

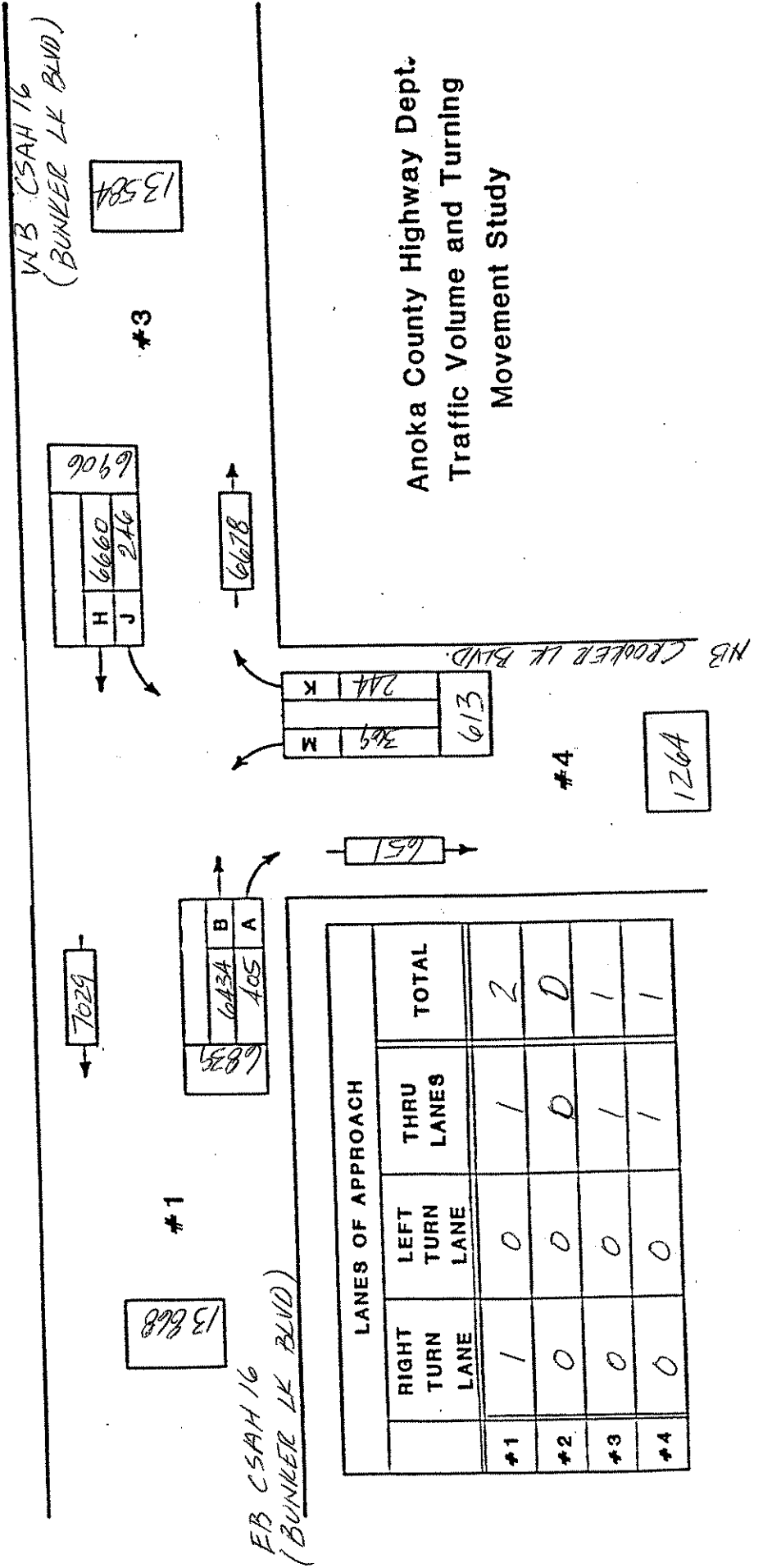


North

Date 7/14/93 AM 7/15/93 PM

C.S. CSAH 16 (BUNKER LAKE BLVD)

Location @ CROOKED LAKE BLVD.



Anoka County Highway Dept.
Traffic Volume and Turning
Movement Study

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

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 : 93
 Start Date: 07
 File I.D. : TM
 Page : 1

Vehicle group 1

Date	Southbound				WB CSAH 16(BUNKER LK BLVD) Westbound				NB CROOKED LK BLVD Northbound				EB CSAH 16(BUNKER LK BLVD) Eastbound				Vehicle Total
	Other	Right	Thru	Left	Other	Right	Thru	Left	Other	Right	Thru	Left	Other	Right	Thru	Left	

07/14/93	-----																
06:00	0	0	0	0	0	0	42	0	0	3	0	1	0	1	29	0	76
06:15	0	0	0	0	2	0	48	3	0	0	0	2	1	4	49	0	106
06:30	0	0	0	0	2	0	75	1	0	1	0	4	0	2	66	0	149
06:45	0	0	0	0	3	0	80	4	0	2	0	2	2	4	77	0	169
Hr Total	0	0	0	0	7	0	245	8	0	6	0	9	3	11	221	0	500
07:00	0	0	0	0	2	0	68	4	0	5	0	3	6	2	74	0	156
07:15	0	0	0	0	5	0	79	2	0	2	0	2	7	3	91	0	179
07:30	0	0	0	0	12	0	84	2	1	3	0	3	4	1	72	0	165
07:45	0	0	0	0	12	0	81	3	0	2	0	3	3	5	82	0	176
Hr Total	0	0	0	0	31	0	312	11	1	12	0	11	20	11	319	0	676
08:00	0	0	0	0	9	0	67	0	0	0	0	7	4	4	73	0	151
08:15	0	0	0	0	10	0	69	3	0	2	0	3	8	4	53	0	134
08:30	0	0	0	0	8	0	70	2	0	3	0	1	8	6	68	0	150
08:45	0	0	0	0	9	0	80	4	2	3	0	8	5	3	78	0	176
Hr Total	0	0	0	0	36	0	286	9	2	8	0	19	25	17	272	0	611
09:00	0	0	0	0	7	0	88	4	0	3	0	3	2	3	56	0	157
09:15	0	0	0	0	1	0	69	4	0	1	0	1	6	1	60	0	136
09:30	0	0	0	0	4	0	73	9	0	0	0	6	9	9	72	0	169
09:45	0	0	0	0	8	0	73	3	0	6	0	2	5	4	68	0	156
Hr Total	0	0	0	0	20	0	303	20	0	10	0	12	22	17	256	0	618
10:00	0	0	0	0	7	0	88	3	0	2	0	7	5	7	77	0	184
10:15	0	0	0	0	6	0	82	1	0	1	0	8	5	6	78	0	176
10:30	0	0	0	0	2	0	80	2	0	2	0	3	4	8	79	0	174
10:45	0	0	0	0	4	0	72	2	0	2	0	4	5	6	94	0	180
Hr Total	0	0	0	0	19	0	322	8	0	7	0	22	19	27	328	0	714
11:00	0	0	0	0	5	0	78	6	1	5	0	4	3	5	83	0	181
11:15	0	0	0	0	6	0	97	4	1	5	0	3	9	10	101	0	220
11:30	0	0	0	0	4	0	84	3	1	3	0	8	8	9	109	0	216
11:45	0	0	0	0	4	0	95	2	2	2	0	9	7	12	112	0	232
Hr Total	0	0	0	0	19	0	354	15	5	15	0	24	27	36	405	0	849
12:00	0	0	0	0	8	0	106	2	0	3	0	8	7	8	111	0	238
12:15	0	0	0	0	4	0	103	4	0	2	0	5	5	5	103	0	222
12:30	0	0	0	0	5	0	95	5	1	2	0	6	2	9	95	0	212
12:45	0	0	0	0	8	0	102	4	0	4	0	2	4	4	87	0	203
Hr Total	0	0	0	0	25	0	406	15	1	11	0	21	18	26	396	0	875

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

Site Code : 93
Start Date: 07
File I.D. : TM
Page : 2

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

Vehicle group 1

Date	Southbound				WB CSAH 16(BUNKER LK BLVD) Westbound				NB CROOKED LK BLVD Northbound				EB CSAH 16(BUNKER LK BLVD) Eastbound				Vehicle Total
	Other	Right	Thru	Left	Other	Right	Thru	Left	Other	Right	Thru	Left	Other	Right	Thru	Left	

07/14/93	-----																
13:00	0	0	0	0	3	0	79	2	0	3	0	2	1	9	89	0	184
13:15	0	0	0	0	6	0	96	2	0	5	0	8	5	4	77	0	192
13:30	0	0	0	0	4	0	73	2	0	3	0	6	6	5	85	0	174
13:45	0	0	0	0	9	0	98	2	0	4	0	1	8	3	99	0	207
Hr Total	0	0	0	0	22	0	346	8	0	15	0	17	20	21	350	0	757
14:00	0	0	0	0	7	0	93	1	0	3	0	4	6	9	97	0	207
14:15	0	0	0	0	10	0	84	7	0	2	0	4	5	7	96	0	200
14:30	0	0	0	0	4	0	96	3	0	6	0	8	13	8	112	0	233
14:45	0	0	0	0	9	0	93	9	0	2	0	2	4	3	98	0	207
Hr Total	0	0	0	0	30	0	366	20	0	13	0	18	28	27	403	0	847
15:00	0	0	0	0	4	0	112	8	0	8	0	9	8	7	113	0	257
15:15	0	0	0	0	5	0	112	4	0	9	0	4	5	2	109	0	240
15:30	0	0	0	0	3	0	125	4	0	4	0	11	4	7	137	0	288
15:45	0	0	0	0	9	0	143	5	1	6	0	9	9	11	124	0	298
Hr Total	0	0	0	0	21	0	492	21	1	27	0	33	26	27	483	0	1083
16:00	0	0	0	0	4	0	142	5	0	4	0	7	8	11	112	0	281
16:15	0	0	0	0	3	0	136	4	0	5	0	10	2	6	110	0	271
16:30	0	0	0	0	5	0	153	3	1	3	0	8	2	5	139	0	311
5	0	0	0	0	4	0	180	7	0	2	0	15	1	16	129	0	349
Hr Total	0	0	0	0	16	0	611	19	1	14	0	40	13	38	490	0	1212
17:00	0	0	0	0	3	0	153	13	1	11	0	8	4	10	125	0	320
17:15	0	0	0	0	2	0	163	4	0	5	0	16	3	8	128	0	324
17:30	0	0	0	0	1	0	187	7	0	6	0	3	0	10	147	0	360
17:45	0	0	0	0	10	0	191	5	0	4	0	4	4	6	145	0	355
Hr Total	0	0	0	0	16	0	694	29	1	26	0	31	11	34	545	0	1359
18:00	0	0	0	0	3	0	184	3	0	10	0	5	3	15	140	0	357
18:15	0	0	0	0	8	0	173	3	1	6	0	5	1	10	153	0	350
18:30	0	0	0	0	2	0	153	6	1	4	0	8	0	8	118	0	297
18:45	0	0	0	0	5	0	151	6	0	5	0	10	1	9	127	0	308
Hr Total	0	0	0	0	18	0	661	18	2	25	0	28	5	42	538	0	1312
19:00	0	0	0	0	1	0	125	8	0	5	0	11	0	4	140	0	293
19:15	0	0	0	0	1	0	123	4	0	4	0	8	2	4	162	0	305
19:30	0	0	0	0	2	0	142	3	1	5	0	11	0	8	122	0	291
19:45	0	0	0	0	2	0	130	3	0	5	0	8	3	7	124	0	277
Hr Total	0	0	0	0	6	0	520	18	1	19	0	38	5	23	548	0	1166

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

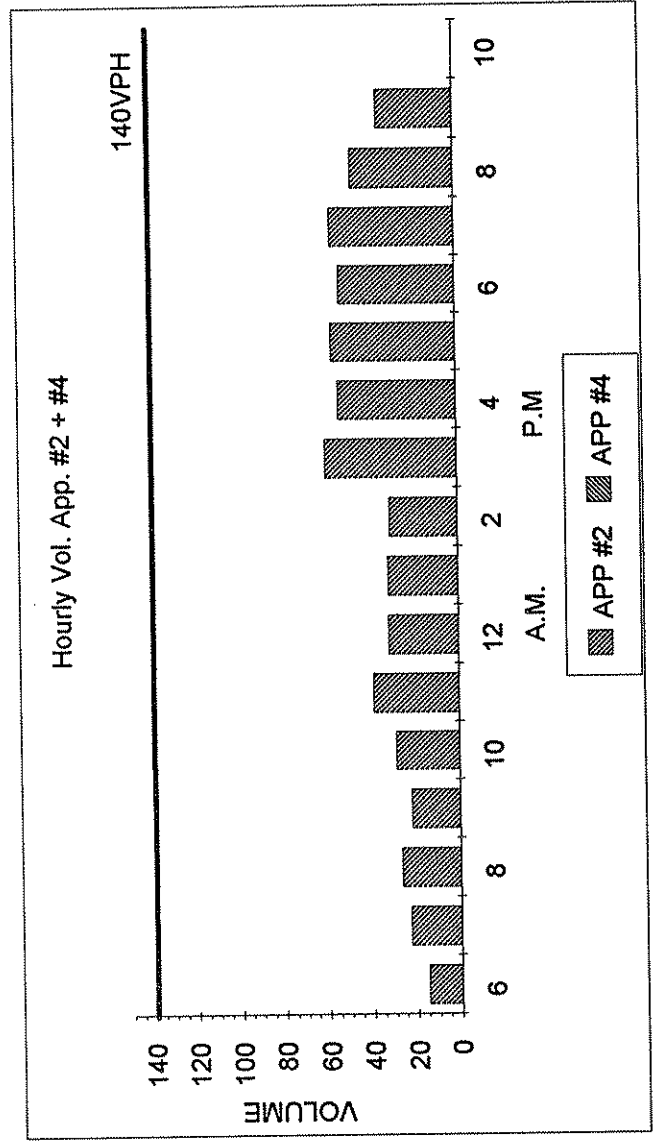
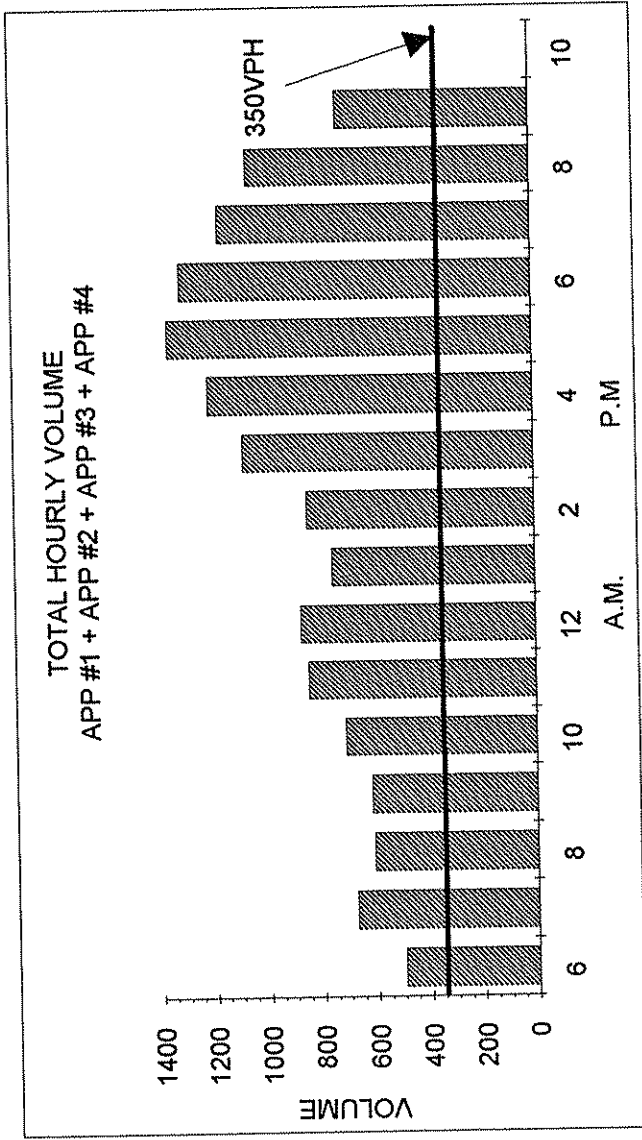
ANOKA COUNTY HIGHWAY DEPARTMENT
 TRAFFIC ENGINEERING SECTION
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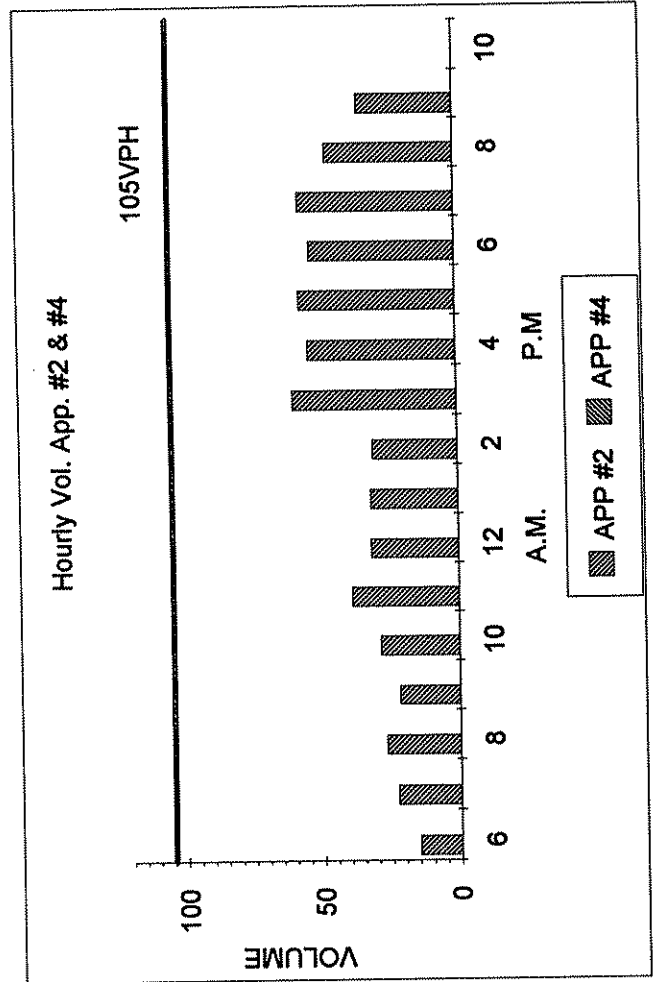
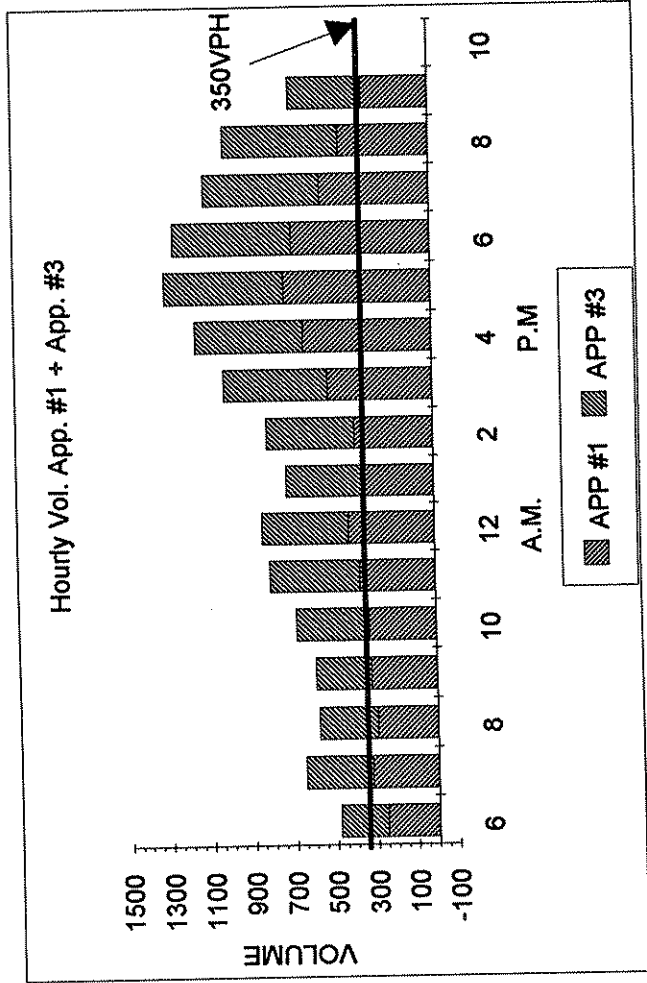
Vehicle group 1

	Southbound				WB CSAH 16(BUNKER LK BLVD) Westbound				NB CROOKED LK BLVD Northbound				EB CSAH 16(BUNKER LK BLVD) Eastbound				Vehicle Total
	Other	Right	Thru	Left	Other	Right	Thru	Left	Other	Right	Thru	Left	Other	Right	Thru	Left	
Date 07/14/93																	
20:00	0	0	0	0	3	0	127	1	0	5	0	7	3	5	129	0	274
20:15	0	0	0	0	0	0	113	4	0	4	0	8	0	6	155	0	290
20:30	0	0	0	0	1	0	109	1	0	6	0	5	1	8	143	0	272
20:45	0	0	0	0	0	0	87	1	0	7	0	5	0	6	116	0	222
Hr Total	0	0	0	0	4	0	436	7	0	22	0	25	4	25	543	0	1058
21:00	0	0	0	0	0	0	86	8	0	4	0	1	0	7	89	0	195
21:15	0	0	0	0	0	0	88	6	0	5	0	6	0	7	93	0	205
21:30	0	0	0	0	0	0	77	5	0	4	0	7	0	4	79	0	176
21:45	0	0	0	0	0	0	55	1	0	1	0	7	1	5	76	0	145
Hr Total	0	0	0	0	0	0	306	20	0	14	0	21	1	23	337	0	721
TOTAL	0	0	0	0	290	0	6660	246	15	244	0	369	247	405	6434	0	14358

TMC9316 STOP WARRANT STUDY



TMC9316 SIGNAL WARRANT 1 STUDY



TMC9316 SIGNAL WARRANT 2 STUDY

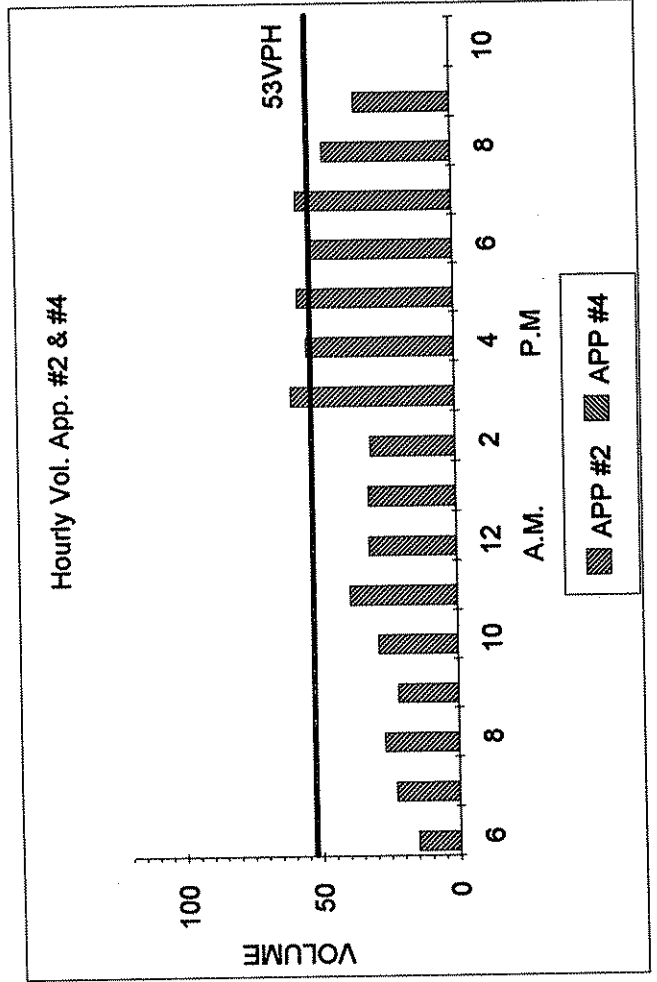
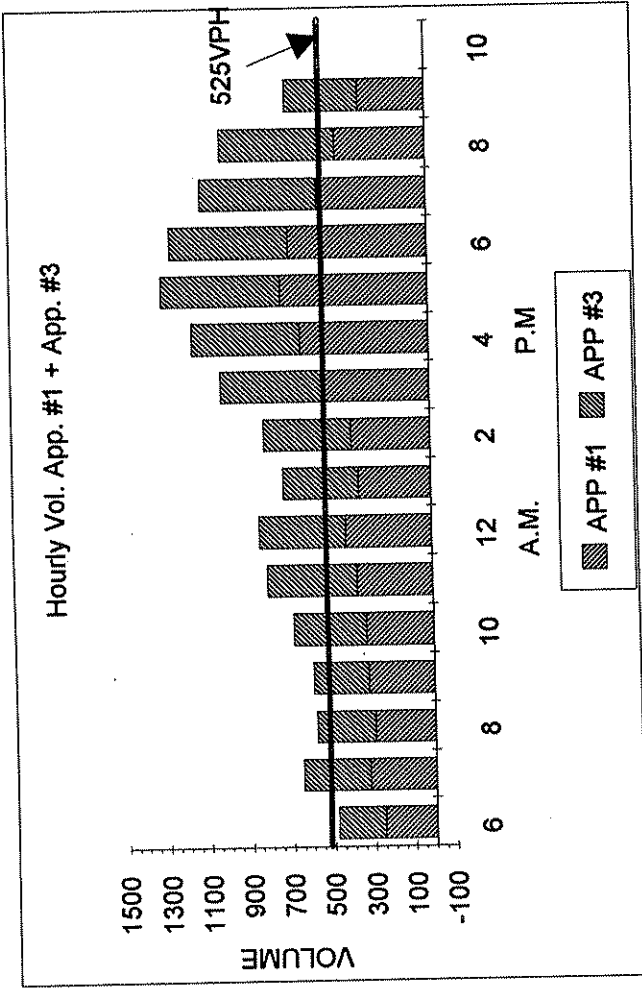
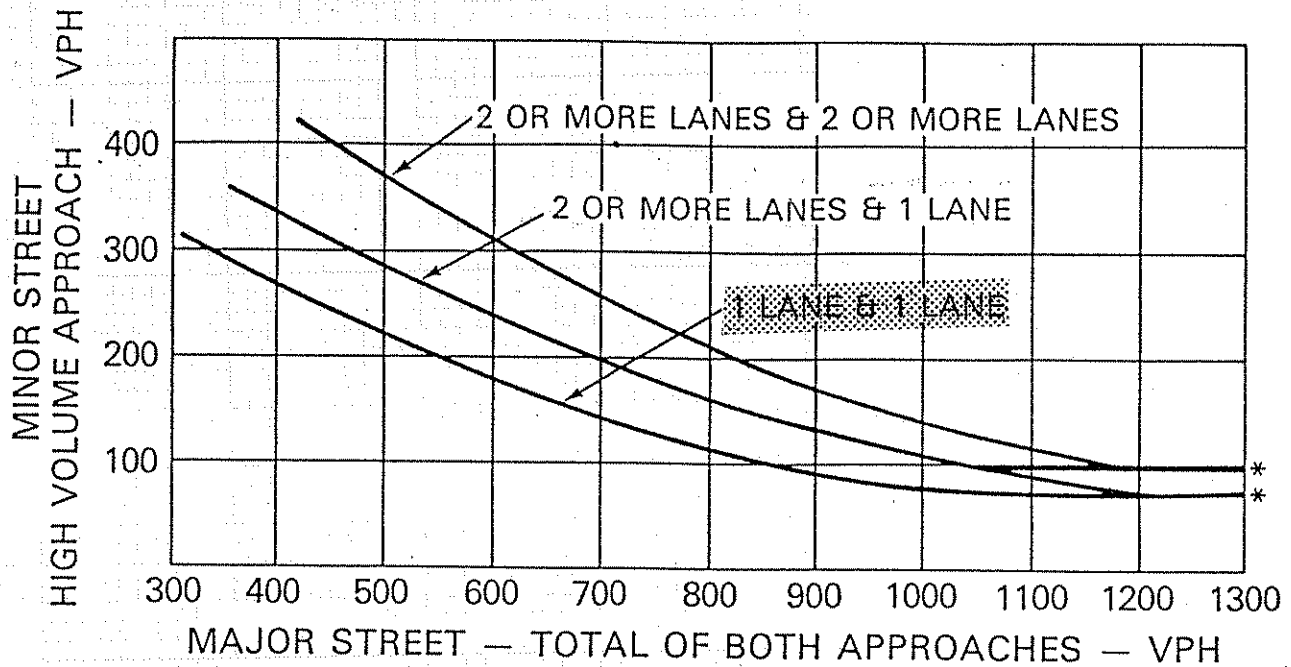


FIGURE 4-6. PEAK HOUR VOLUME WARRANT

(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.

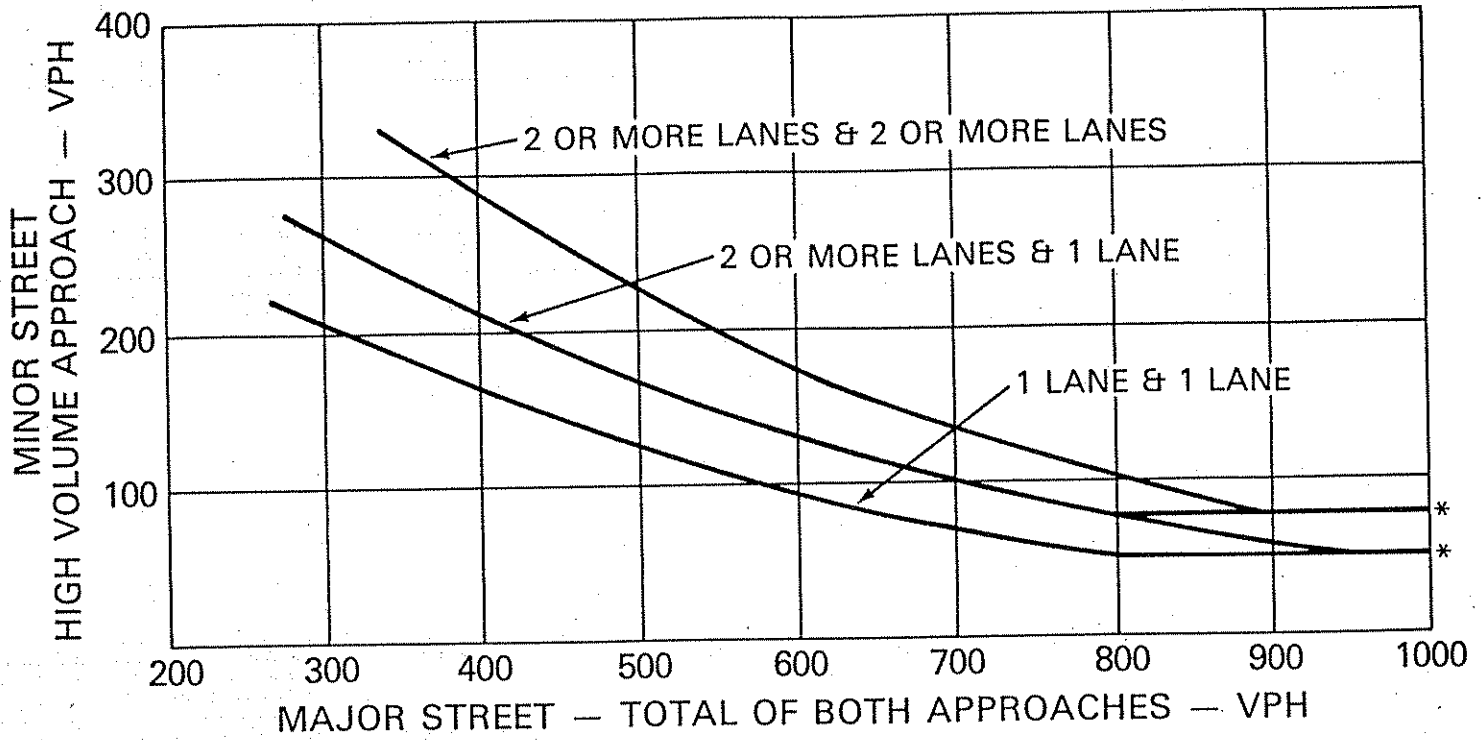
● = VOLUMES WHICH EXCEED THE THRESHOLD AND ARE REPRESENTED ON THE GRAPH.

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

TIME	MAJOR STREETS (VPH)	MINOR STREET (VPH)
6-7 am	485	15
7-8 am	653	23
8-9 am	584	27
9-10 am	596	22
10-11 am	685	29
11-12 pm	810	39
12-1 pm	843	32
1-2 pm	725	32
2-3 pm	816	31
3-4 pm	1023	60
4-5 pm	1158	54
5-6 pm	1302	57
6-7 pm	1259	53
7-8 pm	1109	57
8-9 pm	1011	47
9-10 pm	686	35

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	485	15
7-8 am	653	23
8-9 am	584	27
9-10 am	596	22
10-11 am	685	29
11-12 pm	810	39
12-1 pm	843	32
1-2 pm	725	32
2-3 pm	816	31
★ 3-4 pm	1023	60
4-5 pm	1158	54
5-6 pm	1302	57
6-7 pm	1259	53
7-8 pm	1109	57
8-9 pm	1011	47
9-10 pm	686	35

TMC9316 CSAH 16 (BUNKER LAKE BLVD) @ CROOKED LAKE BLVD.

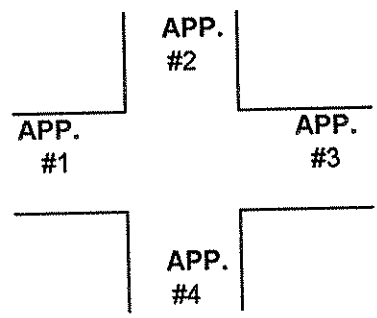


COUNT LOCATION:

CSAH 16 (BUNKER LK BLVD) @
CROOKED LK BLVD

D 7/15/93

APP. #1=
APP. #2=WB CSAH 16
(BUNKER LK BLVD)
APP. #3=
NB CROOKED LK BLVD
APP. #4= EB CSAH 16
(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			1		1			1
6:15-6:30						2		
6:30-6:45						2		
6:45-7:00						5		
HOURLY TOTAL					1	HOURLY TOTAL		10
7:00-7:15						4		4
7:15-7:30						11		1
7:30-7:45						15		1
7:45-8:00						15		
HOURLY TOTAL						HOURLY TOTAL		51
8:00-8:15						8		1
8:15-8:30						18		
8:30-8:45			1		1	15		
8:45-9:00				1	1	15		2
HOURLY TOTAL					2	HOURLY TOTAL		59
9:00-9:15						8		
9:15-9:30						6		1
9:30-9:45						13		
9:45-10:00			2		2	13	1	
HOURLY TOTAL					2	HOURLY TOTAL		42
10:00-10:15						14		1
10:15-10:30			1		1	7	1	
10:30-10:45						6		
10:45-11:00						10		
HOURLY TOTAL					1	HOURLY TOTAL		39
11:00-11:15			1		1	9		
11:15-11:30						15		1
11:30-11:45			3		3	11		2
11:45-12:00						9		4
HOURLY TOTAL					4	HOURLY TOTAL		51
12:00-12:15			2		2	12		3
12:15-12:30			5		5	9		
12:30-12:45			4		4	6	1	
12:45-1:00			1		1	12		
HOURLY TOTAL					12	HOURLY TOTAL		43
1:00-1:15			5	1	6	4		
1:15-1:30						12		
1:30-1:45						7		1
1:45-2:00						16		
HOURLY TOTAL					6	HOURLY TOTAL		40

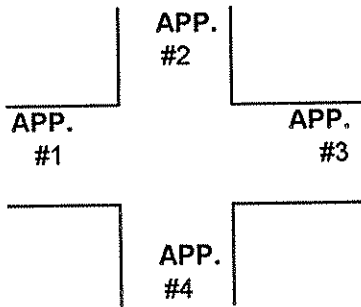


NORTH

COUNT LOCATION: CSAH 16 (BUNKER LK BLVD) @
CROOKED LK BLVD

DA 7/15/93

APP. #1=
APP. #2=WB CSAH 16
(BUNKER LK BLVD)
APP. #3=
NB CROOKED LK BLVD
APP. #4=EB CSAH 16
(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			3		3	12		
2:15-2:30			1		1	15		
2:30-2:45			2		2	16		1
2:45-3:00						14		
HOURLY TOTAL					6	HOURLY TOTAL		58
3:00-3:15			6		6	10		1
3:15-3:30			1		1	10		
3:30-3:45						7		
3:45-4:00						20		
HOURLY TOTAL					7	HOURLY TOTAL		48
4:00-4:15			3		3	12		1
4:15-4:30						4		
4:30-4:45						6		2
4:45-5:00			1		1	4	1	
HOURLY TOTAL					4	HOURLY TOTAL		30
5:00-5:15						9		
5:15-5:30			2		2	5		
5:30-5:45			2		2	1		
5:45-6:00			3		3	13		
HOURLY TOTAL					7	HOURLY TOTAL		28
6:00-6:15			2		2	6		
6:15-6:30			2		2	8		
6:30-6:45			1		1	3		
6:45-7:00		1			1	7		
HOURLY TOTAL					6	HOURLY TOTAL		24
7:00-7:15			2		2	1		
7:15-7:30			2		2	1	3	
7:30-7:45			1		1	3		
7:45-8:00						3		
HOURLY TOTAL					5	HOURLY TOTAL		11
8:00-8:15			2		2	2	3	
8:15-8:30								
8:30-8:45			1		1	1	1	
8:45-9:00								
HOURLY TOTAL					3	HOURLY TOTAL		7
9:00-9:15								
9:15-9:30			2		2			
9:30-9:45								
9:45-10:00						1		
HOURLY TOTAL					2	HOURLY TOTAL		1