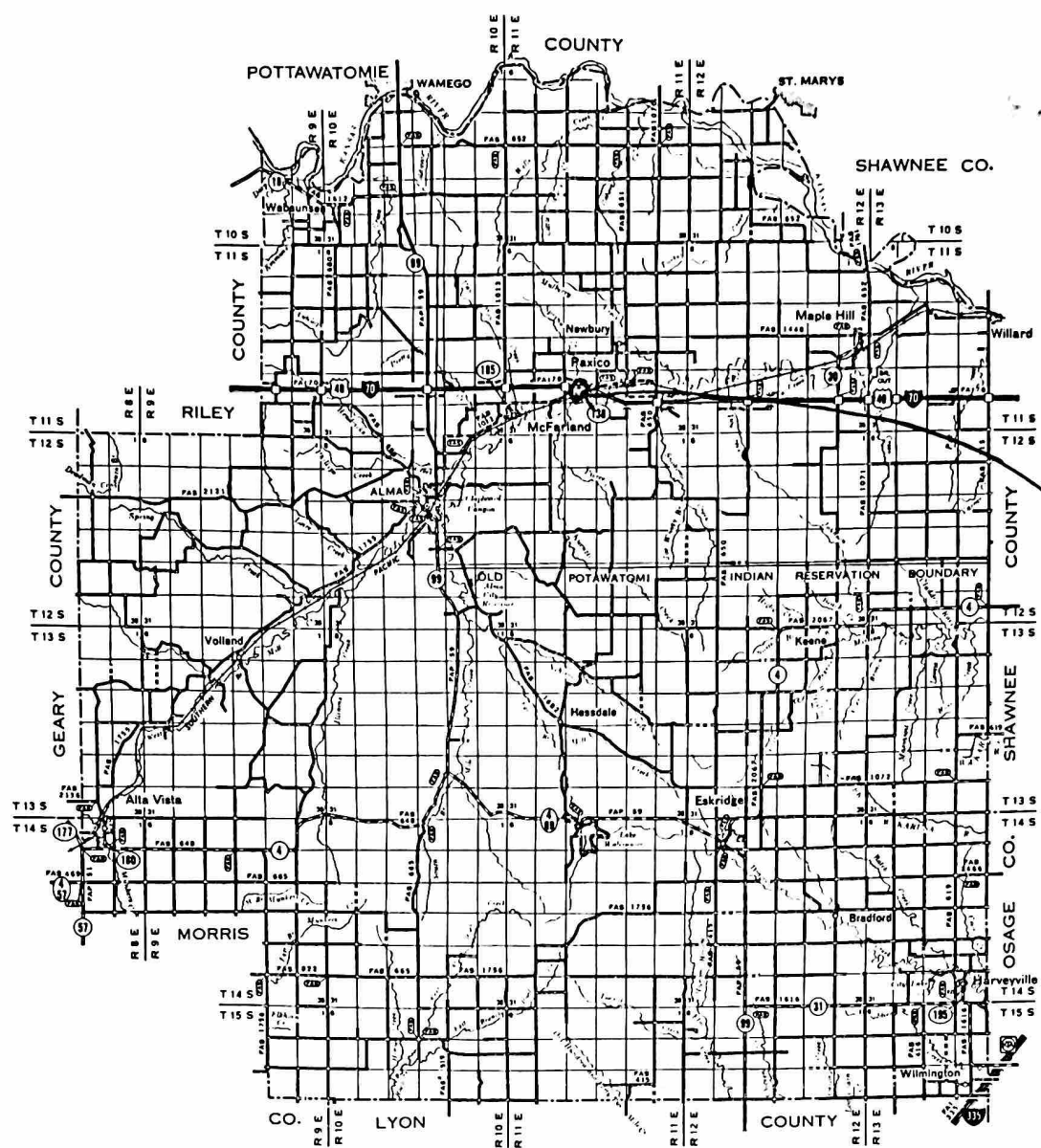




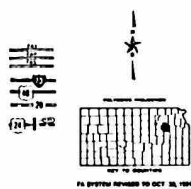
LEGEND

ROADS AND ROADWAY FEATURES

- PRIMITIVE ROAD
- UNIMPROVED ROAD
- GRADED AND GRAVEL ROAD
- SOIL SURFACED ROAD
- GRAVEL OR STONE ROAD
- NOT GRADED OR GRAVEL
- GRAVEL OR STONE ROAD
- GRADED AND GRAVEL
- GRAVEL OR STONE ROAD WITH STABILIZED SURFACE
- BITUMINOUS ROAD-LOW TYPE
- PAVED ROAD
- DIVIDE D. 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 NAMED 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
1990

PA SYSTEM REVISION TO OCT. 25, 1991

Eastbound I-70 over Spring Creek

Sept 1997

Project 70-99 K-5628-01

KDOT

QC2



KANSAS DEPARTMENT OF TRANSPORTATION

RTE./CO. 70-99	SOUNDING NO. 1	SHEET 1 OF 3
BRIDGE STA 18+791.831	PROJ. NO. K-5628-01	BRIDGE NO. 70-99-10.46(605)
SITE NAME E.B. I-70 over Spring Creek		HOLE STA 18+825.23
GEOLOGIST R. Ryan	SCALE: 1:100 (10mm = 1 Meter)	DATE 9/8/97
DRILLER J. Burns	RIG TYPE CME 55	TOP HOLE ELEV. 305.67
GROUNDWATER ELEV —	TOTAL DEPTH 20.73 m	M/B ELEV. 291.86

BIT TYPE	GEOLOGIC NAME	STRATIGRAPHIC COLUMN	DEPTH Meters	ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION kPa	STANDARD PENETRATION OR CASING DRIVE	
							BLOWS	ELEV meters
			0.0	305.67				
				305	Clay & silty clay, gray-brown and dark gray-brown.	599.68		304.2
						26.369		302.4
						17.924		297.8
				300				
				295				
			11.4	294.3	Silty clay with sand & gravel, gray			
			13.0	291.9	Limestone, hard, gray, shaly seams.			
			14.8	290.9	Shale, clayey, gray, gray-green, & maroon. Blocky	38928.6		291.4
						717.9		290.7
				290				

Casing

Diamond
Towle
Mbr.
Mbr.

		SOUNDING NO. 1		PROJECT NO. K-5628-01		SHEET 2 OF 3		
DATE 9/8/97		RTE/CO. 70-99		TOTAL DEPTH 20.73 m		THE 305.67		
BIT TYPE	GEOLOGIC NAME	STRATIGRAPHIC COLUMN	DEPTH	ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION kPa	STANDARD PENETRATION OR CASING DRIVE	
							BLOWS	ELEV
Longyear Diamond Brownville Mbr. Pony Creek Mbr.	Towle Mbr.		2	16.3	289.4 Shale, blocky, maroon	2633.7		289.6
			3	16.2	288.9 Limestone, gray-green, shale seams	10770.7		288.9
			4		Shale, olive-gray & maroon.	400.6		287.7
			5	19.3	286.44			
			6	19.9	285.73 Limestone, gray-green	12567.97		286.0
				285	284.9 TD Shale, Maroon, very firm	2794.7		285.2

Date: 9/8/97

Project No. 070-099 K-5628-01
 Bridge No. 70-99-10.46(605)

Location: Eastbound I-70 over Spring Creek

	<u>Depth</u>	<u>Elevation</u>
Shelby #1	0.91 to 1.46	304.75 to 304.21
Shelby #2	2.74 to 3.29	302.93 to 302.38
Shelby #3	7.31 to 7.86	298.36 to 297.81

<u>Core 1</u>		<u>Core 2</u>		<u>Core 3</u>		<u>Core 4</u>		<u>Core 5</u>	
13.87 to 14.63		14.63 to 16.15		16.15 to 17.68		17.68 to 18.44		18.44 to 19.20	
291.8 to 291.0		291.0 to 289.5		289.5 to 288.0		288.0 to 287.2		287.2 to 286.4	
Cut	2.5 m	Cut	5.0 m	Cut	5.0 m	Cut	2.5 m	Cut	2.5 m
Recov.	2.5 m	Recov.	4.8 m	Recov.	5.0 m	Recov.	2.3 m	Recov.	2.5 m
RQD=	84 %	RQD=	96 %	RQD=	70 %	RQD=	56 %	RQD=	64 %

<u>Core 6</u>	
19.20 to 20.73	
286.4 to 284.9	
Cut	5.0 m
Recov.	4.7 m
RQD=	91 %

Drill Log as recorded In the Field

12 PROJ 70-99 K-56 28-01

I-70 E.B. OVER SPRING CREEK
BR NO 70-99 10.46 (605)
CD #1

LEVEL RUN

+ H. (-) ELEV.

FS 1.340 308.127

2.46 305.667

STA 18+825.23

12.84 LT & I-70 EB LANES

305.67 0°-0.91 0°-3°

SHELBY #1 304.76 0.91-1.46 3°-4°
(0.91-1.46 m) PUSH 0.55 m REL 0.36

304.76 0.91-2.74 3°-9°

JIM BURNS ET SENIOR
BOB VERVYNCK - ET
R RYAN GEOL II

Bm # L-344

ELEV = 306.787

CLAY, DRK BRN TO DRK GRAY-BRN, SILTY

PUSH 1st REC 12 HANDTSF 245 CLAY, DRK
GRAY-BRN, SILTY, VERY STIFF

CLAY DRK GRAY-BRN TO DRK BRN SILTY

CD#1 I-70 E.B. on SPRING CRK

14

Meters



SHELBY #2 302.93 2.74-3.29 9°-10°
302.93-302.38 (2.74-3.29m) PUSH 0.55 REC 0.52m

302.93 3.29-7.31 9°-24°

SHELBY #3
298.36-297.81

7.31-7.86m PUSH 0.55m
7.31-7.86 24°-25°

298.36 7.31-11.40 24°-37°
294.27 11.40-12.00 37°-39°
293.67 12.00-13.81 39°-45°
291.86 13.81-13.87 45°-45°
291.80 13.87-14.00 45°-TD

GORE #1

45°-48°
CUT 2.5 (0.76m)
REC 2.5 (0.76m)

13.87-14.63

291.8 0°-0.21 0°-0°
291.6 0.21-0.70 0°-2°
291.1 0.70-0.76 2°-2°
291.0 0.76-14.00 2°-TD

SAMPLE #1 0°-1° (0.27-0.43)

14.14-14.30 291.5-291.9

15

PUSH 1.8 REC 1.2 CLAY, GRY. BRN, moist
HAND TSF = 2.0

CLAY, GRY. BRN, moist

PUSH 1.8 REC 1.8 CLAY DRK GRY. GEN. SILENT
REC 0.55m, HAND TSF 0.75, SOFT

CLAY, DRK GRY. BRN, SOFT, moist
CLAY & GRAVEL, WET, GRY, SOFT
CLAY w/ HEAVY GRAVEL, CHERT & LS GRAVEL
LIMESTONE, BRN, WTHD
S/S

LS, BRN WTHD w/ few frags
LS, LT GRAY, FRAGMENTED, w/ silty clay seam
LS, LT GRAY
S/S
REC 0 = $\frac{2.1}{2.5} = 84\%$

LS, LT GRAY FRAGMENTED

As 1/11/15

16 CD#1 I-70 E.B. over SPARKS CRK

CORE #2
48° - 53° 251.0 0° - 0.12 0° - 0°

CUT 5° (1.52m) 290.9 0.12 - 1.22 0° - 4°

RECS 8° (1.42m) 289.8 1.22 - 1.52 4° - 5°

14.63 - 16.15 289.5 1.52 - TD 5° - TD

SAMPLE #2 0° - 1° (0.18 - 0.34)
290.8 - 290.7 (14.81 - 14.97 m)

SAMPLE #3 4° - 4° (1.28 - 1.43)
289.7 - 289.6 (15.91 - 16.06 m)

LOSING WATER NEXT TO ROAD

CORE NO3 289.5 0° - 0.06 0° - 0°

53° - 58° 289.4 0.06 - 0.61 0° - 2°

CUT 5° (1.52m) 288.9 0.61 - 1.52 2° - 5°

RECS 7° (1.52m) 288.0 1.52 - TD 5° - TD

SAMPLE #4 1° - 2° (0.49 - 0.61m)
289.0 - 288.9 (16.64 - 16.76 m)

NO SAMPLE OF SHALE TWO WAS

ASPHIN WALL

LS, LT GRAY, SHALEY @ BASE
SHALE, CLAYEY, VARIATED COLOR - GRAY TO GRN -

GRAY TO MAROON, BLOCKY, LIMY

SHALE, GRAY, CLAYEY, LIMY, BLOCKY

SIS RQD = $\frac{46}{48} = 96\%$

SHALE, GRN-GRAY MAROON

SHALE, GRAY, BLOCKY, LIMY

SHALE, GRAY LIMY

LS, LT GRN-GRAY w/ MAROON SHALE IN CENTER

SHALE, OLIV-GRAY w/ LS NODULES, SOFT CLAYEY

SIS CRIMULES TO THIN TO THICK, 12N STAIN
RQD = $\frac{35}{50} = 70\%$

LS, LT GRN-GRAY

22301

HEED OUT THROUGH FAULT APART 5016 TO CAS

I. 70 E. B. OVER SPRING CREEK

CD #1 CONT.

CORE NO 4

58° - 60°

CUT 2° (0.76m)

REL 2° (0.70m)

17.48 - 18.44

METERS

288.0 0° - 0.58 0° - - 1°

287.4 0.58 - 0.67 1° - 2°

287.3 0.67 - 0.76 2° - 2.5°

287.2 0.76 - 1.0 2.5° - TO

SAMPLE #5 0° - 0°

287.9 - 287.6 (17.80 - 17.95m) (0.12 - 0.27m)

CORE NO 5

60° - 63°

CUT 2° (0.76m)

REL 2° (0.76m)

18.44 - 19.20

287.2 0° 0.15 0° - 0.5°

286.7 0.15 - 0.76 0.5° - 2.5°

286.4 0.76 - 1.0 2.5° TO

LOSING WATER TO F.M. - ANOTHER LOAD

CORE #6

63° - 68°

CUT 5° (1.52m)

REL 4° (1.43m)

19.20 - 20.73

286.4 0° - 0.73 0° - 2°

285.7 0.73 - 1.52 2° - 5°

284.9 1.52 - 1.7 5° TO

SHALE, OLIV. GRAY

LS SLAM or BLACK

SHALE, OLIV. GRAY

SIS

RQD = $\frac{13}{23} = 56\%$

CLAYEY, BLOCKY

SHALE, OLIV. GRAY

SHALE, GRAY CLAYEY

SHALE, MARON V/Ls NODULES

SIS

RQD = $\frac{16}{25} = 64\%$

LS, LT GRAY GRAY, w/MARON SHALE

SHALE, MARON, F/M

SIS

RQD = $\frac{43}{47} = 91\%$

BROWN

PONY CREEK

↓

10 WLL SHALE

20 I-70 OVER SPRING CREEK

CD#1 CONT.

SAMPLE #6 9-14
19.47 - 19.63 (0.27 - 0.43m)
286.1 - 285.9

SAMPLE #7 35-40
20.27 - 20.42 (1.07 - 1.22m)
285.3 - 285.2

TD 68' = 20.73m = EL. 284.9

21

LS UGAIN-GRY - (BROWN VILLE)

SHALE, MARENN, FIREM (PONY CREEK)