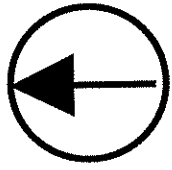


Date : 7/30/98AM 7/29/98PM

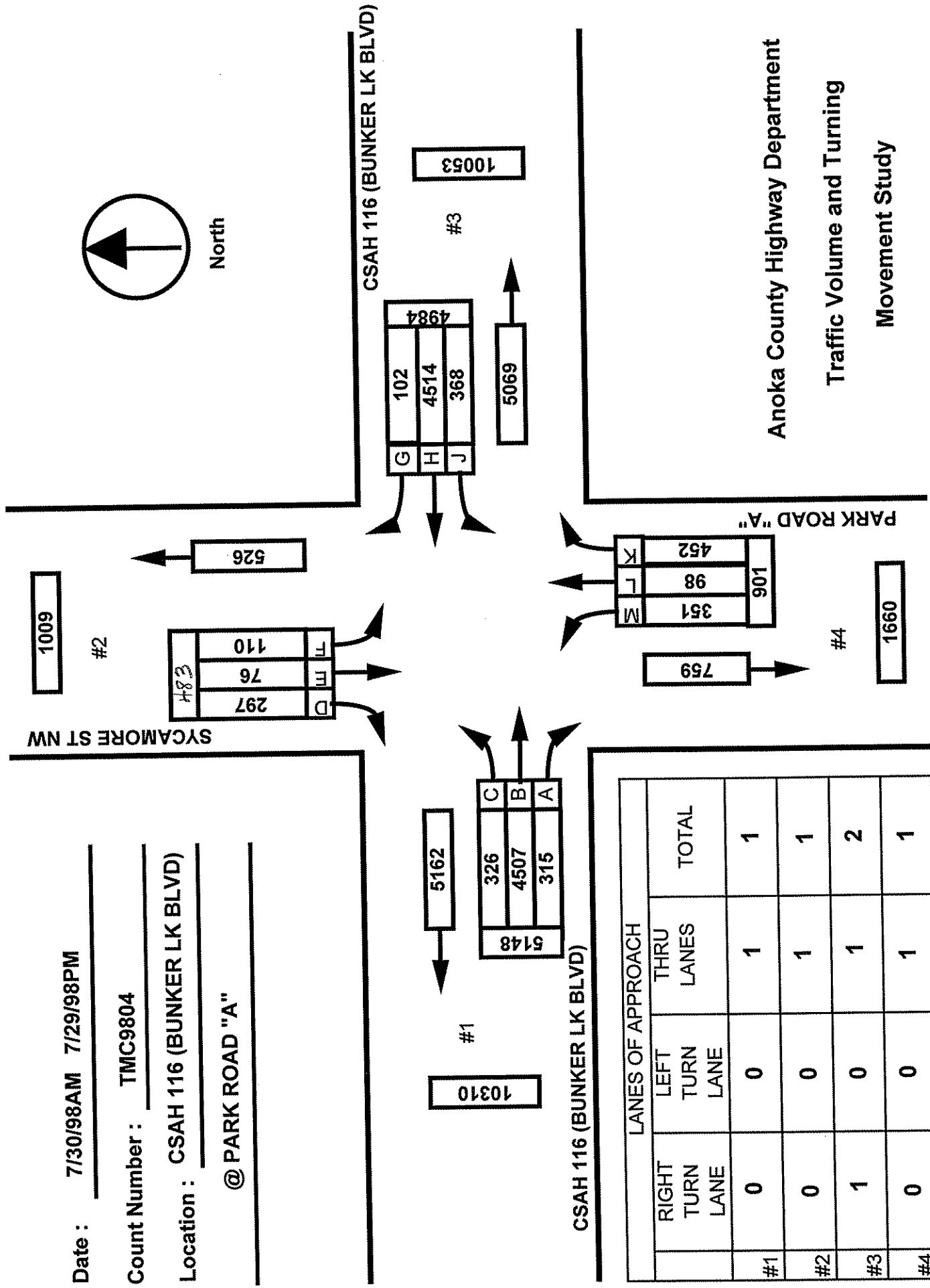
Count Number : TMC9804

Location : CSAH 116 (BUNKER LK BLVD)

@ PARK ROAD "A"



North



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

Anoka County Highway Department
 Traffic Volume and Turning
 Movement Study

PETRA Software

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Jamar Technologies, Inc.

Horsham, PA.

Study Name: TMC9804

Site Code : 98040202

Start Date: 07/30/98

Page : 1

Weather :
 Counted by: Sarah and Vallie
 Board # :
 cher :

Vehicle group 1

Start Time	SYCAMORE ST. NW Southbound				CSAH 116 (BUNKER LK BL) Westbound				PARK ROAD "A" Northbound				CSAH 116 (BUNKER LK BL) Eastbound				Intvl	Exclu	Inclu
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other			
07/30/98																			
06:00	1	4	2	0	12	56	0	3	0	1	1	0	3	45	7	3	138	6	132
06:15	6	4	3	0	8	64	0	1	2	0	2	0	1	65	7	4	167	5	162
06:30	1	7	5	0	16	72	1	5	1	0	1	0	0	79	4	3	195	8	187
06:45	4	4	6	0	9	43	0	2	2	0	0	0	0	84	5	4	163	6	157
Hour	12	19	16	0	45	235	1	11	5	1	4	0	4	273	23	14	663	25	638
07:00	0	12	3	0	5	29	2	1	3	0	2	0	2	77	12	5	153	6	147
07:15	0	6	10	0	14	68	2	2	4	1	3	0	1	87	4	8	210	10	200
07:30	1	3	12	0	9	62	1	5	1	1	6	0	3	98	4	7	213	12	201
07:45	1	3	8	0	5	55	1	4	4	0	3	0	3	82	4	22	195	26	169
Hour	2	24	33	0	33	214	6	12	12	2	14	0	9	344	24	42	771	54	717
08:00	3	1	5	0	6	61	1	7	1	0	2	0	2	66	2	4	161	11	150
08:15	1	2	5	1	5	58	1	6	1	0	3	0	5	58	5	7	158	14	144
08:30	2	2	3	0	5	64	1	6	1	1	3	0	2	48	8	8	154	14	140
08:45	7	0	7	3	7	73	0	6	3	1	2	0	5	55	3	3	175	12	163
Hour	13	5	20	4	23	256	3	25	6	2	10	0	14	227	18	22	648	51	597
09:00	4	1	6	0	4	56	3	5	2	0	4	0	3	77	1	5	171	10	161
09:15	2	0	7	0	1	56	1	10	2	2	5	0	5	45	2	1	139	11	128
09:30	1	1	1	0	4	72	2	6	0	1	4	0	3	59	2	9	165	15	150
09:45	4	1	7	0	2	60	1	4	1	1	1	0	5	54	5	4	150	8	142
Hour	11	3	21	0	11	244	7	25	5	4	14	0	16	235	10	19	625	44	581
10:00	4	1	8	2	7	66	1	8	2	0	3	0	6	56	7	6	177	16	161
10:15	0	0	6	0	2	40	1	4	3	0	2	0	6	61	5	9	139	13	126
10:30	1	2	7	1	4	56	2	5	5	1	4	0	3	68	3	1	163	7	156
10:45	2	0	3	0	3	58	1	8	3	0	3	0	4	64	5	8	162	16	146
Hour	7	3	24	3	16	220	5	25	13	1	12	0	19	249	20	24	641	52	589
11:00	4	2	4	0	10	63	1	3	3	0	6	0	5	69	5	11	186	14	172
11:15	3	0	3	0	9	60	1	4	9	0	5	0	5	66	7	6	178	10	168
11:30	5	0	4	0	4	67	2	4	3	0	4	0	8	79	5	4	189	8	181
11:45	2	1	5	0	4	71	3	4	9	0	8	0	3	78	7	5	200	9	191
Hour	14	3	16	0	27	261	7	15	24	0	23	0	21	292	24	26	753	41	712
12:00	2	0	9	0	4	61	2	4	5	0	2	0	5	49	2	2	147	6	141
12:15	1	0	6	0	9	62	1	8	1	0	9	3	5	76	11	2	194	13	181
12:30	0	0	7	1	6	54	3	8	5	2	7	0	2	79	7	2	183	11	172
12:45	0	0	6	1	9	53	2	4	7	0	4	0	8	62	5	5	166	10	156
Hour	3	0	28	2	28	230	8	24	18	2	22	3	20	266	25	11	690	40	650

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Horsham, PA.

Study Name: TMC9804

Site Code : 98040202

Start Date: 07/30/98

Page : 2

Weather :
 Counted by: Sarah and Vallie
 Board # :
 Meter :
 Meter :

Vehicle group 1

Start Time	SYCAMORE ST. NW Southbound				CSAH 116 (BUNKER LK BL) Westbound				PARK ROAD "A" Northbound				CSAH 116 (BUNKER LK BL) Eastbound				Intvl	Exclu	Inclu
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other			
13:00	3	2	2	0	3	71	3	8	4	3	4	0	7	47	11	5	173	13	160
13:15	3	0	5	0	5	54	1	3	5	0	6	0	8	49	9	4	152	7	145
13:30	3	0	7	0	4	67	0	8	3	2	0	0	6	72	2	7	181	15	166
13:45	0	0	5	0	5	60	1	5	2	0	7	0	6	50	1	3	145	8	137
Hour	9	2	19	0	17	252	5	24	14	5	17	0	27	218	23	19	651	43	608
14:00	1	0	2	1	2	72	3	8	0	1	6	1	2	58	3	4	164	14	150
14:15	3	0	3	0	3	83	1	10	9	1	3	0	7	71	4	9	207	19	188
14:30	1	0	3	0	10	74	3	5	10	0	4	0	0	84	1	8	203	13	190
14:45	2	0	3	1	7	76	0	10	3	2	6	0	3	70	3	11	197	22	175
Hour	7	0	11	2	22	305	7	33	22	4	19	1	12	283	11	32	771	68	703
15:00	0	0	2	0	3	70	0	6	6	1	13	0	4	87	2	7	201	13	188
15:15	0	2	3	0	4	96	1	12	5	5	8	0	3	64	6	1	210	13	197
15:30	0	0	2	0	1	112	1	3	8	1	2	0	6	96	5	7	244	10	234
15:45	1	0	1	0	6	82	2	7	9	1	12	1	7	96	10	4	239	12	227
Hour	1	2	8	0	14	360	4	28	28	8	35	1	20	343	23	19	894	48	846
16:00	1	0	1	0	2	108	3	5	9	1	20	0	8	100	5	3	266	8	258
16:15	3	0	2	0	5	131	1	3	16	2	14	1	7	75	3	1	264	5	259
16:30	0	0	8	1	5	102	3	2	9	4	19	1	6	110	12	5	287	9	278
16:45	0	3	8	0	11	107	3	6	7	4	21	0	4	116	16	0	306	6	300
Hour	4	3	19	1	23	448	10	16	41	11	74	2	25	401	36	9	1123	28	1095
17:00	2	0	5	0	7	94	2	1	18	10	17	0	6	97	5	0	264	1	263
17:15	2	1	6	0	5	113	3	2	14	6	15	0	16	106	4	5	298	7	291
17:30	0	0	3	0	9	98	2	3	13	7	20	0	6	110	5	3	279	6	273
17:45	5	1	8	0	5	113	8	0	10	7	16	0	5	131	6	2	317	2	315
Hour	9	2	22	0	26	418	15	6	55	30	68	0	33	444	20	10	1158	16	1142
18:00	2	0	1	0	6	101	3	2	11	5	19	0	2	75	3	0	230	2	228
18:15	0	0	6	1	10	85	1	3	9	3	10	0	10	84	2	0	224	4	220
18:30	1	1	7	0	7	74	3	1	8	3	18	0	6	81	8	0	218	1	217
18:45	2	2	2	0	12	85	3	0	8	2	12	0	9	87	5	2	231	2	229
Hour	5	3	16	1	35	345	10	6	36	13	59	0	27	327	18	2	903	9	894
19:00	2	1	4	0	3	64	2	2	6	3	7	0	8	96	9	0	207	2	205
19:15	2	0	2	0	11	71	1	1	5	0	6	0	3	66	1	1	170	2	168
19:30	2	2	6	0	3	55	0	0	9	1	7	1	5	47	3	4	145	5	140
19:45	0	1	10	0	3	58	0	1	7	1	10	0	13	50	7	4	165	5	160
Hour	6	4	22	0	20	248	3	4	27	5	30	1	29	259	20	9	687	14	673

Weather :
 Counted by: Sarah and Vallie
 Board # :
 Cher :

PETRA Software
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 Horsham, PA.

Study Name: TMC9804
 Site Code : 98040202
 Start Date: 07/30/98
 Page : 3

Vehicle group 1

Start Time	SYCAMORE ST. NW Southbound				CSAH 116 (BUNKER LK BL) Westbound				PARK ROAD "A" Northbound				CSAH 116 (BUNKER LK BL) Eastbound				Intvl	Exclu	Inclu
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other			
20:00	2	0	6	0	4	52	2	0	11	3	13	0	6	41	9	1	150	1	149
20:15	0	0	4	0	9	64	3	1	5	1	10	0	5	53	6	0	161	1	160
20:30	1	0	1	0	6	66	1	1	5	3	9	0	3	46	0	0	142	1	141
20:45	1	1	1	0	5	64	0	2	10	0	2	0	9	66	2	0	163	2	161
Hour	4	1	12	0	24	246	6	4	31	7	34	0	23	206	17	1	616	5	611
21:00	1	2	4	0	1	99	1	0	3	0	4	0	10	33	2	0	160	0	160
21:15	0	0	1	0	1	57	1	1	5	3	3	0	5	38	0	3	118	4	114
21:30	1	0	5	0	0	42	3	0	2	0	5	0	8	34	0	1	101	1	100
21:45	1	0	0	0	2	34	0	0	4	0	5	0	4	35	1	0	86	0	86
Hour	3	2	10	0	4	232	5	1	14	3	17	0	27	140	3	4	465	5	460
Total	110	76	297	13	368	4514	102	259	351	98	452	8	326	4507	315	263	12059	543	11516
% Apr.	22.1	15.3	59.8	2.6	7.0	86.0	1.9	4.9	38.6	10.7	49.7	0.8	6.0	83.2	5.8	4.8	-	-	-
% Int.	0.9	0.6	2.4	0.1	3.0	37.4	0.8	2.1	2.9	0.8	3.7	-	2.7	37.3	2.6	2.1	-	-	-

Major Street Approaches:

Eastbound:

CSAH 116 (BUNKER LK BLVD)

Data File: C:\APPS\PETRA2\DATAFILE\TMC9804.PDF

Count Type: IMC. Channel: 0. Count Date: 7/30/98

Number of Lanes: 1

Approach Speed: 55

Total Approach Traffic: 5148

Westbound:

CSAH 116 (BUNKER LK BLVD)

Data File: C:\APPS\PETRA2\DATAFILE\TMC9804.PDF

Count Type: IMC. Channel: 0. Count Date: 7/30/98

Number of Lanes: 2

Approach Speed: 55

Total Approach Traffic: 4984

Minor Street Approaches:

Northbound:

PARK ROAD "A"

Data File: C:\APPS\PETRA2\DATAFILE\TMC9804.PDF

Count Type: IMC. Channel: 0. Count Date: 7/30/98

Number of Lanes: 1

Approach Speed: 0

Total Approach Traffic: 901

Southbound:

SYCAMORE ST. NW

Data File: C:\APPS\PETRA2\DATAFILE\TMC9804.PDF

Count Type: IMC. Channel: 0. Count Date: 7/30/98

Number of Lanes: 1

Approach Speed: 0

Total Approach Traffic: 483

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 S 17	105	52	84
1	0	0 S 18	105	52	84
2	0	0 S 19	105	52	84
3	0	0 S 20	105	52	84
4	0	0 S 21	105	52	84
5	0	0 S 22	105	52	84
6	581	47 S 8	MAIN 105	52	MAIN 84
7	630	59 S 7	MAIN 105	--BOTH-- 52	MAIN 84
8	541	38 S 12	MAIN 105	52	MAIN 84
9	523	35 S 14	MAIN 105	52	MAIN 84
10	529	34 S 15	MAIN 105	52	MAIN 84
11	632	47 N 9	MAIN 105	MAIN 52	MAIN 84
12	577	42 N 11	MAIN 105	52	MAIN 84
13	542	36 N 13	MAIN 105	52	MAIN 84
14	640	45 N 10	MAIN 105	MAIN 52	MAIN 84
15	764	71 N 5	MAIN 105	--BOTH-- 52	MAIN 84
16	943	126 N 2	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
17	956	153 N 1	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
18	762	108 N 3	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
19	579	62 N 6	MAIN 105	SIDE 52	MAIN 84
20	522	72 N 4	MAIN 105	SIDE 52	MAIN 84
21	411	34 N 16	105	52	84
22	0	0 S 23	105	52	84
23	0	0 S 24	105	52	84

Warrant Summary:

Rural values apply.

Warrant 1 - Minimum Vehicular Volumes

NOT SATISFIED. Required values reached for 3 hours. Criteria--Main St.: 420; Side St.: See Volume Summary.

Warrant 2 - Interruption of Continuous Traffic

NOT SATISFIED. Required values reached for 5 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: 1142.

- 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 3 hours. Criteria--Main: 504; Side: See Volume Summary.

Warrant 9 - Four Hour Volumes

NOT SATISFIED. Required values reached for 3 hours.

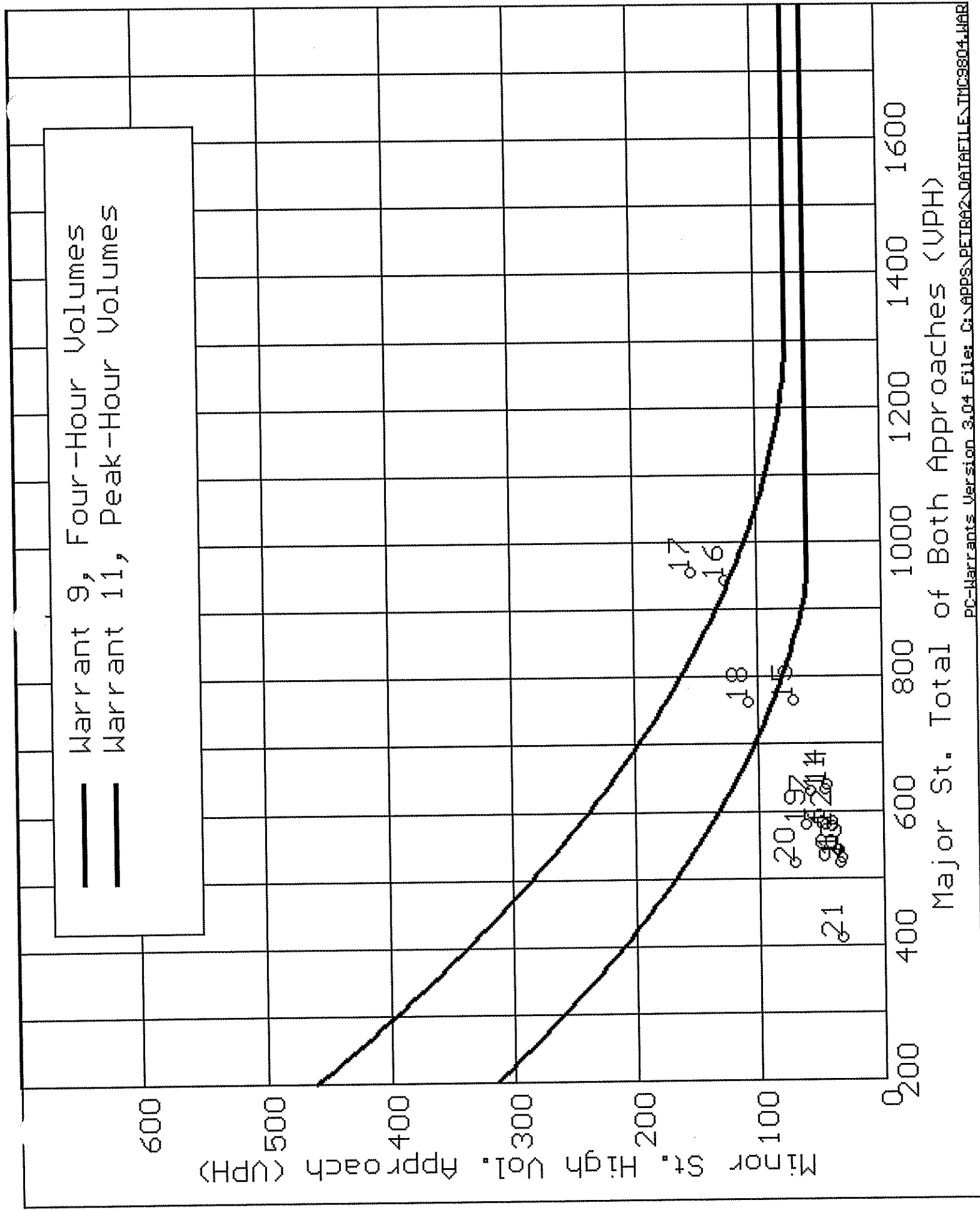
Warrant 10 - Peak Hour Delay

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

Criteria--Main St.: 800 (4 approaches), 650 (3 approaches); Side St.: 100.

Warrant 11 - Peak Hour Volume

SATISFIED for 2 hours.



Major St. Total of Both Approaches (UPH)



COUNT LOCATION:

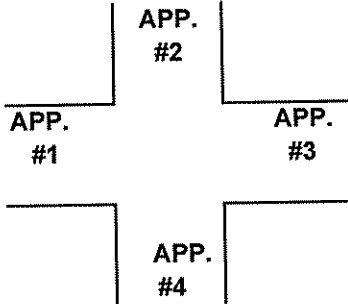
CSAH 116 (BUNKER LK. BLVD.)

DATE:

7/30/98

@ PARK ROAD "A"

APP. #1=EB CSAH 116
(BUNKER LK BLVD)
APP. #2 =SB
SYCAMORE ST
APP. #3=WB CSAH 116
(BUNKER LK BLVD)
APP. #4=NB
PARK ROAD "A"



- 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				15 MIN TOT	HEAVY VEHICLES		
	APP. #1	APP. #2	APP. #3	APP. #4		TRUCKS	RV	BUS
6:00-6:15AM						4	1	
6:15-6:30						5		
6:30-6:45						5		3
6:45-7:00		1				4		2
HOURLY TOTAL						HOURLY TOTAL		24
7:00-7:15		1			1	5		1
7:15-7:30		2			2	10		
7:30-7:45		2			2	11		2
7:45-8:00		1				24		1
HOURLY TOTAL					5	HOURLY TOTAL		54
8:00-8:15		1			1	8		3
8:15-8:30		1			1	14		
8:30-8:45						13		
8:45-9:00						12		
HOURLY TOTAL					2	HOURLY TOTAL		50
9:00-9:15		3			3	10		
9:15-9:30						9	1	
9:30-9:45						12	2	
9:45-10:00		1				7	1	
HOURLY TOTAL					3	HOURLY TOTAL		42
10:00-10:15		3			3	15	1	
10:15-10:30						11	1	1
10:30-10:45						6		1
10:45-11:00		1				16		
HOURLY TOTAL					3	HOURLY TOTAL		52
11:00-11:15		3			3	11		3
11:15-11:30						11		
11:30-11:45		1			1	7		
11:45-12:00		2				7		2
HOURLY TOTAL					4	HOURLY TOTAL		41
12:00-12:15		2			2	4		2
12:15-12:30		4			4	11		2
12:30-12:45						11		
12:45-1:00						9		1
HOURLY TOTAL					6	HOURLY TOTAL		40
1:00-1:15		5			5	12		1
1:15-1:30						7		
1:30-1:45	2	4			6	14	1	
1:45-2:00	2	3				8		
HOURLY TOTAL					11	HOURLY TOTAL		43



NORTH

COUNT LOCATION:

CSAH 116 (BUNKER LK. BLVD.)

DATE:

7/29/98

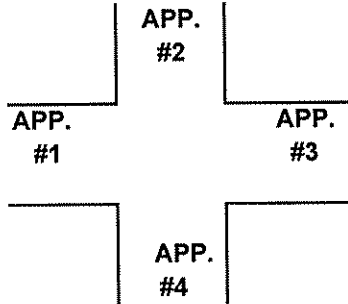
@ PARK ROAD "A"

APP. #1=EB CSAH 116
(BUNKER LK BLVD)

APP. #2 =SB
SYCAMORE ST

APP. #3=WB CSAH 116
(BUNKER LK BLVD)

APP. #4=NB
PARK ROAD "A"



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	14		
2:15-2:30						19		
2:30-2:45	1	3			4	11	1	1
2:45-3:00	2	7			9	21		
HOURLY TOTAL					14	HOURLY TOTAL		67
3:00-3:15		7			7	12		1
3:15-3:30	2	2			4	13		
3:30-3:45						10		
3:45-4:00		2			2	10		2
HOURLY TOTAL					13	HOURLY TOTAL		48
4:00-4:15		1			1	7		2
4:15-4:30						5		
4:30-4:45		1			1	9		
4:45-5:00						5	1	
HOURLY TOTAL					2	HOURLY TOTAL		29
5:00-5:15		1			1			1
5:15-5:30	1	1	2		4	7		
5:30-5:45		1			1	6		
5:45-6:00			1		1			1
HOURLY TOTAL					7	HOURLY TOTAL		15
6:00-6:15						2		
6:15-6:30						3	1	
6:30-6:45		4			4	1		
6:45-7:00		4			4	1	1	
HOURLY TOTAL					8	HOURLY TOTAL		9
7:00-7:15						2		
7:15-7:30		1			1	2		
7:30-7:45		2			2	3	2	
7:45-8:00		3			3	6		
HOURLY TOTAL					6	HOURLY TOTAL		15
8:00-8:15		6			6	1		
8:15-8:30						1		
8:30-8:45		3			3	1		
8:45-9:00		1			1	1		
HOURLY TOTAL					10	HOURLY TOTAL		4
9:00-9:15								
9:15-9:30						4		
9:30-9:45						1		
9:45-10:00								
HOURLY TOTAL						HOURLY TOTAL		5