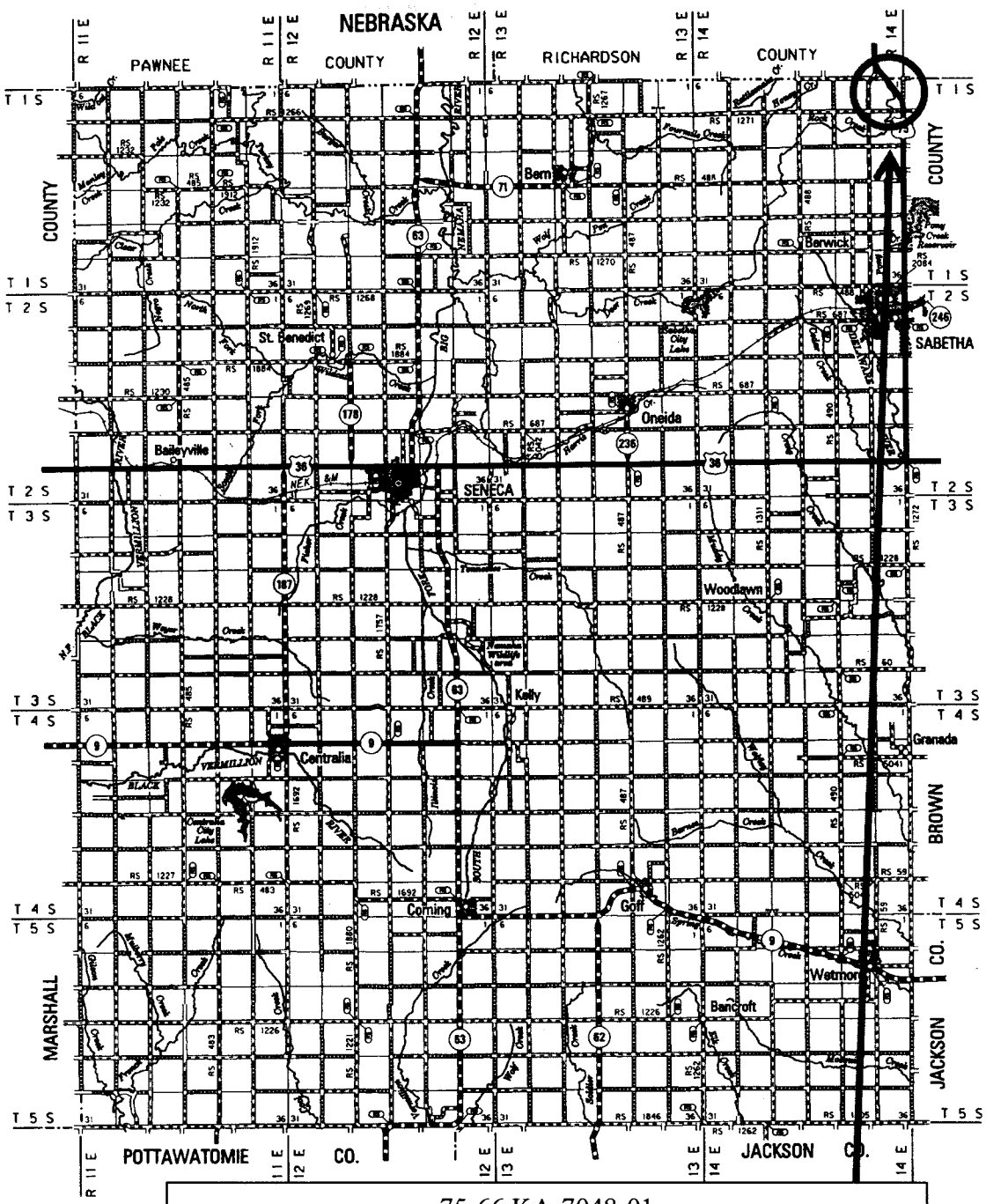

75-66 KA-7048-01

Nemaha County

CD 01

N: 39.999697 E: -95.797402 (Approximate)

NW ¼. NW ¼. NE ¼, Sect 1, T01S, R14E

5/17/2010

KANSAS DEPARTMENT OF TRANSPORTATION

RTE./CO.	75-66	SOUNDING NO.	CD1	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.	586+70.5, 120.0' Rt CL
GEOLOGIST	K. Halverson	SCALE 1 inch = 5.0 feet		DATE	May 17, 2010
DRILLER	R. Vervynck	RIG TYPE	CME 55	TOP HOLE ELEV.	1068.85
GW ELEV.	N/A	TOTAL DEPTH	47.8	M/B ELEV.	1056.95

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			1068.9	Silty clay, dark brown	0.82	56200		1063.05
			10.0	1058.9	Gravel, broken limestone				
Diamond	Howe LS	1	11.9	1057.0	Limestone, gray, very hard, fossiliferous, slightly shaly, closely fractured	122	9.44E+07		1056.15
			13.3	1055.6	Shale, limy, brownish gray, weathered, hard to medium hard				
	Bennett Shale Mbr	2	15.0	1053.9	Shale, firm, closely to widely fractured, dark gray to grayish brown to grayish green	32.05	8900000		1051.55
		3				8.4	938000		1048.35
		4				3.25	207000		1041.35
		5							

BOREHOLE REPORT - KANSAS DOT.GDT - 11/5/10 10:51 - Q:\GEOLOGY\BRIDGE\75-66 KA-0748-01\CORES ROCK CREEK BRIDGE.GPJ

KANSAS DEPARTMENT OF TRANSPORTATION

RTE./CO.	75-66	SOUNDING NO.	CD1	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.	586+70.5, 120.0' Rt 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
Diamond	Bennett Shale Mbr	5		1035	Shale, firm, closely to widely fractured, dark gray to grayish brown to grayish green				
	Glenrock Limestone	6	34.7	1034.2	Limestone, shaly, greenish-gray, hard	87	3.78E+07		1032.05
			38.0	1030.9	Limestone, gray, very hard, shaly, calcite nodules	217	1.4E+08		1030.25
	Johnson Shale Formation	7	38.8	1030.1	Shale, dark gray, limy, hard, occasional gypsum seam	192.5	5.89E+07		1028.55
		8		1025		8.65	491000		1023.55
			47.8	1021.05	T.D. = 47.8				

KANSAS DEPARTMENT OF TRANSPORTATION

RTE./CO.	75-66	SOUNDING NO.	CD1	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.	586+70.5, 120.0' Rt 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

Core	Depth	Elev.	Cut	Rec	Rec %	RQD
1	11.9	1056.95	1.3	1.1	85	42%
2	13.2	1055.65	5.0	5.0	100	30%
3	18.2	1050.65	5.0	5.0	100	92%
4	23.2	1045.65	5.0	5.0	100	78%
5	28.2	1040.65	4.8	2.5	52	0%
6	33.0	1035.85	4.8	3.1	65	50%
7	37.8	1031.05	5.0	4.9	98	80%
8	42.8	1026.05	5.0	5.0	100	94%
Total	**47.8**	**1021.05**	**35.9**	**31.6**	**88**	**60%**

Kansas Department of Transportation

Report of sample of Geology Core

Laboratory No. 10-1342
Date Reported: 5/26/2010
Date Received: 5/20/2010

Specification No.	ASTM D 2938	Quantity:	8
Source of Material	75-66 KA-0748-01	County:	Nemaha
Sampled from	75-66 KA-0748-01		
Submitted by:	Kyle Halverson (Sampled by K. Halverson)		
Identification marks:	Tags on samples		
Project or POV	75-66 KA-0748-01		
Description of site:	Bridge over Rock Creek, CD-1		
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	586+70.5	120.0 Rt.	12.2-12.7	Gray Limestone (Howe Limestone Mbr.)	244000	94400000	148.0	4.7
Sample 2	586+70.5	120.0 Rt.	16.8-17.3	Grayish green shale (Bennett Shale Mbr.)	64100	8900000	107.2	22.6
Sample 3	586+70.5	120.0 Rt.	20.0-20.5	Grayish green shale (Bennett Shale Mbr.)	16800	938000	107.0	22.1
Sample 4	586+70.5	120.0 Rt.	26.9-27.5	Grayish green shale (Bennett Shale Mbr.)	6500	207000	113.9	19.4
Sample 5	586+70.5	120.0 Rt.	36.2-36.8	Grayish green shale (Bennett Shale Mbr.)	174000	37800000	139.6	9.6
Sample 6	586+70.5	120.0 Rt.	38.2-38.6	Grayish green shale (Bennett Shale Mbr.)	434000	1.4E+08	171.1	2.9
Sample 7	586+70.5	120.0 Rt.	39.6-40.3	Grayish green shale (Bennett Shale Mbr.)	385000	58900000	145.7	7.8
Sample 8	586+70.5	120.0 Rt.	44.7-45.3	Grayish green shale (Bennett Shale Mbr.)	17300	491000	119.1	16.2

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

Reported by: Tawab Saeed for

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

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