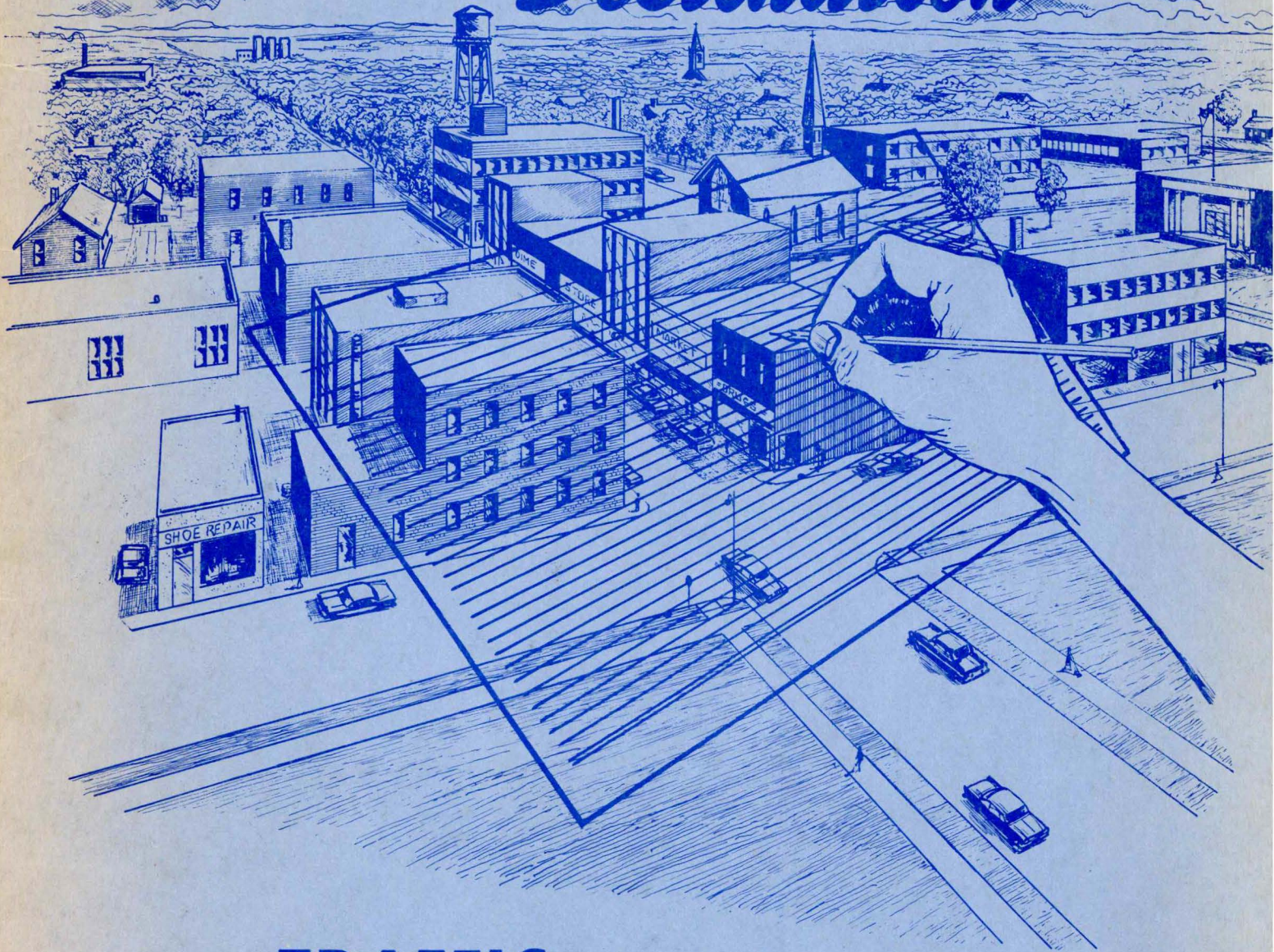


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STUART

Origin and Destination



**TRAFFIC
REPORT**

Iowa

AUGUST 1959 - 61

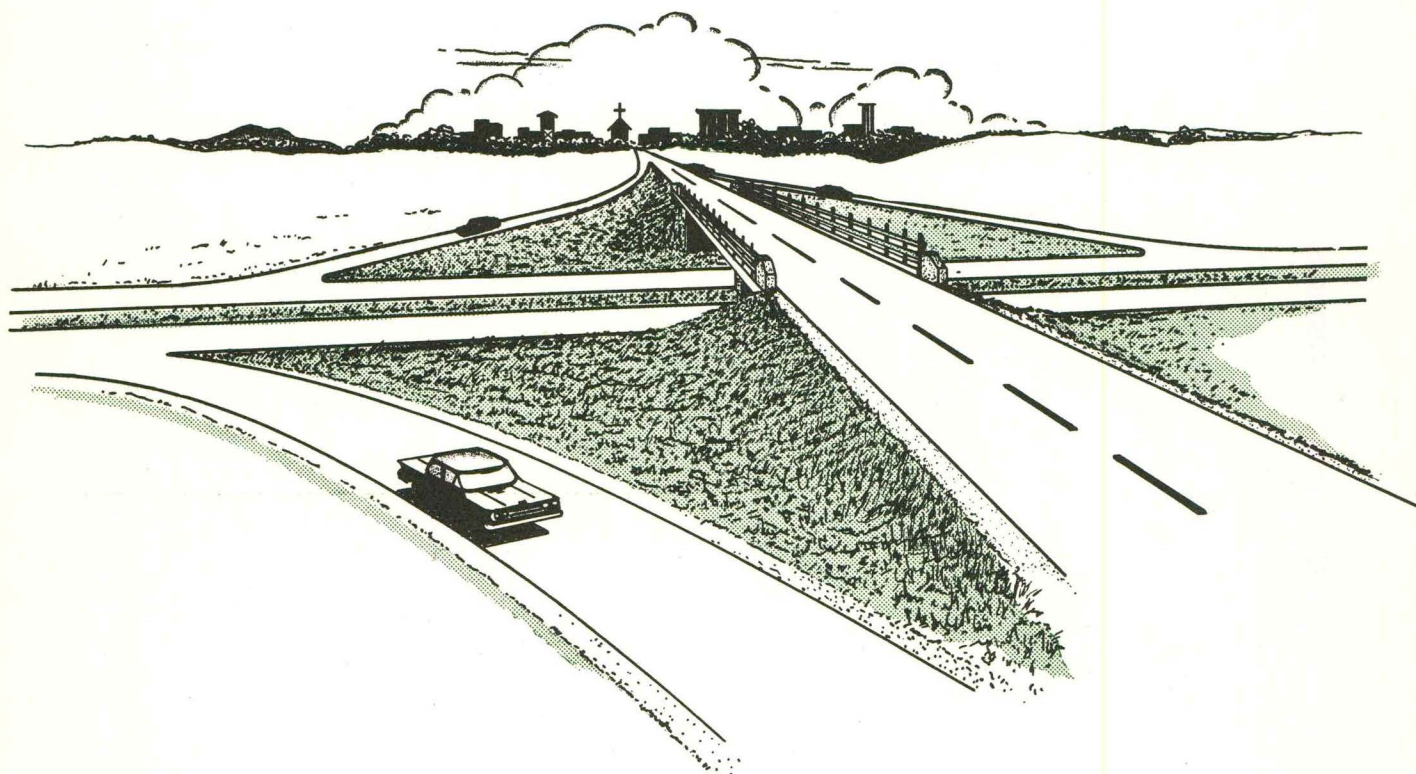
STATE OF IOWA

STUART

ORIGIN AND DESTINATION

TRAFFIC STUDY

JANUARY 1963



PREPARED BY

TRAFFIC AND HIGHWAY PLANNING DEPARTMENT

DIVISION OF PLANNING

IOWA STATE HIGHWAY COMMISSION

IN COOPERATION WITH THE

UNITED STATES BUREAU OF PUBLIC ROADS

INTRODUCTION

In September, 1959 and again in August, 1961 the Iowa State Highway Commission in cooperation with the United States Bureau of Public Roads conducted external origin-destination surveys in Stuart, Iowa.

These surveys were undertaken to determine the extent to which traffic patterns in and around Stuart would be affected by the construction of Interstate 80 just south of Stuart.

The purpose of this report is to present traffic data obtained in the Stuart area before and after the completion of Interstate 80 in this area. No attempt has been made in this report to form conclusions, but rather to present the findings of the surveys in a manner which will facilitate comparison.

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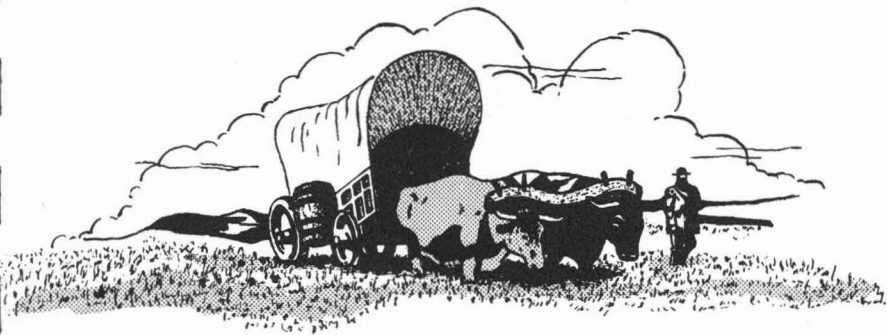
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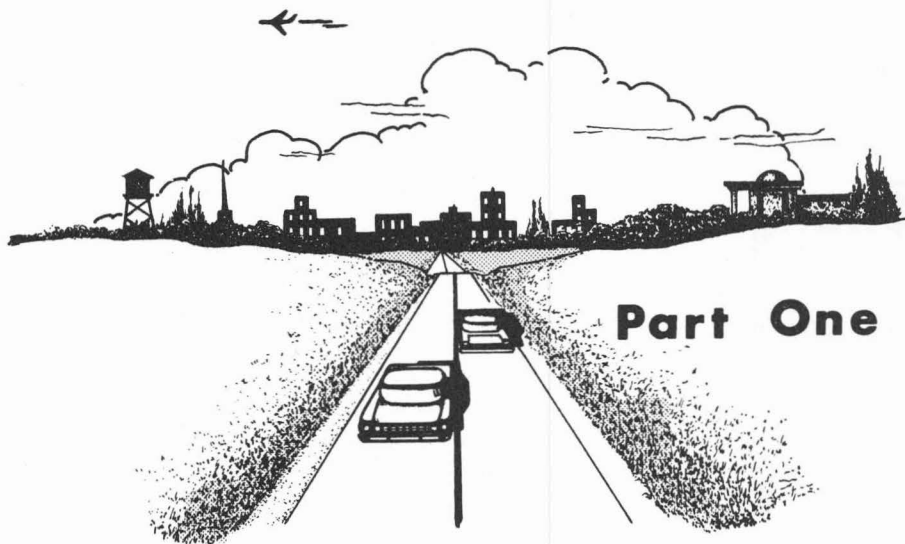
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DEFINITIONS OF TECHNICAL TERMS

Central Business District (C.B.D.)	The major business district of a city
Cordon Line	The boundary of the area being studied.
Desire Line	A straight line between the point of origin and point of destination without regard to routes of travel.
Destination	The place where a trip ends.
External Trip	A movement having origin, destination, or both outside the study area.
Internal Trip	A movement having both origin and destination within the area under study.
Origin	The location from which the driver started the trip.
Through Trip	A movement with neither origin nor destination within the area under study.
Tract	An area containing one or more city blocks and usually consisting of a more or less homogenous development.
Trip	The one-way travel between origin and destination.
Urban Area	The area included within and adjacent to a municipality or other urban place of 5,000 or more in population.



History and Development



Part One

HISTORY OF STUART

Stuart, Iowa was founded in 1869 by Capt. Charles Stuart, a native of Vermont, who came to Iowa from Neponset, Illinois. Captain Stuart spent his first months in Iowa purchasing land in Adair and Guthrie counties, and among his purchases was the land on which the town of Stuart was later established.

It was largely through the efforts of Capt. Stuart, that the Chicago, Rock Island, and Pacific Railroad maintenance shops were located in Stuart. These shops remained until 1897 and contributed greatly to the early growth of the town.

The Exchange State Bank was established in 1871 and was later purchased by the Conger brothers. In 1875 the bank again changed hands when it was purchased by A. H. Savage. The First National Bank was established in 1875 with Charles Bates as its first president.

Among the early businesses of Stuart were two cigar factories, the first being established by C. W. Fathman in 1877 and the second by a Mr. O'Neal in 1878. The first hotel was built in 1869 by a Mr. Willet.

Churches were established in Stuart even before the town was platted. A Quaker meeting house was located at the north edge of town in 1868.

The first school was built in Stuart in 1870 and ten years later the first high school was erected with F. C. Wildes as the first superintendent. The most recent addition to Stuart's school system was made in 1961 when a new building was completed at a cost of \$360,000.

In the early 1880's a District Fair was established at Stuart with Guthrie, Adair, Madison and Dallas counties taking part. In the spring of 1884, Kelley's Army, a branch of Coxey's Army camped overnight at the Stuart fair grounds leaving for Des Moines the next day. Jack London, the famous novelist was a member of the group.

Stuart is located on the Guthrie-Adair county line southwest of Des Moines. Iowa Highway 90 passes directly through the town while Interstate 80 passes just south of the town.

POPULATION TRENDS

Table 1
STUART POPULATION

Census Year	Stuart Population	Percent Change 10 Year Period	Percent Change Since 1900
1900	2079		
1910	1826	-12.16	-12.16
1920	1716	- 6.02	-17.46
1930	1626	- 5.24	-21.79
1940	1611	- .92	-22.51
1950	1500	- 6.89	-27.85
1960	1480	- 1.33	-28.81

Table 2
ADAIR AND GUTHRIE CO. POPULATION

Census Year	County Population	Percent Change 10 Year Period	Percent Change Since 1900
1900	16192		
1910	14420	-10.94	-10.94
1920	14259	- 1.12	-11.94
1930	13891	- 2.58	-14.21
1940	13196	- 5.00	-18.50
1950	12266	- 7.05	-24.25
1960	10893	-11.19	-32.73
1900	18792		
1910	17374	- 7.55	- 7.55
1920	17596	1.28	- 6.36
1930	17324	- 1.55	- 7.81
1940	17210	- .66	- 8.42
1950	15156	-11.93	-19.35
1960	13607	-10.22	-27.59

Adair Co.

Guthrie Co.

STUDY AREA POSITION IN THE MIDWEST

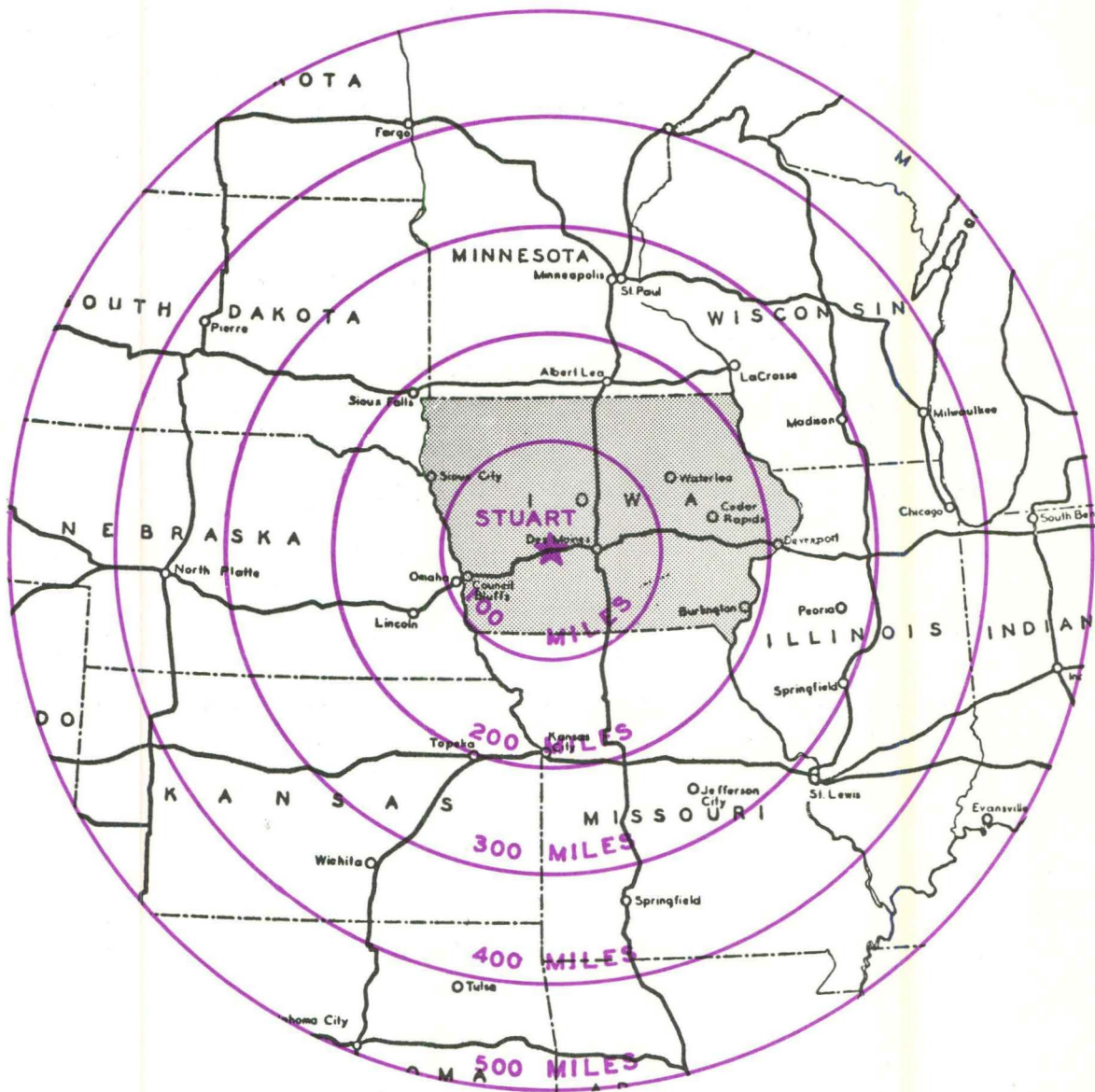
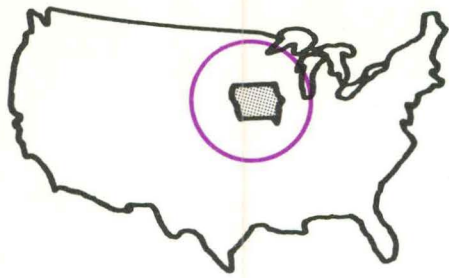


FIGURE 1

STUDY AREA POSITION IN IOWA

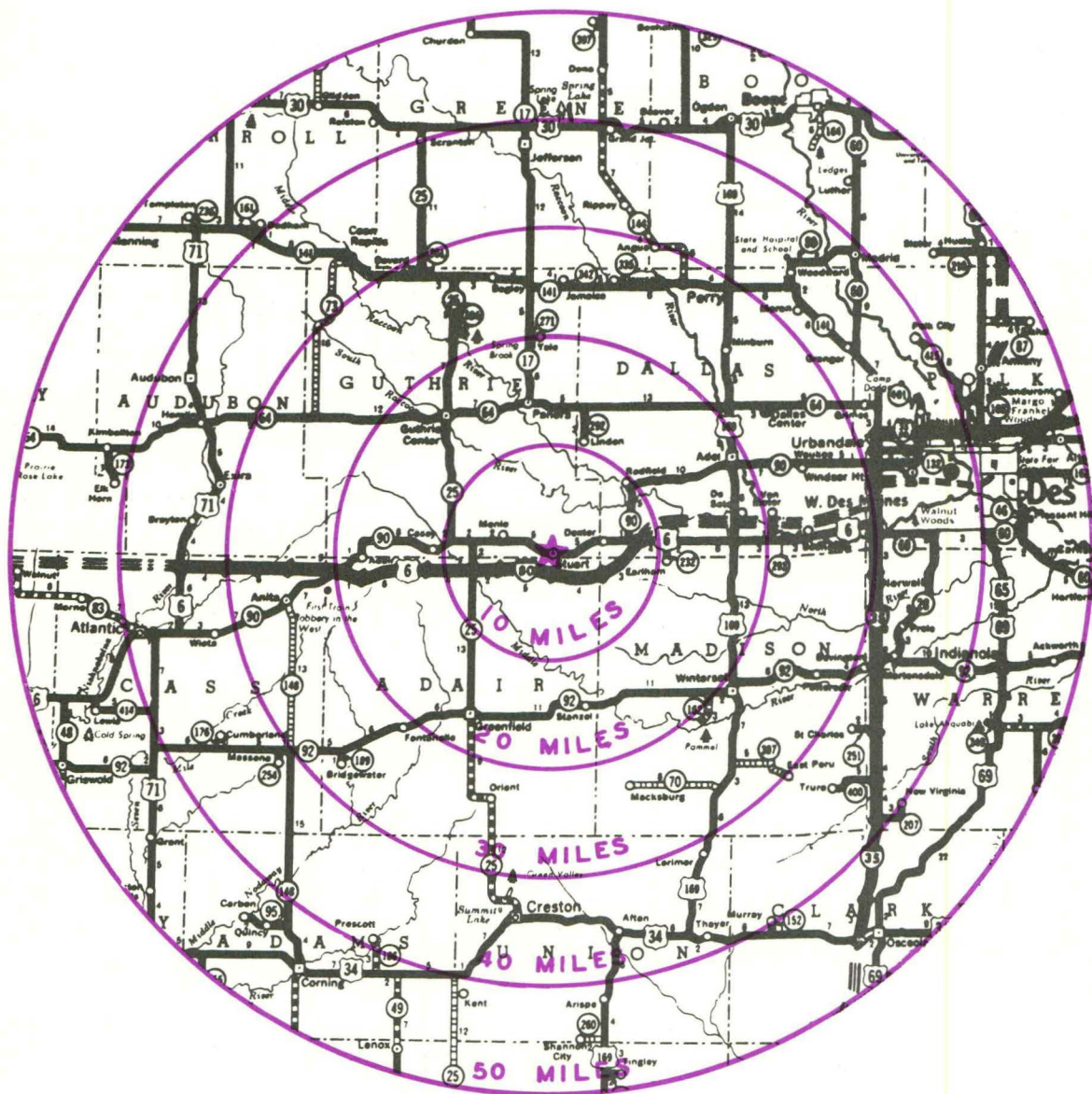
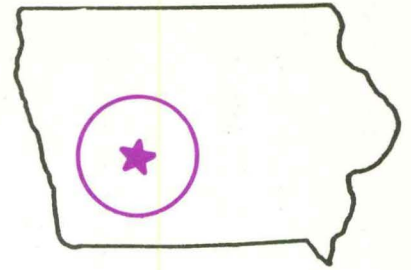


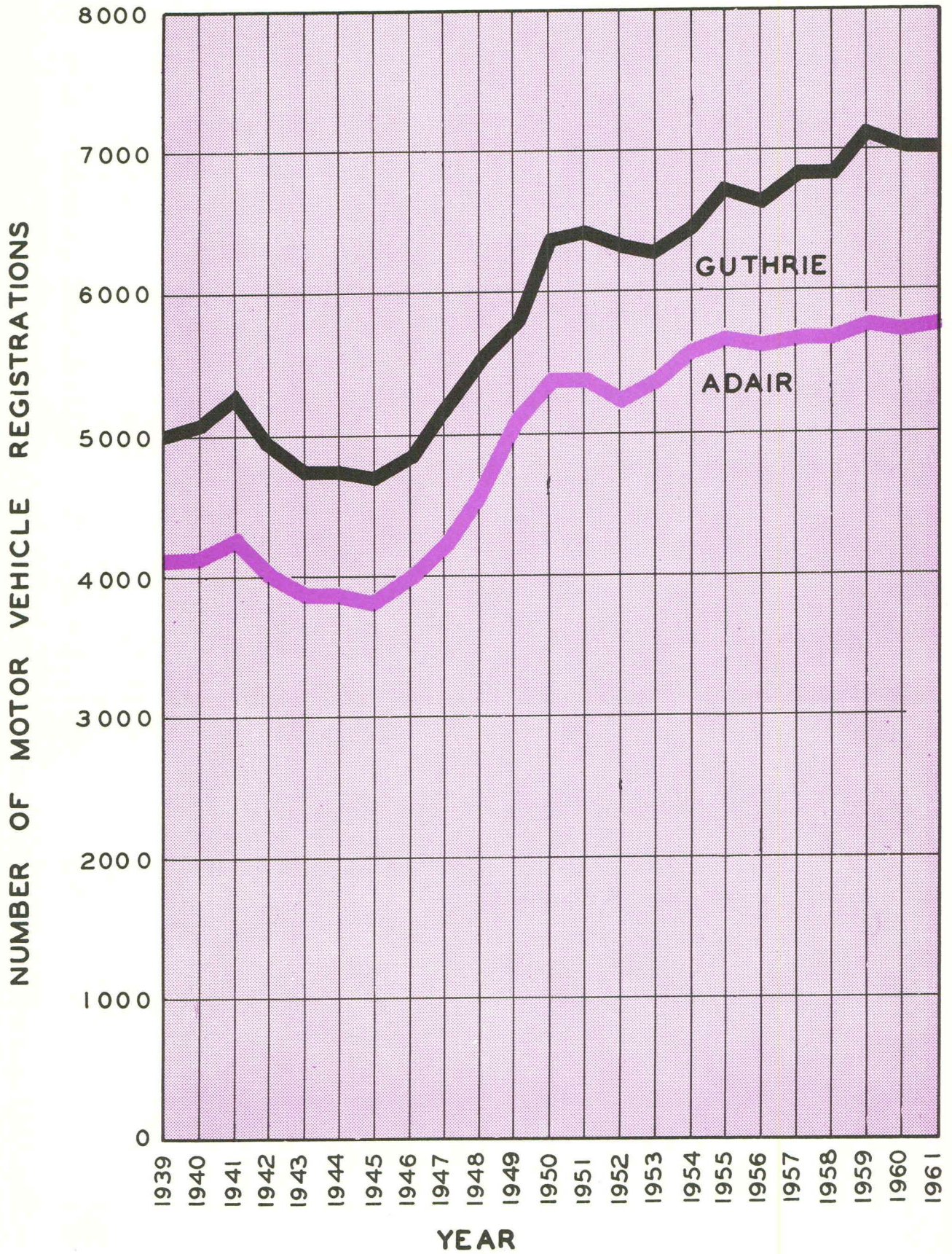
FIGURE 2

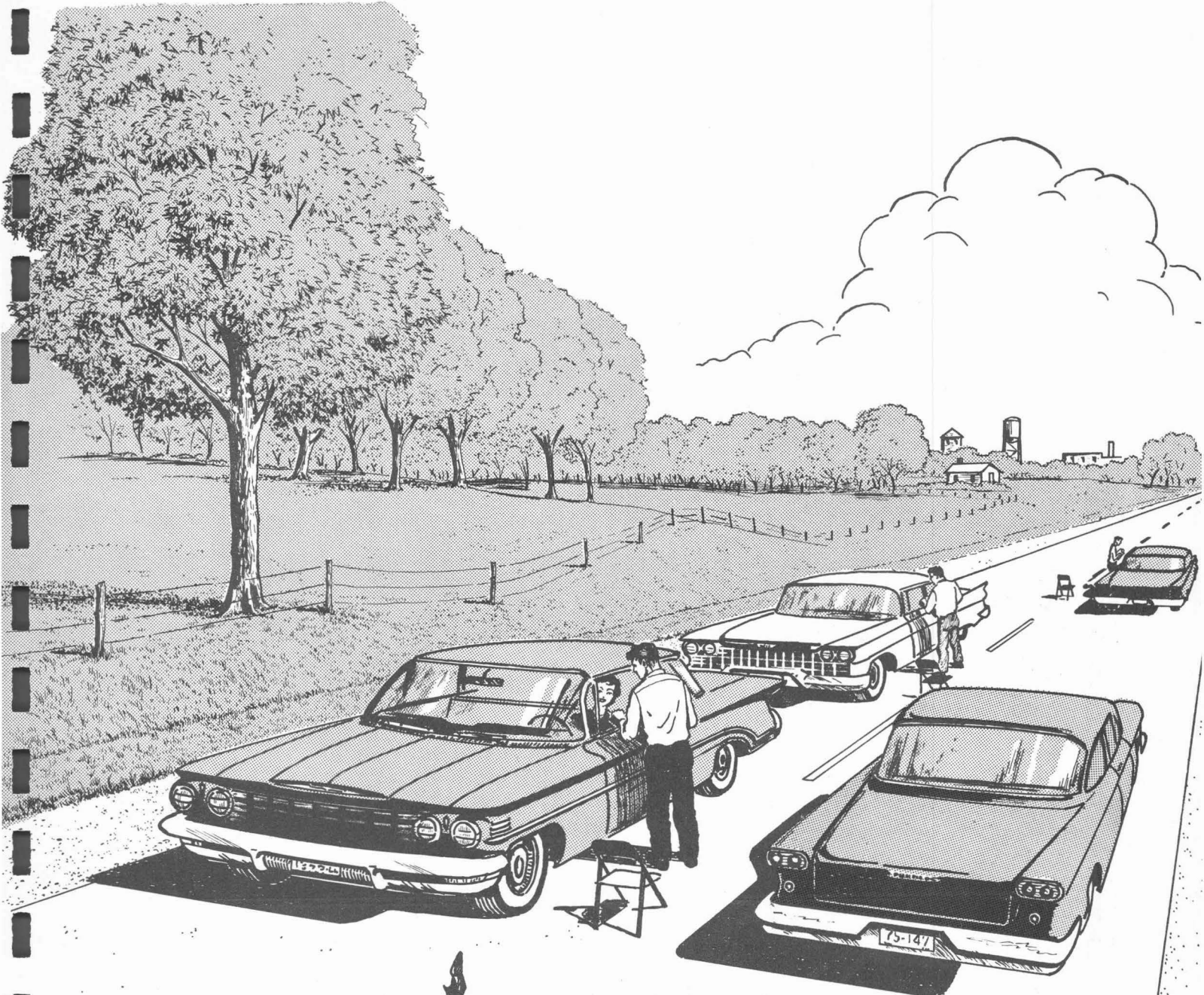
Table 3
MOTOR VEHICLE REGISTRATION IN
ADAIR AND GUTHRIE COUNTIES

Year of Registration	Passenger Vehicles ^{1/}			Commercial Vehicles			Grand Totals		Percent Change	
	Adair County	Guthrie County	Total	Adair County	Guthrie County	Total	Adair County	Guthrie County	Adair County	Guthrie County
1939	3656	4326	7982	427	572	999	4083	4898		
1940	3647	4431	8078	454	635	1089	4101	5066	.44	3.43
1941	3748	4575	8323	488	682	1170	4236	5257	3.29	3.77
1942	3501	4282	7783	474	641	1115	3975	4923	-6.16	-6.35
1943	3425	4058	7483	444	622	1066	3869	4680	-2.67	-4.94
1944	3427	4025	7452	437	647	1084	3864	4672	- .10	- .17
1945	3340	3972	7312	483	653	1136	3823	4625	-1.06	-1.01
1946	3406	4070	7476	547	718	1265	3953	4788	3.40	3.52
1947	3563	4320	7883	634	827	1461	4197	5147	6.17	7.50
1948	3803	4569	8372	744	921	1665	4547	5490	8.34	6.66
1949	4172	4791	8963	883	1045	1928	5055	5836	11.17	6.30
1950	4362	5203	9565	976	1136	2112	5338	6339	5.60	8.62
1951	4305	5145	9450	1024	1227	2251	5329	6372	- .17	.52
1952	4192	5040	9232	1023	1248	2271	5215	6288	-2.14	- .52
1953	4284	5006	9290	1060	1241	2301	5344	6247	2.47	- .65
1954	4391	5086	9477	1142	1326	2468	5533	6412	3.54	2.64
1955	4522	5352	9874	1134	1366	2500	5656	6718	2.22	4.77
1956	4417	5219	9636	1165	1351	2516	5582	6570	-1.31	-2.20
1957	4441	5415	9856	1190	1363	2553	5631	6778	.88	3.17
1958	4454	5388	9842	1207	1413	2620	5661	6801	.53	.34
1959	4491	5581	10072	1256	1508	2764	5747	7089	1.52	4.23
1960	4464	5444	9908	1241	1541	2782	5705	6985	- .73	-1.47
1961	4466	5422	9888	1298	1568	2866	5764	6990	1.03	.07

^{1/} Includes motorcycles

FIGURE 3
MOTOR VEHICLE REGISTRATION
IN
ADAIR AND GUTHRIE COUNTIES





Survey

Procedure

Part Two

PROCEDURE

An origin-destination survey, as the name implies, is a comprehensive study of trip termini with special emphasis being placed on the origin, destination, and routes of travel between the terminal points of each trip. The ultimate goal of such a survey is to obtain factual evidence of traffic patterns in a given locality.

Two origin-destination surveys were taken in Stuart to determine the extent to which traffic patterns in this area would be affected by the construction of Interstate 80. In both surveys the tracts within the study area were identical. Interview stations were likewise established in the same locations for each survey with two additional stations being added for the 1961 survey.

On September 4, 1959, two interview stations were established on U.S. Highway 6 near the east and west corporate limits of Stuart. On the 3rd and 4th days of August, 1961, interviews were again taken at these two locations (now Iowa Highway 90, due to a change in highway designation). In addition, interview stations were also established on F.A.S. 690 south of town and on Interstate 80 west of the Stuart interchange.

In both surveys the town was divided into five internal tracts using major streets or highways in most cases as the dividing lines between tracts. A map showing the location of interview stations and tracts will be found on page 12. No stations were established on secondary roads other than F.A.S. 690 south, but other secondary roads were given a station number which is shown on the map mentioned above.

Interviewing for both surveys was done over a sixteen hour period from 6 A.M. to 10 P.M. Each vehicle passing through an interview station was stopped and the driver was asked the origin, destination, and purpose of his trip. In addition, interviewers also noted and recorded the type of vehicle, number of occupants, direction of travel, and the state or Iowa county in which the vehicle was registered.

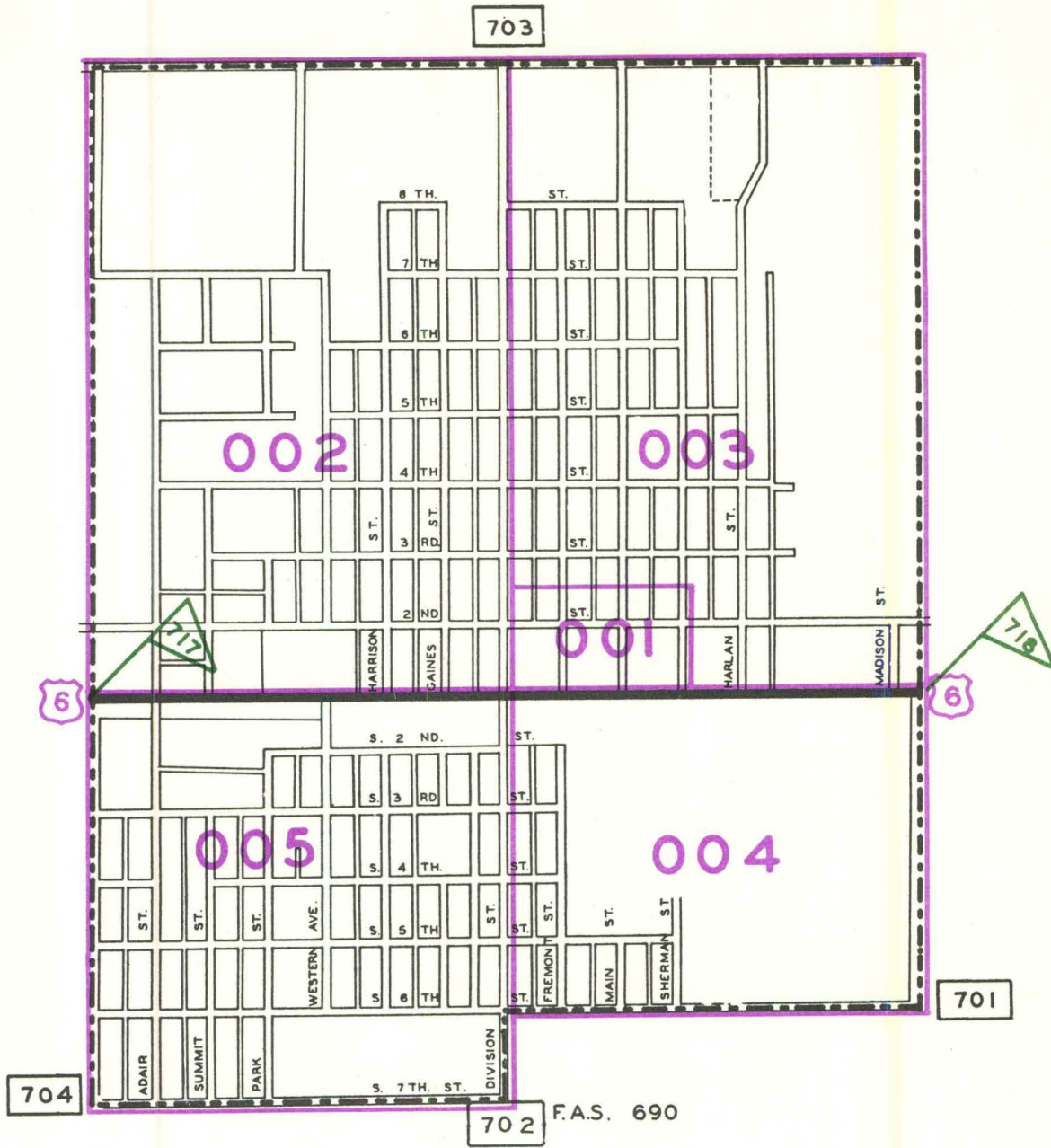
Additional data for both surveys was gathered by means of mechanical recorders and manual vehicle classification counts. This information was then used to expand the interview data to 24 hour August average weekday traffic for 1959 and 1961.

In external surveys of this type, all trips are grouped into two main categories as shown below.

1. External trips. Trips in this category have only one terminal point within the study area and pass through only one interview station enroute to their destination. (In the 1961 survey in Stuart it was possible for some external trips to pass through two stations, 716 and 757 and yet be classed as external trips.)

2. Through trips. Trips in this category have no terminal point within the study area and therefore must pass through two or more interview stations while enroute to their destination.

Traffic flow charts indicating the internal dispersion of trips 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.



LEGEND

1959 STATION NUMBER AND LOCATION 

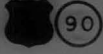
TRACT NUMBER
TRACT BOUNDARY LINE 

001



FIGURE 4
TRACT MAP OF
STUART

WITH EXTERNAL STATION LOCATIONS



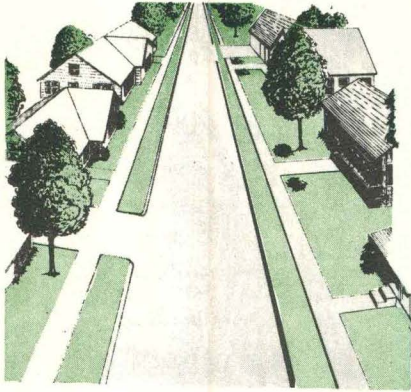
1961 STATION NUMBER AND LOCATION



Summary



INTERNAL TRACTS



THROUGH TRIPS

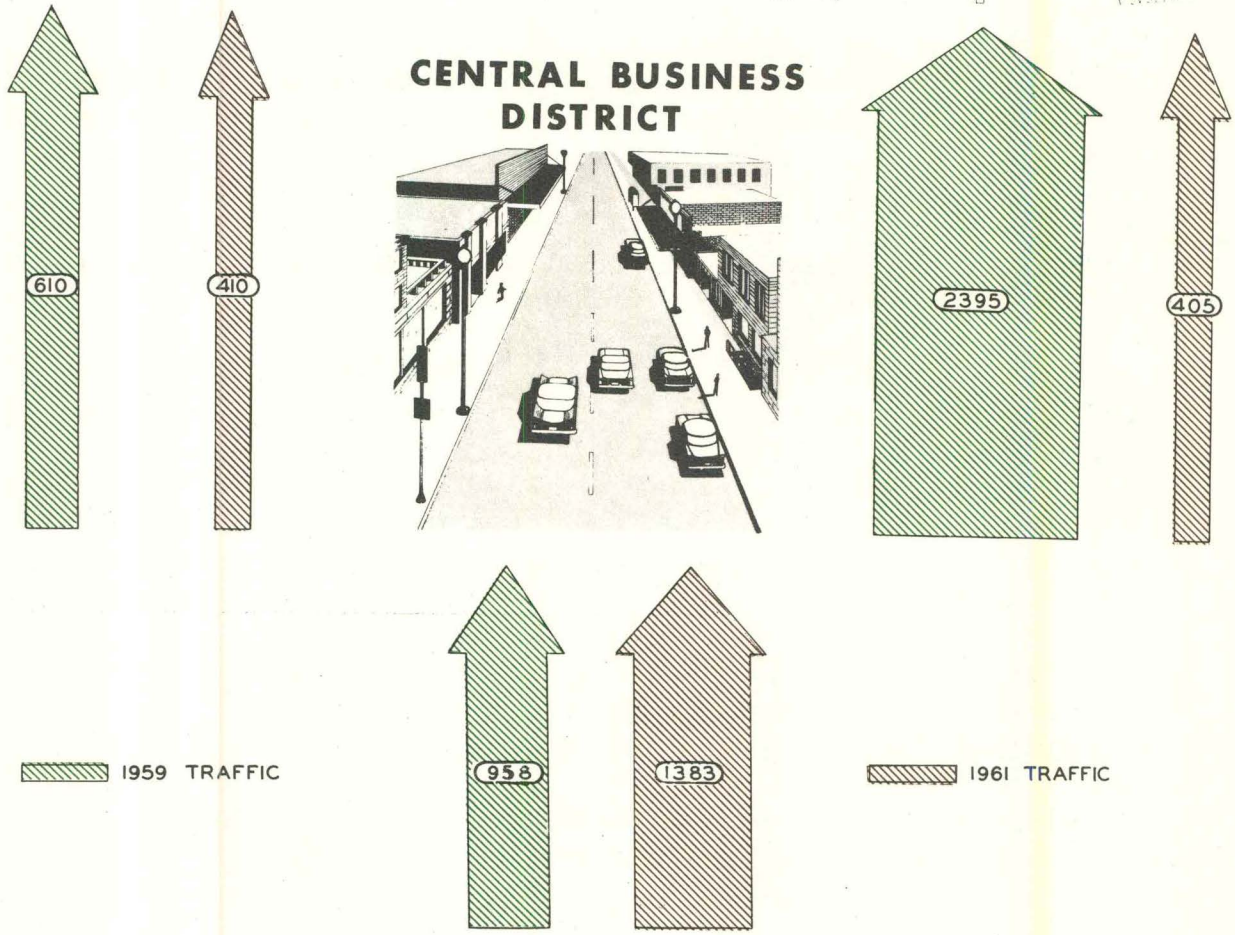
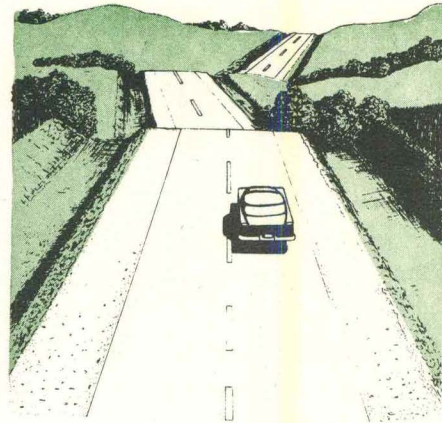


FIGURE 5
DISTRIBUTION OF TRIPS
STUART ORIGIN AND DESTINATION SURVEY
1959 AND 1961

SUMMARY OF TRIPS

The chart at left graphically illustrates some of the more significant traffic volumes derived from the origin-destination surveys conducted in Stuart in 1959 and 1961.

In 1959

958 trips or 24.18 percent of the total number of trips were between external areas and the C.B.D.

610 trips or 15.39 percent of the total number of trips were between external and internal areas exclusive of the C.B.D.

2395 trips or 60.43 percent of the total number of trips were through trips which passed through Stuart enroute to another destination.

In 1961

1383 trips or 30.36 percent of the total number of trips were between external areas and the C.B.D.

410 trips or 9.00 percent of the total number of trips were between external areas and internal tracts exclusive of the C.B.D.

405 trips or 8.89 percent of the total number of trips were through trips which passed through Stuart enroute to another destination.

2357 trips or 51.75 percent of the total trips were through trips which did not pass through Stuart but remained on Interstate 80 and were interviewed at station 757.

It will be noted that the number of through trips passing through Stuart were reduced from 2395 to 405 after the completion of this portion of Interstate 80. The number of trips with termini in the C.B.D. increased from 958 to 1383.

VEHICLE TYPE
1959 AND 1961 SURVEYS

Table 4
August Average Weekday Traffic 1959

External Station Location	Passenger Cars and Pick-ups	Single Unit Trucks	Truck Combinations	Total	No. of Interviews	Percent Interviewed
U.S. 6 W.	2415	275	321	3011	2626	87.21
U.S. 6 E.	2696	214	329	3239	2819	87.03
Total	5111	489	650	6250	5445	87.12

Table 5
August Average Weekday Traffic 1961

External Station Location	Passenger Cars and Pick-ups	Single Unit Trucks	Truck Combinations	Total	No. of Interviews	Percent Interviewed
F.A.S. 690 S	851	64	17	932	917	98.39
Ia. 90 W.	758	71	6	835	834	99.88
Ia. 90 E.	750	48	12	810	900	111.11
I-80	2029	114	428	2571	1968	76.55
Total	4388	297	463	5148	4619	89.72

Tables 4 and 5 above show the total traffic which passed through interview stations in the Stuart area during the 1959 and 1961 surveys.

TRIP PURPOSE

Table 6
August Average Weekday Traffic 1959

Station Location	Work		Social		Shopping		Other		Total
	No.	%	No.	%	No.	%	No.	%	
U.S. 6 W.	1638	54.40	1043	34.64	181	6.01	149	4.95	3011
U.S. 6 E.	1835	56.65	1246	38.47	104	3.21	54	1.67	3239
Total-Less Through Trips	2201	55.54	1355	34.19	261	6.59	146	3.68	3963

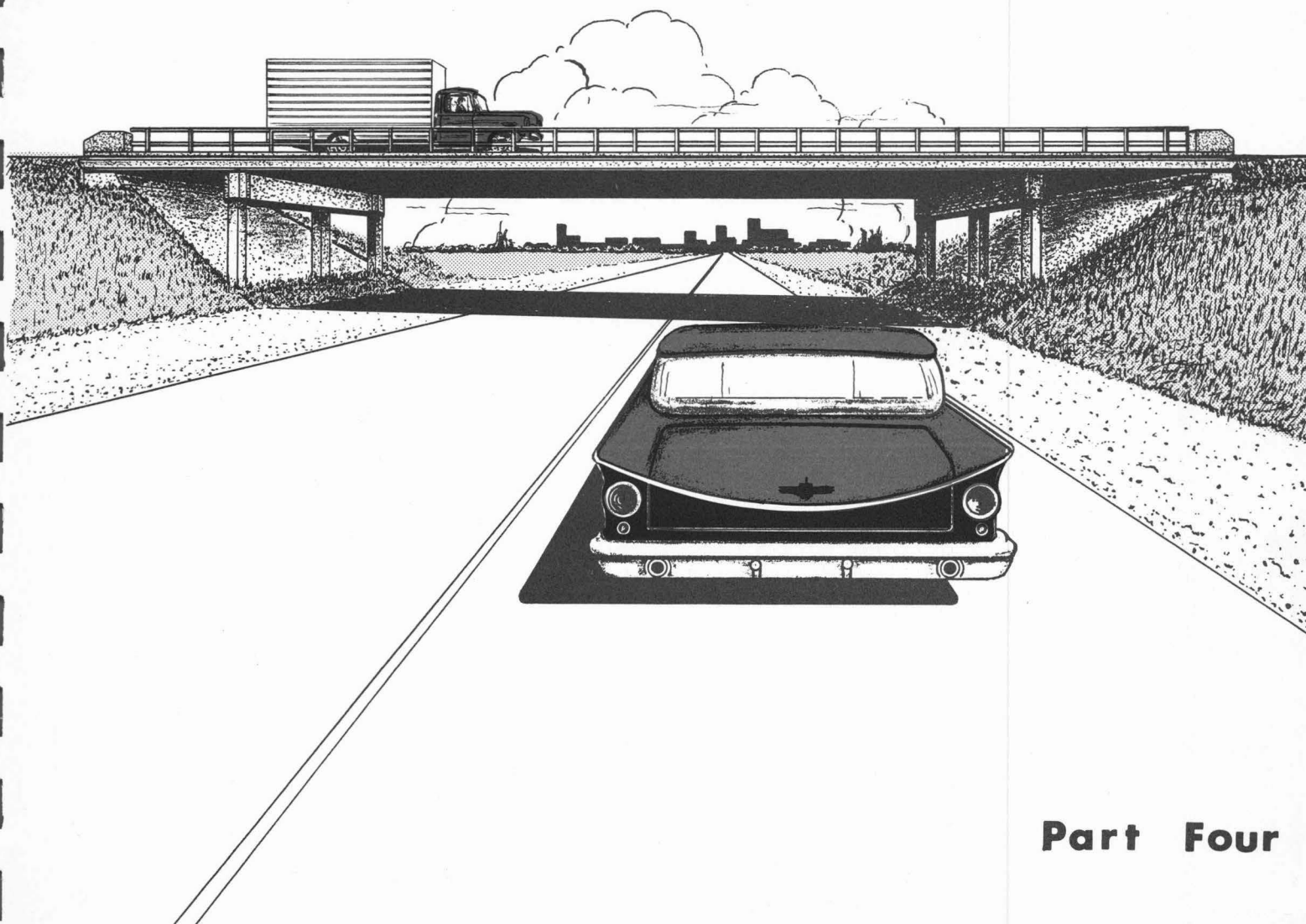
Table 7
August Average Weekday Traffic 1961

Station Location	Work		Social		Shopping		Other		Total
	No.	%	No.	%	No.	%	No.	%	
F.A.S. 690 S.	434	46.57	330	35.41	114	12.23	54	5.79	932
Ia. 90 W.	425	50.90	263	31.50	102	12.21	45	5.39	835
Ia. 90 E.	393	48.52	256	31.60	98	12.10	63	7.78	810
I-80	1449	56.36	1012	39.36	57	2.22	53	2.06	2571
Total-Less Through Trips	2363	51.88	1645	36.11	349	7.66	198	4.35	4555

Tables 6 and 7 above show the trip purpose of vehicle drivers who passed through interview stations in the Stuart origin-destination surveys in 1959 and 1961.

Traffic

Movements



Part Four

TRAFFIC FLOW CHARTS

The following traffic flow charts illustrate the dispersion of traffic between points of origin and/or destination through the specific stations indicated. These charts are not intended to show exact routes, but rather to show the cumulative volume of traffic as it approaches or leaves the station location. Trip origins and destinations are not differentiated and the tract or station totals shown may be considered as either origin or destination.

Figures 6 and 12 illustrate only the movement of through trips between interview stations whereas other flow charts are drawn to show total traffic for specific stations.

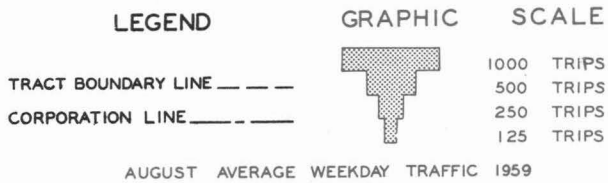
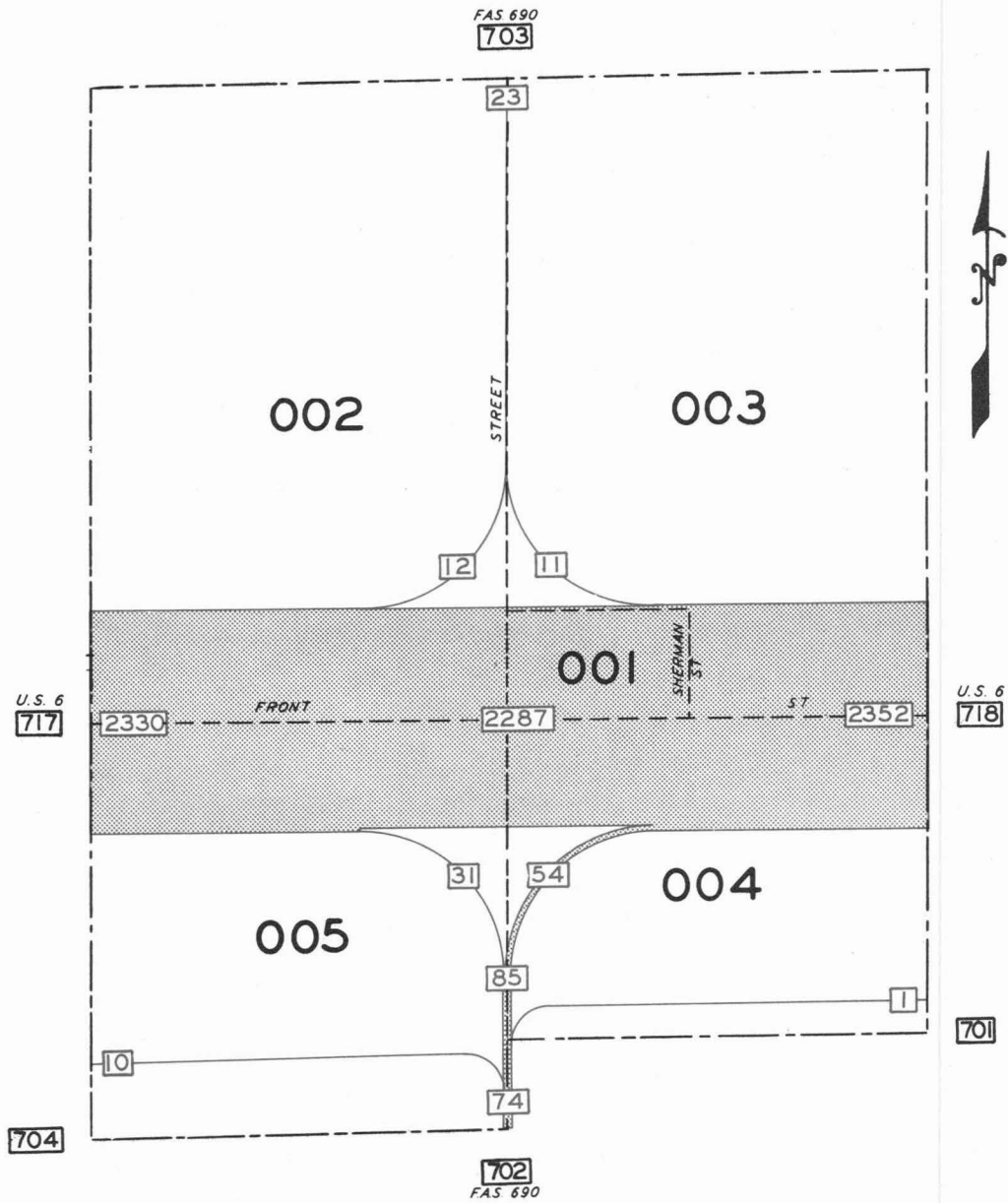


FIGURE 6
 INTERNAL MOVEMENT
 OF
 THROUGH TRIPS BETWEEN STATIONS
 STUART IOWA

TABLE 8
INTERNAL DISPERSION OF TRIPS TO OR FROM U.S. 6 WEST

	Trips	Percent
Trips with internal origin or destination	681	22.62
Trips with external origin and destination	2330	77.38
Grand total of all trips through station 717	3011	100.00
Trips with origin or destination in C.B.D.	477	15.84
Number of interviews (16 hours)	2626	87.21
Percent of total traffic through all primary road entrances		48.18

INTERNAL DISPERSION

Tract	Volume	Percent
001	477	15.84
002	51	1.69
003	73	2.43
004	33	1.10
005	47	1.56
Total	681	22.62

EXTERNAL DISPERSION

Station	Volume	Percent
701	1	.03
702	29	.96
703	12	.40
704	1	.03
717		
718	2287	75.96
Total	2330	77.38

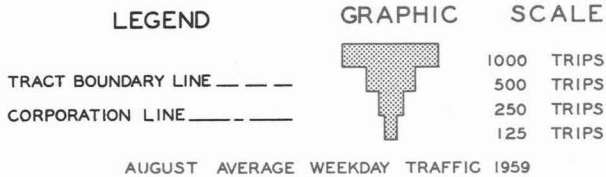
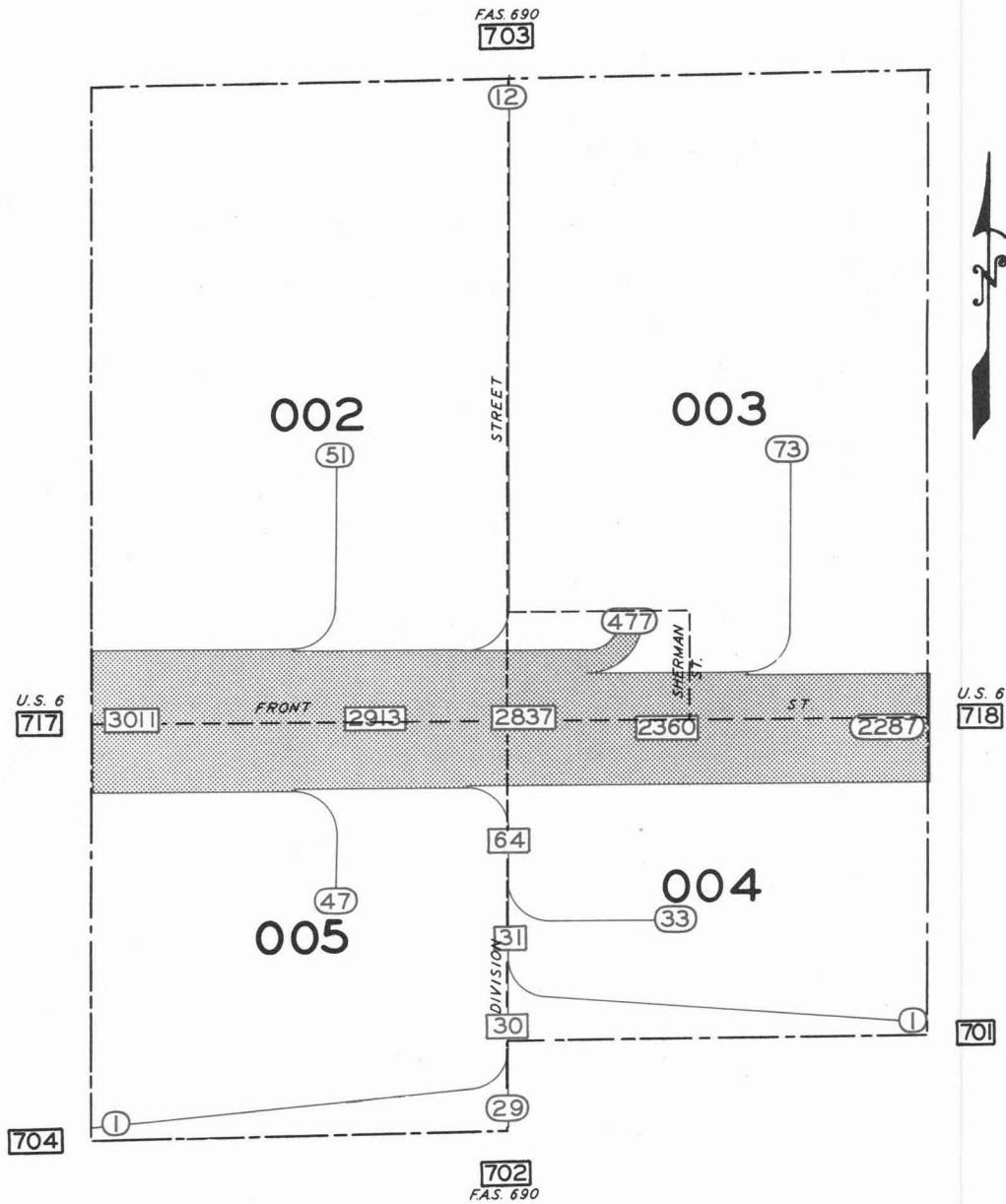


FIGURE 7
 INTERNAL DISPERSION OF TRIPS
 TO OR FROM
 U. S. 6 (STATION 717) WEST
 STUART IOWA

TABLE 9
INTERNAL DISPERSION OF TRIPS TO OR FROM U.S. 6 EAST

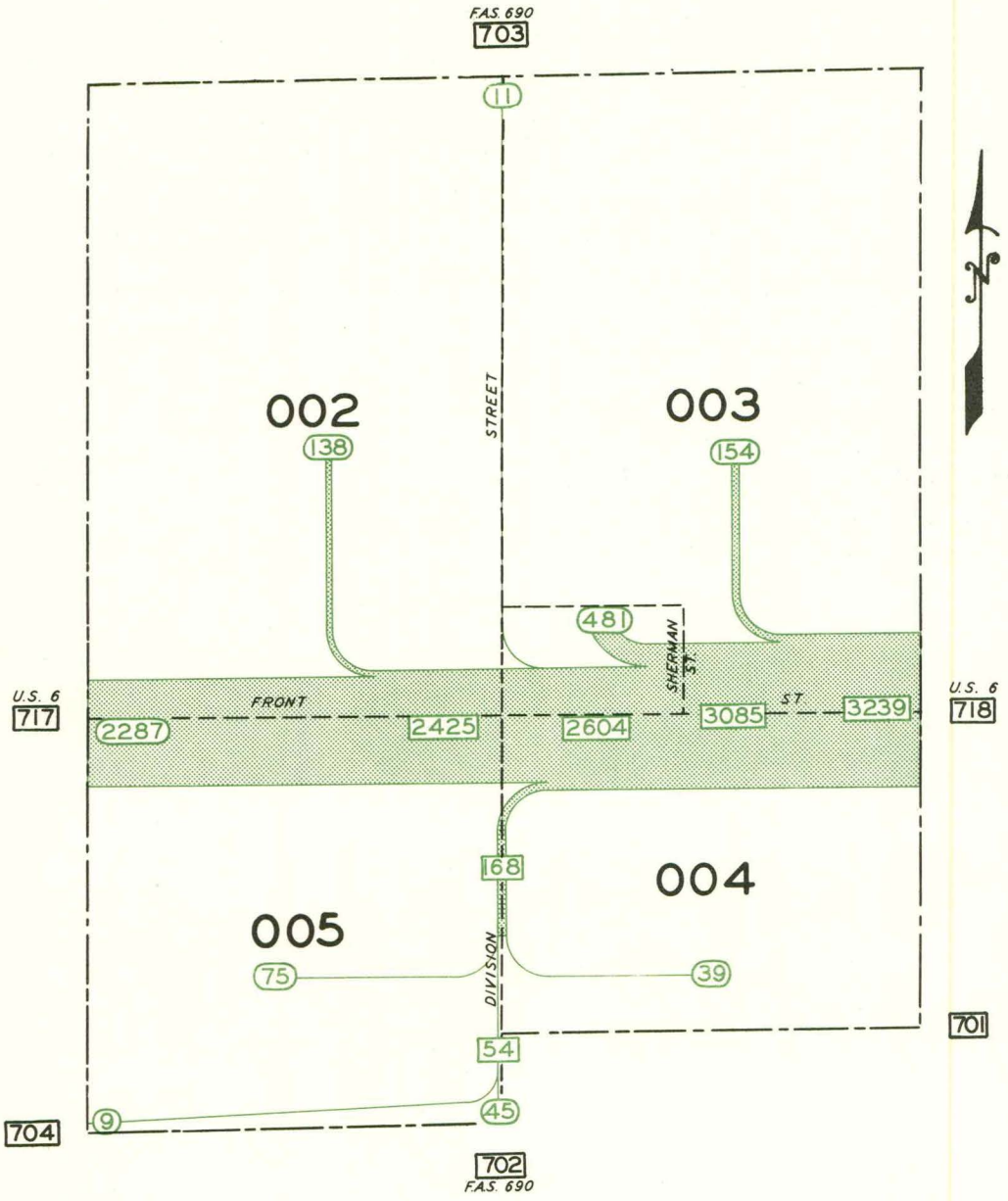
	Trips	Percent
Trips with internal origin or destination	887	27.39
Trips with external origin and destination	2352	72.61
Grand total of all trips through station 718	3239	100.00
Trips with origin or destination in C.B.D.	481	14.85
Number of interviews (16 hours)	2819	87.03
Percent of total traffic through all interview stations		51.82

INTERNAL DISPERSION

Tract	Volume	Percent
001	481	14.85
002	138	4.26
003	154	4.76
004	39	1.20
005	75	2.32
Total	887	27.39

EXTERNAL DISPERSION

Station	Volume	Percent
701		
702	45	1.39
703	11	.34
704	9	.28
717	2287	70.60
718		
Total	2352	72.61



LEGEND

TRACT BOUNDARY LINE - - - - -

CORPORATION LINE _____

GRAPHIC SCALE

1000 TRIPS

500 TRIPS

250 TRIPS

125 TRIPS

AUGUST AVERAGE WEEKDAY TRAFFIC 1959

FIGURE 8

INTERNAL DISPERSION OF TRIPS

TO OR FROM

U. S. 6 (STATION 718) EAST

STUART IOWA

DESIRE LINE CHARTS

The following desire line charts on pages 27 and 39 illustrate desired routes of travel between external stations and internal tracts without regard to existing streets or actual routes traveled. Charts such as these graphically illustrate the travel desires of motorists and frequently point out the need for improvement of existing routes or construction of new ones to satisfy the demands of traffic.

Figures 9, 10, and 11 on page 27 indicate travel desires as revealed by the 1959 origin-destination survey in Stuart. Figures 17, 18, and 19 on page 39 indicate 1961 travel desires in and through the study area.

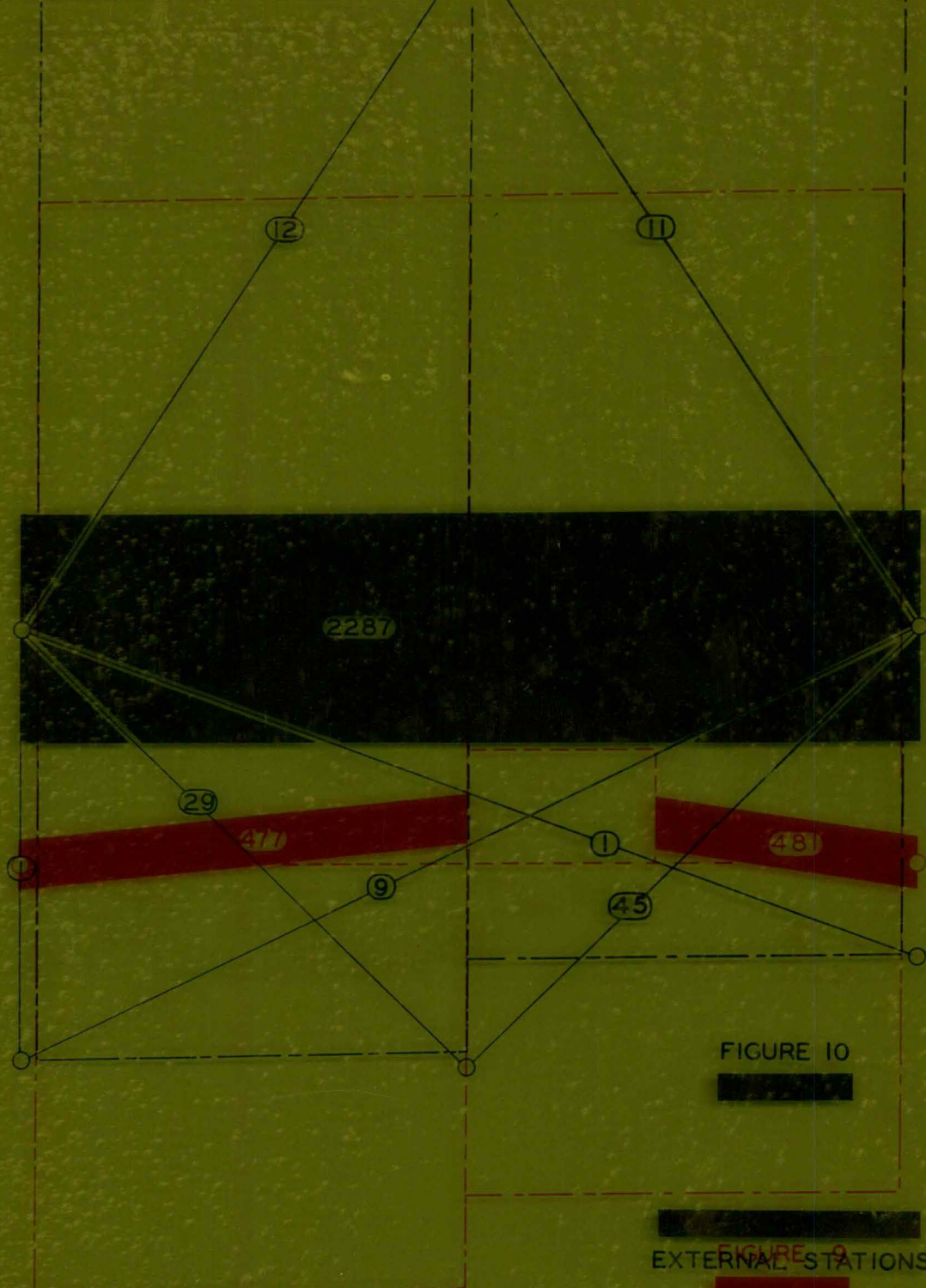


FIGURE 10

EXTERNAL STATIONS

THE CENTRAL BUSINESS DISTRICT

F.A.S. 690
703

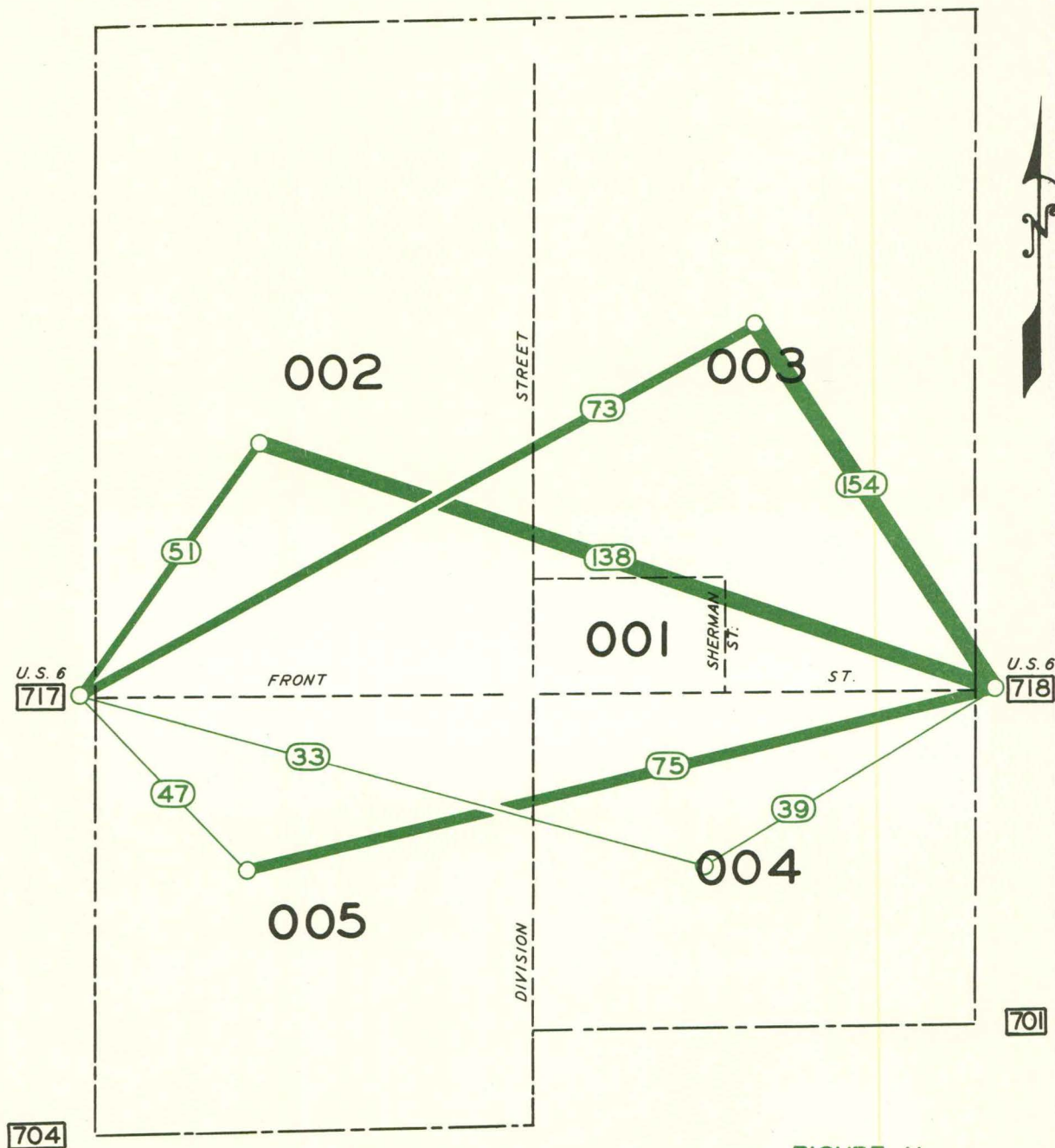


FIGURE II
DESIRE LINES
EXTERNAL STATIONS
TO OR FROM
INTERNAL TRACTS

STUART, IOWA

LEGEND

TRACT BOUNDARY LINE ---

CORPORATION LINE _____

GRAPHIC

SCALE

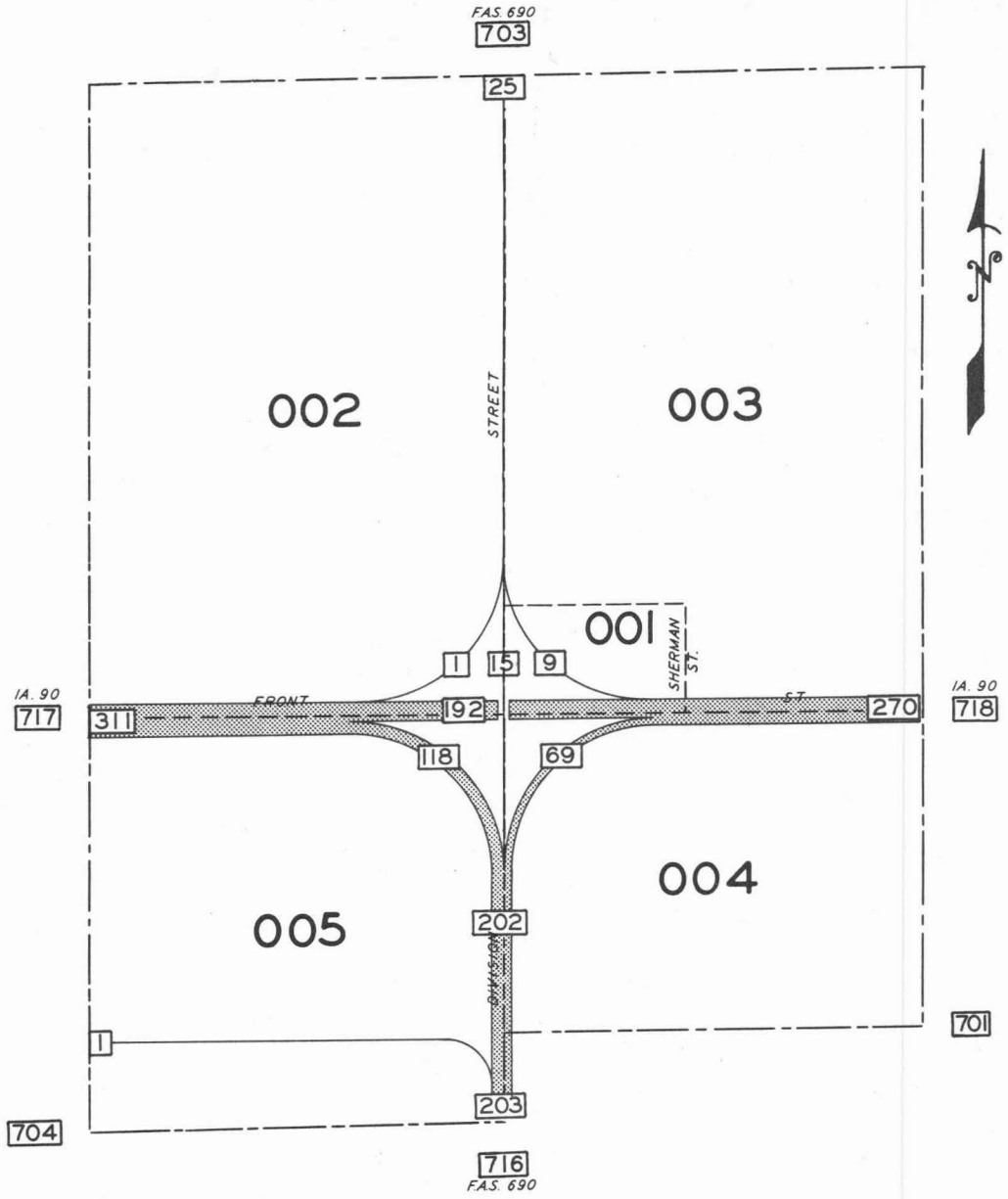
1000 TRIPS

500 TRIPS

250 TRIPS

125 TRIPS

AUGUST AVERAGE WEEKDAY TRAFFIC 1959



LEGEND

TRACT BOUNDARY LINE _____

CORPORATION LINE _____

GRAPHIC

SCALE

1000 TRIPS

500 TRIPS

250 TRIPS

125 TRIPS

AUGUST AVERAGE WEEKDAY TRAFFIC 1961

FIGURE 12
INTERNAL MOVEMENT
OF
THROUGH TRIPS BETWEEN STATIONS
STUART, IOWA

TABLE 10
INTERNAL DISPERSION OF TRIPS TO OR FROM F.A.S. 690 SOUTH

	Trips	Percent
Trips with internal origin or destination	729	78.22
Trips with external origin and destination	203	21.78
Grand total of all trips through station 716	932	100.00
Trips with origin or destination in C.B.D.	454	48.71
Number of interviews (16 hours)	917	98.39
Percent of total traffic through all interview stations		18.10

INTERNAL DISPERSION

Tract	Volume	Percent
001	454	48.71
002	63	6.76
003	73	7.83
004	83	8.91
005	56	6.01
Total	729	78.22

EXTERNAL DISPERSION

Station	Volume	Percent
703	15	1.61
704	1	.11
716		
717	118	12.66
718	23	2.47
757	46	4.93
Total	203	21.78

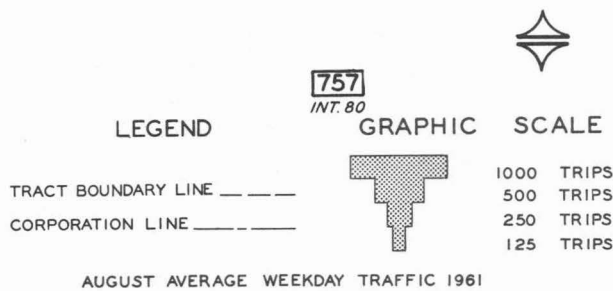
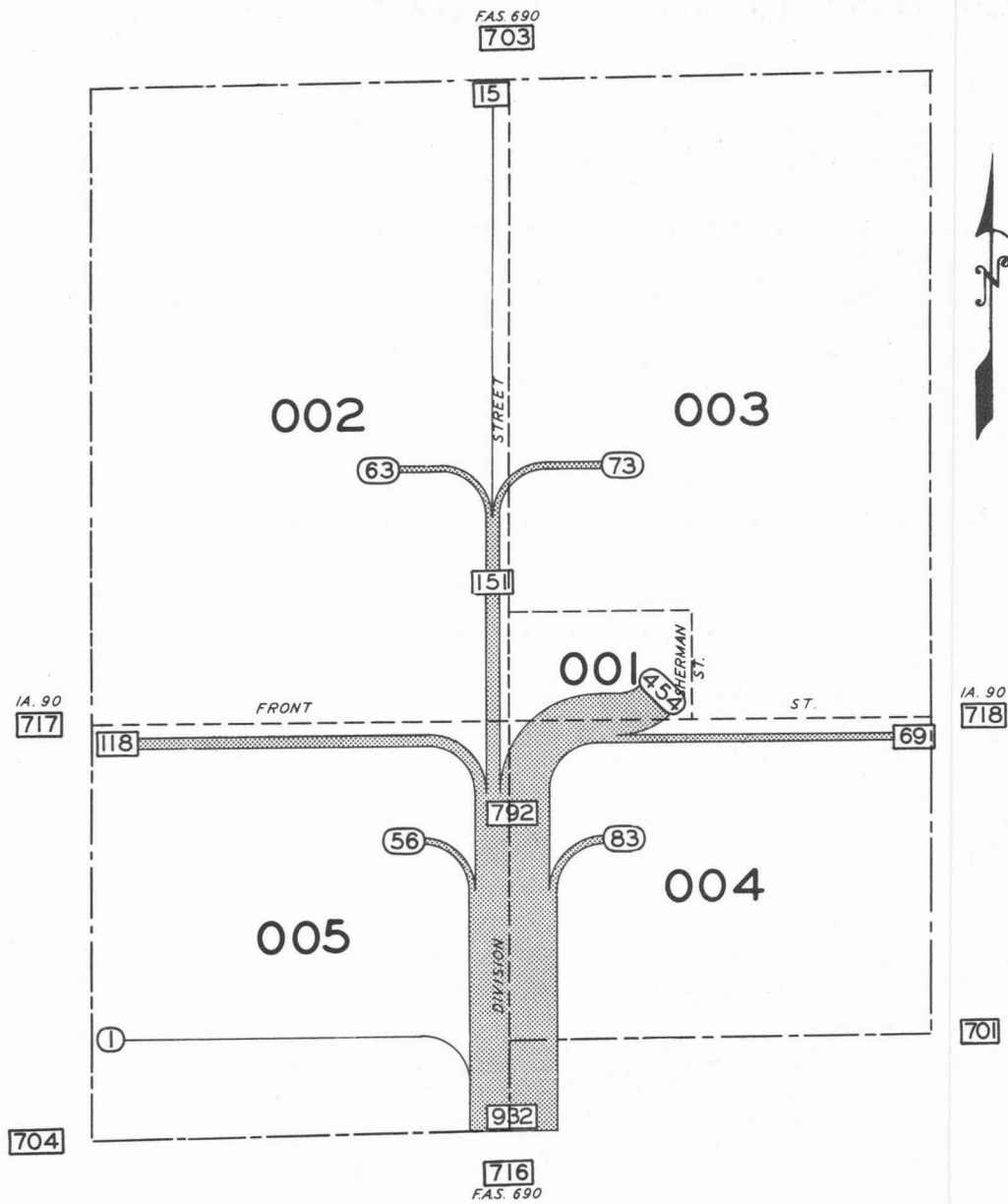


FIGURE 13
INTERNAL DISPERSION OF TRIPS
TO OR FROM
F.A.S. 690 (STATION 716) SOUTH
STUART, IOWA

TABLE 11
INTERNAL DISPERSION OF TRIPS TO OR FROM IOWA 90 WEST

	Trips	Percent
Trips with internal origin or destination	524	62.75
Trips with external origin and destination	311	37.25
Grand total of all trips through station 717	835	100.00
Trips with origin or destination in C.B.D.	450	53.89
Number of interviews (16 hours)	834	99.88
Percent of total traffic through all interview stations		16.22

INTERNAL DISPERSION

Tract	Volume	Percent
001	450	53.89
002	15	1.80
003	26	3.11
004	22	2.63
005	11	1.32
Total	524	62.75

EXTERNAL DISPERSION

Station	Volume	Percent
703	1	.12
704		
716	118	14.13
717		
718	192	23.00
757		
Total	311	37.25

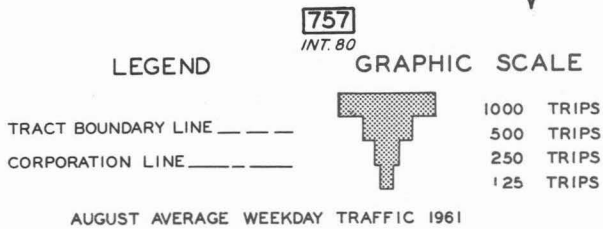
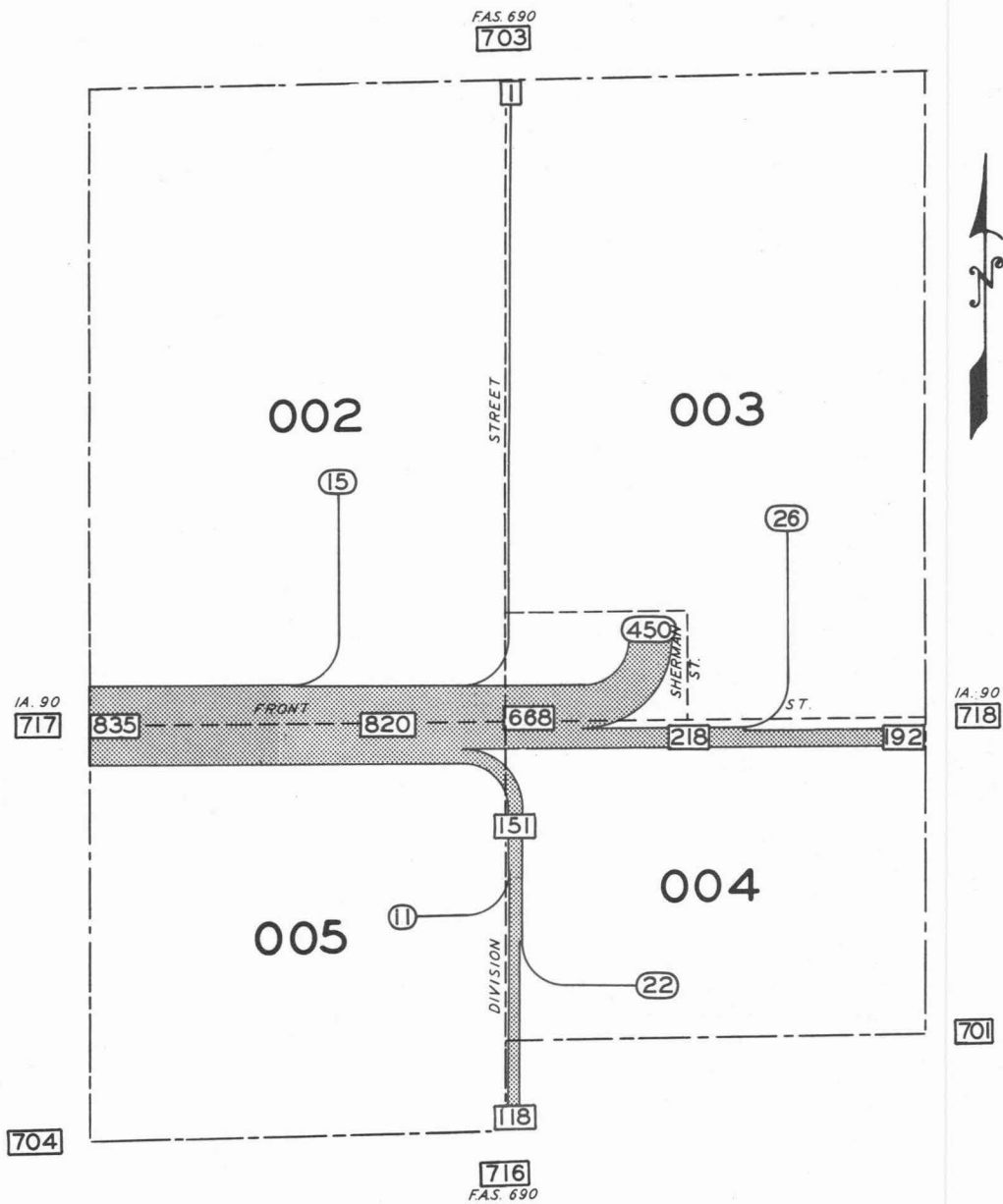


FIGURE 14
INTERNAL DISPERSION OF TRIPS
TO OR FROM
IOWA 90 (STATION 717) WEST
STUART, IOWA

TABLE 12
INTERNAL DISPERSION OF TRIPS TO OR FROM IOWA 90 EAST

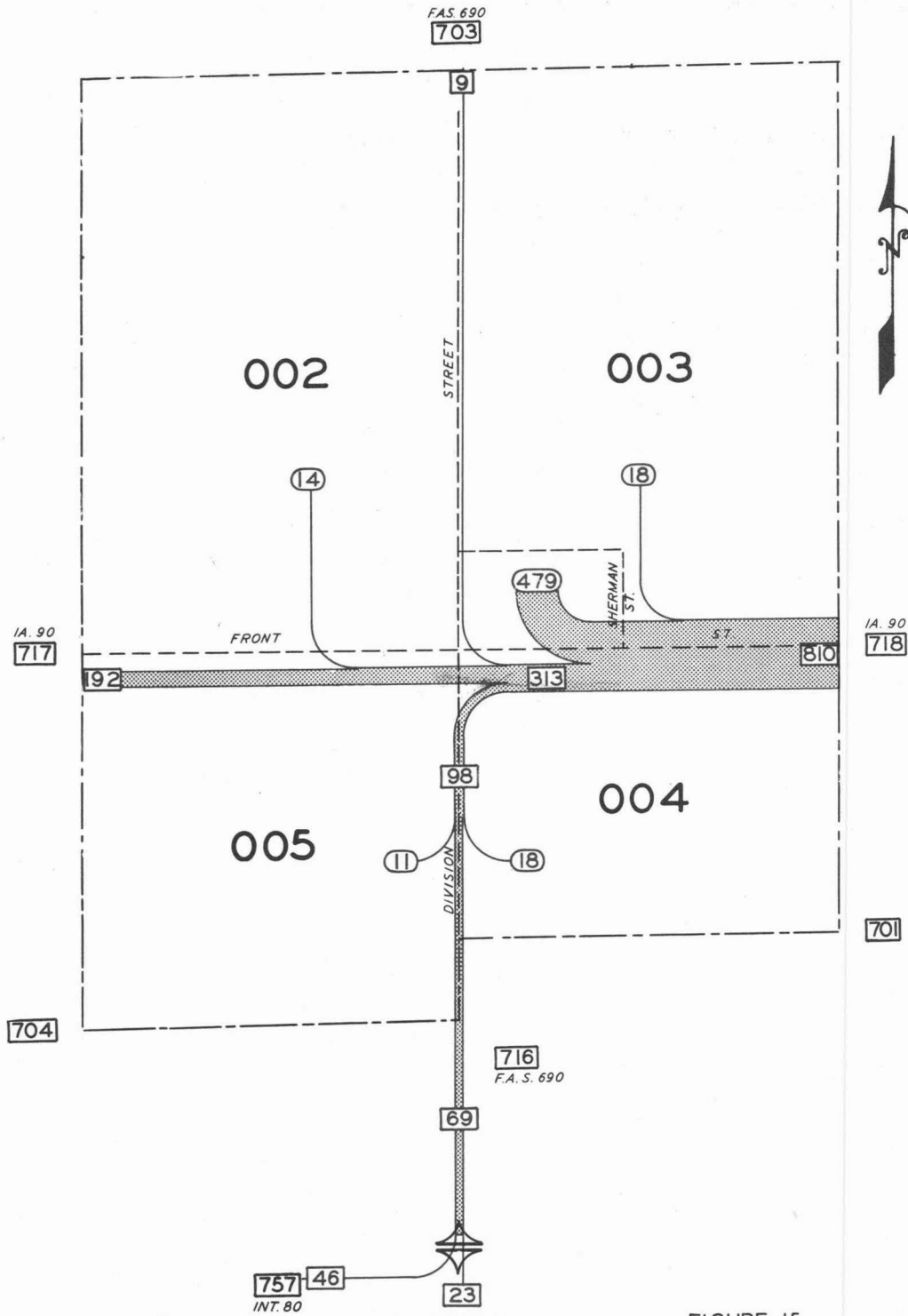
	Trips	Percent
Trips with internal origin or destination	540	66.66
Trips with external origin and destination	270	33.33
Grand total of all trips through station 718	810	100.00
Trips with origin or destination in C.B.D.	479	59.13
Number of interviews (16 hours)	900	111.11
Percent of total traffic through all interview stations		15.74

INTERNAL DISPERSION

Tract	Volume	Percent
001	479	59.13
002	14	1.73
003	18	2.22
004	18	2.22
005	11	1.36
Total	540	66.66

EXTERNAL DISPERSION

Tract	Volume	Percent
703	9	1.11
704		
716	23	2.84
717	192	23.70
718		
757	46	5.68
Total	270	33.33

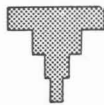


LEGEND

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

AUGUST AVERAGE WEEKDAY TRAFFIC 1961

GRAPHIC SCALE



1000 TRIPS
 500 TRIPS
 250 TRIPS
 125 TRIPS

FIGURE 15
 INTERNAL DISPERSION OF TRIPS
 TO OR FROM
 IOWA 90 STATION (718 EAST)
 STUART, IOWA

TABLE 13
INTERNAL DISPERSION OF TRIPS TO OR FROM INTERSTATE 80

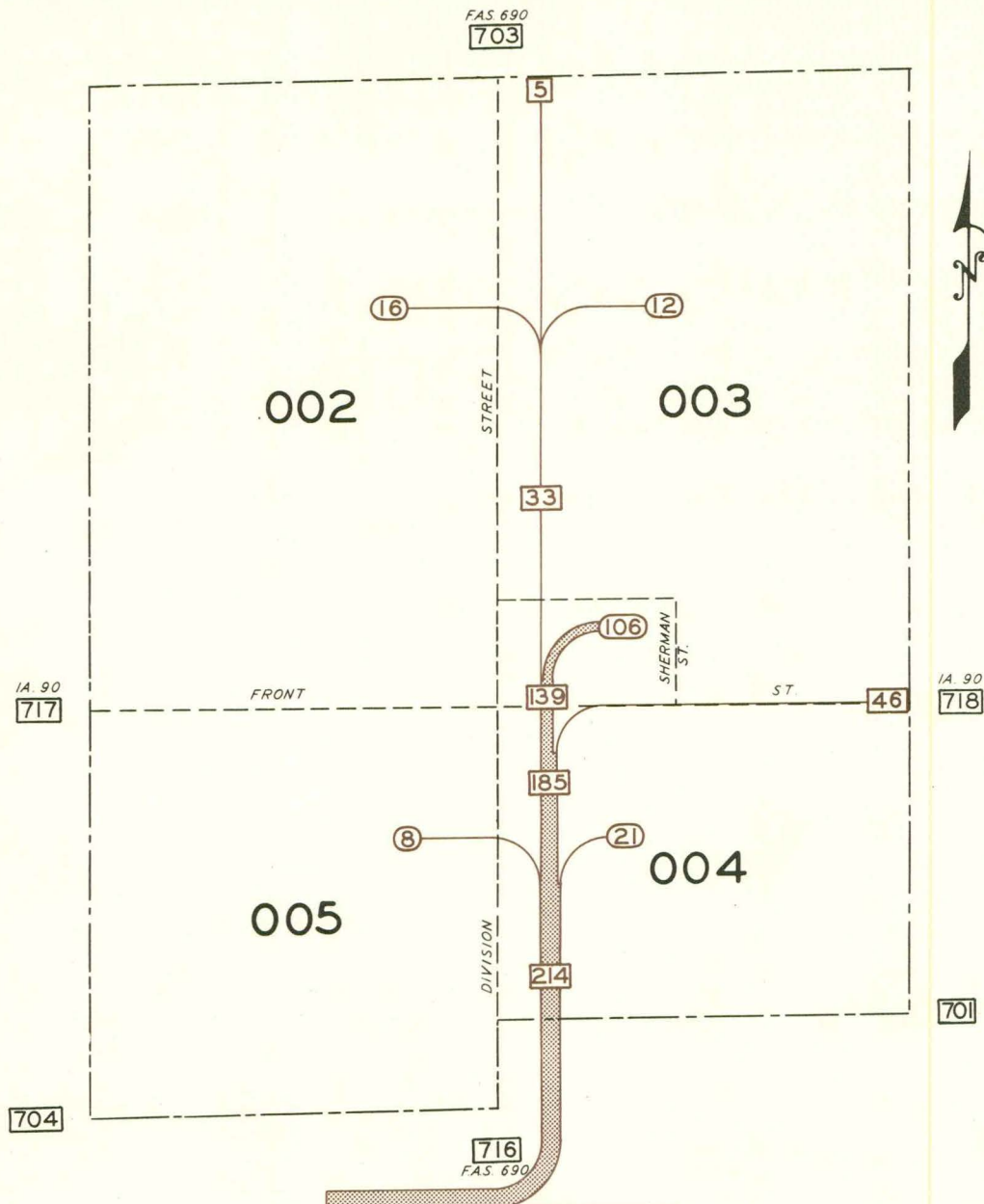
	Trips	Percent
Trips with internal origin or destination	163	6.34
Trips with external origin and destination	2408	93.66
Grand total of all trips through station 757	2571	100.00
Trips with origin or destination in C.B.D.	106	4.12
Number of interviews (14 hours)	1968	76.55
Percent of total traffic through all interview Stations		49.94

INTERNAL DISPERSION

Tract	Volume	Percent
001	106	4.12
002	16	.62
003	12	.47
004	21	.82
005	8	.31
Total	163	6.34

EXTERNAL DISPERSION

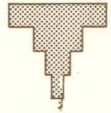
Station	Volume	Percent
703	5	.19
704		
716		
717		
718	46	1.79
757	2357	91.68
Total	2408	93.66



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

AUGUST AVERAGE WEEKDAY TRAFFIC 1961

GRAPHIC SCALE



1000 TRIPS
 500 TRIPS
 250 TRIPS
 125 TRIPS

FIGURE 16

INTERNAL DISPERSION OF TRIPS
 TO OR FROM
 INTERSTATE 80 (STATION 757)
 STUART, IOWA

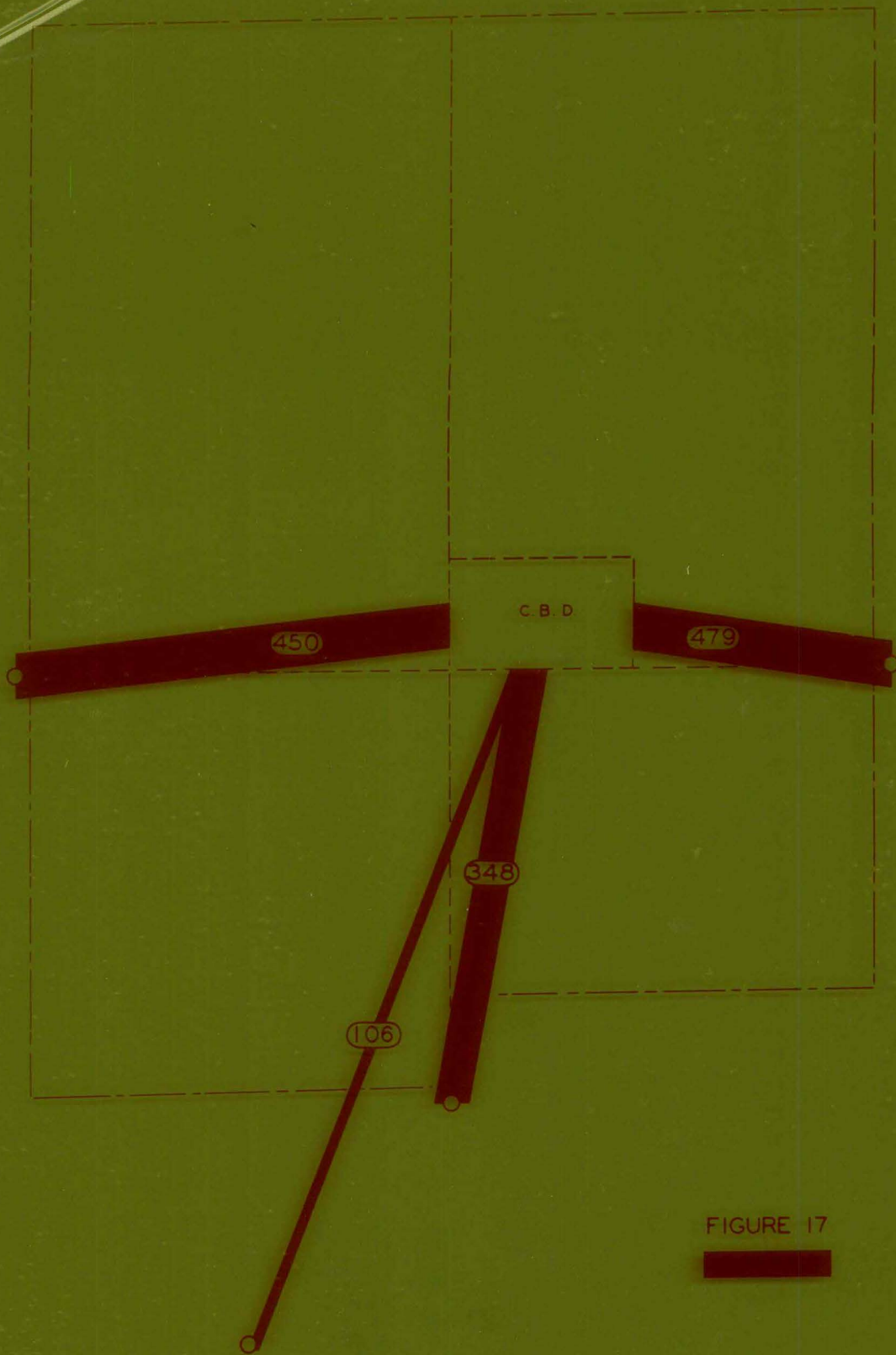
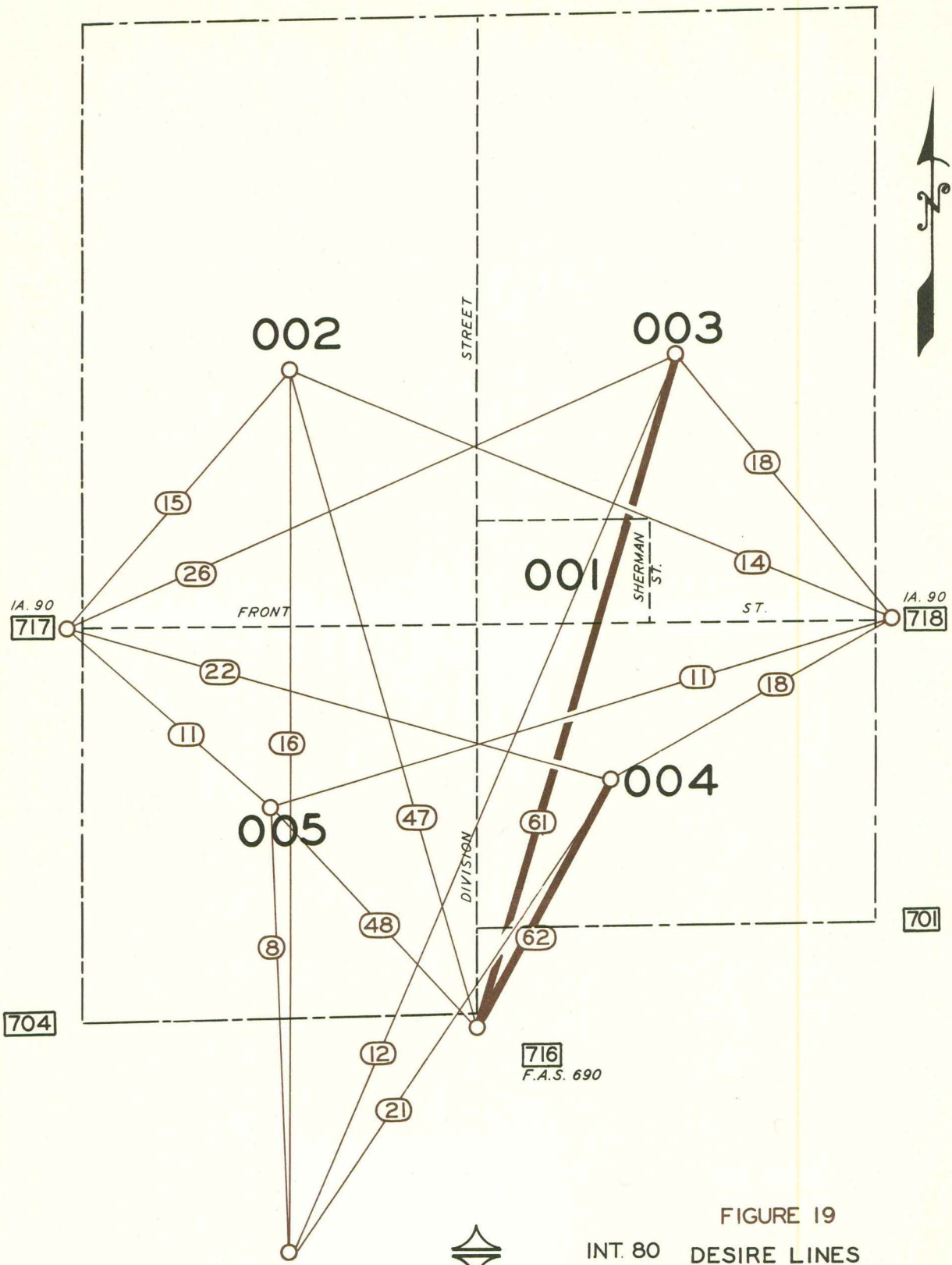


FIGURE 17

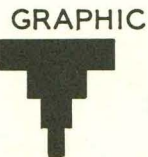


THE CENTRAL BUSINESS DISTRICT



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

AUGUST AVERAGE WEEKDAY
TRAFFIC 1961



SCALE
1000 TRIPS
500 TRIPS
250 TRIPS
125 TRIPS

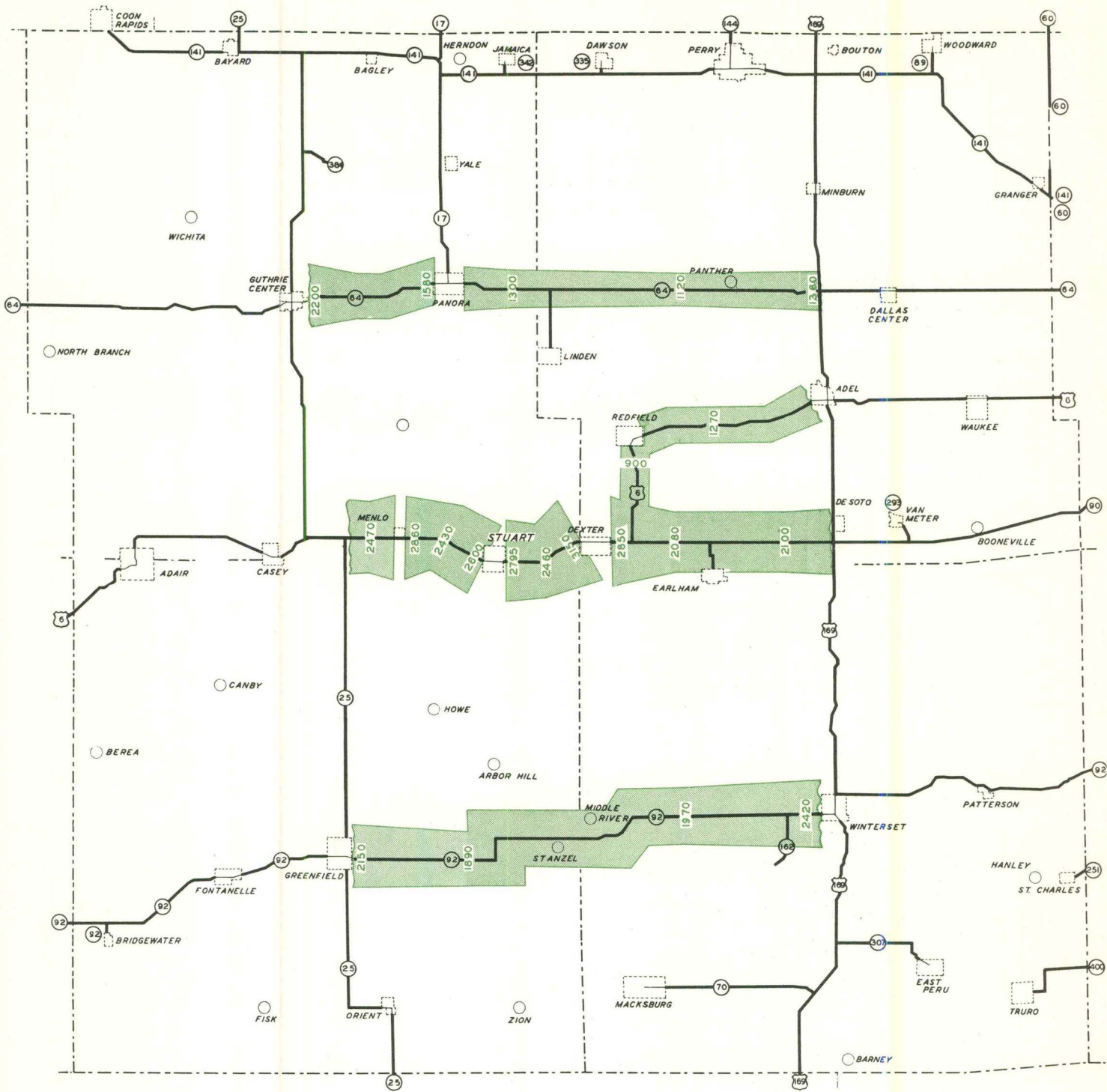
FIGURE 19
INT. 80 DESIRE LINES
EXTERNAL STATIONS
TO OR FROM
INTERNAL TRACTS

STUART, IOWA

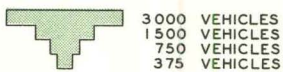
TRAFFIC VOLUMES ON PRIMARY HIGHWAYS IN
AND NEAR STUART

The following charts on pages 42, 43, 44, and 45 illustrate the average annual daily traffic on rural primary highways adjacent to the study area and on primary highways within the corporate limits of Stuart.

It should be noted that these charts indicate average annual daily traffic and not average weekday traffic as do other charts in this report



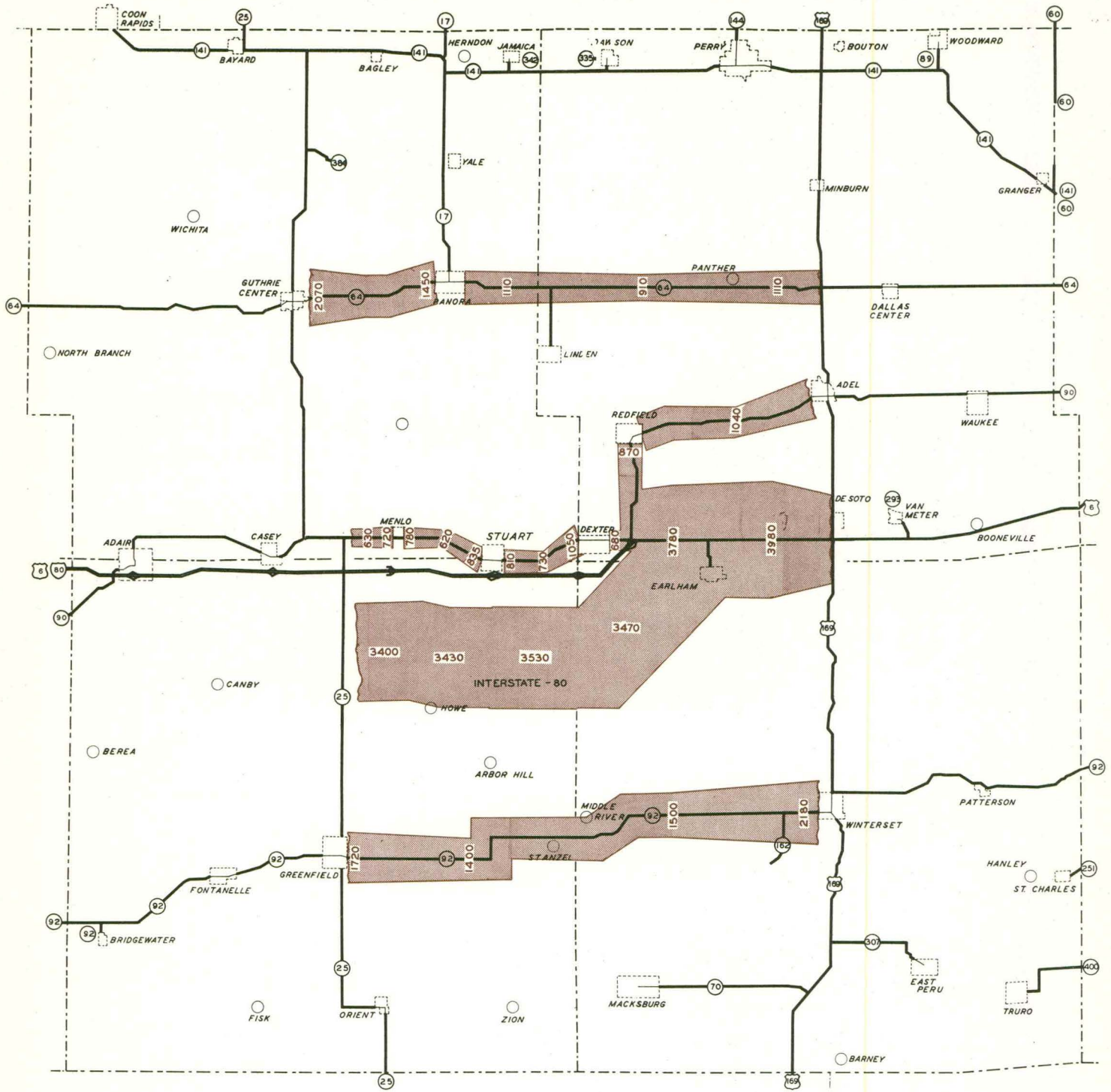
GRAPHIC SCALE



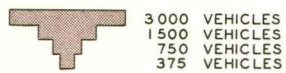
ANNUAL AVERAGE DAILY
TRAFFIC 1959



FIGURE 20
TRAFFIC VOLUMES ON
PRIMARY HIGHWAYS ENTERING THE
STUART AREA



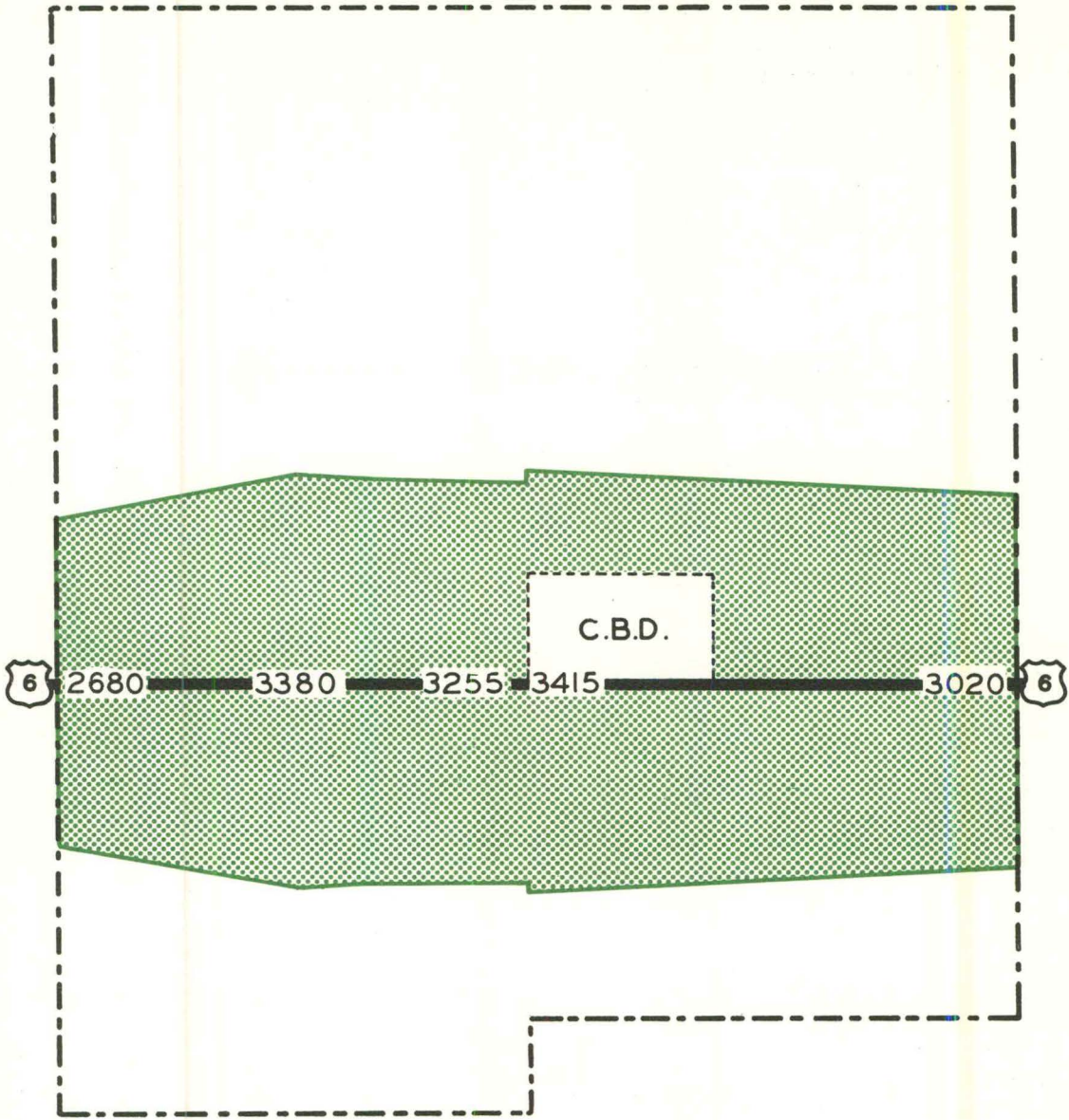
GRAPHIC SCALE



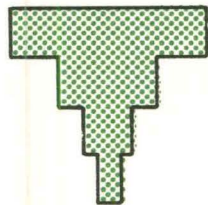
ANNUAL AVERAGE DAILY TRAFFIC 1962



FIGURE 21
TRAFFIC VOLUMES ON
PRIMARY HIGHWAYS IN THE
STUART AREA



GRAPHIC SCALE

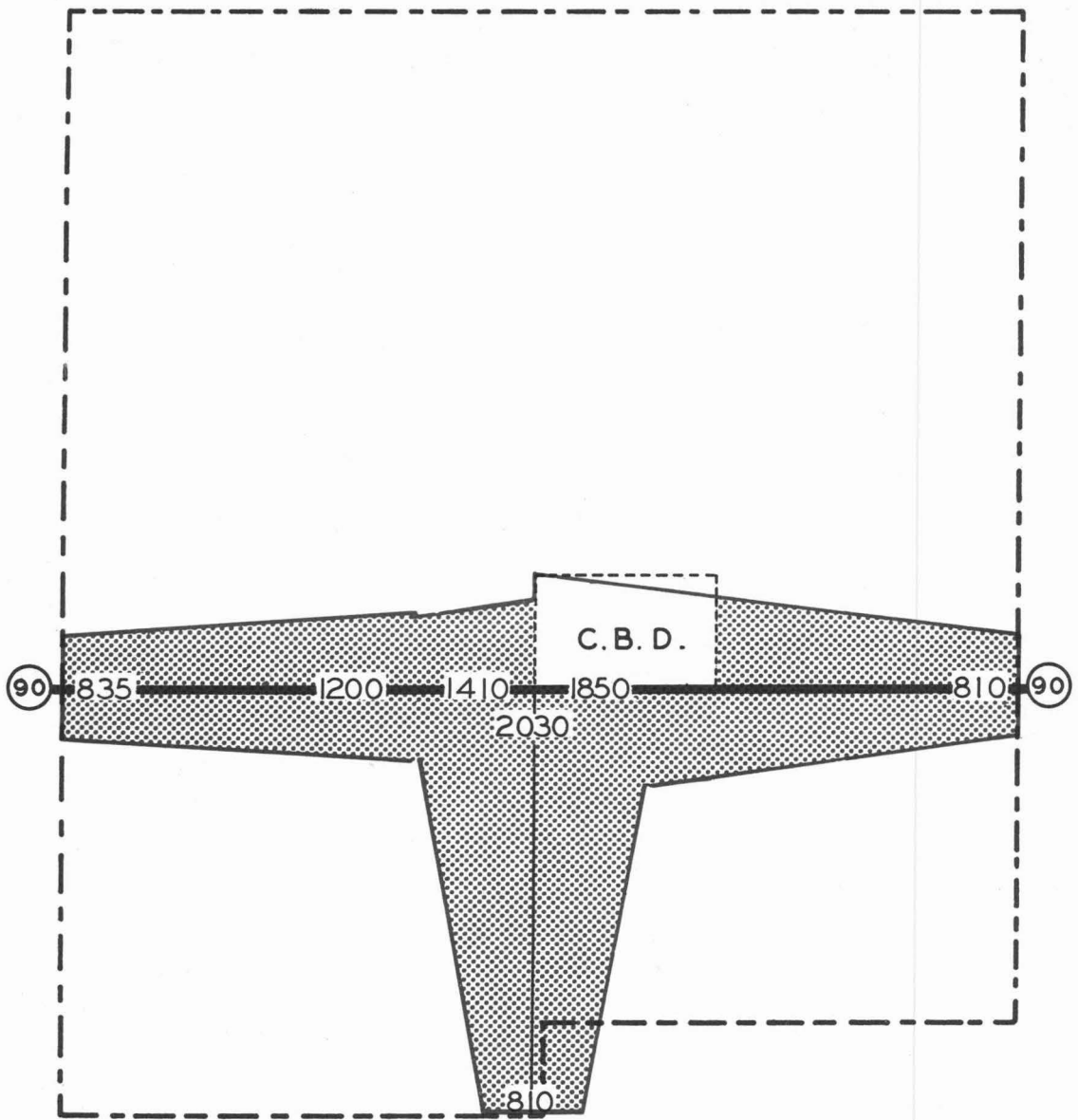


- 1500 VEHICLES
- 750 VEHICLES
- 375 VEHICLES
- 180 VEHICLES

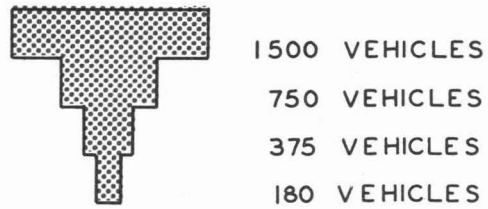
AVERAGE ANNUAL DAILY
TRAFFIC 1958



FIGURE 22
TRAFFIC VOLUMES ON
PRIMARY EXTENSIONS
IN
STUART



GRAPHIC SCALE



AVERAGE ANNUAL DAILY
TRAFFIC 1961



FIGURE 23
TRAFFIC VOLUMES ON
PRIMARY EXTENSIONS
IN

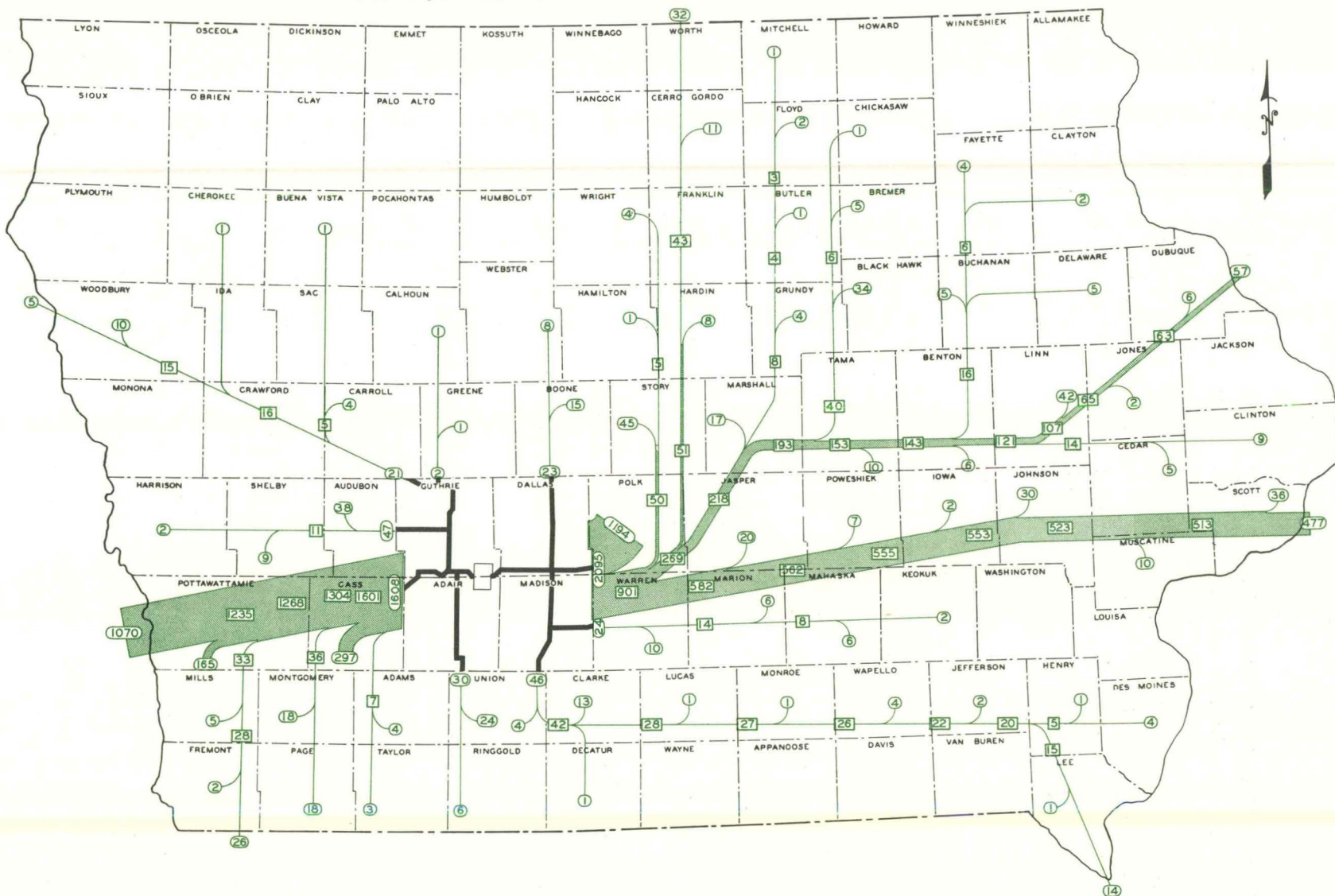
STUART

EXTERNAL TRIP TERMINI

The following traffic flow charts illustrate the external termini of all trips which passed through interview stations in Stuart during the 1959 and 1961 surveys. Figures 24 and 26 show the external dispersion of trips to or from areas beyond Adair, Dallas, Guthrie, and Madison counties for each of the two surveys conducted. Figures 25 and 27 are continuations of figures 24 and 26 and show the external dispersion of trips to or from areas within the four counties adjacent to Stuart.

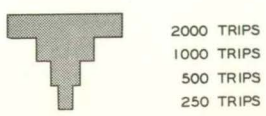
Tables 14 and 15 on pages 52 and 53 summarize the data shown on the charts described above.

FIGURE 24
 EXTERNAL DISPERSION OF TRIPS
 PASSING THROUGH INTERVIEW STATIONS
 TO OR FROM AREAS BEYOND
 ADAIR, DALLAS, GUTHRIE, AND MADISON COUNTIES



-43-

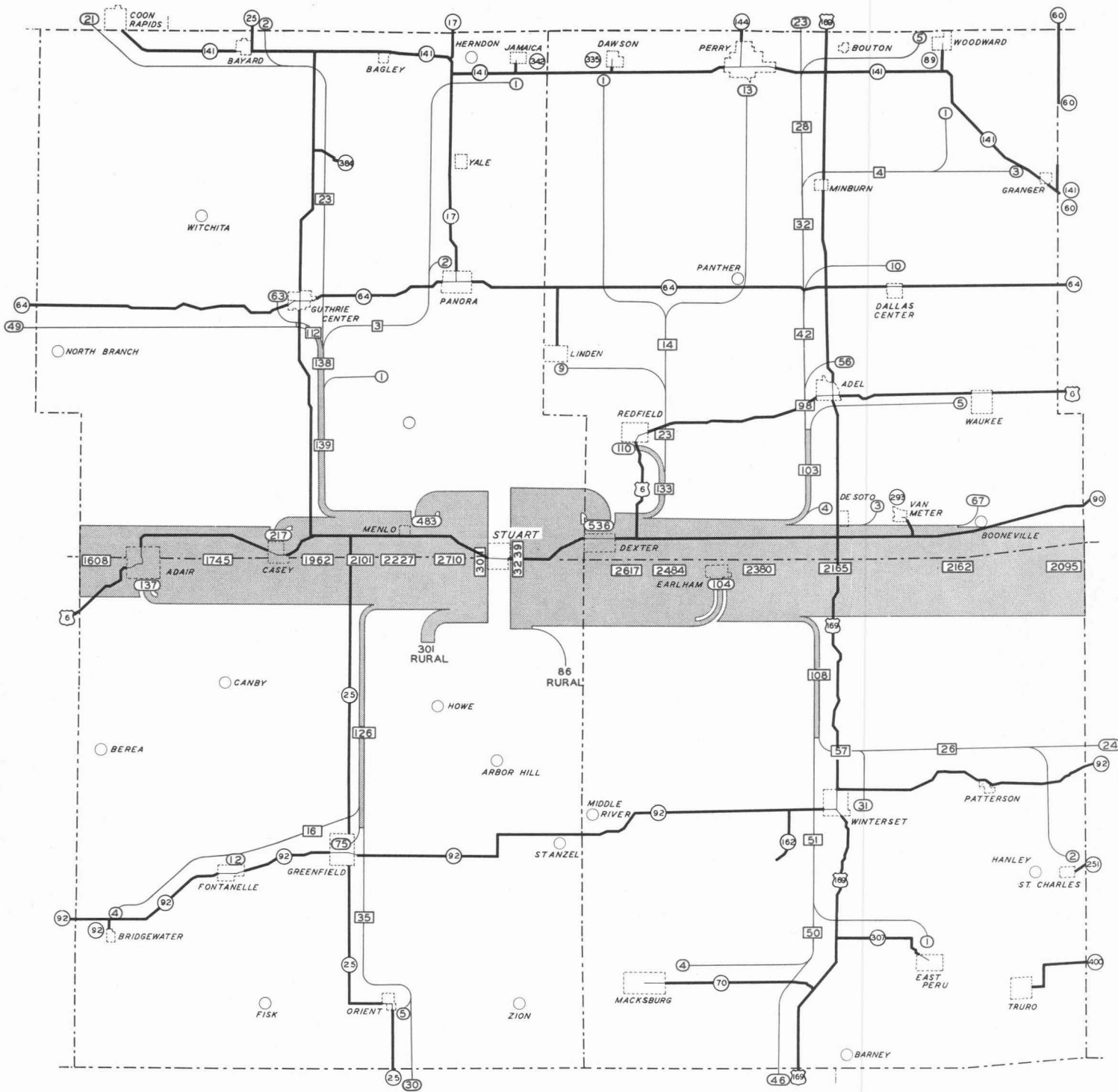
GRAPHIC SCALE



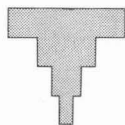
LEGEND



AUGUST AVERAGE WEEKDAY TRAFFIC-1959



GRAPHIC SCALE



- 6 000 TRIPS
- 3 000 TRIPS
- 1 500 TRIPS
- 750 TRIPS

LEGEND

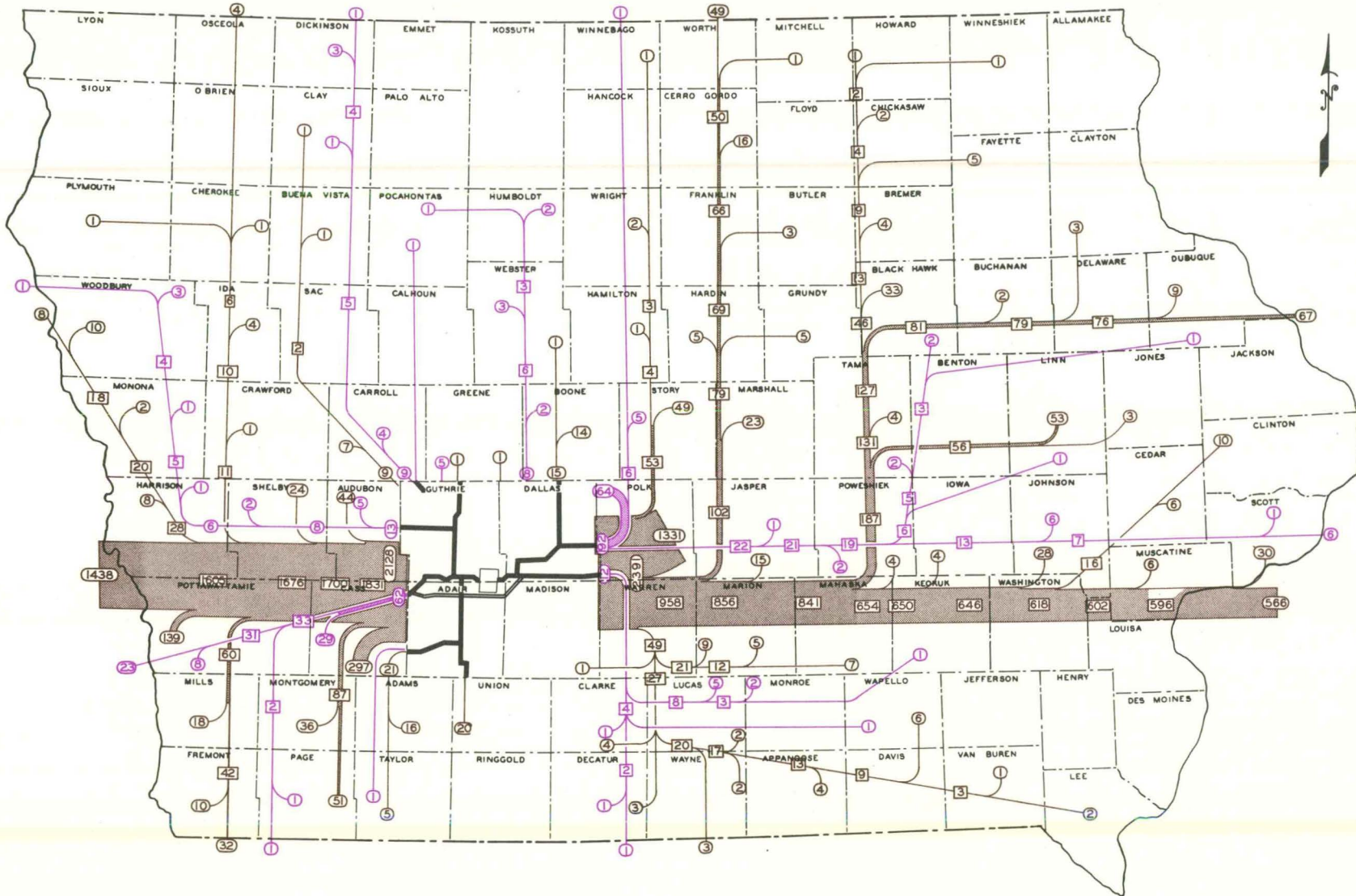
- TRAFFIC THROUGH INTERVIEW STATIONS
- U.S. HIGHWAY NO. 6

AUGUST AVERAGE WEEKDAY TRAFFIC 1959



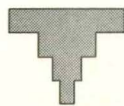
FIGURE 25
 EXTERNAL DISPERSION OF TRIPS
 PASSING THROUGH INTERVIEW STATIONS
 TO OR FROM AREAS WITHIN
 ADAIR, DALLAS, GUTHRIE, AND MADISON COUNTIES

FIGURE 26
 EXTERNAL DISPERSION OF TRIPS
 PASSING THROUGH INTERVIEW STATIONS
 TO OR FROM AREAS BEYOND
 ADAIR, DALLAS, GUTHRIE, AND MADISON COUNTIES



-50-

GRAPHIC SCALE

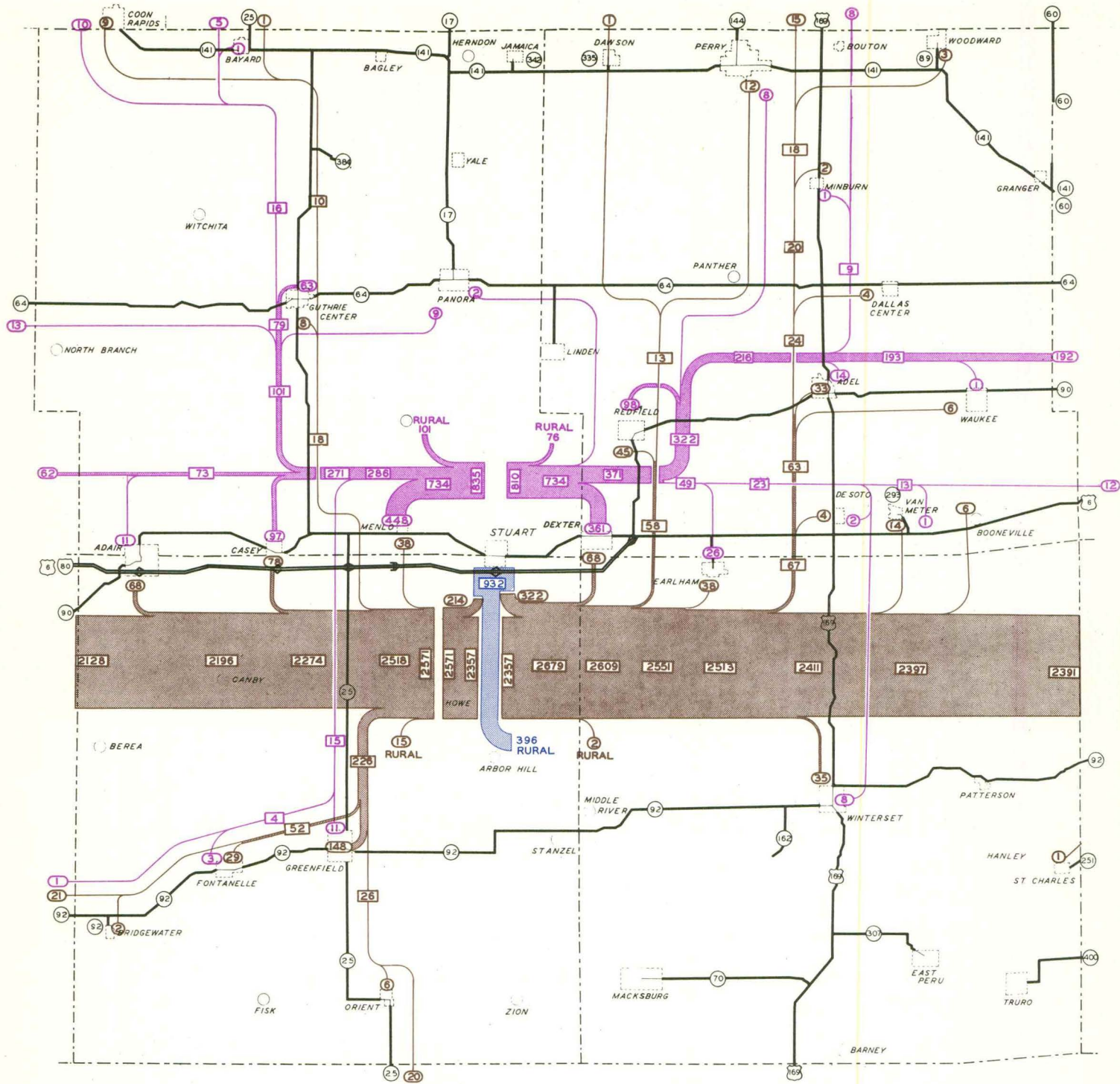


2000 TRIPS
 1000 TRIPS
 500 TRIPS
 250 TRIPS

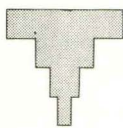
LEGEND

TRAFFIC THROUGH INTERVIEW STATIONS
 INTERSTATE NO. 80
 IOWA HIGHWAY NO. 90

AUGUST AVERAGE WEEKDAY TRAFFIC 1961



GRAPHIC SCALE



6 000 TRIPS
 3 000 TRIPS
 1 500 TRIPS
 750 TRIPS

LEGEND

TRAFFIC THROUGH INTERVIEW STATIONS
 IA. HIGHWAY NO. 90
 U.S. HIGHWAY NO. 6 & I-80
 FAS. 690

AUGUST AVERAGE WEEKDAY TRAFFIC 1961



FIGURE 27
 EXTERNAL DISPERSION OF TRIPS
 PASSING THROUGH INTERVIEW STATIONS
 TO OR FROM AREAS WITHIN
 ADAIR, DALLAS, GUTHRIE, AND MADISON COUNTIES

Table 14
 Summary of External Trip Termini
 August Average Weekday Traffic 1959

Origin or Destination	U.S. 6 West		U.S. 6 East	
	No.	%	No.	%
Adair	137	4.55		
Bridgewater	4	.13		
Fontanelle	12	.40		
Greenfield	75	2.49		
Orient	5	.17		
Casey	217	7.21		
Guthrie Center	63	2.09		
Jamaica	1	.03		
Menlo	483	16.04		
Monteith	1	.03		
Panora	2	.07		
Adel			56	1.73
Booneville			67	2.07
Dallas Center			10	.31
Dawson			1	.03
DeSoto			4	.12
Dexter			536	16.55
Granger			3	.09
Linden			9	.28
Moran			1	.03
Perry			13	.41
Redfield			110	3.40
Van Meter			3	.09
Waukee			5	.15
Woodward			5	.15
Earlham			104	3.21
Macksburg			4	.12
Peru			1	.03
Saint Charles			2	.06
Winterset			31	.96
Towns Total	1000	33.21	965	29.79
Rural Total	301	10.00	86	2.66
Other Counties	609	20.23	1608	49.64
Out-of-State	1101	36.56	580	17.91
Grand Total	3011	100.00	3239	100.00

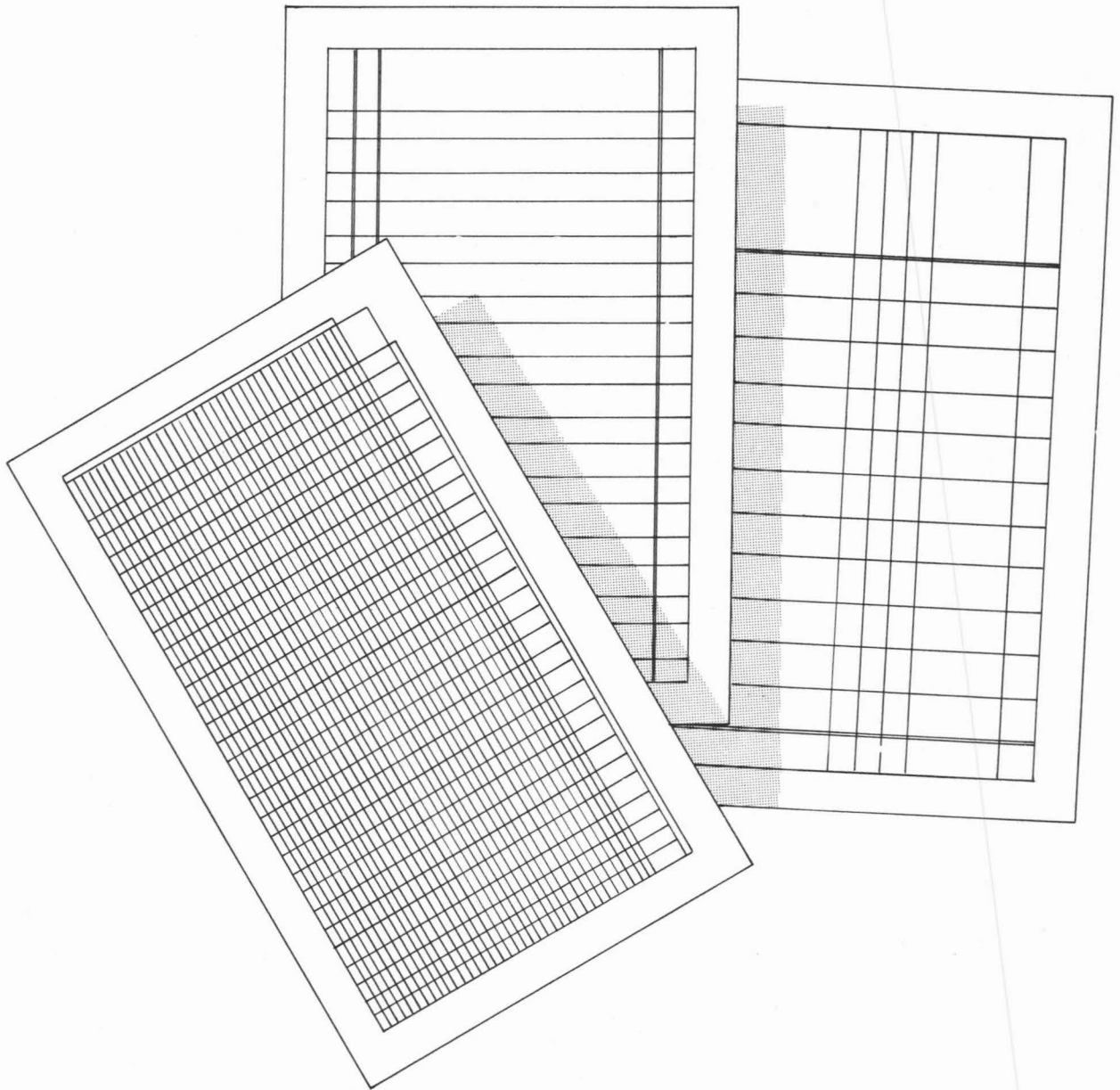
Table 15
Summary of External Trip Termini

August Average Weekday Traffic 1961

	F.A.S. 690 South*		Iowa 90 West		Iowa 90 East		I-80 West		I-80 East	
	No.	%	No.	%	No.	%	No.	%	No.	%
Adair			11	1.32			68	2.64		
Bridgewater							2	.08		
Fontanelle			3	.36			29	1.13		
Greenfield			11	1.32			148	5.76		
Orient							6	.23		
Bayard			1	.12						
Casey			97	11.62			78	3.03		
Guthrie Center			63	7.54			8	.31		
Panora			9	1.08	2	.25				
Menlo			448	53.65			38	1.48		
Adel					14	1.73			33	1.23
Booneville									6	.22
Dallas Center									4	.15
DeSoto					2	.25			4	.15
Dexter					361	44.56			68	2.54
Minburn					1	.12			2	.08
Perry					8	.99			12	.45
Redfield					98	12.10			45	1.68
Van Meter					1	.12			14	.52
Waukee					1	.12			6	.22
Woodward									3	.11
Earlham					26	3.21			38	1.42
Saint Charles									1	.04
Winterset					8	.99			35	1.31
Towns Total			643	77.01	522	64.44	377	14.66	271	10.12
Rural Total			101	12.10	76	9.38	15	.59	2	.07
Other Counties			65	7.78	204	25.19	697	27.11	1721	64.24
Out-of-State			26	3.11	8	.99	1482	57.64	685	25.57
Grand Total			835	100.00	810	100.00	2571	100.00	2679	100.00

* Included in I-80 Traffic

Appendix



INTERPRETATION OF TABLES A-1 AND A-2

The following tables have been compiled to show 1959 August average weekday traffic and 1961 August average weekday traffic for Stuart, Iowa.

These tables indicate the directional movement of external trips to, from, and through the study area. Tract or station origin may be found in the vertical columns along either side of each table. Tract or station destination may be found in the horizontal columns across the top or bottom of each table. In order to determine the number of trips between two points, it is necessary to add origins to destinations.

Origin and Destination of Trips
Entering or Leaving
Stuart

Table A-1

August Average Weekday Traffic 1959

Tract	Destination													External Total	Grand Total	Tract
	C.B.D. 001	002	003	004	005	Stuart Total	Local Road 701	Local Road 702	Local Road 703	Local Road 704	Ia. 90 West 717	Ia. 90 East 718				
001 C.B.D.												213	222	435	435	001
002												30	81	111	111	002
003												33	75	108	108	003
004												16	24	40	40	004
005												22	36	58	58	005
Stuart Total												314	438	752	752	Stuart Total
701 Local Rd												1		1	1	701
702 Local Rd												12	21	33	33	702
703 Local Rd												5	4	9	9	703
704 Local Rd													5	5	5	704
717 Ia 90 W	264	21	40	17	25	367		17	7	1		1161	1186	1553	717	
718 Ia 90 E	259	57	79	15	39	449		24	7	4	1126		1161	1610	718	
Ext. Total	523	78	119	32	64	816		41	14	5	1144	1191	2395	3211	Ext. Total	
Grand Total	523	78	119	32	64	816		41	14	5	1458	1629	3147	3963	Grand Total	
Tract	001	002	003	004	005	Total	701	702	703	704	717	718	Ext. Total	Grand Total		

Origin

Origin and Destination of Trips
Entering or Leaving
Stuart

Table A-2

August Average Weekday Traffic 1961

Tract	Destination													External Total	Grand Total	Tract
	C.B.D. 001	002	003	004	005	Stuart Total	Local Road 703	Local Road 704	F.A.S. 690 S. 716	U.S. 6 West 717	U.S. 6 East 718	I-80 757				
001 C.B.D.										162	215	235	51	663	663	001
002										25	9	8	8	50	50	002
003										21	15	11	3	50	50	003
004										28	9	5	10	52	52	004
005										24	6	8	3	41	41	005
Stuart Total										260	254	267	75	856	856	Stuart Total
703 Local Rd										5	1	2	3	11	11	703
704 Local Rd																704
716 FAS 690 S	186	22	40	34	24	306	5	1		58	9			73	379	716
717 US 6 W	235	6	11	13	5	270			60		102			162	432	717
718 US 6 E	244	6	7	13	3	273	7		14	90		32		143	416	718
757 I-80	55	8	9	11	5	88	2				14	2357		2373	2461	757
Ext Total	720	42	67	71	37	937	14	1	79	149	127	2392		2759	3699	Ext Total
Grand Total	720	42	67	71	37	937	14	1	339	403	394	2467		3618	4555	Grand Total
Tract	001	002	003	004	005	Total	703	704	716	717	718	757		Ext Total	Grand Total	

Origin

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3 1723 02042 3984