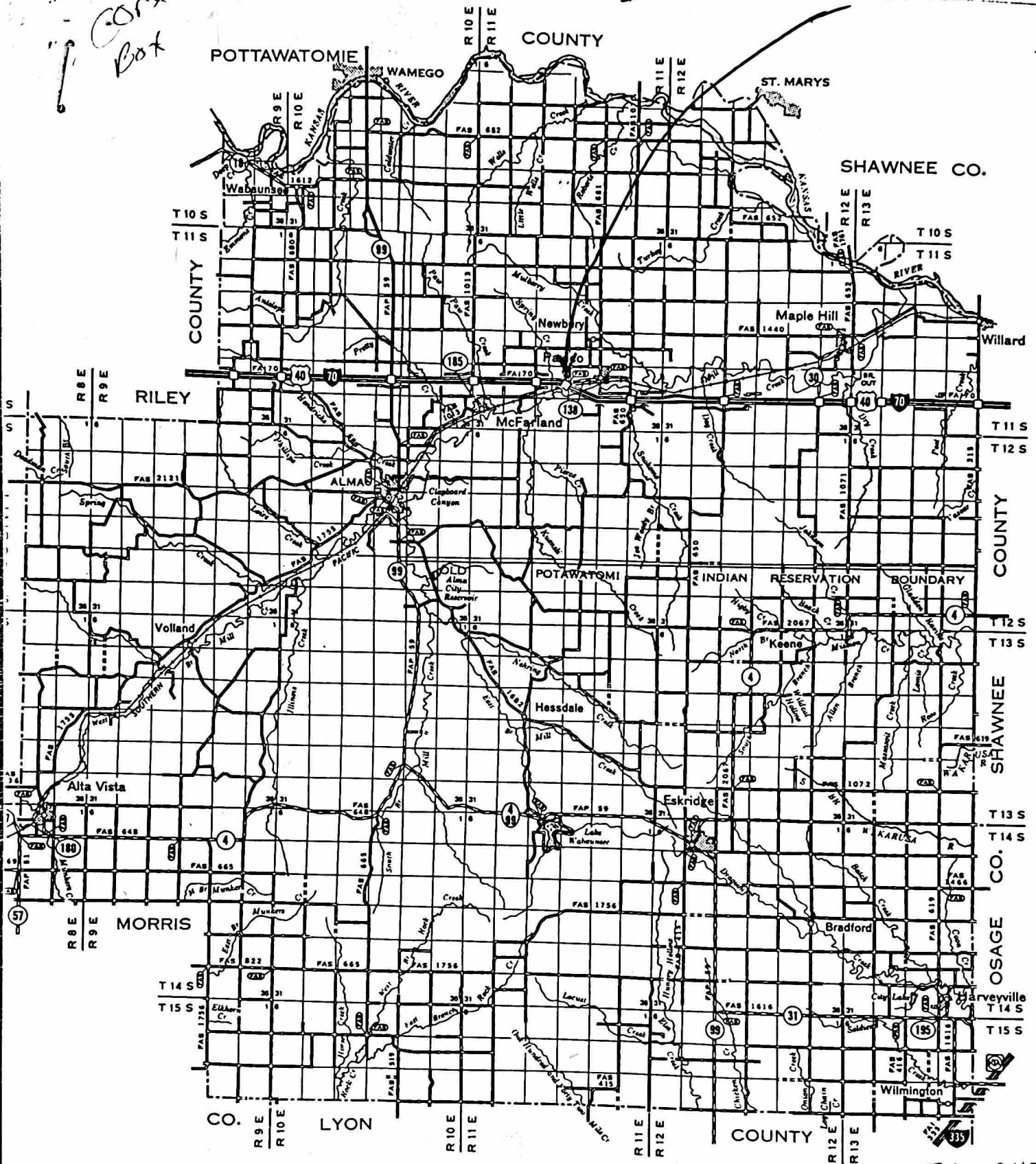


I-70 over K-138 at Paxico Exit



LEGEND

ROADS AND ROADWAY FEATURES

PRIMITIVE ROAD
UNIMPROVED ROAD
GRADED AND DRAINED ROAD
SOIL SURFACED ROAD
GRAVEL OR STONE ROAD
HOT GRADED OR DRAINED
GRAVEL OR STONE ROAD
GRADED AND DRAINED
GRAVEL OR STONE ROAD WITH
STABILIZED 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
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 WABAUNSEE 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

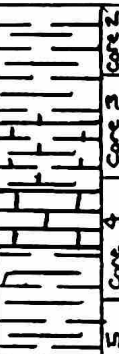
T11S R11E
28 E



KANSAS DEPARTMENT OF TRANSPORTATION

RTE./CO. 70-99	SOUNDING NO. 1	SHEET / OF 2
BRIDGE STA. ^{40+601.663, 12.8 R+} 40+626.613, 12.8 L+	PROJ. NO. K-5633-01	BRIDGE NO. ^{70-99-10.94 E.B.} 70-99-10.95 W.B.
SITE NAME I-70 ove K-138 at Paxico Exit		HOLE STA. 40+603, 30 m ^{1st lane}
GEOLOGIST Billinger	SCALE: 1:100 (10mm = 1 Meter)	DATE 2-24-98
DRILLER B. Bergman	RIG TYPE Mobile B-61	TOP HOLE ELEV. 304.03
GROUNDWATER ELEV 300.22	TOTAL DEPTH 19.812	M/B ELEV. 291.0

BIT TYPE	GEOLOGIC NAME	STRATIGRAPHIC COLUMN	DEPTH	ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION kPa	STANDARD PENETRATION OR CASING DRIVE	
							BLOWS	ELEV meters
			0.00	304.03				
			1.829	302.2	Silty-clay, brown to yellow-brown	149.3	shelby #1	302.78
			6.096	297.934	Silty-clay, yellow-brown, Sandy zones gets wet $\approx$ 4.572 m $\approx$ 299.458	99.3	shelby #2	300.433
			11.735	292.295	Silt to silty clay gray, wet.	28.3	shelby #3	296.684
			12.954	291.076	Heavy gravel	90.5	shelby #4	294.276
			14.448	289.582	Shale, clayey to limy, maroon with green streaks. limy lenses			
			15.027	289.003	Limestone, gray-green, massive	20453.0	sample #1	289.217

			SOUNDING NO. 1		PROJECT NO. K-5633-01		SHEET 2 OF 2	
DATE 2-24-98			RTE/CO. 70-99		TOTAL DEPTH 19.812		THE 304.03	
BIT TYPE	GEOLOGIC NAME	STRATIGRAPHIC COLUMN	DEPTH	ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION kPa	STANDARD PENETRATION OR CASING DRIVE	
							BLOWS	ELEV
Pony Creek Brownville Shale	Towle Shale			289	Shale, gray-green to green, clayey	352.6	Sample 2	288.638
			16.612	287.418	Shale, limy, maroon	744.2	3	286.900
			17.526	286.504		17613.1	4	286.016
			18.258	285.772	Limestone, gray-green, massive	1813.2	5	285.437
			19.812	284.218	Shale, to siltstone, maroon Very firm. TD			

Date: 2/24/98

Project No. 070-099 K-5633-01
Bridge No. 70-99-10.94 E.B. & 10.95 W.B.

Location: I-70 Over K-138 At Paxico Exit

Core 1	Core 2	Core 3	Core 4	Core 5
13.564 to 14.448	14.448 to 15.972	15.972 to 17.374	17.374 to 18.898	18.898 to 19.812
290.466 - 289.582	289.582 - 288.058	288.058 - 286.656	286.656 - 285.132	285.132 - 284.218
Cut 0.884	Cut 1.524	Cut 1.402	Cut 1.524	Cut 0.914
Recov. 0.884	Recov. 1.524	Recov. 1.402	Recov. 1.524	Recov. 0.152
RQD= 0 %	RQD= 88 %	RQD= 48 %	RQD= 94 %	RQD= 0 %

Shelby #1

0.61 to 1.25

303.420 to 302.780

Pushed 0.640

Recovered 0.579

Silty-clay, brown to yellowish-brown.

Shelby #2

3.048 to 3.597

300.982 to 300.433

Pushed 0.549

Recovered 0.518

Silty-clay, brown to yellowish-brown, moist, getting slightly sandy.

Shelby #3

6.706 to 7.346

297.324 to 296.684

Pushed 0.640

Recovered 0.640

Silty-clay to silt, yellowish-brown-gray to gray.

Shelby #4

9.144 to 9.754

294.886 to 294.276

Pushed 0.610

Recovered 0.610

Silty-clay to silt, gray, firm.

KANSAS DEPARTMENT OF TRANSPORTATION

Report of sample of Geology Cores/Shelby Tubes

Laboratory No. 98-450

Date Rep'td. March 23, 1998

Date Rec'd. March 2, 1998

Specification No. - - Quantity - - -

Source of material Project

Sample from Project

Submitted by Delmar Thompson, Lawrence Regional Geology Office

Identification marks Tags with samples

Project or POV 070-099 K-5633-01

Type of construction Bridge Replacement #70-99-10.94, #70-99-10.95.

TEST RESULTS

Sample No.	Metric Station	Dist. m CL	Depth m	Description	Qu. kPa	Sample kg/m ³ by Dry Wt.	Moisture (% of Dry Wt.)
T.H.E. = 304.03							
SH #1	40+603	30 Lt.	061-125	Silty Clay, Yel-brn	149.3	1658.00	23.0
SH #2	" "	" "	3048-3597	Silty Cly, Yel-brn/moist	99.3	1555.00	26.9 _{Sc}
SH #3	" "	" "	6706-7346	Silt, Wet, Grayish	28.3	1425.00	32.0
SH #4	" "	" "	9144-9754	" " "	90.5	1489.00	30.7
S #1	" "	" "	14691-14813	LS, light gray-green	20453.0	2346.00	5.9
S #2	" "	" "	15240-15392	Shale, Gray	352.6	1958.00	15.1
S #3	" "	" "	16977-17130	Shale, limey, maroon	744.2	2041.00	12.0
S #4	" "	" "	17831-18014	LS, Gray-green	17613.1	2457.00	4.3
S #5	" "	" "	18440-18593	SH, firm, sandy, maroon	1813.2	2106.00	10.9

See attached routine analysis test results.

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

Reported by James J.

Title James J.

	TS	lbs/ft ³
Sh1	1.558	103.51
Sh2	1.036	97.08
Sh3	0.295	88.96
Sh4	0.944	92.96
S1	213.42	146.46
S2	3.68	122.23
S3	7.77	127.42
S4	183.77	153.39
SS	18.92	131.47

Cone Hole Paxico Exit

2-24-98

Stor 40+603.

30 m 47

plugged 2-27-98

water level 3.81 meters

RB, RB, RV

Casing 2-

1- 6' 4

7.1

3- 13.5

4- 7.1

5- 20.6

6- 7.0

7- 27.6

8- 7.1

9- 34.7

10- 7.0

11- 41.7

12- 3.4

13- 45.1

14- 0.21 from PA#3

15- 304.24

16- .21

17- 304.03

18- 183

19- 162

20- .21

42'

Rds

~~688~~ 10

62

→ Randy - drove to 43.4 didn't go any deeper due to casing length & getting over the barrel

2-26-98

529

456-	46°	limy
46A-46C		limy

N/6 Sample 12

Tourel Shale

45°

64

Core #2

289.582 14.448

424-524

289.003 15.027

Cut 5°

Rec. 475°

RAD = 44/50

= 88%

53-53°

Core #3

288.058 15.972

524-57°

Cut 46

Rec. 475°

RAD = 22/46

= 48%

Rec. 0° from
Core 2

474-49°

49°-524

LS, gray-green, massive
shale, gray-green grades gray, clayey

Sample 1 482-484 (14.691-14.813 m)

LS, light gray to gray-green

Sample 2 50°-50 1/2 (15.240-15.392 m)
shale, gray

Shale, gray-green

LS, light gray

Shale, green

Shale, maroon, limy

55°-55 1/2 very limy, LS sandy?

Sample 3 557-56 1/2 (16.977-17.13 m)

shale, limy, maroon

2/20 2/20 2/20 66

Eleu meters	modern	Eleu feet	feet
304.03			00-20
	0.61-1.25m		20-4'
			4'-6'
			6'-10'
	3.048-3.597		10'-11'
			118-20'
			20'-22'
	6.706-7.346		220-24'
			24'-275
			275-30'
	9.144-9.754		300-320
			320

Silty clay, dark brown
 Shelly #1, pushed 2' Recov 1'
 Clay 1/5:1 clay brown/yellowish-brown
 Silty clay brown
 clay yellow-brown, fairly stiff
 Shelly #2 pushed 18' Recov 17'
 Silty clay, moist, yellow-brown
 getting slightly sandy
 Seems more silty, drier
 yellow-brown, moist
 dried shelly, reddish wet, drilled on
 down
 Shelly #3 pushed 2' Recov 2'
 Silty to silty clay, wet,
 yellow-gray-brown to gray
 Silty to silty clay, fairly soft
 seems finer
 Shelly 4 pushed 20' Recov 20'
 Silty/silty clay gray firm
 Silty