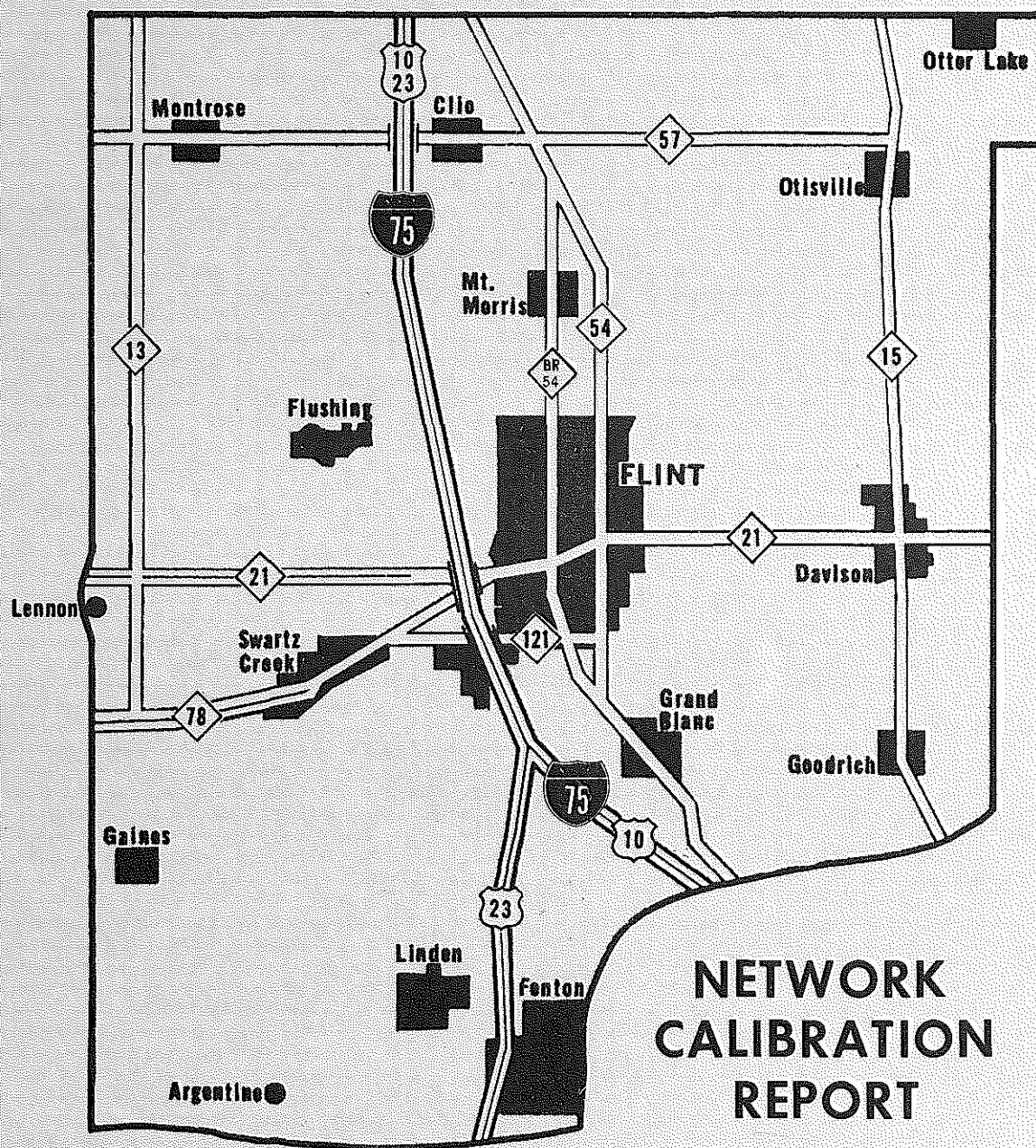


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# FLINT-GENESEE COUNTY TRANSPORTATION STUDY



FLINT - GENESEE COUNTY TRANSPORTATION STUDY

NETWORK CALIBRATION

AUGUST 1972

Prepared by:

MICHIGAN DEPARTMENT OF STATE HIGHWAYS

In Cooperation With:

U.S. Department of Transportation

Federal Highway Administration

COMMISSION:

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STATE HIGHWAYS BUILDING - POST OFFICE DRAWER K - LANSING, MICHIGAN 48904

HENRIK E. STAFSETH, DIRECTOR

August 7, 1972

Mr. Sam F. Cryderman  
Engineer of Transportation Planning  
Transportation Planning Division

Dear Mr. Cryderman:

This report documents the Network Calibration phase of the Flint-Genesee County Transportation Study. This is one of a series of "benchmark" reports documenting the procedures and results of significant elements of this study. The calibrated network will be used, with the other models, to forecast transportation demands in future years.

The calibration of the Flint network was completed by Transportation Analysts Mike Eberlein and Robert Kirkbride, and Maynard Christensen, Supervisor of the Northeast Michigan Analysis Unit.

Sincerely,

A handwritten signature in cursive script that reads "Keith E. Bushnell".

Keith E. Bushnell  
Engineer of Transportation  
Survey and Analysis Section



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## INTRODUCTION

The purpose of network calibration is to reproduce, as accurately as possible, the existing traffic on the base year transportation system. The calibrated traffic assignment will serve as a base for developing future transportation systems and the network travel times will be input to the distribution model.

A manual calibration technique was used to calibrate paths (trees) between zones to determine logical routings. After the trees were judged satisfactory, link by link analysis of actual ground count to assigned volumes was made. Where significant discrepancies appeared, adjustments to link speed were made to bring the volumes into closer agreement.

The option of utilizing a form of capacity restraint as a calibration tool was attempted but rejected when unsatisfactory results were obtained. This was primarily due to the lack of a viable capacity restraint program.

## NETWORK PREPARATION

The network selection for Flint was made by plotting the 315 zone centroids and 49 external stations on an overlay of the area showing all streets by functional classification. Aside from the obvious need to connect all centroids and stations to the network, additions to the network were made in the following order:

1. Controlled Access
2. Arterials
3. All Collectors in the City
4. Selected Rural Collectors

Throughout the selection of the network, care was taken to insure that the proper balance between zone size and network density was maintained. Local streets were not included in the network, being simulated by centroid links.

The next step involved coding the network for computer traffic assignment. The network was divided into link segments by placing nodes at all intersections and centroid connections. Each node was assigned a number and a link was defined by the two nodes connected to create it.

The links received the information necessary to make the computer traffic assignment. In order to build the network it was necessary to supply distance and speed information for each link. The distances were obtained from an accurate scale map. The speeds came primarily from a series of travel time runs made during the Origin-Destination Study. A total of 54 separate runs were made during the study.

These runs ranged from .7 miles to 27.4 miles in length and were ordinarily made in both directions during the AM and PM peak hours and during an off peak. For the purpose of the network calibration assignments off peak speeds were posted to the links.

In addition to the distance and speed each link was assigned a link type and a political jurisdiction code to be used in comparing assigned Vehicle Miles Traveled (V.M.T.) to the V.M.T. computed from the counts.

A twenty-four hour capacity was calculated for each non-centroid link based on tables developed from the Bureau of Public Roads Capacity Manual.

Finally, each link was assigned a twenty-four hour count. A total of 650 locations on the Flint network were counted during the Origin-Destination Study. The minimum count period was twenty-four hours. One key station was operated throughout the study period while 18 control stations on the screenline were operated for one week periods. The remainder of the 2162 con-centroid links were given estimated counts. Since many links are created by centroid connections to the street system the 650 count locations insured that, in most cases, no more than one or two links needed to be estimated between actual count locations.

The counts for each location were adjusted to represent average weekday counts for the period of the Origin-Destination Study. This was necessary because a substantial difference in average traffic occurred between March and June on certain routes. An explanation of the adjustment procedures may be found in Appendix A.

The link information was then coded and keypunched and the network was built using a computer program (TPNET) written for the Burrough's B-5500 computer.

NETWORK DATA

1. Internal Centroids	315
2. External Stations	49
3. Total Number of Nodes Used	1,635
4. Total Number of Links	4,826
5. Total Network Miles	2,363
6. Total Trips Assigned to the Network	1,100,716



## CALIBRATION PROCEDURE

Before the trip volumes were assigned to the network numerous link speed adjustments were made based on a series of "select tree" runs. These "trees" represented the inter-zonal minimum time paths obtained from the set of speeds coded. Illogical routings (e.g. trunkline trips leaving and then returning to the route) were corrected at this time. Also network errors (e.g. "tunnel links") were eliminated by the tree plots. Trees were plotted to zones throughout Genesee County enabling preliminary adjustments to the entire network.

At this point the adjusted 1966 trip volumes were assigned to the network. After the assignment the volumes were plotted on a network map containing the ground counts. To assist in evaluating the network a series of screenlines, crossing Genesee County from east to west and north to south, were drawn. A second series of screenlines intercepting traffic destined for the urban core area were also drawn. A map showing the location of these screenlines may be found on page 8. The total assigned volumes crossing these screenlines was compared with the total count. The comparison for each screenline (or screenline segments) enabled an evaluation of corridor movements.

As a further aid in determining where adjustment to the network speeds were necessary, assigned Vehicle Miles Traveled was compared with count V.M.T. These comparisons were made by political jurisdiction (or area) and by link type. A map

showing jurisdictions may be found on page 11 .

After each assignment the accuracy compared to ground counts was evaluated and the appropriate speed adjustments were made. In a few instances other corrections were made such as corrections in link distance or the relocation of a centroid connector. This phase of the calibration process required four assignments to reach a point where acceptable accuracy was obtained.

## CALIBRATION ACCURACY

The following pages show the ground count/assigned volume comparisons after four calibration assignments. The first table shows the Comparison of Cutlines. The overall comparison of 104.7 percent and the fact that most cutlines show over 100 percent comparisons is primarily due to a screenline adjustment comparison of 101.6 percent. (See Accuracy Checks and Adjustment Factors, January 1970.)

Screenline Eb, situated south of the Central Business District shows an under assignment of 18 percent. This is usual in network calibration efforts and is often attributed to the fact that the ground counts in the C.B.D. area include a considerable amount of circulating traffic.

Three screenlines showed over assignments of trips relative to ground counts. These screenlines (B, E, and 6) were examined link by link to determine if speed changes should be made on any of the crossing routes. Due to the locations of these screenlines and the fact that they crossed the entire county, speed changes would not substantially reduce total volumes across the screenlines. Also, the actual volume/count differences were not considered excessive, especially for screenline B and 6.

The total accuracy of 104.7 percent was considered well within the acceptable limits for this study. The network as coded is capable of reproducing actual 1966 traffic throughout Genesee County.



FLINT - GENESEE

STUDY AREA

CUTLINES

COMPARISON OF SCREENLINES

<u>Screenline</u>	<u># Links</u>	<u>Count</u>	<u>Assigned</u>	<u>%</u>
A	13	46548	46938	100.8
B	13	65844	79908	121.3
C	20	131479	129313	98.3
D	25	213937	223252	104.3
S <sub>1</sub>	9	80720	87457	108.3
E <sub>b</sub>	11	117599	108287	92.0
E	12	158282	129807	82.0
E	18	181274	214454	118.3
F	17	147996	156172	105.5
G	18	90582	96889	106.9
H	13	51030	57913	113.4
I	7	23918	26062	108.9
1	16	52093	54331	104.2
2	20	93686	94967	101.3
3	33	231840	225324	96.8
3 <sub>a</sub>	7	56416	63841	113.1
3 <sub>b</sub>	7	98478	109342	111.0
4	22	140440	156300	111.2
5	14	62176	66180	106.4
6	11	29810	37885	127.0
S(Adjustment)	<u>28</u>	<u>282529</u>	<u>304717</u>	<u>107.8</u>
TOTAL	334	2356677	2469339	104.7

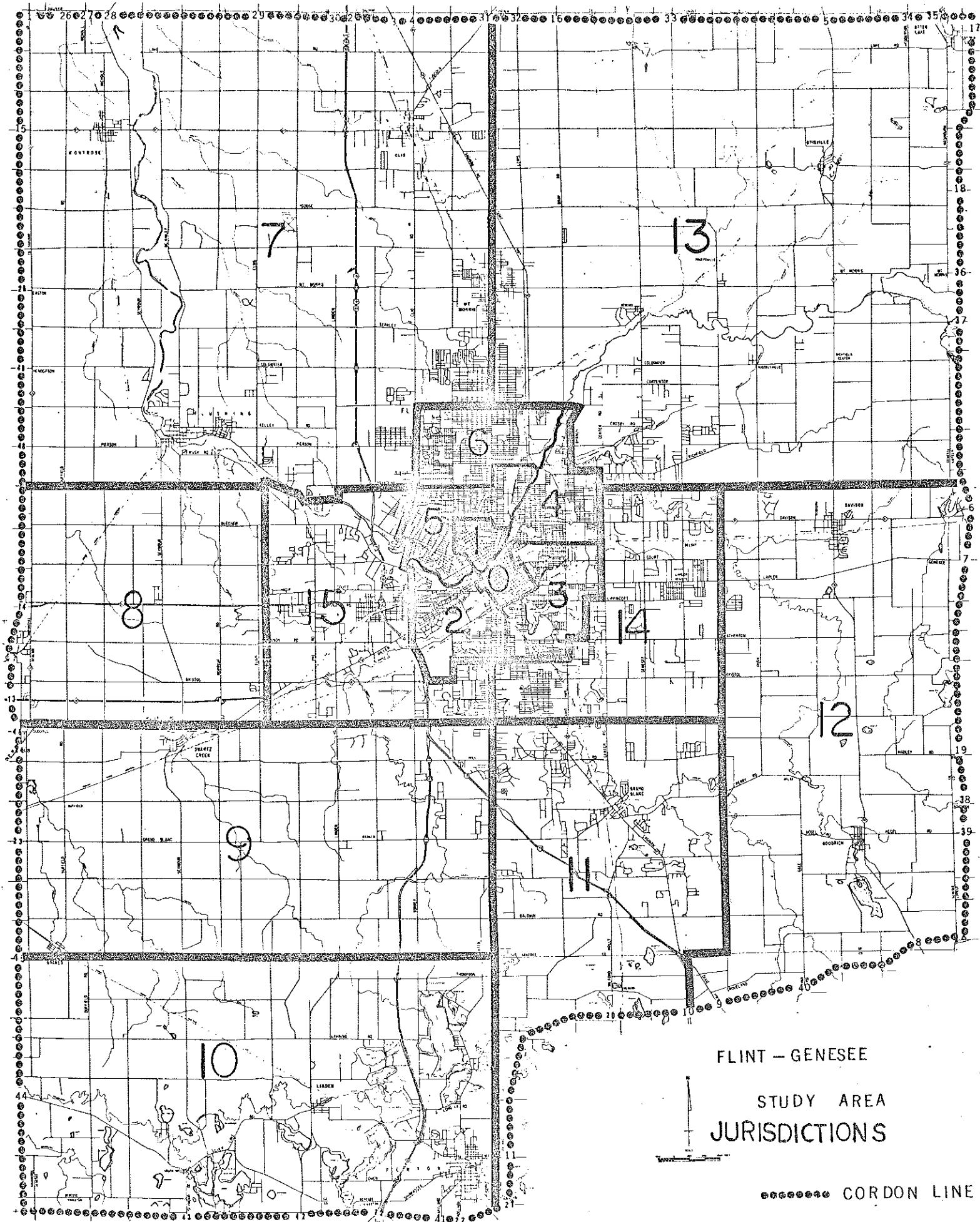
The following tables show comparisons of Vehicle Miles Traveled (V.M.T.) obtained from the final assignment with ground count V.M.T. The first table presents the assignment results for the various political subdivisions (Jurisdictions) within Genesee County.

As noted in the discussion of screenline comparisons an under assignment of trips to the C.B.D. area occurred, as expected. The primarily rural Clayton Township received about 13 percent less assigned V.M.T. than counted V.M.T. This is considered acceptable because none of the adjacent Jurisdictions shows a substantial over assignment and the screenlines through Clayton Township showed comparisons within 10 percent of ground count.

The only other jurisdiction failing to compare within 10 percent was Burton Township. This Jurisdiction showed that V.M.T. assigned was 29 percent higher than ground counts. An examination of links showed that a general over assignment on most links in this area could not be remedied by reasonable speed reductions.

The overall accuracy of 104.8 percent reflects, as does the screenline comparison, the adjustment of trips to over 100 percent of screenline ground count during the Data Adjustment Phase of the study.

The second table shows the Assigned/Count V.M.T. comparisons by link type. This comparison is useful in determining if any type of network facility receives too many assigned trips relative to ground counts. (Often the initial speeds placed on limited access facilities draws too many trips through the computer assignment process.)



FLINT - GENESEE  
STUDY AREA  
JURISDICTIONS

..... CORDON LINE

V.M.T. BY JURISDICTION

<u>Jurisdiction</u>	<u>Count</u>	<u>Assigned</u>	<u>%</u>
0	193837	181657	93.7
1	115411	124842	108.1
2	250093	237033	94.7
3	270555	279143	103.1
4	271000	257454	95.0
5	275568	282991	102.6
6	298678	297420	99.5
7	766199	844903	110.2
8	162970	141427	86.7
9	310236	329729	106.2
10	226777	228514	100.7
11	285390	311914	109.2
12	162072	173924	107.3
13	355883	371735	104.4
14	303682	392204	129.1
15	<u>374427</u>	<u>403912</u>	107.8
TOTAL	4632800	4858712	104.8

Flint City

- 0 - Flint C.B.D.
- 1 - Flint Secondary Business
- 2 - Flint S.W.
- 3 - Flint S.E.
- 4 - Flint N.E.
- 5 - Flint W. Central
- 6 - Flint N.W.

Genesee County

- 7 - Montrose, Vienna, Flushing & Mt. Morris Twp.
- 8 - Clayton Twp.
- 9 - Gaines & Mundy Twps.
- 10 - Argentine & Fenton Twp.
- 11 - Grand Blanc Twp.
- 12 - Davison & Atlas Twp.
- 13 - Thetford, Forest, Genesee & Richfield
- 14 - Burton Twp.
- 15 - Flint Twp.



V.M.T. BY LINK TYPE

<u>Link Type</u>	<u>Count</u>	<u>Assigned</u>	<u>%</u>
Freeway	700188	743233	106.1
Major Arterial	1359737	1527452	112.3
Minor Arterial	1198707	1203725	100.4
Collector	1334261	1347738	101.0
Ramp	<u>39707</u>	<u>36652</u>	91.8
	4632800	4858800	104.8

It can be seen from the V.M.T. by Link Type Table that each facility received assigned volumes comparable with those computed from the ground counts.

These three tests of the final assignment indicate that a generally acceptable comparison was obtained using the last calibrated network. It is necessary, however, to compare link by link assigned volumes to ground counts on the entire network. As documentation of this step a network assignment map of all Genesee County trunklines and major secondary routes may be found in the map pocket inside the back cover of this report.

## APPENDIX A

### Procedures for Adjustment of Network Ground Counts

#### A. Counts within Flint City Limits

A Continuous Count Station was operated during the months of March through June on Grand Traverse Street at the Flint River Bridge. This was also a screenline station and the data obtained at this location were previously used to adjust screenline counts.

The mean count, by direction, for the period during which the counts were taken was computed. From this mean a daily factor was developed. Initial adjustment of counts, by direction was unsuccessful due to numerous instances of machine failure for the Northwest Bound direction. The final adjustment factors were based on the Southeast Bound direction, only.

#### B. Counts in Genesee County Outside Flint

Daily factors were also computed for a number of Permanent Traffic Recorder locations in the vicinity of Genesee County. These recorders were on routes that entered Genesee County and experience has shown that the daily factors developed for these locations can be used within the study area.

The P.T.R. locations and the routes to which they were applied follow:

<u>P.T.R. Station</u>	<u>Routes</u>
M-21, St. Clair County #6079	All two lane trunklines
M-78, Shiawassee County #6069	M-78

P.T.R. Station

Routes

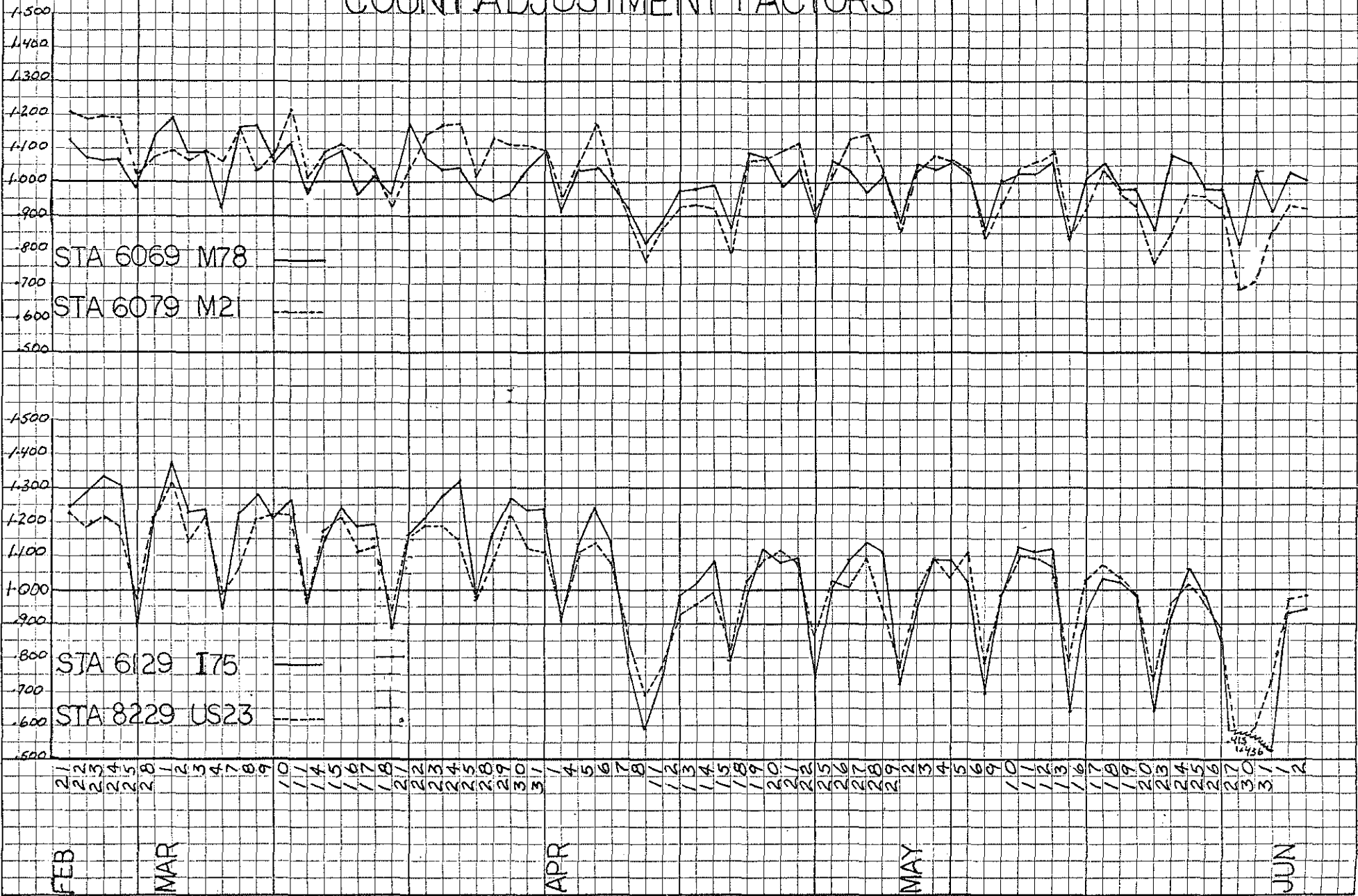
Old US-10, Oakland County #8069	County Roads
US-23, Livingston County #8229	US-23
I-75, Saginaw County #6129	I-75

In the case of trunklines that entered Flint the Continuous Count Station adjustment factors were applied, because these locations exhibited daily fluctuations in volume similar to the urban patterns developed at the C.C.S.

The following graphs present the factors used to adjust counts throughout the network. As indicated, counts on each route were related to those adjustment locations determined to have the most similar traffic characteristics.

An analysis of these graphs shows how the traffic patterns differ within an urban area. The continuous count station graph shows slight variation in the daily adjustment factors. The graphs for I-75 and US 23 show substantial differences in the daily adjustment factors. For example, the adjustment factors for I-75 counts occurring on May 30 and 31 are .413 and .436. This reflects the high Memorial Day traffic.

# COUNT ADJUSTMENT FACTORS



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MAR

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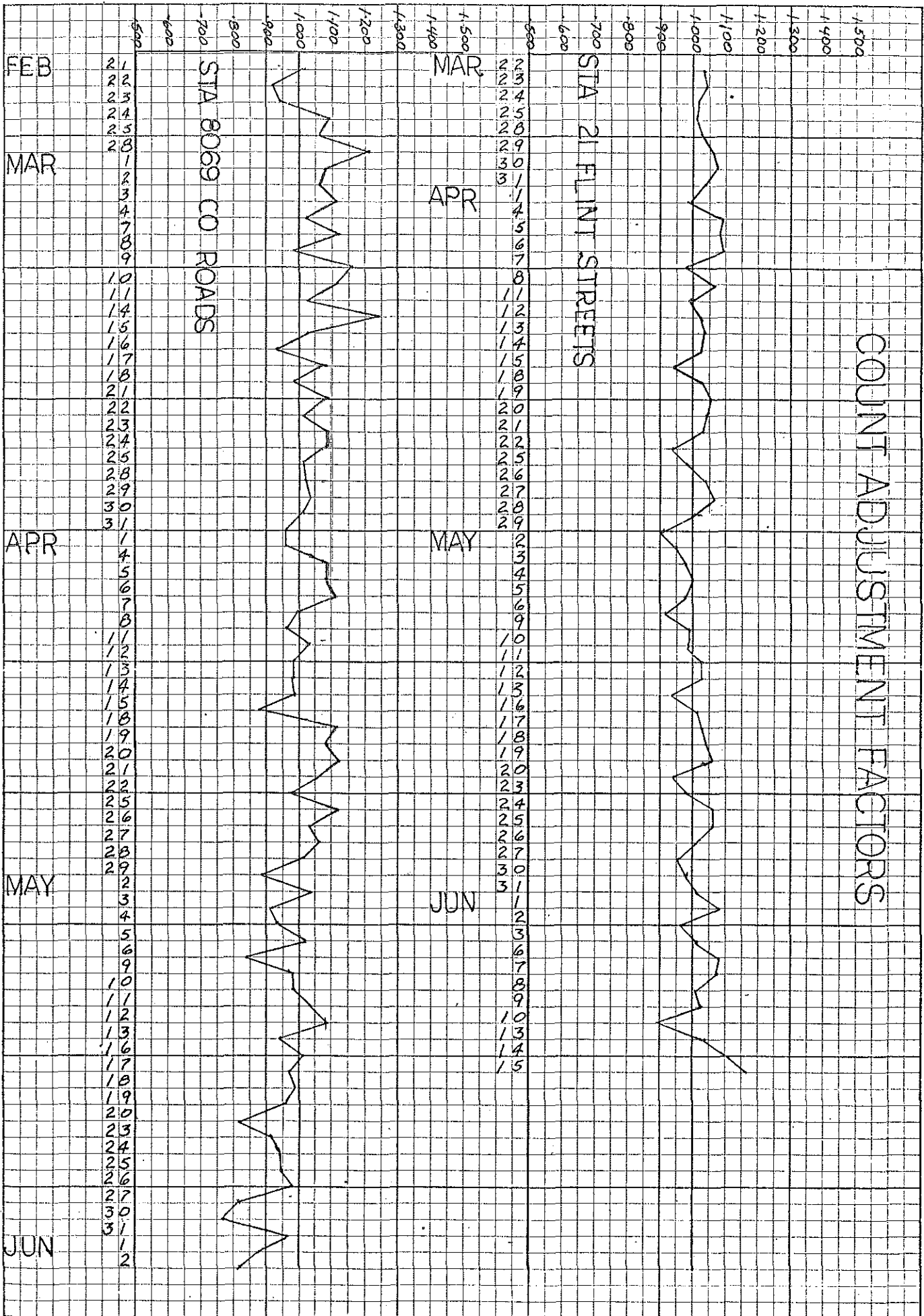
MAY

JUN

1 2 3 4 5 8 1 2 3 4 7 8 9 10 11 14 15 16 17 18 21 22 23 24 25 28 29 30 31 1 4 5 6 7 8 11 12 13 14 15 18 19 22 23 24 25 26 27 28 29 23 4 5 6 9 10 11 12 13 16 17 18 19 22 23 24 25 26 27 30 31 1 2

1435  
1436

# COUNT ADJUSTMENT FACTORS



## APPENDIX B

### Flint Screenline Link Comparisons

The following pages contain the individual link comparisons for the Flint Screenlines. These comparisons give a more detailed view of the comparison between assigned volumes and ground counts. It can be seen that individual link comparisons can be poor when the total screenline comparison is excellent.

The objective of the network calibration efforts for this study was to insure that, for the vast majority of links, acceptable agreement between counts and assigned volumes was obtained. An examination of those links exhibiting poor count/assigned ratios indicated that in most cases the differences were due to the location of centroid connectors from large (often industrial) zones.

SCREENLINE A

<u>Links</u>	<u>Count</u>	<u>Assigned</u>	
1296-1298	1942	2097	
1287-1299	1778	2455	
1286-1300	1024	591	
1284-1303	1478	468	
3073-3001	9450	8814	
3051-3074	8750	8388	
1278-1308	4244	4208	
1268-1311	9280	8983	
1265-1316	2802	4639	
2544-2546	1134	1986	
2538-2539	1290	76	
2535-2536	2726	3612	
2532-2551	<u>650</u>	<u>621</u>	
	46548	46938	100.8%



SCREENLINE B

<u>Links</u>	<u>Count</u>	<u>Assigned</u>	
1356-1358	2076	1826	
1351-1352	2864	2730	
1348-1350	1402	1265	
1344-1345	1220	1272	
3002-3003	9300	10707	
3049-3050	9900	9273	
1337-1338	3824	6244	
1329-1330	12456	21114	
1324-1325	10210	5747	
1319-1320	3208	8569	
2514-2515	2552	4051	
2518-2519	1838	3001	
2521-2522	<u>4999</u>	<u>4109</u>	
	65844	79908	121.3%

SCREENLINE C

<u>Links</u>	<u>Count</u>	<u>Assigned</u>	
1361-1405	1870	2454	
1362-1402	4974	4113	
1365-1399	3854	5207	
1369-1394	2606	2393	
1371-1391	1870	3807	
3004-3005	11400	11549	
3047-3048	11511	12000	
655-656	7510	8107	
657-665	4150	1305	
659-664	4978	3579	
661-663	10628	9818	
793-802	22794	24776	
795-801	6550	2223	
797-800	18972	25961	
799-807	1350	914	
2507-2508	2826	1727	
2499-2500	5780	613	
2495-2498	2862	3810	
2493-2496	<u>4994</u>	<u>4957</u>	
	131479	129313	98.3%

SCREENLINE D

<u>Links</u>	<u>Count</u>	<u>Assigned</u>	
1407-1408	2446	1449	
1409-1410	2686	3026	
1411-1424	1748	1468	
1413-1414	6864	9412	
1415-1416	2278	1903	
3006-3007	14200	18299	
3045-3046	15400	19570	
703-704	30532	16838	
702-706	6980	6245	
701-708	10634	13711	
700-710	17224	10905	
853-854	25712	32431	
852-851	5274	3743	
850-849	4111	8263	
824-848	10330	6830	
827-847	1200	1470	
829-845	6910	5764	
830-843	17914	21957	
832-842	8334	8239	
839-840	7490	4478	
2481-2480	4908	11307	
2486-2487	4906	9466	
2492-2493	<u>5856</u>	<u>6478</u>	
	213937	223252	104.3%

SCREENLINE S-1

<u>Links</u>	<u>Count</u>	<u>Assigned</u>	
744-1017	18848	26863	
746-748	6100	5442	
747-753	11472	10110	
507-511	8108	4450	
505-513	6368	5594	
506-514	6630	10885	
508-516	7849	9890	
596-597	5689	5695	
585-595	<u>9656</u>	<u>8528</u>	
	80720	87457	108.3%

SCREENLINE E<sub>a</sub>

<u>Links</u>	<u>Count</u>	<u>Assigned</u>	
570-783	14834	11176	
550-568	5236	5145	
560-566	7500	5359	
559-564	18722	19672	
558-563	4033	1535	
557-561	11148	2319	
624-640	26728	40337	
639-637	6944	2966	
636-635	11210	15853	
628-633	6740	1467	
629-630	<u>4504</u>	<u>2458</u>	
	117599	108287	92.0%

SCREENLINE Eb

<u>Link</u>	<u>Count</u>	<u>Assigned</u>	
1005-1015	9984	12018	
572-982	12936	16359	
578-580	18010	13835	
577-581	7278	5054	
576-582	10260	2378	
645-646	23586	7842	
644-652	9798	5146	
632-934	12006	6865	
933-937	30186	36199	
932-940	7208	3469	
931-942	9516	7395	
2468-2453	<u>7514</u>	<u>13247</u>	
	158282	129807	82.0%

SCREENLINE E

<u>Links</u>	<u>Count</u>	<u>Assigned</u>	
1451-1600	2478	1552	
1448-1601	484	233	
1464-1465	2120	1697	
1446-1602	1044	1401	
1604-1605	3880	2747	
3008-3009	14600	15012	
3043-3044	15200	17606	
1009-1010	19328	21207	
1002-1022	12534	20243	
992-999	11662	11949	
982-983	15824	18762	
979-981	17100	15269	
968-980	17976	23212	
954-955	29954	33520	
2070-2071	1138	7185	
2062-2063	7282	15047	
2056-2059	3090	2626	
2057-2457	<u>5580</u>	<u>5186</u>	
	181274	214454	118.3%

SCREENLINE F

<u>Links</u>	<u>Count</u>	<u>Assigned</u>	
1600-1669	2594	1755	
1601-1460	484	910	
1465-1466	2120	928	
1603-1626	1000	613	
1607-1627	2886	4131	
1618-1619	12864	12978	
3010-3011	16700	19962	
3041-3042	17700	23315	
995-1613	15794	3645	
989-1610	15098	18999	
976-2185	6978	8354	
974-2075	21017	22540	
961-2074	20551	18684	
2072-2083	3154	4556	
2064-2087	4360	8885	
2059-2089	1844	2351	
2058-2091	<u>2852</u>	<u>3566</u>	
	147996	156172	105.5%

SCREENLINE G

<u>Links</u>	<u>Count</u>	<u>Assigned</u>	
1656-1658	1234	1492	
1659-1802	1170	1282	
1654-1661	1430	826	
1651-1662	1002	90	
1648-1665	2826	1726	
1667-1777	210	358	
1621-1674	3212	3238	
1678-1679	1014	410	
3014-3038	13600	15505	
3037-3039	14500	14999	
1684-1685	1814	828	
1690-1691	12716	10238	
2108-2109	16316	19816	
2104-2105	10822	13747	
2100-2101	3154	4275	
2095-2096	1542	3046	
2092-2122	1168	1864	
2091-2123	<u>2852</u>	<u>3149</u>	
	90582	96889	106.9%



SCREENLINE H

<u>Links</u>	<u>Count</u>	<u>Assigned</u>	
1706-1709	996	1065	
1703-1710	1070	1046	
1717-1714	1930	2451	
1721-1722	1796	937	
3018-3019	7750	10849	
3032-3033	8750	10865	
1696-1725	4934	4503	
3066-3037	4700	4265	
3038-3067	4800	4611	
2159-2160	2876	3678	
2140-2173	550	672	
2134-2174	2484	2420	
2168-2164	<u>8364</u>	<u>10551</u>	
	51030	57913	113.4%

SCREENLINE I

<u>Links</u>	<u>Count</u>	<u>Assigned</u>	
1735-1739	510	514	
1733-1796	400	347	
1732-1741	1820	4647	
3020-3079	7275	7895	
3078-3031	7211	7614	
1729-1746	2860	3600	
1727-1747	<u>3842</u>	<u>1445</u>	
	23918	26062	108.9%

SCREENLINE 1

<u>Links</u>	<u>Count</u>	<u>Assigned</u>	
1284-1285	5788	3318	
1301-1302	432	186	
1346-1348	778	5502	
1364-1366	1756	1779	
1394-1398	486	0	
1397-1400	11080	14646	
1401-1411	2494	1509	
1427-1428	1628	676	
1447-1448	7584	7739	
3055-3056	3867	3894	
3059-3060	3946	3131	
1649-1650	7082	3229	
1703-1793	1814	1598	
1711-1712	560	1384	
1795-1796	170	337	
1769-1770	<u>2628</u>	<u>5403</u>	
	52093	54331	104.2%

SCREENLINE 2

<u>Links</u>	<u>Count</u>	<u>Assigned</u>	
1281-1462	5792	4628	
1306-1307	520	1865	
1341-1342	1312	7165	
1372-1373	3464	3426	
1390-1391	8302	8184	
1416-1417	7374	4350	
1420-1421	8820	9741	
1422-1463	9838	4228	
1439-1441	2150	5436	
1440-1442	12380	11273	
1606-1608	1950	1433	
1618-1619	12864	12978	
1617-1620	6490	8034	
1675-1677	1032	1163	
1699-1717	2614	2902	
1715-1716	780	635	
1731-1732	2222	4215	
1742-1745	674	295	
1757-1758	3318	1654	
1772-1774	<u>1790</u>	<u>1362</u>	
	93686	94967	101.3%

SCREENLINE 3

<u>Links</u>	<u>Counts</u>	<u>Assigned</u>
1268-1270	7164	7300
1268-1269	4678	5547
1310-1313	400	2848
1335-1337	4200	7622
1334-1338	3696	2635
1377-1379	6052	8413
657-658	8750	9105
670-671	180	1867
682-683	20118	17991
694-695	2300	1288
706-707	9950	11616
717-718	4394	872
721-722	6912	4641
741-742	14668	6971
744-745	4722	9618
757-758	11850	13332
770-772	11924	17974
786-787	9610	3538
1006-1007	12702	10594
1003-1004	18890	20572
999-1000	12868	8584
1614-1615	16654	22249
1681-1684	1656	1233
3066-3037	4700	4265
3038-3067	4800	4611

SCREENLINE 3  
(continued)

<u>Links</u>	<u>Count</u>	<u>Assigned</u>	
1686-1687	6694	8104	
1697-1720	4228	4370	
1723-1724	794	339	
1728-1729	1056	0	
1900-1751	3316	801	
1779-1782	5748	4816	
1780-1784	5006	1232	
1785-1786	<u>1160</u>	<u>376</u>	
	231840	225324	96.8%

SCREENLINE 3a

<u>Links</u>	<u>Count</u>	<u>Assigned</u>	
662-793	7768	12685	
675-803	2000	1436	
687-814	18758	20251	
699-818	2800	5783	
711-854	6566	7084	
712-856	6436	5975	
728-886	<u>12088</u>	<u>10627</u>	
	56416	63841	113.1%

SCREENLINE 3b

<u>Links</u>	<u>Count</u>	<u>Assigned</u>	
797-798	5762	8049	
827-828	29900	37600	
845-846	900	208	
865-866	8726	9564	
896-897	12484	14124	
910-911	21772	17505	
923-924	<u>18934</u>	<u>22292</u>	
	98478	109342	111.0%

SCREENLINE 4

<u>Links</u>	<u>Count</u>	<u>Assigned</u>
1265-2558	2234	3487
1317-2557	1206	1560
1318-2512	4054	4848
1320-2511	1974	1167
799-1020	5672	5847
799-807	1350	914
836-837	13906	13235
870-871	4326	5453
901-902	8632	24641
915-916	18296	2011
927-928	10886	9200
939-940	8656	12225
950-951	7590	5762
956-2073	9758	8396

SCREENLINE 4  
(continued)

<u>Links</u>	<u>Count</u>	<u>Assigned</u>	
2081-2082	8034	13099	
2100-2102	2542	3173	
2117-2118	2288	0	
2116-2152	14554	25526	
2153-2154	4116	4946	
3066-3037	4700	4265	
3038-3067	4800	4611	
2158-2164	<u>886</u>	<u>939</u>	
	140440	156300	111.2%

SCREENLINE 5

<u>Links</u>	<u>Count</u>	<u>Assigned</u>	
2545-2546	1782	2675	
2542-2543	710	1000	
2513-2517	2628	3581	
2501-2504	2202	2573	
2485-2488	9218	2349	
2471-2472	14268	16585	
2469-2473	3002	5268	
2452-2453	7562	8644	
2053-2055	2802	1811	
2063-2065	6352	4734	
2086-2087	5832	6622	
2120-2021	2392	3015	
2143-2145	2946	6106	
2170-2171	<u>480</u>	<u>1217</u>	
	62176	66180	106.4%

SCREENLINE 6

<u>Links</u>	<u>Count</u>	<u>Assigned</u>	
2536-2537	1566	1704	
2533-2540	1096	2900	
2520-2521	1350	1426	
2496-2497	2006	3106	
2493-2494	2614	3723	
2464-2465	9892	12277	
2456-2457	4416	7695	
2057-2059	1332	223	
2090-2091	3002	1449	
2138-2139	896	2020	
2136-2140	<u>1640</u>	<u>1362</u>	
	29810	37885	127.0%



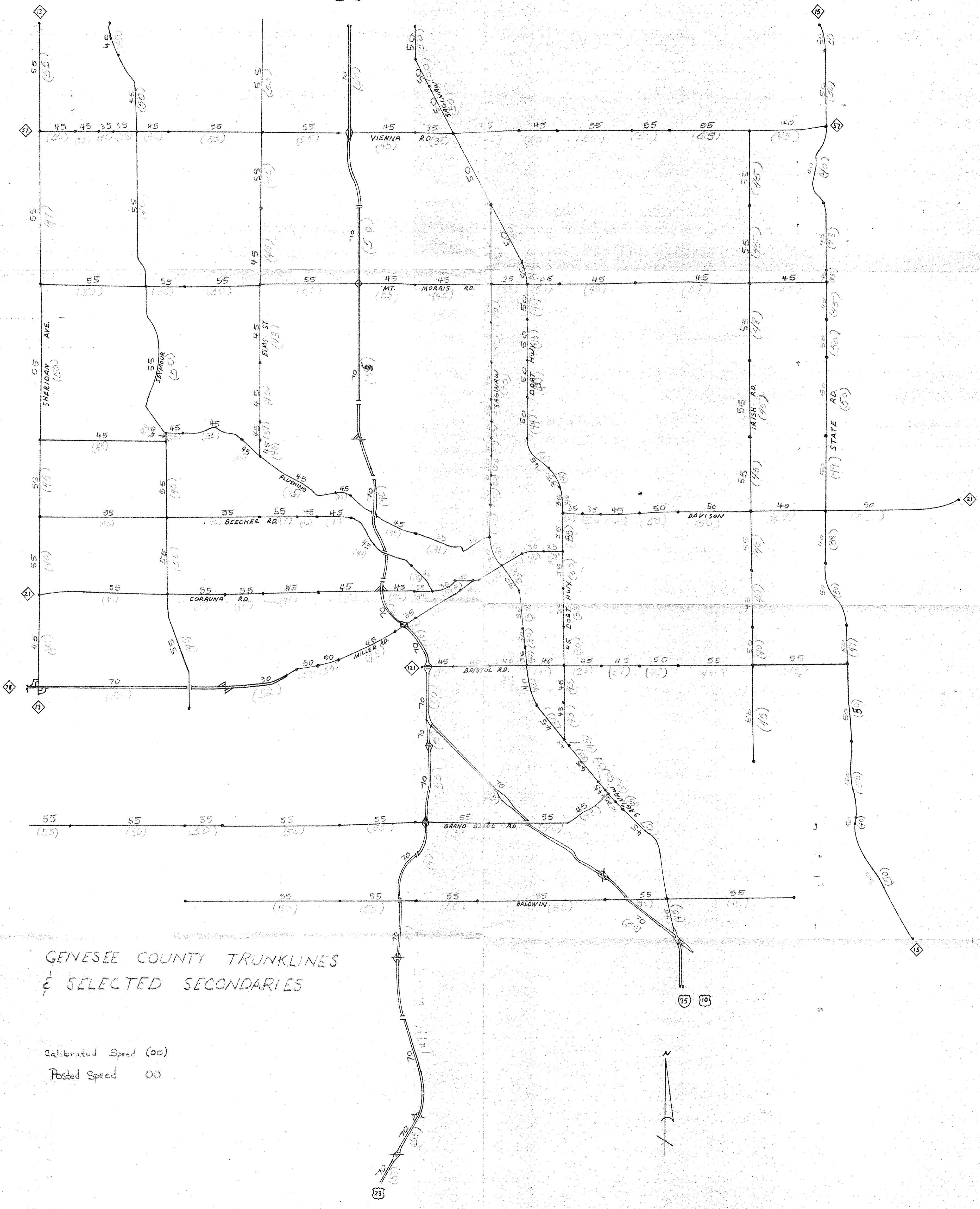
SCREENLINE S (Adjustment)

<u>Links</u>	<u>Count</u>	<u>Assigned</u>
1431-1451	2268	1525
1432-1448	1980	1811
1433-1445	340	691
1434-1441	2879	2601
3006-3007	14200	18299
3045-3046	15400	19570
790-791	17190	21380
788-789	6162	2098
780-786	6468	9982
771-781	4374	3817
533-534	1050	4002
535-544	24036	28587
537-538	2568	4423
530-538	21156	6875
615-616	23228	36716
604-617	5908	13340
606-614	10082	5186
594-595	26264	20214
589-594	4470	3146
590-592	11160	14910
910-1019	4548	4710
908-912	7272	7562
907-914	28062	34025
906-916	10948	3595
905-918	11900	8635

SCREENLINE S (Adjustment)  
(continued)

<u>Links</u>	<u>Counts</u>	<u>Assigned</u>	
2469-2471	7826	14378	
2466-2467	2820	4269	
2457-2462	<u>7920</u>	<u>8370</u>	
	282479	304717	107.8%

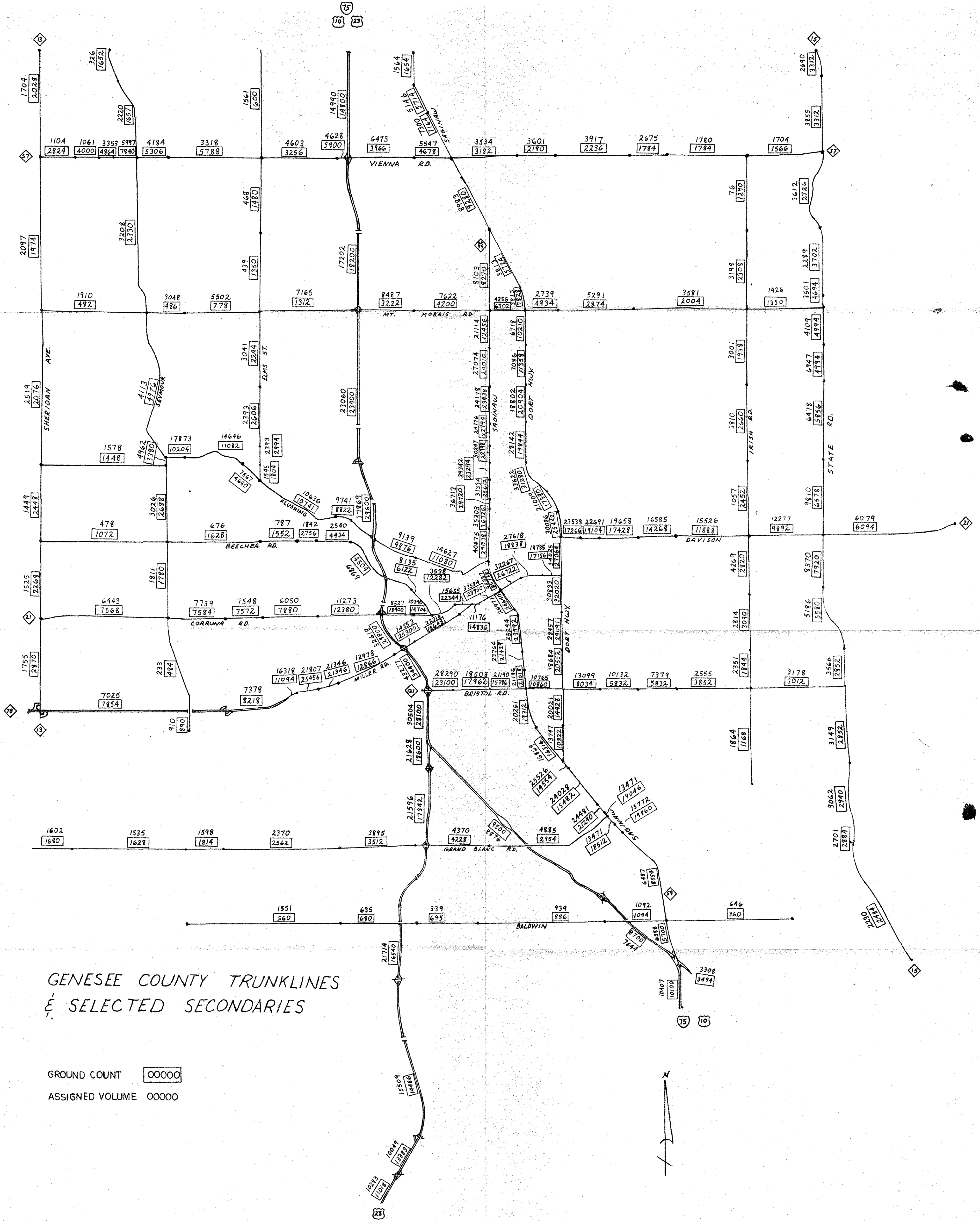
75  
10 23



### GENESEE COUNTY TRUNKLINES & SELECTED SECONDARIES

Calibrated Speed (oo)  
Posted Speed oo





GENESEE COUNTY TRUNKLINES  
& SELECTED SECONDARIES

GROUND COUNT 00000  
ASSIGNED VOLUME 00000