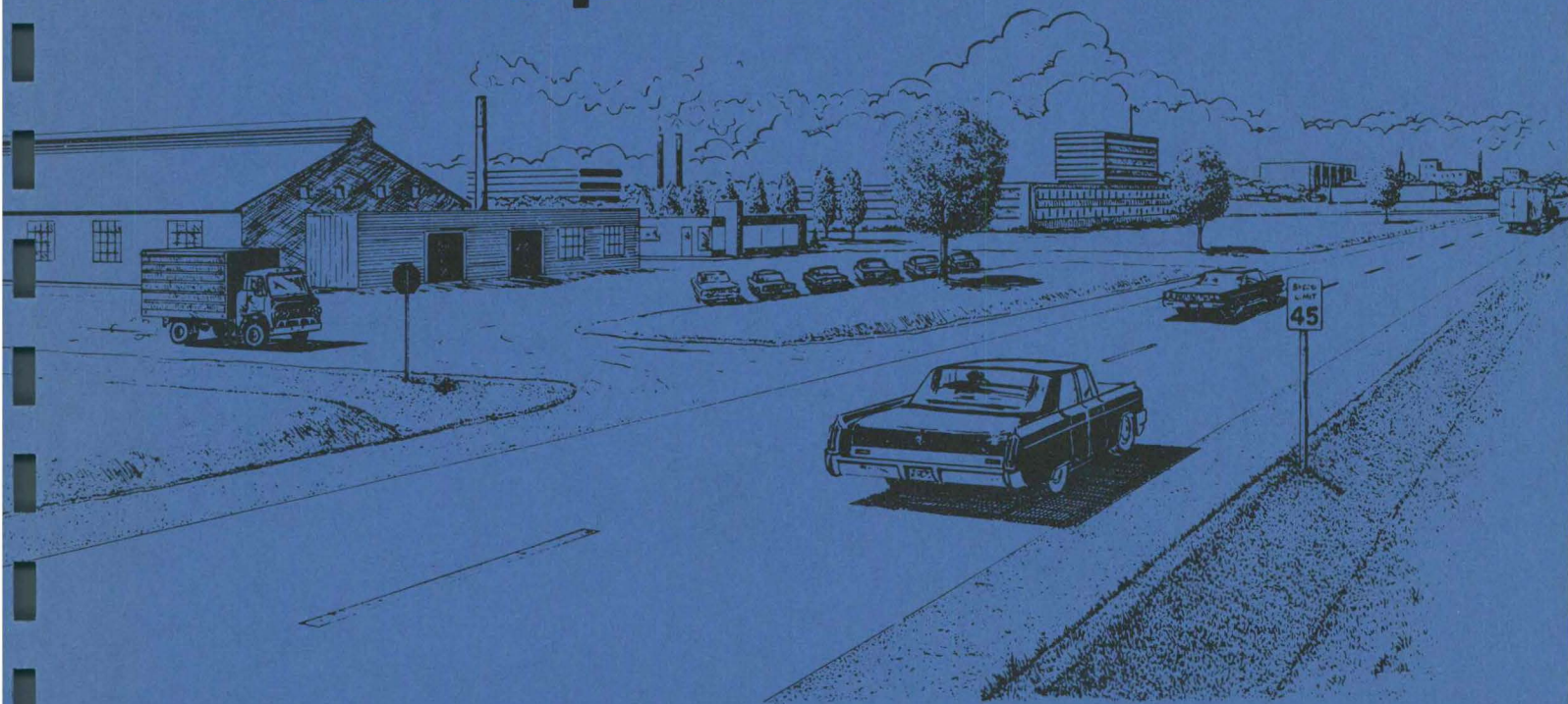


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# NEWTON

## Metropolitan Area



## Origin and Destination traffic report

**Iowa**  
August 1969

STATE OF IOWA

**NEWTON**

ORIGIN AND DESTINATION  
TRAFFIC REPORT

DATA GATHERED AUGUST 1969

PUBLISHED MAY 1970

PREPARED BY

HIGHWAY PLANNING SURVEYS DEPARTMENT  
DIVISION OF PLANNING  
IOWA STATE HIGHWAY COMMISSION

IN COOPERATION WITH THE

UNITED STATES DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
BUREAU OF PUBLIC ROADS

Reproduction Cost           \$5.13

## INTRODUCTION

This report is based on an external origin and destination traffic survey that was made in Newton in August of 1969. The survey was conducted in cooperation with the United States Bureau of Public Roads and was made to determine the total number and type of vehicles entering or leaving the study area, along with specific origin-destination data from a representative sample of vehicle operators.

The purpose of this report is to summarize the data gathered in Newton and to present this data in a manner which will implement the determination of traffic needs, thereby providing a sound basis for street and highway planning.

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## DEFINITIONS OF TECHNICAL TERMS

Study Area	The area enclosed by a cordon line of interview stations
Cordon Line	A hypothetical line determined by the location of traffic interview stations and used to delimit the area under study
Interview Station	A location at which vehicle drivers are stopped and interviewed
Code Station	A location on a street or highway at the point where it crosses the cordon line and at which traffic is counted but not interviewed
Central Business District	The major business district of a city
Origin	The location from which a driver started a trip
Destination	The location at which a trip was ended
Trip	The one-way travel between a point of origin and a point of destination
Internal Trip	A trip having both origin and destination within the study area
External Local Trip	A trip having either origin or destination within the study area and which passed through only one interview station in the cordon line enroute to its destination
External Through Trip	A trip having neither origin nor destination within the study area but which passed through it enroute to its destination
Traffic	The total number of vehicles passing a given point
Desire Line	A straight line between the point of origin and point of destination without regard to routes of travel



# *Significant Facts*

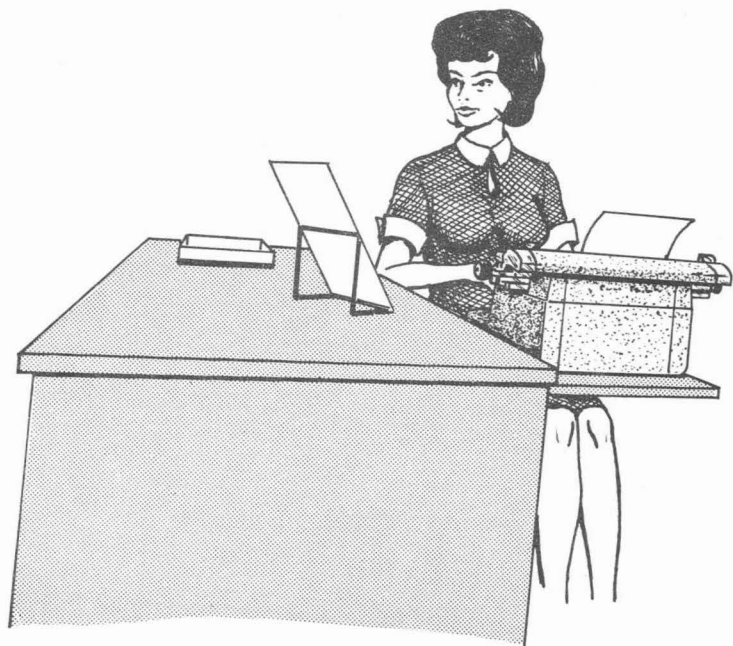
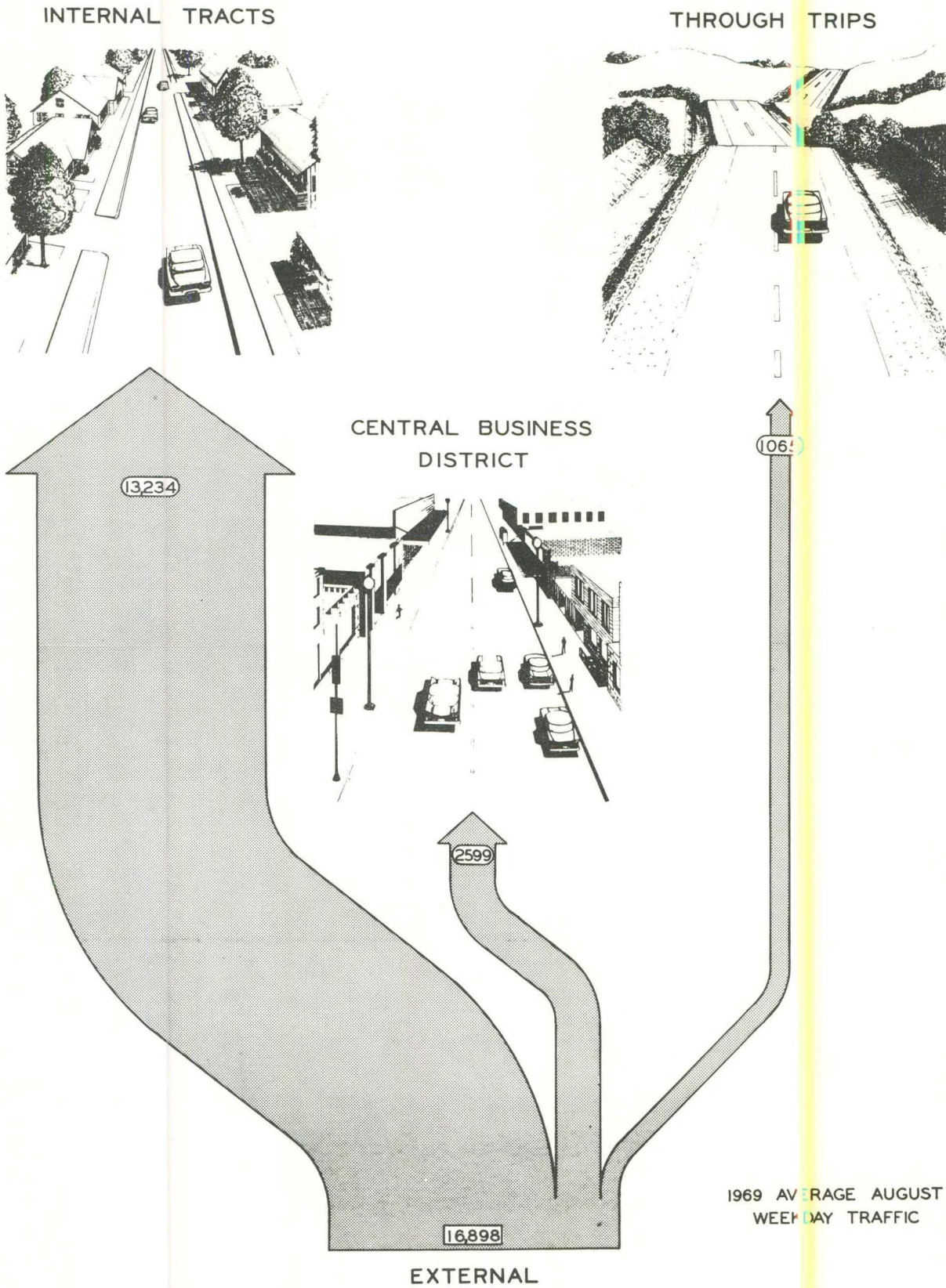


FIGURE I-1  
DISTRIBUTION OF TRIPS  
NEWTON STUDY AREA



## SUMMARY

The chart at left graphically illustrates some of the more significant traffic volumes derived from the Newton origin and destination traffic survey. An average of 16,898 trips per day passed through the external cordon line of interview stations surrounding the study area during the survey period.

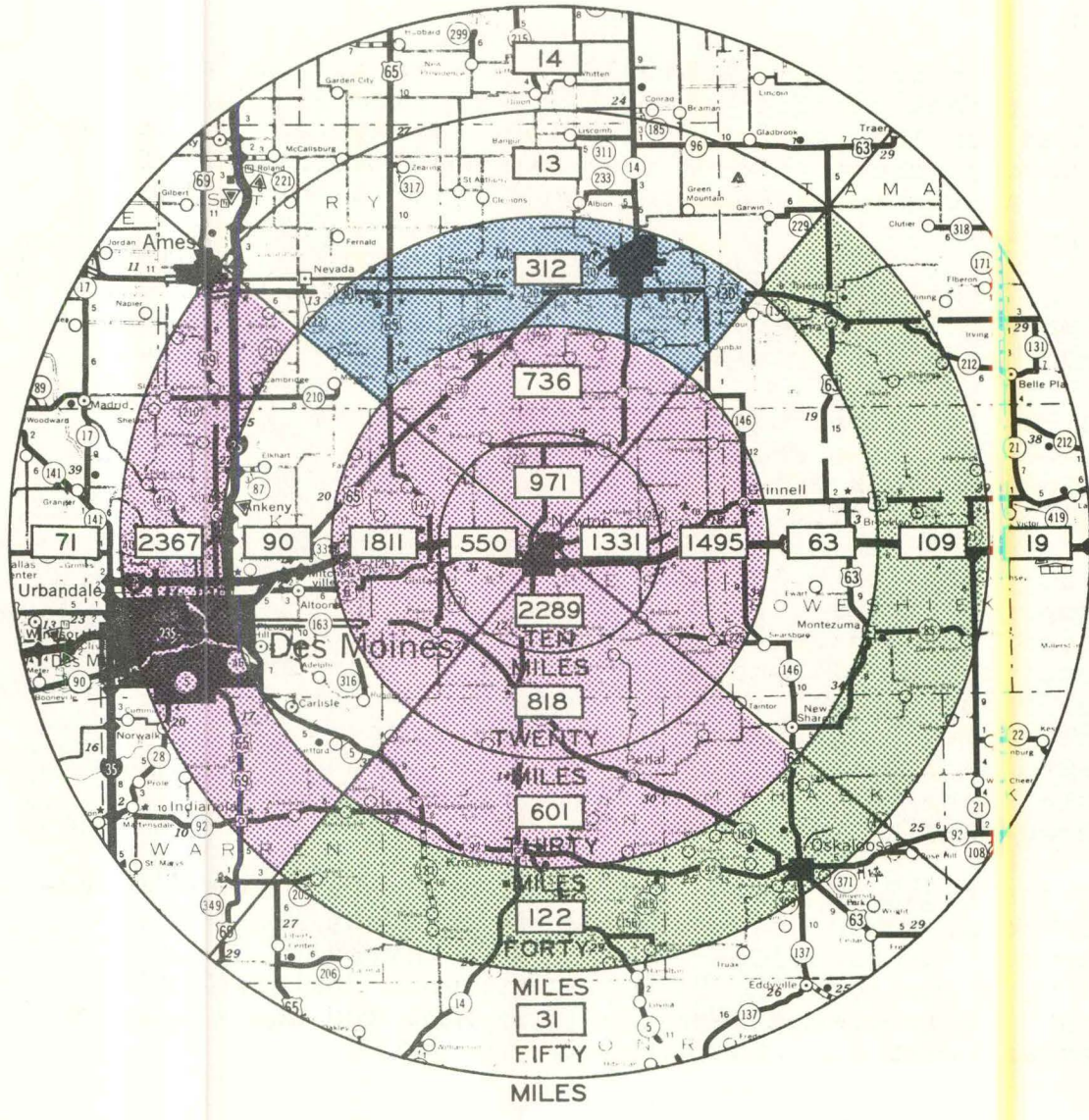
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



13,234 trips or 78.32 percent of the total number of trips were between external and internal areas exclusive of the central business district.

1,065 trips or 6.30 percent of the total number of trips were through trips which passed through Newton enroute to another destination. It should be noted that the low number of through trips in Newton is due to Interstate 80 passing just south of the Newton Study Area. Most through trips use the Interstate Route and therefore are not shown passing through Newton.

Of the total number of trips which passed through interview stations, 25.08 percent began or ended at work, 27.50 percent were for social or recreational purposes, 13.25 percent were during work, 8.20 percent were for personal business, 17.31 percent were for shopping, and the remaining 8.66 percent were for other purposes.

FIGURE 1-2  
 REGIONAL INFLUENCE OF THE  
 NEWTON STUDY AREA



-  0 TO 100 TRIPS
-  100 TO 200 TRIPS
-  200 TO 400 TRIPS
-  400 AND OVER

1965 AVERAGE AUGUST  
 WEEKDAY TRAFFIC

## SUMMARY

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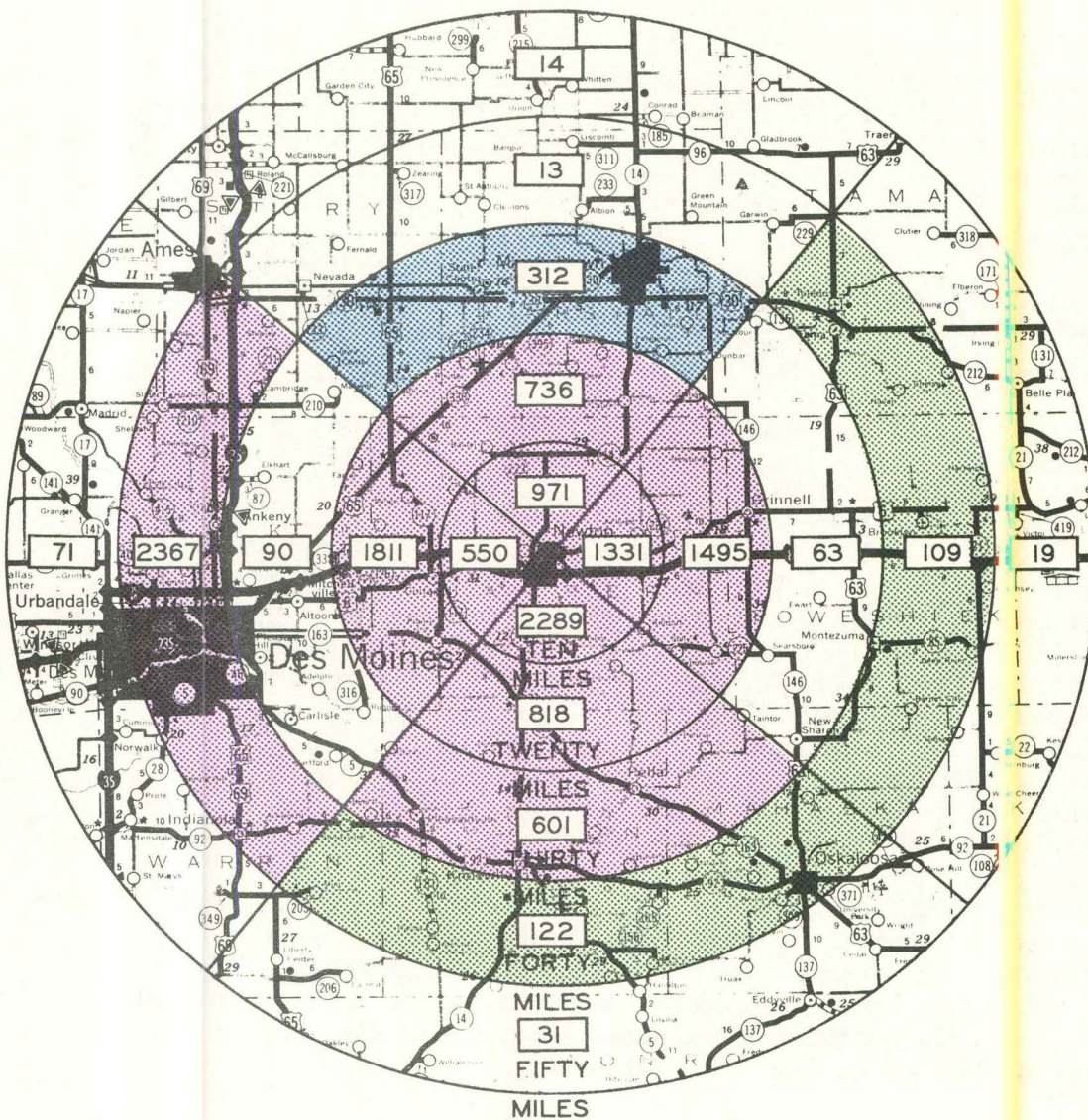
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



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-  100 TO 200 TRIPS
-  200 TO 400 TRIPS
-  400 AND OVER

1969 AVERAGE AUGUST  
 WEEKDAY TRAFFIC

Table 1-1  
Regional Influence of the Newton Study Area

1969 Average August Weekday Traffic

Miles From Study Area		Number of Trips	Percent of Total Trips Within a Fifty-Mile Radius
North	0 - 10	971	7.03
	10 - 20	736	5.33
	20 - 30	312	2.26
	30 - 40	13	.09
	40 - 50	14	.10
North Total		2,046	14.81
East	0 - 10	1,331	9.64
	10 - 20	1,495	10.82
	20 - 30	63	.45
	30 - 40	109	.79
	40 - 50	19	.14
East Total		3,017	21.84
West	0 - 10	550	3.98
	10 - 20	1,811	13.11
	20 - 30	90	.65
	30 - 40	2,367	17.14
	40 - 50	71	.52
West Total		4,889	35.40
South	0 - 10	2,289	16.57
	10 - 20	818	5.92
	20 - 30	601	4.35
	30 - 40	122	.88
	40 - 50	31	.23
South Total		3,861	27.95
Grand Total		13,813	100.00

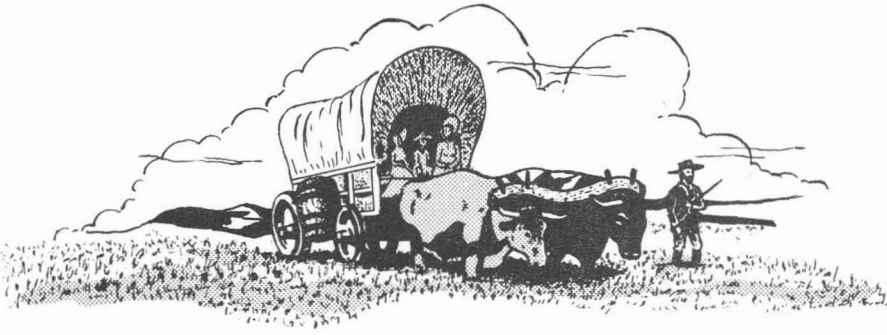


Table 1-2  
Vehicle Type Summary  
Newton Study Area

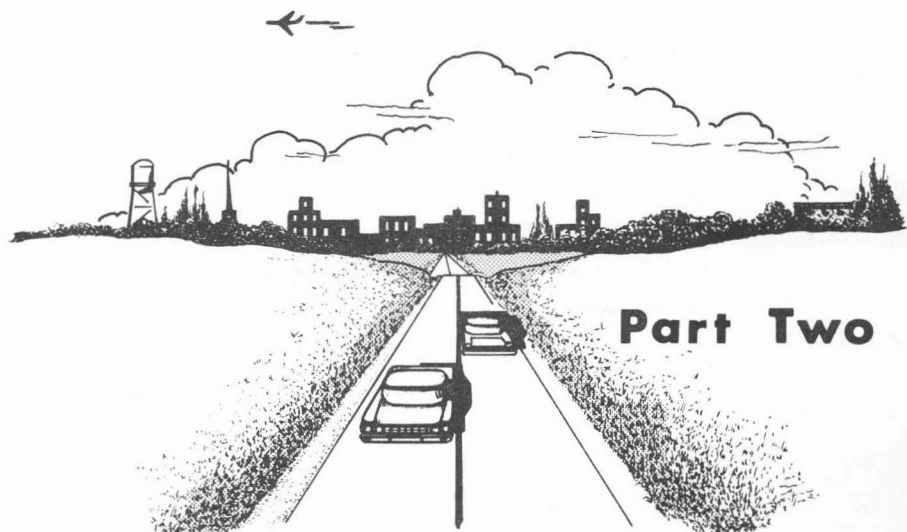
1969 Average August Weekday Traffic

Station	Location	Passenger Cars	Pickups and Panels	Single Unit Trucks	Truck Combinations	Total
701	Iowa 14 North	1,583	303	149	63	2,098
702	F.A.S. 2551 North	115	30	9	--	154
703	County Road F-27 North	126	19	6	--	151
705	Local Road North	79	37	5	--	121
706	North 19th Ave. East	67	30	4	--	101
707	U.S. 6 East	2,037	266	77	29	2,409
709	County Road T-14 South	1,213	173	49	30	1,465
710	County Road S-74 South	1,295	231	47	--	1,573
712	West 4th Street South	125	33	6	--	164
713	Iowa 14 South	6,054	620	364	149	7,187
714	U.S. 6 West	1,863	263	117	14	2,257
716	County Road F-36 Northwest	123	26	9	--	158
717	Local Road North	43	6	3	--	52
718	Local Road North	58	10	--	--	68
Grand Total		14,781	2,047	845	285	17,958

The totals shown above include the duplication of those trips which passed entirely through the study area and were, therefore, interviewed twice.



# *History and Development*



**Part Two**

## History

Newton, the county seat of Jasper County, is located thirty miles east of Des Moines. The city is named after a Sergeant Newton who served in the Revolutionary War. The county is also named after a soldier of the Revolution, Sergeant William Jasper.

Jasper County was created in 1840 by an act of Congress. County government was officially organized in April, 1846, with J. R. Sparks, Manley Gifford and Jacob Bennet named as County Commissioners. In July, 1846, the commissioners laid out Newton City as the county seat. Newton was incorporated under an act of the 6th General Assembly and became a city of the second class in January, 1876.

In the 1860's, the Mississippi and Missouri Railroad was extended into Jasper County providing needed transportation to other cities and areas. The majority of early Jasper County residents engaged in farming, but later, milling of lumber and manufacturing of farm implements became important factors in the economy of the county.

By 1880 most of the farm land in Jasper County was under cultivation. However, by 1890 the rural population had begun to decrease as farm machinery made it possible for one man to farm more land. At the same time, an increase in manufacturing created a greater demand for labor and resulted in a shift in population from rural to urban areas.

Newton has long been a manufacturing center. Because of the Maytag Company, the city is sometimes called the "washing machine center of the world." Maytag has been in operation in Newton since 1893 and has manufactured washing machines since 1907. Other products manufactured in Newton include farm implements, aluminum storm windows and doors, tools and dies, metal castings, wrought iron products, cheese, plastic extrusions and moldings, frozen pizza, trenching machinery, printed items and graphic art products.

Newton's only municipal utility is the water works. The water source, shallow wells dug into a prehistoric river bed, provide a capacity in excess of five million gallons per day. A softening plant removes mineral impurities and provides soft water for the entire city. A sewage disposal plant provides treatment for all wastes.

Electric power is supplied to Newton citizens by a franchise with Iowa Southern Utilities. Natural gas service is provided by a franchise with Peoples Natural Gas Company.

Police protection is supplied by 19 full time officers and a matron. Radio equipped squad cars provide 24 hour patrol of the city.

Fire protection is provided by 17 full time officers and 3 volunteers. Equipment consists of four city trucks and one rural unit. In addition the fire department provides ambulance service with two ambulances on call 24 hours a day.

The school system in Newton consists of eight elementary schools, two junior high schools, one senior high school and one interdenominational private day school. The system is fully accredited and offers a full curriculum and many extra-curricular activities.

Medical and health facilities are provided by Skiff Memorial Hospital. Four nursing homes provide care for the elderly. Help for those with psychological and emotional problems is provided by a mental health center. In addition to the above services, numerous private practitioners offer their skills to Newton citizens.

Communications media in Newton include one newspaper and one radio station. The newspaper, an evening paper, the Newton Daily News, has an average circulation of over 7900. The radio station KCOB, broadcasts on both AM and FM with a power of 1000 watts.

Newton is served by Interstate Highway 80, U.S. Highway 6, and Iowa Highway 14. Many intrastate and interstate trucking firms make use of these highway facilities. Daily bus service is also available. Additional transportation facilities are provided by the Rock Island Railroad and the Minneapolis and St. Louis Railroad. Both passenger and freight service are provided.

Population Trends  
Newton Population

Table 2-1

Census Year	Newton Population	Volume Increase or Decrease	Percent Change 10-year Period
1860	1,617	--	--
1870	1,983	366	22.63
1880	2,607	624	31.47
1890	2,564	- 43	- 1.65
1900	3,682	1,118	43.60
1910	4,616	934	25.37
1920	6,627	2,011	43.57
1930	11,560	4,933	74.44
1940	10,462	- 1,098	- 9.50
1950	11,723	1,261	12.05
1960	15,381	3,658	31.20

Jasper County Population

Table 2-2

Census Year	Jasper County Population	Volume Increase or Decrease	Percent Change 10-year Period
1850	1,280	--	--
1860	9,883	8,603	672.11
1870	22,116	12,233	123.78
1880	25,963	3,487	17.39
1890	24,943	- 1,020	- 3.93
1900	26,976	2,033	8.15
1910	27,034	58	.22
1920	27,885	851	3.15
1930	32,936	5,051	18.11
1940	31,496	- 1,440	- 4.37
1950	32,305	809	2.57
1960	35,282	2,977	9.22

Figure 2-1  
Population Trends

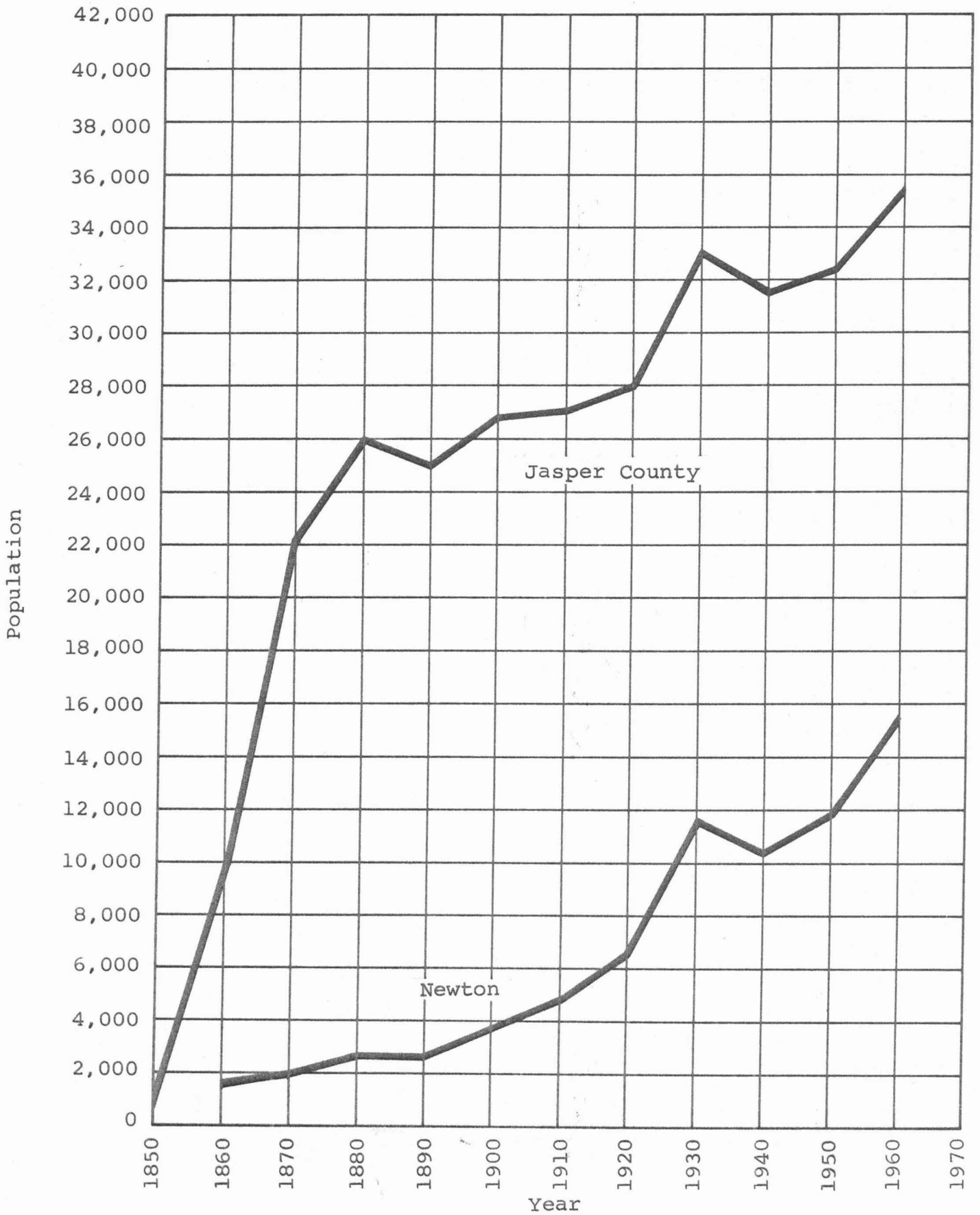


Table 2-3  
 Motor Vehicle Registration  
 In Jasper County From 1939 Through 1969

Year	Autos	Trucks	Motorcycles	Total	Percent Change
1939	8,568	1,117	47	9,732	
1940	8,692	1,213	43	9,948	2.22
1941	8,910	1,270	46	10,226	2.79
1942	8,195	1,191	45	9,431	-7.77
1943	7,812	1,157	47	9,016	-4.40
1944	7,841	1,210	50	9,101	.94
1945	7,590	1,234	56	8,880	-2.43
1946	7,840	1,415	90	9,345	5.24
1947	8,480	1,604	157	10,241	9.59
1948	9,339	1,792	191	11,322	10.56
1949	10,423	1,988	202	12,613	11.40
1950	11,437	2,087	211	13,735	8.90
1951	11,725	2,245	203	14,173	3.19
1952	11,494	2,265	196	13,955	-1.54
1953	12,169	2,350	179	14,698	5.32
1954	12,357	2,461	170	14,988	1.97
1955	12,888	2,566	173	15,627	4.26
1956	13,010	2,565	157	15,732	.67
1957	13,187	2,614	179	15,980	1.58
1958	13,345	2,721	195	16,261	1.76
1959	13,911	2,851	204	16,966	4.34
1960	14,142	2,934	228	17,304	1.99
1961	14,131	3,003	233	17,367	.36
1962	14,508	3,131	258	17,897	3.05
1963	14,875	3,322	238	18,435	3.01
1964	15,291	3,546	258	19,095	3.58
1965	15,766	3,815	318	19,899	4.21
1966	16,200	4,142	349	20,691	3.98
1967	16,540	4,278	403	21,221	2.56
1968	17,023	4,482	482	21,987	3.61
1969	17,648	4,768	582	22,998	4.60

Figure 2-2

Motor Vehicle Registration in Jasper County  
From 1939 Through 1969

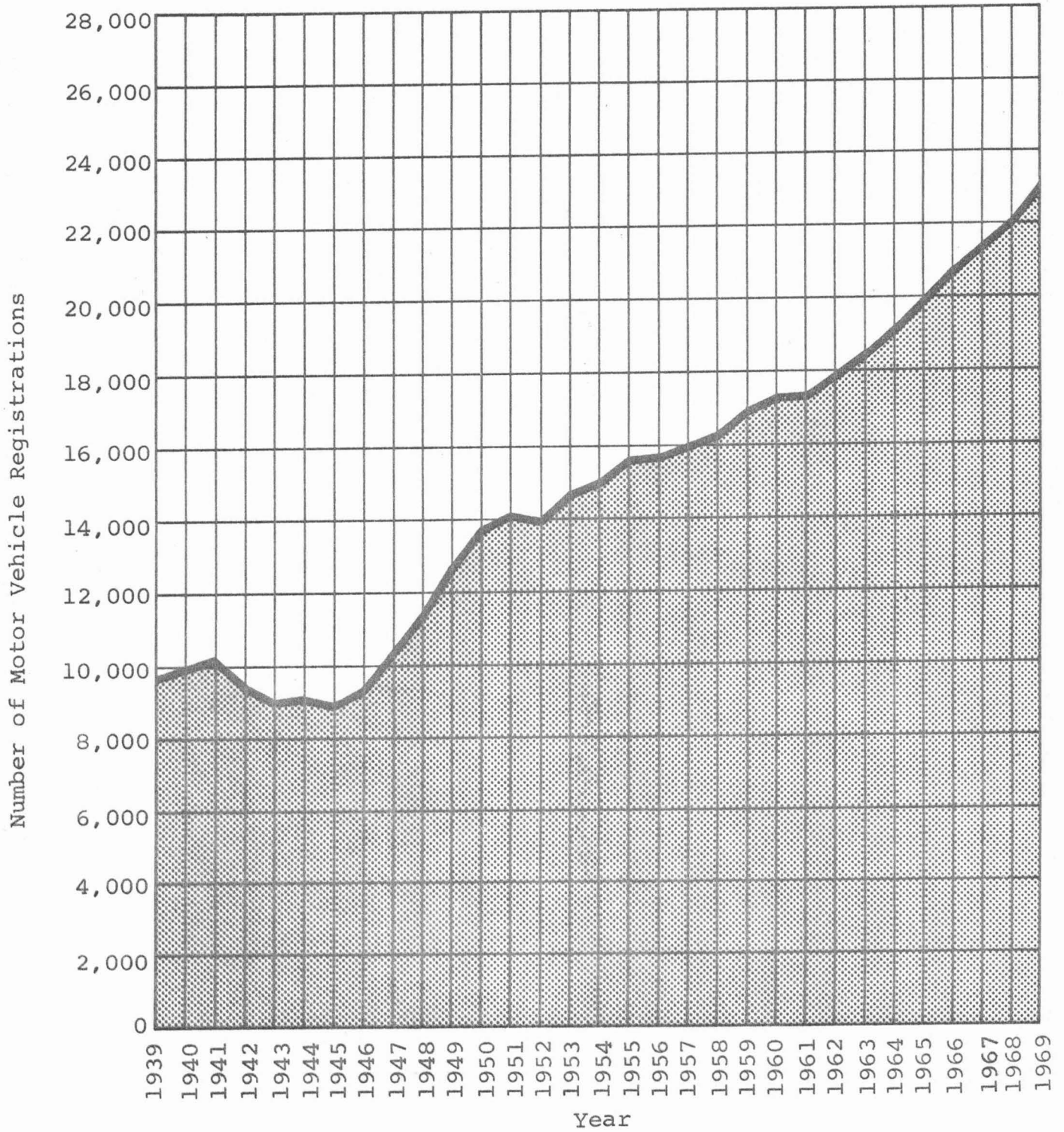
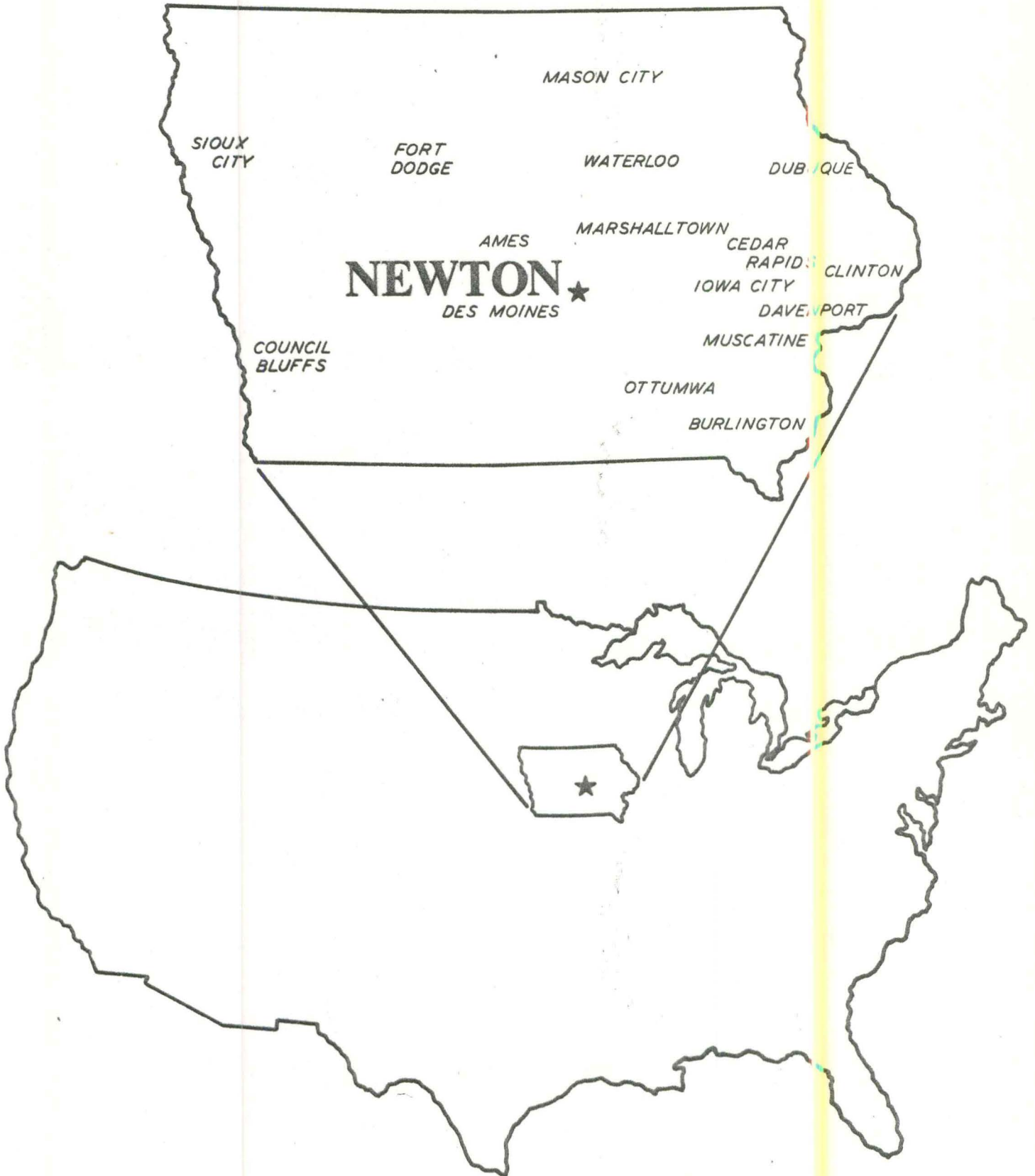
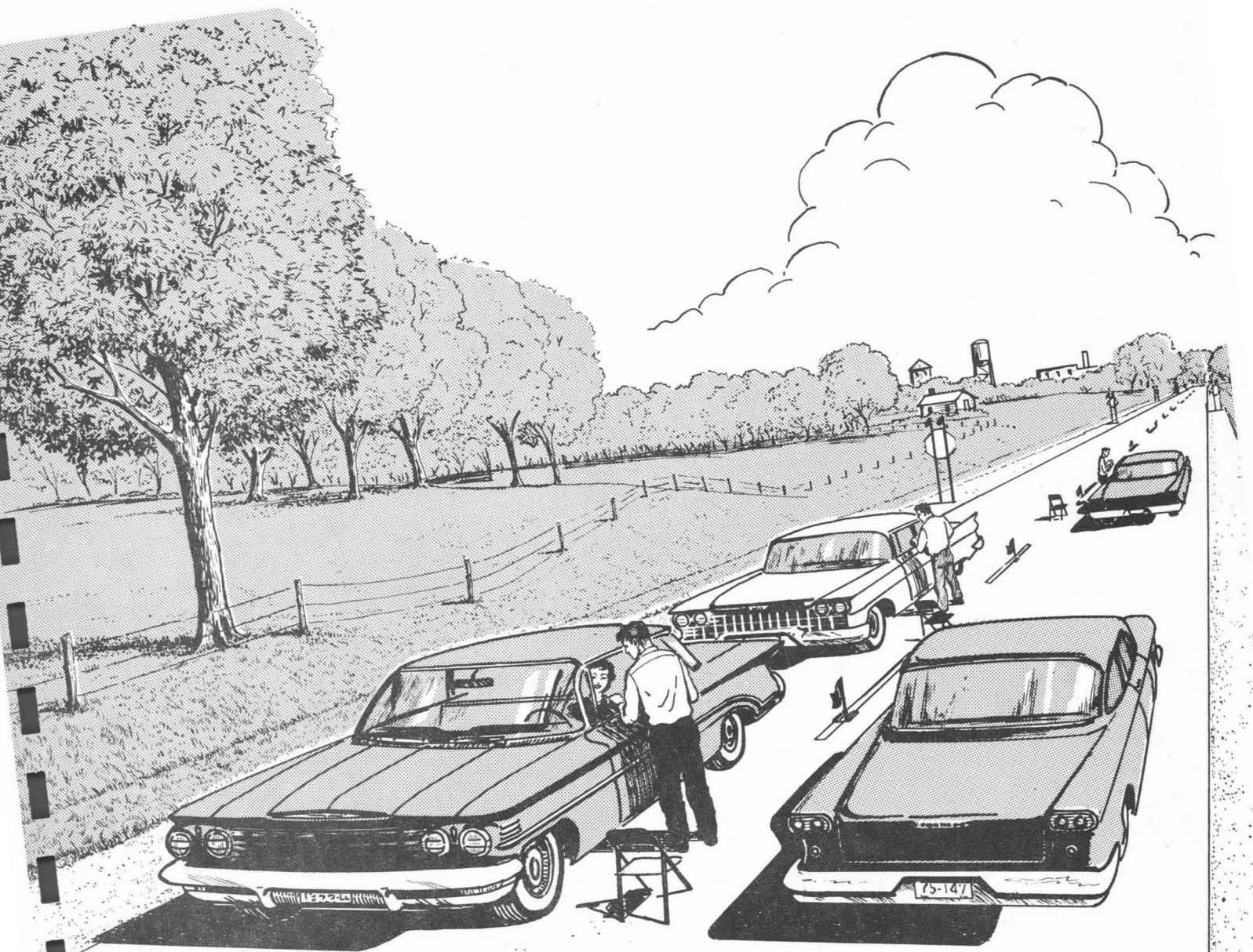




FIGURE 2-3  
STUDY AREA POSITION





*Survey*

*Procedures*

**Part Three**

## THE SURVEY

An external origin and destination traffic survey, of the type conducted in Newton, is designed primarily to determine the origin, destination, and purpose of travel, along with the number and type of all vehicles entering or leaving the study area in a given period of time.

It has been demonstrated that travel is an expression of behavior and as such, tends to be repetitive. It is this repetition which enables the statistician and the highway planner to expand and project current data for the prediction of future needs.

In order to obtain accurate information upon which to base an analysis, it is necessary to interview vehicle drivers at strategically located interview stations. A cordon line composed of interview stations and code stations was located around the perimeter of the study area. Interview stations were located on all major roads entering the study area and all other roads were assigned station code numbers to facilitate the organization of interview data for those through trips which passed through only one interview station. The study area was divided into 22 tracts, and all trips which had either their origin or their destination within the study area were traced to one of these tracts.

Interviewing for the Newton survey was done between the 11th and 21st of August in 1969. All vehicles passing through interview stations during a 15-hour period from 6 a.m. to 9 p.m. were stopped briefly for interviews in which vehicle operators were questioned concerning the origin, destination, and purpose of the trip in progress. In addition, the vehicle type was recorded along with the location where it was normally parked or garaged, the place of registration, direction of travel, and number of occupants.

Mechanical traffic recorders were placed at the location of each interview station and were operated continuously for a period of five weekdays, including the day on which the interviewing was done. Manual vehicle classification counts were also taken and, together with the data provided by the mechanical recorders, were used to expand the interview data to 24-hour average August weekday traffic for 1969.

At the conclusion of the field work, the data pertaining to each trip were coded and punched on tabulating cards. These cards were then sorted and tabulated by machine according to the tract of origin or destination and the station or stations through which each trip passed.

In an external survey of this type, all trips are placed in two main categories composed of "external local trips" and "external through trips." External local trips have only one terminal (which may be either the origin or destination) within the study area and, therefore, pass through only one interview station while enroute to their destination. Trips which have neither origin nor destination within the study area, but must pass through it enroute to another destination, are classified as external through trips. Trips in this category must cross the cordon line at least twice while enroute to their destination.

Traffic flow charts indicating trip termini by tract of origin or destination are included in this report along with a series of desire line charts showing desired routes of travel in straight lines between interview stations and internal tracts.

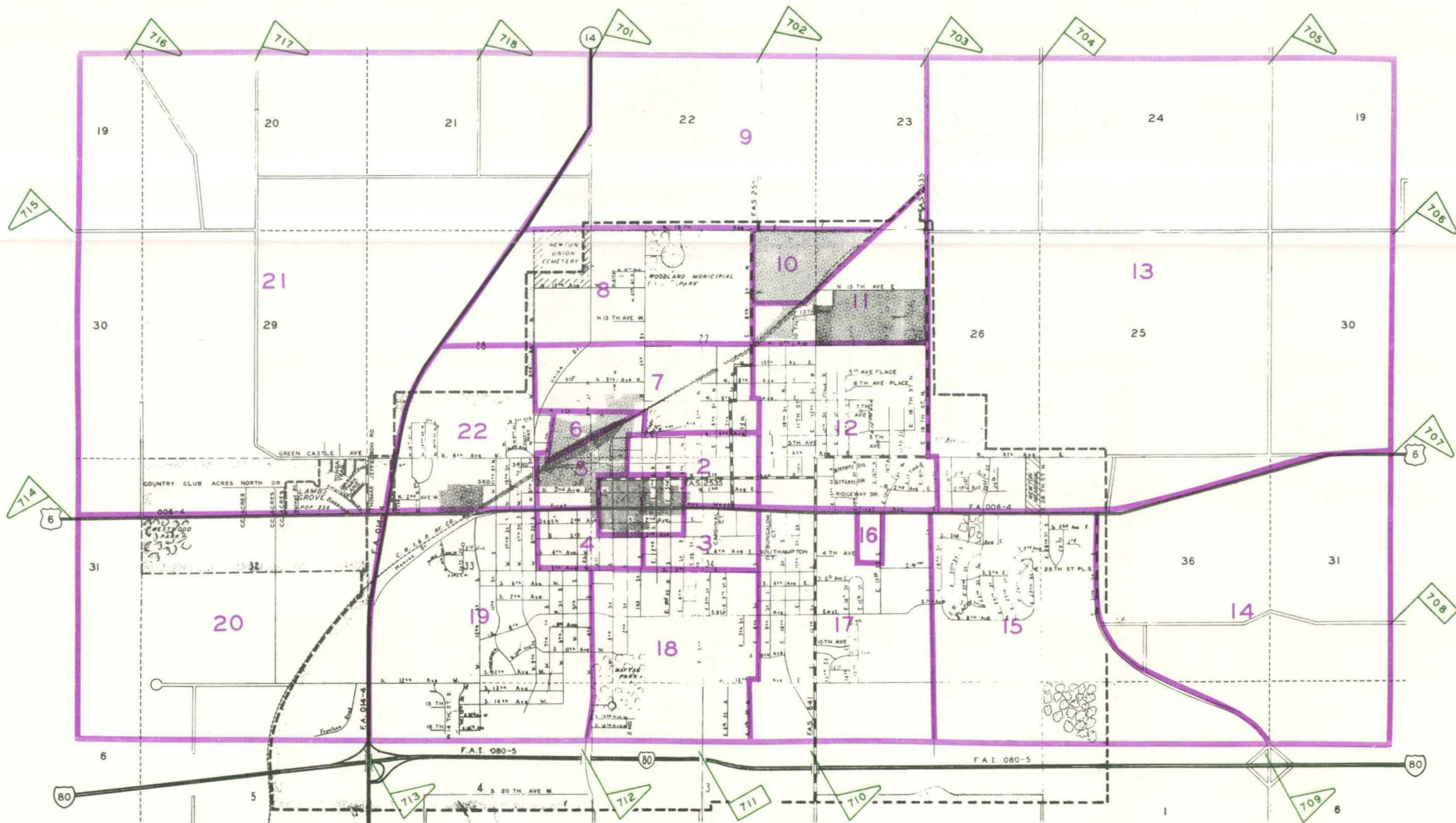




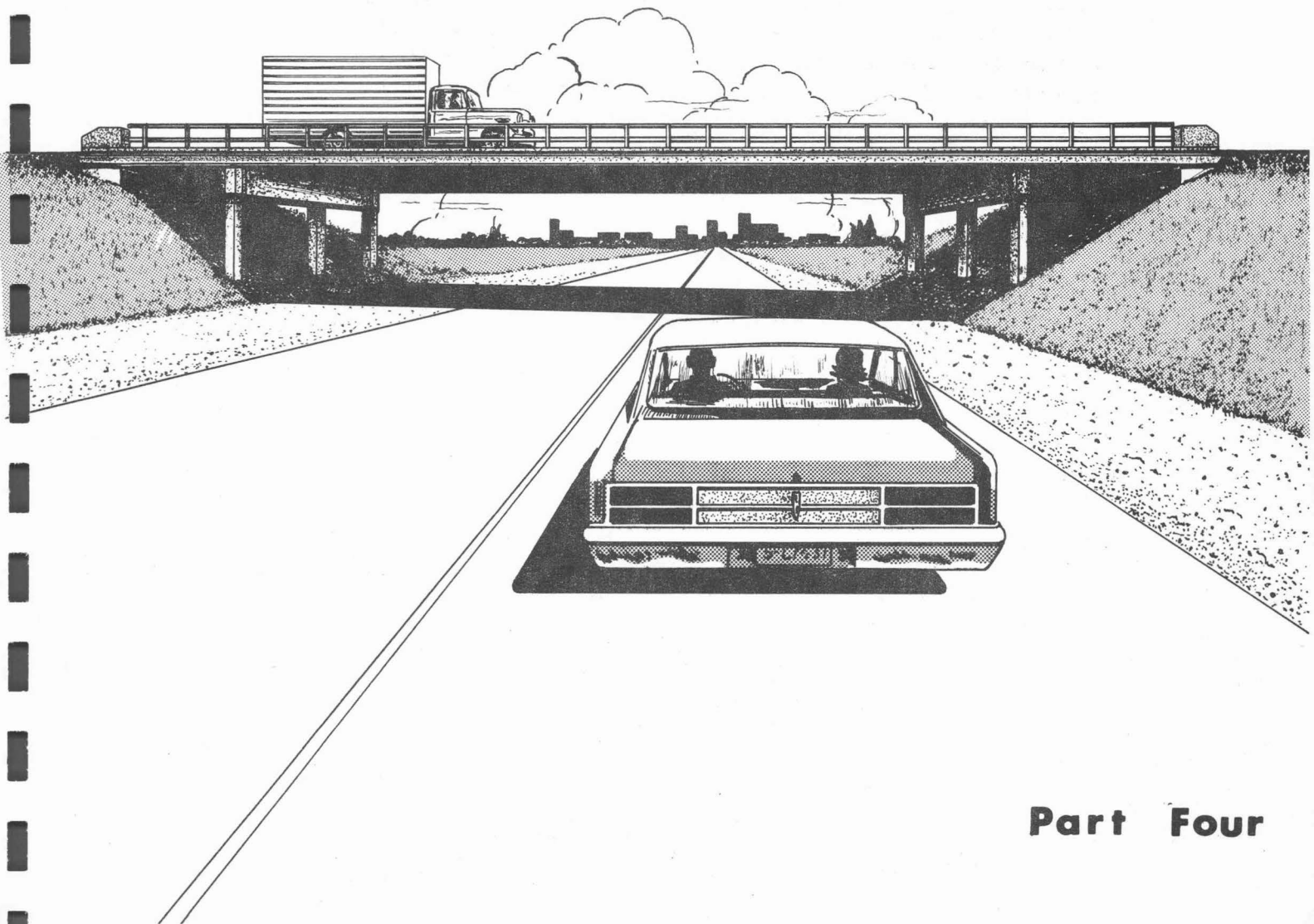


FIGURE 3-1  
TRACT MAP OF THE  
NEWTON STUDY AREA  
AUGUST 1969

**LEGEND**

- TRACT NUMBER 2
- TRACT BOUNDARY LINE 
- CORPORATION LINE 
- INTERVIEW STATION LOCATION 
- CODE STATION LOCATION 

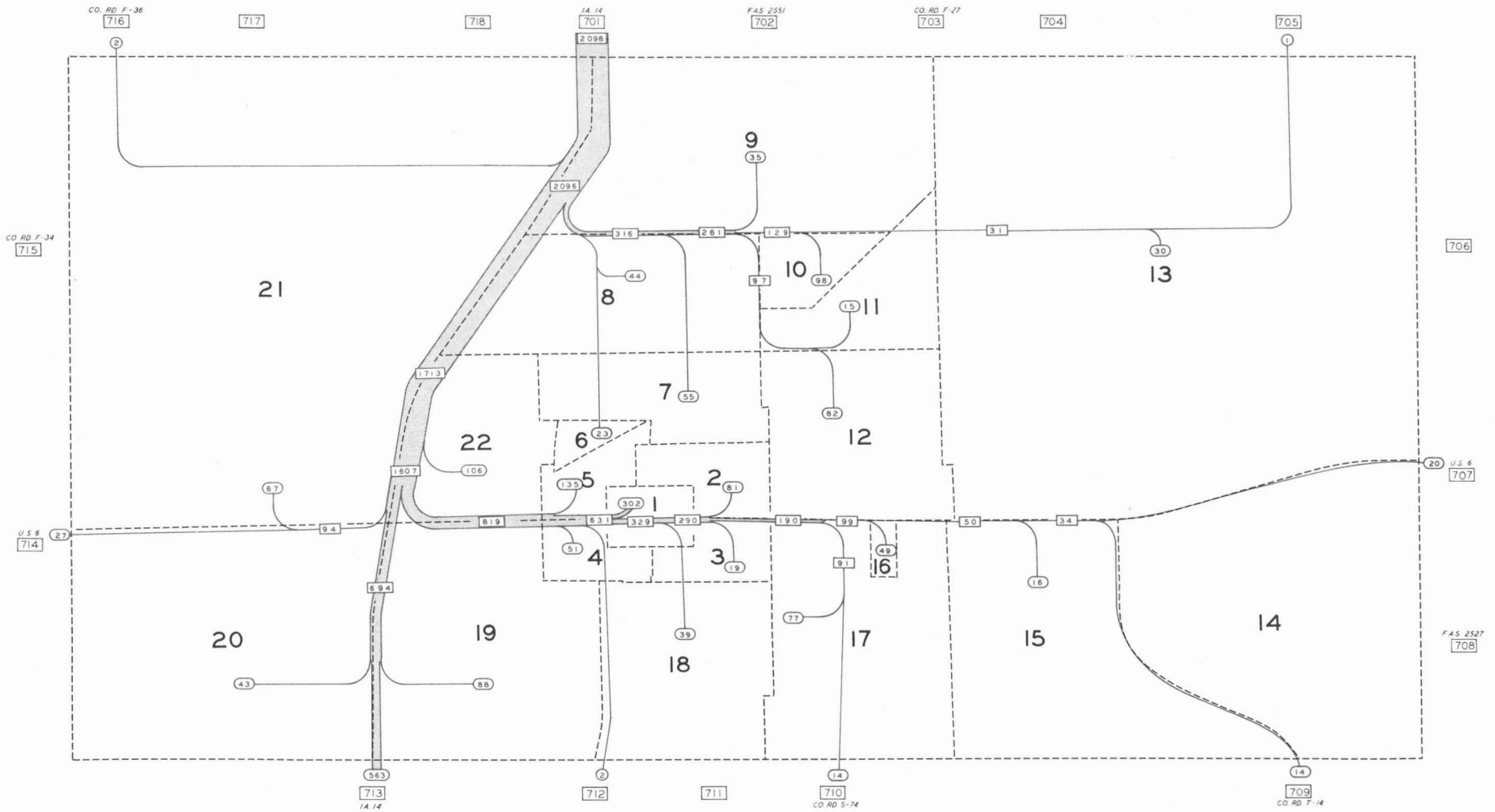
# Traffic Movements



**Part Four**

### TRAFFIC FLOW CHARTS

The following traffic flow charts illustrate the internal dispersion of trips between points of origin and/or destination through the stations indicated. These charts are not intended to show exact routes, but rather to show trip volume by tract of origin or destination and the number of trips passing through each external interview station. Trip origins and destinations are not differentiated and the tract or station totals shown include both origins and destinations.

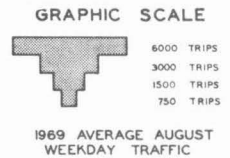


LEGEND  
 TRACT BOUNDARY LINE ———  
 CORPORATION LINE - - - - -



FIGURE 4-1  
 INTERNAL DISPERSION OF ALL  
 VEHICULAR TRIPS PASSING THROUGH  
 STATION 701 - IOWA 14 NORTH  
 OF THE  
 NEWTON STUDY AREA

(ALL TRIPS BY DRIVERS OF AUTOS, TRUCKS, TAXIS, AND BUSES)





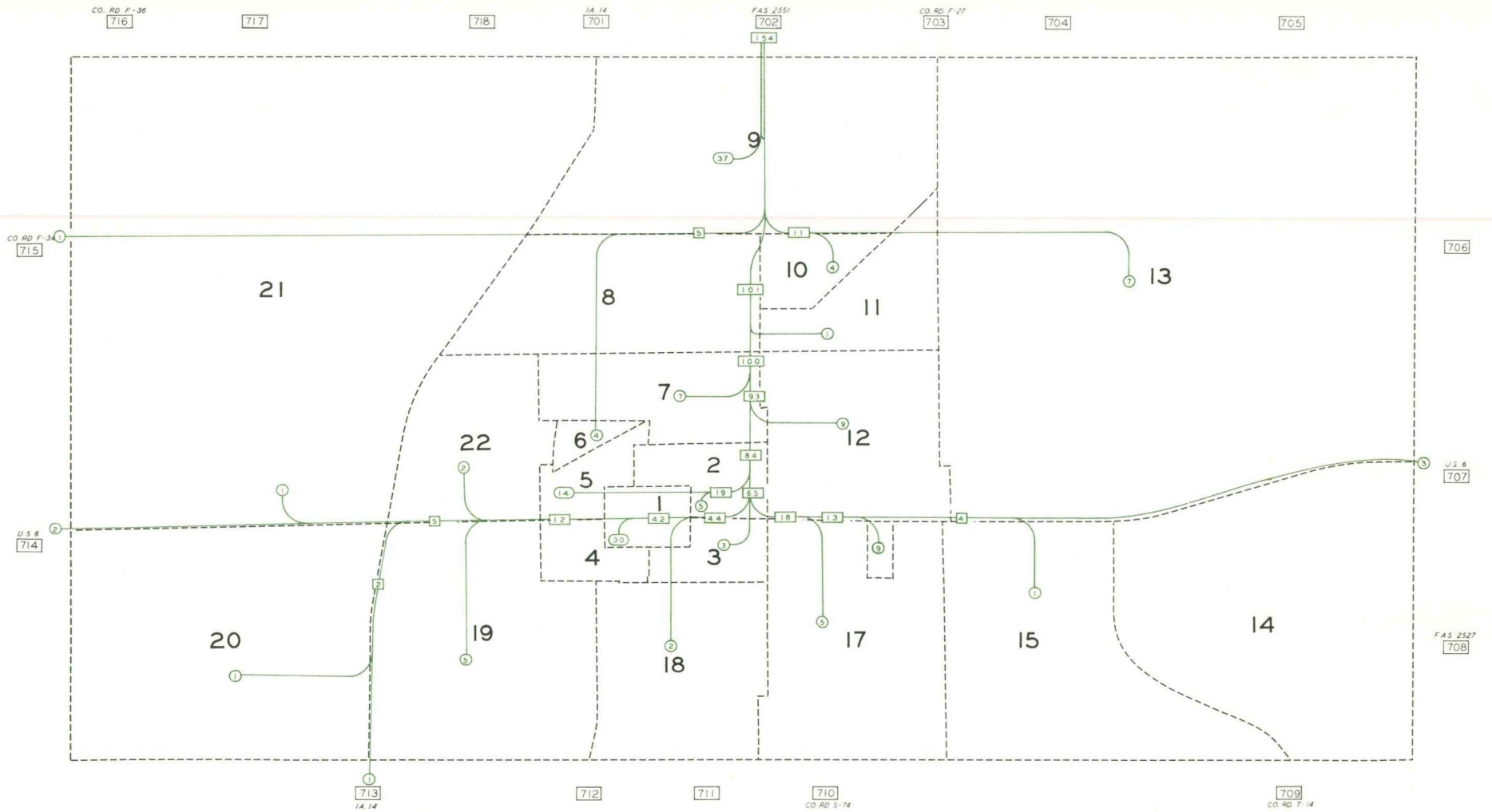
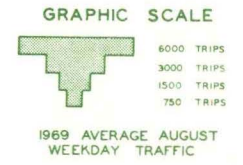


FIGURE 4-2

INTERNAL DISPERSION OF ALL  
 VEHICULAR TRIPS PASSING THROUGH  
 STATION 702-F.A.S. 2551 NORTH  
 OF THE  
 NEWTON STUDY AREA

(ALL TRIPS BY DRIVERS OF AUTOS, TRUCKS, TAXIS, AND BUSES)



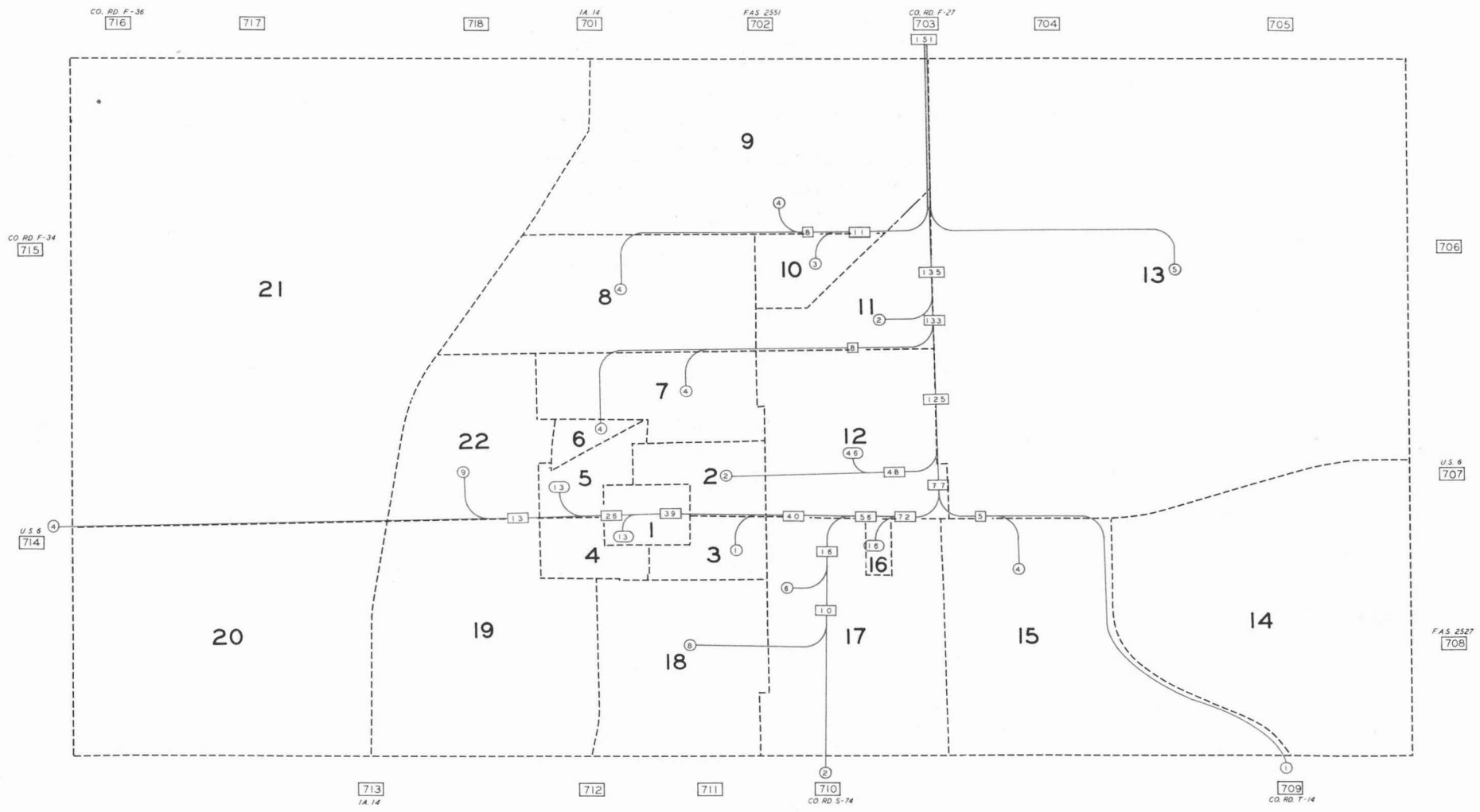
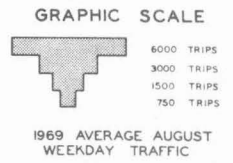
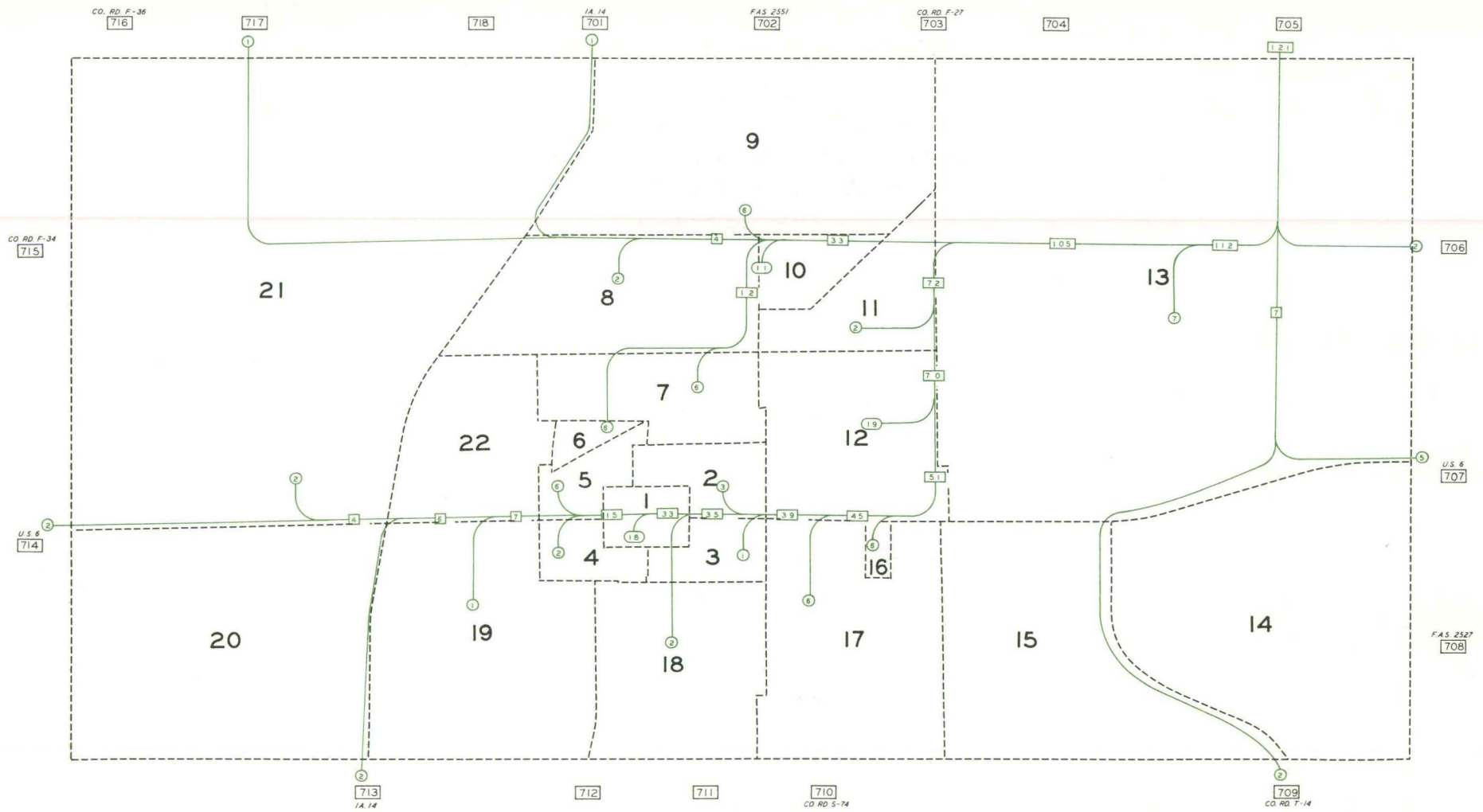


FIGURE 4-3  
 INTERNAL DISPERSION OF ALL  
 VEHICULAR TRIPS PASSING THROUGH  
 STATION 703 - CO. RD. F - 27 NORTH  
 OF THE  
 NEWTON STUDY AREA  
 (ALL TRIPS BY DRIVERS OF AUTOS, TRUCKS, TAXIS, AND BUSES)





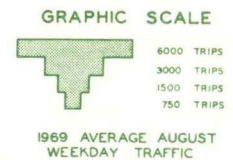
LEGEND  
 TRACT BOUNDARY LINE ———  
 CORPORATION LINE - - - - -



FIGURE 4-4

INTERNAL DISPERSION OF ALL  
 VEHICULAR TRIPS PASSING THROUGH  
 STATION 705 - LOCAL ROAD NORTH  
 OF THE  
 NEWTON STUDY AREA

(ALL TRIPS BY DRIVERS OF AUTOS, TRUCKS, TAXIS, AND BUSES)



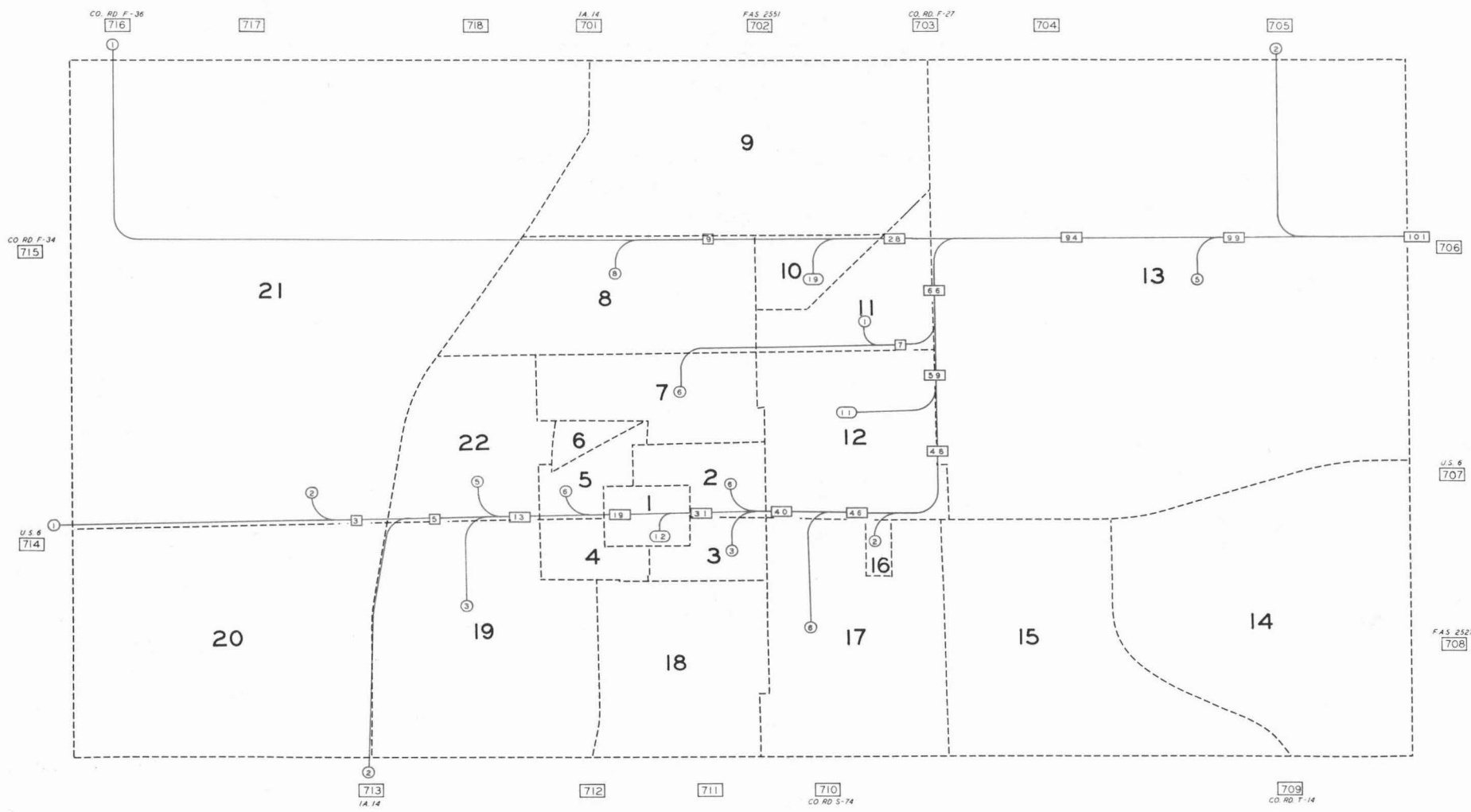


FIGURE 4-5  
 INTERNAL DISPERSION OF ALL  
 VEHICULAR TRIPS PASSING THROUGH  
 STATION 706-19 TH AVENUE EAST  
 OF THE  
 NEWTON STUDY AREA  
 (ALL TRIPS BY DRIVERS OF AUTOS, TRUCKS, TAXIS, AND BUSES)

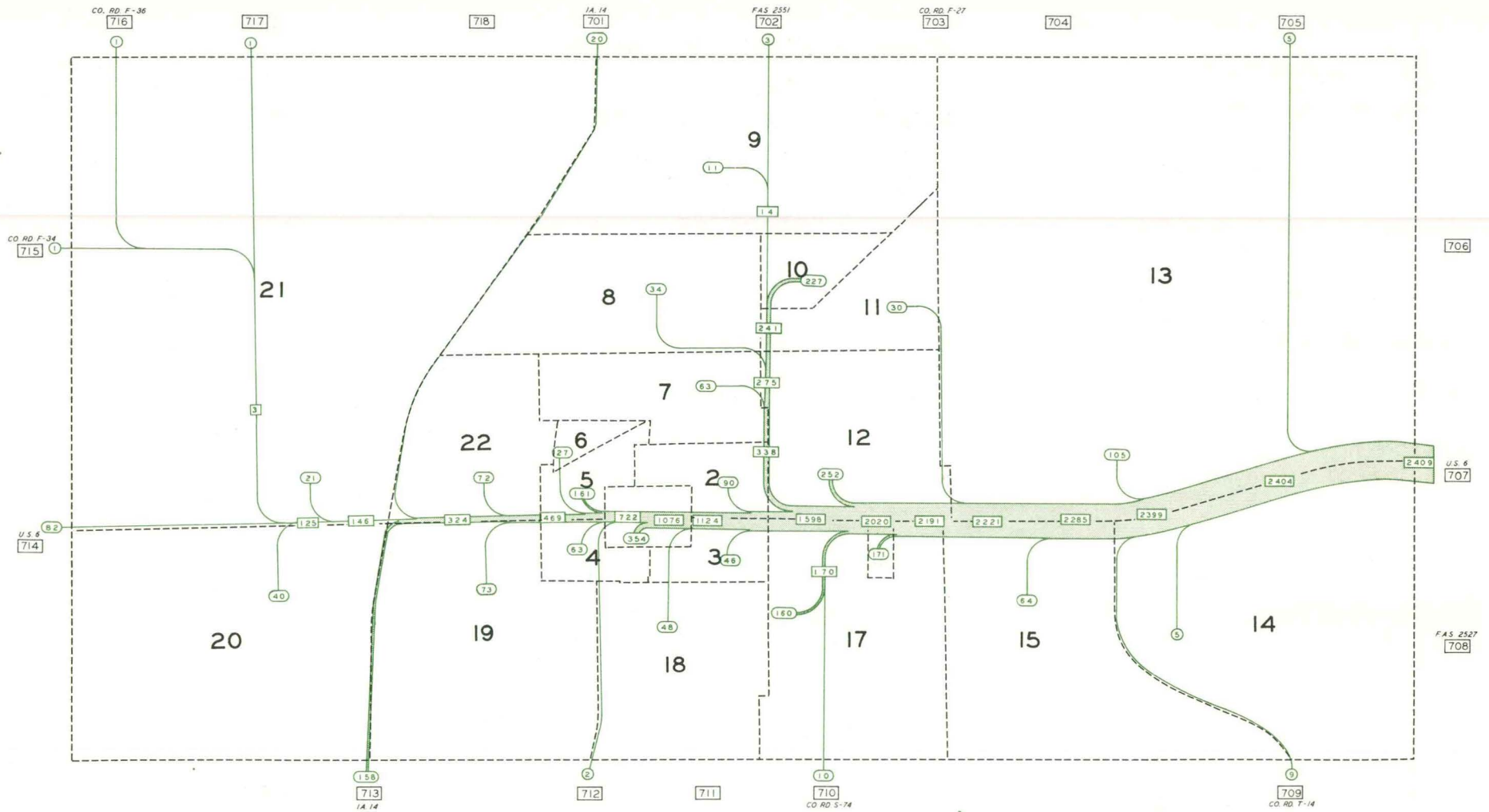
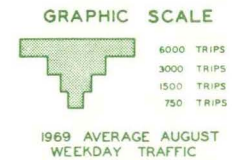
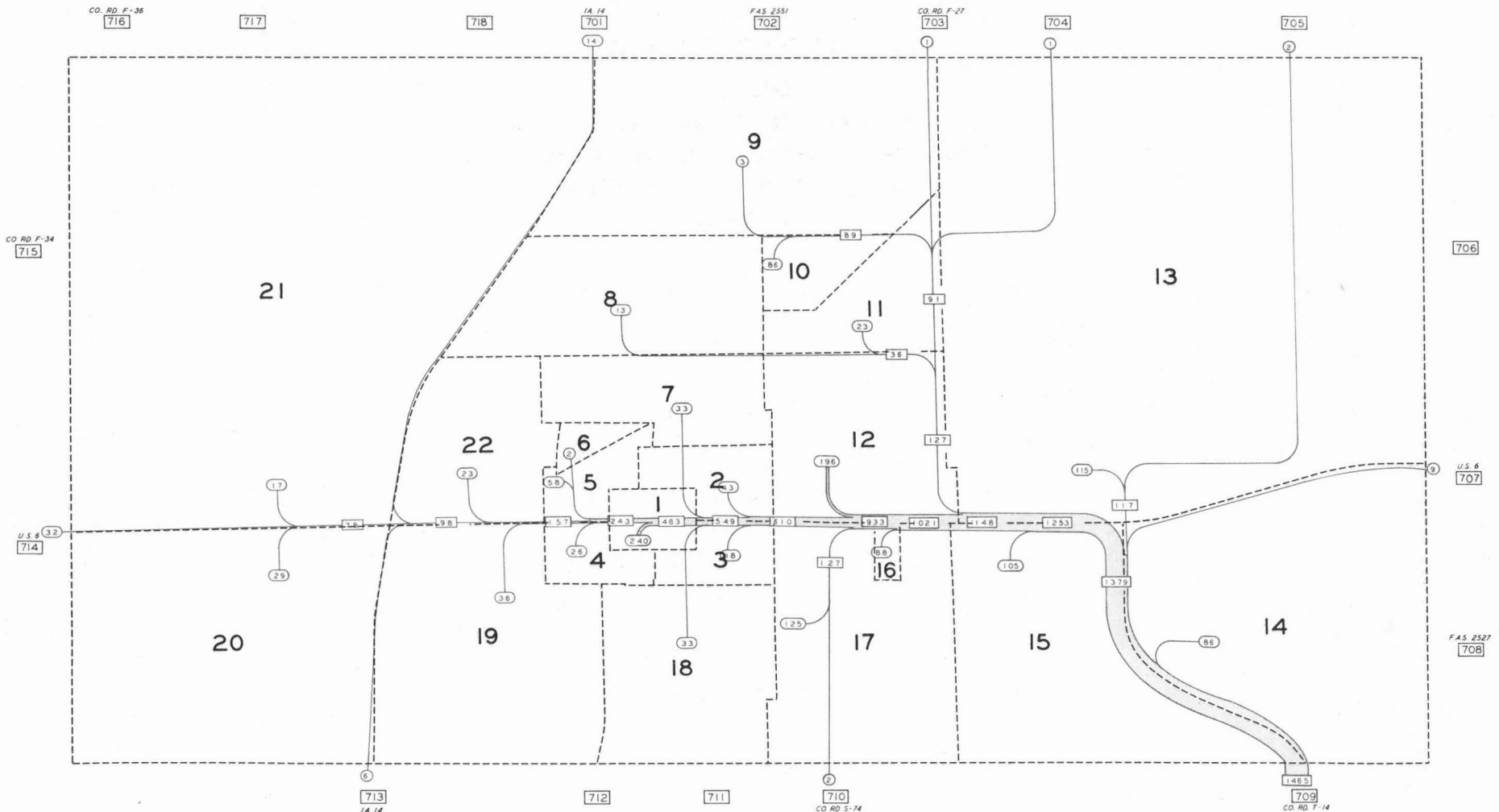


FIGURE 4-6

INTERNAL DISPERSION OF ALL  
 VEHICULAR TRIPS PASSING THROUGH  
 STATION 707 - U.S. 6 EAST  
 OF THE  
 NEWTON STUDY AREA

(ALL TRIPS BY DRIVERS OF AUTOS, TRUCKS, TAXIS, AND BUSES)

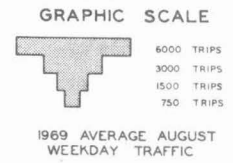


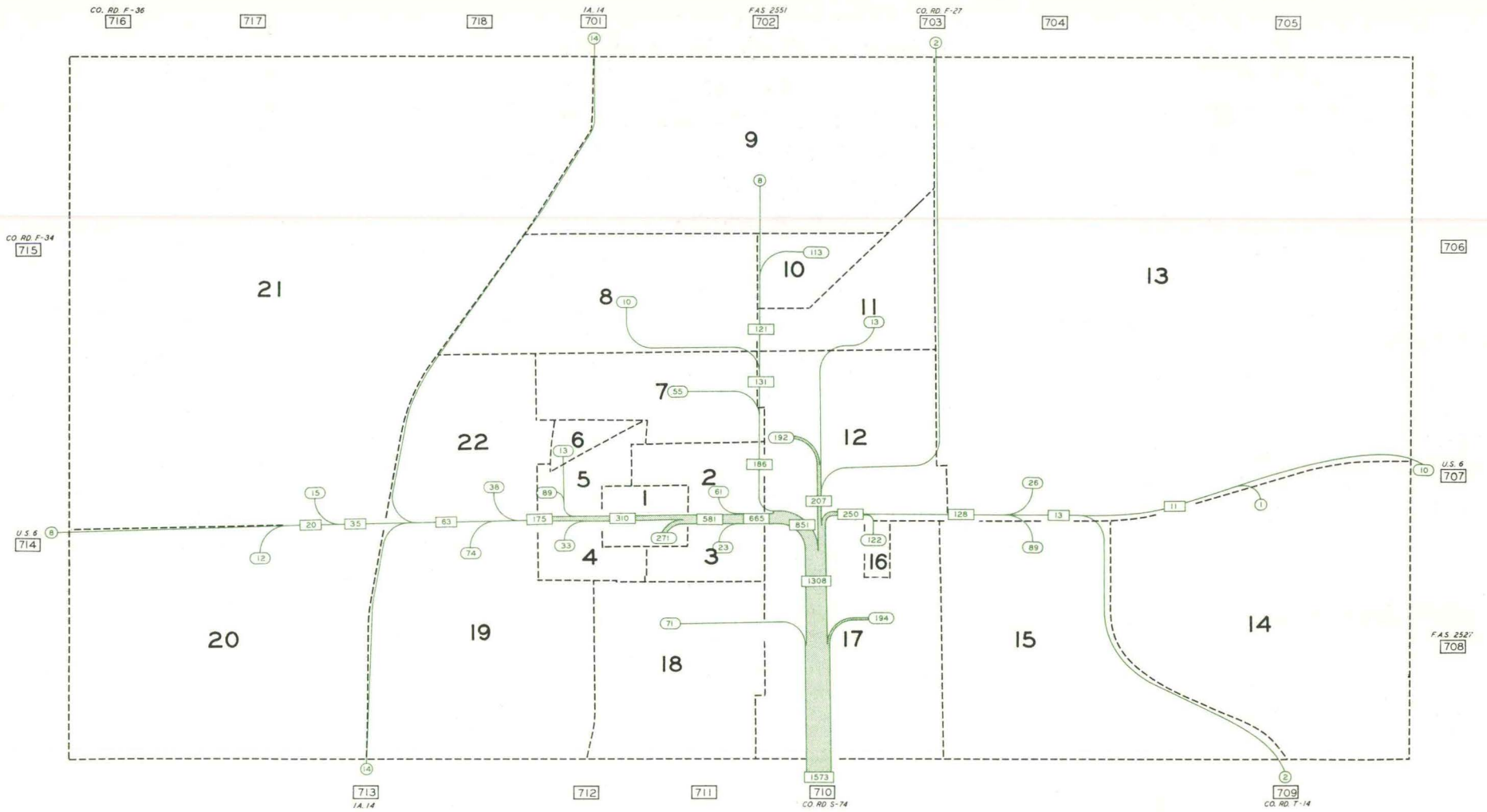


LEGEND  
 TRACT BOUNDARY LINE ———  
 CORPORATION LINE - - - - -



FIGURE 4-7  
 INTERNAL DISPERSION OF ALL  
 VEHICULAR TRIPS PASSING THROUGH  
 STATION 709 - CO. RD. T-14 SOUTH  
 OF THE  
 NEWTON STUDY AREA  
 (ALL TRIPS BY DRIVERS OF AUTOS, TRUCKS, TAXIS, AND BUSES)





LEGEND  
 TRACT BOUNDARY LINE ———  
 CORPORATION LINE - - - - -



FIGURE 4-3

INTERNAL DISPERSION OF ALL  
 VEHICULAR TRIPS PASSING THROUGH  
 STATION 710-CO. RD. S-74 SOUTH  
 OF THE

NEWTON STUDY AREA

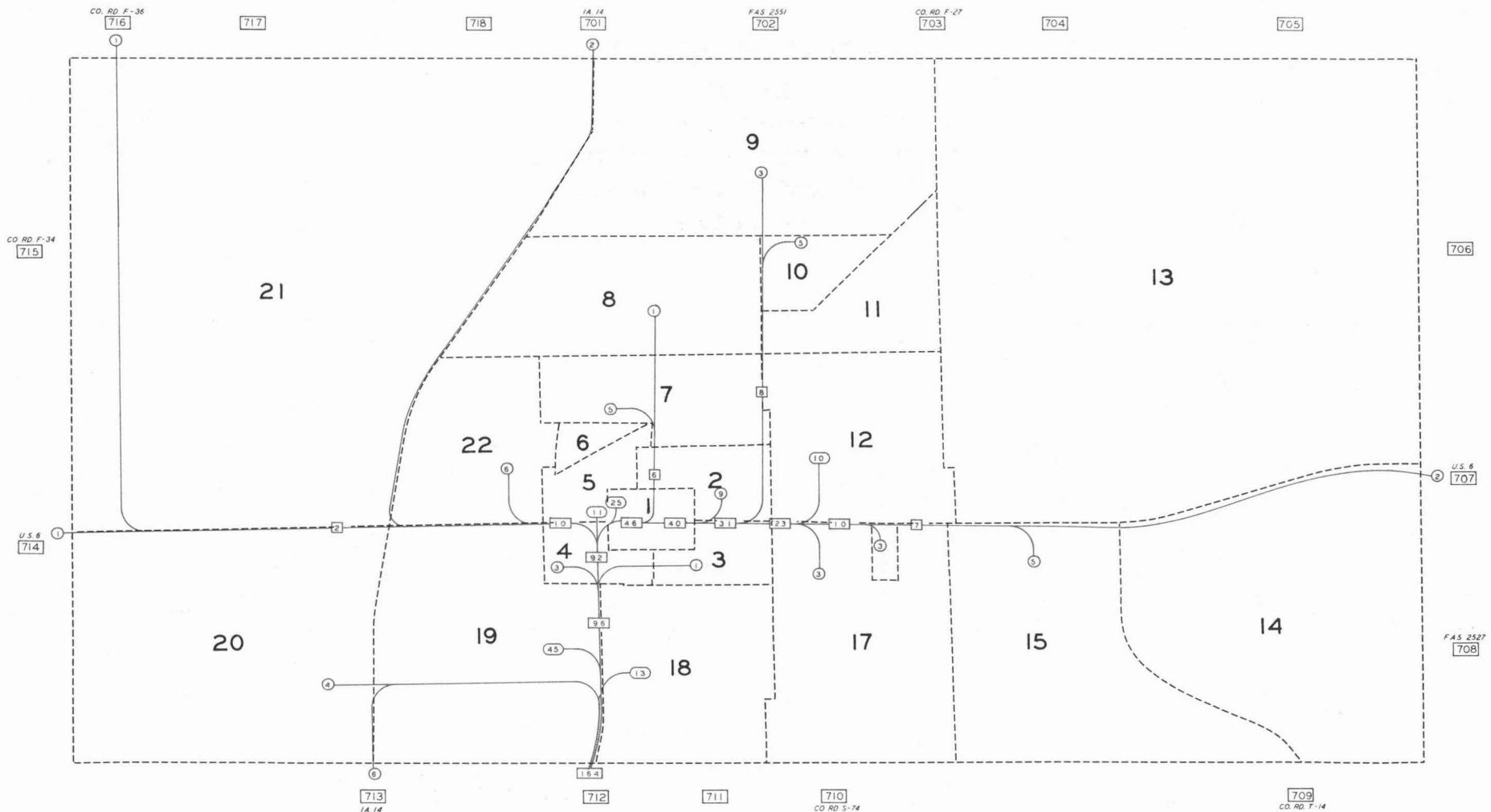
(ALL TRIPS BY DRIVERS OF AUTOS, TRUCKS, TAXIS, AND BUSES)

GRAPHIC SCALE



6000 TRIPS  
 3000 TRIPS  
 1500 TRIPS  
 750 TRIPS

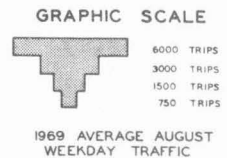
1969 AVERAGE AUGUST  
 WEEKDAY TRAFFIC



LEGEND  
 TRACT BOUNDARY LINE ———  
 CORPORATION LINE - - - - -

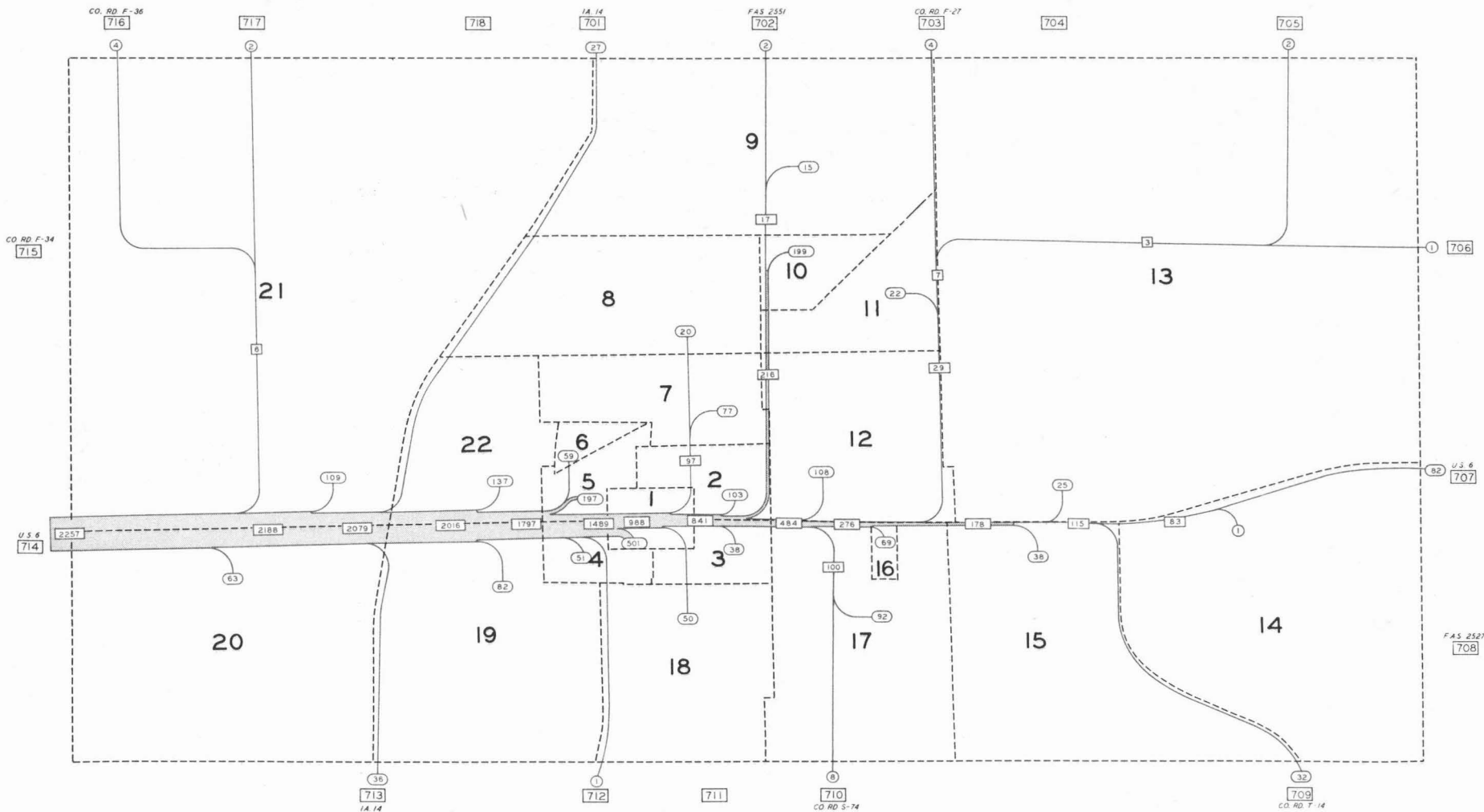


FIGURE 4-9  
 INTERNAL DISPERSION OF ALL  
 VEHICULAR TRIPS PASSING THROUGH  
 STATION 712 - WEST 4 TH ST. SOUTH  
 OF THE  
 NEWTON STUDY AREA  
 (ALL TRIPS BY DRIVERS OF AUTOS, TRUCKS, TAXIS, AND BUSES)





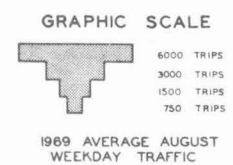


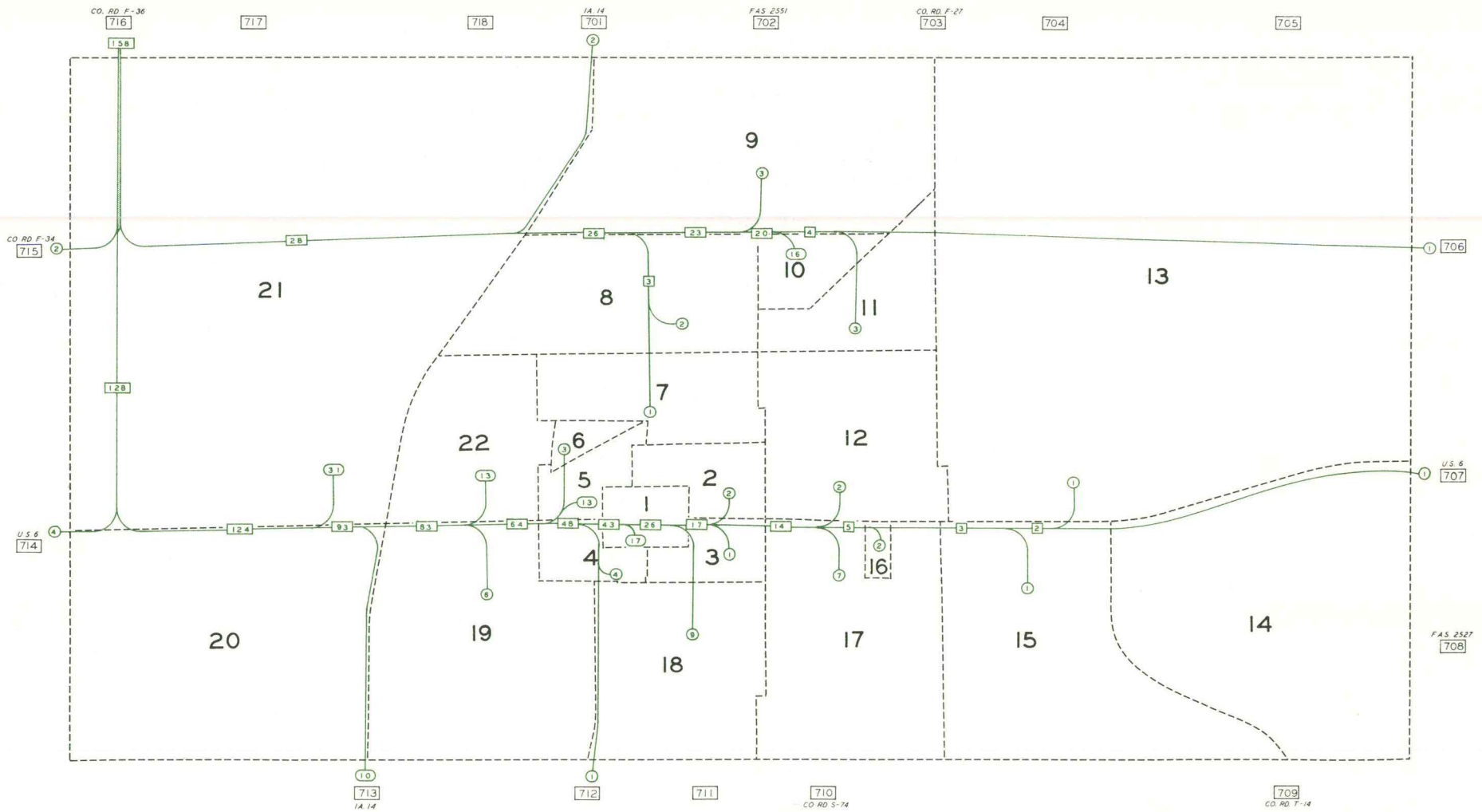


LEGEND  
 TRACT BOUNDARY LINE -----  
 CORPORATION LINE - - - - -



FIGURE 4-11  
 INTERNAL DISPERSION OF ALL  
 VEHICULAR TRIPS PASSING THROUGH  
 STATION 714-U.S. 6 WEST  
 OF THE  
 NEWTON STUDY AREA  
 (ALL TRIPS BY DRIVERS OF AUTOS, TRUCKS, TAXIS, AND BUSES)





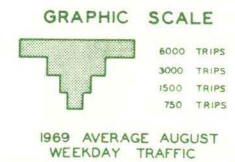
LEGEND  
 TRACT BOUNDARY LINE ———  
 CORPORATION LINE - - - - -

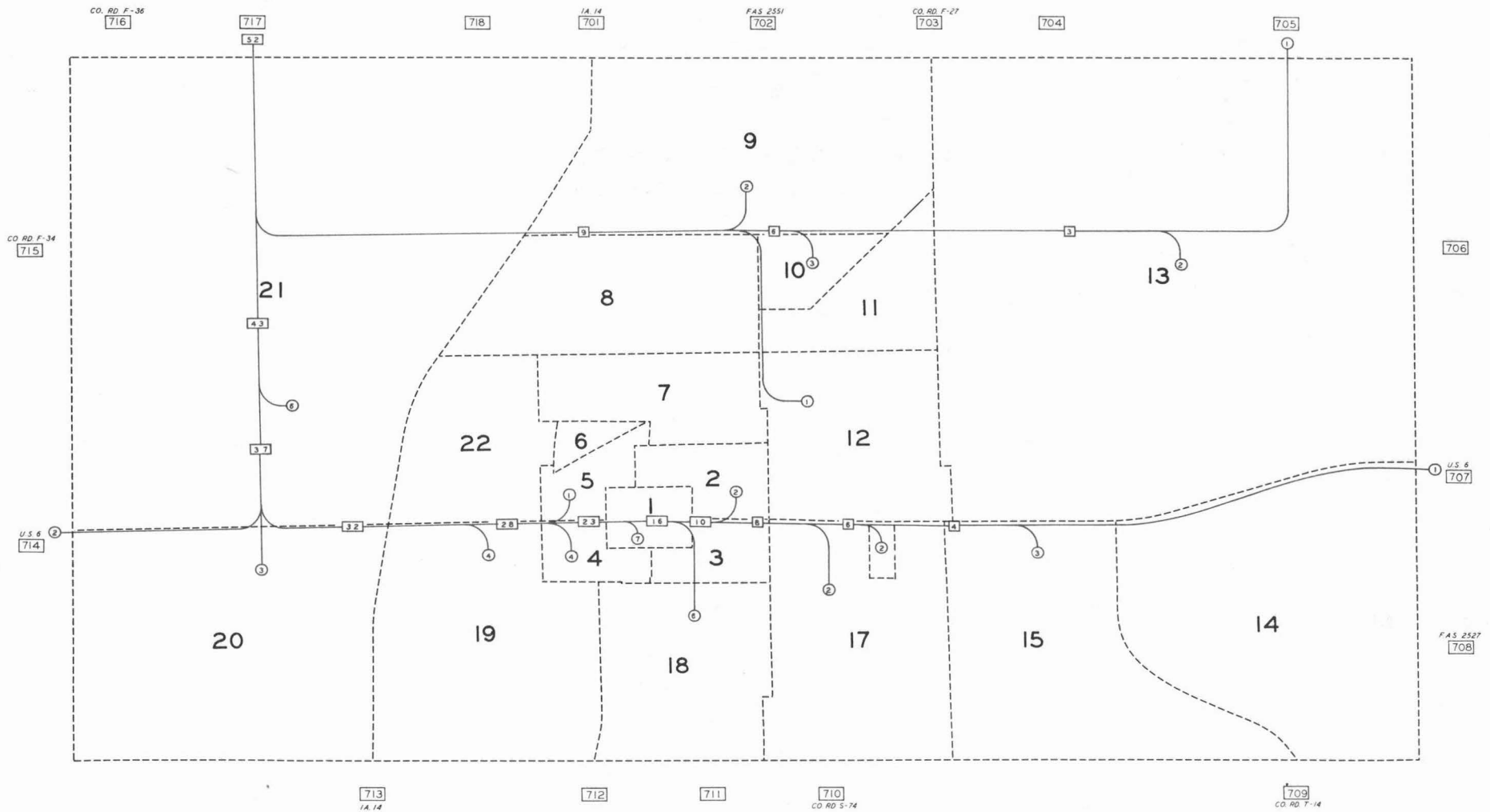


FIGURE 4 12

INTERNAL DISPERSION OF ALL  
 VEHICULAR TRIPS PASSING THROUGH  
 STATION 716-CO. RD. F-36 NORTH  
 OF THE  
 NEWTON STUDY AREA

(ALL TRIPS BY DRIVERS OF AUTOS, TRUCKS, TAXIS, AND BUSES)





LEGEND  
 TRACT BOUNDARY LINE ———  
 CORPORATION LINE - - - - -



FIGURE 4-13  
 INTERNAL DISPERSION OF ALL  
 VEHICULAR TRIPS PASSING THROUGH  
 STATION 717 - LOCAL RD. NORTH  
 OF THE  
 NEWTON STUDY AREA

(ALL TRIPS BY DRIVERS OF AUTOS, TRUCKS, TAXIS, AND BUSES)

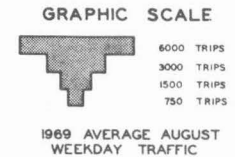
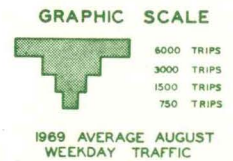




FIGURE 4-14

INTERNAL DISPERSION OF ALL  
 VEHICULAR TRIPS PASSING THROUGH  
 STATION 718-LOCAL RD. NORTH  
 OF THE  
 NEWTON STUDY AREA

(ALL TRIPS BY DRIVERS OF AUTOS, TRUCKS, TAXIS, AND BUSES)



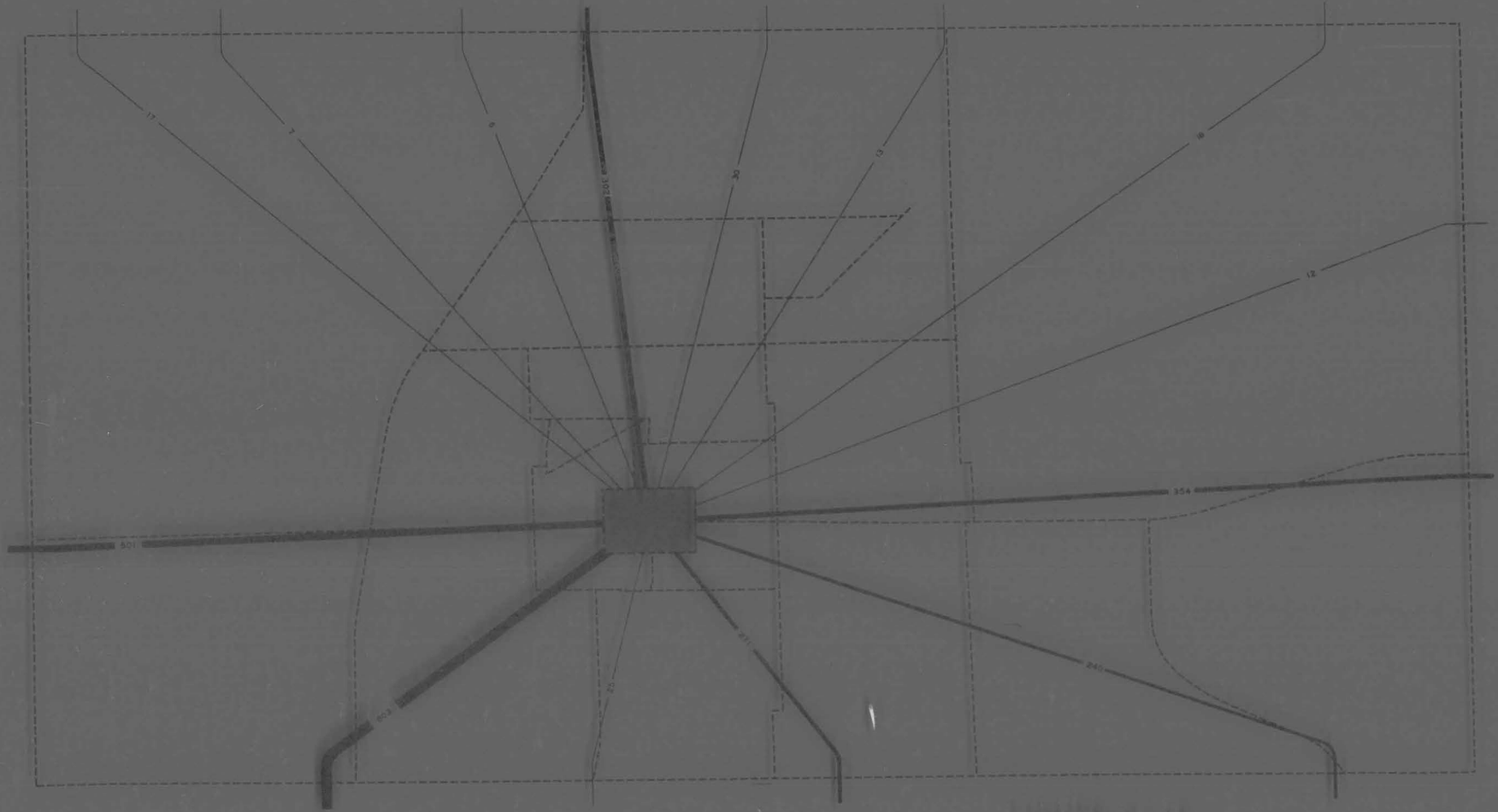


FIGURE 4-15

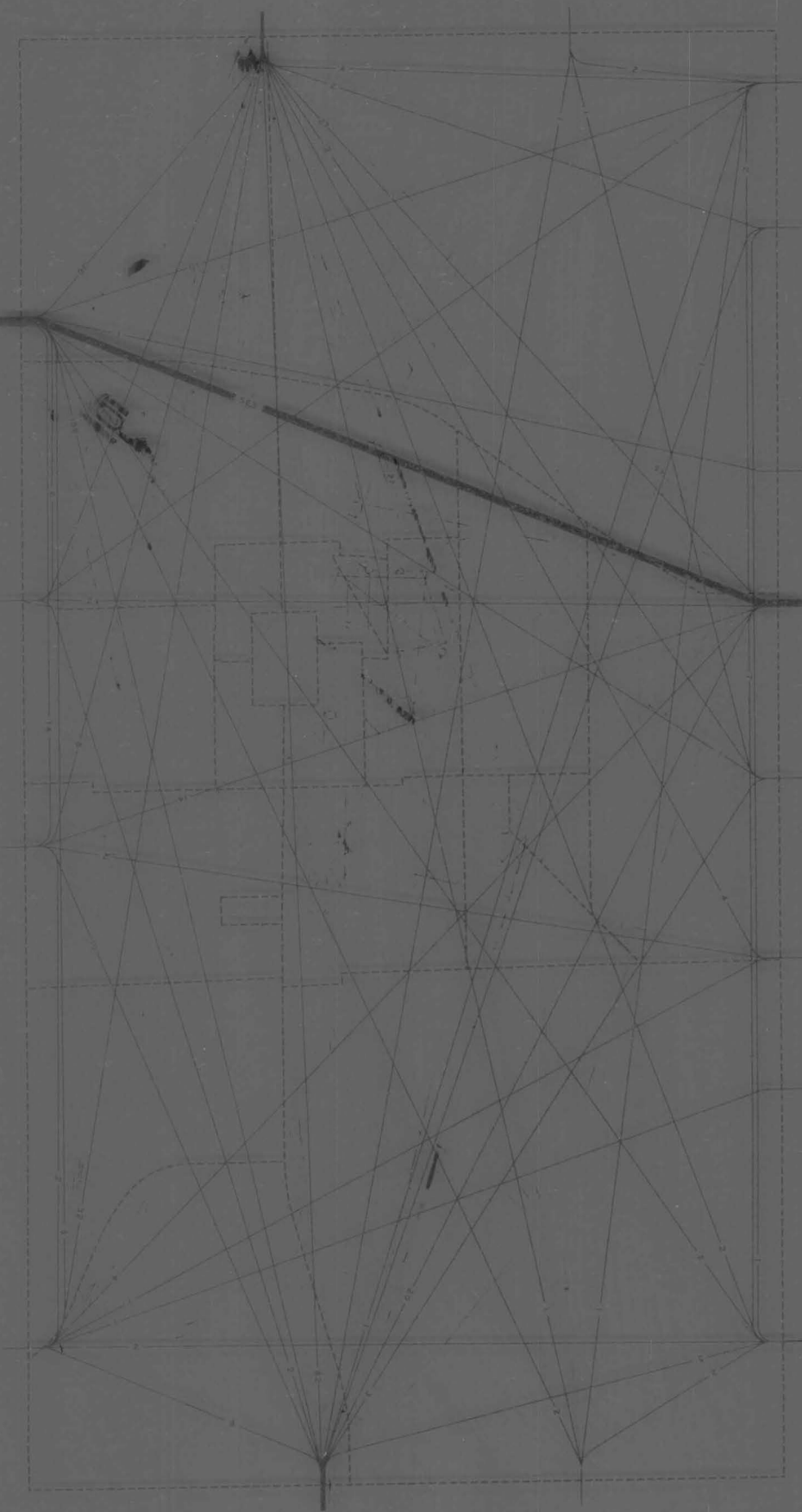


FIGURE 4-16

EXTERNAL ENTRANCES

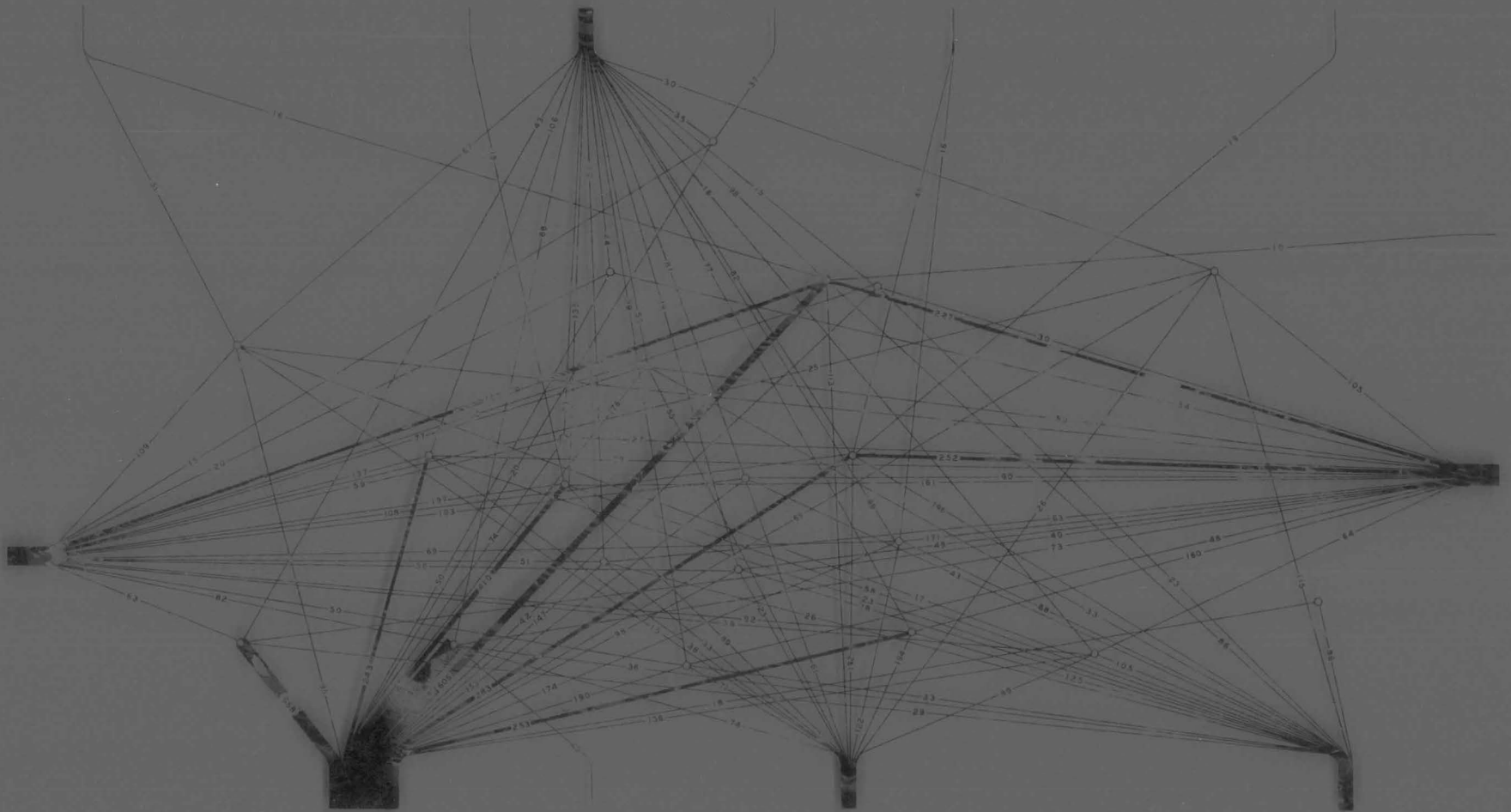
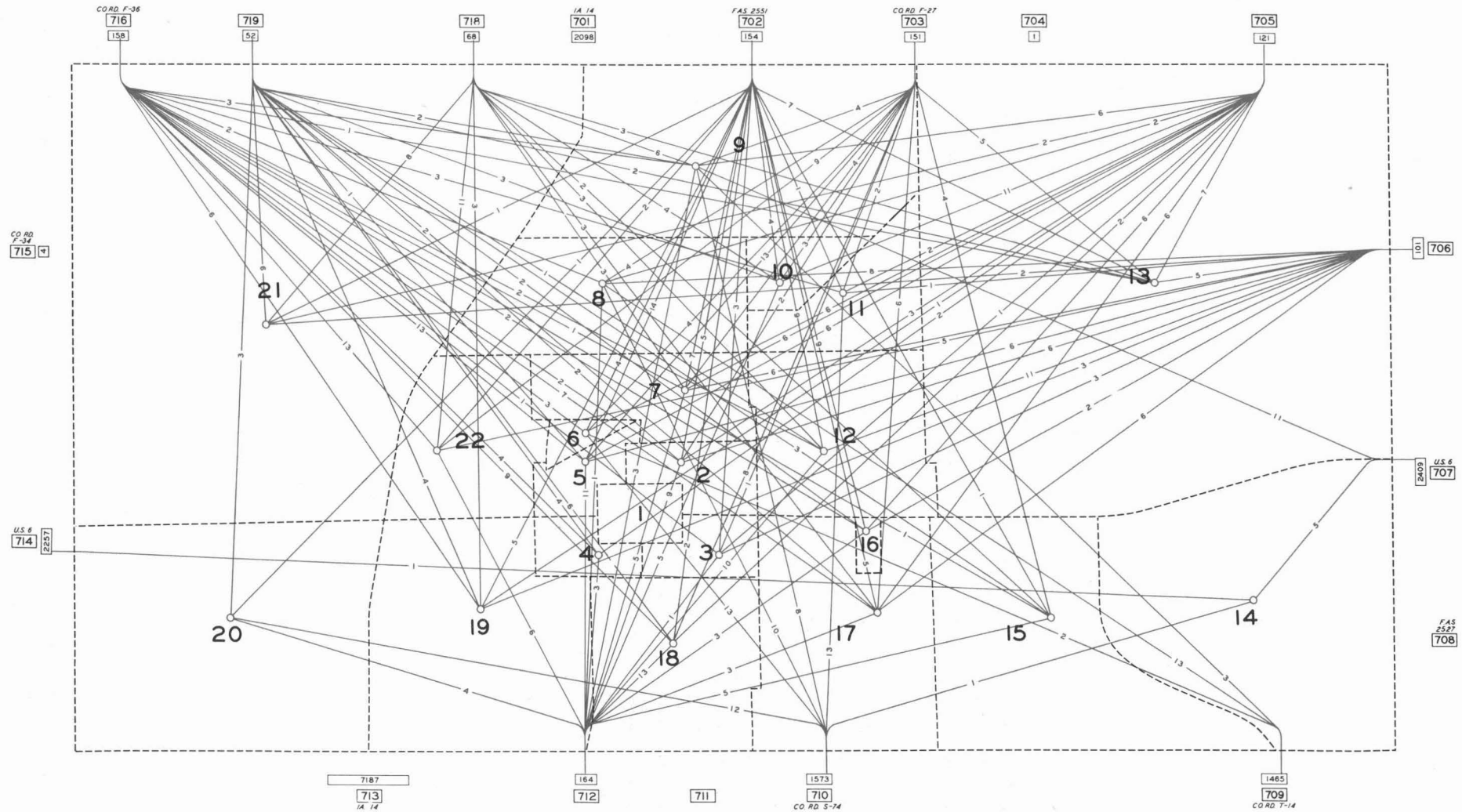


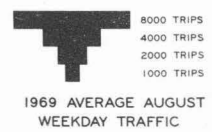
FIGURE 4-17

INTERNAL TRACTS - VOLUMES OF 14 AND UP





**LEGEND**  
 TRACT BOUNDARY LINE - - - - -  
 CORPORATION LINE - - - - -



**FIGURE 4-18**  
 DESIRE LINES OF TRAVEL OF TRIPS  
 TO OR FROM  
 EXTERNAL ENTRANCES OF THE  
 NEWTON STUDY AREA  
 AND  
 INTERNAL TRACTS - VOLUMES OF 1 TO 14

#### EXTERNAL TRIP TERMINI

Table 4-1 on the adjoining page shows a tabulation of the number and percent of those trips which had termini in Jasper County, rural areas adjacent to the study area, other counties in Iowa, and other states.

The following traffic flow charts illustrate the data shown in Table 4-1 and point out the Iowa termini of all trips which passed through the Newton Study Area at the time of the survey. Figures 4-19 and 4-20 show the termini of those trips which used primary roads to enter or leave the study area. Figures 4-21 and 4-22 show the termini of those trips which used secondary roads to enter or leave the study area. All routes shown are approximate and should be interpreted as such.

TABLE 4-1  
 SUMMARY OF TRIPS ENTERING OR LEAVING  
 THE NEWTON STUDY AREA  
 1969 AVERAGE AUGUST WEEKDAY TRAFFIC

Station Location  Origin or Destination	Iowa 14 North		F.A.S. 2551 North		County Road F-27 North		Local Road North		N. 19th Ave. East		U.S. 6 East		County Road T-14 South		County Road S-74 South		West 4th St. South		Iowa 14 South		U.S. 6 West		County Road F-36 North		Local Road North		Local Road North		
	Station 701		Station 702		Station 703		Station 705		Station 706		Station 707		Station 709		Station 710		Station 712		Station 713		Station 714		Station 716		Station 717		Station 718		
	Vol.	%	Vol.	%	Vol.	%	Vol.	%	Vol.	%	Vol.	%	Vol.	%	Vol.	%	Vol.	%	Vol.	%	Vol.	%	Vol.	%	Vol.	%	Vol.	%	Vol.
Baxter	630	30.03	3	1.95															2	.03	33	1.46	6	3.80	9	17.31	3	4.41	
Colfax													26	1.78					454	6.32	829	36.73							
Ira																			40	1.77	4	2.53							
Kellogg					7	4.63	5	4.13	53	52.48	945	39.23	44	3.00					36	.50									
Killduff											14	.58	90	6.14	5	.32			9	.13									
Lynnville											9	.37	94	6.42	1	.06			7	.10									
Mingo	7	.33											4	.27					56	.78	102	4.52	7	4.43	1	1.92			
Monroe													7	.48	167	10.62	7	4.27											
Newburg	5	.24									1	.04							671	9.33									
Prairie City													5	.34	2	.13			90	1.25	135	5.98							
Reasnor															447	28.42			20	.28									
Sully											11	.46	205	13.99	9	.57	2	1.22	44	.61									
Valeria																			8	.36									
Rock Creek State Park									3	2.97	140	5.81							2	.03									
Total to Towns	642	30.60	3	1.95	7	4.63	5	4.13	56	55.45	1,120	46.49	475	32.42	631	40.12	9	5.49	1,391	19.36	1,147	50.82	17	10.76	10	19.23	3	4.41	
Rural Jasper County	450	21.45	147	95.45	141	93.38	113	93.39	41	40.59	293	12.16	279	19.04	703	44.69	152	92.68	791	11.00	594	26.32	139	87.97	41	76.85	65	95.59	
Other Counties	960	45.76	4	2.60	3	1.99	3	2.48	4	3.96	964	40.02	518	35.36	236	15.00	3	1.83	4,184	58.22	488	21.62	2	1.27	1	1.92	--	--	
Out of State	46	2.19	--	--	--	--	--	--	--	--	32	1.33	193	13.18	3	.19	--	--	821	11.42	28	1.24	--	--	--	--	--	--	
Grand Total	2,098	100.00	154	100.00	151	100.00	121	100.00	101	100.00	2,409	100.00	1,465	100.00	1,573	100.00	164	100.00	7,187	100.00	2,257	100.00	158	100.00	52	100.00	68	100.00	

**FIGURE 4-19**  
**DISPERSION OF EXTERNAL TRIPS**  
**USING PRIMARY ROADS BETWEEN THE NEWTON STUDY AREA**  
**AND POINTS IN IOWA BEYOND JASPER COUNTY**

ALL TRIPS BY DRIVERS OF AUTOS, TRUCKS, TAXIS, AND BUSES

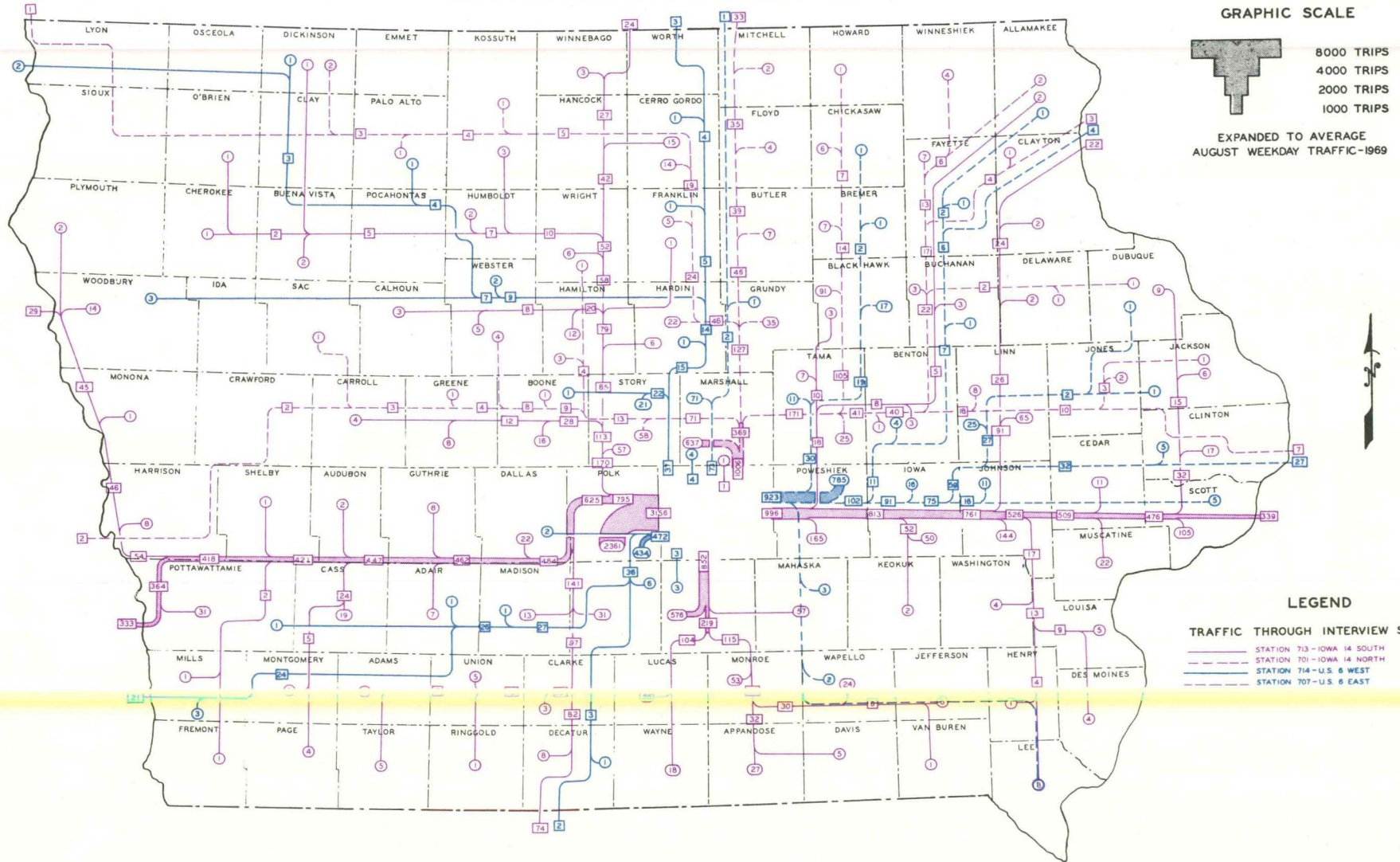




FIGURE 4-21  
 DISPERSION OF EXTERNAL TRIPS  
 USING SECONDARY ROADS BETWEEN THE NEWTON STUDY AREA  
 AND POINTS IN IOWA BEYOND JASPER COUNTY

ALL TRIPS BY DRIVERS OF AUTOS, TRUCKS, TAXIS, AND BUSES

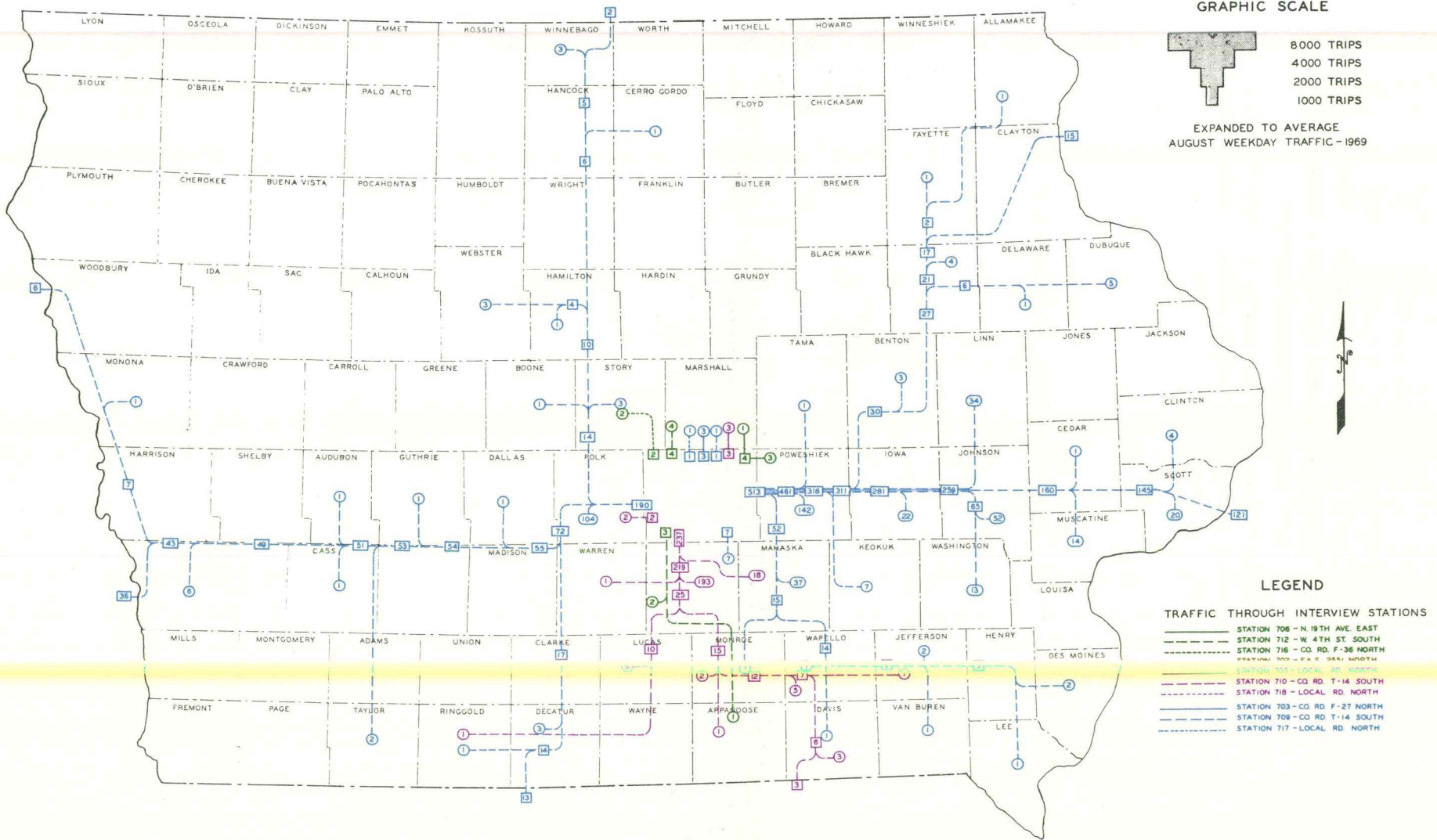
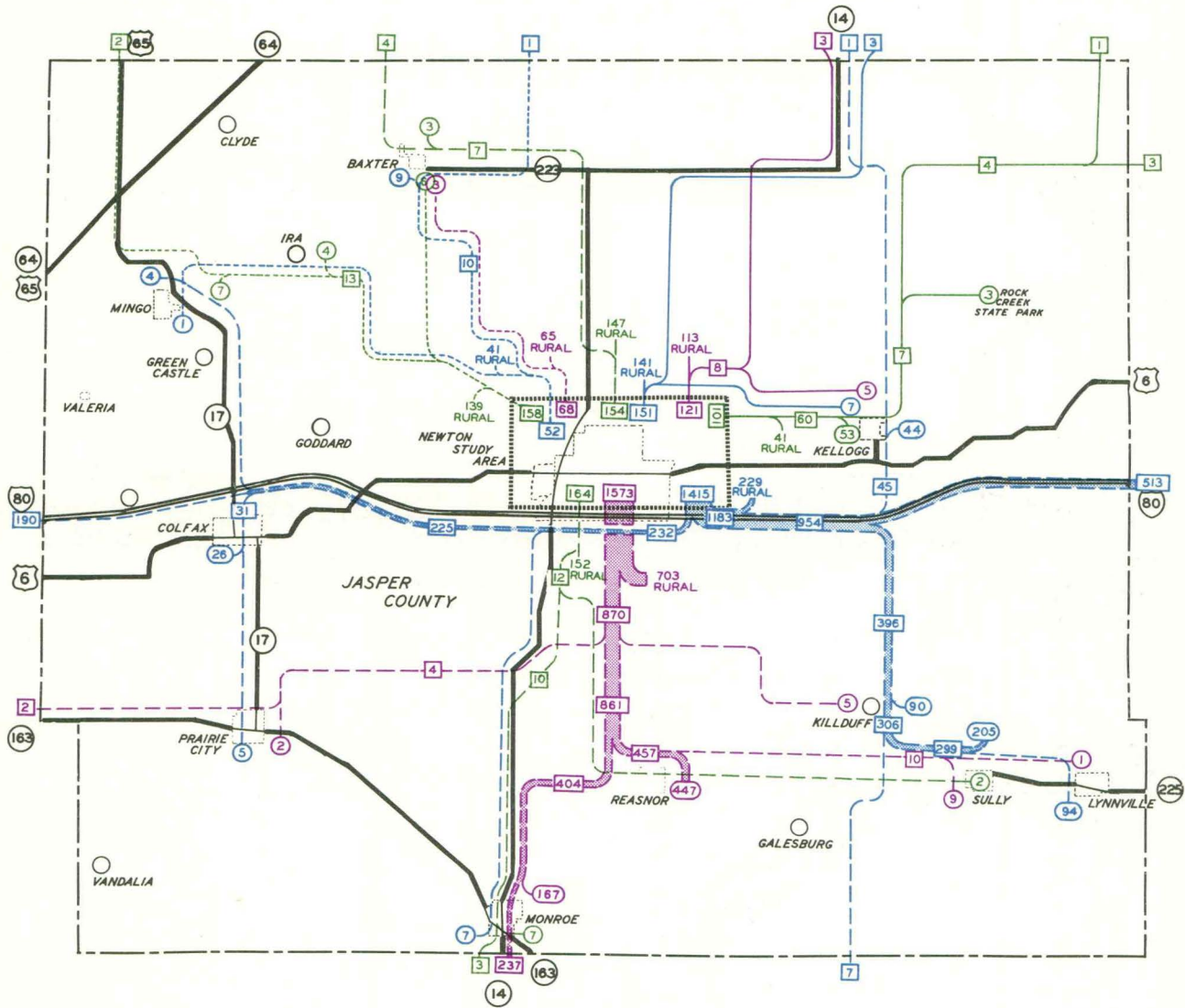


FIGURE 4-22  
 DISPERSION OF EXTERNAL TRIPS  
 USING SECONDARY ROADS BETWEEN  
 THE NEWTON STUDY AREA AND  
 POINTS WITHIN JASPER COUNTY

ALL TRIPS BY DRIVERS OF AUTOS,  
 TRUCKS, TAXIS, AND BUSES



GRAPHIC SCALE

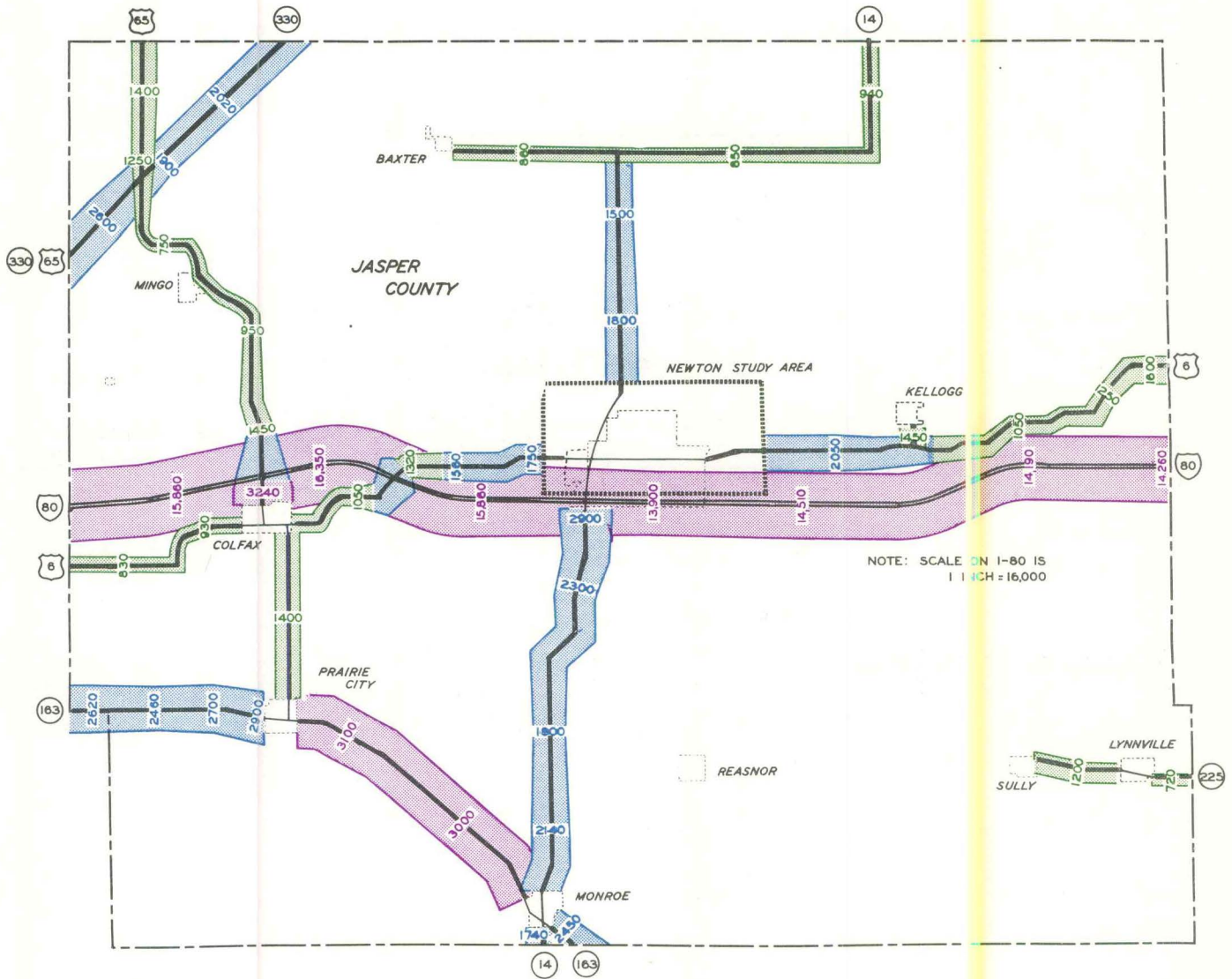


1969 AVERAGE AUGUST  
 WEEKDAY TRAFFIC

LEGEND

- TRAFFIC THROUGH INTERVIEW STATIONS
- STATION 703 - CO. RD. F-27 NORTH
  - - - STATION 709 - CO. RD. T-14 SOUTH
  - - - STATION 717 - LOCAL RD. NORTH
  - - - STATION 702 - F.A.S. 255I NORTH
  - - - STATION 712 - W. 4TH ST. SOUTH
  - - - STATION 716 - CO. RD. F-36 NORTH
  - - - STATION 706 - N. 19TH ST. EAST
  - - - STATION 705 - LOCAL RD. NORTH
  - - - STATION 710 - CO. RD. T-14 SOUTH
  - - - STATION 718 - LOCAL RD. NORTH
- CORPORATION LINE - - - - -  
 CORDON LINE ..... - - - - -

FIGURE 4-23  
 TRAFFIC VOLUMES ON  
 RURAL PRIMARY HIGHWAYS  
 IN JASPER COUNTY

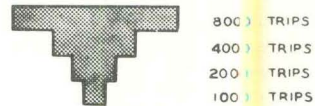


LEGEND

- 0 TO 1500 TRIPS
- 1500 TO 3000 TRIPS
- 3000 TRIPS AND OVER

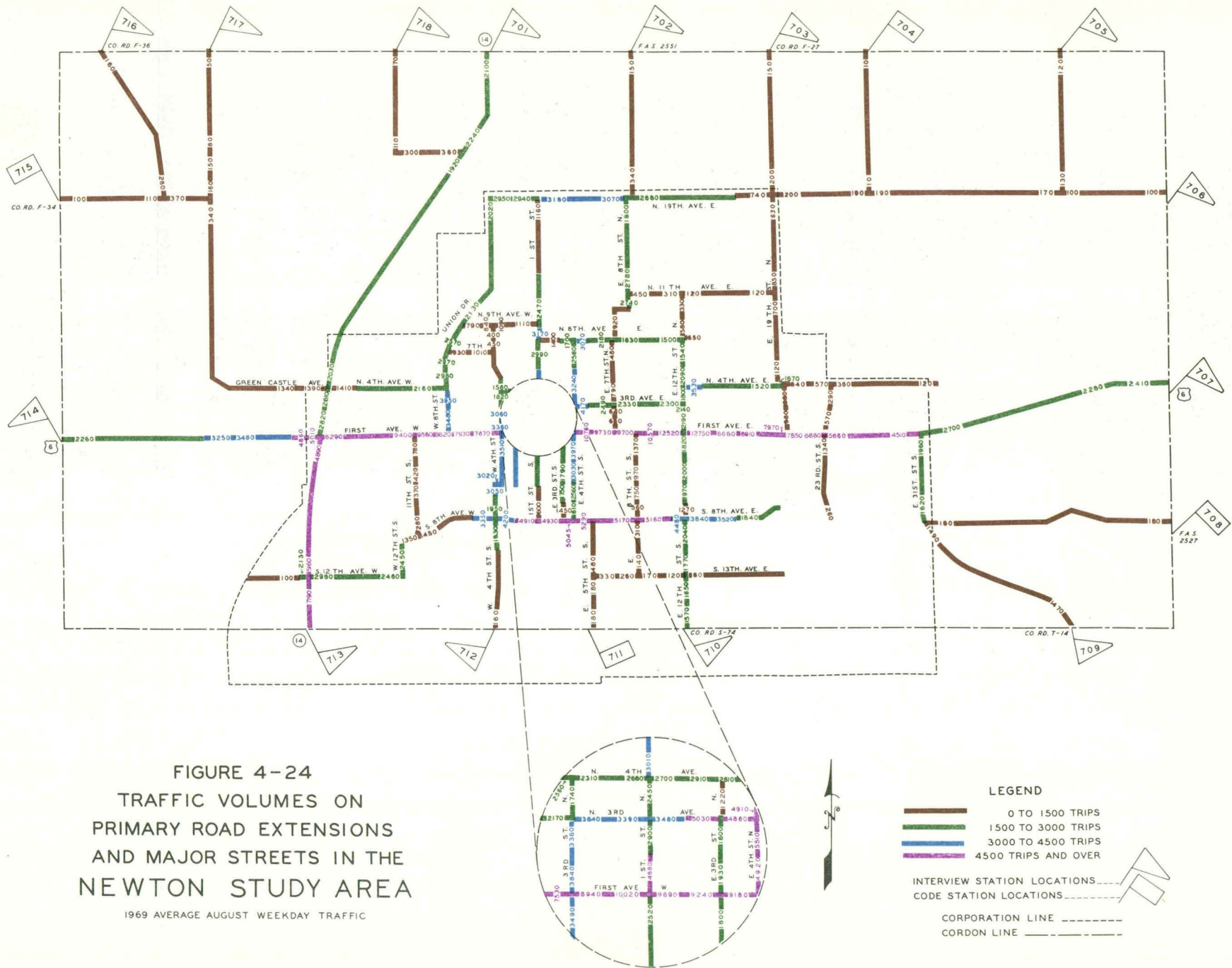
CORPORATION LINE - - - - -  
 CORDON LINE - - - - -

GRAPHIC SCALE

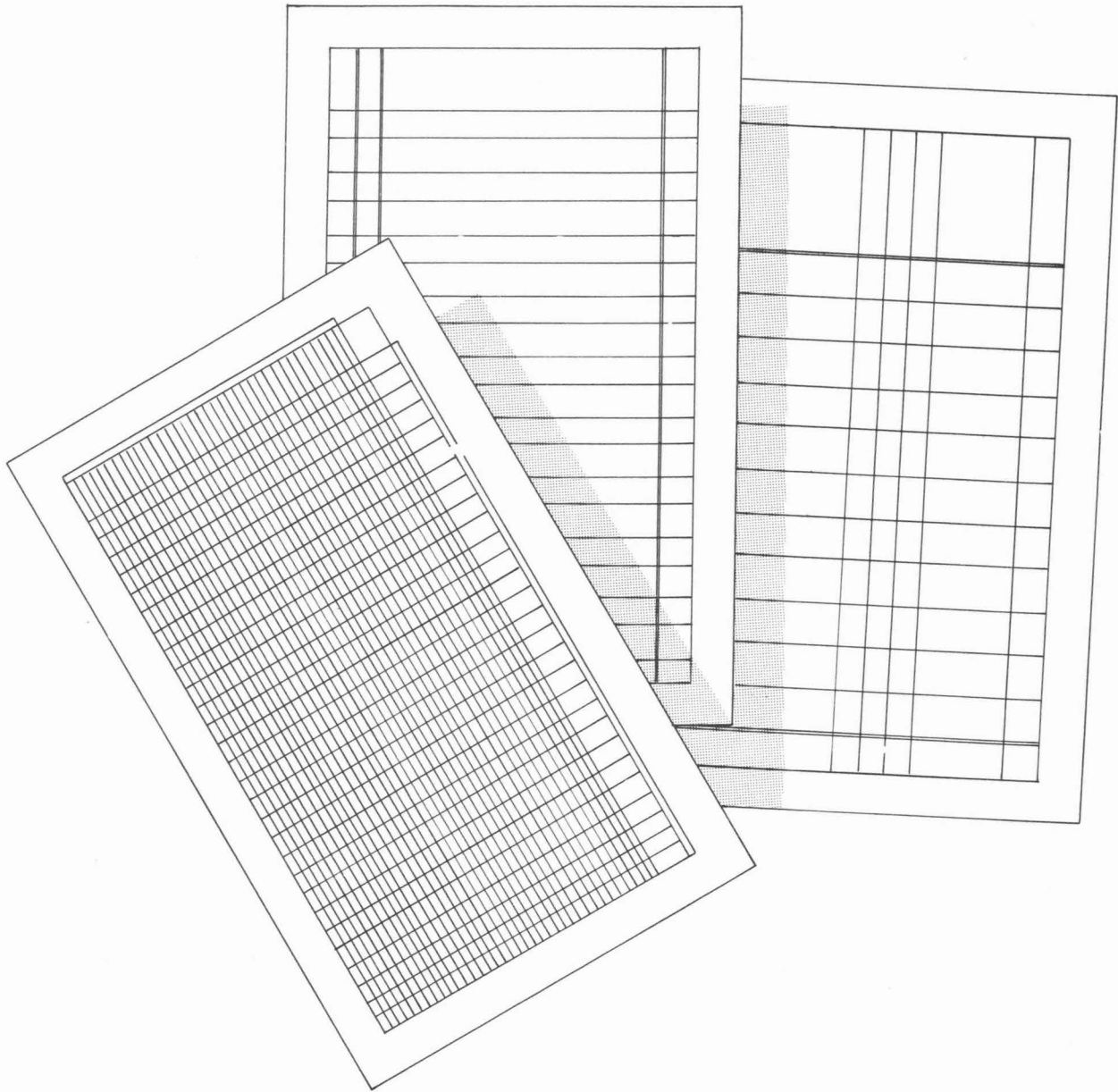


1969 AVERAGE ANNUAL  
 DAILY TRAFFIC





# Appendix



**Part Five**

**NEWTON STUDY AREA**  
**TRIP PURPOSE OF EXTERNAL TRIPS**  
**(ALL VEHICLE TYPES)**  
**1969 AVERAGE AUGUST WEEKDAY TRAFFIC**

External Local Trips

External Through Trips

Table B-2a(1)

Station	701	702	703	705	706	707	709	710	712	713	714	716	717	718	Total Traffic
	Iowa 14 North	F.A.S. 2551 North	County Road F-27 North	Local Road North	North 19th Avenue East	U.S. 6 East	County Road T-14 South	County Road S-74 South	West 4th Street South	Iowa 14 South	U.S. 6 West	County Road F-36 North	Local Road North	Local Road North	
Work	394	52	38	43	33	695	262	406	30	1,431	697	42	8	30	4,161
Personal Business	123	4	3	18	7	80	55	95	28	623	248	13	10	--	1,307
During Work	208	23	16	9	7	247	218	170	19	858	187	11	2	5	1,980
Medical or Dental	60	4	--	--	--	23	21	23	2	60	51	1	1	--	246
School	3	--	--	--	2	1	5	2	--	9	--	--	--	--	22
Social or Recreational	296	30	29	12	27	516	492	470	39	1,716	389	27	14	13	4,070
Eat	45	3	1	4	2	54	45	34	8	599	45	2	1	--	843
Shop	299	29	42	18	14	478	296	280	21	954	405	21	10	19	2,886
Serve Passengers	27	2	15	2	3	23	4	43	5	138	34	20	2	--	318
Total Traffic	1,455	147	144	106	95	2,117	1,398	1,523	152	6,388	2,056	137	48	67	15,833

Table B-2a(2)

Station	701	702	703	705	706	707	709	710	712	713	714	716	717	718	Total Traffic
	Iowa 14 North	F.A.S. 2551 North	County Road F-27 North	Local Road North	North 19th Avenue East	U.S. 6 East	County Road T-14 South	County Road S-74 South	West 4th Street South	Iowa 14 South	U.S. 6 West	County Road F-36 North	Local Road North	Local Road North	
Work	47	1	2	1	3	13	2	9	--	54	19	2	--	--	153
Personal Business	50	--	--	1	1	19	2	5	3	64	12	--	--	--	157
During Work	178	3	1	3	--	58	19	5	--	201	44	4	1	--	517
Medical or Dental	3	--	--	--	--	1	1	--	--	4	1	--	--	--	10
School	3	--	--	--	--	2	--	--	--	6	1	2	--	--	14
Social or Recreational	331	3	1	7	--	184	41	25	8	428	113	10	1	--	1,152
Eat	5	--	--	--	--	1	--	--	--	7	2	--	--	--	15
Shop	19	--	--	2	2	12	1	4	1	26	7	3	1	--	78
Serve Passengers	7	--	3	1	--	2	1	2	--	9	2	--	1	1	29
Total Traffic	643	7	7	15	6	292	67	50	12	799	201	21	4	1	2,125

Summary - All External Trips

Table B-2a(3)

Station	701	702	703	705	706	707	709	710	712	713	714	716	717	718	Total Traffic
	Iowa 14 North	F.A.S. 2551 North	County Road F-27 North	Local Road North	North 19th Avenue East	U.S. 6 East	County Road T-14 South	County Road S-74 South	West 4th Street South	Iowa 14 South	U.S. 6 West	County Road F-36 North	Local Road North	Local Road North	
Work	441	53	40	44	36	708	264	415	30	1,485	716	44	8	30	4,314
Personal Business	173	4	3	19	8	99	57	100	31	687	260	13	10	--	1,464
During Work	386	26	17	12	7	305	237	175	19	1,059	231	15	3	5	2,497
Dental	63	4	--	--	--	24	22	23	2	64	52	1	1	--	25b
School	6	--	--	--	2	3	5	2	--	15	1	2	--	--	36
Social or Recreational	627	33	30	19	27	700	533	495	47	2,144	502	37	15	13	5,222
Eat	50	3	1	4	2	55	45	34	8	606	47	2	1	--	858
Shop	318	29	42	20	16	490	297	284	22	980	412	24	11	19	2,964
Serve Passengers	34	2	18	3	3	25	5	45	5	147	36	20	3	1	347
Total Traffic	2,098	154	151	121	101	2,409	1,465	1,573	164	7,187	2,257	158	52	68	17,958

**NEWTON STUDY AREA**  
**AVERAGE CAR OCCUPANCY BY TRIPS PURPOSE**  
**1969 AVERAGE AUGUST WEEKDAY TRAFFIC**

External Local Trips

External Through Trips

Table B-3a(1)

Trip Purpose Origin	Trip Purpose - Destination										Average Occupancy
	Work	Personal Business	During Work	Medical or Dental	School	Social or Recreation	Eat	Shop	Serve Pass.	Home	
Work	1.353	1.171	1.527	1.000		1.565	1.342	1.433	3.327	1.536	1.551
Personal Business	1.513	1.849	1.000	1.000		2.544	2.582	2.184	2.680	1.873	1.983
During Work	1.000	1.515	1.278			1.000	1.464	1.188		1.223	1.275
Medical or Dental	2.000	2.000		2.000	1.000	1.642	3.000	4.500	3.270	2.014	2.081
School		1.000						2.000	3.000	1.717	1.631
Social or Recreation	2.003	2.585	1.451	2.320		2.824	2.896	2.909	3.993	2.514	2.697
Eat	1.079	1.709	1.333	2.000	2.000	2.525		3.101		2.883	2.596
Shop	1.615	2.058	1.412	3.502	1.000	2.681	2.934	2.239	1.494	2.281	2.343
Serve Passengers	2.779	3.169		4.000		3.222	2.195	2.000	2.501	2.381	2.560
Home	1.539	1.860	1.272	2.338	1.832	2.441	2.676	2.327	2.523		2.066
Average Occupancy	1.558	1.882	1.282	2.360	1.646	2.539	2.643	2.431	2.890	2.057	2.103

Table B-3a(2)

Trip Purpose Origin	Trip Purpose - Destination										Average Occupancy
	Work	Personal Business	During Work	Medical or Dental	School	Social or Recreation	Eat	Shop	Serve Pass.	Home	
Work		1.532								1.257	1.292
Personal Business		1.958	4.000		2.000	2.066				1.607	1.786
During Work			1.304							1.000	1.289
Medical or Dental										2.000	2.000
School						1.000				1.295	1.243
Social or Recreation	4.413	3.137	4.000			2.859	3.000	2.000	2.409	2.896	2.886
Eat			1.000			3.983				2.359	2.952
Shop		1.451				2.831				2.494	2.498
Serve Passengers						3.065				2.465	2.703
Home	1.343	2.115	1.431	1.680	1.239	2.542	2.000	2.577	2.860		2.377
Average Occupancy	1.534	2.157	1.346	1.680	1.398	2.682	2.324	2.563	2.723	2.488	2.388

Summary - All External Trips

Table B-3a(3)

Trip Purpose Origin	Trip Purpose - Destination										Average Occupancy
	Work	Personal Business	During Work	Medical or Dental	School	Social or Recreation	Eat	Shop	Serve Pass.	Home	
Work	1.353	1.189	1.527	1.000		1.556	1.342	1.470	3.327	1.531	1.546
Personal Business	1.513	1.860	2.106	1.000	2.000	2.528	2.582	2.184	2.680	1.859	1.973
During Work	1.000	1.515	1.280			1.000	1.464	1.188		1.198	1.276
Medical or Dental	2.000	2.000		2.000	1.000	1.642	3.000	4.500	3.270	2.014	2.081
School		1.000				1.000		2.000	3.000	1.574	1.559
Social or Recreation	2.166	2.638	1.618	2.320		2.831	2.896	2.907	3.906	2.563	2.719
Eat	1.079	1.709	1.305	2.000	2.000	2.558		3.101		2.870	2.604
Shop	1.615	2.030	1.412	3.502	1.000	2.683	2.934	2.239	1.494	2.284	2.345
Serve Passengers	2.779	3.169		4.000		3.200	2.195	2.000	2.501	2.385	2.566
Home	1.537	1.873	1.286	2.317	1.712	2.453	2.672	2.330	2.536		2.081
Average Occupancy	1.558	1.898	1.288	2.341	1.602	2.556	2.642	2.432	2.884	2.079	2.119

TABLE E-1

**NEWTON STUDY AREA**  
**DIRECTIONAL TRIPS BETWEEN STATIONS AND TRACTS**  
**1969 AVERAGE AUGUST WEEKDAY TRAFFIC**

VEHICLE TRIPS							VEHICLE TRIPS						
From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total	From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
001	701	105	26	7	3	141	001	705	4	3			7
002	701	27	2	2		31	002	705	2				2
003	701	11	2			13	003	705		1			1
004	701	26	3	1		30	005	705	1	1			2
005	701	31	12	9		52	006	705	3				3
006	701	11			1	12	007	705	3	1			4
007	701	16			2	18	008	705		1			1
008	701	9	4	4		17	009	705		2			2
009	701	6	5	6	1	18	010	705	6				6
010	701	32	7		3	42	011	705	1				1
011	701	4	1	3	1	9	012	705	4	4	1		9
012	701	38	7	2		47	013	705	2	1	1		4
013	701	15				15	016	705	4				4
015	701	5	2			7	017	705	3				3
016	701	22	1	1		24	021	705		1			1
017	701	25	13	1		39	Cl.2 Total		33	15	2		50
018	701	16	2			18							
019	701	37	9	3		49	001	706	5	2			7
020	701	15	5			20	002	706	1				1
021	701	22	9	1		32	003	706	1				1
022	701	41	14	4		59	005	706	2	2			4
Cl.2 Total		514	124	44	11	693	007	706	1				1
							008	706	3	1			4
001	702	6	4			10	010	706	5	4	1		10
002	702	4				4	012	706	3	1			4
005	702	7	1			8	013	706	3		2		5
006	702	1				1	016	706	1	1			2
007	702	1				1	017	706	4				4
009	702	12	6	2		20	019	706	1				1
012	702	1		2		3	022	706	2				2
013	702	3				3	Cl.2 Total		32	11	3		46
015	702		1			1							
016	702	3	1			4	001	707	143	15	8	3	169
017	702	4				4	002	707	45	2	2		49
019	702	1				1	003	707	21				21
020	702	1				1	004	707	34	3	3		40
022	702	1				1	005	707	68	11	1		80
Cl.2 Total		45	13	4		62	006	707	11	1			12
							007	707	26	2		1	29
001	703	4	2			6	008	707	7	2	4		13
002	703	1				1	009	707	2	1			3
003	703	1				1	010	707	72	10	1		83
005	703	5	1			6	011	707	5	6		1	18
006	703	3				3	012	707	126	13	1		140
007	703	1				1	013	707	42	11		5	58
009	703	1	1			2	014	707	2	1			3
011	703	1				1	015	707	32	3	1		36
012	703	18	2	3		23	016	707	71	4			75
013	703		1			1	017	707	83	9			97
015	703	1				1	018	707	22	6			28
016	703	7				7	019	707	38	2			40
017	703	3	1			4	020	707	13	1	4		18
018	703	4				4	021	707	10	3			13
022	703	3	1			4	022	707	42	5		3	52
Cl.2 Total		53	9	3		65	Cl.2 Total		915	111	38	13	1,077

VEHICLE TRIPS						
From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
001	709	81	13	1		95
002	709	21				21
003	709	12				12
004	709	9	3			12
005	709	27	2			29
006	709	1				1
007	709	13	3		1	17
008	709	10				10
009	709	1				1
010	709	30	5		1	36
011	709	4	3	4	1	12
012	709	89	17	4		110
013	709	44	8	1	7	60
014	709	37	14	3		54
015	709	51	4			55
016	709	43	3			46
017	709	61	9		1	71
018	709	13	1			14
019	709	17	1			18
020	709	4	1	1		6
021	709	1	4	3		8
022	709	9				9
Cl.2	Total	578	91	17	11	697
001	710	96	17	7		120
002	710	26	3	3		32
003	710	18				18
004	710	16		1		17
005	710	33	17	4		54
006	710	4				4
007	710	25	3			28
008	710	3	1			4
009	710		3			3
010	710	46	12	1		59
011	710	3	3	2		8
012	710	81	17			98
013	710	16	1			17
014	710		1			1
015	710	46	7			53
016	710	68	6			74
017	710	77	15	6		98
018	710	31	4			35
019	710	28	7			35
020	710	6				6
021	710	8				8
022	710	15	4	2		21
Cl.2	Total	646	121	26		793

VEHICLE TRIPS						
From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
001	712	6	3			9
002	712	3		1		4
004	712	1	1			2
005	712	5	2			7
007	712	2	1			3
008	712	1				1
009	712		3			3
012	712	2	1			3
015	712	1				1
016	712	3				3
017	712	1				1
018	712	8	1			9
019	712	22	3	2		27
020	712	1	1			2
022	712	3				3
Cl.2	Total	59	16	3		78
001	713	345	50	17	6	418
002	713	66	6	3		75
003	713	54	2			56
004	713	71	9	4		84
005	713	157	14	24	6	201
006	713	34	1	4		39
007	713	69	4	9	2	84
008	713	18	9		3	30
009	713	6		8	2	16
010	713	231	17	13	8	269
011	713	10	3	6	5	24
012	713	140	11	8	8	167
013	713	34	3	1	2	40
014	713	2	1			3
015	713	62	4		2	68
016	713	72	4	4		80
017	713	116	9	7		132
018	713	84	11	4		99
019	713	575	48	23	5	651
020	713	348	19	13	5	385
021	713	36	9	5		50
022	713	109	17	13	2	141
Cl.2	Total	2,639	251	166	56	3,112
001	714	191	18	9		218
002	714	45		3		48
003	714	19				19
004	714	29	3	1		33
005	714	87	12	6		105
006	714	23	3	2		28
007	714	32	9	1		42
008	714	9	1	2		12
009	714	4	2	1		7
010	714	77	5	1		83
011	714	4	6	1		11
012	714	64	9			73
013	714	12	2			14
014	714	1				1
015	714	16	1	1		18
016	714	25	3			28
017	714	27	11	3		41
018	714	22	2			24
019	714	37	6	1	2	46
020	714	21	8	2		31
021	714	48	13	4		65
022	714	74	7	1		82
Cl.2	Total	867	121	39	2	1,029

VEHICLE TRIPS							VEHICLE TRIPS						
From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total	From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
001	716	3	2			5	702	001	16	2	2		20
002	716	1				1	702	002	1				1
003	716	1				1	702	003	3				3
005	716	6	1			7	702	005	5	1			6
006	716	2				2	702	006	3				3
008	716	1				1	702	007	5	1			6
009	716	1				1	702	009	9	6	2		17
010	716	7	1			8	702	010	1	3			4
011	716	1				1	702	011		1			1
012	716	1				1	702	012	6				6
016	716	2				2	702	013	4				4
017	716	2				2	702	016	5				5
018	716	4				4	702	017	1				1
019	716	2	1			3	702	018	1	1			2
021	716	11	2	4		17	702	019	4				4
022	716	4	1			5	702	021	1				1
Cl.2	Total	49	8	4		61	702	022	1				1
							Cl.3	Total	66	15			85
001	717	2	1			3	703	001	7				7
004	717	1				1	703	002	1				1
005	717	1				1	703	005	5	2			7
009	717	1	1			2	703	006	1				1
010	717	3				3	703	007	3				3
012	717	1				1	703	008	3	1			4
013	717	1				1	703	009	1				1
015	717	2	1			3	703	010	2	1			3
016	717	1				1	703	011	1				1
017	717	1				1	703	012	21	1			23
018	717	3				3	703	013	3	1			4
019	717	3				3	703	015	3				3
020	717	1	1			2	703	016	9				9
021	717	4				4	703	017	1	1			2
Cl.2	Total	25	4			29	703	018	4				4
							703	022	4	1			5
001	718		3			3	Cl.3	Total	69	8			79
005	718	4				4	705	001	8	3			11
009	718	3				3	705	002	1				1
012	718	3				3	705	004	2				2
019	718	3				3	705	005	3	1			4
021	718	3				3	705	006	3				3
022	718	3				3	705	007	1	1			2
Cl.2	Total	19	3			22	705	008	1	1			1
701	001	130	25	5	1	161	705	009		4			4
701	002	44	3	3		50	705	010	5				5
701	003	5	1			6	705	011		1			1
701	004	16	5			21	705	012	7	3			10
701	005	68	11	4		83	705	013	2	2	1		3
701	006	10	1			11	705	016	2				2
701	007	28	4		5	37	705	017	3				3
701	008	14	5	8		27	705	018	2				2
701	009	5	6	5	1	17	705	019	1				1
701	010	43	9	3	1	56	705	021		1			1
701	011	2	1	2	1	6	Cl.3	Total	38	17	1		56
701	012	24	11			35							
701	013	14		1		15							
701	015	9				9							
701	016	24		1		25							
701	017	27	11			38							
701	018	18	3			21							
701	019	33	5	1		39							
701	020	17	5	1		23							
701	021	25	7	2	1	35							
701	022	40	4	3		47							
Cl.3	Total	596	117	39	10	762							

VEHICLE TRIPS						
From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
706	001	3	2			5
706	002	3	2			5
706	003	2				2
706	005		2			2
706	007	5				5
706	008	2	2			4
706	010	5	4			9
706	011			1		1
706	012	5	2			7
706	017	1	1			2
706	019	2				2
706	021	2				2
706	022	3				3
C1.3	Total	33	15	1		49
707	001	161	18	6		185
707	002	38	2	1		41
707	003	24	1			25
707	004	22	1			23
707	005	68	11	1	1	81
707	006	12	3			15
707	007	29	3		2	34
707	008	14	3		1	21
707	009	5	1	1	1	8
707	010	118	22	3	1	144
707	011	2	7	3		12
707	012	99	11	1	1	112
707	013	38	8		1	47
707	014	1	1			2
707	015	24	4			28
707	016	88	8			96
707	017	49	12	2		63
707	018	19	1			20
707	019	31	2			33
707	020	16	3	2	1	22
707	021	7	1			8
707	022	16	2	2		20
C1.3	Total	881	125	25	9	1,040
709	001	125	11	4	5	145
709	002	22				22
709	003	6				6
709	004	13	1			14
709	005	25	1		3	29
709	006	1				1
709	007	13	3			16
709	008	2	1			3
709	009	1		1		2
709	010	36	8	1	5	50
709	011	4	3	4		11
709	012	69	16	1		86
709	013	43	6	5	1	55
709	014	28	4			32
709	015	45	3		2	50
709	016	40	2			42
709	017	44	9	1		54
709	018	15	4			19
709	019	16	1		1	18
709	020	23				23
709	021	4	4	1		9
709	022	11		3		14
C1.3	Total	586	77	21	17	701

VEHICLE TRIPS						
From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
710	001	130	17	4		151
710	002	25	3	1		29
710	003	5				5
710	004	16				16
710	005	24	10	1		35
710	006	6	2	1		9
710	007	20	7			27
710	008	4	2			6
710	009	3	2			5
710	010	37	17			54
710	011		3	2		5
710	012	83	10	1		94
710	013	9				9
710	015	33	3			36
710	016	44	4			48
710	017	75	14	7		96
710	018	33	3			36
710	019	35	4			39
710	020	6				6
710	021	6	1			7
710	022	16		1		17
C1.3	Total	610	102	18		730
712	001	14	2			16
712	002	3	1	1		5
712	003		1			1
712	004	1				1
712	005	2	2			4
712	007		2			2
712	010	3	1	1		5
712	012	6	1			7
712	015	3	1			4
712	017	1	1			2
712	018	4				4
712	019	14	3	1		18
712	020	1	1			2
712	022	3				3
C1.3	Total	55	16	3		74
713	001	315	43	21	6	385
713	002	69	4	5		78
713	003	38	4			42
713	004	57	6			63
713	005	171	18	15	5	209
713	006	28	3	4		35
713	007	73	14	3	2	92
713	008	15	4		1	20
713	009	3	1			4
713	010	265	34	26	12	337
713	011	5	7	3	3	18
713	012	102	11	1	2	116
713	013	25	4			29
713	014	11	4			15
713	015	56	11	1		68
713	016	90	4			94
713	017	96	19	4	2	121
713	018	78	10	3		91
713	019	656	54	24	5	739
713	020	537	18	15	3	573
713	021	31	12		2	45
713	022	83	9	4	6	102
C1.3	Total	2,804	294	129	49	3,276



VEHICLE TRIPS							VEHICLE TRIPS						
From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total	From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
714	001	247	24	12		283	701	705	1				1
714	002	52	3			55	701	707	10	1			12
714	003	19				19	701	709	5				5
714	004	13	5			18	701	710	7	1			8
714	005	73	12	7		92	701	712	1				1
714	006	26	2	3		31	701	713	232	27	2	24	306
714	007	28	5	2		35	701	714	8	4			16
714	008	8				8	701	716	1				1
714	009	5	1	1	1	8	707	701	5	1			8
714	010	98	17	1		116	709	701	7	1		1	9
714	011	5	2	4		11	710	701	4	1			6
714	012	30	2	3		35	712	701	1				1
714	013	7		1	3	11	713	701	183	24	3	17	257
714	015	15	4	1		20	714	701	7	2			11
714	016	40	1			41	716	701	1				1
714	017	43	6	2		51	Cl. 4 Total	473	62	6	42		643
714	018	24	1	1		26	Cl.2&3 Total	1,110	241	8	21		1,455
714	019	28	6	1	1	36	701 Total	1,583	303	14	63		2,098
714	020	20	6	6		32							
714	021	31	9	4		44							
714	022	47	5	3		55							
Cl.3	Total	859	111	52	5	1,027							
716	001	9	3			12	702	707	1				1
716	002	1				1	702	714					1
716	004	4				4	702	715	1				1
716	005	5	1			6	707	702	1	1			2
716	006	1				1	713	702	1				1
716	007		1			1	714	702		1			1
716	008	1				1	Cl. 4 Total	4	2				7
716	009		1	1		2	Cl.2&3 Total	111	28				147
716	010	8				8	702 Total	115	30				154
716	011	1	1			2							
716	012	1	1			2	703	709	1				1
716	013	1				1	703	714	1	1			2
716	015	1				1	710	703	1				2
716	017	5				5	714	703	1	1			2
716	018	5				5	Cl. 4 Total	4	2				7
716	019	1	2			3	Cl.2&3 Total	122	17				144
716	021	11	1	2		14	703 Total	126	19				151
716	022	6	2			8							
Cl.3	Total	60	13	3		76							
717	001	4				4	705	706		1			1
717	002	2				2	705	707	1	1			2
717	004	3				3	705	709	1		1		2
717	013	1				1	705	713	1	1			2
717	016	1				1	705	714	1				1
717	017	1				1	705	717			1		1
717	018	2	1			3	701	705	1				1
717	019	1				1	706	705		1			1
717	020	1				1	707	705	2	1			3
717	021	1	1	2		2	714	705	1				1
717	022	6	2			8	Cl. 4 Total	8	5				15
Cl.3	Total	17	2			19	Cl.2&3 Total	71	32				106
							705 Total	79	37				121
718	001	3				3							
718	005	8	3			11	706	705		1			1
718	007	3				3	706	713		1			1
718	009	3				3	706	716					1
718	010	4				4	705	706	1				1
718	013	3				3	713	706		1			1
718	015		2			2	714	706	1				1
718	017	3				3	Cl. 4 Total	2	4				6
718	021	3	2			5	Cl.2&3 Total	65	26				95
718	022	8				8	706 Total	67	30				101
Cl.3	Total	38	7			45							

VEHICLE TRIPS						
From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
707	701	5	1	2		8
707	702	1	1			2
707	705	2	1			3
707	709	3				3
707	710	4				4
707	712	1				1
707	713	71	7	4	1	83
707	714	32	4	2	1	39
707	716	1				1
701	707	10	1	1		12
702	707	1				1
705	707	1	1			2
709	707	5		1		6
710	707	4	2			6
712	707	1				1
713	707	67	4	3	1	75
714	707	30	8	1	4	43
715	707	1				1
717	707	1				1
Cl. 4	Total	241	30	14	7	292
Cl. 2&3	Total	1,796	236	63	22	2,117
707	Total	2,037	266	77	29	2,409
709	701	7	1		1	9
709	707	5		1		6
709	710	1				1
709	713	5				5
709	714	12	2	3	1	18
701	709	5				5
703	709	1				1
704	709	1	1			2
705	709	1		1		2
707	709	3				3
710	709	1				1
713	709	1				1
714	709	7	1	6		14
Cl. 4	Total	49	5	11	2	67
Cl. 2&3	Total	1,164	168	38	28	1,398
709	Total	1,213	173	49	30	1,465
710	701	4	1	1		6
710	703	1		1		2
710	707	4	2			6
710	709	1				1
710	713	6	2	1		9
710	714	3	1			4
701	710	7	1			8
707	710	4				4
709	707	1				1
713	710	5				5
714	710	3	1			4
Cl. 4	Total	39	8	3		50
Cl. 2&3	Total	1,256	223	44		1,523
710	Total	1,295	231	47		1,573
712	701	1				1
712	707	1				1
712	713	3				3
712	714	1				1
712	716	1				1
701	712	1				1
707	712	1				1
713	712	2	1			3
Cl. 4	Total	11	1			12
Cl. 2&3	Total	114	32	6		152
712	Total	125	33	6		164

VEHICLE TRIPS						
From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
713	701	183	24	33	17	257
713	702	1				1
713	706		1			1
713	707	67	4	3	1	75
713	709	1				1
713	710	5				5
713	712	2	1			3
713	714	13	1	1		15
713	716	2	1	1		4
713	718	1				1
701	713	232	27	23	24	306
705	713	1	1			2
706	713		1			1
707	713	71	7	4	1	83
709	713	5				5
710	713	6	2	1		9
712	713	3				3
714	713	14	3	3	1	21
716	713	4	2			6
Cl. 4	Total	611	75	69	44	799
Cl. 2&3	Total	5,443	545	295	105	6,388
713	Total	6,054	620	364	149	7,187
714	701	7	2	2		11
714	702		1			1
714	703	1	1			2
714	705	1				1
714	706	1				1
714	707	30	8	1	4	43
714	709	7	1	6		14
714	710	3	1			4
714	713	14	3	3	1	21
714	716	1				1
714	717			1		1
701	714	8	4	4		16
702	714			1		1
703	714	1	1			2
705	714	1				1
707	714	32	4	2	1	39
709	714	12	2	3	1	18
710	714	3	1			4
712	714	1				1
713	714	13	1	1		15
716	714	1	1	1		3
717	714			1		1
Cl. 4	Total	137	31	26	7	201
Cl. 2&3	Total	1,726	232	91	7	2,056
714	Total	1,863	263	117	14	2,257
716	701	1				1
716	713	4	2			6
716	714	1	1	1		3
701	716	1				1
706	716	1				1
707	716	1				1
712	716	1				1
713	716	2	1	1		4
714	716	1				1
715	716	1	1			2
Cl. 4	Total	14	5	2		21
Cl. 2&3	Total	109	21	7		137
716	Total	123	26	9		158
717	707	1				1
717	714			1		1
705	717			1		1
714	717			1		1
Cl. 4	Total	1		3		4
Cl. 2&3	Total	42	6			48
717	Total	43	6	3		52
713	718	1				1
Cl. 4	Total	1				1
Cl. 2&3	Total	57	10			67
718	Total	58	10			68

TABLE E-2

**NEWTON STUDY AREA**  
**NONDIRECTIONAL TRIPS BETWEEN STATIONS AND TRACTS**  
**1969 AVERAGE AUGUST WEEKDAY TRAFFIC**

VEHICLE TRIPS							VEHICLE TRIPS						
Between		Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total	Between		Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
701	001	235	51	12	4	302	705	001	12	6			18
701	002	71	5	5		81	705	002	3				3
701	003	16	3			19	705	003		1			1
701	004	42	8	1		51	705	004	2				2
701	005	99	23	13		135	705	005	4	2			6
701	006	21	1		1	23	705	006	6				6
701	007	44	4		7	55	705	007	4	2			6
701	008	23	9	12		44	705	008		2			2
701	009	11	11	11	2	35	705	009		6			6
701	010	75	16	3	4	98	705	010	11				11
701	011	6	2	5		15	705	011	1	1			2
701	012	62	18	2	2	82	705	012	11	7	1		19
701	013	29		1		30	705	013	2	3	2		7
701	015	14	2			16	705	016	6				6
701	016	46	1	2		49	705	017	6				6
701	017	52	24	1		77	705	018	2				2
701	018	34	5			39	705	019	1				1
701	019	70	14	4		88	705	021		2			2
701	020	32	10	1		43	Cl.2&3	Total	71	32	3		106
701	021	47	16	3	1	67							
701	022	81	18	7		106	706	001	8	4			12
Cl.2&3	Total	1,110	241	83	21	1,455	706	002	4	2			6
							706	003	3				3
702	001	22	6	2		30	706	005	2	4			6
702	002	5				5	706	007	6				6
702	003	3				3	706	008	5	3			8
702	005	12	2			14	706	010	10	8	1		19
702	006	4				4	706	011			1		1
702	007	6	1			7	706	012	8	3			11
702	009	21	12	4		37	706	013	3		2		5
702	010	1	3			4	706	016	1	1			2
702	011		1			1	706	017	5	1			6
702	012	7		2		9	706	019	3				3
702	013	7				7	706	021	2				2
702	015		1			1	706	022	5				5
702	016	8	1			9	Cl.2&3	Total	65	26	4		95
702	017	5				5							
702	018	1	1			2	707	001	304	33	14	3	354
702	019	5				5	707	002	83	4	3		90
702	020	1				1	707	003	45	1			46
702	021	1				1	707	004	56	4	3		63
702	022	2				2	707	005	136	22	2	1	161
Cl.2&3	Total	111	28	8		147	707	006	23	4			27
							707	007	55	5		3	63
703	001	11	2			13	707	008	21	5	7	1	34
703	002	2				2	707	009	7	2	1	1	11
703	003	1				1	707	010	190	32	4	1	227
703	005	10	3			13	707	011	7	13	9	1	30
703	006	4				4	707	012	225	24	2	1	252
703	007	4				4	707	013	80	19		6	105
703	008	3	1			4	707	014	3	2			5
703	009	2	1	1		4	707	015	56	7	1		64
703	010	2	1			3	707	016	159	12			171
703	011	2				2	707	017	132	21	7		160
703	012	39	3	4		46	707	018	41	7			48
703	013	3	2			5	707	019	69	4			73
703	015	4				4	707	020	29	4	6	1	40
703	016	16				16	707	021	17	4			21
703	017	4	2			6	707	022	58	7	4	3	72
703	018	8				8	Cl.2&3	Total	1,796	236	13	22	2,117
703	022	7	2			9							
Cl.2&3	Total	122	17	5		144							

VEHICLE TRIPS						
Between	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total	
709 001	206	24	5	5	240	
709 002	43				43	
709 003	18				18	
709 004	22	4			26	
709 005	52	3		3	58	
709 006	2				2	
709 007	26	6		1	33	
709 008	12	1			13	
709 009	2		1		3	
709 010	66	13	1	6	86	
709 011	8	6	8	1	23	
709 012	158	33	5		196	
709 013	87	14	6	8	115	
709 014	65	18	3		86	
709 015	96	7		2	105	
709 016	83	5			88	
709 017	105	18	1	1	125	
709 018	28	5			33	
709 019	33	2		1	36	
709 020	27	1	1		29	
709 021	5	8	4		17	
709 022	20		3		23	
Cl.2&3 Total	1,164	168	38	28	1,398	
710 001	226	34	11		271	
710 002	51	6	4		61	
710 003	23				23	
710 004	32		1		33	
710 005	57	27	5		89	
710 006	10	2	1		13	
710 007	45	10			55	
710 008	7	3			10	
710 009	3	5			8	
710 010	83	29	1		113	
710 011	3	6	4		13	
710 012	164	27	1		192	
710 013	25	1			26	
710 014		1			1	
710 015	79	10			89	
710 016	112	10			122	
710 017	152	29	13		194	
710 018	64	7			71	
710 019	63	11			74	
710 020	12				12	
710 021	14	1			15	
710 022	31	4	3		38	
Cl.2&3 Total	1,256	223	44		1,523	
712 001	20	5			25	
712 002	6	1	2		9	
712 003		1			1	
712 004	2	1			3	
712 005	7	4			11	
712 007	2	3			5	
712 008	1				1	
712 009		3			3	
712 010	3	1	1		5	
712 012	8	2			10	
712 015	4	1			5	
712 016	3				3	
712 017	2	1			3	
712 018	12	1			13	
712 019	36	6	3		45	
712 020	2	2			4	
712 022	6				6	
Cl.2 &3 Total	114	32	6		152	

VEHICLE TRIPS						
Between	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total	
713 001	660	93	38	12	803	
713 002	135	10	8		153	
713 003	92	6			98	
713 004	128	15	4		147	
713 005	328	32	39	11	410	
713 006	62	4	8		74	
713 007	142	18	12	4	176	
713 008	33	13	4		50	
713 009	9	1	8	2	20	
713 010	496	51	39	20	606	
713 011	15	10	9	8	42	
713 012	242	22	9	10	283	
713 013	59	7	1	2	69	
713 014	13	5			18	
713 015	118	15	1	2	136	
713 016	162	8	4		174	
713 017	212	28	11	2	253	
713 018	162	21	7		190	
713 019	1,231	102	47	10	1,390	
713 020	885	37	28	8	958	
713 021	67	21	5	2	95	
713 022	192	26	17	8	243	
Cl.2&3 Total	5,443	545	295	105	6,388	
714 001	438	42	21		501	
714 002	97	3	3		103	
714 003	38				38	
714 004	42	8	1		51	
714 005	160	24	13		197	
714 006	49	5	5		59	
714 007	60	14	3		77	
714 008	17	1	2		20	
714 009	9	3	2	1	15	
714 010	175	22	2		199	
714 011	9	8	5		22	
714 012	94	11	3		108	
714 013	19	2	1	3	25	
714 014	1				1	
714 015	31	5	2		38	
714 016	65	4			69	
714 017	70	17	5		92	
714 018	46	3	1		50	
714 019	65	12	2	3	82	
714 020	41	14	8		63	
714 021	79	22	8		109	
714 022	121	12	4		137	
Cl.2&3 Total	1,726	232	91	7	2,056	
716 001	12	5			17	
716 002	2				2	
716 003	1				1	
716 004	4				4	
716 005	11	2			13	
716 006	3				3	
716 007		1			1	
716 008	2				2	
716 009	1	1	1		3	
716 010	15	1			16	
716 011	2	1			3	
716 012	1	1			2	
716 013	1				1	
716 015	1				1	
716 016	2				2	
716 017	7				7	
716 018	9				9	
716 019	3	3			6	
716 021	22	3	6		31	
716 022	10	3			13	
Cl.2&3 Total	109	21	7		137	

VEHICLE TRIPS					
Between	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
717	001	6	1		7
717	002	2			2
717	004	4			4
717	005	1			1
717	009	1	1		2
717	010	3			3
717	012	1			1
717	013	2			2
717	015	2	1		3
717	016	2			2
717	017	2			2
717	018	5	1		6
717	019	4			4
717	020	2	1		3
717	021	5	1		6
Cl.2&3	Total	42	6		48
718	001	3	3		6
718	005	12	3		15
718	007	3			3
718	009	6			6
718	010	4			4
718	012	3			3
718	013	3			3
718	015		2		2
718	017	3			3
718	019	3			3
718	021	6	2		8
718	022	11			11
Cl.2&3	Total	57	10		67
701	705	1			1
701	707	15	2	3	20
701	709	12	1	1	14
701	710	11	2	1	14
701	712	2			2
701	713	415	51	56	563
701	714	15	6	6	27
701	716	2			2
Cl.4	Total	473	62	66	643
Cl.2&3	Total	1,110	241	83	1,455
701	Total	1,583	303	149	2,098
702	707	2	1		3
702	713	1			1
702	714		1	1	2
702	715	1			1
Cl.4	Total	4	2	1	7
Cl.2&3	Total	111	28	8	147
702	Total	115	30	9	154
703	709	1			1
703	710	1		1	2
703	714	2	2		4
Cl.4	Total	4	2	1	7
Cl.2&3	Total	122	17	5	144
703	Total	126	19	6	151

VEHICLE TRIPS					
Between	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
705	701	1			1
705	706		2		2
705	707	3	2		5
705	709	1			1
705	713	1	1		2
705	714	2			2
705	717		1		1
Cl.4	Total	8	5		15
Cl.2&3	Total	71	32		106
705	Total	79	37		121
706	705		2		2
706	713		2		2
706	714	1			1
706	716	1			1
Cl.4	Total	2	4		6
Cl.2&3	Total	65	26		95
706	Total	67	30		101
707	701	15	2	3	20
707	702	2	1		3
707	705	3	2		5
707	709	8		1	9
707	710	8	2		10
707	712	2			2
707	713	138	11	7	158
707	714	62	12	3	82
707	715	1			1
707	716	1			1
707	717	1			1
Cl.4	Total	241	30	7	292
Cl.2&3	Total	1,796	236	22	2,117
707	Total	2,037	266	29	2,409
709	701	12	1		14
709	703	1			1
709	704		1		1
709	705	1		1	2
709	707	8		1	9
709	710	2			2
709	713	6			6
709	714	19	3	9	32
Cl.4	Total	49	5	2	67
Cl.2&3	Total	1,164	168	28	1,398
709	Total	1,213	173	30	1,465
710	701	11	2	1	14
710	703	1		1	2
710	707	8	2		10
710	709	2			2
710	713	11	2	1	14
710	714	6	2		8
Cl.4	Total	39	8	3	50
Cl.2&3	Total	1,256	223	44	1,523
710	Total	1,295	231	47	1,573

VEHICLE TRIPS						
Between	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total	
712	701	2				2
712	707	2				2
712	713	5	1			6
712	714	1				1
712	716	1				1
Cl.4	Total	11	1			12
Cl.2&3	Total	114	32	6		152
712	Total	125	33	6		164
713	701	415	51	56	41	563
713	702	1				1
713	705	1	1			2
713	706		2			2
713	707	138	11	7	2	158
713	709	6				6
713	710	11	2	1		14
713	712	5	1			6
713	714	27	4	4	1	36
713	716	6	3	1		10
713	718	1				1
Cl.4	Total	611	75	69	44	799
Cl.2&3	Total	5,443	545	295	105	6,388
713	Total	6,054	620	364	149	7,187
714	701	15	6	6		27
714	702		1	1		2
714	703	2	2			4
714	705	2				2
714	706	1				1
714	707	62	12	3	5	82
714	709	19	3	9	1	32
714	710	6	2			8
714	712	1				1
714	713	27	4	4	1	36
714	716	2	1	1		4
714	717		2			2
Cl.4	Total	137	31	26	7	201
Cl.2&3	Total	1,726	232	91	7	2,056
714	Total	1,863	263	117	14	2,257

VEHICLE TRIPS						
Between	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total	
716	701	2				2
716	706	1				1
716	707	1				1
716	712	1				1
716	713	6				6
716	714	2	3	1		6
716	715	1	1			2
Cl.4	Total	14	5	2		21
Cl.2&3	Total	109	21	7		137
716	Total	123	26	9		158
717	705			1		1
717	707	1				1
717	714			2		2
Cl.4	Total	1		3		4
Cl.2&3	Total	42	6			48
717	Total	43	6	3		52
718	713	1				1
Cl.4	Total	1				1
Cl.2&3	Total	57	10			67
718	Total	58	10			68

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