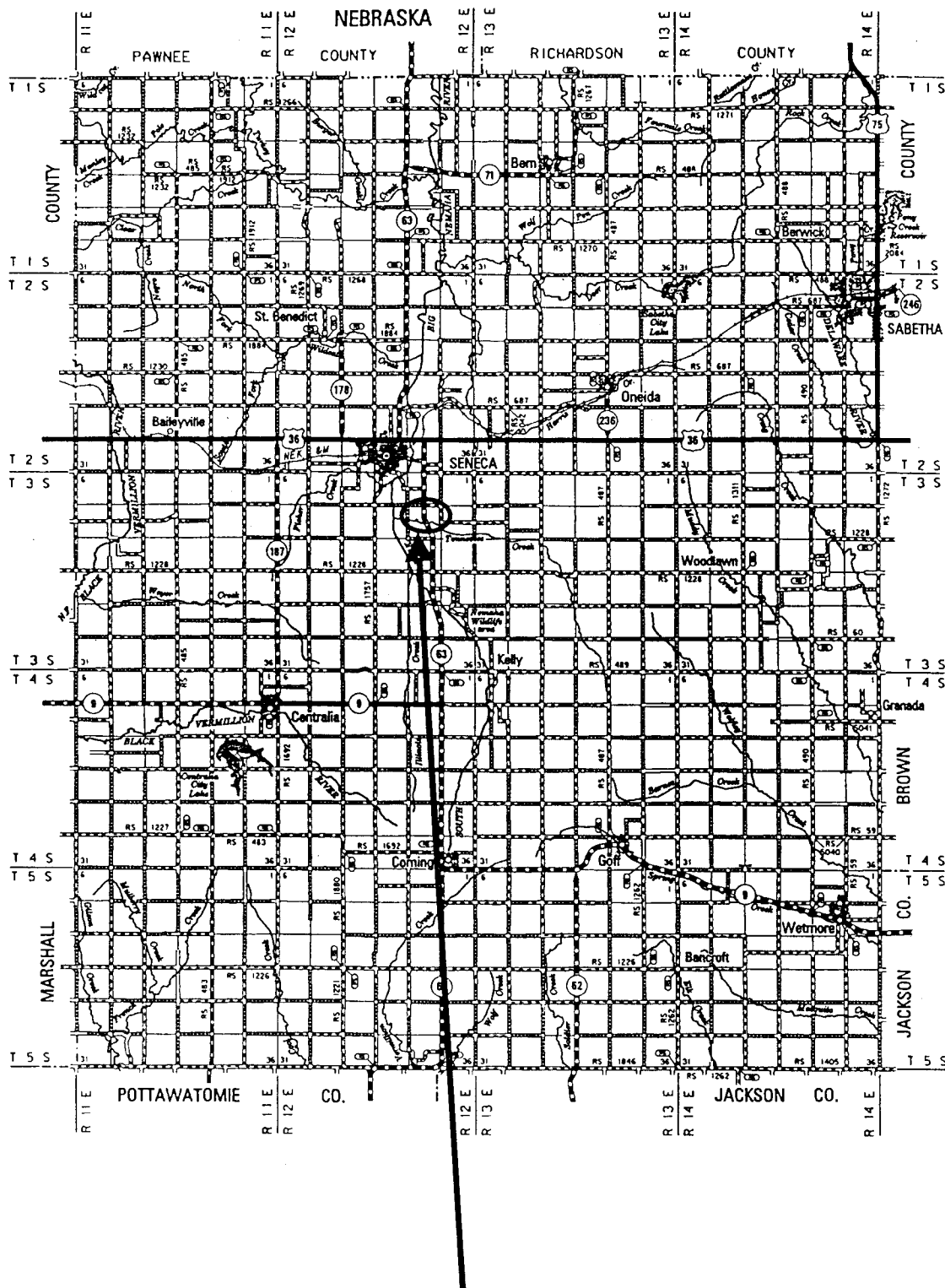




Section 11

Project No. 63-66 K-6364-01
K-63 over Tennessee Creek
Nemaha County

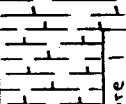
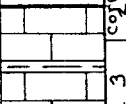
NW SE 11-3-12E



KANSAS DEPARTMENT OF TRANSPORTATION

RTE./CO. 063-066	SOUNDING NO. CD # 1	SHEET 1 OF 5
BRIDGE STA. 10+614.990	PROJ. NO. K-6364-01	BRIDGE NO. 63-66-16.44 (037)
SITE NAME K-63 over Tennessee Creek	HOLE STA. 10+584.49 11m Rt.	
GEOLOGIST Randy Billinger	SCALE: 1:100 (10mm = 1 Meter)	DATE 12-6-99
DRILLER Rob Vervynck	RIG TYPE Mobile B-61	TOP HOLE ELEV. 343.56 m.
GROUNDWATER ELEV 340.30	TOTAL DEPTH 25.73 m.	M/B ELEV. 322.47

BIT TYPE	GEOLOGIC NAME	STRATIGRAPHIC COLUMN	DEPTH	ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION	STANDARD PENETRATION OR CASING DRIVE	
							BLOWS per 300mm	ELEV
			0.00	343.56				
				342	Silty clay, Charcoal grey.			
				341				
				340.30	Ground Water Elevation		Shelby # 1	340.90
				340				
				339				
			4.89	338.67				
				338			4 blows	338.22
				337				
				336			3 blows	335.87
				335	Silty Sand, grey.		4 blows	334.35
				334				
				333			4 blows	332.82
				332				
				331			11 blows	331.30
				330				
				329				
				328				

		SOUNDING NO. CD #1		PROJECT NO. K-6364-01		SHEET 2 OF 5	
E 12-6-99		RTE/CO. 063-066		TOTAL DEPTH 25.73 m.		THE 343.56 m.	
GEOLOGIC NAME	STRATIGRAPHIC COLUMN	DEPTH	ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION	STANDARD PENETRATION OR CASING DRIVE	
						BLOWS	ELEV
MANTLE		17.09	327 326.47	Silty Sand , grey. GRAVEL zone. Abundant sand.			
			326				
			325				
			324				
			323				
	21.09	322.47					
Auburn Sh. Formation			322	Shale, dark grey, limey, containing some pyrite.			
			321				
		23.28	320.28				
			320				
			319				
Soldier Creek Wapakoneta Shale Mbr. LS Mbr.		24.91	318.65	Limestone, light to medium grey, massive bedded, fossiliferous. Shale break @ 319.54 to 319.41. Shale, top 0.18m. is olive-grey, very limey, and fossiliferous. lower 0.64 is Black Fissile.			
			319				
			318				
			317				
						Sample #1	319.88
						Sample #2	319.10
						Sample #3	318.49



063-066 K-6364-01

K-63 over Tennessee Creek

12-6-99

CD #1

Sta. 10 + 584.49

11 m. Right

340.30 m.

Elev.	Depth.	
343.56	0.00	1.00 Silty clay, charcoal grey, moist.
342.56	1.00	1.75 Silty clay, olive-brown, moist.
341.81	1.75	2.00 more clay, drilling tighter.
341.50	2.06	2.66 <u>Shelby #1</u> Push'd: 0.60 Rec'd: 0.45
340.90	2.66	3.46 Silty clay, brown, moist.
340.10	3.46	4.06 Silty clay, brown, moist.
339.50	4.06	4.19 Very soft. no return
339.37	4.19	4.79 firmer again no return
338.97	4.59	4.89 Attempted <u>Shelby</u> but no recovery. Very wet.
338.67	4.89	5.34 Very soft.
		Split Spoon #1
		4.89 - 5.04 2
		5.04 - 5.19 2
		5.19 - 5.34 2
338.22	5.34	7.24 Silty sand, grey.
336.32	7.24	7.69 <u>Split Spoon #2</u>
		7.24 - 7.39 2
		7.39 - 7.54 1
		7.54 - 7.69 2
335.87	7.69	8.76 Silty sand, grey.
334.80	8.76	9.21 <u>Split Spoon #3</u>
		8.76 - 8.91 1
		8.91 - 9.06 2
		9.06 - 9.21 2
334.35	9.21	10.29 Silty sand, grey.
333.27	10.29	10.74 <u>Split Spoon #4</u>
		10.29 - 10.44 1
		10.44 - 10.59 2
		10.59 - 10.74 2
332.82	10.74	11.81 Silty sand, grey.
331.75	11.81	12.26 <u>Split Spoon #5</u>
		11.81 - 11.96 3

Sample Lost

Silty Sand, grey.

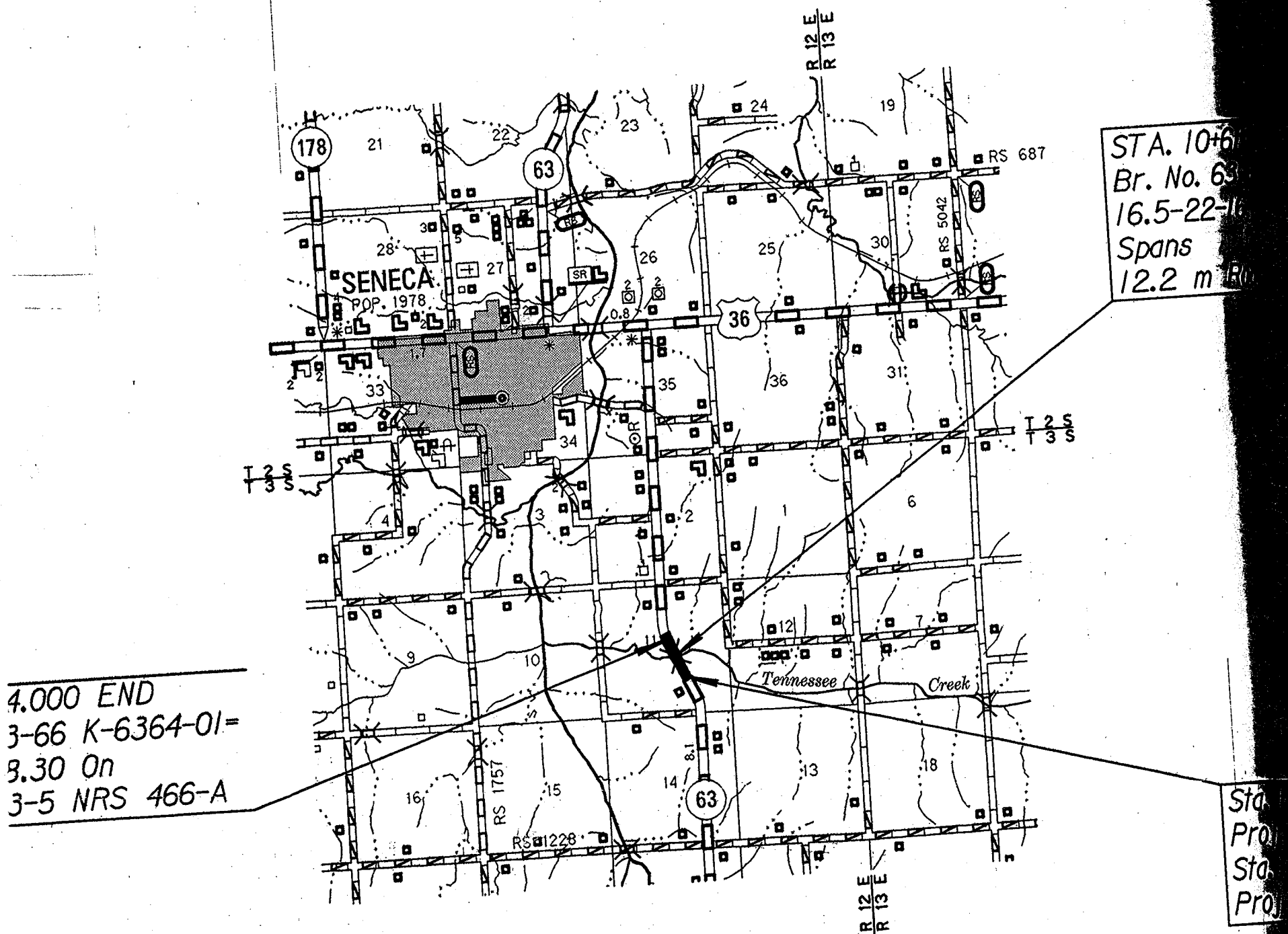
Silty sand, grey,
very wet.Silty sand, grey,
wet.

Silty sand, grey, wet.

continued on next page

063-066	K-6364-01	K-63	OVER Tennessee Creek
		11.96 - 12.11	5 Silty sand, grey, wet.
		12.11 - 12.26	6
331.30	12.26	12.80	Silty sand, dark grey.
330.76	12.80	14.59	Sand, clean, fine, grey.
330.22	13.34		<u>Split Spoon #6</u>
			Auger was back-filled with clean, fine-grained sand when we went back in with Split Spoon.
328.97	14.59	15.36	A little more "gravelly".
328.20	15.36	15.86	<u>Very Firm.</u>
327.70	15.86	17.09	Smooth again, drilled easy.
326.47	17.09	17.39	Feels like gravel.
326.17	17.39	17.89	Heavy gravel, strong vibrations.
325.67	17.89	19.44	lesser vibration; sand or light gravel.
324.12	19.44	21.09	Heavy gravel but seems to be small in size.
			for the most part. Hard to auger thru.
322.47	21.09	21.36	Shale, firm, grey. Set casing in Shale @ 21.36.
			Went in with Hawthorne bit and cleaned casing. Lots of sand and small gravel. Some gravel pieces Quarter sized. Cut down to 21.55 and got back grey shale. Start coring at 21.55.
Core #1	322.01	21.55	21.65
21.55 - 22.95	321.91	21.65	21.70
Cut: 1.40	321.86	21.70	21.90
Rec'd: 0.35	321.66	21.90	22.95
RQD = 0%			
			Shale, dark grey, limy.
			Limestone stringer.
			Shale, dark grey, limy.
			Shale, dark grey, limy. *
			* lost bottom 1.05 m. of core.
Core #2	320.61	22.95	23.15
22.95 - 23.68	320.41	23.15	23.17
Cut: 0.73	320.39	23.17	23.28
Rec'd: 0.68	320.28	23.28	23.68
RQD = 93%			
	320.14	23.42	23.68
			Shale, dark grey, some pyrite crystals.
			Limestone stringer, light grey.
			Shale, dark grey, firm.
			Limestone, grey, Massive or Unit-bedded, fossiliferous, and containing pyrite.
			<u>Sample #1</u> Limestone, grey, Massive bedded fossiliferous, containing some pyrite.
Core #3	319.88	23.68	24.03
23.68 - 25.20	319.53	24.03	24.15
Cut: 1.52	319.41	24.15	24.91
Rec'd: 1.52	318.65	24.91	25.09
RQD 100%	318.47	25.09	25.20
			Shale, olive-grey, calcareous, fossiliferous.
			Shale, black, fissile.

FEDERAL AID PROJECT NEMAHA COUNTY K - 63



*K-63 over Tennessee Creek
63-66 K-6364-01*

*T3S R12E
11 SE*

GROSS LENGTH OF PROJECT 508.000 m
EXCEPTIONS 0.000

NET LENGTH OF PROJECT 508.000 m
NET LENGTH OF BRIDGES 55.750 m
NET LENGTH OF ROAD 452.250 m