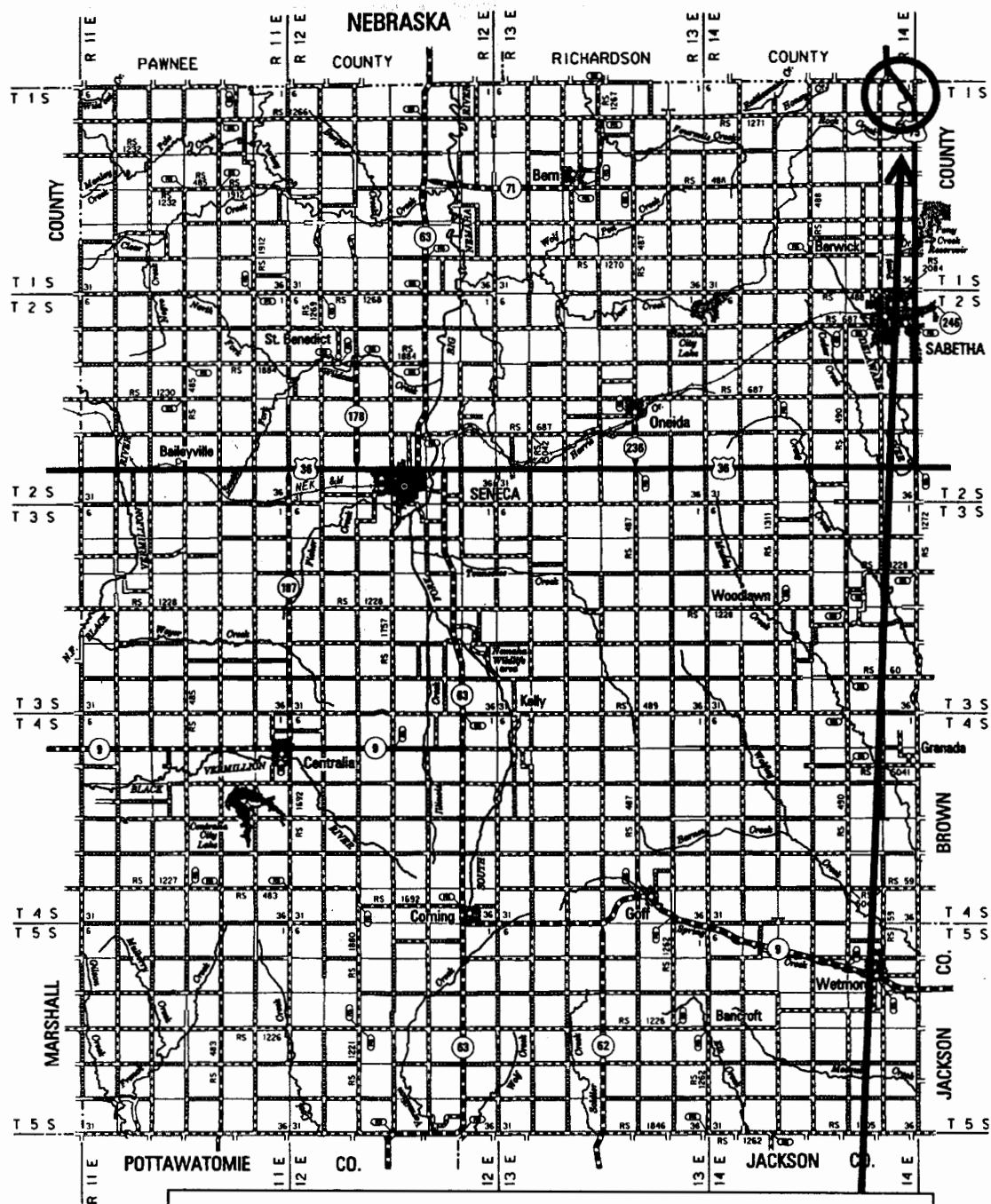




75-66 KA-7048-01

Nemaha County

CD 02

N: 39.999697 E: -95.797402 (Approximate)

NW ¼. NW ¼. NE ¼, Sect 1, T01S, R14E

5/19/2010

KANSAS DEPARTMENT OF TRANSPORTATION

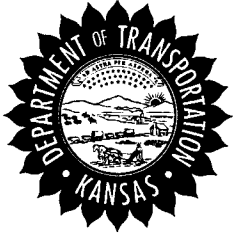


RTE./CO.	75-66	SOUNDING NO.	CD2	SHEET 1 of 3
BRIDGE STA.	584+79.33	PROJ. NO.	KA-0748-01	BRIDGE NO. 75-66-1.00(042)
SITE NAME	US-75 over Rock Creek Bridge			HOLE STA. 584+17.3, 68.0' Lt CL
GEOLOGIST	K. Halverson	SCALE	1 inch = 5.0 feet	DATE May 19, 2010
DRILLER	R. Vervynck	RIG TYPE	CME 55	TOP HOLE ELEV. 1067.92
GW ELEV.	N/A	TOTAL DEPTH	31.4	M/B ELEV. 1057.52

BOREHOLE REPORT - KANSAS DOT.GDT - 11/9/10 08:29 - Q:\GEOLOGY\BRIDGE\7566 KA-0748-01\CORES ROCK CREEK BRIDGE.GPJ

Bit Type	GEOLOGIC NAME	STRATIGRAPHIC COLUMN	DEPTH	ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION (TSF)	ELASTIC MODULUS (PSF)	N60 COUNT (SPT)	ELEVATION	
8" Hollow Augers	Mantle			1067.9	Silty clay, dark brown to black, slightly moist, organics					
				1065		1.02	59100		1061.92	
				1060		0.64	44500		1058.92	
			8.5	1059.4	Sand/gravel with clay, coarse sand to small limestone gravel, moist, dark brown					
Diamond	Howe Limestone		1	1057.5	Shale, black, fissile, thin calcite seams	7.2	940000		1055.42	
				1055						
	Bennett Shale Member			13.1	1054.8	Limestone, gray, very hard, fossiliferous, shaly				
			2	14.1	1053.8	Shale, brown, slightly weathered				
			14.6	1053.3	Shale, grayish brown to grayish green	6.25	2150000		1051.22	
				1050						
			3			12.1	1670000		1047.22	
				1045						
			4							
				1040						
5			8.95	2800000		1039.72				

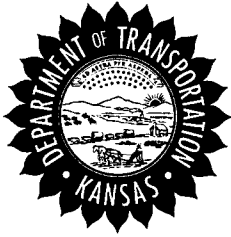
BOREHOLE REPORT - KANSAS DOT GDT - 11/9/10 08:29 - Q:\GEOLOGY\BRIDGE\75-66 KA-0748-01\CORES ROCK CREEK BRIDGE.GPJ



KANSAS DEPARTMENT OF TRANSPORTATION

RTE./CO.	75-66	SOUNDING NO.	CD2	SHEET 2 of 3
BRIDGE STA.	584+79.33	PROJ. NO.	KA-0748-01	BRIDGE NO. 75-66-1.00(042)
SITE NAME	US-75 over Rock Creek Bridge			HOLE STA. 584+17.3, 68.0' Lt CL

Bit Type	GEOLOGIC NAME	STRATIGRAPHIC COLUMN	DEPTH	ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION (TSF)	ELASTIC MODULUS (PSF)	N60 COUNT (SPT)	ELEVATION
		 5	31.4	1036.52	Shale, grayish brown to grayish green				
			1035		T.D. = 31.4				



KANSAS DEPARTMENT OF TRANSPORTATION

RTE./CO.	75-66	SOUNDING NO.	CD2	SHEET 3 of 3
BRIDGE STA.	584+79.33	PROJ. NO.	KA-0748-01	BRIDGE NO. 75-66-1.00(042)
SITE NAME	US-75 over Rock Creek Bridge			HOLE STA. 584+17.3, 68.0' Lt CL

BOREHOLE REPORT - KANSAS DOT.GDT - 11/9/10 08:29 - Q:\GEOLOGY\BRIDGE\75-66 KA-0748-01\CORES ROCK CREEK BRIDGE.GPJ

Bit Type	GEOLOGIC NAME	STRATIGRAPHIC COLUMN	DEPTH	ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION (TSF)	ELASTIC MODULUS (PSF)	N60 COUNT (SPT)	ELEVATION																																																
					<table><thead><tr><th>Core</th><th>Depth</th><th>Elev.</th><th>Cut</th><th>Rec</th><th>Rec %</th><th>RQD</th></tr></thead><tbody><tr><td>1</td><td>10.4</td><td>1057.52</td><td>1.4</td><td>1.1</td><td>79</td><td>0%</td></tr><tr><td>2</td><td>11.8</td><td>1056.12</td><td>5.0</td><td>5.0</td><td>100</td><td>50%</td></tr><tr><td>3</td><td>16.8</td><td>1051.12</td><td>4.8</td><td>4.8</td><td>100</td><td>63%</td></tr><tr><td>4</td><td>21.6</td><td>1046.32</td><td>5.0</td><td>5.0</td><td>100</td><td>58%</td></tr><tr><td>5</td><td>26.6</td><td>1041.32</td><td>4.8</td><td>2.7</td><td>56</td><td>31%</td></tr><tr><td>Total</td><td>31.4</td><td>1036.52</td><td>21.0</td><td>18.6</td><td>89</td><td>47%</td></tr></tbody></table>	Core	Depth	Elev.	Cut	Rec	Rec %	RQD	1	10.4	1057.52	1.4	1.1	79	0%	2	11.8	1056.12	5.0	5.0	100	50%	3	16.8	1051.12	4.8	4.8	100	63%	4	21.6	1046.32	5.0	5.0	100	58%	5	26.6	1041.32	4.8	2.7	56	31%	Total	31.4	1036.52	21.0	18.6	89	47%			
Core	Depth	Elev.	Cut	Rec	Rec %	RQD																																																			
1	10.4	1057.52	1.4	1.1	79	0%																																																			
2	11.8	1056.12	5.0	5.0	100	50%																																																			
3	16.8	1051.12	4.8	4.8	100	63%																																																			
4	21.6	1046.32	5.0	5.0	100	58%																																																			
5	26.6	1041.32	4.8	2.7	56	31%																																																			
Total	31.4	1036.52	21.0	18.6	89	47%																																																			

Kansas Department of Transportation

Report of sample of Geology Cores

Laboratory No. 10-1343

Date Reported: 5/26/2010

Date Received: 5/20/2010

Quantity: 4

County: Nemaha

Specification No. ASTM D 2938

Source of Material 75-66 KA-0748-01

Sampled from 75-66 KA-0748-01

Submitted by: Kyle Halverson (Sampled by Kyle Halverson)

Identification marks: Tags on samples

Project or POV 75-66 KA-0748-01

Description of site: Bridge over Rock Creek, CD-2

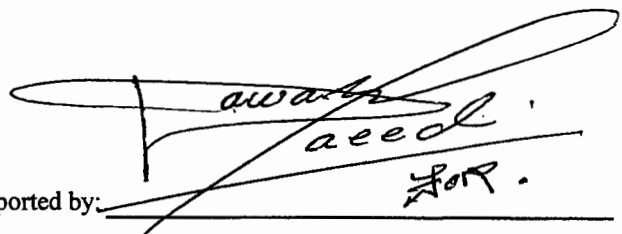
Type of Construction Bridge

TEST RESULTS

Sample No.	Station	CL Offset (FT)	Depth (FT)	Description	Unconfined Compression Qu (psf)	Elastic Modulus E (psf)	Dry Density γ_d (pcf)	Moisture Percent w %
Sample 1	584+17.3	68.0 Lt.	12.1-12.5	Howe Limestone Mbr. Shale, Black	14400	940000	103.4	22.8
Sample 2	584+17.3	68.0 Lt.	15.9-16.7	Grayish green shale (Bennett Shale Mbr.)	12500	2150000	104.6	22.9
Sample 3	584+17.3	68.0 Lt.	20.0-20.7	Grayish green shale (Bennett Shale Mbr.)	24200	1670000	106.5	22.8
Sample 4	584+17.3	68.0 Lt.	27.7-28.2	Grayish green shale (Bennett Shale Mbr.)	17900	2800000	129.6	12.3

Note: Results of the two Shelby tube
samples to be reported separately.

cc: R. Kreider
L. Metheny
R. Henthorne
D. Thompson
Soil Section
File 18-3

Reported by: 

Title: Luke Metheny, P.E., Soils Engineer