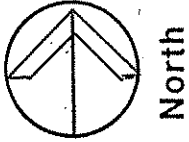


TMC 9330

Date 8/24/93 AM 8/26/93 PM

C.S. CSAH 78 (HANSON BLVD.)

CR 116 (BUNKER LK BLVD.)



North

#2
8A17
EB CR 116
BUNKER LK BLVD

D	1171
E	2197
F	843

6471

#1
12838

A	776
B	4482
C	1109

NB CSAH 78 (HANSON BLVD.)

SB CSAH 78 (HANSON BLVD.)

G	992
H	4425
J	425

#3
11643

5801

M	875
L	2098
K	476

#4
6846
WB CR 116
(BUNKER LK BLVD)

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

Anoka County Highway Dept.
Traffic Volume and Turning
Movement Study

3397

WEATHER: CLEAR/70 CLEAR/75
 Counter : TDC EIGHT
 Counted by Naomi/Eileen

ANOKA COUNTY HIGHWAY DEPARTMENT
 TRAFFIC ENGINEERING SECTION
 TRAFFIC VOLUME AND
 TURNING MOVEMENT STUDY

Site Code : 93300101
 Start Date: 08/24/93
 File I.D. : TMC9330
 Page : 1

Vehicle group 1

Date	SB CSAH 78 (HANSON BLVD) Southbound				WB CR 116 (BUNKER LK BLVD) Westbound				NB CSAH 78 (HANSON BLVD) Northbound				EB CR 116 (BUNKER LK BLVD) Eastbound				Vehicle Total	Other Total
	Other	Right	Thru	Left	Other	Right	Thru	Left	Other	Right	Thru	Left	Other	Right	Thru	Left		
08:00	1	4	79	6	1	2	18	23	0	5	17	2	0	10	16	5	187	2
06:15	0	12	147	13	0	2	8	20	2	4	28	4	1	8	11	3	260	3
06:30	1	18	160	18	0	5	26	21	2	7	33	6	0	8	39	8	349	3
06:45	5	16	178	14	2	3	21	23	1	4	35	4	1	19	54	7	378	9
Hr Total	7	50	564	51	3	12	73	87	5	20	113	16	2	45	120	23	1174	17
07:00	0	12	143	16	2	5	21	22	2	9	26	8	1	13	49	8	332	5
07:15	2	18	140	27	4	6	28	18	12	13	41	8	3	13	66	7	385	21
07:30	15	19	144	9	6	11	26	20	26	17	72	8	6	11	31	11	379	53
07:45	24	29	160	10	2	3	32	15	25	11	61	8	2	10	43	9	391	53
Hr Total	41	78	587	62	14	25	107	75	65	50	200	32	12	47	189	35	1487	132
08:00	13	16	92	8	8	4	34	15	8	6	33	17	6	16	41	7	289	35
08:15	5	16	81	9	3	4	24	11	11	7	34	13	8	19	28	1	247	27
08:30	17	17	88	7	3	4	12	12	18	2	51	15	10	19	33	12	272	48
08:45	23	21	86	9	1	7	27	12	26	9	55	21	4	22	28	6	303	54
Hr Total	58	70	347	33	15	19	97	50	63	24	173	66	28	76	130	26	1111	164
09:00	23	15	85	4	5	5	38	11	7	11	30	15	2	20	28	9	271	37
09:15	12	16	76	4	8	10	21	12	15	5	48	16	1	13	31	5	257	36
09:30	15	11	70	7	2	6	16	10	21	7	54	12	4	9	27	8	237	42
09:45	18	14	82	4	4	4	26	10	26	8	55	28	1	25	19	4	279	49
Hr Total	68	56	313	19	19	25	101	43	69	31	187	71	8	67	105	26	1044	164
10:00	12	17	56	2	4	0	29	8	7	11	42	16	2	24	37	8	250	25
10:15	12	7	52	5	5	2	24	14	15	6	44	15	5	14	38	15	236	37
10:30	19	9	61	5	4	1	20	10	17	8	50	20	7	22	28	14	248	47
10:45	18	16	75	5	1	8	31	7	20	12	46	24	1	23	28	12	287	40
Hr Total	61	49	244	17	14	11	104	39	59	37	182	75	15	83	131	49	1021	149
11:00	15	16	60	9	4	3	19	13	15	14	60	16	1	18	39	14	281	33
11:15	11	22	44	7	4	4	31	8	14	10	58	25	2	19	35	9	272	33
11:30	15	16	67	7	4	4	24	13	25	5	55	13	3	24	34	17	279	47
11:45	20	19	53	4	5	6	31	18	16	12	58	28	4	24	25	9	287	45
Hr Total	61	73	224	27	17	17	105	52	70	41	231	82	10	85	133	49	1119	158
12:00	17	31	57	4	4	3	29	14	11	9	48	20	2	22	23	13	273	30
12:15	14	15	48	3	0	6	26	8	15	6	67	19	2	28	26	13	265	33
12:30	14	14	56	5	3	5	28	14	22	12	62	12	3	14	29	11	262	40
12:45	18	12	51	3	3	5	26	5	28	3	61	14	5	21	34	14	249	50
Hr Total	63	72	212	15	10	19	109	41	76	30	238	65	12	85	112	51	1049	161

ANOKA COUNTY HIGHWAY DEPARTMENT
TRAFFIC ENGINEERING SECTION
TRAFFIC VOLUME AND
TURNING MOVEMENT STUDY

WEATHER: CLEAR/70 CLEAR/75
Counter : TDC EIGHT
Counted by Naomi/Eileen

Site Code : 93300101
Start Date: 08/24/93
File I.D. : TMC93301
Page : 2

Vehicle group 1

Date	SB CSAH 78 (HANSON BLVD) Southbound				WB CR 116 (BUNKER LK BLVD) Westbound				NB CSAH 78 (HANSON BLVD) Northbound				EB CR 116 (BUNKER LK BLVD) Eastbound				Vehicle Total	Other Total	
	Other	Right	Thru	Left	Other	Right	Thru	Left	Other	Right	Thru	Left	Other	Right	Thru	Left			
08/24/93																			
13:00	18	18	69	2	1	2	20	10	14	8	63	20	2	24	44	12	292	35	
13:15	14	10	63	4	5	3	31	13	12	10	52	17	5	17	37	14	271	36	
13:30	9	21	53	4	5	4	23	10	16	8	56	7	2	21	28	6	241	32	
13:45	18	15	70	3	6	9	45	19	14	11	57	21	6	17	41	12	320	44	
Hr Total	59	64	255	13	17	18	119	52	56	37	228	65	15	79	150	44	1124	147	
14:00	21	18	56	2	1	4	28	14	18	11	74	18	5	23	39	11	298	45	
14:15	17	21	75	2	3	6	38	5	18	10	79	18	4	25	31	9	319	42	
14:30	16	25	66	4	3	7	29	16	21	11	71	17	5	25	30	6	307	45	
14:45	12	20	54	3	2	8	37	8	18	8	77	15	1	17	25	15	287	33	
Hr Total	66	84	251	11	9	25	132	43	75	40	301	68	15	90	125	41	1211	165	
15:00	22	21	71	4	6	5	30	21	17	17	93	18	6	22	31	21	354	51	
15:15	13	14	57	7	3	9	32	12	15	16	83	29	2	17	34	19	329	33	
15:30	20	13	63	9	3	10	51	10	19	21	111	27	5	24	37	23	399	47	
15:45	11	18	58	13	3	19	43	10	13	17	107	20	3	19	36	11	371	30	
Hr Total	66	66	249	33	15	43	156	53	64	71	394	94	16	82	138	74	1453	161	
16:00	3	16	69	4	3	11	59	18	14	18	143	34	4	19	49	19	459	24	
16:15	11	16	61	10	1	12	42	14	14	27	112	24	2	27	48	16	409	28	
16:30	11	10	62	3	4	18	72	19	13	25	144	16	4	29	37	19	454	32	
16:45	14	12	72	7	2	6	59	12	11	25	125	33	1	23	50	19	443	28	
Hr Total	39	54	264	24	10	47	232	63	52	95	524	107	11	98	184	73	1765	112	
17:00	13	26	67	10	1	22	62	18	2	27	146	25	2	29	44	15	491	18	
17:15	1	25	63	11	3	14	57	16	2	29	130	30	0	22	53	24	474	6	
17:30	0	15	54	11	2	15	49	12	2	23	151	33	5	17	51	18	449	9	
17:45	1	21	69	5	0	13	51	21	2	29	132	29	0	20	39	27	456	3	
Hr Total	15	87	253	37	6	64	219	67	8	108	559	117	7	88	187	84	1870	36	
18:00	1	9	56	16	2	12	46	15	1	20	136	19	2	17	46	17	409	6	
18:15	2	12	60	5	1	12	47	21	0	15	110	18	2	21	47	25	393	5	
18:30	1	15	70	4	0	21	41	15	0	22	86	27	0	24	36	26	387	1	
18:45	1	15	48	7	1	12	45	17	1	10	81	17	0	13	39	17	321	3	
Hr Total	5	51	234	32	4	57	179	68	2	67	413	81	4	75	168	85	1510	15	
19:00	0	10	46	2	0	6	54	13	1	12	79	16	0	19	49	23	329	7	
19:15	0	17	42	4	1	10	23	14	0	13	71	19	1	22	40	18	293	7	
19:30	0	13	35	10	0	9	29	7	2	16	78	20	0	12	28	19	276	2	
19:45	0	16	31	7	1	10	38	5	0	7	60	12	0	20	28	17	251	7	
Hr Total	0	56	154	23	2	35	144	39	3	48	288	67	1	73	145	77	1149	6	

WEATHER: CLEAR/70 CLEAR/75
 Counter : TDC EIGHT
 Counted by Naomi/Eileen

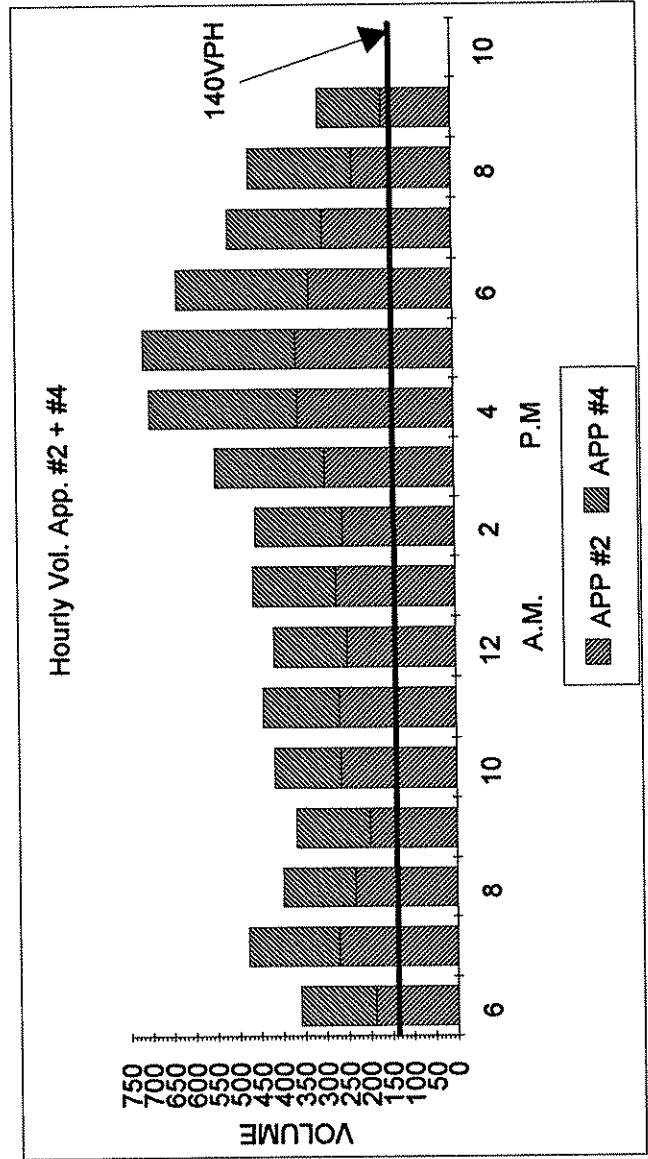
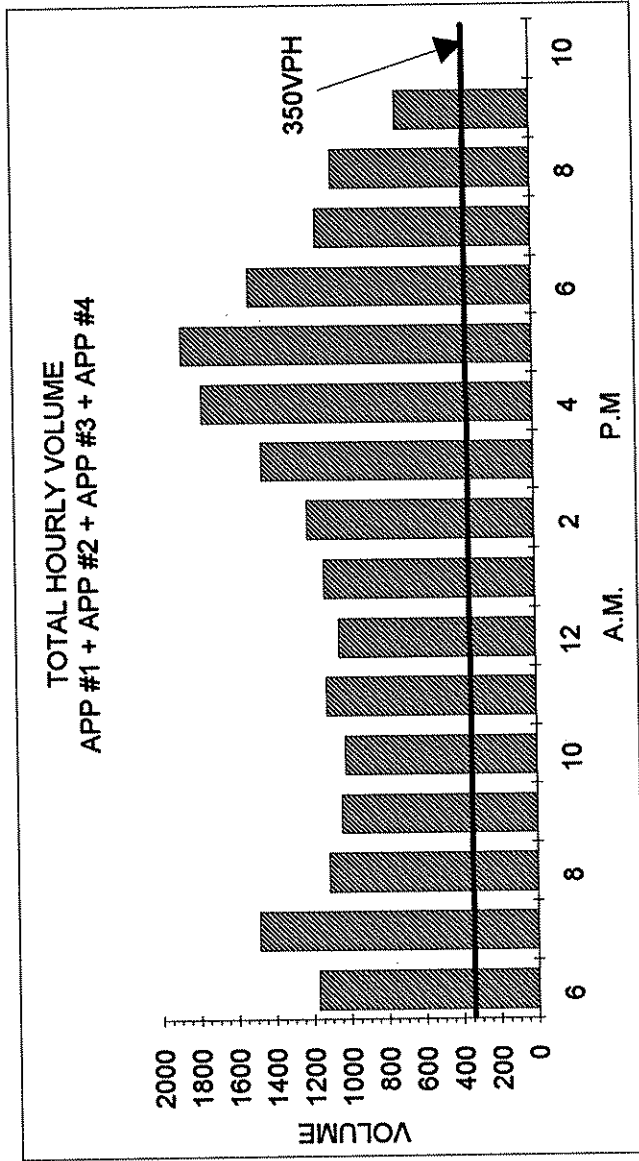
ANOKA COUNTY HIGHWAY DEPARTMENT
 TRAFFIC ENGINEERING SECTION
 TRAFFIC VOLUME AND
 TURNING MOVEMENT STUDY

Site Code : 9330010
 Start Date: 08/24/93
 File I.D. : TMC9330
 Page : 3

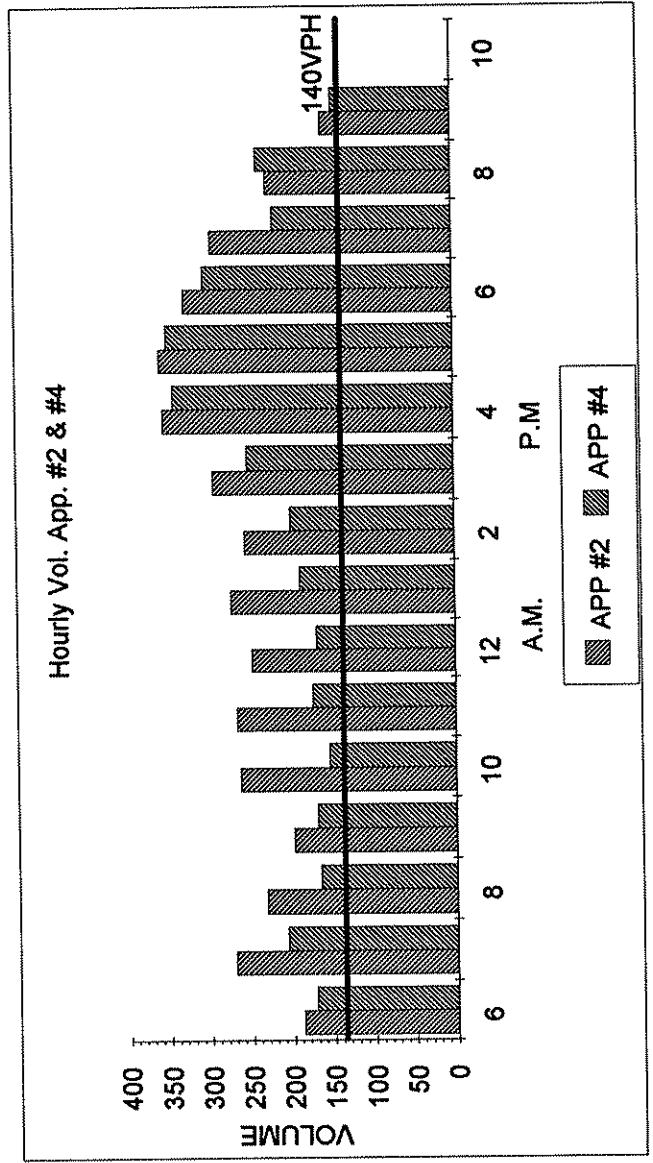
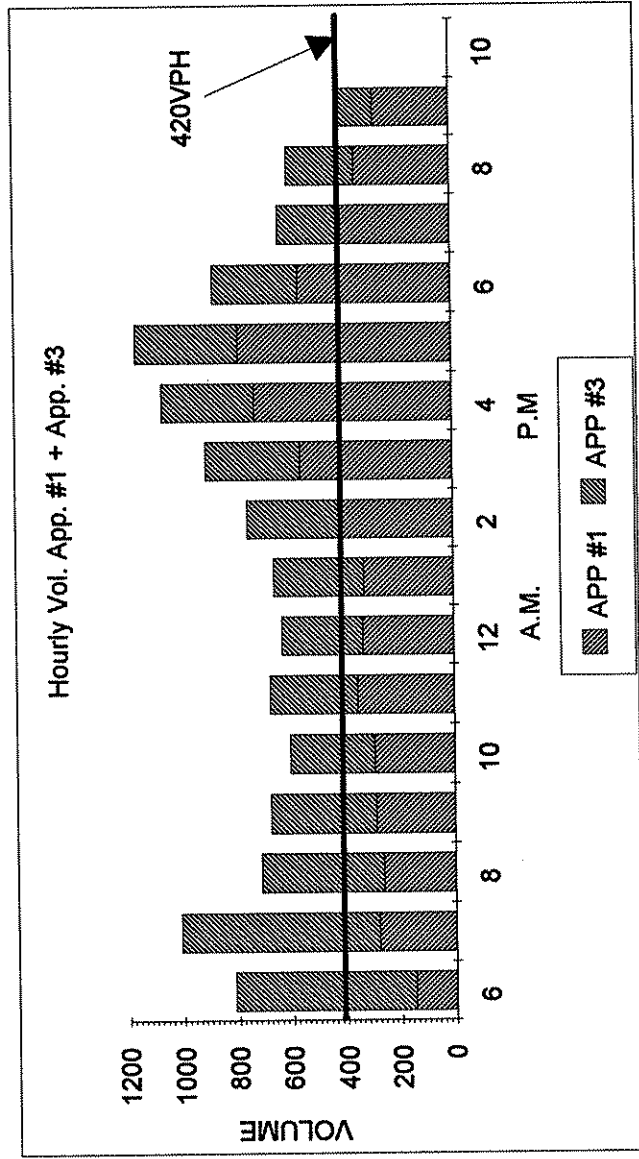
Vehicle group 1

Date	SB CSAH 78 (HANSON BLVD) Southbound				WB CR 116 (BUNKER LK BLVD) Westbound				NB CSAH 78 (HANSON BLVD) Northbound				EB CR 116 (BUNKER LK BLVD) Eastbound				Vehicle Total	Otr To
	Other	Right	Thru	Left	Other	Right	Thru	Left	Other	Right	Thru	Left	Other	Right	Thru	Left		
20:00	1	7	42	3	0	14	32	16	4	13	69	20	0	20	17	19	272	
20:15	0	13	49	8	0	11	45	21	0	4	60	7	0	18	31	13	280	
20:30	0	12	48	6	0	10	28	14	1	14	61	21	0	15	27	12	268	
20:45	0	16	41	4	0	8	25	14	0	8	58	16	0	8	30	16	244	
Hr Total	1	48	180	21	0	43	130	65	5	39	248	64	0	61	105	60	1064	
21:00	0	8	36	3	0	4	24	8	0	13	51	14	0	13	22	19	215	
21:15	1	11	23	1	0	7	29	10	0	12	51	10	1	3	21	8	186	
21:30	0	5	18	1	0	4	24	15	0	7	54	7	1	12	19	13	179	
21:45	0	10	17	2	0	1	14	5	0	5	47	8	0	9	13	6	137	
Hr Total	1	34	94	7	0	16	91	38	0	37	203	39	2	37	75	46	717	
TOTAL	611	992	4425	425	155	476	2098	875	672	775	4482	1109	158	1171	2197	843	19868	15

TMC9330 STOP WARRANT STUDY



TMC9329 SIGNAL WARRANT 1 STUDY



TMC9329 SIGNAL WARRANT 2 STUDY

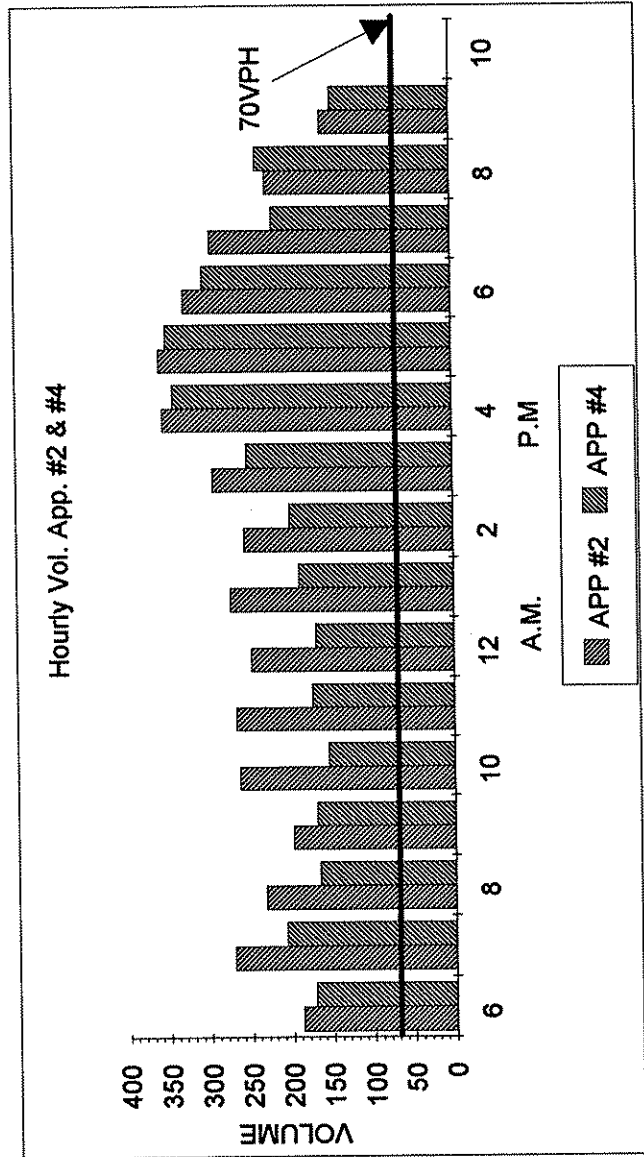
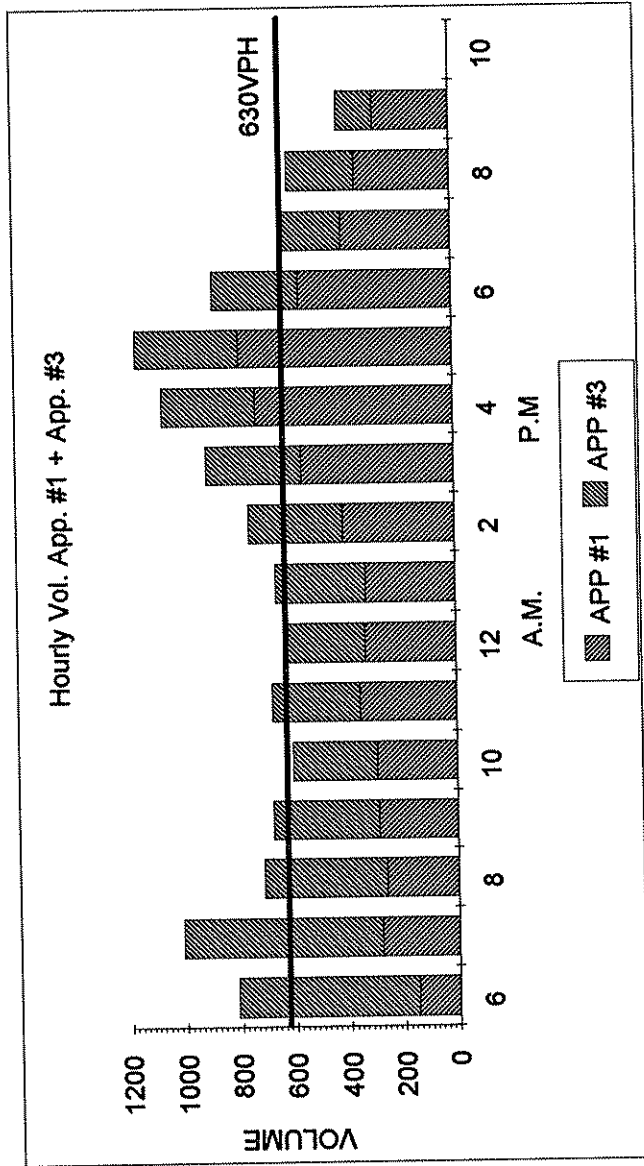
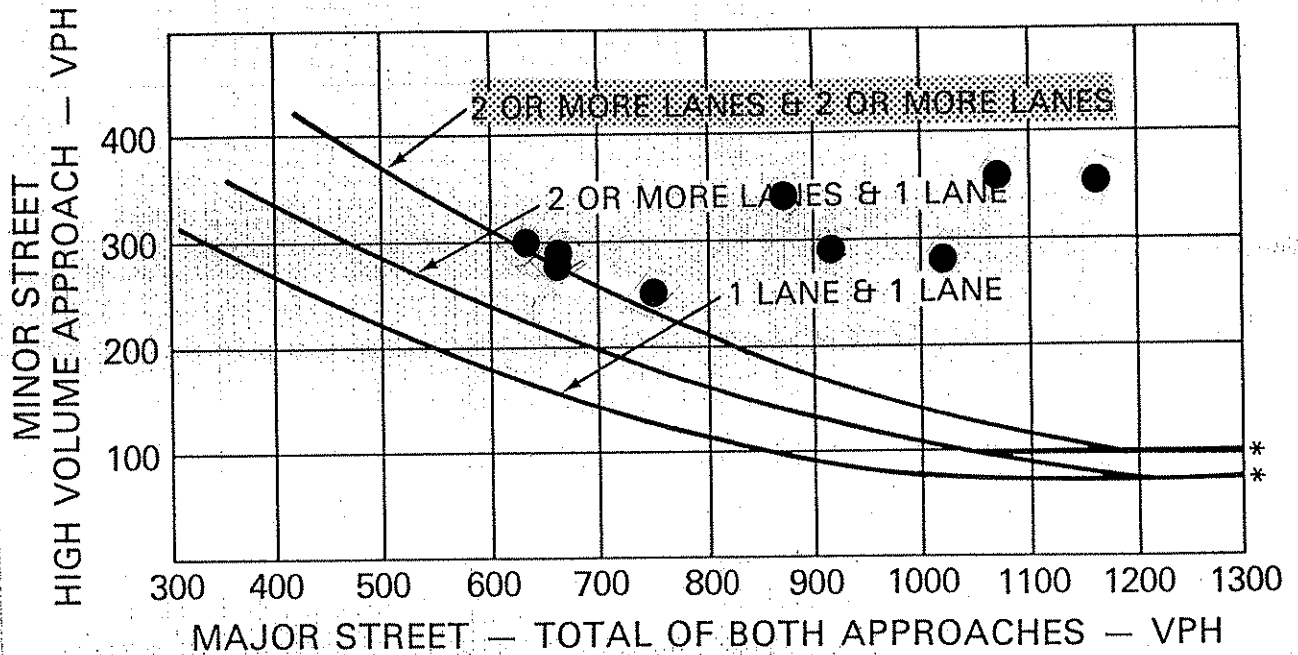


FIGURE 4-6. PEAK HOUR VOLUME WARRANT

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*NOTE: 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 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.

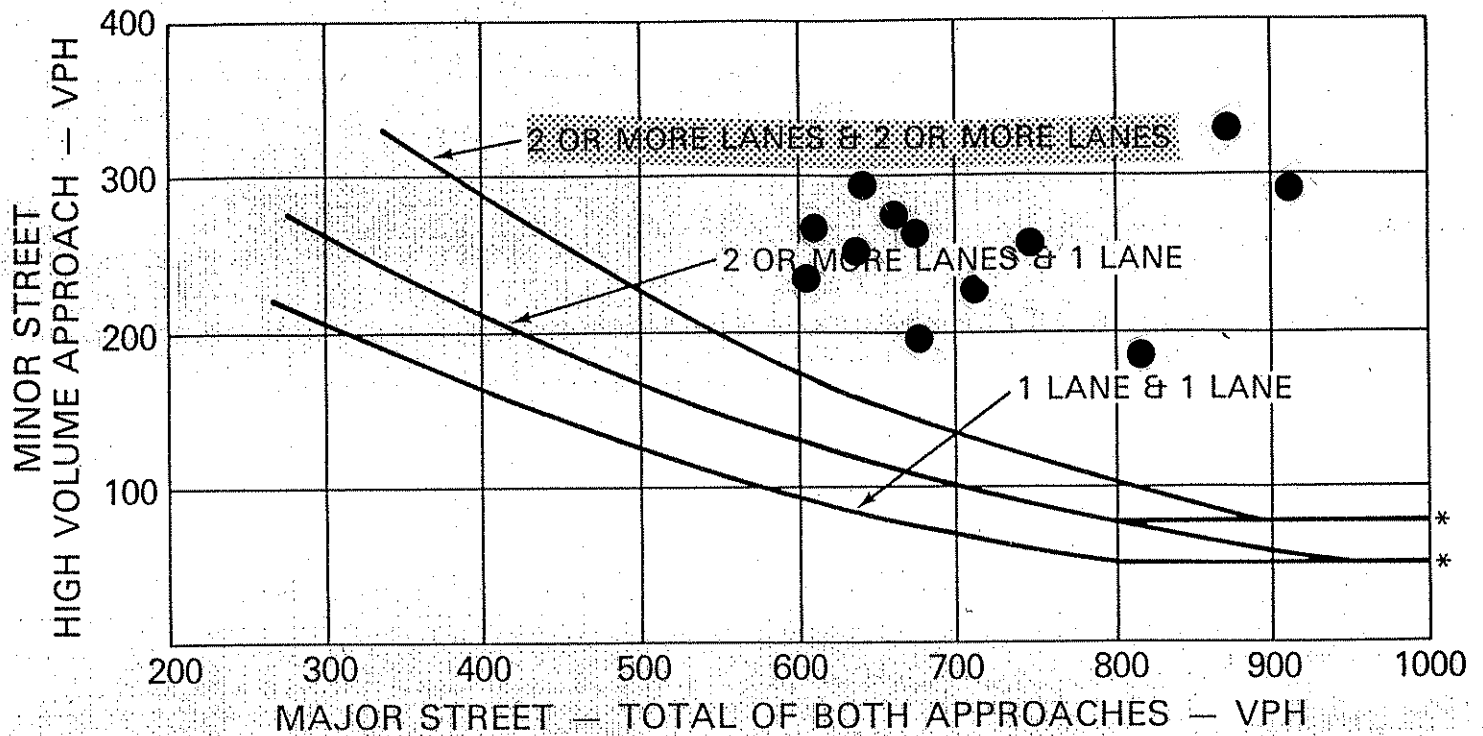
★ = VOLUMES WHICH EXCEED THE THRESHOLD BUT CANNOT BE REPRESENTED ON THE GRAPH.

TIME	MAJOR STREETS (VPH)	MINOR STREET (VPH)
6-7 am	814	188
● 7-8 am	1009	271
8-9 am	713	232
9-10 am	677	198
10-11 am	604	263
● 11-12 pm	678	267
12-1 pm	632	248
● 1-2 pm	662	273
● 2-3 pm	755	256
● 3-4 pm	907	294
● 4-5 pm	1068	355
● 5-6 pm	1161	359
● 6-7 pm	878	328
● 7-8 pm	636	295
● 8-9 pm	600	238
● 9-10 pm	414	158

TMC9330 CSAH 78 (HANSON BLVD) @ CR 116 9BUKER LK BLVD)

FIGURE 4-8. FOUR HOUR VOLUME WARRANT

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*NOTE: 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 60 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	814	188
★ 7-8 am	1009	271
● 8-9 am	713	232
● 9-10 am	677	198
● 10-11 am	604	263
● 11-12 pm	678	267
● 12-1 pm	632	248
● 1-2 pm	662	273
● 2-3 pm	755	256
● 3-4 pm	907	294
★ 4-5 pm	1068	355
★ 5-6 pm	1161	359
● 6-7 pm	878	328
● 7-8 pm	636	295
● 8-9 pm	600	238
● 9-10 pm	414	158

↓



NORTH

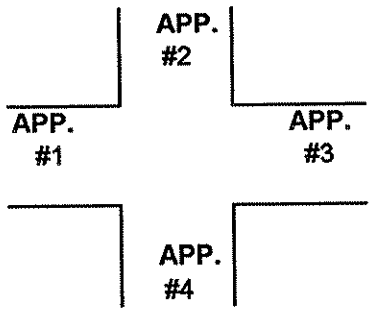
COUNT LOCATION:

CSAH 78 (HANSON BLVD) @
CR 116 (BUNKER LK BLVD)

DATE:

8/24/93

- APP. #1=SB CSAH 78 (HANSON BLVD)
- APP. #2=WB CR 116 (BUNKER LK BLVD)
- APP. #3=NB CSAH 78 (HANSON BLVD)
- APP. #4=EB CR 116 (BUNKER LK BLVD)



- 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						2		
6:15-6:30						3		
6:30-6:45						1		
6:45-7:00						5		
HOURLY TOTAL						HOURLY TOTAL		11
7:00-7:15						6		
7:15-7:30						20	1	
7:30-7:45						53	1	
7:45-8:00						51		
HOURLY TOTAL						HOURLY TOTAL		132
8:00-8:15						31		3
8:15-8:30						24		2
8:30-8:45						45		
8:45-9:00						52		
HOURLY TOTAL						HOURLY TOTAL		157
9:00-9:15						34		
9:15-9:30			1		1	33	1	2
9:30-9:45						41	1	1
9:45-10:00						45		
HOURLY TOTAL					1	HOURLY TOTAL		158
10:00-10:15						23		1
10:15-10:30						34		1
10:30-10:45			2		2	45		
10:45-11:00						40		
HOURLY TOTAL					2	HOURLY TOTAL		144
11:00-11:15						35		
11:15-11:30						32	1	1
11:30-11:45						49		
11:45-12:00						43	1	1
HOURLY TOTAL						HOURLY TOTAL		163
12:00-12:15						34		
12:15-12:30						31		
12:30-12:45						40	1	2
12:45-1:00				3	3	54		
HOURLY TOTAL					3	HOURLY TOTAL		162
1:00-1:15						35		
1:15-1:30			1		1	37		
1:30-1:45						36		
1:45-2:00						44		
HOURLY TOTAL					1	HOURLY TOTAL		152



NORTH

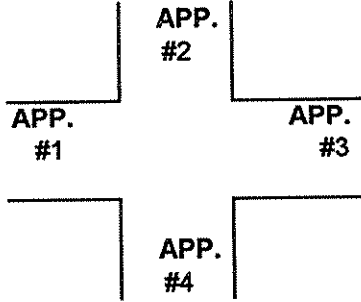
COUNT LOCATION:

CSAH 78 (HANSON BLVD) @
CR 116 (BUNKER LK BLVD)

DATE:

8/26/93

APP. #1=SB CSAH 78
(HANSON BLVD)
APP. #2=WB CR 116
(BUNKER LK BLVD)
APP. #3=NB CSAH 78
(HANSON BLVD)
APP. #4=EB CR 116
(BUNKER LK BLVD)



- 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
2:00-2:15PM						44		1
2:15-2:30						42		
2:30-2:45						45		
2:45-3:00						31	2	2
HOURLY TOTAL						HOURLY TOTAL		167
3:00-3:15						52		
3:15-3:30						35	1	
3:30-3:45						44	1	2
3:45-4:00						28		
HOURLY TOTAL						HOURLY TOTAL		163
4:00-4:15						24		
4:15-4:30						28		1
4:30-4:45						26		
4:45-5:00						27		
HOURLY TOTAL						HOURLY TOTAL		106
5:00-5:15						18		
5:15-5:30						6		
5:30-5:45						9		
5:45-6:00						2		1
HOURLY TOTAL						HOURLY TOTAL		36
6:00-6:15						6		
6:15-6:30						5		
6:30-6:45						1		
6:45-7:00						3		
HOURLY TOTAL						HOURLY TOTAL		15
7:00-7:15						1		
7:15-7:30						1		
7:30-7:45						2		
7:45-8:00						1		
HOURLY TOTAL						HOURLY TOTAL		5
8:00-8:15						3		2
8:15-8:30								
8:30-8:45						1		
8:45-9:00								
HOURLY TOTAL						HOURLY TOTAL		6
9:00-9:15						2		
9:15-9:30								
9:30-9:45						1		
9:45-10:00								
HOURLY TOTAL						HOURLY TOTAL		3