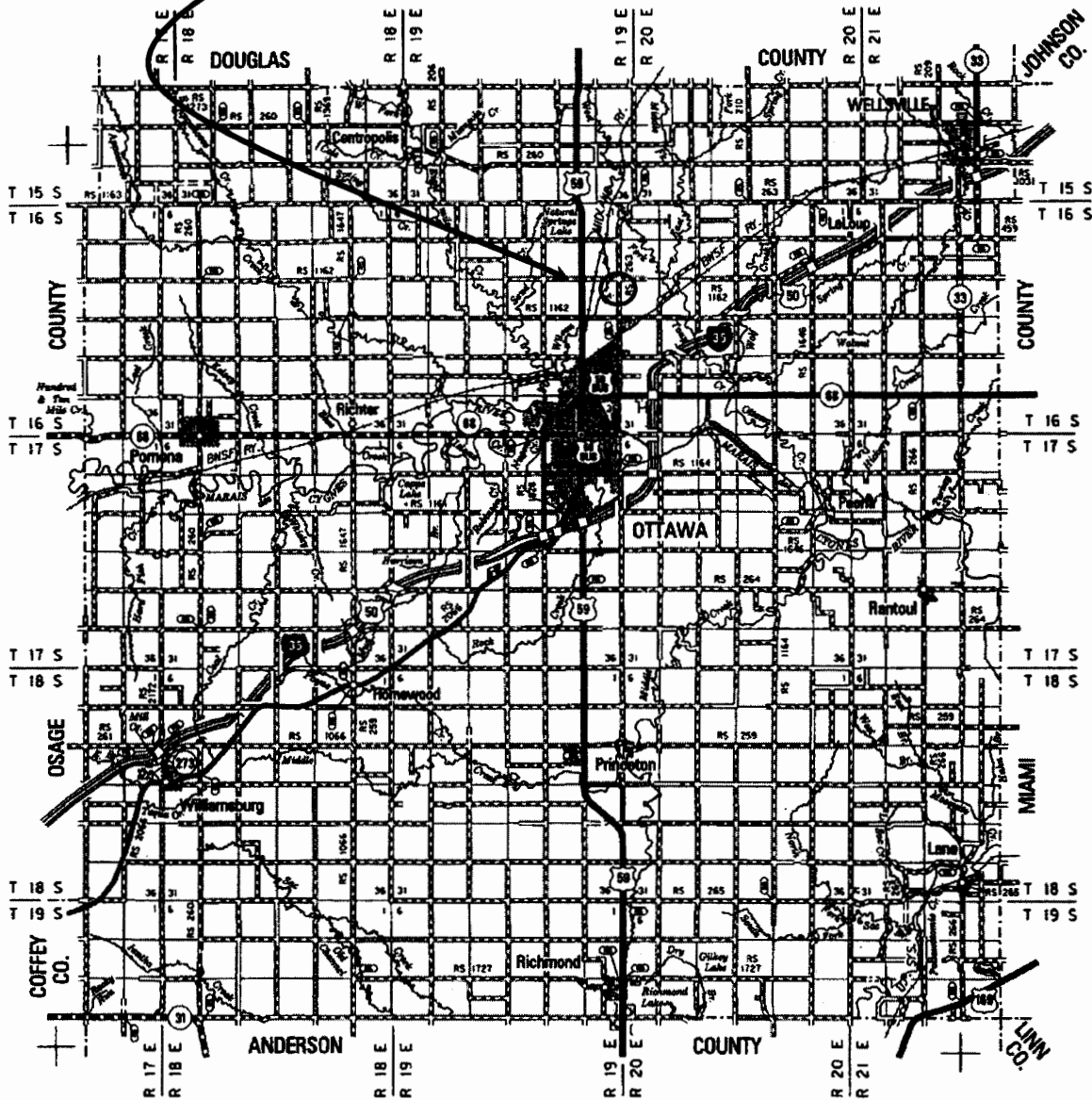
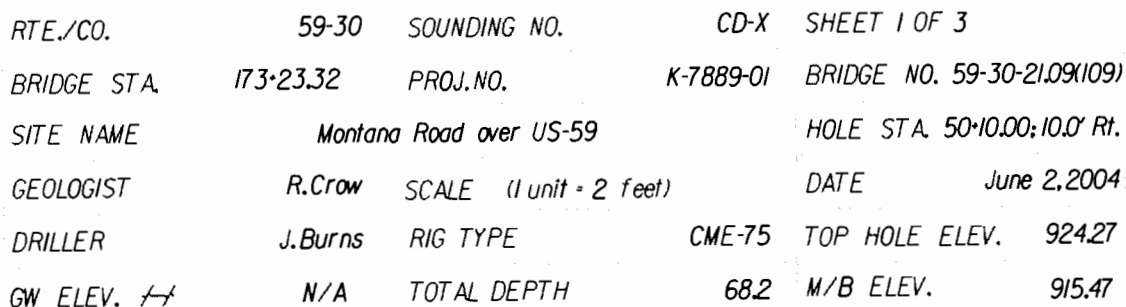


Project 59-30 K-7889-01
Montana Road over US-59

13-16-19E
NE NE



Franklin County



BIT TYPE	GEOLOGIC NAME	STRATIGRAPHIC COLUMN	DEPTH	ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION (tsf)	ELASTIC MODULUS (tsf)	ELEVATION	
Carbide Augers	Soil Mantle		0.0	924	T.H.E. = 924.27			924	
			1.0	923.27	Gravel.				
				922	Silty Clay, tan to brown.			922	
				920				920	
			6.0	918	918.27 Clay, tan.	Shelby *1 1525	93.0	917.27	918
				916				916	
			8.8	915.47	Shale, olive gray, weathered.				
			10.0	914	914.27 Shale, olive gray to tan, laminated.			914	
				912		2550	64.0	912.57	912
				910	910.77 Shale, limy, laminated, olive to tan to maroon, friable.	1470	98.5	909.02	910
Diamond Core Barrel	Western Shale Member		13.5	908		3185	106.0	908	
				906	905.77 Shale, gray, clayey, laminar, becoming more gray, more clayey, and less laminar with depth.	0950	47.25	904.27	906
				904					904
				902					902
			23.5	900	900.77 Shale, gray, clayey, laminar with tan lenses.	1505	93.5	901.07	900
				898		4285	89.5	899.17	898
				896	895.97	2730	88.0	896.77	896



RTE./CO. 59-30 SOUNDING NO. CD-X SHEET 2 OF 3
 BRIDGE STA. 173+23.32 PROJ.NO. K-7889-01 BRIDGE NO. 59-30-21.09(109)
 SITE NAME Montana Road over US-59 HOLE STA. 50+10.00;10.0' Rt.

BIT TYPE	GEOLOGIC NAME	STRATIGRAPHIC COLUMN	DEPTH	ELEVATION	CLASSIFICATION OF MATERIALS DESCRIPTION AND REMARKS	UNCONFINED COMPRESSION (tsf)	ELASTIC MODULUS (tsf)	ELEVATION
	Western Shale Member		29.3	894	Shale, laminar, gray, with iron concretions at base. 894.97			894
			30.8	894	893.47 Shale, black, laminar.			
			32.0	892	892.27 Shale, very dark gray, laminar.			892
			33.3	890	Limestone with 0.1' shale seam at 32.2'. 890.97	7200	104500	891.30
			34.9	888	Limestone, hard gray to black. 888.77	655.0	106000	888.80
			37.6	886	886.67 Shale, gray with a coal seam at the top.			888
			38.1	886	886.17 Shale, blue-gray to green.	3120	168.0	886.50
			38.3	884	885.97 Shale, blue-green, very limy. Limestone, shaley, granular grading to hard gray, wavy bedded, fossiliferous. Crystalline calcite present in middle portion. Fractured at 50.1' to 50.9'.	221.0	65000	883.50
			43.1	882				882
			48.1	878		162.5	24350	878.60
			53.1	872		278.0	84000	871.20
			56.6	868	867.67 Shale, limy, gray.	462.5	101000	867.70
			57.3	866	866.97 Shale, black, platy, with some laminae.			866
			58.1	864				864
			58.5	862		79.0	18150	863.00
			62.3	862	861.97			862



RTE./CO. 59-30 SOUNDING NO. CD-X SHEET 3 OF 3
 BRIDGE STA. 173+23.32 PROJ. NO. K-7889-01 BRIDGE NO. 59-30-21.09(109)
 SITE NAME Montana Road over US-59 HOLE STA. 50+10.00; 10.0' Rt.

BIT TYPE
 GEOLOGIC NAME
 STRATIGRAPHIC
 COLUMN

DEPTH

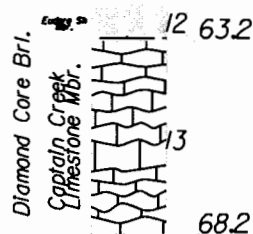
ELEVATION

CLASSIFICATION OF MATERIALS
 DESCRIPTION AND REMARKS

UNCONFINED
 COMPRESSION (tsf)

ELASTIC MODULUS
 (tsf)

ELEVATION



861.07 Shale, black, laminar, grades to limy gray.
 860 Limestone, blue-gray, wavy bedded, fossiliferous.
 858
 856 856.07 T.D. = 68.2' 401.0 67000 856 856.07

Core	Depth	Elev.	Cut	Rec.	%	ROD
1	10.0	914.27	3.5	3.5	100	90%
2	13.5	910.77	5.0	5.0	100	90%
3	18.5	905.77	5.0	5.0	100	100%
4	23.5	900.77	4.8	4.8	100	100%
5	28.3	895.97	5.0	4.5	90	74%
6	33.3	890.97	4.8	4.8	100	100%
7	38.1	886.17	5.0	5.0	100	100%
8	43.1	881.17	5.0	5.0	100	100%
9	48.1	876.17	5.0	5.0	100	84%
10	53.1	871.17	5.0	3.8	76	100%
11	58.1	866.17	0.4	1.2	300	100%
12	58.5	865.77	4.7	5.2	111	100%
13	63.2	861.07	5.0	5.0	100	88%
Total	68.2	856.07	58.2	57.8	99	XXXXX

Montana Road over US-59**Project No. 59-30 K-7889-01****Note: All measurements are in English**

	<u>Elevation</u>	<u>Depth</u>		
Core Hole #1	924.27	0.00	Silty clay, tan-brown, gravel in upper foot.	Mantle
Sta. 50+10	919.27	5.00	Pushed shelby #1. 5.0 to 7.0.	
10 Rt of centerline	917.27	7.00	Clay, tan.	
Date Drilled 6/2/04	915.47	8.80	Shale, weathered, olive.	
Geologist: R. Crow	914.27	10.00	Begin coring.	Weston Shale Fm.
Driller: Jim Burns				
Core # 1	914.27	10.00	Shale, weathered, olive-gray.	
10.0 to 13.5 ft.	910.77	13.50	End Core 1.	
Cut 3.5 ft.				
Recovered 3.5 ft.			Sample 1 11.1 to 11.7 Shale.	
RQD = 90%				
Core # 2	910.77	13.50	Shale, weathered, soft, clayey, orange-gray.	
13.5 to 18.5 ft.	905.77	18.50	End Core 2.	
Cut 5.0 ft.				
Recovered 5.0 ft.			Sample 2 14.65 to 15.25 Shale.	
RQD =90%			Sample 3 16.0 to 16.4 Shale.	
Core # 3	905.77	18.50	Shale, becoming more gray, more clayey.	
18.5 to 23.5 ft.	900.77	23.50	End Core 3.	
Cut 5.0 ft.				
Recovered 5.0 ft.			Sample 4 19.4 to 20.0	
RQD = 100%			Sample 5 22.6 to 23.2	
Core # 4	900.77	23.50	Shale, gray, clayey, tan lenses.	Weston Shale Fm.
23.5 to 28.3 ft.	895.97	28.30	End core 4.	
Cut 4.8 ft.				
Recovered 4.8 ft.			Sample 6 24.3 to 25.1	
RQD = 100%			Sample 7 26.8 to 27.5	
Core # 5	895.97	28.30	Shale, gray, clayey, tan lenses, iron concretions.	
28.3 to 33.3 ft.	894.97	29.30	Shale, dark gray to black.	
Cut 5.0 ft.	893.47	30.80	Shale, dark gray.	
Recovered 4.5 ft.	892.27	32.00	Limestone.	
RQD = 74%	890.97	33.30	End core 5.	South Bend Ls. Member
			Sample 8 32.3 to 33.0	

Montana Road over US-59**Project No. 59-30 K-7889-01**

	<u>Elevation</u>	<u>Depth</u>	<u>South Bend Ls. Member</u>
Core # 6	890.97	33.30	Limestone, gray to blue-gray, medium to coarse grained,
33.3 to 38.1 ft.	889.07	35.20	Coal seam.
Cut 4.8 ft.	888.67	35.60	Shale, gray to blue-gray.
Recovered 4.8 ft.	886.17	38.10	End core 6.
RQD = 100%			
			Sample 9 34.9 to 35.5
			Sample 10 36.9 to 37.8
Core # 7	886.17	38.10	Shale, blue-gray/green, limy.
38.1 to 43.1 ft.	885.97	38.30	Limestone, shaly.
Cut 5.0 ft.	885.37	38.90	Limestone, hard, wavy, gray, fossiliferous.
Recovered 5.0 ft.	881.17	43.10	End core 7.
RQD = 100%			
			Sample 11 40.1 to 40.8 Limestone.
Core # 8	881.17	43.10	Limestone, hard, wavy, calcite crystals.
43.1 to 48.1 ft.	876.17	48.10	End core 8.
Cut 5.0 ft.			
Recovered 5.0 ft.			Sample 12 45.1 to 45.7
RQD = 100%			
Core # 9	876.17	48.10	Limestone, hard, wavy, calcite crystals.
48.1 to 53.1 ft.	871.17	53.10	End core 9.
Cut 5.0 ft.			
Recovered 5.0 ft.			Sample 13 52.5 to 53.1
RQD = 84%			
Core # 10	871.17	53.10	Limestone, hard, wavy, calcite crystals.
53.1 to 58.1 ft.	867.67	56.60	Shale, gray, limy, laminated.
Cut 5.0 ft.	866.97	57.30	Shale, black, platy.
Recovered 5.0 ft.	866.17	58.10	End core 10.
RQD = 100%			
			Sample 14 55.9 to 56.6
Core # 11	866.17	58.10	Shale, black, platy.
58.1 to 58.5 ft.	865.77	58.50	End core 11.
Cut 0.4 ft.			
Recovered 0.4 ft.			
RQD = 100%			

Montana Road over US-59**Project No. 59-30 K-7889-01**

	<u>Elevation</u>	<u>Depth</u>		
Core # 12	865.77	58.50	Shale, black, platy.	Eudora Shale Mbr.
58.5 to 63.2 ft.	861.07	63.20	End core 12.	
Cut 4.7 ft.				
Recovered 4.7 ft.			Sample 15 60.7 to 61.3	
RQD = 100%				
Core # 13	861.07	63.20	Limestone, blue-gray, wavy, cherty, algal.	Captain Creek Ls. Member
63.2 to 68.2 ft.	859.27	65.00	Limestone, blue-gray, wavy, fossiliferous.	
Cut 5.0 ft.	856.07	68.20	End core 13. Total Depth.	
Recovered 5.0 ft.			Sample 16 67.5 to 68.2	
RQD = 88%				

Kansas Department of Transportation

Report of sample of geology cores & shelby tube

Laboratory N°. 04-1898

Date Reported: 6/28/2004

Date Received: 6/3/2004

Specification N°. AASHTO T-208

Source of Material 59-30 K-7889-01

Sampled from 59-30 K-7889-01

Submitted by: Rocky Crow

Identification marks: tags on samples

Project or POV 59-30 K-7889-01

Description of site: Montana Rd over US 59

Type of Construction Bridge Foundation

Quantity: 16 cores & 1 tube

County: Franklin

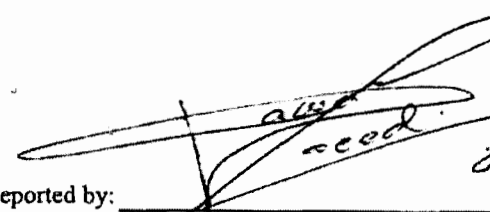
TEST RESULTS

Sample N°	Station	Offset Feet	Depth Feet	Description	Unconfined.	Elastic	Dry	Moisture
					Compression Qu (psf)	Modulus E (psf)	Density γ _d (lb/ft ³)	Percent % γ _d
SH-1			6.15-7.0	Brown mottled clay	1.53 3050	186000	98	26.9
S-1			11.1-11.7	Shale, green/gray, soft	2.6 5100	128000	115	16.7
S-2			14.65-15.25	Shale, green/gray, soft	1.5 2940	197000	117	17.0
S-3			16.0-16.4	Shale, green/gray, soft	3.2 6370	212000	117	16.9
S-4			19.4-20.0	Shale, green/gray, soft	0.95 1900	94500	111	19.0
S-5			22.6-23.2	Shale, green/gray, firm	1.5 3010	187000	117	16.2
S-6			24.3-25.1	Shale, green/gray, mottled	4.3 8570	179000	115	16.4
S-7			26.8-27.5	Shale, green/gray, mottled	2.73 5460	176000	115	16.9
S-8			32.3-33.0	LS	7200 14400000	2.09E+08	168	0.5
S-9			34.9-35.5	LS	655 1310000	2.12E+08	161	2.1
S-10			36.9-37.8	Shale, dk gray	3.1 6240	336000	126	11.5
S-11			40.1-40.8	LS, white	221 442000	1.3E+08	161	0.9
S-12			45.1-45.7	LS, white	162.5 325000	48700000	149	4.7
S-13			52.5-53.1	LS, white	278 556000	1.68E+08	158	2.3
4			55.9-56.6	LS, white w/shale lenses	462.5 925000	2.02E+08	158	1.6
S-15			60.7-61.3	Shale, black, hard	79 158000	36300000	113	7.3
S-16			67.5-68.2	LS, white	401 802000	1.34E+08	162	1.3

T.H.E. = 925.52

See attached routine test results

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

Reported by: 

Title: Robert Fuller; Soils Engineer

INDEX OF SHEETS

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- 2-5 Typical Sections
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- 131-140 Fencing Plans
- 141 Construction Sequencing
- 142-144 Drainage Area Sheets

Volume 2

XS-1 - XS-260 Cross Sections

Volume 3

XS-261 - XS-417 Cross Sections

STATE OF KANSAS

DEPARTMENT OF TRANSPORTATION



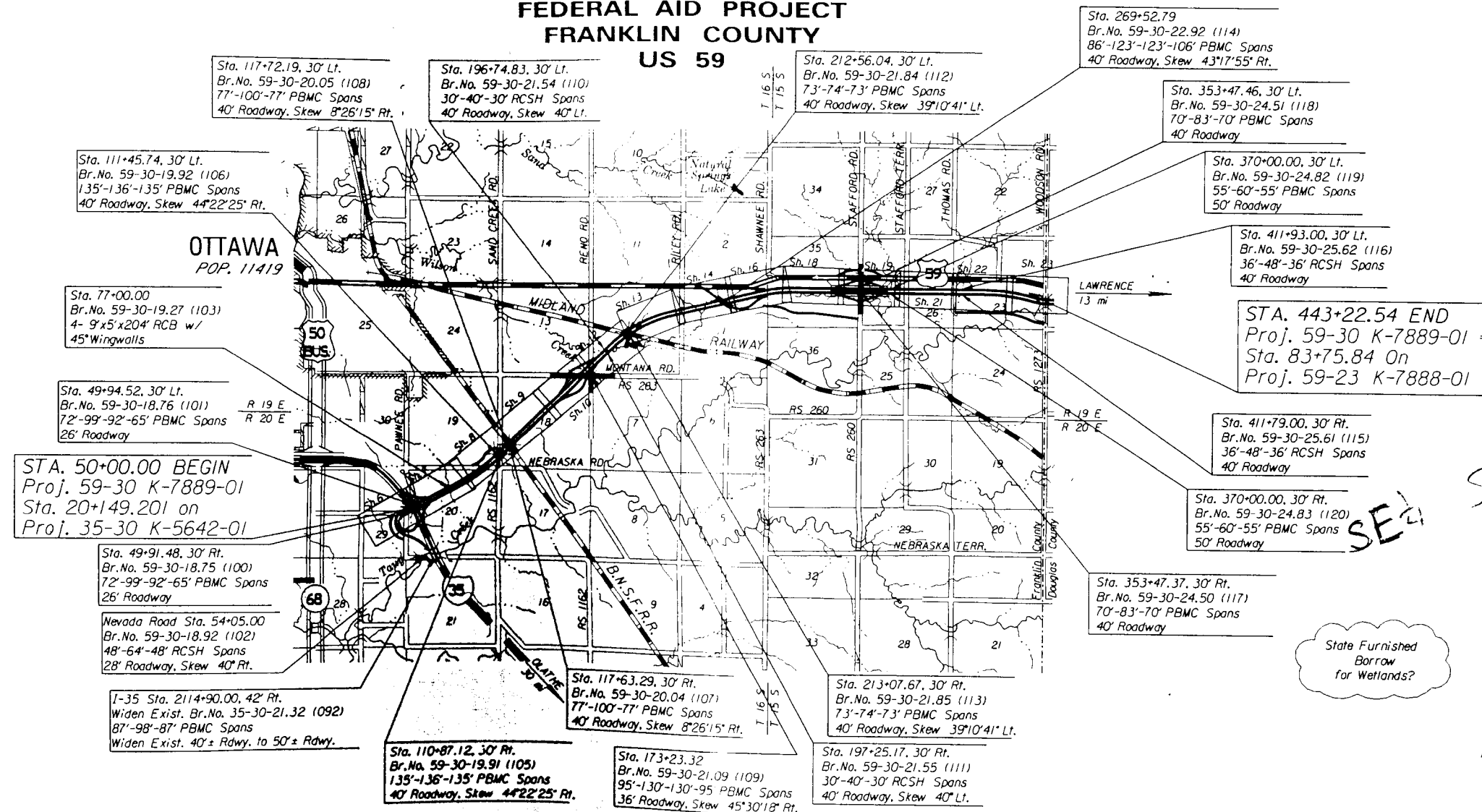
PLAN AND PROFILE OF PROPOSED STATE HIGHWAY

FEDERAL AID PROJECT
FRANKLIN COUNTY
US 59

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

PROJ. NO. 59-30 K-7889-01
K788-0(901)

GRADING
BRIDGES
FENCING
SEEDING



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

COUNTY LINE	CENTER LINE OF PROJECT
CITY LIMITS	TERRACE
STATE OR NATIONAL LINE	CULVERTS
TOWNSHIP, SECTION or GRANT LINE	DROP INLET & STORM SEWER
PROPERTY LINE	ACCESS CONTROL
HIGHWAY FENCE	POWER POLE
EXISTING FENCE	TELEPHONE POLE
GUARD FENCE	MARSH
CONSTRUCTION LIMITS	HEDGE
RIGHT OF WAY LINE	TREES
TRAVELED WAY	PROFILE ELEVATION
RAILROADS	STREAM or CREEK

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