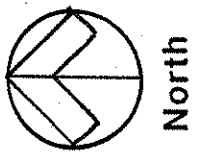
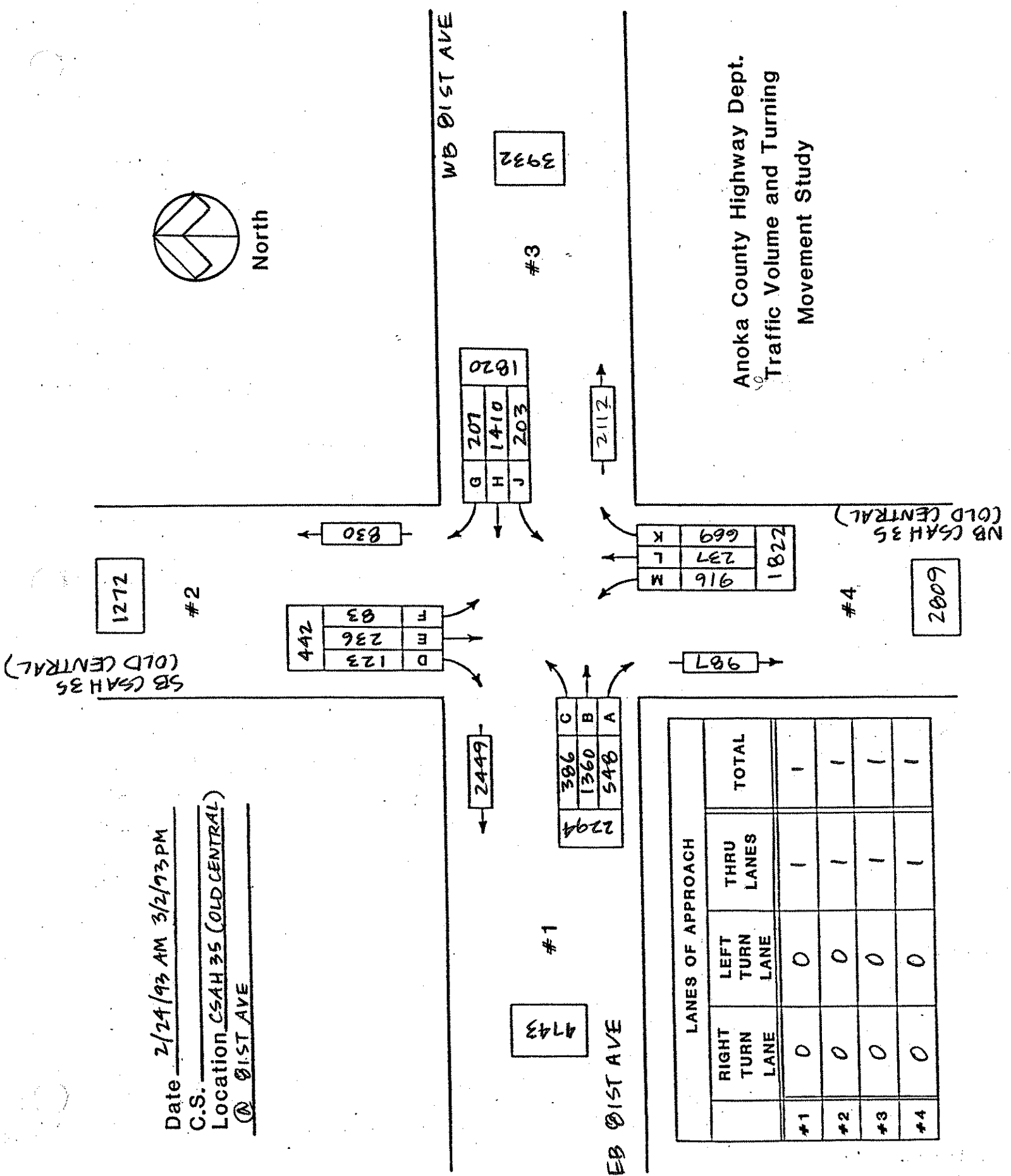


Date 2/24/93 AM 3/2/93 PM
 C.S. Location CSAH 35 (OLD CENTRAL)
 @ 81ST AVE



Anoka County Highway Dept.
 Traffic Volume and Turning
 Movement Study



4743

#1

2294	C	386
	B	1360
	A	548

2449

1272

#2

442	F	83
	E	236
	D	123

830

1820	G	207
	H	1410
	J	203

3932

#3

2112

1822	M	916
	L	237
	K	669

NB CSAH 35 (OLD CENTRAL)

#4

2009

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

EB 81ST AVE

WB 81ST AVE

ANOKA COUNTY HIGHWAY DEPARTMENT
TRAFFIC ENGINEERING SECTION

DATE 2/24/93AM 3/2/93PM
C.S
LOCATION CSAH 35 (OLD CENTRAL) @ 81ST AVE
H.V. OF PDS H.V.
TRAFFIC VOLUME AND
TURNING MOVEMENT STUDY

VOLUME & MOVEMENT

LANES OF APPROACH	RIGHT TURN L. LAMES		THRU	TOTAL	DESCRIPTION	RT. TURN		THRU	LT. TURN	SUB TOTAL	OPPOSING	TOTAL
	#	TURN				#	TURN					
1	0	0	1	1	EASTBOUND 81ST AVE	1	548	1360	386	2294	2448	4743
2	0	0	1	1	SOUTHBOUND CSAH 35 (OLD CENTRAL)	2	123	236	83	442	830	1272
3	0	0	1	1	WESTBOUND 81ST AVE	3	207	1410	203	1820	2112	3932
4	0	0	1	1	NORTHBOUND CSAH 35 (OLD CENTRAL)	4	689	237	916	1822	887	2809

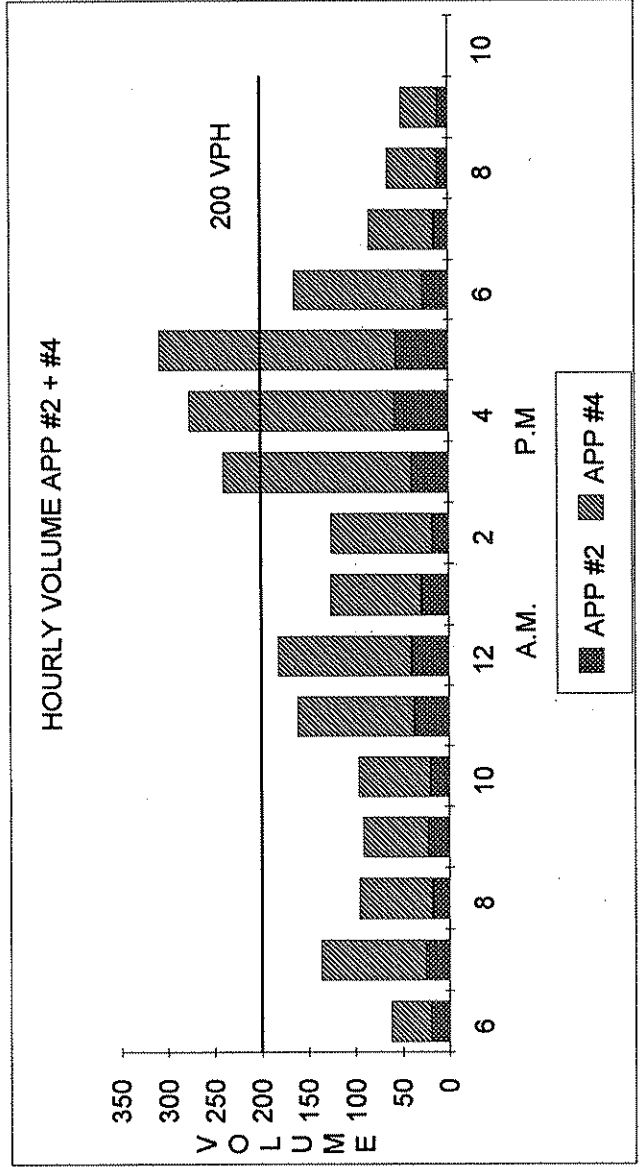
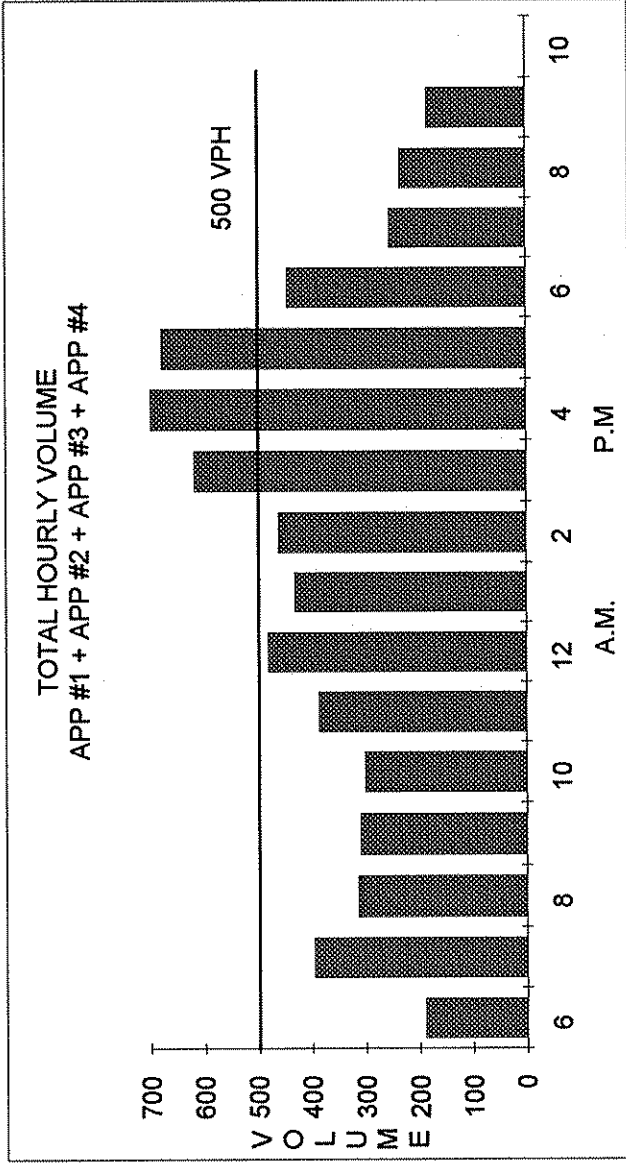
TIME INTERVALS	EASTBOUND APPROACH # 1			WESTBOUND APPROACH # 3			SOUTHBOUND APPROACH # 2			NORTHBOUND APPROACH # 4		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
6:00 - 6:15	0	3	5	2	10	6	0	3	2	0	5	4
6:15 - 6:30	0	11	3	2	16	6:00 to 6:15	0	2	7	0	9	12
6:30 - 6:45	0	10	4	6	20	7:00 to 7:15	0	0	2	0	2	7
6:45 - 7:00*	1	13	11	4	28	74	2	0	11	5	16	53
7:00 - 7:15	0	14	9	4	27	17	0	2	1	0	3	19
7:15 - 7:30	2	15	16	7	38	7:00 to 7:15	4	0	18	7	25	32
7:30 - 7:45	3	17	22	5	44	8:00 to 8:15	1	1	19	8	28	39
7:45 - 8:00	0	22	25	15	62	171	2	0	14	5	19	89
8:00 - 8:15	0	13	15	8	36	36	0	1	9	6	16	25
8:15 - 8:30	0	7	35	3	45	8:00 to 8:15	0	0	9	8	17	28
8:30 - 8:45	0	5	18	3	26	9:00 to 9:15	0	0	14	5	19	34
8:45 - 9:00	3	3	32	4	38	146	2	1	17	2	20	72
9:00 - 9:15	2	5	18	2	25	29	3	1	22	6	29	44
9:15 - 9:30	1	13	21	0	34	9:00 to 9:15	0	0	22	5	27	47
9:30 - 9:45	0	0	23	0	23	10:00 to 10:15	0	0	19	3	22	31
9:45 - 10:00	1	8	26	1	35	117	0	0	19	4	23	101
10:00 - 10:15	2	5	26	2	33	7	2	1	16	7	24	40
10:15 - 10:30	0	3	24	1	28	10:00 to 10:15	0	1	16	3	20	36
10:30 - 10:45	2	7	24	0	31	11:00 to 11:15	1	1	21	5	27	44
10:45 - 11:00	0	7	12	4	23	115	0	0	11	7	18	89
11:00 - 11:15	0	10	13	2	25	5	1	1	18	5	24	41
11:15 - 11:30	0	8	17	2	27	11:00 to 11:15	0	0	18	7	26	54
11:30 - 11:45	0	8	13	2	23	12:00 to 12:15	0	0	20	1	21	31
11:45 - 12:00	2	19	19	3	41	116	1	2	28	9	39	110
12:00 - 12:15	3	23	22	4	49	12	1	0	26	12	38	124
12:15 - 12:30	0	23	14	3	40	12:00 to 12:15	0	0	21	12	33	120
12:30 - 12:45	0	11	20	5	36	1:00 to 1:15	2	0	25	9	34	110
12:45 - 1:00	0	13	31	7	51	176	0	0	12	7	19	124
1:00 - 1:15	2	17	30	1	48	1	1	29	6	36	51	142
1:15 - 1:30	0	9	23	2	34	1:00 to 1:15	1	0	19	10	29	110
1:30 - 1:45	0	9	25	3	37	2:00 to 2:15	0	1	38	7	46	145
1:45 - 2:00	0	11	27	2	40	159	1	2	25	8	35	166
2:00 - 2:15	3	2	23	16	41	34	2	9	24	1	34	129

TIME INTERVALS	EASTBOUND APPROACH # 1			WESTBOUND APPROACH # 3			SOUTHBOUND APPROACH # 2			NORTHBOUND APPROACH # 4		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
6:00 - 6:15	0	3	5	2	10	6	0	3	2	0	5	4
6:15 - 6:30	0	11	3	2	16	6:00 to 6:15	0	2	7	0	9	12
6:30 - 6:45	0	10	4	6	20	7:00 to 7:15	0	0	2	0	2	7
6:45 - 7:00*	1	13	11	4	28	74	2	0	11	5	16	53
7:00 - 7:15	0	14	9	4	27	17	0	2	1	0	3	19
7:15 - 7:30	2	15	16	7	38	7:00 to 7:15	4	0	18	7	25	32
7:30 - 7:45	3	17	22	5	44	8:00 to 8:15	1	1	19	8	28	39
7:45 - 8:00	0	22	25	15	62	171	2	0	14	5	19	89
8:00 - 8:15	0	13	15	8	36	36	0	1	9	6	16	25
8:15 - 8:30	0	7	35	3	45	8:00 to 8:15	0	0	9	8	17	28
8:30 - 8:45	0	5	18	3	26	9:00 to 9:15	0	0	14	5	19	34
8:45 - 9:00	3	3	32	4	38	146	2	1	17	2	20	72
9:00 - 9:15	2	5	18	2	25	29	3	1	22	6	29	44
9:15 - 9:30	1	13	21	0	34	9:00 to 9:15	0	0	22	5	27	47
9:30 - 9:45	0	0	23	0	23	10:00 to 10:15	0	0	19	3	22	31
9:45 - 10:00	1	8	26	1	35	117	0	0	19	4	23	101
10:00 - 10:15	2	5	26	2	33	7	2	1	16	7	24	40
10:15 - 10:30	0	3	24	1	28	10:00 to 10:15	0	1	16	3	20	36
10:30 - 10:45	2	7	24	0	31	11:00 to 11:15	1	1	21	5	27	44
10:45 - 11:00	0	7	12	4	23	115	0	0	11	7	18	89
11:00 - 11:15	0	10	13	2	25	5	1	1	18	5	24	41
11:15 - 11:30	0	8	17	2	27	11:00 to 11:15	0	0	18	7	26	54
11:30 - 11:45	0	8	13	2	23	12:00 to 12:15	0	0	20	1	21	31
11:45 - 12:00	2	19	19	3	41	116	1	2	28	9	39	110
12:00 - 12:15	3	23	22	4	49	12	1	0	26	12	38	124
12:15 - 12:30	0	23	14	3	40	12:00 to 12:15	0	0	21	12	33	120
12:30 - 12:45	0	11	20	5	36	1:00 to 1:15	2	0	25	9	34	110
12:45 - 1:00	0	13	31	7	51	176	0	0	12	7	19	124
1:00 - 1:15	2	17	30	1	48	1	1	29	6	36	51	142
1:15 - 1:30	0	9	23	2	34	1:00 to 1:15	1	0	19	10	29	110
1:30 - 1:45	0	9	25	3	37	2:00 to 2:15	0	1	38	7	46	145
1:45 - 2:00	0	11	27	2	40	159	1	2	25	8	35	166
2:00 - 2:15	3	2	23	16	41	34	2	9	24	1	34	129

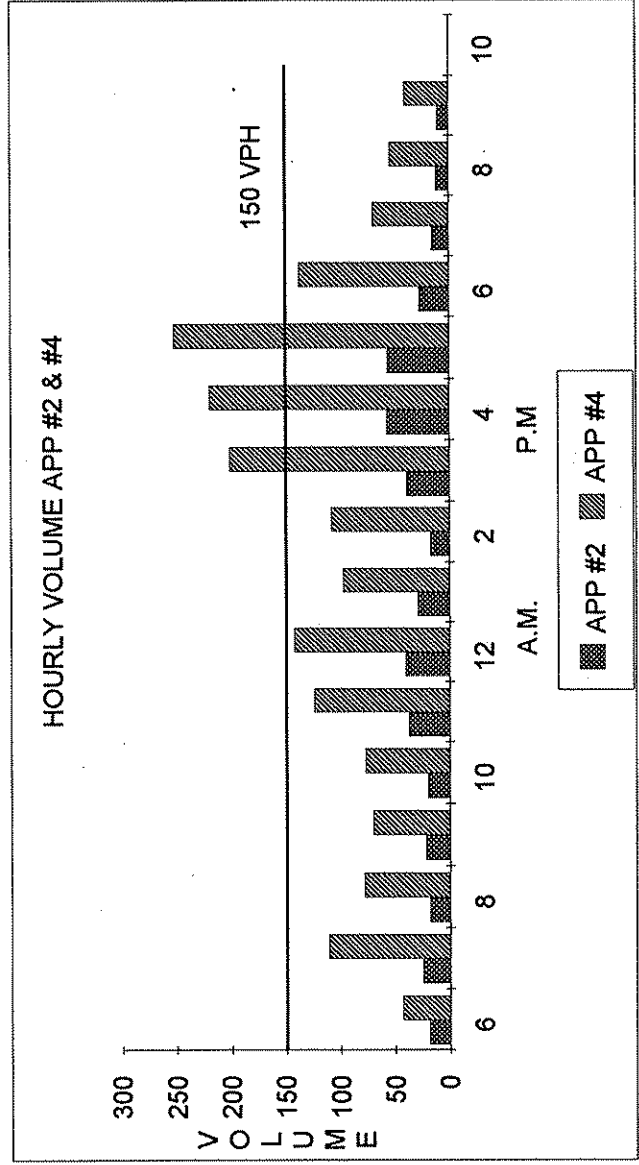
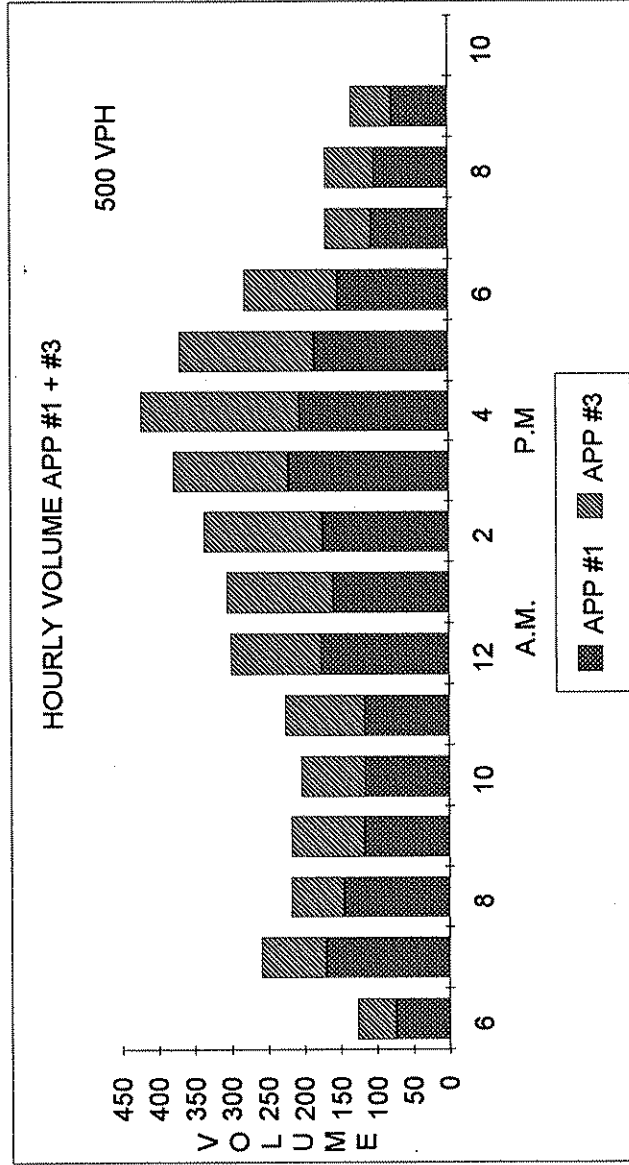
EASTBOUND
WESTBOUND
SOUTHWESTBOUND
NORTHWESTBOUND
 APPROACH # 1 APPROACH # 3 APPROACH # 2 APPROACH # 4

TIME INTERVALS	EASTBOUND			WESTBOUND			SOUTHWESTBOUND			NORTHWESTBOUND																							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT																					
2:15 - 2:30	3	2	26	7	35	2:00	to	1	11	25	0	36	2:00	to	1	1	2	3	6	2:00	to	2	15	3	11	29	2:00	to	2	15	3	11	
2:30 - 2:45	0	3	36	10	49	3:00		1	6	42	0	48	3:00		0	0	5	1	6	3:00		1	22	2	7	31	3:00		1	22	2	7	31
2:45 - 3:00	1	0	35	14	49		174	0	4	40	0	44		182	0	0	1	1	2		17	0	14	2	7	23		108		23		108	
3:00 - 3:15	3	3	37	24	64		64	0	6	25	0	31		31	0	0	4	4	8		2	1	47	3	11	61		61		61		61	
3:15 - 3:30	2	2	24	7	33	3:00	to	2	6	33	0	39	3:00	to	1	0	5	4	9	3:00	to	0	31	4	6	41	3:00	to	0	31	4	6	41
3:30 - 3:45	4	4	39	18	61	4:00		0	10	30	0	40	4:00		0	0	3	4	7	4:00		0	36	6	5	47	4:00		47	4:00		47	
3:45 - 4:00	2	3	39	20	62		220	1	7	41	0	48		158	3	0	2	13	15		39	3	26	10	16	52		201		52		201	
4:00 - 4:15	1	1	34	19	54		54	0	11	32	0	43		43	1	1	5	6	12		12	0	42	2	9	53		53		53		53	
4:15 - 4:30	0	1	32	13	46	4:00	to	0	8	44	0	52	4:00	to	0	0	6	6	12	4:00	to	0	27	6	9	42	4:00	to	0	27	6	9	42
4:30 - 4:45	0	2	26	27	55	5:00		0	11	53	2	66	5:00		0	0	11	9	20	5:00		0	54	7	8	69	5:00		69	5:00		69	
4:45 - 5:00	1	2	28	20	50		205	1	4	52	0	56		217	0	0	6	7	13		57	1	37	4	14	55		219		55		219	
5:00 - 5:15	1	0	29	19	48		48	0	18	66	0	84		84	0	0	8	14	22		22	0	60	9	10	78		78		78		78	
5:15 - 5:30	1	2	23	23	48	5:00	to	0	5	30	0	35	5:00	to	1	0	4	11	15	5:00	to	0	48	10	12	70	5:00	to	0	48	10	12	70
5:30 - 5:45	0	1	28	23	52	6:00		1	11	24	0	35	6:00		0	0	6	5	11	6:00		1	45	2	11	58	6:00		58	6:00		58	
5:45 - 6:00	0	0	20	17	37		185	0	8	22	0	30		184	0	0	2	6	8		8	0	28	2	15	45		252		45		252	
6:00 - 6:15	0	0	16	15	31		31	0	4	24	0	28		28	0	0	3	2	5		5	2	23	3	10	36		36		36		36	
6:15 - 6:30	0	0	22	11	33	6:00	to	0	12	22	0	34	6:00	to	0	0	6	1	7	6:00	to	1	27	7	7	41	6:00	to	1	27	7	7	41
6:30 - 6:45	1	2	27	10	39	7:00		0	2	26	0	29	7:00		0	0	2	3	5	7:00		0	25	2	3	30	7:00		30	7:00		30	
6:45 - 7:00	0	3	35	11	49		152	0	9	28	1	38		128	0	1	7	2	10		27	0	15	1	14	30		137		30		137	
7:00 - 7:15	0	0	28	12	40		40	0	1	15	1	17		17	0	0	5	4	9		9	0	10	2	8	20		20		20		20	
7:15 - 7:30	0	2	19	8	29	7:00	to	1	3	12	0	15	7:00	to	0	0	3	1	4	7:00	to	0	12	1	4	17	7:00	to	0	12	1	4	17
7:30 - 7:45	0	2	12	6	20	8:00		0	4	10	0	14	8:00		0	0	0	0	0	8:00		0	10	4	1	15	8:00		15	8:00		15	
7:45 - 8:00	0	0	8	9	17		106	0	4	12	1	17		63	0	0	1	1	2		15	0	9	4	4	17		69		17		69	
8:00 - 8:15	0	0	10	16	26		26	0	2	10	0	12		12	0	0	1	1	2		2	0	12	1	2	15		15		15		15	
8:15 - 8:30	1	1	15	12	28	8:00	to	0	2	18	0	20	8:00	to	0	0	2	1	3	8:00	to	0	6	0	4	10	8:00	to	0	6	0	4	10
8:30 - 8:45	0	1	12	11	24	9:00		0	1	12	0	13	9:00		0	0	1	1	2	9:00		0	11	0	3	14	9:00		14	9:00		14	
8:45 - 9:00	0	1	13	9	23		101	0	3	20	0	23		88	0	0	3	1	4		11	0	9	0	6	15		54		15		54	
9:00 - 9:15	0	0	11	9	20		20	0	1	20	0	21		21	0	0	2	1	3		3	0	7	1	3	11		11		11		11	
9:15 - 9:30	0	1	8	9	18	9:00	to	0	2	10	0	12	9:00	to	0	0	0	2	2	9:00	to	0	9	1	3	13	9:00	to	0	9	1	3	13
9:30 - 9:45	0	1	12	6	19	10:00		0	1	17	0	18	10:00		0	0	0	2	2	10:00		0	9	1	2	12	10:00		12	10:00		12	
9:45 - 10:00	0	2	10	8	20		77	0	0	5	0	5		56	0	0	1	2	3		3	0	3	0	1	4		4		4		4	

TMC9303 STOP WARRANT STUDY



TMC9303 SIGNAL WARRANT 1 STUDY



TMC9303 SIGNAL WARRANT 2 STUDY

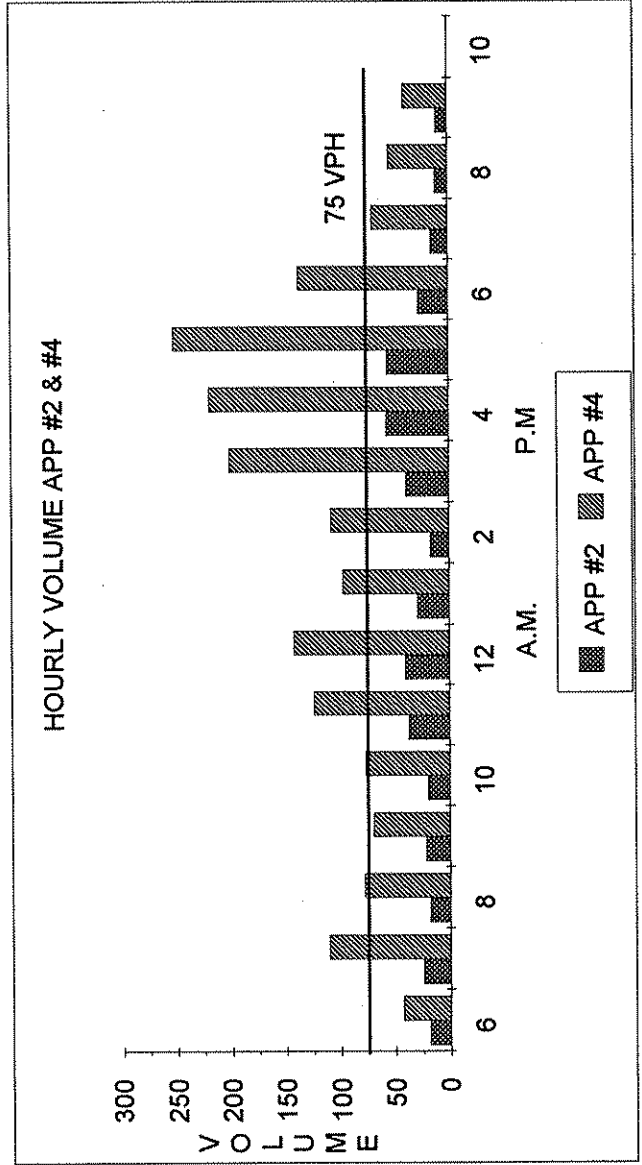
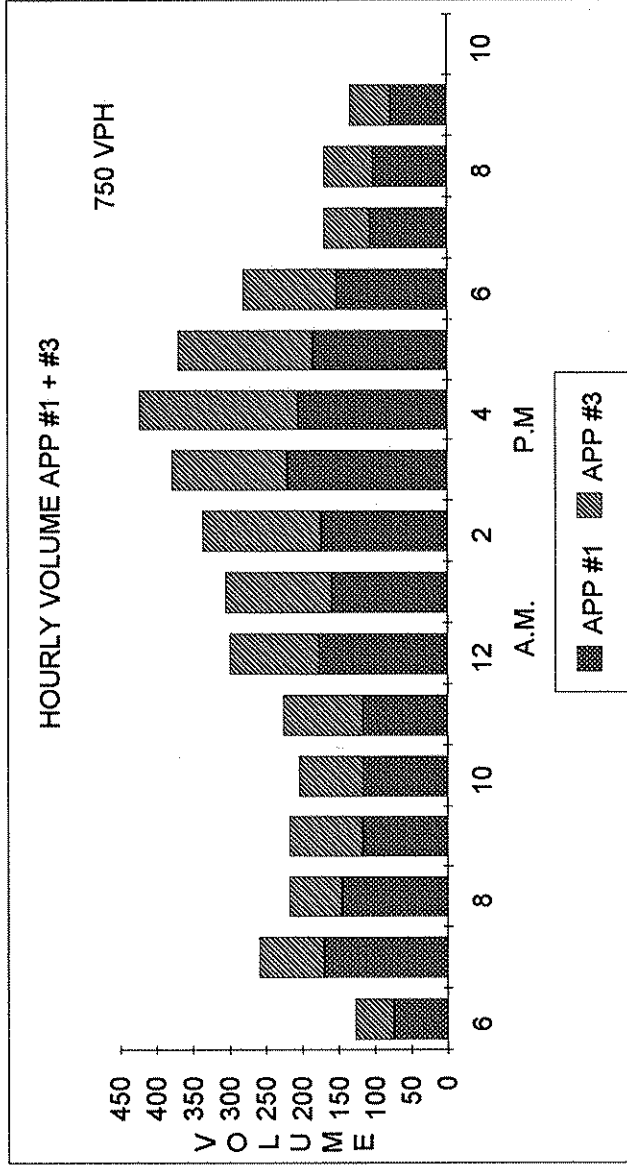
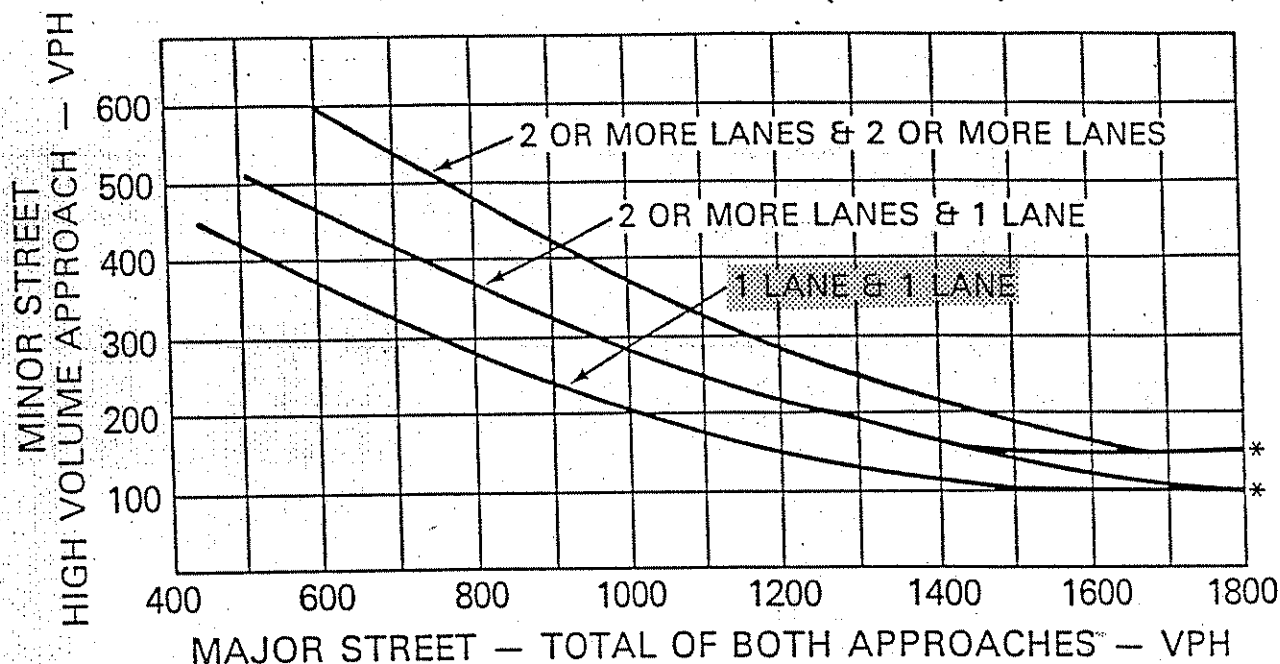


FIGURE 4-5. PEAK HOUR VOLUME WARRANT



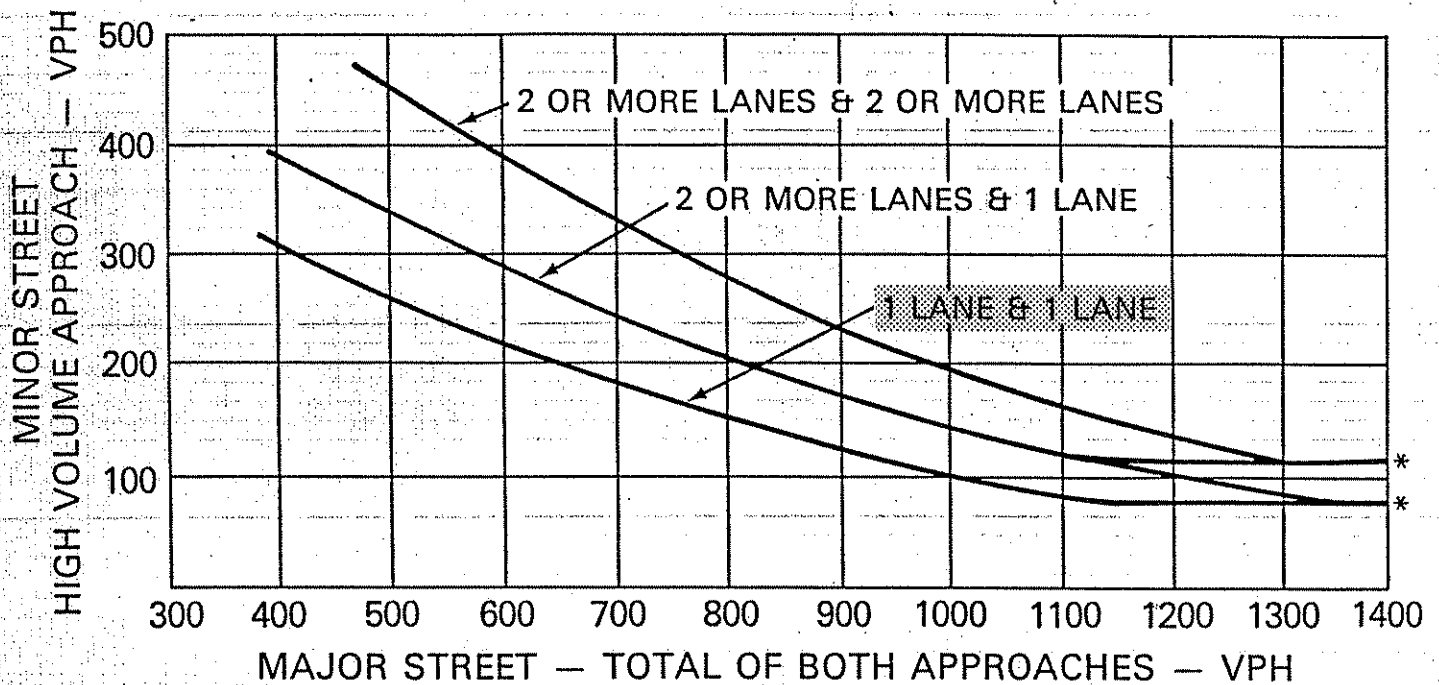
*NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

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

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

TIME	MAJOR STREETS (VPH)	MINOR STREET (VPH)
6-7 am	127	43
7-8 am	260	111
8-9 am	218	78
9-10 am	218	70
10-11 am	204	77
11-12 pm	226	124
12-1 pm	300	142
1-2 pm	305	97
2-3 pm	336	108
3-4 pm	378	201
4-5 pm	422	219
5-6 pm	369	252
6-7 pm	280	137
7-8 pm	169	69
8-9 pm	169	54
9-10 pm	133	40

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	127	43
7-8 am	260	111
8-9 am	218	78
9-10 am	218	70
10-11 am	204	77
11-12 pm	226	124
12-1 pm	300	142
1-2 pm	305	97
2-3 pm	336	108
3-4 pm	378	201
4-5 pm	422	219
5-6 pm	369	252
6-7 pm	280	137
7-8 pm	169	69
8-9 pm	169	54
9-10 pm	133	40

CSAH 35 (OLD CENTRAL) @
81ST AVE

COUNT LOCATION:

DATE: 2/24/93

APP. #1 = EB 81ST AVE

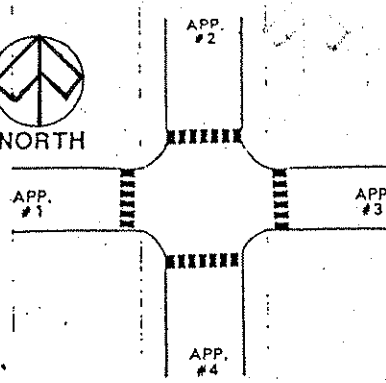
APP. #2 = SB CSAH 35 (OLD CENTRAL)

APP. #3 = WB 81ST AVE

APP. #4 = NB CSAH 35 (OLD CENTRAL)



NORTH



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. TOTAL	TRUCK	MN DOT	RV	BUS
6:00 - 6:15 AM					-				
6:15 - 6:30					-				
6:30 - 6:45					-				
6:45 - 7:00					-	1			2
HOURLY TOTAL					0	HOURLY TOTAL 3			
7:00 - 7:15	1				1				1
7:15 - 7:30					-	2			5
7:30 - 7:45					-	2			3
7:45 - 8:00					-	2			1
HOURLY TOTAL					1	HOURLY TOTAL 10			
8:00 - 8:15		1			1				
8:15 - 8:30					-				1
8:30 - 8:45					-	2			
8:45 - 9:00					-	1	1		3
HOURLY TOTAL					1	HOURLY TOTAL 8			
9:00 - 9:15					-				7
9:15 - 9:30					-				2
9:30 - 9:45					-	2			1
9:45 - 10:00					-	3			
HOURLY TOTAL					0	HOURLY TOTAL 15			
10:00 - 10:15					-	5			
10:15 - 10:30					-				
10:30 - 10:45					-	5			1
10:45 - 11:00					-	1			
HOURLY TOTAL					0	HOURLY TOTAL 12			
11:00 - 11:15		1			1	2			
11:15 - 11:30			2		2	1			
11:30 - 11:45					-	2			
11:45 - 12:00 PM				3	3	4			
HOURLY TOTAL					6	HOURLY TOTAL 9			
12:00 - 12:15 PM		1			1	4			3
12:15 - 12:30	1				1				3
12:30 - 12:45					-	1			3
12:45 - 1:00		1			1	2			2
HOURLY TOTAL					3	HOURLY TOTAL 18			
1:00 - 1:15					-	5			
1:15 - 1:30					-	2			
1:30 - 1:45					-				
1:45 - 2:00					0	2			9