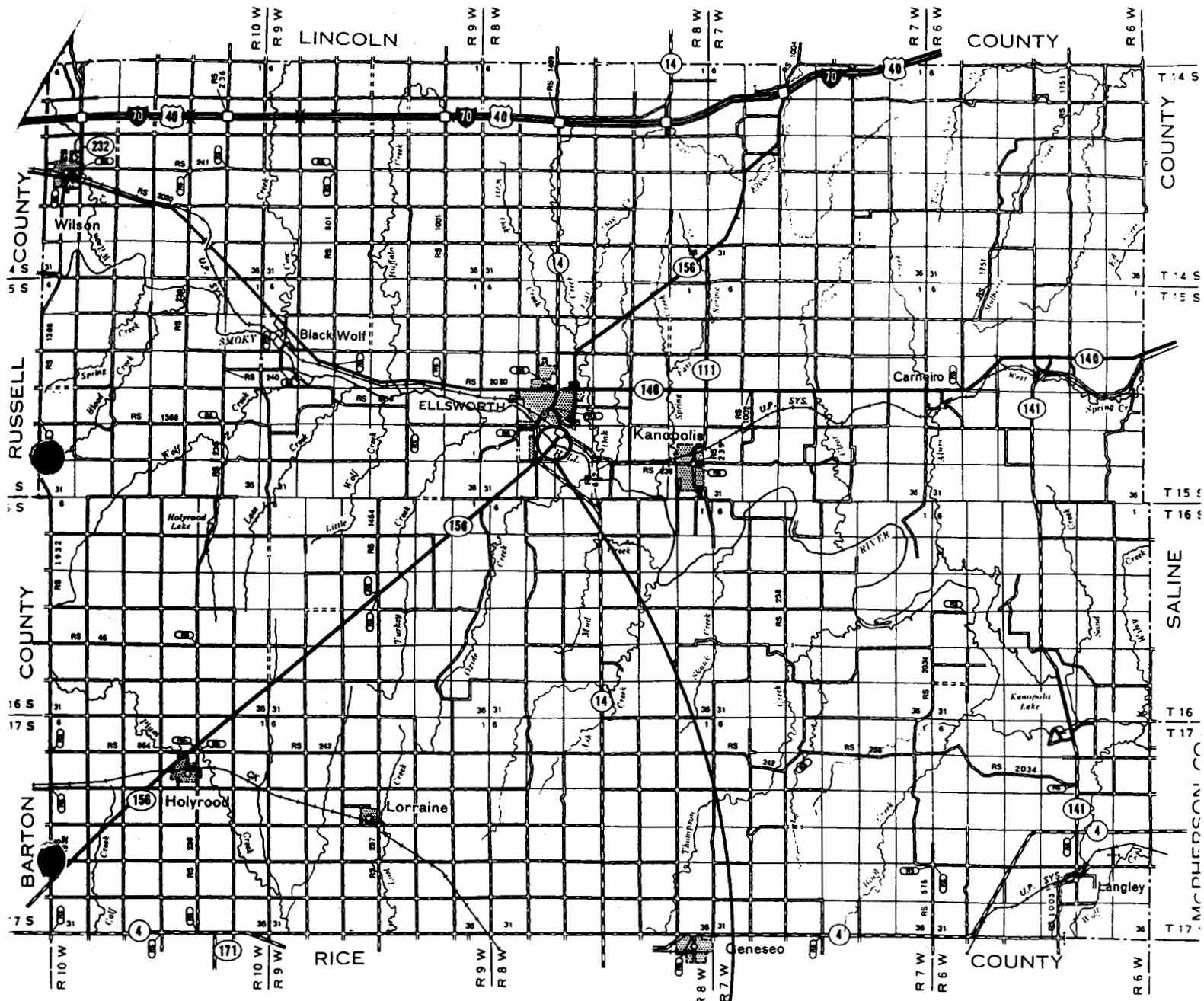

GEOTECHNICAL UNIT
GEOLOGY SECTION

BRIDGE FOUNDATION GEOLOGY REPORT

156-27 K-6217-01
Bridge No. 45-27-18.5
K-156 over the Smoky Hill River

Ellsworth County

GENERAL HIGHWAY MAP
ELLSWORTH 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

POLYCONIC PROJECTION
KEY TO COUNTIES
RS SYSTEM REVISED TO MARCH 1,1995

SCALE IN MILES
SCALE IN KILOMETERS
1993

T15S R8W Sec 29 NE

Core Hole 1

KANSAS DEPARTMENT OF TRANSPORTATION

RTE./CO. 156 - 27	SOUNDING NO. CD #1	SHEET 1 OF 2
BRIDGE STA. 10+273.58	PROJ. NO. K-6217-01	BRIDGE NO. 45-27-18.5
SITE NAME 156 over the Smokey Hill River		HOLE STA. 10+236.8, 10m Rt ℄
GEOLOGIST Billinger / Geist	SCALE: 1:100 (10mm = 1 Meter)	DATE 8-24-98
DRILLER Rob Veruynck / Bob Bergman	RIG TYPE Mobile B-61	TOP HOLE ELEV. 463.94
GROUNDWATER ELEV 460.27	TOTAL DEPTH 13.12	M/B ELEV. 459.86

BIT TYPE	GEOLOGIC NAME	STRATIGRAPHIC COLUMN	Meters DEPTH	Meters ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION	STANDARD PENETRATION OR CASING DRIVE BLOWS	STANDARD PENETRATION OR CASING DRIVE ELEV
			0.00	463.94			Shelby 1	463.27
Casing	Mantle		1.94	462.0	Silt, sandy, brown Silt, brown / gray-brown		Shelby 2	461.89
				461			Shelby 3	460.41
			4.08	459.86	460.2 Sand		Shelby 4	459.96
Cark	Longyear	core 1 core 2 core 3 core 4		455	Sandstone, fine grained, yellow & yellow-orange, friable,			
	Dakota Formation	core 5	10.8	453.14				
		core 6	13.12	450.82	Sandstone, gray-brown to light gray, fine grained, friable, loosely cemented.			
				450				

Date: 8/24/98

Project No. 156-27 K-6217-01
Bridge No. 45-27-18.50

Location: K-156 over the Smokey Hill River
Core Hole #1

Core 1	Core 2	Core 3	Core 4	Core 5
4.34 to 5.52	5.52 to 7.04	7.04 to 8.56	8.56 to 10.08	10.08 to 11.60
459.60 to 458.42	458.42 to 456.90	456.90 to 455.38	455.38 to 453.86	453.86 to 452.34
Cut 1.18	Cut 1.52	Cut 1.52	Cut 1.52	Cut 1.52
Recov. 0.00	Recov. 0.81	Recov. 0.45	Recov. 0.00	Recov. 0.38
RQD= ?	RQD= 0.0 %	RQD= 0 %	RQD= ?	RQD= 0 %

Core 6				
11.60 to 13.12				
452.34 to 450.82				
Cut 1.52				
Recov. 0.32				
RQD= 0 %				

Note: The RQD's for the above cores are probably much higher in the subsurface than recorded. The low RQD values are partially due to the friable nature of the sandstone and the lack of cementation.

Kansas Department of Transportation

Report of sample of Shelby Tubes

Laboratory No. 98-3726

Date Reported. October 6, 1998

Date Received. September 3, 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 156-27 K-6217-01

Type of construction Bridge Widening Bridge #45-27-18.5

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.=463.94			
S1	10+236.8	10 m Rt	0.00-0.67	Sandy Silt	135.2	1,352	9.5
S2	10+236.8	10 m Rt	1.40-2.05	Sandy Silt	Material fell apart		
S3	10+236.8	10 m Rt	2.92-3.53	Silt	36.3	1,424	31.7
S4	10+236.8	10 m Rt	3.53-3.98	Silt /Sand	18.4	1,467	29.6

See attached routine analysis test results to be used for scour analysis.

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

Reported by: Maria Hurd for

Title James J. Brennan, Soils Engineer