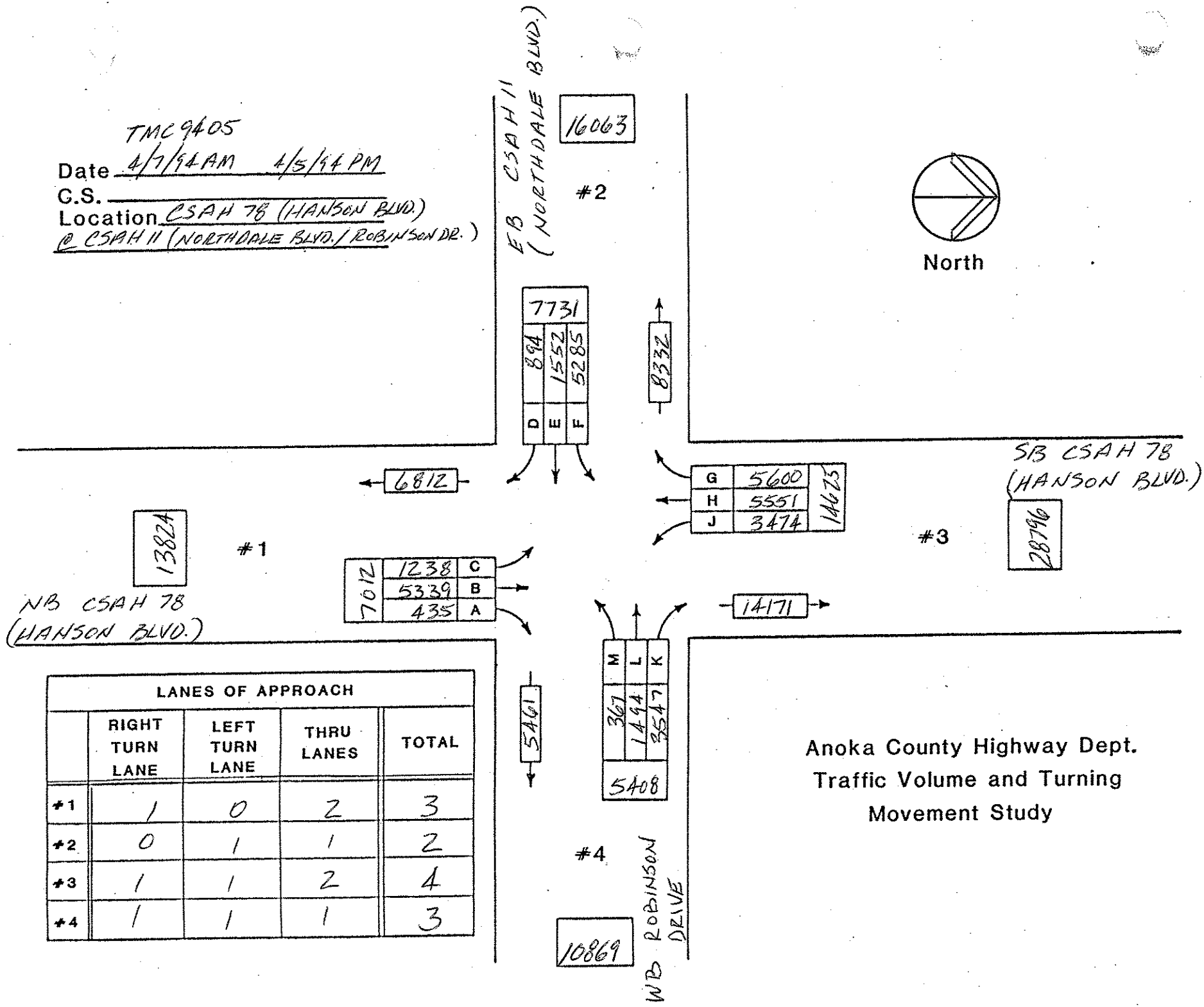
TMC 9405

Date 4/7/94 AM 4/5/94 PM

C.S.

Location CSAH 78 (HANSON BLVD.)

@ CSAH 11 (NORTHDALE BLVD./ ROBINSON DR.)



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

Anoka County Highway Dept.
Traffic Volume and Turning
Movement Study

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

Counter :TDC EIGHT
(ed by

Site Code : 94050101
Start Date: 04/07/94
File I.D. : TMC9405)
Page : 1

Vehicle group 1

	CSAH 78 (HANSON BLVD) Southbound				ROBINSON DRIVE Westbound				CSAH 78 (HANSON BLVD) Northbound				CSAH 11 (NORTHDALE) Eastbound					
Date 04/07/94	Other	Right	Thru	Left	Other	Right	Thru	Left	Other	Right	Thru	Left	Other	Right	Thru	Left	Vehicle Total	Other Total
06:00	0	16	45	8	0	18	3	0	1	2	29	2	2	3	2	30	158	3
06:15	2	23	43	14	0	28	3	2	2	4	34	0	2	2	7	54	214	6
06:30	4	19	76	7	1	30	7	1	1	1	40	1	1	8	3	50	243	7
06:45	5	51	96	11	0	54	8	0	2	2	58	4	2	13	9	69	375	9
Hr Total	11	109	260	40	1	130	21	3	6	9	161	7	7	26	21	203	990	25
07:00	7	84	115	32	2	47	16	0	1	2	71	9	4	11	14	81	482	14
07:15	13	116	104	30	2	53	17	0	2	1	68	27	4	25	19	89	549	21
07:30	25	127	140	41	5	67	42	6	9	6	74	21	11	9	17	92	642	50
07:45	7	127	155	47	2	61	47	3	7	11	88	28	12	25	40	94	726	28
Hr Total	52	454	514	150	11	228	122	9	19	20	301	85	31	70	90	356	2399	113
08:00	24	99	140	49	3	71	37	5	6	2	99	17	5	20	19	110	668	38
08:15	7	47	133	44	3	49	11	4	15	9	126	15	5	18	18	65	539	30
08:30	11	57	87	40	2	43	15	1	5	6	66	9	8	5	21	64	414	26
08:45	9	57	84	63	4	46	16	3	0	2	56	8	11	12	14	58	419	24
(tal	51	260	444	196	12	209	79	13	26	19	347	49	29	55	72	297	2040	118
09:00	7	63	84	49	3	56	11	6	5	4	62	7	3	7	5	45	399	18
09:15	9	67	67	41	10	59	19	8	10	7	70	13	4	4	15	52	422	33
09:30	8	55	53	69	3	49	17	7	14	4	80	18	2	14	21	55	442	27
09:45	6	52	67	53	0	53	22	9	4	2	54	19	6	14	16	48	409	16
Hr Total	30	237	271	212	16	217	69	30	33	17	266	57	15	39	57	200	1672	94
10:00	10	66	69	45	1	51	17	6	9	4	74	11	6	12	22	54	431	26
10:15	7	62	44	48	2	45	22	5	2	5	65	15	2	8	18	52	389	13
10:30	10	61	60	46	0	60	10	8	5	5	53	12	1	8	17	63	403	16
10:45	7	78	59	46	3	48	18	7	3	8	47	12	5	7	21	67	418	16
Hr Total	34	267	232	185	6	204	67	26	19	22	239	50	14	35	78	236	1641	73
11:00	9	69	69	39	3	59	19	6	9	5	70	18	4	16	17	47	434	2
11:15	8	64	80	61	2	43	25	6	5	12	63	11	5	14	29	70	478	2
11:30	6	62	56	47	2	68	22	7	2	3	62	23	10	11	26	93	480	2
11:45	8	83	72	43	2	40	34	11	2	7	50	33	3	18	20	78	489	1
Hr Total	31	278	277	190	9	210	100	30	18	27	245	85	22	59	92	288	1881	80
12:00	5	79	75	40	0	51	25	4	1	11	73	11	5	15	26	101	511	1
12:15	12	101	84	65	2	55	34	4	3	5	88	21	3	13	27	72	569	2
12:30	4	80	52	65	1	55	20	6	3	6	62	19	3	14	26	90	495	1
12:45	5	93	54	47	1	39	29	8	3	3	71	17	4	16	21	97	495	1
Hr Total	26	353	265	217	4	200	108	22	10	25	294	68	15	58	100	360	2070	55

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

Counter :TDC EIGHT
[illegible]ed by

Site Code : 94050101
Start Date: 04/07/94
File I.D. : TMC9405[illegible]
Page : 2

Vehicle group 1

	CSAH 78 (HANSON BLVD) Southbound				ROBINSON DRIVE Westbound				CSAH 78 (HANSON BLVD) Northbound				CSAH 11 (NORTHDALE) Eastbound					
Date 04/07/94	Other	Right	Thru	Left	Other	Right	Thru	Left	Other	Right	Thru	Left	Other	Right	Thru	Left	Vehicle Total	Other Total
13:00	3	84	86	44	1	52	23	8	0	15	53	21	1	17	25	94	522	5
13:15	7	64	67	56	3	49	25	10	1	8	73	20	3	20	21	75	488	14
13:30	1	69	80	49	3	48	14	3	3	8	86	14	3	14	20	70	475	10
13:45	3	69	59	60	0	52	27	6	2	6	55	17	3	14	17	82	464	8
Hr Total	14	286	292	209	7	201	89	27	6	37	267	72	10	65	83	321	1949	37
14:00	13	73	59	51	1	78	32	6	3	12	72	22	2	9	20	64	498	19
14:15	18	84	58	75	1	64	20	7	4	7	71	12	3	13	23	83	517	26
14:30	9	82	75	79	2	81	20	9	6	10	79	15	8	13	38	108	609	25
14:45	15	75	101	73	3	71	26	3	5	7	84	25	20	20	55	121	661	43
Hr Total	55	314	293	278	7	294	98	25	18	36	306	74	33	55	136	376	2285	113
15:00	27	110	87	75	5	75	28	10	18	6	110	28	5	20	29	113	691	55
15:15	10	80	88	73	2	66	27	8	7	12	115	25	16	8	37	119	658	35
15:30	7	90	108	81	1	71	29	9	10	13	112	21	3	14	34	113	695	21
15:45	6	110	104	103	0	90	27	9	9	5	121	18	4	14	36	94	731	19
[illegible]tal	50	390	387	332	8	302	111	36	44	36	458	92	28	56	136	439	2775	130
16:00	9	121	120	95	2	92	35	14	3	7	111	21	3	9	41	86	752	17
16:15	7	115	79	83	6	82	35	12	10	7	106	28	2	17	30	72	666	25
16:30	9	119	93	103	2	76	27	5	7	6	135	15	2	16	29	113	737	20
16:45	5	111	89	58	1	82	42	9	1	8	116	19	2	10	23	84	651	[illegible]
Hr Total	30	466	381	339	11	332	139	40	21	28	468	83	9	52	123	355	2806	71
17:00	3	155	150	112	1	79	34	11	0	12	160	28	0	16	33	98	888	[illegible]
17:15	4	155	110	71	0	91	40	6	1	10	126	42	2	18	54	113	836	[illegible]
17:30	3	167	111	83	2	70	33	8	2	9	122	39	1	18	55	126	841	[illegible]
17:45	6	117	106	70	2	69	37	9	1	9	149	27	2	12	32	101	738	[illegible]
Hr Total	16	594	477	336	5	309	144	34	4	40	557	136	5	64	174	438	3303	30
18:00	3	123	94	88	0	73	34	9	2	7	106	23	1	15	21	84	677	[illegible]
18:15	2	124	109	65	1	64	26	6	1	7	92	27	1	11	27	83	641	[illegible]
18:30	2	137	111	54	1	53	25	6	1	20	97	26	0	20	31	93	673	[illegible]
18:45	0	149	182	77	0	77	38	5	3	13	85	26	0	26	33	101	812	[illegible]
Hr Total	7	533	496	284	2	267	123	26	7	47	380	102	2	72	112	361	2803	18
19:00	4	143	165	57	0	52	23	9	3	8	139	53	1	26	41	110	826	[illegible]
19:15	3	114	141	58	0	55	30	5	0	7	88	26	1	17	27	69	637	[illegible]
19:30	2	126	81	41	0	50	17	5	0	5	67	21	1	17	26	92	548	[illegible]
19:45	1	89	66	38	2	35	27	2	1	3	70	26	0	16	15	100	487	[illegible]
Hr Total	10	472	453	194	2	192	97	21	4	23	364	126	3	76	109	371	2498	19

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

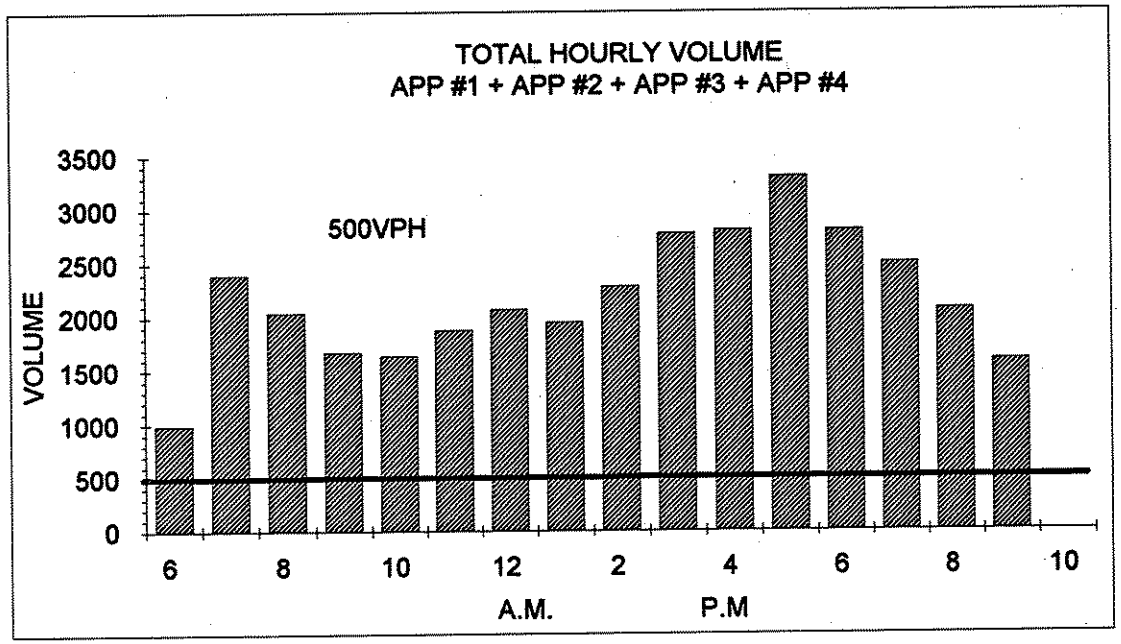
Counter :TDC EIGHT
C[illegible]ed by

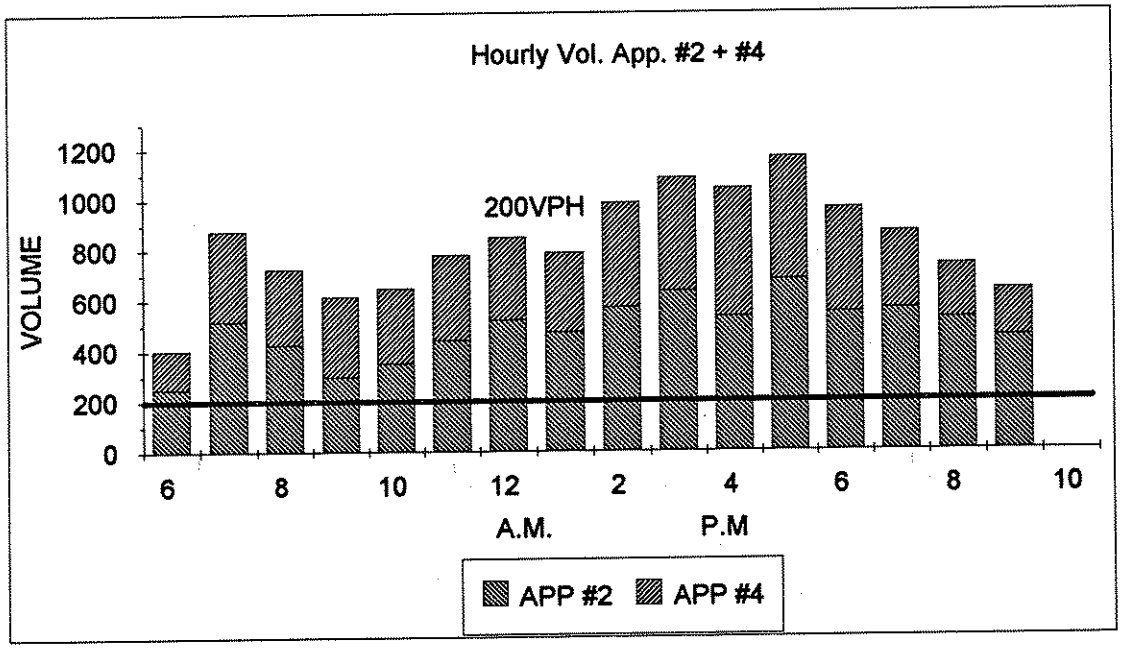
Site Code : 94050101
Start Date: 04/07/94
File I.D. : TMC94053
Page : 3

Vehicle group 1

	CSAH 78 (HANSON BLVD) Southbound				ROBINSON DRIVE Westbound				CSAH 78 (HANSON BLVD) Northbound				CSAH 11 (NORTHDALE) Eastbound					
Date 04/07/94	Other	Right	Thru	Left	Other	Right	Thru	Left	Other	Right	Thru	Left	Other	Right	Thru	Left	Vehicle Total	Other Total
20:00	2	117	88	36	0	41	22	3	0	10	87	29	0	17	26	113	589	2
20:15	4	85	86	41	0	25	22	4	0	6	133	29	0	26	29	99	585	4
20:30	0	83	67	49	2	31	21	4	0	7	105	25	0	17	21	81	511	2
20:45	1	61	47	51	0	28	11	3	0	2	81	13	1	9	19	62	387	2
Hr Total	7	346	288	177	2	125	76	14	0	25	406	96	1	69	95	355	2072	10
21:00	0	65	59	25	1	32	12	0	0	2	69	15	3	14	16	73	382	4
21:15	0	53	59	45	0	17	12	5	0	9	79	17	0	9	24	94	423	0
21:30	0	72	53	37	0	35	8	2	0	4	62	10	0	10	20	93	406	0
21:45	0	51	50	28	0	43	19	4	2	9	70	14	0	10	14	69	381	2
Hr Total	0	241	221	135	1	127	51	11	2	24	280	56	3	43	74	329	1592	6
TOTAL	424	5600	5551	3474	104	3547	1494	367	237	435	5339	1238	227	894	1552	5285	34776	992

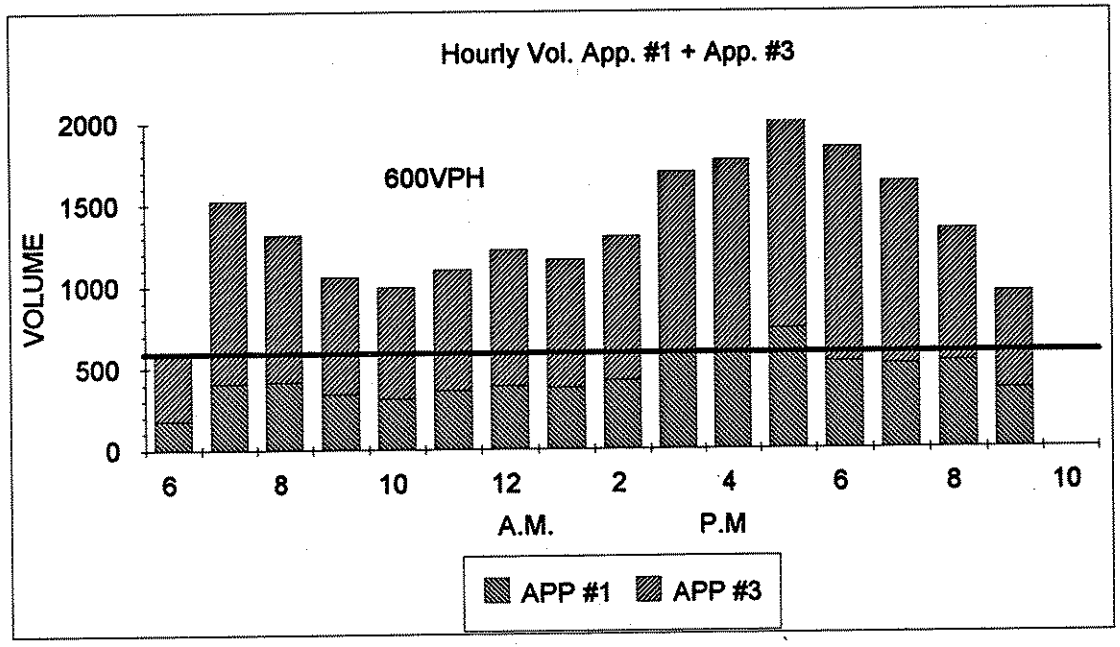
TMC940 STOP WARRANT STUDY

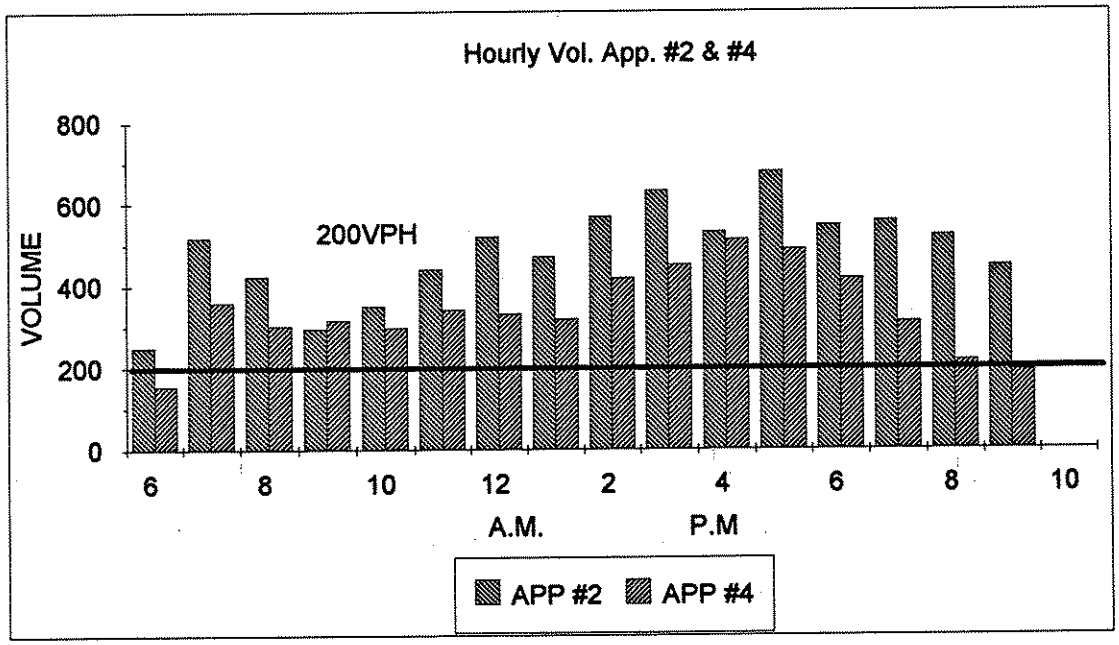




CSAH 78 (HANSON BLVD) @ CSAH 11 (NORTHDALE BLVD/ROBINSON DRIVE)

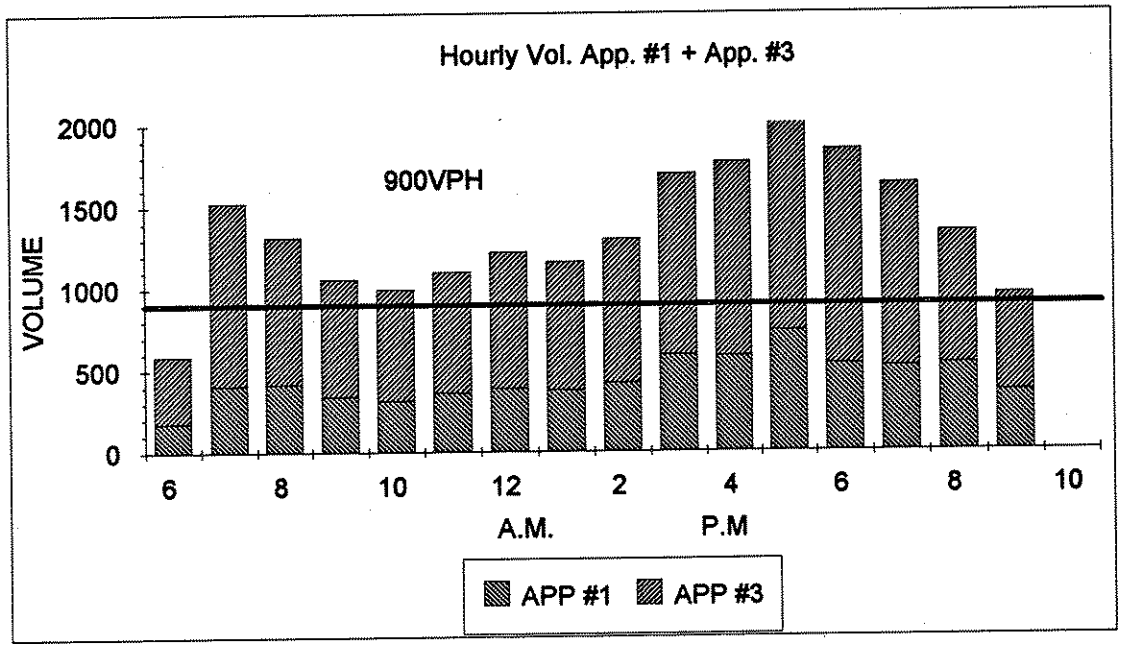
TMC9405 SIGNAL WARRANT 1 STUDY

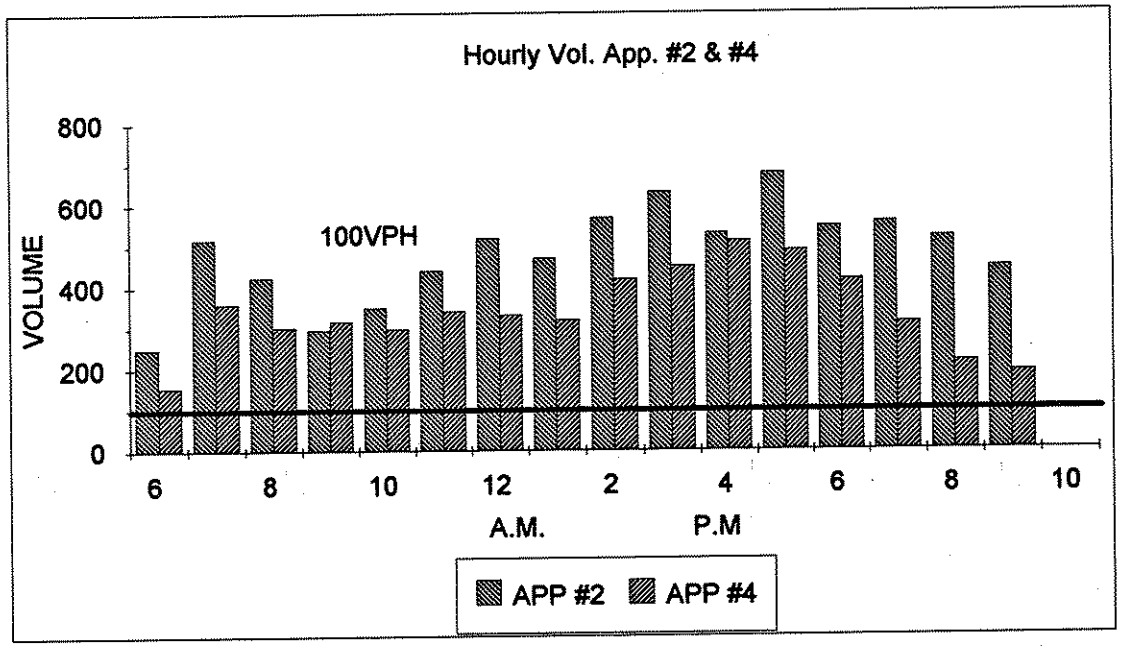




CSAH 78 (HANSON BLVD) @ CSAH 11 (NORTHDALE BLVD/ROBINSON DRIVE)

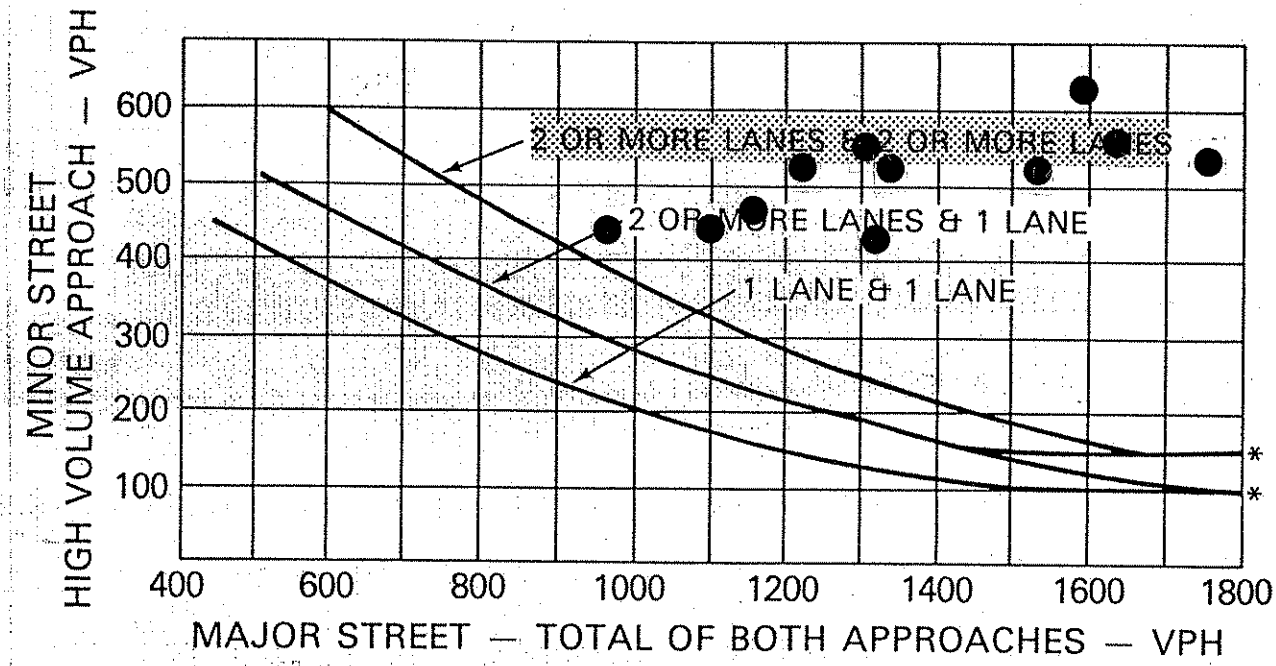
TMC9405 SIGNAL WARRANT 2 STUDY





CSAH 78 (HANSON BLVD) @ CSAH 11 (NORTHDALE BLVD/ROBINSON DRIVE)

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.

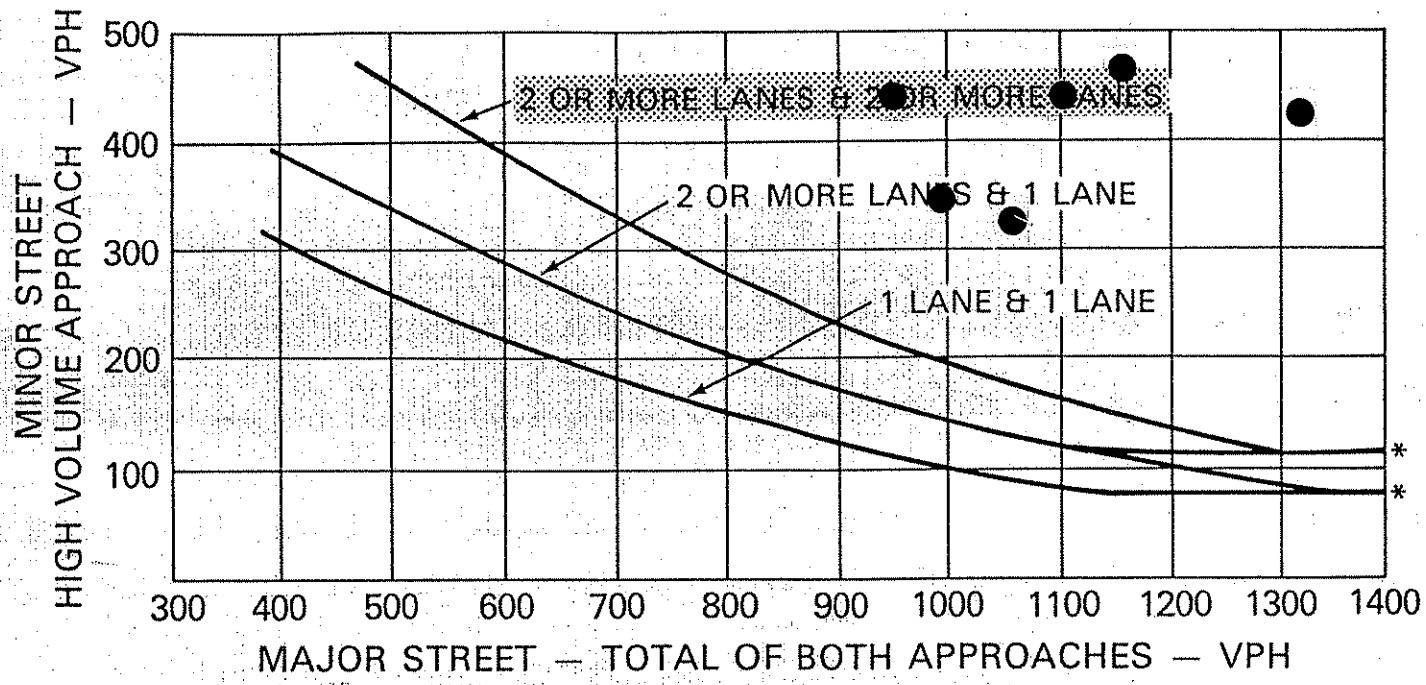
★ = VOLUMES WHICH EXCEED THE THRESHOLD BUT CANNOT BE REPRESENTED ON THE GRAPH.

‡

	TIME	MAJOR STREETS (VPH)	MINOR STREET (VPH)
	6-7 am	586	250
●	7-8 am	1524	516
●	8-9 am	1315	424
	9-10 am	1060	316
	10-11 am	995	349
●	11-12 pm	1102	439
●	12-1 pm	1222	518
●	1-2 pm	1163	469
●	2-3 pm	1301	567
●	3-4 pm	1695	631
●	4-5 pm	1765	530
★	5-6 pm	2140	676
★	6-7 pm	1842	545
●	7-8 pm	1632	556
●	8-9 pm	1338	519
●	9-10 pm	957	446

TMC9405 CSAH 78 (HANSON BLVD) @ CSAH 11 (NORTHDALE BLVD/ROBINSON DRIVE

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	586	250
★	7-8 am	1524	516
●	8-9 am	1315	424
●	9-10 am	1060	316
●	10-11 am	995	349
●	11-12 pm	1102	439
★	12-1 pm	1222	518
●	1-2 pm	1163	469
★	2-3 pm	1301	567
★	3-4 pm	1695	631
★	4-5 pm	1765	530
★	5-6 pm	2140	676
★	6-7 pm	1842	545
★	7-8 pm	1632	556
★	8-9 pm	1338	519
●	9-10 pm	957	446

TMC9405 CSAH 78 (HANSON BLVD) @ CSAH 11 (NORTHDALE BLVD/ROBINSON DRIVE

COUNT LOCATION: CSAH 78 (HANSON BLVD) @ CSAH 11 (ROBINSON/NORTHDALE

DATE: 4/7/94

NORTH

APP. #1=NB CSAH 78 (HANSON BLVD)
APP. #2=EB CSAH 11 (NORTHDALE BLVD)
APP. #3= SB CSAH 78 (HANSON BLVD)
APP. #4=WB ROBINSON DRIVE

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					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						4		2
6:30-6:45		1			1	3		4
6:45-7:00						3		5
HOURLY TOTAL					1	HOURLY TOTAL		23
7:00-7:15						5		9
7:15-7:30						7		13
7:30-7:45	1				1	4		45
7:45-8:00						11		16
HOURLY TOTAL					1	HOURLY TOTAL		110
8:00-8:15	1			1	2	13		25
8:15-8:30		2	1		3	8		21
8:30-8:45		1	2			8		18
8:45-9:00						9		14
HOURLY TOTAL					5	HOURLY TOTAL		116
9:00-9:15						9		10
9:15-9:30						12	1	20
9:30-9:45						14	1	11
9:45-10:00	3			1	4	15		2
HOURLY TOTAL					4	HOURLY TOTAL		95
10:00-10:15			1		1	23		
10:15-10:30						12		1
10:30-10:45						10		4
10:45-11:00						18		2
HOURLY TOTAL					1	HOURLY TOTAL		70
11:00-11:15		2			2	16		9
11:15-11:30						21		1
11:30-11:45						16		4
11:45-12:00						9		5
HOURLY TOTAL					2	HOURLY TOTAL		81
12:00-12:15						7		4
12:15-12:30	1		1		2	12		7
12:30-12:45						9		3
12:45-1:00	1			1	2	10	1	3
HOURLY TOTAL					4	HOURLY TOTAL		56
1:00-1:15	1				1	6		
1:15-1:30						11		1
1:30-1:45						9		2
1:45-2:00	1			2	3	6		2
HOURLY TOTAL					4	HOURLY TOTAL		37

COUNT LOCATION: CSAH 78 (HANSON BLVD) @ CSAH 11 (NORTHDALE/ROBINSON DR) **DATE:** 4/5/94

NORTH

APP. #1=NB CSAH 78 (HANSON BLVD)
APP. #2=EB CHAH 11 (NORTHDALE BLVD)
APP. #3=SB CSAH 78 (HANSON BLVD)
APP. #4=WB ROBINSON DRIVE

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					HEAVY VEHICLES		
	APP. #1	APP. #2	APP. #3	APP. #4	15 MIN TOT	TRUCKS	RV	BUS
2:00-2:15PM	1				1	9		10
2:15-2:30						6		19
2:30-2:45	1				1	8		14
2:45-3:00				1	1	6		35
HOURLY TOTAL					3	HOURLY TOTAL		107
3:00-3:15	1				1	12		43
3:15-3:30						11		21
3:30-3:45		2			2	7		12
3:45-4:00	1			1	2	7		12
HOURLY TOTAL					5	HOURLY TOTAL		125
4:00-4:15						9		8
4:15-4:30	1		1		2	7		17
4:30-4:45	1	1		1	3	4		10
4:45-5:00	1				1	5		4
HOURLY TOTAL					6	HOURLY TOTAL		64
5:00-5:15				1	1	3		1
5:15-5:30						3		3
5:30-5:45						4		3
5:45-6:00	1				1	7		4
HOURLY TOTAL					2	HOURLY TOTAL		28
6:00-6:15	1				1	5		1
6:15-6:30		1	2		3	2		2
6:30-6:45			3		3	2		2
6:45-7:00			1		1	5		
HOURLY TOTAL					8	HOURLY TOTAL		19
7:00-7:15		1			1	7		
7:15-7:30						3		
7:30-7:45						3		
7:45-8:00						3		
HOURLY TOTAL					1	HOURLY TOTAL		16
8:00-8:15						2		
8:15-8:30			3		3	4		
8:30-8:45		1			1	2		
8:45-9:00	1				1	2		
HOURLY TOTAL					5	HOURLY TOTAL		10
9:00-9:15						4		
9:15-9:30		2		1	3			
9:30-9:45								
9:45-10:00						2		
HOURLY TOTAL					3	HOURLY TOTAL		6