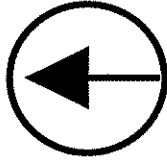


Date : 7/5/97AM 7/4/97PM

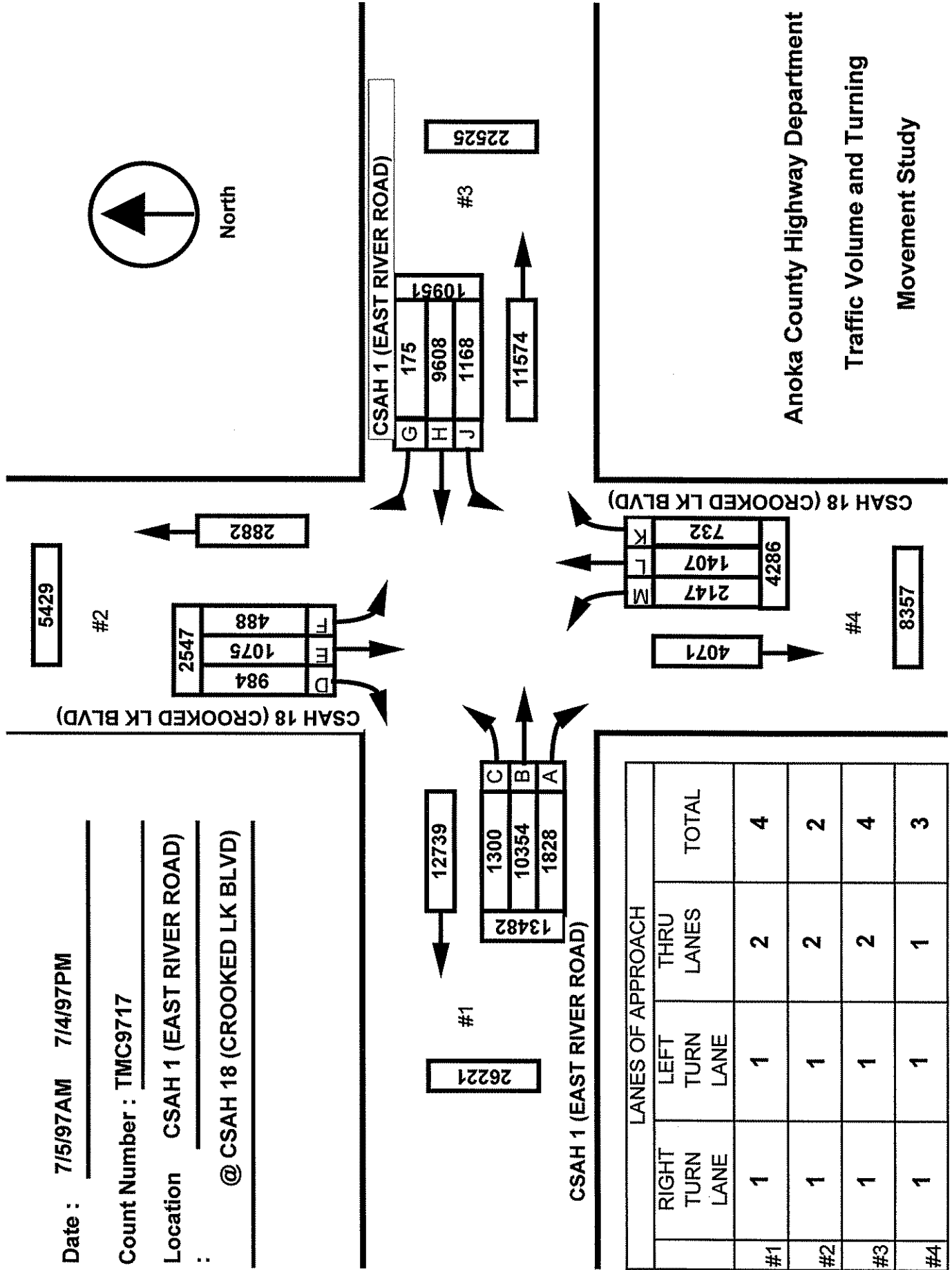
Count Number : TMC9717

Location CSAH 1 (EAST RIVER ROAD)

@ CSAH 18 (CROOKED LK BLVD)



North



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

Anoka County Highway Department
 Traffic Volume and Turning
 Movement Study

Weather :sunny and 80
 Counted by:Sarah and Janelle
 Board # :
 ther :

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Study Name: TMC9717
 Site Code : 97170202
 Start Date: 08/05/97
 Page : 1

Vehicle group 1

Start Time	CSAH 18 (CROOKED LAKE Southbound)				CSAH 1 (EAST RIVER ROA Westbound)				CSAH 18 (CROOKED LAKE Northbound)				CSAH 1 (EAST RIVER ROA Eastbound)				Intvl Total	Exclu Total	Inclu Total
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other			
08/05/97																			
06:00	1	1	7	1	0	178	0	1	65	1	3	0	0	51	6	3	318	5	313
06:15	5	3	9	0	5	180	0	6	65	6	6	1	2	116	5	2	411	9	402
06:30	1	2	12	1	4	211	2	5	67	9	6	2	2	83	2	4	413	12	401
06:45	0	11	15	1	0	197	2	3	71	8	6	0	2	103	6	0	425	4	421
Hour	7	17	43	3	9	766	4	15	268	24	21	3	6	353	19	9	1567	30	1537
07:00	3	4	7	0	2	193	2	4	44	3	5	0	4	118	18	6	413	10	403
07:15	7	3	11	0	6	222	0	2	48	9	6	0	4	148	12	1	479	3	476
07:30	2	4	6	1	6	136	1	3	35	12	9	3	7	146	14	4	389	11	378
07:45	4	13	7	1	7	93	2	1	32	8	5	0	8	117	18	7	323	9	314
Hour	16	24	31	2	21	644	5	10	159	32	25	3	23	529	62	18	1604	33	1571
08:00	4	5	8	2	15	123	1	3	41	12	5	4	8	105	13	7	356	16	340
08:15	2	13	14	0	10	109	1	3	42	12	17	2	13	128	22	5	393	10	383
08:30	3	15	13	0	12	122	3	6	23	13	17	3	18	101	19	9	377	18	359
08:45	4	7	12	0	13	109	7	2	27	9	11	0	13	110	11	8	343	10	333
Hour	13	40	47	2	50	463	12	14	133	46	50	9	52	444	65	29	1469	54	1415
09:00	5	12	12	1	16	106	4	5	27	14	13	1	8	112	11	5	352	12	340
09:15	4	10	13	0	22	137	2	7	23	21	15	1	8	130	15	12	420	20	400
09:30	6	15	10	1	23	151	3	7	29	17	10	4	22	109	15	7	429	19	410
09:45	10	9	9	0	10	121	6	10	15	14	8	2	11	105	7	5	342	17	325
Hour	25	46	44	2	71	515	15	29	94	66	46	8	49	456	48	29	1543	68	1475
10:00	4	16	16	0	17	144	5	8	27	18	11	0	19	95	15	4	399	12	387
10:15	6	14	24	0	24	150	6	6	27	27	17	2	24	135	13	6	481	14	467
10:30	6	11	13	1	16	122	3	5	21	14	9	0	17	127	30	5	400	11	389
10:45	4	14	10	1	17	138	6	5	23	21	13	2	20	130	25	12	441	20	421
Hour	20	55	63	2	74	554	20	24	98	80	50	4	80	487	83	27	1721	57	1664
11:00	8	11	21	2	7	159	3	10	30	25	15	2	18	114	17	7	449	21	428
11:15	11	13	25	0	21	127	5	11	27	20	13	1	31	110	10	3	428	15	413
11:30	11	15	22	3	29	184	9	5	27	28	11	3	21	187	27	6	588	17	571
11:45	7	21	19	1	10	188	7	1	41	23	9	1	27	166	23	7	551	10	541
Hour	37	60	87	6	67	658	24	27	125	96	48	7	97	577	77	23	2016	63	1953
12:00	10	24	20	1	20	152	4	4	31	28	12	2	19	147	20	5	499	12	487
12:15	5	25	15	0	24	184	5	8	33	33	11	4	23	156	19	6	551	18	533
12:30	15	20	27	0	21	173	5	5	36	24	16	3	18	167	30	7	567	15	552
12:45	10	18	16	1	29	162	1	5	24	18	10	0	35	163	33	6	531	12	519
Hour	40	87	78	2	94	671	15	22	124	103	49	9	95	633	102	24	2148	57	2091

Weather :sunny and 80
 Counted by:Sarah and Janelle
 Board # :
 ther :

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Study Name: TMC9717
 Site Code : 97170202
 Start Date: 08/05/97
 Page : 2

Vehicle group 1

Start Time	CSAH 18 (CROOKED LAKE Southbound)				CSAH 1 (EAST RIVER ROA Westbound)				CSAH 18 (CROOKED LAKE Northbound)				CSAH 1 (EAST RIVER ROA Eastbound)				Intvl	Exclu	Inclu
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other			
13:00	10	24	13	1	17	150	0	6	18	23	16	1	22	141	27	4	473	12	461
13:15	5	23	21	1	21	158	4	7	40	14	19	0	24	144	33	5	519	13	506
13:30	19	19	12	2	16	149	5	2	40	30	11	4	29	185	26	8	557	16	541
13:45	8	18	25	0	10	166	2	3	40	32	9	0	23	153	28	5	522	8	514
Hour	42	84	71	4	64	623	11	18	138	99	55	5	98	623	114	22	2071	49	2022
14:00	12	14	12	1	21	169	1	5	26	21	17	1	21	175	21	8	525	15	510
14:15	10	19	23	1	20	163	3	7	31	31	9	1	24	181	28	7	558	16	542
14:30	9	9	21	0	20	153	3	5	42	23	13	1	17	218	32	9	575	15	560
14:45	12	17	13	0	22	162	3	5	36	25	14	2	19	186	24	7	547	14	533
Hour	43	59	69	2	83	647	10	22	135	100	53	5	81	760	105	31	2205	60	2145
15:00	4	17	9	0	25	177	1	4	21	30	13	0	30	197	34	6	568	10	558
15:15	12	22	17	1	30	165	6	9	24	21	19	2	20	219	47	5	619	17	602
15:30	11	16	15	0	24	170	2	5	36	28	10	1	29	235	46	3	631	9	622
15:45	6	26	20	0	30	164	4	8	38	18	15	0	25	237	65	2	658	10	648
Hour	33	81	61	1	109	676	13	26	119	97	57	3	104	888	192	16	2476	46	2430
16:00	7	20	28	0	30	183	4	1	30	24	20	4	20	244	62	5	682	10	672
16:15	14	31	12	0	11	200	1	5	46	25	12	0	33	291	38	4	723	9	714
16:30	13	25	19	0	17	187	4	2	28	32	8	0	31	296	67	5	734	7	727
16:45	9	22	13	0	19	197	2	2	38	33	13	0	34	310	71	2	765	4	761
Hour	43	98	72	0	77	767	11	10	142	114	53	4	118	1141	238	16	2904	30	2874
17:00	23	17	15	0	26	173	0	4	46	29	14	1	30	359	80	3	820	8	812
17:15	7	25	12	0	20	160	3	2	38	30	8	0	42	356	70	6	779	8	771
17:30	13	26	17	0	26	171	1	5	40	50	18	1	25	275	71	2	741	8	733
17:45	5	19	11	0	22	122	5	1	39	31	14	0	36	272	55	2	634	3	631
Hour	48	87	55	0	94	626	9	12	163	140	54	2	133	1262	276	13	2974	27	2947
18:00	10	26	20	0	25	156	3	1	58	34	15	1	37	278	52	1	717	3	714
18:15	10	26	15	0	37	138	1	1	27	29	18	0	28	208	51	1	590	2	588
18:30	8	18	20	0	22	163	4	4	31	35	7	1	22	162	38	3	538	8	530
18:45	16	25	15	0	24	145	1	0	41	31	18	0	17	157	32	4	526	4	522
Hour	44	95	70	0	108	602	9	6	157	129	58	2	104	805	173	9	2371	17	2354
19:00	4	30	19	0	15	127	2	0	27	38	21	0	20	152	34	4	493	4	489
19:15	3	18	23	1	22	153	1	1	28	27	8	2	27	131	25	2	472	6	466
19:30	9	26	20	0	27	116	3	1	32	32	13	0	36	132	24	2	473	3	470
19:45	4	22	12	0	30	112	3	1	36	26	8	0	20	109	22	2	407	3	404
Hour	20	96	74	1	94	508	9	3	123	123	50	2	103	524	105	10	1845	16	1829

Weather :sunny and 80
 Counted by:Sarah and Janelle
 Board # :
 ther :

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Study Name: TMC9717
 Site Code : 97170202
 Start Date: 08/05/97
 Page : 3

Vehicle group 1

Start Time	CSAH 18 (CROOKED LAKE Southbound				CSAH 1 (EAST RIVER ROA Westbound				CSAH 18 (CROOKED LAKE Northbound				CSAH 1 (EAST RIVER ROA Eastbound				Intvl	Exclu	Inclu
	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other	Left	Thru	Right	Other			
20:00	11	27	19	0	8	139	1	1	32	27	9	0	32	109	20	1	436	2	434
20:15	13	24	13	1	19	121	3	0	26	26	10	0	26	128	23	2	435	3	432
20:30	9	15	22	0	20	120	1	3	20	27	12	0	18	119	24	3	413	6	407
20:45	8	19	16	0	28	115	2	1	22	15	9	0	32	111	18	1	397	2	395
Hour	41	85	70	1	75	495	7	5	100	95	40	0	108	467	85	7	1681	13	1668
21:00	4	20	16	0	30	109	0	2	23	22	3	0	18	122	19	1	389	3	386
21:15	3	18	11	0	12	120	1	2	11	22	7	0	16	121	27	0	371	2	369
21:30	5	13	13	0	12	92	0	0	17	11	5	0	9	96	27	0	300	0	300
21:45	4	10	9	0	24	72	0	1	18	8	8	0	6	66	11	1	238	2	236
Hour	16	61	49	0	78	393	1	5	69	63	23	0	49	405	84	2	1298	7	1291
Total	488	1075	984	28	1168	9608	175	248	2147	1407	732	66	1300	10354	1828	285	31893	627	31266
% Apr.	18.9	41.7	38.2	1.0	10.4	85.7	1.5	2.2	49.3	32.3	16.8	1.5	9.4	75.2	13.2	2.0	-	-	-
% Int.	1.5	3.3	3.0	-	3.6	30.1	0.5	0.7	6.7	4.4	2.2	0.2	4.0	32.4	5.7	0.8	-	-	-

Major Street Approaches:

astbound:

CSAH 1 (EAST RIVER ROAD)

Data File: C:\APPS\PETRA2\DATAFILE\TMC9717.PDF
 Count Type: IMC. Channel: 0. Count Date: 8/ 5/97
 Number of Lanes: 2
 Approach Speed: 45
 Total Approach Traffic: 13482

Westbound:

CSAH 1 (EAST RIVER ROAD)

Data File: C:\APPS\PETRA2\DATAFILE\TMC9717.PDF
 Count Type: IMC. Channel: 0. Count Date: 8/ 5/97
 Number of Lanes: 2
 Approach Speed: 45
 Total Approach Traffic: 10951

Minor Street Approaches:

Northbound:

CSAH 18 (CROOKED LAKE BLVD)

Data File: C:\APPS\PETRA2\DATAFILE\TMC9717.PDF
 Count Type: IMC. Channel: 0. Count Date: 8/ 5/97
 Number of Lanes: 2
 Approach Speed: 30
 Total Approach Traffic: 4286

Southbound:

CSAH 18 (CROOKED LAKE BLVD)

Data File: C:\APPS\PETRA2\DATAFILE\TMC9717.PDF
 Count Type: IMC. Channel: 0. Count Date: 8/ 5/97
 Number of Lanes: 2
 Approach Speed: 35
 Total Approach Traffic: 2547

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

Hour	Main (Total)	Side			Warrant 1		Warrant 2		Warrant 8	
		Vol.	Dir.	Rank	Meets?	Criteria	Meets?	Criteria	Meets?	Criteria
0	0	0	S	17		140		70		112
1	0	0	S	18		140		70		112
2	0	0	S	19		140		70		112
3	0	0	S	20		140		70		112
4	0	0	S	21		140		70		112
5	0	0	S	22		140		70		112
6	1157	313	N	3	--BOTH--	140	--BOTH--	70	--BOTH--	112
7	1284	216	N	14	--BOTH--	140	--BOTH--	70	--BOTH--	112
8	1086	229	N	12	--BOTH--	140	--BOTH--	70	--BOTH--	112
9	1154	206	N	15	--BOTH--	140	--BOTH--	70	--BOTH--	112
10	1298	228	N	13	--BOTH--	140	--BOTH--	70	--BOTH--	112
11	1500	269	N	10	--BOTH--	140	--BOTH--	70	--BOTH--	112
12	1610	276	N	8	--BOTH--	140	--BOTH--	70	--BOTH--	112
13	1533	292	N	6	--BOTH--	140	--BOTH--	70	--BOTH--	112
14	1686	288	N	7	--BOTH--	140	--BOTH--	70	--BOTH--	112
15	1982	273	N	9	--BOTH--	140	--BOTH--	70	--BOTH--	112
16	2352	309	N	4	--BOTH--	140	--BOTH--	70	--BOTH--	112
17	2400	357	N	1	--BOTH--	140	--BOTH--	70	--BOTH--	112
18	1801	344	N	2	--BOTH--	140	--BOTH--	70	--BOTH--	112
19	1343	296	N	5	--BOTH--	140	--BOTH--	70	--BOTH--	112
20	1237	235	N	11	--BOTH--	140	--BOTH--	70	--BOTH--	112
21	1010	155	N	16	--BOTH--	140	--BOTH--	70	--BOTH--	112
22	0	0	S	23		140		70		112
23	0	0	S	24		140		70		112

Warrant Summary:

Rural values apply.

Warrant 1 - Minimum Vehicular Volumes

SATISFIED for 16 hours. Criteria--Main St.: 420; Side St.: See Volume Summary.

Warrant 2 - Interruption of Continuous Traffic

SATISFIED for 16 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: 2947.

- 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

SATISFIED for 16 hours. Criteria--Main: 504; Side: See Volume Summary.

Warrant 9 - Four Hour Volumes

SATISFIED for 16 hours.

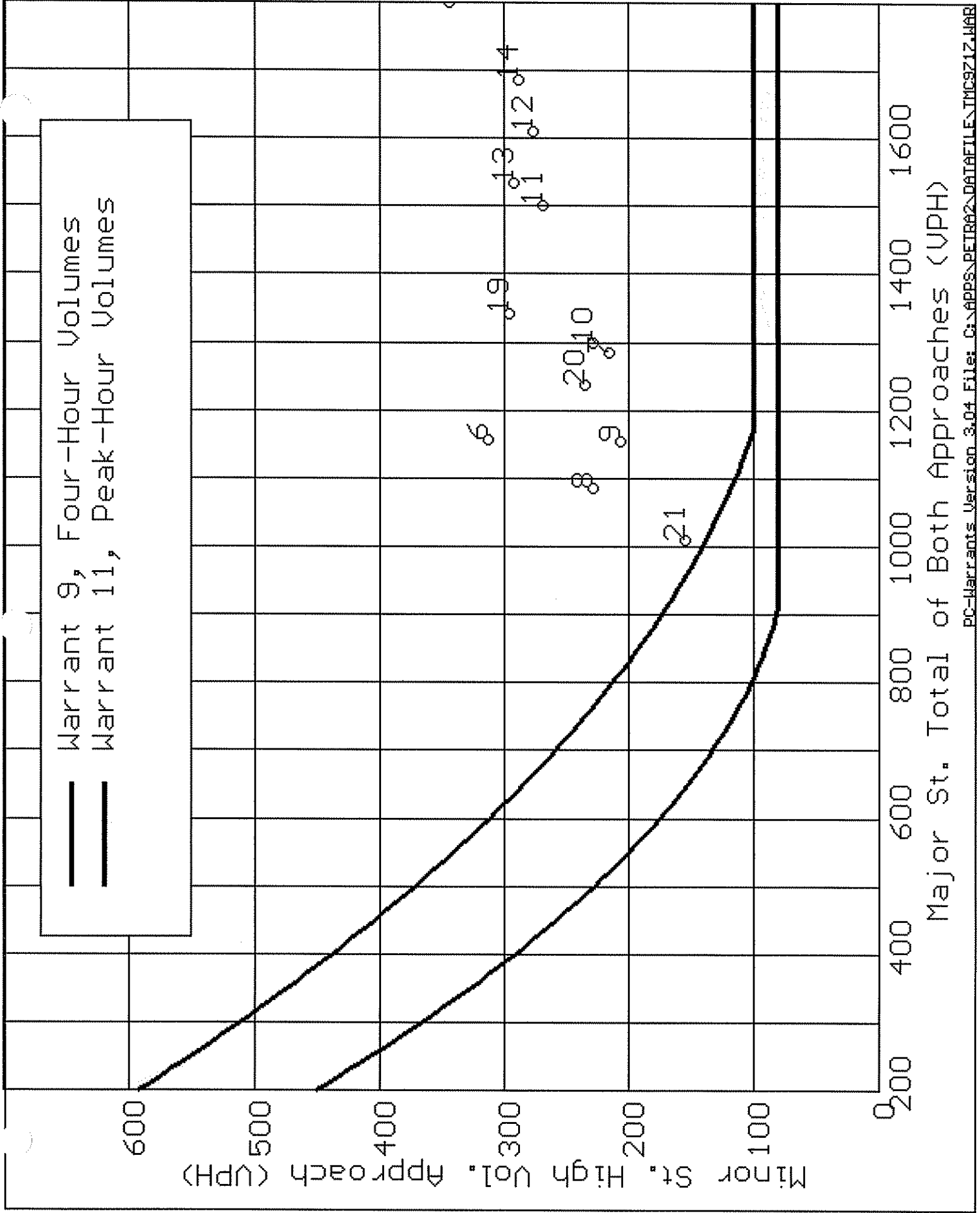
Warrant 10 - Peak Hour Delay

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 16 hours.



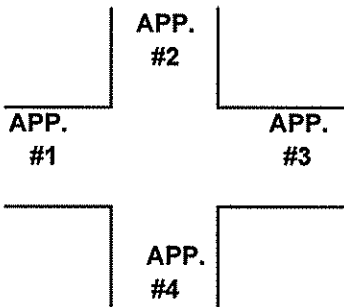
Major St. Total of Both Approaches (VPH)


NORTH

APP. #1=EB CSAH 1
 EAST RIVER ROAD
 APP. #2 =SB CSAH 18
 CROOKED LAKE BLVD
 APP. #3=WB CSAH 1
 EAST RIVER ROAD
 APP. #4=NB CSAH 18
 CROOKED LAKE ROAD

COUNT LOCATION: TMC 9717 CSAH 1 (EAST RIVER RD)
 @CSAH 18 (CROOKED LAKE BLVD)

DATE: 8/5/97



- 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	1		1
6:15-6:30			1	1	2	8		5
6:30-6:45			1		1	7		2
6:45-7:00	1				1	4		1
HOURLY TOTAL					5	HOURLY TOTAL		29
7:00-7:15						6	1	2
7:15-7:30						1		2
7:30-7:45						10		2
7:45-8:00	1	2			3	10		
HOURLY TOTAL					3	HOURLY TOTAL		34
8:00-8:15		2	1		3	14		1
8:15-8:30				1	1	7		3
8:30-8:45						16		3
8:45-9:00						9		2
HOURLY TOTAL					4	HOURLY TOTAL		55
9:00-9:15				3	3	11		1
9:15-9:30			1	1	2	20		4
9:30-9:45						7		7
9:45-10:00	1	1			2	16		
HOURLY TOTAL					7	HOURLY TOTAL		66
10:00-10:15				2	2	11		2
10:15-10:30	2			6	8	9		
10:30-10:45				1	1	12		4
10:45-11:00						15		4
HOURLY TOTAL					11	HOURLY TOTAL		57
11:00-11:15			1		1	22		
11:15-11:30						12	1	2
11:30-11:45		2	2			13		3
11:45-12:00						8		1
HOURLY TOTAL					1	HOURLY TOTAL		62
12:00-12:15	3			10	13	8	2	2
12:15-12:30	2			4	6	15		1
12:30-12:45		4	4		8	11		2
12:45-1:00				2	2	11		1
HOURLY TOTAL					29	HOURLY TOTAL		53
1:00-1:15				1	1	16	1	1
1:15-1:30			1		1	7		
1:30-1:45	1		2	1	4	19		1
1:45-2:00						2		1
HOURLY TOTAL					6	HOURLY TOTAL		48



NORTH

COUNT LOCATION: TMC 9717 CSAH 1 (EAST RIVER RD)
@CSAH 18 (CROOKED LAKE BLVD)

DATE:

8/4/97

APP. #1=EB CSAH 1
EAST RIVER ROAD

APP. #2 =SB CSAH 18
CROOKED LAKE BLVD

APP. #3=WB CSAH 1
EAST RIVER ROAD

APP. #4=NB CSAH 18
CROOKED LAKE ROAD

APP. #1

APP. #2

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			5	1	6	10		2
2:15-2:30				1	1	16		3
2:30-2:45				2	2	12		4
2:45-3:00						13		1
HOURLY TOTAL					9			61
3:00-3:15			2		2	8		2
3:15-3:30			2		2	17		
3:30-3:45			4	2	6	9		3
3:45-4:00				1	1	8		2
HOURLY TOTAL					11	HOURLY TOTAL		49
4:00-4:15						3		2
4:15-4:30		2			2	7		3
4:30-4:45		2	3		5	3	1	1
4:45-5:00						4		
HOURLY TOTAL					7	HOURLY TOTAL		24
5:00-5:15			1		1	8		
5:15-5:30						6		3
5:30-5:45				2	2	7		1
5:45-6:00						2		
HOURLY TOTAL					3	HOURLY TOTAL		27
6:00-6:15						1		1
6:15-6:30				2	2	2		
6:30-6:45	1		1	3	5	4		1
6:45-7:00			4	1	5	4		1
HOURLY TOTAL					12	HOURLY TOTAL		14
7:00-7:15		1	3	1	5	5		
7:15-7:30		1	3		4	3		1
7:30-7:45	2			2	4	2		2
7:45-8:00						3		
HOURLY TOTAL					13	HOURLY TOTAL		16
8:00-8:15		1			1	1		
8:15-8:30						1		1
8:30-8:45		1			1	3		2
8:45-9:00						2		
HOURLY TOTAL					2	HOURLY TOTAL		10
9:00-9:15						3		
9:15-9:30				1	1	1		1
9:30-9:45	2				2			
9:45-10:00			3		3	1		
HOURLY TOTAL					6			6