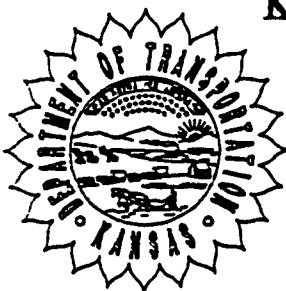


KANSAS DEPARTMENT OF TRANSPORTATION



1. ROUTE-COUNTY NO. 004-089	7. SOUNDING NO. 1	12. SHEET 01 OF 04
2. BRIDGE STA. 50+00	8. PROJECT NO. K-3362-03	13. BRIDGE NO. 19.41
3. DESCRIPTION Rice Rd. over K-4	9. HOLE STA. 50+00, 58 Rt	14. DATE 3-14-94
4. GEOLOGIST Thompson	10. VERTICLE SCALE 1"=10'	15. ELEVATION TOP OF HOLE 984.7
5. DRILLER Shull	11. RIG B-61	16. ELEVATION TOP OF ROCK 978.9
6. GROUND WATER ELEV. 972.2	17. TOTAL DEPTH OF HOLE 57' 8"	

BIT TYPE & NO.	GEOLOGIC NAME	STRATIGRAPHIC COLUMN	DEPTH	ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION	STANDARD PENETRATION OR CASING DRIVE	
							Depth	ELEV.
			0°	984.7				
	Mantle		58	978.9	Mantle, Silty Clay, brown with limestone rubble.			
	Holt Mbr.		85	976.2	shale, black			
	DuBois Mbr.		113	973.4	Limestone, shaly with shale breaks weathered, brown to gray-brown			
	Turner Crk. Sheldon		130	971.7	shale, dark gray, limy	13.749	12'	972.5
	Jones Pt. Mbr.		145	970.8	Limestone, light gray			
			173	967.4	Shale, olive, firm, clayey			
	Carzon Mbr.				Limestone, hard, shaly zones gray. Dense in zones with no shale.	632.012	178	966.9
						246.495	197	965.0
			260	958.7		216.768	228	961.9
	Iowa Pt.		268	957.9	shale, gray, clayey	700.097	274	957.3
	Hartford Mbr.		315	953.2	Limestone, hard, dense, gray			
			353	949.4	Shale, gray, clayey	47.125	33'	951.0
					Shale, gray, very firm, sandy	15.903	368	947.9
	Calhoun Frm		409	943.8				
			436	941.1	sandstone, gray, shaly	71.362	432	941.5
					Shale, gray, firm, sandy with thin sandstone stringers	20.404	456	939.1
						41.570	497	935
			550	929.7				
			571	927.6	sandstone, shaly			
			57.8		shale clayey gray 926.9 T.D.			

3-12-16E

3-14-94 K-3362-03 Rice Rd

Br. # 19.41

CD # 1

Sta. 412+11 K-4
= 50+00, 59Rt Rice Rd.

984.7

0°-4°

S. Cl, brn

4°-5°

Ls, Rbls

978.9
Holt

5°-8°

Sh, blks

976.2

8°-9°

Ls, hdy, wt

9°-10°

Sh, brn

Caseing

6⁵

-2³
4³

Drove 4°-5°

Dubois

Water 12.5

973.4

Turner creek

971.7

Sheldon

970.7

Jones point

74.7
16.0
68.7

0°-4°

84.7
16.0
68.7

51.5
0.7
58

(13)

Pot

971.16

74.7

2.3

10.8

CD # 1

8.80

74.7

Pot

2.3

84.7

22.7

12.8

Core # 1 6°-11° Cut 5° Recov. 5°

6°-6° - Ls, shly, very wtd

6°-8° Sh, brn to blk wtd - Lost 0.5

8°-9° Ls, shly, wtd

9°-10° Sh, brn + gry, wtd, - Lost 0.5 Ls

RQD = 1.4 / 5.0

Core # 2 11°-16° Cut 5° Recov.

11°-11° - Sh

11°-11° - Ls - base Dubois

11°-12° Sh, Turner Crt dk gry very

fine

12°-13° - Sh, dk gry, very limy

- gradational to Ls

13°-13° - Ls, lt gry impure

13°-14° - Ls, hdy

14°-15° Sh, olive, limy - Jones Pt - very clayey

RQD = 3.2 / 5.0

Sample #1 11⁴-12¹ - Shale Turner Ck

Core #3 16⁰-20⁸ Cut 4⁸ Recov. 4⁷

16⁰-17³ Sh, olive, firm - no sample possible

17³-18⁵ Limestone, lt gray, dense

18⁵-20² Limestone, impure, shaly

20²-20⁵ Limestone, lt gray

RQD = 3⁸/4⁸

Sample #2 17³-17⁸ Limestone

Sample #3 18⁸-19⁷ Limestone shaly

Core #4 20⁸-25⁵ Cut 4⁷ Recov. 4⁷

20⁸-23⁴ Ls, lt gray dense to mottled

23⁴-24¹ Ls, impure to shaly

24¹-25⁴ Ls, lt gray, dense, slightly

impure

25⁴-25⁵ - Ls, shaly

RQD = 98%

Sample #4

21⁴-22⁸ All Ls, Curzon

14

Curzon

962.4

967.4
958.7
8.7

Core # 5 25⁵-30⁵ Cut 5° Recov. 4° 5°

25⁵-26⁰ Ls, lt gray, impure to shly

26⁰-26⁸ Sh, gray clayey

26⁸-30⁵ Ls, light gray dense to unit bedded.

RQD = 4²/5⁰

Sample # 5 ~~27¹-27⁹~~ Ls, Hartford

26⁸-27⁴

Core # 6 30⁵-35³ Cut 4° Recov. 4°

30⁵-31⁵ Ls, lt gray, slightly impure

31⁵-32⁷ Sh, gray, Firm

32⁷-32⁹ Coal

32⁹-35³ Sh, dark gray Firm

Sample # 6 33⁰-33⁷ Sh, gray

RQD = 4⁰/4⁸

Core # 7 35³-40¹ Cut 4° Recov. 3° 4°

35³-38² Sh, light gray, sandy

Sample # 7 36³-36⁸ Sh,

RQD = 3³/4⁸

Curzon

Jones Pt

Hartford

Colburn

774.7
26.0

758.7

774.7

26.0

758.7

(15)

(958.7 to 957.9)

957.9

953.2

579
515
264

109
81
28

Core # 8 40¹-43³ Cut 3² Recov. 3²

40¹-40⁹ Sh, gray, sand, very fine

→ 40⁹-43³ Sandstone, lt gray, shaly

Sample # 8 42⁵-43² Sandstone

RQD = 2⁴/3²

Core # 9 43³-48³ Cut 5⁰ Recov. 4⁵

43³-43⁶ ~~Ss~~ Ss, lt gray Shly

43⁶-46⁶ Sh, lt gray, clayey, sandy

46⁶-48³ Sh, lt gray, clayey

Sample # 9 45⁰-45⁶⁵

Sh, sand

RQD = 78%

Core # 10 48³-52¹ Cut 4⁶ Recov. 4⁶

→ 48³-52⁸ Sh, lt gray, very sand

to ss stringers

RQD = 3⁶/4⁶

→ 52⁹
48³
78

Sample # 10 48⁶-49⁷

Core # 11 52⁹-57⁸ Cut 4⁹ Recov. 4⁵

52⁹-55⁰ Same as above

RQD 55⁰-55⁹ Ss, shaly

= 55⁹-57¹ Ss, lt gray, calcareous

4¹/4⁹ 57¹-57⁸ Sh, dk gray

T.D.

004-089-K-3362-03

Rice Rd. Over K-4

Core Descriptions.

Core 1	6°-6 ⁴	Limestone, shaly, very weathered
6°-11°	6 ⁴ -8 ⁵	Shale, brown to black, weathered
Cut 5°	8 ⁵ -9 ⁵	Limestone, shaly, weathered
Recov. 5°	9 ⁵ -11°	Shale, brown-gray weathered.
RQD = 1.4/5.0		
= 28%		

Core 2		
11°-16°	11°-11 ¹	Shale
Cut 5°	11 ¹ -11 ³	Limestone
Recov. 5°	11 ³ -12 ³	Shale, dark gray, very firm
RQD = 3 ² /5°	12 ³ -13°	Shale, dark gray, very limy gradational to limestone
= 64%	13°-13 ³	Limestone, light gray, impure
	13 ³ -14°	Limestone, hard
	14°-15 ⁷	Shale, olive, limy, very clayey

Sample 1	11 ⁴ -12 ¹	Shale, gray
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Core 3		
16°-20°	16°-17 ³	Shale, olive, firm
Cut 4°	17 ³ -18 ⁵	Limestone, light gray, dense
Recov. 4 ⁷	18 ⁵ -20 ²	Limestone, impure, shaly
RQD = 3 ⁸ /4°	20 ² -20 ⁵	Limestone, light gray
= 79.2%	20 ⁵ -20°	lost in coring

Sample 2	17 ³ -17°	Limestone
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Sample 3	18°-19 ⁷	Limestone, shaly
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Core 4		
20°-25°	20°-23 ⁶	Limestone, light gray, dense to unit bedded.
Cut 4 ⁷	23 ⁶ -24 ¹	Limestone, impure to shaly
Recov. 4 ⁷	24 ¹ -25 ⁴	Limestone, light gray, dense,
RQD = 98%	25 ⁴ -25°	Limestone, shaly

Sample 4	21 ⁶ -22°	Limestone.
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Core Descriptions (Con't)

Core 5

25⁵-30⁵cut 5⁰Recov. 5⁰RQD = $4^2/5^0$
= 84%25⁵-26⁰ Limestone, light gray, impure to shaly26⁰-26⁸ Shale, gray, clayey26⁸-30⁵ Limestone, light gray, dense to unit beddedSample 5 26⁸-27⁴ Limestone

Core 6

30⁵-35³Cut 4⁸Recov. 4⁶RQD = $4^0/4^8$
= 83.3%30⁵-31⁵ Limestone, light gray31⁵-32⁷ Shale, gray, firm32⁷-32⁹ Coal32⁹-35¹ Shale, dark gray, firm35¹-35³ Lost ?Sample 6 33⁰-33⁷ Shale, gray

Core 7

35³-40¹Cut 4⁸Recov. 4⁸RQD = $3^3/4^8$
= 68.75%35³-40¹ Shale, light gray, sandySample 7 36³-36⁸ Shale, sandy

Core 8

40¹-43³Cut 3²Recov. 3²RQD = $2^4/3^2$
= 75%40¹-40⁹ Shale, gray, sandy, very firm40⁹-43³ Sandstone, light gray, shalySample 8 42⁵-43² Sandstone

Core Descriptions (Con't)

Core 9	43 ³ -43 ⁶	Sandstone, light gray, shaly
43 ³ -48 ³	43 ⁶ -46 ⁶	Shale, light gray, sandy
Cut 5 ⁰	46 ⁶ -48 ³	Shale, light gray, clayey
Recov. 4 ⁵		
RQD = 73%		
Sample 9	45 ⁰ -45 ⁶⁵	Shale, Sandy

Core 10		
48 ³ -52 ⁹	48 ³ -52 ⁹	Shale, light gray, very sandy, with sandstone stringers
Cut 4 ⁶		
Recov. 4 ⁶		
RQD = 3 ⁶ /4 ⁶		
= 78.3%		
Sample 10	48 ⁶ -49 ⁷	Shale

Core 11		
52 ⁹ -57 ⁸	52 ⁹ -55 ⁰	Shale, light gray, very sandy
Cut 4 ⁹	55 ⁰ -55 ⁹	Sandstone, shaly
Recov. 4 ⁶	55 ⁹ -57 ¹	Sandstone, light gray
RQD = 4 ¹ /4 ⁹	57 ¹ -57 ⁸	Shale, dark gray
= 83.7%	57 ⁸	TD

KANSAS DEPARTMENT OF TRANSPORTATION

Report of sample of Geology Cores

Laboratory No. 94-0732

Date Rep'td. March 22, 1994

Date Rec'd. March 18, 1994

Specification No. - - Quantity - - -

Source of material Project

Sample from Project

Submitted by Delmer Thompson, Lawrence Geology Office

Identification marks Tags with samples

Project or POV 4-89 K-3362-03, Bridge #19.41, Shawnee County, District 1

Type of construction Bridge

TEST RESULTS

Sample No.	Station	Dist.ft. CL	Depth ft.	Description	Qu. t.s.f.	Sample p.c.f. by Dry Wt.	Moisture (% of Dry Wt.)
CD-1	50+00	59' Rt Rice	114-121	Sh, Turner Crk. ✓	13.749	134.7	8.1 ✓
CD-2	"	"	173-178	Ls, light gray ✓	632.012	161.0	3.1 ✓
CD-3	"	"	183-197	Ls, Shaley ✓	246.495	150.9	4.6
CD-4	"	"	216-228	Ls, light gray ✓	216.768	149.3	5.2
CD-5	"	"	268-274	Ls, light gray ✓	700.097	151.6	5.3
CD-6	"	"	330-337	Sh, gray ✓	47.125	133.8	9.4
CD-7	"	"	363-368	Sh, lght gry, sandy ✓	15.903	129.0	10.4
CD-8	"	"	425-432	Ss, Shaley ✓	71.362	122.8	12.7
CD-9	"	"	450-4565	Sh, lght gry, sandy ✓	20.404	129.4	10.0
CD-10	"	"	486-497	Sh, lght gry, sandy	41.570	135.0	8.9

cc: L.S. Ingram
L.A. Rockers
Lawrence Geology Office ✓
J.J. Brennan
Soil Section
File

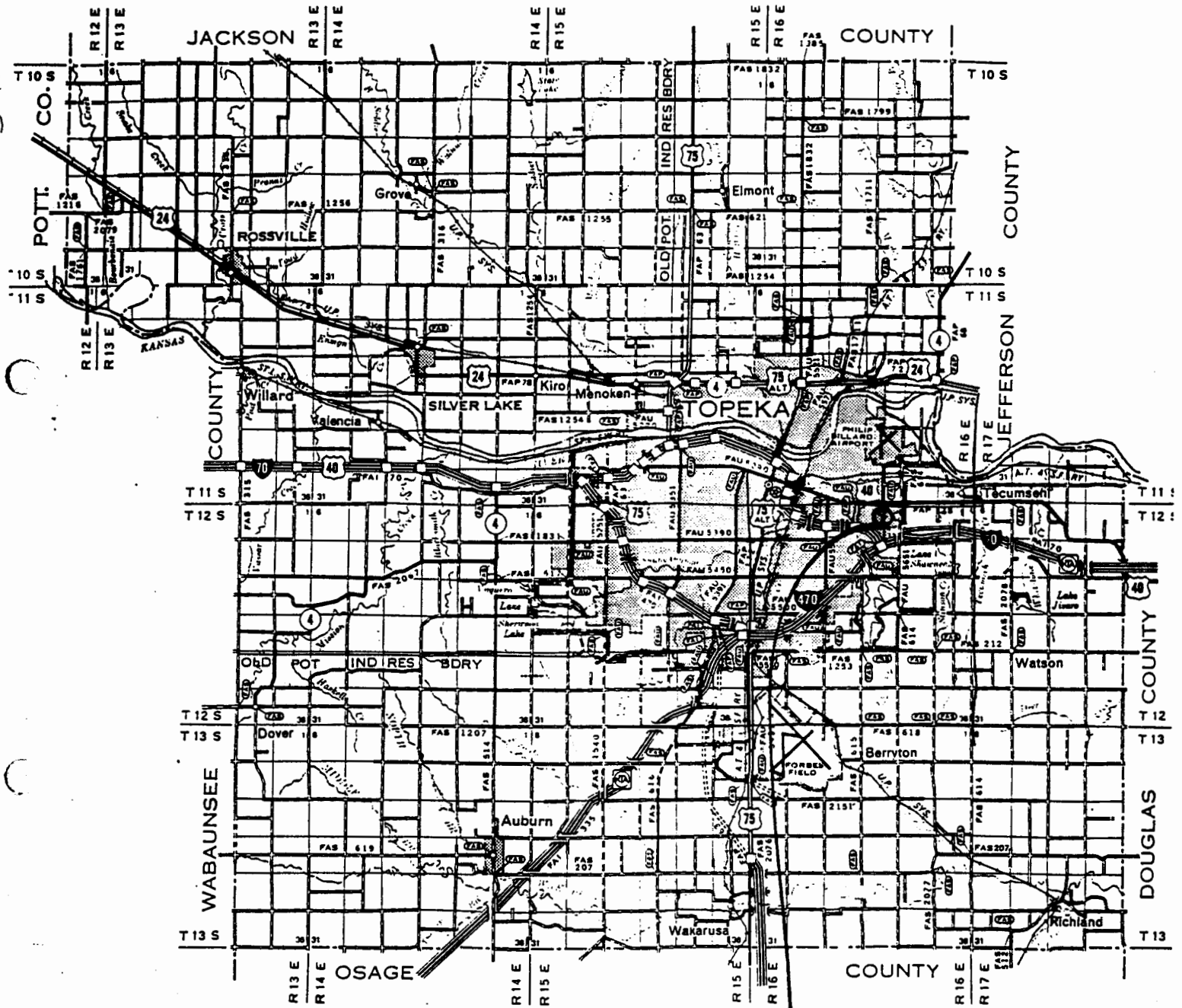
Reported by Maurice Hunt for

Title James J. Brennan, Soils Engineer

Kansas Department of Transportation

FINAL DESIGN GEOLOGY REPORT

2-12-110E



C N2 - 3 - 125 - 10E

0-58'

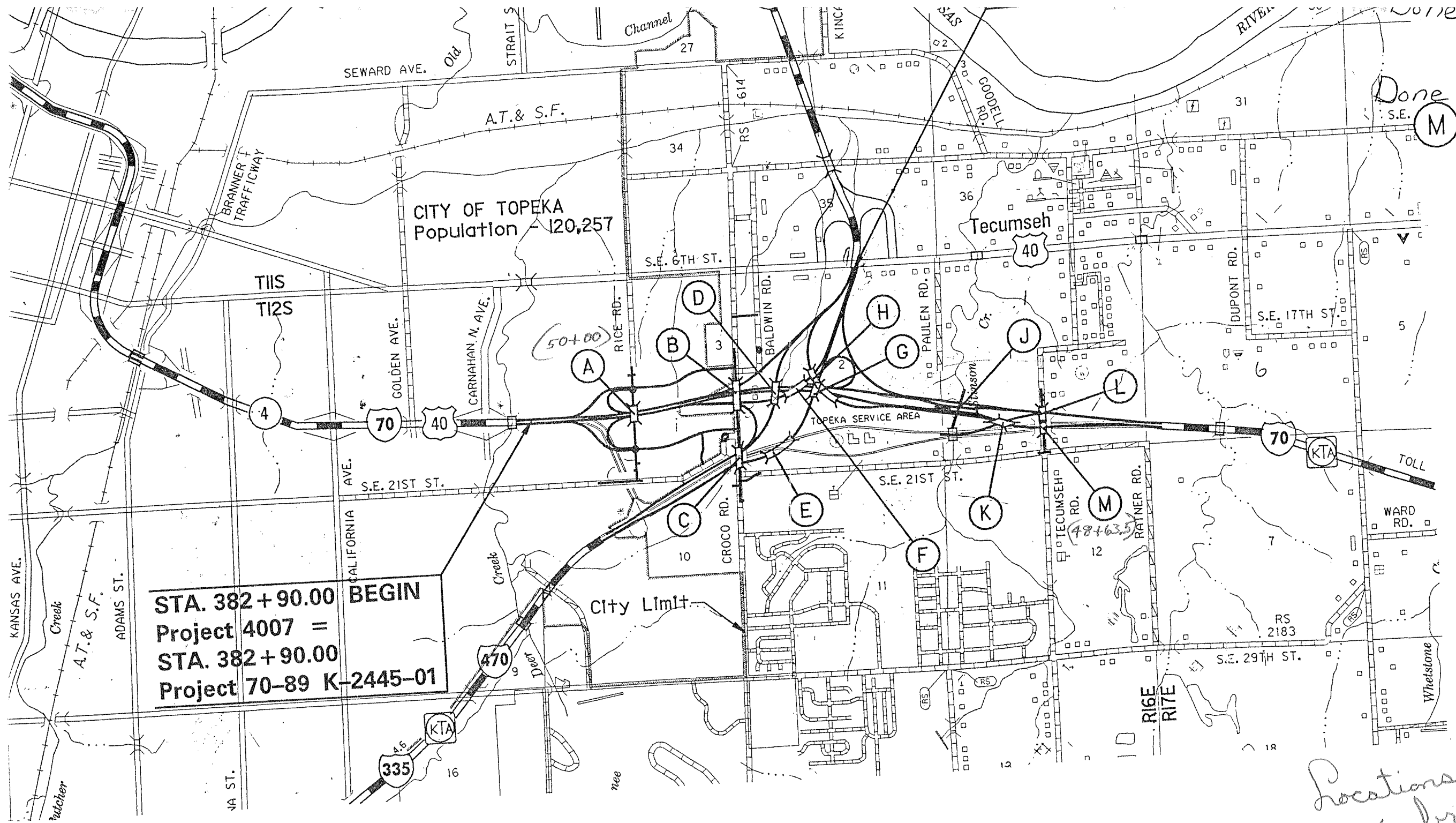
Shawnee

Holt to Calhoun

Project 4-89 K-3362-03
Shawnee County

Bridge # 19.41

S2 N2 S2



32'-0" Roadway

STA. 521+16.57
 Tecumseh Road
 Br. No. 70-89-2
 70'-125'-70' Cor
 32'-0" Roadway

Note: (I) not u

PF
 F
 HN
 AR
 OV
 D/

Sheets see Sheet No. 2
 out See Sheet No.

GROSS LENGTH OF PROJECT 10,936.33 FT. 2.071 MILES

EXCEPTIONS FT. MILES

ADDITIONS FT. MILES

RECOM. FOR APPROVAL-DATE

CHIEF, BUREAU OF DESIGN
 KANSAS DEPARTMENT OF TRANSPORTATION

APPROVED - DATE