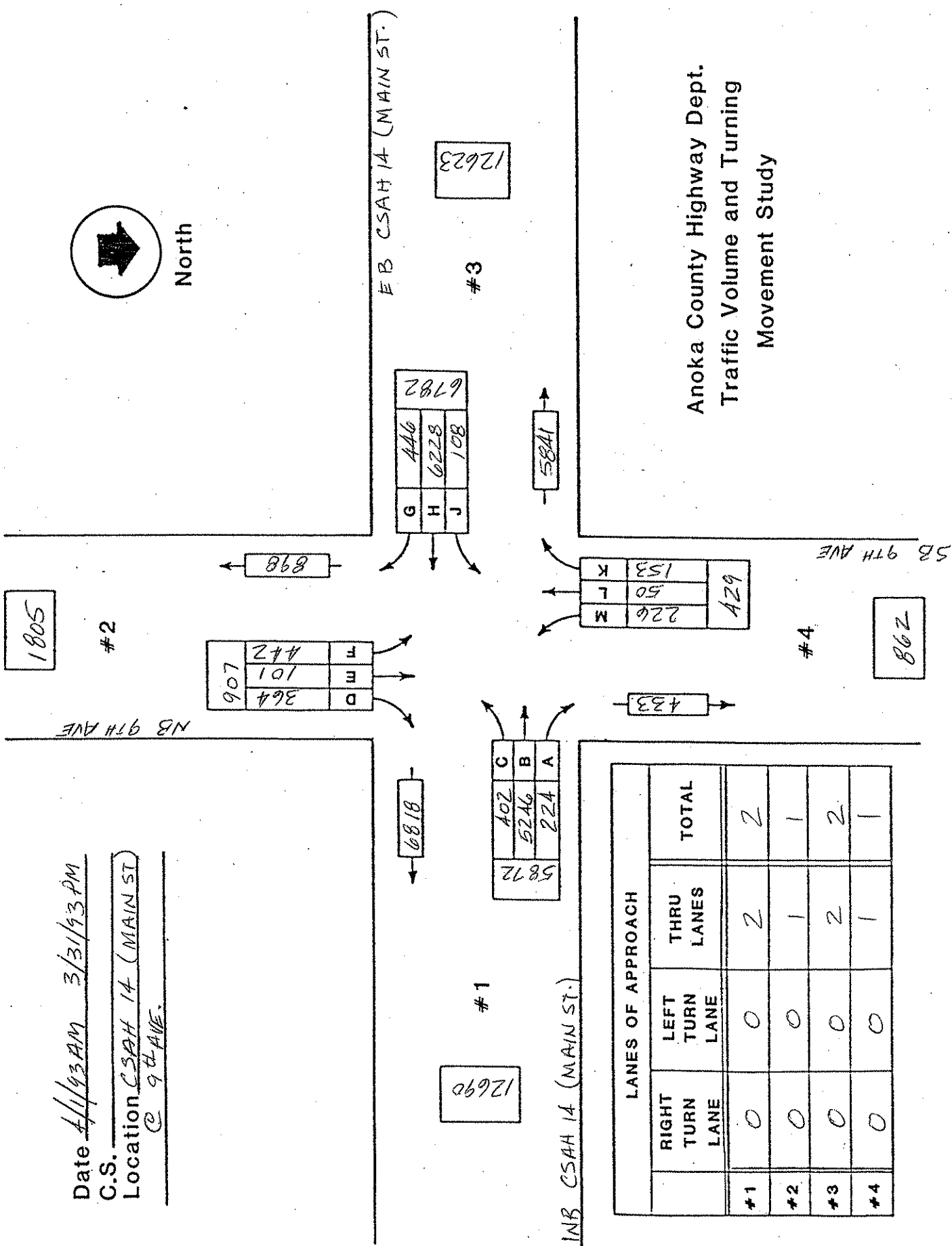


Date 4/1/93 AM 3/31/93 PM
 C.S. CSAH 14 (MAIN ST)
 Location @ 9th AVE.



North



1805

#2

907	D	364
	E	101
	F	442

6818

#1

12690

5872	C	402
	B	5246
	A	224

433

6782	G	446
	H	6228
	J	108

#3

12623

5841

226	M	226
	L	50
	K	153
429		

#4

862

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

VOLUME & MOVEMENT

#	RIGHT TURN L. LANES		THRU	TOTAL	DESCRIPTION	# RT. TURN	THRU	LT. TURN	SUB TOTAL	OPPOSING	TOTAL	
	TURN L.	TURN L.										TURN
1	0	0	2	2	WESTBOUND CSAH 14 (MAIN STREET)	1	224	5246	402	5872	6818	12690
2	0	0	1	1	NORTHBOUND 9TH AVE	2	364	191	442	907	898	1805
3	0	0	2	2	EASTBOUND CSAH 14 (MAIN STREET)	3	446	6228	108	6782	5841	12623
4	0	0	1	1	SOUTHBOUND 9TH AVE	4	153	50	226	429	433	862

TIME INTERVALS	WESTBOUND APPROACH # 1			EASTBOUND APPROACH # 3			NORTHBOUND APPROACH # 2			SOUTHBOUND APPROACH # 4		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT

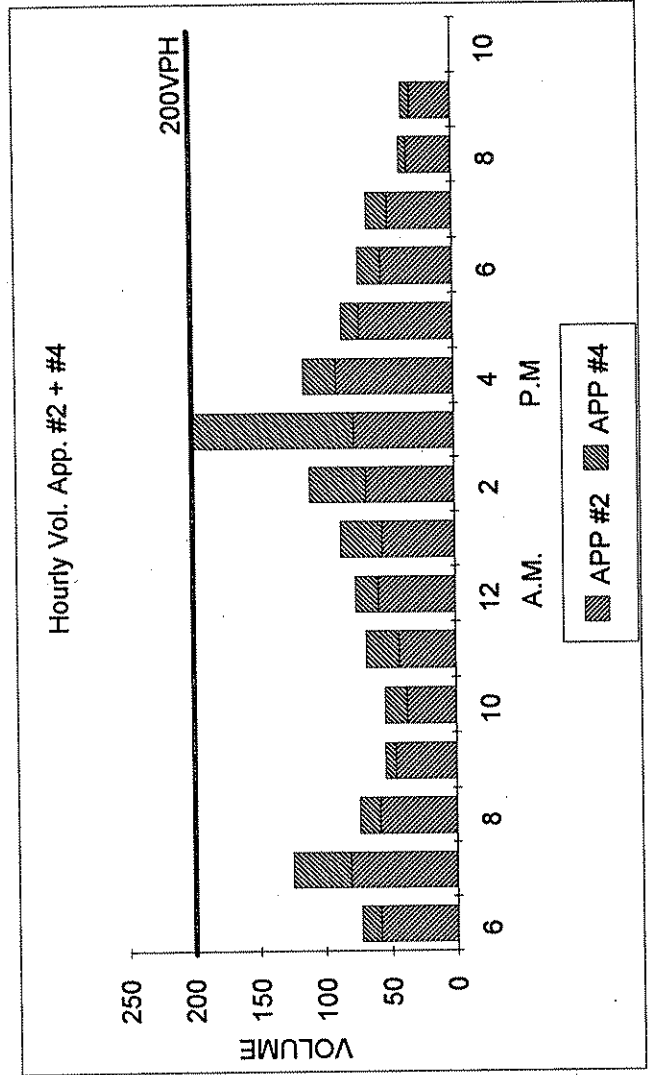
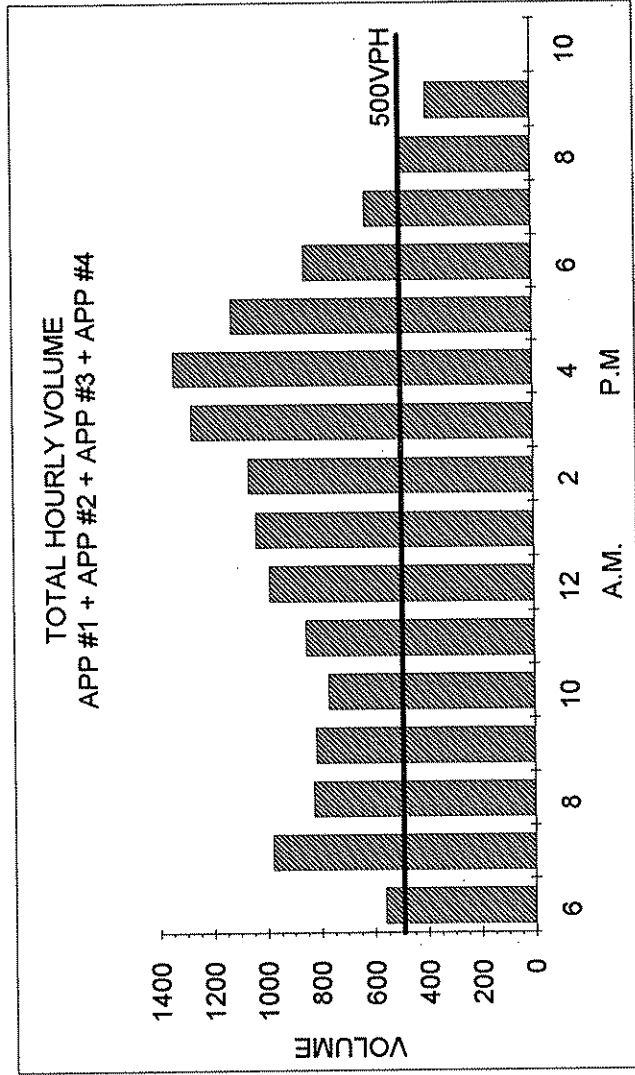
H.V. TO TO TO 15 MIN HOURLY H.V. TO TO TO 15 MIN HOURLY H.V. TO TO TO 15 MIN HOURLY H.V. TO TO TO 15 MIN HOURLY

TIME INTERVALS	WESTBOUND APPROACH # 1			EASTBOUND APPROACH # 3			NORTHBOUND APPROACH # 2			SOUTHBOUND APPROACH # 4		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
6:00 - 6:15	0	3	49	2	3	22	0	25	0	3	1	3
6:15 - 6:30	0	1	59	1	6	5	32	5	42	6:00 to	0	2
6:30 - 6:45	3	3	75	9	87	7:00	6	13	50	3	66	7:00
6:45 - 7:00	0	1	81	4	86	288	3	10	53	6	69	202
7:00 - 7:15	4	7	95	5	107		2	2	67	5	74	21
7:15 - 7:30	2	2	136	3	141	7:00 to	3	1	52	1	54	7:00 to
7:30 - 7:45	6	9	132	10	151	8:00	7	1	88	5	94	8:00
7:45 - 8:00	4	6	143	7	156	555	4	2	66	10	78	300
8:00 - 8:15	2	4	98	1	103		9	4	54	10	68	11
8:15 - 8:30	1	8	88	2	98	8:00 to	5	1	55	7	63	8:00 to
8:30 - 8:45	4	8	103	2	113	9:00	5	1	77	8	86	9:00
8:45 - 9:00	4	8	120	3	131	445	8	0	83	7	90	307
9:00 - 9:15	10	14	98	1	113		6	0	88	4	92	9
9:15 - 9:30	9	5	88	4	97	9:00 to	2	0	94	7	101	9:00 to
9:30 - 9:45	4	1	75	3	79	10:00	5	0	97	2	99	10:00
9:45 - 10:00	1	4	88	1	93	382	5	1	83	4	88	380
10:00 - 10:15	4	6	66	4	76		4	0	103	7	110	8
10:15 - 10:30	2	0	82	1	83	10:00 to	3	0	89	3	92	10:00 to
10:30 - 10:45	4	1	85	4	90	11:00	8	2	76	4	82	11:00
10:45 - 11:00	7	8	82	5	95	344	4	1	79	7	87	371
11:00 - 11:15	1	2	63	1	66		3	3	90	5	98	8
11:15 - 11:30	4	7	101	4	112	11:00 to	7	2	98	8	108	11:00 to
11:30 - 11:45	6	6	62	7	75	12:00	4	3	124	2	129	12:00
11:45 - 12:00	4	10	79	4	93	346	7	1	94	10	105	440
12:00 - 12:15	4	8	100	2	110		1	1	101	11	113	15
12:15 - 12:30	1	5	95	2	102	12:00 to	3	1	113	14	128	12:00 to
12:30 - 12:45	4	4	90	3	97	1:00	3	0	121	12	133	1:00
12:45 - 1:00	5	4	107	6	117	426	6	1	103	8	112	486
1:00 - 1:15	2	8	94	3	105		2	5	134	5	144	14
1:15 - 1:30	4	5	107	7	119	1:00 to	5	3	121	3	127	1:00 to
1:30 - 1:45	2	7	90	4	101	2:00	5	5	100	7	112	2:00
1:45 - 2:00	3	4	95	9	108	433	10	5	121	6	132	515
2:00 - 2:15	2	3	91	14	108		7	2	101	7	110	15

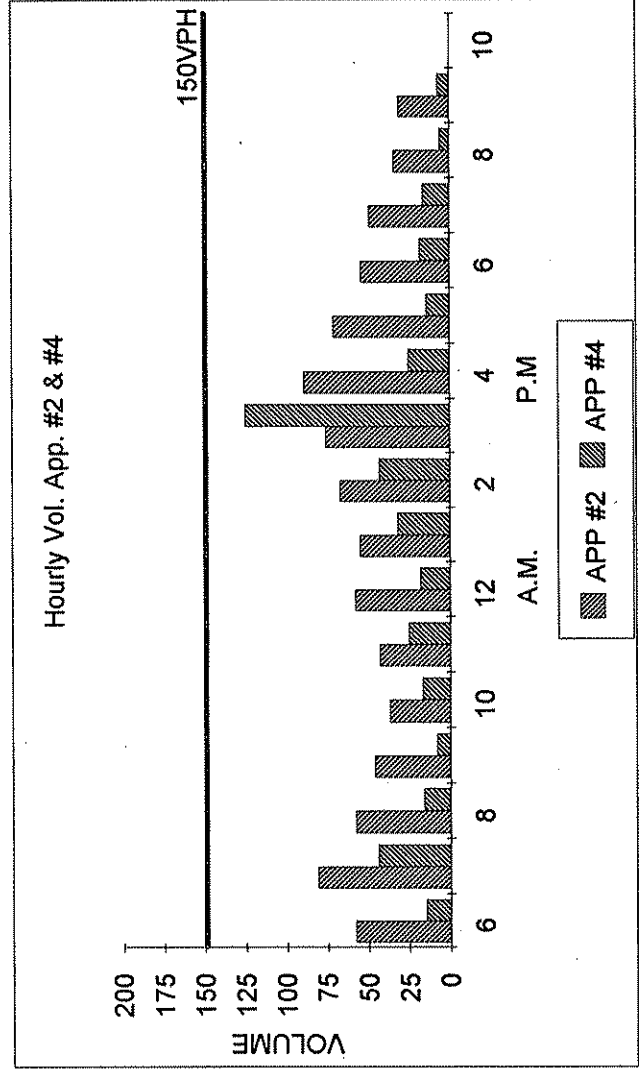
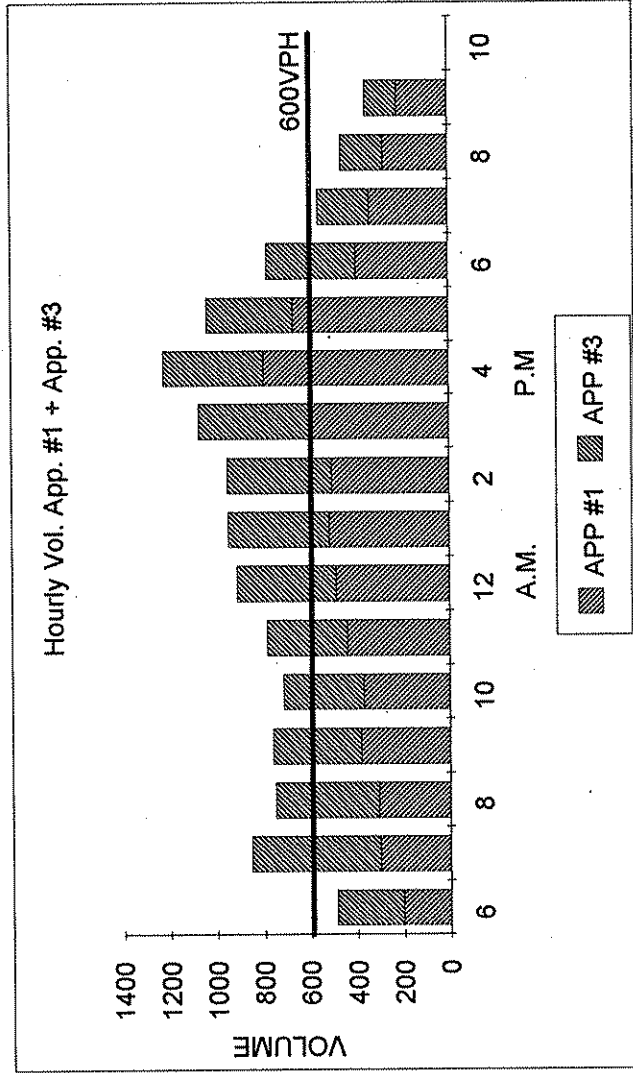
WESTBOUND APPROACH # 1 EASTBOUND APPROACH # 3 NORTHBOUND APPROACH # 2 SOUTHBOUND APPROACH # 4

TIME INTERVALS	WESTBOUND APPROACH # 1			EASTBOUND APPROACH # 3			NORTHBOUND APPROACH # 2			SOUTHBOUND APPROACH # 4										
	H.V.	TO	15 MIN TOTAL	H.V.	TO	15 MIN TOTAL	H.V.	TO	15 MIN TOTAL	H.V.	TO	15 MIN TOTAL								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT								
2:15 - 2:30	3	7	90	6	5	116	2	5	2	4	11	2:00 to	3	5	3	0	8 2:00 to			
2:30 - 2:45	7	6	99	6	6	130	1	15	5	3	23	3:00	2	9	0	4	13 3:00			
2:45 - 3:00	10	8	103	7	3	117	5	125	504	67	18	67	0	1	2	4	7	43		
3:00 - 3:15	4	8	144	9	1	161	8	170		20	2	58	2	58	8	34	100			
3:15 - 3:30	1	5	91	0	0	121	10	131	3:00 to	0	11	0	16	3:00 to	2	5	1	10	16 3:00 to	
3:30 - 3:45	3	7	94	2	0	131	9	140	4:00	0	12	3	25	4:00	2	6	0	1	7 4:00	
3:45 - 4:00	6	9	103	1	0	146	8	154	595	15	5	4	15	76	1	1	0	1	2	125
4:00 - 4:15	11	16	89	6	3	171	12	186		21	0	2	21	5	0	2	1	2	5	
4:15 - 4:30	11	16	87	3	1	160	8	169	4:00 to	0	13	3	29	4:00 to	0	5	0	1	6 4:00 to	
4:30 - 4:45	2	10	89	3	0	194	9	203	5:00	0	7	2	18	5:00	1	4	4	1	9 5:00	
4:45 - 5:00	1	17	101	1	2	221	13	236	794	0	8	3	21	89	1	3	0	2	5	25
5:00 - 5:15	4	14	92	4	2	192	10	204		0	8	2	21	7	0	4	2	1	7	
5:15 - 5:30	2	9	88	2	0	175	8	183	5:00 to	0	13	5	27	5:00 to	0	0	0	2	2 5:00 to	
5:30 - 5:45	4	7	88	1	0	147	10	157	6:00	0	7	1	11	6:00	0	1	0	1	2 6:00	
5:45 - 6:00	0	7	62	1	2	106	13	121	665	0	4	1	12	71	1	1	2	0	3	14
6:00 - 6:15	8	8	76	0	0	114	6	120		0	4	0	7		1	2	0	0	2	
6:15 - 6:30	6	10	68	1	0	99	6	105	6:00 to	0	4	1	10	6:00 to	1	2	1	0	3 6:00 to	
6:30 - 6:45	4	5	80	2	1	67	6	74	7:00	0	6	3	16	7:00	6	5	1	2	8 7:00	
6:45 - 7:00	0	11	110	1	0	86	11	97	396	0	11	2	21	54	4	3	0	2	5	18
7:00 - 7:15	1	3	68	1	0	78	11	89		0	8	0	20		3	5	0	0	5	
7:15 - 7:30	1	2	58	1	0	78	4	82	7:00 to	0	6	3	10	7:00 to	3	3	1	2	6 7:00 to	
7:30 - 7:45	0	6	43	0	0	65	7	72	8:00	0	0	1	3	4	0	0	0	0	0 8:00	
7:45 - 8:00	2	4	29	1	1	83	10	94	337	0	9	1	15	49	3	3	1	1	5	16
8:00 - 8:15	1	5	34	1	0	72	4	76		0	7	0	8	15	1	1	1	0	2	
8:15 - 8:30	2	3	45	0	0	48	3	51	8:00 to	0	1	2	5	8	8:00 to	0	0	0	0 8:00 to	
8:30 - 8:45	0	7	44	1	0	71	9	80	9:00	0	3	0	1	4	9:00	1	1	0	0 1 9:00	
8:45 - 9:00	0	6	33	0	0	61	8	69	276	0	5	2	0	7	34	0	1	2	0 3	6
9:00 - 9:15	0	4	39	0	0	56	5	61		0	1	0	3	4	0	2	0	1	3	
9:15 - 9:30	0	3	36	1	0	43	5	48	9:00 to	1	15	0	8	23	9:00 to	0	2	0	0 2 9:00 to	
9:30 - 9:45	1	3	24	1	1	54	3	58	10:00	1	0	0	1	1	10:00	1	1	0	0 1 10:00	
9:45 - 10:00	3	4	22	1	1	36	10	47	214	0	1	0	2	3	31	1	0	0	1	7

TMC9310 STOP WARRANT STUDY



TMC9310 SIGNAL WARRANT 1 STUDY



TMC9310 SIGNAL WARRANT 2 STUDY

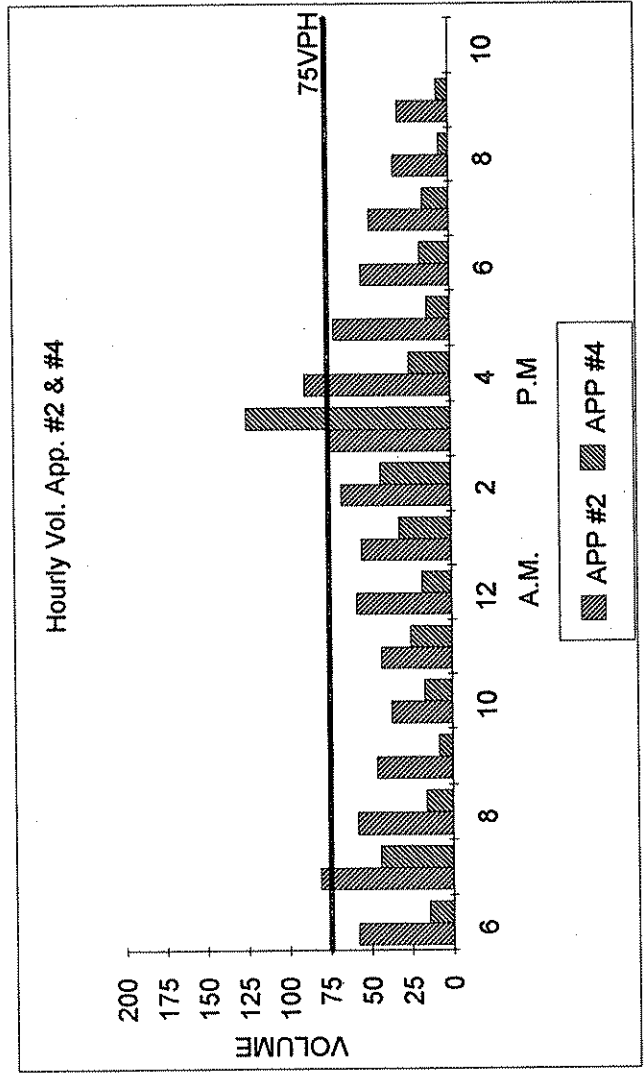
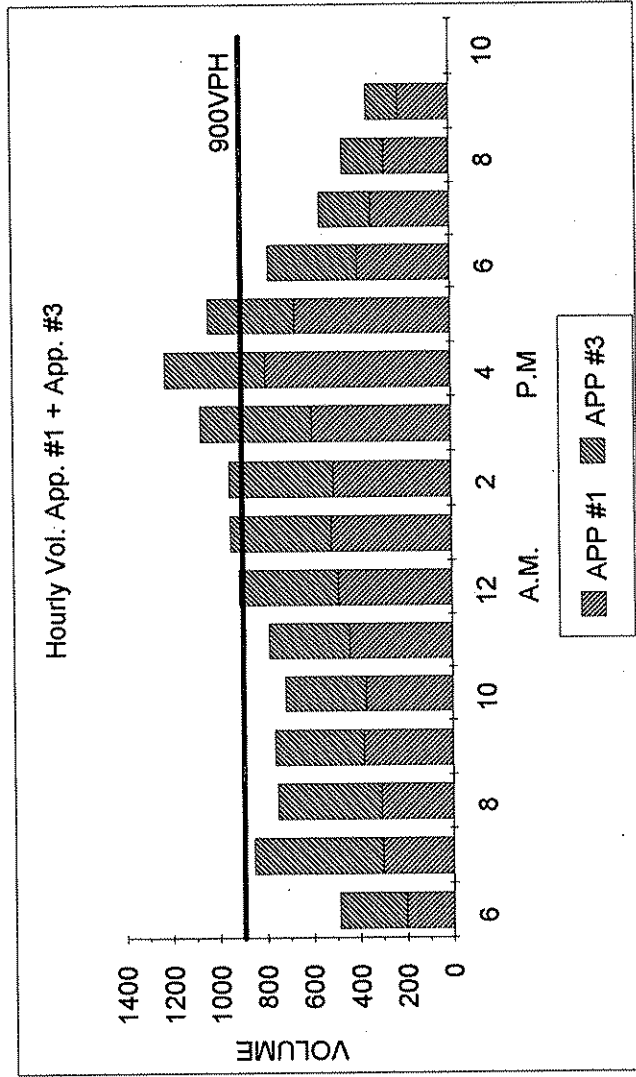
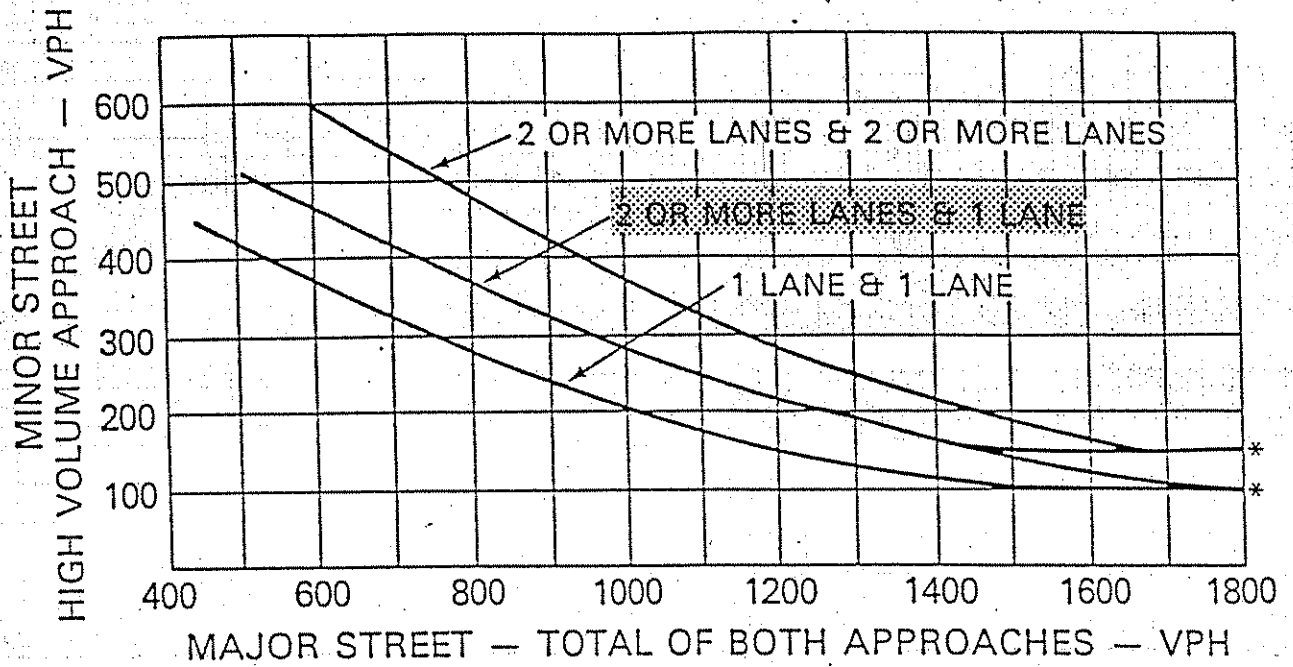


FIGURE 4-5. PEAK HOUR VOLUME WARRANT



*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.

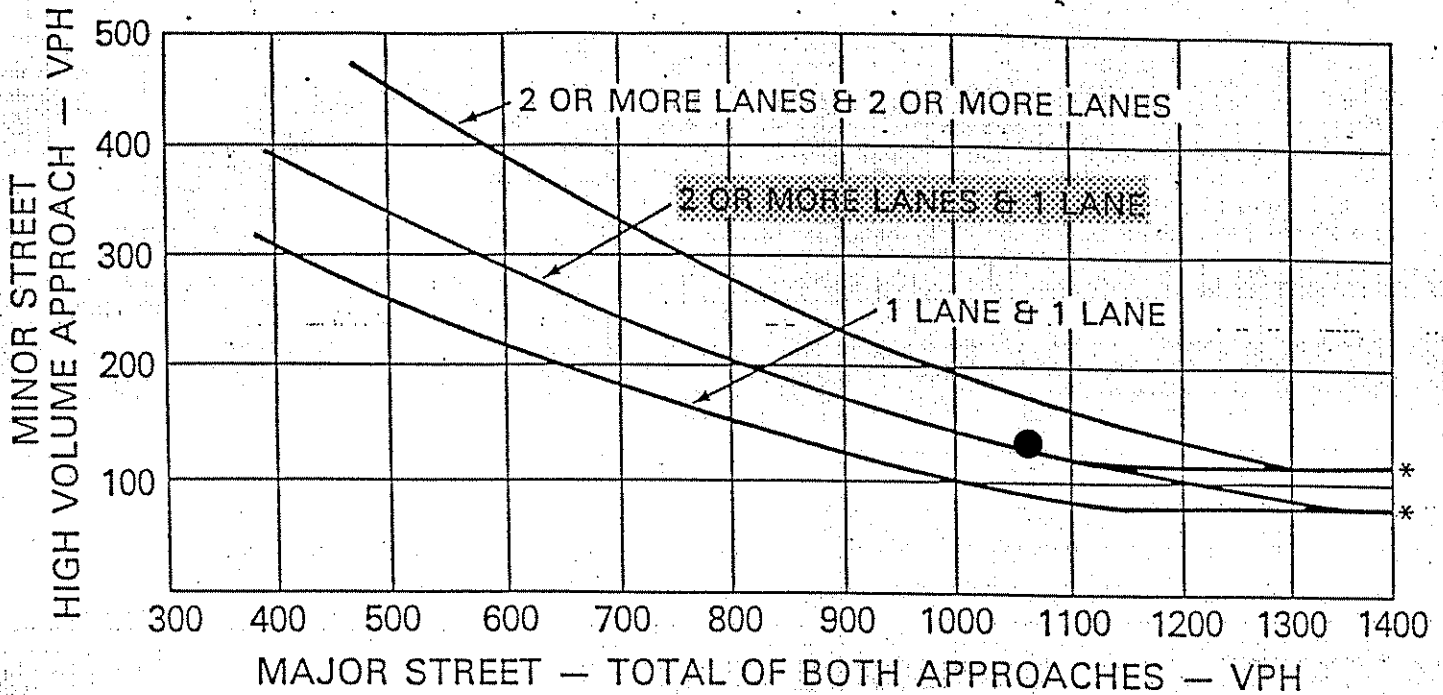
● = VOLUMES WHICH EXCEED THE THRESHOLD AND ARE REPRESENTED ON THE GRAPH.

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

TIME	MAJOR STREETS (VPH)	MINOR STREET (VPH)
6-7 am	490	58
7-8 am	855	81
8-9 am	752	58
9-10 am	762	46
10-11 am	715	37
11-12 pm	786	43
12-1 pm	912	58
1-2 pm	948	55
2-3 pm	952	67
3-4 pm	1072	125
4-5 pm	1223	89
5-6 pm	1038	71
6-7 pm	779	54
7-8 pm	558	49
8-9 pm	458	34
9-10 pm	354	31

TMC9310 CSAH 14 (MAIN ST) @ 9 TH AVE

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	490	58
7-8 am	855	81
8-9 am	752	58
9-10 am	762	46
10-11 am	715	37
11-12 pm	786	43
12-1 pm	912	58
1-2 pm	948	55
2-3 pm	952	67
● 3-4 pm	1072	125
4-5 pm	1223	89
5-6 pm	1038	71
6-7 pm	779	54
7-8 pm	558	49
8-9 pm	458	34
9-10 pm	354	31



NORTH

APP. #1= WB CSAH 14
(MAIN STREET)
APP. #2= NB 9TH AVE.

APP. #3= WB CSAH 14
(MAIN STREET)
APP. #4= SB 9TH AVE.

COUNT LOCATION: CSAH 14 (MAIN STREET) @
9TH AVE

DATE: 3/31/93

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			1		1	7		6
2:15-2:30						3		10
2:30-2:45	1				1	4		10
2:45-3:00		2	3		5	11		5
HOURLY TOTAL					7	HOURLY TOTAL		56
3:00-3:15						8		9
3:15-3:30						2		1
3:30-3:45						6		2
3:45-4:00						3		4
HOURLY TOTAL						HOURLY TOTAL		35
4:00-4:15						9		9
4:15-4:30						5		8
4:30-4:45	1				1	3		3
4:45-5:00						3		1
HOURLY TOTAL					1	HOURLY TOTAL		41
5:00-5:15						4		3
5:15-5:30						4		
5:30-5:45						4		1
5:45-6:00						2		
HOURLY TOTAL						HOURLY TOTAL		18
6:00-6:15						8		1
6:15-6:30						7		1
6:30-6:45						11		
6:45-7:00						5		
HOURLY TOTAL						HOURLY TOTAL		33
7:00-7:15						5		
7:15-7:30						5		
7:30-7:45								
7:45-8:00						6		
HOURLY TOTAL						HOURLY TOTAL		16
8:00-8:15						3		
8:15-8:30						2		
8:30-8:45						2		
8:45-9:00								
HOURLY TOTAL						HOURLY TOTAL		7
9:00-9:15								
9:15-9:30						2		
9:30-9:45						3		
9:45-10:00						5		
HOURLY TOTAL						HOURLY TOTAL		10