FINAL ENVIRONMENTAL STATEMENT

ARTERIAL HIGHWAY 520

HAMILTON AND HARDIN COUNTIES

PROJECT NUMBERS F-520-4 and F-520-5

Prepared By
IOWA DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
OFFICE OF PROJECT PLANNING

In Cooperation With
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

JULY 1977

HWA-IOWA-EIS-74-07-F

FEDERAL HIGHWAY ADMINISTRATION

EGION 7

ARTERIAL HIGHWAY 520

HAMILTON AND HARDIN COUNTIES

FROM 0.5 MILE EAST OF I-35
TO
0.5 MILE EAST OF U. S. 65

ADMINISTRATIVE ACTION

FINAL

ENVIRONMENTAL IMPACT STATEMENT

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
and
IOWA DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISON

SUBMITTED PURSUANT TO 42 U.S.C. 4332 (2) (C) 23 U.S.C. 128(a)

DEC 2 1977

DATE

for Irwin W. Silence

REGIONAL ADMINISTRATOR

FEDERAL HIGHWAY ADMINISTRATION

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ILLUSTRATIONS

FEDERAL HIGHWAY ADMINISTRATION
ADMINISTRATIVE ACTION
FINAL ENVIRONMENTAL STATEMENT
ARTERIAL HIGHWAY 520
IN HAMILTON AND HARDIN COUNTIES, IOWA
SUMMARY OF STATEMENT
JULY, 1977

Project Description

The proposed project involves an approximate 16 mile segment of Arterial Highway 520 beginning approximately 0.5 mile east of Interstate 35 in Hamilton County and terminating approximately 0.5 mile east of U.S. 65 in Hardin County (refer to Figure 1). This facility will be a four-lane divided fully-access controlled highway running parallel to and approximately 4.5 miles south of present U.S. 20. Traffic will be maintained on existing U.S. 20 during the construction phase of the project. Right-of-way width in the corridor will average approximately 300 feet.

Probable Environmental Impacts

The proposed project will divert approximately 543 acres of productive cropland to transportation use and will also remove some natural vegetation. The facility will cross the South Fork of the Iowa River and South Beaver Creek. A minor rechannelization on the South Fork of the Iowa River is proposed. The potential for soil erosion and sedimentation-type water pollution will be increased by the construction process and by the proposed rechannelization. Noise and air pollution in the project corridor will increase due to increases in traffic volumes and the introduction of traffic into a previously undisturbed agricultural area. The highway alignment will displace two farmsteads and no businesses. Benefits to be derived from the project consist of a safer and more efficient transportation system for local and through traffic in the project corridor. This project will also serve to complete a segment of the Arterial Highway 520 system between Dubuque and Sioux City.

Alternatives

Two alternates were considered for this project. The recommended alternate proposed the construction of a four-lane roadway, linking up with a previously constructed section of Arterial Highway 520, which terminates just east of Interstate 35 in Hamilton County, continuing easterly, and terminating approximately one-half mile east of U.S. 65. The second alternate was the "Do-Nothing" Alternate.

Reviewing Agencies

A Draft Environmental Statement was sent to the following agencies and individuals for comment:

ARTERIAL 520 PROJECT MAP

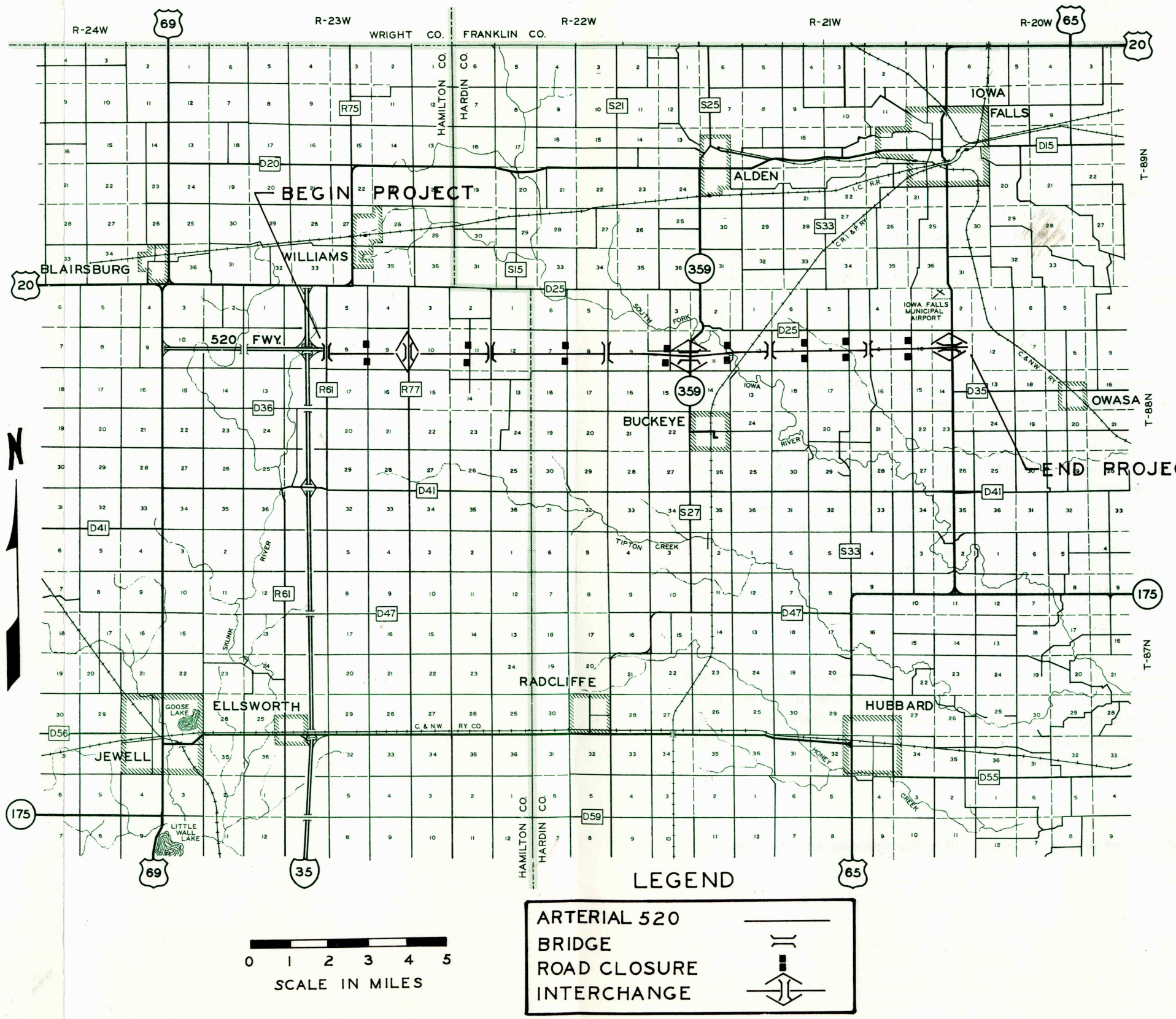


FIGURE 1

Federal Agencies:

*Department of Health, Education and Welfare
Department of Housing and Urban Development
*Department of Agriculture
*Department of Interior
*Environmental Protection Agency
National Air Pollution Control Administration
U.S. Army Corps of Engineers

State Agencies:

Iowa Development Commission
Department of Soil Conservation
State Conservation Commission
Iowa Natural Resources Council
*Department of Environmental Quality
Office of Planning and Programming
*State Historical Preservation Officer
*Office of the State Archaeologist
Iowa State Historical Society

Local Agencies:

Mayor of Williams
Mayor of Alden
Mayor of Buckeye
*Mayor of Iowa Falls
*Hamilton County Conservation Board
Hamilton County Board of Supervisors
*Hardin County Conservation Board
*Hardin County Board of Supervisors
Iowa Northland Regional Council of Governments
*Mid Iowa Development Association Regional Planning Commission

Private Organizations:

Iowa Confederation of Environmental Organizations

*An asterisk denotes those agencies whose comments were received within the prescribed period of reviewing time.

This Statement was made available to the Council on Environmental Quality on July 25, 1974.

The following persons can be contacted for additional information concerning this proposed project and environmental impact statement:

H. A. Willard, Division Administrator
Federal Highway Administration
Ames, Iowa 50010
Telephone 515-233-1664

Robert L. Humphrey, Project Planning Engineer
Highway Division
Iowa Department of Transportation
Ames, Iowa 50010
Telephone 515-296-1391

SECTION I. DESCRIPTION OF THE PROJECT

Project Description And Purpose

Highway needs and fiscal studies were called for in 1959 by the 58th General Assembly of Iowa. The needs study covered the years 1960-1980 and was compiled by the Automotive Safety Foundation of Washington D.C. in cooperation with the Iowa State Highway Commission (now the Iowa Department of Transportation, Highway Division), the offices of the County Engineers, and the municipalities of 5,000 or greater population. One of the significant recommendations of the study report was a statewide 1217-mile Freeway System to supplement the Interstate System.

After the 1960 study, the Highway Commission proceeded with origin and destination studies to pinpoint more closely proper freeway corridor locations, and to develop a segment-by-segment plan which would include traffic and cost estimates. The Freeway System in Iowa was officially adopted by the Iowa State Highway Commission in November, 1965. In 1967, the Highway Commission performed another series of traffic assignment studies on the state highway system to decide on final corridor locations, and to determine which routes should be freeway-type facilities in the final system, and which should be expressway-types. In February, 1968, the Iowa State Highway Commission adopted the revised Freeway-Expressway System, which reflected facility changes in adjacent states and changes in socio-economic development in Iowa. This revised system contained a corridor location for proposed Freeway 520, linking Sioux City and Dubuque and points in between.

These proposed Freeway and Freeway-Expressway System reports have served as basic planning documents, providing system guidance during the past 15 years. Sixty public hearings, attended by approximately 11,000 citizens, have been held to guide the decision-making process. Much of the information received at those hearings has strengthened the need for a Freeway-Expressway System.

In March, 1976, the Iowa Department of Transportation published the *Initial Iowa Transportation Plan (TransPlan '76).* This was a plan in which citizen input was accomplished through consultation with three citizen advisory councils representing business and industry, local government, and interest groups. The entire Freeway-Expressway System was re-examined in light of current travel trends and socio, economic and environmental impacts, and in its place a State Arterial Highway System was proposed.

Planning for the system began with determining specific needs of highway users. Much of the information used in determining needs was obtained from origin and destination traffic surveys, traffic counts, and historical traffic-related data.

Traffic volumes, composition, and functional and performance criteria were used in determining multi-lane needs for the Primary System in Iowa. Routes connecting major

urban and regional areas, serving long distance trips and connecting with similar routes in adjacent states, were deemed candidates for multi-lane development. Various degrees of access control were to be included in the system design. This would vary from full control on freeway-type facilities with access via interchange only to an intermediate control on other two or four-lane roadways, where at grade connections for selected roads would be allowed. In determining the need for a multi-lane facility on the basis of traffic, the general criteria was, that if the 1995 year traffic was estimated to be less than 5,000 ADT, a two-lane modern design highway would be sufficient to serve the traffic needs.

Arterial Highway 520 in Hamilton and Hardin Counties was designated as a four-lane component of the proposed State Arterial Highway System. A freeway-type facility was found to be necessary due to the fact that it would serve long-distance travel in the north-central part of the state and would provide service for design year traffic volumes expected to considerably exceed 5,000 vehicles per day. Arterial Highway 520, when completed, would also provide a connecting link between major urban areas in that portion of the state, such as Sioux City, Fort Dodge, Waterloo, and Dubuque, and would connect to proposed similar routes in Wisconsin and Illinois, on the eastern border of Iowa. Certain sections of U.S. 20, linking Dubuque with Rockford and Chicago, Illinois, are currently being reconstructed to four lanes; a similar concept is currently proposed on U.S. 151 between Dubuque and Madison, Wisconsin.

The proposed segment of Arterial Highway 520 studied in this statement runs generally parallel to and approximately 4.5 miles south of present U.S. 20, extending from just east of Interstate 35 in Hamilton County, easterly approximately 15.9 miles to just east of U.S. 65 in Hardin County. The relationship of the project area to the Interstate System and other primary roads in the study area is shown in Figure 2. The proposed construction will provide for two 24-foot wide paved lanes separated by a depressed median. Shoulders along the roadways will consist of 10-foot wide paved shoulders on the outside of each lane and 6-foot wide paved shoulders on the median side of each lane. A typical cross section of the proposed highway is shown in Figure 3. An average width of approximately 300 feet will be necessary along the project to fulfill right-of-way requirements. Under the Access Control designation, Arterial Highway 520 is classified as a Class I highway, meaning access will be allowed only at interchanges.

At the present time there is no east-west highway facility of freeway-type design providing service to the northern half of the state. Through-traffic desires are poorly served by the existing primary roads because many of these roads are located through urban areas resulting in conflicts between local and through traffic. In addition, some of these roads are narrow and winding and do not directly connect the eastern and western portions of the state.

U.S. 20 is a major east-west highway in the north-central portion of the state which passes directly through the urban areas of Sioux City, Fort Dodge, Cedar Falls, Waterloo, and Dubuque. If constructed, Arterial Highway 520 will help to alleviate the conflict between local and through traffic on U.S. 20. It will directly serve eastbound and westbound through traffic in the north-central portion of the state.

IOWA'S INTERSTATE SYSTEM
AND
OTHER PRIMARY ROADS IN THE PROJECT AREA

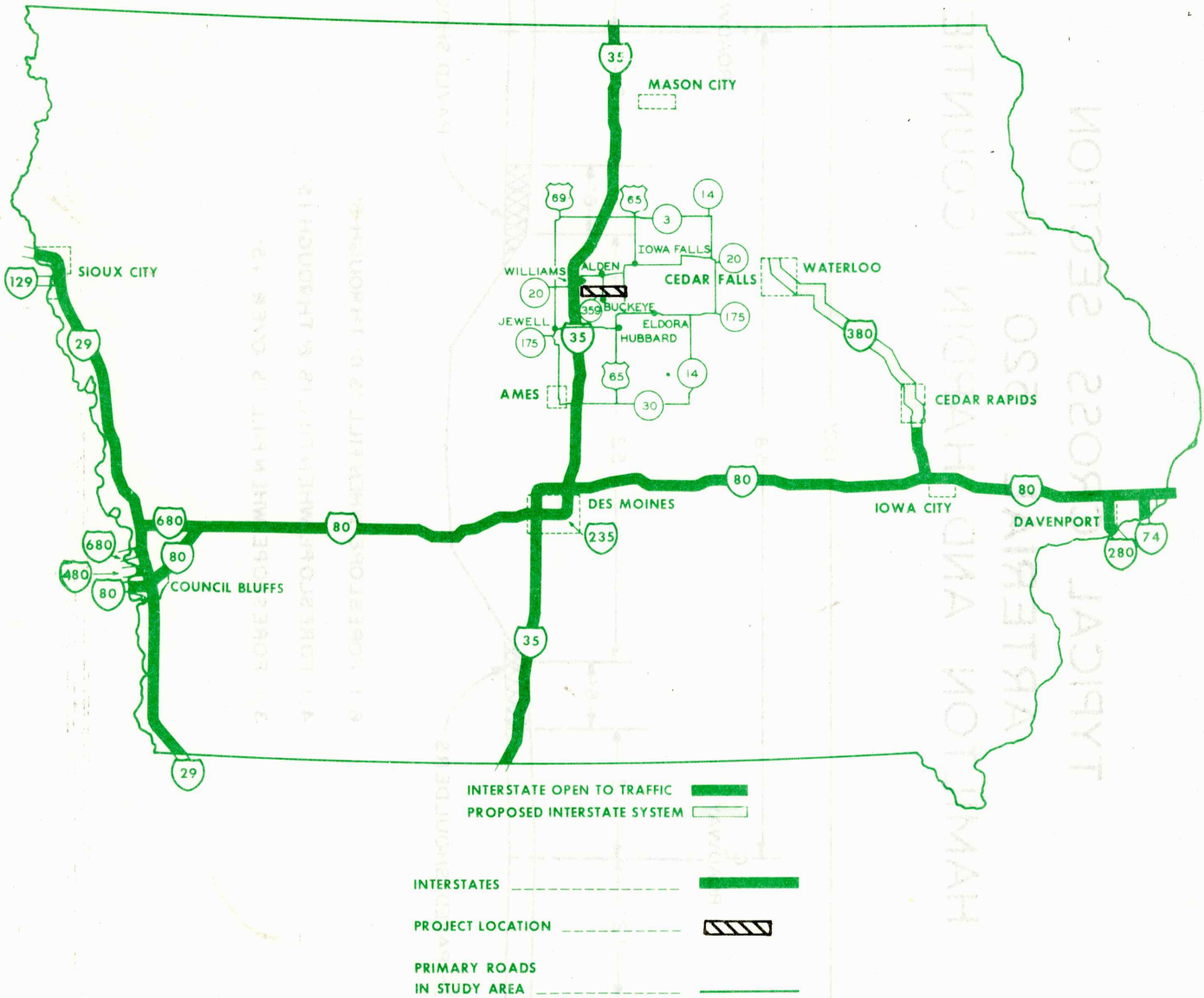
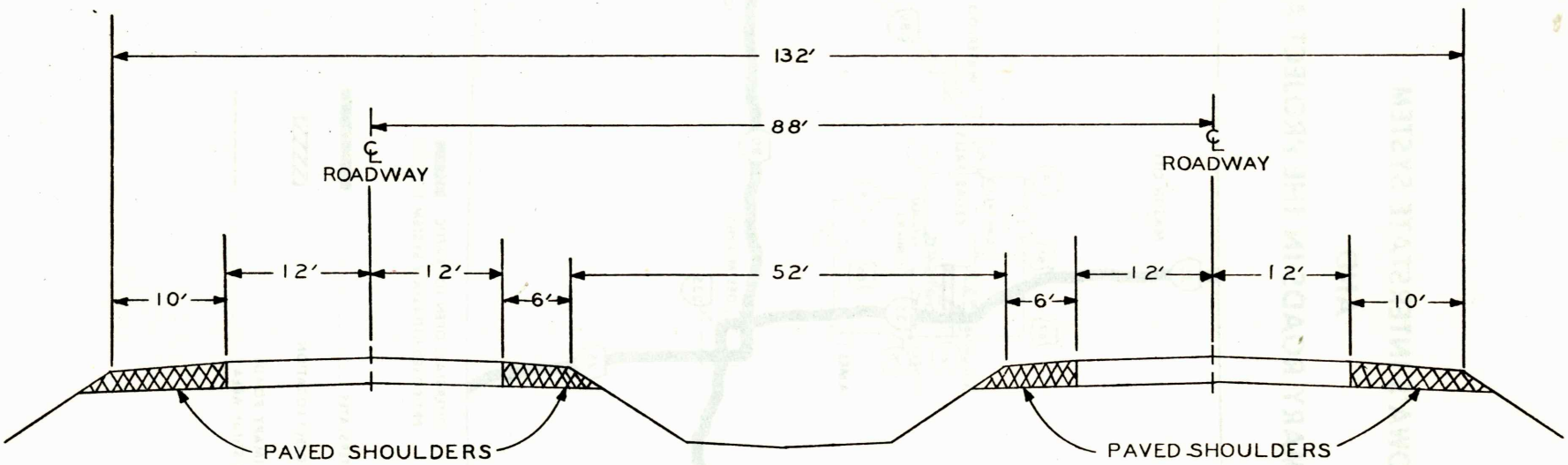


FIGURE 2

TYPICAL CROSS SECTION
ARTERIAL 520 IN
HAMILTON AND HARDIN COUNTIES



6:1 FORESLOPE WHEN FILL IS 0' THROUGH 5'

4:1 FORESLOPE WHEN FILL IS 6' THROUGH 15'

3:1 FORESLOPE WHEN FILL IS OVER 15'

FIGURE 3

In meetings with the Federal Highway Administration in late December, 1973, and in January, 1974, the Iowa State Highway Commission (now the Iowa Department of Transportation), was, however, directed to prepare an Environmental Impact Statement on the section of Freeway 520 from I-35 easterly to U.S. 65, since prior design approval had not been granted.

In July of 1974, a Draft Environmental Impact Statement was circulated on Freeway 520 extending from 0.5 mile east of Interstate 35 in Hamilton County easterly to 0.5 mile east of U.S. 65 in Hardin County. The document evaluated the merits of two alternates, the build and the no-build.

In October of 1975, the Iowa Department of Transportation published, in two local project area newspapers, a notice of availability for review of the Draft Environmental Impact Statement. Those individuals or organizations wishing to review and comment on the Statement were invited to do so, with their comments to be included in the Final Environmental Statement.

This Final Environmental Impact Statement recommends that Freeway 520 be constructed to run generally parallel to and approximately 4.5 miles south of present U.S. 20, to extend from just east of Interstate 35, easterly approximately 15.9 miles, to just east of U.S. 65. The facility will be built to four-lane freeway-type standards.

Project Construction Schedule and Programmed Costs

The Iowa Department of Transportation's current *Transportation Improvement Program (1977-1982)* has right-of-way acquisition for Arterial Highway 520, between I-35 and U.S. 65, programmed for fiscal year 1982, with the grading and paving portions of the project listed as programmed improvements, beyond 1982.

The estimated cost of constructing proposed Arterial Highway 520 in Hamilton and Hardin Counties is $22,178,000. Table 1 gives a cost breakdown, by county, as contained in the current five year Program.

TABLE 1

PROGRAMMED PROJECT COSTS

	Hamilton County (5.5 miles)	Hardin County (10.3 miles)	Total
Right-of-Way	$ 757,000	$ 818,000	$ 1,575,000
Grade & Drain	1,965,000	5,562,000	7,527,000
Paving	4,611,000	8,465,000	13,076,000
Total	$7,333,000	$14,845,000	$22,178,000

Traffic Data

Existing traffic in the proposed Arterial Highway 520 corridor in Hamilton and Hardin Counties is primarily served by U.S. 20 and Iowa 175. From the junction of Interstate 35 easterly to the south junction of U.S. 65 in Iowa Falls, the estimated 1976 average annual daily traffic volume on U.S. 20 is 3790 vehicles per day, with approximately 14% trucks. The averages for the rural and municipal sections are 3410 and 5945 vehicles per day, respectively.

From the interchange with Interstate 35 easterly to the east junction of U.S. 65, the estimated average daily traffic volume on Iowa 175 is 1435 vehicles per day, with approximately 12% trucks. The averages for the rural and municipal sections are 1400 and 1980 vehicles per day, respectively.

In addition to U.S. 20 and Iowa 175, existing traffic in the proposed corridor is also served by County Roads D25 and D41. The estimated 1976 average daily traffic volume on D25 is 300 vehicles per day, including 16% trucks. County Road D41 carries an estimated 1976 average daily traffic volume of 520 vehicles per day, with 9% trucks.

The estimated year 1980 and 2000 average daily traffic volumes for proposed Arterial Highway 520, extending from Interstate 35 east to U.S. 65 is summarized in Table 2. These volumes were forecasted using standard techniques of the Office of Advance Planning (Iowa Department of Transportation) based upon present day traffic volumes, anticipated growth rates, and estimated diversion of traffic from existing highways in the study area.

TABLE 2

ARTERIAL HIGHWAY 520
ESTIMATED FUTURE AVERAGE DAILY TRAFFIC (ADT)

Section	Length	1980 ADT	2000 ADT
From the proposed Interchange with I-35 easterly to County Road R77	2.45	5200	7800
From County Road R77 easterly to the proposed Interchange with Iowa 359	6.95	5300	7900
From the proposed Interchange with Iowa 359 easterly to the proposed Interchange with U.S. 65	6.45	5400	8000

Sufficiency Study

Existing roadway conditions within the proposed Arterial Highway 520 corridor are reflected in the sufficiency ratings of U.S. 20 and Iowa 175.

The sufficiency rating is a numerical system developed by highway administrators to compare the adequacy of a particular section of primary road with all other primary roads in the state. Data on pavements, bridges, curves and other highway features are recorded and analyzed. Three basic factors enter into the establishment of a sufficiency rating on a rural section of road: structural adequacy, safety and service. Structural adequacy measures the ability of the road section to stand up under traffic and climatic conditions. Safety measures the ability of the road section to offer the motorist reasonable assurance of safe movement. Service measures the capability of the road to transport vehicular traffic with a minimum of conflict.

The basic rating is then adjusted for intolerability, if any, based on the tolerable standard approach. A tolerable standard is defined as the minimum prudent geometrical or structural condition which can exist without being in critical need of upgrading. The rating is then adjusted to reflect the effect of the volume of traffic to the traffic carrying capacity of the section of highway. The final adjustment compares the rating of individual sections of highway to all sections of the same highway and modifies the rating to emphasize either very good or very poor sections.

A rating of 100 is the maximum sufficiency rating obtainable on any section of road. The numerical sufficiency rating classification is as follows:

Sufficiency Rating Scale

Points	Rating
90-100	Excellent
80- 89	Good
65- 79	Fair
50- 64	Tolerable
0- 49	Critical

Sufficiency ratings for U.S. 20 and Iowa 175 in the study area are shown in Figure 4. Approximately 93% of the 18.59 miles of U.S. 20 from Interstate 35 to U.S. 65 fall within the critical or poor sufficiency range. In addition, all of the 13.35 miles of Iowa 175 from Interstate 35 to U.S. 65 falls within the critical sufficiency range.

Accident Analysis

A review of the latest traffic accident information prepared by the Iowa Department of Public Safety reveals that a total of 268 reportable accidents have occurred on rural sections

SUFFICIENCY AND PAVEMENT WIDTH

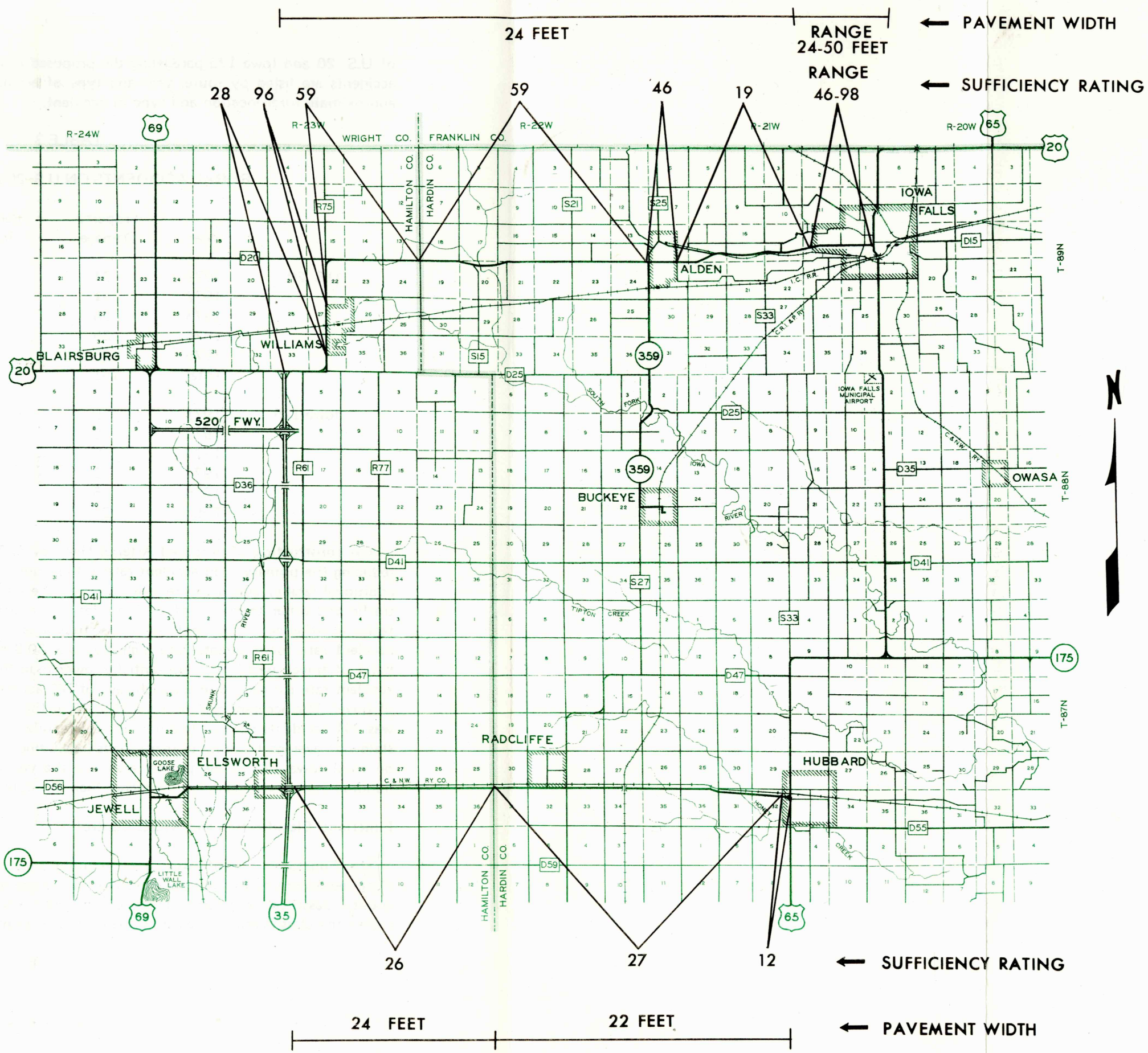


FIGURE 4

of U.S. 20 and Iowa 175 paralleling the proposed project between 1971 and 1975. These accidents are listed by route, year and type of accident in Table 3. Figure 5 shows the approximate rural location and type of accident.

TABLE 3

RURAL ACCIDENTS ON U.S. 20 AND IOWA 175

	Year	Property Damage	Personal Injury	Fatal	Total
U.S. 20	1971	34	12	0	46
	1972	31	18	3	52
	1973	36	19	0	55
	1974	25	3	1	29
	1975	25	15	3	43
	Total	151	67	7	225
Iowa 175	1971	5	2	0	7
	1972	5	3	0	8
	1973	9	2	1	12
	1974	2	3	0	5
	1975	5	6	0	11
	Total	26	16	1	43

The construction of proposed Arterial Highway 520 should have a significant impact on reducing the primary road accident rate in the study area. The new highway will serve as an additional facility which will relieve traffic on these routes by diverting long distance truck traffic and other through traffic. The safety of interstate-type travel is another important factor in reducing the accident rate in the study area. The 1971-1975 rural statewide average accident rate for interstate-type highways was 80.3 accidents per hundred million vehicle miles of travel, which was substantially lower than the 1971-1975 rural statewide average accident rate for rural primary highways of 181 accidents per hundred million vehicle miles of travel. The accident rate on rural U.S. 20 in the study area for the same five year period was 241 accidents per hundred million vehicle miles. This was 33% higher than the five year statewide average for rural primary roads (excluding Interstate highways). The accident rate on rural Iowa 175 in the project area, for the years 1971-1975, was 194 accidents per hundred million vehicle miles, 7% higher than the statewide average.

Functional Classification and Access Control

The Functional Classification Law requires that all roads and streets in the state be classified according to the type of service they provide. This classification is performed by county classification boards. These boards meet periodically to classify new roads and review the classification of existing roads in each county. Iowa's rural primary highways are

REPORTABLE ACCIDENTS 1971-1975

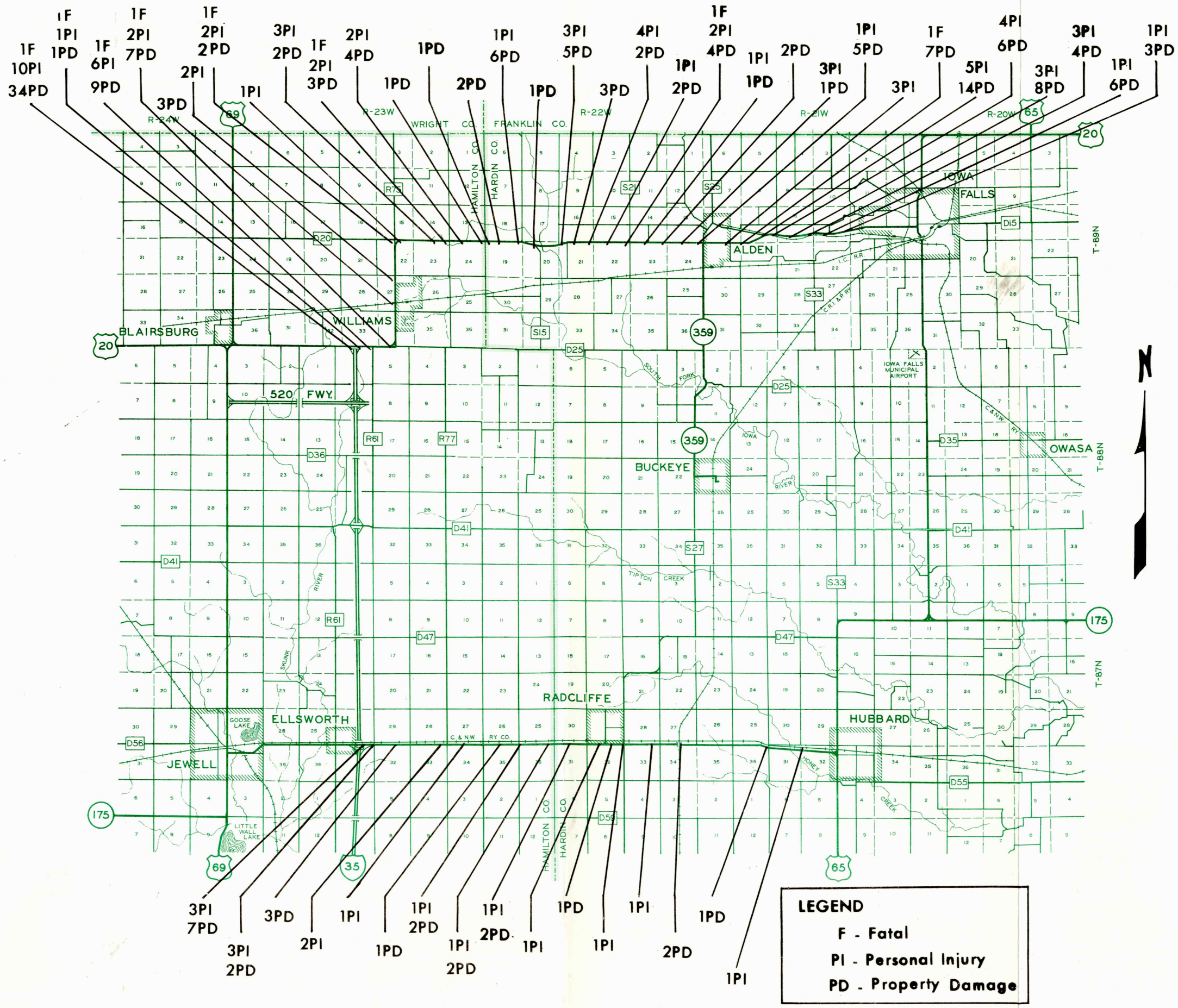


FIGURE 5

functionally classified into three main categories: the Freeway-Expressway System, the Arterial System, and the Arterial Connector System. U.S. 20 in Hamilton and Hardin Counties is functionally classified as part of the Freeway-Expressway System, the Arterial System, and the Arterial Connector System. U.S. 20 in Hamilton and Hardin Counties is functionally classified as part of the Freeway-Expressway System. This system includes the Interstate Highway System and all roads connecting and serving major urban and regional areas of the state with high volume, long distance traffic movements, and generally connecting with like roads of adjacent states.

Iowa 175 in the study area is functionally classified as part of the Arterial Connector System. This system includes roads providing service for short distance intrastate and interstate traffic, or providing connections between highways classified as Arterial or Freeway-Expressway.

Arterial Highway 520, following its construction, will become part of the functionally classified Freeway-Expressway System. The 1971-1990 Iowa Highway Needs Study Analysis recommends that existing U.S. 20 then become part of the Arterial Connector System.

U.S. 20 presently has a Class III access control classification. This classification is given to planned controlled access highways on which through traffic is given primary consideration over land service traffic. Iowa 175 currently has a Class IV access control classification. This classification is given to planned controlled access highways on which through traffic and land service traffic are given equal consideration.

Population Projections

Hamilton and Hardin Counties are rural counties containing several small towns. Both counties lack a large urban center. The largest community in Hamilton County is Webster City with a 1970 population of 8,488. Iowa Falls with a 1970 population of 6,454 is the largest community in Hardin County. From 1960 to 1970, Hamilton County experienced a net loss of 1,649 inhabitants, accounting for 8.2% of the county's 1960 population. Hardin County likewise lost 285 inhabitants or 1.3% of its 1960 population.(1) Over the next twenty years, Hamilton and Hardin Counties, like other rural counties in the state, are expected to continue to decline in population. Migration to metropolitan areas for improved employment opportunities will continue as the major source of this decline. See Table 4 for recent population trends in the Hamilton-Hardin County study area, and projected future trends.

TABLE 4

STUDY AREA POPULATION

	1950	1960	1970	1980	1990
Hamilton County	19,660	20,032	18,383	17,099*	16,580*
Ellsworth	439	493	443		
Williams	519	490	456		

TABLE 4 (Cont'd)

Hardin County	22,218	22,533	22,248	21,955*	22,086*
Alden	829	838	876		
Buckeye	192	190	143		
Hubbard	836	806	846		
Iowa Falls	4,900	5,565	6,454		
Radcliffe	638	615	548		

*Projections obtained from the Records and Statistics Division of the Iowa State Health Department

Geology and Topography

The project area is underlain almost completely by the drift plain of the Wisconsin glacier. Most of the area soils are derived from this material. At least twice during the glacial age, great sheets of ice swept over the area and, upon their retreat, left behind vast deposits, which covered to considerable depths, the original bedrock.

The earliest drift material deposited in the area is known as the Kansan. It is seen only in railway cuts and on river banks, and does not appear at the surface. The thickness of this deposit varies considerably, being reported to depths of 50 to 150 feet. The material consists of a bluish, gritty clay containing numerous pebbles and boulders.

The second great glacier which invaded the area is known as the Wisconsin. Upon its retreat, a considerable layer of Wisconsin drift material was deposited. The depth of this surface deposit averages from 6 to 16 feet. The original Wisconsin drift material consisted of a whitish or pale yellowish calcareous pebbled clay. Under the influence of weathering, much of the calcareous material disappeared and with the accumulation of organic matter from plant residues, formed loamy soils, dark brown to black in color mixed with numerous pebbles and boulders.

The topographical condition of the corridor area may be described as level to gently undulating. Conspicuous features are low-lying, nearly level plains which contain numerous saucer-like depressions and low knobs and ridges which rise slightly above the level of the low plain.

Natural drainage in the project area is relatively poor except for the land adjacent to the South Fork of the Iowa River and South Beaver Creek, both of which traverse the project corridor. Over the years, a network of tile lines and ditches have been constructed to supplement the area's natural drainage.

Soils

The project corridor lies within the Clarion-Nicollet-Webster soil association. These soils

have developed from loam-textured glacial till or till-derived sediments under the influence of prairie grass vegetation.

Clarion soils have good surface drainage and occur predominantly on convex slopes of 2 to 5 percent gradient. They have slightly acidic, dark brown, loam surface layers ranging from 9 to 14 inches thick. The subsoil consists of a dark brown to yellowish-brown, moderately permeable loam. The substratum is a yellowish-brown moderately permeable loam and is usually calcareous at a depth of 2 1/2 feet.

Nicollet soils have relatively poor surface drainage and usually occur between the well-drained Clarion soils and poorly drained Webster soils on slopes of 1 to 3 percent gradient. The surface layer is a dark brown to black loam to clay loam with a thickness of about 15 inches. The subsoil is a moderately permeable loam to clay loam with a mixed gray and brown color. The substratum consists of an olive gray to yellowish-brown moderately permeable loam. It is calcareous at depths ranging from 30 to 45 inches. Sand pockets are often present in the substratum. Tile drainage is necessary on some areas of Nicollet soils that border Webster soils, to improve agricultural production.

Webster soils occur on slopes with gradients of 0 to 2 percent, typically at lower elevations than the Clarion and Nicollet soils. Because of the naturally poor surface drainage of Webster soils, tile drainage is usually needed. The surface layer of Webster soils is a black, gritty silty clay loam 15 to 20 inches thick. The subsoil is gray to olive gray, moderately permeable, friable to firm loam to clay loam. The substratum is a grayish-brown to olive gray friable loam till, which is calcareous at depths ranging from 24 to 40 inches.

The productivity of Clarion-Nicollet-Webster soils is relatively high. Corn yields in the Hamilton-Hardin County study area averaged between 95-117 bushels per acre during the period 1973-1975, while soybean yields averaged between 27-39 bushels per acre.(2)

Climate

The climate of Hamilton and Hardin Counties is representative of the temperate continental type and is characterized by relatively cold winters and hot summers. Average temperatures in July vary from an approximate daily high of 87° F. to a daily low of 62° F. Temperatures in January vary from an average high of 28° F. to an average low of 9° F. Extreme temperatures occur from near -30° F. to 100°F. for any given year. The average length of the growing season is approximately 150 days. The average annual precipitation is approximately 32 inches per year. About 70% of the annual precipitation occurs during the period April through September. Snowfall has been recorded in all but the four summer months June through September. Northwesterly winds with an average velocity of 11.5 miles per hour prevail in the winter and early spring months, and southerly winds with an average velocity of 10 miles per hour prevail in the late spring, summer and fall months. A typical year in Hamilton and Hardin Counties is characterized by 100 clear days, 102 partly-cloudy days and 163 cloudy days.

Recreation and Wildlife Area

Ten recreation areas, one rest area, and one wildlife refuge are presently located near the study area of proposed Arterial Highway 520. All of these are under the jurisdiction of the Hardin County Conservation Board. There are no federal or state parks, recreation areas, wildlife refuges, or sites or potential sites of historical significance located in this area. See Figure 6 for locations.

Three of the county areas are situated in the vicinity of the proposed highway corridor. They are Twin Elms Park, Flowing Well Park, and Utech Wildlife Refuge.

Twin Elms Park includes a 4-acre tract which is owned and a 20-acre tract which is leased by the Hardin County Conservation Board. The two areas are separated by a strip of land 330 feet wide on which the highway will be built. See Section VIII, Comments and Objections, for correspondence verifying the actual park boundaries. Fishing and hunting are the designated recreational activities for these areas. Good cover and closeness to the river make the area useful for wildlife.

Flowing Well Park, located north of Buckeye on Iowa 359, is principally used for picnicking. Fishing is also permitted. Cover, which is good on the east side of the river, and in the oxbow pond area at the southern end of the park, provides protection for wildlife. Beaver have re-established in this area and songbirds are abundant. The park contains 13 acres. The proposed highway right-of-way will not infringe upon this parkland.

The Utech Wildlife Area is located in Section 8, T88N, R21W, adjacent to South Beaver Creek. The 1.9 acre site consists mainly of dense herbaceous cover, multiflora rose, and a few second growth trees. The entire refuge is surrounded by tilled farm fields, South Beaver Creek, and the adjacent county gravel road. While the refuge provides forage and cover for small animals and birds, it is not suitable for larger wildlife such as deer. The proposed 520 alignment will eliminate a major portion of this refuge. The area is presently managed for wildlife use, under lease, by the Hardin County Conservation Board. The Board, however, by letter dated July 14, 1977, has informed the Iowa Department of Transportation that they have no plans for the future development of that area as a wildlife habitat and that they intend to terminate their lease, by mutual consent of the property owner, before September 1, 1977.

PUBLIC PARKS, PRESERVES AND ACCESSES IN THE ARTERIAL 520 PROJECT AREA

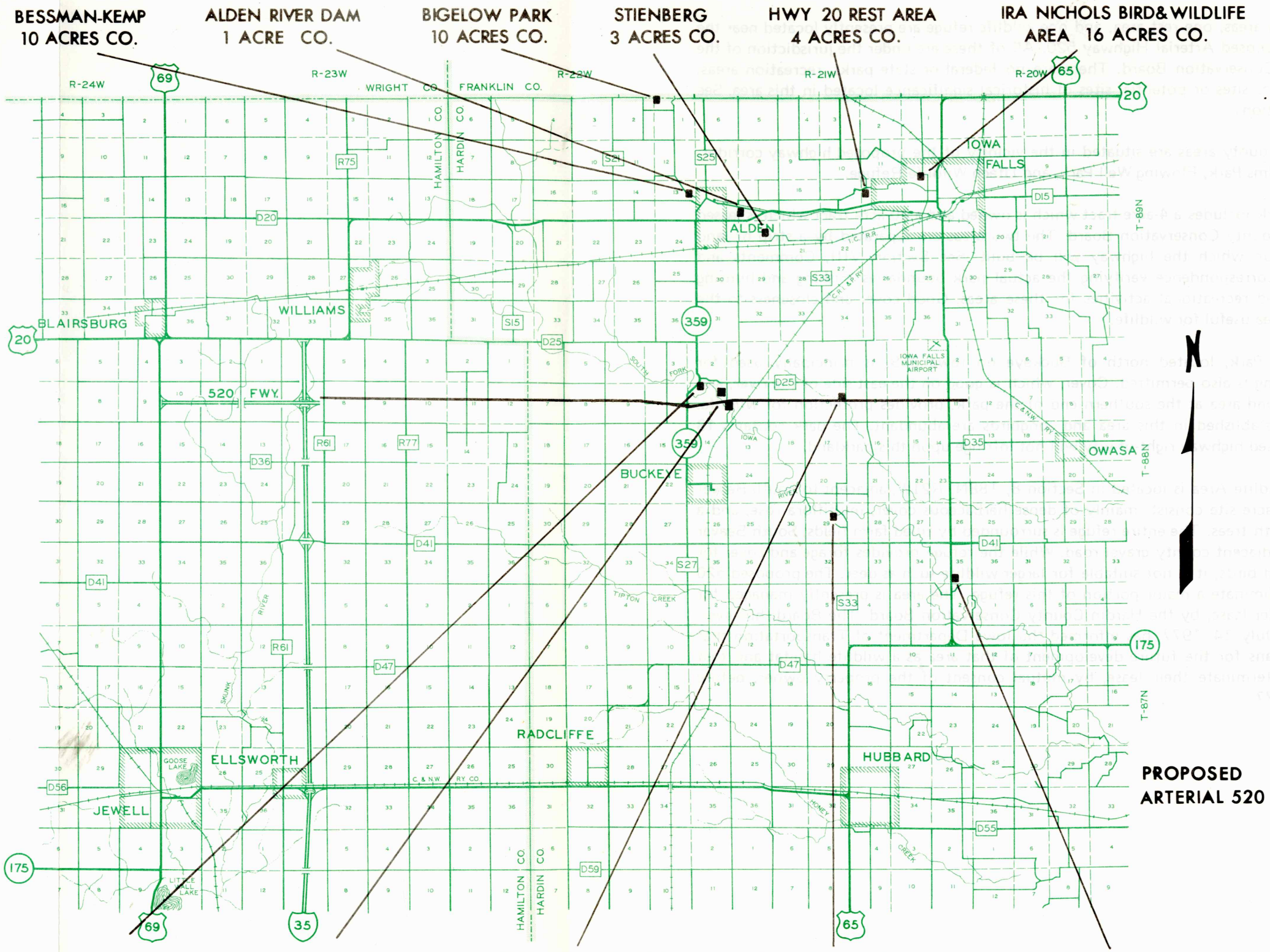


FIGURE 6

SECTION II. PROBABLE ENVIRONMENTAL IMPACTS

Dislocations

The acquisition of right-of-way to accommodate the proposed Arterial Highway 520 corridor will necessitate the removal of one home and four farm buildings in Section 10 of Rose Grove Township (T88N, R23W), in Hamilton County. In Hardin County, one home and eight farm buildings in Section 10 of Buckeye Township (T88N, R22W) and four farm buildings in Section 9 of Ellis Township (T88N, R21W) will be displaced. The total number of relocatees on this project will be approximately seven, none of which belong to a minority race. No businesses will be displaced by the proposed alignment in either Hamilton or Hardin County.

Right-of-Way Requirements

Total right-of-way requirements for the Arterial Highway 520 project are approximately 580 acres, 183 of which are in Hamilton County and 397 of which are in Hardin County. All of this land is of the Clarion-Nicollet-Webster soil association, land that is considered to be some of the most productive farmland in Iowa. The proposed right-of-way affects only small areas of woodland located almost exclusively along the South Fork of the Iowa River.

Loss of Access

Access will be allowed only at selected interchanges along the approximate 15.9 miles of the proposed freeway project (refer to Figure 1). The proposed highway alignment will cross U.S. 65, Iowa 359 and fourteen local roads. Interchanges will be constructed at the junctions of U.S. 65, Iowa 359 and County Road R77; grade separations will be constructed at five locations; and, eight local roads will be closed to through traffic. County road access to the two parcels of Twin Elms Park will be limited due to the closure of that road on either side of the new highway alignment.

In the 520 corridor there are approximately eight farms which will be severed after right-of-way acreage is acquired. (See Table 5). Two of these will require new access. To minimize the impact that occurs with property isolation, service roads are built to provide

TABLE 5

AGRICULTURAL SEVERANCE, TAKINGS AND DISPLACEMENTS

Number of farms severed	8
Farmsteads taken	2
Acreage taken (ROW)	580
Acreage severed (Total)	1540
With direct access	800
With circuitous access	590
With no access	150

new access to these farm parcels, or if it is considered more economical, the property involved will be purchased. It is recognized that certain inconveniences for individual farmers may be realized due to increased travel time to reach fields.

Access Control Impact on Rural Services

The highway limitations on activities that may require the crossing of the alignment have been studied. This potential problem was examined for the hinderance it may have on the following services:

1. Fire department routes
2. School bus service
3. Mail routes

Fire protection in the proposed project area is provided by the fire departments of Blairsburg, Williams, Buckeye, Radcliffe and Iowa Falls. The project area was reviewed by the Iowa State University Fire Service Extension and it was determined that there should be no major delays realized by the fire departments in reaching their destinations. The area just south of the proposed alignment and east of the County Road R61 may experience delays of up to approximately one minute. This area is presently protected by the Williams Fire Department. Other fire routes may have to be changed slightly but there should be no resulting increase in travel time.

Three school district bus routes will be affected by the construction of Arterial Highway 520, including Northeast Hamilton Community in northeast Hamilton County, Alden Community in northwest Hardin County and Iowa Falls Community in north-central Hardin County. In each school district, certain changes will have to be made in bus routes; however, since these routes change on a yearly basis, the exact effect of the proposed highway cannot be determined at this time.

Mail routes will also have to be altered. This will cause slight inconveniences to the rural mail carriers since some backtracking may be necessary. However, these should not be significant and should not hamper mail delivery.

Secondary Impacts on Commercial and Industrial Development

It is not anticipated that Arterial Highway 520 will significantly alter population or land use patterns due to the type of facility proposed and the characteristics of the area itself. In general, the proposed highway will increase accessibility to Webster City, the commercial and industrial center of Hamilton County, and to other communities in the area. This improved access will result in time and cost savings for travelers. It may also increase consumer demands for goods and services, thus increasing commercial sales, industrial productivity, and consumer satisfaction for persons in the corridor area.

Generally, the controlled access of the facility will not encourage development except in the immediate area of the interchanges. Increased development potential induced by highway improvements will be influenced by existing socio-economic characteristics and

trends of the region. The most prevalent trend in Hamilton and Hardin Counties is the population movement from rural to urban areas. This decline in rural population is a reflection of the passing of the family farm and the progress made in mechanization of the farming process. It is also projected that smaller towns in rural areas will continue to lose population.

The future population growth of major urban areas in those counties will depend to a great extent on their abilities to maintain a proportionate share of the future agricultural economy and at the same time increase industrialization. According to local officials, the fact that there is, presently, a limited supply of natural gas in the region, will most probably affect the industrial development trends.

The existing socio-economic conditions are likely to inhibit any increased development potential associated with the proposed 520 project. The prime value of agricultural land, the prevalence of agriculturally associated businesses, and the low population density will provide little basis for a significant degree of economic diversification or a more rapid rate of growth.

Stream Crossings

A significant effect of the proposed Arterial Highway 520 project upon the environment will result from the crossing of the South Fork of the Iowa River. This River will intersect the project corridor near the eastern edge of Section 11, T88N, R22W. In addition, South Beaver Creek will be crossed in the northeast quadrant of Section 8, T88N, R21W. (Refer to Aerial Plates 15 and 19.)

The South Fork of the Iowa River, at its point of crossing by the proposed facility, has an average width of 20 to 30 feet, an average gradient in the existing channel of about .033% or 1.76 feet per mile and drains a 91-square mile area. The Iowa River is a warm water, non-meandered stream with year-round flow. The average depth of the channel in the area of the crossing is approximately 2 to 2½ feet. Typical game fish species found in the river include smallmouth bass, channel catfish, black bullhead and green sunfish; there are also minnows and rough fish species such as carp. The wildlife habitat found along the banks adjacent to the river is composed mostly of small to medium sized timbered areas in narrow bands occasionally broken by cultivated fields. Refer to the following section on wildlife habitats for a more detailed discussion of these areas.

The river will be crossed by dual, prestressed concrete beam bridges. At this early stage, it is anticipated that 200-foot x 40-foot bridges will be utilized to cross the South Fork of the Iowa River. Although bridge design details are not complete and could change, the bridge will be of sufficient length and height to allow for the free movement of wildlife. The length of the relocated channel will be approximately 325 feet and it will replace approximately 550 feet of existing river channel. The new channel cut will increase the gradient of the existing stream in that area, which is currently 1.76 feet per mile, creating some minor upstream cutting and downstream deposition. However, due to the relative shortness of the channel change, it is anticipated that the streambed will stabilize over a short period of time.

Intersection and channelization of the South Fork of the Iowa River will eliminate fish habitat in the channelized section. Bayless and Smith (3) have demonstrated significant reductions in standing crops of fishes following channelization of streams in North Carolina. Hansen (4) found a greater number of fish species in an unchannelized than in a channeled portion of the Little Sioux River in Iowa. Hansen (4) determined that the most obvious factor responsible for the greater diversity and numbers of fishes in unchannelized over channelized sections of the Little Sioux River was the lack of suitable habitat areas (brush piles and pools) in channeled sections.

A small, southwesterly-flowing stream immediately east of the South Fork of the Iowa River will probably not be affected. Preliminary study indicates that no channel change will be required to this extensively meandered stream.

South Beaver Creek will be crossed using a single 10-foot x 10-foot concrete box culvert. The creek, at the crossing, has an average width of approximately 5 to 8 feet and has previously been straightened for drainage. Field survey data indicates that this creek is somewhat seasonal in nature. Rough fish and minnows may still migrate upsteam from the South Fork of the Iowa River, but it is doubtful if any appreciable fish populations could overwinter. The wildlife habitat found adjacent to the creek consists primarily of grass covered banks. A 1.9 acre wildlife refuge area, which, until approximately September 1, 1977, will have been maintained by the Hardin County Conservation Board, lies immediately east and north of South Beaver Creek in the proposed project corridor, and consists primarily of grassland, brambles and tree covered stream banks.

Wildlife Habitat

Hamilton and Hardin Counties provide habitat for both wild game and fish. The best habitat is found along rivers and wooded margins since intensive farming operations have decreased fence rows and other shrub and tree cover in this region. The ringnecked pheasant, Iowa's most popular game species, inhabits the farmlands of this area. Other game birds include several species of migratory ducks and geese. White-tailed jackrabbits and eastern cottontails are numerous in the pastures and grasslands. White-tailed deer, raccoons and eastern fox squirrels are present in the timberlands, and the rivers and streams support channel catfish, smallmouth and largemouth bass, northern pike, walleyes, bluegills and white crappies.

The timbered bottom land of the South Fork of the Iowa River is adjoined by agricultural land; therefore, it is restricted to a relatively narrow band adjacent to both sides of the river valley. The composition of the bottom land timber is primarily box elder, American elm, eastern cottonwood, green ash, hawthorn, and black willow. Silver maple and basswood can be found at most sites on the slopes, with white, red and burr oak, and shagbark hickory on the drier parts of the slopes. Numerous dead Amercian elms are found throughout the area. The trees have been dead for some time, and the area is littered with broken branches and other debris. Because the wooded areas along the Iowa River and its tributaries are situated in a broad, intensively-farmed area with little cover for wildlife, these river-woodland habitats are especially important to the region.

Animal species indigenous to this type of habitat include white-tailed deer, raccoon, red fox, eastern fox squirrel, beaver, muskrat and various small rodents. Bird species typically found in this type of habitat are red-headed, downy, and hairy woodpeckers; screech, barred, and great-horned owls; red-tailed hawks; blue jay; white-breasted nuthatch; cardinal; scarlet tanager; rose-breasted grosbeak and others. Some of the more uncommon birds sighted in this area include long-eared owls, sharp-shinned and red-shouldered hawks.

If the proposed highway project is implemented, approximately 8.8 acres of timber and 14 acres of wooded pasture adjacent to the South Fork of the Iowa River will be lost. Since the river is wooded along its banks both upstream and downstream from the proposed bridge location, it is anticipated that some migration routes and territorial boundaries of wildlife in the area will probably be disrupted.

The crossing of South Beaver Creek, in the area proposed, will necessitate the removal of an approximate two acre wildlife habitat area, which has been known as the Utech Wildlife Area. The refuge consists primarily of herbaceous cover, hedgerows of multiflora rose and small to medium-sized Siberian elms. Although the refuge is small, it does provide cover and some food for pheasants, rabbits, various species of rodents and songbirds, in a region of intensely cultivated farmland. The wildlife habitat lost will be mitigated somewhat by right-of-way landscaping programs.

Noise Pollution

The corridor of proposed Arterial 520 is located in a completely rural atmosphere; the existing noise emanates primarily from vehicles traveling the local roads and from machinery used for farming. The effect of the construction alternate will be to increase traffic in an area where land use is primarily agricultural. The type of highway facility which is proposed has geometrics incorporated into its design which allow for maintaining a constant speed. This design contributes to a lessening of noise when compared to designs which do not permit a constant speed. At the same time, however, this facility will contribute to the generated noise level due to increased vehicle speeds and increasing volumes of traffic.

Federal Highway Administration regulations establish certain noise levels for various land uses, which are not to be exceeded by highway traffic noise. Residential areas, including rural farm homes, are not to be subjected to an L10 (noise level exceeded 10% of the time) which exceeds 70dBA. Parklands, unless they require special qualities of serenity, are also controlled by the 70dBA criterion.

Two parks and approximately 17 farmsteads lie within a thousand feet of the proposed highway centerline and will experience increased noise levels resulting from this project. See Section III, under Noise Impacts, for a discussion of present and predicted future noise levels in the project corridor.

Air Pollution

Some air pollution will result during construction. This will be in the form of engine

exhaust, the dust from construction machinery, and possibly from the burning of construction wastes. The disposal of construction wastes is discussed in detail in Section VII. The degree of pollution from this phase of highway construction is temporary and rather unpredictable. The pollution potential, however, created by the increase in traffic volumes, following completion of the project, is more than a temporary situation. It can be predicted based on predicted future traffic volumes and anticipated technological advances in rendering the internal combustion engine into a less polluting factor. Thus, an increase in the number of pollution producing sources will be somewhat counteracted by the decrease of pollution emissions per unit. It is difficult, at this time, to predict the exact rate at which environmental improvement will take place due to cleaner engines, but it will depend upon legislation to speed up the transition from the serious pollution source of cars and trucks to much less pollutant-producing vehicles. Section III discusses the predicted air quality impacts of the new highway facility.

Water Pollution

Water pollution is usually not a prolonged or serious problem in regard to highway construction. Siltation during construction is the major concern. The period of greatest vulnerability is when the land is denuded of vegetation. If the construction period is excessively rainy, erosion will become worse and the increased runoff will cause turbidity of the streams. The contractor, however, is required to control erosion and minimize adverse effects which cause water pollution. When construction is completed and the bridge approaches and stream slopes are vegetated, soil erosion will no longer affect the streams.

It is anticipated that considerable siltation and turbidity will occur for a short time in the area of the South Fork of the Iowa River, at the time the new channel is cut. In addition, the proposed channel change, which will shorten a 550-foot section to approximately 325 feet, will increase the gradient flow of the stream, thereby creating some minor upstream cutting and downstream deposition. After construction, however, the streambed should stabilize and reestablish itself and the turbidity should settle out.

The South Fork of the Iowa River is classified as a non-meandered, warm water stream. The flow fluctuates in response to seasonal rains, with the normally heavy rainfall occurring in the spring and fall. The river is also classified as a perennial stream, but due to drought conditions in 1976, the river dried up in the summer of that year. The proposed Arterial 520 improvement will cross the South Fork of the Iowa River on dual structures in Section 11, T88N-R22W. A single concrete box culvert will be built to cross South Beaver Creek in Section 8, T88N-R21W. There are no downstream residences or cities in the immediate vicinity of the two waterways. River water in the area is utilized by fish and wildlife, aquatic life, streamside vegetation, and possibly by agriculture. Projected population growth in the corridor study area is anticipated to be slow in this rural area. (5)

Solids suspended in solution, and turbidity levels, are higher in the Iowa River, which the South Fork flows into, than in all other eastern Iowa rivers. Maximum concentrations have exceeded Iowa stream standards, and in 1970 they measured 782 mg per liter. (6) The

South Fork of the Iowa River receives considerable erosion runoff from farm fields during spring rains. As a result, the silt load and turbidity are periodically quite high. In addition, this river, like most in Iowa which drain agricultural land, is periodically polluted by herbicides, pesticides, and fertilizers from runoff.

Other highway related elements can also affect water supplies. These include oil and grease from automobiles, vehicle exhausts, and salt residues from the deicing treatment of pavements. Sodium chloride and calcium chloride have been the most widely used deicing agents employed for safe wintertime driving conditions. However, when salt accumulates in small bodies of water, density stratification can prevent normal seasonal mixing of the lake. This will cause oxygen depletion in the lower layer of the lake, thus affecting the bottom-dwelling flora and fauna. The Arterial 520 project is located approximately 850 feet from an oxbow of the South Fork of the Iowa River, located near Flowing Well Park, in Section 11, T88N, R22W.

For rivers and streams, the critical problem is the close proximity of highways to waterways; here the salt contaminated surface water can enter the stream as runoff. Research, however, shows that the concentration of salt in streams progressively diminishes with increased distance from the highway and with increased volumes of water. (7) The proposed facility will cross two waterways, the South Fork of the Iowa River and South Beaver Creek. The latter has previously been straightened.

Ground water can also become contaminated if bedrock aquifers are situated close to the surface. Under such conditions, the salt contaminated runoff could pollute the ground water. However, ground water should not become polluted from deicing salts since there are no bedrock aquifers in the vicinity of the proposed project. Whether salts applied to highways are polluting ground water supplies in Iowa has not been determined. Future testing will be required to establish this information.

Salt can also reduce soil fertility, and it is toxic to some vegetation. There is increasing evidence that salt residues from winter road treatments can have serious impacts on plant life. However, some limited testing in 1974 by the Iowa State Highway Commission (now the Highway Division, Iowa Department of Transportation) seemed to indicate that soil salt concentrations within the highway right-of-way were not sufficiently high to produce harmful effects on vegetation. (8)

Beneficial Impacts

The major benefit to be derived from the construction of the proposed Arterial Highway 520 project in Hamilton and Hardin Counties will be the provision of a fast, safe, and efficient transportation system in the project area. In addition, this project is one link contributing to the completion of the Arterial Highway 520 system across the State from Dubuque to Sioux City. This highly efficient route will bring this area of the state closer to shipping and trade centers on the Mississippi and Missouri Rivers.

The new facility will also provide a fast, safe and efficient route for the motoring public in the corridor communities along the route and will provide easy access to the Interstate System by connecting to Interstate 35 in north central Iowa and Interstate 380 near Waterloo. These will be the connections provided when Iowa's proposed network of Interstate and Arterial Highways is completed.

The provision of an efficient link to highway travel and transportation will most probably stimulate industrial and commercial growth, especially in the corridor communities. This should contribute to the prosperity of the area.

SECTION III. PROBABLE ADVERSE IMPACTS WHICH CANNOT BE AVOIDED

Displacement of People

The dislocation of individuals and homes will be minimal due to the rural nature of the project. Only two homes are located within or close enough to the right-of-way to justify relocation and economic assistance. The dislocation of individuals and families is viewed as a short-term impact since measures are taken in each case to insure replacement of decent, safe, and sanitary housing. Relocation assistance is discussed in detail in Section VII of this statement.

Diversion of Agricultural Land to Roadway Use

An unavoidable impact of the proposed highway facility is the diversion of approximately 580 acres of predominantly agricultural land to transportation use. It is recognized that the State of Iowa's most valuable natural resource is its highly productive soil. The economy of Iowa has traditionally been based on its high agricultural production. The efficient operation of a modern agricultural system, however, requires more than rich soil and hard work. Many agricultural inputs must be brought together from widely separated areas. Products travel long distances to markets. The need for a modern transportation system to serve the agricultural sector of the economy as well as the commercial and industrial sectors is clear.

A land use analysis of right-of-way takings is shown in Table 6.

TABLE 6

LAND USE ANALYSIS

Roadway and Farmstead Acres (%)	Rowcrop Land Acres (%)	Permanent Pasture Acres (%)	Forest and Wildlife Habitat Acres (%)	River Channel Acres (%)	Total Acres (%)
11 (1.9)	543 (93.7)	14 (2.4)	10 (1.7)	2 (0.3)	580 (100)

Wildlife Disruption

The displacement of wildlife species by road construction will increase the competition for the remaining habitat. To attain a new population - food supply equilibrium - either the wildlife population will decrease or the habitat quality will decrease, through overuse. The immediate effect of construction will be the elimination of approximately 9 acres of timber and 14 acres of wooded pasture adjacent to the South Fork of the Iowa River. Also, the new highway will act as a barrier and will disrupt migration routes and territorial boundaries of the established animal species. The long range result will be a general reduction in wildlife

numbers. However, the grassed right-of-way which will replace the timber will provide nesting cover for pheasants and songbirds as well as forage possibilities for deer, thus somewhat mitigating the habitat loss.

Approximately two acres of grassland and tree lined stream banks adjacent to South Beaver Creek will also be acquired for right-of-way purposes. This area is presently known as the Utech Wildlife Area and is leased by the Hardin County Conservation Board from a private land owner. For purposes of the 4(f) determination the County Conservation Board has, by letter dated July 14, 1977, indicated that they have no plans for the future development of that area as a wildlife habitat and that they intend to terminate their lease, by mutual consent, before September 1, 1977. See Section VIII, Comments and Objections, page 58 for documentation of their intent to terminate that lease. It is estimated that the amount of existing wildlife cover at this location, which will be displaced by the new construction, will be more than offset, over a period of time, by natural habitat development along the new facility.

Noise Impacts

Since the proposed 520 project is to be constructed entirely on new location through agricultural land, noise sensitive areas will consist primarily of farm homes in the project corridor although two county parks also lie in close proximity to the Arterial 520 mainline. Federal Highway Administration regulations establish certain noise levels for various land uses which are not to be exceeded as a result of highway traffic noise. Residential areas, including rural farm homes, are not to be subjected to an L10 (noise level exceeded 10% of the time) which exceeds 70dBA. Parkland, unless its use requires special qualities of serenity, is also controlled by the 70dBA criterion.

Utilizing an approved highway noise prediction model (NCHRP 117/144), 60dBA and 70dBA contour lines were established for the design year (2000) of Freeway 520. Contour lines represent the maximum spread of certain noise levels from the centerline of the highway facility. Parameters incorporated into the analysis include: Traffic volume, truck percentage, speed (by vehicle type), unique geometric considerations and terrain characteristics. The contour lines are depicted on the aerial photographs, Plates 1-23, in Appendix A.

The 70dBA contour line was determined to lie approximately 190 feet outward from the highway centerline while the 60dBA line will extend to a distance of approximately 810 feet. No farmsteads presently lie within the predicted 70dBA contour. A total of 12 farmsteads will be within the predicted 60dBA contour.

Twin Elms Park, consists of two separate parcels, with areas totaling approximately 4.1 and 17.8 acres. The mainline of Arterial 520 will be located between the two parcels but no parkland will be required for highway right-of-way. Approximately 0.3 acre of Twin Elms Park will be exposed to design year noise levels in excess of 70dBA. (See Aerial Photographic Plate 15.) All but approximately 3.5 acres of the total park area will experience noise levels at least equal to 60dBA.

Flowing Well Park, which is located approximately 1000 feet north of the proposed highway centerline, will experience only a moderate increase in the existing noise level if Arterial 520 is constructed as proposed. The spatial separation of the park to the proposed facility, the terrain, and the dense vegetation all contribute to maintaining acceptable noise levels within the park. It is estimated that the design year L10 noise level at the southeast corner of the park (the closest point) will be 51dBA. The existing L10 noise level is 40dBA.

The establishment of noise contour distances provides an indication of potential highway traffic noise problem areas. In order to assess the impact of the highway facility upon the environment, however, predicted noise levels which will be experienced at sensitive sites are compared to existing noise levels at the same locations. Additionally, the predicted noise levels must be compared to the controlling FHWA design noise levels to determine if compliance with those levels has been met.

Six noise sensitive sites were selected for detailed noise analyses. These sites represent several other noise sensitive receivers within the highway corridor, which are located at similar distances from the proposed facility. Table 7 indicates the existing and predicted L10 noise levels, the present land use, the source to receiver distance, and the number of noise sensitive receivers represented by each site. In addition, Figure 7 indicates the location of the sensitive sites.

TABLE 7

PRESENT AND PREDICTED FUTURE NOISE LEVELS

Noise Sensitive Site	Land Use	Distance From Centerline	Design Noise Level L10	Existing Noise Level	Predicted Year 2000 Noise Level	No. of Noise Sensitive Receivers
1	Farmhouse	370 ft	70dBA	40dBA	66dBA	2
2	Farmhouse	520 ft	70dBA	50dBA	66dBA	2
3	Twin Elms Park	140 ft	70dBA	40dBA	72dBA	1
4	Farmhouse	420 ft	70dBA	40dBA	67dBA	2
5	Farmhouse	280 ft	70dBA	40dBA	67dBA	1
6	Farmhouse	530 ft	70dBA	40dBA	67dBA	3

Existing noise levels in the project corridor are essentially unaffected by highway traffic noise and, for one exception, range from 35 to 45dBA. Sounds typical of this rural environment emanate from wind, farm machinery, and infrequent motor vehicle traffic on local county roads. Moderate traffic usage of Iowa 359 results in a somewhat higher existing L10 noise level (50dBA) at Site 2.

The predicted design year noise levels for the noise sensitive sites represent a 16 to 32 decibel increase over existing levels. Some experts contend that noise increases greater than

NOISE SENSITIVE SITES

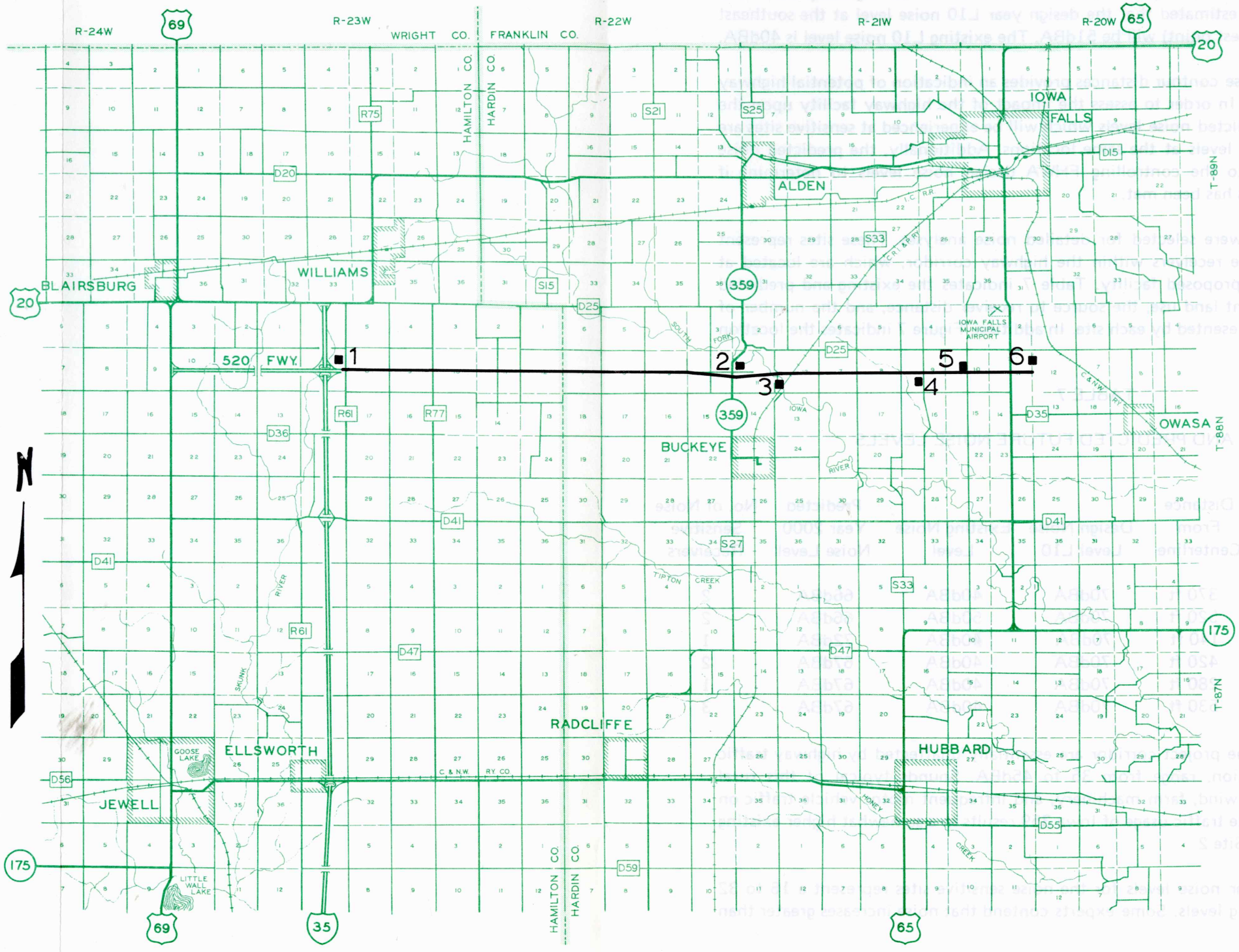


FIGURE 7

15 decibels constitute a significant impact. Even though the FHWA design noise level of 70dBA is exceeded only at Site 3, Twin Elms Park, the increase in predicted levels throughout the corridor is recognized as a negative impact, attendant to the construction of Arterial 520. This impact, however, is lessened by the low number of residences in the corridor.

The noise impact upon Twin Elms Park, the only site where the 70dBA limit is exceeded, is difficult to characterize. Recreational uses of the park include hunting and fishing while other areas of the park and wooded portions adjacent to it, which are privately owned, also provide habitat for wildlife. There is only a limited body of literature available concerning the effects of noise on wildlife. Increases in traffic noise have the potential of negatively influencing wildlife activites, (i.e., nesting, prey detection, communication and feeding patterns, etc.). However, the noise levels necessary to achieve such interference have not been quantified. In view of the anticipated increase in noise levels at Twin Elms Park, it is expected that negative impacts upon wildlife in this area are likely to occur, but the magnitude of that impact is impossible to determine. Possible noise mitigation measures, such as earthen berms, would encroach upon the park itself.

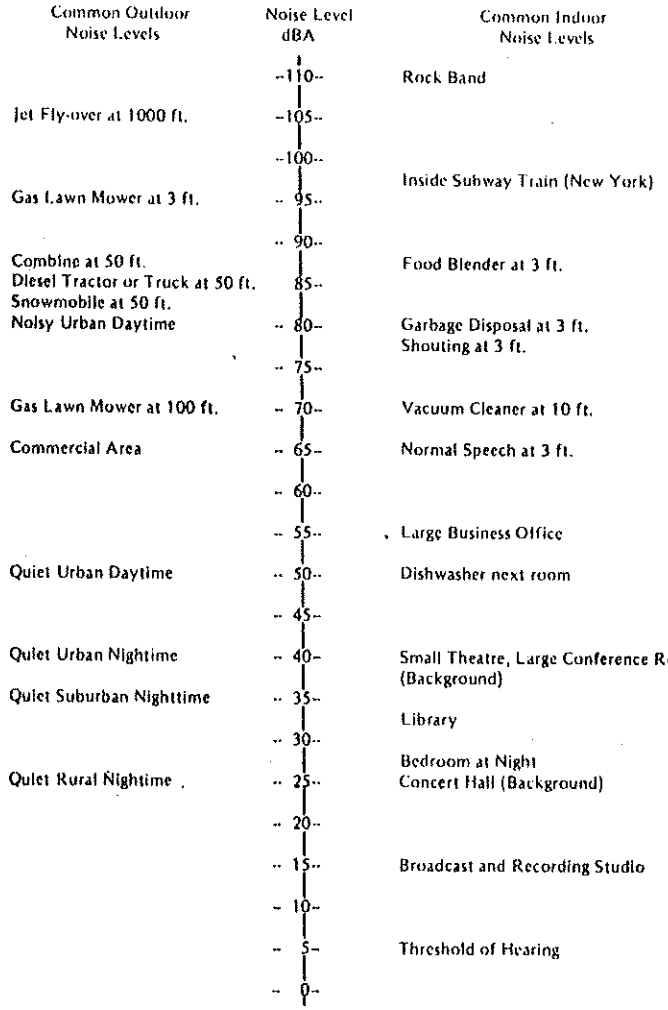
Figure 8 indicates the decibel level of common indoor and outdoor noise sources. Also included in this figure are the design noise levels by land use category. The latter was prepared by the Federal Highway Administration (FHWA) to serve as a guide for the maximum noise levels allowed for specific land uses. Exceptions to excessive design noise levels may be approved by the FHWA if there is no feasible, prudent, or effective method of attenuating the highway noise.

Mitigation of noise impacts at sensitive areas by constructing noise barriers or berms is not considered prudent for this project. Costs would be excessive to build barriers for the 12 isolated farm homes which are affected by this project (within the 60dBA countour line). It is estimated that appreciable abatement (4 decibels) of traffic noise would require a berm height of 15 feet and length of 400 feet. A berm built to these dimensions would cost a minimum of $8500. Because the 12 farmhomes are isolated, it would be difficult to justify the berm's cost for each home.

That portion of Twin Elms Park which will be exposed to noise levels greater than 70dBA is not currently utilized for recreational uses. The noise impact upon wildlife in this area is an unavoidable impact. The benefits derived from noise abatement measures, given the park's current use, are dubious. It is anticipated that an exception to the design noise levels will be granted at Site 3.

Construction Noise Impacts

Those locations identified in the sensitive site analysis will also be expected to experience increased noise levels during construction activity. Noise from heavy construction equipment and haul trucks is a relatively short term, but nonetheless, disturbing impact upon sensitive land use near the construction site. In an effort to minimize the adverse



COMMON INDOOR AND OUTDOOR NOISE LEVELS
Adapted from: Bolt Beranek and Newman Inc., Fundamentals and Abatement of Highway Traffic Noise, 1973

DESIGN NOISE LEVEL/ACTIVITY RELATIONSHIPS

Activity Category	Design Noise Levels-dBA Leq	L10	Description of Activity Category
A	57 (Exterior)	60 (Exterior)	Tracts of lands in which serenity and quiet are of extraordinary significance and serve an important public need, and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of parks, or open spaces which are dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
B	67 (Exterior)	70 (Exterior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, picnic areas, recreation areas, playgrounds, active sports areas, and parks.
C	72 (Exterior)	75 (Exterior)	Developed lands, properties or activities not included in categories A and B above.
D	--	--	For requirements on undeveloped lands see paragraphs 11a and c, FHPM 7-7-3.
E	52 (Interior)	55 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.

Source: Federal-Aid Highway Program Manual 7-7-3

FIGURE 8

effects of the construction period, contractors will be required to equip and maintain trucks and machinery so as to limit noise emissions to the extent possible. Contract specifications will also restrict especially noisy construction activity to the daytime hours in order to minimize conflict with noise sensitive nightime activities.

Air Quality

The Air Quality Management Division of Iowa's Department of Environmental Quality (DEQ) has devised a method of screening highway projects for possible conflict with the State Implementation Plan for maintaining national ambient air quality standards. When highway facilities designed to carry traffic at certain operating speeds are predicted to carry critical year (year of highest pollution potential) traffic volumes higher than the cutoff volumes specified by DEQ, a mathematical analysis of the air quality impact of the highway project is required. This analysis is made part of the Environmental Impact Statement and is reviewed by DEQ to ascertain the consistency of the proposed project with the State Implementation Plan (SIP).

For a project predicted to carry critical year traffic volumes below the specified cutoff volumes, no detailed analysis is required because of its very minor air quality impact.

As indicated in Table 8, critical year traffic volumes on Arterial Highway 520 in Hamilton and Hardin Counties are not expected to approach those stipulated by DEQ in the screening procedure. In addition, the open topography and favorable meteorology of the project corridor would assure rapid dispersion of air contaminants emanating from highway traffic, so that such pollution would exert a less than significant impact upon the human environment. The project is consequently deemed consistent with Iowa's Implementation Plan for maintenance of the national ambient air quality standards.

TABLE 8

DETERMINATION OF CONSISTENCY WITH
THE STATE IMPLEMENTATION PLAN

Speed (mph)	DEQ Specified Cutoff Volumes*		Estimated Peak Arterial 520 Traffic Volumes For Critical Year (1984)	
	1-hour	8-hour	1-hour	8-hour
55	11,200	65,160	1463	9360

*Source: Table III, *Guidelines of the Department of Environmental Quality for Review of Federally-Funded Highway Projects,* revised December 12, 1974.

Water Quality

The adverse effects to water quality which cannot be avoided by the proposed project include an approximate 225-foot shortening of the South Fork of the Iowa River. This modification will result in change of the river bottom substrate and, subsequently, the potential habitat types available to aquatic life. In addition, some upstream cutting and downstream deposition may occur, due to an increase in the stream gradient.

Raising the grade for the bridge approaches at that site will fill most of the oxbow pond located between Stations 251 and 255 (See Aerial Plate 15). During wet years, this area serves as a breeding ground for aquatic life and a reservoir of species for the river. (9)

The impact to the river and oxbow area are unavoidable through this area. Due to the narrow neck of land between the two parcels of Twin Elms Park, the river channel will require correction to ensure protection of the bridge and embankments.

Temporary erosion and siltation are other effects which cannot be eliminated. The severity of these problems will depend upon weather conditions at the time of construction and precautionary measures taken by the contractor.

A more permanent effect on water quality could possibly result from the use of deicing chemicals. Sodium chloride and calcium chloride are applied to winter road surfaces. Near rivers and streams these deicing chemicals are washed off the roadway, into drainageways and into the streams. They are also splashed off the road, onto roadside vegetation. Research shows that about 25 percent of the deicing chemical applied is washed away by surface runoff; approximately 12 percent leaches through the soil; perhaps 10 percent is removed through the air; and about 50 percent is removed by highway traffic. (10)

The seriousness of water pollution from highway runoff depends on several things. The size of the drainageway and the specific intended use of the water are important factors. Different amounts of salt in water are permitted for domestic, industrial, agricultural, and for fish and wildlife.

For domestic water, standards for sodium or chloride are a matter of taste for chlorides, and a matter of health for sodium. The maximum permissible level of chloride in drinking water is 250 mg per liter. The concentrations of sodium permitted in domestic water is set at 270 mg per liter; however, a warning limit of 20 mg per liter has been determined for people on low-sodium diets. A person on a strict sodium intake will obtain 440 mg/day from his normal basic diet. (11)

The higher forms of life such as man, animals and fish are fortunately more tolerant to salt stress; however, an extremely high concentration can be toxic. This toxicity is mainly in the nature of osmotic pressure rather than a salt constituent. Plant life is the least tolerant to high salinity. Deicing salts affect the physiology and growth of plants by altering the soil solutions from which they absorb their food. These changes produced by salts include: (1) increased osmotic pressure; (2) changes in replaceable ions; and (3) changes in the ratio of

ions in soil solutions, which alters nutrition and results in a toxic level of ions in plants. Salts that contain sodium can indirectly affect plant growth by altering the soil structure, permeability and aeration. (7)

Deicing salts can cause injury to certain plants along highways. Many wooded species, especially, suffer severe physiological effects or death from sodium or chloride ions, at even rather low concentrations. (7) However, plants such as grasses can adjust to rather high osmotic concentrations of salt ions, and selection of plants more tolerant to higher salt levels will minimize plant injury.

Studies of chloride concentrations in Iowa's rivers have not been completed and findings are not available for all rivers. However, chloride concentrations have been tabulated in the Shellrock River, which lies east and slightly north of the Iowa River and the South Fork of the Iowa River. These studies averaged 30 mg per liter. At this level, chloride is not considered a polluting agent. (12)

Studies of salt in Maine's rivers indicate that highway salting is not affecting them seriously. This conclusion was based on an average wintertime salt application of nearly four times Iowa's average annual salt application. (7)

Salt applications in Iowa do not exceed a maximum of 500 pounds per two lane mile of roadway. Under normal wintertime conditions, the average annual application of salt for those roads treated with salt equals 2.74 tons per lane mile of roadway.

Some wildlife mortalities have been attributed to salt poisoning, caused by highway deicing chemicals. There have also been instances of ungulate animals (for example, deer) having been attracted onto highways because of the availability of salt. This situation is often not only fatal to the animals, but constitutes a hazard for the motorist as well. Such effects upon wildlife and traffic safety are recognized as possible results of the use of deicing salts.

Various salt additives are also known toxicants. The two most common additives are ferric ferrocyanide (Prussian blue) and sodium ferrocyanide, used as anti-caking agents. Sodium ferrocyanide, itself, is not harmful, but in solution it produces deadly hydrogen cyanide, which is extremely toxic to fish and other aquatic life forms. The following quote, from an Environmental Protection Agency study, states that, "Numerical limits of cyanide are among the lowest and most critical of all the trace ions to be tolerated for various water uses." Rust inhibitors are another group of salt additives.

SECTION IV. ALTERNATIVES

Description of Alternates

Two alternates were considered for this project, the recommended one being a construction alternate linking up with a previously constructed section of Arterial Highway 520, just east of the Interstate 35 interchange. This alternate continues easterly approximately 16 miles through Hamilton and Hardin Counties and terminates approximately one-half mile east of U.S. 65. The location of this alternate is shown in Figure 1. Aerial photographs showing the proposed alignment are presented in Appendix A of this statement. The second considered alternate was the "Do-Nothing" condition.

The construction alternate will provide for two 24-foot wide paved lanes separated by a depressed median. Shoulders along the highway will consist of 10-foot wide paved shoulders on the outside of each lane and 6-foot wide paved shoulders on the median side of each lane. Access will be provided via interchanges at selected locations.

The project will begin approximately 1.5 miles south of U.S. 20, just east of Interstate 35, where present 520 ends in Section 7, T88N, R23W. The alignment will proceed easterly from this point along the half-section line. At county road R61, a bridge will be built to carry local traffic over Arterial Highway 520. The local road between Sections 8 and 9 will be closed. A diamond interchange will be built at county road R77 to provide access to and from the new facility. A farmstead in Section 10 will be acquired due to the right-of-way requirements of the interchange, at that location. A local road in the middle of Section 11 will be closed while a bridge will be constructed to carry local traffic over the new highway between Sections 11 and 12.

The alignment passes into Hardin County and continues along the half-section line in an easterly direction. The county road between Sections 7 and 8, T88N, R22W, will be closed. Another bridge will be constructed over the new facility for local traffic between Sections 8 and 9. In the center of Section 9, the alignment shifts slightly to the southeast. A local road in the center of Section 10 will be closed south of the highway. The proposed alignment intersects Iowa 359 at a point approximately 530 feet south of a parallel local road. A farmstead will be acquired at that location, in Section 10. A diamond interchange will be constructed at Iowa 359, providing access to the communities of Alden and Buckeye. The above mentioned local road will be partially relocated, to a point approximately 600 feet north of the interchange. The highway alignment continues in an easterly direction along the half-section line in Section 11. The proposed facility also traverses the South Fork of the Iowa River in this section. The river will be channelized and a bridge constructed. The local road between Sections 11 and 12 will be closed.

The Chicago, Rock Island and Pacific Railroad tracks located in Section 12 will be spanned with a bridge. At the county road between Section 12, T88N, R22W and Section 7, T88N, R21W, a bridge will be erected to carry traffic over the new facility. The local road between Sections 7 and 8 will be closed. The highway alignment will cross South Beaver

Creek and an adjacent two acre wildlife habitat area in Section 8. A concrete box culvert will be constructed to channel South Beaver Creek under the roadbed. The local road located between Sections 8 and 9 will be closed. A bridge will be built in Section 9 to carry local traffic over the highway. A local road in Section 10 will be closed. A diamond interchange will be constructed in Section 11 where the proposed highway crosses U.S. 65. The alignment continues eastward to the section line dividing Sections 11 and 12, where the project terminates.

The "Do-Nothing" Alternate was also considered for this project. Adoption of this alternate would have prevented the completion of the Arterial Highway 520 system across Iowa. The traffic service needs in the project corridor would have continued to be accommodated by U.S. 20 and Iowa 175. As was mentioned in Section I, the sufficiency ratings for U.S. 20 and Iowa 175 in the project area fall almost completely in the critical or poor range (93% of U.S. 20 has a critical or poor sufficiency rating, while all of Iowa 175 has a critical rating). Also, it should be noted that the accident rate for rural U.S. 20 was 33% higher than the statewide average for rural primary roads for the five-year period 1971-1975. By doing nothing to relieve these conditions, it is apparent that safety and convenience problems will continue to increase.

If the new facility is not constructed, some beneficial effects can also be expected. These effects are related to the visual impact of the highway and to the resources which must be altered or irreversibly committed if the project is built. The project area would not experience the adverse effects due to noise, air and water pollution; woodlands and wildlife habitat (including the Utech Wildlife Refuge) would not be lost; people and farmsteads would not be dislocated; and, productive farmland would not be diverted.

SECTION V. THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The primary objective of planned development is to ensure that short-term uses of the environment do not conflict with long-term productivity. Due to the large and often irreversible commitment of resources in highway projects such as this one, this relationship was carefully evaluated during the planning process. Initially, the environment of the corridor will be disturbed by the short-term effects of construction. These include the noise, dust and exhaust emissions from the operation of heavy equipment, and an increased potential for soil erosion from denuded ground surfaces. (Methods of minimizing these negative short-term effects are discussed in Sections III and VII.) With implementation of these precautionary measures, the effects of construction should stabilize once the improvement is complete.

In addition to such impacts upon the natural environment, the project will require the relocation of individuals by the removal of two existing farmsteads. The effects of such dislocation are considered to be short-term because human populations are adaptable and have the ability to relocate. It is necessary, however, to allow adequate time and to provide just compensation to minimize this impact.

Conversely, wildlife habitat taken by construction of the highway is gone forever. It is possible that over a period of time the natural development of habitat along new fences could mitigate the losses of brushy areas. However, on prime agricultural land such as that which is available in Iowa, the trend is for intensive cultivation or pasture utilization up to the fences, eliminating growth of new heavy cover areas. The immediate effect of construction is to change the brushy fence lines and odd areas to grassy areas. Both types provide valuable wildlife habitat, but each is preferred by different species and serves a different function.

The diversion of agricultural land and the reshaping of the landscape to obtain a smooth grade line is one of the most significant long-term negative impacts of the proposed project. In the case of this project, approximately 557 acres of cropland and pasture and 10 acres of timber and wildlife habitat will be diverted to highway use.

The proposed project will have little effect on either present or future land use in the corridor. The acquisition of additional right-of-way and the construction of a Class I facility will result in the construction of slightly altered means of access for farmsteads and fields, adjacent to the corridor. Some field entrances will be relocated and two parcels of land will be isolated. The project will result in some diagonal severance. This will be limited, however, since the project alignment follows almost entirely along half section lines.

Noise and air quality within the immediate highway corridor will change as a result of the increasing traffic volumes on the new facility. This is likewise viewed as a long-term impact of the project. The introduction of a highway facility into the existing rural area will

concurrently introduce noise and air concentrations of vehicular emissions into the highway corridor. These will be diffused, however, because of the undeveloped nature of the project corridor. There will also be an accompanying reduction in noise and air pollution concentrations along the existing U.S. 20 and Iowa 175 corridors.

The long-term benefits derived from the added safety and convenience of a freeway facility should offset both the short-term and long-term investments in our natural resources required for construction of the project. When this facility is completed it will provide efficiency of travel from Dubuque to Sioux City across the northern section of the state. The economic benefits of improved accessibility to surrounding communities can also be considered a long-term benefit.

SECTION VI. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Investment in a highway project such as Arterial 520 is a long-term commitment of the elements that make up the project. Some of these elements are irreversibly committed. Resources that must be committed to a highway project include:

Space - This includes the surface, subsurface and air space. In some cases there are multiple use possibilities for space over, under and around a highway project. The most common example of this multiple use of space is the maintenance and enhancement of surface water drainage around and under the roadway. Since the alignment of Arterial 520 will cross a number of drainageways, this element will be incorporated throughout the project corridor. Commitment of space is not necessarily irreversible. If in the future it becomes desirable to change this land use, it is possible to remove the highway and adapt the land to other uses. This would, however, be a very remote probability.

Existing Landscape - In the construction of most highways the existing shape of the land must be altered to conform to a desirable design for vehicle transportation. Because of both engineering and aesthetic considerations, it is desirable to keep this alteration to a minimum. A highway that blends with the surrounding terrain is not only more attractive but most often is more economical to build. This factor was considered in the planning for the Arterial 520 project. In a few areas the existing configuration of the landscape within the corridor will be changed due to the cutting and filling necessary to achieve the gentle grades of a freeway-type facility.

This project improvement will mean a commitment of approximately 580 acres of land to transportation purposes. Approximately 543 acres of this land is productive cropland, some of which also serves as wildlife habitat. In addition, an approximate two acre wildlife habitat area near South Beaver Creek will be lost and numerous trees will be removed within the highway corridor, in the vicinity of the South Fork of the Iowa River.

The sacrifice of these trees will result in loss of wildlife protection and loss of aesthetic quality. This loss must be regarded as a permanent commitment of a treasured resource. The possibility remains that some of the trees in the right-of-way might be preserved, although this would not be determined until a later stage in project development. The improvement will include the planting of grasses and trees in the corridor to control erosion and to partially retrieve aesthetic quality that is removed. Time is necessary, however, for the growth of the planted landscape to reach the degree that will contribute to the aesthetic quality of the area.

Construction Materials - These include cement, sand, gravel, asphalt, steel, aluminum and other products typical of large scale construction projects. In all probability these elements will be committed permanently. In the event of future highway removal, some of the metals could be recycled. Any utilization of used construction materials would depend on the needs and economics of that time.

Construction machinery - The equipment, motor fuels and lubricants used during construction are irreversible commitments. The quantities of these products currently being expended on a project of this scale are becoming more significant in relation to national use and declining availability. However, these resources are considered to be beneficially employed in a responsible long-term capacity.

Future Commitments - By constructing Arterial 520 in Hamilton and Hardin Counties, a commitment of future expenditures is made, primarily, in the form of necessary maintenance. The principal natural resources within the project area, which for all practical purposes will be irretrievably committed to transportation use, are the aggregate used for cement and the good quality agricultural land and remnant woodlands.

SECTION VII. STEPS TO MINIMIZE HARM

Dislocation and Relocation Assistance

The disruption to residences and businesses displaced by this project will be offset by acquisition payments supplemented by relocation assistance. The acquisition payment is the payment made to the owner for land and buildings. This amount is based on fair market value as determined by current sales and current prices. In addition, the Iowa Department of Transportation, under the provisions of the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and Chapter 316, Code of Iowa, 1975, will provide relocation assistance to all eligible relocatees of a highway project. The relocation assistance program assists owners and tenants displaced by a highway project by acquiring decent, safe, and sanitary housing for them. Both tenants and owners qualify for relocation assistance by meeting minimum residence requirements. Any individual or family who has owned and occupied or rented a dwelling for at least 90 days before the start of negotiations may be eligible to receive payments for residential moving expenses, closing costs incurred in purchasing another dwelling and, possibly, a replacement housing payment. Any individual or family that has owned and occupied their own home for at least 180 days before the start of negotiations may be eligible for additional compensation to offset increased interest payments on a replacement dwelling.

Programmed replacement housing as a "last resort" is provided for under Section 206 of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970. This Act stipulates that if the local agency determines it is in the public interest to proceed with the construction of the Federal-Aid project and it cannot do so because of an inadequate supply of comparable replacement housing, then it may, as a last resort, provide the necessary housing by use of funds authorized for the highway projects.

Replacement housing currently available in the study area communities, while rather limited, does include both rental and sales units. Since the project lies completely in a rural area, however, it is likely that most, if not all of the displaced families, will be relocated to replacement houses built or moved onto their same properties.

Due to the limited number of minorities in the area and the primarily rural nature of the proposed corridor, it is not anticipated that Arterial Highway 520 will adversely affect a particular neighborhood, group or segment of the study area population. After a field review of the corridor and a review of 1970 census data, it is not anticipated that this project will be in conflict with the provisions of Title VI of the Civil Rights Act of 1964.

Erosion Control Measures

Positive steps will be taken to minimize potential damage from wind and water erosion. The area of erodible soil exposed by clearing and grubbing operations or grading will be limited to localize any damage potential to a controllable size. Temporary pollution control practices will be instituted during construction. These include construction of temporary

berms, dikes, dams, sediment basins, slope drains and use of temporary mulches, mats, seeding or other control devices or methods as necessary to control erosion. Cut slopes will be seeded and mulched as the excavation proceeds to the extent considered desirable and practicable. Temporary pollution control measures will be used to correct conditions during construction that were not foreseen during the design stage; that are needed prior to installation of permanent pollution control features; or that are needed temporarily to control erosion that develops during normal construction practices. Temporary pollution control may include work outside the right-of-way where such work is necessary as a result of roadway construction (borrow pit operations, haul roads, and equipment storage sites, etc.)

Contractors are also required to incorporate permanent erosion control features into the project as soon as possible. "Under no conditions shall the amount of surface area of erodible earth material exposed at one time by excavation, borrow, or fill within the right-of-way exceed 750,000 square feet, without prior approval by the engineer." *(Iowa DOT Standard Specifications for Construction and Maintenance).* Sodding, mulching, seeding and control of surface drainage are among the permanent measures employed for erosion control.

Conservation of Top Soil

Top soil is removed from the corridor alignment and stockpiled, before construction. This productive soil is later replaced within the new corridor in appropriate areas, in order to better support roadside vegetation. In this manner the rich top soil of this area will continue to be used beneficially.

Possible borrow areas needed for the construction of Arterial Highway 520 have not been determined at this time. The borrow needs and possible sites will be determined at the final design stage. If, borrow areas are deemed necessary, several measures will be taken to minimize harm. In general, all borrow areas will be planned for restoration by means of removing and replacing the topsoil, except in those areas which obviously will not require topsoil replacement. Such areas include lake or pond type borrows, borrows in urban areas and sites having potential for development, borrow areas where no topsoil exists in its original condition and borrows where restoration by fertilizing, mulching, reseeding or other appropriate measures to provide vegetative cover or prevent erosion is specifically documented and agreed to by the property owner involved prior to plan completion. Borrows which are incorporated into the project as an integral part of the roadway design by means of widening ditches and/or flattening backslopes in areas of normal excavation shall be treated in the same manner as the remainder of the project. No borrow areas will be located on Federally-owned land.

Controlled Burning of Solid Wastes

Landscape wastes will be created as a result of clearing, grubbing, and construction operations. These wastes may be used in the project fill, hauled to a suitable landfill or

burned on the premises. As stipulated by the Iowa Department of Environmental Quality Administrative Guidelines, open burning for the disposal of landscape wastes originating on the premises and produced in clearing, grubbing or construction operations is allowable only if such burnings are limited to sites at least one-quarter of a mile from any human habitations. Open burnings do create infrequent, short durational air pollution situations which do not permanently alter the local air quality but will contribute additional particulates and hydrocarbons to the atmosphere.

Control of Fugitive Dust

Iowa's air quality standards require that certain measures be taken to control fugitive dust. As stipulated by the Iowa Department of Environmental Quality, the contractor will take reasonable precaution to prevent particulate matter in quantities sufficient to create a nuisance, as defined in Section 657.1 of the Code, from becoming airborne. Fugitive dust precautions include application of suitable materials, such as asphalt, oil, water or chemicals to areas giving rise to airborne dust. Installation and use of containment or control equipment to enclose or limit the emissions resulting from the handling and transfer of dusty materials such as aggregates are required. Open-bodied vehicles transporting materials likely to give rise to airborne dust must be covered at all times when in motion.

Landscaping and Planting For Aesthetics and Utility

Various species of plants are planted to control wind and water erosion, as well as to provide wildlife habitat and an attractive right-of-way. Not only are roadside plantings aesthetically pleasing but they can also have a positive on highway safety. They may be properly placed to indicate changes in highway alignment and to provide traffic guidance for danger areas such as bridge abutments, culvert headwalls or other structures near the edge of the pavement. Plantings may reduce headlight glare on frontage roads, act as a barrier to reduce impact when used in median strips, screen unsightly areas and reduce "highway hypnosis". Plantings may also be used to create a "living snow fence" to keep snow from drifting onto the highway during winter storms.

These plantings provide many deep rooted plants which stabilize the soil by their fibrous root system and protect it from wind erosion and raindrop impact by virtue of their complete vegetative cover. Increasing usage of native prairie species in right-of-way plantings has begun. A large variety of plants is included in this group and as they are perennials and most so-called weed species are annuals, the native prairie plants are extremely competitive once they become established. Use of native prairie species reduces the likelihood of destruction by a single disease, reduces the need for maintenance since neither mowing nor blanket spraying is needed for weed control, and provides a continuous and dependable wildlife cover and food source. This potential for wildlife habitat is especially important in the intensively farmed areas of Iowa where increasingly more land is being cultivated for corn and soybeans rather than cereal grain crops and hayfields, which have in the past, provided a large portion of the productive pheasant nesting sites and other small animal habitat in Iowa. In addition, the prairie species are the historically compatible plants for

Iowa, whose rich agricultural soil was developed under prairie vegetation. Not only are the native prairie grasses and flowers suited for the climatic soil conditions of this region, but they are also economical in the long run because their higher rate of survival and longer life would minimize the need for any more than a nominal amount of reseeding and maintenance. There is also the added benefit that, once established, they will continue to enhance soil fertility without chemical additives. In a like manner, legumes also increase soil fertility by their contribution to the soils usable nitrogen content.

Mowing Practices

The Iowa Department of Transportation's policy to limit mowing was instituted to cut maintenance costs and improve wildlife habitat. Before July 1, only the shoulders and a single swath along the foreslopes are mowed. Backslopes and ditches are left in their natural state. After July 1, medians and weed patches are mowed. Bridge berms and similar areas are planted with ground cover plantings such as crown vetch, thus eliminating the need for mowing.

Spraying Practices

Blanket spraying of rights-of-way is no longer practiced. The use of herbicides, mainly 2,4-D, is limited to the control of noxious weeds. When spraying is necessary, the herbicide is applied in an emulsion form to minimize drift. The growth of weeds is discouraged by a dominating cover of grasses. Reduced spraying and mowing also help keep weeds from becoming established in the rights-of-way.

Management of Right-of-Way for Wildlife Habitat

A total of 3.07% of Iowa's land area is utilized for all existing highways, streets, and county roads; of this only one-third is roadway and two-thirds are rights-of-way. This land in right-of-way represents potential wildlife habitat. Studies have shown that with proper planting and management, highway rights-of-way make excellent pheasant nesting habitat. (13) A state-wide policy of limited mowing and selective spraying provides vegetation year around on the highway backslopes and ditches. This policy of delayed mowing was instituted to insure that nesting habitat within the right-of-way was not disturbed during the peak nesting periods. Today, the roadside cover of ditches and slopes is especially valuable to wildlife since wooded areas and fence row cover in Iowa are being removed as more land is being placed under cultivation.

Salting and Efforts to Mitigate Effects on the Environment

Results of studies reprinted by the Salt Institute indicate that salt can cause contamination of some water sources near roadways. However, pollution of wells, ponds, and streams is small, and contamination usually requires heavy salting very near the well or water source. (14)

In 1975, the Highway Division of the Department of Transportation modified its "bare pavement" policy. Wide-spread use of roadway deicers had been the primary means for implementing this policy to create wintertime roadway safety. The new policy outlines different procedures for Priority 1 and Priority 2 highways.

Priority 1 highways include freeways, expressways, major commuter routes and arterial highways. Maintenance for these highways provides storm snow removal and a near-normal road condition within 10 hours after a storm ends. A 50-50 sand-salt mixture is utilized for snow and ice control.

Priority 2 highways include arterial connectors, trunk routes and stub routes. On Priority 2 highways, the inside wheel track surface is made bare enough to provide traction within 24 hours after a storm ends. During the course of a normal storm, sand only, is utilized for hazardous locations, including hills, curves, bridges, stop signs, and railroad crossings.

The Iowa State Highway Commission (now the Highway Division of the Iowa Department of Transportation) has been a leader in the development of calibration for salt spreaders and its economical application. An application technique utilizing liquid calcium chloride sprayed onto sodium chloride has been developed by the Maintenance Section. This technique allows for a reduction in the amount of salt necessary for deicing purposes. It also reduces the incidence of salt scattering onto roadside vegetation during application and it increases the efficiency of melting ice at lower temperatures.

Salt stored by the Iowa Department of Transportation is stockpiled in permanent buildings or covered, to protect it from wind and rain. When outside storage is necessary, the salt is covered and is stored for a very short time period to assure minimum exposure to the elements.

The problem of highway deicers is multi-faceted and, therefore, any solution must attack the problem from many sides. At present, substitutes for sodium and calcium chloride salts are expensive and impractical, lack comparable effectiveness, and are more toxic than the salts presently in use.

Salt can also injure roadside vegetation, but it does not appear to cause widespread damage to grasses. Trees most sensitive to increased saline concentrations are white pine, hemlock, sugar maple, red maple, balsam fir, basswood, and elm. Although most of these species are not native to Iowa, the list demonstrates the diversity of trees vulnerable to the effects of excessive salinity in soil. Certain plant families and plant species are also more tolerant to salt. Selective planting of these in the right-of-way can reduce salt damage.

The Iowa Department of Transportation is well aware of the environmental considerations involved with deicing salts. Maintenance personnel guard against adverse effects associated with winter deicing salts by using the latest techniques of salt application and proper storage facilities, to protect supplies from the weather.

Preservation of Archaeological Values and Historic Sites

A review was made of the National Register of Historic Places as it was published in its entirety in the April 5, 1977, Federal Register, to determine areas of possible conflict with the Arterial 520 project. No sites on the Register or potential sites eligible for the Register are directly or indirectly affected by the alignment.

This project has been coordinated with the Office of the State Archaeologist and with the State Historic Preservation Officer to provide for special investigation and salvage, if areas of potential value or local significance, which are not included on the National Register, are identified within the project corridor.

An architectural resource review was conducted in May of 1974 by the State Historic Preservation Officer. His review concluded that no structures within the study area corridor appear to have a great degree of architectural significance. A copy of the appropriate clearance letter from that office is included in Section VIII, Comments and Objections, page 67.

In March of 1977, a pedestrian archaeological survey for the project was conducted by the State Highway Surveys Archaeologist. One archaeological site was identified in the area of South Beaver Creek, approximately 500 feet south of the proposed highway centerline, outside the proposed right-of-way takings. It was concluded that the archaeological potential of the project area must be regarded as low. If, however, additional sites are identified within the project corridor during the construction phase of the project, salvage procedures will be implemented in accordance with provisions contained in an agreement existing between the Iowa Department of Transportation and the State Archaeologist. In addition, if and when borrow areas are designated, a field inspection will be conducted at the time of the initial clearing and grubbing operation to avoid potential impacts on unknown sites. A copy of the appropriate archaeological clearance letter is included in Section VIII, Comments and Objections, page 68. A copy of the archaeological survey report is included as Figure 9. Aerial Plate 19, in Appendix A, shows the location of the identified archaeological site and its relationship to the proposed Arterial Highway 520 alignment.

Regulation of Outdoor Advertising

The Iowa General Assembly has enacted enabling legislation that will bring Iowa into conformity with federal laws relating to control of outdoor advertising. The legislation defines what types of outdoor advertising will be permitted within visibility of the roadway of primary and interstate highways in Iowa, restricts their location and spacing, sets standards for size and lighting, and provides for the removal of those signs which fail to comply with these regulations. Payment of compensation is provided for in those instances where action by the Iowa Department of Transportation, such as new highway construction, necessitates removal of those signs lawfully in existence at the time the legislation went into effect, and which are in compliance with the permit provisions established in the legislation.

Freeway 520

Hamilton-Hardin Counties

A Report to the

Iowa Department of Transportation

Highway Division

by

John Hotopp

Highway Archaeologist

March, 1977

Freeway 520

Hamilton-Hardin Counties

Project Description: The proposed freeway begins 2250 feet east of Interstate 35 in Hamilton County (Rose Grove Township, T88N, R23W, Sec. 7) and extends eastward on relocation approximately sixteen miles junctioning with Highway 65 in Hardin County (Ellis Township, T88N, R21W, Sec. 12). The project terminates one-half mile east of Highway 65 (Figure 1). The freeway, as designed, will be a four lane divided facility with limited access with an average corridor width of approximately 300 feet expanding to 600 feet in the interchanges. The proposed alignment is illustrated in Plates 1 through 23.

Archaeological Assessment: A pedestrian archaeological survey of the project was conducted during March, 1977. The ground, at the time of the survey, was open and surface visibility was excellent. An estimated 70% of the fields in the project area were plowed at the time of the survey. Approximately 95% of the survey area is cultivated with the remainder in timber or pasture primarily around the south fork of the Iowa River. The majority of the fields were planted in corn during 1976. Two drainage systems intersect the project. One of these, the south fork of the Iowa River in Hardin County, is bordered by woodlands and pasture with plowed fields to the east and west within the corridor. There were several rises in the plowed fields bordering the river where glacial till was exposed. The areas of pasture and timber bordering the river are in areas that are untillable and the slopes suggest a lowered potential for an archaeological site.

The second drainage which intersects the project is Beaver Creek located in Hardin County. One archaeological site (13HA300) was located on the right bank of this stream approximately 500 feet south of the centerline of the proposed freeway (Plate 19). The description of this site is contained in the Survey Results section.

Survey Methodology: The area covered in the survey averaged 300 feet on either side of the proposed centerline. A crew of two, Emilie Lawrence of the Office of State Archaeologist and Dennis Miller, conducted the pedestrian survey. The entire alignment was inspected with increased emphasis placed upon coverage of areas with high potential, i.e., the two drainage systems.

Survey Results: One prehistoric site was designated in the Beaver Creek area (13HA300, T88N, R21W, Sec. 9, NW, NW, SW). The site is located in a plowed corn field on the north slope of a rise south of the creek. Four flakes and three possible core fragments were recovered from an area approximately 60 x 70 meters. This site lies well outside the project area and if no alignment shifts occur will not be affected by the project.

Based upon the results of a pedestrian survey, the archaeological potential for this project on the proposed alignment must be regarded as low. When borrow areas are designated, a field inspection will be necessary during clearing and grubbing.

Structural Assessment: Photographs of all affected structures in the project area were submitted to the Office of Historic Preservation for their assessment. A reply dated May 31, 1974, is appended to this report. They conclude that, ". . . none of the structures represented appears to have a great degree of architectural significance."

Summary and Conclusions: A pedestrian survey of the alignment located one archaeological site approximately 500 feet south of centerline which is outside the project area. No other archaeological features or sites were located within the proposed corridor. The archaeological potential for this project must be regarded as low. When borrows are designated they should be inspected during clearing and grubbing.

FIGURE 9

It also establishes a permit system whereby all owners of signs regulated by the provisions of this legislation, except for signs specifically exempted (such as signs advertising the sale or lease of property on which they are located, or advertising activities conducted on the property on which they are located, official traffic control devices, or public service information signs), are required to make application for a permit and pay a fee to the Department of Transportation for the privilege of display. These permits will facilitate in monitoring the location and erection of outdoor advertising devices. Monies from the fees collected will be deposited in a highway beautification fund. It further stipulates that those advertising devices in locations permissible by law shall not be erected, maintained or illuminated in a manner so as to interfere with official traffic signs or devices or with the motirist's view of approaching, merging or intersecting traffic. Under this legislation, on the Interstate and Arterial highway systems, the Iowa Department of Transportation will erect Logo signs on which they will display for owners of certain types of commercial establishments, approved business signs, upon payment of a fee. These signs would be located within the right-of-way and would be designed to give information of special interest to the motoring public. Such panels would include information concerning the available services of "Gas", "Food", and "Lodging". Monies collected from both the advertising permit system and the Logo signing program will be deposited in the Highway Beautification Fund. This fund is designated for use in the administration, control, acquisition and removal of advertising devices. The net effect of such a program is the improvement of areas adjacent to Iowa's highways to promote safety, convenience and aesthetics for the motoring public.

Recreational and Wildlife Areas Protection

No parks, recreation areas, historic sites or wildlife refuges of federal, state, or local significance will be affected by the right-of-way takings or construction of this highway project. The use of parks for recreational purposes, as described in Section I, will not be adversely affected by Arterial 520 noise or air pollutants. As described in Section III, it is not known what effects noise will have on wildlife in Twin Elms Park.

A 1.9 acre tract of grassland, brambles, and tree dotted stream bank, currently known as the Utech Wildlife Area, lies immediately east and north of South Beaver Creek in the 520 corridor. The Hardin County Conservation Board has leased this property as a wildlife sanctuary from the Utech family for an indeterminate period of time. For the purposes of the 4F determination, the Hardin County Conservation Board has, by letter dated July 14, 1977, indicated that they have no plans for the future development of that area as a wildlife habitat and that they intend to terminate their lease, by mutual consent, before September 1, 1977. See Section VIII, Comments and Objections, page 58 for documentation of their intent to terminate that lease.

SECTION VIII. COMMENTS AND OBJECTIONS

This section is divided into two parts, identified as A and B.

Part A: The Draft Environmental Impact Statement was circulated on July 22, 1974. This statement covered the proposed construction of approximately 16 miles of Arterial Highway 520 beginning 0.5 mile east of Interstate 35 in Hamilton County to 0.5 mile east of U.S. 65 in Hardin County. Part A consists of letters received from the agencies reviewing the Draft Statement and the responses to those letters.

Part B: A Notice of Availability of the Draft Environmental Impact Statement was published in *The Daily Freeman-Journal* and the *Iowa Falls Citizen* on October 9, 1975. No comments were received as a result of the publication of those notices.

Part A - Comments From Agencies Reviewing The Draft Environmental Impact Statement

This statement was circulated in draft form to the following federal, state and local agencies for their comments:

Federal Agencies

*Department of Health, Education, and Welfare
Department of Housing and Urban Development
*Department of Agriculture
*Department of Interior
*Environmental Protection Agency
National Air Pollution Control Administration
U.S. Army Corps of Engineers

State of Iowa

Iowa Development Commission
Department of Soil Conservation
State Conservation Commission
Iowa Natural Resources Council
*Department of Environmental Quality
Office of Planning and Programming
*State Historical Preservation Officer
*Office of the State Archaeologist
Iowa State Historical Society

Local Agencies

Mayor of Williams
Mayor of Alden
Mayor of Buckeye
*Mayor of Iowa Falls
*Hamilton County Conservation Board
Hamilton County Board of Supervisors
*Hardin County Conservation Board
*Hardin County Board of Supervisors
Iowa Northland Regional Council of Governments
*Mid Iowa Development Association Regional Planning Commission

Private Organizations

Iowa Confederation of Environmental Organizations

*Denotes a written reply was received during the 45 day review period.

The letters from reviewing agencies follow. Responses to specific comments are contained on the page opposite the agency letter.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
REGION VII
FEDERAL BUILDING
601 EAST 12TH STREET
KANSAS CITY, MISSOURI 64106

September 16, 1974

OFFICE OF
THE REGIONAL DIRECTOR

Mr. Robert L. Humphrey
Corridor Planning Engineer
Iowa State Highway Commission
Ames, Iowa 50010

RE: Draft Environmental Impact Statement
F 520-4, F 520-5
Hamilton and Hardin Counties

Dear Mr. Humphrey:

The opportunity to review the above referenced Environmental Impact Statement is appreciated and it would appear that the impacts of the proposed action and the reasonable alternatives have been adequately addressed.

This project has no impact on the programs or responsibilities of the Department of Health, Education, and Welfare.

Sincerely

William H. Henderson
Regional Environmental Officer

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
823 Federal Building, Des Moines, Iowa 50309

September 17, 1974

Robert L. Humphrey
Corridor Planning Engineer
Iowa State Highway Commission
Ames, Iowa 50010

Dear Mr. Humphrey:

The draft environmental impact statement for Freeway 520 in Hamilton and Hardin Counties, Iowa that was addressed to Dr. T. C. Byerly, Coordinator of Environmental Quality Activities, U. S. Department of Agriculture on July 25, 1974 was referred to the Soil Conservation Service for review and comment.

The project corridor lies within the Clarion-Nicollet-Webster soil association. Webster soil and some Nicollet soil require tile drainage before they can be used for agricultural production. It will be necessary, therefore, that the project not adversely affect any existing or future drainage systems.

The Soil Conservation Service through the local Soil Conservation Districts will be very happy to assist the Highway Commission in planning any modification of existing drainage systems or needs for future systems.

We appreciate the opportunity to review and comment on this proposed work.

Sincerely,

Wilson T. Moon
State Conservationist

Provisions will be made to maintain any existing outlets of water disposal systems, such as drainage ditches, tile lines, and/or terraces which may be intersected or crossed as a result of the location and construction of the highway.

Tile lines and outlets will be adapted to the highway facilities' drainage system, while any existing terraces intercepted by construction will be blocked or diked at the point of interception.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
1735 BALTIMORE AVENUE
KANSAS CITY, MISSOURI 64108

October 4, 1974

Mr. Leon N. Larson
Division Engineer
Federal Highway Administration
P.O. Box 627
Ames, Iowa 50010

Dear Mr. Larson:

We have reviewed the Draft Environmental Statement for Freeway 520 in Hamilton and Hardin Counties, Iowa. The statement and project are rated LO-2 indicating a lack of objection to the project. However, we believe the final statement should be expanded to discuss the subjects included in this letter. In particular, we are concerned about the numbers of impact statements being written on segments of 520 and the fact that they do not address the 520 system's cumulative impacts. The Federal Highway Administration's proposed regulations as published in the Federal Register November 1, 1973 and promulgated September 30, 1974, indicate the statement should have independent significance, be broad enough to avoid segmentation of projects, insure meaningful consideration of alternatives, and assess the overall impact of a chain of contemplated projects. This contention is also supported by the Council on Environmental Quality Guidelines of August 1, 1973. It would be desirable for each draft and final environmental impact statement presently being prepared on Freeway 520 segments to include a section discussing the cumulative effects of the entire Freeway.

See "Overview of Arterial Highway 520 Between Interstate 35 in Hamilton County and Interstate 380 in Black Hawk County", inserted inside the front cover of this Final Environmental Impact Statement (FHWA-IOWA-EIS-74-07-F), for a discussion of the cumulative impacts of three segments of the Arterial 520 system in Iowa.

Noise

The statement should include noise contour maps with L_{10}dBA contours and right of way boundaries. All noise sensitive areas along the route, including the two farmhouses at the project's two termini, should be identified and a comparison made between the present noise levels and those predicted for the year 2001.

Noise contour maps have been added. See Appendix A, Aerial Plates. A comprehensive sensitive site noise analysis has been included in Section III, Noise Impacts. Right-of-way width in the corridor will average approximately 300 feet.

Water Quality

The statement should address environmental degradation due to deicing salts and other contaminants carried in highway runoff in the vicinity of the proposed project. Points to be addressed should include the predicted maximum salt concentrations in streams during spring runoff, expected impacts on aquatic flora and fauna, predicted soil salt concentrations, expected impacts on natural vegetation and agricultural crops and measures to control adverse effects. A discussion of toxic additives present in deicing salts and their possible effects on roadside wildlife, aquatic life, and plants should be included.

See Section III, under Water Quality and Section VII, under Salting and Efforts to Mitigate Effects on the Environment.

Construction Impacts

The discussion of erosion control measures should include an outline of measures to monitor erosion from the project pursuant to Iowa's new conservancy l[illegible]. The statement should indicate that rule 4.3(2)c (limitation on fugitive dust emissions) of the Iowa Environmental Quality Department Regulations will be adhered to during construction activities.

Alternatives

We believe the presentation of alternatives in the draft statement does not adequately cover all practical alternatives. The alternative section should be expanded to discuss the following alternatives:

1. Aligning the future highway along section lines.
2. The utilization of existing county road right of ways through Hamilton and Hardin Counties.
3. The upgrading of the present State Highway 175 or U.S. Highway 20 systems to meet the projected travel demands of the area.

The environmental impacts of each alternative should be compared with the impacts of the proposed alignment.

In Section VII, see Erosion Control Measures and Control of Fugitive Dust.

In the early phases of planning, numerous alternatives, in addition to those presented in the Draft Environmental Impact Statements, were considered as possible alternates for the Arterial 520 alignment in Hamilton, Hardin, Grundy and Black Hawk Counties. These included four-lane construction along existing two-lane highways, four-lane new construction on relocation, and a combination of four-lane reconstruction and relocation. The "Do-Nothing" Alternate was also considered throughout the entire planning process.

Including the "Do-Nothing" Alternate, 12 alternatives were initially studied through the four county study area. As studies developed, however, it became apparent that some of these were more prudent choices than others; thus, some alternatives were eliminated prior to the publication of the Draft Statements.

One suggested alternate for Arterial 520 was to construct the project along either the existing U.S. 20 or Iowa 175 alignment. This alternate would have provided for the two existing lanes to be used for one direction of travel while the two new lanes would have served traffic in the opposite direction. The assumption has been made that this type of improvement would require less right-of-way, would be less disruptive to the property owners involved, and would be less expensive.

However, this is usually not the case. This type of proposal often is more disruptive and is as expensive to build as a four-lane roadway on new alignment. The existing pavement is usually nearing the end of its useful life, and in order for it to be structurally sound, it is often necessary to do large amounts of full-depth patching, widening, and resurfacing. Often it is necessary to reconstruct substantial portions of the old highway to correct grades and curves, which do not meet the standards for a freeway-type facility.

Roadside developments along highways cause the most problems in constructing along the existing alignment. It is usually necessary to purchase many of the farmsteads on one side of the highway to obtain sufficient right-of-way to construct the other two new lanes. This may cause right-of-way and relocation assistance costs to be higher than they would be for a four-lane roadway on new alignment. In addition, remaining properties on either side of the facility have no direct access except at interchange locations. Consequently, it is often necessary to construct miles of frontage roads to give property owners access to the public road system. This causes a further increase in right-of-way and construction costs and results in additional property damage.

Since existing U.S. 20 and Iowa 175 are older highways, they have deteriorating pavement conditions and, in many places, substandard curves and grades. In addition numerous homes and farmsteads have been built on either side of these highways. Consequently, building the facility along the existing alignment would result in numerous dislocations and access problems and excessive costs.

Aligning Arterial Highway 520 along section lines and existing county roads in Iowa would present problems similar to aligning it along existing primary highway routes. Numerous farmsteads are located adjacent to those county roads, making it necessary to purchase many of them, in order to construct the new highway. In addition, remaining properties on either side of the new facility, would again have no direct access. Therefore it would be necessary to construct miles and miles of frontage roads to provide farmers access to their farmsteads and fields. The costs of these dislocations and frontage roads would be excessive.

The proposed route will cross the South Fork of the Iowa River and necessitate a channel relocation for the Iowa River and a small tributary stream. The analysis of alternative stream crossing sites may reduce or eliminate both the need and resulting impacts of stream channelization and relocation. Therefore, we request that analysis of alternatives to the proposed river crossing be included in the final statement. This should include the environmental effects of the alternatives compared to the proposed river crossing.

Cumulative Effects of Freeway 520 System

We believe the environmental impacts of the entire proposed Freeway 520 System should be addressed in the final statement. This should include the interrelationships of the segments to each other and the cumulative environmental impact of the 520 system and the proposed Iowa system of freeways and expressways. In a systems context, cumulative environmental impacts would include but are not limited to:

- Amount of 4(f) land committed to the 520 system.
- Amount of stream channelization and relocation required for stream crossings.
- Total acreage of land required for the 520 system.
- Loss of agricultural and associated income to the surrounding communities and the state.
- Loss of agricultural commodities to the nation.
- Increases in air pollutants.
- Increases in road originated contaminants.
- Increased safety of travel on U.S. 20, Iowa 175 and proposed 520.
- Secondary impacts resulting from commercial and industrial development along the proposed system.
- Secondary impacts resulting from the effort to maintain present agricultural productivity while losing agricultural land to the proposed system.
- Secondary impacts to the communities bypassed by the proposed system.

We appreciate the opportunity to review and comment on this draft environmental statement. Please furnish us with a copy of the final statement when it is officially filed with the Council on Environmental Quality.

Very truly yours,

Edward C. Vest

Edward C. Vest
Environmental Impact Statement
Coordinator

Aligning Arterial 520 along the half-section line reduces the number of dislocations necessary and nearly eliminates the need for frontage roads.

For a discussion of alternates initially studied through the four county study area, see the "Overview", which has been inserted inside the front cover of this Final Environmental Impact Statement (FHWA-IOWA-EIS-74-07-F).

The proposed facility will cross the South Fork of the Iowa River on a strip of land 330 feet wide, which separates two parcels of Twin Elms Park. The alignment of the highway has been shifted south approximately 125 feet since the publication of the Draft Environmental Impact Statement to utilize this strip of land. Alternative stream crossing sites, both upstream and downstream from the proposed location would increase out of distance travel for motorists and require extensive amounts of additional agricultural land, in the process creating additional diagonal severence and, possibly, several isolated remainder land tracts. In addition, there appears to be no alternative site within that mile section where a river crossing could be made without a channel change, due to the extensive meander of the stream. The location of the Chicago, Rock Island and Pacific Railroad line also hinders a possible line shift. See Section II, under Stream Crossings, for additional comments.

See "Overview of Arterial Highway 520 Between Interstate 35 in Hamilton County and Interstate 380 in Black Hawk County", inserted inside the front cover of this Final Environmental Impact Statement (FHWA-IOWA-EIS-74-07-F), for a discussion of the cumulative impacts of three segments of the Arterial 520 system in Iowa.

60

United States Department of the Interior
OFFICE OF THE SECRETARY
MISSOURI BASIN REGION
DENVER, COLORADO 80225

ER-74/995

SEP 18 1974

Mr. Robert L. Humphrey
Corridor Planning Engineer
Iowa State Highway Commission
Ames, Iowa 50010

Dear Mr. Humphrey:

This is in response to your request for the Department of the Interior's comments on the draft environmental statement for Freeway 520, Hamilton and Hardin Counties, Iowa. We have reviewed the draft and offer these comments for your consideration.

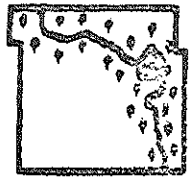
General Comments

There appears to be some question as to the exact location of the Twin Elms Park. The Hardin County Conservation Board believes Figure 6 is in error and that Twin Elms Park will be affected by the proposed project. A delineation of the exact location should be made in order to ascertain what the impacts on the park will be.

The location of Twin Elms Park has been corrected. See Section I, Recreation and Wildlife Areas, and revised Figure 6. In addition, Aerial Photographic Plate 15, in Appendix A, also delineates the park boundaries, and shows the relationship of the proposed Arterial Highway 520 alignment.

The discussion of the Utech Wildlife Area and its dismissal as non-4(f) land should be expanded. It would be helpful to know the exact terms of the oral lease, what control the Hardin County Conservation Board has over the land, and how long they have leased it. This information is needed to document that the land is indeed not subject to the provisions of Section 4(f).

The Hardin County Conservation Board has leased the Utech property for an indeterminate period of time for the said purpose of providing wildlife habitat, with no hunting permitted. For purposes of the 4F determination, the Hardin County Conservation Board has, by letter dated July 14, 1977, (a copy of which follows), indicated that they have no plans for the future development of that area as a wildlife habitat and that they intend to terminate their lease, by mutual consent of the landowner, before September 1, 1977.



Hardin County Conservation Board

(Iowa River Green Belt)

July 14, 1977

Mr. Robert L. Humphrey
Project Planning Engineer
Highway Division
Iowa Department of Transportation
Ames, Iowa 50010

Dear Mr. Humphrey:

On April 18, 1977, I wrote you advising that the Conservation Board had voted to allow Arterial 520 to be constructed across the Utech Wildlife Area.

To further clarify our position, the Board has no plans for development of this area as a wildlife habitat and intends to terminate the lease by mutual consent before September 1, 1977.

Very truly yours,

Irwin Burns

Irwin Burns, Executive Director
Hardin County Conservation Board

62

The final statement should contain a letter from the Hardin County Conservation Board clearly establishing (1) the status of the Uteck Wildlife Area, and (2) the location of the Twin Elms Park. This letter should also discuss the impact of the proposed facility on both of these areas.

See letter from Iowa Department of Transportation dated 10/4/76 and letter from Hardin County Conservation Board dated 11/12/76.

IOWA DEPARTMENT OF TRANSPORTATION

October 4, 1976

F-520-4 Hamilton
F-520-5 Hardin
Arterial Hwy 520

Mr. Irwin C. Burns, Executive Director
Hardin County Conservation Board
RR 2
Ackley, IA 50601

Dear Mr. Burns:

Your letter of September 23, 1976, concerning the boundaries of Twin Elms Park has been received.

Our belief that the park was in two separate sections was based on a search of courthouse records conducted approximately two years ago. In order that both the Iowa Department of Transportation and the Hardin County Conservation Board may have a clear understanding of the actual boundaries of the Twin Elms Park in all future communications concerning both highway and park development in this area, we have re-examined all documents and records available to us to determine such boundaries. This re-examination included a recent search of courthouse records to determine if any land transfers concerning the Hardin County Conservation Board had taken place since our original search some two years ago.

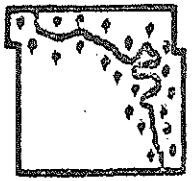
As a result of this research, it is our belief that the boundaries of Twin Elms Park are as described in our September 2, 1975, letter and its attached aerial photo; i.e., two discontinuous sections separated by approximately 330 feet of privately owned land. If you have legal documents (deeds, leases, etc.) which indicate otherwise, would you please provide copies of these documents to us so we may examine them.

Once again it is our proposal to shift the center line of arterial highway 520 so that it will pass between Twin Elms Park and the leased land without the necessity for acquiring right-of-way from either. Would you please offer your comments on such an alignment shift?

Very truly yours,

Robert L. Humphrey
Project Planning Engineer

RLH:GF:rkm



Hardin County Conservation Board

(Iowa River Green Belt)

Ackley, Iowa
Nov. 12,1976

Mr. Robert Humphrey
Project Planning Engineer
Dept. Transportation
Ames, Iowa 50010

Dear Mr. Humphrey:

Very sorry I did not respond to your letter of October 4, 1976 requesting legal documentation concerning the bound aries of Twin Elm Park.

Your findings are correct there is a 330 ft. strip between the park and the wildlife area that we lease.

Yours very truly

Irvin C. Burns
Hardin County Conservation Board
RR #2
Ackley, Iowa 50601

Specific Comments

1. Project Description and Purpose

The route proposed in this project does not follow the existing highways. Hence, the tile drainage systems in the agricultural lands traversed will be disrupted. The statement should be expanded to describe (1) the tile drainage systems affected, (2) the impacts of the disruption, and (3) mitigating measures to minimize this disruption.

See response to USDA, Soil Conservation Service, page 56.

2. Probable Environmental Impacts

The statement determines that the project "may divide certain farms" and "may cause certain property to be cut off from all access." These statements should be more specific as to how much land will be cut off and how many farms will be divided. Without this information, the magnitude of the impact of loss of access is difficult to determine.

See Section II, under Loss of Access.

The statement indicates that the intersections of the proposed highway with the South Fork of the Iowa River and South Beaver Creek will require channel changes in these streams. Because of the adverse impacts channelizations will have on the associated fishery resources and habitat (paragraph 2, page 21), we believe that possible alternatives to channelization should be included and thoroughly discussed in the final statement.

See Section II, under Stream Crossings, and Section III, under Water Quality.

In addition, see response to the Environmental Protection Agency letter, page 59, for a discussion of alternative stream crossing sites, which would eliminate the need for a channel change.

The statement describes most of the primary adverse impacts of the project on fish and wildlife resources, but fails to discuss the secondary impacts of the project on these resources. Secondary impacts should include such things as the effects of the project-induced commercial and industrial development on the renewable natural resources.

See Section II, under Secondary Impacts on Commercial and Industrial Development.

3. Probable Adverse Impacts Which Cannot be Avoided

No mention is made of the impact of increased noise on the wildlife and recreation sites in the project area. Information should be presented as to the amount of increase which can be expected due to the proposed project and the effects this increase will have on the recreation experience and wildlife.

See Section III, under Noise Impacts.

In discussing the use of deicing chemicals, chloride concentrations in several major rivers in the eastern United States, and sodium concentrations in New England rivers are cited. It seems highly unlikely that the conditions for this project are analogous to those in the studies cited. Local water quality data and information should be obtained from the Iowa Department of Environmental Quality.

See Section II, under Water Pollution, and Section III, under Water Quality.

4. Alternatives

The only alternative described other than the proposed action is the "Do-Nothing" alternative. Surely there are other feasible alternatives, such as locating the freeway one-half mile north or south of the proposed location to coincide more with existing routes. This would lessen the adverse impact on agricultural land and terrestrial wildlife habitat. Such alternatives should be considered and discussed in the final statement.

See response to the Environmental Protection Agency letter, pages 58-59, in Section VIII, for a discussion of alternatives studied.

5. Steps to Minimize Harm

Mention was made in this section of the utilization of old borrow pits for wildlife habitat. It is unclear whether this mitigating measure is being contemplated for the project. The final statement should contain some positive explanation of what borrow pits will be located in the project area and whether they will be converted into wildlife habitat. Also, we suggest the conversion of any property purchased due to the isolation or loss of access to wildlife habitat or recreation use as mitigation for the loss of the Utech Wildlife Area and other wildlife habitat. The final statement should contain what actions <u>will</u> be taken to protect and expand the wildlife habitat.

We note that the State Historic Preservation Officer and the State Archeologist have been furnished copies of this statement for review and that responses received from them will be included in the final statement. If professional surveys to locate and assess presently unrecorded cultural resources are recommended, the final statement should describe arrangements that have been made to provide for such surveys. The final statement should also describe measures to be taken if previously unknown cultural resources are encountered during construction.

Sincerely,

Special Assistant
to the Secretary

cc: Hardin County Conservation Board, Eldora, Iowa
Federal Highway Administration, Region 7, Kansas City, Missouri
Federal Highway Administration, Division Engineer, Ames, Iowa

Construction of borrow pits from borrow areas for the express purpose of wildlife habitat is possible if, during construction operations, the land owner is interested in this kind of development. At the present time, borrow areas for this project have not been identified, and no plans are underway for the development of borrow pits.

See Section VII, under Landscaping and Planting for Aesthetics and Utility; Mowing Practices; Spraying Practices; and Management of Right-of-Way for Wildlife Habitat.

See Section VII, under Preservation of Archaeological Values and Historic Sites.

iowa department of environmental quality
kenneth m. kurch, p.e. executive director

August 7, 1974

A. Thomas Wallace, Jr.
Federal Funds Coordinator
Office for Planning and Programming
State Capitol
LOCAL

Re: FNPS Letter of Intent
Project: FNPS No. 740430
Hamilton-Hardin Counties-
F-520-4, F-520-5
Environmental Impact Statement

Dear Mr. Wallace:

Thus far we have been offered opportunities to comment on various aspects of Freeway 520 which will traverse Iowa from Sioux City to Dubuque. Such an analysis is useful, however, an analysis of the entire 520 program may be even more beneficial.

You are probably aware that microanalysis such as you are soliciting for F-520-4 and F-FG-520-5 can, in the aggregate, lead to approval of a program which when viewed on the macro scale is environmentally unsound. The opportunity to review this project has again brought this pervasive problem to our attention. In any case, we appreciate the efforts of the Interstate Highway Commission staff to obtain the projected, short-term traffic volumes needed to evaluate the significance of the above mentioned highway segment.

Sincerely,

Charles C. Miller
Chief, Planning Section

DT:CCM:mh

3920 Delaware Ave., P.O. Box 3326, Des Moines, Iowa 50316 • 515/265-8134

Department of Environmental Quality Guidelines were applied (page 35), and predicted critical year traffic volumes were determined to be safely below the established cutoff volumes used to determine the need for a more detailed analysis. As indicated in the "Overview" for a 65 mile segment of Arterial 520, the facility will traverse primarily open agricultural land, bypassing urban population centers. This concept will be continued as other 520 segments are developed across the state. The diversion of traffic from existing highways to the 520 facility would be expected to remove traffic from sensitive populated areas and reduce overall emissions by affording more efficient operating conditions. Based on this location and operational information, Arterial 520 would be anticipated to have positive air quality impacts at both the micro and meso scales of analysis.

FRED A. PRIEWERT, Director
300 Fourth Street, Des Moines, Iowa 50319
515/281-5145

May 31, 1974

Mr. Robert L. Humphrey
Corridor Planning Engineer
The Iowa State Highway Commission
Ames, Iowa 50010

Re: EIS, F-520-4, F-520-5, Hamilton-Hardin Counties, I-35 to U. S. 65

Dear Mr. Humphrey:

Regarding the above named project, we have reviewed the photographs which you sent us of all structures over 50 years old and find that none of the strucutres represented appears to have a great degree of architectural significance.

Sincerely,

Adrian D. Anderson
State Historic Preservation Officer
State Historic Preservation Program
B-13 MacLean Hall
Iowa City, Iowa 52242

ADA:pas

STATE HISTORICAL DEPARTMENT OF IOWA
DIVISION OF HISTORIC PRESERVATION

ADRIAN D. ANDERSON, DIRECTOR
HISTORIC PRESERVATION OFFICER

April 6, 1977

Mr. Robert Humphrey
Department of Transportation
Highway Division
826 Lincoln Way
Ames, Iowa 50010

Re: Freeway 520 Hamilton-Hardin Counties.

Dear Mr. Humphrey:

A survey report of the above referenced project has been received: Freeway 520 Hamilton-Hardin Counties, by John Hotopp, March, 1977.

If no shifts in the presently planned alignment are made there should be no impact on known cultural resources. In addition, borrow areas should be reconnoitered during initial clearing. Reconnaissance of the borrow areas prior to acquisition would be appropriate in order to avoid potential impacts on unknown sites which may then need to be salvaged after acquisition.

Sincerely,

R. Stanley Riggle
Chief, Archaeological Survey

RSR/af
cc: Thomas Wallace, OPP

B.13 MAC LEAN HALL • IOWA CITY, IOWA 52242
TELEPHONE 319.353.6949/319.353.4186

City of Iowa Falls

[illegible]
P. O. BOX 100
IOWA FALLS, IOWA 50126
TELEPHONE [illegible]

July 31, 1974

Mr. Robert L. Humphrey
Corridor Planning Engineer
Iowa State Highway Commission
Ames, IA 50010

Dear Mr. Humphrey:

RE: F-520-4, F-520-5
Hamilton, Hardin Counties

I have reviewed the Draft Environmental Impact Statement/ Planning Report and I have no comments on this project.

Sincerely,

CITY OF IOWA FALLS

Arnold Anderson

Arnold Anderson
Mayor

eag

70

HAMILTON COUNTY CONSERVATION BOARD

R. R. 1 WEBSTER CITY, IOWA 50595

September 18, 1974

Mr. Robert L. Humphrey
Corridor Planning Engineer
Iowa State Highway Commission
Ames, IA 50010

Dear Mr. Humphrey,

This letter is in reply to the draft Environmental Impact Statement F 520-4, F 520-5 Hamilton-Hardin Counties.

I have given the above mentioned draft E.I.S. a cursory review. The only comment I have regarding the literary content of this draft reflects the statement on page 43 under the section entitled "Management of Right-of-Way for Wildlife Habitat".

The statement "Because of the installation of permanent erosion measures, a state-wide policy of limited and selective spraying and restricted mowing, and continuous maintenance, highway rights-of-way in Iowa constitute a source of stable, managed wildlife habitat of high quality".

This statement would be correct if it were followed. However, this past year I witnessed highway commission personnel mowing the total highway right-of-way on both sides of the roadway on T.H. 175 between Stanhope and Jewell, Iowa, in mid-June. The broad leafed or weed count along the roadway did not warrant the extensive cutting measure.

This maintenance practice is contrary to production of pheasant nesting and various wildlife activities and, therefore, does not reflect the true inference of the highway commissions respective state-wide policy.

Sincerely,

Brian Philip Holt

Brian Philip Holt
Executive Director

BPH:mah

It is the policy of the Iowa Department of Transportation that before July 1, only highway shoulders, one swath down foreslopes, and weed patches are mowed. After July 1, medians are mowed and backslopes and ditch bottoms are left in their natural state.

See Section VII, under Mowing Practices; Spraying Practices; and, Management of Right-of-Way for Wildlife Habitat.

Hardin County Conservation Board

(Iowa River Green Belt)

Eldora, Iowa
September 16, 1974

Mr. Robert L. Humphrey
Corridor Planning Engineer
Iowa State Highway Commission
Ames, Iowa 50010

Dear Mr. Humphrey:

The Hardin County Conservation Board submits the enclosed comments and additions to the Draft Environmental Impact Statement and Planning report on F-520-4 , F-520-5, Hamilton and Hardin Counties.

Sincerely,

Harold H. Luiken, Chairman
Hardin County Conservation Board

Encl.

Comments and additional information regarding the Environmental Statement for Freeway 520 in Hamilton and Hardin Counties from 0.5 mile east of I-35 to 0.5 mile east of U.S.65,from the Hardin County Conservation Board.

The material in this statement deals only with the environmental effect of the construction of this road.

Throughout the entire length of this proposed highway segement, a large amount of the remaining wildlife habitat will be destroyed because the corridor will be constructed on or near the centerline of each section of land which is the boundry line of many farms and as such is a maintained fence row and is one of the few areas where grasses and shrubs, which provide wildlife habitat, are allowed to remain.

The greatest adverse environmental impact will be created in Hardin County, Buckeye Township, T-88N, R-22W, Sections 10-11-12. This area includes the heaviest wildlife travel routes of the entire western portion of Hardin County. This area also has the most complete natural wildlife habitat of this portion of the county supporting a high population of all classes of wildlife from the smallest shrew to the white-tailed deer. Although the published draft recognizes the close proximity of the proposed freeway to Flowing Well Park, it fails to fully note the noise impact on this portion of the county outdoor recreation system nor the fact that this park contains 13 acres, six acres owned by the county and seven leased, through 1979, from Clarence and Clara Dougherty, the lease instrument also contains the provision that Hardin County, by the Hardin County Conservation Board, shall have the first right of purchase in the event of its sale.

Also in error, in the published draft, is the placement of Twin Elms Park which is the property of Hardin County, by the Hardin County Conservation Board. Figure 6,page 17, of the draft, places the site of this park as being situated in Hardin County, Buckey Township, T-88-R-22W, Section 2, when in reality this park is located in Hardin County, Buckeye Township, T-88N, R-22W, Section 12. As this area lies within the corridor of proposed Freeway 520, the construction of this road will destroy the majority of the wildlife habitat of the area, negatively alter two water courses and close the county road to this area.

The Hardin County Conservation Board, sportsman organizations, youth groups and individuals have attempted to stem the rapid and steady decline of wildife habitat in Hardin County through yearly planting programs but cannot compete with such distruction as will occur with the construction of Freeway 520 which will forever destroy this entire area for wildlife habitat development.

While it is true that habitat within the fence row will be destroyed in some areas, the additional vegetative cover to be located within the new highway right-of-way should provide ample replacement habitat. See Section VII, under Management of Right-of-Way for Wildlife Habitat, for additional comments.

The impact on wildlife habitat and travel routes is acknowledged as a significant adverse environmental impact and, as such, is addressed in the Final Environmental Statement. See Section II, under Wildlife Habitat, and Section III, under Wildlife Disruption.

The noise impact on Flowing Well Park is discussed in the Final Environmental Impact Statement. See Section III, under Noise Impacts.

The number of acres in Flowing Well Park has been corrected. See Section I, under Recreation and Wildlife Areas.

The location of Twin Elms Park has been corrected. See Aerial Photographic Plate 15 in Appendix A and revised Figure 6. Twin Elms Park is comprised of two separate parcels of land, which are separated by a 330-foot strip of privately owned land, on which the highway will be built. The highway alignment has been shifted south approximately 125 feet since the publication of the Draft Environmental Impact Statement, to utilize this strip of land.

The impact on wildlife habitat has been discussed.

The effect of the channel change resulting from the crossing of the South Fork of the Iowa River is discussed in Section II, under Stream Crossings, and in Section III, under Water Quality. The South Fork of the Iowa River will be the only water course altered.

While it is acknowledged that limiting access to the two parcels of Twin Elms Park, by closing the county road, may be an inconvenience to some, it should be recognized that the Iowa Department of Transportation must coordinate all road closures, grade separations and interchange locations with the respective County Boards of Supervisors, and that they, in turn, must sign a resolution agreeing to all proposed county road alterations.

BOARD OF SUPERVISORS, HARDIN COUNTY

WHITEHEAD
/ PROVIDENCE
LEPHONE 497-5223

CARL F. LETTOW
IOWA FALLS
TELEPHONE 648-9050

Eldora, Iowa 50627
Office Telephone: 515-858-3461
Extension 36

LEO L. KNIGHT
15 FISCHER
IOWA FALLS
TELEPHONE 648-4159

ENGINEERING DEPT.
ELDORA
TELEPHONE 858-2522

August 9, 1974

RECEIVED
AUG 12 1974
OFFICE FOR PLANNING
AND PROGRAMMING

Iowa State Highway Commission and
Iowa Office for Planning & Programming
State Capitol Building
Des Moines, Iowa

Dear Sirs:

Re: F-520, F-520 -5
Hamilton, Hardin Counties

After reviewing the Iowa State Highway Commission's draft on the environmental statement for Freeway 520 in Hardin County from I-35 to one-half mile East of Highway 65, we find nothing amiss in our judgement.

We would like, if possible, to meet with you on placement of the overpasses and we would like to know how soon this road will be built so we do not spend an excessive amount on roads that might be closed.

Very truly yours,

Carl F Lettow
Chairman, Board of Supervisors

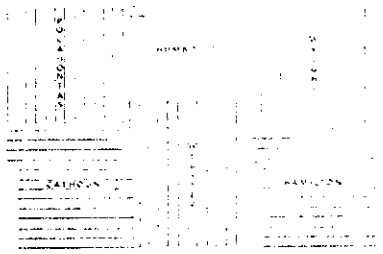
Member, Board of Supervisors

Leo L Knight
Member, Board of Supervisors

CFL/bp

During project development, field reviews of the proposed highway alignment will be conducted. At that time, a meeting will be arranged to discuss the location of proposed grade separations.

The Hamilton-Hardin County portion of the Arterial 520 system is currently listed in the Iowa Transportation Improvement Program 1977-1982. Money for right-of-way acquisition has been programmed for the year 1982 with grading and construction to follow.



MIDAS
MID IOWA DEVELOPMENT ASSOCIATION
REGIONAL PLANNING COMMISSION
12 SOUTH TENTH STREET
FORT DODGE, IOWA 50501
515-576-7183

September 27, 1974

Mr. Robert L. Humphrey
Corridor Planning Engineer
Iowa State Highway Commission
Ames, IA 50010

RE: Review of the Draft Environmental Statement for F-500-4, F-502-5 Hamilton-Hardin counties

Dear Mr. Humphrey:

We have reviewed the above document for its environmental impact on our area. Our review is for that part of the proposed freeway construction covering Hamilton County only. Since Hardin is not within the MIDAS Council of Governments six county region.

After reviewing the draft environmental document, we can find no serious environmental impacts that should alter your proposed road construction, concerning your alternative #1.

Thank you for submitting the draft enviornmental impact statement to MIDAS, for our review and comment.

Sincerely,

Jonathan M. Rutstein
Executive Director

cc: Dwain Blake
Hamilton County Board of Supervisors

Part B. Notice of Availability

A Notice of Availability of the Draft Environmental Impact Statement was published in *The Daily Freeman-Journal* and the *Iowa Falls Citizen* on October 9, 1975. No comments were received as a result of the publication of those notices.

IOWA DEPARTMENT OF TRANSPORTATION

September 29, 1975

F-520-4 & F-520-5
Hamilton-Hardin Cos.
Freeway 520

Editor
Iowa Falls Citizen
Box 1018
Iowa Falls, Iowa 50126

Dear Sir:

Enclosed is a NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL IMPACT STATEMENT which I wish to have published in one issue of your newspaper on October 9, 1975.

When publication is complete, please send your bill together with proof of publication in triplicate, to the Iowa Department of Transportation, Highway Division, Ames, Iowa, 50010, Attention: Robert L. Humphrey.

Very truly yours,

Robert L. Humphrey
Project Planning Engineer

RLH:HSB:db
Enclosure
cc: Bob Henely
District Engineer
Iowa Department of Transportation

IOWA DEPARTMENT OF TRANSPORTATION

September 29, 1975

F-520-4 & F-520-5
Hamilton-Hardin Cos.
Freeway 520

Editor
The Daily Freeman-Journal
Box 116
Webster City, Iowa 50595

Dear Sir:

Enclosed is a NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL IMPACT STATEMENT which I wish to have published in one issue of your newspaper on October 9, 1975.

When publication is complete, please send your bill together with proof of publication in triplicate, to the Iowa Department of Transportation, Highway Division, Ames, Iowa, 50010, Attention: Robert L. Humphrey.

Very truly yours,

Robert L. Humphrey
Project Planning Engineer

RLH:HSB:db
Enclosure
cc: Bob Henely
District Engineer
Iowa Department of Transportation

NOTICE OF AVAILABILITY OF THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR FREEWAY 520 IN HAMILTON AND HARDIN COUNTIES, IOWA

TO WHOM IT MAY CONCERN:

Notice is hereby given to all interested persons that the Draft Environmental Impact Statement for Freeway 520 in Hamilton and Hardin Counties, Iowa, is now available for review at the Department of Transportation, Highway Division Offices, Ames, Iowa. Requests for copies of the Draft Environmental Impact Statement may be directed to the Project Planning Engineer, Highway Division, Department of Transportation, Ames, Iowa, 50010.

Comments from the public are invited and will be included in the Final Environmental Impact Statement, particularly in reference to the social, economic and environmental effects of the proposed Freeway 520 corridor location as follows:

Hamilton and Hardin Counties Project Numbers F-520-4 and F-520-5

The proposed Freeway 520 corridor begins approximately 0.5 mile east of the Interstate 35 - Freeway 520 Interchange in Hamilton County and extends easterly through Hamilton and Hardin Counties to approximately 0.5 mile east of U.S. 65. The length of the proposed corridor is approximately 15.9 miles.

Maps, drawings, and other pertinent information developed by the Highway Division in the planning for this project as well as any written correspondence received from the State's resources, recreation, and planning agencies, and any Federal or local agencies or public officials, and any public advisory groups that have expressed interest in or are affected by the proposed highway development, are available for public inspection and copying at the Highway Division Offices in Ames, Iowa, 50010.

Information on relocation assistance programs are also available.

Statements or exhibits will be accepted by delivering said statements or exhibits with respect to the proposed project to the Project Planning Engineer, Highway Division, Department of Transportation, Ames, Iowa, 50010. The final date for receipt of these statements or exhibits is November 26, 1975.

Howard E. Gunnerson
Director-Chief Engineer
Iowa Department of Transportation
Highway Division

APPENDIX A

AERIAL PHOTOGRAPHIC PLATES

LEGEND:

Proposed Construction - Arterial Highway 520

County Road Reconstruction

County Road Relocations

County Line

Section Lines

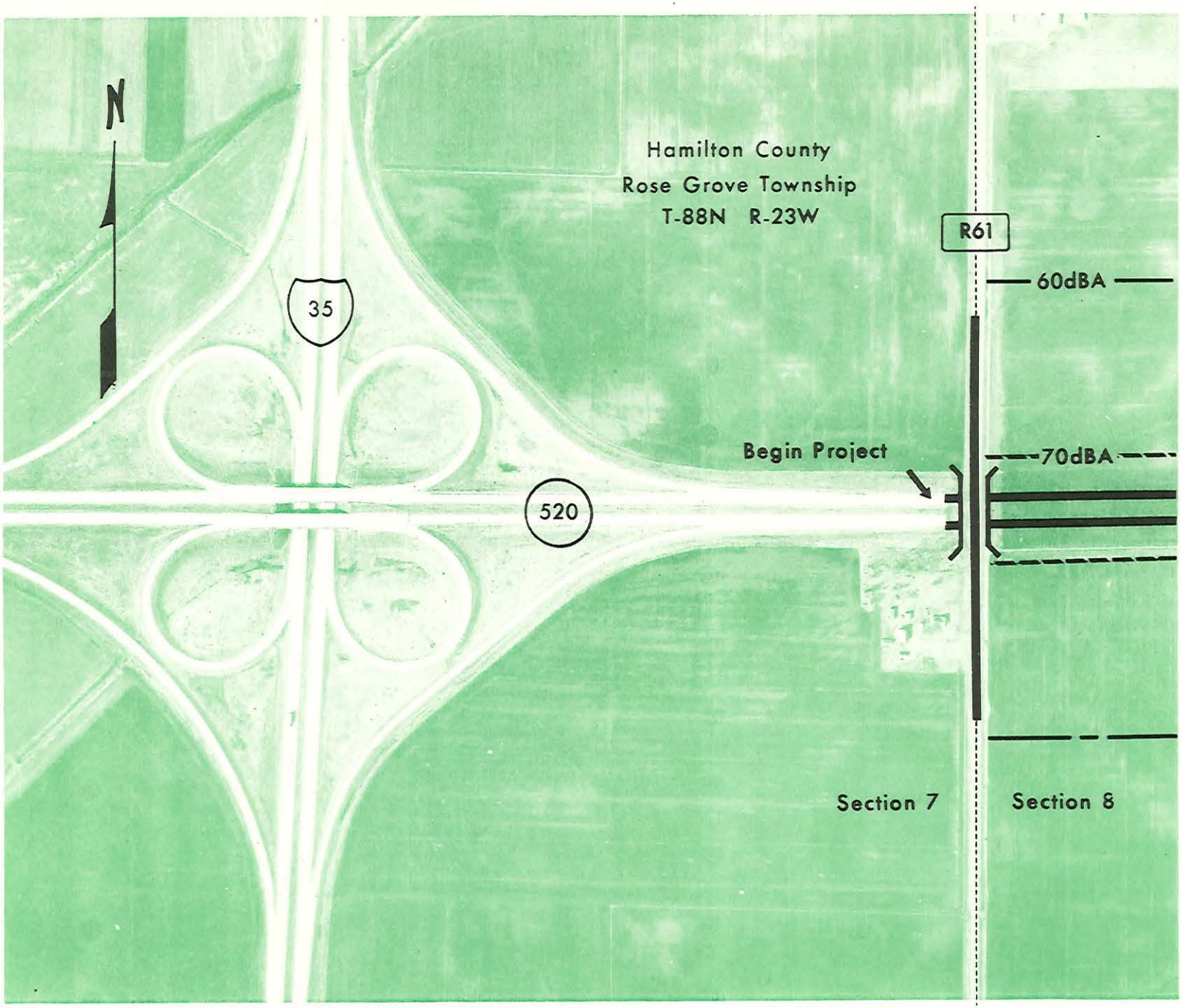
Proposed Grade Separations And Bridges

Proposed Road Closures

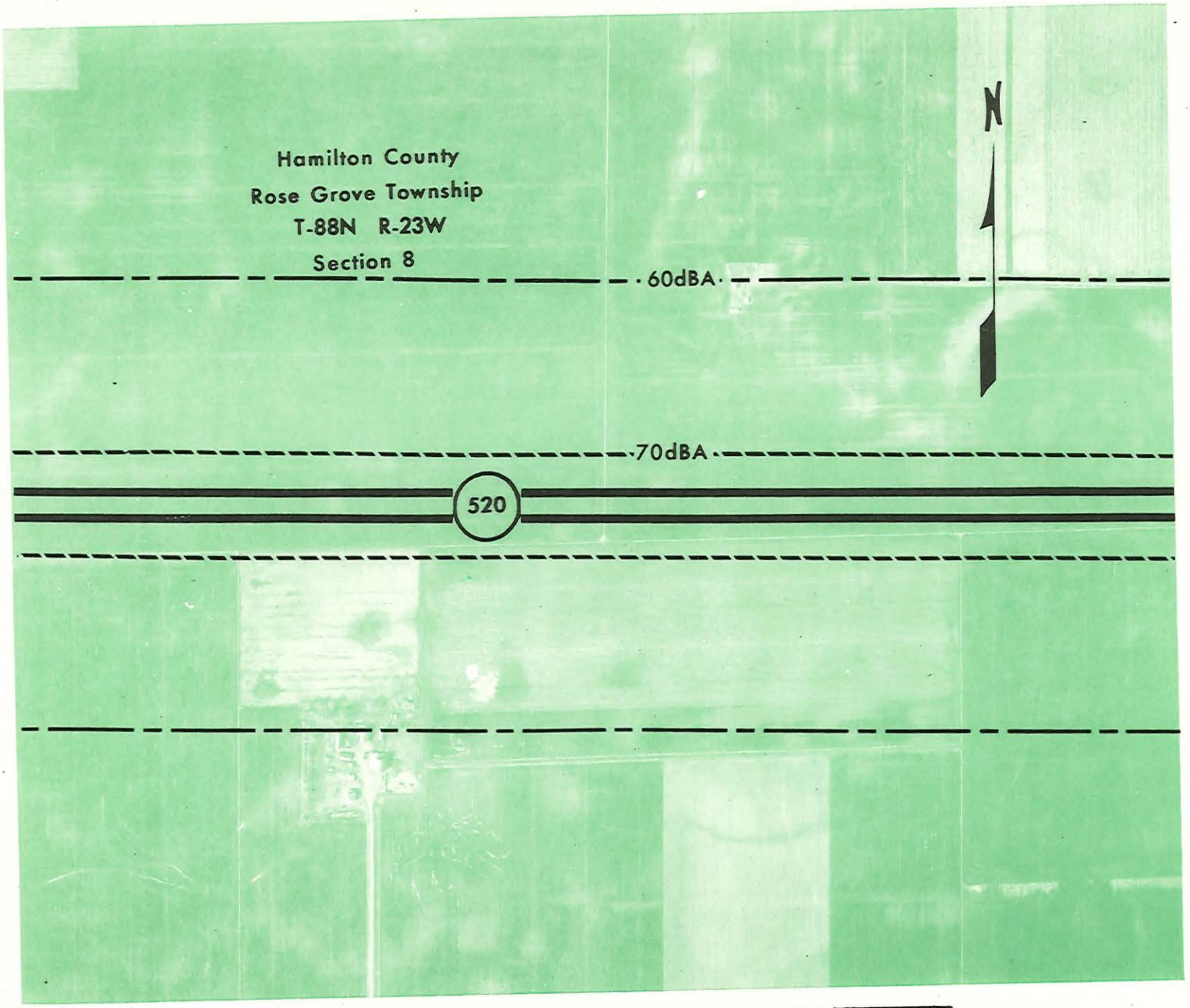
Generalized 70 dBA Contour Lines

Generalized 60 dBA Contour Lines

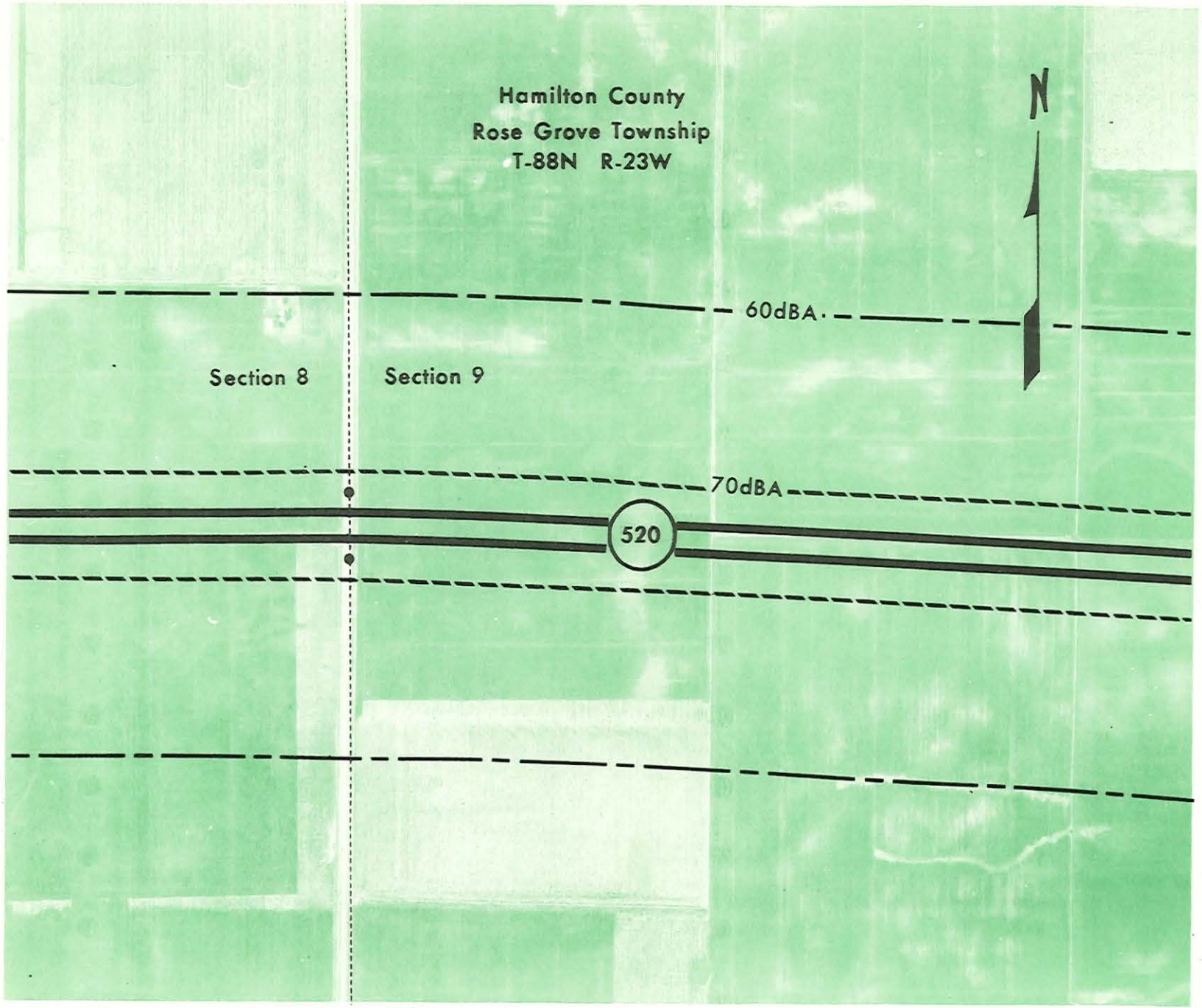
Note: The symbols shown on the following aerial photographs represent approximate locations and are not to scale.



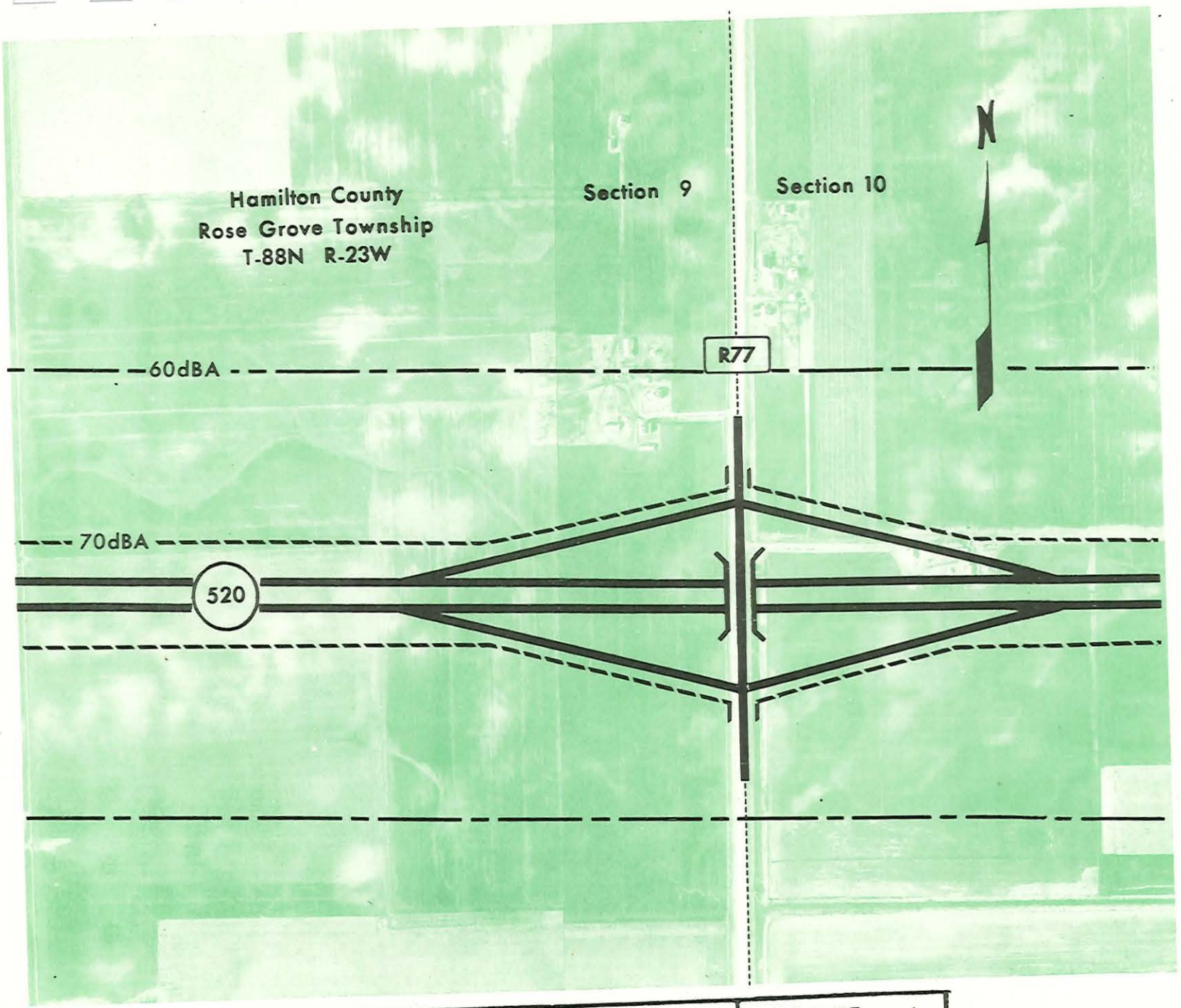
SCALE: 1 in. = 500 ft. | PLATE 1



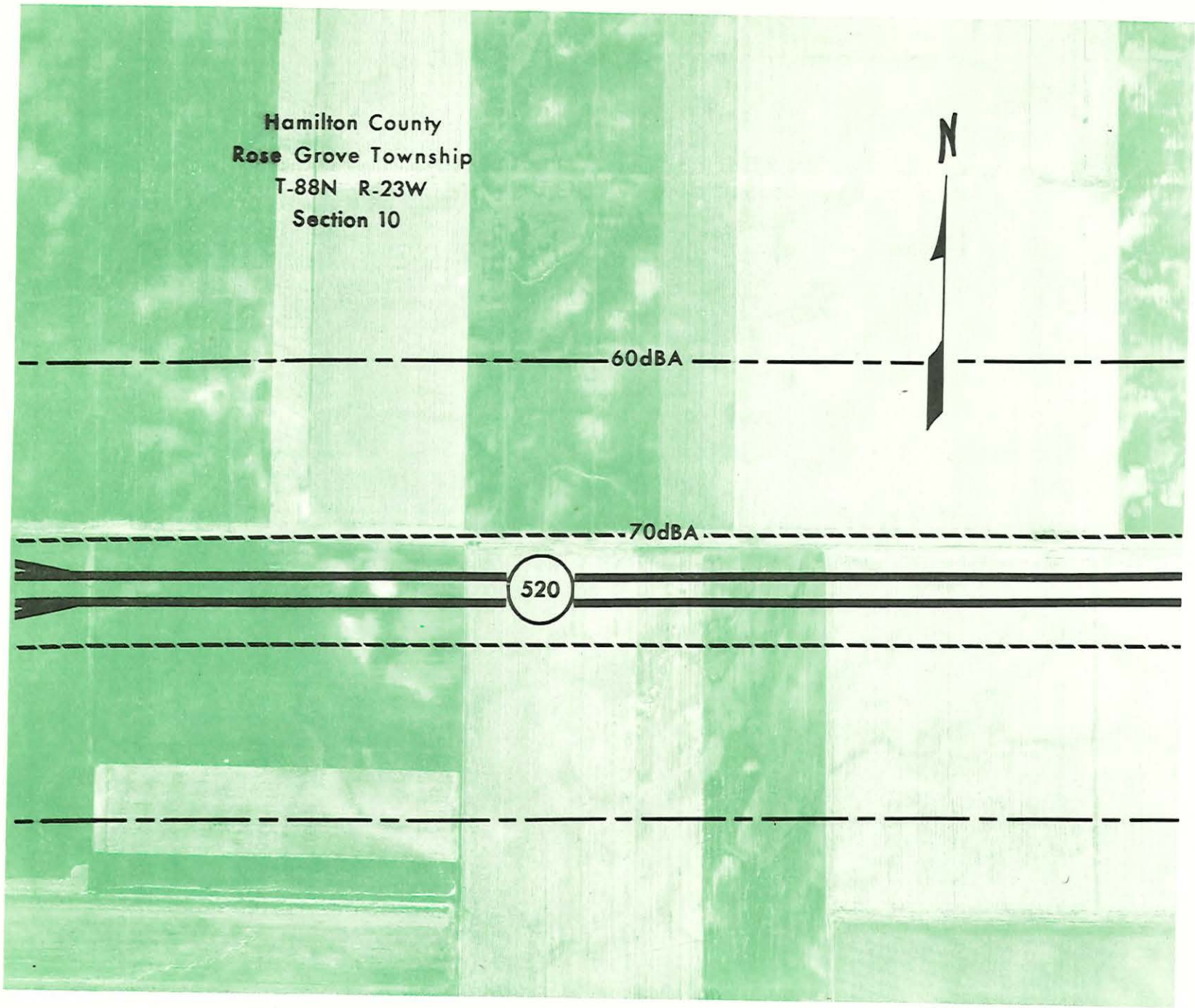
SCALE: 1 in. = 500 ft. | PLATE 2



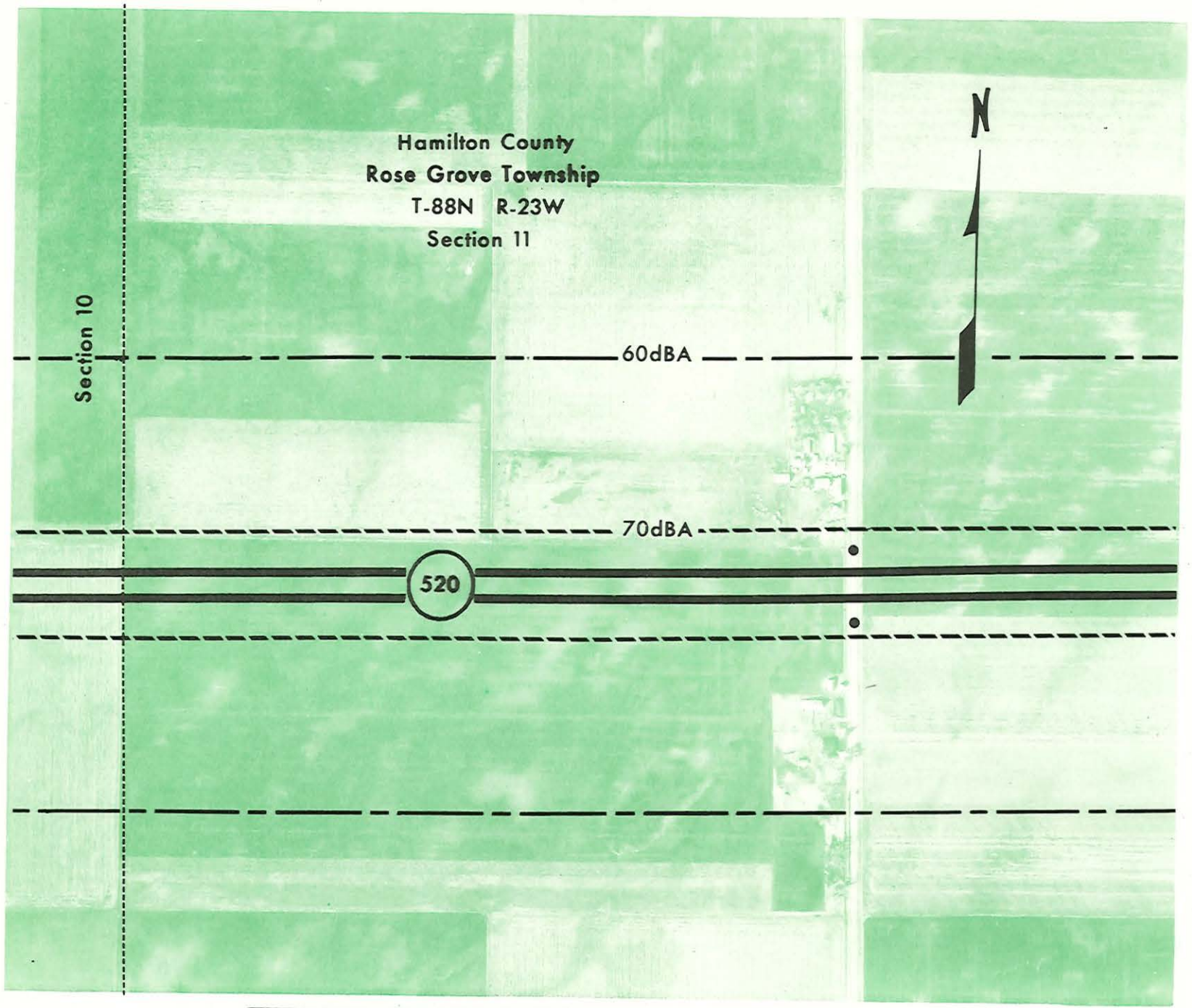
SCALE: 1 in. = 500 ft. | PLATE 3



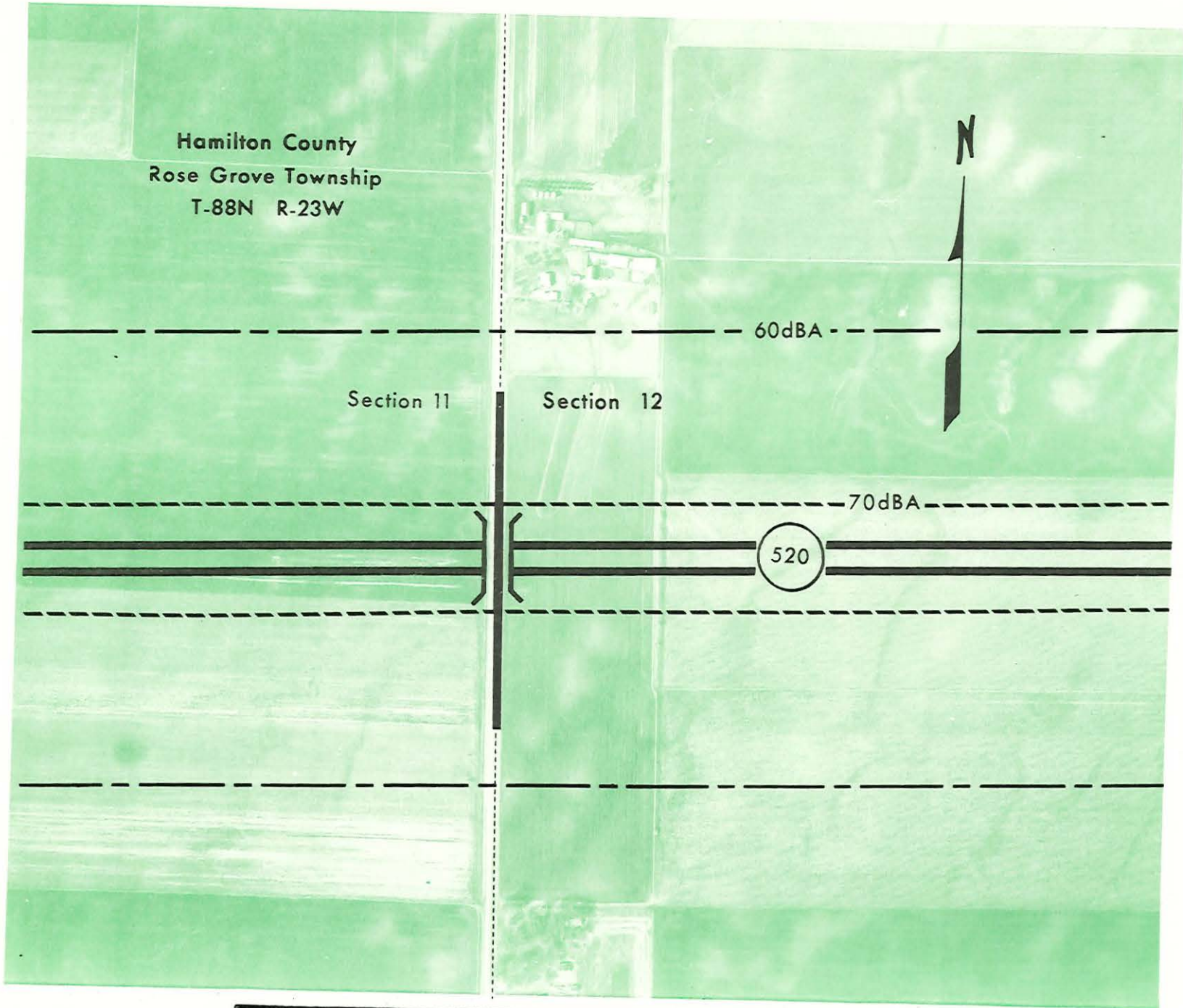
SCALE: 1 in. = 500 ft. | PLATE 4



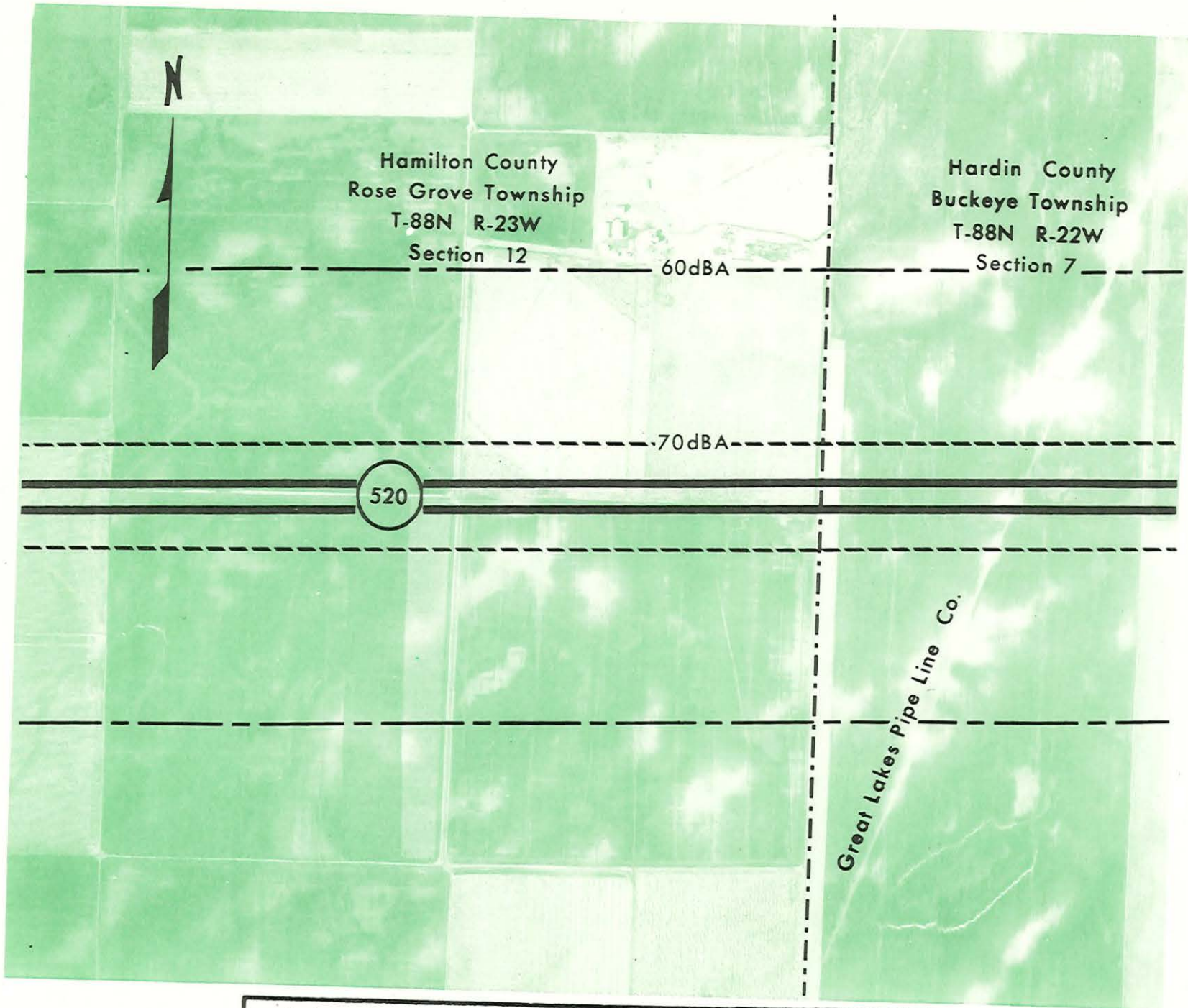
SCALE: 1 in. = 500 ft.	PLATE 5



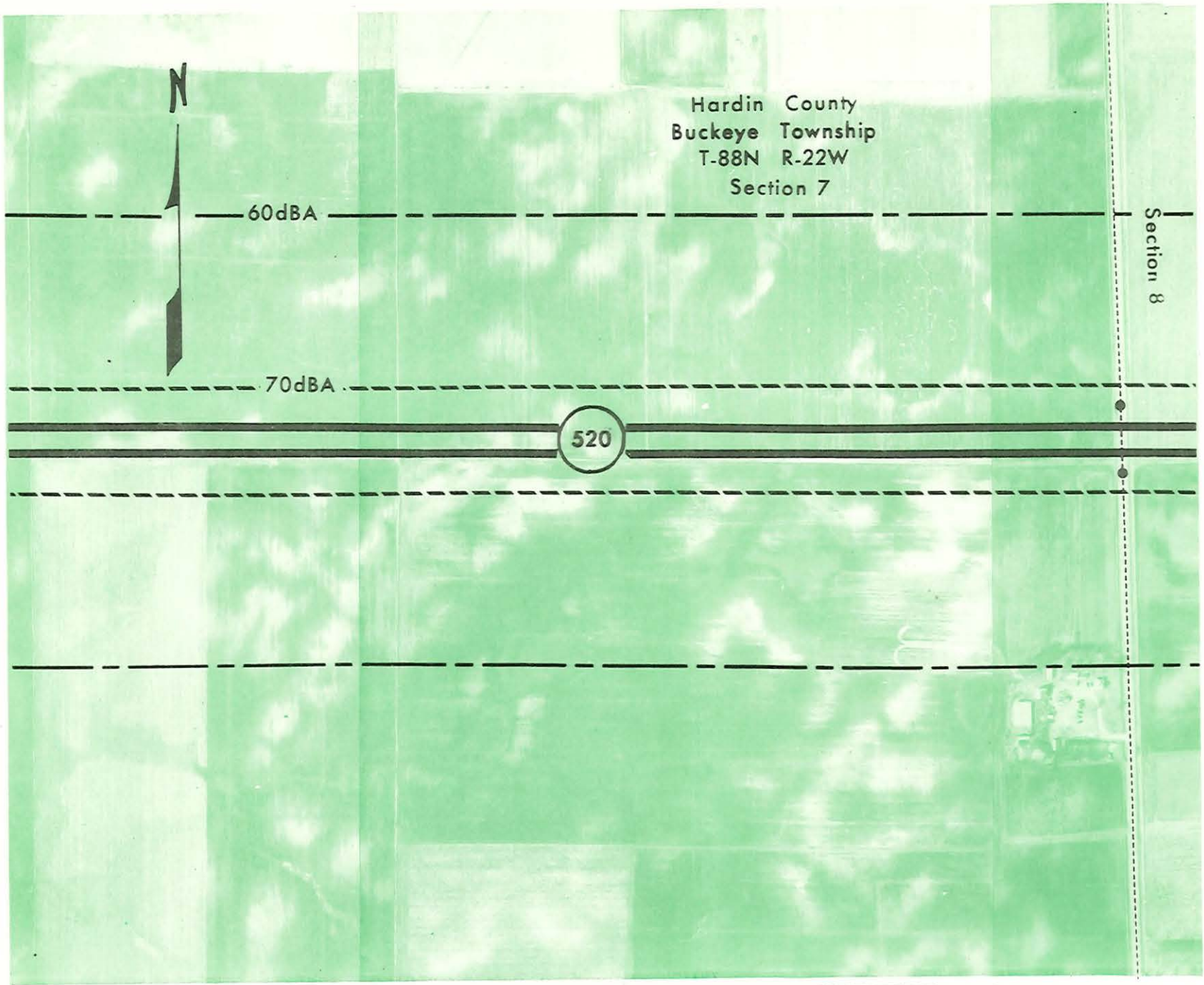
SCALE: 1 in. = 500 ft. | PLATE 6



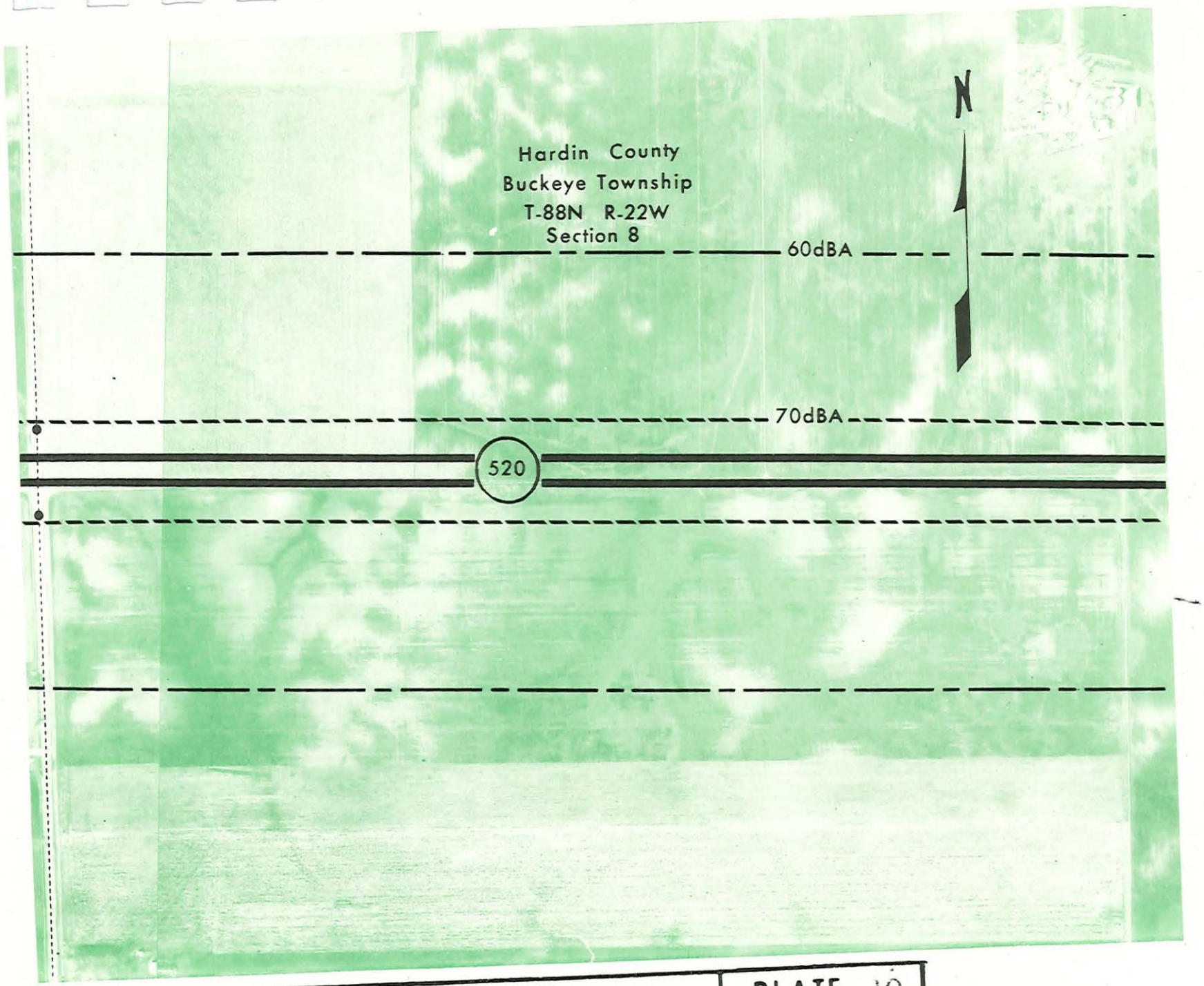
SCALE: 1 in. = 500 ft. | PLATE 7



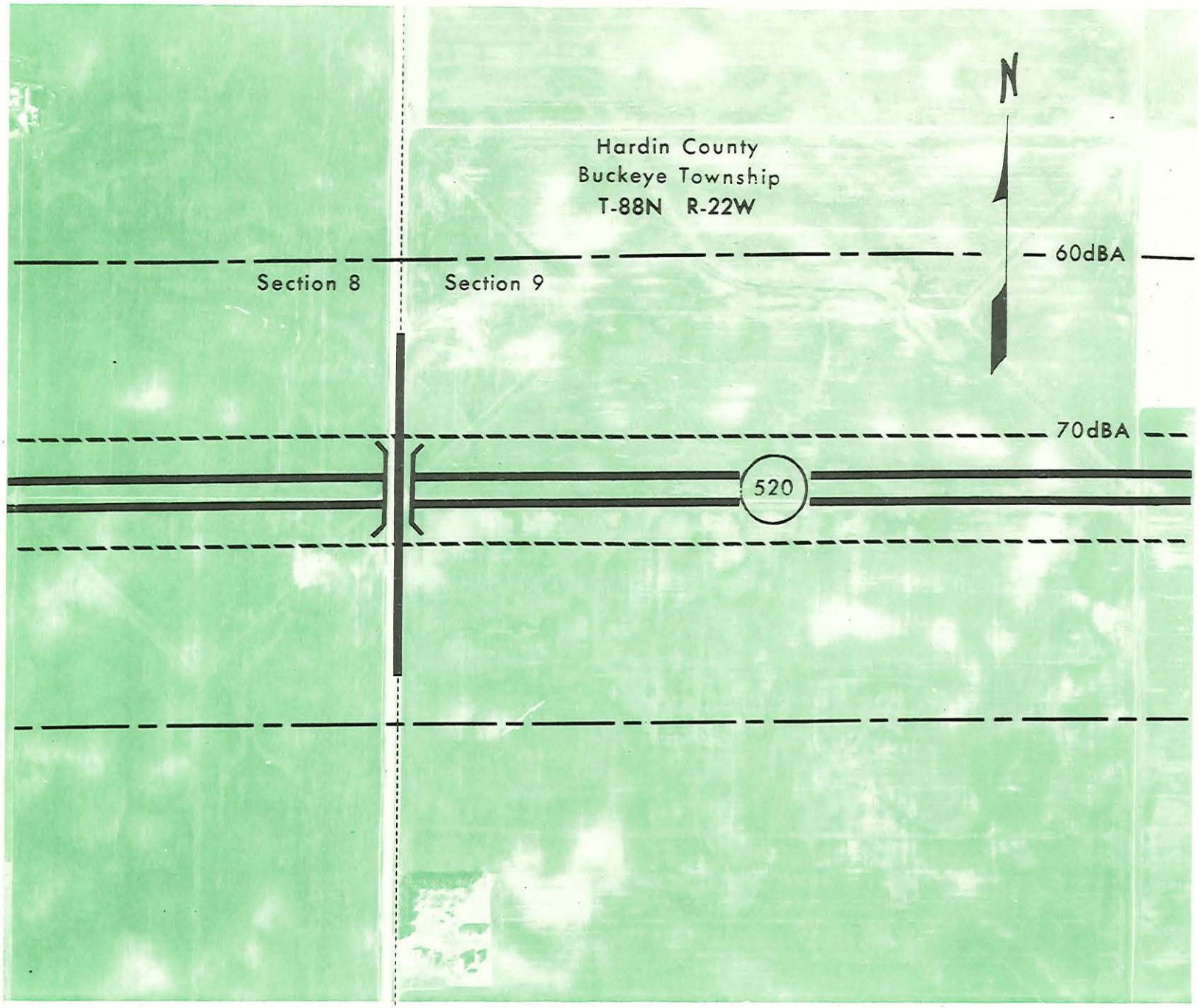
SCALE: 1 in. = 500 ft. | PLATE 8



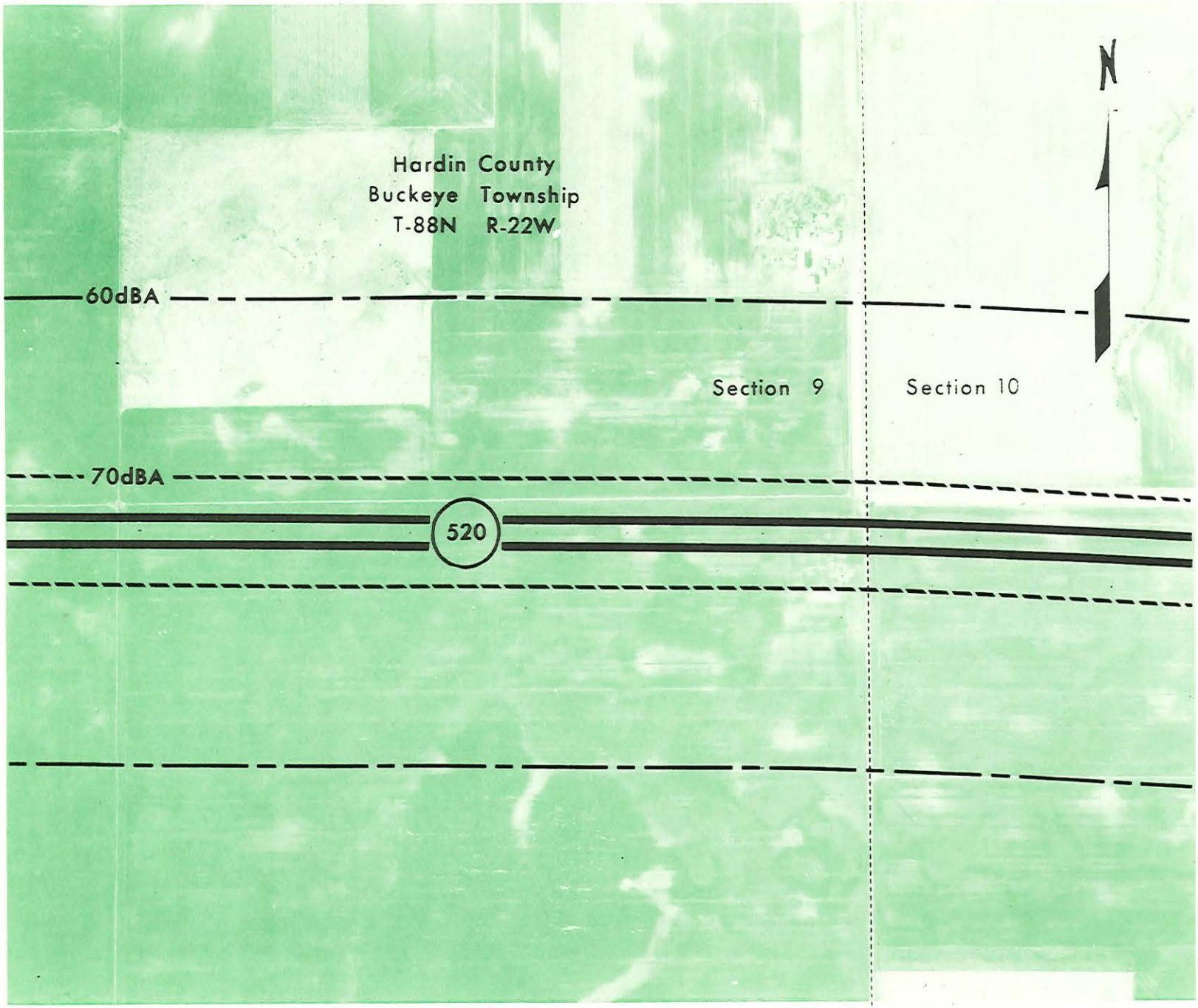
SCALE: 1 in. = 500 ft. | PLATE 9



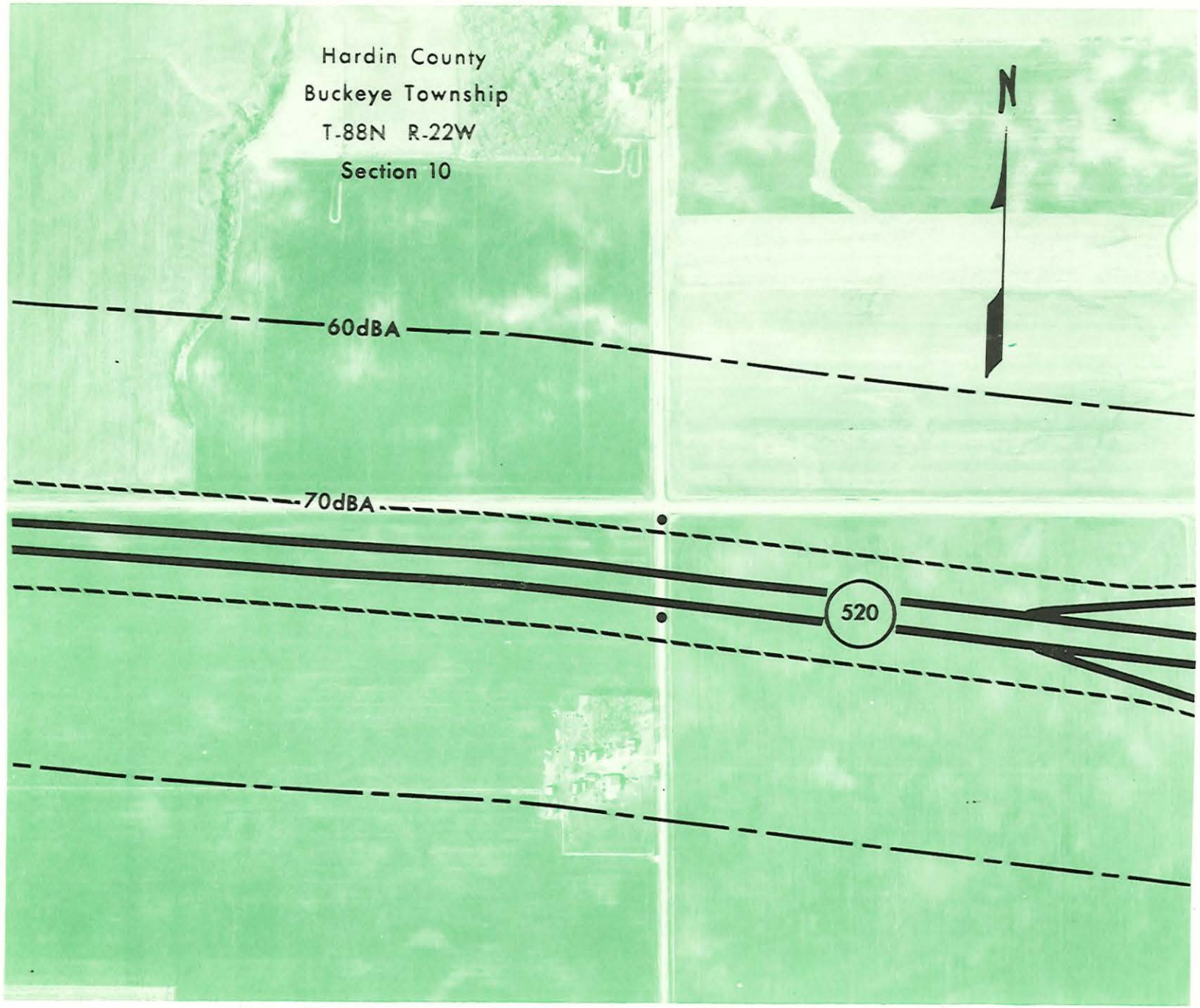
SCALE: 1 in. = 500 ft. | PLATE 10



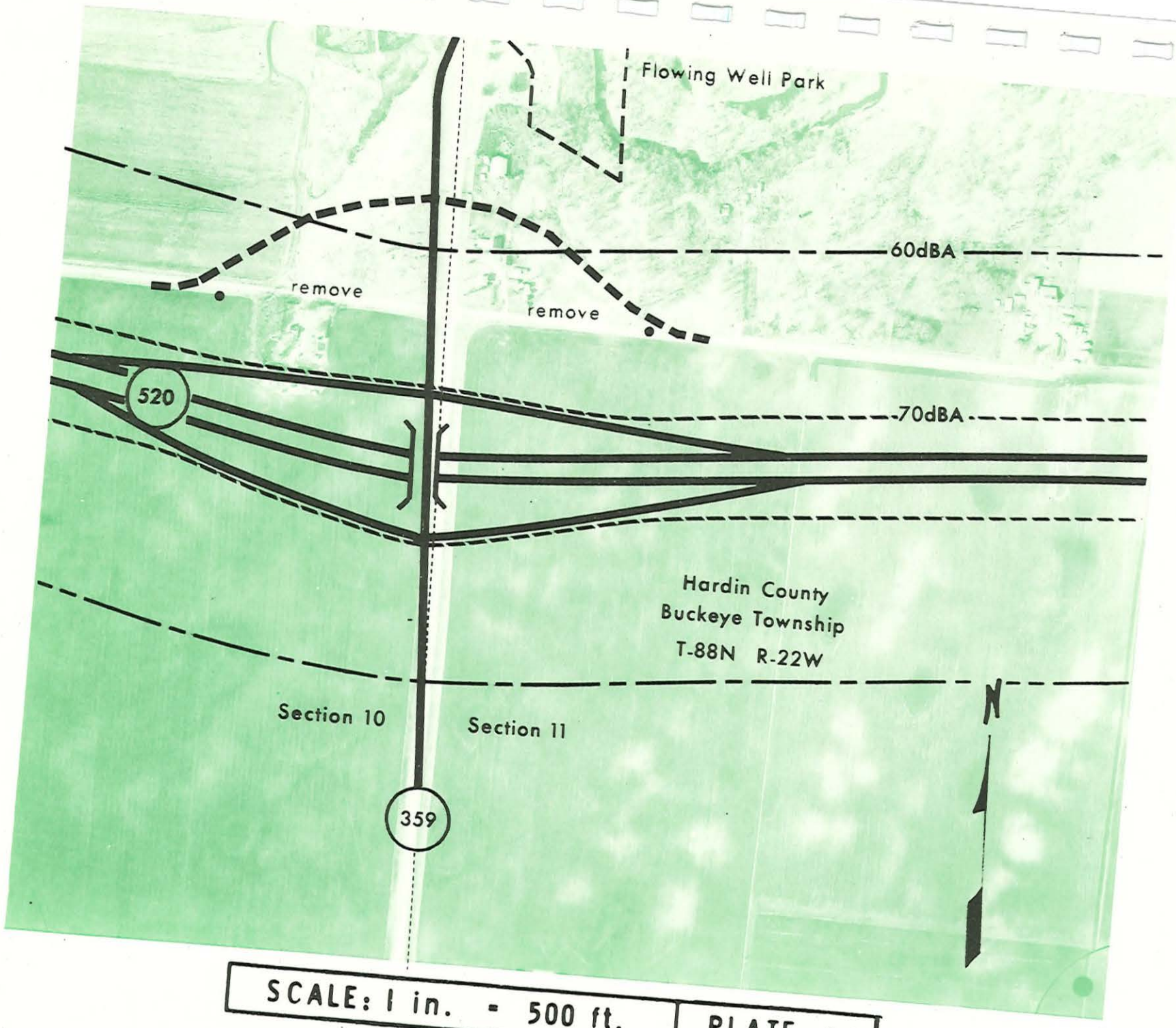
SCALE: 1 in. = 500 ft. | PLATE II



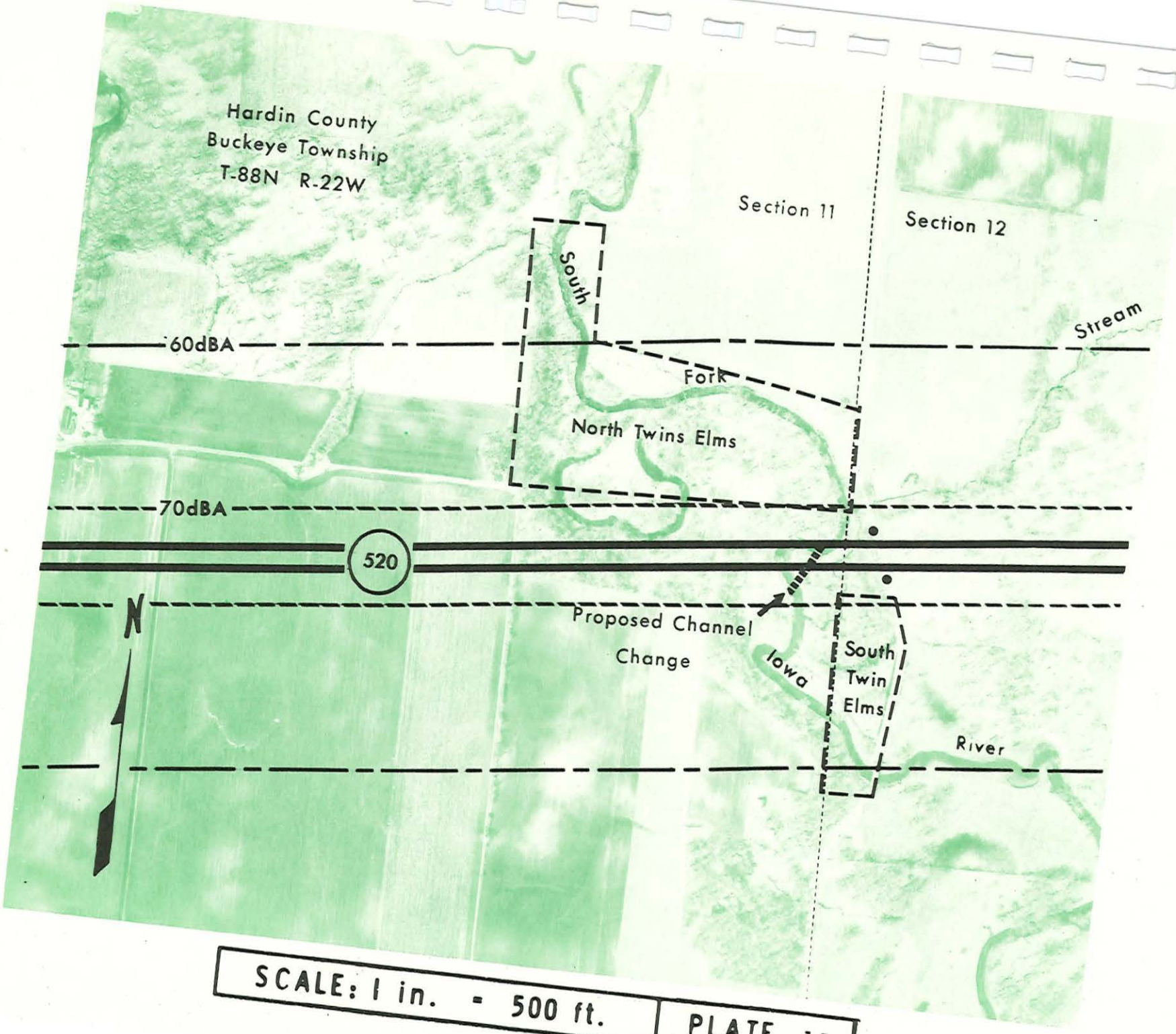
SCALE: 1 in. = 500 ft. | PLATE 12



SCALE: 1 in. = 500 ft. | PLATE 13



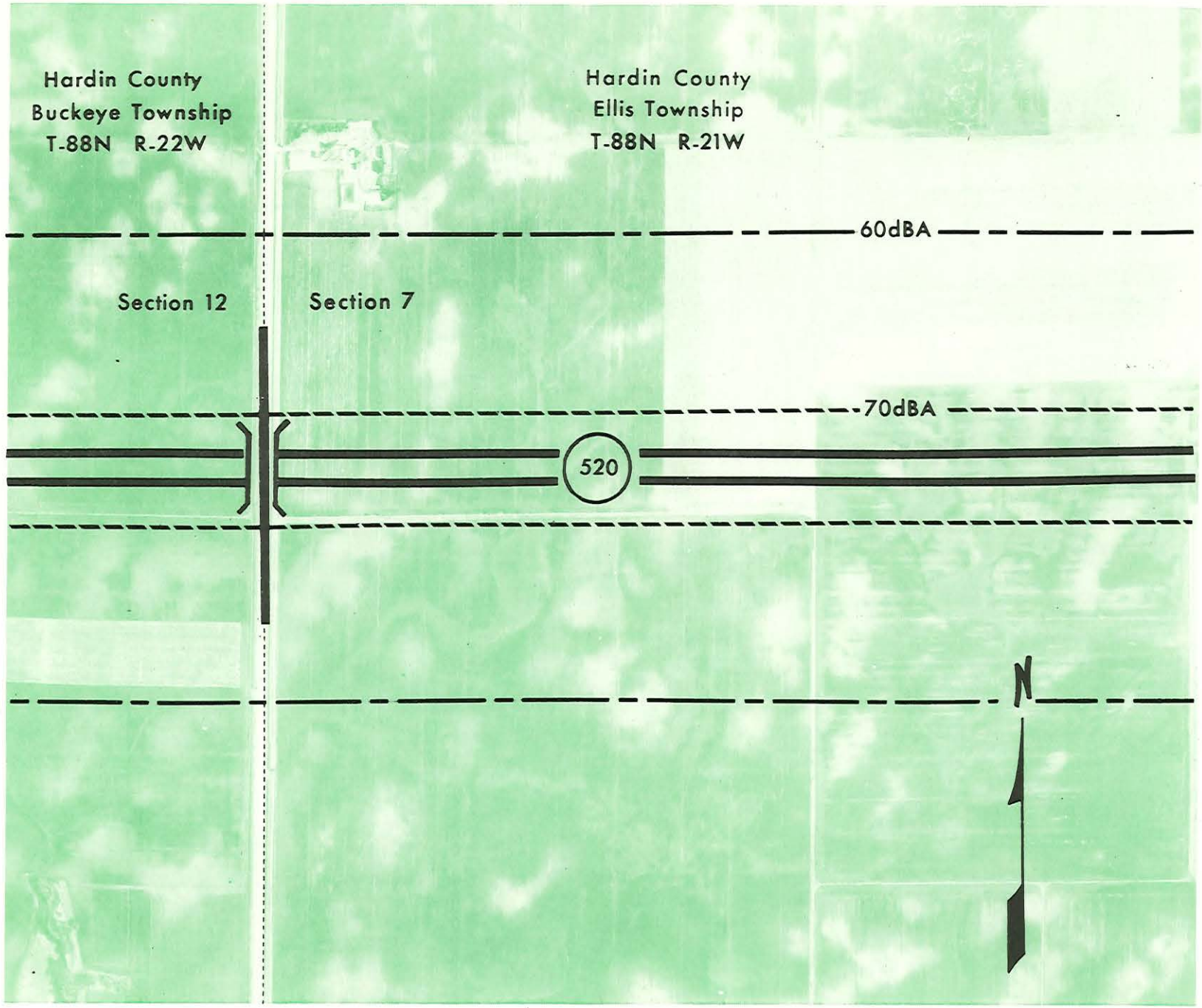
SCALE: 1 in. = 500 ft. | PLATE 14



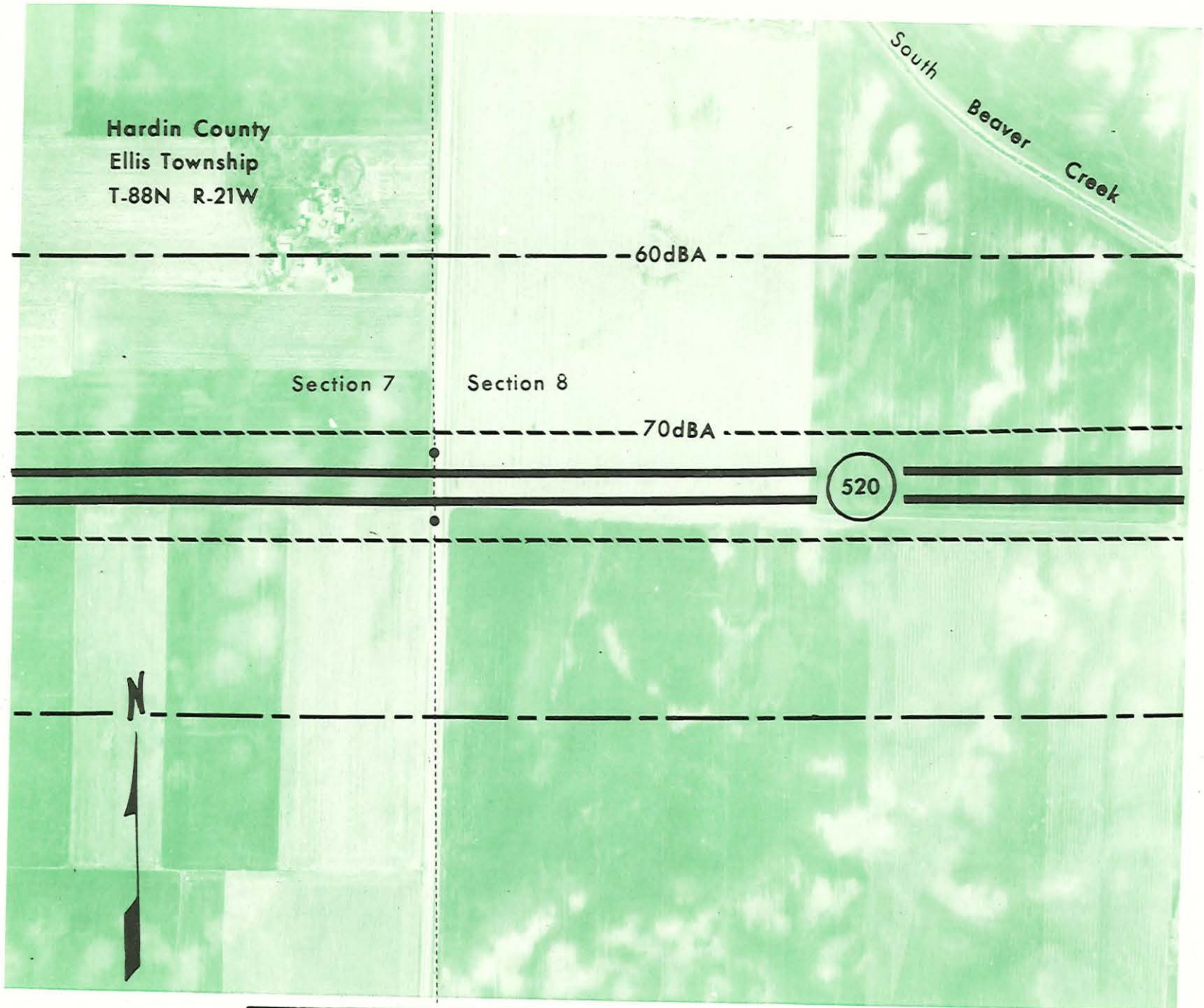
SCALE: 1 in. = 500 ft.

PLATE 15

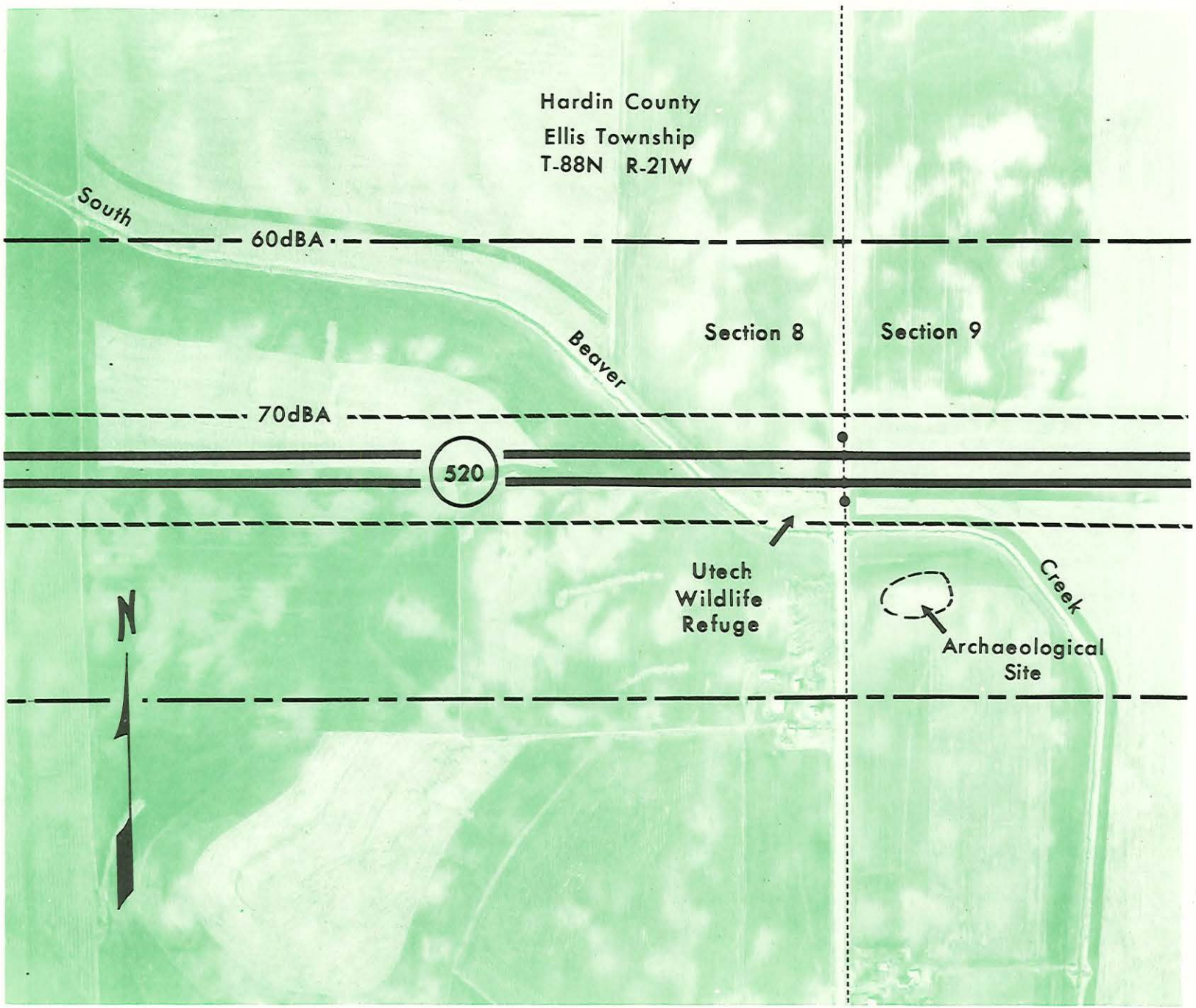
SCALE: 1 in. = 500 ft.	PLATE 16



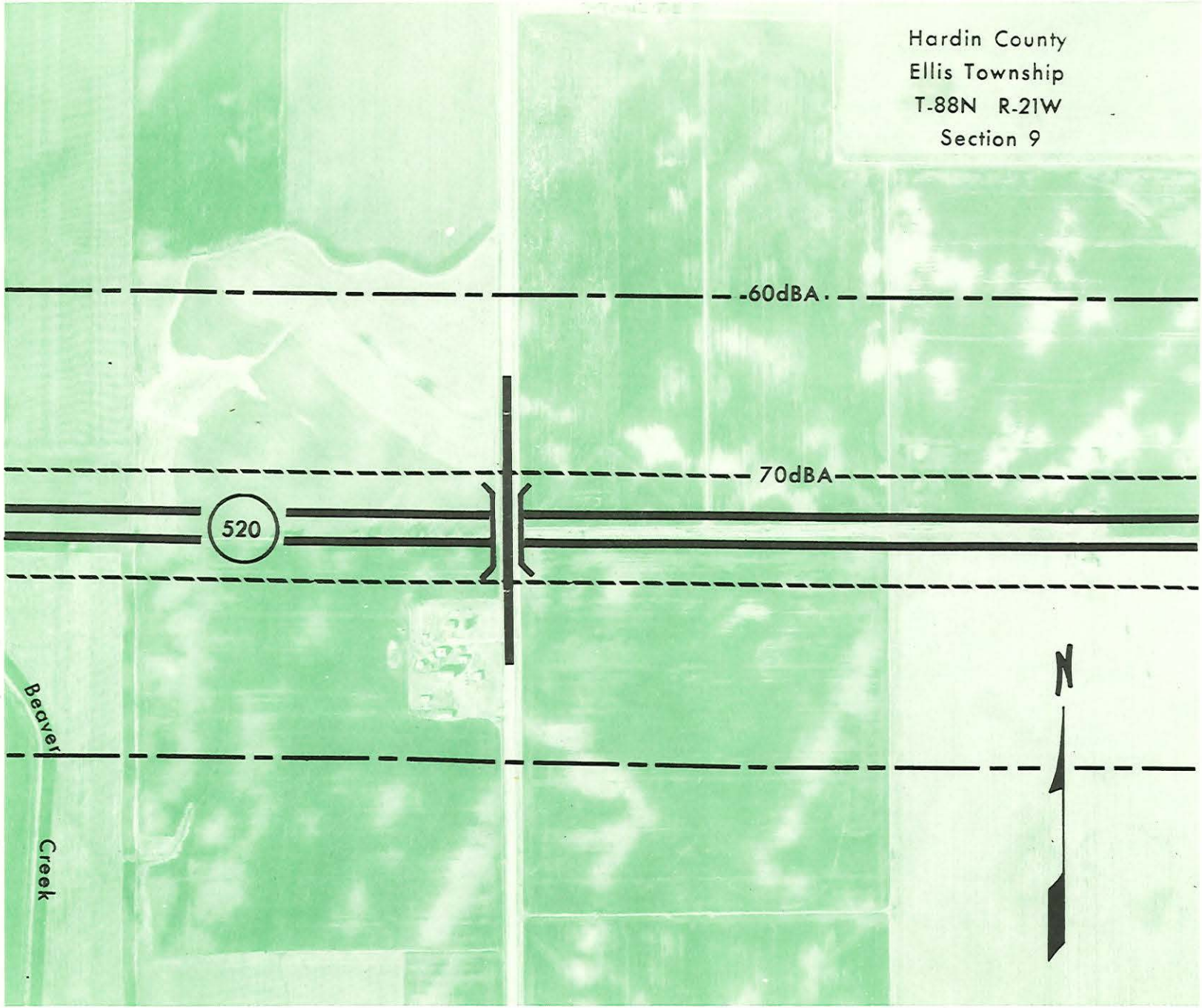
SCALE: 1 in. = 500 ft. | PLATE 17



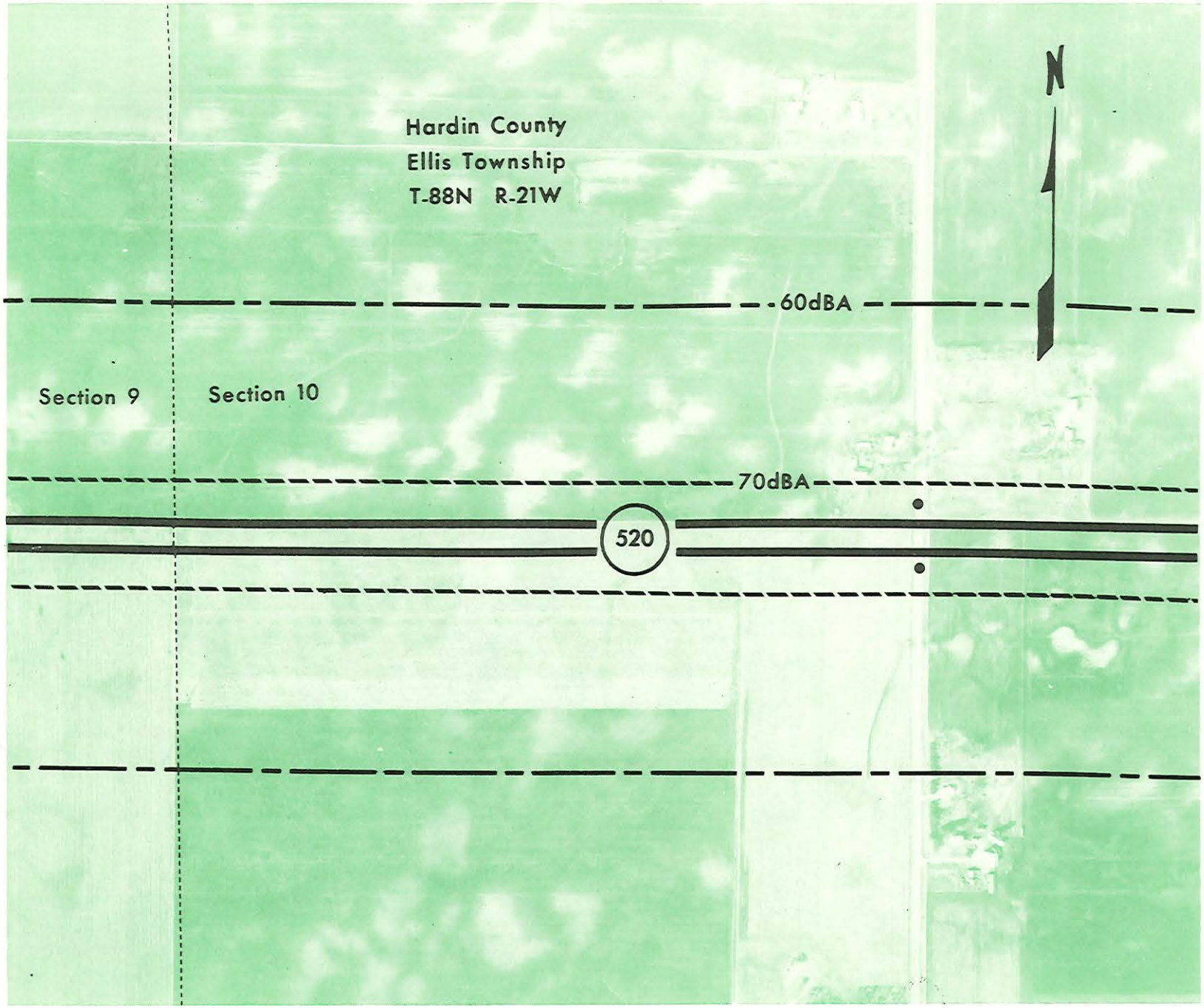
SCALE: 1 in. = 500 ft. | PLATE 18



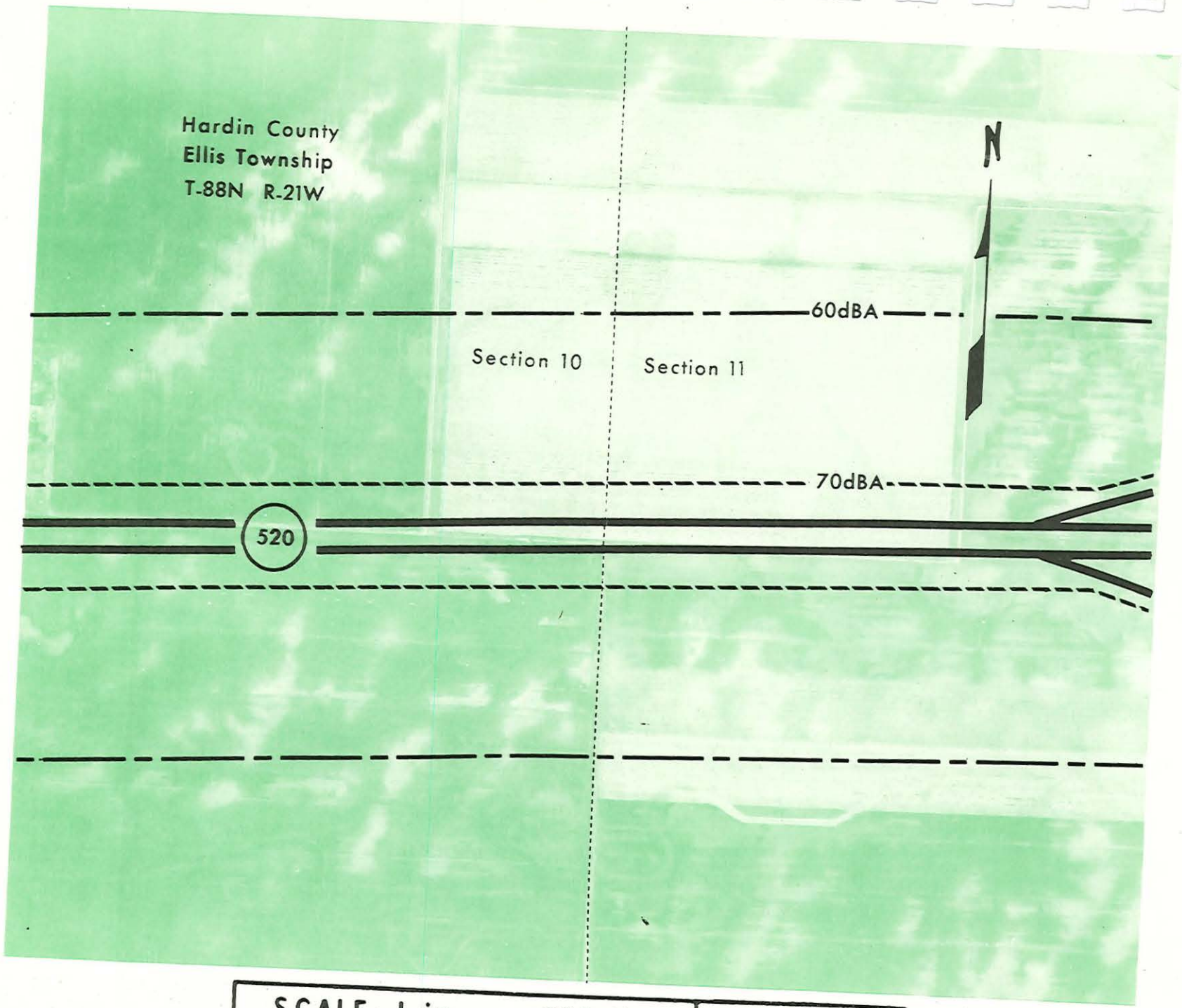
SCALE: 1 in. = 500 ft. | PLATE



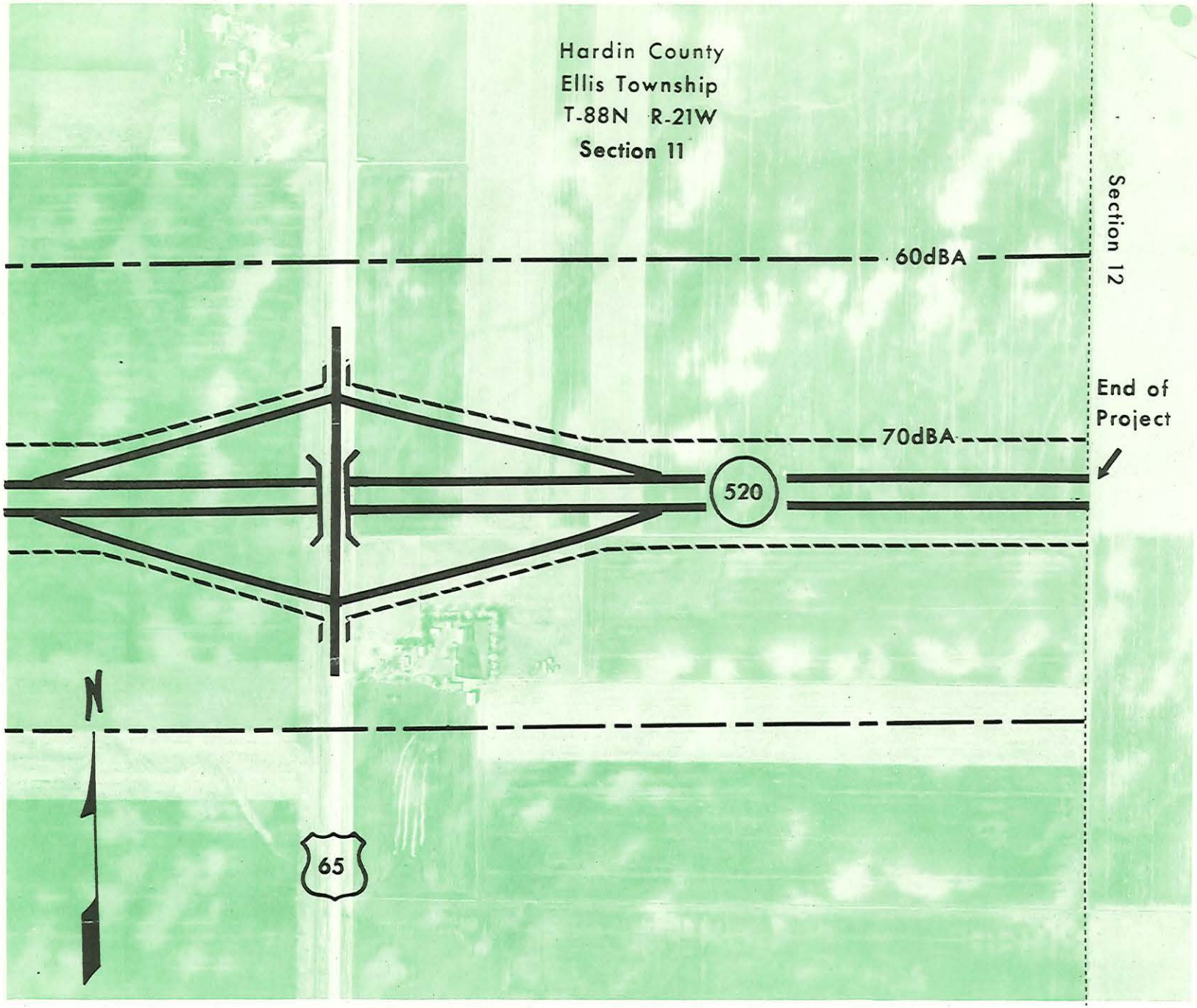
SCALE: 1 in. = 500 ft. | PLATE 20



SCALE: 1 in. = 500 ft. | PLATE 21



SCALE: 1 in. = 500 ft. | PLATE 22



SCALE: 1 in. = 500 ft. | PLATE 23

REFERENCES

1. "Census of Population-Number of Inhabitants, Iowa." U.S. Department of Commerce, Washington, D.C. 1970.

2. *1977 Statistical Profile of Iowa.* Iowa Development Commission, Des Moines, Iowa, 1977, page 36.

3. Bayless, Jack and Smith, W. B. *The Effects of Channelization Upon the Fish Populations of Lotic Waters in Eastern North Carolina.* Proc. Ann. Conf. Southeastern Assoc. Game and Fish Comm., 18:230-238. 1967.

4. Hansen, Douglas R. *Effects of Stream Channelization on Fishes and Bottom Fauna in the Little Sioux River, Iowa.* Unpublished M. S. Thesis, Library, Iowa State University, Ames, Iowa. 1971.

5. *Iowa Water Quality Management Plan, Iowa - Cedar River,* Iowa Department of Environmental Quality, July, 1975.

6. *Iowa Water Quality Report,* Iowa Department of Environmental Quality, April, 1975, pp. 11-81.

7. *Effects of Deicing Salts on Water Quality and Biota,* National Cooperative Highway Research Program Report 91, Highway Research Board, Washington, D.C., 1970.

8. Studies done by the Iowa State Highway Commission in 1974.

9. Patrick, Ruth (1971-73) of Report No. FHWA-RD-76-4, "Highway-Wildlife Relationships", December 1975. Prepared for FHWA Offices of Research and Development, Washington, D.C., page 14.

10. "Deicing Salts and the Environment", The Habitat School of Environment, February, 1972.

11. "A Policy Study for the Special Commission on Salt Contamination of Water Supplies, Massachusetts General Court." Public Affairs Center, Arthur D. Little, Inc., Cambridge, Massachusetts, December, 1972.

12. *Iowa Water Quality Report,* Iowa Department of Environmental Quality, April, 1975, pages 11-120.

13. Joselyn, G. Blair and Tate, G. F. *Practical Aspects of Managing Roadside Cover for Nesting Pheasants,* Journal of Wildlife Management, 36:1-11. January, 1972.

14. From *Facts You Should Know About Effects of Deicing Salt on the Environment,* - A review of National Cooperative Highway Research Program Report 91, *Effects of Deicing Salts on Water Quality and Biota.* This material was also published by National Cooperative Highway Research Program as a supplement to the January 1971 *Reporter* of the American Public Works Association.