

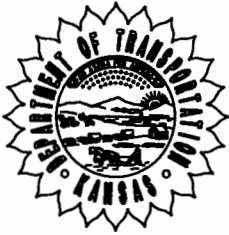
K-7888-01 Road 550N over US-59  
 2.5 miles north of US-59/US-56 Intersection  
 Douglas County  
 CD 01  
 N: 38.818681 E: -95.269197 (Approximate)  
 Center of Sect 23, T14S, R19E  
 6/29/2004

# KANSAS DEPARTMENT OF TRANSPORTATION



RTE./CO.	59-23	SOUNDING NO.	CD #1	SHEET 1 OF 2	
BRIDGE STA.	391+74.40	PROJ.NO.	K-7888-01	BRIDGE NO. 59-23-5.53(114)	
SITE NAME			US-59 and North 550 Road	HOLE STA. 391+71.0; 47.0' Lt.	
GEOLOGIST	R. Billinger	SCALE	1 unit = 2 feet	DATE	June 29, 2004
DRILLER	R. Bergman	RIG TYPE	CME-75	TOP HOLE ELEV.	1085.76
GW ELEV.	NA	TOTAL DEPTH	38.0	M/B ELEV.	1083.66

BIT TYPE	GEOLOGIC MEMBER	GEOLOGIC MEMBER	STRATIGRAPHIC COLUMN	DEPTH	ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION (tsf)	ELASTIC MODULUS (tsf)	ELEVATION
				0.00		T.H.E. = 1085.76			
				0.80	1085	1084.96 Road gravel. Clay, mantle, reddish.			1085
				2.10	1083.66				
				2.50	1083	1083.26 Limestone, gray-brown. Limestone, gray/light gray, fractured, blocky, small solution cavities which are rusty brown.			1083
				4.50	1081	1081.26 Limestone, blocky, gray with brown zones at the blocky breaks.			1081
					1079				1079
				8.70	1077	1077.06	340	20900	1078.16
				9.20	1077	1076.56 Limestone, gray w/ rusty brown staining, hard. Shale, weathered, yellowish-brown.			1077
				10.90	1075	1074.86 Shale, black, fissile to platy.	2.11	130	1075.26
				13.50	1073	1072.26 Shale, black, fissile to platy.	4.4	1245	1072.96
				16.30	1069	1069.46 Limestone, gray, hard, unit bedded.	7.25	58000	1069
				18.20	1067	1067.56 Shale, gray, clayey.			1068.86
				18.50	1067	1067.26 Shale, gray to gray-green, clayey.	6.05	348	1067
				22.60	1063	1063.16 Limestone.			1065
				23.00	1061	1062.76 Limestone. Limestone, grayish.			1063
				23.60	1061	1062.16 Shale, green-gray, clayey.	3.00	261	1061
				25.70	1059	1060.06 Limestone, gray, solution cavities filled with green shale inclusions.			1061.06
				28.00	1057	1057.76 Limestone, gray, blocky w/ green shale inclusions.	2.44	34750	1059
					1057				1057



# KANSAS DEPARTMENT OF TRANSPORTATION

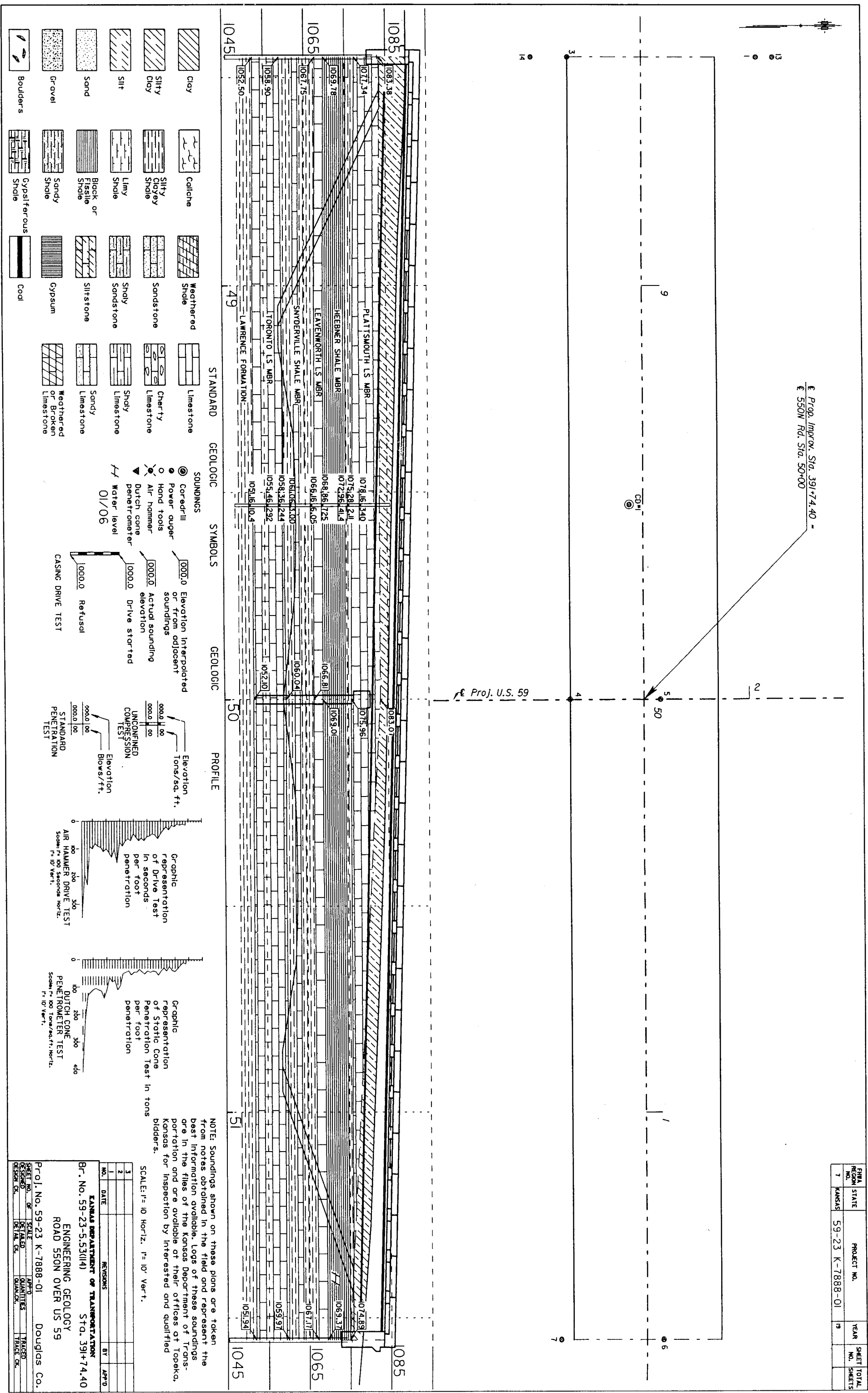
RTE./CO.	59-23	SOUNDING NO.	CD *10
BRIDGE STA.	391+74.40	PROJ.NO.	K-7888-01
SITE NAME	US-59 and North 550 Road		HOLE STA. 391+71.0:47.0' Lt.

BIT TYPE	GEOLOGIC MEMBER	GEOLOGIC MEMBER	STRATIGRAPHIC COLUMN	DEPTH	ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION (tsf)	ELASTIC MODULUS (tsf)	ELEVATION																																																																						
N02 Diamond	Oread Ls. Fm.	Toronto Ls. Mbr.	7	33.00	1055	Limestone, thin to blocky, includes green shale inclusions.	292	28000	1055.46																																																																						
	Lawrence Shale Fm.		8	33.60	1053	Limestone, gray w/green shale inclusions. Shale, greenish-gray, sandy.	10.4	241	1051.16																																																																						
				38.00	1047.76	TD - 38.0'																																																																									
<table border="1" style="width: 100%; border-collapse: collapse; margin: 10px auto;"> <thead> <tr> <th>Core</th> <th>Depth</th> <th>Elev.</th> <th>Cut</th> <th>Rec</th> <th>%</th> <th>ROD</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2.50</td> <td>1083.26</td> <td>2.0</td> <td>1.8</td> <td>90.0</td> <td>0%</td> </tr> <tr> <td>2</td> <td>4.50</td> <td>1081.26</td> <td>4.2</td> <td>4.2</td> <td>100</td> <td>43%</td> </tr> <tr> <td>3</td> <td>8.70</td> <td>1077.06</td> <td>4.8</td> <td>4.8</td> <td>100</td> <td>81%</td> </tr> <tr> <td>4</td> <td>13.50</td> <td>1072.26</td> <td>5.0</td> <td>4.8</td> <td>96.0</td> <td>70%</td> </tr> <tr> <td>5</td> <td>18.50</td> <td>1067.26</td> <td>4.5</td> <td>4.5</td> <td>100</td> <td>82%</td> </tr> <tr> <td>6</td> <td>23.00</td> <td>1062.76</td> <td>5.0</td> <td>5.0</td> <td>100</td> <td>86%</td> </tr> <tr> <td>7</td> <td>28.00</td> <td>1057.76</td> <td>5.0</td> <td>5.0</td> <td>100</td> <td>86%</td> </tr> <tr> <td>8</td> <td>33.00</td> <td>1052.76</td> <td>5.0</td> <td>5.0</td> <td>100</td> <td>100%</td> </tr> <tr> <td>Total</td> <td>38.00</td> <td>1047.76</td> <td>35.5</td> <td>35.1</td> <td>98.9</td> <td>XXXX</td> </tr> </tbody> </table>										Core	Depth	Elev.	Cut	Rec	%	ROD	1	2.50	1083.26	2.0	1.8	90.0	0%	2	4.50	1081.26	4.2	4.2	100	43%	3	8.70	1077.06	4.8	4.8	100	81%	4	13.50	1072.26	5.0	4.8	96.0	70%	5	18.50	1067.26	4.5	4.5	100	82%	6	23.00	1062.76	5.0	5.0	100	86%	7	28.00	1057.76	5.0	5.0	100	86%	8	33.00	1052.76	5.0	5.0	100	100%	Total	38.00	1047.76	35.5	35.1	98.9	XXXX
Core	Depth	Elev.	Cut	Rec	%	ROD																																																																									
1	2.50	1083.26	2.0	1.8	90.0	0%																																																																									
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Total	38.00	1047.76	35.5	35.1	98.9	XXXX																																																																									

Plotted By : rocky  
 Plot File : C:\crowbridge\K-7888-01\78880553.dgn  
 Plot Date : 3/30/2006

Std. Base File : Rocky Crow 785,843,2827  
 Server File : working\k788801\geology\dgn\78880553.dgn  
 Server : DK00mh71  
 View : PLOT1

DATE FROM BRJND.	PROJ.	CO.
DESIGN	DESIGN	CHECK
DATE	DATE	DATE
QUANTITIES	DATE	DATE
TRACING	DATE	DATE
RELEASED	DATE	DATE

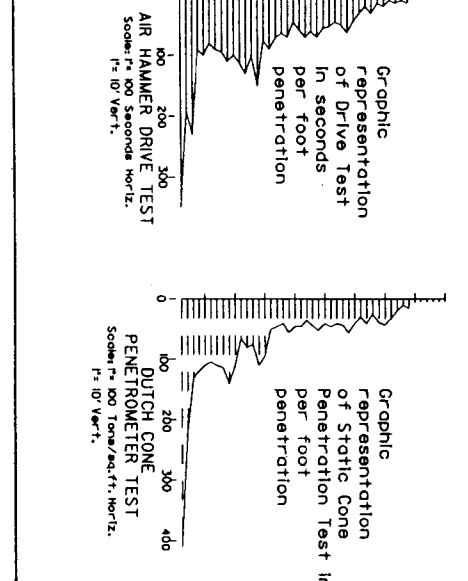


**STANDARD GEOLOGIC SYMBOLS**

	Clay		Weathered Shale		Limestone
	Silty Clay		Sandstone		Cherty Limestone
	Silt		Sandy Sandstone		Shaly Limestone
	Sand		Siltstone		Sandy Limestone
	Gravel		Gypsum		Weathered or Broken Limestone
	Boulders		Gypsiferous Shale		Cool
	Coliche		Limestone		Limestone
	Silty Shale		Silty Shale		Silty Shale
	Limy Shale		Black or Fissile Shale		Black or Fissile Shale

**GEOLOGIC SYMBOLS**

	Cored-ill		Elevation Interpolated or from adjacent soundings
	Power auger		Actual sounding elevation
	Hand tools		Drive started
	Air hammer		Refusal
	Dutch cone penetrometer		CASING DRIVE TEST
	Water level		Elevation Tons/sq. ft.
	Water level		UNCONFINED COMPRESSION TEST
	Water level		STANDARD PENETRATION TEST



NOTE: Soundings shown on these plans are taken from notes obtained in the field and represent the best information available. Logs of these soundings are in the files of the Kansas Department of Transportation and are available at their offices at Topeka, Kansas for inspection by interested and qualified bidders.

SCALE: 1" = 10' Horiz., 1" = 10' Vert.

NO.	DATE	REVISIONS	BY	APP'D.
1				
2				
3				

KANSAS DEPARTMENT OF TRANSPORTATION  
 BR. No. 59-23-5.53(14) Sta. 391+74.40  
 ENGINEERING GEOLOGY  
 ROAD 550N OVER US 59  
 Proj. No. 59-23 K-7888-01 Douglas Co.

DESIGNED	SCALE	APPROVED	TRACED
REVISION	DETAIL	QUANTITIES	TRACE
OK	OK	OK	OK

FINAL REGION NO.	PROJECT NO.	YEAR	SHEET TOTAL
7 KANSAS	59-23 K-7888-01	19	NO. SHEETS