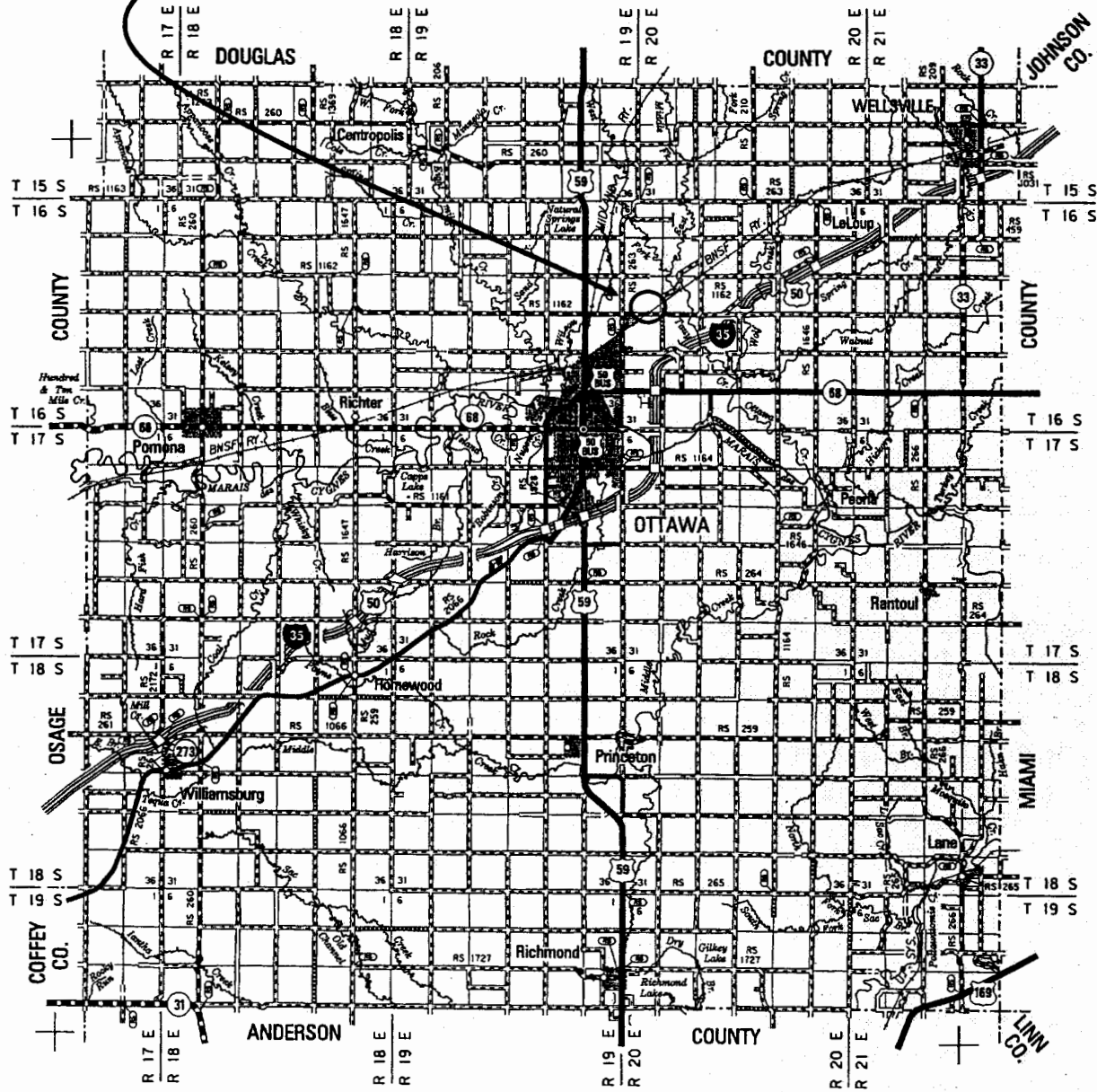


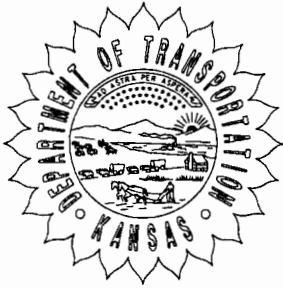
Project 59-30 K-7889-01
US-59 over BNSF Railroad

18-16-20E
S/2 SE



Franklin County

KANSAS DEPARTMENT OF TRANSPORTATION



RTE./CO. 59-30	SOUNDING NO. CD	SHEET 1 OF 3	
BRIDGE STA. 117+63.29; 30.0 Rt. 117+72.19; 30.0 Lt.	PROJ. NO. K-7889-01	BRIDGE *59-30-20.04(107) 59-30-20.05(108)	
SITE NAME US-59 over BNSFRR		HOLE STA. 117+00.00; CL	
GEOLOGIST B. Henthorne	SCALE 1 unit = 2 feet	DATE June 7, 2004	
DRILLER J. Burns	RIG TYPE CME-75	TOP HOLE ELEV. 930.97	
GW ELEV. H N/A	TOTAL DEPTH 58.0	M/B ELEV. 912.67	

BIT TYPE	GEOLOGIC NAME	STRATIGRAPHIC COLUMN	DEPTH	ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION (tsf)	ELASTIC MODULUS (tsf)	ELEVATION		
					<i>T.H.E. = 930.97</i>					
Augers	Soil Mantle			930	Silty Clay, black to mottled brown orange.			930		
				928					928	
				926				Shelby *1		926
				924				2.000	94.00	924
				922						922
				920						920
				918						918
				916						916
				914						914
				18.3			912.67			
Core Barrel	Weston Shale Member			19.3	912	Shale, weathered, tan-gray, isolated fern leaves.			912	
					910	Shale, weathered, tan-gray to gray, vertical jointing.			910	
				23.5	908		1.385	45.15	908.17908	
					906				906	
				28.5	904		0.295	21.00	904	
				903.97			903.97			
				902			902			



KANSAS DEPARTMENT OF TRANSPORTATION

RTE./CO.	59-30	SOUNDING NO.	CD
BRIDGE STA.	117+63.29; 30.0 Rt. 117+72.19; 30.0 Lt.	PROJ. NO.	K-7889-01
SITE NAME	US-59 over BNSFRR		HOLE STA. 117+00.00; CL
			SHEET 2 OF 3
			BRIDGE *59-30-20.04(107) 59-30-20.05(108)

BIT TYPE	GEOLOGIC NAME	STRATIGRAPHIC COLUMN	DEPTH	ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION (tsf)	ELASTIC MODULUS (tsf)	ELEVATION	
Core Barrel	Weston Shale Member		3	900	Shale, weathered, tan-gray to gray, vertical jointing.			900	
			32.9	898	898.07	1.200	55.65	899.27	
			33.0	898				898	
	South Bend Limestone Fm.		4	896	896.97	Shale, gray, platy, very high clay content. The top has a 0.1' weathered limestone that is orange-brown with a strong iron content.	3.150	103.95	896.97
			38.0	894	895.77	Limestone, brown-orange to gray to dark gray, top 0.3' is weathered, fossiliferous, medium-grained, very argillaceous at the base.	423.0	87000	896
			38.3	892	892.67				894
	Rock Lake Shale Fm.		5	890	889.77	Shale, clayey, dark gray, very thin coal seam at top, blue-green limestone nodules in lower portion.	23.5	1144.5	890.67
			41.2	890					890
			43.0	888	888.57	Limestone, light gray to dark gray, medium to coarse grained, stylolitic jointing, fossiliferous, and shale-mud varving at joints.	483.0	79509	888.57
	Stoner Limestone Member		6	886			181.5	32235	886.87
			48.0	884					884
			882	882					882
			880	880			132.5	25305	880
			53.0	878	880.07				880.07
	58.0	874	874.47		369.0	88500	874.47		
			58.0	872	TD - 58.0'			872	
				870				870	
				868				868	



KANSAS DEPARTMENT OF TRANSPORTATION

RTE./CO. 59-30	SOUNDING NO. CD	SHEET 3 OF 3
BRIDGE STA. 117+63.29; 30.0 Rt. 117+72.19; 30.0 Lt.	PROJ. NO. K-7889-01	BRIDGE *59-30-20.04(107) 59-30-20.05(108)
SITE NAME US-59 over BNSFRR		HOLE STA. 117+00.00; CL

BIT TYPE	GEOLOGIC NAME	STRATIGRAPHIC COLUMN	DEPTH	ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION (tsf)	ELASTIC MODULUS (tsf)	ELEVATION																																																																						
					<table border="1" style="width: 100%; border-collapse: collapse; margin: auto;"> <thead> <tr> <th>Core</th> <th>Depth</th> <th>Elev.</th> <th>Cut</th> <th>Rec.</th> <th>%</th> <th>RQD</th> </tr> </thead> <tbody> <tr><td>1</td><td>19.3</td><td>911.67</td><td>4.2</td><td>4.2</td><td>100</td><td>90%</td></tr> <tr><td>2</td><td>23.5</td><td>907.47</td><td>5.0</td><td>5.0</td><td>100</td><td>91%</td></tr> <tr><td>3</td><td>28.5</td><td>902.47</td><td>4.5</td><td>4.5</td><td>100</td><td>98%</td></tr> <tr><td>4</td><td>33.0</td><td>897.97</td><td>5.0</td><td>5.0</td><td>100</td><td>100%</td></tr> <tr><td>5</td><td>38.0</td><td>892.97</td><td>5.0</td><td>5.0</td><td>100</td><td>92%</td></tr> <tr><td>6</td><td>43.0</td><td>887.97</td><td>5.0</td><td>5.0</td><td>100</td><td>100%</td></tr> <tr><td>7</td><td>48.0</td><td>882.97</td><td>5.0</td><td>5.0</td><td>100</td><td>100%</td></tr> <tr><td>8</td><td>53.0</td><td>877.97</td><td>5.0</td><td>5.0</td><td>100</td><td>100%</td></tr> <tr><td>Total</td><td>58.0</td><td>872.97</td><td>38.7</td><td>38.7</td><td>100</td><td>XXXXX</td></tr> </tbody> </table>	Core	Depth	Elev.	Cut	Rec.	%	RQD	1	19.3	911.67	4.2	4.2	100	90%	2	23.5	907.47	5.0	5.0	100	91%	3	28.5	902.47	4.5	4.5	100	98%	4	33.0	897.97	5.0	5.0	100	100%	5	38.0	892.97	5.0	5.0	100	92%	6	43.0	887.97	5.0	5.0	100	100%	7	48.0	882.97	5.0	5.0	100	100%	8	53.0	877.97	5.0	5.0	100	100%	Total	58.0	872.97	38.7	38.7	100	XXXXX			
Core	Depth	Elev.	Cut	Rec.	%	RQD																																																																								
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Total	58.0	872.97	38.7	38.7	100	XXXXX																																																																								

US-59 over BNSF Railroad

Project No. 59-30 K-7889-01

Note: All measurements are in English

	<u>Elevation</u>	<u>Depth</u>		
Core Hole #1	930.97	0.00	Silty clay, black to mottled brown-orange, moist.	Mantle
Sta. 117+00	925.97	5.00	Pushed shelby #1. Orange-brown silty clay. Pushed 2.0 ft.	
Centerline	923.97	7.00	Silty clay, black to mottled brown-orange, moist.	
	912.67	18.30	Shale, weathered, soft, tan-gray, fern fossils.	
Date Drilled 6/8/04	911.67	19.30	Begin coring.	
Geologist: Bob Henthorne				
Driller: Jim Burns				

Core # 1	911.67	19.30	Shale, weathered, soft, tan-gray, fern fossils.	
19.3 to 23.5 ft.	907.47	23.50	End Core 1.	Weston Shale Fm.
Cut 4.2 ft.				
Recovered 4.2 ft.			Sample 1 22.1 to 22.8 Shale.	
RQD = 90%				

Core # 2	907.47	23.50	Shale, weathered, soft, tan-gray, fern fossils.	
23.5 to 28.5 ft.	903.37	27.60	Shale, gray with weathered tan seams.	
Cut 5.0 ft.	902.47	28.50	End Core 2.	
Recovered 5.0 ft.				
RQD = 91%				

Core # 3	902.47	28.50	Shale, weathered orange, horz. & vert. jointing	
28.5 to 33.0 ft.	898.07	32.90	Limestone, weathered, orange-brown.	South Bend LS.
Cut 4.5 ft.	897.97	33.00	End Core 3.	Member
Recovered 4.5 ft.				
RQD = 98%				

Core # 4	897.97	33.00	Shale, gray, platy, clay in vert. joints.	
33.0 to 38.0	896.97	34.00	Limestone, orange-brown, weathered, fusilinids.	
Cut 5.0 ft.	896.67	34.30	Limestone, gray, medium grained, fusiliids, small Brachs.	
Recovered 5.0 ft.	893.47	37.50	Limestone, dark gray, numerous fossil types, very argillagous at base.	
RQD = 100%	892.97	38.00	End core 4.	
			Sample 39.7 to 40.3	
			Sample 41.8 to 42.4	

US-59 over BNSF Railroad
Project No. 59-30 K-7889-01

	<u>Elevation</u>	<u>Depth</u>		
Core # 5	892.97	38.00	Limestone, dark gray, numerous fossil types,	South Bend LS.
38.0 to 43.0 ft.	892.67	38.30	Shale, clayey, dark gray, thin coal seam.	Rock Lake Shale
Cut 5.0 ft.	891.67	39.30	Shale, blue-green, limestone nodules.	Member
Recovered 5.0 ft.	889.77	41.20	Limestone, light gray, medium grained, mud filled vert. joints	
RQD = 92%	887.97	43.00	End core 5.	Stoner Ls. Mbr.
			Sample 39.7 to 40.3	
			Sample 41.8 to 42.4	
Core # 6	892.97	38.00	Limestone, gray to blue-gray, medium to coarse grained,	
43.0 to 48.0 ft.			Medium bedded.	
Cut 5.0 ft.	887.97	43.00	End core 6.	
Recovered 5.0 ft.			Sample 41.8 to 42.4	
RQD = 100%			Sample 43.7 to 44.2	
Core # 7	882.97	48.00	Limestone, gray to blue-gray, medium to coarse grained,	
48.0 to 53.0 ft.			Medium bedded.	
Cut 5.0 ft.	877.97	53.00	End core 7.	
Recovered 5.0 ft.			Sample 50.3 to 50.9	
RQD = 100%				
Core # 8	877.97	53.00	Limestone, gray to blue-gray, medium to coarse grained,	
53.0 to 58.0 ft.			Medium bedded.	
Cut 5.0 ft.	872.97	58.00	End core 8. Total depth.	Stoner Ls. Mbr.
Recovered 5.0 ft.			Sample 56.0 to 56.5	
RQD = 100%				

Kansas Department of Transportation

Report of sample of geology cores

Laboratory N^o. 04-1970

Date Reported: 6/28/2004

Date Received: 6/8/2004

Specification N^o. AASHTO T-208

Quantity: 10 cores

Source of Material 59-30 K-7889-01

County: Franklin

Sampled from 59-30 K-7889-01

Submitted by: R. Henthorne

Identification marks: tags on samples

Project or POV 59-30 K-7889-01

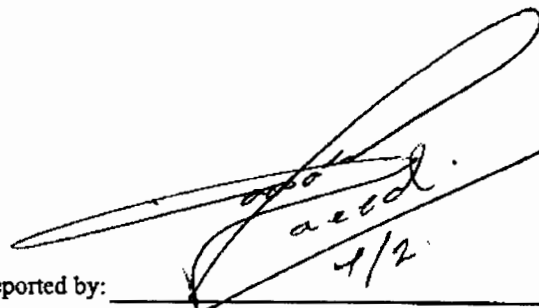
Description of site: US 59 over BNSF RR

Type of Construction Bridge Foundation

TEST RESULTS

S e N ^o	Station	Offset (ft)	Depth (ft)	Description	Unconfined	Elastic	Dry	Moisture
					Compression Qu (psf)	Modulus E (psf)	Density γ_d (lb/ft ³)	Percent % γ_d
S-1B	117+00	CL	22.1-22.8	Shale, weathered	1,385 2770	45,15 90300	113	18.8
S-2B	"	"	26.5-27.0	Shale, weathered	0,295 590	21, 42000	109	20.3
S-3B	"	"	31.0-31.7	Shale, weathered	1,200 2400	55,65 111300	111	19.2
S-4B	"	"	33.5-34.0	Shale, gray	3,150 6300	103,95 207900	111	19.6
S-5B	"	"	34.5-35.2	Limestone	423, 846000	81000 1,74E+08	165	0.5
S-6B	"	"	39.7-40.3	Shale, LS nodules	23,500 47000	114, 2289000	135	8.1
S-7B	"	"	41.8-42.4	Limestone	483, 966000	72000 1,59E+08	161	1.0
S-8B	"	"	43.7-44.1	Limestone	181,500 363000	32300 64470000	157	0.7
S-9B	"	"	50.3-50.9	Limestone	132,500 265000	25300 50610000	143	4.8
S-10B	"	"	56.0-56.5	Limestone	369, 738000	88500 1,77E+08	158	0.7

cc: L.S. Ingram
R. Fuller
R. Henthorne
Soil Section
File 18-3


 Reported by: _____
 Title: Robert Fuller; Soils Engineer

Project File

Kansas Department of Transportation

Report of sample of shelby tubes

Laboratory N^o. 04-1969
 Date Reported: 6/28/2004
 Date Received: 6/8/2004

Specification N ^o .	AASHTO T-208	Quantity: <u>1 tube</u>
Source of Material	59-30 K-7889-01	County: <u>Franklin</u>
Sampled from	59-30 K-7889-01	
Submitted by:	R. Henthorne	
Identification marks:	tags on samples	
Project or POV	59-30 K-7889-01	
Description of site:	59 over BNSF RR	
Type of Construction	Bridge Foundation	

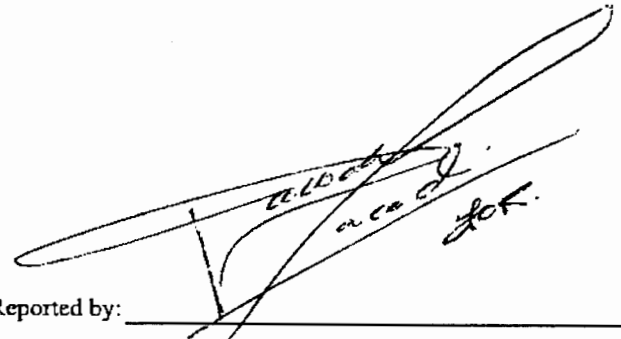
TEST RESULTS

Sample N ^o .	Station	Offset Feet	Depth Feet	Description	Unconfined Compression Qu (psf)	Elastic Modulus E (psf)	Dry Density γ_d (lb/ft ³)	Moisture Percent % γ_d
SH-1B	117+00	CL	5.0-7.0	Brown mottled clay	4000 <i>75*</i> 2	188000 <i>94</i>	103	22.0

cc: L.S. Ingram
 R. Fuller
 R. Henthorne
 Soil Section
 File 18-3

Reported by: _____

Title: Robert Fuller; Soils Engineer



INDEX OF SHEETS

Volume 1

- 1 Title Sheet
- 2 - 5 Typical Sections
- 6 - 40 Plan & Profile Sheets
- 41 - 86 Interchange Details
- 87 Miscellaneous Details
- 88 Drainage Data Sheet
- 89 - 130 Bridge Sheets
- 131 - 140 Fencing Plans
- 141 Construction Sequencing
- 142 - 144 Drainage Area Sheets

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XS-1 - XS-260 Cross Sections

Volume 3

XS-261 - XS-417 Cross Sections

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	59-30 K-7889-01	2006	1	

STATE OF KANSAS
DEPARTMENT OF TRANSPORTATION

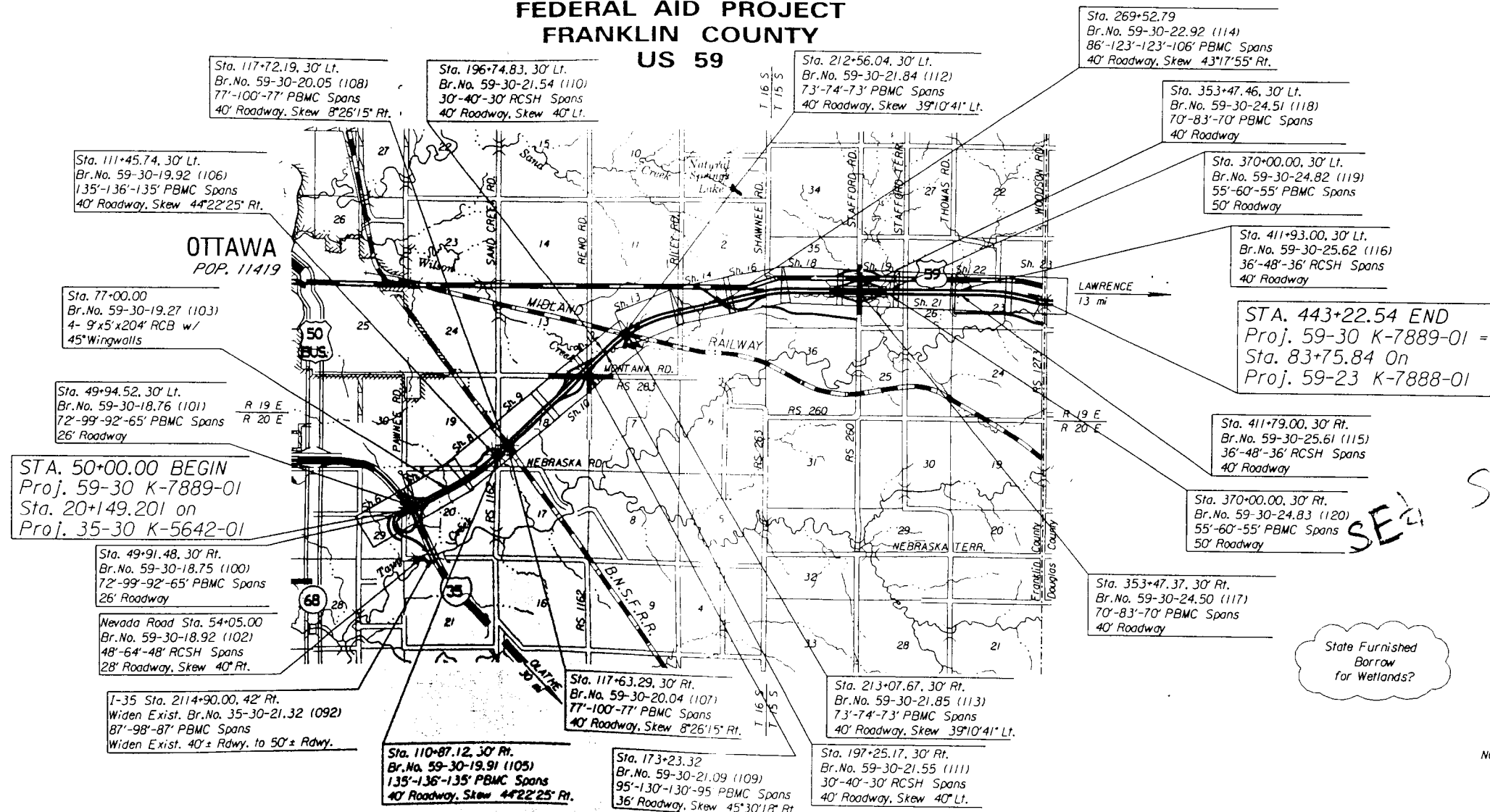


PLAN AND PROFILE OF PROPOSED
STATE HIGHWAY

FEDERAL AID PROJECT
FRANKLIN COUNTY
US 59

PROJ. NO. 59-30 K-7889-01
K788-0(90I)

GRADING
BRIDGES
FENCING
SEEDING



Scale = 1" : 4,000'

STA. 443+22.54 END
Proj. 59-30 K-7889-01 =
Sta. 83+75.84 On
Proj. 59-23 K-7888-01

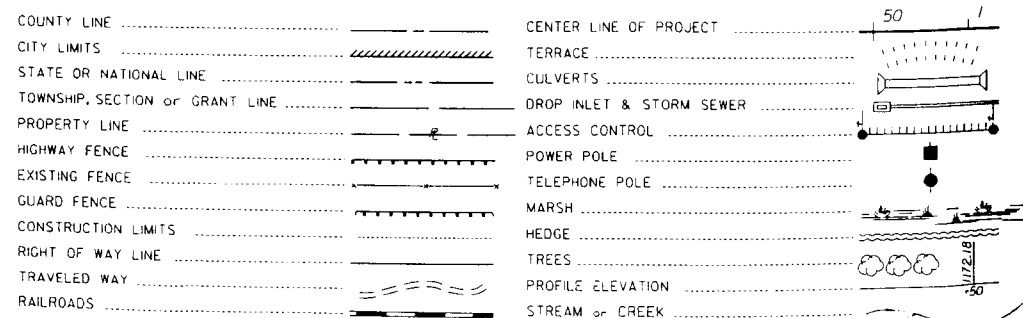
SE 23 T 15S R 15E

State Furnished Borrow for Wetlands?

DESIGN DESIGNATION

- AADT (2007) = 6900
- AADT (2027) = 10500
- DHV = 11%
- D = 60/40
- T = 7%
- V = 70 mph
- C of A = FULL
- Clear Zone = 34'

CONVENTIONAL SIGNS



GROSS LENGTH OF PROJECT	39,322.54
EXCEPTIONS	None
ADDITIONS	None
NET LENGTH OF PROJECT	39,322.54 FT.
NET LENGTH OF BRIDGES	1,511.00 FT.
NET LENGTH OF ROAD	37,811.54 FT.

FEB 23 2005

NOTE: TRAFFIC TO BE CARRIED THRU CONSTRUCTION.
FOR CONSTRUCTION SEQUENCE SEE SH. NO. 141

PLANS PREPARED AND SUBMITTED BY:
GEORGE BUTLER ASSOCIATES, INC.
LENEXA KANSAS

RECOM. FOR APPROVAL-DATE

CHIEF, BUREAU OF DESIGN
KANSAS DEPARTMENT OF TRANSPORTATION

APPROVED - DATE

STATE TRANSPORTATION ENGINEER
KANSAS DEPARTMENT OF TRANSPORTATION

RECOM. FOR APPROVAL-DATE

ENGINEER
FEDERAL HIGHWAY ADMINISTRATION
DEPARTMENT OF TRANSPORTATION

APPROVED - DATE

DIVISION ADMINISTRATOR
FEDERAL HIGHWAY ADMINISTRATION
DEPARTMENT OF TRANSPORTATION