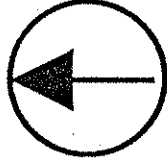


Date : 10/20/98AM 10/19/98PM

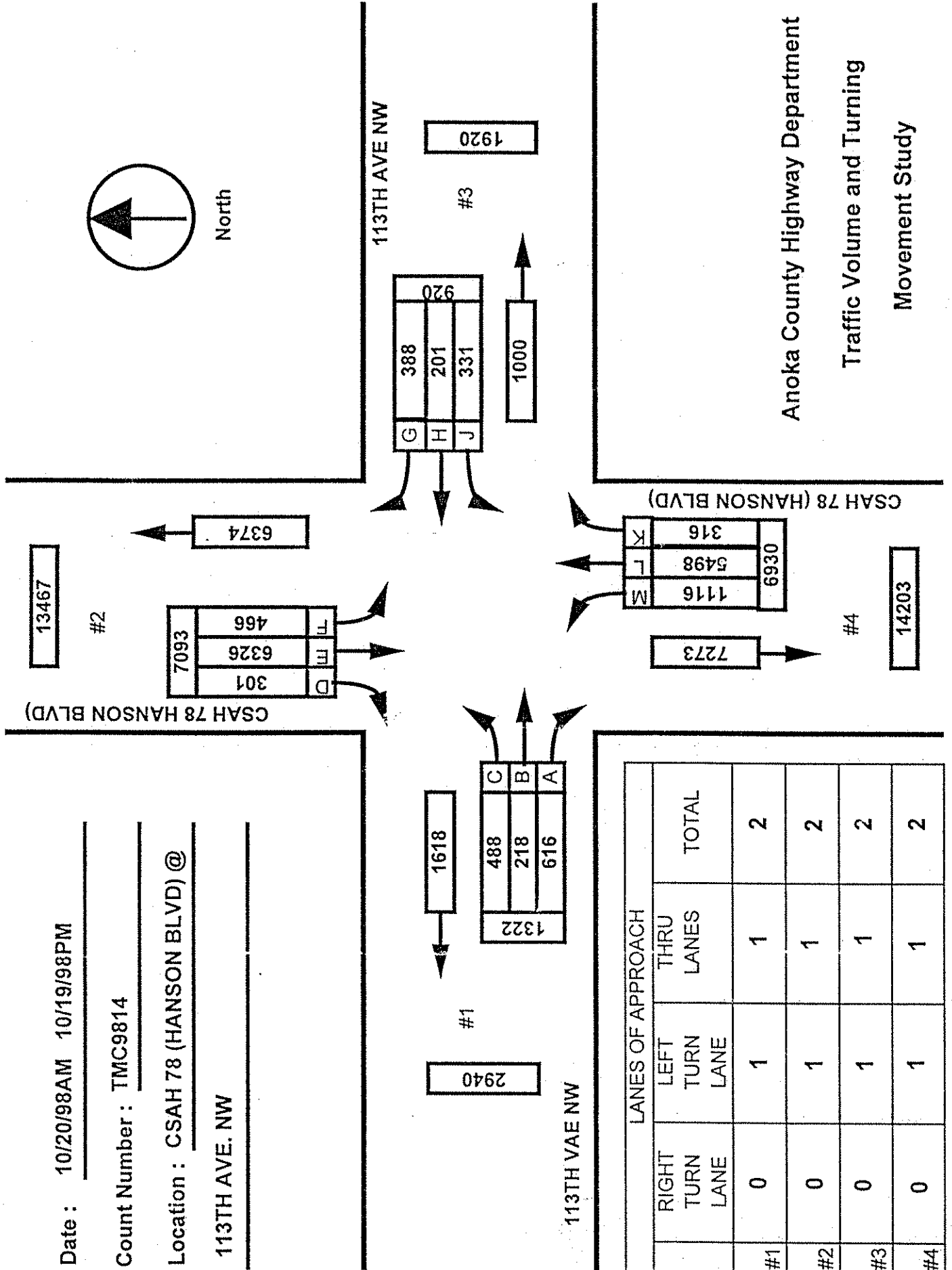
Count Number : TMC9814

Location : CSAH 78 (HANSON BLVD) @

113TH AVE. NW



North



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

Anoka County Highway Department
 Traffic Volume and Turning
 Movement Study

Weather :PC/55
 Counted by:RANDY AND JOSIE
 Board # :2
 her :

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 Jamar Technologies, Inc.
 Horsham, PA.

Study Name: TMC9814
 Site Code : 98140202
 Start Date: 10/20/98
 Page : 1

Vehicle group 1

Start Time	CSAH 78 (HANSON BLVD) Southbound				113TH AVE NW Westbound				CSAH 78 (HANSON BLVD) Northbound				113TH AVE NW Eastbound				Intvl	Exclu	Inclu
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other			
10/20/98																			
06:00	2	72	0	1	10	2	4	2	2	34	0	0	6	0	20	0	155	3	152
06:15	3	137	5	0	5	1	0	1	2	58	3	2	11	4	25	0	257	3	254
06:30	7	154	0	2	5	3	3	0	15	64	4	1	11	6	14	1	290	4	286
06:45	6	173	1	5	4	2	7	2	19	64	6	2	17	3	19	0	330	9	321
Hour	18	536	6	8	24	8	14	5	38	220	13	5	45	13	78	1	1032	19	1013
07:00	8	166	5	6	5	7	4	2	49	77	3	9	11	4	16	0	372	17	355
07:15	20	190	5	13	10	14	3	0	54	75	3	3	15	10	25	1	441	17	424
07:30	21	157	1	5	3	5	5	2	23	81	9	12	8	7	22	4	365	23	342
07:45	25	201	5	15	11	4	4	3	25	109	2	15	18	6	10	1	454	34	420
Hour	74	714	16	39	29	30	16	7	151	342	17	39	52	27	73	6	1632	91	1541
08:00	12	156	2	4	7	0	4	0	11	88	4	7	5	5	13	2	320	13	307
08:15	8	93	1	9	7	1	4	1	3	56	5	4	7	2	12	2	215	16	199
08:30	2	83	2	7	10	3	3	1	6	69	2	6	7	1	8	0	210	14	196
08:45	4	81	0	4	8	2	4	3	8	59	3	6	9	2	5	2	200	15	185
Hour	26	413	5	24	32	6	15	5	28	272	14	23	28	10	38	6	945	58	887
09:00	7	85	5	6	4	1	7	0	11	68	5	12	14	1	1	0	227	18	209
09:15	2	79	5	5	1	1	5	1	7	80	5	5	6	3	1	0	206	11	195
09:30	3	74	3	4	3	2	4	1	4	68	2	4	9	4	5	2	192	11	181
09:45	7	62	1	4	4	1	10	0	6	48	3	4	10	0	6	0	166	8	158
Hour	19	300	14	19	12	5	26	2	28	264	15	25	39	8	13	2	791	48	743
10:00	9	43	3	4	2	2	7	0	6	59	3	4	5	3	5	0	155	8	147
10:15	2	76	0	10	10	1	3	0	10	75	3	5	3	1	4	0	203	15	188
10:30	5	71	4	6	8	1	11	4	5	59	9	4	3	2	5	1	198	15	183
10:45	10	107	2	5	5	1	7	3	8	52	6	5	0	1	8	0	220	13	207
Hour	26	297	9	25	25	5	28	7	29	245	21	18	11	7	22	1	776	51	725
11:00	7	76	4	7	5	3	6	1	3	54	3	3	9	6	8	3	198	14	184
11:15	4	82	4	4	3	2	3	2	6	67	2	3	6	0	5	1	194	10	184
11:30	5	77	1	8	7	3	7	0	12	66	4	4	5	3	11	0	213	12	201
11:45	15	89	4	6	6	4	11	4	10	67	6	2	3	3	5	0	235	12	223
Hour	31	324	13	25	21	12	27	7	31	254	15	12	23	12	29	4	840	48	792
12:00	10	84	4	5	5	3	18	1	11	81	5	0	7	4	8	0	246	6	240
12:15	14	72	5	6	5	1	6	1	5	93	7	2	9	4	8	0	238	9	229
12:30	4	82	5	4	3	4	7	1	7	77	5	3	6	2	9	0	219	8	211
12:45	20	83	3	6	4	1	3	0	8	76	7	6	7	4	3	0	231	12	219
Hour	48	321	17	21	17	9	34	3	31	327	24	11	29	14	28	0	934	35	899

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Horsham, PA.

Weather :PC/55

Counted by:RANDY AND JOSIE

Board # :2

Other :

Study Name: TMC9814

Site Code : 98140202

Start Date: 10/20/98

Page : 2

Vehicle group 1

Start Time	CSAH 78 (HANSON BLVD) Southbound				113TH AVE NW Westbound				CSAH 78 (HANSON BLVD) Northbound				113TH AVE NW Eastbound				Intvl	Exclu	Inclu
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other			
13:00	9	67	4	3	6	1	10	0	5	73	4	3	9	2	8	1	205	7	198
13:15	13	69	5	4	2	3	8	1	9	76	4	5	5	3	3	0	210	10	200
13:30	7	88	8	8	7	5	13	3	11	78	11	4	4	1	6	0	254	15	239
13:45	5	51	5	2	3	2	5	0	17	81	6	2	4	3	11	0	197	4	193
Hour	34	275	22	17	18	11	36	4	42	308	25	14	22	9	28	1	866	36	830
14:00	6	71	4	5	7	5	4	0	14	98	4	6	5	3	8	1	241	12	229
14:15	14	140	7	10	5	5	3	0	11	95	4	2	14	18	19	1	348	13	335
14:30	13	104	6	16	4	2	8	2	21	87	5	7	6	2	7	1	291	26	265
14:45	7	114	2	16	6	4	7	0	21	140	7	12	5	4	4	0	349	28	321
Hour	40	429	19	47	22	16	22	2	67	420	20	27	30	27	38	3	1229	79	1150
15:00	2	80	2	9	9	3	9	1	15	105	5	2	9	1	9	0	261	12	249
15:15	12	99	5	5	4	3	6	1	19	114	4	7	5	1	9	1	295	14	281
15:30	15	106	7	2	5	3	5	1	27	136	4	2	10	1	5	0	329	5	324
15:45	8	108	15	4	6	3	9	1	28	110	4	5	10	2	12	1	326	11	315
Hour	37	393	29	20	24	12	29	4	89	465	17	16	34	5	35	2	1211	42	1169
16:00	6	112	8	4	10	10	28	2	40	134	6	6	5	3	14	2	390	14	376
16:15	9	108	9	2	4	7	14	0	32	151	6	5	8	2	10	0	367	7	360
16:30	8	101	3	1	7	5	13	0	30	126	12	5	7	8	10	1	337	7	330
16:45	3	101	8	2	6	6	14	0	29	148	8	1	13	7	12	0	358	3	355
Hour	26	422	28	9	27	28	69	2	131	559	32	17	33	20	46	3	1452	31	1421
17:00	4	123	4	3	11	3	12	0	28	126	4	2	11	3	15	1	350	6	344
17:15	3	117	6	1	2	6	1	0	38	121	9	1	7	2	16	0	330	2	328
17:30	4	120	7	0	5	10	6	0	49	147	12	3	8	4	11	0	386	3	383
17:45	9	115	11	0	6	3	8	2	36	143	11	4	8	7	9	0	372	6	366
Hour	20	475	28	4	24	22	27	2	151	537	36	10	34	16	51	1	1438	17	1421
18:00	5	106	10	1	4	1	4	0	35	127	12	2	11	3	17	0	338	3	335
18:15	2	125	14	1	7	3	6	0	37	105	10	3	21	9	8	0	351	4	347
18:30	4	145	10	0	9	5	10	0	51	103	4	2	11	3	14	0	371	2	369
18:45	4	164	8	0	6	2	3	0	26	97	9	0	7	4	17	0	347	0	347
Hour	15	540	42	2	26	11	23	0	149	432	35	7	50	19	56	0	1407	9	1398
19:00	7	122	3	1	2	2	2	0	24	87	4	2	2	2	9	0	269	3	266
19:15	6	73	5	0	3	1	3	0	19	72	3	0	6	1	9	0	201	0	201
19:30	7	79	5	0	1	1	3	0	12	60	3	0	11	3	9	0	194	0	194
19:45	5	74	3	1	4	3	5	0	16	90	0	0	2	5	6	0	214	1	213
Hour	25	348	16	2	10	7	13	0	71	309	10	2	21	11	33	0	878	4	874

Weather :PC/55
 Counted by:RANDY AND JOSIE
 Board # :2
 Printer :

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 Horsham, PA.

Study Name: TMC9814
 Site Code : 98140202
 Start Date: 10/20/98
 Page : 3

Vehicle group 1

Start Time	CSAH 78 (HANSON BLVD) Southbound				113TH AVE NW Westbound				CSAH 78 (HANSON BLVD) Northbound				113TH AVE NW Eastbound				Intvl	Exclu	Inclu
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other			
20:00	2	85	1	0	0	1	1	0	9	82	5	0	7	2	7	0	202	0	202
20:15	2	74	7	0	1	6	1	0	14	84	4	1	2	1	3	0	200	1	199
20:30	7	119	0	1	1	2	1	0	13	51	2	0	6	7	12	0	222	1	221
20:45	2	69	7	0	2	3	0	0	14	48	1	0	3	3	11	0	163	0	163
Hour	13	347	15	1	4	12	3	0	50	265	12	1	18	13	33	0	787	2	785
21:00	2	49	3	0	2	2	1	0	11	57	2	0	5	1	5	0	140	0	140
21:15	2	52	6	0	7	2	0	0	7	51	2	0	5	1	6	0	141	0	141
21:30	6	45	6	0	4	2	3	0	5	85	4	0	2	3	1	0	166	0	166
21:45	4	46	7	0	3	1	2	0	7	86	2	0	7	2	3	0	170	0	170
Hour	14	192	22	0	16	7	6	0	30	279	10	0	19	7	15	0	617	0	617
Total	466	6326	301	263	331	201	388	50	1116	5498	316	227	488	218	616	30	16835	570	16265
% Apr.	6.3	85.9	4.0	3.5	34.1	20.7	40.0	5.1	15.5	76.8	4.4	3.1	36.0	16.1	45.5	2.2	-	-	-
% Int.	2.7	37.5	1.7	1.5	1.9	1.1	2.3	0.2	6.6	32.6	1.8	1.3	2.8	1.2	3.6	0.1	-	-	-

or Street Approaches:

Northbound:

CSAH 78 (HANSON BLVD)

Data File: C:\APPS\PETRA2\DATAFILE\TMC9814.PDF
 Count Type: IMC. Channel: 0. Count Date: 10/20/98
 Number of Lanes: 2
 Approach Speed: 41
 Total Approach Traffic: 6930

Southbound:

CSAH 78 (HANSON BLVD)

Data File: C:\APPS\PETRA2\DATAFILE\TMC9814.PDF
 Count Type: IMC. Channel: 0. Count Date: 10/20/98
 Number of Lanes: 2
 Approach Speed: 41
 Total Approach Traffic: 7093

Minor Street Approaches:

Eastbound:

113TH AVE NW

Data File: C:\APPS\PETRA2\DATAFILE\TMC9814.PDF
 Count Type: IMC. Channel: 0. Count Date: 10/20/98
 Number of Lanes: 2
 Approach Speed: 30
 Total Approach Traffic: 1322

Westbound:

113TH AVE NW

Data File: C:\APPS\PETRA2\DATAFILE\TMC9814.PDF
 Count Type: IMC. Channel: 0. Count Date: 10/20/98
 Number of Lanes: 2
 Approach Speed: 30
 Total Approach Traffic: 920

Analysis of 8-Hour Volume Warrants (Criteria refers to high volume side street for that hour):

Hour	Main	Side			Warrant 1		Warrant 2		Warrant 8	
Begin	(Total)	Vol.	Dir.	Rank	Meets?	Criteria	Meets?	Criteria	Meets?	Criteria
0	0	0	W	17		140		70		112
1	0	0	W	18		140		70		112
2	0	0	W	19		140		70		112
3	0	0	W	20		140		70		112
4	0	0	W	21		140		70		112
5	0	0	W	22		140		70		112
6	831	136	E	2	MAIN	140	--BOTH--	70	--BOTH--	112
7	1314	152	E	1	--BOTH--	140	--BOTH--	70	--BOTH--	112
8	758	76	E	7	MAIN	140	--BOTH--	70	MAIN	112
9	640	60	E	14	MAIN	140	MAIN	70	MAIN	112
10	627	58	W	15	MAIN	140		70	MAIN	112
11	668	64	E	12	MAIN	140	MAIN	70	MAIN	112
12	768	71	E	9	MAIN	140	--BOTH--	70	MAIN	112
13	706	65	W	10	MAIN	140	MAIN	70	MAIN	112
14	995	95	E	6	MAIN	140	--BOTH--	70	MAIN	112
15	1030	74	E	8	MAIN	140	--BOTH--	70	MAIN	112
16	1198	124	W	4	MAIN	140	--BOTH--	70	--BOTH--	112
17	1247	101	E	5	MAIN	140	--BOTH--	70	MAIN	112
18	1213	125	E	3	MAIN	140	--BOTH--	70	--BOTH--	112
19	779	65	E	11	MAIN	140	MAIN	70	MAIN	112
20	702	64	E	13	MAIN	140	MAIN	70	MAIN	112
21	547	41	E	16	MAIN	140		70	MAIN	112
22	0	0	W	23		140		70		112
23	0	0	W	24		140		70		112

Warrant Summary:

Rural values apply.

Warrant 1 - Minimum Vehicular Volumes

NOT SATISFIED. Required values reached for 1 hours. Criteria--Main St.: 420; Side St.: See Volume Summary.

Warrant 2 - Interruption of Continuous Traffic

SATISFIED for 9 hours. Criteria--Main St.: 630; Side St.: See Volume Summary.

Warrant 3 - Minimum Pedestrian Volumes

NOT SATISFIED. Ped volumes too low. Criteria--190 Peds in peak hour, 100 peds in 4th high hour.

Warrant 4 - School Crossing

NOT APPLICABLE. Gap data has not been defined.

Warrant 5 - Progressive Movement

NOT SATISFIED. Adjacent signals closer than 1000 feet and/or not part of coordinated system.

Warrant 6 - Accident Experience

NOT SATISFIED. 0 correctable accidents is fewer than required 5.

Correctable Accidents: 0; Right Angle Accidents: 0; Left Turn Accidents: 0; Other Accidents: 0.

Warrant 7 - Systems Warrant

NOT SATISFIED. At least one street has no major approaches. Peak hour total entering volume: 1541.

- Approaches which are part of the principal through traffic roadway network.
- Approaches which include rural or suburban highways outside, entering or traversing a city.
- Approaches which appear as a major route in an official transportation plan.

Warrant 8 - Combination of Warrants

NOT SATISFIED. Required values reached for 4 hours. Criteria--Main: 504; Side: See Volume Summary.

Warrant 9 - Four Hour Volumes

SATISFIED for 6 hours.

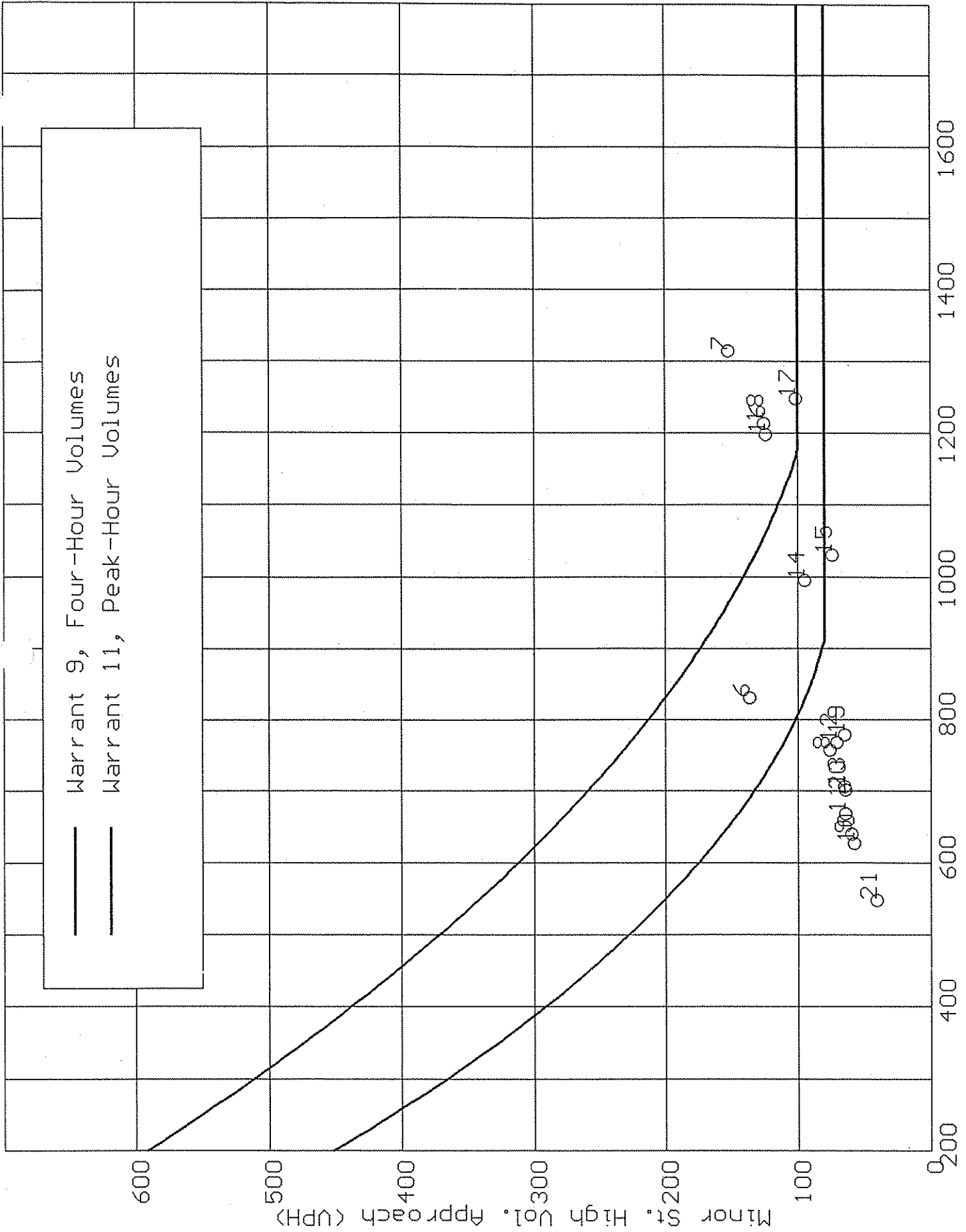
Warrant 10 - Peak Hour Delay

NOT APPLICABLE. Volume requirements satisfied, but side street peak hour delay not defined.

Criteria--Main St.: 800 (4 approaches), 650 (3 approaches); Side St.: 150.

Warrant 11 - Peak Hour Volume

SATISFIED for 4 hours.



Major St. Total of Both Approaches (UPH)



NORTH

COUNT LOCATION:

CSAH 78 (HANSON BLVD) @
113TH AVE. NW

DATE:

10/20/98

APP. #1=EB 113TH AVE

APP. #2 =SB CSAH 78
(HANSON BLVD)

APP. #3=WB 113TH AVE

APP. #4 =NB CSAH 78
(HANSON BLVD)

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						1		3
6:15-6:30						1		2
6:30-6:45	1				1	2		2
6:45-7:00				1	1	4		6
HOURLY TOTAL					2	HOURLY TOTAL		21
7:00-7:15						4		13
7:15-7:30		2			2	8		8
7:30-7:45						10	1	12
7:45-8:00						7	1	25
HOURLY TOTAL					2	HOURLY TOTAL		89
8:00-8:15						4		11
8:15-8:30						9		6
8:30-8:45						1		12
8:45-9:00						5		9
HOURLY TOTAL						HOURLY TOTAL		57
9:00-9:15	1				1	9		9
9:15-9:30	1				1	10	1	2
9:30-9:45						9	1	1
9:45-10:00						10		1
HOURLY TOTAL					2	HOURLY TOTAL		53
10:00-10:15						5		
10:15-10:30						11		3
10:30-10:45						11		5
10:45-11:00						6		7
HOURLY TOTAL						HOURLY TOTAL		48
11:00-11:15			1		1	8	1	1
11:15-11:30				1	1	4		7
11:30-11:45						5	1	5
11:45-12:00						6		6
HOURLY TOTAL					2	HOURLY TOTAL		44
12:00-12:15						4		3
12:15-12:30						5	1	3
12:30-12:45						5		2
12:45-1:00						6		6
HOURLY TOTAL						HOURLY TOTAL		35
1:00-1:15						5		
1:15-1:30			1		1	7		3
1:30-1:45						10		5
1:45-2:00			2		2	1		3
HOURLY TOTAL					3	HOURLY TOTAL		34



NORTH

COUNT LOCATION:

CSAH 78 (HANSON BLVD) @
113TH AVE. NW

DATE:

10/19/98

APP. #1=EB 113TH AVE

APP. #2 =SB CSAH 78
(HANSON BLVD)

APP. #3=WB 113TH AVE

APP. #4 =NB CSAH 78
(HANSON BLVD)

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						3		8
2:15-2:30			1		1	4		10
2:30-2:45	1			1	2	7		20
2:45-3:00	1				1	5		23
HOURLY TOTAL					4	HOURLY TOTAL		80
3:00-3:15	1	1	1	1	4	4		9
3:15-3:30	2		1		3			13
3:30-3:45				1	1			6
3:45-4:00	1		1	1	3	4		7
HOURLY TOTAL					11	HOURLY TOTAL		43
4:00-4:15						4		11
4:15-4:30	1				1			6
4:30-4:45			2		2			3
4:45-5:00								2
HOURLY TOTAL					3	HOURLY TOTAL		26
5:00-5:15						2	1	2
5:15-5:30								1
5:30-5:45						3		1
5:45-6:00						3		5
HOURLY TOTAL						HOURLY TOTAL		18
6:00-6:15								2
6:15-6:30						1		2
6:30-6:45						2		
6:45-7:00								
HOURLY TOTAL						HOURLY TOTAL		7
7:00-7:15						3		
7:15-7:30								
7:30-7:45								
7:45-8:00								
HOURLY TOTAL						HOURLY TOTAL		3
8:00-8:15								
8:15-8:30								
8:30-8:45						1		
8:45-9:00								
HOURLY TOTAL						HOURLY TOTAL		1
9:00-9:15								
9:15-9:30								
9:30-9:45								
9:45-10:00								
HOURLY TOTAL						HOURLY TOTAL		