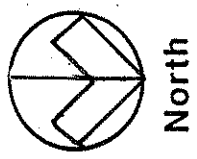
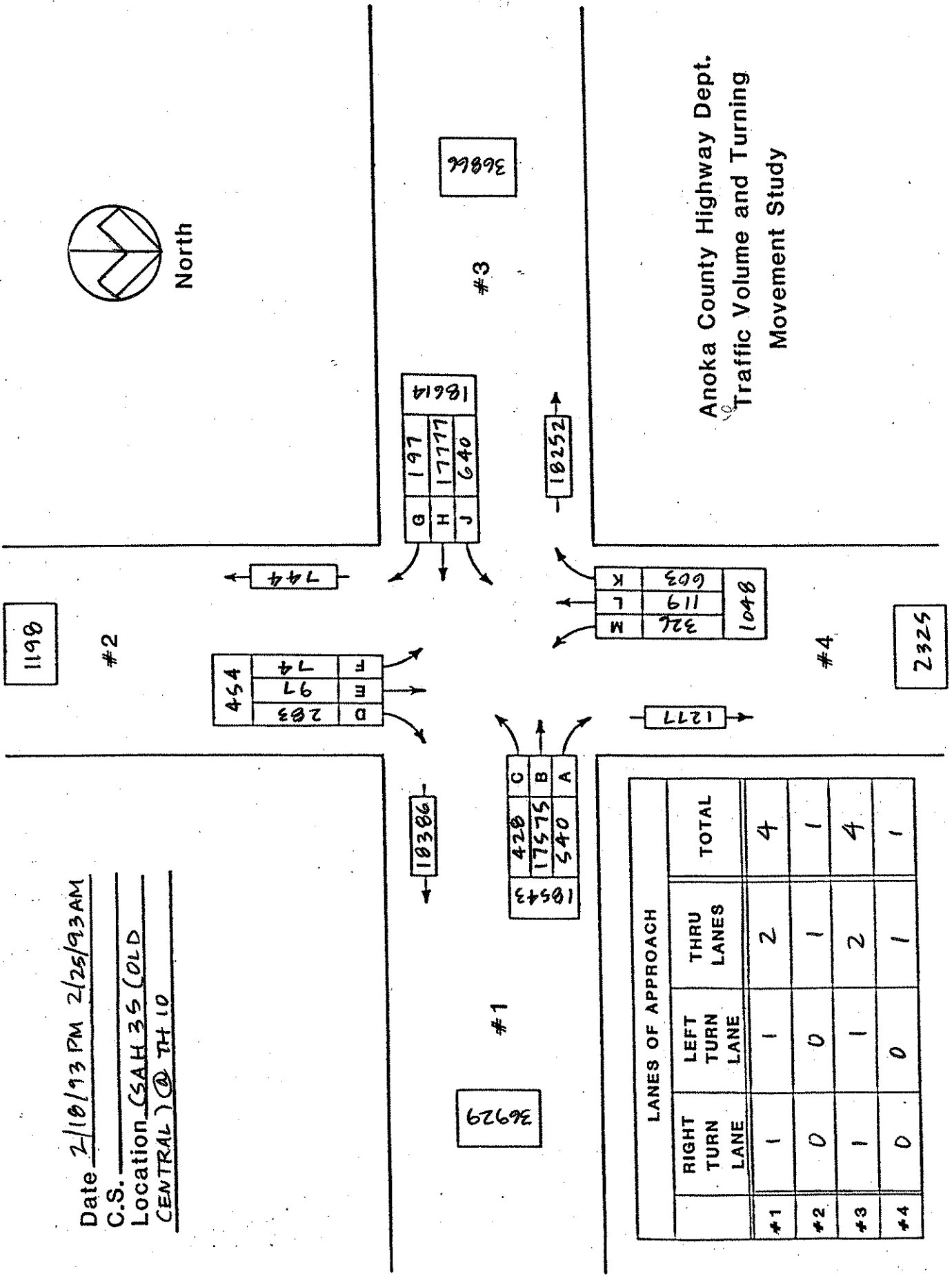


Date 2/10/93 PM 2/25/93 AM
 C.S. _____
 Location SAH 35 (OLD
CENTRAL) @ TH 10



Anoka County Highway Dept.
 Traffic Volume and Turning
 Movement Study



36929

#1

| | | |
|-------|---|-------|
| 18543 | C | 428 |
| | B | 17575 |
| | A | 540 |

18386

#2

1190

| | | |
|-----|---|-----|
| 454 | D | 283 |
| | E | 97 |
| | F | 74 |

744

#3

36866

| | | |
|-------|---|-------|
| 18614 | G | 197 |
| | H | 17777 |
| | J | 640 |

18252

#4

2325

| | | |
|------|---|-----|
| 1048 | M | 326 |
| | L | 119 |
| | K | 603 |

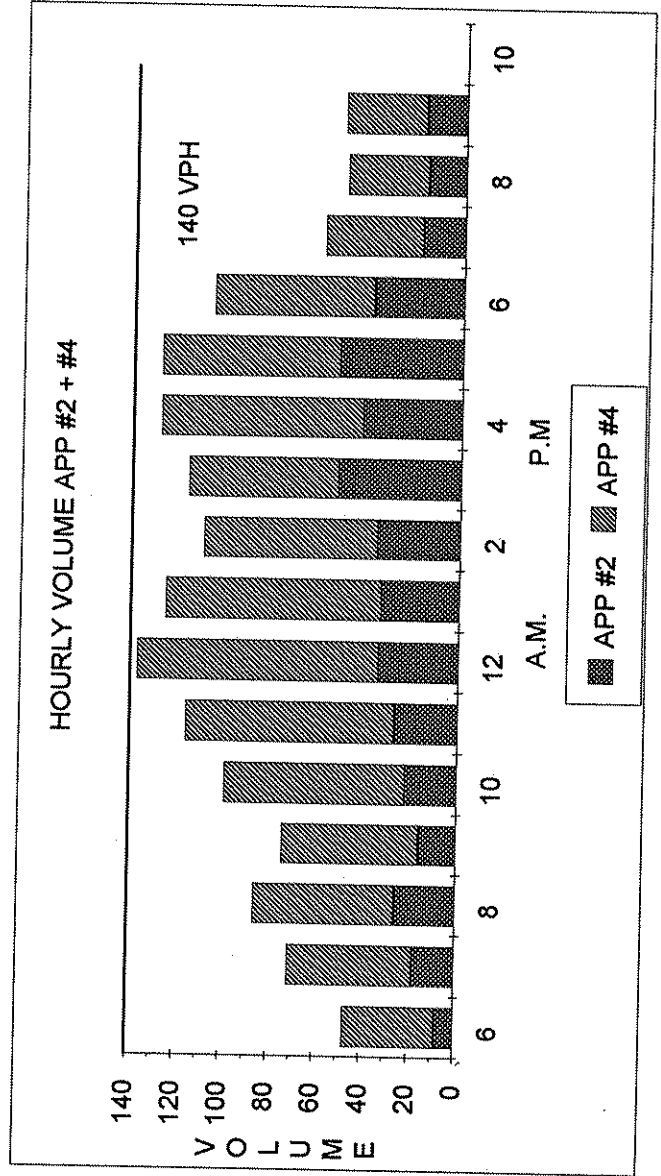
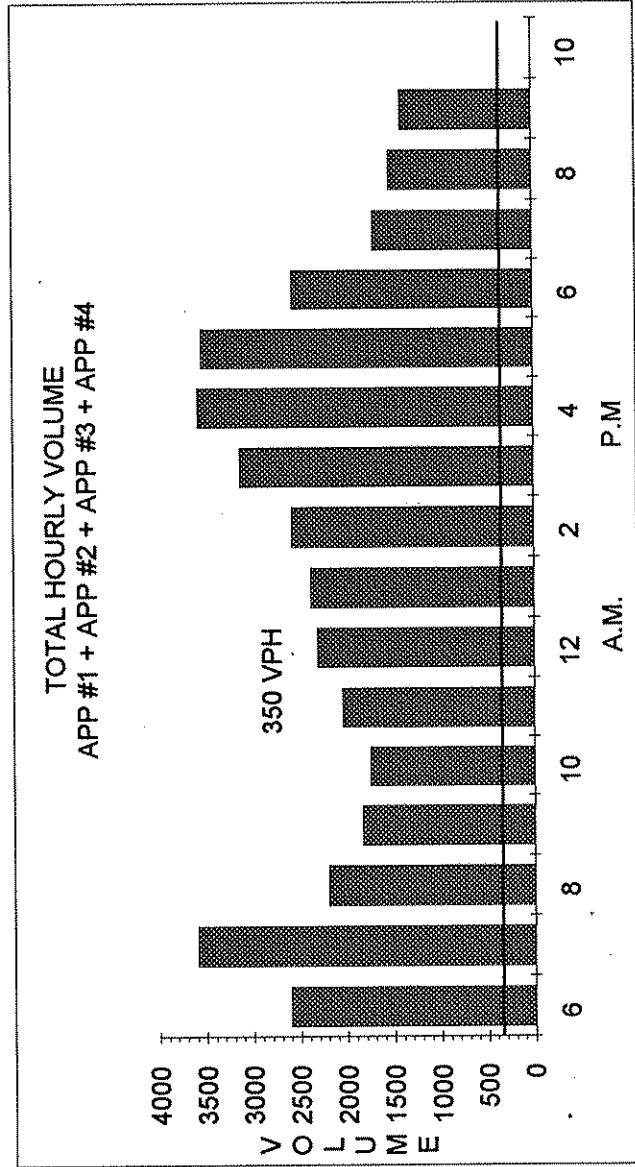
1277

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

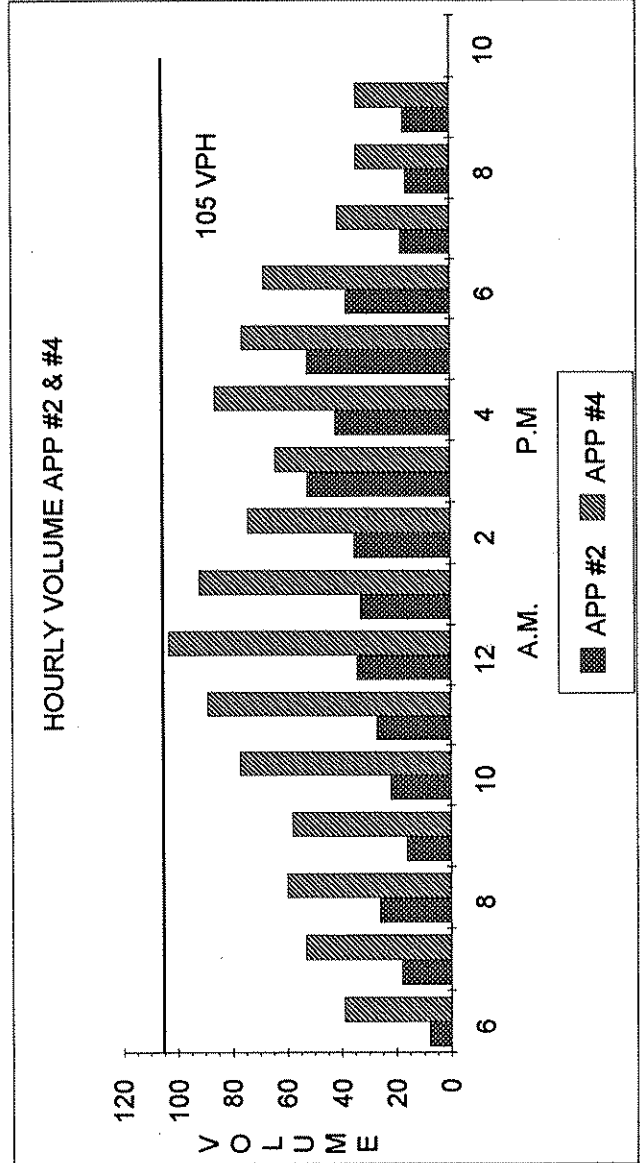
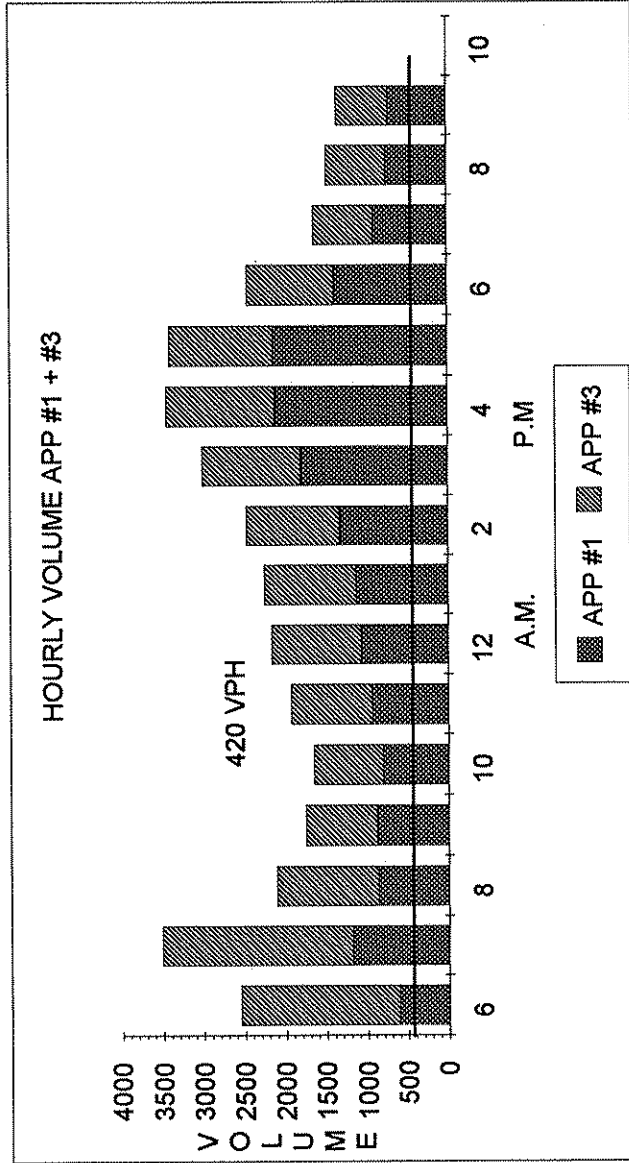
WESTBOUND APPROACH # 1 EASTBOUND APPROACH # 3 NORTHBOUND APPROACH # 2 SOUTHBOUND APPROACH # 4

| TIME INTERVALS | WESTBOUND APPROACH # 1 | | | EASTBOUND APPROACH # 3 | | | NORTHBOUND APPROACH # 2 | | | SOUTHBOUND APPROACH # 4 | | | | | | | | | | | | | | |
|----------------|------------------------|--------------|--------------|------------------------|--------------|--------------|-------------------------|--------------|--------------|-------------------------|--------------|--------------|---|---|---|----|----|---------|---|----|---|----|----|---------|
| | H.V. | TO TO 15 MIN | HOURLY TOTAL | H.V. | TO TO 15 MIN | HOURLY TOTAL | H.V. | TO TO 15 MIN | HOURLY TOTAL | H.V. | TO TO 15 MIN | HOURLY TOTAL | | | | | | | | | | | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | | | | | | | | | | | |
| 2:15 - 2:30 | 6 | 4 | 291 | 7 | 382 | 2:00 to | 5 | 9 | 278 | 5 | 284 | 2:00 to | 0 | 4 | 0 | 15 | 19 | 2:00 to | 0 | 4 | 0 | 10 | 19 | 3:00 |
| 2:30 - 2:45 | 9 | 2 | 329 | 9 | 340 | 3:00 | 9 | 6 | 256 | 4 | 266 | 3:00 | 0 | 0 | 6 | 8 | 14 | 3:00 | 0 | 9 | 0 | 10 | 15 | 74 |
| 2:45 - 3:00 | 9 | 6 | 393 | 10 | 409 | 1323 | 11 | 11 | 276 | 3 | 290 | 1141 | 0 | 1 | 2 | 3 | 6 | 35 | 0 | 6 | 4 | 5 | 15 | 74 |
| 3:00 - 3:15 | 11 | 4 | 346 | 11 | 361 | | 5 | 9 | 278 | 2 | 281 | | 0 | 0 | 6 | 10 | 16 | | 1 | 3 | 0 | 7 | 10 | |
| 3:15 - 3:30 | 8 | 7 | 460 | 10 | 477 | 3:00 to | 5 | 17 | 251 | 1 | 269 | 3:00 to | 0 | 0 | 2 | 5 | 7 | 3:00 to | 1 | 4 | 2 | 9 | 15 | 3:00 to |
| 3:30 - 3:45 | 7 | 7 | 437 | 13 | 457 | 4:00 | 5 | 8 | 307 | 4 | 319 | 4:00 | 1 | 0 | 3 | 13 | 16 | 4:00 | 0 | 3 | 0 | 24 | 27 | 4:00 |
| 3:45 - 4:00 | 6 | 7 | 493 | 7 | 507 | 1802 | 4 | 19 | 388 | 7 | 334 | 1203 | 0 | 2 | 6 | 5 | 13 | 52 | 1 | 2 | 4 | 6 | 12 | 64 |
| 4:00 - 4:15 | 7 | 9 | 446 | 15 | 470 | | 4 | 11 | 317 | 6 | 334 | | 0 | 1 | 4 | 4 | 9 | | 1 | 3 | 2 | 18 | 24 | |
| 4:15 - 4:30 | 4 | 5 | 531 | 13 | 549 | 4:00 to | 6 | 9 | 282 | 4 | 295 | 4:00 to | 0 | 0 | 1 | 5 | 6 | 4:00 to | 0 | 0 | 3 | 17 | 20 | 4:00 to |
| 4:30 - 4:45 | 7 | 12 | 513 | 16 | 541 | 5:00 | 5 | 6 | 348 | 2 | 356 | 5:00 | 1 | 3 | 3 | 8 | 14 | 5:00 | 0 | 3 | 2 | 22 | 27 | 5:00 |
| 4:45 - 5:00 | 3 | 37 | 504 | 16 | 557 | 2117 | 6 | 15 | 326 | 1 | 342 | 1327 | 0 | 5 | 1 | 7 | 13 | 42 | 1 | 3 | 2 | 10 | 15 | 86 |
| 5:00 - 5:15 | 7 | 4 | 534 | 10 | 548 | | 11 | 7 | 342 | 7 | 356 | | 0 | 3 | 4 | 11 | 18 | | 0 | 5 | 6 | 19 | 30 | |
| 5:15 - 5:30 | 5 | 10 | 554 | 9 | 573 | 5:00 to | 5 | 9 | 290 | 5 | 304 | 5:00 to | 0 | 3 | 3 | 12 | 18 | 5:00 to | 0 | 2 | 0 | 14 | 16 | 5:00 to |
| 5:30 - 5:45 | 5 | 10 | 522 | 10 | 542 | 6:00 | 5 | 10 | 319 | 3 | 332 | 6:00 | 0 | 1 | 2 | 7 | 10 | 6:00 | 0 | 2 | 2 | 10 | 14 | 6:00 |
| 5:45 - 6:00 | 1 | 4 | 458 | 9 | 471 | 2134 | 9 | 6 | 270 | 1 | 277 | 1269 | 0 | 1 | 1 | 4 | 6 | 52 | 0 | 6 | 2 | 8 | 16 | 76 |
| 6:00 - 6:15 | 6 | 11 | 341 | 12 | 364 | | 1 | 7 | 312 | 4 | 323 | | 0 | 0 | 0 | 5 | 5 | | 0 | 5 | 2 | 10 | 17 | |
| 6:15 - 6:30 | 5 | 4 | 367 | 5 | 376 | 6:00 to | 5 | 11 | 288 | 0 | 259 | 6:00 to | 0 | 0 | 0 | 5 | 13 | 6:00 to | 0 | 4 | 1 | 7 | 12 | 6:00 to |
| 6:30 - 6:45 | 3 | 5 | 346 | 6 | 357 | 7:00 | 3 | 7 | 228 | 4 | 239 | 7:00 | 0 | 3 | 2 | 5 | 10 | 7:00 | 0 | 3 | 2 | 12 | 17 | 7:00 |
| 6:45 - 7:00 | 1 | 4 | 277 | 6 | 287 | 1384 | 6 | 12 | 230 | 4 | 246 | 1067 | 0 | 4 | 2 | 4 | 10 | 38 | 0 | 10 | 5 | 7 | 22 | 68 |
| 7:00 - 7:15 | 1 | 7 | 254 | 3 | 264 | | 0 | 3 | 171 | 1 | 175 | | 0 | 0 | 0 | 2 | 2 | | 0 | 4 | 2 | 4 | 10 | |
| 7:15 - 7:30 | 1 | 6 | 224 | 6 | 236 | 7:00 to | 1 | 6 | 213 | 2 | 221 | 7:00 to | 0 | 0 | 0 | 3 | 3 | 7:00 to | 1 | 2 | 0 | 5 | 7 | 7:00 to |
| 7:30 - 7:45 | 3 | 7 | 203 | 8 | 218 | 8:00 | 0 | 6 | 176 | 2 | 184 | 8:00 | 0 | 0 | 1 | 5 | 6 | 8:00 | 0 | 1 | 0 | 9 | 10 | 8:00 |
| 7:45 - 8:00 | 1 | 15 | 160 | 5 | 180 | 898 | 1 | 6 | 154 | 0 | 160 | 740 | 0 | 3 | 0 | 4 | 7 | 18 | 0 | 3 | 2 | 9 | 14 | 41 |
| 8:00 - 8:15 | 1 | 3 | 160 | 6 | 169 | | 6 | 10 | 189 | 1 | 200 | | 0 | 1 | 0 | 3 | 4 | | 0 | 4 | 4 | 6 | 14 | |
| 8:15 - 8:30 | 1 | 5 | 184 | 6 | 195 | 8:00 to | 1 | 4 | 182 | 1 | 187 | 8:00 to | 0 | 1 | 0 | 4 | 5 | 8:00 to | 0 | 4 | 1 | 1 | 6 | 8:00 to |
| 8:30 - 8:45 | 1 | 5 | 186 | 6 | 197 | 9:00 | 1 | 14 | 147 | 1 | 162 | 9:00 | 0 | 0 | 4 | 1 | 5 | 9:00 | 0 | 6 | 0 | 3 | 9 | 9:00 |
| 8:45 - 9:00 | 0 | 0 | 175 | 5 | 180 | 741 | 3 | 7 | 176 | 0 | 183 | 732 | 0 | 0 | 0 | 2 | 2 | 16 | 0 | 3 | 0 | 2 | 5 | 34 |
| 9:00 - 9:15 | 1 | 5 | 183 | 3 | 191 | | 1 | 6 | 188 | 0 | 194 | | 0 | 0 | 2 | 0 | 2 | | 0 | 5 | 0 | 14 | 19 | |
| 9:15 - 9:30 | 0 | 3 | 184 | 3 | 190 | 9:00 to | 2 | 2 | 143 | 3 | 148 | 9:00 to | 0 | 1 | 1 | 0 | 2 | 9:00 to | 0 | 5 | 1 | 3 | 9 | 9:00 to |
| 9:30 - 9:45 | 1 | 1 | 187 | 6 | 194 | 10:00 | 2 | 4 | 154 | 0 | 158 | 10:00 | 0 | 2 | 4 | 4 | 10 | 10:00 | 0 | 1 | 1 | 0 | 2 | 10:00 |
| 9:45 - 10:00 | 1 | 0 | 132 | 2 | 134 | 709 | 0 | 2 | 139 | 0 | 141 | 641 | 0 | 0 | 2 | 1 | 3 | 17 | 0 | 4 | 0 | 0 | 4 | 34 |

TMC9302 STOP WARRANT STUDY



TMC9302 SIGNAL WARRANT 1 STUDY



TMC9302 SIGNAL WARRANT 2 STUDY

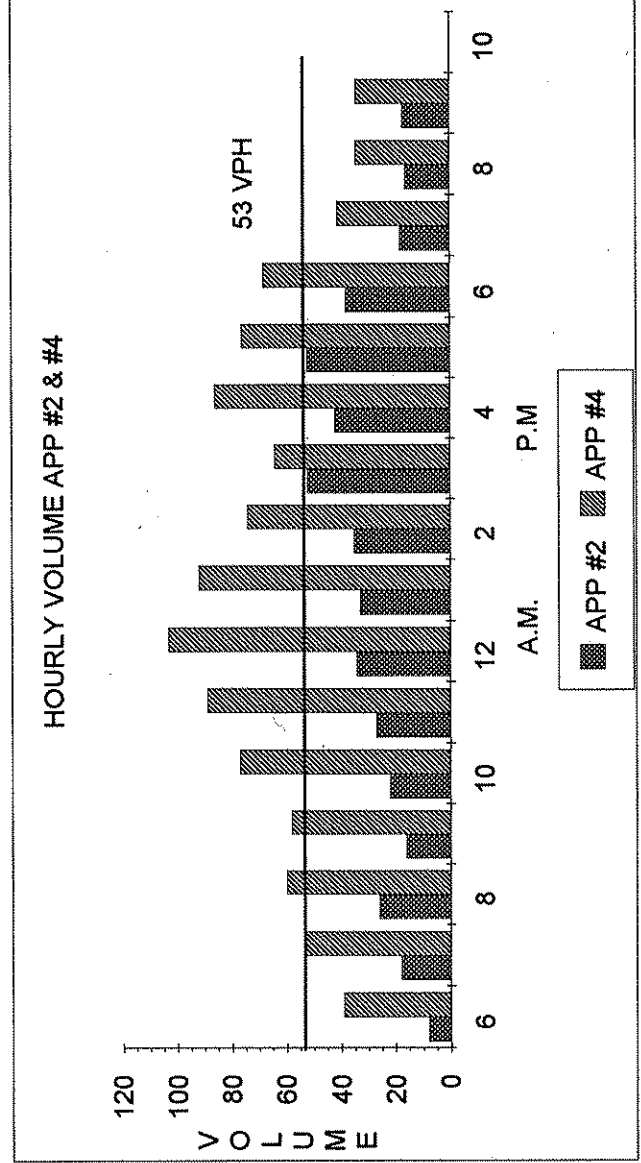
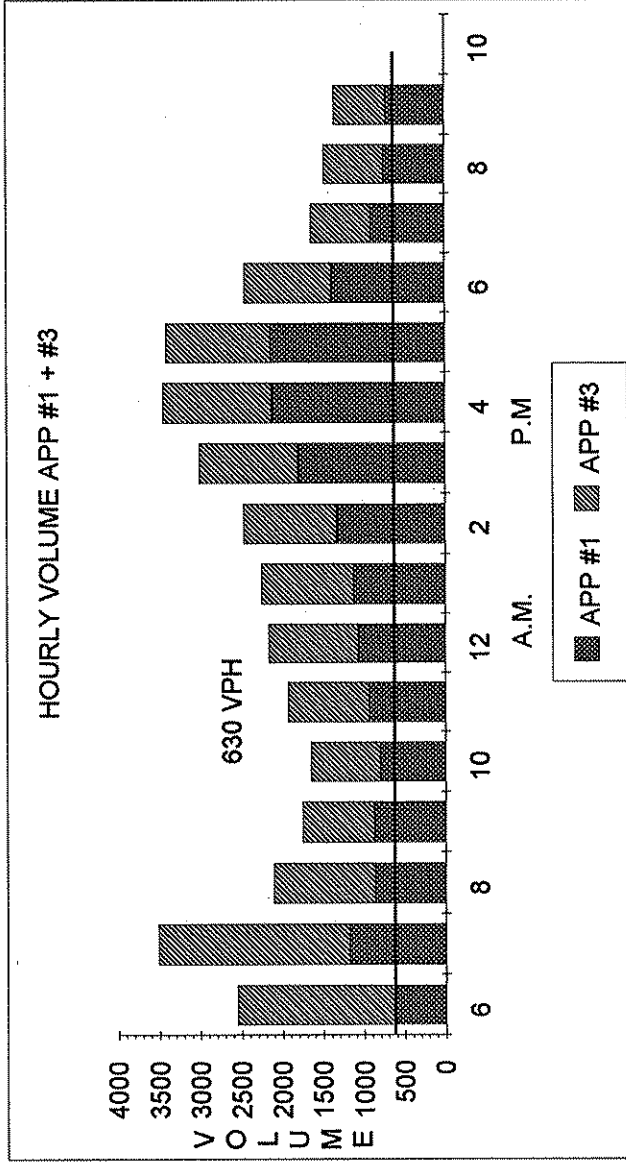
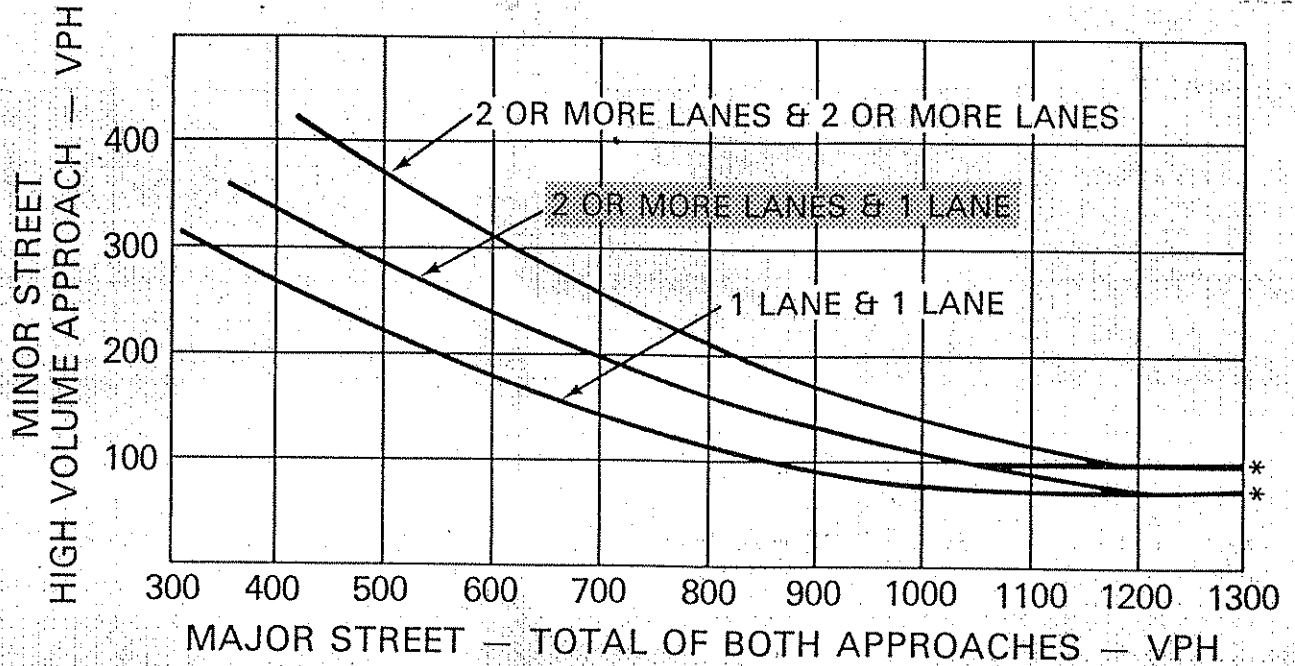


FIGURE 4-6. PEAK HOUR VOLUME WARRANT

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*NOTE: 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

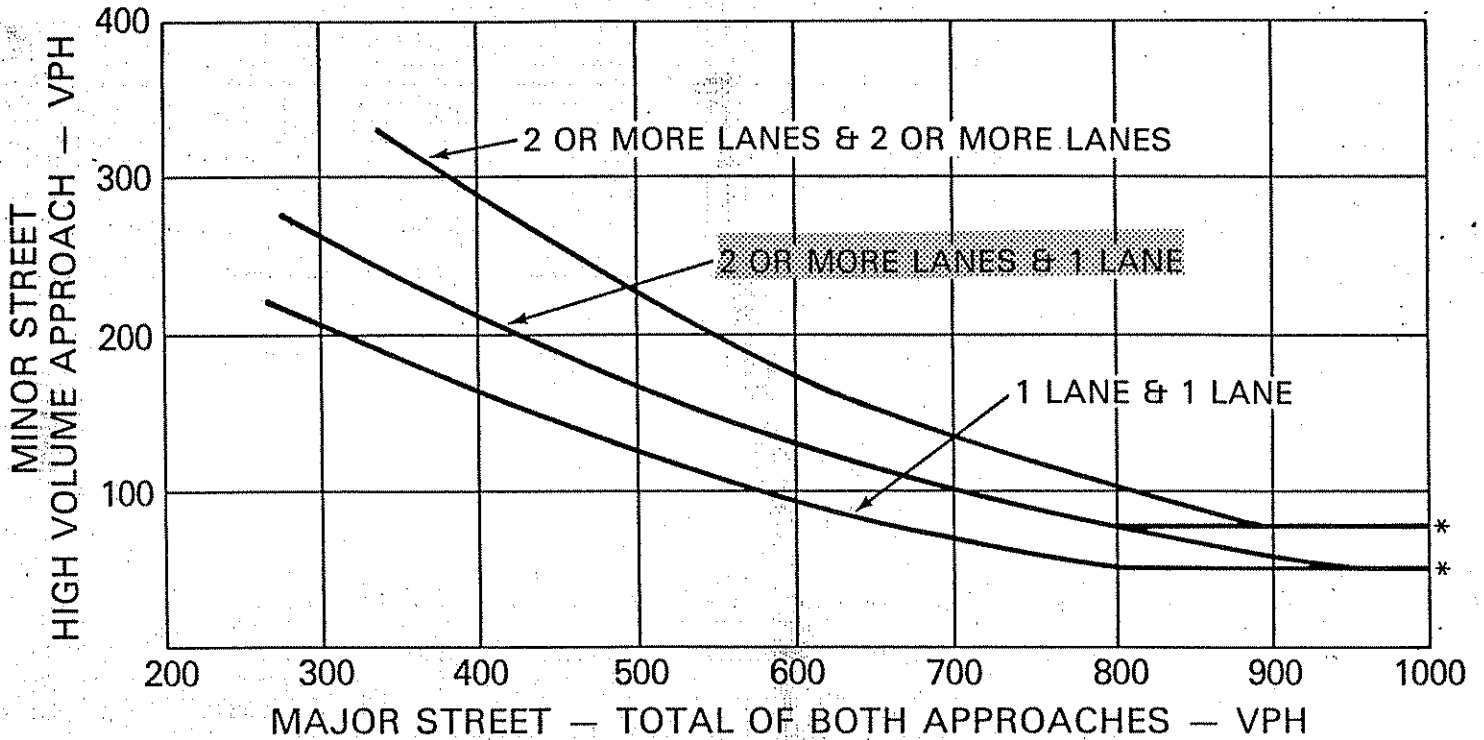
● = VOLUMES WHICH EXCEED THE THRESHOLD AND ARE REPRESENTED ON THE GRAPH.

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

| TIME | MAJOR STREETS (VPH) | MINOR STREET (VPH) |
|------------|---------------------|--------------------|
| 6-7 am | 2553 | 39 |
| 7-8 am | 3520 | 53 |
| 8-9 am | 2107 | 60 |
| 9-10 am | 1755 | 58 |
| ★ 10-11 am | 1653 | 77 |
| ★ 11-12 pm | 1925 | 89 |
| ★ 12-1 pm | 2167 | 103 |
| ★ 1-2 pm | 2249 | 92 |
| 2-3 pm | 2464 | 74 |
| 3-4 pm | 3005 | 64 |
| ★ 4-5 pm | 3444 | 86 |
| ★ 5-6 pm | 3403 | 76 |
| 6-7 pm | 2451 | 68 |
| 7-8 pm | 1638 | 41 |
| 8-9 pm | 1473 | 34 |
| 9-10 pm | 1350 | 34 |

FIGURE 4-8. FOUR HOUR VOLUME WARRANT

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*NOTE: 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 60 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 | 2553 | 39 |
| 7-8 am | 3520 | 53 |
| ★ 8-9 am | 2107 | 60 |
| 9-10 am | 1755 | 58 |
| ★ 10-11 am | 1653 | 77 |
| ★ 11-12 pm | 1925 | 89 |
| ★ 12-1 pm | 2167 | 103 |
| ★ 1-2 pm | 2249 | 92 |
| ★ 2-3 pm | 2464 | 74 |
| ★ 3-4 pm | 3005 | 64 |
| ★ 4-5 pm | 3444 | 86 |
| ★ 5-6 pm | 3403 | 76 |
| ★ 6-7 pm | 2451 | 68 |
| 7-8 pm | 1638 | 41 |
| 8-9 pm | 1473 | 34 |
| 9-10 pm | 1350 | 34 |

CSAH 35 (OLD CENTRAL AVE) @ TH 10

CSAH 35 (OLD CENTRAL) (a)

TH 10

DATE: 2/25/93

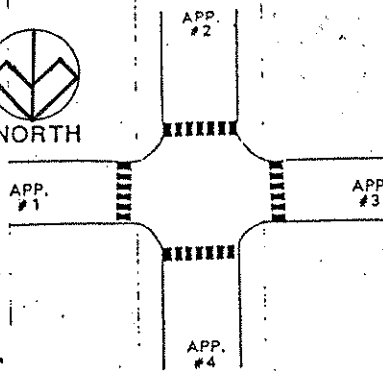
COUNT LOCATION:

APP. #1 = WB TH 10

APP. #2 = NB CSAH 35 (OLD CENTRAL)

APP. #3 = EB TH 10

APP. #4 = SB CSAH 35 (OLD CENTRAL)



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. TOTAL | TRUCK | MN DOT | RV | BUS |
| 6:00 - 6:15 AM | | | | | - | 6 | | | |
| 6:15 - 6:30 | | | | | - | 4 | | | |
| 6:30 - 6:45 | | | | | - | 12 | | | 4 |
| 6:45 - 7:00 | | | | | - | 9 | | | 2 |
| HOURLY TOTAL | | | | | 0 | HOURLY TOTAL | | | 37 |
| 7:00 - 7:15 | | | | | - | 18 | | | 4 |
| 7:15 - 7:30 | | | | | - | 11 | | | |
| 7:30 - 7:45 | | | | | - | 11 | | | 1 |
| 7:45 - 8:00 | | | | | - | 11 | | | 2 |
| HOURLY TOTAL | | | | | 0 | HOURLY TOTAL | | | 58 |
| 8:00 - 8:15 | | | | | - | 11 | | | 2 |
| 8:15 - 8:30 | | | | | - | 24 | | | |
| 8:30 - 8:45 | | | | | - | 26 | 4 | | 1 |
| 8:45 - 9:00 | | | | | - | 29 | 1 | | |
| HOURLY TOTAL | | | | | 0 | HOURLY TOTAL | | | 98 |
| 9:00 - 9:15 | | | | | - | 21 | 1 | | 2 |
| 9:15 - 9:30 | | | | | - | 19 | | | 2 |
| 9:30 - 9:45 | | | | | - | 20 | 1 | | |
| 9:45 - 10:00 | | | | | - | 23 | | 1 | |
| HOURLY TOTAL | | | | | 0 | HOURLY TOTAL | | | 90 |
| 10:00 - 10:15 | | | | 1 | 1 | 18 | | | 1 |
| 10:15 - 10:30 | | | | | - | 25 | | | |
| 10:30 - 10:45 | | | | | - | 27 | 1 | | |
| 10:45 - 11:00 | | | | | - | 13 | | | 1 |
| HOURLY TOTAL | | | | | 1 | HOURLY TOTAL | | | 86 |
| 11:00 - 11:15 | | | | | - | 30 | | | 1 |
| 11:15 - 11:30 | | | | | - | 30 | | | |
| 11:30 - 11:45 | | | | | - | 18 | | | |
| 11:45 - 12:00 PM | | | | | - | 11 | | | 1 |
| HOURLY TOTAL | | | | | 0 | HOURLY TOTAL | | | 91 |
| 12:00 - 12:15 PM | | | | | - | 19 | | | |
| 12:15 - 12:30 | | | | | - | 18 | | | |
| 12:30 - 12:45 | | | | | - | 19 | | | 1 |
| 12:45 - 1:00 | | | | | - | 22 | | | |
| HOURLY TOTAL | | | | | 0 | HOURLY TOTAL | | | 79 |
| 1:00 - 1:15 | | | | | - | 23 | | | |
| 1:15 - 1:30 | | | | | - | 28 | 3 | | 2 |
| 1:30 - 1:45 | | 2 | | | 2 | 25 | | | 3 |
| 1:45 - 2:00 | | | | | 2 | 24 | | | |
| HOURLY TOTAL | | | | | 2 | HOURLY TOTAL | | | 108 |