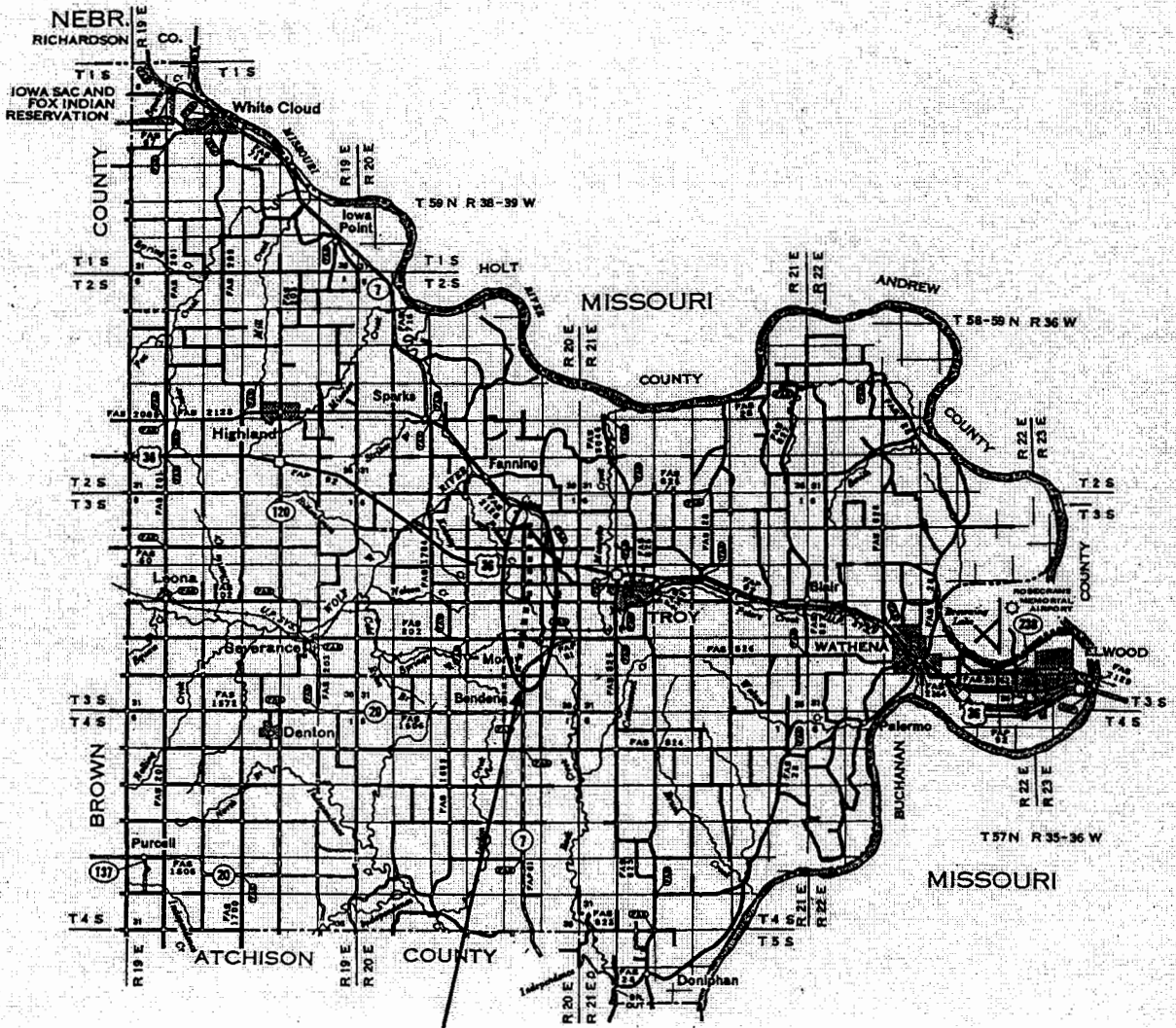


N2 N2 14-3-20E

37-12



Geology Report Addendum

Project No. 7-22 K-6393-01

K-7, from the K-20 Junction, north
on new alignment to existing K-7.

Doniphan County

KANSAS DEPARTMENT OF TRANSPORTATION



RTE./CO. 7-22	SOUNDING NO. CD #1	SHEET OF
BRIDGE STA. 18+101.154	PROJ. NO. K-6393-01	BRIDGE NO. 7-22-10.10(050)
SITE NAME K-17 over US-36	HOLE STA. 18+109, C	
GEOLOGIST Randy Billinger	SCALE: 1:100 (10mm = 1 Meter)	DATE 12-3-01
DRILLER Rob Veruyneck	RIG TYPE Mobile B-31	TOP HOLE ELEV. 324.37
GROUNDWATER ELEV. 322.39	TOTAL DEPTH 26.51	M/B ELEV. 309.13

BIT TYPE	GEOLOGIC NAME	STRATIGRAPHIC COLUMN	DEPTH	ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION	STANDARD PENETRATION OR CASING DRIVE	
							BLAWS	ELEV
			0.0	324.37	U _{max} 330.00 1082.7	kPa		
				324	.98 tsf Dry wt. 95.89 % mo. 24.9 Layer 2	94.4	Shelby 1	323.89
				323				
				322	.63 tsf Dry wt. 93.51 Layer 3 % mo. 29.8	60.9	Shelby 2	322.24
				321	Silty clay, tan-orange-gray			
				320	3.0 tsf Dry wt. 109.19 % mo. 20.3 Layer 4			
				319				
				318				
				317				
						288.4	Shelby 3	318.61

Mantle



26.25

SOUNDING NO. CD 1

PROJECT NO. K-6393-01

SHEET OF

DATE 12-3-01

RTE./CO. 7-22

TOTAL DEPTH 26.51

THE 324.37

BIT TYPE

GEOLOGIC NAME

STRATIGRAPHIC COLUMN

DEPTH

ELEVATION

CLASSIFICATION OF MATERIALS
DESCRIPTION AND REMARKS

UNCONFINED
COMPRESSION
kPa

STANDARD
PENETRATION
OR
CASING
DRIVE

BLOWS

ELEV

316

Silty clay, tan-orange-gray.

Layer 11

3.77 tsf

Dry wt. 109.93

%mo 19.7

972

314.65

50.36

360.7

Shelby 4

314.65

Layer 5

314

55.36

313

Silty clay with light gravel,
tan-orange-gray.

Mantle

312

Layer 6

3.14 tsf

Dry wt 109.18

%mo 19.8

301.3

Shelby 5

311.60

311

310

1524

309.13

68.47

Severy Shale Fm.

Core 1

308

Shale, firm, gray, sandy, has
sand lenses.

489.1

Sample 1

308.1

307

1180.7

Sample 2

307.25

1787

306.5

SOUNDING NO. CD 1

PROJECT NO. K-6393-01

SHEET OF

DATE 12-3-01

RTE./CO. 7-22

TOTAL DEPTH 26.51

THE 324.37

BIT TYPE	GEOLOGIC NAME	STRATIGRAPHIC COLUMN	DEPTH	ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION kPa	STANDARD PENETRATION OR CASING DRVE	
							BLOWS	ELEV
	Severy Shale Formation	Core 2		306	Shale, gray, firm, mostly clayey.	1,774.1	sample 3	305 ⁹⁰
				305		2,133.7	sample 4	304 ⁵⁶
				304				
				303				
				302				
	Coal Creek Ls. Mbr.	Core 3	22 ⁶⁴	301 ⁷³	Limestone, gray, thick-bedded to massive, fossiliferous.	1,242.9	sample 5	302 ⁸⁶
			23 ⁵³	300 ⁸⁴				
	Dy- Boss Holt Sh. Mbr.	Core 4	24 ²⁰	300 ¹⁷	Shale, dark gray to black, platy to fissile.			
			24 ⁶²	299 ¹⁵	Limestone, gray, blocky.			
	Turner Creek Sh. Mbr.	Core 5		299	Shale, gray to gray-green, clayey to silty.			
			25 ⁶⁶	298 ²¹				
	Sheldon Ls Mbr.	Core 6	26 ⁰⁹	298 ²⁸	Limestone, shaly, blocky, gray-green.			
			26 ⁵¹	297 ⁸⁶	Shale, green.			
	Pres Point Sh. Mbr.	Core 7		297	Total Depth			

K-7 over US-36 near Troy

Project No. 7-22 K-6393-01

	<u>Elevation</u>	<u>Depth</u>		
Core Hole #1	324.37	0.00	Shelby 1. Pushed 0.48 m Recovered 0.42 m.	Mantle
Sta. 18+109			Silt, wet olive.	
K-7 C.L.	323.89	0.48	Silt, wet olive.	
	322.85	1.52	Shelby 2. Pushed 0.60 m Recovered 0.60 m.	
Water Level 1.98 m			Silty, tan and orange.	
Water Elev. 322.39 m	322.24	2.13	Silty clay, tan and orange.	
Date Drilled 12/3/01	319.80	4.57	Tried to get a shelby but hit a rock 0.18 m into the push.	
Geologist: R. Billinger			Was trying to push 0.6 m. Crushed end of the tube.	
	319.62	4.75	Big rock.	
	319.53	4.84	Soft, silty clay.	
	319.19	5.18	Shelby 3. Pushed 0.58 m Recovered 0.58 m.	
			Silty clay, tan and orange.	
	318.61	5.76	Silty clay, tan-orange and gray.	
	315.23	9.14	Shelby 4. Pushed 0.58 m Recovered 0.58 m.	
			Silty clay to clayey, tan-orange and gray.	Mantle
	314.65	9.72	Silty clay to clayey, tan-orange and gray. Some light gravel.	
	312.18	12.19	Shelby 5. Pushed 0.58 m Recovered 0.58 m.	
			Silty clay to clayey, tan-orange and gray. Some light gravel.	
	311.60	12.77	Silty clay with some light gravel.	
	309.13	15.24	Tried to get a shelby sample. Only able to push 0.18 m.	
			Firm gray shale and crushed the end of the tube.	
	309.13	15.24	Firm gray shale.	Severy Shale
			Set casing to 15.45 m.	Formation
	308.52	15.85	Shale, gray, firm. Begin coring.	
Core # 1	308.52	15.85	Shale, sandy, olive to grayish.	
15.85 to 17.37 m	307.82	16.55	Shale, gray, firm, sandy, sand lenses.	
Cut 1.52 m	307.00	17.37	End core 1.	
Recovered 1.52 m				
RQD = 100%			Sample 1 16.09 - 16.27 Sandy shale, gray.	
			Sample 2 16.97 - 17.12 Shale, gray.	
Core # 2	307.00	17.37	Shale, gray, firm, sand lenses.	
17.37 to 18.89 m	305.48	18.89	End core 2.	
Cut 1.52 m				
Recovered 1.52 m			Sample 3 18.28 - 18.47 Shale, gray.	
RQD = 100%				
Core # 3	305.48	18.89	Shale, gray, firm.	Severy Shale
18.89 to 20.42 m	303.90	20.47	End core 3.	Formation
Cut 1.52 m				
Recovered 1.52 m			Sample 4 19.62 - 19.81 Shale, gray.	
RQD = 100%				

K-7 over US-36 near Troy**Project No. 7-22 K-6393-01**

Core # 4	303.95	20.42	Shale, gray, firm.	Severy Shale Formation
20.42 to 21.94 m	302.43	21.94	End core 4.	
Cut 1.52 m				
Recovered 1.52 m			Sample 5 21.33 - 21.51 Shale, gray.	
RQD = 100%				
Core # 5	302.43	21.94	Shale, gray, firm.	Coal Creek Ls. Mbr.
21.94 to 23.46 m	301.73	22.64	Limestone, gray, blocky, fossiliferous.	
Cut 1.52 m	301.51	22.86	Limestone, gray, blocky to more massive, fossiliferous.	
Recovered 1.52 m	300.91	23.46	End core 5.	
RQD = 62%				
Note: The shale RQD is 100% the limestone is blocky.			Sample 6 23.25 - 23.37 Limestone.	
Core # 6	300.91	23.46	Limestone, gray, blocky to more massive, fossiliferous.	Holt Shale Member
23.46 to 24.99 m	300.84	23.53	Shale, dark gray, limy.	
Cut 1.52 m	300.63	23.74	Shale, black, fissile.	Du Bois Ls. Mbr.
Recovered 1.52 m	300.17	24.20	Limestone, gray, blocky.	
RQD = 72%	299.75	24.62	Shale, gray to gray-green. Clayey to silty.	Turner Creek Shale Member
	299.38	24.99	End core 6.	
Core # 7	299.38	24.99	Shale, gray to gray-green.	Turner Creek Shale Member
24.99 to 26.51 m	299.20	25.17	Thin limy bed.	
Cut 1.52 m	299.14	25.23	Shale, gray to gray-green.	Sheldon Ls. Mbr.
Recovered 1.52 m	298.71	25.66	Limestone, shaly, blocky, gray-green.	
RQD = 70%	298.28	26.09	Shale, green.	Jones Point Shale Member
	297.86	26.51	End core 7. Total Depth.	