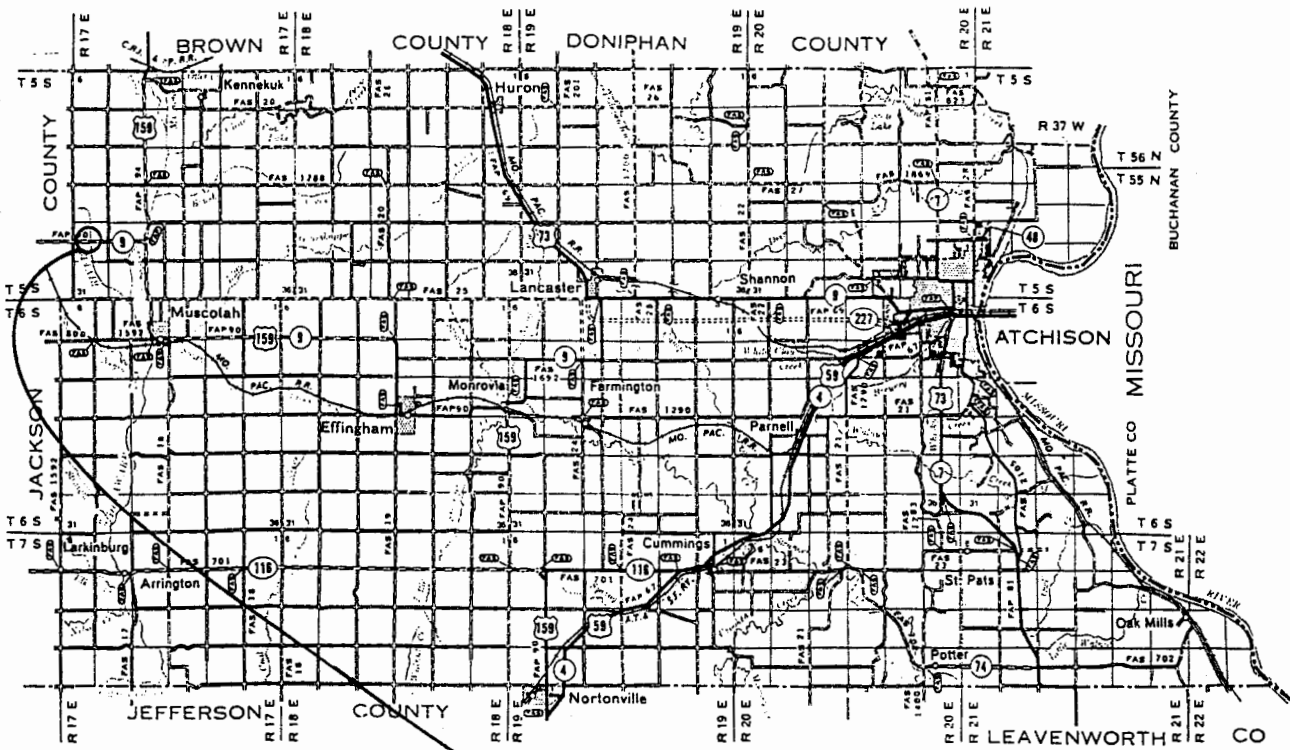


Kansas Department of Transportation

BRIDGE FOUNDATION GEOLOGY REPORT

2CBØ



30-5-17E

9-3 K-4004-01
Br. No. 00.48
Atchison County

KANSAS DEPARTMENT OF TRANSPORTATION

COUNTY *Atchison* PROJECT NO. *9-3-K-4004-01* BRIDGE NO. *00.48*

DESCRIPTION *K-9 over the Delaware River* STA. *26+44, 20 L+*

GEOLOGIST *D.L. Thompson* VERTICAL SCALE *1"=5'* DATE *11/8/90*

BIT TYPE & NO.	GEOLOGIC NAME	GEOLOGIC COLUMN	GROUNDWATER ELEVATION	DEPTH	ELEVATION	GEOLOGIC DESCRIPTION AND REMARKS CD # 1	UNCONFINED COMPRESSION	STANDARD PENETRATION OR CASING DRIVE	
								BLOWS	ELEV.
				0°	963.6				
					960	Clay, silty, brown to gray-brown Lower 2° sand to gravel			
				8°	955				955.6
				9°			.581		953.8
					950				
				15°					948.6
				17°			.714		946.6
				19°	945				
				20°	944.6				942.6
				21°			1.35		941.3
					940				
				25°				938.6	
				26°		.563		937.3	
					935				
				32°	930.9				
					930	Limestone, badly weathered, shaly to impure			
				35°	928.0	Shale, gray, upper 0.5 limy			

8" Auger

Soil Mantle

Haw.

Di. Cedar Vale Mbr.

Rulo Mbr.

1

KANSAS DEPARTMENT OF TRANSPORTATION

COUNTY Atchison PROJECT NO. 9-3-K-4004-01 BRIDGE NO. 00.48
 DESCRIPTION K-9 over the Delaware River STA. 26+44, 20 Lt
 GEOLOGIST D.L. Thompson VERTICAL SCALE 1" = 5' DATE 11/8/90

BIT TYPE & NO.	GEOLOGIC NAME	GEOLOGIC COLUMN	GROUNDWATER ELEVATION	DEPTH	ELEVATION	GEOLOGIC DESCRIPTION AND REMARKS CD# 1	UNCONFINED COMPRESSION	STANDARD PENETRATION OR CASING DRIVE		
								BLOWS	ELEV.	
	Cedar Vale Mb.	1		35 ⁴	929.6	Limestone, badly weathered				
		2			925	Shale, gray, upper 0.5 limy	929.8	3.6		
		3			920		920.5	9.29		
		4			915		917.0	12.1		
		5					912.6	19.6		
		6		55 ⁷		910		910.4	3.67	
				57 ²		907.9		908.3	3.57	
						906.4	Coal			
						905	Shale, dark gray to black Gradational contact with limestone	904.4	22.8	
	Happy Hollow Mb.	7		59 ⁹	903.7	Limestone, light gray, shaly	902.4	13.5		
		8		63 ³	900		900.3			
								897.4	58.2	
	White Cloud Mbr.	9			895	Shale, light gray, limy				
				70 ⁵		893.1	TD			

KANSAS DEPARTMENT OF TRANSPORTATION

COUNTY *Atchison* PROJECT NO. *9-3-K-4004-01* BRIDGE NO. *00.48*

DESCRIPTION *K-9 over the Delaware River* STA. *26+44, 20 Lt*

GEOLOGIST *D.L. Thompson* VERTICAL SCALE *NA* DATE *11/8/70*

BIT TYPE & NO.	GEOLOGIC NAME	GEOLOGIC COLUMN	GROUNDWATER ELEVATION	DEPTH	ELEVATION	GEOLOGIC DESCRIPTION AND REMARKS <i>THE. 903.6</i> <i>CD # 1</i>	UNCONFINED COMPRESSION	STANDARD PENETRATION OR CASING DRIVE	
								BLOWS	ELEV.
						<p><i>Core # 1 33'-38' Core # 5' Recov. 3'</i></p> <p><i>928.6</i> <i>33'</i></p> <p><i>Limestone, badly broken</i> <i>no frag. -> 0.1</i></p> <p><i>0.7</i></p> <p><i>0.2</i></p> <p><i>0.2</i></p> <p><i>0.1</i></p> <p><i>0.1</i> <i>Limestone, shaly,</i> <i>weathered</i></p> <p><i>0.2</i></p> <p><i>0.3</i></p> <p><i>0.2</i></p> <p><i>0.3</i></p> <p><i>0.2</i></p> <p><i>0.2</i></p> <p><i>928.6</i> <i>0.1 35'</i></p> <p><i>0.15</i></p> <p><i>0.15</i> <i>Shale, gray, clayey</i></p> <p><i>0.2</i> <i>upper 0.5 limy</i></p> <p><i>0.3</i></p> <p><i>0.2 36'</i></p> <p><i>Lost</i></p> <p><i>925.5</i> <i>38'</i></p> <p><i>RQD = NA - Heavy gravel chewed up core</i></p>			
						<p><i>Core # 2 38'-42' Core # 4' Recov. 4'</i></p> <p><i>925.5</i> <i>38'</i></p> <p><i>0.2</i></p> <p><i>0.4</i> <i>Shale, gray, clayey</i></p> <p><i>0.2</i></p> <p><i>0.2</i></p> <p><i>0.2</i></p> <p><i>0.2</i></p> <p><i>923.7</i> <i>0.4 39.9</i> <i>Sample # 1</i> <i>38'-38'</i></p> <p><i>0.5</i></p> <p><i>0.2</i> <i>Shale, gray, Firm</i></p> <p><i>0.2</i></p> <p><i>0.2</i></p> <p><i>0.2</i></p> <p><i>0.3</i></p> <p><i>0.3</i></p> <p><i>921.5</i> <i>0.3 42.1</i></p> <p><i>RQD = 32.5%</i></p>			

KANSAS DEPARTMENT OF TRANSPORTATION

COUNTY *Atchison*

PROJECT NO. *9-3-K-4004-01*

BRIDGE NO. *00.48*

DESCRIPTION *K-9 over the Delaware River*

STA. *26+44, 20 Lt*

GEOLOGIST *D. L. Thompson*

VERTICAL SCALE *NA*

DATE *11/8/90*

BIT TYPE & NO.	GEOLOGIC NAME	GEOLOGIC COLUMN	GROUNDWATER ELEVATION	DEPTH	ELEVATION	GEOLOGIC DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION	STANDARD PENETRATION OR CASING DRIVE	
								BLOWS	ELEV.
						<p>Core #3 42'-46'⁹ Corad 4⁸ Recov. 4⁸</p> <p>921.5 _____ 42.1</p> <p>Shale, gray to dark gray Very Firm</p> <p>Sample # 2 42'-43'⁰⁰</p> <p>Sample # 3 45'-46'⁵⁵</p> <p>RQD = 85.4%</p>			
						<p>Core #4 46'-49'⁹ Corad 3⁰ Recov. 3⁰</p> <p>916.7 _____ 46.9</p> <p>Shale, dark gray, Firm</p> <p>Sample # 3 45'-46'⁵⁵</p> <p>RQD = 100%</p>			

KANSAS DEPARTMENT OF TRANSPORTATION

COUNTY A. Johnson PROJECT NO. 9-3-K-4004-01 BRIDGE NO. 00.48

DESCRIPTION K-9 over the Delaware River STA. 26+44, 20 Lr

GEOLOGIST D.L. Thompson VERTICAL SCALE NA DATE 11/8/90

BIT TYPE & NO.	GEOLOGIC NAME	GEOLOGIC COLUMN	GROUNDWATER ELEVATION	DEPTH	ELEVATION	GEOLOGIC DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION	STANDARD PENETRATION OR CASING DRIVE	
								BLOWS	ELEV.
						<p style="text-align: center;">Core # 5 49⁹ - 53⁶ Coreal 3⁷ Recov. 3⁷</p> <p style="text-align: center;">913.7 49.9</p> <div style="display: flex; align-items: center;"> <div style="width: 100px; border-left: 1px solid black; border-right: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">0.85</div> <div style="margin-right: 5px;">Sample # 4</div> <div style="margin-right: 5px;">Shale, gray</div> <div style="margin-right: 5px;">50³ - 51⁰</div> <div style="margin-right: 5px;">Firm</div> </div> <div style="display: flex; align-items: center; margin-top: 10px;"> <div style="width: 100px; border-left: 1px solid black; border-right: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">1.2</div> <div style="margin-right: 5px;">Shale, gray, clayey</div> </div> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="width: 100px; border-left: 1px solid black; border-right: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">0.3</div> </div> <div style="display: flex; align-items: center; margin-top: 10px;"> <div style="width: 100px; border-left: 1px solid black; border-right: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">0.45</div> <div style="margin-right: 5px;">Sample # 5</div> </div> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="width: 100px; border-left: 1px solid black; border-right: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">0.4</div> <div style="margin-right: 5px;">52⁸ - 53²</div> </div> <p style="text-align: center; margin-top: 10px;">910.0 0.6 53.6</p> <p style="text-align: center;">RQD = 94.6 %</p>			
						<p style="text-align: center;">Core # 6 53⁶ - 57² Coreal 3⁶ Recov. 3⁶</p> <p style="text-align: center;">910.0 53.6</p> <div style="display: flex; align-items: center;"> <div style="width: 100px; border-left: 1px solid black; border-right: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">0.15</div> <div style="margin-right: 5px;">Shale, gray, clayey</div> </div> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="width: 100px; border-left: 1px solid black; border-right: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">0.15</div> <div style="margin-right: 5px;">Sample # 6</div> <div style="margin-right: 5px;">54⁵ - 55²⁵</div> </div> <p style="text-align: center; margin-top: 10px;">907.9 1.8 55.7</p> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="width: 100px; border-left: 1px solid black; border-right: 1px solid black; background-color: black; margin-right: 5px;"></div> <div style="margin-right: 5px;">0.35</div> <div style="margin-right: 5px;">Coal</div> </div> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="width: 100px; border-left: 1px solid black; border-right: 1px solid black; background-color: black; margin-right: 5px;"></div> <div style="margin-right: 5px;">0.15</div> </div> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="width: 100px; border-left: 1px solid black; border-right: 1px solid black; background-color: black; margin-right: 5px;"></div> <div style="margin-right: 5px;">0.2</div> </div> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="width: 100px; border-left: 1px solid black; border-right: 1px solid black; background-color: black; margin-right: 5px;"></div> <div style="margin-right: 5px;">0.2</div> </div> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="width: 100px; border-left: 1px solid black; border-right: 1px solid black; background-color: black; margin-right: 5px;"></div> <div style="margin-right: 5px;">0.1</div> </div> <p style="text-align: center; margin-top: 10px;">906.4 0.35 57²</p> <p style="text-align: center;">RQD = 50%</p>			

KANSAS DEPARTMENT OF TRANSPORTATION

COUNTY *Atchison*

PROJECT NO. *9-3-K-4009-01*

BRIDGE NO. *00.48*

DESCRIPTION *K-9 over the Delaware River*

STA. *26+44.20 L+*

GEOLOGIST *D. L. Thompson*

VERTICAL SCALE *NA*

DATE *11/8/90*

BIT TYPE & NO.	GEOLOGIC NAME	GEOLOGIC COLUMN	GROUNDWATER ELEVATION	DEPTH	ELEVATION	GEOLOGIC DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION	STANDARD PENETRATION OR CASING DRIVE	
								BLOWS	ELEV.
						<p>Core # 7 <i>57²-61⁷</i> Core # 4⁵ Recov. 4⁵</p> <p>906.4 <i>57²</i> RQD = 91.1%</p> <p>0.6 Shale, dark gray to black</p> <p>0.75 (Sample # 7)</p> <p>0.1 (58²-59¹)</p> <p>0.3</p> <p>Shale, limy gradational to limestone.</p> <p>903.7 0.95</p> <p>901.9 1.8 <i>61⁷</i></p> <p>Limestone, shaly (Sample # 8.)</p> <p>(60²-61¹)</p>			
						<p>Core # 8 <i>61⁷-66⁴</i> Core # 4⁷ Recov. 4⁷</p> <p>906.9 <i>61⁷</i> RQD = 66%</p> <p>Limestone, light gray, shaly</p> <p>900.3 1.3 63³</p> <p>0.3</p> <p>0.2 Shale, gray, limy</p> <p>899.4 0.3 64.2</p> <p>0.1</p> <p>Shale, (Sample # 9)</p> <p>light gray (65⁶-66²)</p> <p>1.8</p> <p>897² 0.2 66⁴</p>			

KANSAS DEPARTMENT OF TRANSPORTATION

COUNTY *Atchison* PROJECT NO. *9-3-K4004-01* BRIDGE NO. *00.48*

DESCRIPTION *K-9 over the Delaware River* STA. *26+44, 20L+*

GEOLOGIST *D.L. Thompson* VERTICAL SCALE *NA* DATE *11/8/90*

BIT TYPE & NO.	GEOLOGIC NAME	GEOLOGIC COLUMN	GROUNDWATER ELEVATION	DEPTH	ELEVATION	GEOLOGIC DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION	STANDARD PENETRATION OR CASING DRIVE	
								BLOWS	ELEV.
						<p>Core # 9 66⁺-70^s Core # 4' Recov. 4'</p> <p>887.2 66⁺</p> <p>0.8 Shale, gray, limy</p> <p>0.3</p> <p>895.4 0.7 68.2</p> <p>0.1</p> <p>0.8 Shale, gray</p> <p>0.3</p> <p>893.1 1.1 70.5</p> <p>TD ROD = 82.9 %</p>			