

TRAFFIC IMPACT STUDY
FOR
FOUNTAIN SQUARE ADDITION
WEBB ROAD AND K-96 FREEWAY

By

MID-KANSAS ENGINEERING CONSULTANTS, INC.
411 North Webb Road
Wichita, Kansas 67206

&

ALPHA/OMEGA, CCI, INC.
William McKinley, PE
Goddard, Kansas

February, 1999

Current peak hour turning movement volumes have been collected during the P.M. peak at Webb and K-96 ramps and Webb and 29th Street. These counts are shown in Figure 2 and the detailed counts are attached as Appendices B, C and D.

PROJECTED TRAFFIC

Metropolitan Area Planning Department provided projected traffic volumes for the year 2020 in the area of the study. Their projections indicate that 29th Street will carry 6,600 vehicles per day, while Webb Road volumes will be between 11,500 and 10,500 vehicles per day.

The Fountain Square Addition is proposed as a 450,000 square foot shopping center. The 6th Edition of "Trip Generation" by the Institute of Transportation Engineers provides trip rates for different land uses found in this project. Traffic generation rates for shopping centers over 300,000 square feet were used to indicate traffic volumes into and out of the site. The results were as follows:

Projected Shopping Center Traffic

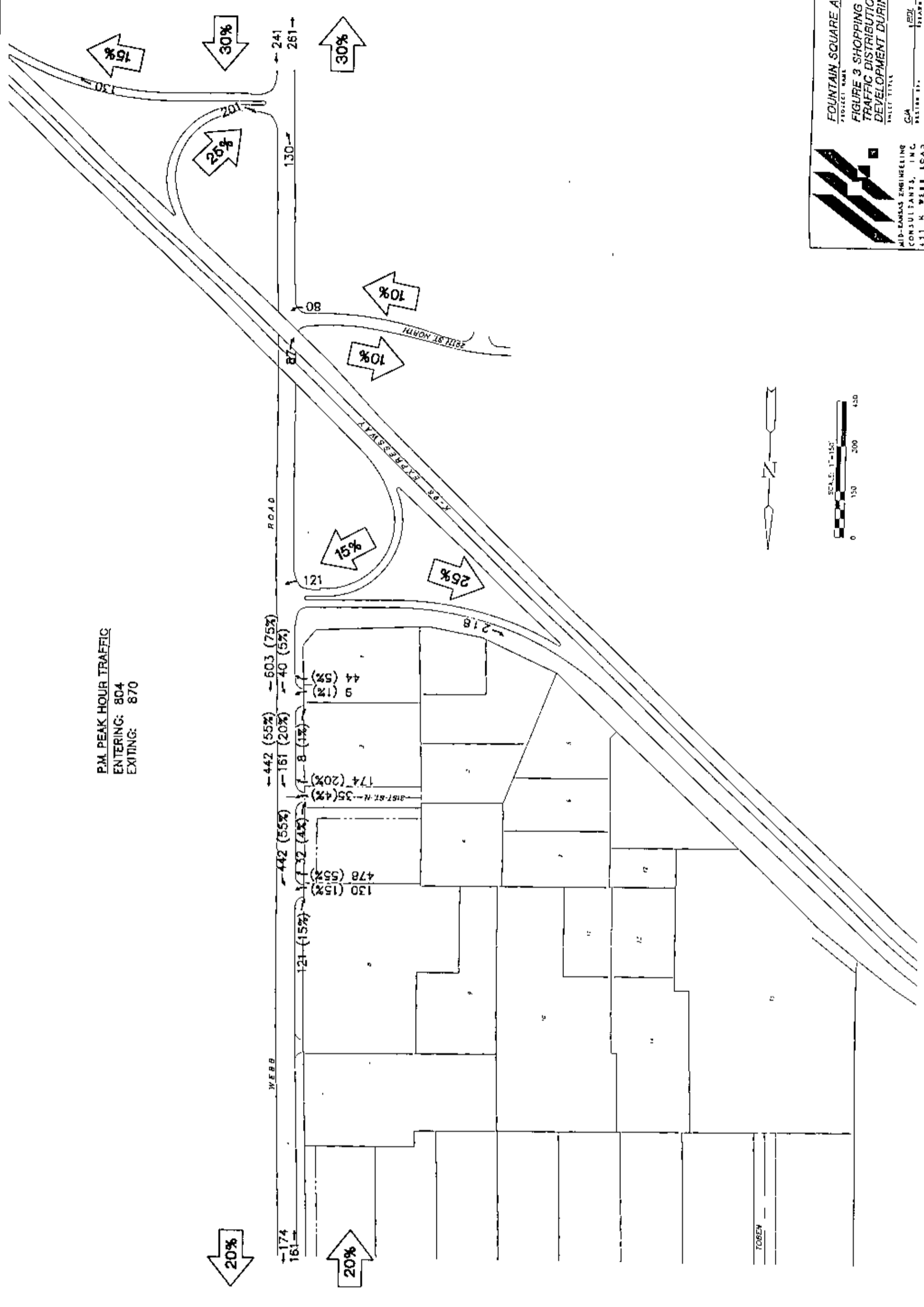
Approximate Gross Floor Area	Vehicle Trip Ends for Weekdays	
	Vehicles Per Day	P.M. Peak Hour (4-6) Vehicles Per Hour
450,000 Gross Square Feet	42.92/1000 gsf	3.72/1000 gsf
	19,350 vehicles	1,674 vehicles

TRAFFIC DISTRIBUTION AND COMBINED TRAFFIC

The P.M. peak hour traffic was distributed to the site as shown in Figure 3. It is forecasted that during the P.M. peak hour a total of 1,674 vehicles per hour will be attracted to the site. Of this total of 1,674 vehicles, 804 will enter and 870 will exit the site.

Figure 4 shows the combination of shopping center traffic and P.M. traffic in and out of the center and also through the interchange of K-96 and Webb Road.

P.M. PEAK HOUR TRAFFIC
ENTERING: 804
EXITING: 870



FOUNTAIN SQUARE ADDITION

PROJECT NAME: FOUNTAIN SQUARE ADDITION
 PROJECT NUMBER: 188110-216
 DATE: FEBRUARY 1999

CLIENT: MID-KANSAS ENGINEERING CONSULTANTS, INC.
 431 N. WEBB ROAD
 WICHITA, KS 67208
 313-634-9400

DESIGNED BY: [Signature]
 CHECKED BY: [Signature]
 DATE: 5/8

TRAFFIC CAPACITY ANALYSIS

Capacity Analysis was computed for each of the intersections around the site. All ramps and shopping center entrances will operate at Service Level A or B. The intersection at 29th and Webb operates at an acceptable service level. The following table shows the service levels at each intersection for a fully developed shopping center, plus existing traffic.

Service Level at Each Intersection

<u>Critical Movements</u>					
Webb & K-96 (South Ramp)	Webb & 29 th "T" Intersection	Webb & K-96 (North Ramp)	Webb & South Shopping Center Entrance	Webb & Middle Shopping Center Entrance	Webb & North Shopping Center Entrance
296	426	398	368	324	246
156	245	135	40	35	442
<u>440</u>	<u>165</u>	<u>356</u>	<u>9</u>	<u>161</u>	<u>130</u>
892	836	889	417	520	818
LEVEL B	LEVEL B	LEVEL B	LEVEL A	LEVEL A	LEVEL B

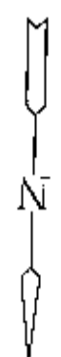
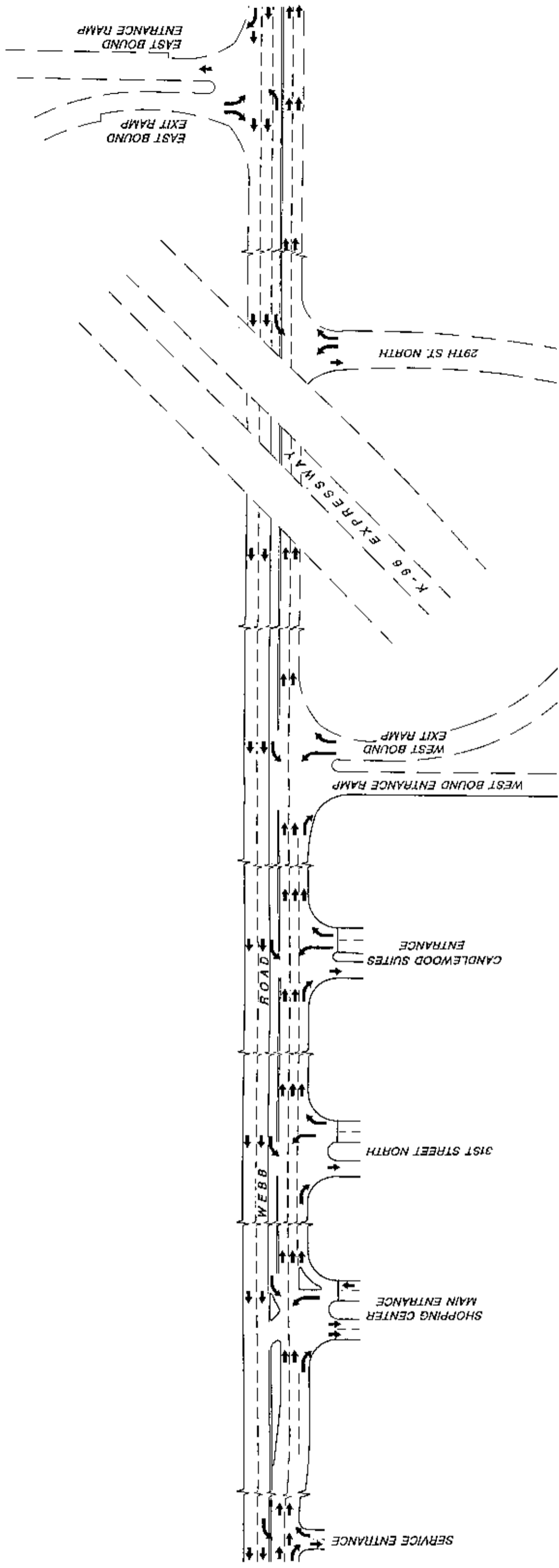
This analysis assumes a fully developed shopping center with current traffic added. If the present counts on Webb Road were to increase at a rate of 30 percent over a 20 year period, all of the above intersections would operate at a Service Level C or better.

PROPOSED ROADWAY IMPROVEMENTS

It is proposed that this development include the following roadway improvements as shown in Figure 5.

Webb Road - This study proposes the construction of a center lane for left turns into the major entrances. Also, a continuous right-turn lane should be across the site and extend to the north ramp of K-96.

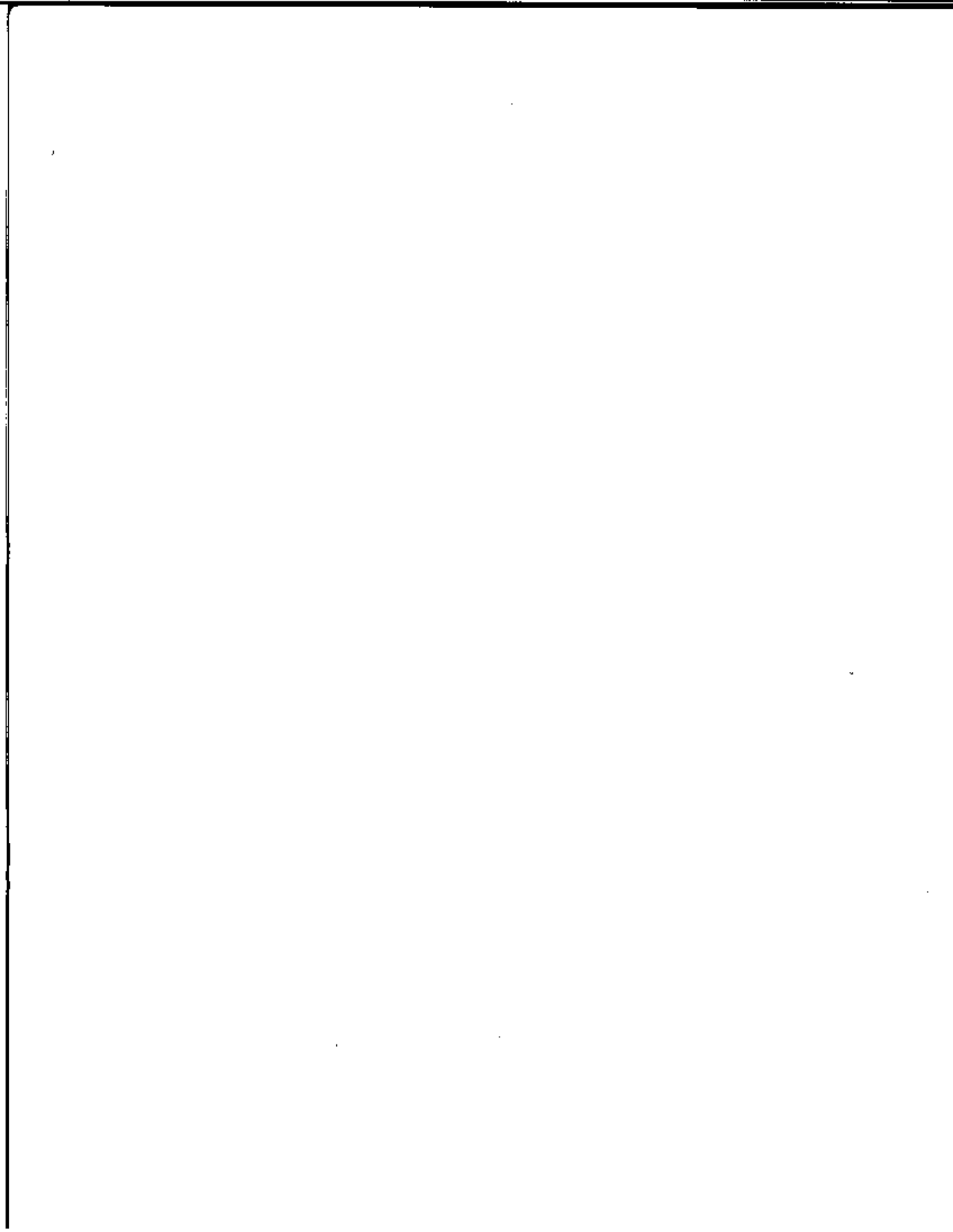
Signalization - The developer has agreed to pay 100 percent of the cost of signals at the north major entrance when they are warranted.



FOUNTAIN SQUARE ADDITION
 PROJECT NAME
 FIGURE 5
 PROPOSED WEBB ROAD LAYOUT
 SHEET TITLE

MID-MISSOURI ENGINEERING
 CONSULTANTS, INC.
 415 N. WEBB ROAD
 WICHITA, KS. 67205
 316-694-8630

DATE: FEBRUARY 1999
 JOB NO.: 98120-216
 SHEET NO.: 6 / 8
 DESIGN BY: [blank]
 CHECKED BY: [blank]
 CJA



Island and Medials - It is proposed that the north major entrance be designed with raised islands, as shown in Figure 5. The small (south) island should be a mountable island with a design that would contrast with the existing pavement.

APPENDIX 'A'

A.M. Turning Movements at South Ramp
K-96 AND WEBB ROAD

TIME*	NORTH APPROACH		EAST APPROACH		SOUTH APPROACH		
	LEFT	STRAIGHT	LEFT	RIGHT	STRAIGHT	RIGHT	
7:15	6	35	40	12	77	1	171
7:30	8	69	57	20	119	0	273
7:45	10	96	60	36	172	4	378
8:00	16	124	77	51	87	0	355
8:15	7	49	65	35	139	0	295
8:30	13	65	47	20	110	1	956
8:45	32	37	43	19	72	0	203
9:00	8	38	31	23	76	2	178
7:30	8	69	57	20	119	0	
7:45	10	96	60	36	172	4	
8:00	16	124	77	51	87	0	
8:15	7	49	65	35	139	0	
	41	338	259	142	517	4	1301

*Started @ 7:00 A.M. End @ 9:00 A.M.

APPENDIX 'B'

Vehicle Turning Volume Count

Route: Webb & K-96 North Ramp
 Date: February 3, 1999

City: Wichita
 Day: Wednesday

County: Sedgwick
 By: DFL

RAMP

TIME INTERVAL	FROM NORTH ON			FROM EAST ON			FROM SOUTH ON			FROM WEST ON			TOTALS INT.	HOUR	
	L	T	R	L	T	R	L	T	R	L	T	R			
4:15			24						70				7	14	115
4:30			23						74				10	18	125
4:45			22						91				3	16	132
5:00			37						71				5	14	129
TOTALS			108						306				25	62	
5:15			47						95				1	17	160
5:30			85						99				5	9	5:21 P 5:25 P
5:45			27						82				3	21	133
6:00			31						611				5	10	114
TOTALS			183						344				14	57	5:40 P
TOTAL 2															
L T & R															
*TRUCK															
15															
30			92												
4:15			30						91				3	16	
4:00									71				3	14	
TOTALS															
5:15			47						95				1	17	17
5:30			86						99				5	9	9
5:45															
6:00															
TOTAL:			106						356				14	56	56

APPENDIX 'C'

Vehicle Turning Volume Count

Route: Webb & K-96 South Ramp
Date: February 3, 1999

City: Wichita
County: Sedgewick
Day: Wednesday
By: WGM

TIME INTERVAL	FROM NORTH ON			FROM EAST ON			FROM SOUTH ON			FROM WEST ON			TOTALS INT.	1 HOUR
	L	T	R	L	T	R	L	T	R	L	T	R		
4-15	17	100		35		19	138		6				345	
4-30	30	92		37		14	136		3				315	
4-45	50	94		29		10	139		5				333	
5-00	36	99		31		12	146		2				325	
TOTALS:	174	385		132		55	559		16				319	
5-15	36	75		37		15	152		4				387	
5-30	38	115		58		15	104		6				249	
5-45	21	73		53		7	88		0				333	
6-00	30	101		61		9	123		7					
TOTALS:	434	334		210		46	547		17					
TOTALS:														
TRUCKS														
15														
30														
4-15		56	64		29		10		139	5				
4-30		34	98		31		12		145	2				
TOTALS:														
5-15		36	75		37		15		152	4				
5-30		32	85		59		15		184	6				
5-45														
6-00														
TOTAL:		166	359		156		52		62	17			1364	

APPENDIX 'D'

Vehicle Turning Volume Count

Route: Webb & 99th Street Intersection
 Date: February 3, 1999

City: Wichita
 Day: Wednesday
 County: Sedgwick
 By: BWT

TIME INTERVAL	FROM NORTH			FROM EAST			FROM SOUTH			FROM WEST			TOTALS INT.	HOUR
	L	T	R	L	T	R	L	T	R	L	T	R		
4-15		65	39				34	116	95			67	306	
4-30		52	32				40	109	59			32	317	
4-45		49	16				45	125	90			96	348	
5-00		62	20				50	119	24			73	350	
TOTALS:														
5-15		63	39				29	110	33			98	366	
5-30		71	23				44	155	16			84	393	
5-45		63	28				45	117	10			68	329	
6-00		74	11				54	90	11			67	307	
TOTALS														
TOTAL 2														
TRUCKS														
15														
30														
4-15		49	15				42	125	20			96		
4-30		68	23				50	116	24			72		
TOTALS														
5-15		64	32				99	110	30			92		
5-30		71	23				44	155	16			84		
5-45														
6-00														
TOTALS:		245	101				165	508	92			345	1457	