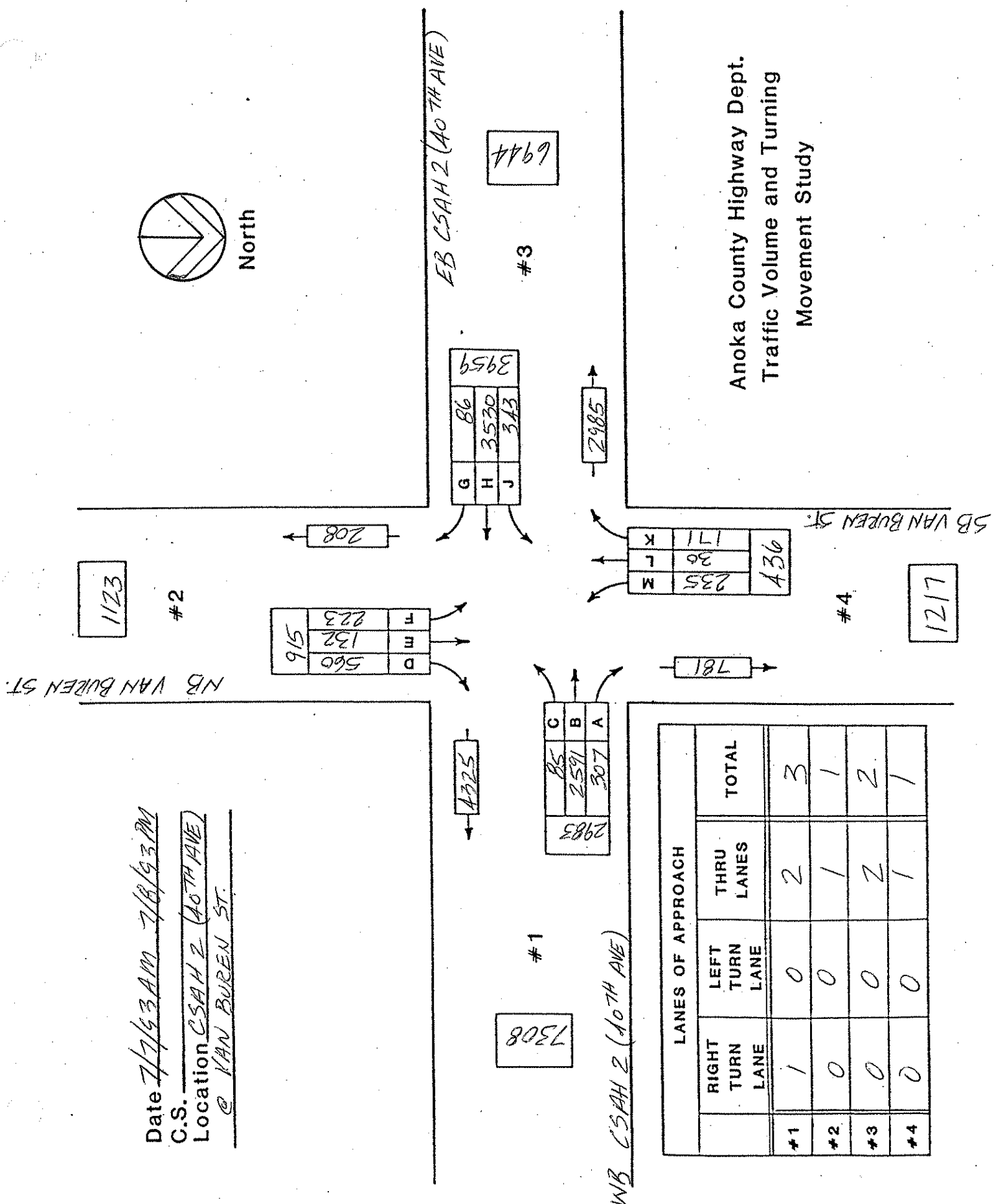
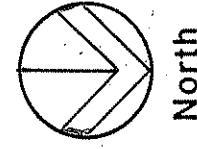


Date 7/7/93 AM 7/8/93 PM
 C.S. CSAH 2 (10TH AVE)
 Location @ VAN BUREN ST.



	LANES OF APPROACH			TOTAL
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	
#1	1	0	2	3
#2	0	0	1	1
#3	0	0	2	2
#4	0	0	1	1

Anoka County Highway Dept.
 Traffic Volume and Turning
 Movement Study

1123

#2

6944

#3

1217

#4

7308

#1

VOLUME & MOVEMENT

LANES OF APPROACH	RIGHT		THRU	TOTAL	DESCRIPTION	# LT. TURN	THRU	RT. TURN	SUB		TOTAL	OPPOSING	TOTAL
	# TURN L.	TURN L.							TURN	TOTAL			
6:00 - 6:15	2	0	16	1	17	1	0	20	1	21	0	0	0
6:15 - 6:30	4	0	16	0	16	6:00 to	3	0	24	2	26	6:00 to	1 6:00 to
6:30 - 6:45	3	0	18	0	18	7:00	2	2	30	1	33	7:00	0 7:00
6:45 - 7:00	3	3	25	0	28	79	6	1	30	3	34	114	0 1 0 0 0 2
7:00 - 7:15	2	0	24	0	24		5	2	44	1	47		0 1 0 0 0 1
7:15 - 7:30	2	4	24	1	29	7:00 to	4	2	36	4	42	7:00 to	2 7:00 to
7:30 - 7:45	1	1	18	2	21	8:00	3	1	41	4	46	8:00	1 1 1 1 1 3
7:45 - 8:00	4	1	34	4	39	113	4	0	47	2	49	184	1 3 0 1 4 10
8:00 - 8:15	0	1	24	0	25		4	2	39	6	47		0 1 0 0 0 1
8:15 - 8:30	2	3	37	1	41	8:00 to	3	0	41	4	45	8:00 to	1 3 0 1 4 8:00 to
8:30 - 8:45	5	2	36	3	41	9:00	4	1	44	7	52	9:00	0 2 1 2 2 5 9:00
8:45 - 9:00	1	8	46	3	57	164	3	1	36	8	45	189	0 5 0 1 6 16
9:00 - 9:15	3	8	47	2	57		1	3	55	5	63		0 3 1 4 8
9:15 - 9:30	0	5	24	0	29	9:00 to	0	1	56	4	61	9:00 to	0 3 0 3 6 9:00 to
9:30 - 9:45	4	7	44	1	52	10:00	4	0	48	8	56	10:00	0 2 0 8 10 10:00
9:45 - 10:00	1	7	28	1	36	174	6	2	59	4	65	245	1 2 0 5 7 31
10:00 - 10:15	4	7	35	0	42		1	4	40	4	48		0 2 0 6 8
10:15 - 10:30	5	5	34	1	40	10:00 to	6	3	73	8	84	10:00 to	1 2 1 12 15 10:00 to
10:30 - 10:45	5	3	46	3	52	11:00	4	2	51	1	54	11:00	0 2 1 5 8 11:00
10:45 - 11:00	0	5	41	0	46	180	3	3	56	6	65	251	0 1 0 12 13 44
11:00 - 11:15	5	4	41	1	46		4	2	51	6	59		0 3 0 5 8
11:15 - 11:30	1	9	35	1	45	11:00 to	2	1	61	5	67	11:00 to	0 0 0 9 9 11:00 to
11:30 - 11:45	2	3	36	2	41	12:00	3	1	65	4	70	12:00	0 4 1 7 12 12:00
11:45 - 12:00	4	5	38	2	45	177	2	2	62	5	69	265	0 5 0 3 8 37
12:00 - 12:15	4	10	54	0	64		5	1	94	11	106		0 2 0 6 8
12:15 - 12:30	0	4	46	3	53	12:00 to	3	2	62	5	69	12:00 to	0 8 3 4 15 12:00 to
12:30 - 12:45	4	8	43	1	52	1:00	2	2	52	4	58	1:00	0 0 0 5 5 1:00
12:45 - 1:00	2	7	46	1	54	223	2	1	57	5	63	296	0 0 1 11 12 40
1:00 - 1:15	3	11	52	4	67		5	0	62	5	67		0 4 0 3 7
1:15 - 1:30	2	7	47	2	56	1:00 to	1	4	60	10	74	1:00 to	0 5 1 4 10 1:00 to
1:30 - 1:45	5	11	50	4	65	2:00	2	3	53	8	64	2:00	0 5 1 5 11 2:00
1:45 - 2:00	2	4	42	1	47	235	5	0	77	11	88	293	0 3 1 2 6 34
2:00 - 2:15	5	6	65	0	71		3	3	84	8	95		0 3 0 8 11
2:15 - 2:30	0	7	56	5	68	2:00 to	1	3	70	6	79	2:00 to	0 4 1 6 11 2:00 to
2:30 - 2:45	1	8	49	1	58	3:00	4	0	77	11	88	3:00	0 7 2 4 13 3:00
2:45 - 3:00	1	10	44	1	55	252	3	2	62	14	78	340	0 3 1 6 10 45
3:00 - 3:15	1	10	47	0	57		3	1	71	9	81		0 6 0 5 11
3:15 - 3:30	3	9	41	1	51	3:00 to	1	2	70	10	82	3:00 to	0 4 0 9 13 3:00 to
3:30 - 3:45	1	13	55	4	72	4:00	6	4	85	9	98	4:00	0 2 1 4 7 4:00
3:45 - 4:00	2	12	60	3	75	255	3	2	90	12	104	365	0 6 2 9 17 48
4:00 - 4:15	2	12	54	2	68		3	4	77	6	87		0 7 0 8 15

SOUTHBOUND
APPROACH # 4

NORTHBOUND
APPROACH # 2

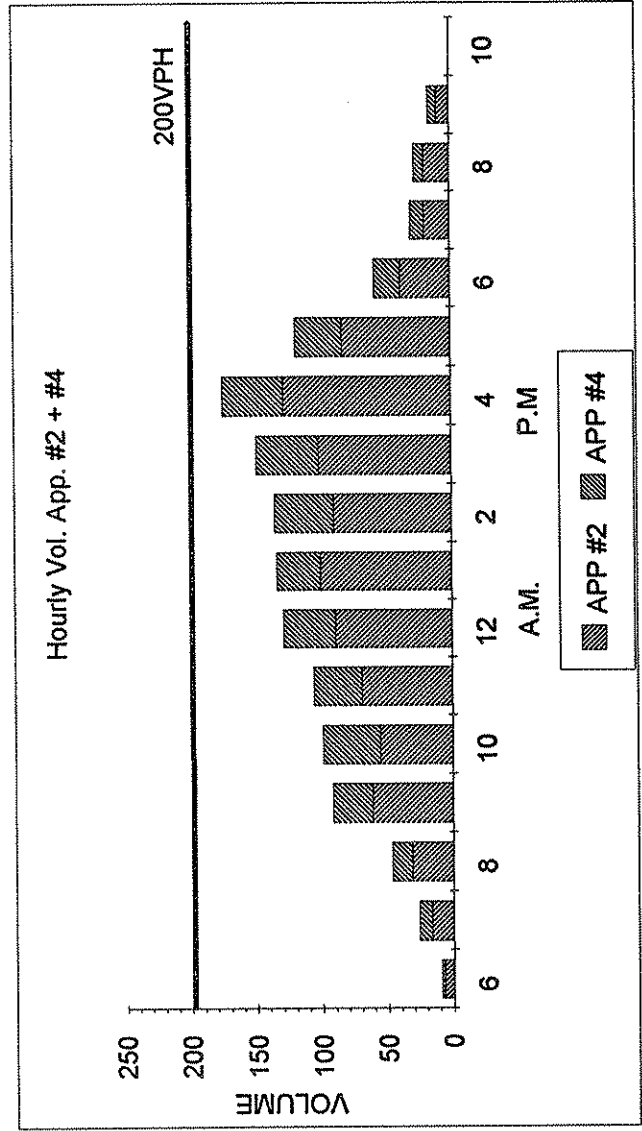
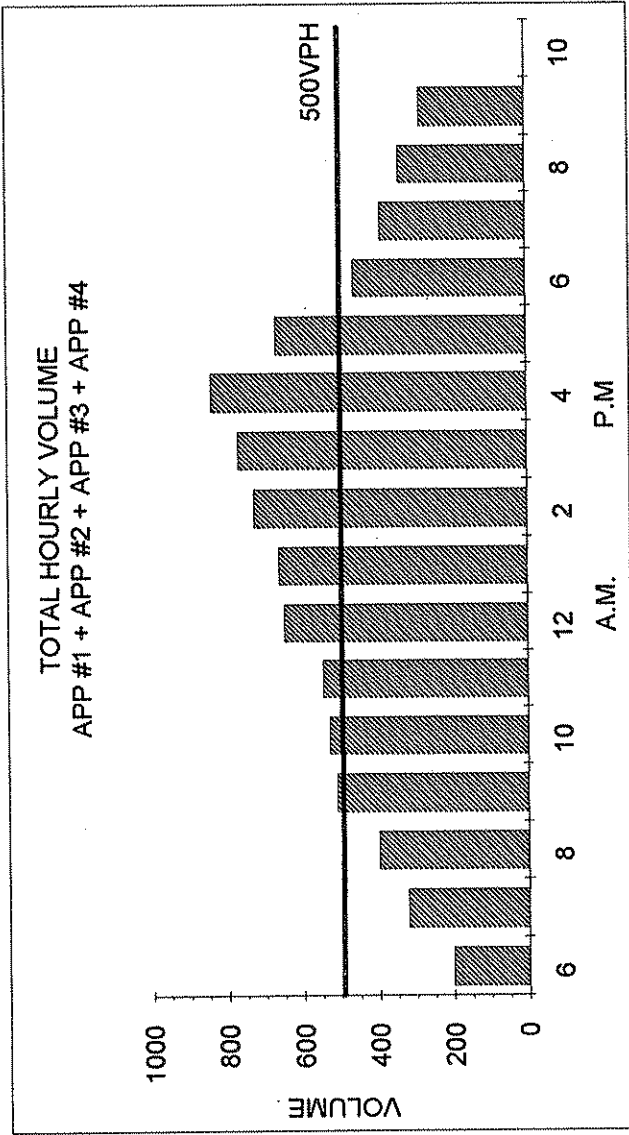
EASTBOUND
APPROACH # 3

WESTBOUND
APPROACH # 1

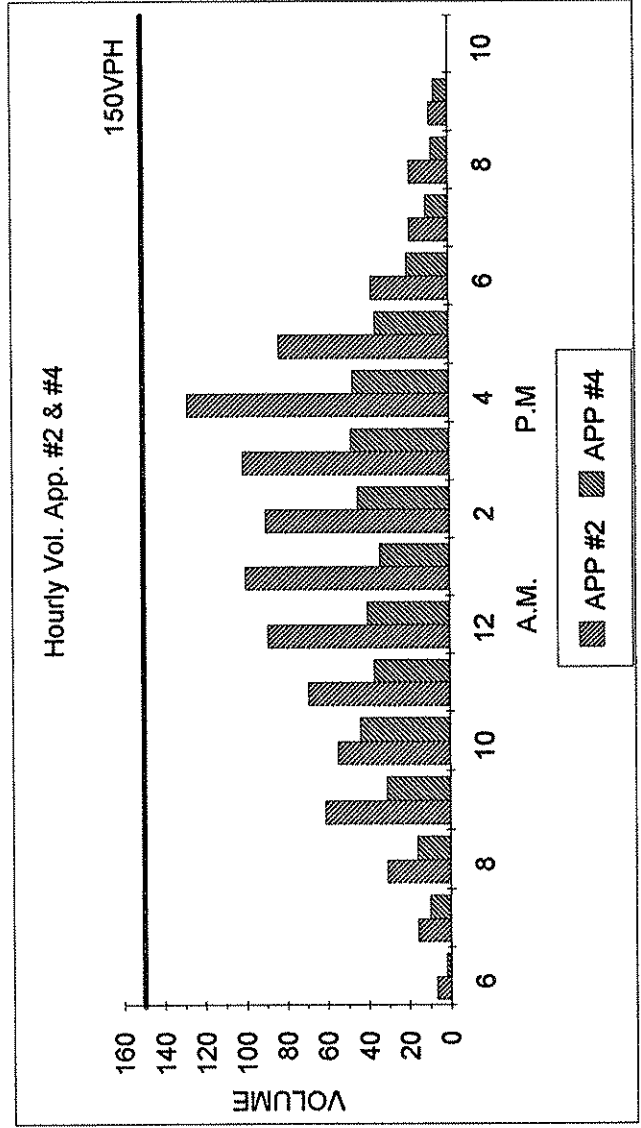
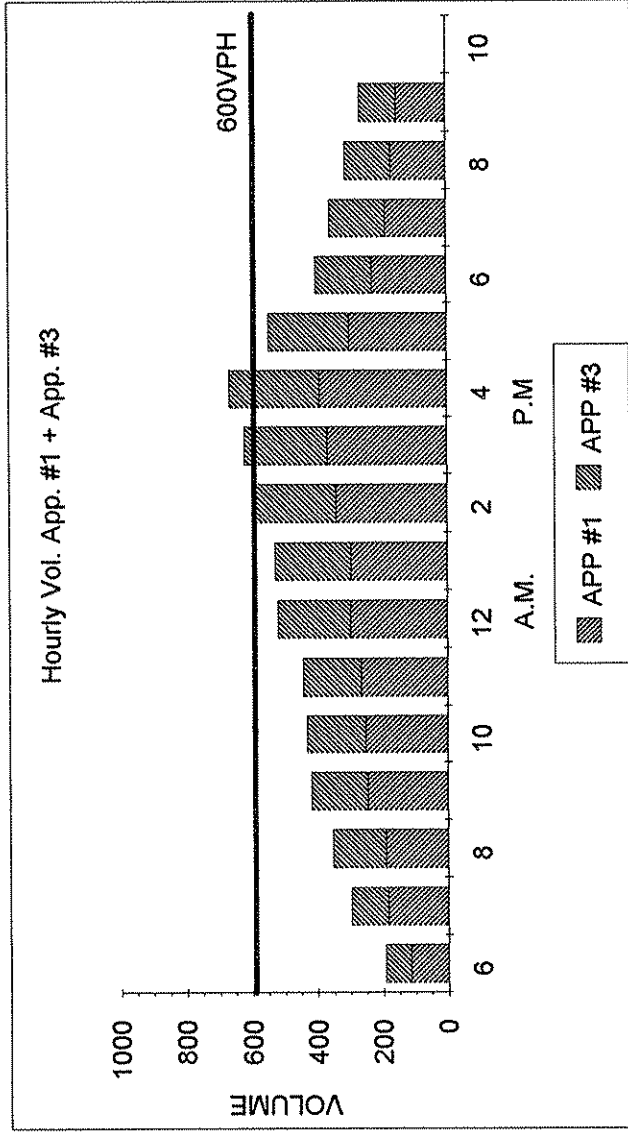
TIME
INTERVALS

TIME INTERVALS	WESTBOUND APPROACH # 1			EASTBOUND APPROACH # 3			NORTHBOUND APPROACH # 2			SOUTHBOUND APPROACH # 4		
	H.V.	TO TO 15 MIN RT TH LT	HOURLY TOTAL	H.V.	TO TO 15 MIN RT TH LT	HOURLY TOTAL	H.V.	TO TO 15 MIN RT TH LT	HOURLY TOTAL	H.V.	TO TO 15 MIN RT TH LT	HOURLY TOTAL
4:15 - 4:30	2	8 56 2	66 4:00 to	5	0 86 9	95 4:00 to	1	23 5 11	39 4:00 to	0	7 0 2	9 4:00 to
4:30 - 4:45	1	8 61 2	71 5:00	1	3 86 17	106 5:00	0	15 7 9	31 5:00	0	4 3 12	19 5:00
4:45 - 5:00	2	6 62 4	72 277	5	2 80 18	100 388	1	14 4 8	26 128	0	3 0 1	4 47
5:00 - 5:15	1	8 56 2	66	3	1 90 1	92	0	15 6 8	29	0	4 1 7	12
5:15 - 5:30	5	1 56 4	61 5:00 to	4	2 56 4	62 5:00 to	0	17 5 5	27 5:00 to	0	1 0 6	7 5:00 to
5:30 - 5:45	0	4 60 1	65 6:00	5	2 78 3	83 6:00	0	9 0 4	13 6:00	0	6 2 2	10 6:00
5:45 - 6:00	1	4 52 1	57 249	2	1 55 6	62 299	0	8 2 4	14 83	0	2 0 5	7 36
6:00 - 6:15	2	4 45 0	49	3	0 73 4	77	0	9 1 2	12	0	2 1 4	7 7
6:15 - 6:30	0	2 38 1	41 6:00 to	1	3 43 2	48 6:00 to	0	6 0 1	7 6:00 to	0	4 0 2	6 6:00 to
6:30 - 6:45	1	1 37 2	40 7:00	2	0 48 2	50 7:00	0	6 0 2	8 7:00	0	2 0 1	3 7:00
6:45 - 7:00	4	4 39 1	44 174	1	0 47 5	52 227	0	9 2 0	11 38	0	1 0 3	4 20
7:00 - 7:15	1	1 55 1	57	0	1 57 1	59	0	2 0 4	6 6	0	3 1 0	4 4
7:15 - 7:30	2	3 44 0	47 7:00 to	4	1 40 3	44 7:00 to	0	0 3 2	5 7:00 to	0	1 0 2	3 7:00 to
7:30 - 7:45	1	0 37 0	37 8:00	1	0 43 2	45 8:00	0	4 2 0	6 8:00	0	2 0 2	4 8:00
7:45 - 8:00	1	2 30 0	32 173	2	0 33 4	37 185	0	0 1 1	2 19	0	0 0 0	0 11
8:00 - 8:15	2	3 35 0	38	0	0 50 0	50	0	2 0 4	6 6	0	2 0 0	2 2
8:15 - 8:30	0	1 38 0	39 8:00 to	2	0 42 2	44 8:00 to	0	0 1 4	5 8:00 to	0	2 0 0	2 8:00 to
8:30 - 8:45	1	1 31 0	32 9:00	2	0 47 2	49 9:00	0	2 1 1	4 9:00	0	0 0 0	0 9:00
8:45 - 9:00	1	2 31 0	33 142	3	0 23 2	25 168	0	1 1 2	4 19	0	3 1 0	4 8
9:00 - 9:15	1	1 38 0	39	1	0 59 5	64	0	0 0 0	0 0	0	2 0 1	3 3
9:15 - 9:30	1	1 33 1	35 9:00 to	2	0 33 2	35 9:00 to	0	3 1 0	4 9:00 to	0	1 0 0	1 9:00 to
9:30 - 9:45	0	0 24 1	25 10:00	1	0 25 0	25 10:00	0	0 1 1	2 10:00	0	2 0 0	2 10:00
9:45 - 10:00	0	1 15 0	16 115	1	0 24 2	26 150	0	2 1 0	3 9	0	0 1 0	1 7

TMC9311 STOP WARRANT STUDY



TMC9311 SIGNAL WARRANT 1 STUDY



TMC9311 SIGNAL WARRANT 2 STUDY

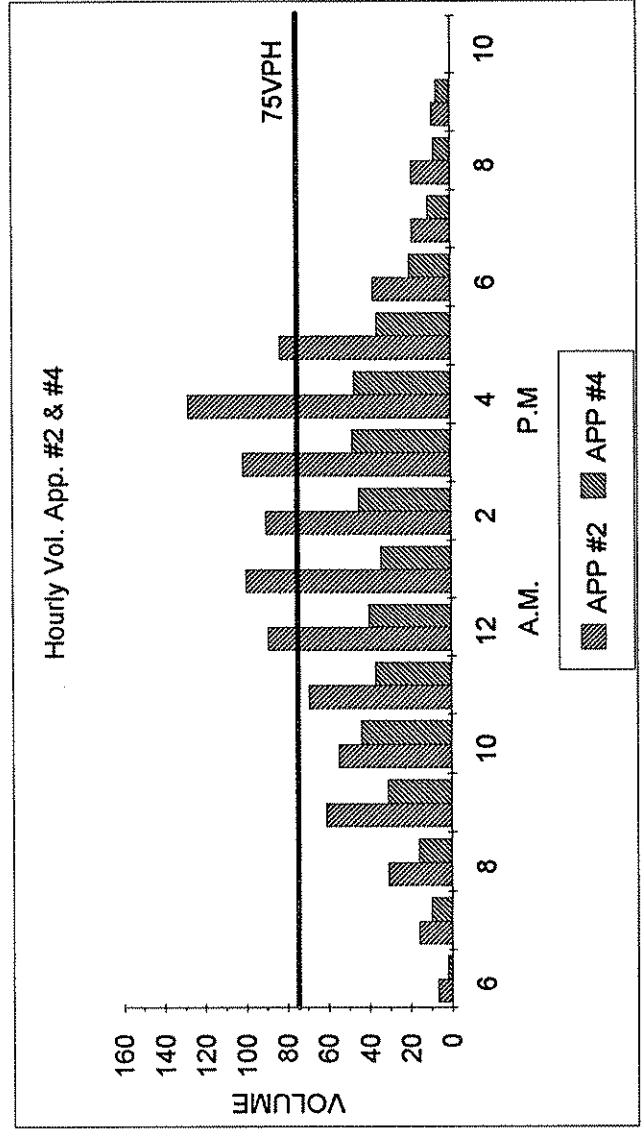
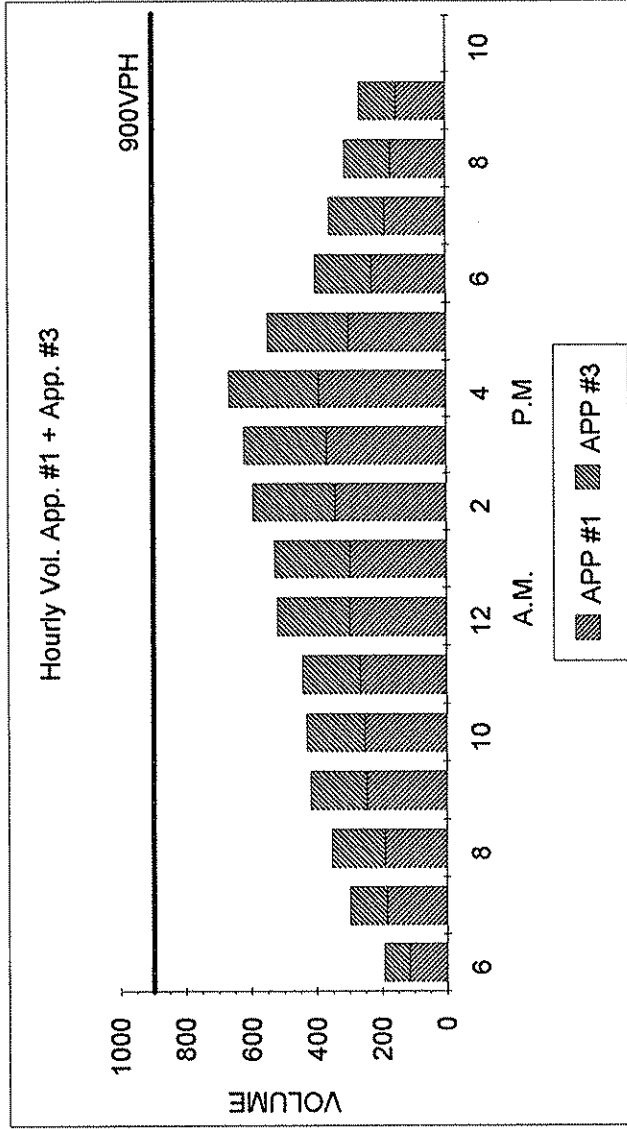
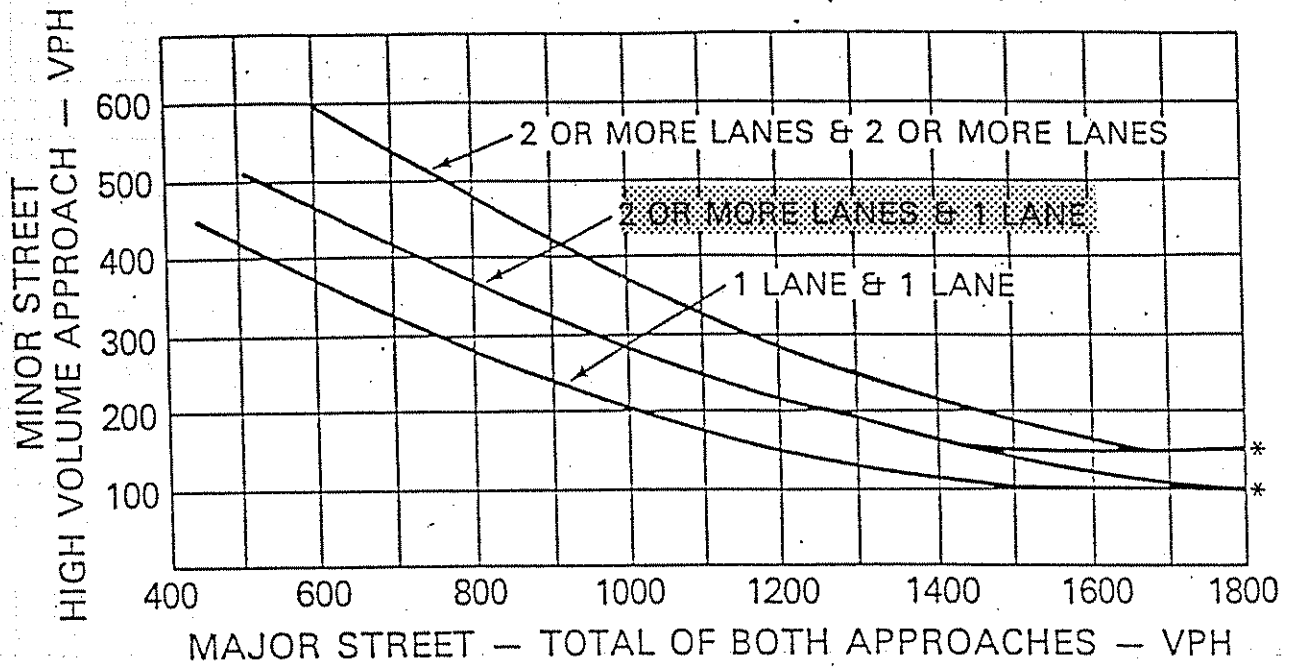


FIGURE 4-5. PEAK HOUR VOLUME WARRANT



*NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

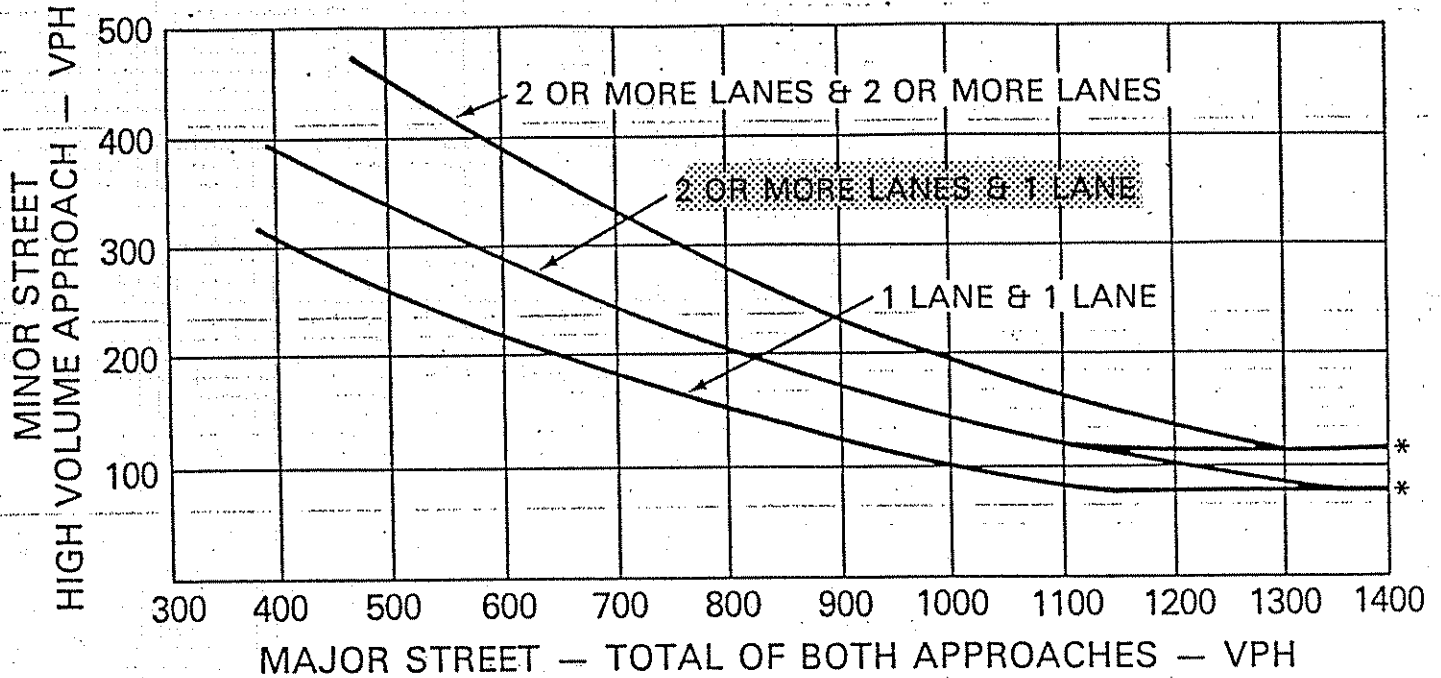
● = VOLUMES WHICH EXCEED THE THRESHOLD AND ARE REPRESENTED ON THE GRAPH.

★ = VOLUMES WHICH EXCEED THE THRESHOLD BUT CANNOT BE REPRESENTED ON THE GRAPH.

TIME	MAJOR STREETS (VPH)	MINOR STREET (VPH)
6-7 am	193	7
7-8 am	297	16
8-9 am	353	31
9-10 am	419	61
10-11 am	431	55
11-12 pm	442	69
12-1 pm	519	89
1-2 pm	528	100
2-3 pm	592	90
3-4 pm	620	101
4-5 pm	665	128
5-6 pm	548	83
6-7 pm	401	38
7-8 pm	358	19
8-9 pm	310	19
9-10 pm	265	9

TMC9311 CSAH 2 (40TH AVE) @ VAN BUREN STREET

FIGURE 4-7. FOUR HOUR VOLUME WARRANT



*NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

● = VOLUMES WHICH EXCEED THE THRESHOLD AND ARE REPRESENTED ON THE GRAPH.

★ = VOLUMES WHICH EXCEED THE THRESHOLD BUT CANNOT BE REPRESENTED ON THE GRAPH.

TIME	MAJOR STREETS (VPH)	MINOR STREET (VPH)
6-7 am	193	7
7-8 am	297	16
8-9 am	353	31
9-10 am	419	61
10-11 am	431	55
11-12 pm	442	69
12-1 pm	519	89
1-2 pm	528	100
2-3 pm	592	90
3-4 pm	620	101
4-5 pm	665	128
5-6 pm	548	83
6-7 pm	401	38
7-8 pm	358	19
8-9 pm	310	19
9-10 pm	265	9

TMC9311 CSAH 2 (40TH AVE) @ VAN BUREN STREET

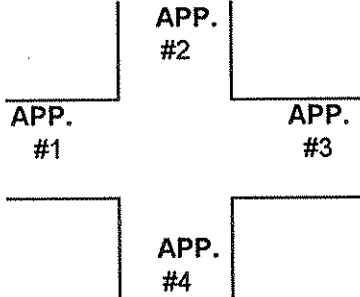


NORTH

COUNT LOCATION: CSAH 2 (40TH AVE) @
VAN BUREN ST.

D 7/7/93

APP. #1= EB CSAH 2
(40TH AVE)
APP. #2=
SB VEAN BUREN ST.
APP. #3=WB CSAH 2
(40TH AVE)
APP. #4=
NB VAN BUREN ST.



HEAVY VEHICLE- ANY VEHICLE HAVING MORE THAN FOUR TIRES TOUCHING THE PAVEMENT

A. TRUCKS- A HEAVY VEHICLE INVOLVED PRIMARILY IN THE TRANSPORT OF GOODS OR IN THE DELIVERY OF A SERVICE.

B. RV- A HEAVY VEHICLE OPERATED BY A PRIVATE MOTORIST AND INVOLVED IN THE TRANSPORT OF RECREATIONAL EQUIPMENT OR FACILITIES.

C. BUSES- A HEAVY VEHICLE INVOLVED IN THE TRANSPORTATION OF GROUPS OF PEOPLE.

TIME	PEDESTRIANS					HEAVY VEHICLES		
	APP. #1	APP. #2	APP. #3	APP. #4	15 MIN TOT	TRUCKS	RV	BUS
6:00-6:15AM		1			1			2
6:15-6:30						3		4
6:30-6:45		1		1	2	2		3
6:45-7:00		1			1	4		6
HOURLY TOTAL					4	HOURLY TOTAL		24
7:00-7:15	1	1			2	1		6
7:15-7:30		7			7	1		5
7:30-7:45		1			1	1		5
7:45-8:00		1			1	3		5
HOURLY TOTAL					11	HOURLY TOTAL		27
8:00-8:15						2		2
8:15-8:30	3				3	4		2
8:30-8:45		2			2	5		4
8:45-9:00		1			1	1		3
HOURLY TOTAL					6	HOURLY TOTAL		23
9:00-9:15				1	1	2		3
9:15-9:30		2			2	1		1
9:30-9:45	1	1		1	3	8		1
9:45-10:00		1		1	2	6		2
HOURLY TOTAL					8	HOURLY TOTAL		24
10:00-10:15						4		1
10:15-10:30				1	1	9	1	2
10:30-10:45				1	1	5	1	1
10:45-11:00		1			1	3		1
HOURLY TOTAL					3	HOURLY TOTAL		28
11:00-11:15	1	1		3	5	5	1	3
11:15-11:30		3	1	2	6	3		
11:30-11:45		4			4	3		3
11:45-12:00		1			1	5		1
HOURLY TOTAL					16	HOURLY TOTAL		24
12:00-12:15		3		2	5	6		2
12:15-12:30		2		4	6	4		1
12:30-12:45						3		2
12:45-1:00			1		1	4		
HOURLY TOTAL					12	HOURLY TOTAL		22
1:00-1:15						6		2
1:15-1:30				3	3	3		2
1:30-1:45						6		3
1:45-2:00		3		2	5	4		
HOURLY TOTAL					8	HOURLY TOTAL		26



NORTH

COUNT LOCATION:

CSAH 2 (40TH AVE) @

DA 7/8/93

VAN BUREN ST.

APP. #1=EB CSAH 2 (40TH AVE)

APP. #2= SB VAN BUREN ST.

APP. #3=WB CSAH 2 (40TH AVE)

APP. #4= NB VAN BUREN ST.

APP. #2

APP. #1

APP. #3

APP. #4

- HEAVY VEHICLE- ANY VEHICLE HAVING MORE THAN FOUR TIRES TOUCHING THE PAVEMENT
- A. TRUCKS- A HEAVY VEHICLE INVOLVED PRIMARILY IN THE TRANSPORT OF GOODS OR IN THE DELIVERY OF A SERVICE.
 - B. RV- A HEAVY VEHICLE OPERATED BY A PRIVATE MOTORIST AND INVOLVED IN THE TRANSPORT OF RECREATIONAL EQUIPMENT OR FACILITIES.
 - C. BUSES- A HEAVY VEHICLE INVOLVED IN THE TRANSPORTATION OF GROUPS OF PEOPLE.

TIME	PEDESTRIANS				15 MIN TOT	HEAVY VEHICLES		
	APP. #1	APP. #2	APP. #3	APP. #4		TRUCKS	RV	BUS
2:00-2:15PM	6			2	8	4		4
2:15-2:30	2	1	2	1	6			1
2:30-2:45		8		3	11	3		2
2:45-3:00				1	1	3		3
HOURLY TOTAL					26	HOURLY TOTAL		20
3:00-3:15	2	1	2	1	6	1		2
3:15-3:30	1	3		3	7	2		3
3:30-3:45	1	4			5	2		2
3:45-4:00		1		2	3	4		3
HOURLY TOTAL					21	HOURLY TOTAL		19
4:00-4:15						3		2
4:15-4:30		4	2	7	13	5		4
4:30-4:45	1			8	9			1
4:45-5:00				2	2	2		6
HOURLY TOTAL					24	HOURLY TOTAL		23
5:00-5:15			1		1	2		4
5:15-5:30	1			1	2	1		2
5:30-5:45		4		1	5	6		3
5:45-6:00		1		4	5		1	2
HOURLY TOTAL					13	HOURLY TOTAL		21
6:00-6:15		3			3			5
6:15-6:30				2	2	1		
6:30-6:45				1	1			3
6:45-7:00		1			1	2		3
HOURLY TOTAL					7	HOURLY TOTAL		14
7:00-7:15		1		2	3	1		
7:15-7:30				3	3	3		3
7:30-7:45				1	1			2
7:45-8:00		5		1	6	2		1
HOURLY TOTAL					13	HOURLY TOTAL		12
8:00-8:15		1		2	3	1		1
8:15-8:30		2			2			1
8:30-8:45						1		2
8:45-9:00						1		3
HOURLY TOTAL					5	HOURLY TOTAL		10
9:00-9:15		2			2	1		1
9:15-9:30		4			4	1		1
9:30-9:45		1			1			1
9:45-10:00		1			1	1		
HOURLY TOTAL					8	HOURLY TOTAL		6