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1987

TRUCK WEIGHT SURVEY

INSTRUCTIONS



IOWA DEPARTMENT
OF TRANSPORTATION

IOWA DEPARTMENT OF TRANSPORTATION
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Office of Transportation Inventory
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If you see any spills or accidents with hazardous materials of any kind you will call your supervisor or the Ames Office (see key phone numbers) as soon as possible. DO NOT approach any spill or accident involving hazardous materials. Obtain following data from a position of safety:

1. Your name, address and phone number where you can be reached.
2. Type of spill or accident (fire, explosion, truck, railroad, etc.)
3. Material and amount (if material is not known report the four (4) digit I.D. number displayed either on the placard or on an ORANGE panel on the vehicle or describe the placard).
4. Location (city, county, etc.).
5. Affecting land, water or air.
6. Date and time of occurrence.
7. Shipper.
8. Casualties.
9. Action taken.

TRUCK WEIGHT SURVEY

FIELD

INSTRUCTIONS



**Iowa Department
of Transportation**

Prepared By
Office of Transportation Inventory
In Cooperation With
United State Department of Transportation
Federal Highway Administration

515/239-1289
May 1987

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INTRODUCTION

The Truck Weight Survey is conducted by the Office of Transportation Inventory of the Iowa Department of Transportation, in cooperation with the Federal Highway Administration.

Weighing operations are conducted biennially and provide information with regard to trends of gross weight, axle loading, axle spacing, dimensions and commodities carried by commercial vehicles using the highways in Iowa.

The weighing schedule is prepared so that each station is operated during comparable periods as preceding years. Manual counts are made every year with the weighing operations conducted during odd numbered years.

Field operations will be conducted at the eighteen (18) locations shown on the map in Illustration 1. Seven (7) of these stations are located on rural Interstate highways; five (5) on rural Primary highways; two (2) on urban Primary highways; two (2) on rural Secondary roads, and two (2) on City Streets.

The weigh and count classification operations will be conducted at each of the seven (7) Interstate locations according to the following time periods:

<u>Weight Data</u>	<u>Count Data</u>
6:00 a.m. to 1:00 p.m.	5:00 a.m. to 1:00 p.m.
2:00 p.m. to 9:00 p.m.	1:00 p.m. to 9:00 p.m.
10:00 p.m. to 5:00 a.m.	9:00 p.m. to 5:00 a.m.

The remaining locations will be operated according to the following time periods:

<u>Weight Data</u>	<u>Count Data</u>
6:00 a.m. to 1:00 p.m.	5:00 a.m. to 1:00 p.m.
2:00 p.m. to 9:00 p.m.	1:00 p.m. to 9:00 p.m.
	9:00 p.m. to 5:00 a.m.

Station Locations
Interstate Rural - Seven Locations

<u>Station Number</u>	<u>Location</u>
91S (Tipton)	On I-80, at the permanent pit scale location two miles east of the west Jct. of I-80 and Ia. 38, nine miles south of Tipton.
92N (Des Moines)	On I-80, at the permanent pit scale location just west of U.S. 65, northeast of Des Moines.
93P (Avoca)	On I-80, at the permanent pit scale location three miles east of U.S. 59, four miles northeast of Avoca.
94Q (Ames)	On I-35, at the permanent pit scale location three miles north of Ia. 210, six miles southeast of Ames.
95R (Salix)	On I-29, at the permanent pit scale location five miles north of Ia. 141, one and one-half (1½) miles south of Salix.
96T (Missouri Valley)	On I-29 and U.S. 75, at the permanent pit scale location two miles south of U.S. 30, three miles southwest of Missouri Valley.
97U (Osceola)	On I-35, at the permanent pit scale location two and one-half (2½) miles south of U.S. 34, three miles southwest of Osceola.

Primary Rural - Five Locations

<u>Station Number</u>	<u>Location</u>
24B (Waterloo)	On U.S. 218, just south of Co. Rd. D-35, four miles southeast of Waterloo.
59F (Pleasantville)	On Ia. 5, one mile north of Ia. 92, one mile south of Pleasantville.
74H (Ogden)	On U.S. 30 and 169, one mile west of the east Jct. U.S. 30 and 169 at the permanent pit scale location, southwest of Ogden.
76M (Carroll)	On U.S. 71 and Ia. 141, just west of the east Jct. of U.S. 71 and Ia. 141, 10 miles south of Carroll.
85J (Afton)	On U.S. 34 and 169, one mile east of the west Jct. of U.S. 34 and 169, one mile east of Afton.

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PURPOSE

The Truck Weight Survey is conducted to obtain information on commercial vehicles traveling about on the road system in Iowa.

The survey produces information on total vehicle weight and weight of individual axles and axle groups. It produces information on vehicle characteristics such as type of vehicle, age, and dimensions. It produces information on the commodities or loads the trucks are hauling, where these loads are coming from and going to, and how often trucks are moving empty.

Knowing the axle loadings (18 Kip equivalents) that a pavement has endured is vital to pavement management analysis. Being able to estimate the expected 18 Kip axle loadings is the basis for pavement design. These truck observations are useful in evaluating size and weight enforcement efforts and in developing legislation, truck regulations, and highway cost allocation.

When asked for more detailed information, have the individual contact Patrick R. Cain, Office of Transportation Inventory, Iowa Department of Transportation, Ames, Iowa, 50010, 515/239-1073.



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Primary Urban - Two Locations

Station Number

Location

32C
(Mason City)

On U.S. 65, just south of 25th St., N.W., in the northern part of Mason City.

35D
(Davenport)

On U.S. 61, just west of Credit Island Lane, southwest part of Davenport.

Secondary Rural - Two Locations

Station Number

Location

41K
(Plymouth)

On Co. Rd. S-56, at the Jct. of Co. Rd. B-20, two and one-half (2½) miles south of Plymouth.

42L
(Vincent)

On Co. Rd. P-71, at the Jct. of Co. Rd. D-18, five miles south of Vincent.

City Street, Federal Aid Urban - Two Locations

Station Number

Location

47I
(Marshalltown)

On South 12th Avenue, south of Olive St. in front of Fisher Governor Plant.

46E
(Boone)

On Cpl. Roger Snedden Dr. south of Airport in the south part of Boone.

TRUCK WEIGHT SURVEY STATION LOCATIONS

STATE OF
IOWA

PREPARED BY THE
IOWA DEPARTMENT OF TRANSPORTATION
DIVISION OF PLANNING AND RESEARCH
OFFICE OF TRANSPORTATION INVENTORY
PHONE 75-52 298-1285
IN COOPERATION WITH
UNITED STATES DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

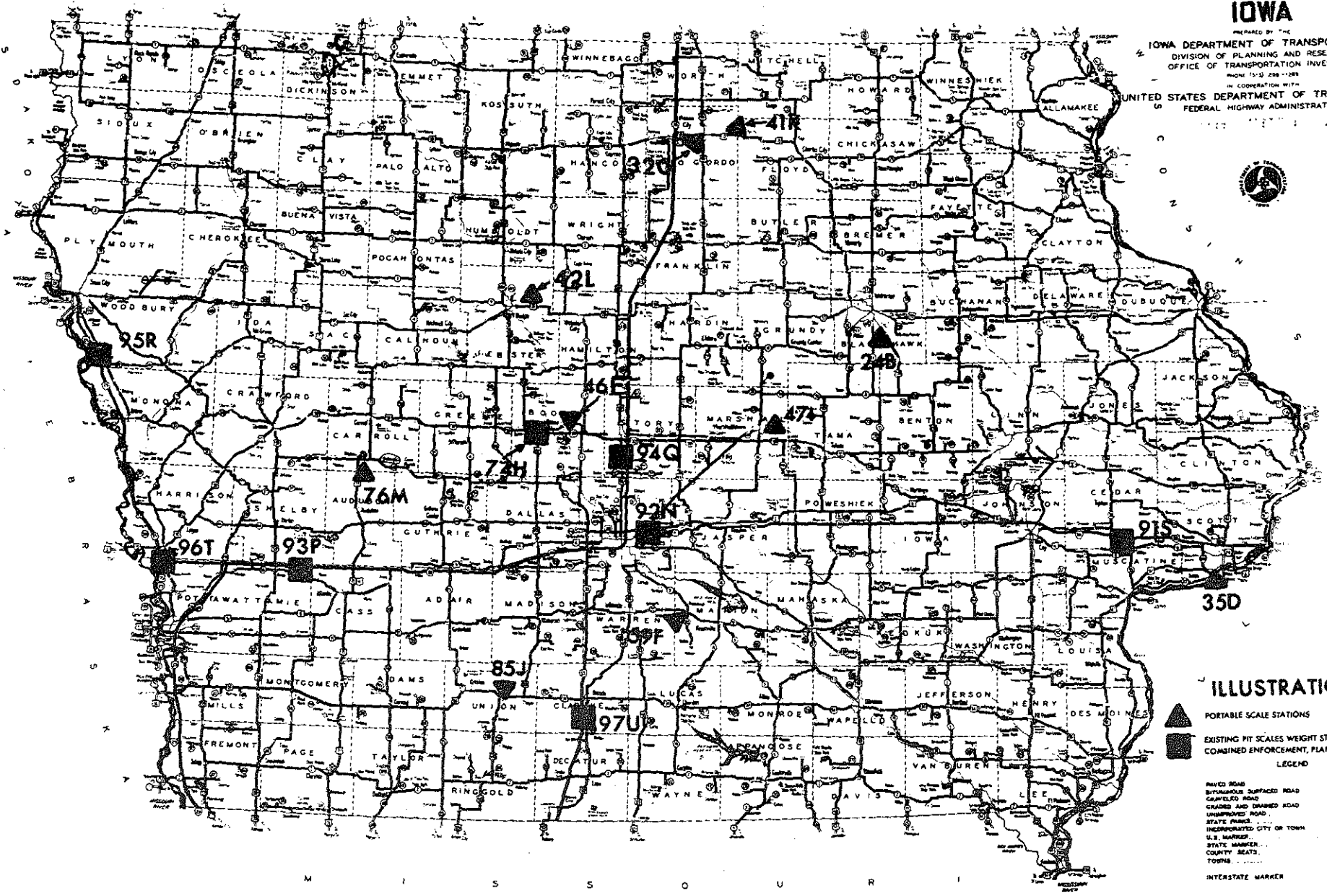
















ILLUSTRATION 1

-  PORTABLE SCALE STATIONS
 -  EXISTING PIT SCALES WEIGHT STATION,
COMBINED ENFORCEMENT, PLANNING AND RESEARCH
- LEGEND
-  PAVED ROAD
 -  BITUMINOUS SURFACED ROAD
 -  GRAVELLED ROAD
 -  GRADES AND DRAINED ROAD
 -  UNIMPROVED ROAD
 -  STATE FINES
 -  INCORPORATED CITY OR TOWN
 -  U.S. MARKER
 -  STATE MARKER
 -  COUNTY SEATS
 -  TOWNS
 -  INTERSTATE MARKER

GENERAL DUTIES AND SAFETY PROCEDURES

A. General Duties - the crew members will perform the following duties as assigned by the Supervisor.

1. Place, install and remove equipment at the stations.
2. Flag and/or direct traffic.
3. Direct vehicles on and off scales.
4. Interview truck drivers.
5. Operate scales.
6. Measure distance between axles.
7. Record axle weights and measurements.
8. Make traffic counts.
9. Code the data.
10. Other necessary duties as required.

B. Safety Procedures

1. The traveled way of public roads can be a very dangerous working area if not properly signed or if carelessly managed. Since much of the work performed by the crew will be on or near the traveled way of the road, strict safety procedures must be followed not only to protect the members of the crew but also the motoring public. The procedures outlined in the following sections will be followed unless deviations have been approved in advance by the by the Survey Supervisor.
2. All personnel when working on or near the traveled way of the road will wear safety vests, hard hats, and protective clothing. In addition, the flag person will have a safety flag and/or flashlight with a red wand.
3. All vehicles will be parked a safe distance off the traveled way in a manner that will not present a cluttered appearance to the traveling public. Vehicles will not be parked on the median strip of a divided roadway nor will drivers cross the median strip of a divided roadway except at grade level intersections or at interchanges. Maintenance crossovers will not be used.
4. When the equipment vehicles are dropping off or picking up equipment, all vehicle warning lights will be in operation.
5. Vehicles required to operate electrical signing equipment will be placed off the shoulder if possible, or on the shoulder behind the signing if necessary.
6. Unauthorized personnel will not be allowed at the stations at any time.
7. USE EXTREME CAUTION WHEN IT IS NECESSARY TO CROSS THE TRAVELED WAY.

TRUCK WEIGHT STATIONS

A. General

There are four types of stations, two for portable scales and two for pit scales. See Illustrations II, III, IV and V for signing layouts. See Appendix A for maps depicting the location of each station.

B. Station Equipment Markings

The Survey Supervisor will be responsible for having the equipment locations marked for each type of station prior to the time of operation. The distances may be determined using roadway station markers or may be measured with a tape or odometer.

C. Placing of Equipment

1. Portable Scale Stations

The barricades will be installed then the equipment will be placed on the right hand shoulder starting from the barricades. After all equipment for one side has been set, the equipment vehicle will turn around and set the equipment for the other side of the road. When the equipment vehicle is stopped and signing is being loaded or unloaded, a flagman will be located behind the vehicle to control traffic as needed.

2. Pit Scale Locations

The survey crew signs will be installed and then the equipment will be unloaded at the weigh site.

3. Lighting Equipment

The portable lighting will be placed when and where directed by the Survey Supervisor.

D. Installation of the Equipment

1. Portable Scale Stations

The signing and other equipment will be set up starting from the barricades and working toward the opposite end of the station. A flagman will accompany the people setting up the signing to control and warn traffic.

2. Pit Scale Stations

Equipment will be set up at prescribed locations before the scale is opened to trucks.

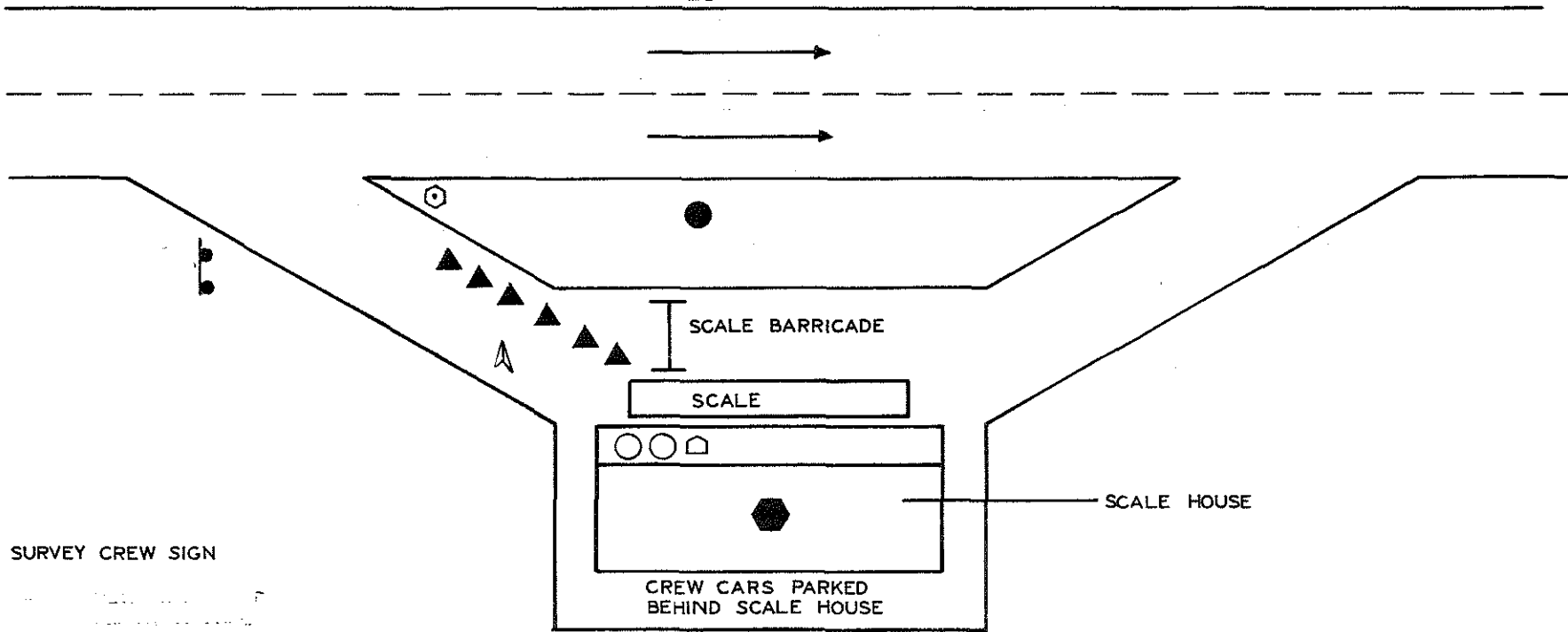
E. Removal of Equipment

The crew will dismantle the equipment in the reverse order that it was set up. The equipment will then be picked up in the manner it was set out with barricades the last to be picked up.

TRUCK WEIGH STATION PIT SCALE

DIVIDED HIGHWAY

MEDIAN



▲▲ SURVEY CREW SIGN

▲ TRAFFIC CONES

⬡ MICROPHONE OPERATOR

○ TAPEMEN

□ RECORDERMAN

▲ INTERVIEWER

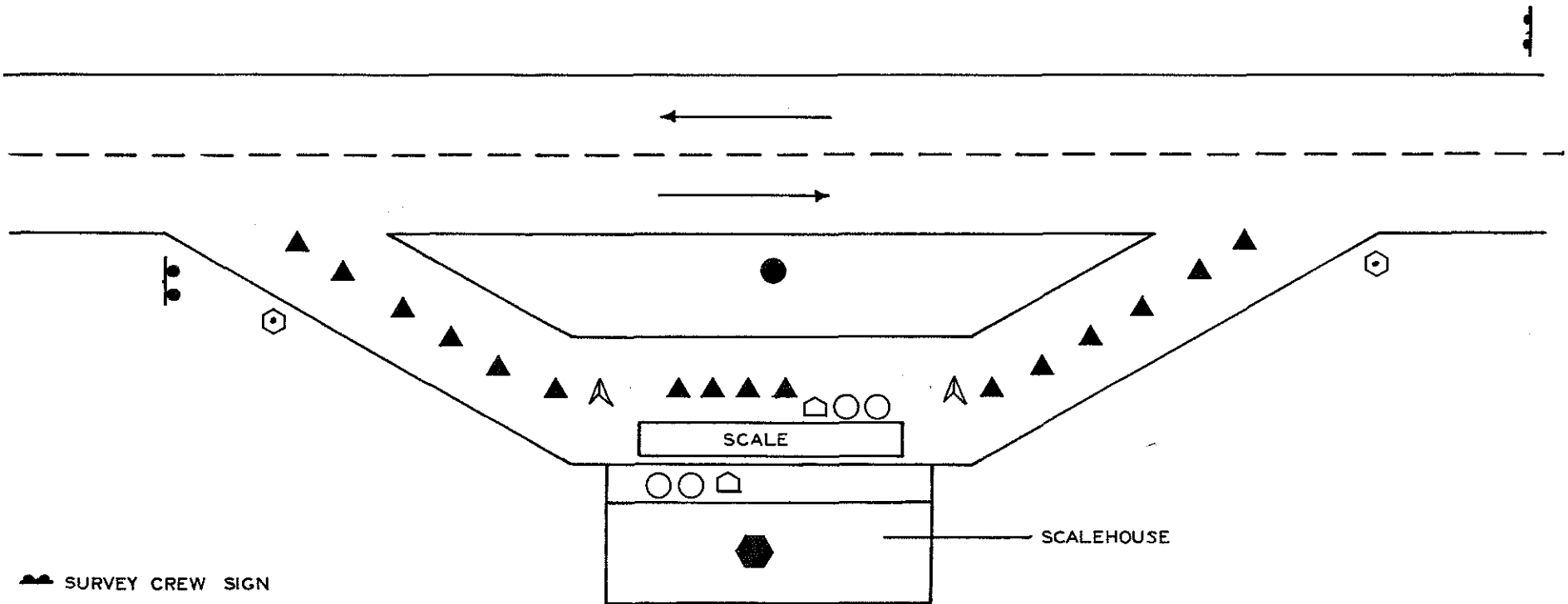
● COUNTER

⬡ FLAGMAN

TRUCK WEIGH STATION
PIT SCALE

TWO LANE ROADWAY
ONE SIDE

12



▲ SURVEY CREW SIGN

▲ TRAFFIC CONES

● MICROPONE OPERATOR

○ TAPEMEN

◻ RECORDERMEN

▲ INTERVIEWER

● COUNTER

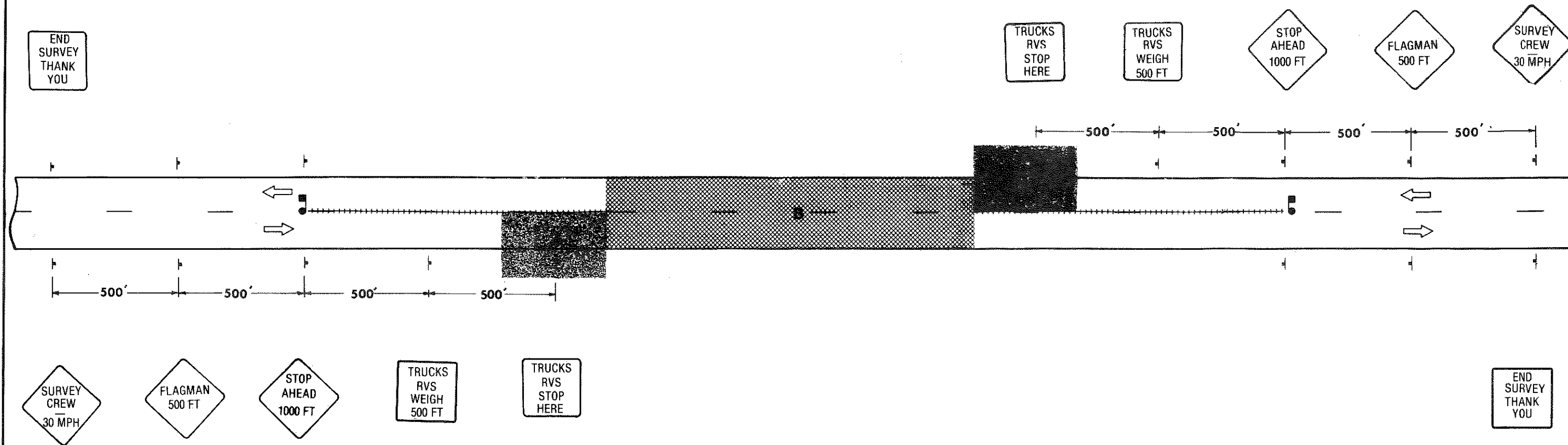
◻ FLAGMEN

SCALE

SCALEHOUSE

TWO-LANE ROADWAY

TYPICAL APPLICATIONS



GENERAL NOTES:

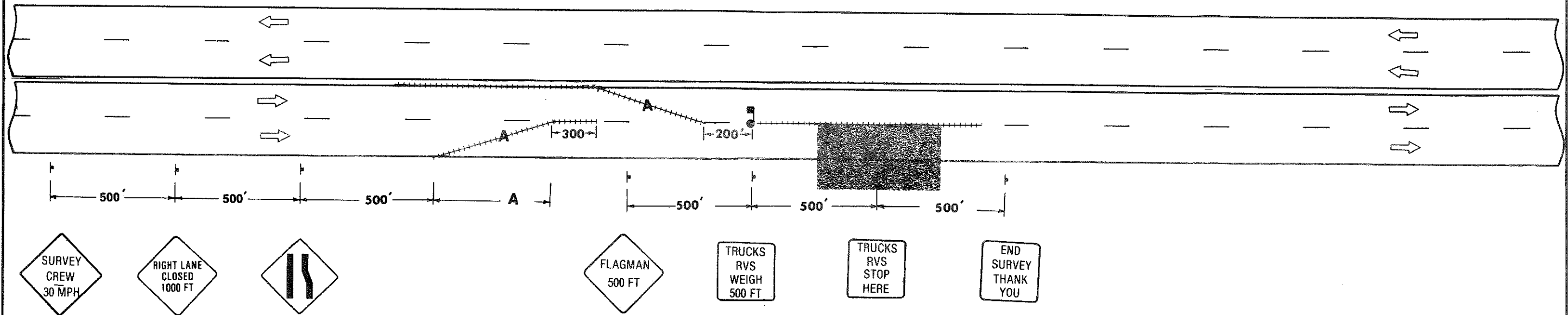
- 1 WORK AREA (A) APPROX. 200 FT.
- 2 SAFETY ZONE (B) APPROX. 1000 FT.
- 3 ALL DISTANCES APPROX. FT.
- 4 FIRST THREE SIGNS WILL BE SUPPLEMENTED ON LEFT SHOULDER. (BLACK ON ORANGE REFLECTORIZED MATERIAL)
- 5 END SURVEY THANK YOU ON RIGHT SHOULDER
- 6 NO VEHICLES WILL BE PARKED WITHIN WORK AREA
- 7 LAST TWO SIGNS ARE BLACK ON WHITE REFLECTORIZED MATERIAL

LEGEND

- SAFETY ZONE
- Traffic Sign
- Flagger
- Work Area
- Channelizing Devices

Iowa Department of Transportation			
NO.	DATE	STANDARD ROAD PLAN	
RECOMMENDED		ENGINEER	DATE
APPROVED		ENGINEER	DATE
TRAFFIC CONTROL FOR TRUCK WEIGHT SURVEY			

FOUR-LANE ROADWAY
 (OTHER DIRECTION SIGNED IN SAME MANNER)
 TYPICAL APPLICATIONS



GENERAL NOTES:

- 1 ALL DISTANCES APPROX. FT.
- 2 TAPER DISTANCE (A) WILL BE SPEED X [WIDTH OF CLOSED LANE (IN FEET)]
 EXAMPLE: 30 MPH, LANE WIDTH 10'
 30' x 10' = 300' DISTANCE
- 3 WORK AREA (B) APPROX. 200 FT.
- 4 NO VEHICLES WILL BE PARKED WITHIN WORK AREA
- 5 FIRST FOUR SIGNS BLACK ON ORANGE (REFLECTORIZED MATERIAL)
- 6 LAST THREE SIGNS BLACK ON WHITE (REFLECTORIZED MATERIAL)

LEGEND

- Traffic Sign
- Flagger
- Work Area
- Channelizing Devices

NO.		Iowa Department of Transportation	
		STANDARD ROAD PLAN	
RECOMMENDED			DATE
APPROVED			DATE
		ENGINEER	DATE
TRAFFIC CONTROL FOR TRUCK WEIGHT SURVEY			

OPERATION OF STATIONS

A. General

The Survey Supervisor will assign the various duties to the crew members and rotate personnel at convenient times. Personnel will be positioned as shown on the appropriate station layout or as directed by the Supervisor. During weighing operations all trucks and buses will be weighed, measured and the drivers interviewed. The Survey Supervisor will direct when trucks and RV's will be passed. All vehicles will be counted and classified by vehicle type.

B. Duties

1. Flag Person

Direct and control traffic. See Illustration VI for flagging methods.

2. Traffic Director

Directs the vehicles on and off the scales.

3. Interviewer

Interviews drivers of vehicle waiting to be weighed. Complete the interview form as shown in Appendix A, Section I.

4. Recorder

Records the weights and measurements on the recorder form. See Appendix A, Section III for a sample of the form and recording details.

5. Scale Operators

a. Portable Scale Sites

Weigh each axle and measure the distance from the center of the front axle to the center of each of the following axles. Announce the weights and distances to the Recorder.

b. Pit Scale Sites

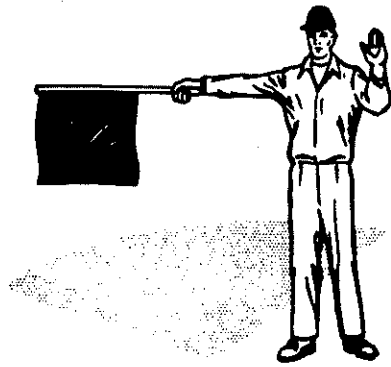
Measure and announce distance to the Recorder. A third scale operator will weigh and record the weights on the scale operator's form. See Appendix A, Section II on how the form is to be completed.

c. The order that axles are to be weighed for the various vehicle types is shown in Appendix B.

6. Traffic Counter

Classifies and records traffic on count form. See Appendix A, Section IV for procedures and a sample of the count form.

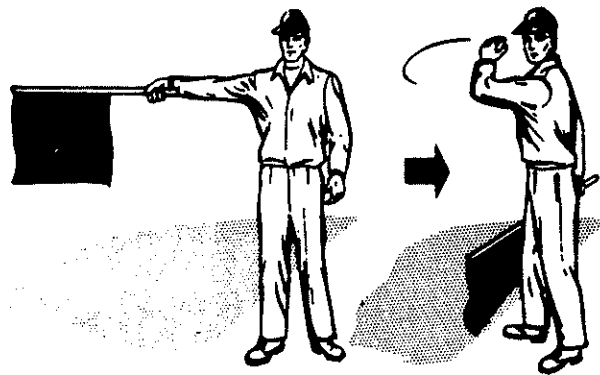
FLAGGING METHODS



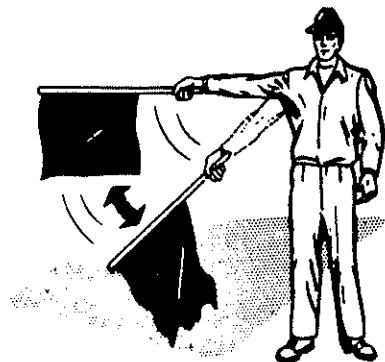
To stop
traffic



Traffic
proceed



To slow
traffic



To alert
traffic

APPENDIX A

INSTRUCTIONS FOR SURVEY FORMS

SECTION 1 - INTERVIEW FORM

The interviewer will interview the drivers of all trucks and RV's in the order they are to be weighed, and record the information on the interview form. The interview form contains data for columns 18-41 of the recorder form, and lines for ten interviews. The ten lines on the interview form correspond to the ten lines on the recorder form. A sample of the interview form is shown below.

WSP 152-G
11-4-81

TRUCK WEIGHT SURVEY INTERVIEW FORM

TRANSPORTATION INVENTORY

STATION NO _____
DIR OF TRAVEL _____

DATE _____ HOUR _____
SHEET _____ OF _____
INTERVIEWER _____

CONTROL NUMBER	VEHICLE TYPE	BODY TYPE CODE	LIGHT Trucks 11 Panel 12 Pickup 13 Light Utility 14 Personnel Cargo 15 Car/Van/Minibus Other Trucks	Fuel Type 1 Gasoline 2 Diesel 3 LP Gas 4 Electric 5 Other	LICENSED WEIGHT GROUP	LICENSED WEIGHT (In Thousands) 000 = UNK.	BASIS OF REGISTRATION	MODEL YEAR	Class Operation 1 Public 2 U.S. Farms 3 Other Agr 4 Municipal/Foreign	Loaded or Empty	
										36-40	41
1	18-23	24-25	26	27-28	Code 35	29-31	32	33-34	35	36-40	41
2					Code	Pounds	Code State				
3											
4											
5											
6											
7											
8											
9											
10											

Complete the interview form in the following manner.

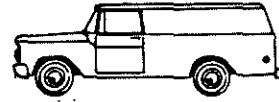
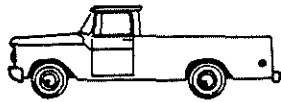
1. Make the appropriate entries in the heading.
2. Vehicle Type

This is a six digit code with the first digit describing the basic vehicle type. The following digits denote the number of axles on the power unit and trailers. The vehicle type coding chart below shows the complete codes. The next page shows examples of the vehicle types.

(18)
(19)
(20)
(21)
(22)

VEHICLE TYPE	1ST CHARACTER BASIC VEHICLE TYPE	2ND CHARACTER	3RD CHARACTER	4TH CHARACTER	5TH CHARACTER	6TH CHARACTER	
Bus	1	1=Intercity Commercial 2=Transit Commercial 6=School & Nonrevenue 7=Camper	0	1=2 Axle 4 Tire 2=2 Axle 6 Tire 3=3 Axle 4=4 Axle Or More	0	0 For All Vehicle Types	
Single Unit Trucks Without Trailers Or With Light Trailers	2	0=Pickup Or Panel 1=heavy 2 Axle 4 Tire Trucks 2=2Axle 6 Tire 3=3 Axle 4=4 Axle 5=5 Axle 6=6 Axle 7=7Axle 8=2 Axle Or More	0	Light Trailers 0=No Trailer 8=Slant Back 9=All Light Trailers	0		
Tractor Plus Semi-Trailer (TTST)	3	Number Axles On Power Unit	1ST Trailer	0	0		
Single Unit Truck +Full Trailer	4			0	0		
Tractor Plus Semi-Trailer +Full Trailer (Double Bottom)	5			2ND TRAILER		0	
Single Unit Truck +2 Full Trailers	6			Number Axles On Trailer 1=1 Axle 2=2 Axles 3=3 Axles 4=4 Axles 5=5 Axles 6=6 Axles		0	
Tractor Plus Semi-Trailer +2 Full Trailers	7			7=2 Axles With Spread Tandem 8=3 Axles With Spread Tandem 9=4 Axles With Spread Tandem		3RD Trailer	
Single Unit Truck +3 Full Trailers	8						

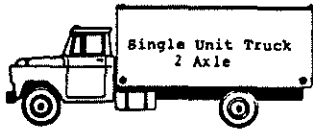
EXAMPLES OF VEHICLE TYPES



Pickup or Panel 4-Wheel Truck
 200000 = Less than 1 ton rated capacity
 210000 = 1 ton or more rated capacity



220000



220000



230000



230000

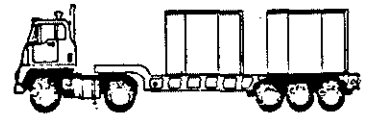
TRUCKTRACTOR - SEMITRAILER



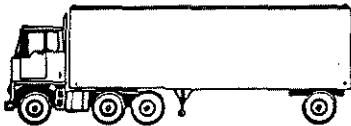
321000



322000



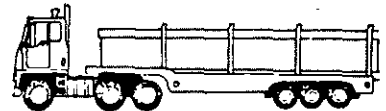
323000



331000



332000



333000

SINGLE UNIT TRUCK WITH TRAILER



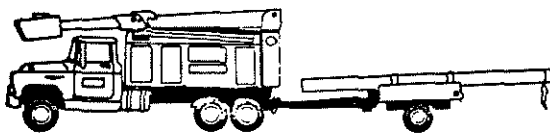
220900



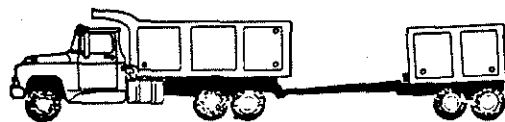
220900



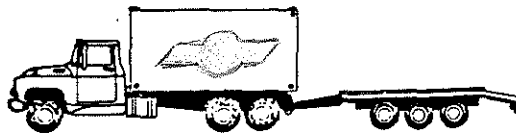
423000



230900

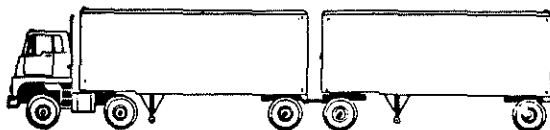


432000



433000

TRUCKTRACTOR - SEMITRAILER WITH TRAILER
 (DOUBLE BOTTOM)



521200



531200

3. Body Types

The interviewer will enter the two digit code for the various body types. All body type codes are shown on the interview form while a detailed explanation of each body type is shown below. Light trucks may have a body type under the general truck category such as a Multi-stop or Standup Delivery (Code 61).

LIGHT TRUCKS

<u>Code</u>	<u>Description</u>
11	Van - A fully enclosed body of limited capacity which includes driver's compartment.
12	Pickup - A small open box or express body.
13	Light Utility - A body designed to carry readily accessible tools, equipment, and supplies in integrally constructed compartments, with or without other cargo spaces.
14	Personnel and Cargo - A body with large integral enclosed passenger compartment and a separate open box or express body.
15	Minibus - An enclosed utility body with side windows and one or more removable seats designed for transporting either passengers, light cargo or both.

GENERAL TRUCK AND SEMI-TRAILER BODIES

21	Platform, Flat, or Stake - A body having a floor without sides or roof, with or without readily removable stakes, which may be tied together with chains, slats or panels.
22	Low-Boy Trailer - A truck trailer with a platform body constructed to provide a low loading height and designed for the transportation of extremely heavy or bulky property.
23	Rack - A body with fixed slatted sides and headboard.
24	Livestock Rack - A rack body with or without roof designed primarily for transportation of livestock.
25	Riggers or Oil Field - A platform body of heavy construction equipped with a rear end roller or bullnose adapted for loading by winch or crane mounted on the vehicle and designed primarily for rigging, construction or work in oil fields.
26	Lumber - A platform body usually with transverse rollers designed primarily for the transportation of sawed lumber.

<u>Code</u>	<u>Description</u>
27	Log or Pipe - A body comprised of sill, bolsters, with or without headboard, with provision for uprights, and designed primarily for the transportation of logs, pipes, poles, or other loads which may be boomed. (Use body type codes 21 or 23 for trucks hauling pulpwood).
28	Canopy - An express body with fixed or removable uprights and roof which may be integral or separate from cab.
31	Express - An open box body with or without flareboards.
32	Open Top Box or Van - A body with high closed sides and ends and a movable top which usually is a tarpaulin cover.
33	Grain - A low-side open box primarily designed to transport dry fluid commodities in bulk.
34	Dump - A low-side open box body designed primarily to transport dry fluid commodities in bulk which can be tilted or otherwise manipulated to discharge its load by gravity.
35	Hopper - A body which is capable of discharging its load by gravity or mechanical power through means other than tilting and usually loaded from the top.
41	Van - A fully enclosed body designed primarily for the transportation of packaged commodities.
42	Refrigerated Van - A van body designed primarily for the transportation of commodities at controlled temperatures. It is provided with equipment for refrigeration or heating.
43	Furniture or Moving Van - A van body designed primarily for transportation of furniture or household goods.
51	Tank - A body designed for bulk commodities other than petroleum.
52	Petroleum Tank - A body designed for transportation of petroleum products.
53	Bituminous Material Distributor - A tank body provided with means for distributing hot bituminous material under pressure, usually equipped with means for heating the material.
54	Bottler - A body designed primarily for the transportation of cased bottled beverages on open or closed shelves, A-frames or pallets.
61	Multi-stop or Standup Delivery - A fully enclosed body with driver's compartment integral and designed for easy access.

<u>Code</u>	<u>Description</u>
62	Automobile Transporter - A body designed primarily for the transportation of other vehicles.
63	Armored Car (Not Military) - An enclosed cargo body with integral driver's compartment so constructed as to protect cargo and crew from overt attack.
64	Boat Carrier - A body designed to transport two (2) or more boats.
71	Concrete Mixer or Agitator - A body designed and equipped to mix or agitate concrete.
72	Wrecker - A body designed primarily for transportation of equipment for salvaging disabled vehicles and equipped with means of hoisting and towing such vehicles.
73	Utilities - A body designed primarily for the transportation of tools, equipment, and supplies for construction, maintenance, and repair purposes.
74	Garbage and Refuse - A dump body designed primarily for the collection of garbage and refuse.
75	Container - A body designed to transport bundled, stacked, or palletized commodities or special containers, with special lifting, locking or loading devices.
76	Equipment - Any truck mounted or other self-propelled wheeled equipment designed for highway travel, such as truck-mounted cranes, well drills, compressors, etc.
77	Bare Chassis - A cargo type vehicle with no provision for carrying load. This code should be used also for the body type when one truck, without a body, is transporting a second without a body, where the front wheels of the second rest on the first.
78	Shop - A body constructed for use as a shop, laboratory, office, or for a similar purpose with tools, equipment, or supplied to be used, operated or dispensed from inside the body.
79	Dwelling Body - A body designed for use as an abode with bunk(s), including house body and camp body.
88	Truck-Tractor without Semi-Trailer or Trailer - Any vehicle constructed primarily to pull a semi-trailer, full trailer, pole trailer, house trailer or equipment.

<u>Code</u>	<u>Description</u>
89	Empty Log Truck - Carrying pole trailer.
91	Intercity Bus - A body constructed with reclining seats and large separate cargo compartment for transporting persons on journeys of long duration.
92	Suburban Bus - A body constructed with fixed or reclining seats, overhead passenger luggage space, provision for standing passengers, with or without quick opening separate entrance and exit doors.
93	City Transit Bus - A body constructed with fixed seats, provision for a high proportion of standing passengers, with quick opening entrance and exit doors.
94	School Bus - A light bus body constructed for the transportation of students.

4. Fuel Type

Classify fuel type by interviewing driver.

<u>Code</u>	<u>Description</u>
1	Gasoline
2	Diesel
3	Propane
4	Turbine
8	Other
9	Unknown

5. Gross Reg. Weight Group

6. Reg. Weight

<u>Code</u>	<u>Pounds</u>
072	72,000
006	6,000

a. Information can be obtained from:

(1) Truck License Plate - Double the tonnage sticker value to get thousand pound code as shown in the following example.

<u>Code</u>	<u>Sticker</u>
072	36T
006	3T

(2) Door of Truck or Side of Trailer

<u>Code</u>	<u>Marked</u>
072	GRW 72,000

(3) The Driver (Ask about the registration or cab card).

7. Basis of Registration

Code a 1 in this column unless the only state the vehicle is registered in is one of the states shown below, then use the appropriate code. When a vehicle's home state is one of the following and it is also registered in a state not shown below, use the other state to determine the basis of registration and the licensed weight. Ask driver.

<u>Code</u>	<u>State</u>
3	Alaska
3	California
3	Colorado
3	Hawaii
5	Maryland
2	Montana
3	Nevada
3	Ohio
2	Oregon
7	South Carolina
3	Wyoming
3	District of Columbia
9	Canada and Mexico

8. Model Year

Determine the actual model year of the vehicle by asking the driver. Code the last two digits of the year, example for 1981 code 81.

9. Class of Operation

Determine the class of operation by questioning the driver. Enter the appropriate code.

<u>Code</u>	<u>Description</u>
1	Privately operated vehicles in general service. The load carried is the property of the owner of the vehicle.
2	For hire operation under certification of the Interstate Commerce Commission; such vehicles bear a plate displaying the "MC" number of permit or certificate.
3	<u>Other for hire operation, all vehicles not bearing ICC identification carrying cargo not property of the owner of the vehicle.</u>
9	Class of operation not determined or does not apply. This code may be used for vehicles from Canada or Mexico.

10. Commodity

Determine the commodity the vehicle is carrying by observation and/or asking the driver. Enter the commodity in brief but precise wording.

Example: Wrong - Meat
Correct - Swinging meat or boxed meat
Wrong - Grain
Correct - Corn

When the body type is mounted equipment the commodity must agree, such as welding unit, wrecker, crane, etc.

If there is a Hazardous Materials Placard on the vehicle, enter the 4 digit code from the placard.

11. Empty or Loaded

The loaded or empty code must match the commodity columns exactly. A vehicle with a commodity code in the commodity column therefore must be coded as a loaded vehicle.

<u>Code</u>	<u>Description</u>
0	Empty
1	Loaded
2	Non-commodity movement (utility or mounted equipment)
3	Permitted Overload

Code "2" is used for vehicles which cannot be considered as transporting a commodity.

Examples: Utility trucks such as gas, telephone and power companies, plumbing, heating and electrical contractors.

Code "3" is used when driver's answer yes to the overweight permit question. All other answers will result in a blank answer space signifying No.

SECTION 2 - SCALE OPERATOR'S FORM

The form will be used only at the pit scale stations. There is room for forty trucks in groups of ten. Each group corresponds with one recorder form. Use the upper left group first, then the bottom left group of ten, third the upper right group, and finally the lower right group. The first sheet of the Scale Operator's Form will then correspond to the first four sheets of the Recorder Form. See sample below. Complete the form in the following manner.

1. Heading

Enter the station number, the direction of travel the weights will be for, the date, the hour, the sheet numbers for the hour and your name.

2. Axle Weights

Enter the axle weights for each vehicle. The first axle or steering axle will be under Axle A, the second axle under Axle B, etc. There are sufficient columns for seven axles; if a vehicle has more than seven axles start over again under Axle A and circle.

FORM 153-G
11-4-61

TRUCK WEIGHT SURVEY SCALEMAN'S FORM
TRANSPORTATION INVENTORY

STATION NO _____
DIR. TRAVEL _____

DATE _____ HOUR _____
SHEET _____ OF _____
SCALEMAN _____

CONTROL NUMBER	Axle Weights in Hundreds of Pounds							CONTROL NUMBER	Axle Weights in Hundreds of Pounds						
	Axle A	Axle B	Axle C	Axle D	Axle E	Axle F	Axle G		Axle A	Axle B	Axle C	Axle D	Axle E	Axle F	Axle G
1								1							
2								2							
3								3							
4								4							
5								5							
6								6							
7								7							
8								8							
9								9							
10								10							
1								1							
2								2							
3								3							
4								4							
5								5							
6								6							
7								7							
8								8							
9								9							
10								10							

SECTION 3 - RECORDER FORM

A sample of the recorder form is shown below and will be completed as indicated in this section.

FORM 1100
11. 480

TRUCK WEIGHT SURVEY RECORDER FORM
TRANSPORTATION INVENTORY

SHEET ___ OF ___
RECORDER _____
WEIGHTS BY _____
CODED BY _____

VEH TYPE	19 GEN	20 REG AX	21 TRL AX	22 STATE	23 AXLE	24 BODY	25 TYPE	26 FUEL TYPE	27 GROSS REG	28 WGT GROUP	29 REG	30 WEIGHT	31 BASIS REG	32 MODEL	33 YEAR	34 CLASS	35 OP	36	37	38	39	40	41 E OR L	42	43	44	45	AXLE WEIGHTS										AXLE MEASUREMENTS										TOTAL SERIAL NO.	CARD NO.														
																												46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65			66	67	68	69	70	71	72	73	74	75	76	77	78	79
1	19 GEN	20 REG AX	21 TRL AX	22 STATE	23 AXLE	24 BODY	25 TYPE	26 FUEL TYPE	27 GROSS REG	28 WGT GROUP	29 REG	30 WEIGHT	31 BASIS REG	32 MODEL	33 YEAR	34 CLASS	35 OP	36	37	38	39	40	41 E OR L	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79		
2	19 GEN	20 REG AX	21 TRL AX	22 STATE	23 AXLE	24 BODY	25 TYPE	26 FUEL TYPE	27 GROSS REG	28 WGT GROUP	29 REG	30 WEIGHT	31 BASIS REG	32 MODEL	33 YEAR	34 CLASS	35 OP	36	37	38	39	40	41 E OR L	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79		
3	19 GEN	20 REG AX	21 TRL AX	22 STATE	23 AXLE	24 BODY	25 TYPE	26 FUEL TYPE	27 GROSS REG	28 WGT GROUP	29 REG	30 WEIGHT	31 BASIS REG	32 MODEL	33 YEAR	34 CLASS	35 OP	36	37	38	39	40	41 E OR L	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79		
4	19 GEN	20 REG AX	21 TRL AX	22 STATE	23 AXLE	24 BODY	25 TYPE	26 FUEL TYPE	27 GROSS REG	28 WGT GROUP	29 REG	30 WEIGHT	31 BASIS REG	32 MODEL	33 YEAR	34 CLASS	35 OP	36	37	38	39	40	41 E OR L	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79		
5	19 GEN	20 REG AX	21 TRL AX	22 STATE	23 AXLE	24 BODY	25 TYPE	26 FUEL TYPE	27 GROSS REG	28 WGT GROUP	29 REG	30 WEIGHT	31 BASIS REG	32 MODEL	33 YEAR	34 CLASS	35 OP	36	37	38	39	40	41 E OR L	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79		
6	19 GEN	20 REG AX	21 TRL AX	22 STATE	23 AXLE	24 BODY	25 TYPE	26 FUEL TYPE	27 GROSS REG	28 WGT GROUP	29 REG	30 WEIGHT	31 BASIS REG	32 MODEL	33 YEAR	34 CLASS	35 OP	36	37	38	39	40	41 E OR L	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79		
7	19 GEN	20 REG AX	21 TRL AX	22 STATE	23 AXLE	24 BODY	25 TYPE	26 FUEL TYPE	27 GROSS REG	28 WGT GROUP	29 REG	30 WEIGHT	31 BASIS REG	32 MODEL	33 YEAR	34 CLASS	35 OP	36	37	38	39	40	41 E OR L	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79		
8	19 GEN	20 REG AX	21 TRL AX	22 STATE	23 AXLE	24 BODY	25 TYPE	26 FUEL TYPE	27 GROSS REG	28 WGT GROUP	29 REG	30 WEIGHT	31 BASIS REG	32 MODEL	33 YEAR	34 CLASS	35 OP	36	37	38	39	40	41 E OR L	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79		
9	19 GEN	20 REG AX	21 TRL AX	22 STATE	23 AXLE	24 BODY	25 TYPE	26 FUEL TYPE	27 GROSS REG	28 WGT GROUP	29 REG	30 WEIGHT	31 BASIS REG	32 MODEL	33 YEAR	34 CLASS	35 OP	36	37	38	39	40	41 E OR L	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79		
10	19 GEN	20 REG AX	21 TRL AX	22 STATE	23 AXLE	24 BODY	25 TYPE	26 FUEL TYPE	27 GROSS REG	28 WGT GROUP	29 REG	30 WEIGHT	31 BASIS REG	32 MODEL	33 YEAR	34 CLASS	35 OP	36	37	38	39	40	41 E OR L	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79		

TYPE	STATE	HWY	SYS.	STA. NO.	DOT	YEAR	MON.	DATE	HOUR
7	1	9							
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

- Commodity Code
- Ammonia 20190
 - Asphalt 29520
 - Bananas 35110
 - Beer 01390
 - Boats 20821
 - Bottles (Empty) 32210
 - Burial 34900
 - Vanitas 37111
 - Cars 37111
 - Caterpillar 35110
 - Cattle 01411
 - Cement (Dry) 32411
 - CO₂ (Carbon Dioxide) 28130
 - Concrete (wet Mix) 32710
 - Eggs 01520
 - Feed (Bulk) 20421
 - Freight (General) 41100
 - Furniture 25000
 - Gravel 14612
 - Hay 01191
 - Wigs 01413
 - Horses 01920
 - Household Goods 41100
 - Insulation 32900
 - LTL 41100
 - Lumber 24000
 - Meat (Boxed) 20120
 - Meat (Sling) 20110
 - Milk Processed 20260
 - Motorcycles 37500
 - Oats 01133
 - Pallets Wood 21000
 - Parcel 47100
 - Plywood 24300
 - Pop 20660
 - Potatoes 21195
 - Postal Chips 01510
 - Postal 01510
 - PreFab Homes 24320
 - PreFab
 - Steel Bldg 34840
 - RR Tools 34200
 - Refrigerator 36320
 - Roofing 29520
 - Soybean 01144
 - Soybean Meal 20923
 - Steel (Axle & Beams) 33125
 - Steel (Pipes & Tubing) 33126
 - Steel (Rods & Bars) 33124
 - Steel Sheets 33123
 - Tractors 35200
 - Trucks 35200

Column 1: Card Code (7) is precoded.

Column 2-3: State Code (19) is precoded.

Column 4-8: Highway System and Station Number.

Use the codes shown below:

<u>Highway System</u> (4-5)	<u>Station Number</u> (6-8)
06	24B (Waterloo)
14	32C (Mason City)
12	35D (Davenport)
07	41K (Plymouth)
07	42L (Vincent)
16	46E (Boone)
16	47I (Marshalltown)
02	59F (Pleasantville)
02	74H (Ogden)
02	76M (Carroll)
02	85J (Afton)
01	91S (Tipton)
11	92N (Des Moines)

<u>Highway System</u> (4-5)	<u>Station Number</u> (6-8)
01	93P (Avoca)
01	94Q (Ames)
01	95R (Salix)
01	96T (Missouri Valley)
01	97U (Osceola)

Column 9: Direction of Travel

The direction codes are:

Northbound - 1
 Eastbound - 3
 Southbound - 5
 Westbound - 7

For each station the following codes will be used:

<u>STATION</u>	<u>DOT</u>	<u>STATION</u>	<u>DOT</u>
24B	1 and 5	85J	3 and 7
32C	1 and 5	91S	3 and 7
35D	3 and 7	92N	3 and 7
41K	1 and 5	93P	3 and 7
42L	1 and 5	94Q	1 and 5
46E	1 and 5	95R	1 and 5
47I	1 and 5	96T	1 and 5
59F	1 and 5	97U	1 and 5
74H	3 and 7		
76M	3 and 7		

Columns 10 - 11: Year of Survey

Code the last two digits of the year, example for 1980 - code 80.

Columns 12 - 13: Month

Use the appropriate two digit code for the month (01-12).

Columns 14 - 15: Day of the Month

Code the day of the month using a two digit code (01-31).

Columns 16 - 17: Hour

For the hour use the 24-hour clock; code as shown on the following page.

<u>HOUR</u>	<u>CODE</u>	<u>HOUR</u>	<u>CODE</u>
12:00 AM - 1:00 AM	00	12:00 PM - 1:00 PM	12
1:00 AM - 2:00 AM	01	1:00 PM - 2:00 PM	13
2:00 AM - 3:00 AM	02	2:00 PM - 3:00 PM	14
3:00 AM - 4:00 AM	03	3:00 PM - 4:00 PM	15
4:00 AM - 5:00 AM	04	4:00 PM - 5:00 PM	16
5:00 AM - 6:00 AM	05	5:00 PM - 6:00 PM	17
6:00 AM - 7:00 AM	06	6:00 PM - 7:00 PM	18
7:00 AM - 8:00 AM	07	7:00 PM - 8:00 PM	19
8:00 AM - 9:00 AM	08	8:00 PM - 9:00 PM	20
9:00 AM - 10:00 AM	09	9:00 PM - 10:00 PM	21
10:00 AM - 11:00 AM	10	10:00 PM - 11:00 PM	22
11:00 AM - 12:00 AM	11	11:00 PM - 12:00 PM	23

Columns 18 - 41:

These columns will be left blank by the recorder during station operations.

Columns 42 - 60: Weights

The weights will be recorded to the nearest 100 pounds as announced by the scale operators, Axle A for the first axle weighed, Axle B for the second, etc. Columns without axle weights will be left blank. Cheater axles off the surface will be coded 001. Enter the sixth axle weight for a vehicle in the total weight column, otherwise leave blank. Circle the sixth axle weight. See example of recorded weights on the following page.

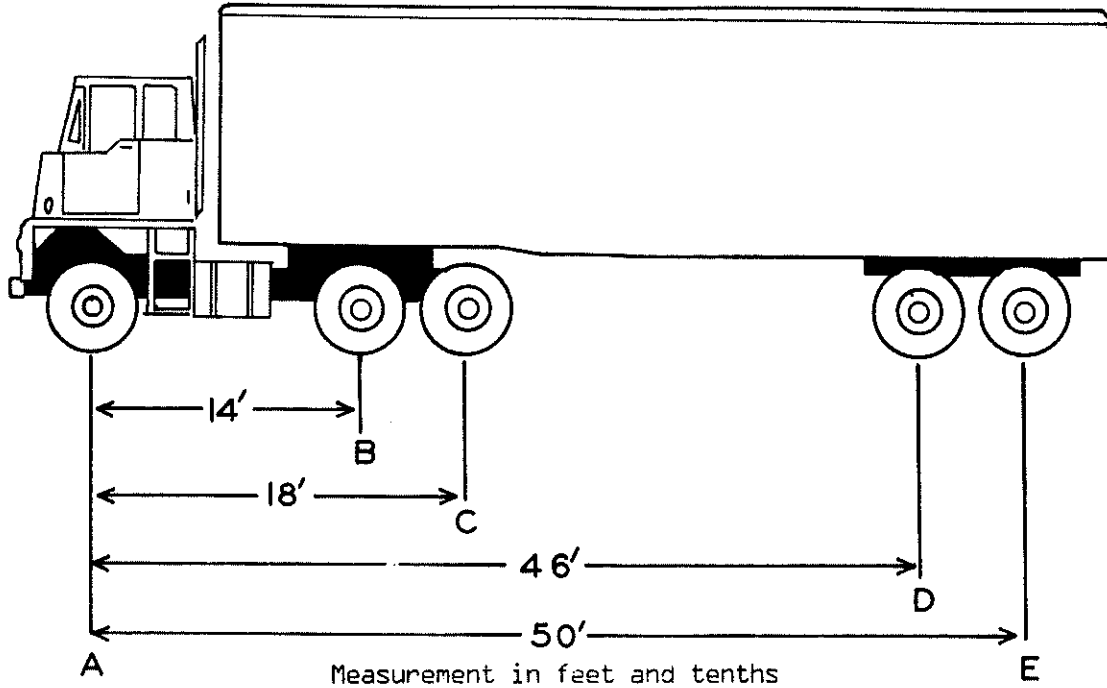
Columns 61 - 76: Measurements

The measurements will be recorded to the nearest tenth of a foot as announced by the scale operators or tapemen depending on station type. The first measurement will be recorded in Axle A-B, the second in B-C, etc. The total wheel base will be left blank unless needed for a six axle vehicle. If used, circle. There will always be one less measurement than weight. See example on the following page.

Columns 77 - 80: Serial Number and Card Number

Leave blank.

RECORDING WEIGHTS AND MEASUREMENTS



Measurement in feet and tenths

Weights in 100 lb. units

057 port. scales
114 pit scales

080 port. scales
274 pit scales
078 port. scales
430 pit scales

050 port. scales
194 pit scales
047 port. scales
094 pit scales

AXLE MEASUREMENTS												TOTAL WHEEL BASE			
AXLE A-B		AXLE B-C		AXLE C-D		AXLE D-E									
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76
140		180		460		500									

PORTABLE SCALES

TOTAL WEIGHT	AXLE WEIGHTS																	
	AXLE A	AXLE B	AXLE C	AXLE D	AXLE E													
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
					0570800					78050047								

PIT SCALES

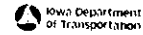
TOTAL WEIGHT	AXLE WEIGHTS																	
	AXLE A	AXLE B	AXLE C	AXLE D	AXLE E													
42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
					1142744					30194094								

SECTION 4 - VEHICLE CLASSIFICATION COUNTS

The vehicle classification counts will be made on the count form, example shown below.

Form 151-G
11-3-84

TRUCK WEIGHT SURVEY COUNT FORM



TRANSPORTATION INVENTORY

TYPE	STATE	HWY.	SYS.	STA.	NO.	DOT	YEAR	MON.	DATE	HOUR
4	1	9								
1	2	3	4	5	6	7	8	9	10	11
	12	13	14	15	16	17				

COUNTER _____
CODER _____

Circle Direction of Travel		North East <u>1</u>	South West <u>5</u>	North East <u>1</u>	South West <u>5</u>	North East <u>1</u>	South West <u>5</u>	
		East <u>3</u>	West <u>7</u>	East <u>3</u>	West <u>7</u>	East <u>3</u>	West <u>7</u>	
PASSENGER	Standard and Compact	18		Type 327000	Type 327000	Type 521100	Type 521100	
	Small	19						
		20						
		21			Type 323000	Type 323000	Type 521200	Type 521200
		22						
		23			Type 331000	Type 331000	Type 531100	Type 531100
	24							
	25							
	26							
	27							
Motorcycles and Motor Scooter	38			Type 337000	Type 337000	Type 531200	Type 531200	
39								
40								
Commercial Buses	41							
	42							
	43			Type 333000	Type 333000	Type 533400	Type 533400	
44								
School Buses	45							
	46							
	47							
SINGLE UNIT	200000	48		Type 334000	Type 334000	Type 621100	Type 621100	
	Pickup and Panel	49						
	50							
	51			Type 343000	Type 343000	Type 622100	Type 622100	
	210000 Heavy 4 Tire	52		With Light Trailer				
		53						
		54			Type 421000	Type 421000	Type 622200	Type 622200
	55							
	220000	56						
	6-Tired Dual Rear Tires	57						
58								
59								
230000	60			Type 422000	Type 422000	Type 200079	Type 200079	
3 Axle	61							
62								
SCHEMATIC TRAILER	321000	63		Type 423000	Type 423000	Type 210079	Type 210079	
	2 Axle Tractor 1 Axle Trailer	64						
	65							
	322000	66		Type 424000	Type 424000	Type 220079	Type 220079	
	2 Axle Tractor 2 Axle Trailer	67						
	68							
	69							
	332000	70		Type 431000	Type 431000	Type 230079	Type 230079	
	3 Axle Tractor 2 Axle Trailer	71						
	72							
73								
		Type 220800	Type 220800	Type 432000	Type 432000			
		Type 230800	Type 230800	Type 433000	Type 433000			
		Type 240000	Type 240000	Type 434000	Type 434000			

Complete the heading in the same manner as the Recorder Form, however, leave the DOT (Column 9) blank.

The count portion of the form is divided into three sections. The left side is by vehicle classification for the most common vehicle types. The second and third sections of the form are arranged by vehicle type, and then by number of axles on the vehicle. Circle the direction of travel in each section used.

A. The passenger vehicles will be categorized into four different classes:

Standard and compact cars;
Motorcycles, motor scooters and mopeds;
Commercial buses; and
School buses

1. No distinction will be made between standard/compact cars and small cars as is indicated on the count form. All passenger cars will be entered on the count form under standard and compact. The space reserved for small cars will be left blank.

2. Motorcycles, Mopeds and Motor Scooters (Columns 38 - 40)

Motorcycle travel has considerable seasonal variation. This type of classification data is of particular value and should be noted carefully.

3. Commercial Buses (Columns 41 - 44)

4. School Buses (Columns 45 - 57)

Some buses are reconstructed to carry a commodity such as tools, office equipment, or camping gear. These are to be classified as a truck, depending on the wheel arrangement.

B. Trucks will be classified the same as by the interviewer. See Vehicle Type Coding Chart page B-2.

Single unit trucks (including pickups and panels) with light trailers will be counted in the section marked "with light trailers", with full trailers (including all fifth wheel trailers) the trucks will be counted in the appropriate vehicle type 4 category. Single unit trucks with campers, either demountable or permanently installed, will be counted in the 2-0079 series.

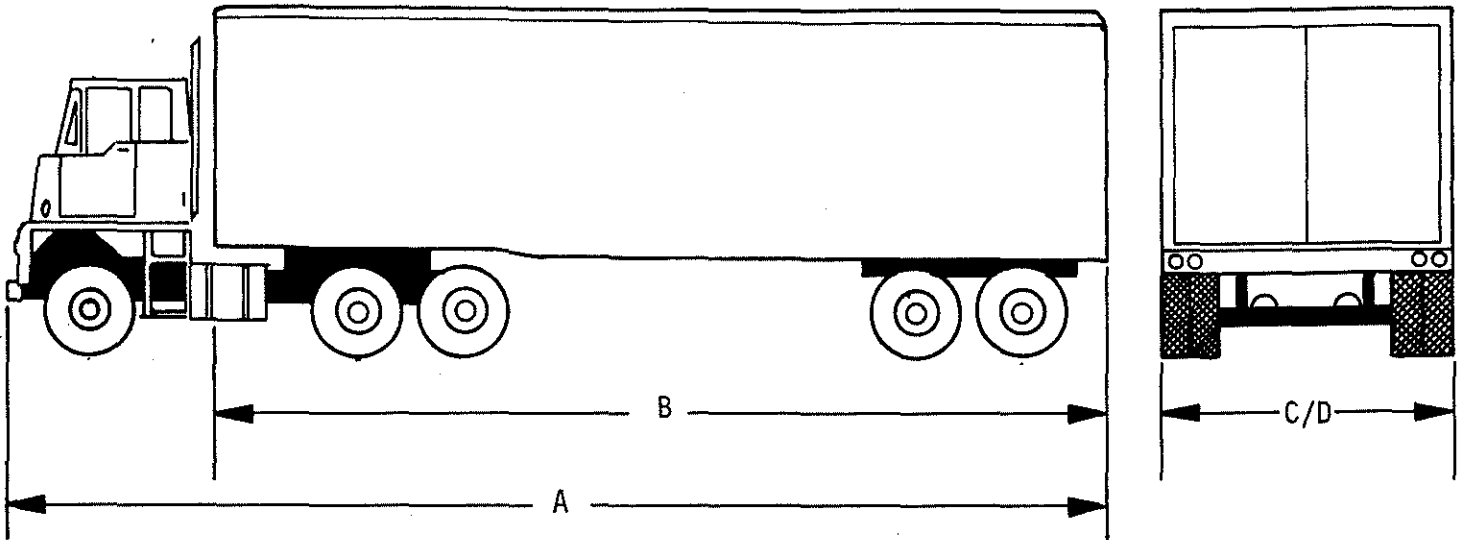
TRUCK WEIGHT SURVEY
SUPPLEMENTAL MEASUREMENT FORM

SHEET of
RECORDER

TYPE	STATE	HWY. SYS.	STA. NO.	DOT.	YEAR	MON.	DATE	HR
7	1	9						

VEH TYPE							SUPPLEMENTAL MEASUREMENTS				SECOND TRAILER MEASUREMENT		
GEN	AX	REG	TRL	STATE	AXLE	BODY TYPE	A TOTAL LENGTH	B TRLER LENGTH	C WIDTH TRLER	D WIDTH TIRES	B TRLER LENGTH	C WIDTH TRLER	D WIDTH TIRES
CONTROL NUMBERS							FT/10s	FT/10s	INCHES	INCHES	FT/10s	INCHES	INCHES
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													

RECORDING SUPPLEMENTAL MEASUREMENTS



Supplemental measurements will be taken on all trucks in the order that they weighed. To ensure uniformity, vehicle and body type will be recorded in the order that trucks are weighed. The vehicle type and body type will be used to later identify these measurements.

Measurements A and B will be in FEET and TENTHS of feet on all trucks. The measurements for C/D will be in INCHES on all trucks.

The following measurement instructions will be followed to obtain data:

- MEASUREMENT A: Measure the overall length of the truck from the leading edge of the front bumper to the trailing edge of the box or trailer.
- MEASUREMENT B: Measure the length of the trailer from the front of the load carrying platform or container (EXCLUDE ANY EQUIPMENT SUCH AS REEFER UNITS OR AIRFOILS MOUNTED ON FRONT OF TRAILERS) to the rear edge of trailer or bumper. NOTE: When measuring Double-Bottoms EXCLUDE dolly or boogie towing connection for second trailer from trailer length.
- MEASUREMENT C: Measure the widest part of the load carrying platform or container including any load tiedown devices. (EXCLUDE SAFETY DEVICES SUCH AS side marker lights, splash/spray suppressant equipment or other items that appear to be safety related).
*If truck is a Double-Bottom measure width of both trailers.
- MEASUREMENT D: Measure width of tires from outside to outside including any bulge due to load.

NOTE: MEASURE ONLY LENGTH OF SADDLE/SLANTBACK UNITS. DON'T TRY TO MEASURE EACH UNIT AS A TRAILER.

NOTE: INCLUDE TONGUE OF PUP TRAILERS AS PART OF LENGTH.

APPENDIX B
ORDER OF WEIGHING AXLES

Portable Scales

1. Two axle trucks: Weigh both axles at the same time.
2. Three axle trucks: Weigh the steering (front) axle and then both drivers at the same time.
3. Three axle tandems: Weigh the first two together and the last two together (the middle axle will be weighed twice but only one reading will be recorded).
4. Trailers: Weigh in the same manner as the trucks.

Pit Scales

1. Trucks and buses: The steering axle will be weighed alone, then each following axle on the driver unit will be added until all axles are on the scale.
2. Trailers: Weigh all axles first and then remove one axle at a time from the scale.

Examples on the order to weigh the axles of various truck types are on the following pages.

Order of Weighing Vehicles by Axles on Pit or Portable Scales

Pit Scales

Portable Scales

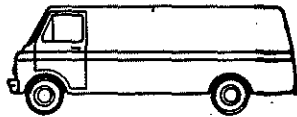
Vehicle Type

Vehicle Type

2000

2000

Weigh A



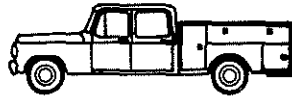
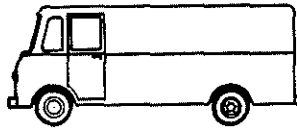
Weigh A & B

Weigh A & B

2100

2100

Weigh A



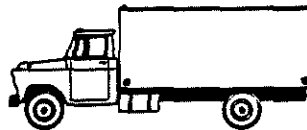
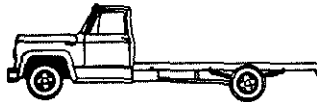
Weigh A & B

Weigh A & B

2200

2200

Weigh A



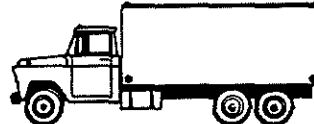
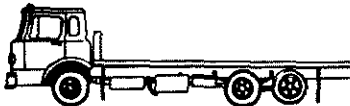
Weigh A & B

Weigh A & B

2300

2300

Weigh A



Weigh A

Weigh A & B

Weigh B & C

Weigh A & B & C

2400

2400

Weigh A

Weigh A

Weigh A & B

Weigh B & C

Weigh A & B & C



Weigh C & D

Weigh A & B & C & D

3210

3210

Weigh A

Weigh A & B

Weigh A & B

Weigh C

Weigh C



Pit Scales

Vehicle Type

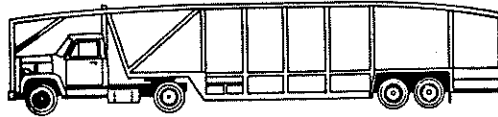
3220

Weigh A

Weigh A & B

Weigh C & D

Weigh D



3270

Weigh A

Weigh A & B

Weigh C & D

Weigh D



3230

Weigh A

Weigh A & B

Weigh C & D & E

Weigh D & E

Weigh E



3240

Weigh A

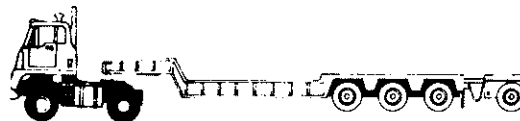
Weigh A & B

Weigh C & D & E & F

Weigh D & E & F

Weigh E & F

Weigh F



3310

Weigh A

Weigh A & B

Weigh A & B & C

Weigh D



Portable Scales

Vehicle Type

3220

Weigh A & B

Weigh C & D

3270

Weigh A & B

Weigh C & D

3230

Weigh A & B

Weigh C & D

Weigh D & E

3240

Weigh A & B

Weigh C & D

Weigh E & F

3310

Weigh A

Weigh B & C

Weigh D

Pit Scales

Vehicle Type

3320

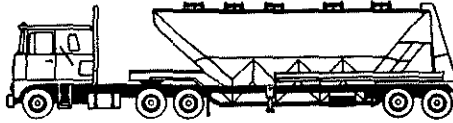
Weigh A

Weigh A & B

Weigh A & B & C

Weigh D & E

Weigh E



3370

Weigh A

Weigh A & B

Weigh A & B & C

Weigh D & E

Weigh E



3330

Weigh A

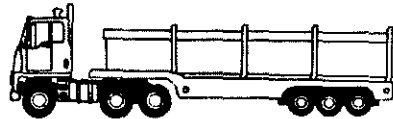
Weigh A & B

Weigh A & B & C

Weigh D & E & F

Weigh E & F

Weigh F



3340

Weigh A

Weigh A & B

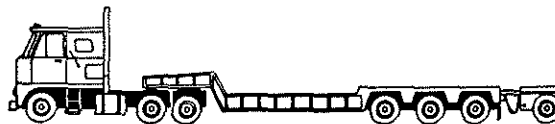
Weigh A & B & C

Weigh D & E & F & G

Weigh E & F & G

Weigh F & G

Weigh G



Portable Scales

Vehicle Type

3320

Weigh A

Weigh B & C

Weigh D & E

3370

Weigh A

Weigh B & C

Weigh D & E

3330

Weigh A

Weigh B & C

Weigh D & E

Weigh E & F

3340

Weigh A

Weigh B & C

Weigh D & E

Weigh F & G

Pit Scales

Vehicle Type

3430

Weigh A

Weigh A & B

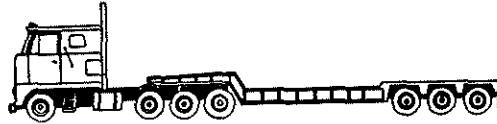
Weigh A & B & C

Weigh A & B & C & D

Weigh E & F & G

Weigh F & G

Weigh G

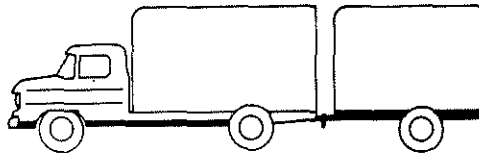


4210

Weigh A

Weigh A & B

Weigh C



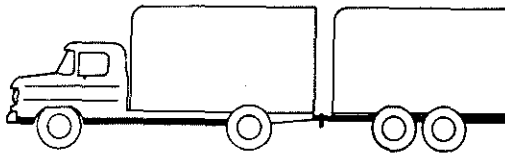
4220

Weigh A

Weigh A & B

Weigh C & D

Weigh D



4230

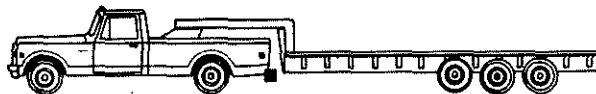
Weigh A

Weigh A & B

Weigh C & D & E

Weigh D & E

Weigh E



Portable Scales

Vehicle Type

3430

Weigh A & B

Weigh C & D

Weigh E & F

Weigh F & G

4210

Weigh A & B

Weigh C

4220

Weigh A & B

Weigh C & D

4230

Weigh A & B

Weigh C & D

Weigh D & E

Pit Scales

Vehicle Type

4240

Weigh A

Weigh A & B

Weigh C & D & E & F

Weigh D & E & F

Weigh E & F

Weigh F



4310

Weigh A

Weigh A & B

Weigh A & B & C

Weigh D



4320

Weigh A

Weigh A & B

Weigh A & B & C

Weigh D & E

Weigh E



4330

Weigh A

Weigh A & B

Weigh A & B & C

Weigh D & E & F

Weigh E & F

Weigh F



Portable Scales

Vehicle Type

4240

Weigh A & B

Weigh C & D

Weigh E & F

4310

Weigh A

Weigh B & C

Weigh D

4320

Weigh A

Weigh B & C

Weigh D & E

4330

Weigh A

Weigh B & C

Weigh D & E

Weigh E & F

Pit Scales

Vehicle Type

5212 (32/24 platform)

Weigh A

Weigh A & B

Weigh C

Weigh D

Weigh E



5212

5311 (40' platform)

Weigh A

Weigh A & B

Weigh A & B & C

Weigh D & E

Weigh E



5311

5311 (32/24 platform)

Weigh A

Weigh A & B

Weigh A & B & C

Weigh D

Weigh E

5312 (40' platform)

Weigh A

Weigh A & B

Weigh A & B & C

Weigh D & E & F

Weigh E & F

Weigh F



5312

Portable Scales

Vehicle Type

5212

Weigh A & B

Weigh C & D

Weigh E

5311

Weigh A

Weigh B & C

Weigh D & E

5311

Weigh A

Weigh B & C

Weigh D & E

5312

Weigh A

Weigh B & C

Weigh D & E

Weigh F

Pit Scales

Portable Scales

Vehicle Type

Vehicle Type

4340

4340

Weigh A

Weigh A & B

Weigh A & B & C

Weigh D & E & F & G

Weigh E & F & G

Weigh F & G

Weigh G



Weigh A

Weigh B & C

Weigh D & E

Weigh F & G

5211 (40' platform)

5211

Weigh A

Weigh A & B

Weigh C & D

Weigh D



5211

Weigh A & B

Weigh C & D

5211 (32/24 platform)

5211

Weigh A

Weigh A & B

Weigh C

Weigh D

Weigh A & B

Weigh C & D

5212 (40' platform)

5212

Weigh A

Weigh A & B

Weigh C & D & E

Weigh D & E

Weigh E



5212

Weigh A & B

Weigh C & D

Weigh E

Pit Scales

Portable Scales

Vehicle Type

Vehicle Type

5312 (32/24 platform)

5312

Weigh A

Weigh A

Weigh A & B

Weigh B & C

Weigh A & B & C

Weigh D & E

Weigh D

Weigh F

Weigh E

Weigh F



5312

6222

6222

Weigh A

Weigh A & B

Weigh A & B

Weigh C & D

Weigh C & D

Weigh E & F

Weigh D

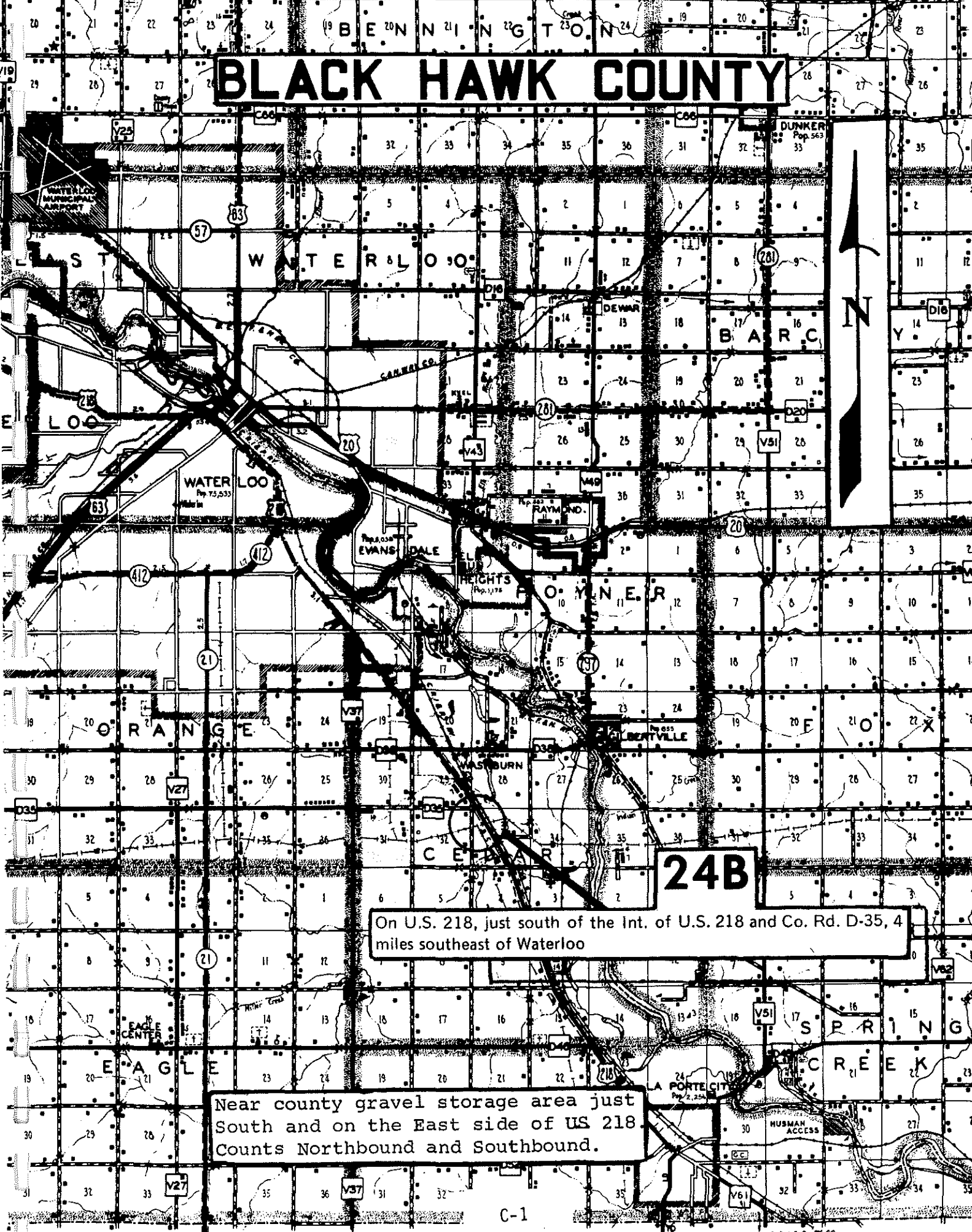
Weigh E & F

Weigh F



Vehicles not assigned an axle weighing order or due to abnormal spacing cannot be weighed according to its assigned weighing order, will be weighed in the most expedient manner possible. The order in which the axles were weighed will be recorded in the following scheme A, A & B, A & B & C, etc.

BLACK HAWK COUNTY

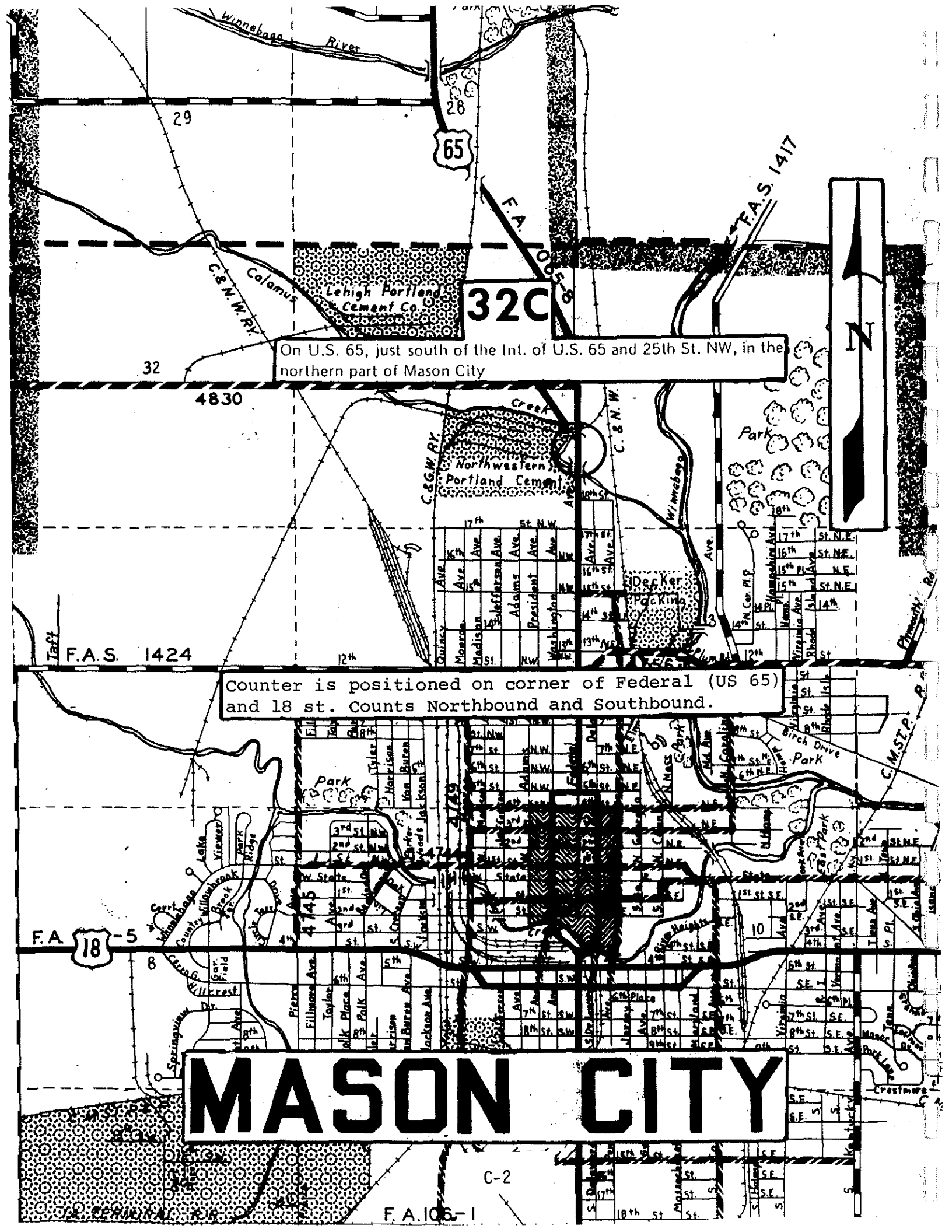


24B

On U.S. 218, just south of the Int. of U.S. 218 and Co. Rd. D-35, 4 miles southeast of Waterloo

Near county gravel storage area just South and on the East side of US 218. Counts Northbound and Southbound.

C-1



29

65

F.A.S. 1417

Lehigh Portland Cement Co.

32C

On U.S. 65, just south of the Int. of U.S. 65 and 25th St. NW, in the northern part of Mason City

32

4830



F.A.S. 1424

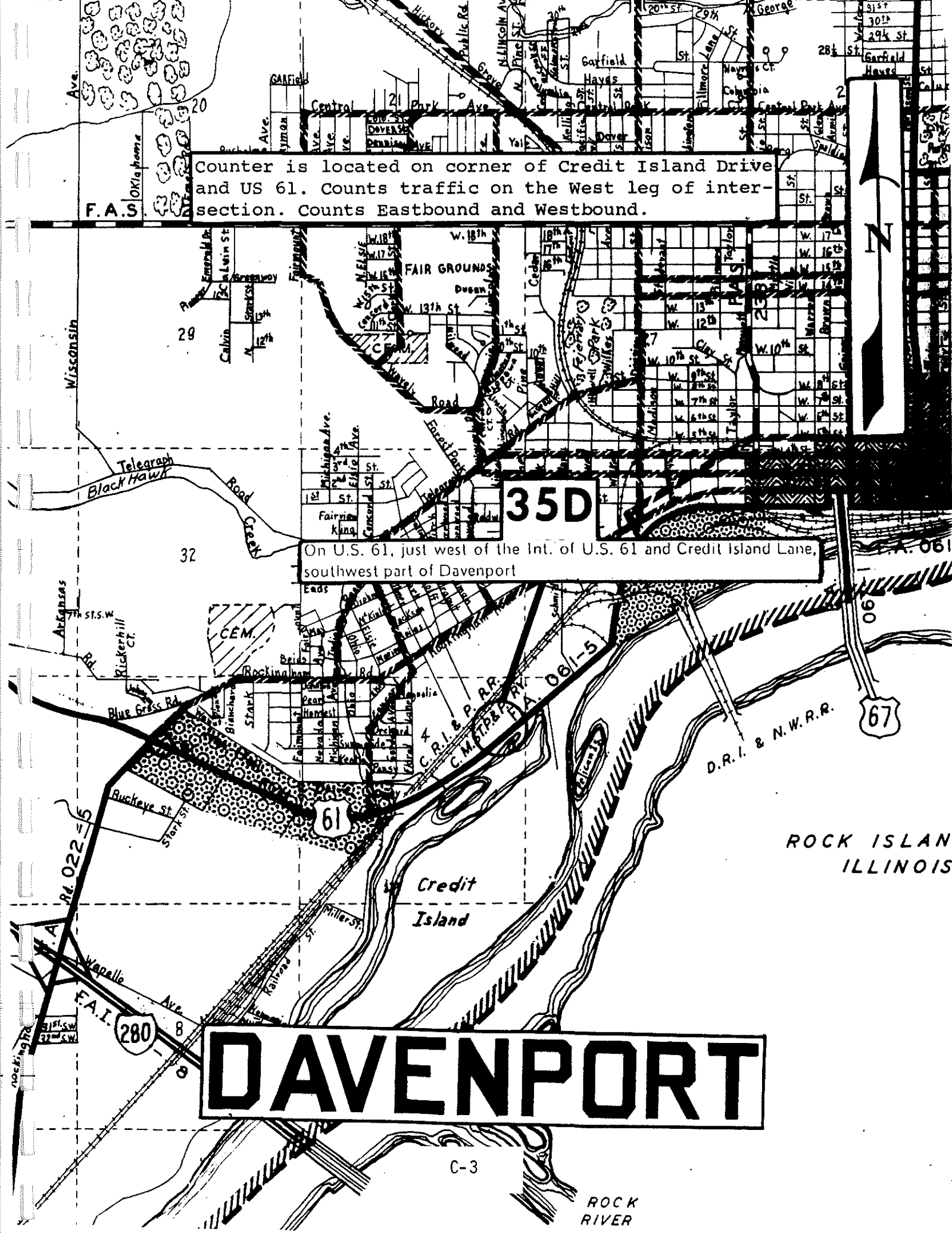
Counter is positioned on corner of Federal (US 65) and 18 st. Counts Northbound and Southbound.

F.A. 18-5

MASON CITY

C-2

F.A. 106-1



Counter is located on corner of Credit Island Drive and US 61. Counts traffic on the West leg of intersection. Counts Eastbound and Westbound.

F.A.S.

On U.S. 61, just west of the Int. of U.S. 61 and Credit Island Lane, southwest part of Davenport

35D

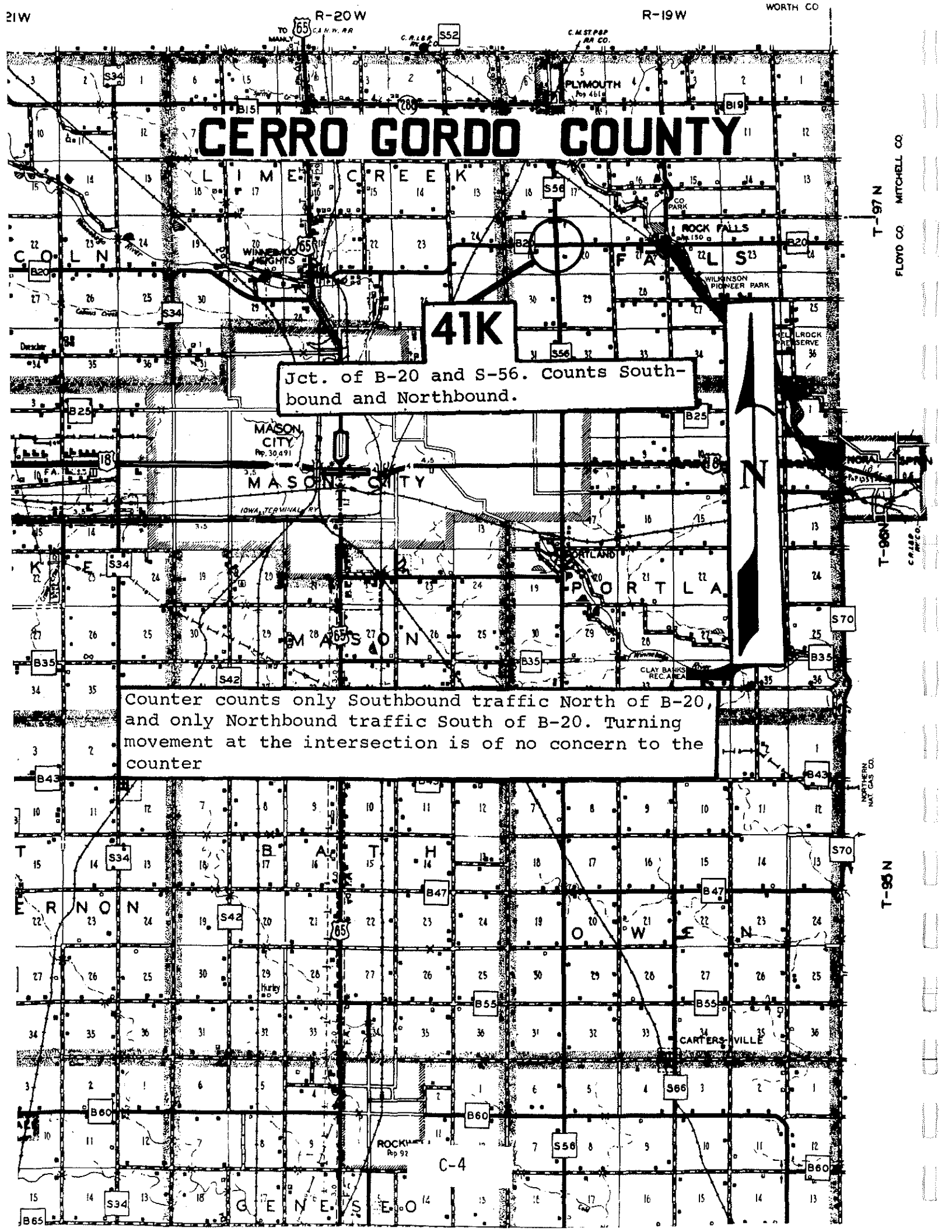
DAVENPORT

CERRO GORDO COUNTY

41K

Jct. of B-20 and S-56. Counts Southbound and Northbound.

Counter counts only Southbound traffic North of B-20, and only Northbound traffic South of B-20. Turning movement at the intersection is of no concern to the counter



T-97 N
FLOYD CO MITCHELL CO

T-96 N
CRISP IOWA CO

NORTHERN NAT GAS CO

T-95 N

169 TO KUMBOLDT

DES MOINES RIVER

NORTHERN NATURAL GAS CO. PIPELINES

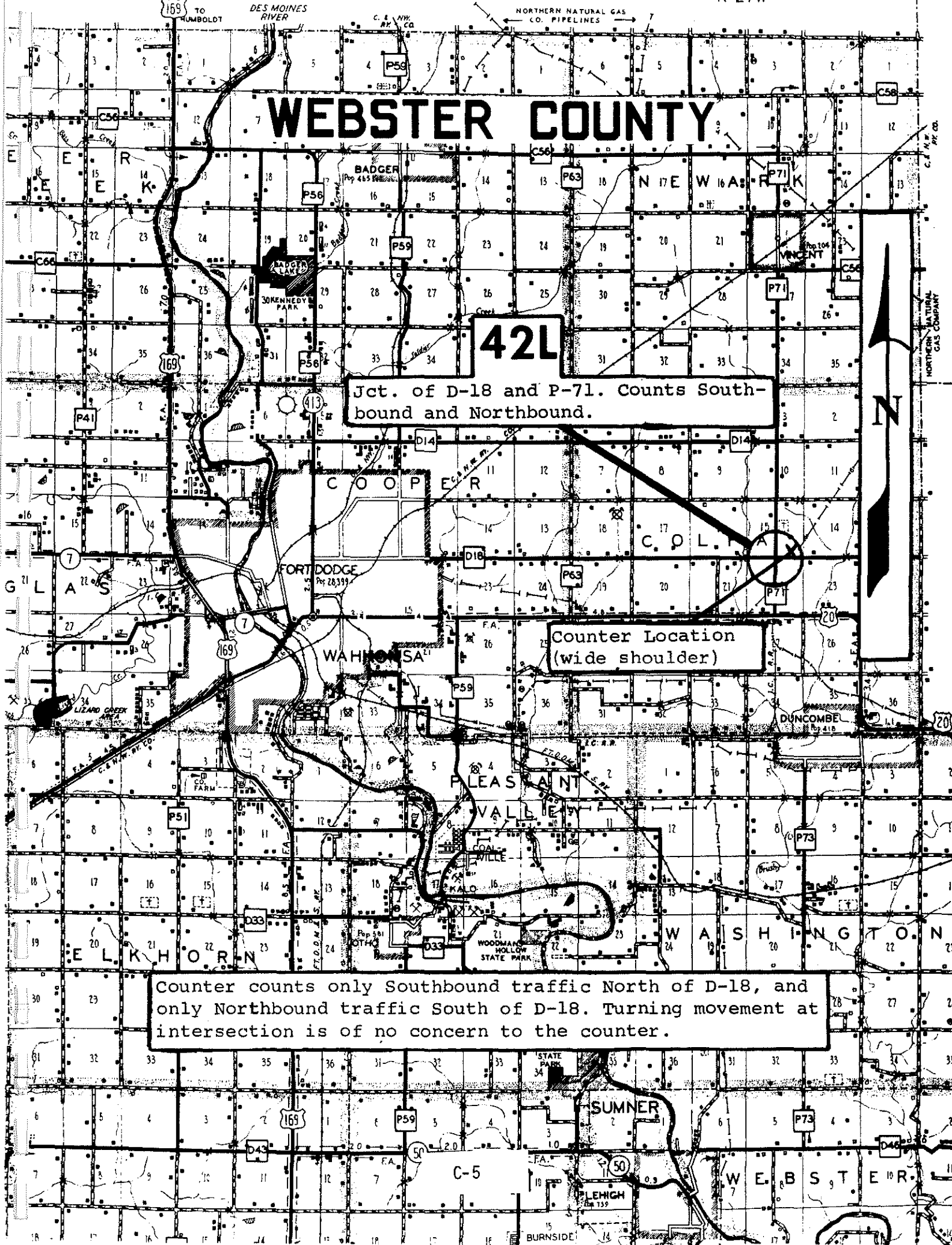
WEBSTER COUNTY

42L

Jct. of D-18 and P-71. Counts Southbound and Northbound.

Counter Location (wide shoulder)

Counter counts only Southbound traffic North of D-18, and only Northbound traffic South of D-18. Turning movement at intersection is of no concern to the counter.



C. & N.W. CO.

NORTHERN NATURAL GAS COMPANY

T-00N

T-00N

20

50

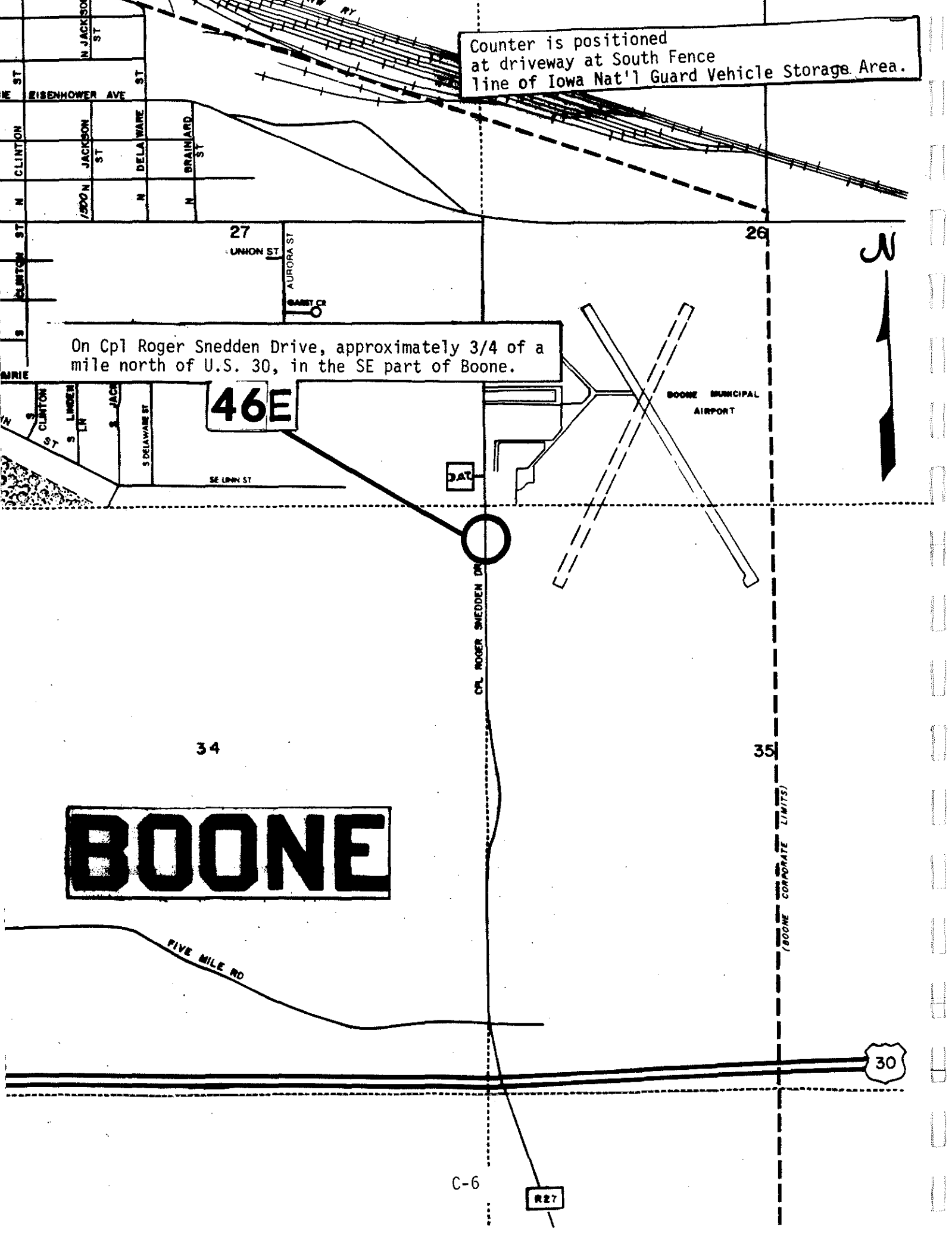
50

Counter is positioned at driveway at South Fence line of Iowa Nat'l Guard Vehicle Storage Area.

On Cpl Roger Snedden Drive, approximately 3/4 of a mile north of U.S. 30, in the SE part of Boone.

46E

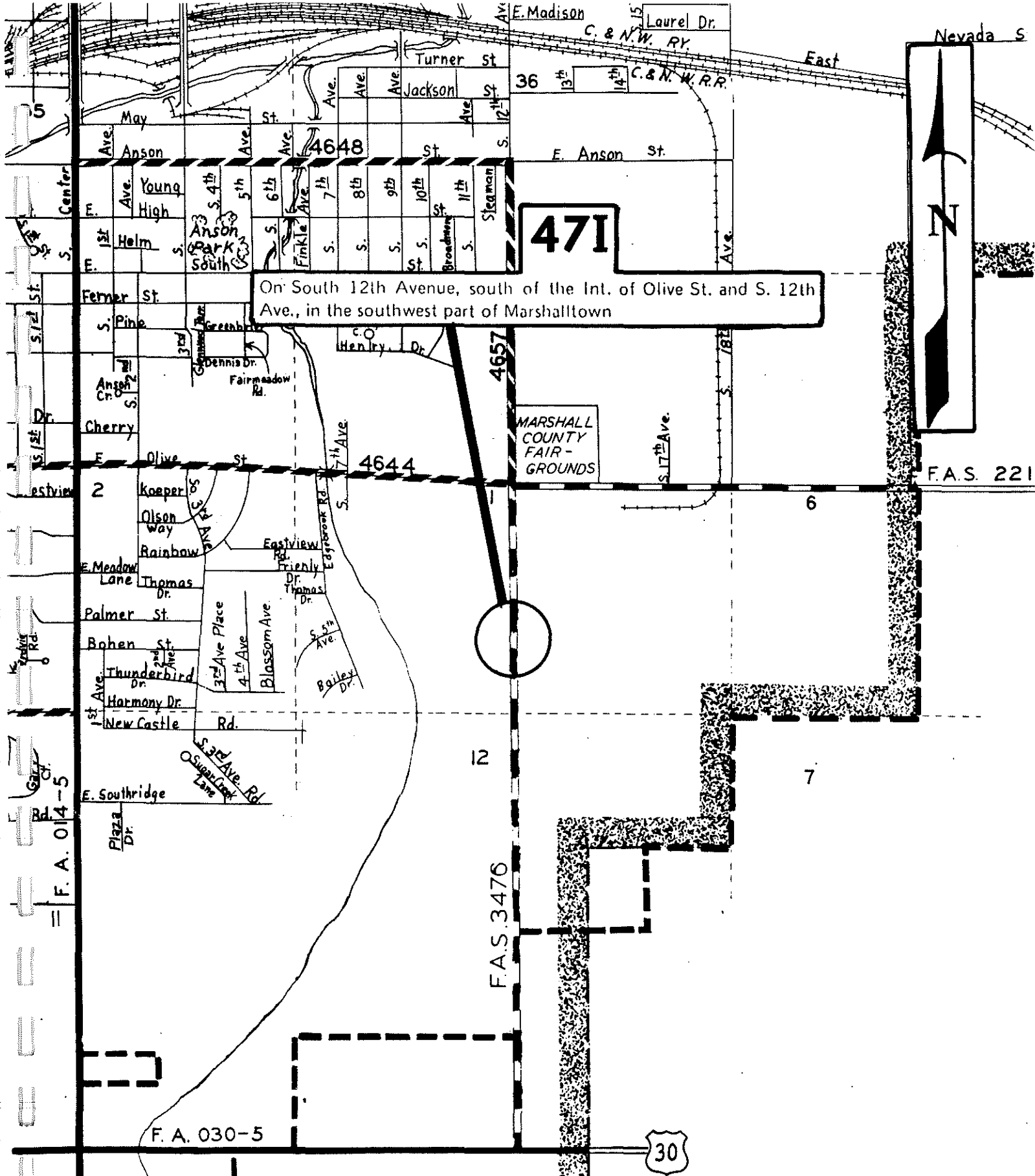
BOONE



C-6

R27

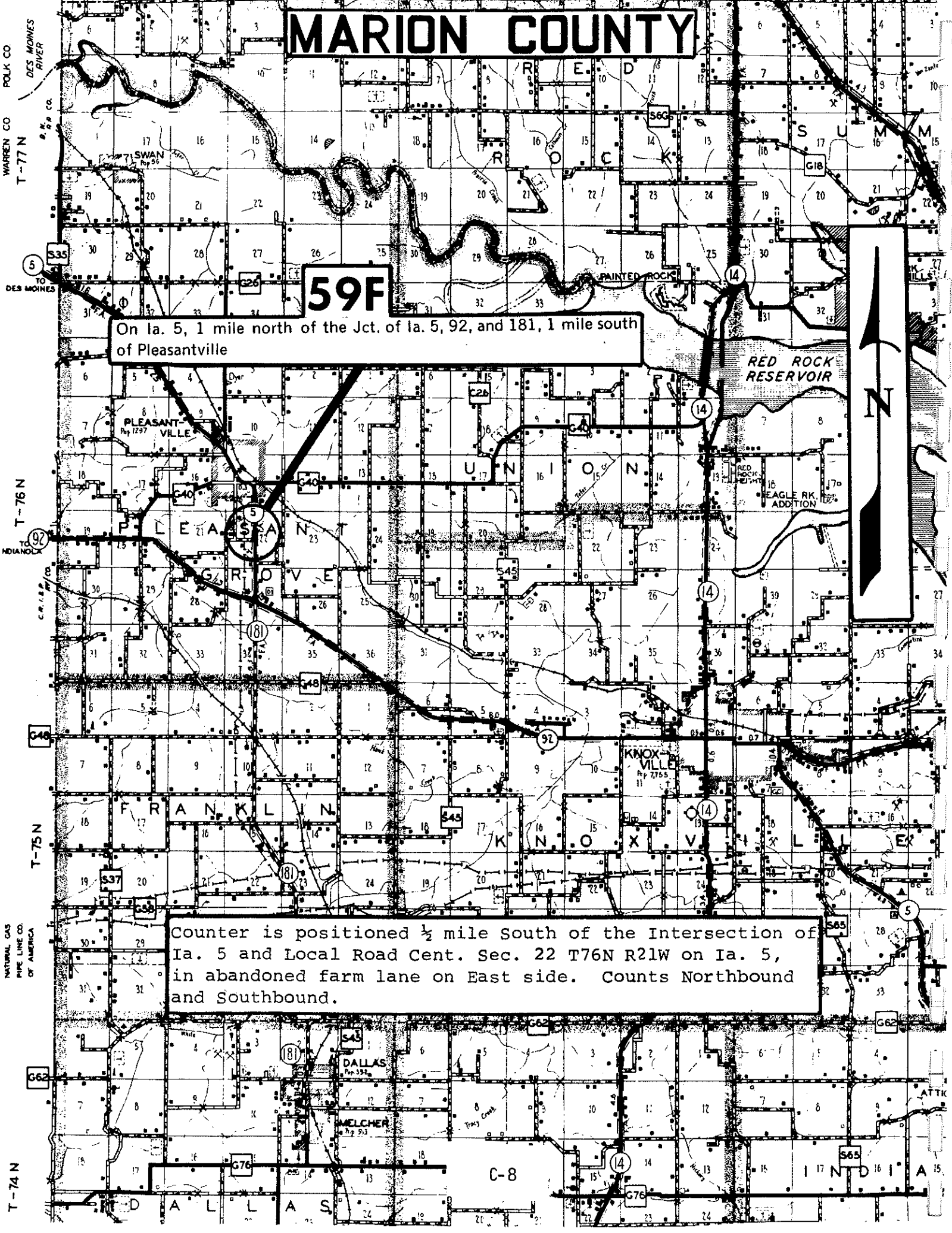
(BOONE CORPORATE LIMITS)



On South 12th Avenue, south of the Int. of Olive St. and S. 12th Ave., in the southwest part of Marshalltown

MARSHALLTOWN

MARION COUNTY



59F

On Ia. 5, 1 mile north of the Jct. of Ia. 5, 92, and 181, 1 mile south of Pleasantville

Counter is positioned $\frac{1}{2}$ mile south of the Intersection of Ia. 5 and Local Road Cent. Sec. 22 T76N R21W on Ia. 5, in abandoned farm lane on East side. Counts Northbound and Southbound.



WARREN CO
T-77 N
T-76 N
T-75 N
T-74 N

POLK CO
DES MOINES RIVER
S U M M
INDIA

NATURAL GAS
PIPE LINE CO.
OF AMERICA

5
S35
TO DES MOINES

92
TO MOHAWK

181

G62

G76

S66

S45

S43

G62

G76

14

14

14

G62

G76

RED ROCK RESERVOIR

EAGLE RK. ADDITION

KNOXVILLE
Pop. 7755

DALLAS
Pop. 352

MELCHER
Pop. 93

C-8

S65

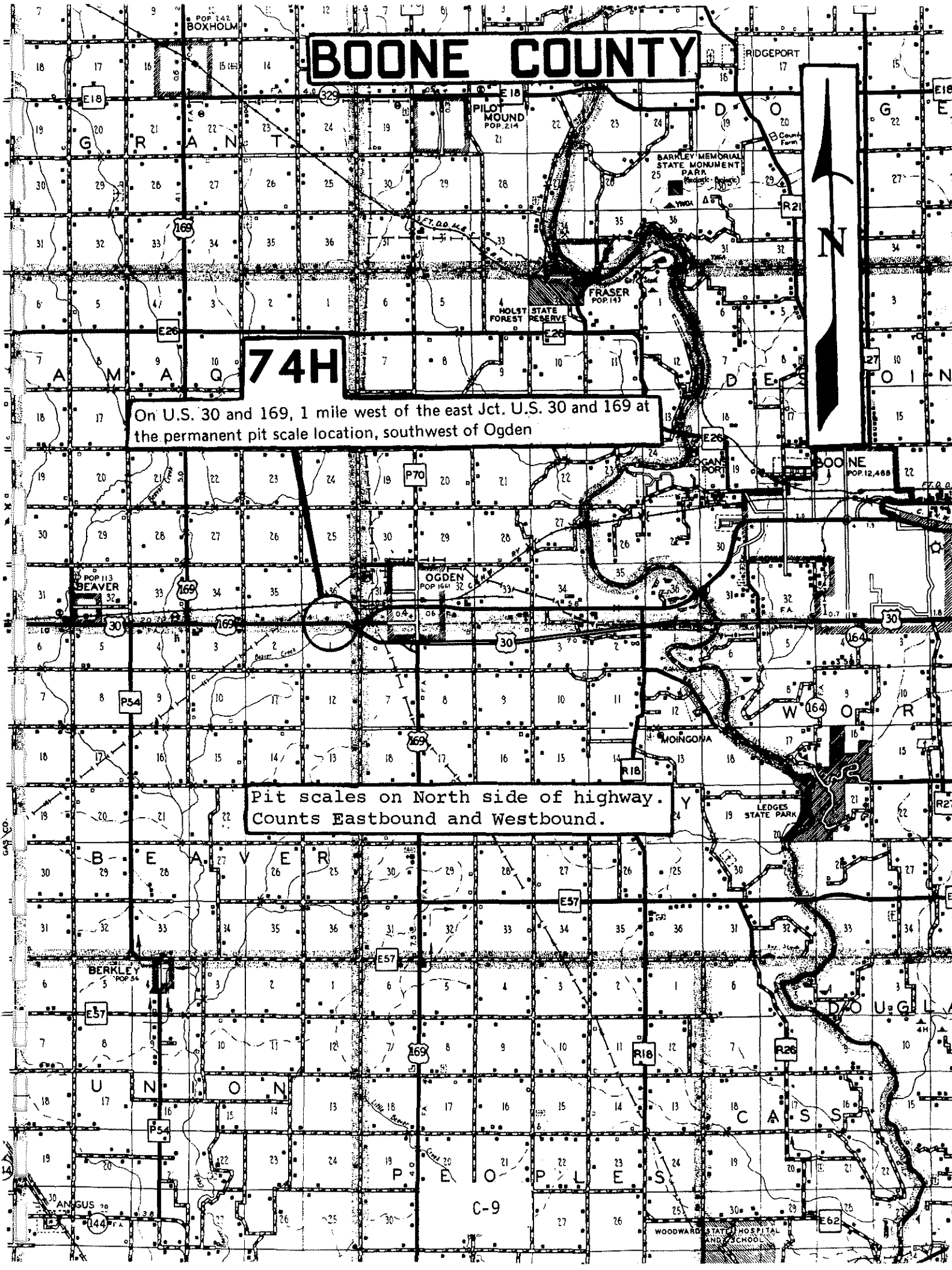
BOONE COUNTY



74H

On U.S. 30 and 169, 1 mile west of the east Jct. U.S. 30 and 169 at the permanent pit scale location, southwest of Ogden

Pit scales on North side of highway.
Counts Eastbound and Westbound.



CARROLL COUNTY



East jct. of US 71, Ia. 141, and local road just west of the intersection, on South side of road, in a field entrance. Counts Eastbound and Westbound.

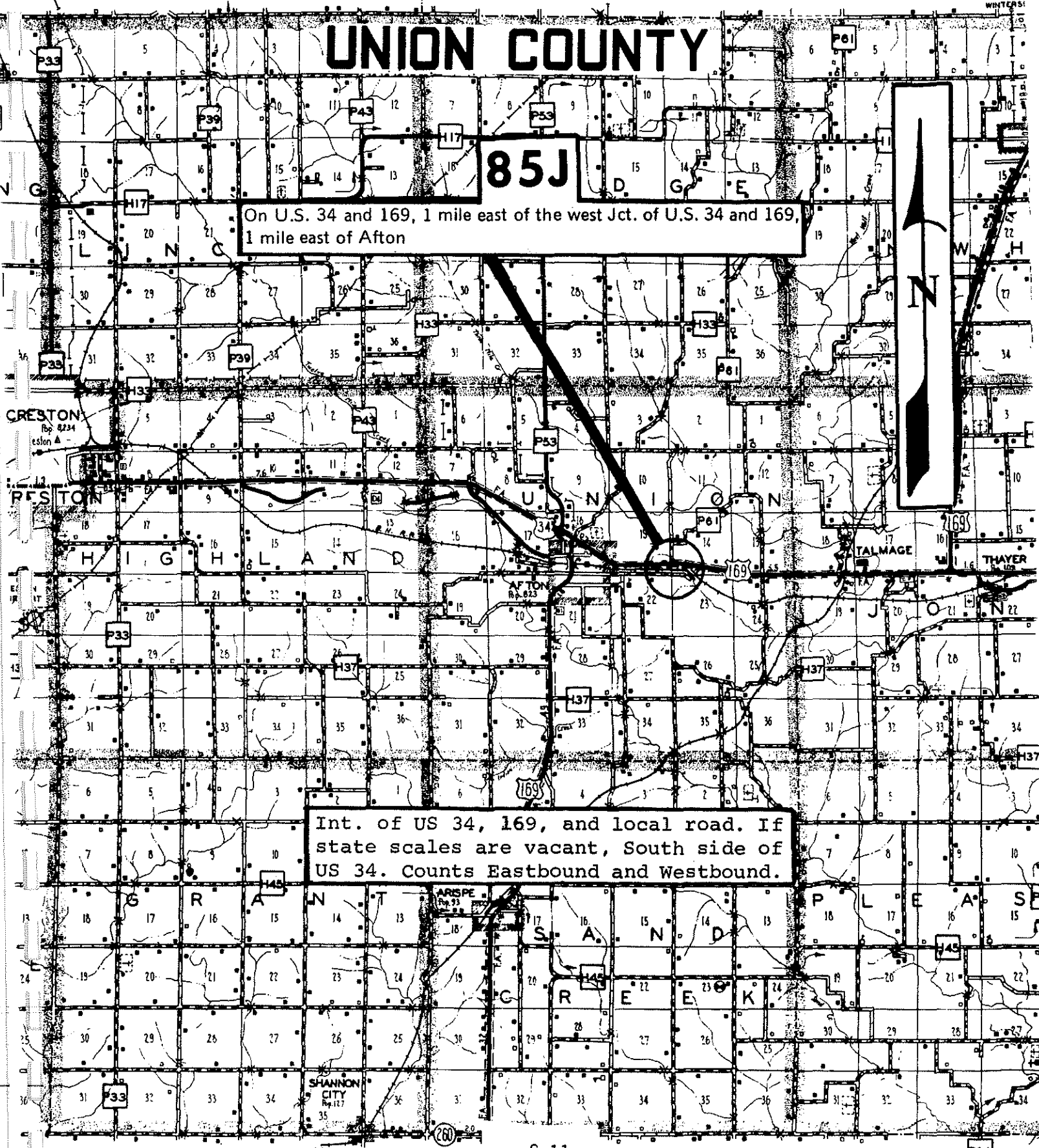
76M

On U.S. 71 and Ia. 141, just west of the east Jct. of U.S. 71 and Ia. 141, 10 miles south of Carroll

UNION COUNTY

85J

On U.S. 34 and 169, 1 mile east of the west Jct. of U.S. 34 and 169,
1 mile east of Afton

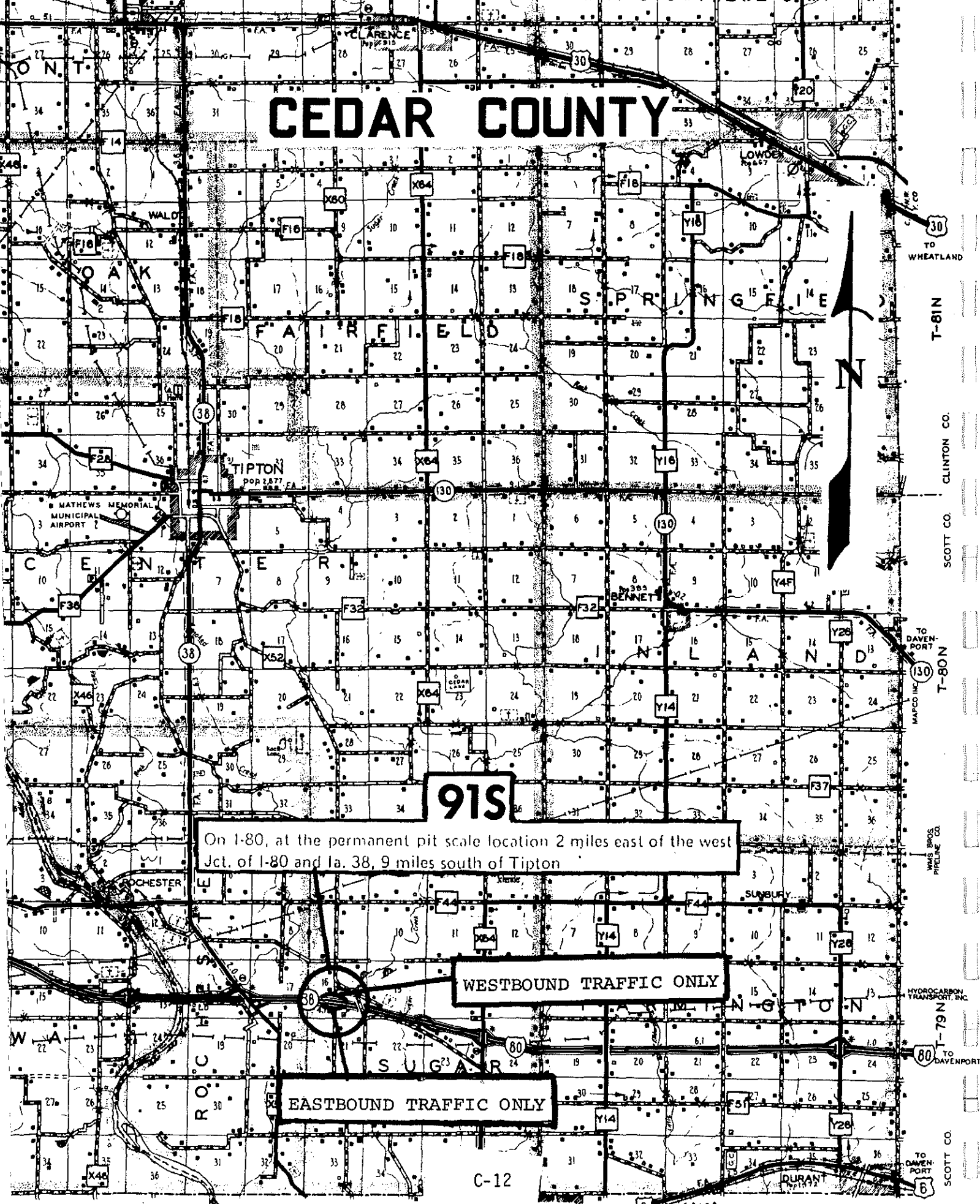


Int. of US 34, 169, and local road. If
state scales are vacant, South side of
US 34. Counts Eastbound and Westbound.

SHANNON CITY
Pop. 117

C-11

CEDAR COUNTY



91S
On I-80, at the permanent pit scale location 2 miles east of the west Jct. of I-80 and Ia. 38, 9 miles south of Tipton

WESTBOUND TRAFFIC ONLY

EASTBOUND TRAFFIC ONLY

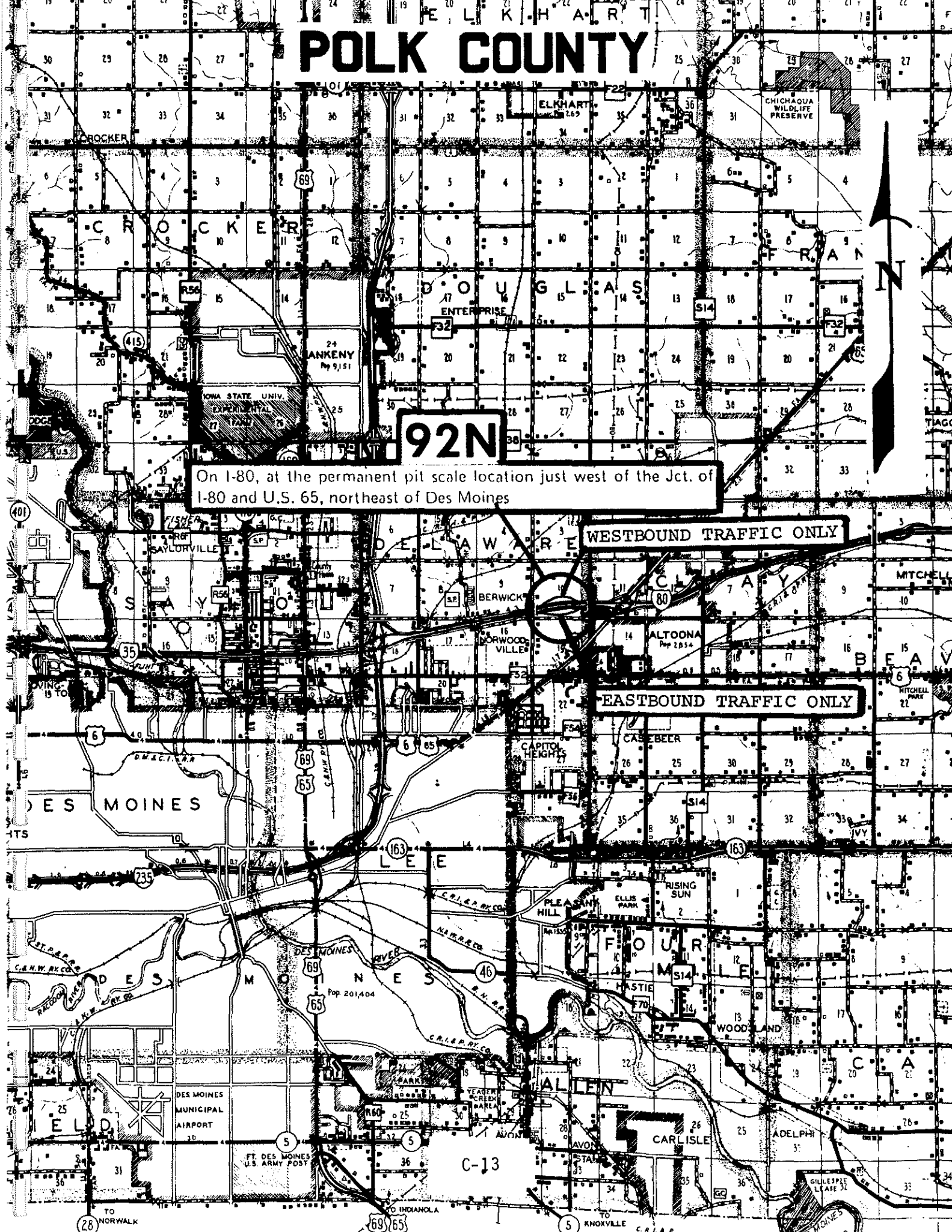
POLK COUNTY

92N

On I-80, at the permanent pit scale location just west of the Jct. of I-80 and U.S. 65, northeast of Des Moines

WESTBOUND TRAFFIC ONLY

EASTBOUND TRAFFIC ONLY



TO NORWALK

TO INDIANOLA

TO KNOXVILLE



D-24W

WMS BROS. DIST. INC. P.C.

C.R.I.P. RY.CO.

TO SHELBY

59 TO MARLAN

NORTHERN NATURAL GAS CO.

M47

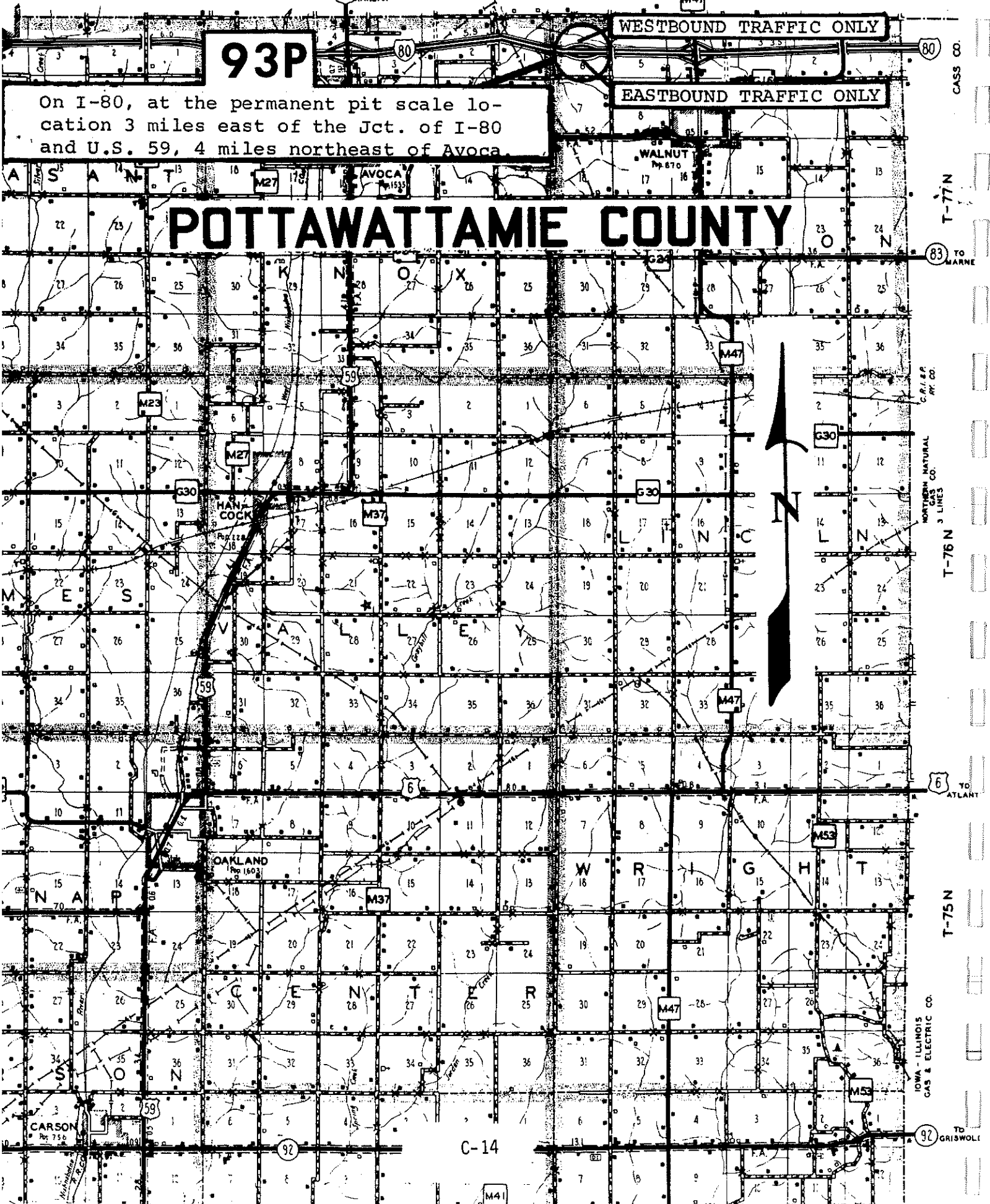
93P

WESTBOUND TRAFFIC ONLY

EASTBOUND TRAFFIC ONLY

On I-80, at the permanent pit scale location 3 miles east of the Jct. of I-80 and U.S. 59, 4 miles northeast of Avoca.

POTTAWATTAMIE COUNTY



CASS CO.

T-77N

83 TO MARNE

NORTHERN NATURAL GAS CO. 3 LINES

T-76N

6 TO ATLANT

T-75N

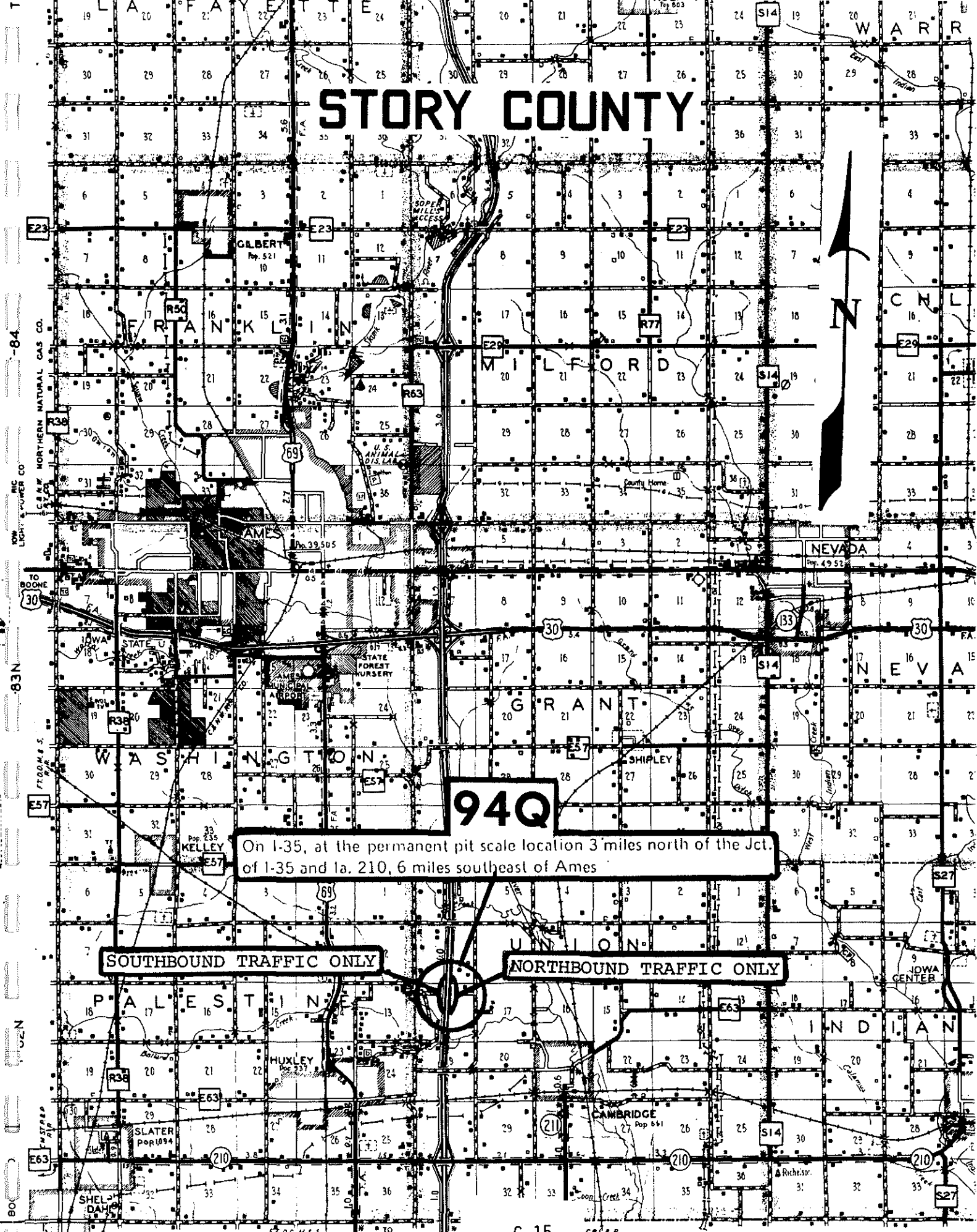
IOWA - ILLINOIS GAS & ELECTRIC CO.

92 TO GRISWOLD

C-14

M41

STORY COUNTY

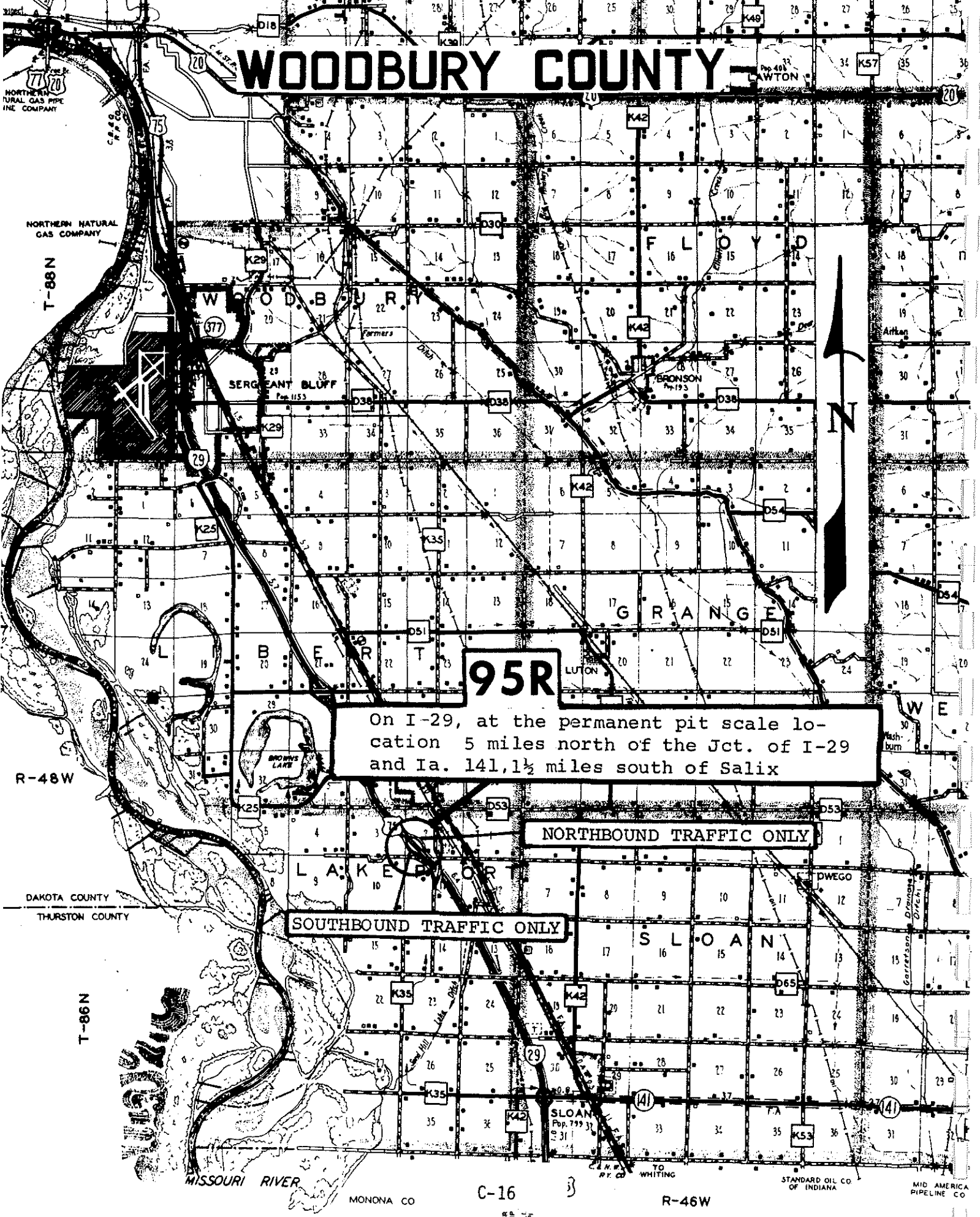


94Q
On I-35, at the pop. pit scale location 3 miles north of the Jct. of I-35 and Ia. 210, 6 miles southeast of Ames

SOUTHBOUND TRAFFIC ONLY

NORTHBOUND TRAFFIC ONLY

WOODBURY COUNTY



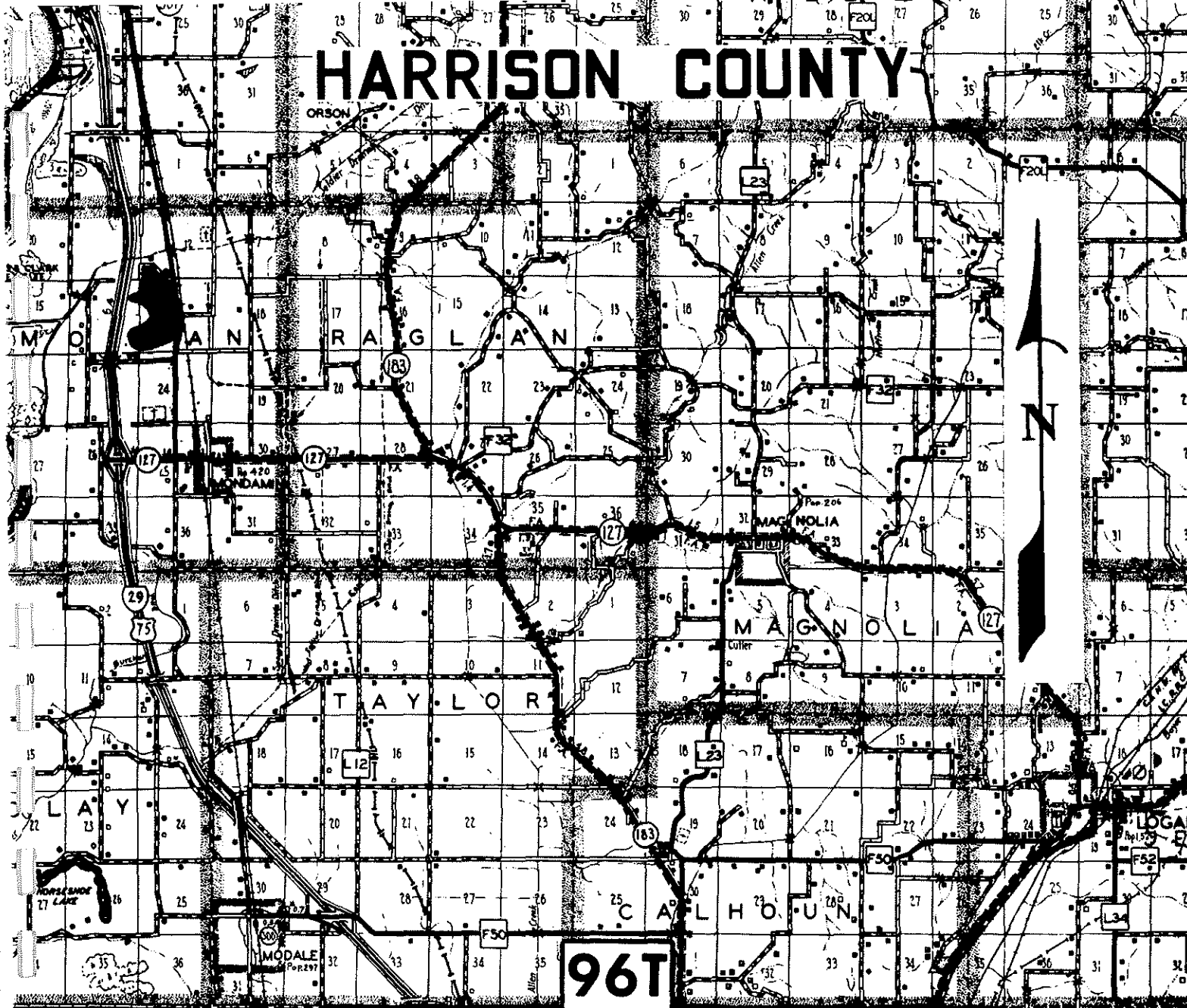
95R
On I-29, at the permanent pit scale location 5 miles north of the Jct. of I-29 and Ia. 141, 1½ miles south of Salix

NORTHBOUND TRAFFIC ONLY

SOUTHBOUND TRAFFIC ONLY

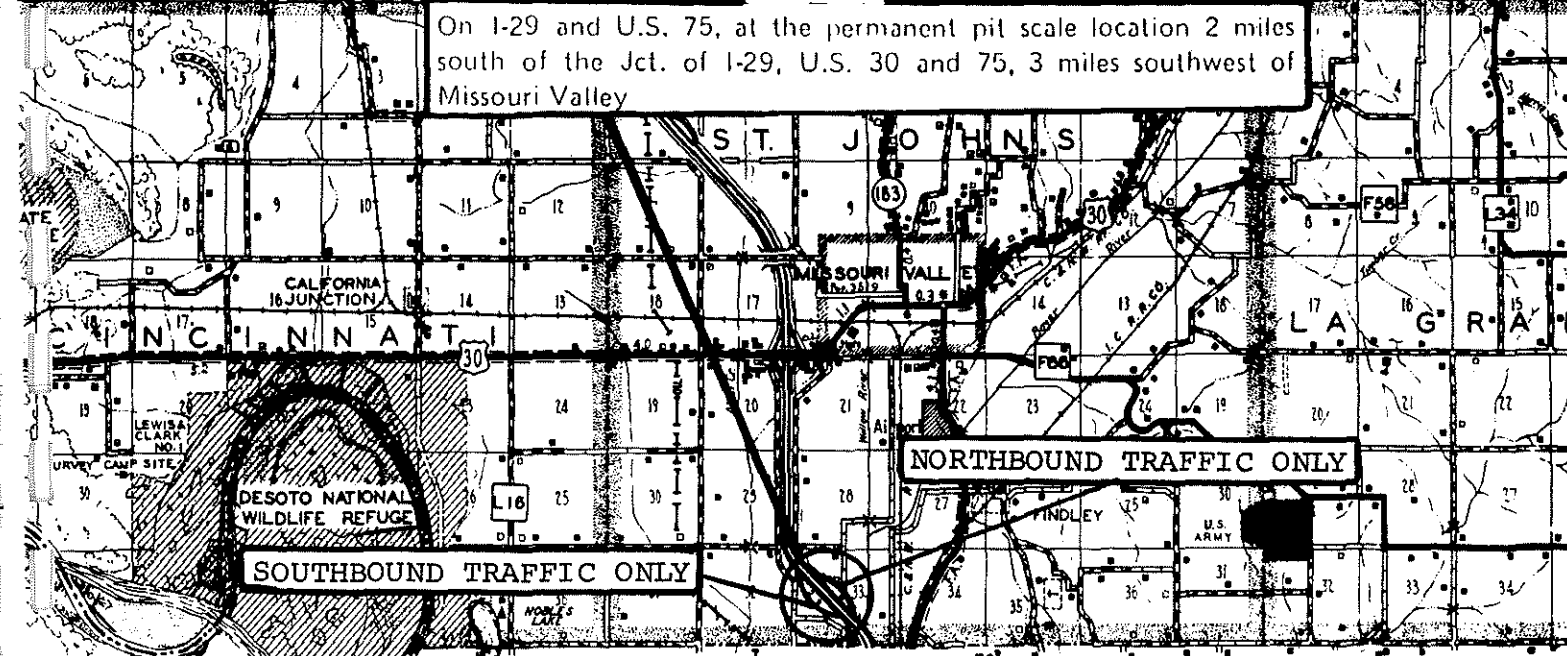
Map labels include:
Towns: LAWTON, SERGEANT BLUFF, LUTA, SLOAN, DWEGO, AIRMAN, WASHINGTON, WASHBURN, MONONA CO.
Roads: I-29, I-49, I-94, I-16, I-17, I-18, I-19, I-20, I-21, I-22, I-23, I-24, I-25, I-26, I-27, I-28, I-29, I-30, I-31, I-32, I-33, I-34, I-35, I-36, I-37, I-38, I-39, I-40, I-41, I-42, I-43, I-44, I-45, I-46, I-47, I-48, I-49, I-50, I-51, I-52, I-53, I-54, I-55, I-56, I-57, I-58, I-59, I-60, I-61, I-62, I-63, I-64, I-65, I-66, I-67, I-68, I-69, I-70, I-71, I-72, I-73, I-74, I-75, I-76, I-77, I-78, I-79, I-80, I-81, I-82, I-83, I-84, I-85, I-86, I-87, I-88, I-89, I-90, I-91, I-92, I-93, I-94, I-95, I-96, I-97, I-98, I-99, I-100.
Geographical Features: MISSOURI RIVER, BROWN'S LAKE, CASPER RAPIDS, FORMERS, DIER, GARRETT, SLOAN, DWEGO, AIRMAN, WASHINGTON, WASHBURN, MONONA CO.
Other: DAKOTA COUNTY, THURSTON COUNTY, MONONA CO, R-46W, R-47W, T-86N, T-88N, R-48W, C-16, WILCOX, MID AMERICA PIPELINE CO, STANDARD OIL CO OF INDIANA, TO WHITING, R.F. CO.

HARRISON COUNTY



96T

On I-29 and U.S. 75, at the permanent pit scale location 2 miles south of the Jct. of I-29, U.S. 30 and 75, 3 miles southwest of Missouri Valley



SOUTHBOUND TRAFFIC ONLY

NORTHBOUND TRAFFIC ONLY

MISSOURI RIVER

POTTAWATTAMIE CO.

C-17

W

R-43W

R-26 W

MADISON CO.

WARREN CO.

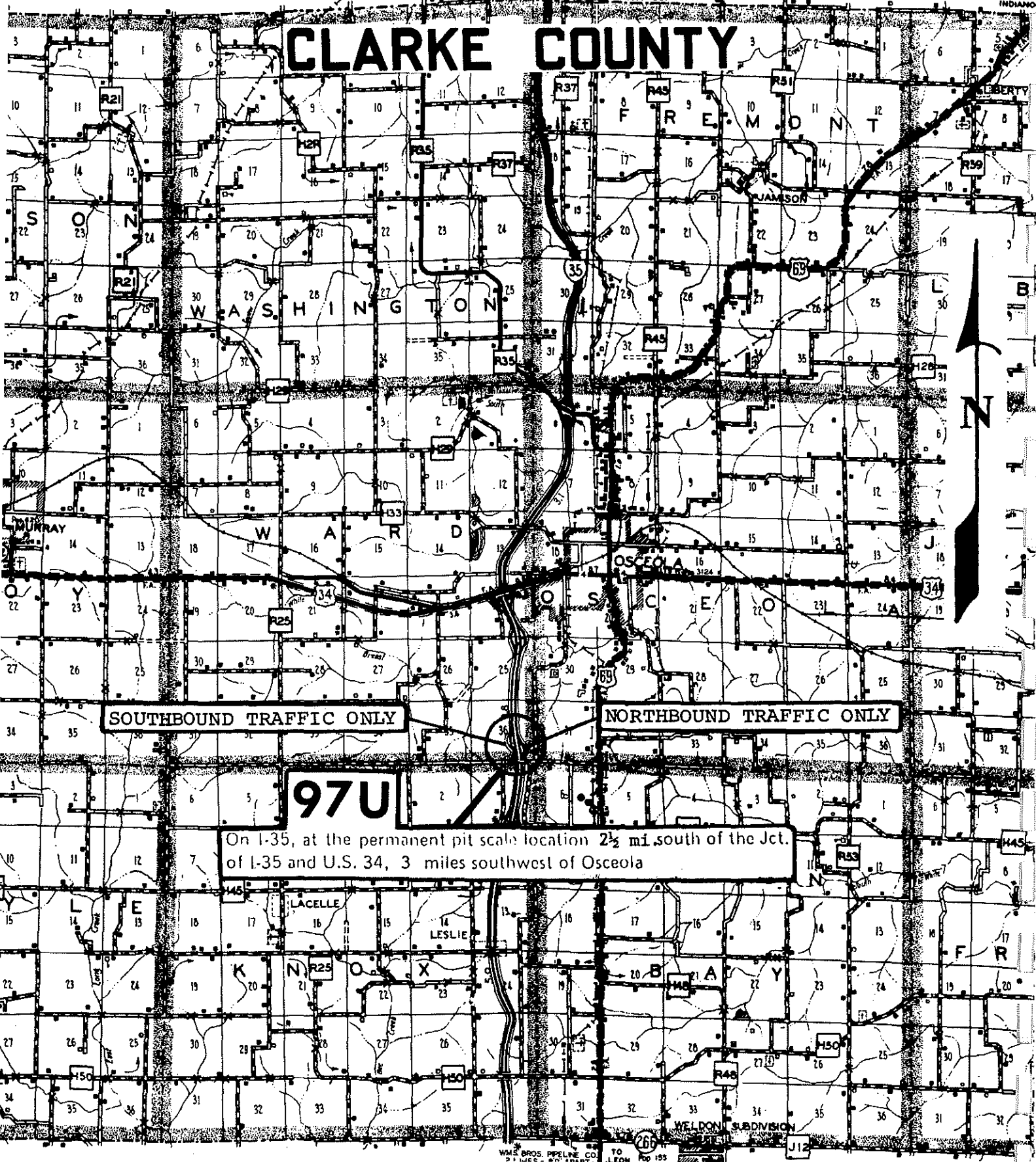
R-25 W

WMS. BROS. PIPELINE CO.

35 IOWA SOUTHERN UTILITIES GAS CO.

INDIANO

CLARKE COUNTY



SOUTHBOUND TRAFFIC ONLY

NORTHBOUND TRAFFIC ONLY

97U

On I-35, at the permanent pit scale location 2½ mi. south of the Jct. of I-35 and U.S. 34, 3 miles southwest of Osceola

R-26 W

C-18

R-25 W

WMS. BROS. PIPELINE CO. TO WELDON

266

689

WELDON SUBDIVISION

J12