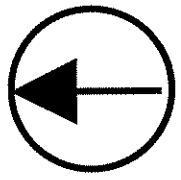


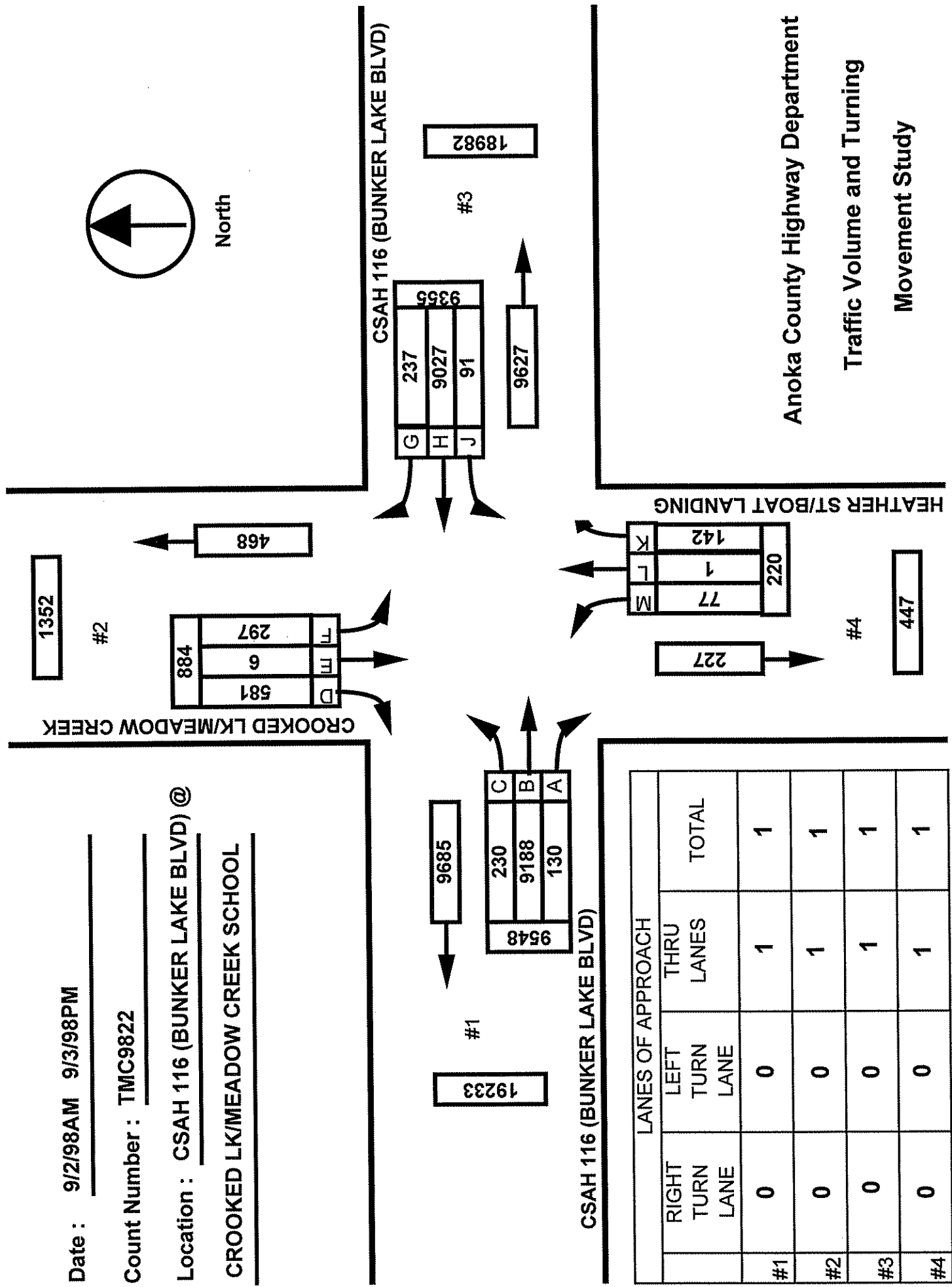
Date : 9/2/98AM 9/3/98PM

Count Number : TMC9822

Location : CSAH 116 (BUNKER LAKE BLVD) @
CROOKED LK/MEADOW CREEK SCHOOL



North



	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

Anoka County Highway Department
Traffic Volume and Turning
Movement Study

PETRA Software

Weather :
 Counted by: Josie and Vallie
 Board # :
 Other :

Copyright (C) 1990, 1995
 Jamar Technologies, Inc.
 Horsham, PA.

Study Name: TMC9822
 Site Code : 98220202
 Start Date: 09/02/98
 Page : 1

Vehicle group 1

Start Time	Crooked Lake/Meadow Cr Southbound				CSAH 116 (Bunker Lake) Westbound				Heather St./Boat Landi Northbound				CSAH 116 (Bunker Lake) Eastbound				Intvl	Exclu	Inclu
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other			
09/02/98																			
06:00	0	0	0	0	0	77	0	1	0	0	2	0	0	46	0	1	127	2	125
06:15	0	0	0	0	1	92	0	5	0	0	1	0	0	77	0	1	177	6	171
06:30	1	0	2	0	0	134	0	5	2	0	5	0	0	97	1	5	252	10	242
06:45	4	0	9	0	0	184	0	8	2	0	2	0	1	110	2	5	327	13	314
Hour	5	0	11	0	1	487	0	19	4	0	10	0	1	330	3	12	883	31	852
07:00	2	0	2	1	2	178	0	9	1	0	4	0	0	123	0	8	330	18	312
07:15	1	0	1	0	1	182	2	12	0	0	1	0	0	96	1	6	303	18	285
07:30	3	0	4	1	1	161	0	6	2	0	3	2	0	165	0	10	358	19	339
07:45	3	0	10	1	3	173	13	4	1	0	5	0	9	132	0	15	369	20	349
Hour	9	0	17	3	7	694	15	31	4	0	13	2	9	516	1	39	1360	75	1285
08:00	2	0	4	0	0	133	1	13	1	0	2	0	4	77	0	8	245	21	224
08:15	3	0	3	0	0	124	9	16	0	0	0	0	7	82	1	7	252	23	229
08:30	14	0	15	0	0	97	35	6	0	0	3	0	25	104	1	12	312	18	294
08:45	9	0	36	4	0	118	49	11	0	1	7	0	31	109	4	7	386	22	364
Hour	28	0	58	4	0	472	94	46	1	1	12	0	67	372	6	34	1195	84	1111
09:00	31	0	44	15	0	124	12	12	0	0	2	0	7	147	0	18	412	45	367
09:15	24	0	66	7	0	131	4	10	2	0	3	1	0	82	1	8	339	26	313
09:30	6	0	7	1	0	126	1	9	1	0	2	0	0	89	0	10	252	20	232
09:45	2	0	3	0	1	114	1	5	2	0	1	0	3	75	0	2	209	7	202
Hour	63	0	120	23	1	495	18	36	5	0	8	1	10	393	1	38	1212	98	1114
10:00	1	0	3	0	2	112	3	6	0	0	1	0	1	95	2	4	230	10	220
10:15	0	0	3	1	1	88	5	5	3	0	1	1	3	102	1	8	222	15	207
10:30	2	1	2	0	1	81	0	4	2	0	4	0	3	83	0	8	191	12	179
10:45	0	0	6	0	3	102	0	4	0	0	1	0	2	123	2	8	251	12	239
Hour	3	1	14	1	7	383	8	19	5	0	7	1	9	403	5	28	894	49	845
11:00	1	0	2	0	3	115	5	6	1	0	3	0	1	115	1	7	260	13	247
11:15	0	0	6	0	2	120	12	7	3	0	1	0	14	116	0	8	289	15	274
11:30	5	1	27	3	1	106	2	8	0	0	1	0	11	124	2	7	298	18	280
11:45	6	0	18	2	2	105	0	13	4	0	1	0	0	120	6	8	285	23	262
Hour	12	1	53	5	8	446	19	34	8	0	6	0	26	475	9	30	1132	69	1063
12:00	3	0	6	1	0	157	0	11	0	0	1	0	0	148	3	9	339	21	318
12:15	0	0	1	0	0	146	4	5	3	0	4	0	3	114	3	5	288	10	278
12:30	3	0	8	1	1	126	7	8	2	0	3	2	13	117	6	3	300	14	286
12:45	10	1	19	1	1	139	5	5	2	0	4	0	9	134	2	10	342	16	326
Hour	16	1	34	3	2	568	16	29	7	0	12	2	25	513	14	27	1269	61	1208

Weather :
 Counted by: Josie and Vallie
 Board # :
 Ther :

PETRA Software
 Copyright (C) 1990, 1995
 Jamar Technologies, Inc.
 Horsham, PA.

Study Name: TMC9822
 Site Code : 98220202
 Start Date: 09/02/98
 Page : 2

Vehicle group 1

Start Time	Crooked Lake/Meadow Cr Southbound				CSAH 116 (Bunker Lake Westbound				Heather St./Boat Landi Northbound				CSAH 116 (Bunker Lake Eastbound				Intvl	Exclu	Inclu
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other			
13:00	7	0	18	5	1	117	3	4	0	0	2	1	2	160	3	7	330	17	313
13:15	5	0	18	2	1	109	0	7	0	0	3	0	2	142	2	5	296	14	282
13:30	1	0	0	1	3	136	0	7	0	0	3	1	1	121	1	8	283	17	266
13:45	3	0	2	0	1	127	1	14	0	0	3	1	3	122	1	11	289	26	263
Hour	16	0	38	8	6	489	4	32	0	0	11	3	8	545	7	31	1198	74	1124
14:00	1	0	1	0	0	118	0	18	3	0	2	0	1	129	1	8	282	26	256
14:15	2	0	3	0	0	88	1	1	1	0	1	0	0	143	2	3	245	4	241
14:30	1	0	3	0	1	111	0	5	2	0	3	0	2	180	1	10	319	15	304
14:45	2	0	3	0	3	135	4	12	0	0	1	0	4	135	5	6	310	18	292
Hour	6	0	10	0	4	452	5	36	6	0	7	0	7	587	9	27	1156	63	1093
15:00	6	0	7	0	4	137	7	8	0	0	0	0	5	160	1	7	342	15	327
15:15	6	0	5	1	2	171	6	16	0	0	1	0	14	173	4	10	409	27	382
15:30	18	1	17	1	2	164	11	14	2	0	2	1	9	181	6	11	440	27	413
15:45	28	1	49	18	1	157	1	5	0	0	3	0	2	187	1	5	458	28	430
Hour	58	2	78	20	9	629	25	43	2	0	6	1	30	701	12	33	1649	97	1552
16:00	8	0	32	8	2	182	2	10	1	0	2	1	3	218	1	13	483	32	451
16:15	11	0	11	1	3	183	2	5	0	0	1	0	3	201	3	14	438	20	418
16:30	6	1	8	0	2	198	0	3	1	0	3	0	0	182	2	8	414	11	403
16:45	3	0	13	0	3	211	1	3	0	0	2	0	2	219	3	4	464	7	457
Hour	28	1	64	9	10	774	5	21	2	0	8	1	8	820	9	39	1799	70	1729
17:00	3	0	11	0	5	210	4	6	1	0	2	0	2	222	3	5	474	11	463
17:15	3	0	7	0	2	242	6	4	1	0	4	0	4	230	4	7	514	11	503
17:30	10	0	18	0	0	220	4	4	1	0	3	0	10	225	4	4	503	8	495
17:45	15	0	19	0	4	219	2	3	5	0	4	1	3	217	4	4	500	8	492
Hour	31	0	55	0	11	891	16	17	8	0	13	1	19	894	15	20	1991	38	1953
18:00	10	0	6	0	1	209	3	5	0	0	1	0	0	222	2	0	459	5	454
18:15	3	0	5	0	3	191	1	3	2	0	2	1	1	208	7	5	432	9	423
18:30	3	0	3	0	2	191	1	3	3	0	1	0	1	210	4	3	425	6	419
18:45	0	0	4	0	4	174	0	1	2	0	4	0	1	189	4	2	385	3	382
Hour	16	0	18	0	10	765	5	12	7	0	8	1	3	829	17	10	1701	23	1678
19:00	0	0	1	0	2	182	2	2	2	0	1	0	2	209	2	1	406	3	403
19:15	0	0	1	0	3	159	2	0	0	0	3	0	1	149	4	3	325	3	322
19:30	2	0	0	0	0	154	0	0	4	0	1	0	3	174	1	3	342	3	339
19:45	2	0	6	0	1	162	1	1	0	0	6	0	1	174	3	0	357	1	356
Hour	4	0	8	0	6	657	5	3	6	0	11	0	7	706	10	7	1430	10	1420

Weather :
 Counted by: Josie and Vallie
 Board # :
 Ther :

PETRA Software
 Copyright (C) 1990, 1995
 Jamar Technologies, Inc.
 Horsham, PA.

Study Name: TMC9822
 Site Code : 98220202
 Start Date: 09/02/98
 Page : 3

Vehicle group 1

Start Time	Crooked Lake/Meadow Cr Southbound				CSAH 116 (Bunker Lake Westbound				Heather St./Boat Landi Northbound				CSAH 116 (Bunker Lake Eastbound				Intvl	Exclu	Inclu
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other			
20:00	1	0	0	0	1	153	2	1	4	0	2	0	0	178	0	2	344	3	341
20:15	0	0	0	0	0	141	0	2	1	0	1	0	0	171	6	1	323	3	320
20:30	0	0	2	0	2	97	0	1	1	0	2	0	0	144	1	0	250	1	249
20:45	0	0	0	0	1	98	0	1	3	0	0	0	1	139	2	0	245	1	244
Hour	1	0	2	0	4	489	2	5	9	0	5	0	1	632	9	3	1162	8	1154
21:00	0	0	1	0	1	97	0	0	3	0	2	0	0	130	1	0	235	0	235
21:15	1	0	0	0	1	81	0	0	0	0	1	0	0	135	1	0	220	0	220
21:30	0	0	0	0	1	81	0	1	0	0	1	0	0	113	1	0	198	1	197
21:45	0	0	0	0	2	77	0	0	0	0	1	0	0	94	0	0	174	0	174
Hour	1	0	1	0	5	336	0	1	3	0	5	0	0	472	3	0	827	1	826
Total	297	6	581	76	91	9027	237	384	77	1	142	13	230	9188	130	378	20858	851	20007
% Apr.	30.9	0.6	60.5	7.9	0.9	92.6	2.4	3.9	33.0	0.4	60.9	5.5	2.3	92.5	1.3	3.8	-	-	-
% Int.	1.4	-	2.7	0.3	0.4	43.2	1.1	1.8	0.3	-	0.6	-	1.1	44.0	0.6	1.8	-	-	-

or Street Approaches:

Lastbound:

CSAH 116 (Bunker Lake Blvd)
 Data File: C:\APPS\PETRA2\DATAFILE\TMC9822.PDF
 Count Type: IMC. Channel: 0. Count Date: 9/ 2/98
 Number of Lanes: 1
 Approach Speed: 50
 Total Approach Traffic: 9548

Westbound:

CSAH 116 (Bunker Lake Blvd)
 Data File: C:\APPS\PETRA2\DATAFILE\TMC9822.PDF
 Count Type: IMC. Channel: 0. Count Date: 9/ 2/98
 Number of Lanes: 1
 Approach Speed: 50
 Total Approach Traffic: 9355

Minor Street Approaches:

Northbound:

Heather St./Boat Landing
 Data File: C:\APPS\PETRA2\DATAFILE\TMC9822.PDF
 Count Type: IMC. Channel: 0. Count Date: 9/ 2/98
 Number of Lanes: 1
 Approach Speed: 0
 Total Approach Traffic: 220

Southbound:

Crooked Lake/Meadow Creek School
 Data File: C:\APPS\PETRA2\DATAFILE\TMC9822.PDF
 Count Type: IMC. Channel: 0. Count Date: 9/ 2/98
 Number of Lanes: 1
 Approach Speed: 0
 Total Approach Traffic: 884

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	822	16	S	13	MAIN 105	MAIN 52	MAIN 84
7	1242	26	S	10	MAIN 105	MAIN 52	MAIN 84
8	1011	86	S	4	MAIN 105	--BOTH-- 52	--BOTH-- 84
9	918	183	S	1	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
10	815	18	S	11	MAIN 105	MAIN 52	MAIN 84
11	983	66	S	6	MAIN 105	--BOTH-- 52	MAIN 84
12	1138	51	S	8	MAIN 105	MAIN 52	MAIN 84
13	1059	54	S	7	MAIN 105	--BOTH-- 52	MAIN 84
14	1064	16	S	14	MAIN 105	MAIN 52	MAIN 84
15	1406	138	S	2	--BOTH-- 105	--BOTH-- 52	--BOTH-- 84
16	1626	93	S	3	MAIN 105	--BOTH-- 52	--BOTH-- 84
17	1846	86	S	5	MAIN 105	--BOTH-- 52	--BOTH-- 84
18	1629	34	S	9	MAIN 105	MAIN 52	MAIN 84
19	1391	17	N	12	MAIN 105	MAIN 52	MAIN 84
20	1137	14	N	15	MAIN 105	MAIN 52	MAIN 84
21	816	8	N	16	MAIN 105	MAIN 52	MAIN 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 2 hours. Criteria--Main St.: 350; Side St.: See Volume Summary.

Warrant 2 - Interruption of Continuous Traffic

NOT SATISFIED. Required values reached for 7 hours. Criteria--Main St.: 525; 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: 1953.

- 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 5 hours. Criteria--Main: 420; Side: See Volume Summary.

Warrant 9 - Four Hour Volumes

NOT SATISFIED for 6 hours.

Warrant 10 - Peak Hour Delay

NOT SATISFIED. Peak hour (1700 hours) volume not adequate.

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

Warrant 11 - Peak Hour Volume

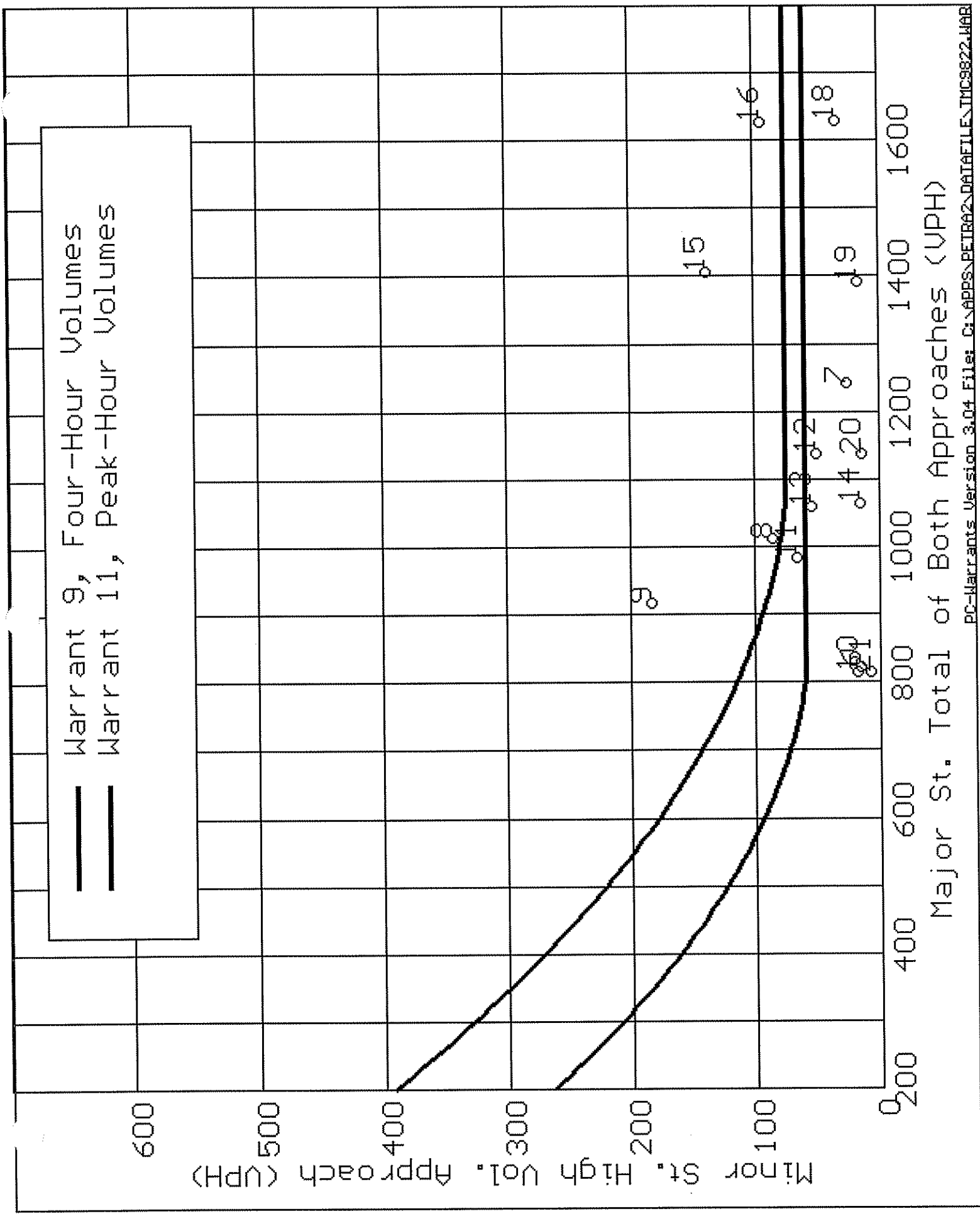
NOT SATISFIED for 5 hours.

Minor St. High Vol. Approach (VPH)

Warrant 9, Four-Hour Volumes
Warrant 11, Peak-Hour Volumes

200 400 600 800 1000 1200 1400 1600

Major St. Total of Both Approaches (VPH)



↓
NORTH

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

APP. #2 =NB HEATHER ST.
BOAT LANDING

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

APP. #4=SB CROOKED LK
& MEADOW CREEK SCHOOL

COUNT LOCATION: CSAH 116 (BUNKER LK BLVD) @ **DATE:** 9/2/98
CROOKER LK & MEADOW CREEK SCHOOL/HEATHER ST.

APP. #2

APP. #1 APP. #3

APP. #4

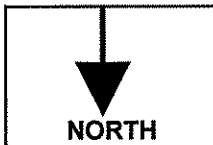
HEAVY VEHICLE- ANY VEHICLE HAVING MORE THAN FOUR TIRES TOUCHING THE PAVEMENT

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		1
6:15-6:30						4		2
6:30-6:45						9		1
6:45-7:00		1			1	4		9
HOURLY TOTAL					1	HOURLY TOTAL		31
7:00-7:15		2			2	11		7
7:15-7:30						9		9
7:30-7:45						11		7
7:45-8:00						11		9
HOURLY TOTAL					2	HOURLY TOTAL		74
8:00-8:15		2			2	11		11
8:15-8:30		3	2		5	17		5
8:30-8:45		6	6		12	13		5
8:45-9:00		12	69		81	13		9
HOURLY TOTAL					100	HOURLY TOTAL		84
9:00-9:15						14		30
9:15-9:30		2	25		27	17		11
9:30-9:45			15		15	14		4
9:45-10:00		1			1	6	1	
HOURLY TOTAL					43	HOURLY TOTAL		97
10:00-10:15						9		
10:15-10:30						15		
10:30-10:45						12		
10:45-11:00		1	1		2	11		2
HOURLY TOTAL					2	HOURLY TOTAL		49
11:00-11:15						13		
11:15-11:30						12	1	3
11:30-11:45			1		1	12		5
11:45-12:00						15		9
HOURLY TOTAL					1	HOURLY TOTAL		70
12:00-12:15		1			1	15		6
12:15-12:30			1		1	8		2
12:30-12:45						13		1
12:45-1:00						12		4
HOURLY TOTAL					2	HOURLY TOTAL		61
1:00-1:15						11		6
1:15-1:30						11		3
1:30-1:45						13		4
1:45-2:00						16		10
HOURLY TOTAL						HOURLY TOTAL		74



COUNT LOCATION: CSAH 116 (BUNKER LK BLVD) @ **DATE:** 9/2/98
 CROOKER LK & MEADOW CREEK SCHOOL/HEATHER ST.

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

APP. #2 =NB HEATHER ST.
BOAT LANDING

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

APP. #4=SB CROOKED LK
& MEADOW CREEK SCHOOL

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	15		11
2:15-2:30		2			2	4		2
2:30-2:45						8	1	6
2:45-3:00				1	1	13		6
HOURLY TOTAL					4	HOURLY TOTAL		66
3:00-3:15				1	1	11	1	3
3:15-3:30						11	1	14
3:30-3:45			5	1	6	14	3	11
3:45-4:00			80		80	5		22
HOURLY TOTAL					87	HOURLY TOTAL		96
4:00-4:15			3	2	5	11	1	20
4:15-4:30			1		1	6		15
4:30-4:45		4		1	5	3	1	6
4:45-5:00						7		1
HOURLY TOTAL					11	HOURLY TOTAL		71
5:00-5:15						5	1	5
5:15-5:30						8		3
5:30-5:45		1	1		2	8		
5:45-6:00						6		2
HOURLY TOTAL					2	HOURLY TOTAL		38
6:00-6:15				2	2	5		
6:15-6:30						6	1	2
6:30-6:45						3		
6:45-7:00		2			2	3	2	
HOURLY TOTAL					4	HOURLY TOTAL		22
7:00-7:15		1			1	3		
7:15-7:30						3		
7:30-7:45			1		1	3		
7:45-8:00						1		
HOURLY TOTAL					2	HOURLY TOTAL		10
8:00-8:15						2	1	
8:15-8:30		3			3	4		
8:30-8:45						1		
8:45-9:00				1	1	1		
HOURLY TOTAL					4	HOURLY TOTAL		9
9:00-9:15						1		
9:15-9:30								
9:30-9:45								1
9:45-10:00								
HOURLY TOTAL						HOURLY TOTAL		2