FHWA-IL-EA 09-86

Administrative Action
Finding of No Significant Impact

Submitted Pursuant to 42 U.S.C. 4332(2) (c)

by

U.S. Department of Transportation
Federal Highway Administration
and
Illinois Department of Transportation

U.S. BUSINESS ROUTE 20 (F.A.P. 517)
LYFORD ROAD, ROCKFORD TO
HIGH LINE STREET, BELVIDERE
WINNEBAGO AND BOONE COUNTIES, ILLINOIS

Cooperating Agencies

U.S. Army Corps of Engineers

August 21, 1986
Date

For FHWA

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The proposed project will provide for improving the existing two-lane roadway to a four-lane facility, along the existing corridor, in three phases. Phase I consists of constructing four lanes from Lyford Road to a point approximately 0.4 mile east of Shaw Road (1.8 miles); from there the existing roadway will be reconditioned and resurfaced into Belvidere. Phase II consists of constructing four lanes from Town Hall Road to High Line Street (0.9 mile). Phase III consists of the four-lane construction of that length of the project between Phase I and II (2.5 miles). One structure, over Beaver Creek, will be built in conjunction with Phase III of the proposed project.

The FHWA has determined that this project will not have any significant impact on the human environment. This Finding of No Significant Impact (FONSI) is based on the attached environmental assessment which has been independently evaluated by the FHWA and determined to adequately and accurately discuss the environmental issues and impacts of the proposed action. It provides sufficient evidence and analysis for determining that an environmental impact statement is not required. The FHWA takes full responsibility for the accuracy, scope and content of the attached environmental assessment.

Preferred Alternate

Based on the findings of this study, Alternate 4, an arterial street design incorporating the best features of the Alternate 1, 2 and 3 alignments, has been selected as the Preferred Alternate for the following reasons:

1. Public hearing and meeting responses were overwhelmingly in favor of Alternate 4, since it provided for no access control, over other alternatives which provided for partial access control along the corridor. Partial access control restrictions were firmly opposed by area residents and businesses due to these considerations:

   The existing number of agricultural and residential points of access onto U.S. BR 20 would be reduced.

   Many of the remaining agricultural and residential entrances would have to be relocated or combined into service drives. Commercial properties along U.S. BR 20 would have to maintain access via service roads to the nearest sideroad, if economically feasible; otherwise, these properties would be acquired.

   Additional property would have to be dedicated to the use of service drives and service roads. Combined service drives for agricultural and residential access would cross property lines and cause maintenance responsibilities to be unclear.

   The upkeep of the added length of relocated entrances, combined service drives and service roads would be an additional expense for residences and businesses.

2. The need to provide a high speed, access-controlled highway, as in the other alternates, is reduced by the presence of I-90 and U.S. 20. These routes parallel U.S. BR 20 two to three miles south and provide the access controlled highways most desired by through trips.

3. Alternate 4 has the least economic impact, requires the least amount of additional right-of-way, causes the least amount of displacement of residents and businesses, and is the least disruptive to adjacent farms and farming operations.

4. Although the type of facility proposed by Alternate 4 may encourage and accelerate strip development along the project corridor, local units of government can promote orderly development by zoning. In addition, the Illinois Department of Transportation can supervise the method of gaining access to U.S. BR 20 by virtue of its driveway permit requirements for state highways.

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SUMMARY

Project Description

The proposed project involves the upgrading of F.A. 517 (U.S. BR 20) from a two-lane to a four-lane facility between the cities of Rockford, in Winnebago County, and Belvidere, in Boone County. The project begins at its western terminus located 339 feet west of the Lyford Road intersection and extends easterly for 5.1 miles to its eastern terminus at High Line Street.

The project will be constructed in three phases as growth along the corridor occurs. Phase I consists of constructing four lanes on the western end of the project, from Lyford Road to approximately 0.4 miles east of Shaw Road (1.8 miles); from there, the existing roadway will be resurfaced into Belvidere. Phase II consists of constructing four lanes on the eastern end of the project, from Town Hall Road to High Line Street (0.9 miles). Phase III consists of constructing four lanes for the remaining center portion, from 0.4 miles east of Shaw Road easterly to Town Hall road (2.5 miles). Lyford and Shaw Roads, north and south of F.A. 517, shall be reconstructed as part of this project.

This improvement will provide for improved, safer, and more efficient handling of traffic along U.S. BR 20 from Rockford to Belvidere.

The project will require the issuance of a 404 Permit for an improved stream crossing at Beaver Creek.

Proposed area projects include U.S. BR 20 from High Line Street east to Illinois Route 76; the Belvidere East Bypass from the Genoa Road-U.S. BR 20 intersection westerly to the Appleton Road - U.S. BR 20 intersection; and Appleton-Stone Quarry Road from U.S. BR 20 to a point 1,500 feet north of its intersection with U.S. Route 20. The Illinois State Clearinghouse lists no conflicts with State policies or priorities.

Alternates Considered

The following alternates were examined and found unfeasible: postponed action, widening and resurfacing, two-lane reconstruction, narrower medians (with rural cross section), alignment relocation, and the "No-Action" alternate. The feasible project alternates considered within this assessment were as follows:

Alternate No. 1

Construction of a four-lane divided highway centering on existing U.S. BR 20. This alternate is classified as a

rural Area Service highway with partial access control along the corridor.

Alternate No. 2

Construction of a four-lane divided highway with the additional two lanes located north of existing U.S. BR 20. This alternate is classified as a rural Area Service highway with partial access control along the corridor.

Alternate No. 3

Construction of a four-lane divided highway with additional two lanes located south of existing U.S. BR 20. This alternate is classified as a rural Area Service highway with partial access control along the corridor.

Alternate No. 4

Construction of a four-lane highway with a flush median using the best combination of alignments found in the previous alternates. This alternate is classified as a sub-urban Area Service highway with no access control.

Based on the results of this study, Alternate No. 4 has been selected as the Preferred Alternate.

Environmental Impacts

The principal environmental impact of the four proposed alternates is the positive benefit associated with improved traffic flow and increased safety for the 13,600 daily motorists.

The primary negative environmental impacts of Alternates 1, 2, and 3 will be the displacement of residents and businesses along the corridor. 16 residences and 3 businesses will be displaced by Alternate 1, 11 residences and 4 businesses by Alternate 2 and 13 residences and 6 businesses by Alternate 3. A second significant impact is the right-of-way requirements; approximately 69.6 acres, 71.1 acres, and 73.1 acres of additional right-of-way will be required for Alternates 1, 2 and 3, respectively. Of the ultimate project right-of-way, the respective takes for each alternate are 43.0 acres, 45.1 acres, and 46.0 acres of cultivated cropland; 5.4 acres, 6.0 acres, and 4.4 acres of pasture ground; and 21.2 acres, 20.0 acres, and 22.7 acres which are used for nonagricultural (residential and commercial) purposes.

The primary negative environmental impact of Alternate No. 4 is the right-of-way required for the ultimate improvement. 36.9 acres of additional right-of-way will be required for Alternate 4, consisting of approximately 25.8 acres of cropland, 4.4 acres of pasture, and 6.7 acres used for nonagricultural purposes.

Also, 1 residential displacement will be necessary for this alternate. In addition, Alternate 4 is likely to accelerate development along the project corridor because it proposes no access control.

Areas of Controversy

The primary area of concern expressed by local residents appears to be the implementation of partial access control as proposed in Alternates 1, 2 and 3. At the informational meetings held by the Illinois Department of Transportation, local residents expressed concerns over maintenance jurisdiction of service drives required for Alternates 1, 2 and 3. Businesses along the route expressed dissatisfaction with proposed access off of sideroads for the first three alternates.

Of the four alternates proposed, the overwhelming majority of local residents preferred Alternate No. 4.

I. PURPOSE OF AND NEED FOR ACTION

A. TRANSPORTATION DEMAND

Based on vehicle counts and traffic forecasting methods, the Illinois Department of Transportation has projected an average daily traffic (ADT) volume of 7,600 for 1988, the anticipated date of construction of this project. Twenty years after construction, the normal design life for a roadway, traffic is expected to increase to an ADT of 13,600. This represents an average annual increase in traffic volume of approximately 3%.

Taking into account the percentage of passing sight distance available on the existing roadway, it is anticipated that traffic volumes will reach the maximum acceptable capacity for this category of two-lane road in 1999, or about one-half way through the design period.

By upgrading U.S. BR 20 to a four-lane facility as soon as possible, many traffic related problems can be resolved before they become so serious that significant safety, economic and environmental consequences occur.

Foreseeing that such events will happen during the design period is sufficient justification for the consideration of improvements to this route.

B. SOCIAL AND ECONOMIC CONSIDERATIONS

U.S. Business Route (BR) 20 is one of three existing state highways connecting Belvidere and Rockford. The other two are four-lane routes located approximately three miles south of U.S. B.R. 20, one being the I-90 Tollway with an exit and entrance at the southeast corner of Belvidere, and the other being U.S. Route 20 passing through the south part of Belvidere. The I-90 Tollway does not primarily serve inter-city traffic because of tolls, and U.S. Route 20 primarily serves through traffic between points west of Rockford and points east of Belvidere. U.S. BR 20, on the other hand, serves primarily as the main route for business and social related traffic between Rockford, with a population of 139,700, and Belvidere, with a population of 15,200. The commercial growth areas have declined in the center of Rockford and are expanding along the eastern fringe areas of the city. The East State Street, Alpine Road and Mulford Road areas have attracted and will continue to attract numerous retail and commercial establishments. This route provide immediate access to these establishments from points east of Rockford. This route also provides the most direct connection between the central business district of Rockford, with its Metro Centre offering various cultural and sporting activities, and downtown Belvidere, approximately 13 miles away. U.S. BR 20is one of two available routes, together with U.S. Route 20 to the south, which offers a direct connection between Belvidere and Cherryvale Mall, a

shopping center located in the southeast corner of Rockford. It follows that a higher-type facility for U.S. BR 20 will improve the social and economic welfare of those who have property along this route, travel on the road or cater to those who do.

C. AREA PLANNING

The proposed improvement to U.S. BR 20 is essential to the future growth of the two county area adjacent to its route. There are a number of recent developments in the area as well as forecasted future growth which highlight the importance of the U.S. BR 20 corridor to the future development of the Winnebago-Boone County area.

In the Winnebago County portion of the study there are a number of recent developments that demonstrate the future growth potential of the area. For example, the Clock Tower Inn complex at the Lyford Road intersection has undergone significant expansion in the last five years. In addition, in 1982, not only did Barber-Colman Company build a $7 million world headquarters just south of U.S. BR 20 on Lyford Road, but the Controls and Data Systems Division of White Consolidated Industries also constructed a 50,000 sq. ft. engineering facility for 300 engineers next to Barber-Colman on Lyford Road. Also in 1982, the Rockford Boy's Club built a new facility within one-half mile of U.S. BR 20 on Lyford Road. Finally, a number of expansions have taken place at the Belford 6 theater complex in recent years.

In addition to the above developments, there are currently five vacant sites, totaling 300 acres, within the immediate area of the Lyford Road intersection that are ideally suited for either office, hotel, or light industrial use. The Year 2000 Plan for Rockford and Winnebago County projects continued commercial development along both sides of U.S. BR 20, proceeding easterly from inside the Rockford city limits to the Boone County line. Recognizing this potential, the City of Rockford adopted an Annexation Policy on June 4, 1984, which lists the annexation of the U.S. BR 20 corridor from Mulford Road (approximately 2 miles west of Lyford Road) to the Boone County line as a high priority, projected to take place in the 1983-1988 time period. The ultimate annexation plans for the City of Rockford include the entire area for three miles north and a mile south of U.S. BR 20 to the Boone County line.

One can therefore see the level of development activity in the immediate past as well as the likelihood of its continuance well into the future and the subsequent importance of improving U.S. BR 20 in this area of Winnebago County.

The Boone County area of the U.S. BR 20 corridor is also projected to be a growth area, although to a slightly lesser degree than that of Winnebago County. For example, the City of Belvidere, through the Belvidere-Boone County Regional Planning

Commission, has identified a narrow corridor along U.S. BR 20 extending approximately one-quarter mile west of High Line Street as an active annexation area. Active annexation areas are those areas where annexation should be sought out rather than merely acted upon through an annexation petition. Furthermore, it is conservatively estimated that Boone County's population will increase by 3,100 between 1980 and 1990 with 60%, or 1,860 people, locating in the unincorporated areas of the County. From 1990 to the year 2000, an additional 3,300 people are expected to inhabit Boone County, with approximately 1,500 of them projected to locate in unincorporated areas. According to the Boone County Land Use Plan, the primary area of the County set aside for limited residential development is along U.S. BR 20 between Belvidere and the county line. Thus, the importance of future improvements to U.S. BR 20 to keep pace with and help stimulate the future development of that part of Boone County is readily apparent.

As shown by its inclusion on the list of highway programs in the Transportation Improvement Program of the Rockford Area Transportation Study (Exhibit 13F), this project is in conformance with Rockford's overall transportation plan. The Rockford Area Transportation Study is the designated 3C Planning Authority for the Rockford Urban Area.

The Belvidere-Boone County Planning Commission has no specific transportation plan as part of its overall planning process.

D. SYSTEM LINKAGE

As previously explained, U.S. BR 20 serves as the main traffic carrier between the cities of Rockford and Belvidere. The road extends from U.S. Route 20 west of Rockford through both Rockford and Belvidere and terminates east of Belvidere at its intersection with U.S. Route 20. From a point near Rockton Avenue on the west side of Rockford to the east side of Belvidere, the entire length of this section of U.S. BR 20 is a four lane facility with the exception of the area being studied between Lyford Road and High Line Street. It can therefore be seen that the construction of a four-lane facility from Lyford Road to High Line Street will provide the "missing link" in a complete four-lane system from a point west of Rockford to a point east of Belvidere.

E. DEFICIENCY OF EXISTING FACILITY

U.S. B.R. 20 from Lyford Road (immediately east of the I-90 Tollway) easterly to High Line Street in Belvidere is classified as an Area Service highway with a design hourly volume (DHV) of 1,360 projected for 2008. The design rural criteria for an Area Service highway with the above traffic volume provides for a design speed of 60 mph and for four 12 ft. traffic lanes

separated by an open ditch, grassed median with a minimum width of 44 ft. In addition, the shoulder requirements are 8 ft. on the left and 10 ft. on the right with generally 6:1 foreslopes and 3:1 back slopes. The present highway has a 22 ft. pavement width beginning about 700 ft. east of Lyford Road and proceeding east to the Winnebago-Boone County Line. From there a 24 ft. pavement width extends east into the City of Belvidere.

In general, other existing deficiencies include inadequate ditch slopes, substandard vertical curve lengths, insufficient clear zone distances from the edge of pavement to permanent obstacles, and undersized drainage facilities.

In addition to the deficiencies on U.S. BR 20, both Lyford Road and Shaw Road require major rebuilding to meet 40 mph design speed criteria. The specific deficiencies needing upgrading are the requirement that connecting sideroads initially slope away from State highways and stopping sight distances to be met for both sag and crest vertical curves. Case III sight distance requirements are not met at the entrances north of U.S. BR 20 on either Lyford Road or Shaw Road. The existing 20 foot pavement width and 4 foot shoulder width on the north approach of Lyford Road are substandard for the proposed design speed.

F. SAFETY

An important factor in determining a need for a highway improvement project is the current accident rate of the existing facility. An Accident Analysis was prepared for this project. Some of the key points need to be stressed as they relate to the need for the project. For the years 1980-1982, the latest 3-year accident data available, statewide average accident rates for all types of accidents are exceeded for the entire project for each of the three years and for several of the intersections for one or more years. Analysis of wet pavement accidents using IDOT's "Procedure for Identifying, Analyzing and Improving Wet Pavement Accident Locations Within Rehabilitation/Resurfacing Projects" has identified three accident cluster sites within the project limits. In addition, the IDOT Spot Safety System has identified several areas where accident patterns indicate that safety measures should be investigated and other areas where accidents are likely to repeat.

In general, there appears to be several reasons for the higher than normal accident rate on existing U.S. BR 20. First, there are few limitations on the positioning and spacing of both commercial and private entrances. Next, there are currently no traffic signals or lighting at the Lyford Road intersection. Furthermore, the skid resistance of the existing pavement is somewhat less than the current desirable standard. In addition, the occurrence of rear end accidents is at least partly due to the existence of only two lanes of pavement, which requires stopping in the traveled lane for all left turn movements. Also, substandard shoulder widths and foreslope slopes have undoubtedly

contributed to the rate and severity of "run-off-the-road" type accidents.

Briefly, the construction of the project should significantly reduce the accident rate by mitigating the factors listed above. For the alternates proposing partial access control, the removal of all direct commercial access as well as the provisions of minimum spacing for agricultural and residential entrances and median crossovers will significantly reduce the accident potential at a number of existing conflict points. Likewise, the bi-directional left-turn lane proposed for the remaining alternate will have a similar effect. Intersection improvements at Lyford Road, which include signals and lighting, should reduce the accident potential at that location. New PCC pavement or resurfacing with skid-resistant bituminous concrete will help curb the wet pavement accidents. In addition, the construction of a four-lane facility as well as left turn lanes at all intersections will reduce the potential for rear-end collisions due to stopping for left turns. Finally, shoulders will be widened and surfaced and foreslopes flattened, all of which should reduce the "run-off-the-road" accident potential. One can see, therefore, the positive benefits that construction of the project will have on the reduction of the accident potential.

G. CAPACITY

One of the most important characteristics of a highway facility is its ability to carry traffic in an efficient manner. Classification of a highway's ability to carry traffic is done in terms of its "level of service." Generally six levels of service have been identified with Level of Service A (free flow) as being the best service varying to Level of Service F (congestion) as being the worst service.

Traffic projections on U.S. BR 20 predict construction year traffic (1988) of 7,600 vehicles with traffic increasing to 13,600 in 20 years (2008). Using calculation methods specified in the 1965 Highway Capacity Manual by the Highway Research Board indicates that the No-Action Alternate would result in Level of Service D approaching Level of Service E by the year 2008. By constructing one of the build alternates the same calculations indicate a four-lane facility would be operating under Level of Service B in the year 2008. Thus, the importance of upgrading to a four-lane facility as far as maintaining a desirable level of service in the future can be seen.

The Area Service highway classification for U.S. BR 20 has a minimum level of Service C in accordance with the State of Illinois Design Manual. The rural design policies in the Design Manual requires two traffic lanes at 24 feet each for any Area Service highway where the projected 20 year traffic is over 1,200 design hourly volume (DHV). U.S. BR 20 from Lyford Road to High Line Street has a projected DHV of 1,360 for the year 2008.

H. STRUCTURAL CONDITION AND MAINTENANCE

Other important criteria in evaluating the need for future highway improvements are the present structural adequacy, ride quality, and maintenance costs associated with the existing facility.

The structural adequacy of the existing pavement was evaluated for a Class I road using data obtained from existing road core samples, traffic projections for 10 years into the future and an estimated Illinois Bearing Ratio of 3.0. Calculations indicate an average bituminous overlay requirement of four inches if the existing pavement remains, thus indicating the structural inadequacy of the existing pavement.

Pavement serviceability ratings, which are based upon cracking, patching, potholes, deterioration, maintenance, and visual physical condition, are done on all state highways every two years. The most recent Condition Rating Survey (CRS) data available for U.S. BR 20 are for 1982 and are based on a scale of 1.0 to 9.0 from poorest to best. In addition, a "road ride" rating of 0-5 is given with 5 being the best. In 1982, U.S. BR 20 had a CRS rating of 3.9 and a road ride rating of 2. This demonstrates relatively poor ratings for both serviceability and road ride for existing U.S. BR 20.

Maintenance costs for 1981 and 1982, the latest data available for the segment of U.S. BR 20 being studied, are above both the State and District 2 averages. For example, in 1981 the cost per lane mile for U.S. BR 20 was $3,127 while the District 2 average was $2,552 and the State wide average was $2,737. In 1982, the cost per lane mile for U.S. BR 20 was $2,973 while the District 2 average was $2,663 and the statewide average was $2,885. Thus, maintenance costs ranged from 3% to 22% above statewide and District 2 averages for the 1981-1982 period.

II. AFFECTED ENVIRONMENT

A. SURROUNDING TERRAIN AND ECOSYSTEMS

Agricultural Lands

The area immediately surrounding the proposed improvement is predominantly agricultural with some developed land in Belvidere and near Lyford Road. The usual types of trees and vegetation are present adjacent to the creeks which cross the proposed corridor at several points. By implementing any of the proposed build alternates, existing areas of active farmland will be converted permanently to grass. If Alternate 1 is selected, the existing total right-of-way of 82.7 acres, will be increased by 69.6 acres to a total of 152.3 acres. Similarly, if Alternates 2, 3 or 4 are implemented, the existing right-of-way will be increased by 71.1 acres, 73.1 acres, and 36.9 acres to a total of 153.8 acres, 155.8 acres, and 119.6 acres respectively. Therefore, construction of Alternate 1 will result in the conversion of 43.0 acres of cultivated farmland and 5.4 acres of pasture land to grass; Alternate 2 will convert 45.1 acres of tillable farmland and 6.0 acres of pasture to grass; Alternate 3 will convert 46.0 acres of active farmland and 4.4 acres of pasture to grass; Alternate 4 will result in the conversion of 25.8 acres of cultivated fields and 4.4 acres of pasture to grass. A breakdown of these acreages are shown on Table 19.

The proposed right-of-way lines for any of the proposed build alternates generally follow a line parallel to the existing right-of-way line. Thus, the general configuration of agricultural fields along the corridor will remain unaffected by any of the build alternates. Because all alternaters follow the existing alignment of U.S. BR 20, there will be no remnant parcels of agricultural land.

The implementation of any of the proposed build alternates will enhance both surface and subsurface drainage by construction of four foot deep ditches along the outside of the pavement. Any field tile lines encountered will be outletted into the proposed roadside ditches, where practical. Tile lines located deep enough to require crossing the proposed roadway will be rebuilt between the right-of-way lines with access structures at each end.

Existing natural drainage patterns will be maintained.

Ecological Resources

The proposed project involves the construction of an expressway between the cities of Rockford and Belvidere which would closely follow existing U.S. Route BR 20. An ecological survey was conducted during the summer and fall of 1984 to

evaluate the ecological impacts that would result from the construction of this project.

Habitat Description

The project corridor within Boone and Winnebago Counties lies in the eastern part of the Rock River Hill Country of the Till Plains Section of the Central Lowland Province (Leighton 1948). Dominant features of this division are rolling hills, thin glacial drifts and narrow valleys. The description of the habitat within the project corridor will be referenced by the alignment stationing as described in Section II of the Environmental Assessment.

The project corridor is 5.07 miles in length and is dominated by agricultural ground with urbanization occurring on the edge of Rockford (Stations 260+00 to 280+00) and Belvidere (Stations 155+00 to 280+00). Individual private residences, commercial developments, and subdivisions are also found along the corridor.

Woodlots are found along the project corridor, generally in the vicinity of private residences. The larger wooded areas are composed of bur oak (Quercus macrocarpum), white oak (Q. alba), black oak (Q. nigra), shagbark hickory (Cara ovata). Disturbed wooded areas adjacent to the highway consist of American elm (Ulmus americana), Slipper elm (U. rubra), willow (Salix spp.), ash (Fraxinus spp.), silver maple (Acer saccharinum), Box elder (A. negundo).

The Boone County Conservation District owns property right of Stations 44+00 to 57+00. The property is agricultural where it borders the corridor and is considered to be park land.

Water Resources

The corridor crosses Beaver Creek at Station 70+00.

The following description of Beaver Creek was taken from the Boone County Surface Water Resources Report (Tichace 1969).

Beaver Creek	(T44N, R33E, Section 30)
Surface Acres	83.0
Miles	25.5
Average Width	27 feet
Gradient	10.4 feet/mile
Tributary to	N. Branch of the Kishwaukee River

This moderately gradient stream originates in the northeast corner of the county just south of Shorn, Wisconsin. From this point it meanders in a roughly diagonal line to the southwest entering the Kishwaukee River, 0.75 mile east east of the Winnebago County line. Its 40,660 acre drainage basin includes the highest point in the county.

The stream's depth ranges from a maximum of 7 feet to a minimum of 18 inches, having an average depth throughout of 3.5 feet. Some spring activity occurs on the basin as beds of watercress are found at various locations along its course. Much of the middle portion has been dredged.

In a 1965 survey, sampling locations just north of Belvidere and south of Poplar Grove produced 26 species, most of which would be classified as forage fish.

The stream course contains for the most part, Westville Silt Loam, Otter Silt Loam and the watershed is predominantly Pecatonica Silt Loam. These soil types are characterized by moderate to rapid drainage and moderate sub-surface drainage.

The habitat surrounding structure 004-0001 (Station 70+00) will be described by quadrants with BR 20 representing the east-west axis and the creek as the north-south axis.

The bridge approaches are grass covered from the pavement edge to the right-of-way line. The vegetation below the bridge is willow and grass. The three eastern spans are silted in with the creek running through the westernmost span.

Upstream (north) the creek flows through one mile of riparian woodland, then drains pastures and agricultural ground.

The northwest and northeast quadrants have similar vegetation. The streambanks 50 yards north of the bridge are low sand and silt banks with dense stands of willow. Beaver (Castor canadensis) tracks and willow cuttings are evident on all banks. The bank on the northeast side become steeper and varies in height. Upstream, the channel has been dredged, with spoil mounds lining the bank. The stream consists of riffle and pool zones. The substrate in the riffle areas consist of gravel and supports a diverse mussel fauna. Open shells along the streambank indicate raccoon (Procyon lotor) feeding activity. A green heron was observed feeding in the riffle zones. The pools vary in depth and have a soft silt bottom. Approximately 0.25 of a mile upstream a beaver dam occurs in the west channel around a small island.

The southeast quadrant is a wide floodplain under agricultural use. A narrow band of riparian vegetation consisting of willow, boxelder and silver maple buffers the stream. The southwest quadrant consists of a grass filed bordered by woody riparian vegetation.

Downstream of the structure (south) the creek consists of long, deep pools with gravel bars extending from the shore. The next riffle zone is approximately 0.5 miles downstream. This section of Beaver Creek appears to receive moderate fishing pressure.

Water Quality

Water sampled from Beaver Creek was tested on June 7, 1984 with a LaMotte testing kit. Dissolved oxygen was 10 ppm, dissolved CO_2 was 9 ppm and pH was 7.5. These criteria are above the standards set by the Illinois Environmental Protection Agency. The water conditions are adequate to support aquatic fauna as was indicated by the field survey. Turbidity was 30 inches, measured with a secchi disk, in one upstream pool. Siltation may vary in this stream with the amount of agricultural runoff and extent of cattle usage upstream.

B. SURROUNDING NATURAL AND CULTURAL FEATURES

The two prime cultural features of the project area are the towns of Rockford and Belvidere, which are connected by U.S. BR 20. See Table 1 for population data.

Rockford

The east corporate limits of Rockford currently end approximately one and one-half miles west of the west terminus of the project. This geographic proximity to the project makes the Greater Rockford area the prime traffic generator for the portion of U.S. BR 20 being studied. The City of Rockford, with a population of 139,712 is the county seat of Winnebago County and the business and industrial hub of northwest Illinois. Corporate Rockford encompasses an area of over 38 square miles while the Rockford metropolitan area, which includes Winnebago and Boone Counties, has an estimated population of 279,514. There are over 772 factories in metropolitan Rockford producing goods ranging from aviation and space instruments to structural steel and toys.

A wide variety of facilities and public services are available, including: 22 banks and savings and loans, over 200 churches, one daily and 3 weekly newspapers, six radio stations, 5 television stations, 2 municipal bus lines, 4 intercity bus lines, 38 common carrier truck lines, 4 railroads, numerous amusement and entertainment facilities, 125 parks, 8 museums, 3 hospitals, 4 colleges, a public library system that includes 4 branches, 530 miles of streets and 974 miles of sewers.

Belvidere

The east terminus of the U.S. BR 20 study area is at High Line Street in the northwest corner of Belvidere. The importance of Belvidere as a traffic generator, due to its proximity to the study area is readily apparent. The City of Belvidere contains an area of 3 square miles, with a population of 15,176 of Boone County's total of 28,630. As the county seat of Boone County, Belvidere provides a number of facilities and public services including: 5 banks and savings and loans, 2 parks, 25 churches, 66 manufacturing facilities, one daily newspaper, one railroad, one bus line, several amusement facilities, 2 hospitals, 26 major

TABLE 1
POPULATION DATA

	CENSUS DATA		PROJECTED POPULATION**	
	1970	1980	1990	2000
Winnebago County	246,623	250,884	281,166	294,825
Rockford Township	191,671	178,858	204,380	209,328
City of Rockford	147,370	139,712		
Boone County	25,440	28,630	33,040	36,293
Belvidere Township	17,147	18,729	23,943	26,828
City of Belvidere	14,061	15,176	17,500	19,750
Rockford Metropolitan Area*	272,063	279,514		

*Standard Metropolitan Statistical Area (SMSA) includes Winnebago and Boone Counties

**Projections for Winnebago County and Rockford Township from Rockford-Winnebago County Planning Commission; Boone County and Belvidere Township from Rock Valley Metropolitan Council; City of Belvidere from Belvidere and Boone County Regional Planning Commission.

truck lines, a public library, one museum, 75 miles of streets and 65 miles of sewers.

Kishwaukee River

The most notable natural feature of the project area is the Kishwaukee River which flows through Belvidere and the south part of Rockford before emptying into the Rock River. Land use plans in both Winnebago and Boone Counties indicate a high priority for developing the area along the Kishwaukee River as open space and park areas.

Water Reservoir Sites

There are 5 existing water reservoirs in Winnebago County and 2 in Boone. Also, there are a number of potential reservoir sites in Winnebago and Boone Counties; in particular, Winnebago County has 13 potential sites and Boone County has 3 sites. The closest reservoir site to the project is located over 2 miles north of the east terminus. None of the reservoir sites receive drainage from the project area.

Archaeological/Historic Sites

Four different construction and right-of-way alternates for proposed improvements to F.A. 517 (U.S. Business Route 20) were surveyed by the Resource Investigation Program (RIP), University of Illinois, Urbana, and by the Midwestern Archaeological Research Center (MARC), Illinois State University, Normal. The Phase I pedestrian reconnaissance by RIP failed to reveal any prehistoric sites; evidence for historic sites was submitted to MARC. These sites and those with standing structures were visited and evaluated in the field by MARC personnel in order to ascertain their potential for inclusion in the National Register of Historic Places. Of the 20 sites identified, three of the 14 sites with standing structures may be eligible for the National Register owing to their architecture. Architectural studies to determine the eligibility of those buildings actually impacted also will be undertaken.

These three buildings or sets of buildings which are considered as having potential for eligibility for historic registration are discussed below.

The first is the A.M. and Z.M. Smith site (11-Bo-H0-6; 11-Bo-195) located Right of Station 158, approximately 0.1 mile west of Town Hall Road (south side). This is a farmstead consisting of a house, barn and silo. The house is a two-story, brick Gothic Revival structure of the type made popular by architect Andrew Jackson Downing and others.

The second is the Ezra May site (11-Bo-11-10; 11-Bo-199) located Right of Station 117, approximately 0.1 mile east of Beaver Valley Road (south side). This is a farmstead, consisting of a house, barn with silo and other outbuildings. The house is

a one and one-half story, T-shaped frame structure with white clapboard siding and asphalt roof, resting on a limestone foundation.

The third is the Peter Clarke Site (11-Bo-H-12, 11-Bo-201) located Right of Station 91. This is a one-story frame house located approximately 0.1 mile east of of Distillery Road (south side). The clapboard siding of this structure may conceal a log cabin.

In addition, eleven other standing buildings or building clusters and six sites of former structures have been identified as having potential archaeological interest. A complete report further discussing the three potential register sets of structures as well as the remaining sites is available for review at the IDOT District 2 office in Dixon.

Developed Areas

Developed areas of various types exist along the entire length of the project. Beginning at the west terminus of the project, the following developments currently exist along or near the project: the Clock Tower Inn in the southwest corner of the Lyford Road - U.S. BR 20 intersection has motel, restaurant, shopping, museum, and small convention facilities; a gas station is located in the northwest corner of Lyford Road and U.S. BR 20; a recreational waterslide facility is situated on the northeast corner of the intersection; a motel is located in the southeast corner of Lyford Road and U.S. BR 20; to the south on Lyford Road is an 18 hole golf course, a corporate headquarters, a large engineering facility, a Boys Club site and a large residential subdivision; a large drive-in/indoor theater complex is located approximately one-quarter mile east of Lyford Road immediately south of U.S. BR 20; a stone quarry is situated immediately north of U.S. BR 20 and approximately one-quarter mile west of Shaw Road; individual residences as well as small residential subdivisions are located north and south on Shaw Road within a mile of U.S. BR 20; two residential subdivisions are located on the west side of Olson Road within a mile of U.S. BR 20; a go-cart rental facility is located in the northeast corner of the U.S. BR 20 - Beaver Valley Road intersection; a night club is located immediately north of U.S. BR 20, one-eighth mile east of Beaver Valley Road; the Belvidere Church of the Open Bible is situated in the northeast corner of the U.S. BR 20 - Town Hall Road intersection; approximately one mile west of High Line Street in Belvidere begins an area of both residential and

commercial development on both sides of U.S. BR 20 which extends to the east project terminus at High Line Street. The remainder of the project is dominated by farmland and farm buildings.

Area Road Network

The area immediately surrounding the U.S. BR 20 project corridor is served on three sides by major traffic facilities (Exhibit 2). Approximately one-quarter mile west of Lyford Road lies Interstate 90, running north and south; I-90 is a four-lane tollroad. South of Newberg Road, I-90 turns and runs east and west between Rockford and Belvidere, approximately 2 to 3 miles south of the proposed project. Also running between Rockford and Belvidere, approximately 2-1/2 miles south of U.S. BR 20, is U.S. Route 20, a four-lane roadway. About one-half mile east of High Line Street is Illinois Route 76, running north and south. No marked route running east and west lies closer than 6-1/2 miles north of the project route.

Airports

The nearest airport to the project is the Belvidere airport. It is located three miles north of the project on Illinois route 76 and does not require additional coordination since it is more than two miles from the nearest point on the project.

Private Utilities

The U.S. BR 20 corridor between Lyford Road and High Line Street is furnished with natural gas by the Northern Illinois Gas Company via a gas main running parallel to the roadway for the length of the project.

Telephone service is generally provided by overhead lines owned and operated by the General Telephone Company of Illinois.

Electrical distribution is generally accomplished by overhead lines belonging to Commonwealth Edison Company. In addition, there is a major power transmission line on steel towers crossing U.S. BR 20 at a point approximately one-quarter mile west of the county line.

C. VISUAL QUALITY

The existing roadway is a two-lane facility following the rolling terrain of the area. The "view of the roadway" is similar to that of many other at-grade roadways passing through the rural countryside. The "view from the roadway" is of typical farmland surroundings, interspersed with occasional small commercial establishments.

D. SURROUND NEIGHBORHOODS

The general character of the land along the project corridor is agricultural in nature with the majority of residents working in agricultural related fields. The farmsteads are typical to those existing in northern Illinois consisting of farmhouses, barns, and out buildings. Several of the houses adjacent to U.S. BR 20 are currently rental properties. There are currently no known religions or ethnic groups present along the project corridor. There are a number of commercial establishments located within the U.S. BR 20 project limits. The majority of these businesses are located near the Lyford Road intersection or along the eastern end of the project corridor in Belvidere.

E. PUBLIC FACILITIES AND SERVICES

School District No. 205 currently has one bus per day that utilizes U.S. BR 20 as far east as the Winnebago-Boone County line. No public water systems exist east of I-90. Sanitary sewers serve the Clock Tower Inn as well as properties on the south leg of Lyford Road and to a point 100' north of U.S. BR 20 on Lyford Road. The remainder of the project area in Winnebago County is serviced by wells and septic systems.

Police protection is provided by the Winnebago County Sheriffs' Department and fire protection is provided by the Cherry Valley Fire Department. There are no fire stations located on U.S. BR 20 between Lyford Road and the Boone County Line.

School District 100 presently has 6 buses per day traveling along U.S. BR 20 west to the Winnebago-Boone County line. City water service is planned to extend approximately 600' west of High Line Street on U.S. BR 20 while sanitary sewer service is planned to extend approximately 400' west of High Line Street. The remainder of the Boone County area along U.S. BR 20 is served by wells and septic systems.

Police protection is provided by the Boone County Sheriffs' Department. Fire protection is under the jurisdiction of the Boone County Fire Protection District. There are no fire stations located along U.S. BR 20 from High Line Street to the Winnebago County line.

F. EXISTING ROAD SYSTEM

The existing road system in the immediate project area consists of six north-south intersecting roads along with U.S. BR 20. U.S. BR 20 is a rigid pavement of varying widths, classified as an Area Service Road between the cities of Rockford and Belvidere. Lyford Road and Shaw Road are bituminous pavements which are considered collector roads. The remaining side roads are classified as land access roads generally serving the farm to

market population. The average daily traffic (ADT) is 6,700 vehicles at the west end of U.S. BR 20. Traffic increases to 7,200 ADT at the eastern terminus of this project. See Exhibits 3A and 3B for existing typical sections.

G. EXISTING NOISE LEVELS

Existing noise levels were determined throughout the project. A Bruel and Kjoer sound level meter type 2205 was used to obtain the existing noise readings during February 1984. Readings were taken at various locations throughout the project with the following noise levels recorded: Lyford Road and U.S. BR 20 intersection - 54 to 61 dBA; Lyford Road to Shaw Road on U.S. BR 20 - 50 to 63 dBA; Shaw Road and U.S. BR 20 intersection - 52 to 61 dBA; Shaw Road to Olson Road on U.S. BR 20 - 47 to 54 dBA; Olson Road to Beaver Valley Road on U.S. BR 20 - 53 to 63 dBA; Beaver Valley Road to the west edge of Belvidere on U.S. BR 20 - 52 to 63 dBA; and the Belvidere residential area to High Line Street on U.S. BR 20 - 49 to 63 dBA. At all locations, the existing noise levels are below the abatement criteria of 67 dBA for residences and 72 dBA for commercial establishments. A tabulation of specific receptor locations and their related measured existing noise levels can be found in Section IV I. of this report.

H. ENDANGERED AND THREATENED SPECIES

Federally-listed endangered species which may occur in the proposed project area are the Indiana bat and the bald eagle. The Indiana bat is listed by the U.S. Fish and Wildlife Service North Central Region "Red Book" for threatened and endangered species as occurring in Winnebago and Boone Counties. Wintering habitat for the bald eagle may also occur in Winnebago County.

Two vertebrate and 64 plant species listed as endangered or threatened in Illinois by the State Endangered Species Protection Board have been recorded in Winnebago and Boone Counties. The habitat requirements and distribution of these species are described in the Endangered and Threatened Vertebrate Animals and Vascular Plants of Illinois as published by the Illinois Department of Conservation.

I. WATER RESOURCES

Water resources in the project area consist mainly of man-made facilities, with the exception of the Kiswaukee River which has previously been described. Municipal water service will be available in Belvidere to a point 600' west of High Line Street on U.S. BR 20. The municipal water supply for Belvidere is obtained from 8 wells, the closest well being located approximately 0.6 miles north of U.S. BR 20 on Beloit Road. This well is 120 feet deep and was constructed in 1969 into a sand and gravel aquifer. The remaining seven wells are approximately

1,800 feet deep and draw from the Galaville aquifer. None of these seven wells are located in the project area. Rockford's water supply is derived from 35 deep groundwater wells, none of which are located in the project area. There is no municipal water service from Rockford east of I-90.

There are 31 rural homesteads and 13 commercial establishments along the U.S. BR 20 corridor which are served by private wells. These wells are all located within 500' of the project limits. From well boring logs, the commercial wells generally draw from either a limestone or a sandstone strata, with depths varying from 250 feet to 860 feet. The residential well depths vary from approximately 50 feet in a sand and gravel strata to 450 feet into sandstone strata.

The 1977 Overall Economic Development Plan for Boone County states that current water supplies are in no danger of depletion if used carefully and protected from haphazard development.

J. EXISTING AREA PLANNING

To best examine the scope and status of existing planning in the project area as well as policies and controls on future land use it is necessary to look separately at Boone and Winnebago Counties. Existing land use in the project area is shown in Exhibit 4.

In the Winnebago County section of the project area there are several possible future developments. In the Year 2000 Plan of the Rockford-Winnebago County Planning Commission the potential of a bicycle path or urban trail is identified within the Commonwealth Edison Company right-of-way located approximately one half mile west of the county line. In addition, the Sanitary District of Rockford has long range plans to cross U.S. BR 20 at two locations for interceptor sewers between Lyford Road and the county line with the possibility of additional individual or lateral sewer lines to be constructed across the right-of-way. Also identified in the Year 2000 Plan as a possible generator of future bicycle traffic is the Boys Club of Rockford site, located a half mile south of U.S. BR 20 on Lyford Road. The specific locations for these proposed Winnebago County developments are shown on Exhibit 5A. As can be seen on Exhibit 5, the proposed land use for Winnebago County in the project area is primarily agricultural and commercial.

There are also a number of future projects in Boone County adjacent to the project area which need to be considered. The first project which will impact this area is a segment of U.S. BR 20 extending from High Line Street east to Illinois Route 76. This project, which was constructed in 1984 consists of widening the existing 24 foot pavement to a dual 24' wide pavement with a 14' median. The next project which will impact this project is the proposed Belvidere East Bypass project. This project, which is included in the 1984 IDOT 5 year plan, begins at the

intersection of Genoa Road and U.S. BR 20 on the east edge of Belvidere and terminates at the Appleton Road - U.S. BR 20 intersection in the northwest corner of Belvidere. The ultimate plan calls for two 24' pavements with curb and gutter. Another proposed improvement in the project area, not currently on the 5 year plan, is the improvement of Appleton-Stone Quarry Road from its intersection with U.S. BR 20 to a point 1,500' north of its intersection with U.S. Route 20 at the southwest corner of Belvidere. As can be seen on Exhibit 5, the proposed land use for the area of Boone County immediately adjacent to the project is residential, limited residential and commercial. The Kishwaukee River bottom land just south of U.S. BR 20 is proposed as a future park and recreation area. A recent acquisition by the Boone County Conservation District of a one-quarter mile long tract of land abutting U.S. BR 20 on the south, one mile east of the county line, will ultimately provide direct access from U.S. BR 20 to the proposed park area. However, legal stipulations prevent use of the land for other than agricultural purposes until the year 2019. The specific locations for these proposed Boone County developments are shown on Exhibit 5A.

III. ALTERNATIVES INCLUDING PROPOSED ACTION

A. SELECTION OF REASONABLE ALTERNATIVES

The needs for action along U.S. BR 20 have been discussed in Section I of this report. The ability to meet these needs is the best criteria to judge the quality of an alternative considered for the project. Specifically, a reasonable alternative should be able to:

1. Provide for the safe and efficient movement of increased traffic between the centers of Rockford and Belvidere.

2. Facilitate projected development between Rockford and Belvidere.

3. Complete the missing portion of a high-type transportation facility.

4. Improve the structural adequacy, serviceability and road ride of the existing roadway, as well as reduce maintenance costs.

In addition to fulfilling the above project objectives, a reasonable alternative should do so without incurring excessive costs or creating adverse environmental impacts.

B. ALTERNATIVES CONSIDERED BUT NOT STUDIED IN DETAIL

Postponed Action

Postponing of any action on U.S. BR 20 might be considered a viable alternative if current problems with the roadway are viewed as temporary in nature or relievable by other projects planned for the near future. Either of these two reasons would give hope that the existing situation could be cured by the simple passage of time alone.

However, age of the existing facility and traffic, the two major components of the problems on the project route, will not get any better by delaying action. Projected traffic increases for the roadway give no indication that other projects will siphon off enough vehicles to have any impact. The existing road base, already over fifty years old, is covered by bituminous overlays ranging from 14 to 25 years in age; the effects of time on this pavement structure, already reflected in poor pavement serviceability and road ride ratings and increased maintenance costs, can only continue the decline in its condition.

In addition, putting off construction will not solve any of the existing safety problems found along the roadway.

From the discussion above, it can be seen that postponed action not only does not meet any of the project objectives, but would cause existing problems to worsen; therefore it was not considered a reasonable alternative and was not studied in detail.

Public Transportation

Belvidere is currently served by one intercity bus line while Rockford has three intercity and two intracity bus lines. Connections between the two cities are furnished by Greyhound Bus Lines.

Demand has not been great enough to create significant use of public transportation between the two cities and a marked increase in future service through a limited residential area is not expected.

Since public transportation probably will not have a significant impact on projected traffic volumes for the U.S. BR 20 corridor and will not solve existing non-traffic related problems, this alternative was not studied in detail.

Lesser Action Alternatives

The consideration of lesser action alternatives involves three possibilities: widening and resurfacing, reconstruction as a two-lane facility and constructing a rural four-lane roadway with a median width narrower than current standards. The discussion of a narrow median width will pertain only to the alternates which would utilize a divided highway concept - Alternates 1, 2 and 3.

In order to widen and resurface the existing roadway, rehabilitation (3R) guidelines would be followed. These policies would permit the retention of vertical curves designed for speeds 10 to 15 miles below the desired design speed for this type of facility. Also, existing earth side slopes will be allowed to remain in place.

It is assumed that, under this alternative, construction will not include any work on Lyford and Shaw Roads other than resurfacing the returns.

Although wideningand resurfacing would be the most economical of the lesser action alternatives, would create the least environmental impacts (by leaving existing conditions outside of the roadway pretty much as they are) and would partially solve the first, second and fourth project objectives, it would leave some major problems unresolved.

With regard to safety for the motoring public, some improvements would be made. Specifically, the roadway surface would be improved and some roadside obstacles would be removed or protected against by guardrail. However, consideration of

roadside obstacles will not be out to a distance required by new construction. Also, as previously mentioned, vertical curves and earth slopes will not be adjusted to full design standards. Therefore, although this alternative would improve the safety of the highway, it would not be to the same standards as a new road.

Restricted sight distance and substandard vertical curve conditions will remain as hazards on Shaw and Lyford Roads, as well.

As far as handling the efficient movement of increasing traffic volumes is concerned, this proposal would be adequate for approximately 11 years after construction takes place. At that time traffic is anticipated to increase to the level requiring consideration of a four-lane facility. Continuing past that point with a two-lane roadway would lead to a decrease in the level of service as described in Section I. Along with the increased costs incurred by a motorist operating at a lower level of service would be a corresponding decrease in safety.

Another problem affecting the efficiency and safety of traffic flow is the likelihood that a two-lane road would remain without any access control, as is currently the case. Not only would this allow commercial access directly to U.S. BR 20, but it would leave a large number of agricultural and residential access points on the road. Each access location represents a potential point of conflict with regard to the safe and smooth flow of traffic.

Although a repaired and widened roadway would facilitate future development along its corridor, it would not do so to the same extent that a higher type of facility would do.

The resurfacing of the roadway, while improving the structural adequacy of the existing pavement, does not meet the necessary strength requirements for a 20 year design period and would require a second overlay in order to do so.

A further consideration is that the hydraulic capacity of the existing box culverts, which are very undersized by current criteria, would not be improved.

As discussed above, the lesser action alternative of widening and resurfacing the roadway fails to meet most of the projects ultimate goals and was therefore not studied in detail for the entire project.

Reconstruction of the roadway as a two-lane facility would solve some of the problems associated with just widening and resurfacing it. As far as safety goes, treatment of roadside obstacles, vertical curve design and construction of earth slopes would be to current design standards for new construction. A new pavement would provide the necessary structural adequacy as well as excellent serviceability and road ride. The hydraulic capacity of the existing drainage structures would be improved.

Finally, Lyford and Shaw Roads could be reconstructed, thereby eliminating the safety hazards there.

However, this alternative would still retain the problems inherent in a two-lane facility; namely, an inability to efficiently handle 20 year design traffic volumes. These volumes would be exceeded after 15 years of service.

In addition, this alternative will also not facilitate development along the corridor to the maximum extent possible, it will have more environmental impacts due to right-of-way requirements and significant problems in maintaining traffic during construction and it will only be able to be built at a substantial cost.

Due to the cost of constructing this lesser action alternative, while also leaving several project goals unattained, it was not studied in detail.

As established above, the construction of a four-lane facility along this corridor would be a more desirable solution toward reaching the goals of the project.

The lesser action version of a rural four-lane highway would involve the reduction of the median width. This is discussed in considerable depth because of the objections expressed by residents at the Public Information Meetings.

Current design policies of the Illinois Department of Transportation separate the recommended median treatment for this type of facility into two categories. In an area where a 45 mph design speed is desired, it is assumed that the availability of right-of-way would favor a 22 foot curbed median. This width provides the minimum protection for U-turn movements. In areas where a higher design speed is warranted, a 44 to 50 foot open ditch median is preferred. For a roadway utilizing a higher rate of speed, it is assumed that right-of-way can reasonably be acquired for inclusion of necessary safety features. By substituting shoulders and earth slopes for curbs, the wider median provides for improved operations on the through traffic lanes. It affords excellent drainage, particularly following snow removal; it also allows space for vehicle recovery and space for future additional lanes. U-turns are afforded better protection and can be permitted indefinitely, even with left-turn lanes.

For this project, it is felt that a 44 foot wide median is preferred in the areas where the speed limit is over 45 mph. This median will allow a 4 foot deep, 4 foot wide ditch with 4:1 sideslopes. A 4:1 sideslope is the steepest slope which can be negotiated by an out-of-control vehicle with a good chance of recovery.

For a lesser action alternative, consideration can be given to reducing the 44 foot wide median to a 22 foot width. However,

continuous curbing is not allowed alongside high speed multi-lane rural highways since it constitutes a roadside hazard. Therefore, in this area a flush median would be required. In addition, to increase the operational safety of the highway by neutralizing the interference of opposing traffic, which is the primary function of a median, a concrete barrier wall would have to be constructed down the center of the flush median. Median crossovers would be provided by openings in the wall; the exposed ends of the walls at these openings would receive impact attenuation devices to reduce the safety hazard that they present.

The effect of a reduced median width would be positive in some aspects. Depending on which of the first three alternates was selected for the proposed project, reduced right-of-way requirements would eliminate the necessity to acquire one church or two residences (out of 13) or three residences (out of 11). In addition, approximately 11.2 acres of land (16% of the total requirements) would be saved, the majority of it consisting of farmland.

However, a number of problems would be created with this narrower median width. The view of the roadway would be seriously affected. The lack of a grassy strip between the traffic lanes, an intermittent concrete wall and the large number of impact attenuation devices will create an effect that is not in harmony with the rural area through which the project passes.

In this case, the additional costs associated with a median paved for its full width, the drainage system required to handle median storm water, the concrete barrier and the impact attenuation devices, the narrower width median will add approximately $847,000 to the cost of the project.

Another problem created by the narrowing of the median is the reduction in the safety of the vehicular traffic along the project. The exposed ends of the barrier wall, although protected by the impact attenuators, will still present an obstacle along the traveled roadway. An out-of-control vehicle, even if it misses the ends of the walls, is apt to sustain damage by hitting the concrete wall, before recovering.

The American Association of State Highway and Transportation Officials (AASHTO), which formulates the basic design criteria used by transportation engineers in designing the nation's streets and highways, makes the following comments in its 1984 A Policy on Geometric Design of Highways and Streets:

> "The principal functions of a median are to provide the desired freedom from the interference of opposing traffic, to provide a recovery area for out-of-control vehicles, to provide a stopping area in case of emergencies, to provide for speed changes and storage of left-turning and U-turning vehicles, to minimize headlight glare, and to provide width for future lanes."

"In general, the median should be as wide as can be used advantageously. As far as the safety and convenience of motor vehicle operation are concerned, the farther the pavements are apart the better. However, economic factors limit the width of median that can be provided. Cost of construction and maintenance increases generally with an increase in the width of roadbed, but the additional cost may not be appreciable compared with the cost of the highway as a whole and may be justified in view of the benefits derived."

From the above comments cited from AASHTO, it can be seen that conventional design theory favors the wider median width, particularly since there is a substantial economic penalty for constructing the narrower median.

Thus it can be seen that, even though some property may be saved, significant problems with aesthetics, cost and safety preclude consideration of a facility with reduced median width as a rural alternative to be studied in detail.

Alignment Relocation

Realignment of the proposed roadway outside of the existing U.S. BR 20 corridor could achieve the first three project objectives, as well as reduce the fourth objective to a minor consideration, due to the diverting of traffic from the existing facility.

Assuming that the east and west termini of this project would remain the same, several observations can be made. Relocation to the south would involve the disruption of a large commercial facility (drive-in/indoor theater complex), either infringe upon a cemetery at the county line or divide a subdivision along Shaw Road, separate farm fields from their supporting buildings, require more agricultural land for right-of-way, encroach upon the Kishwaukee River floodplain and need larger drainage structures. The only advantage to a southern relocation would be a slightly shorter travel distance between Rockford and Belvidere. Relocation to the north would involve the disruption of a large commercial facility (stone quarry), divide a subdivision along Shaw Road, separate farm fields from their supporting buildings, require more agricultural land for right-of-way and create a longer travel distance between the two towns. The only advantage to a northern relocation would be in needing smaller drainage structures.

Residential and commercial activities are well established along the existing U.S. BR 20 corridor and would be disrupted by a change in alignment.

Therefore, since advantages to relocating the facility are very minor and could not take place without incurring excessive

costs or creating adverse environmental impacts, a general alignment relocation was not studied in detail.

One additional consideration would be the relocation of the eastern end of the project. This would involve continuing the roadway straight east from the center of Section 22, to link up directly with the proposed Belvidere East Bypass project. This alignment modification will not be studied in detail since the route would cut through a large electrical substation, with subsequent costly results.

C. NO-ACTION ALTERNATE

Most of the effects of the No-Action Alternate have been covered in the prior discussions regarding postponed action and lesser action alternatives.

The No-Action Alternate consists of retaining the existing highway facilities and involves no construction activities. It will require no expenditure of funds and will have no adverse environmental impacts resulting from construction.

Traffic patterns will remain as they currently exist. Traffic volumes will continue to increase, resulting in a decreased level of service; this will result in economic losses and safety problems. Safety hazards on the present roadway will remain.

The hydraulic inadequacies of existing box culverts would be unchanged.

The structural capacity, serviceability and road ride of the existing pavement will continue to deteriorate. Maintenance costs, already high, will continue to escalate.

Projected development between Rockford and Belvidere will be hindered because the main local traffic artery in this area will be a substandard facility.

In summary, it can be seen that none of the project objectives are met by the No-Action Alternate.

D. BUILD ALTERNATES - GENERAL

Alternates 1, 2 and 3

For these alternates, the ultimate proposed project consists of constructing a four-lane divided highway on the alignment of an existing two-lane roadway (U.S. BR 20).

Construction starts just west of the intersection of Lyford Road and U.S. BR 20. Beginning at the existing four-lane road with a 16 foot curbed median, the median widens to a 22 foot curbed median as the new road proceeds east from Lyford Road.

Left turn lanes will be constructed for both U.S. BR 20 approaches at the intersection with Lyford Road. See Exhibit 6A for typical sections.

The 22 foot curbed median will be constructed in the 45 mph speed zone, widening to a 44 foot open ditch median at the beginning of the 55 mph speed zone, located toward the east end of the Belford 6 Drive-In Theaters property. The open ditch median continues to the Winnebago-Boone County Line, a distance of about 5,781 feet (1.09 mi.) from the point of beginning. The length of road having curbed median will have shoulders on the outside edge of pavement, with the remaining roadway having shoulders at both the inside and outside edges of pavement. From the county line, the proposed roadway continues east with the open ditch median until it reaches the curve just outside Belvidere. There the median begins to narrow to meet a 14 foot flush, paved median at the outskirts of town. Shoulders will be utilized outside the edges of pavement in the area of the paved median. The urban design consists of widening and resurfacing the existing pavement to provide four lanes of traffic and the 14 foot median (See Exhibit 6B). This section will be constructed to High Line Street, a distance of about 21,022 feet (3.98 mi.) from the county line.

The approximate total project length is 26,753 feet (5.07 mi.).

Additional left turn lanes are planned on U.S. BR 20 for the east and west approaches at Shaw Road, the west approaches at Olson, Beaver Valley and Town Hall Roads and the east approach at Distillery Road.

New mainline pavement will be of the continuously reinforced, Portland Cement concrete type.

Lyford Road will be reconstructed for a distance of about 1,048 feet north and 976 feet south of U.S. BR 20, for a total length of approximately 2,024 feet (0.38 mi.). The new pavement will be constructed of Portland Cement concrete and will taper from four through lanes and a left turn lane at the intersection, to two lanes where it meets the existing pavement to remain in place (See Exhibits 6A and 6C).

Lyford, Shaw, Olson, Distillery, Beaver Valley and Town Hall Roads will retain their at-grade intersections with U.S. BR 20.

Shaw Road south of the mainline will be rebuilt as a two-lane Portland Cement concrete pavement. Shaw Road to the north, as well as Olson, Beaver Valley and Town Hall Roads, where reconstruction is required, will be built as two-lane roadways with a bituminous concrete surface over an aggregate base course. Distillery Road will remain a two-lane road with a bituminous surface treatment on top of an aggregate base course. See Exhibit 6C for typical sections of these sideroads.

Projected traffic data for the construction year and twenty years later is shown in Table 2 for U.S. BR 20 and the sideroads. Appropriate truck volume information is also included.

Speed limit zones as currently posted will remain the same after construction, with the exception of Shaw Road to the north which does not have a posted speed limit at this time. The township highway commissioner has agreed to post a 40 mph speed limit in this area following construction.

The existing box culverts crossing under the roadway do not have sufficient capacity to meet current design standards. They will be removed and larger structures, of sufficient size to meet requirements, will be constructed in their place as part of the proposed project.

Due to the rolling nature of the terrain in the area, the presence of a significant number of field tile lines crossing under the existing pavement is not anticipated. Any tile lines encountered will be outletted into the proposed roadside ditches. Locations of field tile will be determined for construction plans by contact with local land owners. In addition, exploratory trenching will be used during construction to fix the locations of any unknown lines.

There is one major stream crossing required, over Beaver Creek, approximately 1.3 miles east of the county line. The existing four span bridge had the superstructure replaced and the abutments reconstructed in 1983. Thus, the existing structure is in excellent condition and, with only a two foot widening of the outside shoulder, can be used as half of the dual bridge system needed for a four-lane divided facility. Finally, a second similar structure will be required at this stream to carry the proposed additional pair of lanes.

For a multi-lane Area Service highway, partial access control is preferred. Since there is currently no access control along U.S. BR 20, a number of changes would be required. For safety reasons partial access control does not allow direct commercial entry onto the roadway; thus access to businesses located along the roadway can be treated in one of two ways, either by purchasing the commercial rights to the property, thus eliminating it as a business, or by providing a service road from the business to a sideroad. Economic analyses were performed for business along the project and it was determined that it would be cost effective to buy the commercial interest of the following properties listed in Table 3.

TABLE 2

TRAFFIC DATA

LOCATION	30TH MAXIMUM HOUR TRAFFIC*		TRUCK VOLUMES	
	1988	2008	MEDIUM	HEAVY
U.S. BR 20 -west of Lyford Road	1,030	2,030	2.5%	2%
Lyford Road - north	245	760	4 %	1%
Lyford Road - south	485	1,410	4 %	1%
U.S. BR 20 - Lyford Road to Shaw Road	760	1,360	2.5%	2%
Shaw Road - north	85	135	3 %	0%
Shaw Road - south	150	220	3 %	0%
U.S. BR 20 - Shaw Road to Belvidere	755	1,355	2.5%	2%
U. S. BR 20 in Belvidere to Beloit Road	800	1,650**		
Olson Road	120	170		
Distillery Road	10	15		
Beaver Valley Road	60	85		
Town Hall Road	65	95		

*30th Maximum Hour Traffic is 10% of Average Daily Traffic

**assumes Belvidere East Bypass in operation

TABLE 3

ECONOMICS ANALYSIS FOR COMMERCIAL ACCESS

Commercial Property	Best Alternate	Access Cost	Property Cost
Aqua Supply Company	#2	$ 43,100	$ 15,400
Rustic Oaks Mobile Trade Center	Any	$ 82,500	$ 7,035
*Franklin Park Wire	#2	$ 356,500	$ 301,700
State Street Small Animal Shelter	#2	$ 192,200	$ 115,770

*formerly the Natilie P. Yarger property

In addition, partial access control requires a reduction in the points of conflict presented by agricultural and residential entrances on the roadway. To accomplish this objective, entry to the highway will be restricted to one point of direct access for each abutting property, to be used only for agricultural or single dwelling residential purposes. In order to satisfy spacing requirements and also to allow direct entry to median crossovers (which also have minimum spacing requirements so that they will not interfere with the operational safety of the roadway), agricultural and residential entrances have, in many cases, either been relocated or combined on a service drive. The effects of partial access control on commercial, agricultural and residential entrances are depicted on Exhibits 7A thru 9J.

One additional access control will be employed on this project. Entrance or service drive connections to a sideroad will be designed to provide a minimum distance of 100 feet from the near edge of the roadway through traffic lane to the beginning of the radius or flared portion of that connection. This is done to insure satisfactory operating conditions and safety.

Under the first three alternates proposed for this project, the reconstruction of Lyford Road will remain the same in each case. On the south approach of the road a gutter is proposed adjacent to the east edge of pavement in front of the Interstate Inn of Rockford property. This gutter will substitute for a ditch in carrying pavement drainage, thus, no land will have to be acquired from in front of the Exel Inn. The west side of this approach will be constructed with a roadside ditch, requiring the removal of approximately 53 parking spaces along the east edge of the Clock Tower Inn parking lot. Entrance to the Belford 6 Drive-In Theater will be via a service road connection to Lyford Road south of the intersection.

North of U.S. BR 20, Lyford Road passes between two commercial establishments, a gas station/restaurant and water slide. In order to reduce the amount of property needed from these businesses, about 500 feet of gutter is planned for each side of the road, instead of ditches. In addition, a sheet pile retaining wall around 300 feet in length will be needed next to the waterslide.

Average right-of-way requirements proposed for Lyford Road are about 130 feet to the south and 125 feet to the north of U.S. BR 20. Nine temporary easements will be necessary along Lyford Road, one for building a runaround, and the remainder for the reconstruction of entrances. See Exhibit 7A for details of construction on Lyford Road.

Waste disposal sites will be required for this project and borrow pits may also be required. Locations for these sites cannot be determined at this time because disposal of surplus material and acquisition of borrow material will be the responsibility of the contractor.

The final appearance of waste disposal sites is controlled by the Standard Specifications for Road and Bridge Construction of the Illinois Department of Transportation, which will be part of the construction plans. These same specifications also govern the final appearance, drainage and safety of borrow areas.

Special provisions included in the construction plans will require that borrow areas, temporary access roads, detours and runarounds, plant sites, staging and storage areas and other contractor-use areas will be inspected for evidence of archeological sites. If any are found, either the proposed construction activity will be relocated or the area will receive appropriate mitigation measures.

Recent accident history of U.S. BR 20 in this area has been studied in an Accident Analysis. This report categorized the numbers, types and locations of accidents that occurred along this route from 1980 through 1982. Statewide average accident rates are exceeded for the entire project for each of the three years and for some of the intersections for one or more years. In addition, the existing commercial entrance of the Belford 6 Drive-In Theater has had an abnormally high accident rate for two of the three years.

In order to determine the feasibility of recycling a portion of the existing bituminous surfacing, a Recycling Analysis was performed. It concluded that recycling was not advantageous for this project.

Finally, a Traffic Noise Analysis was prepared for this report. It was found that abatement criteria will not be exceeded, nor will any significant increases in noise levels occur, as a result of the project. This study is included as Section IV I. of the report.

Although previous discussion has established that a four-lane facility was the most desirable answer to the problems of the existing roadway, nevertheless, stage construction is to be implemented to fit growth along the corridor which is anticipated but not present at this time. By properly selecting the area to become the four-lane portion, most of the project needs could still be met; then, sometime in the future, when traffic demands reach the maximum capacity of a two-lane road, the remaining four-lane portion of the project could be completed.

This report studies the effects of a four-lane road for the entire length of the project. Further discussion will refer to this project in three phases; Phase I will indicate the construction of the initial four-lane portion of the project, as well as the rehabilitating of the remaining two-lane roadway; additional phases will indicate the future upgrading of the remaining two-lane portion to four lanes.

The section of U.S. BR 20 that is in Winnebago County was built in 1931 and widened to 22 feet in 1950. The Boone County part of the road was originally constructed in 1932, then widened to 24 feet in 1959.

Since the Winnebago County area of the project has the potential to experience the most rapid development in the near future, contains the substandard width portion of U.S. BR 20, has the major intersecting sideroad on the project (Lyford Road), contains the largest commercial traffic generator (drive-in theaters) and has the oldest original pavement and widening, it was selected to receive the initial four-lane construction. The Winnebago-Boone County Line does not constitute a logical eastern terminus for the four-lane highway, thus, it was decided to extend the four lanes one-third of a mile further east to the next major intersection, at Shaw Road. The four lanes will taper down to the existing two-lane width just past the curve lying immediately east of Shaw Road. The placement of the initial four-lane highway at this end of the project will allow for the reconstruction of Lyford and Shaw Roads, which will solve severe capacity and horizontal and vertical geometry problems at these intersections. It will also include the second largest commercial traffic generator (stone quarry). In addition, the west one-third of the project to be four-laned has recorded over one-half of the accidents for the project in the years 1980-1982; this upgrading should improve the least safe portion of the project.

Thus, Phase I will consist of constructing a four-lane highway along the route of U.S. BR 20 from just west of Lyford Road to a point east of Shaw Road, approximately one-half mile from the Winnebago-Boone County line. The remaining length of U.S. BR 20 will be resurfaced and receive safety improvements to a point about 850 feet west of High Line Street. The portion of the project remaining to be converted to four-lanes will be developed in two stages as traffic demand warrants. It is

anticipated that, following Phase I construction, the largest traffic volumes occurring on the two-lane roadway will take place at the eastern end of the project. Thus, Phase II will represent the building of a four-lane facility from just west of Town Hall Road to a point just west of High Line Street. Phase III, therefore, will consist of the four-lane reconstruction of that length of the project between Phases I and II. Phase I has about 9,300 feet (1.76 mi.) of four-lane construction and nearly 16,700 feet (3.16 mi.) of resurfacing. Phase II includes about 4,900 feet (0.93 mi.) and Phase III about 13,200 feet (2.50 mi.) of four-lane construction.

Development of the first three build alternates along the existing corridor fell into three logical categories. Attempting to balance the impacts on both sides of the roadway would involve centering the proposed four lanes on the existing centerline; this will require the removal of the existing pavement. In order to utilize the existing pavement as two lanes of the four-lane facility, the remaining two lanes could be built on either the north or the south side of the existing roadway. Further discussion of these three build alternates will follow in Sections III E, III F and III G.

Alternate 4

During the early development of this study, the proposed roadway was conceived as being essentially rural in nature (with an "open suburban" area at the western end and an urban area at the eastern end), due to the existing land use in the project corridor. This led to the proposing of a partially access controlled, divided, four-lane facility as described under Alternates 1, 2 and 3.

However, during the initial public involvement process (as detailed in Sections V B and V C in this report) many concerns were raised about this type of facility. Therefore, it was decided to add a fourth alternate to this study which would view the U.S. BR 20 corridor as a "closed suburban" area by giving greater emphasis to the projected land use along the route. As shown in Exhibit 5, this would consist of commercial development in Winnebago County and residential or limited residential development in Boone County. Only a very small segment of the project length in Winnebago County is expected to remain as agricultural land in the future. These projections could result in a corridor exhibiting closed suburban characteristics, such as a combination of intermittent ribbon development, street network and open space segments with a good potential for considerable land development within about 5 years after the highway improvement.

Under this premise, a proposed highway improvement would need to be designed more as an urban facility. This would require no access control, a flush median and a slower design speed. With this in mind, Alternate 4 was developed. By taking advantage of the insights gained from the study of Alternates 1,

2 and 3, a single alignment was selected which would use the best combination of the other alternates. The following discussion will cover only those items in which Alternate 4 differs from the first three alternates.

For Alternate 4, the ultimate proposed project consists of constructing a four-lane highway with flush median on the alignment of an existing two-lane roadway (U.S. BR 20).

Construction starts just west of the intersection of Lyford Road and U.S. BR 20. Beginning at the existing four-lane road with a 16 foot curbed median, the median becomes a 16 foot flush median on the east approach of Lyford Road (See Exhibit 6G), then transitions to a 14 foot median as the new road proceeds east. The 14 foot flush median continues to the eastern end of the project. This type of median will allow for the construction of left-turn lanes at all the sideroads, as well as providing a bi-directional left-turn lane outside of the intersection areas.

In order to facilitate snow removal and vehicular mail delivery, as well as reduce conflicts from stalled vehicles, shoulders are proposed adjacent to the outside edges of pavement.

In general, roadside drainage toward the highway will be intercepted by roadway ditches, as is now the case. In some instances, however, in order to prevent taking a residence or to reduce the right-of-way requirements in front of a house, a concrete gutter section has been placed against the outside edge of the shoulder, in lieu of a ditch.

Lyford Road will be reconstructed for a distance of about 1,048 feet north and 976 feet south of U.S. BR 20, for a total length of approximately 2,024 feet (0.38 mi.). See Exhibits 6G and 6H for typical sections of Lyford Road.

For Alternate 4, U.S. BR 20 is considered an urban Area Service class road, with Lyford Road being viewed as an urban Collector street and the remainder of the sideroads designated as rural Collector or Land Access class roadways.

Horizontal and vertical alignments on the mainline reflect a 45 mph design speed, except for the east end of the project where U.S. BR 20 enters the outskirts of Belvidere. In this area the design speed will drop to correspond to a similar reduction in posted speed limits.

Although Lyford Road has a current speed limit of 40 mph, a proposed design speed of 30 mph is required for an urban street classification. The township highway commissioner has agreed to a 30 mph speed limit in this area.

Under this alternate, the bridge over Beaver Creek will be widened to allow for an additional two lanes and flush median.

No access control is proposed for Alternate 4. Thus, existing entrances along U.S. BR 20 will remain in approximately their same locations, unless changes are necessary to meet grade or sight distance requirements. All commercial properties along the route will retain the same entrance location they have now.

Reconstruction of Lyford Road under Alternate 4 will be slightly different from the previous three alternates. To the south, the roadway will have curb and gutter on both sides; however, this will result in the same impacts to the Interstate Inn of Rockford and the Clock Tower Inn properties as before. Entrance to the Belford 6 Drive-In Theater will not be off of Lyford Road for this alternate, but will be from U.S. BR 20 at its existing location.

North of U.S. BR 20, Lyford Road will have curb and gutter along both sides. Although posted for a 30 mph speed limit, the gradeline will correspond to a 40 mph design, in order to provide adequate sight distance for the commercial entrances in the northwest corner of the intersection.

Average right-of-way requirements proposed for Lyford Road will be reduced to about 105 feet to the north of U.S. BR 20 for this alternate. Ten temporary easements will be necessary along Lyford Road, one for building a runaround, and the remainder for the reconstruction of entrances, in order for them to not exceed the standards for desirable grades. See Exhibit 10A for details of construction on Lyford Road.

All remaining general considerations for Alternate 4 are the same as for Alternate 1, 2 and 3. A further discussion of items particular to this alternate will follow in Section III H.

All build alternates are under consideration and a decision in favor of one will be made only after the public hearing transcript and comments on this report have been evaluated.

E. ALTERNATE 1

Alternate 1 consists of centering the proposed four-lane improvement on the existing centerline of U.S. BR 20. This will automatically require the removal of the existing pavement, since it would fall in the area of the proposed median. See Exhibit 6D for typical sections and Exhibits 7A through 7K for plans of Alternate 1.

In the description of Alternate 1 which follows, it should be noted that all Station locations given are approximate.

Phase I consists of constructing, or reconstructing, four lanes of pavement from a point 339 feet west of the Lyford Road intersection (Sta. 257+48) to a point 943 feet east of the Shaw Road intersection (Sta. 27+36), then narrowing the median and dropping two lanes in order to meet the existing two-lane

pavement in 1,175 feet (Sta. 39+11). There is a station equation at the Winnebago-Boone County Line where Sta. 314+78.94 back equals Sta. 0+00 ahead. The transition takes place on a curve located just east of Shaw Road. In addition, the existing two-lane pavement will be resurfaced from the end of the taper to a point 856 feet west of High Line Street in Belvidere (Sta. 201+66); that portion of the route to be resurfaced will also receive various safety improvements.

Phase II begins by transitioning from the existing two-lane pavement at a point 1,933 feet west of Town Hall Road (Sta. 145+07) to the ultimate four-lane section at a point 140 feet west of Town Hall Road (Sta. 163+00). From there the improvement continues to High Line Street (Sta. 210+22) in Belvidere.

Phase III of the project completes the four-lane facility between Sta. 27+36 and Sta. 163+00.

Right-of-way width requirements on U.S. BR 20 vary from approximately 180 feet to 270 feet, with the majority of the route falling in the 210 foot to 240 foot range. About 68 acres of additional right-of-way will be needed to construct Alternate 1; this will result in the removal of 16 residences. In addition, 67 easements along the mainline, totalling about 16 acres in area, will be necessary for entrance reconstruction/relocation, building removal and backslope reconstruction on this alternate.

Specific deviations between the existing and proposed gradelines are of a minor nature at eight locations where vertical curves are lengthened; more substantial displacements take place in three areas.

The first of these areas is from around Sta. 304 to Sta. 3+50, where the existing grade needs to be reduced. This results in a maximum cut of about 7 feet around Sta. 311. The second major gradeline change occurs between Stas. 16 and 26, because the crest of the curve needs to be lowered to provide adequate sight distance from Shaw Road. The maximum cut of about 2 feet is located near Sta. 20. The final significant gradeline change takes place from Sta. 74 to Sta. 88, in order to meet curve length criteria and also flatten the grade between the two curves. This results in a maximum fill of around 1.5 feet at Sta. 78 and a maximum cut of nearly 2 feet at Sta. 84.

Construction of the north roadside ditch will require the filling in of a farm pond, left of Sta. 300. In addition, building of the road embankment necessitates a channel relocation of about 130 feet, right of Sta. 166.

Shaw Road will be relocated approximately 70 feet east of its intersection with U.S. BR 20. Under Alternate 1, reconstruction of Shaw Road will begin about 982 feet south and continue to around 1,465 feet north of the mainline resulting in a total length of approximately 2,447 feet (0.46 mi.)

Shaw Road was realigned in order to provide a common tangent centerline for both the north and south approaches, a much more desirable situation for a higher type facility than the kink existing at the present intersection.

The Shaw Road gradeline proposed for the north is based on a 40 mph design speed, which has been approved by the township highway commissioner. A 50 mph design speed will exist along the south leg of Shaw Road.

Average right-of-way requirements for Shaw Road are about 150 feet to the south and 160 feet to the north of U.S. BR 20. Four temporary easements will be necessary along Shaw Road for the reconstruction of entrances.

Olson, Distillery, Beaver Valley and Town Hall Roads will also require reconstruction, to distances of approximately 500, 140, 280 and 340 feet from the existing centerline of U.S. BR 20, respectively. The intersection of Town Hall Road with the mainline will be shifted slightly to the west, in order to come closer to a more desirable right-angle intersection. Entrance to Frank Gay's Marquee will be via a service road connection to Beaver Valley Road along the south side of the Family Fun Land property.

Predominant right-of-way widths for the minor sideroads are: 130 feet for Olson Road; 66 feet for Distillery Road; 80 feet for Beaver Valley Road and 110 feet for Town Hall Road.

Crossing Beaver Creek will require a dual bridge system for a four-lane facility. For the Alternate 1 concept, this would require removal of the existing bridge and replacing it with two similar structures. Since the existing structure was recently rebuilt, it would not be practical to consider removing this bridge; instead, it is assumed that one of the offset alignments will be considered in the area of the river crossing, thus, dual bridges over Beaver Creek were not studied in detail for Alternate 1.

F. ALTERNATE 2

Alternate 2 consists of offsetting the additional two lanes of the improvement to the left (north). An economic analysis determined that replacing the existing pavement would be less expensive than paying the high maintenance costs required to keep the existing pavement in place. See Exhibit 6E for typical sections and Exhibits 8A thru 8J for plans of Alternate 2.

In the description of Alternate 2 which follows, it should be noted that all Station locations given are approximate.

Phase I consists of constructing, or reconstructing, four lanes of pavement from a point 339 feet west of the Lyford Road

intersection (Sta. 257+48) to a point 768 feet east of the Shaw Road intersection (Sta. 25+61), then narrowing the median and dropping two lanes in order to meet the existing two-lane pavement in 1,169 feet (Sta. 37+30). There is a station equation at the Winnebago-Boone County Line where Sta. 314+78.94 back equals Sta. 0+00 ahead. The transition takes place on a curve located just east of Shaw Road. In addition, the existing two-lane pavement will be resurfaced from the end of the taper to a point 856 feet west of High Line Street in Belvidere (Sta. 201+66); that portion of the route to be resurfaced will also receive various safety improvements.

Phase II begins by transitioning from the existing two-lane pavement at a point 1,420 feet west of Town Hall Road (Sta. 150+20) to the ultimate four-lane section at a point 257 feet west of Town Hall Road (Sta. 161+83). From there the improvement continues to High Line Street (Sta. 210+22) in Belvidere.

Phase III of the project completes the four-lane facility between Sta. 25+61 and Sta. 161+83.

Right-of-way width requirements on U.S. BR 20 vary from approximately 180 feet to 240 feet, with the majority of the route falling in the 220 foot to 240 foot range. About 71 acres of additional right-of-way will be needed to construct Alternate 2; this will result in the removal of 10 residences and one church. In addition, 63 easements along the mainline, totaling about 15 acres in area, will be necessary for entrance reconstruction/relocation, building removal and backslope reconstruction on this alternate.

Alternate 2 is one of two alternates (the other being Alternate 4) which will not require the purchase of right-of-way from the Boone County Conservation District property, located one mile east of the county line.

The proposed gradeline generally follows the existing gradeline, with several exceptions. In all but two cases these differences are identical to those previously mentioned for Alternate 1.

The first instance where gradelines for the two alternates do not match occurs between Sta. 304 and Sta. 3+50. In this area the existing grade is too steep for an upgrade but adequate for a downgrade. Since the new lanes to be added will constitute the upgrade portion of the divided highway at this spot, only these westbound lanes will have to be constructed on a flatter grade. In order to accomplish this, while maintaining the same sideslopes and ditch width for the median, the north pair of lanes will be shifted further north to widen the median, as noted above in the description of the median on the project. For this portion of the roadway the proposed gradeline for the eastbound lanes will be the same as that existing, except for the crest vertical curve at Sta. 310 which needs to be lengthened to meet design speed criteria.

The second location where the gradeline does not match that of Alternate 1 occurs between Sta. 65+50 and Sta. 74+00. In this area the proposed second bridge will have deeper beams than the existing structure.

Construction of the north roadside ditch will require the filling in of the same farm pond as Alternate 1.

The reconstruction of Shaw Road on Alternate 2 is to be treated in a manner similar to Alternate 1. Reconstruction will extend about 1,445 feet north of the mainline resulting in a total length of approximately 2,427 feet (0.46 mi.).

Reconstruction on Olson, Distillery, Beaver Valley and Town Hall Roads will extend, respectively, approximately 515, 115, 340 and 400 feet from the existing centerline of U.S. BR 20. Entrance to Frank Gay's Marquee will be via a service road connection to Beaver Valley Road north of the Family Fun Land property.

Predominant right-of-way widths for the minor sideroads are: 120 feet for Olson Road; 66 feet for Distillery Road; 100 feet for Beaver Valley Road and 110 feet for Town Hall Road.

Crossing Beaver Creek will require a second bridge, offset to the north (upstream), to carry the westbound lanes; the existing bridge, rebuilt in 1983, can continue to serve the eastbound lanes.

Due to the meandering of the creek at this location, part of the pier will project into the stream. This will require a cofferdam during construction, which will be subsequently removed following completion of the pier.

G. ALTERNATE 3

Alternate 3 consists of offsetting the additional two lanes of the improvement to the right (south). Similar to the discussion presented for Alternate 2, an economic analysis shows that replacement of the existing pavement is cheaper than attempting to keep the existing pavement in place. See Exhibit 6F for typical sections and Exhibits 9A thru 9J for plans of Alternate 3.

In the description of Alternate 3 which follows, it should be noted that all Station locations given are approximate.

Phase I consists of constructing, or reconstructing, four lanes of pavement from a point 339 feet west of the Lyford Road intersection (Sta. 257+48) to a point 1,114 feet east of the Shaw Road intersection (Sta. 29+07), then narrowing the median and dropping two lanes in order to meet the existing two-lane pavement in 1,190 feet (Sta. 40+97). There is a station equation

at the Winnebago-Boone County Line where Sta. 314+78.94 back equals Sta. 0+00 ahead. The transition takes place on a curve located just east of Shaw Road. In addition, the existing two-lane pavement will be resurfaced from the end of the taper to a point 856 feet west of High Line Street in Belvidere (Sta. 201+66); of the route to be resurfaced will also receive various safety improvements.

Phase II begins by transitioning from the existing two-lane pavement at a point 1,730 feet west of Town Hall Road (Sta. 147+10) to the ultimate four-lane section at a point 94 feet west of Town Hall Road (Sta. 163+46. From there the improvement continues to High Line Street (Sta. 210+22) in Belvidere.

Phase III of the project completes the four-lane facility between Sta. 29+07 and Sta. 163+46.

Right-of-way width requirements on U.S. BR 20 vary from approximately 180 feet to 280 feet, with the majority of the route falling in the 210 foot to 240 foot range. About 73 acres of additional right-of-way will be needed to construct Alternate 3; this will result in the removal of 13 residences and the relocation of 1 business. In addition, 63 easements along the mainline, totaling about 16 acres in area, will be necessary for entrance reconstruction/relocation, building removal and backslope reconstruction on this alternate.

The proposed gradeline generally follows the existing gradeline, with several exceptions. In all cases these differences are identical to those previously mentioned for Alternate 1.

Several channel relocations will be required for Alternate 3, either to provide room for construction of the roadway embankment or to allow a more desirable alignment for a proposed box culvert. They occur right of Stas. 10, 165 and 185 and left of Sta. 187 and are for approximate lengths of 250, 400, 110 and 120 feet, respectively.

The reconstruction of Shaw Road on Alternate 3 is to be treated in a manner similar to Alternate 1. Reconstruction will extend about 1,138 feet north of the mainline, resulting in a total length of approximately 2,120 feet (0.40 mi.).

On Shaw Road, north of the mainline, the conditions present on Alternate 3 enabled the horizontal alignment to be designed for 50 mph and the maximum grade and crest to be based on a 45 mph design speed.

Six temporary easements will be necessary along Shaw Road for the relocation of one entrance and the reconstruction of the others.

Reconstruction of Olson, Distillery, Beaver Valley and Town Hall Roads will extend, respectively, approximately 430, 250, 175 and 170 feet from the existing centerline of U.S. BR 20.

Predominant right-of-way widths for the minor sideroads are: 110 feet for Olson Road; 66 feet for Distillery Road; 85 feet for Beaver Valley Road and 90 feet for Town Hall Road.

Crossing Beaver Creek will require a second bridge, offset to the south (downstream), to carry the eastbound lanes; the existing bridge, rebuilt in 1983, can continue to serve the westbound lanes.

Due to the meandering of the creek at this location, part of one pier will project into the stream. This will require a cofferdam during construction, which will be subsequently removed following completion of the pier.

H. ALTERNATE 4

Alternate 4 consists of offsetting the additional two lanes of the improvement to the right (south) at the western end of the project, then shifting the offset to the left approximately one-quarter mile east of Shaw Road. Using the same reasons presented for Alternate 2 in Section III F, this alternate proposes removing and replacing the existing pavement. See Exhibit 6H for typical sections and Exhibits 10A thru 10K for plans of Alternate 4.

In the description of Alternate 4 which follows, it should be noted that all Station locations given are approximate.

Phase I consists of constructing, or reconstructing, four lanes of pavement from a point 339 feet west of the Lyford Road intersection (Sta. 257+48) to a point 1,009 feet east of the Shaw Road intersection (Sta. 28+02), then narrowing the median and dropping two lanes in order to meet the existing two-lane pavement in 968 feet (Sta. 38+75). There is a station equation at the Winnebago-Boone County Line where Sta. 314+78.94 back equals Sta. 0+00 ahead. The transition takes place on a curve located just east of Shaw Road. In addition, the existing two-lane pavement will be resurfaced from the end of the taper to a point 856 feet west of High Line Street in Belvidere (Sta.201+66); that portion of the route to be resurfaced will also receive various safety improvements.

Phase II begins by transitioning from the existing two-lane pavement at a point 1.388 feet west of Town Hall Road (Sta. 150+52) to the ultimate four-lane section at a point 274 feet west of Town Hall Road (Sta. 161+66). From there the improvement continues to High Line Street (Sta. 210+22) in Belvidere.

Phase III of the project completes the four-lane facility between Sta. 28+02 and Sta. 161+66.

Right-of-way width requirements on U.S. BR 20 vary from approximately 110 feet to 210 feet, with the majority of the route falling in the 160 foot to 200 foot range. About 37 acres of additional right-of-way will be needed to construct Alternate 4; this will result in the removal of 1 residence. In addition, 13 easements along the mainline, totalling about 2 acres in area, will be necessary for entrance reconstruction/relocation and building removal on this alternate.

Similar to Alternate 2, Alternate 4 will not require the purchase of right-of-way from the Boone County Conservation District property, located one mile east of the county line.

The proposed gradeline generally follows the existing gradeline, since the grades and vertical curve lengths currently in place meet the design criteria for the lower speed proposed for this alternate. There are, however, two exceptions. The first deviation occurs between Stations 145 and 163, where the grade is increased slightly to the minimum slope necessary to provide proper drainage for a length of concrete gutter located along the outside edge of the shoulder. The second gradeline change takes place from about Sta. 187 to the eastern end of the project. Here the gradeline is lowered to allow adjacent urban areas to drain toward the roadway; also, grades are increased to attain the minimum desirable slope for draining the curb and gutter proposed in this area.

The farm pond located left of Sta. 300 will not have to be filled in under this alternate, nor will any channel relocations be required.

Storm sewer systems will be required to drain the pavement for the two locations where curb and gutter is proposed - Lyford Road and U.S. BR 20 in Belvidere. The proposed sewers on U.S. BR 20 will attach to the existing Belvidere storm sewer system at High Line Street.

Shaw road will be relocated approximately 20 feet east of its current intersection with U.S. BR 20. For Alternate 4, reconstruction of Shaw Road will begin about 665 feet south and continue to around 1,335 feet north of the mainline, resulting in a total length of approximately 2,000 feet (0.38 mi.).

Shaw Road was realigned for the same basic reasons as Alternates 1, 2 and 3; however, the first horizontal curve north of U.S. BR 20 was placed an additional 120 feet farther to the west than the other alternates. This was done in order to reduce the impact to the entrances of the homes along the east side of Shaw Road. Although these drives will be longer for this alternate, they will have less severe grades and will avoid the additional snow drifting problems created by driveway cuts required for the first three alternates.

In order to minimize the right-of-way requirements in the area of the Hickory Hills Driving Range, a 40 mph design speed is proposed for the south leg of the Shaw Road improvement. This design speed has been approved by the township highway commissioner for both Shaw Road approaches to U.S. BR 20.

Average right-of-way requirements for Shaw Road are about 90 feet to the south and 180 feet to the north of U.S. BR 20. Three temporary easements will be necessary along Shaw Road.

Olson, Distillery, Beaver Valley and Town Hall Roads will also require reconstruction, to distances of approximately 490, 130, 300 and 360 feet from the existing centerline of U.S. BR 20, respectively. Entrance to Frank Gay's Marquee will remain on U.S. BR 20 near Beaver Valley Road.

Predominant right-of-way widths for the minor sideroads are: 110 feet for Olson Road; 90 feet for Beaver Valley Road and 125 feet for Town Hall Road. The Distillery Road improvement will not require any additional right-of-way.

Under the Alternate 4 concept, crossing Beaver Creek will require a single structure, due to the narrow median. To accomplish this, the existing structure will be reconstructed to provide the necessary width of deck.

Due to the meandering of the creek at this location, part of one pier will project into the stream. This will require a cofferdam during construction, which will be subsequently removed following completion of the pier.

Alternate 4 will require the construction of one retaining wall along U.S. BR 20, located left of Station 83. This wall, approximately 155 feet in length, is proposed in order to avoid the necessity of acquiring the residence behind it. A similar situation, located right of Station 279, was considered in order to save the dwelling at that location. However, this second wall created sight distance problems, both from the nearby drive-in entrance to the west and from the residential entrance, itself; in addition, an economic analysis (see Table 3A) indicated that it would be more costly to construct the wall than to purchase the residence.

TABLE 3A
ECONOMIC ANALYSIS (ALTERNATE 4) RETAINING WALLS

Location	Wall Length (Ft.)	Total Wall Cost	Total Property Cost
RT 278+00 0 279+85	210	$36,000	$32,000
LT 82+50 - 84+05	155	$31,300	$55,000

Based on the results of this study, Alternate 4 has been selected as the Preferred Alternate.

IV. ENVIRONMENTAL CONSEQUENCES

A. GENERAL IMPACTS AND MITIGATION MEASURES

As required in Section 107.01 of the Illinois Department of Transportation's Standard Specifications for Road and Bridge Construction, contractors for construction of the project are required at all times to observe and comply with all Federal and State laws, local laws, ordinances, and regulations which in any manner affect the conduct of the work.

B. SOCIAL IMPACTS

Relocation of Individuals and Families

A revised Preliminary Relocation Plan has been prepared for this project by District 2 of the Illinois Department of Transportation. Results of this study regarding relocation of individuals and families are summarized below.

Anticipated relocation of households ranges from 1 to 16 depending upon the alternate chosen. No physically handicapped or minority residents are expected to require displacement under any alternate. 0 to 3 elderly residents may be impacted by the project, according to which alternate is selected. All households affected appear to have incomes in excess of $15,000. The majority of households studied seem to have a tenure of less than 5 years, with the second largest numbers having been there for over 20 years. This information, by Alternates, is categorized in Table 4.

A social and economic assessment was made to determine if any social or economic impacts would be created in the project area upon implementation of the proposed project. It appears there will be no social impacts upon the local society. The displaced families will merely relocate to other neighborhoods where replacement housing can be found to their liking. Upon relocating, nearly everyone usually upgrades their housing, and in so doing, provides for an overall improvement in their living conditions and home environment. Most relocatees are able to accomplish this with benefits provided by the State's relocation assistance program.

A number of residential displacements consist of single family dwellings located on large agricultural farmlands. In these locations, it may be socially and economically advantageous to relocate the existing dwelling on the remaining acreage. Relocation assistance would be provided to these home owners while moving.

Replacement housing which will be offered will be decent, safe and sanitary, comparably equal or better than the subject properties, offering like utility will be adequate to satisfy

DISPLACEMENT SHEET

	Alternate 1	Alternate 2	Alternate 3	Alternate** 4
Number of Households	16	11	13	1
Number of Individuals	0	0	0	0
Number of Minority Residents	0	0	0	0
Number of Elderly Residents	3	1	3	0
Number of Large Families	0	0	0	0
Number of Households with Incomes of:				
$ 0 - $ 7,000				
7,000 - 10,000				
10,000 - 15,000				
15,000 and above	16	11	13	1
Number of Households with Tenure of:				
0 - 5 years	10	7	8	1
5 - 10 years	1	1	0	
10 - 15 years	0	0	2	
15 - 20 years	0	0	0	
20 or more years	5	3	3	
Number of Farms	0	0	0	0
Number of Businesses	3	4*	6*	0
Total Number of Employees	25	25	25+3 part-time seasonal	0
Number of Businesses Proving Essential Goods or Services	1	2	3	0

* Includes sheds and barns.

** Preferred Alternate

needs of the displacee and priced within the displacee's financial capability. Replacement housing will be provided in an area not generally less desirable than the property being acquired with respect to unreasonable adverse environmental factors. Through careful planning, relocation assistance will be carried out with a minimum of hardship to those persons who will be affected by the project.

There are no public or private projects, nor are there any known proposed future projects that might cause major displacements to occur and compete for replacement housing during the relocation period. Since most of the relocation assistance that will be required for the project will involve families living closer to Belvidere, just Belvidere's real estate market resources in the newspapers were checked at the time of the study. For available replacement housing it appeared there was an ample supply of homes offered for sale to satisfy the relocation needs of the project. Rental housing is usually scarce, but was found at this time to be in good supply.

Home loans, although high by historic standards, appear to be available from local lending institutions. In addition, the Farmer's Home Administration has been a good source of alternate financing on some of the State's rural road projects when regular funds did not qualify, due to property location, income level of borrower, poor credit rating, etc., and financing is currently available at their office in Belvidere.

Present planning indicates earliest negotiations for Phase I land acquisition will be initiated sometime during FY 86. Construction of Phase I is then scheduled to follow approximately one year later. This scheduling will permit all relocation in the section to be completed in one year, which should be adequate. Right-of-way to be acquired to accomplish Phase I will be incorporated at the west end of the project between Lyford and Shaw Roads, a distance of approximately one and one-quarter mile. The total number of dwellings to be acquired for Phase I could range from a total of none to five depending upon which alignment is selected. Relocation advisory assistance will be provided by the District Relocation Manager and his staff, working directly from the District 2 Highway Office in Dixon. The highway office is within driving distance of the project so a local relocation office will be unnecessary. Phases II and III of the project, as scheduled, will be constructed over a long period of time allowing for relocation to be accomplished on a continuing basis. Earlier acquisitions will be only to those parcels requiring relocation assistance.

The State's Relocation Assistance and Payments Program is realistic and is adequate to provide orderly, timely and efficient relocation of individuals and families to decent, safe and sanitary housing which is available without regard to race, color, religion or national origin with minimum hardship to those affected.

Relocation assistance will be provided to all residential properties that will be acquired in accordance with the "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970."

It is anticipated that funding will be provided with both Federal and State funds. Federal funding will be utilized for both land acquisition and construction costs.

Small population changes would result on each of the four alternates due to the acquisition of dwelling units to enable construction to be completed. On Alternate 1, for example, sixteen dwelling units would need to be acquired along the five mile length of the project. Implementing Alternate 2, on the other hand, would require the acquisition of ten dwelling units. Similarly, Alternate 3 construction would result in the acquisition of thirteen dwelling units. Alternate 4 would require the removal of only one dwelling unit. The impact on the population size and composition should be minor for several reasons, despite the acquisition of from one to sixteen dwelling units. As previously mentioned, a significant portion of the displaced persons will likely relocate within a short distance of their existing residences, some possibly on the same property if space and setback requirements permit.

Community Values

There will likely be some changes, although neither rapid nor dramatic, in community values in the project area. Because of the essentially rural nature of the existing project community and the corresponding sparse population, there are few well defined community values traditionally associated with urban communities. However, as projected commercial and limited residential development take place, the area will slowly evolve into a more well defined community, although not to the extent of a true urban community.

It is anticipated that change will occur more rapidly under Alternate 4. Since it proposes no access control, residential development on U.S. BR 20, itself, will be facilitated. This will also make it easier for business development along the whole corridor, whereas it would have been restricted to areas near the sideroads for the other alternates.

As part of the public involvement activities for the project, a number of contacts, including several information and data collection meetings, have been made with local residents. A fairly definite consensus of local residents has expressed opposition to the project in general as well as several specific features of the project. In particular, this citizen's group is opposed to the required right-of-way for a four-lane facility, any access control constraints placed on private and commercial entrances, added maintenance responsibilities of longer drives and the total cost to the taxpayers. The preferred alternate of

these affected citizens is one that would upgrade some of the existing vertical alignment and resurface the entire road between Lyford Road and High Line Street.

Community Change

Several minor impacts in regards to community change can be expected for any of the three build alternates in the short term. In general, the impacts on community change are minor because of the rural nature of the existing land and the correspondingly sparse population concentration.

Over the longer term, the potential impacts on community change are greater. Development in the Boone County portion of the study area is projected to be suburban residential under the build or no-build alternates. It is likely, however, that under one of the build alternates development will be accelerated, due to the improved transportation service that would be provided by the proposed improvement to U.S. BR 20. This is especially true in the case of Alternate 4, which proposes no access control. Although it is not forecast in the Year 2000 Plan by the Winnebago County Department of Planning and Economic Development, "spillover" suburban residential development will likely occur in the Winnebago county portion of the study area. The increases in population, both in numbers and density, that will accompany the suburban residential development near the project will tend to stimulate economic activity, create a more identifiable community or communities at points of population concentration and tend to change the social mix to a more upper class blue or white collar mix from the current tendency toward a more agrarian dominated social mix.

Special Groups and Interests

There are a number of special groups and interests that are potentially effected by any proposed major highway improvement project. Because of the rural nature of this project and the almost complete absence of defined special interest groups in the project area, only one special group impact has been defined. The congregation of the Belvidere Church of the Open Bible will be impacted, if Alternate 2 is constructed, by the necessity to rebuild or relocate one of their primary church buildings. However, an adequate area to do so is available on the existing church property, thus significantly mitigating the negative impact. Thus, as far as can be determined, only one special interest group is impacted by the project and on only one of the three build alternates.

Public Services and Facilities

Public services and facilities would be impacted only slightly by the proposed improvement and in a positive way. By providing a safer facility that is more easily able to handle various levels of user demand, emergency vehicle traffic in the project area will be better served. In addition, a tract of land

that will ultimately be used by the Boone County Conservation District as a public recreation area will be better served by the proposed project since the land is immediately adjacent to this improvement. Also, the potential exists for a bicycle/pedestrian pathway to be constructed across U.S. BR 20, approximately one-eighth mile west of the county line; if this idea ever becomes a reality, a pedestrian bridge may have to be considered at this location. Because of the rural nature of the project, no public services or facilities are adversely affected by the project. It can be concluded that there would be few impacts on public services and facilities as a result of the proposed improvement.

A recent acquisition by the Boone County Conservation District of a one-quarter mile lone tract of land abutting U.S. BR 20 on the south, one mile east of the county line, will ultimately provide direct access from U.S. BR 20 to a proposed park area along the Kishwaukee River. Alternates 1 and 3 require the acquisition of additional right-of-way from the Boone County Conservation District as shown on Exhibits 7F and 9E. Because legal stipulations prevent use of the land for other than agricultural purposes until the year 2019, no Section 4 (f) Statement will be necessary. The specific locations for these proposed Boone County developments are shown on Exhibit 5A.

C. ECONOMIC IMPACTS

Businesses to be Displaced

A revised Preliminary Relocation Plan has been proposed for this project by District 2 of the Illinois Department of Transportation. Results of this study regarding relocation of businesses are summarized below.

Anticipated business relocations range from 0 to 6 depending upon the alternate chosen; up to 3 of these businesses provide essential goods or services. For Alternates 1, 2 and 3, required relocation of business facilities might impact 25 full-time and up to 3 part-time seasonal employees. No farms will be displaced. One non-profit organization (a church) will be affected by a partial acquisition under Alternate 2. Other than Franklin Park Wire, the possible acquisition and subsequent relocation of businesses to other locations will have no economic impact as they are not large, nor active businesses and it is doubtful if the businesses have any paid employees. The availability of goods and services should remain the same after the project is completed. See Table 4 for the number of displacements associated with each Alternate.

Availability of replacement business facilities is difficult to predict. At the time of a newspaper check of Belvidere's real estate market resources, a few commercial properties were available for sale or rent. The business owners will be advised of the availability of business loans administered by the Small Business Administration. Businesses displaced from Federally financed project are often eligible for assistance from the SBA.

If requested, IDOT will assist the business owners in making application for such loans or aid them if they should need managerial or technical assistance.

The State's Assistance and Payments Program is realistic and is adequate to provide orderly, timely and efficient relocation of businesses to replacement facilities which are available without regard to race, color, religion or national origin with minimum hardship to those affected.

Relocation assistance will be provided to all business properties that will be acquired in accordance with the "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970."

In addition to the business displacements discussed in the Project Relocation Plan, other business relocations may be necessary. Alternates 1, 2 and 3 propose partial access control, thus denying commercial properties direct access to U.S. BR 20. As discussed in Section III D, it will be more economical to acquire the commercial interests of several additional properties than to construct a service road to the nearest sideroad. These properties include the Aqua Supply Company, located right of Station 104 and the State Street Small Animal Shelter, located right of Station 179.

Businesses to Remain

Under the Alternate 4 proposal, all existing businesses in the project area will be able to remain and operate essentially as they do now. On the other hand, Alternates 1, 2 and 3 not only require the displacement of some commercial establishments, but there are several businesses along the proposed improvement to U.S. BR 20 that, while remaining, will be affected by construction. It is necessary to examine any potential impacts of the first three build alternates for the project.

Proceeding from west to east on U.S. BR 20, the first affected business to remain after construction is the Belford 6 Drive-In Theaters located approximately one-quarter mile east of Lyford Road. The only potential impact is due to the necessary relocation of the existing access directly onto U.S. BR 20 to a point on Lyford Road (Exhibit 7B). Except for the temporary initial problem of familiarizing current patrons with the new entrance location, no negative impacts should result. In fact, current traffic congestion and safety problems associated with the existing direct access onto U.S. BR 20 will be eliminated. The installation of traffic signals at Lyford Road and U.S. BR 20 will serve to lessen the potential traffic congestion problems on Lyford Road near the theater entrance. The combination of improved ingress and egress as well as safer conditions should serve to improve business at least slightly. The impact on the theater complex will be the same for each of the first three build alternates.

The next business along the road which will not have to be moved is the State Street Quarry. Due to the constraints placed on commercial entrances by the access control requirements of the proposed improvement, a new 1,000' long service road to rebuilt Shaw Road will be necessary (Exhibit 7C). Because of the limited number of quarries in the area it is unlikely that any business will be lost. Haul lengths to destinations west of the quarry will be lengthened by approximately one-half mile per trip which will slightly raise the cost of doing business for those customers. An additional impact is the cost and inconvenience involved in maintaining a 1,000' long driveway. This cost, as well as that incurred by the increased haul distance, will be mitigated in the right-of-way acquisition process in the form of increased damage payments. Improvements to the Shaw Road intersection as well as to U.S. BR 20 will make the actual access to U.S. BR 20 safer and easier. The previously discussed impacts will be the same for Alternates 1, 2 and 3. One can thus see that there will be some negative economic impacts on the State Street Quarry but that mitigation through right-of-way payments and by creating a safer access onto U.S. BR 20 will tend to minimize the impacts.

The next affected business not requiring relocation is the Hickory Hills Driving Range located at the southwest corner of Shaw Road and U.S. BR 20. This recreational facility is privately owned by Hickory Knolls, Inc. and includes a miniature golf course, a golf driving range and a baseball batting cage. It will be necessary to discuss the impacts of each of the initial three build alternates separately due to the varying amounts of right-of-way required.

The implementation of Alternate 1 would require an additional strip of right-of-way along Shaw Road between 10' and 40' in width and a 45' wide additional strip along U.S. BR 20. The major impact on the business will be the necessity to completely relocate the existing parking area which will be almost totally acquired by the proposed right-of-way. The layout of the various activities in relation to the proposed right-of-way taking will make relocation of the parking lot in a convenient location difficult. A partial relocation of activities or the acceptance by the management of some increased inconvenience to customers appears to be inevitable. Mitigation through the payment of damages during right-of-way acquisition appears to be the most likely solution, however, if computed damages become too high, total relocation will need to be considered.

Of the first three alternates, the implementation of Alternate 2 would be the least disruptive to the Hickory Hills Driving Range. The right-of-way requirement along Shaw Road is approximately the same as for Alternate 1, however, only a 15' wide strip as needed along U.S. BR 20 as compared to 45' on Alternate 1. The area to remain along U.S. BR 20 encompasses the entire existing parking which should prevent any disruption of current business operations. Thus, only minor impact would

result from the implementation of Alternate 2.

The selection of Alternate 3 would have the most economic impact on the Hickory Hills Driving Range. An additional 40' wide strip of right-of-way is required along Shaw Road which will mandate the partial relocation of the miniature golf course. along U.S. BR 20 a 90' strip of additional right-of-way will require the relocation of the existing parking area, the driving range tee area, and the clubhouse. While there appears to be adequate area for relocation of the facilities, a thorough study of the costs involved compared to a complete relocation should be undertaken during the right-of-way acquisition process. It can be seen, therefore, that the construction of Alternate 3 would have the most economic impact on the Hickory Hills Driving Range.

The next business to remain which would be impacted is Family Fun Land, located in the northeast corner of the Beaver Valley Road and U.S. BR 20 intersection. The only economic impact on the business would be the acquisition of right-of-way on Alternates 1 and 2 and a permanent easement for a service road on Alternates 1 and 3. In all cases the area to be acquired as right-of-way or easement is semi-wooded and not essential to the current operation of the business. Since all necessary right-of-way and easement acquisition will be purchased at or above market value during the right-of-way acquisition process, there will be little or no negative economic impact on the Family Fun Land.

Immediately east of the Family Fun Land is Frank Gay's Marquee, a night club which currently has two entrances directly onto U.S. BR 20. The economic impacts on this property result from the necessary right-of-way acquisition and the elimination of direct access onto U.S. BR 20.

The implementation of Alternate 1 would require an additional 66' wide strip of right-of-way which would require the relocation of approximately one-half acre of existing parking. Adequate area for this relocation exists within the existing property boundaries. Damage payments during the right-of-way acquisition process will mitigate the negative impacts associated with relocating a portion of the existing parking lot. Additionally under Alternate 1, relocation of the entrance would be necessary. From the existing configuration of two entrances directly onto U.S. BR 20 will evolve a relocated 600' long service road accessing Beaver Valley Road at a point approximately 75' north of U.S. BR 20. Compensation in the right-of-way acquisition process will provide monies for use in future roadway maintenance as well as for acquiring the necessary permanent easement from an adjacent property. Due to the reliance on local and repeat customers, the relocation of the entrance should provide no appreciable negative economic impact on Frank Gay's Marquee.

Alternate 2 construction would require the acquisition of an additional 96' wide strip of right-of-way and the subsequent relocation of approximately one acre of existing parking.

Sufficient land for the relocation is available within the existing property boundaries. Monetary compensation for damages would be forthcoming at the time of right-of-way acquisition as a mitigation to any negative economic impacts. In addition to the necessary right-of-way acquisition, a new entrance configuration would be necessary. The two existing access points directly onto U.S. BR 20 would be relocated as a 750' long service road accessing Beaver Valley Road at a point approximately 500' north of U.S. BR 20. A 250' long permanent easement, approximately 40' wide, would be necessary in order to cross and adjacent property. As before, because of the nature of the customers, access relocation should provide negligible negative economic impact. Additional compensation during the right-of-way acquisition process will provide funds for future driveway maintenance costs as well as for purchase of the permanent easement.

The selection of Alternate 3 would require the acquisition of an additional 26 feet of right-of-way with little loss of existing parking area from Frank Gay's Marquee. Right-of-way payments will compensate for any negative economic impacts. Similar to Alternate 1, the existing dual entrances onto U.S. BR 20 will be relocated onto Beaver Valley Road at a point about 150' north of U.S. BR 20 by the acquisition of a permanent easement. As before, because most patrons are repeat customers from the local area, no loss of business should result from the driveway relocation. Payments during right-of-way negotiation will mitigate any negative economic effects of the required permanent easement as well as for any future maintenance costs for the roadway.

It can thus be seen that any potential negative economic impacts on Frank Gay's Marquee will be mitigated through monetary compensation during right-of-way acquisition. In addition, it is evident that, between Alternates 1, 2 and 3, Alternate 3 has the least economic impact on this property with Alternate 2 having the greatest impact.

An additional 25' wide strip of right-of-way is required from the Commonwealth Edison Company power substation property located approximately 1,000' west of High Line Street on the north side of U.S. BR 20. Mitigation in the form of monetary compensation will take place during the right-of-way acquisition process. No disruption of business operations will occur as a result of the right-of-way acquisition.

There are four businesses that will not require relocation between Davis Drive and High Line Street in Belvidere. Included in those businesses are the Young Hong Karate Institute, Travelers Motel, and Ker-Ree Rock Shop on the south side of U.S. BR 20 and Ranch Motel on the north side. On the first three alternates, temporary construction easements are required from each of the businesses to complete backslope work. These easements will be purchased at the time of right-of-way acquisition and will cause no permanent disruption of business

operations. The construction of four through lanes and a common left turn lane in front of all these businesses should facilitate ingress and egress to them and provide a small positive impact on future business because of easier access. It can therefore be seen that no significant negative economic impacts will be felt by the four businesses listed above.

Property Values

There are several potential impacts that a highway improvement project can have on property. The first impact on property values results from right-of-way acquisition reducing the actual size of the property. Property value reduction in this case is due to limiting the existing and future use of the parcel or in reducing the potential crop production in the case of strictly agricultural land. Impacts of this kind are mitigated by payment of fair market value, including damages, as part of the right-of-way acquisition process of IDOT. Some additional potential impacts on property values include increased traffic volumes higher noise levels, and increased air pollution. As can be seen from the noise analysis section of the study, there are only minor projected noise level increases for any of the receptors on any of the alternates. Traffic volumes along the route should have no adverse effects on property values as caused by air pollution. The overall effect of the impacts listed above on property values will be virtually the same for any of the build alternates, except for reduction in property values by the taking of right-of-way, which will be smaller, in general, for Alternate 4. Therefore, while property values will undoubtedly be lowered by right-of-way acquisition, the effects will be mitigated by monetary payments, and any other impacts are minimal.

Moving the proposed right-of-way line closer to an existing building may bring that structure into noncompliance with local zoning ordinances. Winnebago County has a 33 foot front setback regulation and Boone County has a 75 foot front setback requirement. A building which is forced into noncompliance as a result of right-of-way purchase will not be required to relocate. Any subsequent additions to these structures will have to request a zoning variance. However, as long as the proposed addition does not extend any closer to the road than the present building, it is anticipated that obtaining the needed variance will pose no problem. If the structure in noncompliance should be more than 40% destroyed in a catastrophe, any subsequent rebuilding will have to comply with the zoning regulations; but, in this case, the original building will probably be considered a total loss and a physical relocation for the new building will not be the major concern. As shown in the discussion above, conflict with local zoning ordinances, induced by the proposed project, should not have a significant impact on property values.

An additional consideration in the purchase of right-of-way is the possibility that the area of an existing septic field for a residence may be reduced. If there is room to relocate the

field, compensation will be included in the right-of-way payment for the owner to do so. Should enough additional area of adequate soil types not be available on the property, IDOT will not allow the residence to remain and be condemned for not complying with local health ordinances; instead, the house will be purchased and the residents relocated. In either case, financial remuneration will negate the impact of the proposed improvement.

Due to the partial access control requirements of a rural Area Service highway, a number of driveways will require modifications under Alternates 1, 2 and 3. Essentially there are two types of modifications which need to be considered. The first is a shared driveway where one point of access onto U.S. BR 20 serves two or more properties. In almost all cases this involves a longer driveway than currently exists. The second modification involves changing the location of access onto U.S. BR 20 and consequently lengthening the driveway as compared to the existing condition. On Alternate 1 there are four locations where driveways will be shared and three other locations where longer driveways will result from the proposed improvement. Alternate 2 construction would involve four shared driveways and four longer driveways. Finally, Alternate 3 would require four shared driveways and six longer driveways. These are the types and number of entrance modifications made necessary by the requirements of a rural Area Service highway.

The access modifications have potential economic impacts on property values which need to be discussed. Property values would tend to be lessened by the increased maintenance costs associated with longer drives. Several factors will serve to mitigate this situation. First, in the case of shared driveways, the respective township will be requested to maintain that portion of the drive connecting the edge of pavement with the farthest driveway served. Second, in most cases the new drive will be constructed to a higher standard of width, slopes, and thickness than the existing driveway. Third, equipment for snow removal and mowing, which encompasses the vast majority of necessary maintenance, is already in use by most rural property owners as a virtual necessity to life in the country. Last, and most important, damage payments during the right-of-way acquisition process will further mitigate any remaining negative economic impacts. It can be seen, therefore, that while potential negative economic impacts exist due to access modifications, mitigating measures will neutralize these impacts. Alternate 4 will have minimal impact on driveways, thus requiring no mitigation.

Local Governments

Taxing jurisdictions in both Boone and Winnebago Counties would be affected by right-of-way acquisition on the proposed improvement through loss of tax revenue. As can be seen in Tables 5, 6 and 7, the tax revenue losses for the nine taxing jurisdictions of Winnebago County, under Phase I of Alternate 1, range from $34 to $2,397, and on a percentage basis from .004%

to .042%. In Boone County, on the other hand, losses for the eight taxing jurisdictions for all phases of Alternate 1 range from $58 to $4,966, and on a percentage basis from .081% to .168%. On a total tax revenue basis the losses per year in Winnebago County are $3,695 and in Boone County are $7,764. One can therefore see the relatively small tax revenue losses that would result from implementing Alternate 1.

In a similar manner to Alternate 1, some tax revenue losses would result in both Boone and Winnebago Counties from the implementation of all phases of Alternate 2. In Winnebago County, as can be seen in Tables 8, 9 and 10, the nine taxing jurisdictions would lose from $16 to $1,336 annually, and on a percentage basis from .002% to .023%, with a total annual revenue loss of $2,059. Boone County's eight taxing jurisdictions on the other hand, would lose from $58 to $4,958 annually with a percentage basis range of from .081% to .168% and a total yearly revenue loss of $7,754. One can again see both the relatively small tax revenue losses that would occur under Alternate 2 and that the total of these losses would be less than for Alternate 1.

Implementing all phases of Alternate 3 would also result in yearly tax revenue losses for the various taxing jurisdictions of the two counties. Winnebago County's nine taxing jurisdictions, for example, would incur yearly tax revenue losses of $26 to $1,875, percentage losses of .003% to .032%, and a total loss of $2,890. Similarly, in Boone County, the eight taxing jurisdictions would have yearly tax revenue losses of from $68 to $5,786, percentage losses of .095% to .197%, and a total yearly loss of $9,050 (See Tables 11, 12 and 13). Again, one can see the relatively minor tax revenue loss that would result from the implementation of of Alternate 3, although the total loss would be greater than Alternates 1 or 2.

Tables 14, 15 and 16 show the tax loss breakdowns for Alternate 4. Revenue losses in Winnebago County would range from $18 to $1,507, and percentage-wise from .003% to .026%. Boone county, for all phases, would suffer losses from $4 to $408 in cash and from .007% to .014% on a percentage basis. Total yearly revenue loss would be $2,322 and $637 in Winnebago and Boone Counties, respectively. It is clear that Alternate 4 would have the least impact with regard to tax losses of all the alternates.

Public Transportation

There are currently no plans by the Rockford Mass Transit District to serve the U.S. BR 20 corridor under study. Existing and future interstate bus routes utilizing U.S. BR 20 would benefit from implementation of any of the three build alternates through decreased travel time, safer road configuration, and greatly improved riding comfort. Carpool or van-pool programs, likely to be stimulated by existing and future major employers in the area, would benefit in a similar manner.

Employment Generation

It is an established fact that major highway improvements generate employment both during the actual construction of the project and later by increasing the accessibility of the areas to be served by the improvement. Using standard employment generation factors for highway construction projects, the estimated costs shown in Table 18, and a construction period of 18 months, yields the number of on-site, off-site, and total induced jobs for each of the build alternates. A detailed breakdown of the employment generation is shown in Table 17. It can be seen from the table that man-years of employment generation range from 1034 on Alternate 4 to 1241 on Alternate 1. Therefore, the short term effect on employment generation of this proposed improvement can be seen, with Alternate 1 generating the most jobs, followed by Alternates 3, 2 and 4 respectively. Long term employment generation will likely be of a minor nature since the industries of the area already have ready access to national markets. Some minor employment is likely to be generated, however, as commercial activity in the U.S. BR 20 corridor increases.

Project Costs

A detailed breakdown of total estimated costs for the various alternates and phases of the project can be seen on Table 18. It can be seen that, for Phase I, Alternate 4 is the least expensive to build at $5,132,000 followed by Alternate 3 at $6,685,400, Alternate 2 at $6,698,500 and Alternate 1 at $7,529,800. Phase I resurfacing, which will cost the same regardless of the alternate selected, is estimated to cost $662,500. On Phase II, Alternate 4 will be the least expensive to build at $2,495,400, followed by Alternate 2 at $2,949,100, Alternate 1 at $3,063,500, and Alternate 3 at $3,083,300. For Phase III, Alternate 4 will be the most economical to construct at $6,117,200 followed by Alternates 2, 3 and 1 at $7,967,400, $8,058,800 and $8,310,500 respectively.

TABLE 5
ALTERNATE 1 - PHASE I
ASSESSED VALUATION AND TAX DATA - U.S. BUSINESS ROUTE 20 PROJECT

WINNEBAGO COUNTY

Tax Jurisdiction	Total Assessed Valuation	Assessed Valuation Loss	Tax Rate	Tax Revenues	Revenue Loss	% Loss
Winnebago County	$1,416,953,153	$62,906	0.6739	9,548,847	424	.004
Forest Preserve	1,416,953,153	62,906	0.0452	640,463	28	.004
Rockford Township	960,444,990	62,906	0.3123	2,999,470	196	.007
Cherry Valley Fire	151,812,027	62,906	0.1856	281,763	117	.042
Rockford Park and Bond	1,033,289,416	62,906	0.4012	4,145,557	252	.006
Rockford Sanitary	951,514,708	62,906	0.2426	2,308,375	153	.007
Greater Rockford Airport Authority	1,210,286,702	62,906	0.0533	645,083	34	.005
S.D. #205 Bonds	1,015,813,736	62,906	3.8111	38,713,677	2397	.006
Comm. College #511	1,416,763,472	62,906	0.1495	2,118,061	94	.004

Source: Winnebago County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983

BOONE COUNTY

Boone County	224,411,715	40,229	0.5800	1,301,588	233	.018
Boone County Conserv. Dist.	224,411,715	40,229	0.0983	220,597	40	.018
Belvidere Township	108,572,873	40,229	0.1696	184,139	68	.037
Belvidere Township Roads	108,572,873	40,229	0.1650	179,145	66	.037
Belvidere Township Park District	108,572,873	40,229	0.3039	329,953	122	.037
Belvidere Township Cemetery	108,572,873	40,229	0.0318	34,526	13	.038
School District #100	179,853,144	40,229	2.7275	4,905,495	1097	.022
Junior College Dist. #511	219,808,547	40,229	0.1889	415,218	76	.018

Source: Boone County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983

TABLE 6
ALTERNATE 1 - PHASE II
ASSESSED VALUATION AND TAX DATA - U.S. BUSINESS ROUTE 20 PROJECT

WINNEBAGO COUNTY

Tax Jurisdiction	Total Assessed Valuation	Assessed Valuation Loss	Tax Rate	Tax Revenues	Revenue Loss	% Loss
Winnebago County	$1,416,953,153		0.6739	9,548,847		
Forest Preserve	1,416,953,153		0.0452	640,463		
Rockford Township	960,444,990		0.3123	2,999,470		
Cherry Valley Fire	151,812,027		0.1856	281,763		
Rockford Park and Bond	1,033,289,416		0.4012	4,145,557		
Rockford Sanitary	951,514,708		0.2426	2,308,375		
Greater Rockford Airport Authority	1,210,286,702		0.0533	645,083		
S.D. #205 Bonds	1,015,813,736		3.8111	38,713,677		
Comm. College #511	1,416,763,472		0.1495	2,118,061		

Source: Winnebago County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983

BOONE COUNTY

Boone County	224,411,715	22,318	0.5800	1,301,588	129	.010
Boone County Conserv. Dist.	224,411,715	22,318	0.0983	220,597	22	.010
Belvidere Township	108,572,873	22,318	0.1696	184,139	38	.021
Belvidere Township Roads	108,572,873	22,318	0.1650	179,145	37	.021
Belvidere Township Park District	108,572,873	22,318	0.3039	329,953	68	.021
Belvidere Township Cemetery	108,572,873	22,318	0.0318	34,526	7	.020
School District #100	179,853,144	22,318	2.7275	4,905,495	609	.012
Junior College Dist. #511	219,808,547	22,318	0.1889	415,218	42	.010

Source: Boone County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983

TABLE 7
ALTERNATE 1 - PHASE III
ASSESSED VALUATION AND TAX DATA - U.S. BUSINESS ROUTE 20 PROJECT

WINNEBAGO COUNTY

Tax Jurisdiction	Total Assessed Valuation	Assessed Valuation Loss	Tax Rate	Tax Revenues	Revenue Loss	% Loss
Winnebago County	$1,416,953,153		0.6739	9,548,847		
Forest Preserve	1,416,953,153		0.0452	640,463		
Rockford Township	960,444,990		0.3123	2,999,470		
Cherry Valley Fire	151,812,027		0.1856	281,763		
Rockford Park and Bond	1,033,289,416		0.4012	4,145,557		
Rockford Sanitary	951,514,708		0.2426	2,308,375		
Greater Rockford Airport Authority	1,210,286,702		0.0533	645,083		
S.D. #205 Bonds	1,015,813,736		3.8111	38,713,677		
Comm. College #511	1,416,763,472		0.1495	2,118,061		

Source: Winnebago County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983

BOONE COUNTY

Boone County	224,411,715	119,512	0.5800	1,301,588	693	.053
Boone County Conserv. Dist.	224,411,715	119,512	0.0983	220,597	117	.053
Belvidere Township	108,572,873	119,512	0.1696	184,139	203	.110
Belvidere Township Roads	108,572,873	119,512	0.1650	179,145	197	.110
Belvidere Township Park District	108,572,873	119,512	0.3039	329,953	363	.110
Belvidere Township Cemetery	108,572,873	119,512	0.0318	34,526	38	.110
School District #100	179,853,144	119,512	2.7275	4,905,495	3260	.066
Junior College Dist. #511	219,808,547	119,512	0.1889	415,218	226	.054

Source: Boone County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983

TABLE 8
ALTERNATE 2 - PHASE I
ASSESSED VALUATION AND TAX DATA - U.S. BUSINESS ROUTE 20 PROJECT

WINNEBAGO COUNTY

Tax Jurisdiction	Total Assessed Valuation	Assessed Valuation Loss	Tax Rate	Tax Revenues	Revenue Loss	% Loss
Winnebago County	$1,416,953,153	$35,059	0.6739	9,548,847	236	.002
Forest Preserve	1,416,953,153	35,059	0.0452	640,463	16	.002
Rockford Township	960,444,990	35,059	0.3123	2,999,470	109	.004
Cherry Valley Fire	151,812,027	35,059	0.1856	281,763	65	.023
Rockford Park and Bond	1,033,289,416	35,059	0.4012	4,145,557	141	.003
Rockford Sanitary	951,514,708	35,059	0.2426	2,308,375	85	.004
Greater Rockford Airport Authority	1,210,286,702	35,059	0.0533	645,083	19	.003
S.D. #205 Bonds	1,015,813,736	35,059	3.8111	38,713,677	1336	.003
Comm. College #511	1,416,763,472	35,059	0.1495	2,118,061	52	.002

Source: Winnebago County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983

BOONE COUNTY

Boone County	224,411,715	42,704	0.5800	1,301,588	248	.019
Boone County Conserv. Dist.	224,411,715	42,704	0.0983	220,597	42	.019
Belvidere Township	108,572,873	42,704	0.1696	184,139	72	.039
Belvidere Township Roads	108,572,873	42,704	0.1650	179,145	70	.039
Belvidere Township Park District	108,572,873	42,704	0.3039	329,953	130	.039
Belvidere Township Cemetery	108,572,873	42,704	0.0318	34,526	14	.041
School District #100	179,853,144	42,704	2.7275	4,905,495	1165	.024
Junior College Dist. #511	219,808,547	42,704	0.1889	415,218	81	.020

Source: Boone County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983

TABLE 9
ALTERNATE 2 - PHASE II
ASSESSED VALUATION AND TAX DATA - U.S. BUSINESS ROUTE 20 PROJECT

WINNEBAGO COUNTY

Tax Jurisdiction	Total Assessed Valuation	Assessed Valuation Loss	Tax Rate	Tax Revenues	Revenue Loss	% Loss
Winnebago County	$1,416,953,153		0.6739	9,548,847		
Forest Preserve	1,416,953,153		0.0452	640,463		
Rockford Township	960,444,990		0.3123	2,999,470		
Cherry Valley Fire	151,812,027		0.1856	281,763		
Rockford Park and Bond	1,033,289,416		0.4012	4,145,557		
Rockford Sanitary	951,514,708		0.2426	2,308,375		
Greater Rockford Airport Authority	1,210,286,702		0.0533	645,083		
S.D. #205 Bonds	1,015,813,736		3.8111	38,713,677		
Comm. College #511	1,416,763,472		0.1495	2,118,061		

Source: Winnebago County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983

BOONE COUNTY

Boone County	224,411,715	24,954	0.5800	1,301,588	145	.011
Boone County Conserv. Dist.	224,411,715	24,954	0.0983	220,597	25	.011
Belvidere Township	108,572,873	24,954	0.1696	184,139	42	.023
Belvidere Township Roads	108,572,873	24,954	0.1650	179,145	41	.023
Belvidere Township Park District	108,572,873	24,954	0.3039	329,953	76	.023
Belvidere Township Cemetery	108,572,873	24,954	0.0318	34,526	8	.023
School District #100	179,853,144	24,954	2.7275	4,905,495	681	.014
Junior College Dist. #511	219,808,547	24,954	0.1889	415,218	47	.011

Source: Boone County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983

TABLE 10
ALTERNATE 2 - PHASE III
ASSESSED VALUATION AND TAX DATA - U.S. BUSINESS ROUTE 20 PROJECT

WINNEBAGO COUNTY

Tax Jurisdiction	Total Assessed Valuation	Assessed Valuation Loss	Tax Rate	Tax Revenues	Revenue Loss	% Loss
Winnebago County	$1,416,953,153		0.6739	9,548,847		
Forest Preserve	1,416,953,153		0.0452	640,463		
Rockford Township	960,444,990		0.3123	2,999,470		
Cherry Valley Fire	151,812,027		0.1856	281,763		
Rockford Park and Bond	1,033,289,416		0.4012	4,145,557		
Rockford Sanitary	951,514,708		0.2426	2,308,375		
Greater Rockford Airport Authority	1,210,286,702		0.0533	645,083		
S.D. #205 Bonds	1,015,813,736		3.8111	38,713,677		
Comm. College #511	1,416,763,472		0.1495	2,118,061		

Source: Winnebago County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983

BOONE COUNTY

Boone County	224,411,715	114,098	0.5800	1,301,588	662	.051
Boone County Conserv. Dist.	224,411,715	114,098	0.0983	220,597	112	.051
Belvidere Township	108,572,873	114,098	0.1696	184,139	194	.105
Belvidere Township Roads	108,572,873	114,098	0.1650	179,145	188	.105
Belvidere Township Park District	108,572,873	114,098	0.3039	329,953	347	.105
Belvidere Township Cemetery	108,572,873	114,098	0.0318	34,526	36	.104
School District #100	179,853,144	114,098	2.7275	4,905,495	3112	.063
Junior College Dist. #511	219,808,547	114,098	0.1889	415,218	216	.052

Source: Boone County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983

TABLE 11
ALTERNATE 3 - PHASE I
ASSESSED VALUATION AND TAX DATA - U.S. BUSINESS ROUTE 20 PROJECT

WINNEBAGO COUNTY

Tax Jurisdiction	Total Assessed Valuation	Assessed Valuation Loss	Tax Rate	Tax Revenues	Revenue Loss	% Loss
Winnebago County	$1,416,953,153	$49,204	0.6739	9,548,847	332	.003
Forest Preserve	1,416,953,153	49,204	0.0452	640,463	22	.003
Rockford Township	960,444,990	49,204	0.3123	2,999,470	154	.005
Cherry Valley Fire	151,812,027	49,204	0.1856	281,763	91	.032
Rockford Park and Bond	1,033,289,416	49,204	0.4012	4,145,557	197	.005
Rockford Sanitary	951,514,708	49,204	0.2426	2,308,375	119	.005
Greater Rockford Airport Authority	1,210,286,702	49,204	0.0533	645,083	26	.004
S.D. #205 Bonds	1,015,813,736	49,204	3.8111	38,713,677	1875	.005
Comm. College #511	1,416,763,472	49,204	0.1495	2,118,061	74	.003

Source: Winnebago County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983

BOONE COUNTY

Boone County	224,411,715	42,555	0.5800	1,301,588	247	.019
Boone County Conserv. Dist.	224,411,715	42,555	0.0983	220,597	42	.019
Belvidere Township	108,572,873	42,555	0.1696	184,139	72	.039
Belvidere Township Roads	108,572,873	42,555	0.1650	179,145	70	.039
Belvidere Township Park District	108,572,873	42,555	0.3039	329,953	129	.039
Belvidere Township Cemetery	108,572,873	42,555	0.0318	34,526	14	.039
School District #100	179,853,144	42,555	2.7275	4,905,495	1161	.024
Junior College Dist. #511	219,808,547	42,555	0.1889	415,218	80	.019

Source: Boone County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983

TABLE 12
ALTERNATE 3 - PHASE II
ASSESSED VALUATION AND TAX DATA - U.S. BUSINESS ROUTE 20 PROJECT

WINNEBAGO COUNTY

Tax Jurisdiction	Total Assessed Valuation	Assessed Valuation Loss	Tax Rate	Tax Revenues	Revenue Loss	% Loss
Winnebago County	$1,416,953,153		0.6739	9,548,847		
Forest Preserve	1,416,953,153		0.0452	640,463		
Rockford Township	960,444,990		0.3123	2,999,470		
Cherry Valley Fire	151,812,027		0.1856	281,763		
Rockford Park and Bond	1,033,289,416		0.4012	4,145,557		
Rockford Sanitary	951,514,708		0.2426	2,308,375		
Greater Rockford Airport Authority	1,210,286,702		0.0533	645,083		
S.D. #205 Bonds	1,015,813,736		3.8111	38,713,677		
Comm. College #511	1,416,763,472		0.1495	2,118,061		

Source: Winnebago County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983

BOONE COUNTY

Boone County	224,411,715	49,485	0.5800	1,301,588	287	.022
Boone County Conserv. Dist.	224,411,715	49,485	0.0983	220,597	49	.022
Belvidere Township	108,572,873	49,485	0.1696	184,139	84	.046
Belvidere Township Roads	108,572,873	49,485	0.1650	179,145	82	.046
Belvidere Township Park District	108,572,873	49,485	0.3039	329,953	151	.046
Belvidere Township Cemetery	108,572,873	49,485	0.0318	34,526	16	.046
School District #100	179,853,144	49,485	2.7275	4,905,495	1350	.028
Junior College Dist. #511	219,808,547	49,485	0.1889	415,218	94	.023

Source: Boone County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983

TABLE 13
ALTERNATE 3 - PHASE III
ASSESSED VALUATION AND TAX DATA - U.S. BUSINESS ROUTE 20 PROJECT

WINNEBAGO COUNTY

Tax Jurisdiction	Total Assessed Valuation	Assessed Valuation Loss	Tax Rate	Tax Revenues	Revenue Loss	% Loss
Winnebago County	$1,416,953,153		0.6739	9,548,847		
Forest Preserve	1,416,953,153		0.0452	640,463		
Rockford Township	960,444,990		0.3123	2,999,470		
Cherry Valley Fire	151,812,027		0.1856	281,763		
Rockford Park and Bond	1,033,289,416		0.4012	4,145,557		
Rockford Sanitary	951,514,708		0.2426	2,308,375		
Greater Rockford Airport Authority	1,210,286,702		0.0533	645,083		
S.D. #205 Bonds	1,015,813,736		3.8111	38,713,677		
Comm. College #511	1,416,763,472		0.1495	2,118,061		

Source: Winnebago County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983

BOONE COUNTY

Boone County	224,411,715	120,090	0.5800	1,301,588	697	.054
Boone County Conserv. Dist.	224,411,715	120,090	0.0983	220,597	118	.053
Belvidere Township	108,572,873	120,090	0.1696	184,139	204	.111
Belvidere Township Roads	108,572,873	120,090	0.1650	179,145	198	.111
Belvidere Township Park District	108,572,873	120,090	0.3039	329,953	365	.111
Belvidere Township Cemetery	108,572,873	120,090	0.0318	34,526	38	.110
School District #100	179,853,144	120,090	2.7275	4,905,495	3275	.067
Junior College Dist. #511	219,808,547	120,090	0.1889	415,218	227	.055

Source: Boone County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983

TABLE 14
ALTERNATE 4 - PHASE I*
ASSESSED VALUATION AND TAX DATA - U.S. BUSINESS ROUTE 20 PROJECT

WINNEBAGO COUNTY

Tax Jurisdiction	Total Assessed Valuation	Assessed Valuation Loss	Tax Rate	Tax Revenues	Revenue Loss	% Loss
Winnebago County	$1,416,953,153	$39,532	0.6739	9,548,847	266	.003
Forest Preserve	1,416,953,153	39,532	0.0452	640,463	18	.003
Rockford Township	960,444,990	39,532	0.3123	2,999,470	123	.004
Cherry Valley Fire	151,812,027	39,532	0.1856	281,763	73	.026
Rockford Park and Bond	1,033,289,416	39,532	0.4012	4,145,557	159	.004
Rockford Sanitary	951,514,708	39,532	0.2426	2,308,375	96	.004
Greater Rockford Airport Authority	1,210,286,702	39,532	0.0533	645,083	21	.003
S.D. #205 Bonds	1,015,813,736	39,532	3.8111	38,713,677	1507	.004
Comm. College #511	1,416,763,472	39,532	0.1495	2,118,061	59	.003

Source: Winnebago County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983

BOONE COUNTY

Boone County	224,411,715	3,360	0.5800	1,301,588	19	.001
Boone County Conserv. Dist.	224,411,715	3,360	0.0983	220,597	3	.001
Belvidere Township	108,572,873	3,360	0.1696	184,139	6	.003
Belvidere Township Roads	108,572,873	3,360	0.1650	179,145	6	.003
Belvidere Township Park District	108,572,873	3,360	0.3039	329,953	10	.003
Belvidere Township Cemetery	108,572,873	3,360	0.0318	34,526	1	.003
School District #100	179,853,144	3,360	2.7275	4,905,495	92	.002
Junior College Dist. #511	219,808,547	3,360	0.1889	415,218	6	.001

Source: Boone County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983
*Preferred Alternate

TABLE 15
ALTERNATE 4 - PHASE II*
ASSESSED VALUATION AND TAX DATA - U.S. BUSINESS ROUTE 20 PROJECT

WINNEBAGO COUNTY

Tax Jurisdiction	Total Assessed Valuation	Assessed Valuation Loss	Tax Rate	Tax Revenues	Revenue Loss	% Loss
Winnebago County	$1,416,953,153		0.6739	9,548,847		
Forest Preserve	1,416,953,153		0.0452	640,463		
Rockford Township	960,444,990		0.3123	2,999,470		
Cherry Valley Fire	151,812,027		0.1856	281,763		
Rockford Park and Bond	1,033,289,416		0.4012	4,145,557		
Rockford Sanitary	951,514,708		0.2426	2,308,375		
Greater Rockford Airport Authority	I,210,286,702		0.0533	645,083		
S.D. #205 Bonds	1,015,813,736		3.8111	38,713,677		
Comm. College #511	1,416,763,472		0.1495	2,118,061		

Source: Winnebago County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983

BOONE COUNTY

Boone County	224,411,715	4,662	0.5800	1,301,588	27	.002
Boone County Conserv. Dist.	224,411,715	4,662	0.0983	220,597	5	.002
Belvidere Township	108,572,873	4,662	0.1696	184,139	8	.004
Belvidere Township Roads	108,572,873	4,662	0.1650	179,145	8	.004
Belvidere Township Park District	108,572,873	4,662	0.3039	329,953	14	.004
Belvidere Township Cemetery	108,572,873	4,662	0.0318	34,526	1	.003
School District #100	179,853,144	4,662	2.7275	4,905,495	127	.003
Junior College Dist. #511	219,808,547	4,662	0.1889	415,218	9	.002

Source: Boone County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983
* Preferred Alternate

TABLE 16
ALTERNATE 4 - PHASE III*
ASSESSED VALUATION AND TAX DATA - U.S. BUSINESS ROUTE 20 PROJECT

WINNEBAGO COUNTY

Tax Jurisdiction	Total Assessed Valuation	Assessed Valuation Loss	Tax Rate	Tax Revenues	Revenue Loss	% Loss
Winnebago County	$1,416,953,153		0.6739	9,548,847		
Forest Preserve	1,416,953,153		0.0452	640,463		
Rockford Township	960,444,990		0.3123	2,999,470		
Cherry Valley Fire	151,812,027		0.1856	281,763		
Rockford Park and Bond	1,033,289,416		0.4012	4,145,557		
Rockford Sanitary	951,514,708		0.2426	2,308,375		
Greater Rockford Airport Authority	1,210,286,702		0.0533	645,083		
S.D. #205 Bonds	1,015,813,736		3.8111	38,713,677		
Comm. College #511	1,416,763,472		0.1495	2,118,061		

Source: Winnebago County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983

BOONE COUNTY

Boone County	224,411,715	6,944	0.5800	1,301,588	40	.003
Boone County Conserv. Dist.	224,411,715	6,944	0.0983	220,597	7	.003
Belvidere Township	108,572,873	6,944	0.1696	184,139	12	.007
Belvidere Township Roads	108,572,873	6,944	0.1650	179,145	11	.006
Belvidere Township Park District	108,572,873	6,944	0.3039	329,953	21	.006
Belvidere Township Cemetery	108,572,873	6,944	0.0318	34,526	2	.006
School District #100	179,853,144	6,944	2.7275	4,905,495	189	.004
Junior College Dist. #511	219,808,547	6,944	0.1889	415,218	13	.003

Source: Boone County Clerk's Office
Note: Figures in Dollars. Tax Rates are 1982 Rates, Payable in 1983
* Preferred Alternate

TABLE 17
EMPLOYMENT GENERATION

	ON SITE		OFF SITE		INDUCED GENERATION		TOTAL	
	Man Years	Jobs*	Man Years	Jobs*	Man Years	Jobs*	Man Years	Jobs*
ALT. #1 PHASE 1	102	68	102	68	294	196	498	332
ALT. #1 PHASE 2	44	29	44	29	127	85	215	143
ALT. #1 PHASE 3	104	69	108	72	312	208	528	352
TOTAL ALT. #1	254	169	254	169	733	489	1241	827
ALT. #2 PHASE 1	98	65	98	65	282	188	478	318
ALT. #2 PHASE 2	44	29	43	29	122	81	208	139
ALT. #2 PHASE 3	104	69	104	69	298	199	506	397
TOTAL ALT. #2	245	163	245	163	702	468	1192	794
ALT. #3 PHASE 1	98	65	98	65	282	188	478	318
ALT. #3 PHASE 2	44	29	44	29	128	85	216	143
ALT. #3 PHASE 3	103	69	103	69	297	198	503	336
TOTAL ALT. #3	245	163	245	163	707	471	1197	797
** ALT. #4 PHASE 1	84	56	84	56	241	161	409	273
** ALT. #4 PHASE 2	36	24	36	24	105	70	177	118
** ALT. #4 PHASE 3	92	61	92	61	264	176	448	298
TOTAL ALT. #4	212	141	212	141	610	407	1034	689

*Construction period of 18 months per phase.
**Preferred Alternate

TABLE 18
COST ESTIMATE
1984 ESTIMATED COSTS IN $1,000'S

*Four Lane Portion #Preferred Alternate

WORK CLASSIFICATION	Alt. 1-Ph. I*	Alt. 2-Ph. I*	Alt. 3-Ph. I*	Alt. 4-Ph. I*#	Resurf. Portion of Phase I	Alt. 1-Ph. II	Alt. 2-Ph. II	Alt. 3-Ph. II	Alt. 4-Ph. II#	Alt. 1-Ph. III	Alt. 2-Ph. III	Alt. 3-Ph. III	Alt. 4-Ph. III
1. Clear and Grub: Demolition	34.1	24.4	32.8	11.5	0	33.0	24.0	32.9	0.8	35.9	23.1	31.1	1.2
2. a. Mainline Grading and Drainage	620.5	602.6	586.4	435.0	7.8	542.6	538.2	598.5	379.6	691.3	683.2	779.0	563.0
b. Frontage Road Grading and Drainage	262.1	264.7	253.8	96.5	31.8	29.9	29.9	26.6	12.8	34.0	32.0	33.4	38.3
3. a. Mainline subbase, base, surface and shoulders	2353.8	2334.7	2345.6	2156.9	391.2	1370.9	1297.0	1333.6	1191.1	3371.5	3481.7	3380.8	3121.5
b. Frontage road, subbase, base, surface and shoulders	739.9	732.2	766.9	577.4	16.2	57.0	58.5	52.8	54.3	106.4	116.3	124.4	86.0
4. Railroad grade separations	0	0	0	0	0	0	0	0	0	0	0	0	0
5. Highway grade separations including earthwork and pavement (w/o ramps)	0	0	0	0	0	0	0	0	0	0	0	0	0
6. Interchanges (structure, cross-road and ramp earthwork, cross-road and ramp pavements).	0	0	0	0	0	0	0	0	0	910.4	570.6	538.4	661.1
7. Major structures.	135.0	135.0	135.0	56.4	0	54.6	54.6	54.6	36.4	36.4	36.4	36.4	36.4
8. Walls (retaining or reinforced earth)	39.4	36.2	38.6	30.3	29.4	45.0	36.0	36.0	50.0	105.0	84.0	84.0	70.0
9. a. Guardrail, fencing and lighting	150.0	100.0	100.0	100.0	20.0	5.0	5.0	5.0	10.0	10.0	10.0	10.0	10.0
b. Traffic control	10.0	10.0	10.0	10.0	0	30.0	30.0	30.0	25.0	70.0	70.0	70.0	55.0
c. Signing	50.0	50.0	50.0	50.0	0	41.4	41.1	41.1	29.7	108.6	110.7	99.9	81.6
10. a. Erosion Control	87.0	88.5	86.7	69.6	27.3	0	0	0	0	0	0	0	0
b. Landscaping	0	0	0	0	0	0	0	0	0	0	0	0	0
c. Rest areas or other amenities	0	0	0	0	0	0	0	0	0	0	0	0	0
d. Other environmental mitigation	0	0	0	0	0	0	0	0	0	124.0	163.0	163.0	0
11. Traffic Maintenance	25.8	25.8	25.8	25.8	0	0	0	0	0	25.3	8.3	8.3	8.3
a. Crossovers	262.9	167.8	129.9	200.3	0	85.9	94.4	91.9	99.9	0	0	0	0
b. Temporary roadways	0	0	0	0	0	0	0	0	0	5628.8	5389.3	5358.7	4768.5
12. All other items	4770.5	4571.9	4561.5	3819.7	523.7	2295.3	2208.7	2303.0	1889.6	562.9	538.9	535.9	476.9
13. Subtotal (Lines 1-12)	477.1	457.2	456.2	382.0	52.4	229.5	220.9	230.3	189.0	6191.7	5928.2	5894.6	5245.4
14. Contingencies (10% of Line 13)	5247.6	5029.1	5017.7	4201.7	576.1	2524.8	2429.6	2533.3	2078.6				
15. CONSTRUCTION COST (Lines 13,14)													
16. Right-Of-Way	1495.0	915.0	915.0	300.0	0	160.0	155.0	170.0	105.0	1190.0	1150.0	1280.0	85.0
17. Utility Adjustments	0	0	0	0	0	0	0	0	0	0	0	0	0
18. Prelim. Eng. (5% of Line 15)	262.4	251.5	250.9	210.1	28.8	126.2	121.5	126.7	103.9	309.6	296.4	294.7	262.3
19. Const. Eng. (10% of Line 15)	524.8	502.9	501.8	420.2	57.6	252.5	243.0	253.3	207.9	619.2	592.8	589.5	524.5
20. TOTAL PROJECT COST (Lines 15, 16, 17, 18, 19)	7529.8	6698.5	6685.4	5132.0	662.5	3063.5	2949.1	3083.3	2495.4	8310.5	7967.4	8058.8	6117.2

D. ARCHEOLOGICAL/HISTORICAL/CULTURAL RESOURCES

The historic impact report prepared for this project identified five sites with potential for eligibility for historic registration, with an additional 15 sites which would be a potential source of information through archaeological testing. For that reason, the Department of Transportation will undertake Phase II archaeological testing and architectural investigations of any of the 10 sites which would be impacted by proposed construction. These investigations will be designed to provide information on which the State Historic Preservation Officer (SHPO) could base determinations of eligibility of the sites for inclusion in the National Register of Historic Places (NRHP).

The most recent historic investigation considers the following three buildings or sets of buildings as having the greatest potential for eligibility for historic registration. The Peter Clark site (11-Bo-H-12) located Right Station 91, the Ezra May site (11-Bo-H-10) located Right Station 117, and the A.M. and Z.M. Smith site (11-Bo-HO-6) located Right Station 158. Alternates 1, 2, and 4 would not take any buildings or sets of buildings from the preceeding three sites for their implementation. Alternate 3 would require the removal or relocation of at least one building at each of the three above listed locations.

The response of the SHPO following analysis of the historic impact report is included as Exhibit 13D of this report. This letter indicates that none of the three sites with greatest potential for inclusion in the National Register of Historic Places is eligible. Thus it may be concluded that the Archeological/Historical/Cultural impacts of the proposed project will not be significant.

E. LAND USE/AGRICULTURE

Area Development

As has been previously discussed in Section I C. of this study, there is considerable development, both existing and projected, on the U.S. BR 20 corridor. Considerable commercial development has occurred in the last five years in the Winnebago County portion of the study area and this growth is expected to continue in the foreseeable future. Construction of the proposed improvement will undoubtedly enhance the growth potential of the area. A number of steps are currently in use or will soon be in place to help the local agencies in Winnebago County control the projected growth, including: subdivision regulations which specify the conditions for converting undeveloped land into buildable sites; zoning ordinances which allocate land areas into districts of common usage; building codes which put forth the rules for actual building construction; housing codes which deal with correcting substandard housing and preventing future deterioration due to improper maintenance; sanitary regulations dealing with the safety and effectiveness of sewage systems and water supplies; and a capital improvement program to list and prioritize improvement projects.

In the Boone County portion of the study area, considerable suburban residential development is expected in the U.S. BR 20 corridor in the next twenty years. The proposed improvements to U.S. BR 20 as well as the accelerated commercial growth in the Winnebago County portion of the study will serve to hasten this suburban residential development. The local government agencies in Boone County have implemented or are in the process of implementing the same regulations as previously discussed for Winnebago County.

There are several potential future facilities planned, as well as a comprehensive land use plan for the Winnebago County portion of the project. As previously outlined in Section II K., future proposed developments in the area include a bicycle path or urban trail, as well as sewer lateral and interceptor extensions. As shown on Exhibit 5, the proposed future land use for the project area is primarily agricultural and commercial as documented in the Year 2000 Plan of the Rockford-Winnebago County Planning Commission. There appears to be no conflicts between any of the proposed future area developments and the proposed improvement to U.S. BR 20 in the Winnebago County portion of the project.

Boone County also has a number of future projects which need to be considered, as detailed in Section II K. Several highway projects are in various stages of planning or construction, including widening U.S. BR 20 from High Line Street to Illinois Route 76, constructing the Belvidere East Bypass project from Genoa Road to Appleton Road, and improving Appleton-Stone Quarry Road from U.S. BR 20 south to a point 1500' north of U.S. Route 20. In addition, a tract of land one mile east of the County

line is a potential future park and recreation area. As can be seen on Exhibit 5, the future land use for the Boone County portion of the project area is residential, limited residential, and commercial. The proposed improvement to U.S. BR 20 will provide no conflicts with the future area planning as outlined in the Land Use Plan by the Belvidere-Boone County Regional Planning Commission.

There is a definite relationship between the proposed improvement to U.S. BR 20 and the planned future growth for both the Winnebago and Boone County areas of the project. Undoubtedly, the increased access to both downtown Rockford and Belvidere that will be afforded by the project will enhance both the commercial and residential development of the project area. As has been previously discussed, the existing and expected future commercial growth eastward from Lyford Road will be enhanced by the project and will harmoniously mesh with the Year 2000 Plan of the Rockford-Winnebago County Planning Commission.

Similarly, theproposed improvement to U.S. BR 20 will improve access to proposed and existing suburban residential developments in the Boone County area. By improving the access to both Rockford and Belvidere, growth into the area will naturally be stimulated. By stimulating the existing and future planned growth in the area the project will have a permanent positive effect on the area. As documented in the Land Use Plan of the Belvidere-Boone County Regional Planning Commission, the primary planned future development in the U.S. BR 20 area of Boone County is limited residential. By stimulating this development through improved access to both Rockford and Belvidere, the proposed improvement will fit in well with the planned growth in the area.

The proposed improvement, if any of the first three alternates are implemented, will have two principal impacts on adjoining land uses. The first impact will be on the commercial development of the Winnebago County portion of the project area. Because of commercial access to U.S. BR 20 being restricted to side roads only, it is likely that the commercial developments will begin at Lyford Road and Shaw Road and slowly converge on each other. This will tend to make those areas of farmland most remote from the side roads less likely to be quickly converted to non-agricultural use. The second potential impact, again due to the access requirements of a rural Area Service highway, involves the number and placement of field entrances. Following completion of the project, only one point of access will be allowed unless the parcel would be landlocked by that restriction. At other points of existing access to fields, the actual position of the access point could be shifted to meet the minimum spacing requirements between access points and from an access point to a median crossover. Regardless of the built alternate selected, only two parcels would have fewer points of access while several would have existing points of access shifted. It is readily apparent that both of these potential impacts on adjoining land uses are of a relatively minor nature.

Since the concept for Alternate 4 includes no access control, its impact on adjoining land uses will be substantially different from Alternates 1, 2 and 3. Commercial development will not have to begin at the sideroads and slowly grow outward, but can start at any point along the mainline corridor. Likewise, residential construction will not be tied down to single entrances or median locations. The net effect of no restriction to access on this alternate, when compared to the other three, will be to promote a much faster commercialization and urbanization, causing the corridor to more rapidly lose its rural character.

Farmland

The implementation of any of the build alternates for the proposed improvement would convert existing farmland into non-agricultural uses. Having previously recognized this loss of land, on July 22, 1980, Governor James R. Thompson signed Executive Order No. 4 entitled, "Preservation of Illinois Farmland," which requires that the Department of Transportation and other State agencies develop an agricultural land preservation policy. In response to that order, the Illinois Department of Transportation has prepared the following policy regarding the conversion of farmland for transportation purposes.

POLICY

Recognizing that its transportation objectives must be in concert with the overall goals of the state, it is the policy of the Department of Transportation, in its programs, procedures, and operations, to preserve Illinois farmland to the extent practicable and feasible, giving appropriate consideration to the state's social, economic, and environmental goals.

IMPACT MITIGATION

The Illinois Department of Transportation is committed to initiating special measures when transportation projects affect agricultural lands. The following special measures will be initiated when transportation and water resources projects take "prime" farmland (land classes I, II and III). Department sponsored projects should not acquire more than ten acres of prime farmland, unless alternatives are not feasible because of other social, economic, environmental, safety, or operational factors. Further, projects requiring more than ten acres of prime farmland will be accompanied by a study of the measures which could practicably mitigate the scope and impacts of the conversion. The study will be furnished to the Illinois Department of Agriculture.

Although the Department of Transportation's mitigation measures will not necessarily eliminate the non-farm use of prime farmland, a thorough impact analysis will be made before the Department determines that a given conversion is consistent with

our programmatic responsibilities and Executive Order No. 4 (1980).

In order to assess the amount of very productive farmland that would be required as right-of-way for the project, scale right-of-way drawings of each of the four build alternates were furnished to the Illinois Department of Agriculture. Included as Appendix A of this study is a report of the findings of the IDOA.

The Department of Agriculture studied the impacts of the four Alternates by use of the State Land Evaluation and Site Assessment System (LESA). This system is useful in assessing differing alternates that intend to convert farmland to nonagricultural purposes and in determining which alternate creates the least harm to the agricultural environment. The agricultural impacts for the proposed alternates, as determined by the Illinois Department of Agriculture, are as follows: Alternate 1 is 195.41; Alternate 2 equals 188.16; Alternate 3 totals 177.22; Alternate 4 amounts to 157.60. In summary, it can be seen that the IDOA did not initially object to the utilization of any of the first three build alternates and found little difference in impacts, regardless of which alternate was selected. In addition, it is further concluded that the implementation of any of the first three alternates would be consistent with the previously stated Department of Transportation policy. Following the submittal of Alternate 4 to the IDOA, they expressed a definite preference for this proposal over Alternates 1, 2 and 3.

Throughout the project, and on each of the four alternates, are a number of temporary and permanent easements, required mainly for driveway construction and building removal. Most of these easements involve existing land which is currently unproductive. One required permanent easement which will involve the removal of approximately 2 acres of farmland is necessary for the construction of a service road in the northwest quadrant of the U.S. BR 20 intersection with Shaw Road. This access from Shaw road to the State Street Quarry is mandated by the access requirements of a rural Area Service highway for Alternates 1 thru 3 only. The land requirement for this easement will be essentially the same regardless of which alternate is chosen. An examination of Exhibits 7A thru 10K shows the relatively minor impact on productive farmland that the remaining temporary and permanent easements will have.

In addition to the evaluation of farmland completed by the Illinois Department of Agriculture, the United States Department of Agriculture's Soil Conservation Service has done an evaluation of the soils to be encountered under any of the proposed build alternates. The list of soils to be encountered, including qualifying statements for prime farmland, as well as a cover letter which indicates no conflict with the project, is included as part of Appendix A. By reviewing all the information included in Appendix A, one can see the extent of impacts to farmland, as

well as the coordination that has been done with the Soil Conservation Service.

Right-of-Way Requirements

Property required to be purchased as right-of-way for all four alternates is shown in Table 19, as well as the number and total areas of easements necessary. Right-of-way takings are subdivided into four current land use categories - cropland, pasture, residential and commercial.

Land requirements for the first three alternates differ to only a minor degree. The largest total purchase, 73.1 acres for Alternate 3, varies by about 5% from the smallest, 69.6 acres for Alternate 1. Alternate 4, however, requires only 36.9 acres of right-of-way, far less (47%) than the next closest alternate.

F. ECOLOGICAL IMPACT

The habitat within the project corridor has been previously disturbed by agricultural practices, utilized for residential, transportation, commercial or recreational purposes. There were not any areas of native or unique habitat located within the proposed project corridor during the survey.

Alternates 1, 2 and 3 have potential impacts to habitat found in the project corridor and are similar in quantity and quality of the areas affected (refer to Section II). The dominant land type impacted by any of the build alternates will be agricultural land which is considered to be ecologically disturbed habitat. The majority of the impacts caused by Alternates 1, 2 and 3 results from the acquisition of additional right-of-way required for a frontage road access system. This frontage road system would impact wooded habitat found around many of the private residences. Reduction of any wooded habitat would result in a loss of wildlife cover.

Alternate 4 takes less additional right-of-way than any of the other alternates except the no build option (Table 19). Alternate 4 does not utilize an extensive frontage road system in the residential and commercial areas, which reduces impacts to both agricultural ground and wooded habitat. The ecologically impacted acreages for the various alternates are listed in Table 20.

Two areas where construction may have a significant ecological impact would be during bridge construction over Beaver Creek or excessive tree removal Right and Left of Stations 111+00 to 116+00 south of Family Fun Land.

Site selection for the proposed Beaver Creek crossing varies with each alternate and is described in reference to the existing structure: Alternate 1 splits the difference requiring the removal of the existing bridge, Alternate 2 would place the new

TABLE 19
PROPERTY REQUIRED FOR PROJECT RIGHT-OF-WAY

	ALTERNATES/ PHASES	EASEMENTS			RIGHT-OF-WAY: CURRENT LAND USE (ACRES)					
		NO.	ACRES	TOTALS	CROPLAND	PASTURE	RESIDENTIAL	COMMERCIAL	TOTALS	
	ALT. 1 PHASE I	29	8.9	80	19.1	1.3	6.4	3.7	30.5	
	ALT. 1 PHASE II	33	3.4	16.4 AC.	6.9	1.0	2.3	2.0	12.2	69.6
	ALT. 1 PHASE III	18	4.1		17.0	3.1	2.9	3.9	26.9	
	ALT. 2 PHASE I	27	8.7	76	21.2	0.4	6.8	2.4	30.8	
	ALT. 2 PHASE II	33	2.8	15.3 AC.	8.4	1.9	1.6	2.5	14.4	71.1
	ALT. 2 PHASE III	16	3.8		15.5	3.7	2.7	4.0	25.9	
	ALT. 3 PHASE I	30	8.8	78	20.9	0.5	5.6	6.9	33.9	
	ALT. 3 PHASE II	31	2.8	16.1 AC.	8.2	0.7	2.1	1.2	12.2	73.1
	ALT. 3 PHASE III	17	4.5		16.9	3.2	2.9	4.0	27.0	
*	ALT. 4 PHASE I	14	1.3	26	12.3	1.6	1.2	2.5	17.6	
*	ALT. 4 PHASE II	6	0.6	2.6 AC.	4.3	1.0	0.2	1.0	6.5	36.9
*	ALT. 4 PHASE III	6	0.7		9.2	1.8	1.0	0.8	12.8	

*Preferred Alternate

TABLE 20

ECOLOGICAL PROPERTY REQUIRED FOR PROJECT RIGHT-OF-WAY
(ACRES)

	ALTERNATES/ PHASES	RIGHT-OF-WAY TOTALS		ECOLOGICALLY IMPACTED PROPERTY			
				WOODLAND	LAWNS	100 YR. FLOODPLAIN	WETLANDS
	ALT. 1 PHASE I	30.5		3.3	2.6	1.2	0
	ALT. 1 PHASE II	12.2	69.6	1.3	2.7	0.8	0
	ALT. 1 PHASE III	26.9		3.9	3.1	0.5	0
	ALT. 2 PHASE I	30.8		2.1	4.6	3.3	0
	ALT. 2 PHASE II	14.4	71.1	1.4	3.0	0.9	0
	ALT. 2 PHASE III	25.9		3.1	4.1	0.5	0
	ALT. 3 PHASE I	33.9		4.1	4.5	2.0	0
	ALT. 3 PHASE II	12.2	73.1	1.2	3.0	0.7	0
	ALT. 3 PHASE III	27.0		3.1	4.0	0.7	0
*	ALT. 4 PHASE I	17.6		1.0	1.6	0.2	0
*	ALT. 4 PHASE II	6.5	36.9	0.5	1.6	0.6	0
*	ALT. 4 PHASE III	12.8		1.0	2.1	0.4	0

*Preferred Alternate

bridge on the northside, Alternate 3 would place the new bridge on the south side. Alternate 4 proposes widening the existing structure on the north edge. Construction of a new bridge on the south side of the existing bridge would result in more tree removal than would construction on the north side. The north side is relatively clear of woody vegetation.

Construction impacts to the woodlot adjacent to Stations 111+00 to 116+00 vary with each alternate. Alternates 1 and 3 show a proposed frontage road which would result in tree removal; Alternates 2 and 4 propose alternate entrances or maintenance of existing ones which would avoid the majority of tree removal. Design measures between these stations will be studied to reduce or avoid removal of the larger trees.

The land right of Stations 44+00 to 57+00 has been deeded to the Boone County Conservation District. Land would be required from this area on both Alternates 1 and 3. Alternates 2 and 4 avoid utilization of the BCCD property.

The future land use as shown in Exhibit 5 indicates that the land adjacent to U.S. BR 20 will continue to be developed for commercial and residential purposes. This development will contribute to the ecological disturbance of the study corridor.

Threatened and Endangered Species

This project will not affect any species listed by the Illinois Department of Conservation or the U.S. Fish and Wildlife Service, as threatened or endangered.

The U.S. Fish and Wildlife Service has indicated that the bald eagle may occur in Winnebago County, and that the Indiana bat may occur in both Winnebago and Boone Counties. However, there is no suitable habitat present in the project corridor for the bald eagle or the Indiana bat.

Two vertebrate and 64 plant species listed as endangered or threatened in Illinois by the State Endangered Species Protection Board have been known to occur in Winnebago and Boone Counties. However, there is no suitable habitat present in the project corridor for these species.

The results of the Biological Survey for this project are shown in Exhibit 13G. This exhibit indicates that the project has been reviewed by the Natural Studies Unit of the Illinois Department of Transportation's Bureau of Location and Environment and found to contain no threatened or endangered species within the proposed construction area.

G. WATER QUALITY/RESOURCES

No Action Alternative

The No-Action Alternative would not have affected the water

quality or resources of the area. Highway traffic would have continued to use the traffic corridor along U.S. Business Route 20. The erosion and subsequent sedimentation, which is possible with highway construction, would not have occurred. Chemicals applied to the highway or spilled on the highway would have been carried off in the roadway drainage system, as is currently the case.

Area streams and rivers would not have been affected. The possibility of contamination of surface and groundwater supplies, or of any public water supply, is currently very small and would have remained so. A small increase in the possibility of property loss or hazard to life from surface flooding would have occurred as the existing roadway drainage culverts are hydraulically undersized in accordance with current design standards and practice.

All Build Alternates

The effects of erosion and sedimentation during construction will be minimized and contained within the right-of-way; the effects of deicing materials will not seriously affect the environment in the area; the use (and effect) of weed, rodent, and insect control products will decrease because of the project construction; and spillage of toxic chemicals, should it occur, will be contained within the right-of-way.

Runoff containing pollutants from vehicular operation will be contained within the roadway drainage system. Wastewater disposal from rest areas will not be a problem since the project does not contain any rest areas. The probability of contamination of surface and/or groundwater supplies or any public water supply system is not foreseen.

There are no wetland areas within or adjacent to the U.S. Business Route 20 vicinity.

U.S. BR 20 was reevaluated on November 21, 1985, using the U.S. Fish and Wildlife Service Wetland Classification System (Classification of Wetlands and Deepwater Habitats of the United States). No wetlands were found within or adjacent to U.S. BR 20 according to the U.S. Fish and Wildlife Service Wetland Classification System.

The proposed project area does include Beaver Creek. Beaver Creek would be classified into a Riverine System and a Streambed (vegetated) Class. The study area around Beaver Creek does not qualify as a Regulatory Wetland according to the U.S. Fish and Wildlife Service Classification System because it does not have the three major wetland parameters as described below: (1) Vegetation - The land does not support predominantly hydrophytes. The dominant trees in the area were box elder (Acer negundo), silver maple (Acer saccharinum), and sandbar willow (Salix interior). The existing bridge had been built in 1983 and the surrounding area had been seeded with Class II Special Seed Mix

which includes fescue (Festuca arundinacea) and little bluestem (Schizachyrium scoparium). These species dominate the area. (2) Substrate - The soils along the creek in this area are classified as Millington Silt Loam, which are poorly drained soils but not undrained hydic soils. (3) Hydrology - The area is not covered by water at some time during the growing season of each year. Therefore, this project will not have any impacts on wetlands.

The project will not result in modification or impoundment of any existing stream.

Existing natural drainage patterns will be maintained.

The U.S. Business Route 20 project crosses the 100-year floodplain of Beaver Creek in Boone County, and construction is proposed within the limits of this floodplain.

The project will, in part, parallel the Kishwaukee River floodplain. It will have partially controlled access, thus limiting direct access from the proposed roadway to property in the floodplain. However, from two existing intersections at Shaw and Distillery Roads less restricted access to floodplain property will be available. The Boone County Zoning Ordinance severely restricts development in the Kishwaukee floodplain. This aspect of the county zoning ordinance has been strictly reinforced and recent area planning documents restate the concept that severe restrictions of floodplain development should continue. The proposed project will not provide new access to the floodplain and will not encourage development in the floodplain (see Exhibit 11A).

Construction of this project will cause a minimal increase in flood heights and flood limits.

Since all four Alternates generally follow the existing alignment of U.S. BR 20, there will be no longitudinal encroachment of the proposed roadway into the 100 year Kishwaukee floodplain (see Exhibit 11B). With the limiits of the Kishwaukee floodway approaching no closer than approximately 500 feet to any of the proposed alternates, there will be no significant impacts on the natural and beneficial floodplain values, no change in flood risk or damage and no significant potential for interruption of emergency service or emergency evacuation routes.

Coordination with the U.S. Army Corps of Engineering has established that the project has a river crossing below the headwaters of Beaver Creek and that the stream has a normal flow of greater than five cubic feet per second at the crossing locations (see Exhibit 13A). An individual 404 Permit will have to be applied for subsequent to approval of the final design plans. Concurrently, an application will have to be made to the Illinois EPA requesting Water Quality Certification.

Construction of the project will create an increase in the number of lane miles of traveled roadway in the area and will,

therefore, increase the amount of salt applied to the roadway as a deicing chemical.

It is the current policy of the Illinois Department of Transportation to lessen the hazards of ice buildup on State roads by the application of salt to the pavement at a rate of 250# per line mile for each application. The number of annual applications will vary considerably from year to year depending upon the weather conditions and the perceived need for salt application.

When salt is spread onto the roadway, it may be reasonably assumed that the salt will end up at some specific place in the environment. Because salt is readily dissolved in water, any snow-salt mixture will ultimately result in the disappearance of salt into solution and its breakdown into its constituent sodium and chloride ions. These ions will enter the environment by either remaining in solution within the melting snow and/or rain and be carried as runoff to the adjacent surface water system or by percolating downward into the soil and become available to the plant roots or underlying water table.

The chloride ion has been identified as having the greater relative impact on the environment due to its high mobility within the soil. The Illinois Water Survey has sampled several sites throughout Illinois for chloride contamination of the groundwater and has come to the conclusion that, in areas showing an upward trend in chloride concentration, this trend is due primarily to the use of salt to control ice on the highway. Specific problems were found to be freeway interchanges where there are multiple deicing passes and also near improperly stored salt piles, neither of which is involved with this project. This information was presented by Mr. James Gibb of the Illinois State Water Survey at the December 19, 1980 Bi-Monthly Environmental Advisory board meeting.

The current findings of the Illinois Water Survey indicate that the two regions of the State that are experiencing upward trends of groundwater chloride concentrations toward the recommended Public Health limits of 250 mg/liter acre are, in general, the Chicago Urbanized area and the East St. Louis Urbanized Area, neither of which affect this project.

Since the project will decrease the acreage cultivated for farm crops, it is expected that the amount of herbicides and insecticides applied will decrease. The possibility of accidental spillage of toxic materials will exist on this route as it does on all higher class roadways. Procedures to deal with such spillage have been formulated, and it is expected that the effects of such spillage, should it occur, will be contained within the project right-of-way.

There are no known public wells in the Winnebago or Boone Counties in the vicinity of the project. The public water supply for the City of Rockford is obtained from 35 deep groundwater

wells. The public water supply for the City of Belvidere is obtained from 8 deep groundwater wells. Currently there are no existing pressure water distribution lines on U.S. Business Route 20 between I-90 and Beloit Road in Belvidere. However, there are plans to extend the City of Belvidere lines to a point west of High Line Street in the near future.

In order to assess the possibility of these wells being contaminated by salt or other contaminants from the project the following factors are noted:

1. In the project area the direction of flow of both surface runoff and groundwater is south or east to the Kishwaukee River.
2. All of the Rockford or Belvidere water wells are outside of groundwater seepage area from the project, being either east or west of the project, north of the Kishwaukee River.
3. The closest well from either city to the project is 0.60 miles away.

The possibility of any of these wells being contaminated from the proposed project, either from direct runoff or the seepage of contaminated groundwater, is extremely remote.

The probability of contamination to groundwater supplies is not anticipated along the project corridor as a result of any of the build alternates, since groundwater contamination levels have not been observed to approach the recommended Public Health limits as a result of the construcxtion of other rural multi-lane highways. The creation of positive surface drainage by implementing any of the build alternates will also reduce the probability of any groundwater contamination.

During the construction phases, the contractor will be required to implement the IDOT Special Provision for Erosion Control in both excavation and embankment areas. Erosion in the streambed of Beaver Creek during bridge construction will be minimized by the implementation of the IDOT Special Provision for the Protection of Waterways, Lakes, and Reservoirs. By adoption of these special provisions, surface water contamination, due to soil erosion during construction, should be minimal.

The proposed project includes removing and replacing eight large drainage culverts. A hydraulic analysis using the design of a 50-year flood frequency was performed for each culvert. Each culvert was sized to create no more than 0.5 feet additional head from the design year and less than 1.0 feet of additional head for the 100-year flood frequency over the natural stream conditions. Generally this resulted in the replacement waterway openings being larger in size than the existing culverts. This will actually lower flood heights and decrease flooding limits.

In addition, for Alternates 1, 2 and 3, an existing culvert

used at the entrance to the stone quarry, Lt. Station 6+50, will be removed due to the relocation of the quarry entrance. This will improve the hydraulic capacity of the stream, resulting in lower flood heights and decreased flooding limits.

The above discussion shows that there will be no significant impact on water quality or resources caused by the general implementation of the project.

Alternate 1

Alternate 1 is on the existing alignment and includes one significant drainage structure affecting the floodplain, a highway bridge carrying the roadway over Beaver Creek. A hydraulic analysis for this structure has not been prepared as Alternate 1 was not considered desirable in this area, since the existing bridge was reconstructed in 1983 and this alignment would require its removal.

In order to construct the embankment for Alternate 1, a channel relocation cutting across a stream meander, Rt. Station 166+00, will be required. The proposed relocation would be approximately 130 feet in length and occur in a stream draining about 1,460 acres.

Alternate 1 will require the filling in of a farm pond, located Lt. Station 300+00. This pond was constructed next to the existing right-of-way line by the present property owner within the past four years.

Construction of Alternate 1 will cause a minimal increase in flood heights and flood limits. These minimal increases will not result in any significant adverse impacts on the natural and beneficial floodplain values; they will not result in any significant change in flood risks or drainage; and they do not have significant potential for interruption or termination or emergency service or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant.

Alternate 2

Alternate 2 is on the existing alignment and includes one significant drainage structure affecting the floodplain, a highway bridge north of and parallel to an existing structure carrying the roadway over Beaver Creek. A hydraulic analysis for the dual structures has been prepared and is summarized in Table 20A.

The floodwater surface elevations for the 100-year frequency flood will be increased by 0.44 feet, upstream from the dual structures, by the construction of the proposed bridge. The additional area at the edge of the 100-year floodplain which would be flooded (in a 100-year flood) by this increase in the water surface elevation was inspected. No buildings or roads

were found in this area, which is currently utilized as pasture or cultivated farmland.

The frequency with which the proposed roadway will be overtopped by flooding is more than 500 years, i.e., the 500-year flood will not overtop the proposed roadway. If the roadway is overtopped by flooding, it will occur at the low point in the roadway profile, Station 63+00, approximately 570 feet west of the west end of the existing bridge.

The pier configuration of the proposed structure can be arranged in a manner to minimize in-stream work and eliminate the need for any channel relocation.

Alternate 2 will also require the filling in of the farm pond Lt. Station 300+00.

Construction of Alternate 2 will cause a minimal increase, in flood heights and flood limits. The minimal increases will not result in any significant adverse impacts on the natural and beneficial floodplain values; they will not result in any significant change in flood risks or damage; and they do not have significant potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant.

Alternate 3

Alternate 3 is also on the existing alignment and includes one significant drainage structure affecting the floodplain, a highway bridge south of and parallel to an existing structure carrying the roadway over Beaver Creek. A hydraulic analysis for the dual structures has been prepared and is summarized in Table 20A.

The floodwater surface elevations for the 100-year frequency flood will be increased by 0.50 feet upstream from the dual structures, by the construction of the proposed bridge. The additional area at the edge of the 100-year floodplain which would be flooded (in a 100-year flood) by this increase in the water surface elevation was inspected. Again, no buildings or roads were found in this area, which is currently utilized as pasture or cultivated farmland.

The frequency with which the proposed roadway will be overtopped by flooding is more than 500 years; i.e., the 500-year flood will not overtop the proposed roadway. If the roadway is overtopped by flooding, it will occur at the low point in the roadway profile, Station 63+00, approximately 570 feet west of the west end of the existing bridge.

The pier arrangement of this proposed structure can also be configured in order to minimize in-stream work and avoid any channel change.

Several channel relocations will be required in order to provide room for the construction of the embankment for Alternate 3. A 250 foot relocation is needed Rt. Station 10+00, on a stream draining 560 acres. Also needed is a channel change of about 400 feet, located Rt. Station 165+00 on a 1,460 acre drainageway.

In addition, the desirable alignment for a proposed box culvert necessitates 110 and 120 foot channel adjustments Rt. Station 185+00 and Lt. Station 187+00, respectively. This stream drains approximately 2,850 acres.

Construction of Alternate 3 will cause a minimal increase in flood heights and flood limits. The minimal increase will not result in any significant adverse impacts on the natural and beneficial floodplain values. They will not result in any significant change in flood risks or drainage; and they do not have significant potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant.

Alternate 4

Alternate 4 is on the existing alignment and includes one significant drainage structure affecting the floodplain, a highway bridge over Beaver Creek. Under this alternate, the existing structure will be reconstructed to carry a wider deck. A hydraulic analysis for the wider structure has been prepared and is summarized in Table 20A.

The floodwater surface elevations for the 100-year frequency flood will be increased by 0.34 feet, upstream from the structure, exactly the same as the existing bridge. No additional area at the edge of the 100-year floodplain would be flooded.

The frequency with which the proposed roadway will be overtopped by flooding is more than 500 years, i.e., the 500-year flood will not overtop the proposed roadway. If the roadway is overtopped by flooding, it will occur at the low point in the roadway profile, Station 63+00, approximately 570 feet west of the west end of the existing bridge.

The pier configuration of the proposed structure can be arranged in a manner to minimize in-stream work and eliminate the need for any channel relocation.

Alternate 4 will not need to fill in the farm pond Lt. Station 300+00, nor will it require any channel relocations.

Alternate 4 will require the construction of two additional box culverts across U.S. BR 20 at Stations 60 and 155. These are proposed in order to switch ditch drainage from the north to the

south sides of the mainline; this will eliminate the ditch in front of two residences, thus insuring that they will not have to be acquired under this alternate.

Construction of Alternate 4 will cause a minimal increase in flood heights and flood limits. The minimal increases will not result in any significant adverse impacts on the natural and beneficial floodplain values; they will not result in any significant change in flood risks or damage; and they do not have significant potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant.

TABLE 20A

BEAVER CREEK BRIDGE
WATERWAY INFORMATION

Drainage Area	70.6	Sq. Mi.
Existing Opening (50 year)	1,075	Sq. Ft.
Existing Opening (100 year)	1,121	Sq. Ft.
Proposed Opening (50 year)	1,075	Sq. Ft.
Proposed Opening (100 year)	1,121	Sq. Ft.
Discharge (50 year)	3,728	C.F.S.
Discharge (100 year)	4,252	C.F.S.
Created Head (Existing 50 year)	0.28	Ft.
Created Head (Proposed 50 year)		
Alternate 2	0.36	Ft.
Alternate 3	0.41	Ft.
Alternate 4	0.28	Ft.
Created Head (Existing 100 year)	0.34	Ft.
Created Head (Proposed 100 year)		
Alternate 2	0.44	Ft.
Alternate 3	0.50	Ft.
Alternate 4	0.34	Ft.
High Water Elevation (50 year)	754.6	
High Water Elevation (100 year)	754.8	

H. AIR QUALITY

In accordance with the provisions of the IDOT-IEPA Agreement of June 21, 1978, the U.S. BR 20 project is exempted from air quality analysis as a low volume roadway with forecast traffic volume of 7,900 ADT at the end of the first year of project operation.

This project is an area where the State Implementation Plan is not required to contain any transportation control measures. Therefore, the conformity procedures of 23 CFR 770 do not apply to this project.

I. NOISE

A Traffic Noise Analysis has been completed in accordance

with IDOT's Traffic Noise and Vibration Manual. The results of this analysis are summarized in Table 21. The underlined values meet or exceed the FHPM 7-7-3 noise abatement criteria.

Table 22 lists specific locations where the calculated noise levels meet or exceed the abatement criteria. This table also gives the projected noise levels for each alternate. Abatement measures were not considered because calculated noise levels were greater than the abatement criteria for the no-action condition only. In general, it is increased road usage, not roadway improvements, that will produce noise levels at or above the abatement criteria at these locations. Overall, any build alternate will improve noise conditions, but will also require removal of several existing receptors. Removal of these receptors will eliminate locations where noise levels would be above the abatement criteria.

Locations listed in Table 23 received special attention in the noise analysis because of land useage. The calculated noise levels at these locations are below the abatement criteria levels. Leq ranged from 58 dBA to 66 dBA at these locations.

Tables 24 thru 28 are presented to supply additional data for individual project locations. Table 24 lists the 1988 and 2008 design hourly traffic volumes and project speeds used in the noise analysis at each receptor location. Tables 25 thru 28 list deviations between different noise levels at each receptor.

As shown in Table 25, the maximum increase for Alternate 1 from the existing Leq is 11 dBA. In Table 26, the greatest increase for Alternate 2 from the existing Leq is 11 dBA. Table 27 lists the largest increase for Alternate 3 from the existing Leq as 13 dBA. Finally, Table 28 indicates that the greatest increase for Alternate 4 over the existing Leq is 12 dBA. Since all of the alternates indicate a less than 15 dBA increase over the ambient noise level, and none of the abatement levels for the build alternates are exceeded, no significant impact is anticipated on the surrounding area.

Alternate 4 is the most favorable with regard to noise levels, since it shows a significant noise decrease when compared to the No-Action Alternate. This is mainly due to a reduction in traffic speed proposed for Alternate 4.

See Exhibits 12A thru 12G for a depiction of individual receptor locations along with a comparison of noise levels for each alternate.

Investigation has been made into reducing the noise impacts of the proposed project at locations that would be at the Abatement Criteria level or would experience incrases greater than 10 dBA. Since Alternate 4 is the Preferred Alternate, the analysis has been carried out for this alternate only, but a further analysis would be made if another alternate was chosen.

State law does not permit the spending of highway funds for noise abatement measures outside of the Right-of-Way, such as the insulation of houses. Therefore, since the distance between the receptors and the roadway would not allow the placement of a tree-shrub barrier of sufficient depth to achieve an adequate reduction in noise levels, the construction of noise barrier walls would be the most practical means of noise abatement.

There were three receptor locations considered for abatement measures, as shown in Table 28A. Receptors number 17 and 44 were at the Abatement Criteria level; noise barrier walls were proposed at these locations which would reduce projected noise levels by 4 dBA to the existing noise levels. Receptor number 16 is expected to experience a 12 dBA increase with construction of Alternate 4; this would be reduced by 4 dBA by the proposed noise barrier wall.

The construction of noise barrier walls at these three locations is not cost effective, as indicated by the high wall cost per receptor per dBA attenuation shown in Table 28A (over $3,000 at each location). In order to achieve the most efficient noise reduction, the noise barrier walls would have to be situated directly in front of the houses concerned. The presence of a 12 foot high wall in close proximity to, and across the front of, one's home would probably be considered esthetically unacceptable by most residents. In addition, a high wall on either side of, or adjacent to, entrance locations required to maintain access to property could be expected to create sight distance problems. Finally, anticipated noise levels for the proposed project at these locations are expected to be within 1 dBA of the "no-action" alternate (as shown in Table 28). For these reasons, the construction of noise barrier walls for this project is not considered feasible and is not recommended.

TABLE 21
SUMMARY OF NOISE LEVEL DATA

RECEPTOR LOCATION	1984 EXISITING	Leq dBA YEAR: 2008 NO ACTION	ALTERNATE #1	ALTERNATE #2	ALTERNATE #3	ALTERNATE #4*	ABATEMENT CRITERIA
Lyford - BR 20 Intersection	54 to 61	65 to 66	64 to 66	64 to 66	64 to 66	61 to 66	67 or 72
Lyford Rd. to Shaw Rd. on BR 20	50 to 63	60 to 67	60 to 61	59 to 66	60 to 65	58 to 63	67 or 72
Shaw Rd. - BR 20 Intersection	52 to 61	62 to 69	61 to 66	62 to 64	61	60 to 65	67 or 72
Shaw Rd. to Olson Rd. on BR 20	47 to 54	55 to 57	55 to 57	56 to 58	55 to 57	53 to 56	67 or 72
Olson Rd. to Beaver Valley Rd. on BR 20	53 to 63	62 to 68	62 to 66	61 to 64	64 to 67	59 to 67	67 or 72
Beaver Valley Rd. to W. Edge Belvidere on BR 20	52 to 63	55 to 68	55 to 65	55 to 66	56 to 66	54 to 65	67 or 72
Belvidere to High Line Street on BR 20	49 to 63	55 to 66	55 to 65	55 to 66	55 to 67	55 to 67	67 or 72
Weighted Averages	57	62	61	62	61	61	67 or 72

NOTES: Residential Abatement Criteria = 67 dBA
Commercial Abatement Criteria = 72 dBA

*Preferred Alternate

TABLE 22
LOCATIONS WHERE Leq ≥ ABATEMENT CRITERIA

RECEPTOR NUMBER	TYPE	Leq (dBA) NO ACTION	ALTERNATE #1	ALTERNATE #2	ALTERNATE #3	ALTERNATE #4*	ABATEMENT CRITERIA	BEST ALTERNATE
11	Residence	69	---	---	---	65	67	4
17	"	68	---	---	66	67	67	3
19	"	64	65	63	67	61	67	4
21	"	68	---	66	---	65	67	4
28	"	67	---	65	---	64	67	4
33	"	65	65	64	67	64	67	2 OR 4
44	"	66	---	---	---	67	67	No Action
45	"	67	---	66	---	---	67	2

NOTE: --- = Alternate will require receptor to be removed.
* Preferred Alternate
Best Alternate based on noise analysis only.

TABLE 23
SPECIAL LOCATION RECEPTORS

RECEPTOR NUMBER	PROPERTY NAME	Leq (dBA) YEAR 2008 No Action	Alternate #1	Alternate #2	Alternate #3	Alternate #4*	Abatement Criteria
2	Excel Inn	65	64	64	64	61	67
3	Wild Mountain Waterslide	66	66	66	66	66	72
7	County Line Cemetery	60	60	59	61	58	67
20	Family Fun Land	62	62	63	61	60	72
27	Belvidere Church of the Open Bible	64	65	---	63	64	67

NOTE: ----- = Alternate will require receptor to be removed.
* Preferred Alternate

TABLE 24
1988 AND 2008 DESIGN HOURLY TRAFFIC VOLUMES

RECEPTORS AFFECTED AND LOCATION	VOLUME (DHV)						PROJECT SPEED (MPH)		
	YEAR 1988			YEAR 2008				Alt.	
	Auto	Med. Trucks	Heavy Trucks	Auto	Med. Trucks	Heavy Trucks	Existing	1,2, & 3	Alt. 4*
Lyford Rd. North of BR 20 (1, 2 & 3)	242	2	1	748	8	4	45	40	30
Lyford Rd. South of BR 20 (1, 2 & 3)	470	10	5	1368	28	14	45	40	30
BR 20, West of Lyford Rd. (1, 2 & 3)	998	21	11	1969	41	20	45	45	45
BR 20, East of Lyford Rd. and West of Shaw Road (1 thru 12 and 45)	737	15	8	1319	27	14	45-55	45-55	45
BR 20 East of Shaw Rd. and West of High Line St. (9 thru 44)	732	15	8	1314	27	14	55 35-50 (Bel.)	55 35-50 (Bel.)	45 35-45 (Bel.)
Shaw Rd. North of BR 20 (9, 10 & 11)	82	2	1	131	3	1	45	40	40
Shaw Rd. South of BR 20 (9, 10 & 11)	146	3	1	214	5	1	45	45	40
Olson Rd. North of BR 20 (14, 15 & 16)	117	2	1	169	2	1	40	40	40

* Preferred Alternate

TABLE 25

NOISE LEVEL DEVIATIONS (ALTERNATE #1)

RECEPTOR ANALYSIS NUMBER	NUMBER OF EXISTING RECEPTORS EFFECTED (1984)	ANALYSIS LOCATION	2008 "BUILD" PROJECTED NOISE Leq (dBA)	EXISTING LAND USAGE	ABATEMENT CRITERIA Leq (dBA)	"BUILD" DEVIATION FROM ABATEMENT CRITERIA Leq (dBA)	MEASURED EXISTING NOISE Leq (dBA) (1984)	"BUILD" DEVIATION FROM EXISTING Leq (dBA)	2008 "NO-ACTION PROJECTED NOISE Leq (dBA)	"BUILD" DEVIATION FROM "NO-ACTION Leq (dB
1	1	STN. 259+95, LT. 250'	64	COMMERCIAL	72	- 8	54	+ 10	65	- 1
2	2	STN. 261+60, RT. 425'	64	HOTELS	67	- 3	55	+ 9	65	- 1
3	1	STN. 263+55, LT. 120'	66	COMMERCIAL	72	- 6	61	+ 5	66	0
4	2	STN. 298+45, RT. 215'	61	RESIDENCES	67	- 6	58	+ 3	61	0
5	1	STN. 301+50, LT. 225	61	RESIDENCES	67	- 6	58	+ 3	61	0
6	2	STN. 302+00, LT. 100'	----	RESIDENCES	67	----	59	-----	66	----
7	1	STN. 313+00, RT. 275'	60	CEMETERY	67	- 7	50	+ 10	60	0
8	2	STN. 6+80, LT. 245'	61	COMMERCIAL	72	- 11	53	+ 8	60	+ 1
9	2	STN. 16+65, RT. 120	66	COMMERCIAL	72	- 6	60	+ 6	66	0
10	3	STN. 17+85, LT. 380	61	RESIDENCES	67	- 6	52	+ 11	62	- 1
11	2	STN. 19+80, LT. 70'	----	RESIDENCES	67	----	61	----	69	----
12	2	STN. 26+30, LT. 550'	55	RESIDENCES	67	- 12	54	+ 1	55	0
13	6	STN. 48+35, LT. 400'	57	RESIDENCES	67	- 10	50	+ 7	57	0
14	3	STN. 54+10, LT. 425'	57	RESIDENCES	67	- 10	47	+ 10	57	0
15	4	STN. 58+15, RT. 195'	62	RESIDENCES	67	- 5	53	+ 9	62	0
16	1	STN. 60+75, LT. 110'	----	RESIDENCES	67	----	53	----	66	----
17	1	STN. 83+30, LT. 80'	----	RESIDENCES	67	----	63	----	68	----
18	1	STN. 90+80, RT. 105'	66	RESIDENCES	67	- 1	59	+ 7	66	0
19	5	STN. 103+00, RT. 135'	65	RESIDENCES	67	- 2	61	+ 4	64	+ 1
20	1	STN. 113+00, LT. 200'	62	COMMERCIAL	72	- 10	60	+ 2	62	0
21	2	STN. 116+75, RT. 75'	----	RESIDENCES	67	----	63	----	68	----
22	1	STN. 121+00, RT. 150'	64	COMMERCIAL	72	- 8	53	+ 11	64	0
23	2	STN. 129+05, LT. 265'	60	RESIDENCES	67	- 7	54	+ 6	60	0
24	3	STN. 130+65, LT. 140'	64	RESIDENCES	67	- 3	61	+ 3	64	0
25	2	STN. 137+25, RT. 140'	----	COMMERCIAL	72	----	59	----	64	----
26	1	STN. 165+00, LT. 300'	59	RESIDENCES	67	- 8	52	+ 7	59	0
27	2	STN. 167+00, LT. 125'	65	CHURCH	67	- 2	57	+ 8	64	+ 1
28	1	STN. 171+50, RT. 85'	----	RESIDENCES	67	----	59	----	67	----
29	1	STN. 175+00, RT. 480'	55	RESIDENCES	67	- 12	54	+ 1	55	0
30	2	STN. 175+80, LT. 175'	62	COMMERCIAL	72	- 10	53	+ 9	62	0
31	2	STN. 179+75, RT. 300'	58	COMMERCIAL	72	- 14	53	+ 5	58	0
32	2	STN. 190+20, LT. 110'	64	RESIDENCES	67	- 3	59	+ 5	64	0
33	1	STN. 192+75, RT. 75'	65	RESIDENCES	67	- 2	61	+ 4	65	0
34	2	STN. 192+70, LT. 225'	58	RESIDENCES	67	- 9	52	+ 6	59	- 1
35	1	STN. 194+25, RT. 350'	55	RESIDENCES	67	- 12	52	+ 3	55	0
36	1	STN. 195+00, RT. 275'	57	RESIDENCES	67	- 10	54	+ 3	57	0
37	3	STN. 195+20, RT. 100'	64	COMMERCIAL & RESIDENCES	67	- 3	62	+ 2	64	0
38	2	STN. 195+80, LT. 300'	57	RESIDENCES	67	- 10	55	+ 2	57	0
39	9	STN. 198+70, RT. 275'	58	RESIDENCES	67	- 9	49	+ 9	57	+ 1
40	2	STN. 201+00, LT. 130'	63	COMMERCIAL	72	- 9	59	+ 4	62	+ 1
41	2	STN. 204+75, LT. 100'	64	HOTELS	67	- 3	62	+ 2	64	0
42	2	STN. 209+00, LT. 80'	64	RESIDENCES	67	- 3	63	+ 1	63	+ 1
43	13	STN. 210+60, RT. 110'	61	RESIDENCES	67	- 6	60	+ 1	61	0
44	2	STN. 193+00, LT. 75'	----	RESIDENCES	67	----	63	----	66	----
45	1	STN. 279+00, RT. 90'	----	RESIDENCES	67	----	63	----	67	----

TABLE 26

NOISE LEVEL DEVIATIONS (ALTERNATE #2)

RECEPTOR ANALYSIS NUMBER	NO. OF EXISTING RECEPTORS EFFECTED (1984)	ANALYSIS LOCATION	2008 "BUILD" PROJECTED NOISE Leq (dBA)	EXISTING LAND USAGE	ABATEMENT CRITERIA Leq (dBA)	"BUILD" DEVIATION FROM ABATEMENT CRITERIA Leq (dBA)	MEASURED EXISTING NOISE Leq (dBA) (1984)	"BUILD" DEVIATION FROM EXISTING Leq (dBA)	2008 "NO-ACTION" PROJECTED NOISE Leq (DBA)	"BUILD" DEVIATIO FROM "NO-ACTIO Leq (dBA
1	1	STN. 259+95, LT. 250'	64	COMMERCIAL	72	- 8	54	+ 10	65	- 1
2	2	STN. 261+60, RT. 425'	64	HOTELS	67	- 3	55	+ 9	65	- 1
3	1	STN. 263+55, LT. 120'	66	COMMERCIAL	72	- 6	61	+ 5	66	0
4	2	STN. 298+45, RT. 215'	60	RESIDENCES	67	- 7	58	+ 2	61	- 1
5	1	STN. 301+50, LT. 225'	62	RESIDENCES	67	- 5	58	+ 4	61	+ 1
6	2	STN. 302+00, LT. 100'	----	RESIDENCES	67	----	59	----	66	----
7	1	STN. 313+00, RT. 275'	59	CEMETERY	67	- 8	50	+ 9	60	- 1
8	2	STN. 6+80, LT. 245'	62	COMMERCIAL	72	- 10	53	+ 9	60	+ 2
9	2	STN. 16+65, RT. 120'	64	COMMERCIAL	72	- 8	60	+ 4	66	- 2
10	3	STN. 17+85, LT. 380'	62	RESIDENCES	67	- 5	52	+ 10	62	0
11	2	STN. 19+80, LT. 70'	----	RESIDENCES	67	----	61	----	69	----
12	2	STN. 26+30, LT. 550'	56	RESIDENCES	67	- 11	54	+ 2	55	+ 1
13	6	STN. 48+35, LT. 400'	58	RESIDENCES	67	- 9	50	+ 8	57	+ 1
14	3	STN. 54+10, LT. 425'	58	RESIDENCES	67	- 9	47	+ 11	57	+ 1
15	4	STN. 58+15, RT. 195'	61	RESIDENCES	67	- 6	53	+ 8	62	- 1
16	1	STN. 60+75, LT. 110'	----	RESIDENCES	67	----	53	----	66	----
17	1	STN. 83+30, LT. 80'	----	RESIDENCES	67	----	63	----	68	----
18	1	STN. 90+80, RT. 105'	64	RESIDENCES	67	- 3	59	+ 5	66	- 2
19	5	STN. 103+00, RT. 135'	63	RESIDENCES	67	- 4	61	+ 2	64	- 1
20	1	STN. 113+00, LT. 200'	63	COMMERCIAL	72	- 9	60	+ 3	62	+ 1
21	2	STN. 116+75, RT. 75'	66	RESIDENCES	67	- 1	63	+ 3	68	- 2
22	1	STN. 121+00, RT. 150'	63	COMMERCIAL	72	- 9	53	+ 10	64	- 1
23	2	STN. 129+05, LT. 265'	61	RESIDENCES	67	- 6	54	+ 7	60	+ 1
24	3	STN. 130+65, LT. 140'	66	RESIDENCES	67	- 1	61	+ 5	64	+ 2
25	2	STN. 137+25, RT. 140'	----	COMMERCIAL	72	----	59	----	64	----
26	1	STN. 165+00, LT. 300	60	RESIDENCES	67	- 7	52	+ 8	59	+ 1
27	2	STN. 167+00, LT. 125'	----	CHURCH	67	----	57	----	64	----
28	1	STN. 171+50, RT. 85'	65	RESIDENCES	67	- 2	59	+ 6	67	- 2
29	1	STN. 175+00, RT. 480'	55	RESIDENCES	67	- 12	54	+ 1	55	0
30	2	STN. 175+80, LT. 175'	63	COMMERCIAL	72	- 9	53	+ 10	62	+ 1
31	2	STN. 179+75, RT. 300'	57	COMMERCIAL	72	- 15	53	+ 4	58	- 1
32	2	STN. 190+20, LT. 110'	66	RESIDENCES	67	- 1	59	+ 7	64	+ 2
33	1	STN. 192+75, RT. 75'	64	RESIDENCES	67	- 3	61	+ 3	65	- 1
34	2	STN. 192+70, LT. 225'	58	RESIDENCES	67	- 9	52	+ 6	59	- 1
35	1	STN. 194+25, RT. 350'	55	RESIDENCES	67	- 12	52	+ 3	55	0
36	1	STN. 195+00, RT. 275'	57	RESIDENCES	67	- 10	54	+ 3	57	0
37	3	STN. 195+20, RT. 100'	64	COMMERCIAL & RESIDENCES	67	- 3	62	+ 2	64	0
38	2	STN. 195+80, LT. 300'	57	RESIDENCES	67	- 10	55	+ 2	57	0
39	9	STN. 198+70, RT. 275'	58	RESIDENCES	67	- 9	49	+ 9	57	+ 1
40	2	STN. 201+00, LT. 130'	63	COMMERCIAL	72	- 9	59	+ 4	62	+ 1
41	2	STN. 204+75, LT. 100'	64	HOTELS	67	- 3	62	+ 2	64	0
42	2	STN. 209+00, LT. 80'	64	RESIDENCES	67	- 3	63	+ 1	63	+ 1
43	13	STN. 210+60, RT. 110'	61	RESIDENCES	67	- 6	60	+ 1	61	0
44	2	STN. 193+00, LT. 75'	----	RESIDENCES	67	----	63	----	66	----
45	1	STN. 279+00, RT. 90	66	RESIDENCES	67	- 1	63	+ 3	67	- 1

TABLE 27

NOISE LEVEL DEVIATIONS (ALTERNATE #3)

RECEPTOR ANALYSIS NUMBER	NUMBER OF EXISTING RECEPTORS EFFECTED (1984)	ANALYSIS LOCATION	2008 "BUILD" PROJECTED NOISE Leq (dBA)	EXISTING LAND USAGE	ABATEMENT CRITERIA Leq (dBA)	"BUILD" DEVIATION FROM ABATEMENT CRITERIA Leq (dBA)	MEASURED EXISTING NOISE LEQ (DBA) (1984)	"BUILD" DEVIATION FROM EXISTING LEQ (dBA)	2008 "NO-ACTION" PROJECTED NOISE Leq (dBA)	"BUILD" DEVIATI FROM "NO-ACTI Leq (dB
1	1	STN. 259+95, LT. 250'	64	COMMERCIAL	72	- 8	54	+ 10	65	- 1
2	2	STN. 261+60, RT. 425'	64	HOTELS	67	- 3	55	+ 9	65	- 1
3	1	STN. 263+55, LT. 120'	66	COMMERCIAL	72	- 6	61	+ 5	66	0
4	2	STN. 298+45, RT. 215'	63	RESIDENCES	67	- 4	58	+ 5	61	+ 2
5	1	STN. 301+50, LT. 225'	60	RESIDENCES	67	- 7	58	+ 2	61	- 1
6	2	STN. 302+00, LT. 100'	65	RESIDENCES	67	- 2	59	+ 6	66	- 1
7	1	STN. 313+00, RT. 275'	61	CEMETERY	67	- 6	50	+ 11	60	+ 1
8	2	STN. 6+80, LT. 245'	60	COMMERCIAL	72	- 12	53	+ 7	60	0
9	2	STN. 16+65, RT. 120'	----	COMMERCIAL	72	----	60	----	66	----
10	3	STN. 17+85, LT. 380'	61	RESIDENCES	67	- 6	52	+ 9	62	- 1
11	2	STN. 19+80, LT. 70'	----	RESIDENCES	67	----	61	----	69	----
12	2	STN. 26+30, LT. 550'	55	RESIDENCES	67	- 12	54	+ 1	55	0
13	6	STN. 48+35, LT. 400'	57	RESIDENCES	67	- 10	50	+ 7	57	0
14	3	STN. 54+10, LT. 425'	57	RESIDENCES	67	- 10	47	+ 10	57	0
15	4	STN. 58+15, RT. 195'	64	RESIDENCES	67	- 3	53	+ 11	62	+ 2
16	1	STN. 60+75, LT. 110'	64	RESIDENCES	67	- 3	53	+ 11	66	- 2
17	1	STN. 83+30, LT. 80'	66	RESIDENCES	67	- 1	63	+ 3	68	- 2
18	1	STN. 90+80, RT. 105'	----	RESIDENCES	67	----	59	----	66	----
19	5	STN. 103+00, RT. 135'	67	RESIDENCES	67	0	61	+ 6	64	+ 3
20	1	STN. 113+00, LT. 200'	61	COMMERCIAL	72	- 11	60	+ 1	62	- 1
21	2	STN. 116+75, RT. 75'	----	RESIDENCES	67	----	63	----	68	----
22	1	STN. 121+00, RT. 150'	66	COMMERCIAL	72	- 6	53	+ 13	64	+ 2
23	2	STN. 129+05, LT. 265'	59	RESIDENCES	67	- 8	54	+ 5	60	- 1
24	3	STN. 130+65, LT. 140'	63	RESIDENCES	67	- 4	61	+ 2	64	- 1
25	2	STN. 137+25, LT. 140'	----	COMMERCIAL	72	----	59	----	64	----
26	1	STN. 165+00, LT. 300'	58	RESIDENCES	67	- 9	52	+ 6	59	- 1
27	2	STN. 167+00, LT. 125'	63	CHURCH	67	- 4	57	+ 6	64	- 1
28	1	STN. 171+50, RT. 85'	----	RESIDENCES	67	----	59	----	67	----
29	1	STN. 175+00, RT. 480'	56	RESIDENCES	67	- 11	54	+ 2	55	+ 1
30	2	STN. 175+80, LT. 175'	61	COMMERCIAL	72	- 11	53	+ 8	62	- 1
31	2	STN. 179+75, RT. 300'	59	COMMERCIAL	72	- 13	53	+ 6	58	+ 1
32	2	STN. 190+20, LT. 110'	63	RESIDENCES	67	- 4	59	+ 4	64	- 1
33	1	STN. 192+75, RT. 75'	67	RESIDENCES	67	0	61	+ 6	65	+ 2
34	2	STN. 192+70, RT. 225'	58	RESIDENCES	67	- 9	52	+ 6	59	- 1
35	1	STN. 194+25, RT. 350'	55	RESIDENCES	67	- 12	52	+ 3	55	0
36	1	STN. 195+00, RT. 275'	57	RESIDENCES	67	- 10	54	+ 3	57	0
37	3	STN. 195+20, RT. 100'	64	COMMERCIAL & RESIDENCES	67	- 3	62	+ 2	64	0
38	2	STN. 195+80, LT. 300'	57	RESIDENCES	67	- 10	55	+ 2	57	0
39	9	STN. 198+70, RT. 275'	58	RESIDENCES	67	- 9	49	+ 9	57	+ 1
40	2	STN. 201+00, LT. 130'	63	COMMERCIAL	72	- 9	59	+ 4	62	+ 1
41	2	STN. 204+75, LT. 100'	64	HOTELS	67	- 3	62	+ 2	64	0
42	2	STN. 209+00, LT. 80'	64	RESIDENCES	67	- 3	63	+ 1	63	+ 1
43	13	STN. 210+60, RT. 110'	61	RESIDENCES	67	- 6	60	+ 1	61	0
44	2	STN. 193+00, LT. 75'	----	RESIDENCES	67	----	63	----	66	----
45	1	STN. 279+00, RT. 90'	----	RESIDENCES	67	----	63	----	67	----

TABLE 28

NOISE LEVEL DEVIATIONS (ALTERNATE #4)

PREFERRED ALTERNATE

RECEPTOR ANALYSIS NUMBER	NO. OF EXISTING RECEPTORS EFFECTED (1984)	ANALYSIS LOCATION	2008 "BUILD" PROJECTED NOISE LEQ (DBA)	EXISTING LAND USAGE	ABATEMENT CRITERIA Leq (dBA)	"BUILD" DEVIATION FROM ABATEMENT CRITERIA Leq (dBA)	MEASURED EXISTING NOISE Leq (dBA) (1984)	"BUILD" DEVIATION FROM EXISTING Leq (dBA)	2008 "NO-ACTION" PROJECTED NOISE Leq (dBA)	"BUILD" DEVIATION FROM "NO-ACTION" Leq (dBA)
1	1	STN. 259+95, LT. 250'	63	COMMERCIAL	72	- 9	54	+ 9	65	- 2
2	2	STN. 261+60, RT. 425'	61	HOTELS	67	- 6	55	+ 6	65	- 4
3	1	STN. 263+55, LT. 120'	66	COMMERCIAL	72	- 6	61	+ 5	66	0
4	2	STN. 298+45, RT. 215'	60	RESIDENCES	67	- 7	58	+ 2	61	- 1
5	1	STN. 301+50, LT. 225'	58	RESIDENCES	67	- 9	58	0	61	- 3
6	2	STN. 302+00, LT. 100'	63	RESIDENCES	67	- 4	59	+ 4	66	- 3
7	1	STN. 313+00, RT. 275'	58	CEMETERY	67	- 9	50	+ 8	60	- 2
8	2	STN. 6+80, LT. 245'	58	COMMERCIAL	72	- 14	53	+ 5	60	- 2
9	2	STN. 16+65, RT. 120'	65	COMEMRCIAL	72	- 7	60	+ 5	66	- 1
10	3	STN. 17+85, LT. 380'	60	RESIDENCES	67	- 7	52	+ 8	62	- 2
11	2	STN. 19+80, LT. 70'	65	RESIDENCES	67	- 2	61	+ 4	69	- 4
12	2	STN. 26+30, LT. 550'	53	RESIDENCES	67	- 14	54	- 1	55	- 2
13	6	STN. 48+35, LT. 400'	55	RESIDENCES	67	- 12	50	+ 5	57	- 2
14	3	STN. 54+10, LT. 425'	56	RESIDENCES	67	- 11	47	+ 9	57	- 1
15	4	STN. 58+15, RT. 195'	59	RESIDENCES	67	- 8	53	+ 6	62	- 3
16	1	STN. 60+75, LT. 110'	65	RESIDENCES	67	- 2	53	+ 12	66	- 1
17	1	STN. 83+30, LT. 80'	67	RESIDENCES	67	0	63	+ 4	68	- 1
18	1	STN. 90+80, RT. 105'	63	RESIDENCES	67	- 4	59	+ 4	66	- 3
19	5	STN. 103+00, RT. 135'	61	RESIDENCES	67	- 6	61	0	64	- 3
20	1	STN. 113+00, LT. 200'	60	COMMERCIAL	72	- 12	60	0	62	- 2
21	2	STN. 116+75, RT. 75'	65	RESIDENCES	67	- 2	63	+ 2	68	- 3
22	1	STN. 121+00, RT. 150'	61	COMMERCIAL	72	- 11	53	+ 8	64	- 3
23	2	STN. 129+05, LT. 265'	58	RESIDENCES	67	- 9	54	+ 4	60	- 2
24	3	STN. 130+65, LT. 140'	63	RESIDENCES	67	- 4	61	+ 2	64	- 1
25	2	STN. 137+25, RT. 140'	61	COMMERCIAL	72	- 11	59	+ 2	64	- 3
26	1	STN. 165+00, LT. 300'	57	RESIDENCES	67	- 10	52	+ 5	59	- 2
27	2	STN. 167+00, LT. 125'	64	CHURCH	67	- 3	57	+ 7	64	0
28	1	STN. 171+50, RT. 85'	64	RESIDENCES	67	- 3	59	+ 5	67	- 3
29	1	STN. 175+00, RT. 480'	54	RESIDENCES	67	- 13	54	0	55	- 1
30	2	STN. 175+80, LT. 175'	61	COMMERCIAL	72	- 11	53	+ 8	62	- 1
31	2	STN. 179+75, RT. 300'	57	COMMERCIAL	72	- 15	53	+ 4	58	- 1
32	2	STN. 190+20, LT. 110'	65	RESIDENCES	67	- 2	59	+ 6	64	+ 1
33	1	STN. 192+75, RT. 75'	64	RESIDENCES	67	- 3	61	+ 3	65	- 1
34	2	STN. 192+70, RT. 225'	58	RESIDENCES	67	- 9	52	+ 6	59	- 1
35	1	STN. 194+25, RT. 350'	55	RESIDENCES	67	- 12	52	+ 3	55	0
36	1	STN. 195+00, RT. 275'	57	RESIDENCES	67	- 10	54	+ 3	57	0
37	3	STN. 195+20, RT. 100'	64	COMMERCIAL & RESIDENCES	67	- 3	62	+ 2	64	0
38	2	STN. 195+80, LT. 300'	57	RESIDENCES	67	- 10	55	+ 2	57	0
39	9	STN. 198+70, RT. 275'	58	RESIDENCES	67	- 9	49	+ 9	57	+ 1
40	2	STN. 201+00, LT. 130'	63	COMMERCIAL	72	- 9	59	+ 4	62	+ 1
41	2	STN. 204+75, LT. 100'	64	HOTEL	67	- 3	62	+ 2	64	0
42	2	STN. 209+00, LT. 80'	64	RESIDENCES	67	- 3	63	+ 1	63	+ 1
43	13	STN. 210+60, RT. 110'	61	RESIDENCES	67	- 6	60	+ 1	61	0
44	2	STN. 193+00, LT. 75'	67	RESIDENCES	67	0	63	+ 4	66	+ 1
45	1	STN. 279+00, RT. 90'	----	RESIDENCES	67	----	63	----	67	----

TABLE 28A

NOISE BARRIER WALLS FOR ALTERNATE 4
(PREFERRED ALTERNATE)

Receptor Number	No. of Receptors Affected	Existing Noise Level	Build . Noise Level	Noise Level with Wall	Cost of Wall/ Receptor/dBA
16	1	53	65	61	$3,025
17	1	63	67	63	$3,490
44	2	63	67	63	$3,140

J. OTHER RESOURCES/IMPACTS

Material Resources

The construction of any phase of this project would create minor impacts on the material resources of the area. The largest resource usage for any of the four alternates would consist of 44,200 cubic yards of concrete pavement, 417,000 pounds of structural steel, 4,120,000 pounds of reinforcing steel, 97,900 tons of aggregate, and 54,300 tons of bituminous concrete. Of these resources, aggregate is the only one native to the project area. The three phases of the project will tend to mitigate any impacts on the project area resources.

The only mining activity in Boone or Winnebago Counties is rock quarrying. Construction of Alternates 1, 2 or 3 would alter the entrance to the State Street Quarry located in the northwest corner of U.S. BR 20 and Shaw Road. This, however, would have no effect on the future availability of the rock deposits. Construction of Alternate 4 would allow the quarry entrance to remain at its present location.

Energy Resources

By studying the results summarized in Table 29, several observations can be made concerning the utilization of energy resources for the project.

Upgrading U.S. Business Route 20 from a two lane to a four lane facility, removing direct commercial access, restricting agricultural and residential access points and providing for higher functional design speeds at the major sideroads (Lyford Road and Shaw Road) will result in improved traffic flow for Alternates 1, 2 and 3. This factor, along with an improved road surface, leads to the use of 24.8% less direct and 20.3% less indirect vehicular energy consumption annually, if the proposed project is constructed. For Alternate 4, upgrading to four lanes, sideroad improvements, speed limit reductions and an improved road surface will require 34.6% less direct and 20.6% less indirect vehicular energy consumption annually, compared to the No-Action Alternate.

Due to the presence of more lane miles for the proposed project, it would induce 71.4% more annual energy use for indirect maintenance.

Construction energy consumption for the proposed project is approximately 6.5% of total energy requirements for the first three build alternates and 6.0% for the fourth.

Despite the energy utilized for indirect construction and the differential in indirect maintenance, total annual energy consumption for the proposed project varies from 17% to 24% less than the No-Action Alternate. Thus, it can be seen that

TABLE 29

ENERGY RESOURCES

ENERGY CONSUMPTION BY SOURCE	ALTERNATE NO. 1	ALTERNATE NO. 2	ALTERNATE NO. 3	ALTERNATE NO. 4*	NO-ACTION ALTERNATE
Direct Vehicle	122,730	122,730	122,730	106,733	163,104
Indirect Vehicle	95,828	95,828	95,828	95,479	120,214
Indirect Construction	16,366	15,985	16,118	13,801	0
Indirect Maintenance	1,507	1,507	1,507	1,507	879
Average Annual BTU's	236,431	236,050	236,183	217,520	284,197
Barrels of Oil Per Day	112	112	112	103	134

*Preferred Alternate

NOTE: Energy consumption in 1,000,000 BTU's

As used in this table, Direct Vehicle energy refers to the energy used by vehicles using an alternate. Indirect Vehicle energy refers to the energy used to maintain the vehicles using an alternative. Indirect Construction energy refers to the energy required to construct an alternative. Indirect Maintenance energy refers to the energy required to maintain an alternative.

consumption of energy resources favors constructing the proposed project.

With regard to the three build alternates, the table shows that they are quite close in energy requirements. Due to uncertainties about the data at the current state-of-the-art, the small differences indicate that these three alternates are essentially equal with respect to energy consumption. Alternate 4, however, would consume approximately 8% less energy resources annually than Alternates 1, 2 or 3, due to the reduced speed limits proposed for this alternate. Therefore, Alternate 4 would be the preferred alternate with regard to conservation of energy resources.

Visual Impacts

Implementation of the No-Action Alternate would have the "view of the roadway" and the "view from the roadway" unchanged, and no impact would occur.

Construction of any of the build alternates will not have a significant effect visually on the surrounding area. All of the alternates under consideration will have alignments along existing U.S. BR 20. Except for a grade change in one area for Alternates 1, 2 and 3, the proposed guidelines will generally follow the existing gradeline. Therefore, except for the removal of various structures, the "view from the roadway" will remain essentially the same as that existing.

Although the view of a four lane roadway will be different from the view of the existing two lane roadway, it will be similar to other rural or suburban four lane roadways throughout the area. The parallel gradelines and flat sideslopes should provide a generally pleasing effect for the "view of the roadway."

Solid Wastes

As is the case in most major highway projects, solid wastes will be generated by each of the alternates on all phases of the project. The principal generators of solid waste are excess earth excavation, pavement removal, structure removal, clearing and unsuitable removal, including buildings. Waste material which will be disposed of off the right-of-way must be transported to an IEPA approved landfill. The nearest approved landfill is the Belvidere Municipal Lot #2, located on Illinois Route 76 near Squaw Prairie Road. This is the logical depository for the solid waste from this project.

The total amount of solid wastes generated for Alternates 1, 2, 3 and 4 are 231,000 cubic yards, 350,000 cubic yards, 100,000 cubic yards, and 120,000 cubic yards, respectively. The breakdown of each alternate by phases is listed in Table 30.

The solid waste materials will need to be loaded on trucks and hauled to the approved landfill site. This will create significantly greater costs for Alternates 1 and 2 because of the quantities involved.

The removal and disposal of solid waste materials shall be done in accordance with the IDOT Standard Specifications for Road and Bridge Construction. The impact of introducing additional waste materials into the landfill will be mitigated by that fact that more than 70% of the waste material is dirt which can be used as cover for other solid waste deposits.

Construction Impacts

An important impact for residents along a construction project as well as motorists using the road is that resulting from the actual construction of a project. Although such impacts are temporary in nature, they can be as negative or even more so than the permanent impacts discussed elsewhere.

Since the No-Action Alternate involves no construction, there will be no construction impacts if the No-Build Alternate is selected.

On most construction projects, the primary impact during construction involves noise. The building any of the four alternates will produce noticeable increases in noise levels during construction.

Construction activities produce noise which may affect some land uses and activities during the construction period. Analysis of this project indicates that surrounding receptors will receive construction noise in varying degrees which may at times be noticeable. These receptors are located near the project's construction limits and are identified as single family residences, commercial buildings/activities, one church and one cemetery.

It has been determined that the noisiest piece of equipment in operation will be a pile driver producing a dBA level of 101 at 50 feet. Utilizing a noise level drop-off rate of 4.5 dBA per doubling of distance, noise levels can be predicted for receptors based on its distance from the construction work.

Those receptors located within 150 feet of the proposed construction work will occasionally experience noise levels equal to or greater than 82 dBA. Those receptors located within 500 feet will occasionally receive noise levels equal to or in excess of 74 dBA.

The Illinois Department of Transportation concludes that the noise levels experienced during construction will not be objectionable during the daylight hours, but would be disruptive to sleep during the night hours, creating a social and

environmental disturbance at that time. Current IDOT standard specifications prohibit construction noise during normal sleeping hours.

Another potential construction impact involves air quality. Although the construction equipment will emit carbon monoxide, hydrocarbons, and oxides of nitrogen, the ambient air quality will not be significantly affected by operation of construction vehicles and machinery. The major air quality impact during construction will be the emission of dust during various construction operations. Mitigation of this impact could be accomplished by sprinkling water on exposed earth twice a day. This would lead to a significant decrease in the amount of blowing dust.

Disruption to traffic flow is another potential impact during construction. As detailed in the Traffic Control Plan of this study, however, no roads will be closed during construction. Although this will serve to minimize the traffic disruptions, some delays and inconvenience will be unavoidable. Access will be maintained at all times to both private and commercial driveways, again with temporary inconveniences a likely possibility. One can therefore see that while there will likely be temporary traffic disruptions, major disruptions will be avoided.

Soil erosion does not appear to be a serious problem for any of the build alternates. Exposed soil will be present in both excavation and embankment areas. Minimization of soil erosion problems during construction will be accomplished by implementing the IDOT Special Provision for Erosion Control. Erosion in the streambed of Beaver Creek during bridge construction will be minimized by the implementation of the IDOT Special Provision for the Protection of Waterways, Lakes, and Reservoirs. By incorporating these special provisions in the plans, soil erosion problems during construction should be minimal.

Construction impacts due to excavation removal and disposal will be minimal. All alternates produce excess excavation which must be disposed of off the right-of-way in an IEPA approved landfill. An amount of borrow material will be necessary for Alternate 3, however due to the small amount required and the rolling terrain adjacent to the project, minimal impact in furnishing this material is expected.

From the discussion above, it is seen that the proposed project will have no significant impact on the areas noise levels, air quality, traffic flow, soil erosion or ability to furnish or dispose of earthen material during construction.

K. IMPACT/ALTERNATE COMPARISON

A summary of the environmental impacts of the proposed project is shown in Table 30 This table is broken down by

alternates and phases, and includes preferred alternate selections for each category and phase. An inspection of the summary shows that, where a preference is indicated, Alternate 4 is designated solely, or with another alternate, in all but two phases under the solid waste impact. Therefore, it can be stated that, for the entire project, Alternate 4 would be favored when considering environmental concerns.

TABLE 30

IMPACT/ALTERNATE SUMMARY

*Preferred Alternate

IMPACT	ALTERNATE 1			ALTERNATE 2			ALTERNATE 3			ALTERNATE 4 *		
	Phase I	Phase II	Phase III	Phase I	Phase II	Phase III	Phase I	Phase II	Phase III	Phase I	Phase II	Phase III
Social:												
residential relocations	5	5	3	4	3	2	3	5	3	1	0	0
public serv./facilities	minor	minor	minor	minor	church acquired	minor	minor	minor	minor	minor	minor	minor
residential access	partial access control			similar to 1 & 3			similar to 1 & 2			no access control		
Economic:												
business relocations	0	2	2	0	2	2	1	2	2	0	0	0
business access	no direct access to U.S. BR 20			similar to 1 & 3			similar to 1 & 2			no access control		
tax loss	$5,410	$ 952	$5,097	$3,881	$1,065	$4,867	$4,705	$2,113	$5,122	$2,465	$ 199	$ 295
employ. gen.(man-yrs.)	498	215	528	478	208	506	478	216	503	409	177	448
cost (1,000's)	$8,192	$3,064	$8,311	$7,361	$2,949	$7,967	$7,348	$3,083	$8,059	$5,795	$2,495	$6,117
Archaeological/ Historical/Cultural:	minor	minor	minor	minor	minor	minor	minor	some	some	minor	minor	minor
Land Use/Agriculture:												
cropland/pasture loss (acre)	20.4	7.9	20.1	21.6	10.3	19.2	21.4	8.9	20.1	13.9	5.3	11.0
residential/com. loss (acre)	10.1	4.3	6.8	9.2	4.1	6.7	12.5	3.3	6.9	3.7	1.2	1.8
Ecological Resources:	minor	some	minor	minor	some	minor	minor	some	minor	minor	minor	minor
Water Quality Resources:												
stream modifications	0	1(130')	0	0	0	0	0	3(630')	1(250')	0	0	0
fill in farm pond	1	0	0	1	0	0	0	0	0	0	0	0
Air Quality:	minor	minor	minor	minor	minor	minor	minor	minor	minor	minor	minor	minor
Noise:												
Ambient Impact Receptors												
0-3 dBA Increase	5	11	6	4	12	6	4	11	6	3	9	5
4-7 dBA Increase	2	6	4	3	5	3	4	7	3	6	9	5
8-15 dBA Increase	5	3	3	5	3	4	4	2	4	3	2	3
Material Resources:												
concrete (c.y.)	17,000	8,200	19,000	16,700	8,000	19,100	16,800	8,500	19,000	15,000	7,000	17,900
steel (lb.)	1,449,000	830,000	2,258,000	1,419,000	820,000	2,248,000	1,439,000	870,000	1,910,000	1,253,000	700,000	1,800,000
Energy Resources: average annual BTU's (all Phases)	236,431			236,050			236,183			217,520		
Visual Impacts:	minor	minor	minor	minor	minor	minor	minor	minor	minor	minor	minor	minor
Solid Wastes (c.y.):	131,000	24,000	76,000	166,000	43,000	142,000	85,000	6,000	9,000	39,000	19,000	62,000
Construction Impacts:	similar to 2, 3 & 4			similar to 1, 3 & 4			similar to 1, 2 & 4			similar to 1, 2 & 3		

V. COMMENTS AND COORDINATION

A. COORDINATION WITH OTHER AGENCIES

Comments and/or information have been solicited from public and private agencies at various times during the preparation of this report. The following agencies have been contacted; written responses received from them and included in this report are indicated by an attached exhibit number in parenthesis:

U.S. Army Corps of Engineers (13A)
Illinois State Clearinghouse (13B)
Belvidere & Boone County Regional Planning Commission
Winnebago County Department of Planning and Economic Development
* Soil Conservation Service (Appendix A)
Illinois Department of Agriculture (Appendix A)
Federal Highway Administration
Illinois Department of Conservation (13C)
State Historic Preservation Officer (13D)
Illinois Archaeological Survey
Illinois Environmental Protection Agency
U.S. Fish and Wildlife Service (13E)
Commonwealth Edison
General Telephone Company of Illinois
Northern Illinois Gas
Winnebago County
Boone County
City of Rockford
City of Belvidere
Rockford Chamber of Commerce
Greater Belvidere Area Chamber of Commerce
Winnebago County Conservation District
Boone County Conservation District
Winnebago County Soil and Water Conservation District
Boone County Soil and Water Conservation District
Boone County Farm Bureau
Council of 100

*Coordination was initiated by the Illinois Department of Transportation on March 18, 1985 and the enclosed response (Appendix A) finalizes all coordination activities relevant to this project with the U.S. Soil Conservation Service.

B. COORDINATION WITH CITIZENS GROUP

Following the Data Collection Meeting held in June of 1984, IDOT officials for District 2 were contacted by a representative of a group of landowners on U.S. BR 20 requesting additional information about the project.

On June 21, 1984, these landowners met and discussed the proposed project. The feelings of the people involved were

reported in the local paper along with comments from District 2 personnel. The results of the meeting were sent to IDOT and public officials in a letter.

In this letter, the property owners questioned the need for a four lane roadway. In particular, they objected to the wide grassed median of a divided highway and the partial access control restrictions, which would result in shared service drives.

IDOT's response to the groups comments was to schedule the first Informational Meeting.

C. PUBLIC INFORMATIONAL MEETINGS

Public Awareness Meeting

On Wednesday, December 14, 1983, a Public Awareness Meeting was held to inform area residents of the initiation of studies for the proposed project. The meeting was held in the District 2 mobile office, located in the parking lot of the Clock Tower Inn. At this time only conceptual drawings of the proposed project were displayed.

The meeting was held from 1:00 p.m.to 5:00 p.m. and 6:30 p.m. to 7:30 p.m. The time and place of the meeting had been previously announced in the local news media and residents along the route were sent notices in the mail. Fifty-five people attended the meeting.

Significant comments were received from people at this meeting. Responses to these comments are as follows:

Future meetings showed in detail the impact to Mr. Anderson's farm pond.

The proposed box culvert in the vicinity of the Kersotes Theaters will have a waterway opening approximately 44% larger than the existing box culvert, thus eliminating flood water over the pavement.

Problems with drifting snow should be alleviated by a wider facility with flatter backslopes.

Sight distance requirements have been checked on U.S. BR 20 and adjustments necessary to obtain them have been made.

The difficulty in climbing the grade at the county line during the winter is basically an operational problem in the salting policies of adjacent maintenance areas. However, the reduction of the grade in this area proposed for this project will help the situation.

Data Collection Meeting

A Data Collection Meeting was held on Tuesday, June 5, 1984, in order to present to the public more detailed information on the proposed project and solicit their comments. Displayed were 1" = 200' scale aerial mosaic plan and profile sheets of both phases of the three alternate.

This meeting was held in the same location and at the same times as the Public Awareness Meeting. Area residents were made aware of the times and place of the meeting as before. Seventy-one people attended this meeting.

Responses to significant comments received at this meeting are as follows:

The property initially marked as commercial has been redesignated as a private storage facility.

A residential/agricultural entrance was provided for the property Lt. Stas. 170-177.

Entrance to the property Rt. Sta. 300 remained in the same location to line up with a median crossover also serving a property on the other side of the road.

Further contact with the engineers for the Drive-In is needed before a decision can be made on its entrance location.

Local agencies will be requested to assume maintenance of common service drives.

Sight distances on Shaw and Lyford Roads will be improved as part of the proposed project.

Financial remuneration for maintenance of the quarry service road will be made as part of the right-of-way negotiations.

The combined entrances for Alternate 2 have been separated.

First Informational Meeting

As a result of the concerns of a citizens group, previously discussed, the first Information Meeting was held at the Guilford-Hope Grange Hall, between 7:30 p.m. and 11:00 p.m. on Wednesday, August 8, 1984. Displays consisted of 1" = 50' scale topographic plan and profile drawings of Phase I of the three alternates of the proposed project. Approximately 70 people attended the meeting.

At this meeting, the discussion focused on the points contained in the July 2, 1984 letter to Mr. Wehner. The area property owners restated their objections to a four-lane facility, a divided highway and partial access control.

The position taken by IDOT personnel was that a four-lane highway was necessary for the U.S. BR 20 corridor in this area. At the conclusion of the meeting, the residents were promised that an additional alternative would be studied for a four-lane facility with a narrower median. A second information meeting would be held to present the findings of this investigation.

Second Informational Meeting

Following the development of Alternate 4, the second Information Meeting was held to present the concerned citizens with this proposal. This gathering also took place at the Guilford-Hope Grange Hall, between 7:00 p.m. and 9:30 p.m. on Thursday, January 31, 1984.

Displayed were 1"=50' scale plan and profile exhibits of the three phases of Alternate 4. Sixty people attended the meeting.

The Alternate 4 concept, timetable and construction phasing were explained. This proposal was overwhelmingly favored over the original three alternates by the people in attendance.

D. PUBLIC HEARING PROCESS

A Public Informational Meeting and a Public Hearing will be scheduled for this project. At these meetings all four alternates will be presented, with Alternate 4 designated as the Preferred Alternate.

V. COMMENTS AND COORDINATION

D. PUBLIC HEARING PROCESS

Public Informational Meeting

On Monday, April 21, 1986, a Public Informational Meeting was held at the Clock Tower Inn Convention Center to allow area residents to view and discuss displays of the proposed project which would be presented at the Public Hearing. A 1" = 50' display of Alternate 4 was exhibited, as well as reduced versions of Alternates 1, 2 and 3.

The meeting was held from 1:00 p.m. to 5:00 p.m. and 7:00 p.m. to 8:00 p.m. the time and the place of the meeting had been previously announced in the local news media (see Exhibits 13I and 13J). Eighty-nine people attended the meeting.

Several comments were received to update information shown on the displays.

Concern was expressed by residents of two properties over possible damages to trees in front of their residents. An attempt will be made during preparation of construction plans to minimize the impact to these areas.

Two comments were made regarding existing steep grades at different locations. It was pointed out that where these grades are retained, they are adequate for the design speeds required by the proposed project.

Mr. Robert Reed of the Belvidere-Boone County Regional Planning Commission requested a copy of the final right-of-way plats. These will be furnished to him when they are available.

Mr. Richard Atkins asked for an investigation into the possibility of shifting the north Lyford Road alignment to the east to reduce the impact to trees in front of his property. He also posed this question at the Public Hearing and a response is included in the discussion of that meeting.

Public Hearing

A public hearing was held at the Clock Tower Inn convention Center on April 28, 1986 to present the proposed project to area residents. The hearing was publicized by the local media as shown in Exhibits 13I and 13J. Everyone attending was extended the opportunity to submit written statements concerning the project.

Alternate 4 was designated as the Preferred Alternate.

The following statements have been paraphrased and categorized. Verbatim accounts of the statements are included in the public hearing transcript which should be referred to for exact wording.

Public Hearing Comments and Responses

1. STATEMENT: Mr. John Pearce (area resident, Mr. Henry Close (representing Kerasotes Theaters) and Mr. Richard Nelson (area resident) commended the Illinois Department of Transportation for working with the area residents and businesses to develop an additional alternate that addressed their main concerns (Alternate 4).

   RESPONSE: None required.

2. STATEMENT: Mrs. Olive Fenton (area resident) asked several questions regarding the land-acquisition process.

   RESPONSE: Mr. Mick Kazmerski, IDOT, District 2 Relocation and Property Manager, answered Mrs. Fenton's question from the podium.

3. STATEMENT: Mr. Richard Atkins (area resident) requested that the alignment of Lyford Road north of U.S. BR 20 be shifted east to avoid damaging trees in front of his property. In addition, he felt that a future reconstruction of north Lyford Road as a four-lane facility would require the removal of a complete row of trees if the existing alignment is maintained.

   RESPONSE: The row of trees referred to by Mr. Atkins consists of 12" to 36" diameter basswood, elm, oak and walnut trees just inside the existing west right-of-way line of north Lyford Road, beginning near his south property line and extending approximately 800 feet north (29' - 32' Lt. Stations 417+66 to 425+31). As proposed by Alternate 4, the required construction will probably require the removal of trees south of Mr. Atkins' entrance (Lt. Sta. 418+77) and may require the removal of some of the trees north of his entrance. Trees located north of Mr. Atkins' property are not affected by Alternate 4 construction as currently proposed.

   After an investigation of the effects of offsetting the centerline of north Lyford Road, it was concluded that the proposed tangent alignment would better serve the overall needs of the public for the following reasons:

   The projected traffic levels for the year 2008 are only about 63% of levels normally required for consideration of a four-lane facility. Thus, the complete row of trees would not be threatened by any four-lane construction in the foreseeable future.

   Even with a shift in alignment, the north end of the proposed construction would still need to be centered on the existing alignment. Due to the close proximity of all the trees in the row to the existing centerline, the required roadway section with even a minimal ditch would probably still require the removal of some trees.

In order to be sure to avoid taking any trees in the row, the proposed construction would have to be extended approximately 900 feet north, which would add to the cost of the project as well as requiring additional right-of-way on the east side of north Lyford Road.

Introduction of an offset centerline would require three or four curves and create a slight safety risk compared to the existing tangent alignment.

During the preparation of construction plans, the more detailed plans produced by the designers will enable them to consider options to minimize damages to the trees north of Mr. Atkins' entrance.

4. STATEMENT: Only one written statement was received for this project. This was a letter from Mr. Robert Reed (Planning Director, Belvidere-Boone County Regional Planning Commission) stating that the Regional Planning Commission was concerned with the lack of access control proposed by Alternate 4. See Exhibit 13K for a copy of his letter.

   RESPONSE: See Exhibit 13L for the written response provided to Mr. Reed.

CHANGES TO DRAFT ENVIRONMENTAL ASSESSMENT

1. The Wild Mountain Waterslide located in the northeast corner of the Lyford Road - U.S. BR 20 intersection is now out of business; the waterslide structures have been removed and the height of the earth fill has been significantly reduced.

2. As a result of the leveling of the earth fill associated with the waterslide, the retaining wall proposed along the east side of Lyford Road, north of U.S. BR 20, is no longer required and an additional width of right-of-way in this area is necessary.

3. The average proposed width of right-of-way for Lyford Road, north of U.S. BR 20, has been revised to approximately 115 feet.

4. Section V D, Public Hearing Process, has been revised to include information on the Public Informational Meeting and Public Hearing.

5. Exhibits 13I, J, K and L have been added to supplement the revised text for Section V D.

6. Exhibit 13H has been added to document Corps of Engineers review of the Draft Environmental Assessment.

7. Exhibit 13M has been added to include the Design Stage A-95 Clearinghouse Sign-Off from the Office of the Governor for the proposed project.

APPENDIX A

AGRICULTURAL ASSESSMENT

F.A.P. ROUTE 517
U.S. BUSINESS ROUTE 20
SECTION (2 MFT & L) RS-2
WINNEBAGO AND BOONE COUNTIES

Table of Contents

United States Department of Agriculture

Soil Conservation Service

Springer Federal Building
301 N. Randolph Street
Champaign, Illinois 61820

February 23, 1984

Mr. Kevin L. Koski
Missman, Stanley & Associates, Prof. Corp.
Consulting Engineers and Land Surveyors
1011-27th Avenue, Box 736
Rock Island, IL 61204

Dear Mr. Koski:

Members of our staff have reviewed the data for the proposed environmental assessment of F.A. Rte. 517 (U.S. Bus. Rte. 20), Sec. (L & 2 MFT) RS-2, Winnebago and Boone Counties, Illinois, and have no conflict with the project.

The list of soils encountered within the alignment has been filled out to show the land capability classification and prime farmland conditions of each map unit. A qualifying statement sheet for prime farmland is enclosed for your use. For example, Soil 82(5) would qualify as prime farmland under the conditions where drained and either protected from flooding or flooding is less often than once in two years during the growing season.

Sincerely,

August J. Kaminski Jr.

John J. Eckes
State Conservationist, Actng

Enclosures

cc: Roger Rowe, AISWCD, Marseilles, IL
Steve Chard, IDOA, Springfield, IL
Don Manecke, Orion, IL
G. Paulsgrove, AC, A-1
C. Simpson, DC, A-1

United States Department of Agriculture

Soil Conservation Service

Springer Federal Building
301 North Randolph Street
Champaign, Illinois 61820

May 7, 1985

Mr. William D. Ost, District Engineer
Division of Highways, District 2
Illinois Department of Transportation
819 Depot Avenue
Dixon, Illinois 61021

Dear Mr. Ost:

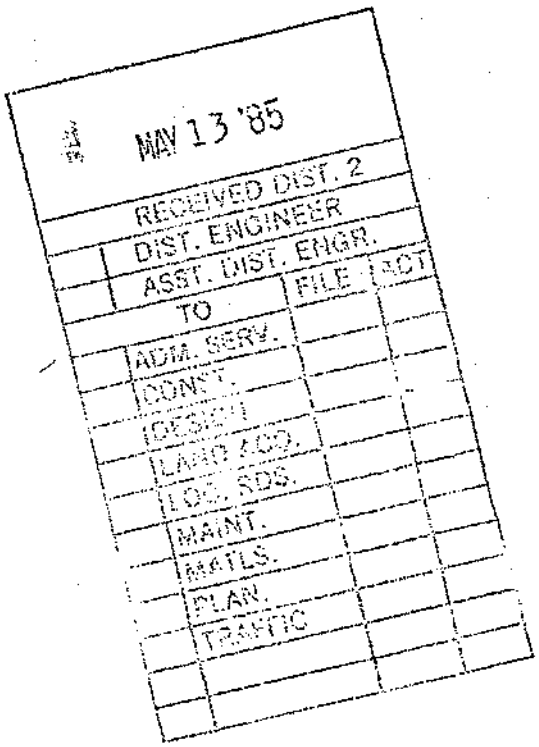
Attached is the AD-1006 form, Farmland Conversion Impact Rating, for your proposed project FAP 517, Rockford-Belvidere Expressway.

Thank you for the opportunity to assist you in evaluating the farmland conversion impacts of your proposed project.

JOHN J. ECKES
State Conservationist

Attachment

cc: Steve Chard, IDOA



DAB:var:RES4/49

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request: March 18, 1985
Name Of Project: Rockford-Belvidere Expwy, FAP 517, Sec. (2MFT&L)RS-2		Federal Agency Involved: Federal Highway Administration
Proposed Land Use: Highway		County And State: Boone and Winnebago, Illinois
PART II *(To be completed by SCS)*		Date Request Received By SCS: 3-21-85
Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply – do not complete additional parts of this form).*	Yes ☒ No ☐	Acres Irrigated: 0 / Average Farm Size: 232
Major Crop(s): Corn, Soybeans, Oats	Farmable Land In Govt. Jurisdiction Acres: 29633500 %97	Amount Of Farmland As Defined in FPPA Acres: 27696200 %91
Name Of Land Evaluation System Used: State of Illinois	Name Of Local Site Assessment System: None	Date Land Evaluation Returned By SCS: 5-6-85

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site ☒ 1	Site ☒ 2	Site ☒ 3	Site ☒ 4
A. Total Acres To Be Converted Directly	67.7	68.7	71.1	34.9
B. Total Acres To Be Converted Indirectly	0.0	0.0	0.0	0.0
C. Total Acres In Site	67.7	68.7	71.1	34.9
PART IV *(To be completed by SCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	45.44	46.6	48.4	23.0
B. Total Acres Statewide And Local Important Farmland	21.31	21.6	20.5	11.9
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	.0002	.0002	.0002	.0001
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	50.7	50.7	50.7	50.7
PART V *(To be completed by SCS)* Land Evaluation Criterion x 1.5* Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	119.6	120.3	117.5	117.6

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use					
2. Perimeter In Nonurban Use					
3. Percent Of Site Being Farmed					
4. Protection Provided By State And Local Government		(See Attached Site Assessment Corridor Factors)			
5. Distance From Urban Builtup Area					
6. Distance To Urban Support Services					
7. Size Of Present Farm Unit Compared To Average					
8. Creation Of Nonfarmable Farmland					
9. Availability Of Farm Support Services					
10. On-Farm Investments					
11. Effects Of Conversion On Farm Support Services					
12. Compatibility With Existing Agricultural Use					
TOTAL SITE ASSESSMENT POINTS	*150	65	57	49	39
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	*150				
Total Site Assessment *(From Part VI above or a local site assessment)*	*150	65	57	49	39
TOTAL POINTS *(Total of above 2 lines)*	*300				

Site Selected: | Date Of Selection | Was A Local Site Assessment Used? Yes ☐ No ☒

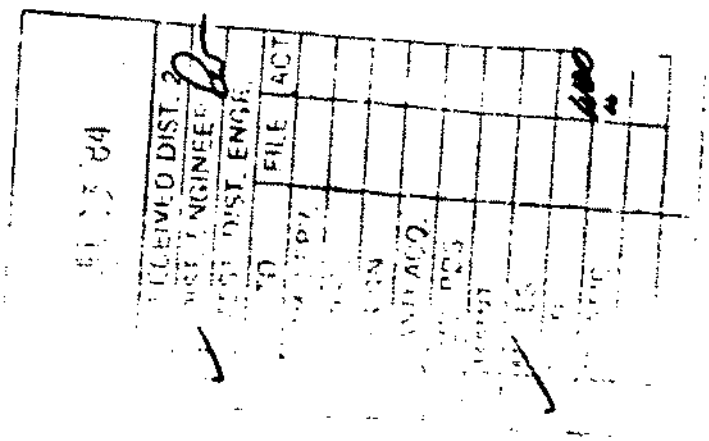
Reason For Selection:

* When utilizing the state corridor factors, 150 points are assigned to the Land Evaluation portion, and 150 points are assigned to the Site Assessment portion, for a maximum score of 300 total points.

State of Illinois
DEPARTMENT OF AGRICULTURE

Office of the Director
Agriculture Building, State Fairgrounds, Springfield 62706-1001, 217/782-2172

July 18, 1984



Mr. Ralph Wehner
District Engineer
Illinois Department of Transportation
District 2
819 Depot Avenue
Dixon, Illinois 61021

Re: FAP 517
Section (2 MFT & L) RS-2
U.S. BR 20
Winnebago & Boone Counties

Dear Mr. Wehner:

The Illinois Department of Agriculture has completed its study of the agricultural impacts of the three alternate alignments proposed for the improvement of FAP 517 (BR 20) between Rockford and Belvidere. We understand the intent of this project is to upgrade existing BR 20 from a two lane highway to a four lane, partial access controlled highway. Construction will be performed in two phases. Phase I will extend from Lyford Road in Rockford to just beyond Shaw Road in Boone County. Phase II will be constructed from Shaw Road to High Line Road in Belvidere.

Mr. Larry Hill of your office informed my staff that each proposed alignment has been designed according to minimum Federal design criteria. Each alternate will therefore require the least amount of land for additional right-of-way as possible for this type of highway design.

Based upon the information provided to the Department of Agriculture by the consultant Missman, Stanley, and Associates, Prof. Corp. and by Mr. Hill, it is our conclusion that there are no significant variations between the level of agriculture impacts generated by the three alternative alignments.

Each of the alternative alignments basically require the same amount of farmland for new highway right-of-way and essentially contain equal quantities of very productive Class I, II and III lands. The results of our Agricultural Productivity Index have indicated that Alternative #1 would lose the least amount of annual agricultural productivity in terms of crop and livestock production; however, the three alignment's value per acre again exhibit no appreciable differences.

Our study of the agricultural impacts of this project included the application of the state Land Evaluation and Site Assessment System (LESA). This tool is useful in assessing development projects that intend to convert farmland to non-agricultural purposes and in determining which project site or alignment can be transformed to a non-farm use with minimal harm to the agricultural environment. No major differences exist in the final LESA scores of the three alternative alignments.

Concerning the issue of borrow, Alignment #3 is the only alternative which requires fill material. However, this alignment will also generate excess cut (waste) material and we are hopeful that the waste material will be utilized for borrow where feasible to lessen the negative impacts of the project upon agriculture.

Taking all of the above issues into consideration, it is our position that we would not object to the utilization of any of the three alignments for the proposed project. All of the alignments principally induce the same degree of adverse impacts upon the agricultural community.

I encourage you to contact the Boone and Winnebago County Soil and Water Conservation Districts for assistance in properly addressing the road's drainage and erosion control needs. Erosion control during and after the construction of the project is of particular interest to the districts. Their addresses are as follows:

Boone County Soil and Water Conservation District
Box 218
Belvidere, Illinois 61008
Telephone: 815-544-2677

Winnebago County Soil and Water Conservation District
3820 Auburn Street
Rockford, Illinois 61103
Telephone: 815-987-4249

I would like to thank both Mr. Hill on your staff and Mr. Dennis Martin of Missman, Stanley, and Associates, Prof. Corp. for their helpfulness in providing the Department with additional information regarding this project. Should you have questions regarding our review of the project, please do not hesitate to contact us.

Sincerely,

Larry A. Werries, Director
Illinois Department of Agriculture

LAW:JRH:mdg
Enclosure

cc: Governor James R. Thompson
Senator Philip Rock
Senator James Philip
Representative Michael Madigan
Representative Lee Daniels
Inter-Agency Committee
Boone County SWCD
Winnebago County SWCD
Rich Clemmons, Illinois Farm Bureau

PROPOSED ALTERNATIVE ALIGNMENTS
FAP 517, Section (2 MFT & L) RS-2
U.S. BR 20, Winnebago & Boone Counties

TABLE I - Acres By Land Capability Class of New Right-of-Way to be Acquired

	Alternative #1		Alternative #2		Alternative #3	
	Acres	Percent	Acres	Percent	Acres	Percent
Class I	8.65	12.78	7.52	10.95	10.06	14.15
Class II	34.66	51.20	37.32	54.32	35.87	50.45
Class III	22.77	33.63	22.68	33.01	22.24	31.28
Class IV	0.67	0.99	0.63	0.92	0.72	1.01
Class V-VIII	0	0	0	0	0	0
Urban/Made Land	0.95	1.40	0.55	0.80	2.21	3.11
Totals	67.70	100.00	68.70	100.00	71.10	100.00

TABLE II - Value of Crop & Livestock Production Losses (Agricultural Productivity Index)

	Alternative #1	Alternative #2	Alternative #3
Crop Value	$18,231.24	$18,640.40	$18,765.46
Livestock Value	$ 7,377.41	$ 7,377.41	$ 7,353.61
Total Value of Crop & Livestock Production	$25,608.65	$26,017.81	$26,119.07
Value Per Acre	$ 383.65	$ 381.77	$ 379.14

TABLE III - Land Evaluation and Site Assessment

	Alternative #1	Alternative #2	Alternative #3
Land Evaluation	80	80	81
Site Assessment	55	50	45
Total LESA Value	135	130	126

State of Illinois
DEPARTMENT OF AGRICULTURE

Division of Natural Resources
Agriculture Building, State Fairgrounds, Springfield, IL 62706-1001, 217/782-6297
Bureau of Farmland Protection Bureau of Soil Conservation

March 8, 1985

Mr. Dennis R. Martin
Missman, Stanley & Associates, Prof. Corp.
1011 - 27th Avenue
Box 736
Rock Island, Illinois 61204

Re: FAP 517
Section (2MFT & L) RS-2
U.S. BR 20
Winnebago and Boone Counties

Dear Mr. Martin:

The Illinois Department of Agriculture has completed its review of the fourth alternate developed for the reconstruction of U.S. BR 20 between Rockford and Belvidere. This alternate proposes the construction of a four-lane facility for the entire 5.06 mile length. It is designed to have a 14-foot flush median which reduces the project's additional right-of-way requirements. Construction is proposed to be performed in three phases.

The adverse agricultural impacts of this alternate are significantly reduced from the impacts of Alternates 1, 2, and 3 which were reviewed last summer. Whereas the additional right-of-way requirements of the first 3 alternates ranged from 71.1 to 67.6 acres, Alternate 4 requires 34.9 acres. All but 0.10 acres of the 34.9 acres in Alternate 4 are Class I, II, and III lands.

Because of its reduced right-of-way requirements, Alternate 4 also creates less of an impact upon the area's agricultural economy as compared to the other 3 alternates. Listed on the accompanying Agricultural Impact Analysis chart are the Department's estimated annual crop and livestock production losses calculated for Alternate 4.

Alternate 4 requires no borrow and consequently no borrow pits to further convert farmland to a non-agricultural use. It does however, generate a small amount of waste material. The Department also noted that existing private and commercial entrances as well as field entrances will remain as they currently exist.

The Department also evaluated Alternate 4 utilizing the state Land Evaluation and Site Assessment (LESA) system. Because minor changes were incorporated into the system since the first three alternatives were examined last summer, the Department also recalculated their LESA scores as well. Thus the comparison between the alternatives' scores provide a more positive indication as to which alternate will incur the least harm to agriculture if its farmland is converted. As you will note on the enclosed Agricultural Impact Analysis chart, Alternate 4 possesses the lowest overall LESA score. The low LESA score further confirms the fact that Alternate 4 is the most suitable for the project from an agricultural impact standpoint.

Because Alternate 4 would significantly reduce the overall negative agricultural impacts of the U.S. BR-20 project, as compared to Alternates 1, 2, and 3, the Department of Agriculture would recommend the implementation of Alternate 4 if U.S. BR-20 is to be reconstructed to a four-lane facility.

As we have previously indicated, the Department of Agriculture sincerely appreciates the flexibility of District 2 in considering other highway designs which have fewer agricultural impacts.

Should you have questions on our review of U.S. BR-20 Alternate 4, please do not hesitate to contact this office.

Sincerely,

Larry A. Werries

Larry A. Werries, Director
Illinois Department of Agriculture

LAW:JRH:mdg

cc: Governor Thompson
Senator Rock
Senator Philip
Representative Madigan
Representative Daniels
IDOT District 2
Inter-Agency Committee
Boone County SWCD
Winnebago County SWCD
Tony Hamilton, IDOA
Rich Clemmons, IFB
Senator Jack Schaffer
Senator Joyce Holmberg
Representative Ronald A. Wait
Representative E. J. Giorgi

AGRICULTURAL IMPACT ANALYSIS
FAP 517 (U.S. BR-20)
Section (2 MFT & L) RS-2
Winnebago & Boone Counties

ALTERNATE #4

TABLE I - Acres By Land Capability Class Of New Right-of-Way To Be Acquired

	Acres	Percent
Class I	3.66	10.49
Class II	17.72	50.77
Class III	13.42	38.45
Class IV	0.10	0.29
Class V-VIII	0	0
Other	0	0
Total	34.90	100.00

TABLE II - Value Of Crop & Livestock Production Losses (Agricultural Productivity Index)

Crop Value	$ 9,491.72
Livestock Value	$ 2,031.25
Total Value of Crop & Livestock Production	$ 11,522.97
Value Per Acre	$ 330.17

TABLE III - Land Evaluation and Site Assessment

	Alternate #1	Alternate #2	Alternate #3	Alternate #4
Land Evaluation	120.41	121.16	118.22	117.60
Site Assessment	75.00	67.00	59.00	40.00
Total LESA Value	195.41	188.16	177.22	157.60

STATE OF ILLINOIS
Agricultural Land Evaluation and Site Assessment System

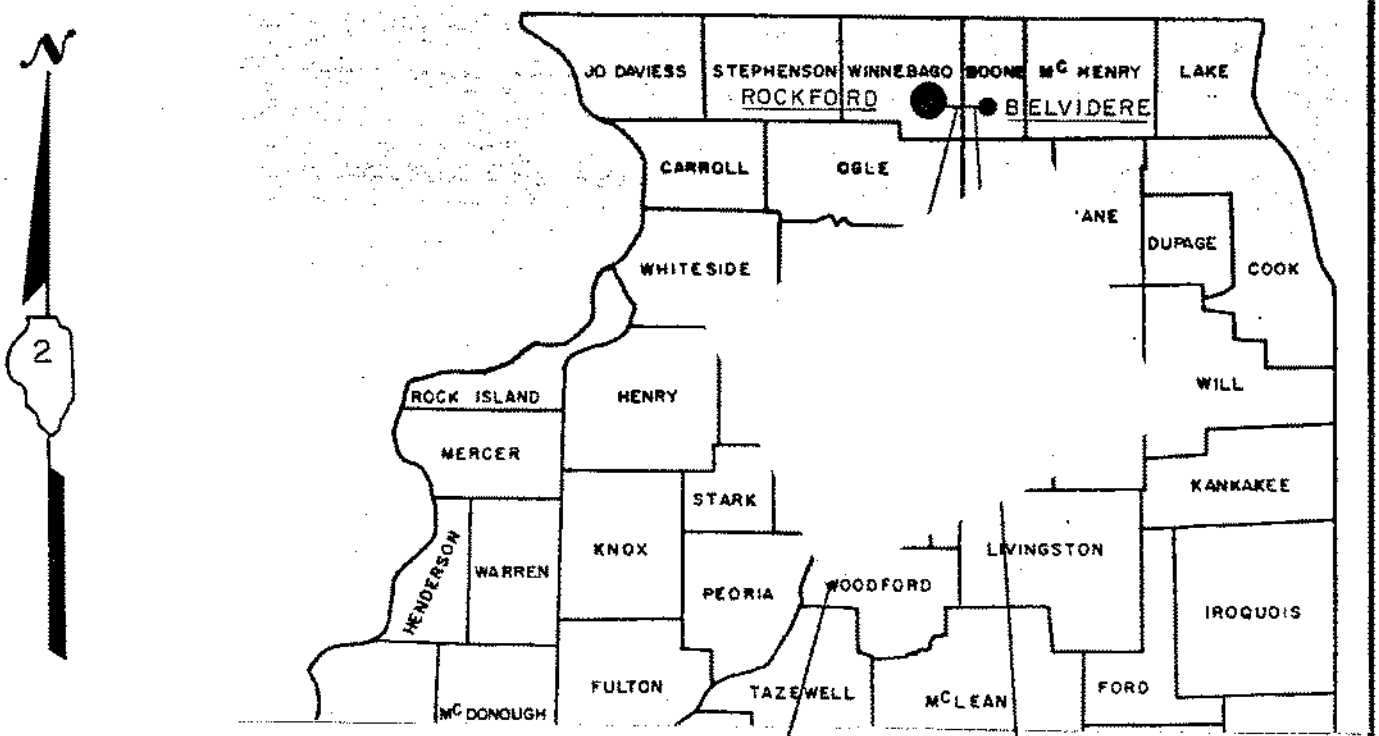
PART VI-B Illinois Site Assessment CORRIDOR Factors	Maximum Points	Alternative Site Rating Site A	Site B	Site C	Site D
1. Compatibility With Normal Agricultural Operations	30	20	20	20	10
2. Project Benefits Agriculture	10	10	10	10	10
3. Consideration Of Less Productive Sites	10	10	7	4	0
4. Compatibility With Local Comprehensive Plan	20	0	0	0	0
5. Project Located Within Official Ag Area	20	0	0	0	0
6. Project Promotes Infill	20	5	5	5	10
7. Alternatives Meet Special Siting Requirements	20	10	10	10	10
8. Total Value Of Agriculture Production Lost	20	20	15	10	0
TOTAL SITE ASSESSMENT CORRIDOR POINTS	**150**	75	67	59	40
PART VII					
Relative Value of Farmland	150				
Total Site Assessment CORRIDOR Factors	150	75	67	59	40
TOTAL ILLINOIS LESA POINTS	**300**				

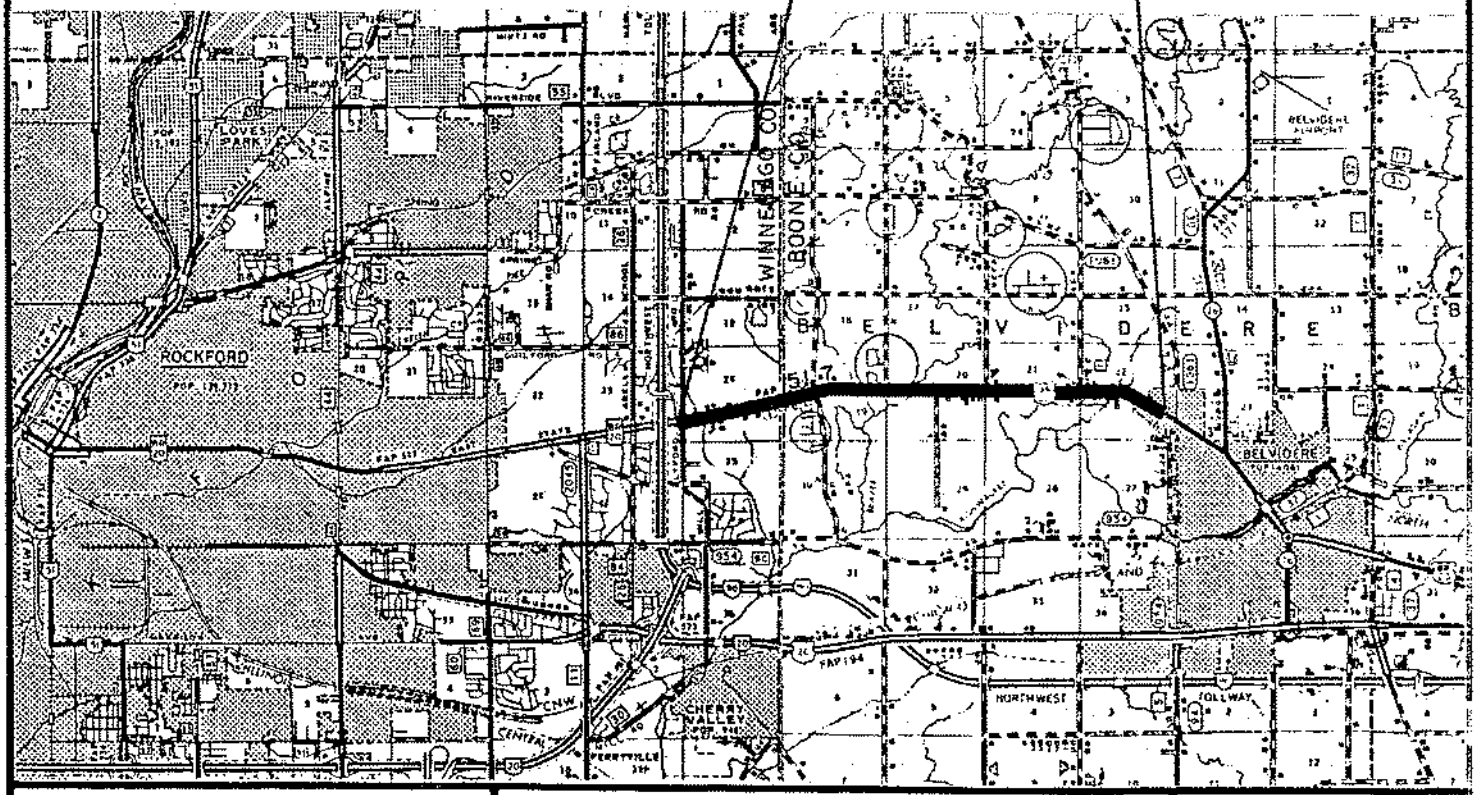
Site A = Alternate 1

Site B = Alternate 2

Site C = Alternate 3

Site D = Alternate 4





F.A.P. 517
(U.S. Business Route 20)
Rockford – Belvidere

PROJECT LOCATION MAP

EXHIBIT
I

PHASE LOCATION MAP

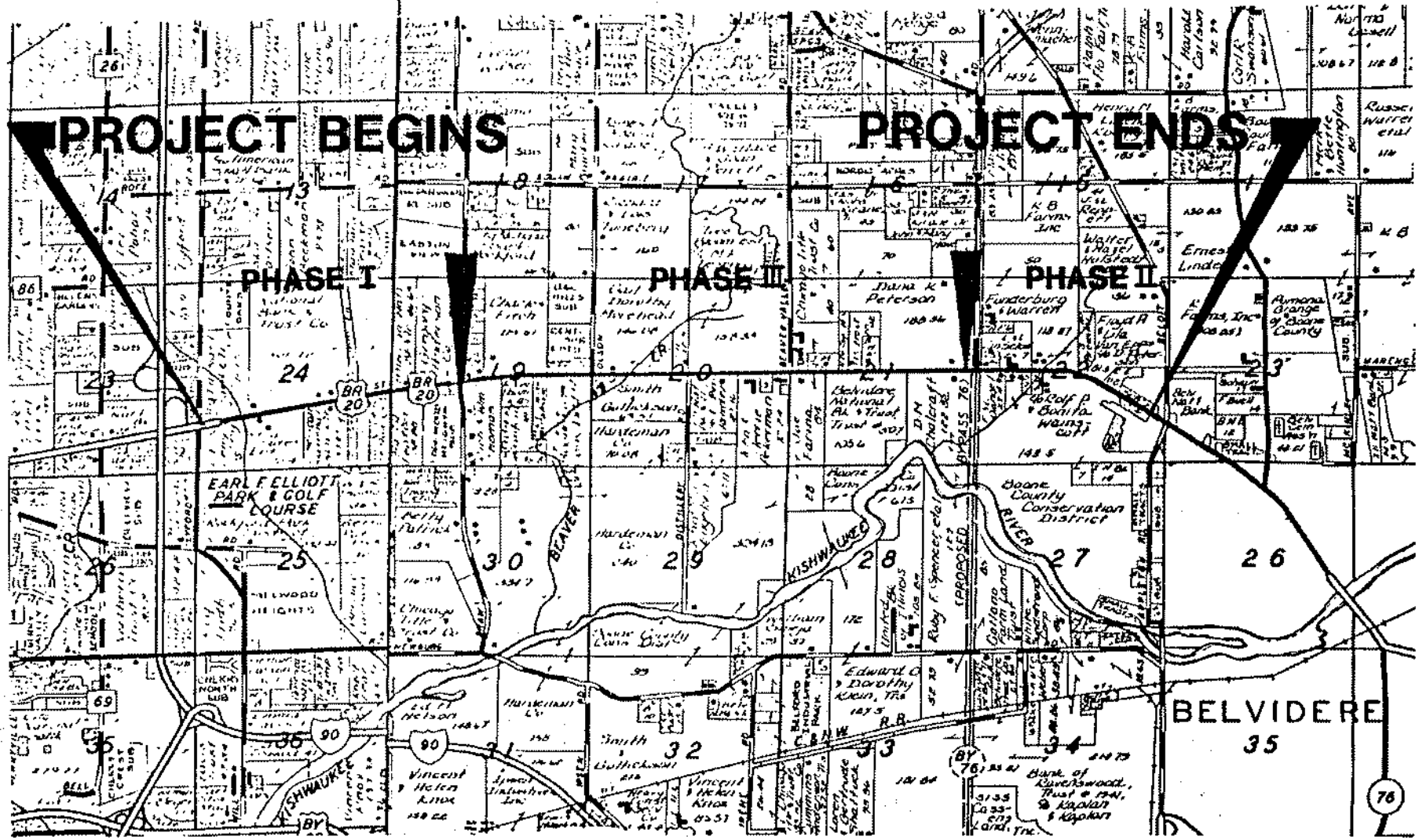
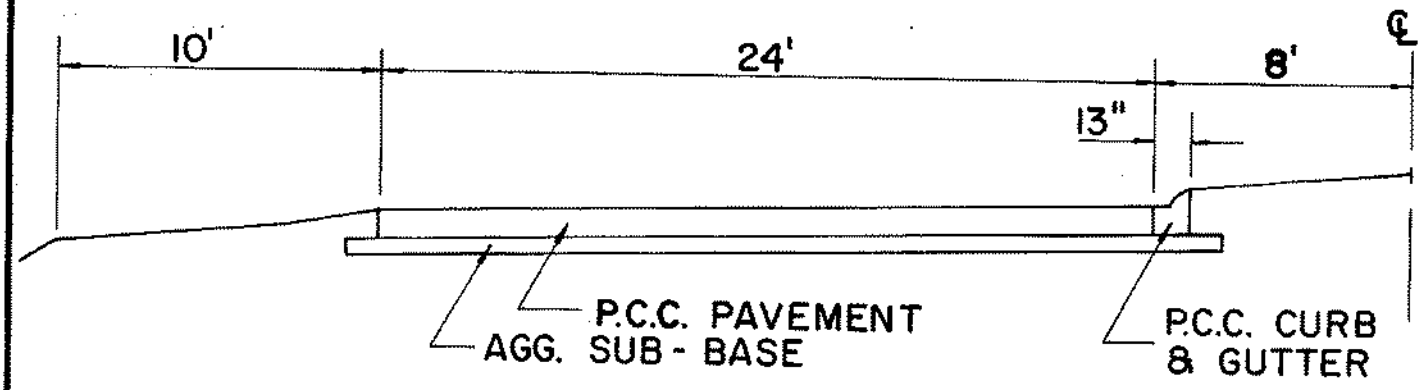


EXHIBIT IA

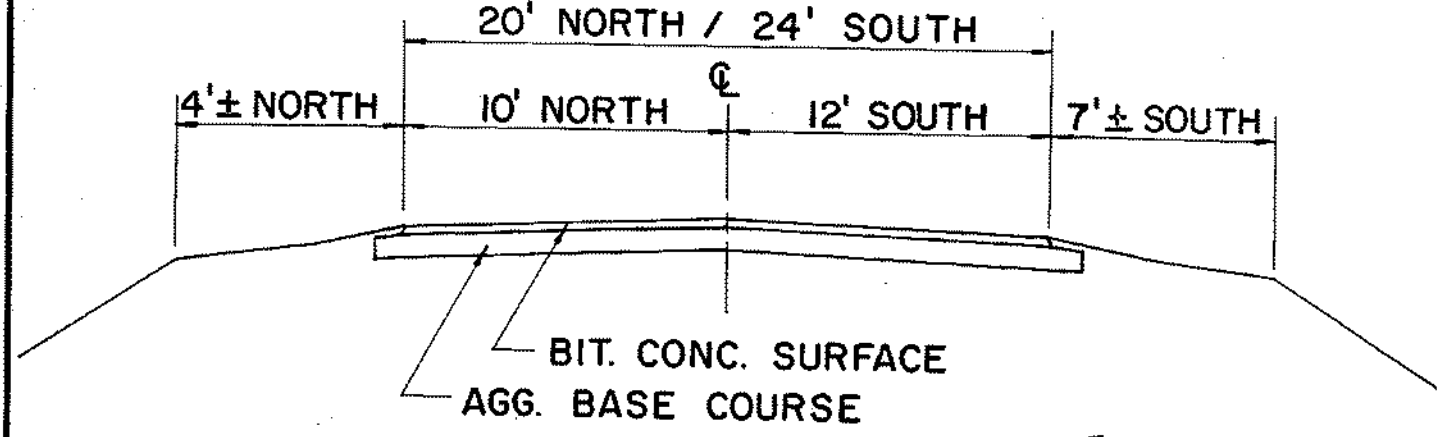
FAP 517
(U.S. Business Route 20)
Rockford – Belvidere

PLANNED AND EXISTING AREA ROADWAYS

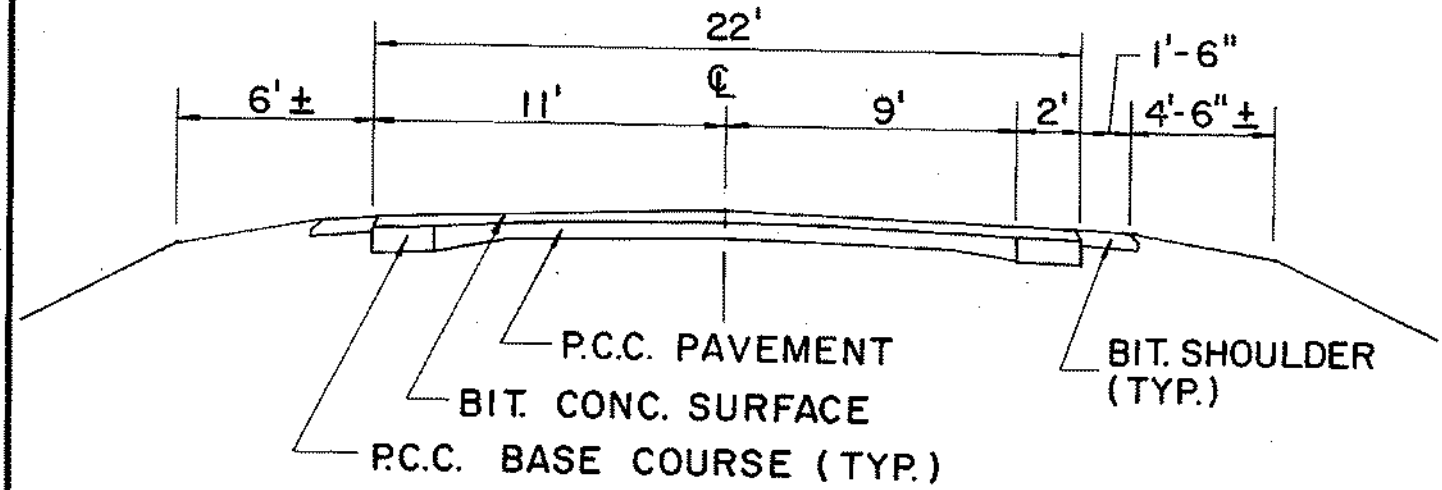
EXHIBIT 2



HALF SECTION
U.S. BUSINESS ROUTE 20
WEST OF LYFORD ROAD

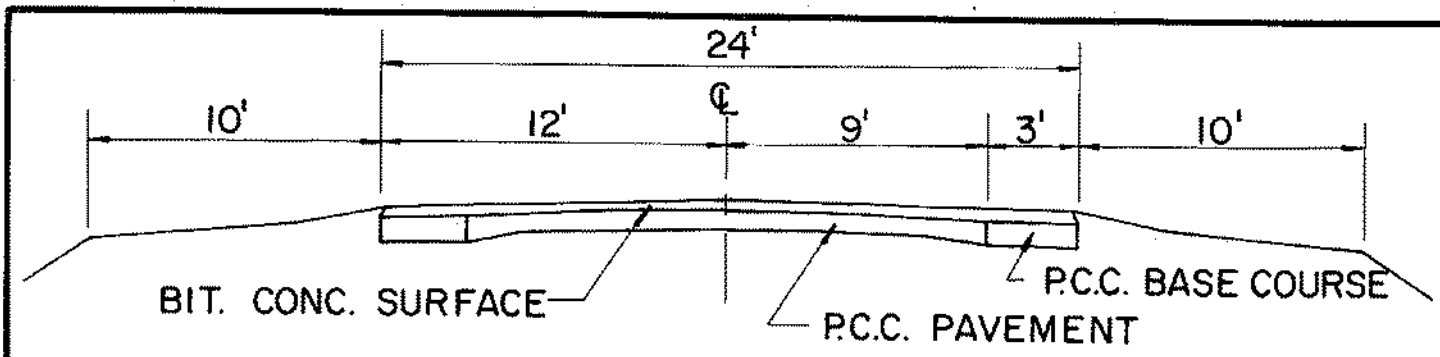


LYFORD ROAD



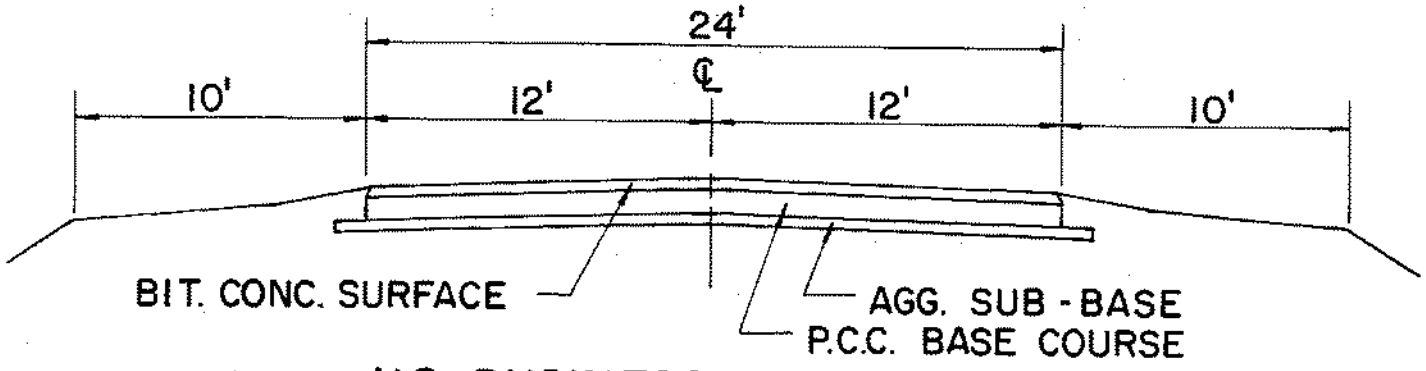
U.S. BUSINESS ROUTE 20
LYFORD ROAD TO COUNTY LINE

F.A.P. 517 (U. S. Business Route 20) Rockford - Belvidere	**EXISTING TYPICAL SECTIONS**	EXHIBIT 3A



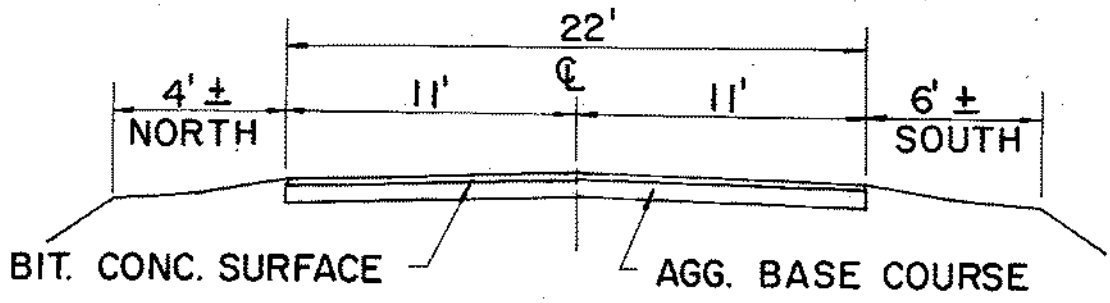
U.S. BUSINESS ROUTE 20

STATIONS 0+00 - 11+50, 28+00 - 75+22, 93+09 - 183+50 & 194+40 - 210+22

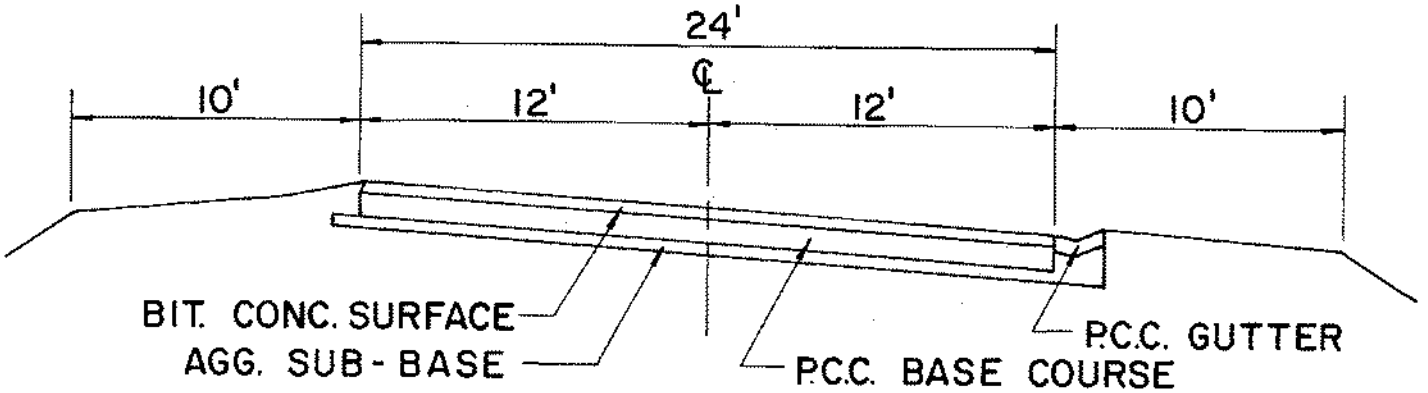


U.S. BUSINESS ROUTE 20

STATIONS 11 + 50 - 28 + 00 & 75+22 - 93+09



SHAW ROAD



U.S. BUSINESS ROUTE 20

STATIONS 183 + 50 - 194 + 40

F.A.P. 517 (U. S. Business Route 20) Rockford – Belvidere	EXISTING TYPICAL SECTIONS	EXHIBIT 3B

FAP 517
(U.S. Business Route 20)
Rockford – Belvidere

EXISTING LAND USE

EXHIBIT 4

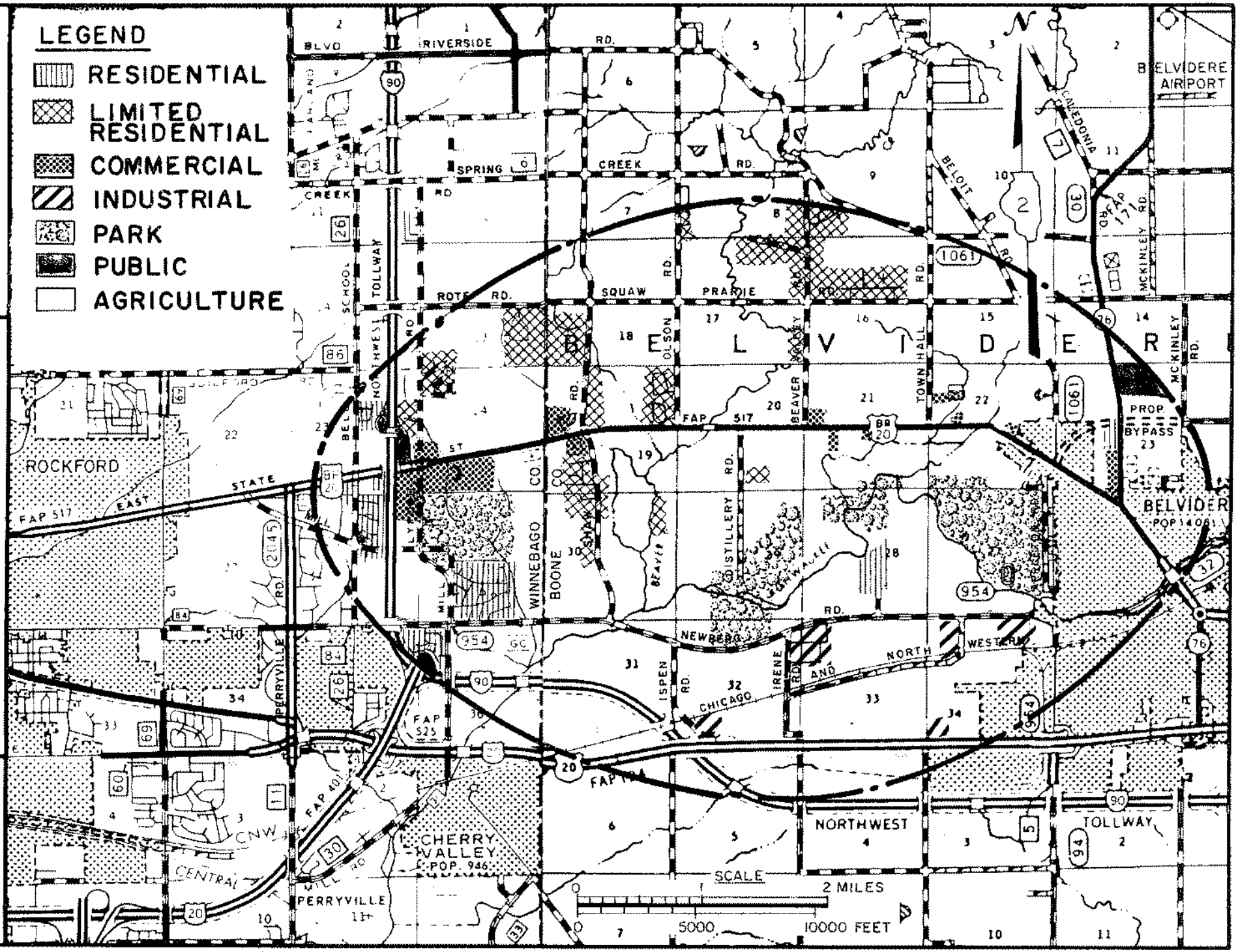
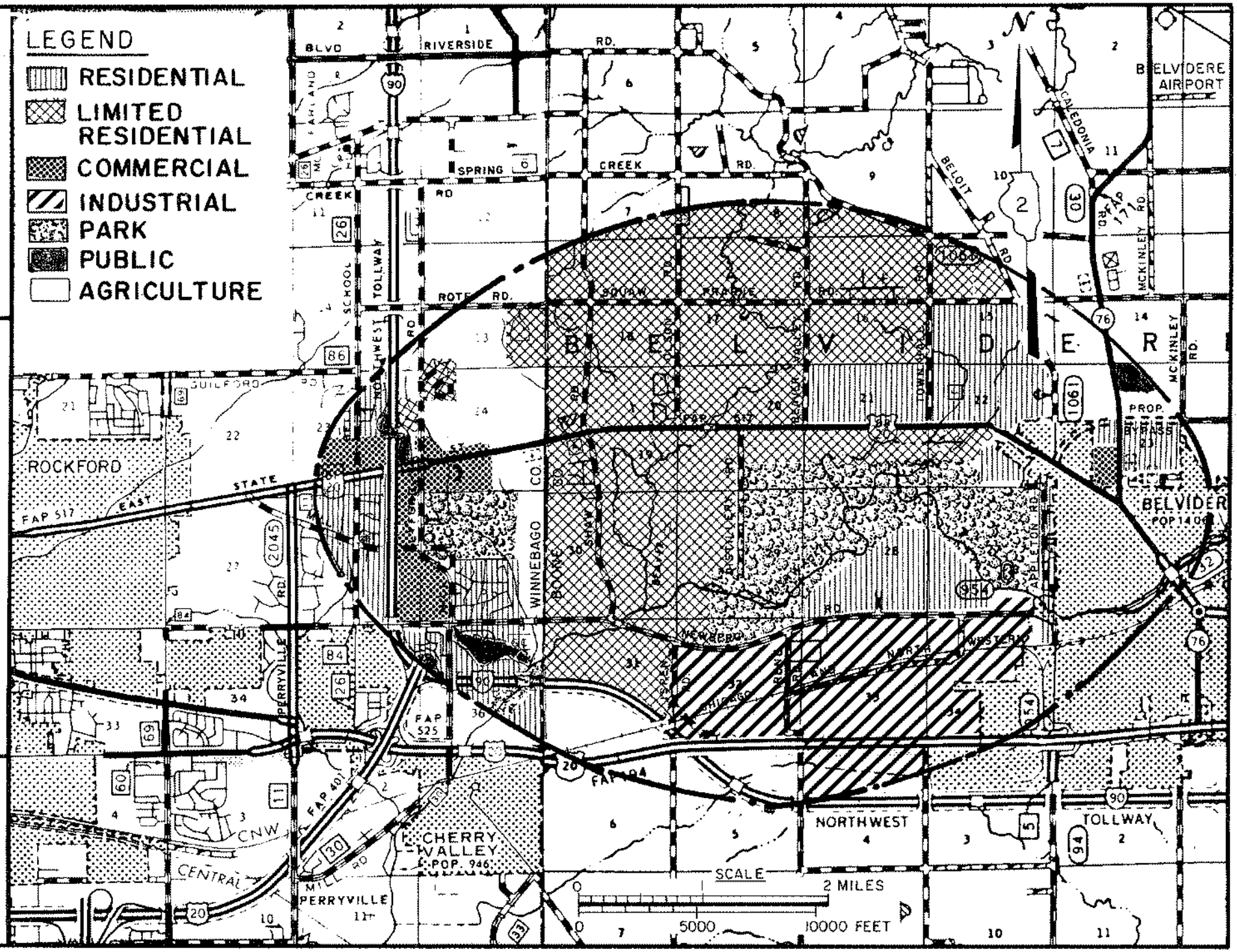
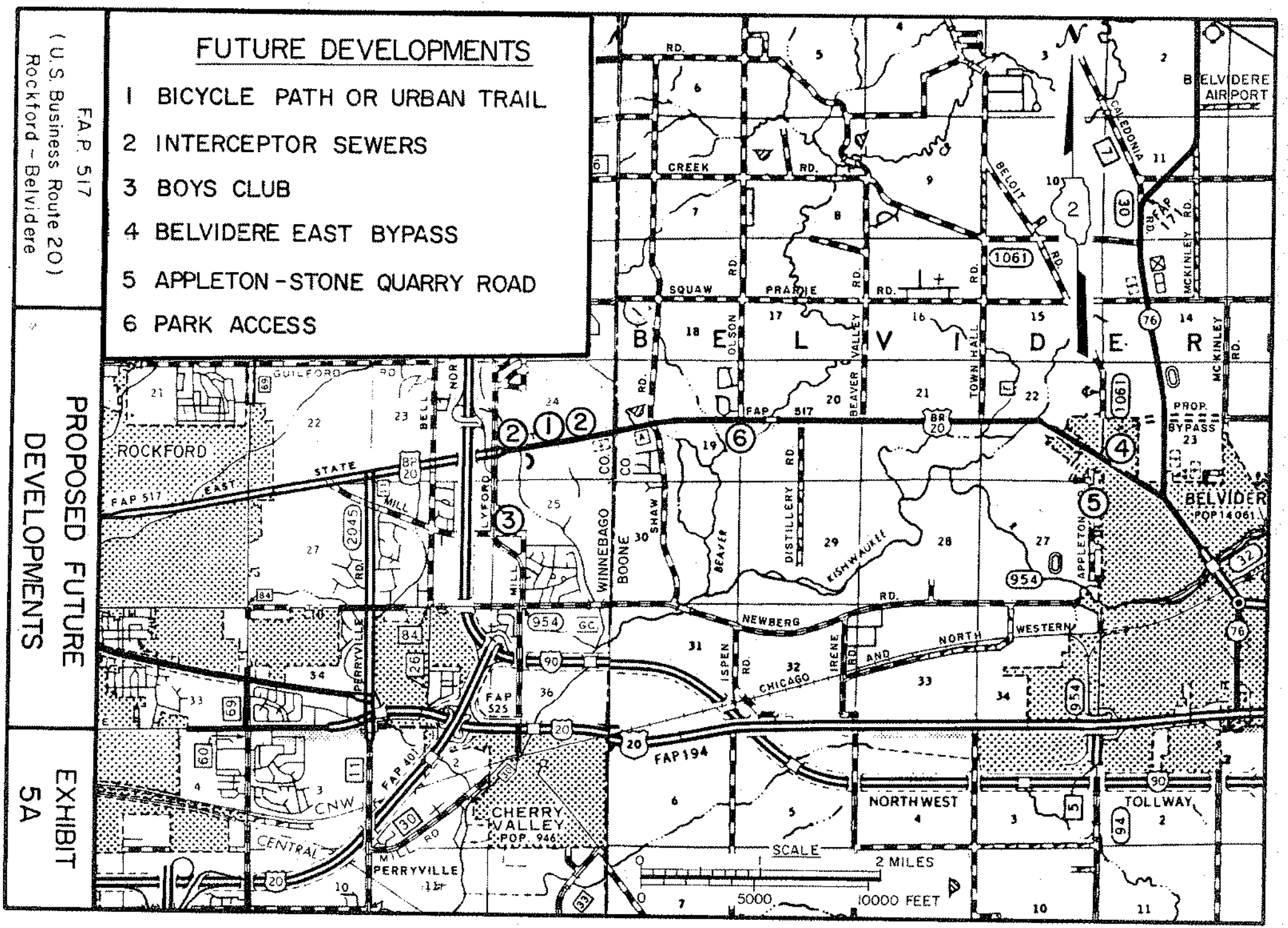


EXHIBIT 5

PROPOSED LAND USE

F.A.P. 517
(U.S. Business Route 20)
Rockford - Belvidere

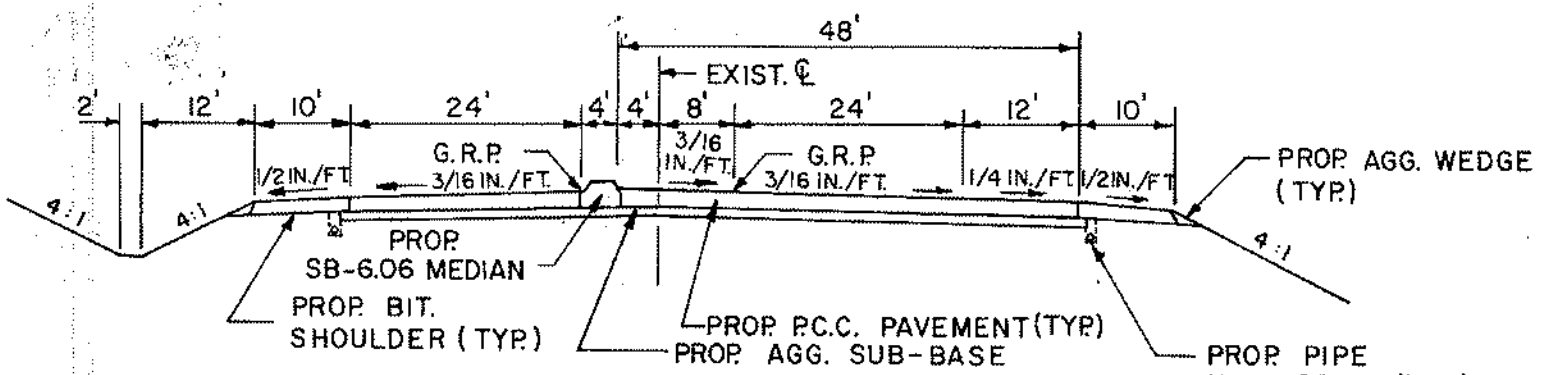



FUTURE DEVELOPMENTS
1 BICYCLE PATH OR URBAN TRAIL
2 INTERCEPTOR SEWERS
3 BOYS CLUB
4 BELVIDERE EAST BYPASS
5 APPLETON-STONE QUARRY ROAD
6 PARK ACCESS
F.A.P. 517
(U.S. Business Route 20)
Rockford - Belvidere
PROPOSED FUTURE DEVELOPMENTS
EXHIBIT 5A
BELVIDERE
ROCKFORD
CHERRY VALLEY
POP. 946
PERRYVILLE
POP. 946
BELVIDERE AIRPORT
PROP. BYPASS
BELVIDERE
POP 14061
NORTHWEST TOLLWAY
SCALE
2 MILES
5000
10000 FEET

F.A.P. 517
(U.S. Business Route 20)
Rockford - Belvidere

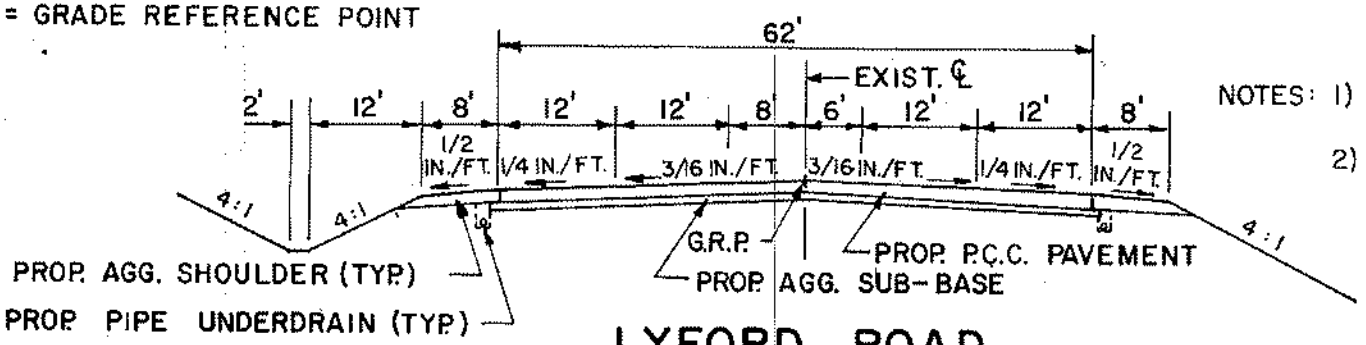
PROPOSED TYPICAL SECTIONS - ALT. 1, 2 & 3

EXHIBIT 6A



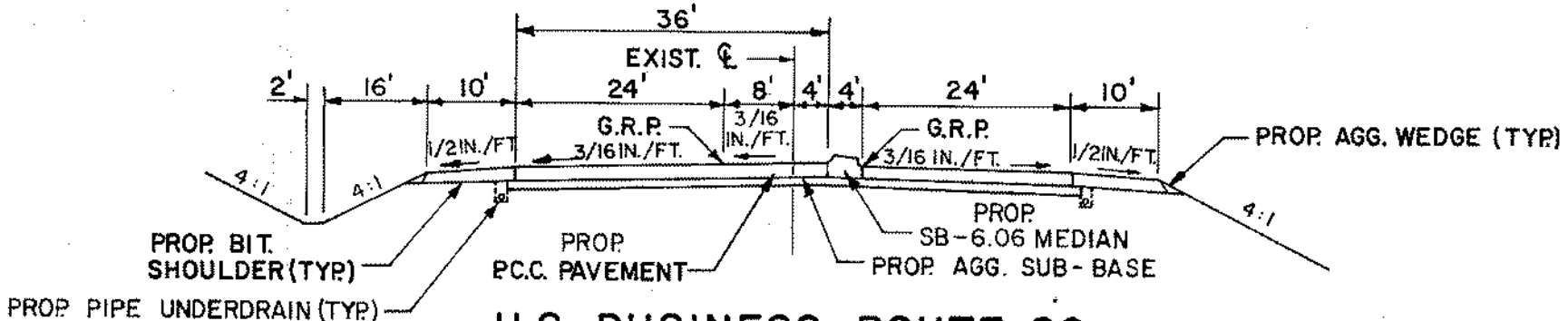
U.S. BUSINESS ROUTE 20
WEST LEG, LYFORD ROAD INTERSECTION

G.R.P. = GRADE REFERENCE POINT



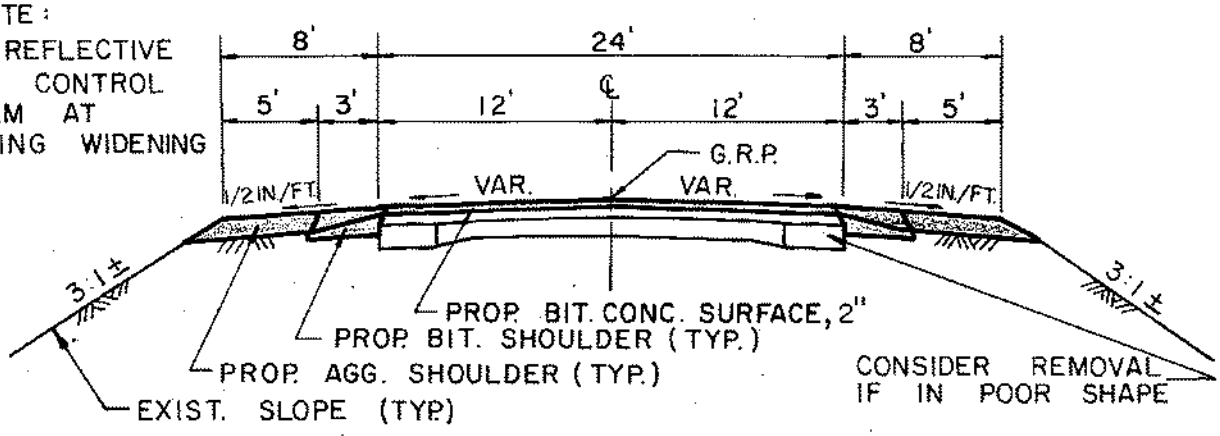
NOTES: 1) EXIST. PAVEMENT TO BE REMOVED
2) PAVEMENT THICKNESS TO BE DETERMINED DURING CONTRACT PLAN PREPARATION

LYFORD ROAD
NORTH & SOUTH LEGS, U.S. BUS. RTE. 20 INTERSECTION



U.S. BUSINESS ROUTE 20
EAST LEG, LYFORD ROAD INTERSECTION

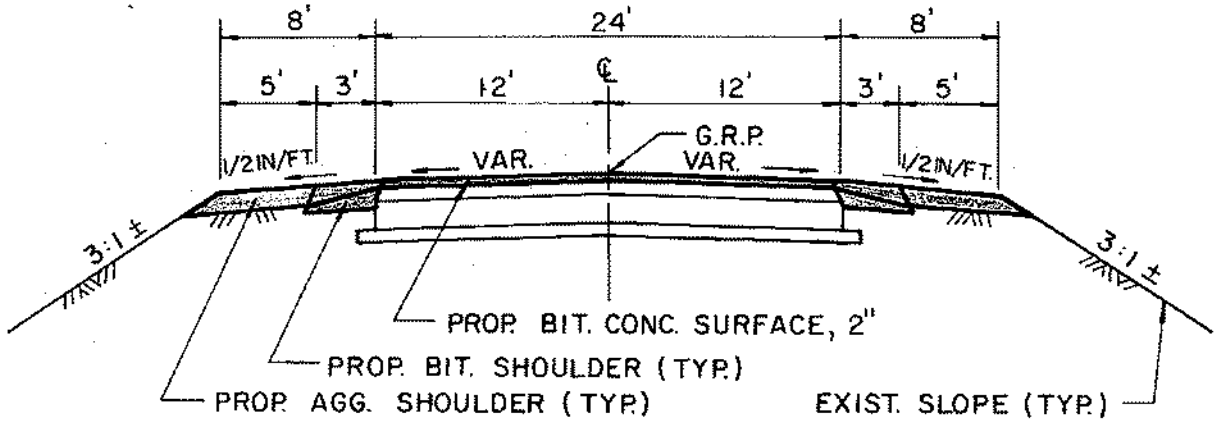
NOTE:
USE REFLECTIVE CRACK CONTROL SYSTEM AT EXISTING WIDENING JOINT.



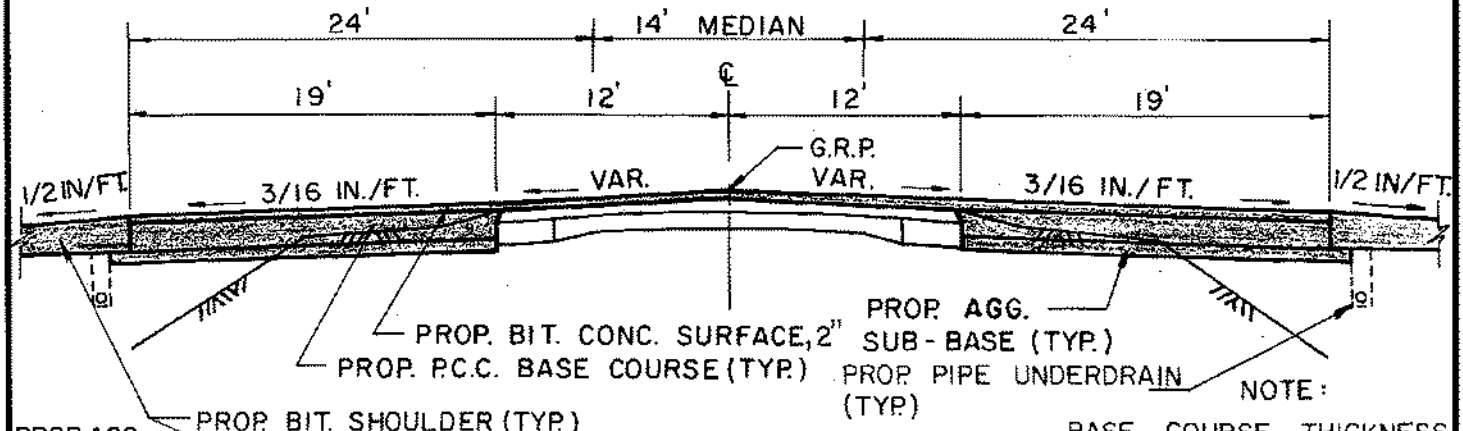
G.R.P. = GRADE REFERENCE POINT

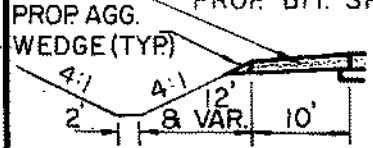
U.S. BUSINESS ROUTE 20 EAST OF SHAW ROAD (PHASE I)

NOTE:
BASE COURSE THICKNESS TO BE DETERMINED DURING CONTRACT PLAN PREPARATION



NOTE: USE REFLECTIVE CRACK CONTROL SYSTEM AT EXISTING WIDENING JOINT.

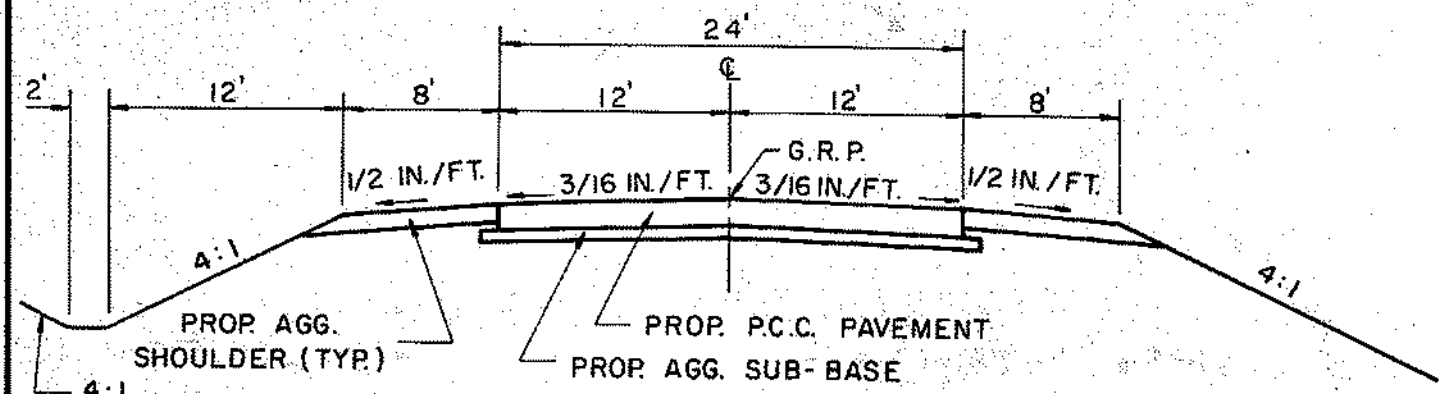




U.S. BUSINESS ROUTE 20 IN BELVIDERE (PHASE II)*

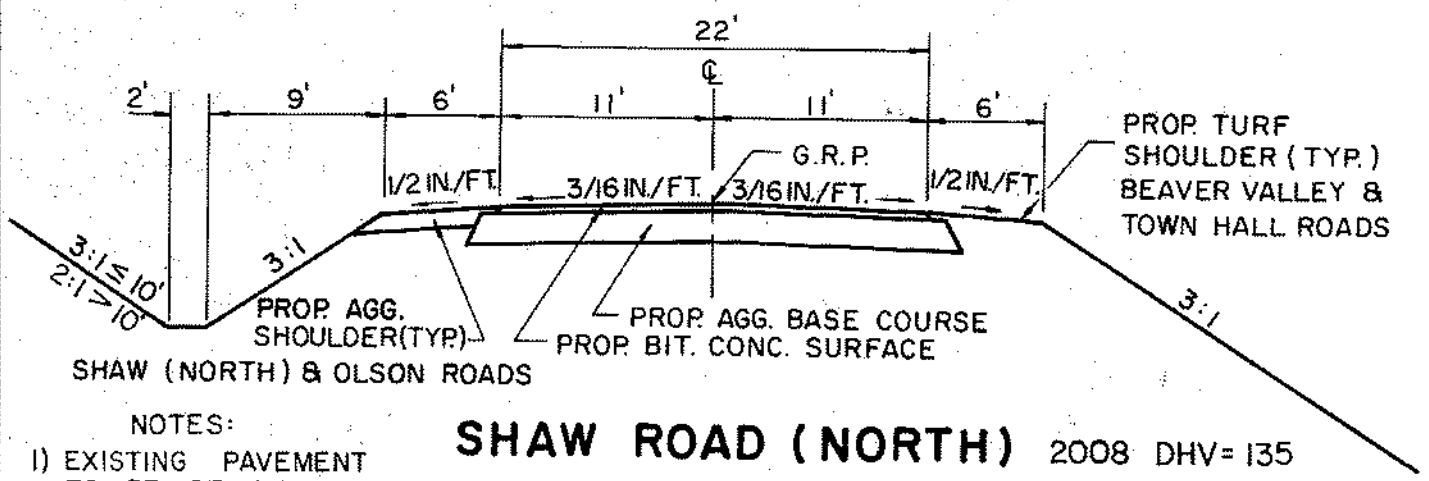
NOTE:
BASE COURSE THICKNESS TO BE DETERMINED DURING CONTRACT PLAN PREPARATION.
* FOR ALTS. 1, 2 & 3

F.A.P. 517 (U.S. Business Route 20) Rockford – Belvidere	PROPOSED TYPICAL SECTIONS	EXHIBIT 6B



LYFORD ROAD* 2008 DHV = 760 (N), 1,410 (S)

SHAW ROAD (SOUTH) 2008 DHV = 220



SHAW ROAD (NORTH) 2008 DHV = 135

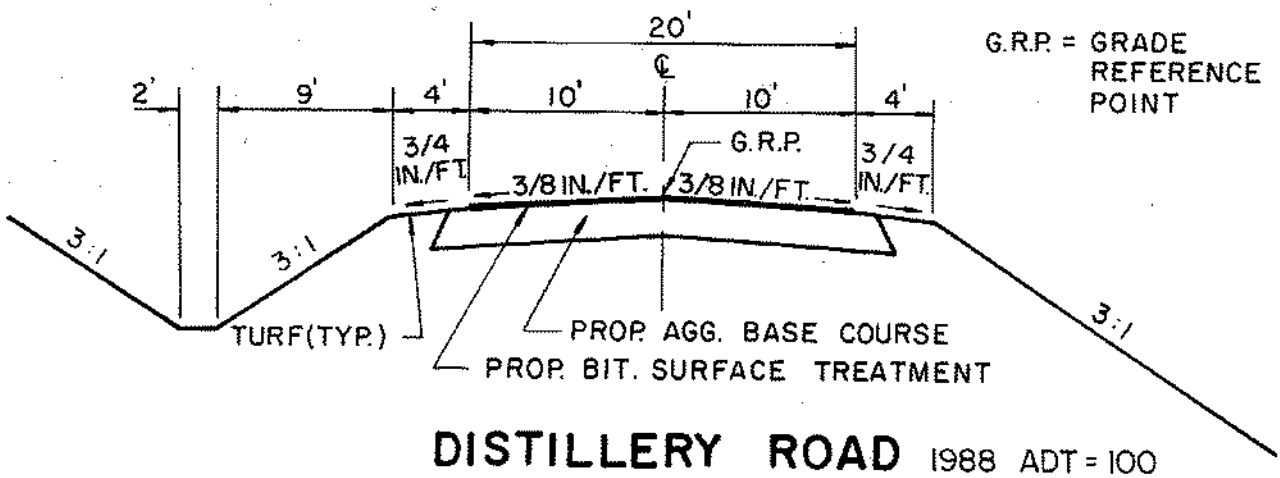
OLSON ROAD 2008 DHV = 170

BEAVER VALLEY ROAD 1988 ADT = 600

TOWNHALL ROAD 1988 ADT = 650

NOTES:

1) EXISTING PAVEMENT TO BE REMOVED.
2) PAVEMENT, SURFACE AND BASE THICKNESS TO BE DETERMINED DURING CONTRACT PLAN PREPARATION.



G.R.P. = GRADE REFERENCE POINT

DISTILLERY ROAD 1988 ADT = 100

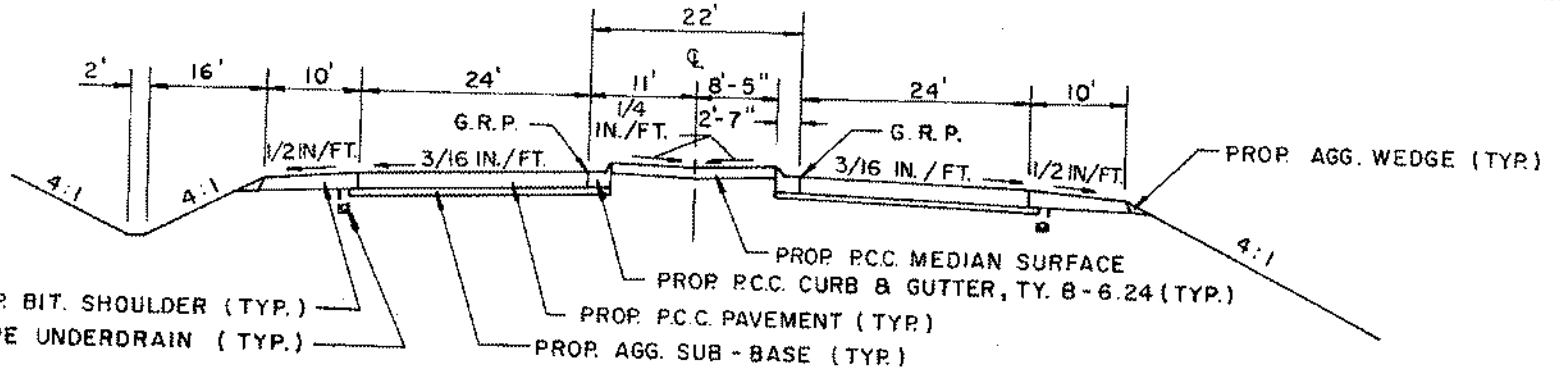
* FOR ALTERNATES 1, 2 & 3

F.A.P. 517 (U.S. Business Route 20) Rockford – Belvidere	**PROPOSED TYPICAL SECTIONS**	EXHIBIT 6C

F.A.P. 517
(U.S. Business Route 20)
Rockford – Belvidere

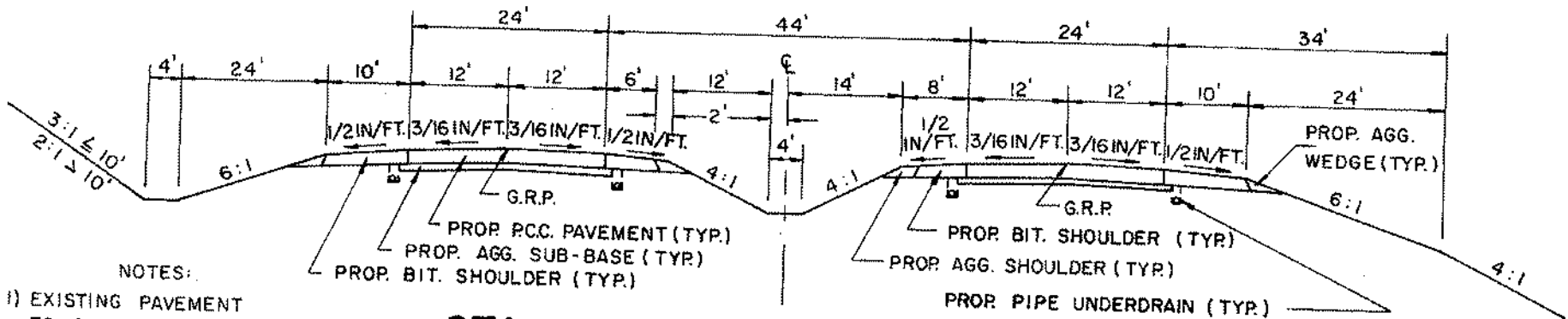
PROPOSED
TYPICAL SECTIONS

EXHIBIT
6D



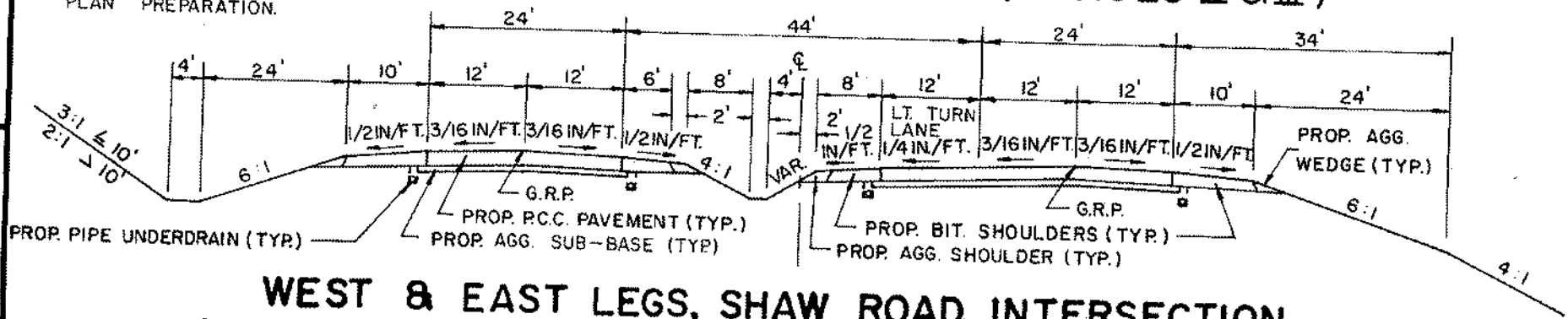
LYFORD ROAD TO STA. 278+90

G.R.P. = GRADE REFERENCE POINT



NOTES:
1) EXISTING PAVEMENT TO BE REMOVED.
2) PAVEMENT THICKNESS TO BE DETERMINED DURING CONTRACT PLAN PREPARATION.

STA. 286+00 TO SHAW ROAD
SHAW ROAD TO BELVIDERE (PHASES II & III)

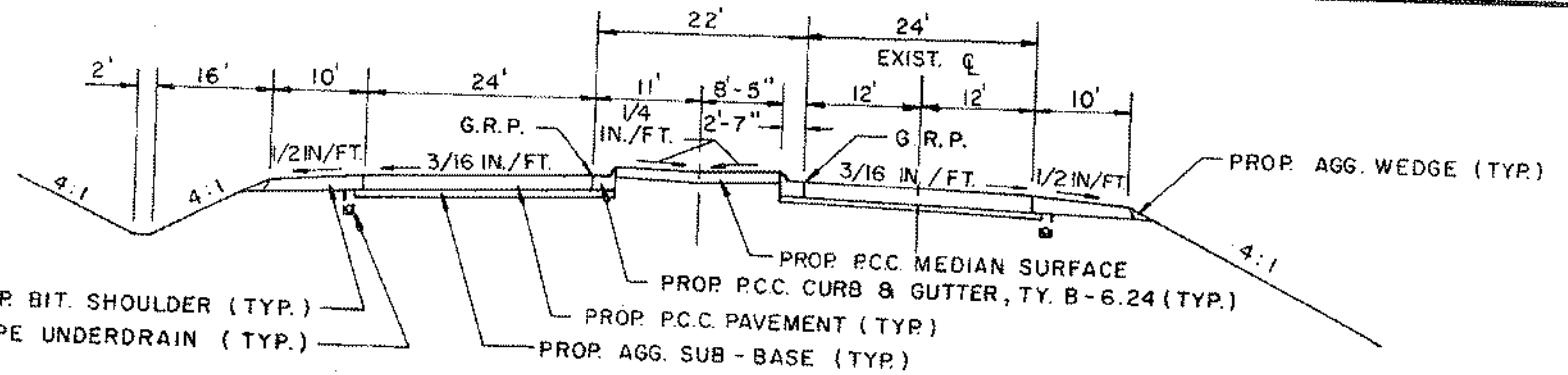


WEST & EAST LEGS, SHAW ROAD INTERSECTION
U.S. BUSINESS ROUTE 20 - ALTERNATE I

F.A.P. 517
(U.S. Business Route 20)
Rockford - Belvidere

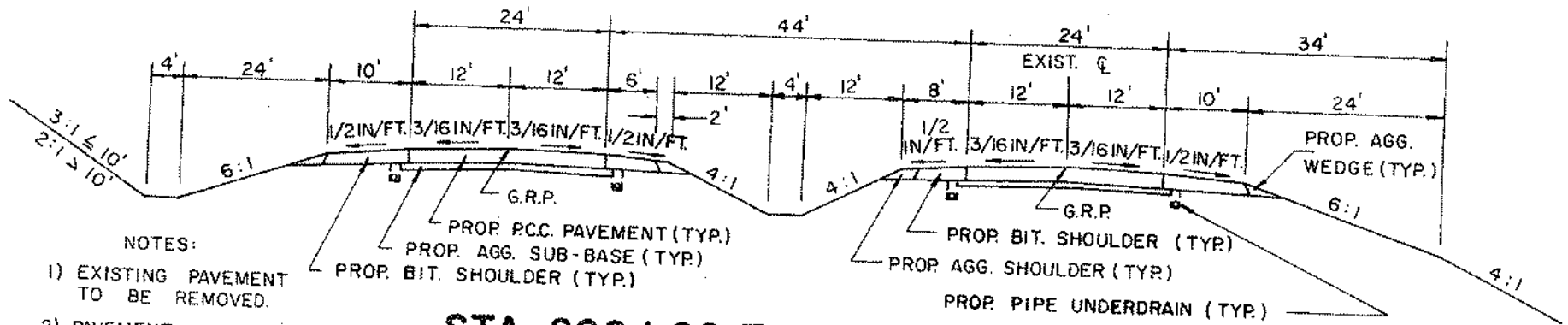
PROPOSED
TYPICAL SECTIONS

EXHIBIT
6E



LYFORD ROAD TO STA. 275+96

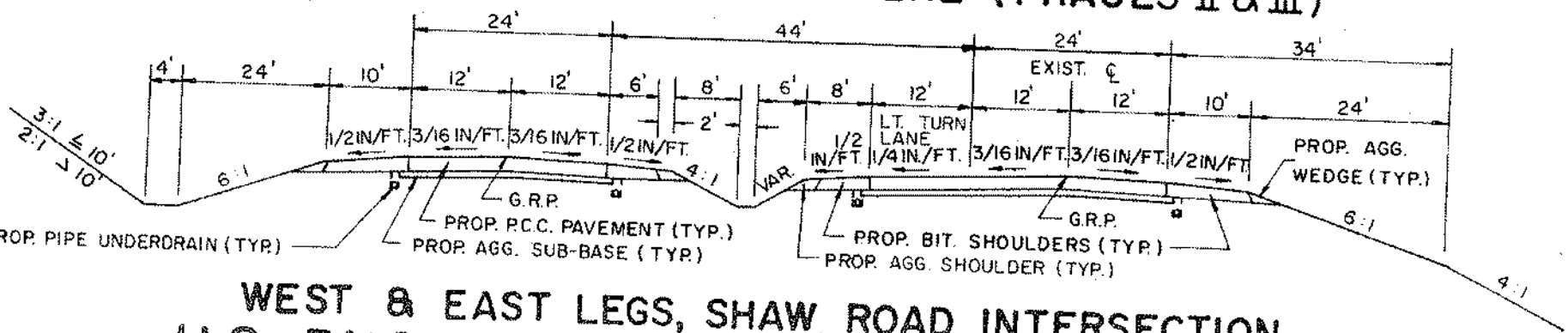
G.R.P. = GRADE REFERENCE POINT



NOTES:

1) EXISTING PAVEMENT TO BE REMOVED.
2) PAVEMENT THICKNESS TO BE DETERMINED DURING CONTRACT PLAN PREPARATION.

STA. 286+00 TO SHAW ROAD
SHAW ROAD TO BELVIDERE (PHASES II & III)

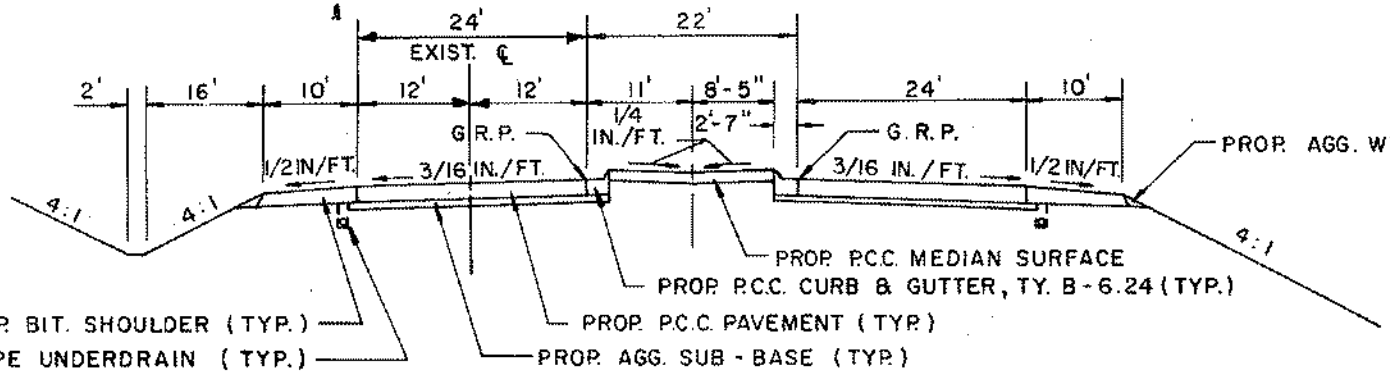


WEST & EAST LEGS, SHAW ROAD INTERSECTION
U.S. BUSINESS ROUTE 20 - ALTERNATE 2

F.A.P. 517
(U.S. Business Route 20)
Rockford – Belvidere

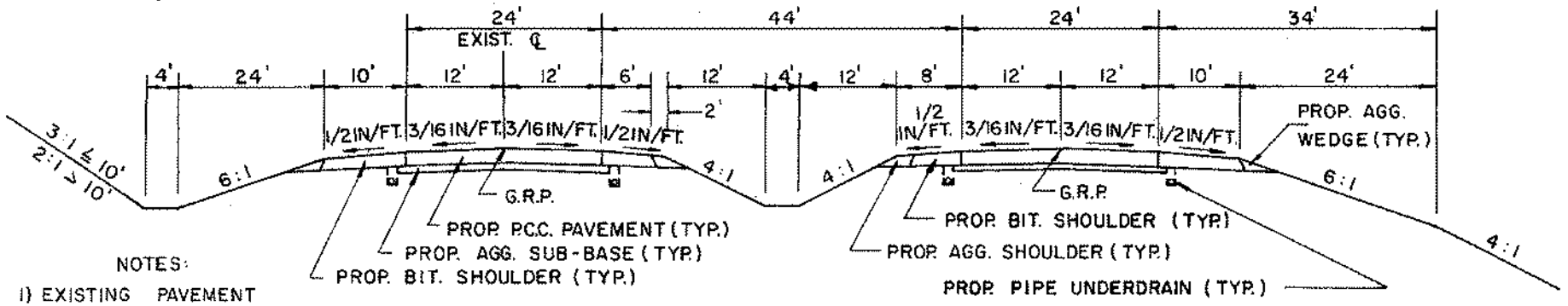
PROPOSED
TYPICAL SECTIONS

EXHIBIT
6F



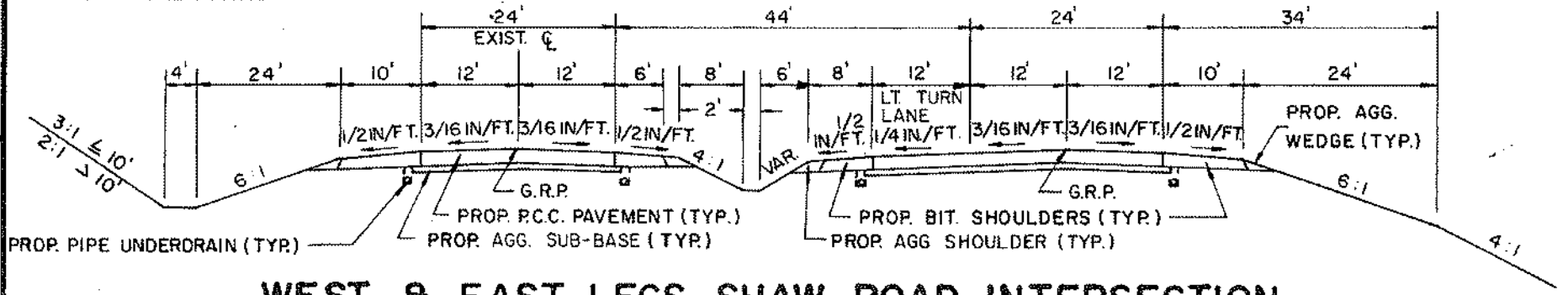
LYFORD ROAD TO STA. 275+96

G.R.P. = GRADE REFERENCE POINT



NOTES:
1) EXISTING PAVEMENT TO BE REMOVED.
2) PAVEMENT THICKNESS TO BE DETERMINED DURING CONTRACT PLAN PREPARATION.

STA. 286+00 TO SHAW ROAD
SHAW ROAD TO BELVIDERE (PHASES II & III)

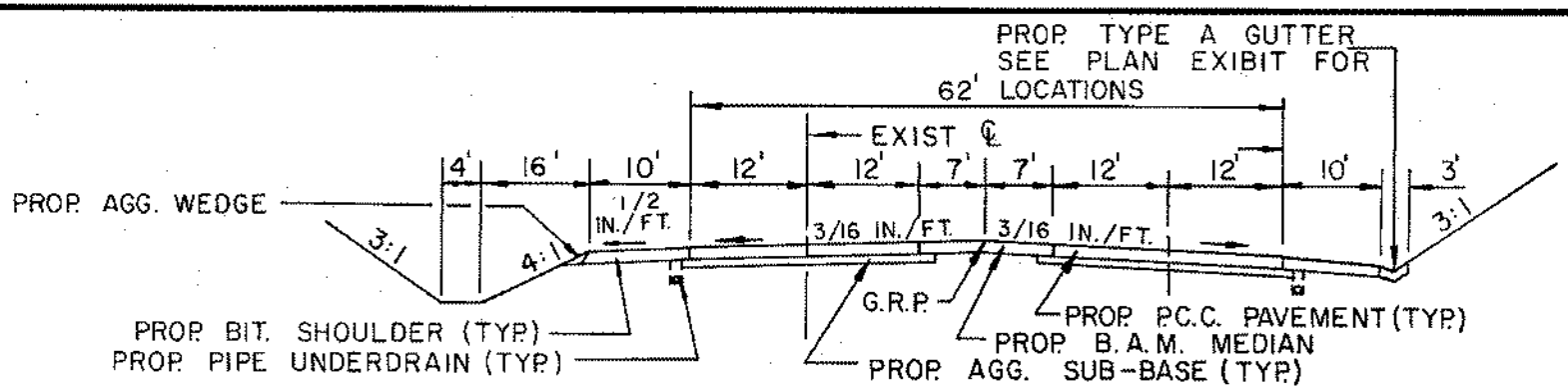


WEST & EAST LEGS, SHAW ROAD INTERSECTION
U.S. BUSINESS ROUTE 20 - ALTERNATE 3

F.A.P. 517
(U.S. Business Route 20)
Rockford - Belvidere

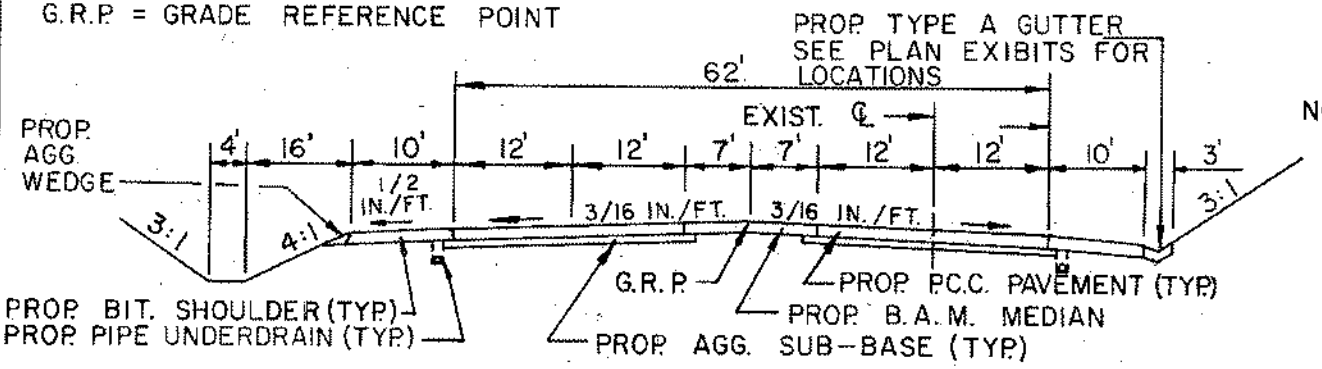
PROPOSED TYPICAL SECTIONS - ALT. 4

EXHIBIT 6H



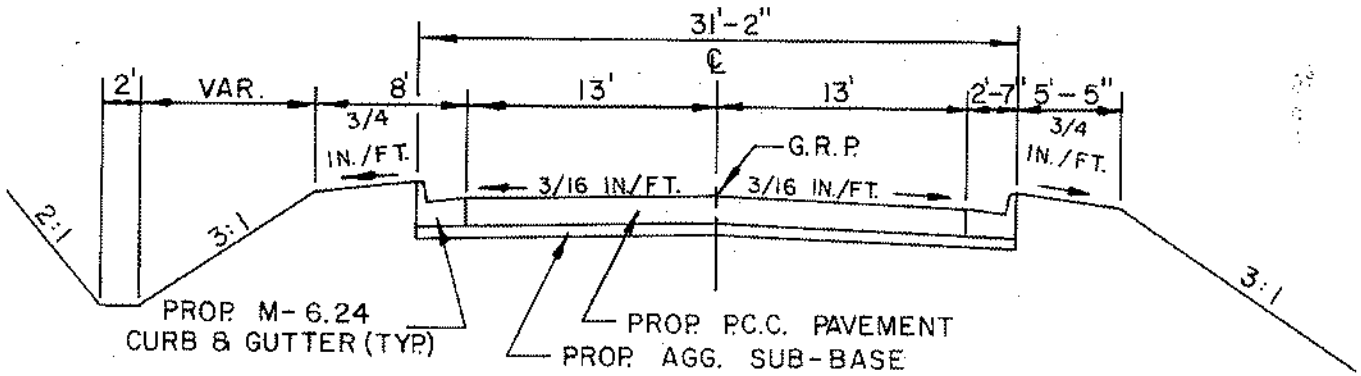
U.S. BUS. RTE. 20
LYFORD TO SHAW ROADS (PHASE I)

G.R.P = GRADE REFERENCE POINT

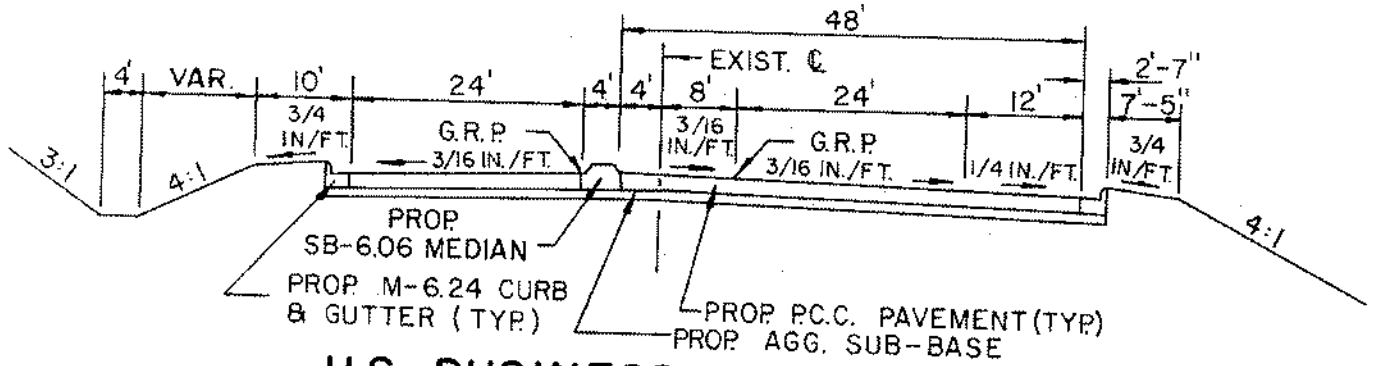


NOTES:
1) EXIST. PAVEMENT TO BE REMOVED.
2) PAVEMENT THICKNESS TO BE DETERMINED DURING CONTRACT PLAN PREPARATION.
3) PHASE II CONSTRUCTION IN BELVIDERE WILL USE M-6.24 CURB & GUTTER INSTEAD OF BIT. SHOULDER.

U.S. BUS. RTE. 20
EAST OF SHAW ROAD (PHASES II & III)

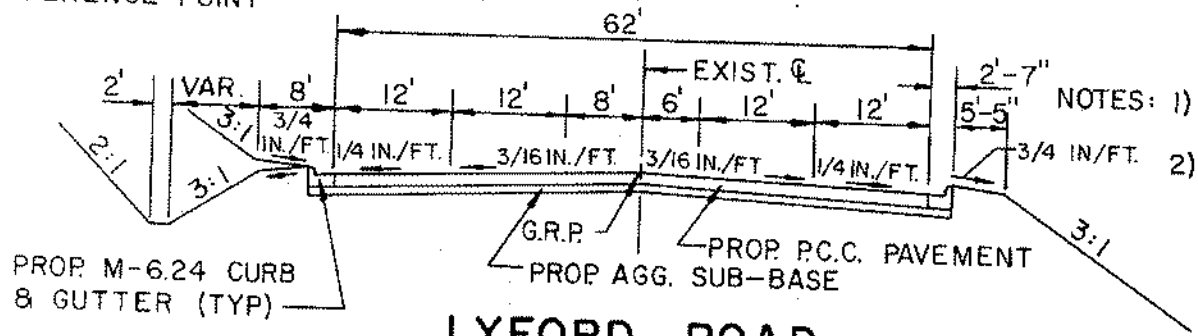


LYFORD ROAD



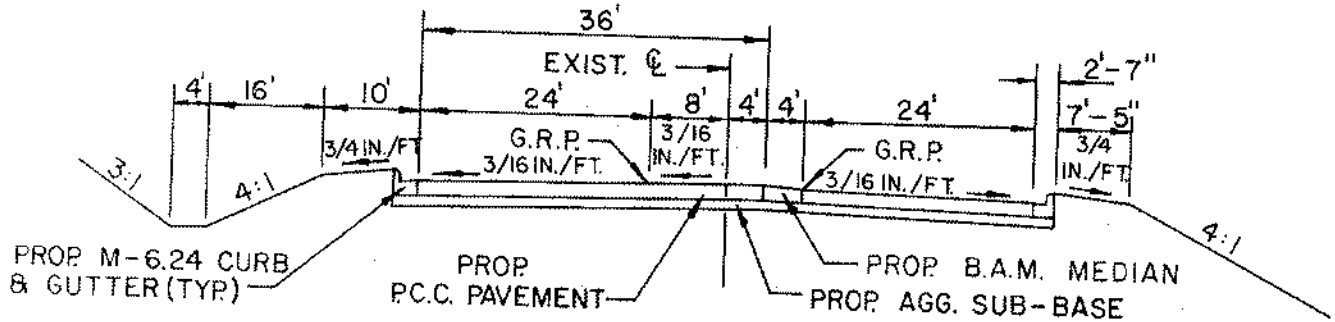
U.S. BUSINESS ROUTE 20
WEST LEG, LYFORD ROAD INTERSECTION

G.R.P. = GRADE REFERENCE POINT



NOTES: 1) EXIST. PAVEMENT TO BE REMOVED
2) PAVEMENT THICKNESS TO BE DETERMINED DURING CONTRACT PLAN PREPARATION

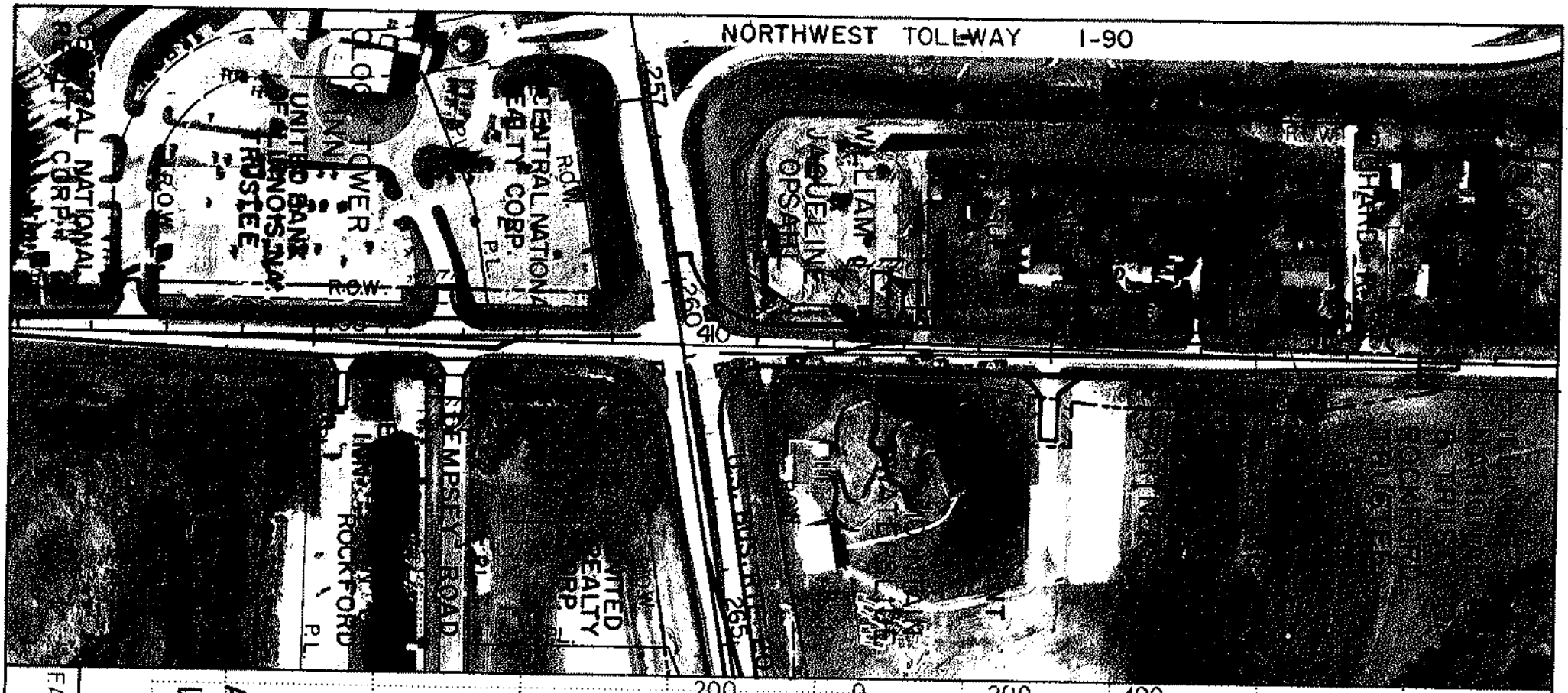
LYFORD ROAD
NORTH & SOUTH LEGS, U.S. BUS. RTE. 20 INTERSECTION

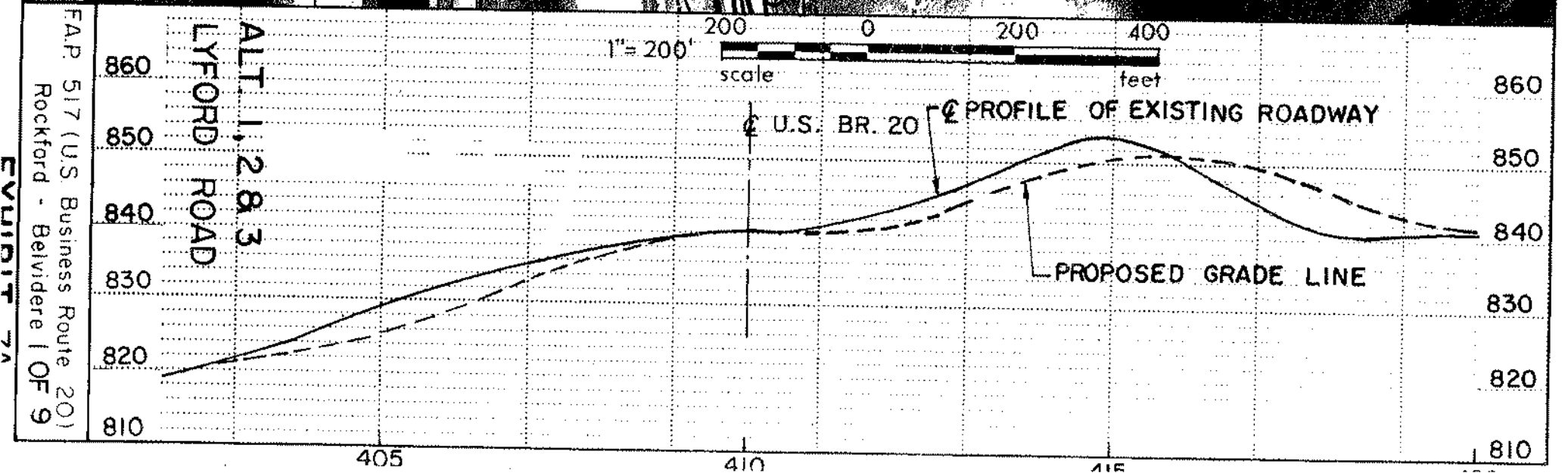


U.S. BUSINESS ROUTE 20
EAST LEG, LYFORD ROAD INTERSECTION

PROPOSED TYPICAL SECTIONS - ALT. 4

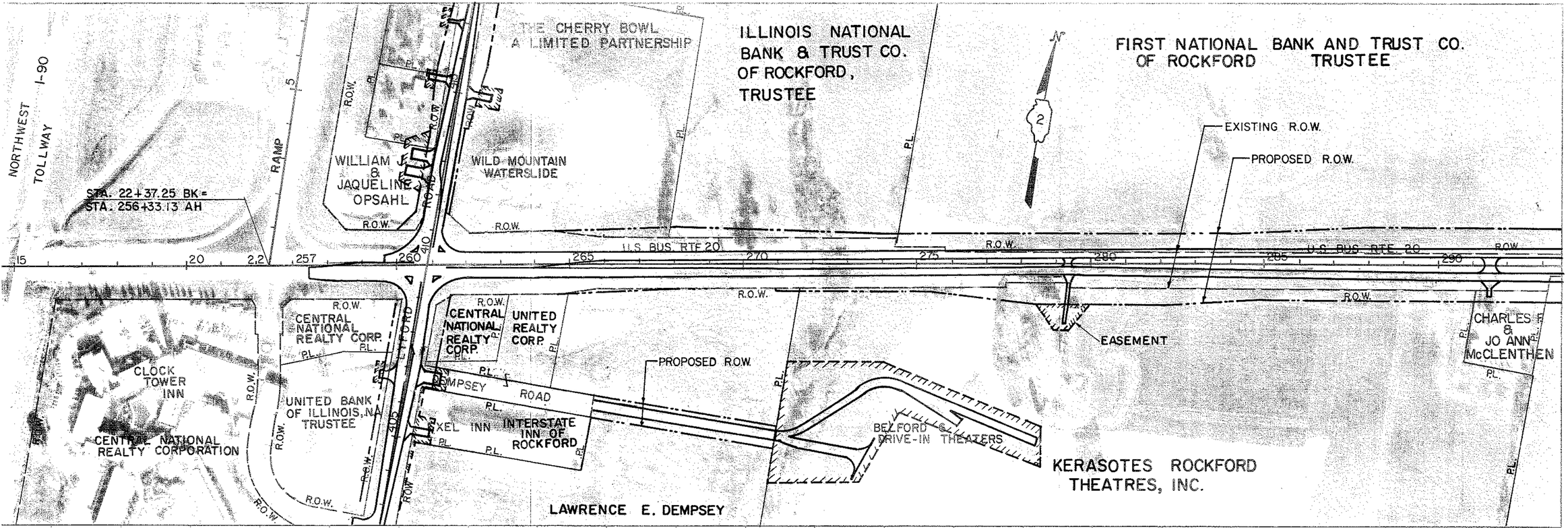
SHEET 6

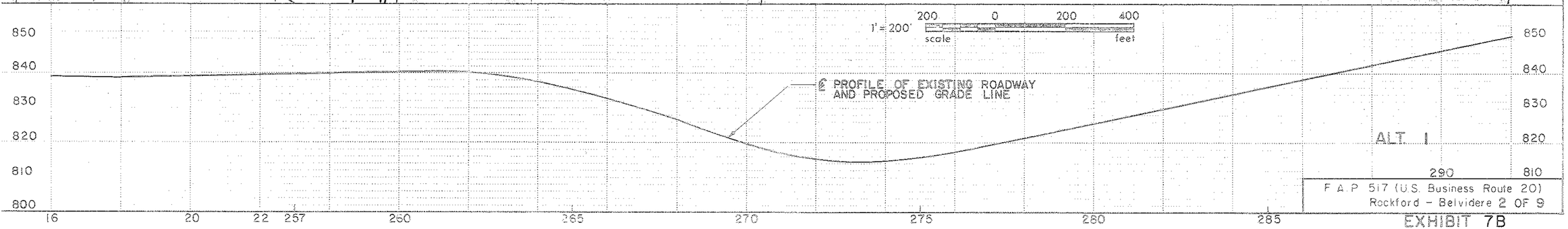




FAP 517 (U.S. Business Route 20)
Rockford - Belvidere I OF 9

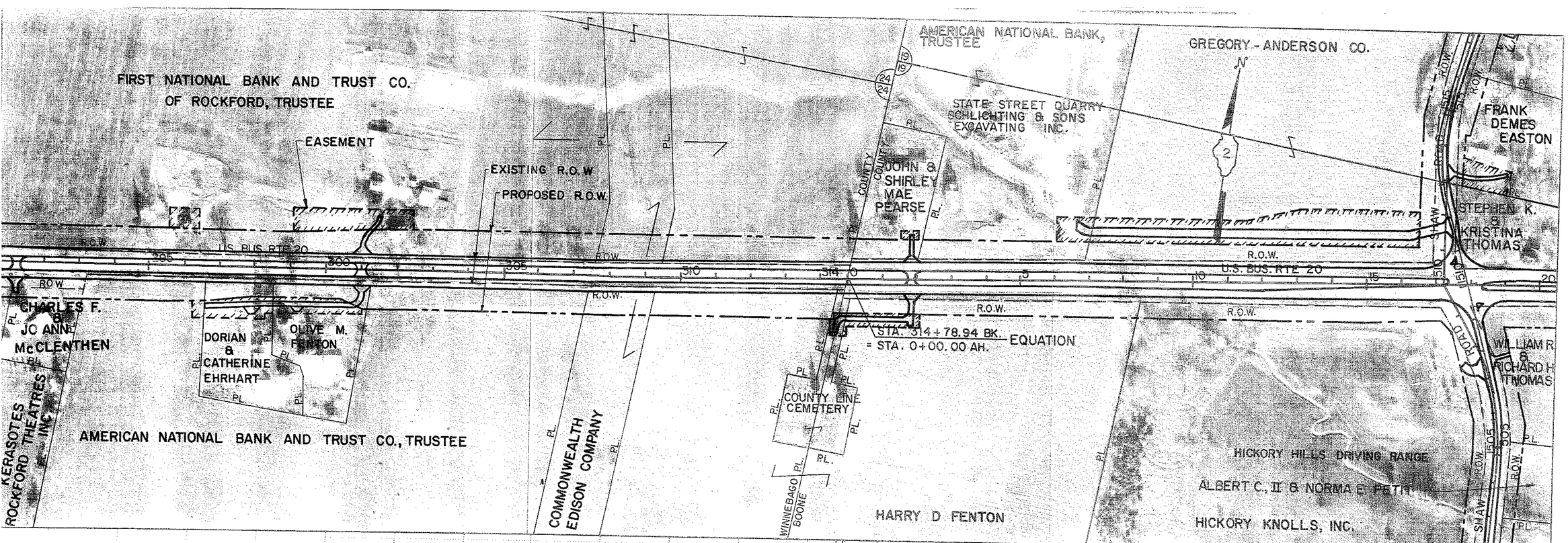
EXHIBIT 7A

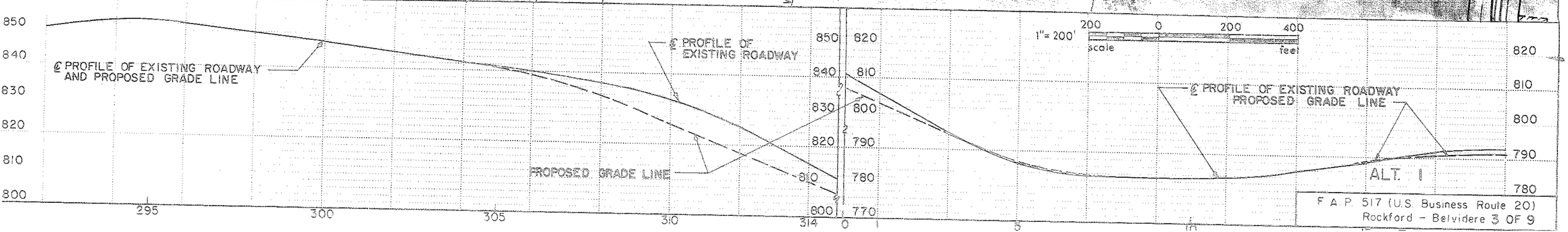




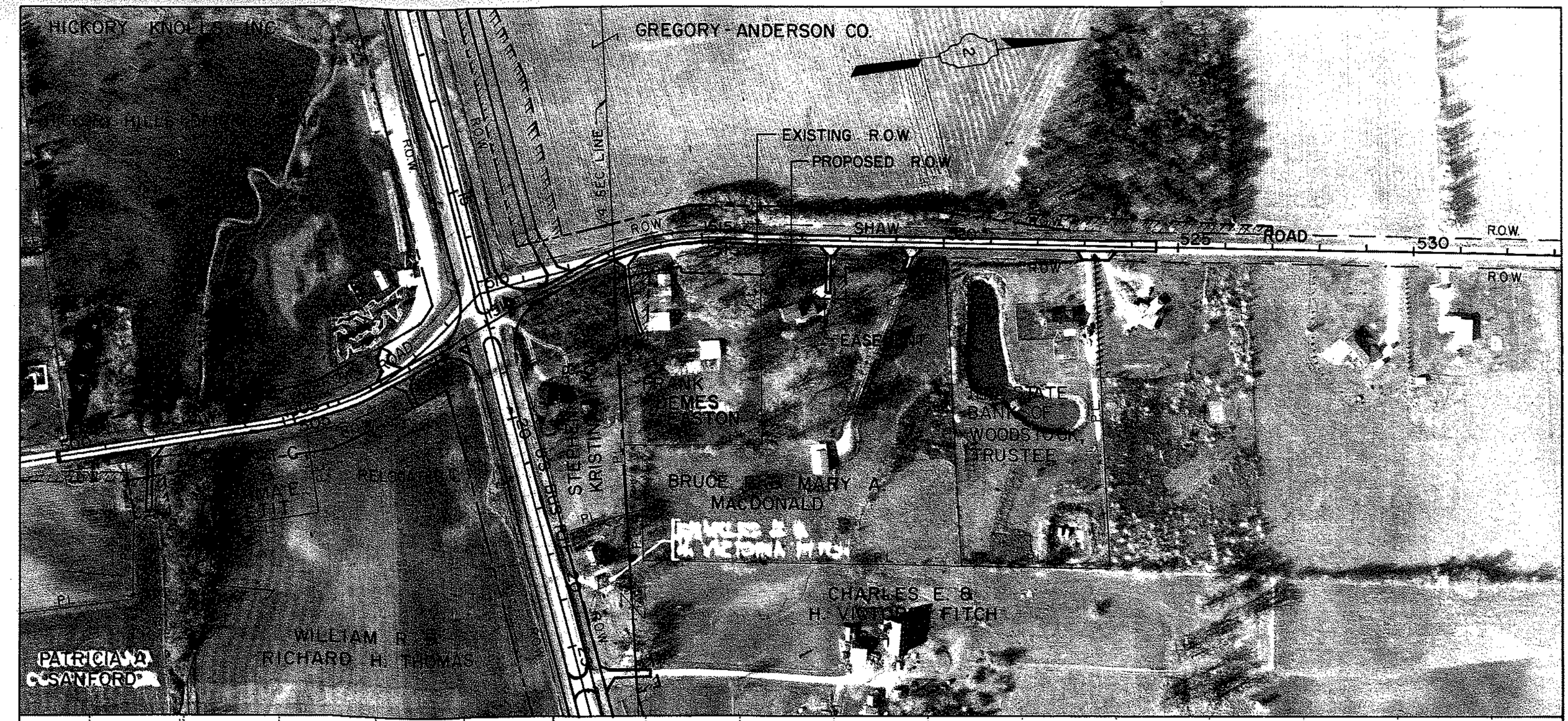
F.A.P. 517 (U.S. Business Route 20)
Rockford – Belvidere 2 OF 9

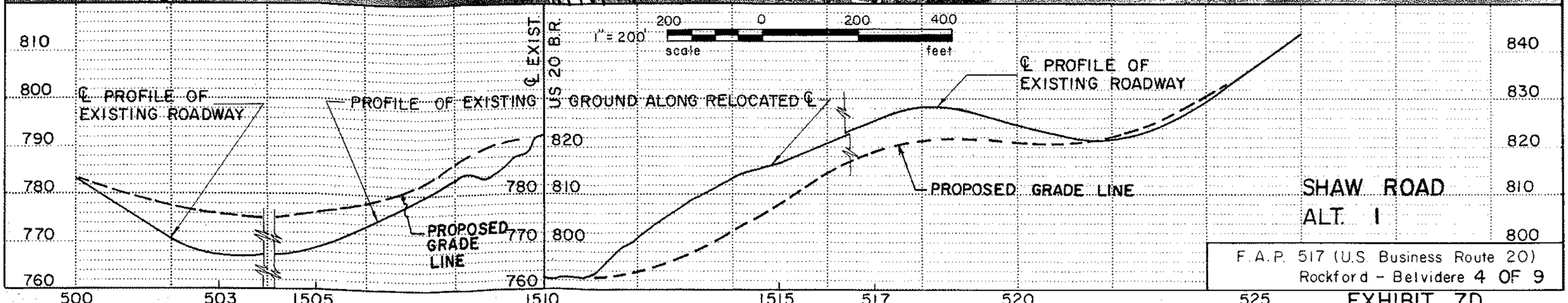
EXHIBIT 7B





F A P 517 (U.S. Business Route 20)
Rockford – Belvidere 3 OF 9

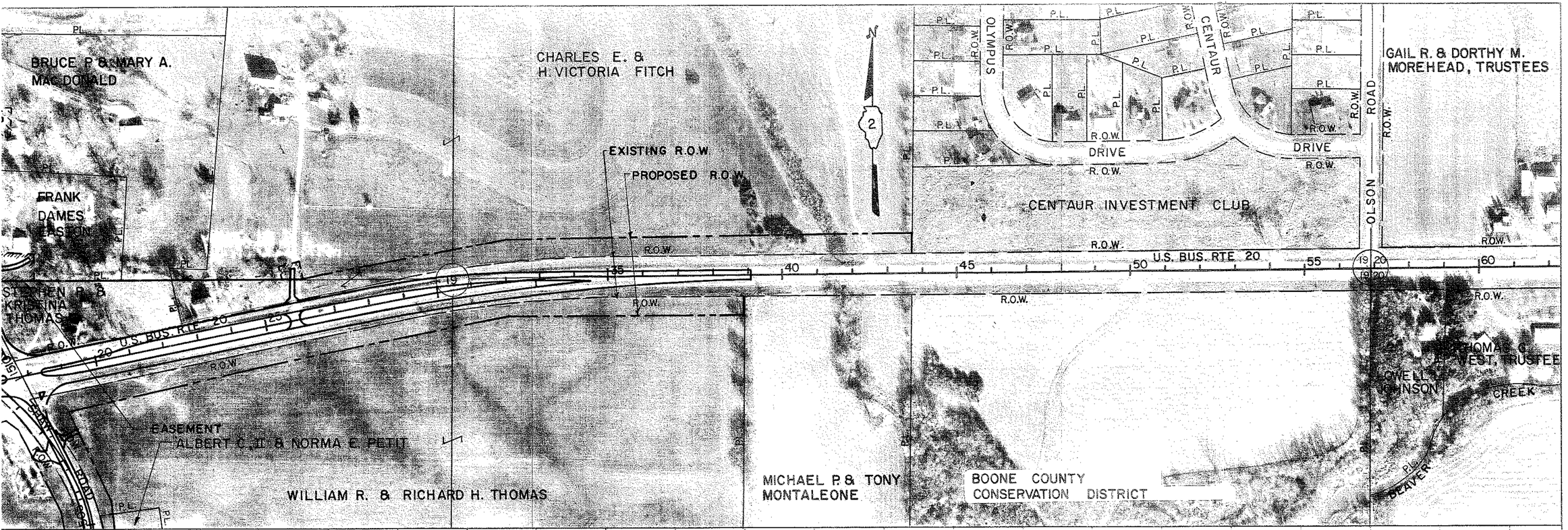




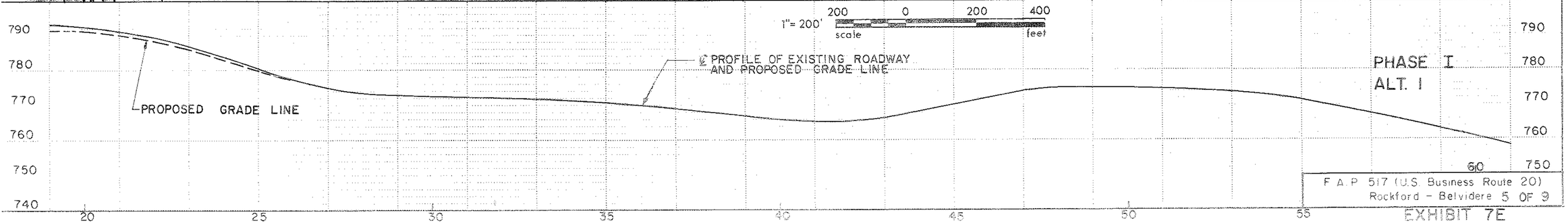
SHAW ROAD
ALT. 1

F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere 4 OF 9

EXHIBIT 7D



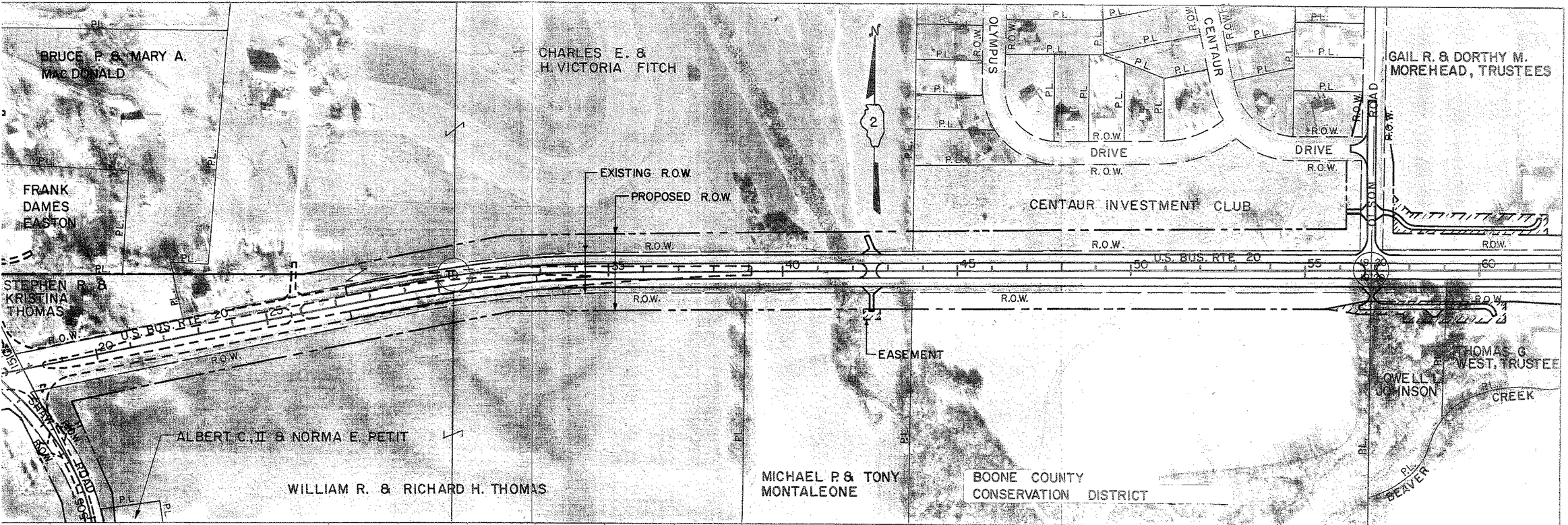
1"= 200' scale 200 0 200 400 feet



PHASE I
ALT. 1

F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere 5 OF 9

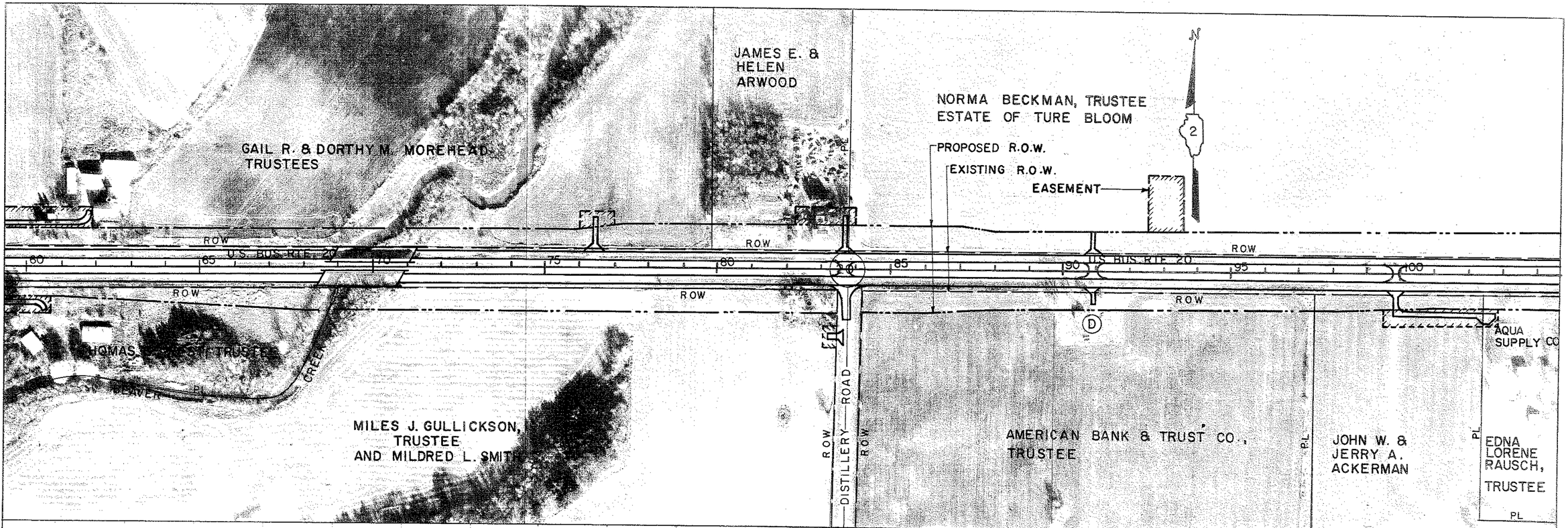
EXHIBIT 7E

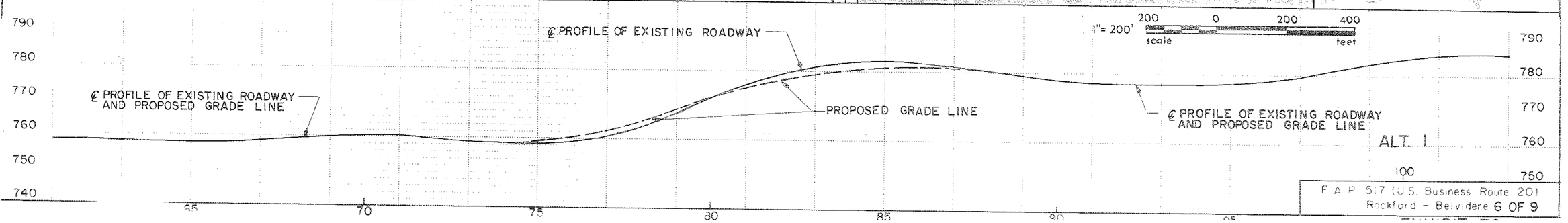


PHASE III
ALT. 1

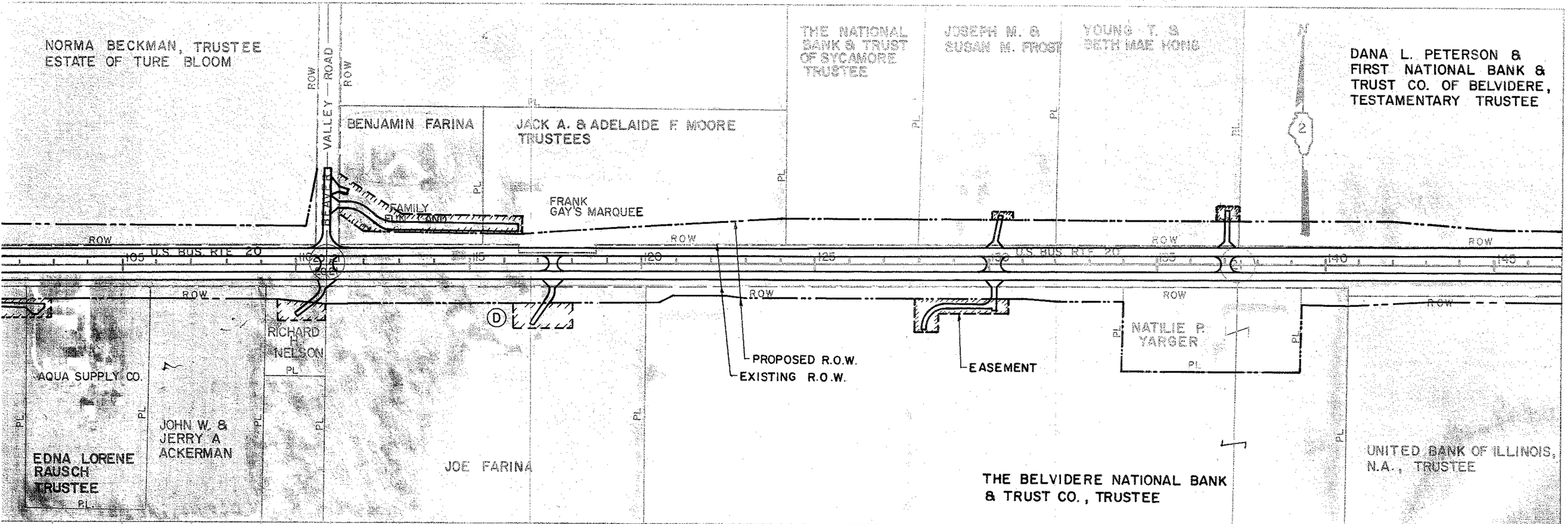
F A P 517 (U.S. Business Route 20)
Rockford - Belvidere 5A OF 9

EXHIBIT 7F





F A P 517 (U.S. Business Route 20)
Rockford – Belvidere 6 OF 9


NORMA BECKMAN, TRUSTEE
ESTATE OF TURE BLOOM
BEAVER VALLEY ROAD
ROW
PL
BENJAMIN FARINA
JACK A. & ADELAIDE F. MOORE
TRUSTEES
THE NATIONAL BANK & TRUST OF SYCAMORE TRUSTEE
JOSEPH M. & SUSAN M. FROST
YOUNG T. & BETH MAE HONG
DANA L. PETERSON & FIRST NATIONAL BANK & TRUST CO. OF BELVIDERE, TESTAMENTARY TRUSTEE
FAMILY
FRANK GAY'S MARQUEE
105 U.S. BUS. RTE. 20
115
120
125
130
135
140
145
RICHARD H. NELSON
AQUA SUPPLY CO.
JOHN W. & JERRY A. ACKERMAN
EDNA LORENE RAUSCH TRUSTEE
JOE FARINA
PROPOSED R.O.W.
EXISTING R.O.W.
EASEMENT
NATILIE P. YARGER
THE BELVIDERE NATIONAL BANK & TRUST CO., TRUSTEE
UNITED BANK OF ILLINOIS, N.A., TRUSTEE
790
780
770
760
750
740
℄ PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
1"= 200'
200 0 200 400
scale
feet
ALT. I

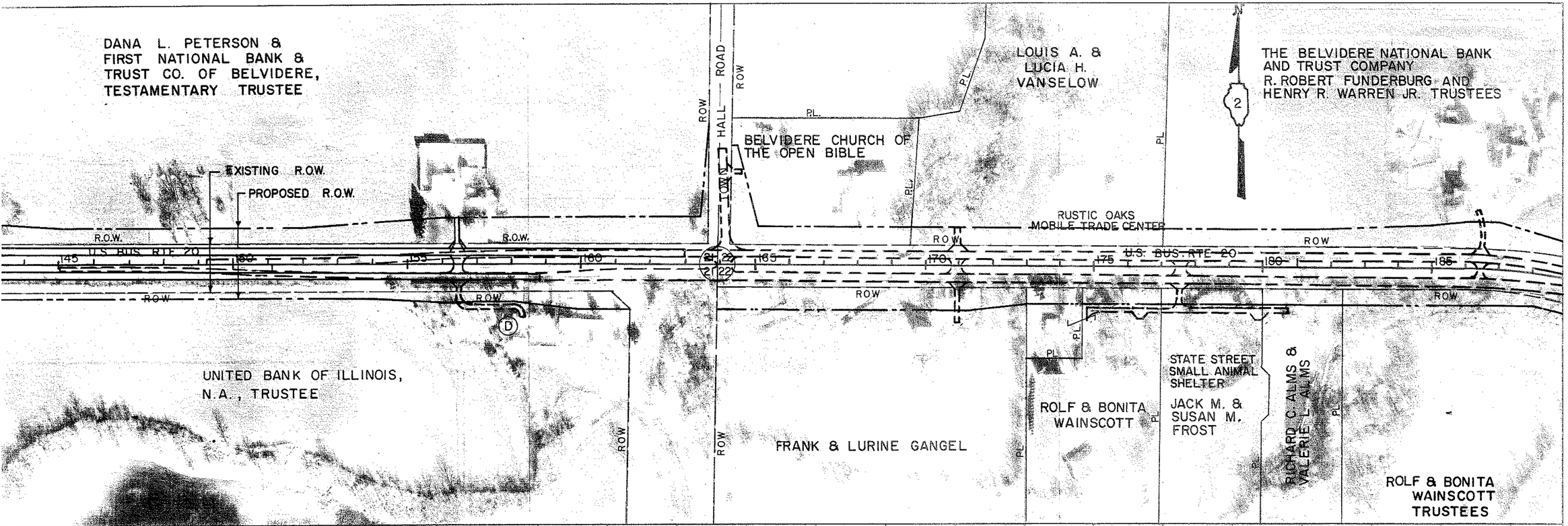
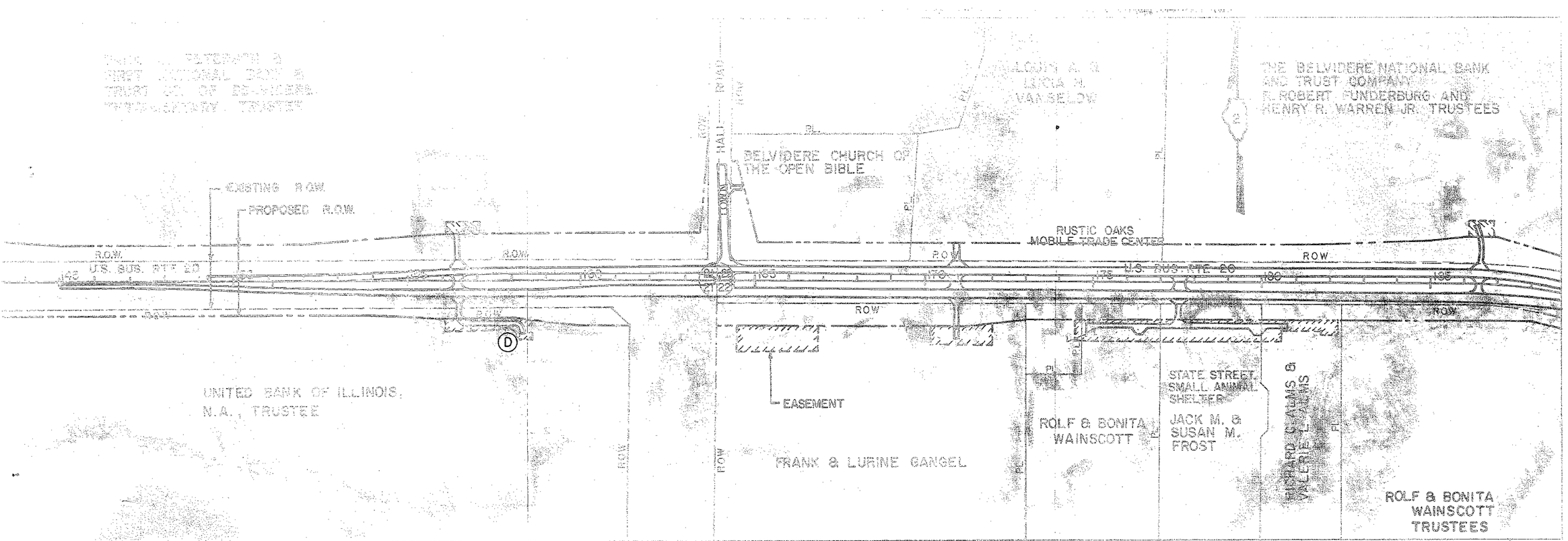
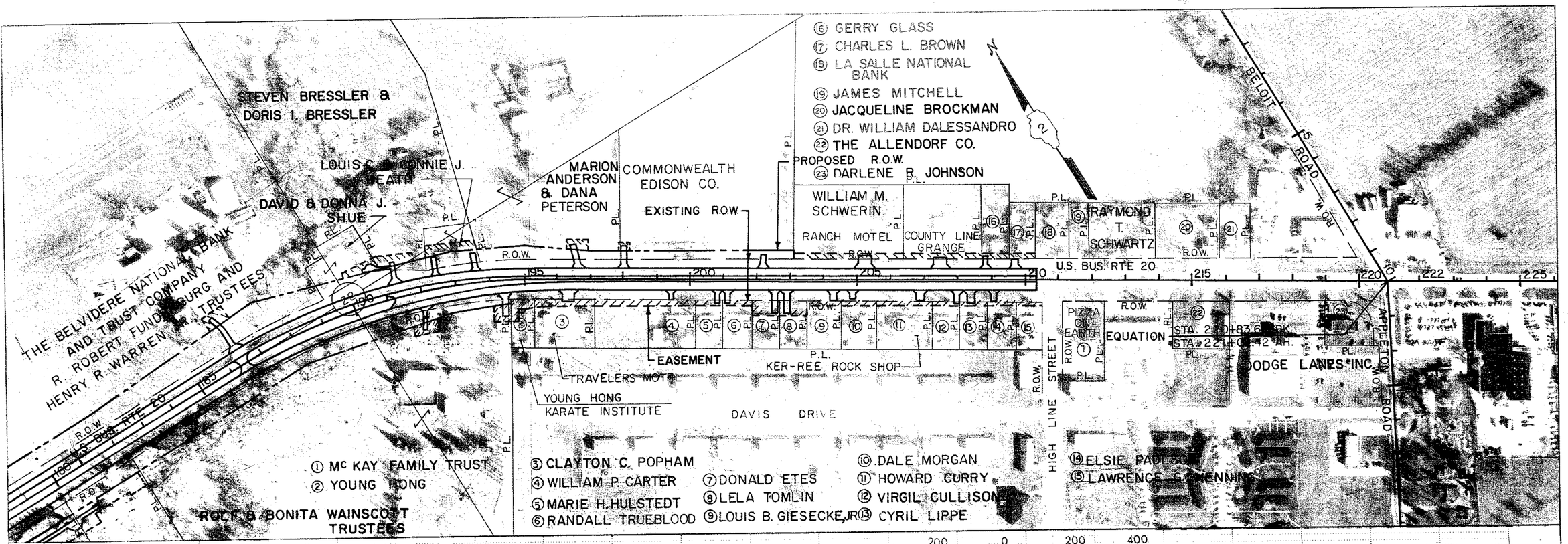

DANA L. PETERSON &
FIRST NATIONAL BANK &
TRUST CO. OF BELVIDERE,
TESTAMENTARY TRUSTEE
EXISTING R.O.W.
PROPOSED R.O.W.
R.O.W.
U.S. BUS. RTE 20
HALL ROAD
BELVIDERE CHURCH OF
THE OPEN BIBLE
LOUIS A. &
LUCIA H.
VANSELOW
THE BELVIDERE NATIONAL BANK
AND TRUST COMPANY
R. ROBERT FUNDERBURG AND
HENRY R. WARREN JR. TRUSTEES
RUSTIC OAKS
MOBILE TRADE CENTER
UNITED BANK OF ILLINOIS,
N.A., TRUSTEE
FRANK & LURINE GANGEL
ROLF & BONITA
WAINSCOTT
STATE STREET
SMALL ANIMAL
SHELTER
JACK M. &
SUSAN M.
FROST
RICHARD C. ALMS &
VALERIE L. ALMS
ROLF & BONITA
WAINSCOTT
TRUSTEES
145
150
155
160
165
170
175
180
185
790
780
770
760
750
740
1"= 200'
200 0 200 400
scale feet
℄ PROFILE OF EXISTING ROADWAY
AND PROPOSED GRADE LINE
PHASE III
ALT. I
F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere 8 OF 9

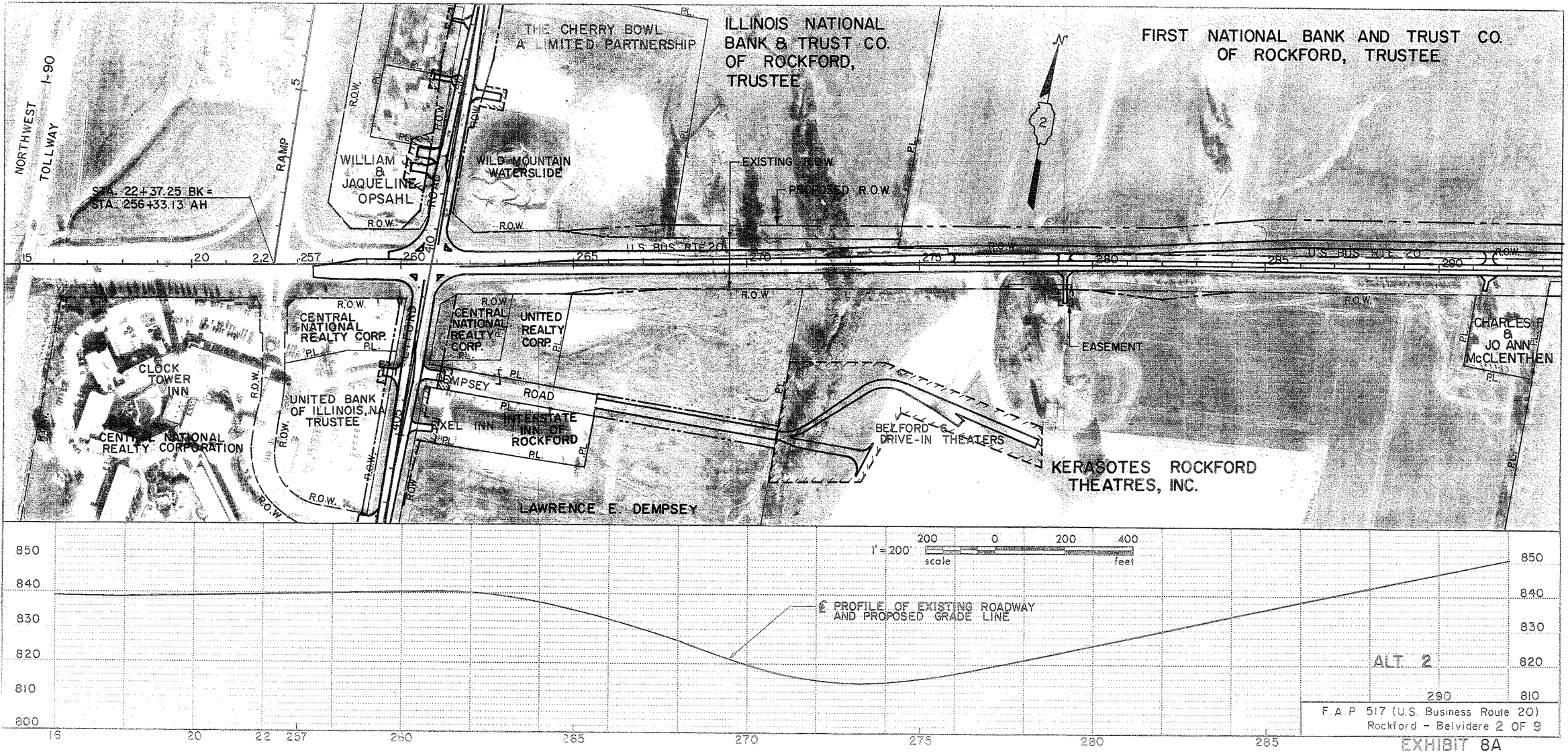
EXHIBIT 7I


THE BELVIDERE NATIONAL BANK AND TRUST COMPANY, R. ROBERT FUNDERBURG AND HENRY R. WARREN JR., TRUSTEES
BELVIDERE CHURCH OF THE OPEN BIBLE
EXISTING R.O.W.
PROPOSED R.O.W.
RUSTIC OAKS MOBILE TRADE CENTER
U.S. RTE. 20
U.S. BUS. RTE. 20
ROW
EASEMENT
UNITED BANK OF ILLINOIS, N.A., TRUSTEE
FRANK & LURINE GANGEL
ROLF & BONITA WAINSCOTT
STATE STREET SMALL ANIMAL SHELTER
JACK M. & SUSAN M. FROST
ROLF & BONITA WAINSCOTT TRUSTEES
1" = 200'
200 0 200 400
scale feet
PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
PHASE II
ALT. 1
790
780
770
760
750
U.S. Business Route 20
8A
7J



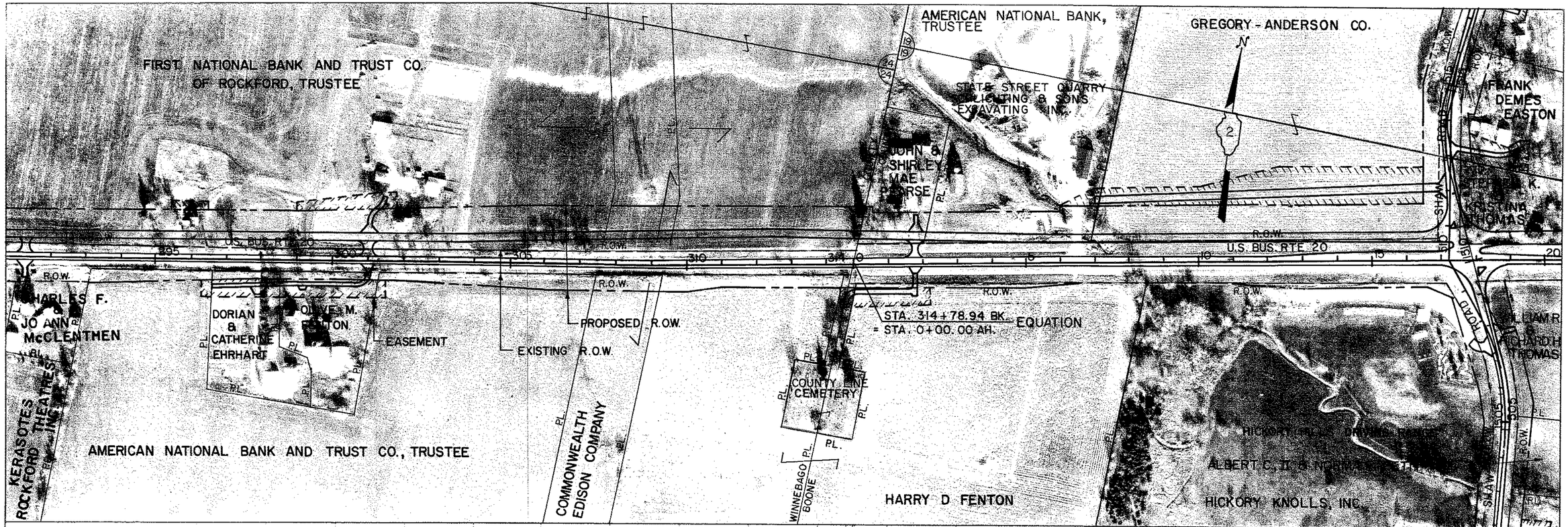
F.A.P. 517 (U.S. Business Route 20)
Rockford – Belvidere 9 OF 9

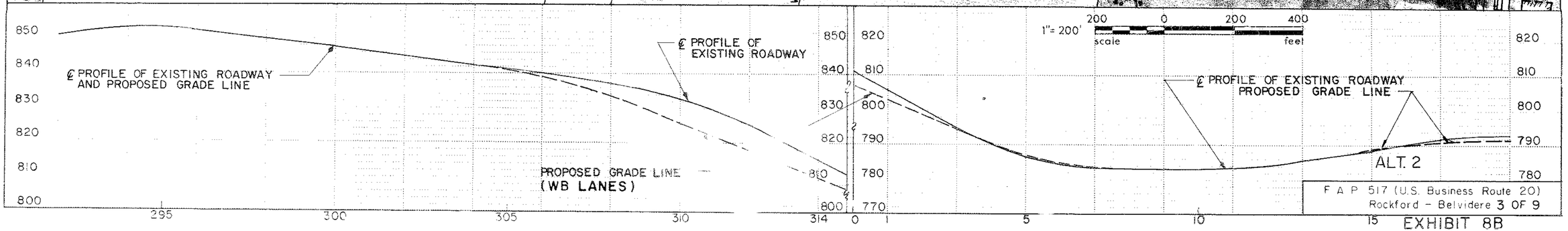
EXHIBIT 7K



F.A.P. 517 (U.S. Business Route 20)
Rockford – Belvidere 2 OF 9

EXHIBIT 8A





F A P 517 (U.S. Business Route 20)
Rockford – Belvidere 3 OF 9

EXHIBIT 8B

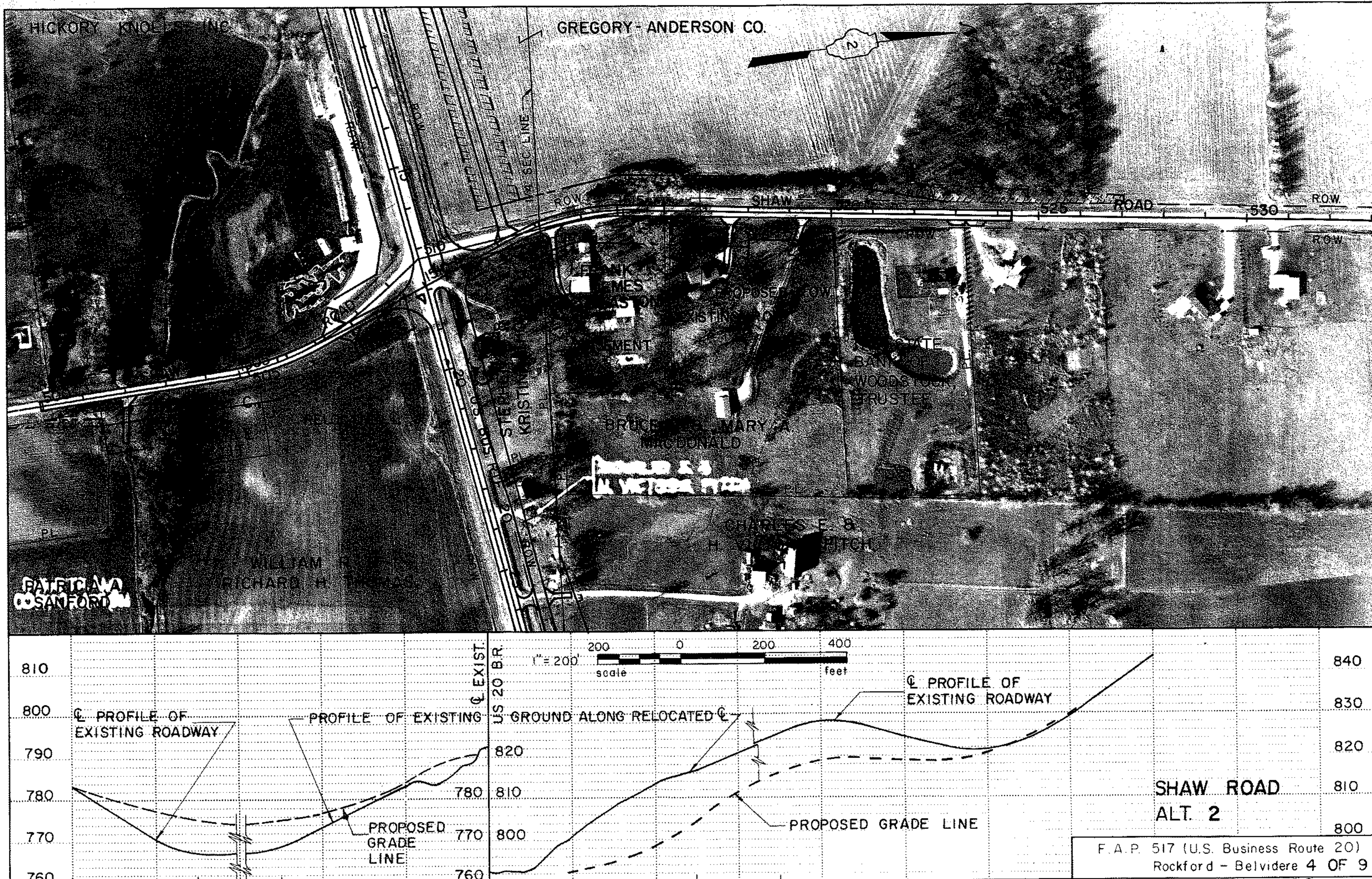
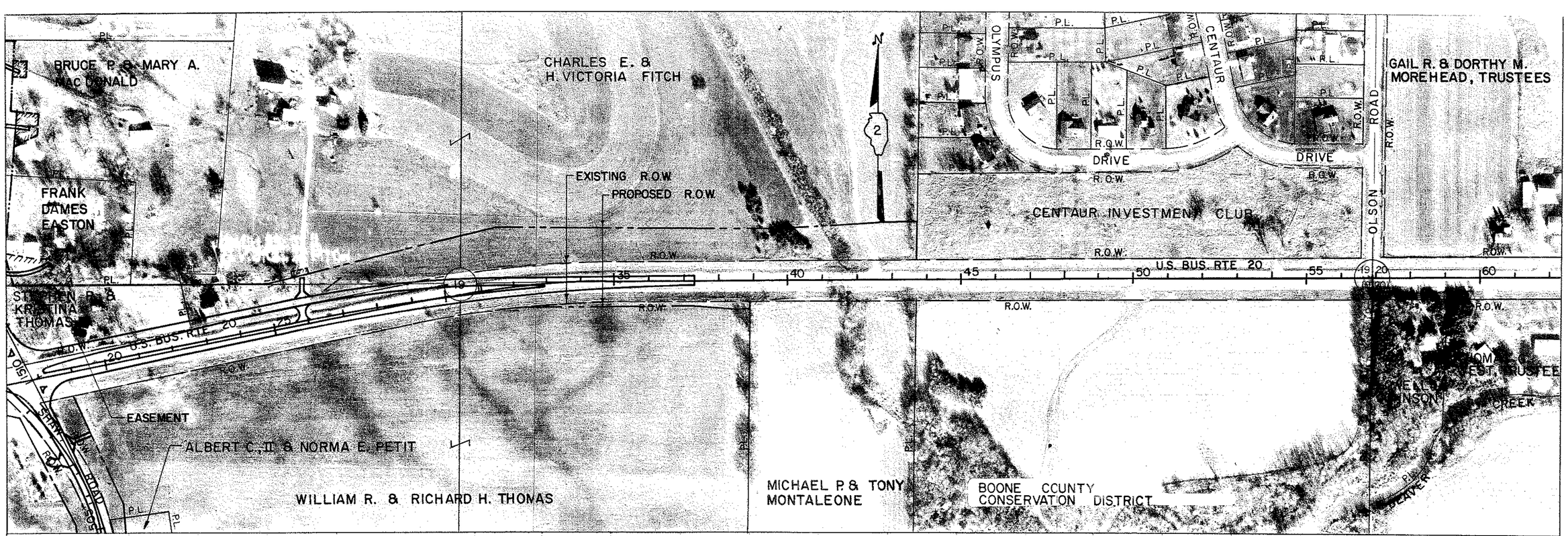

HICKORY KNOLLS INC.
GREGORY - ANDERSON CO.
SHAW ROAD
SEC. LINE
R.O.W.
ROW
BRUCE ... MARY A. MACDONALD
CHARLES E. & H. ... FITCH
WILLIAM R. ... RICHARD H. THOMAS
PATRICIA A. SANFORD
PROPOSED ROW
US 20 B.R.
EXIST.
1" = 200'
scale
feet
200 0 200 400
℄ PROFILE OF EXISTING ROADWAY
PROFILE OF EXISTING GROUND ALONG RELOCATED ℄
PROPOSED GRADE LINE
810
800
790
780
770
760
840
830
820
810
800
500
503
505
510
515
517
520
525
530
SHAW ROAD
ALT. 2
F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere 4 OF 9

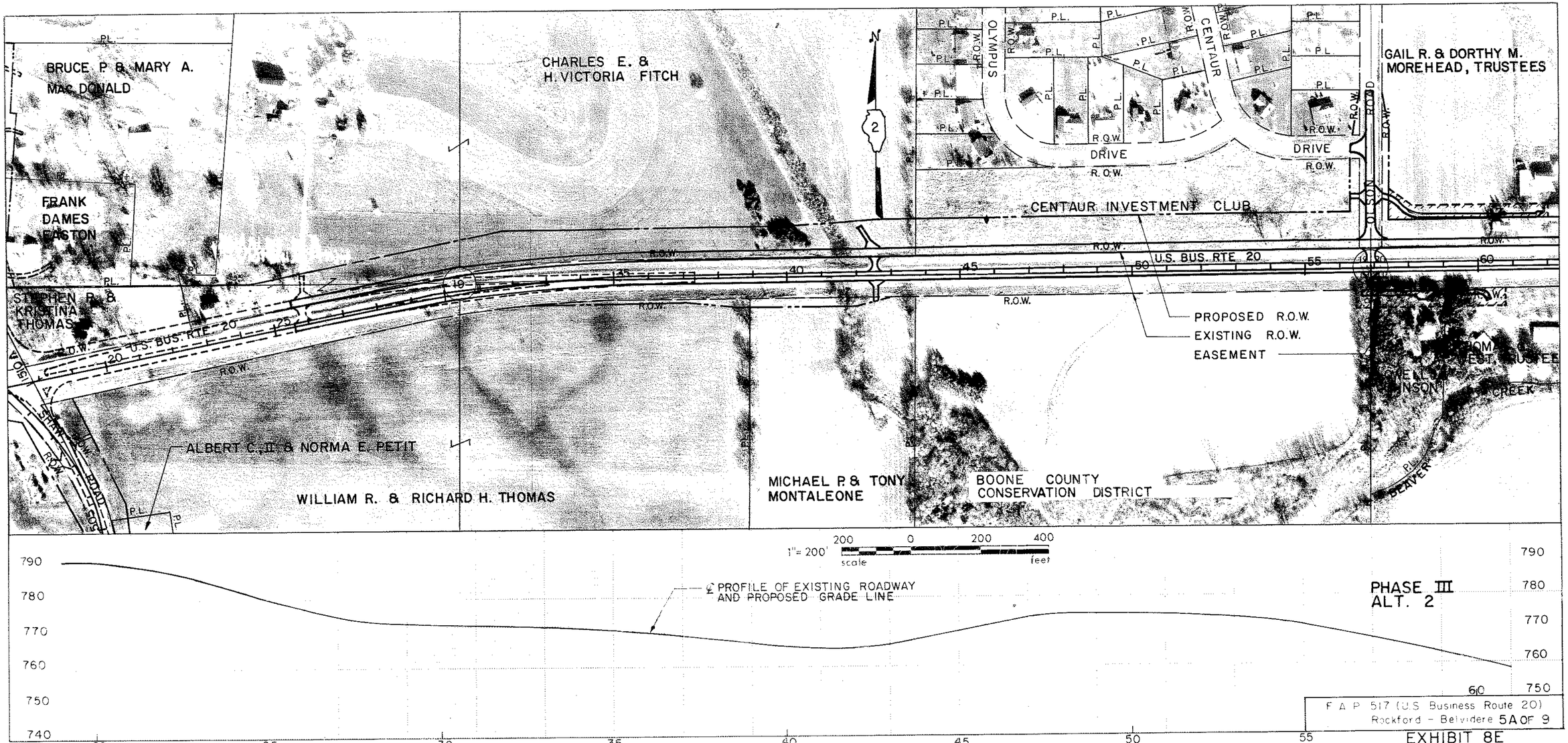
EXHIBIT 8C

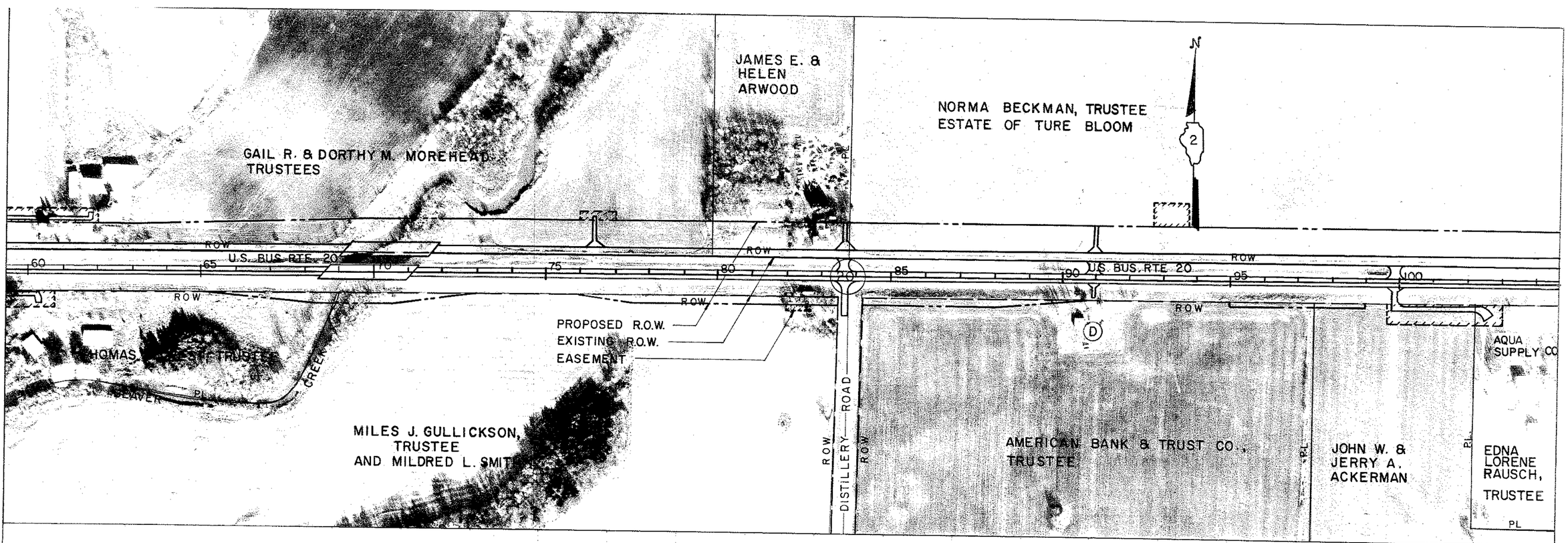


PHASE I
ALT. 2

F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere 5 OF 9

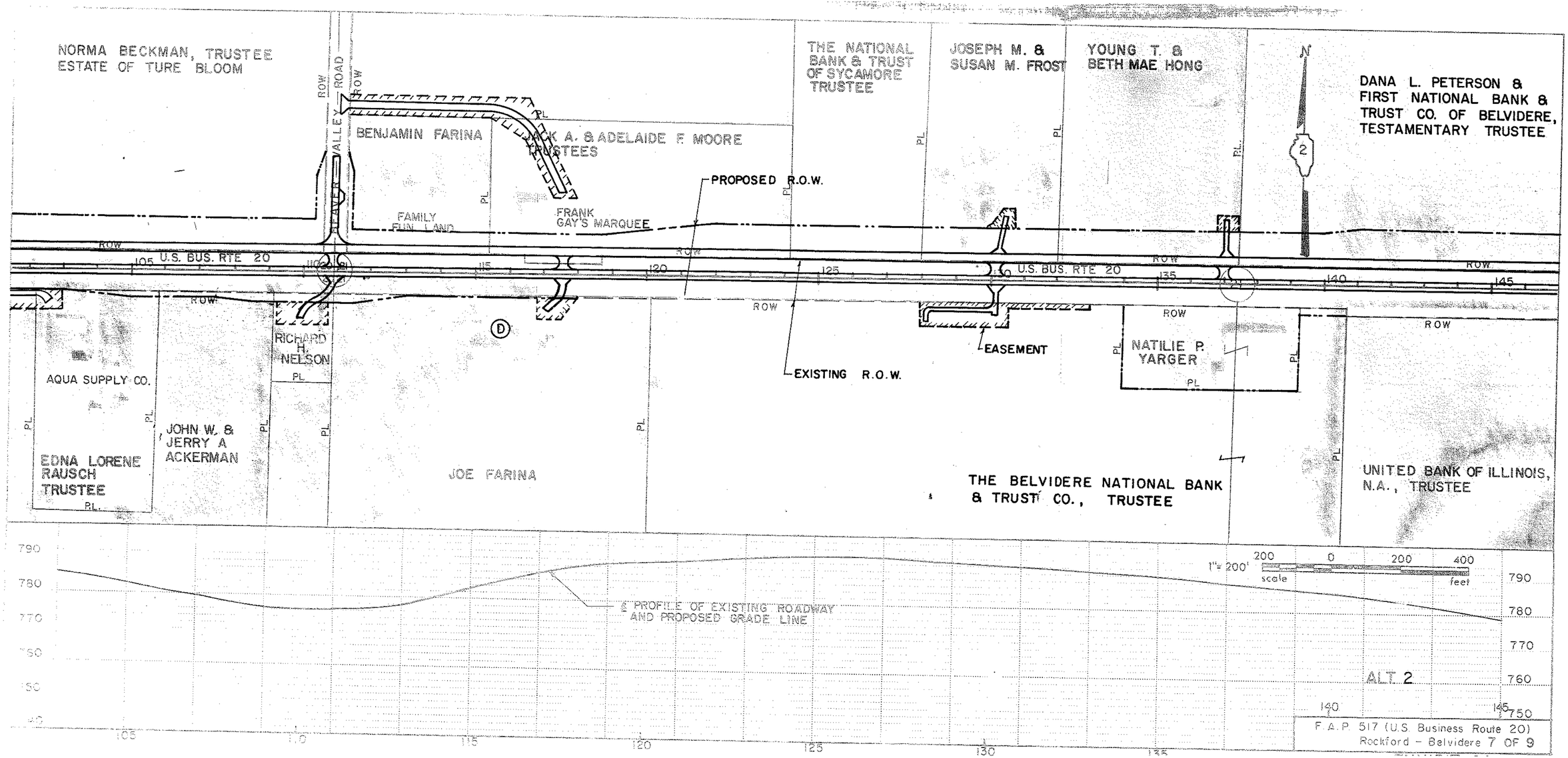
EXHIBIT 8D

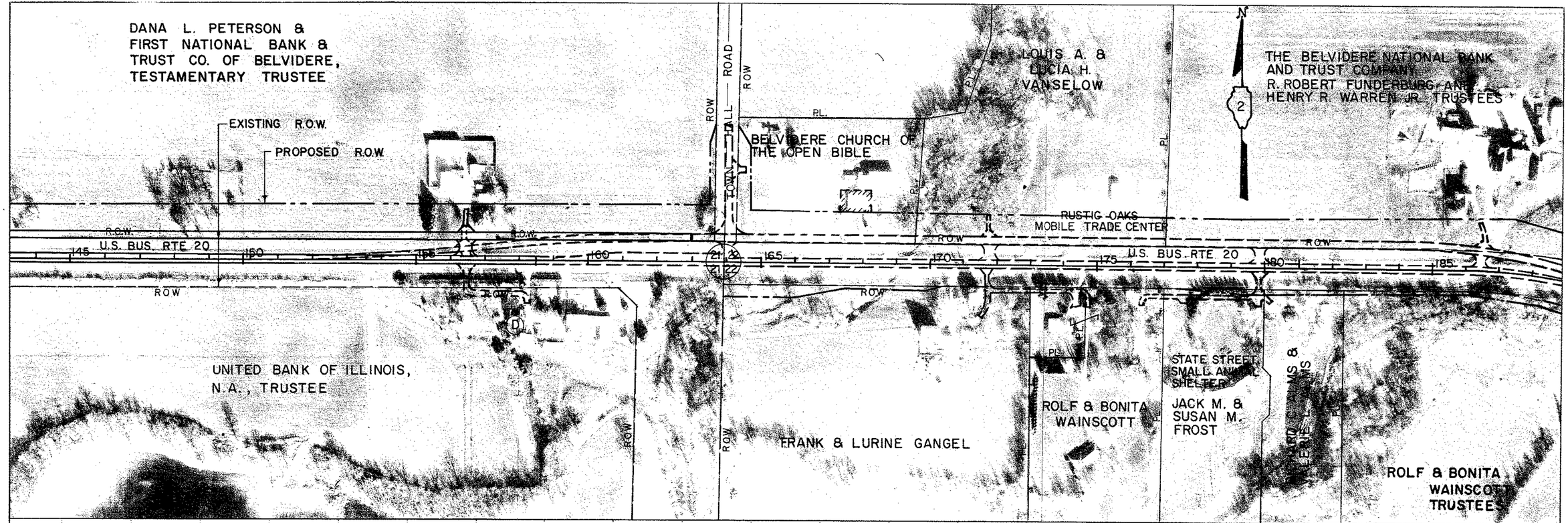

BRUCE P & MARY A. MAC DONALD
FRANK DAMES EASTON
STEPHEN P. & KRISTINA THOMAS
CHARLES E. & H. VICTORIA FITCH
ALBERT C., II & NORMA E. PETIT
WILLIAM R. & RICHARD H. THOMAS
MICHAEL P. & TONY MONTALEONE
BOONE COUNTY CONSERVATION DISTRICT
CENTAUR INVESTMENT CLUB
GAIL R. & DORTHY M. MOREHEAD, TRUSTEES
OLYMPUS
CENTAUR
DRIVE
OLSON ROAD
U.S. BUS. RTE. 20
STATE ROUTE 76
R.O.W.
P.L.
PROPOSED R.O.W.
EXISTING R.O.W.
EASEMENT
CREEK
BEAVER
1" = 200' scale
200 0 200 400 feet
℄ PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
790
780
770
760
750
740
20 25 30 35 40 45 50 55 60
PHASE III
ALT. 2
F A P 517 (U.S. Business Route 20)
Rockford - Belvidere 5A OF 9
EXHIBIT 8E

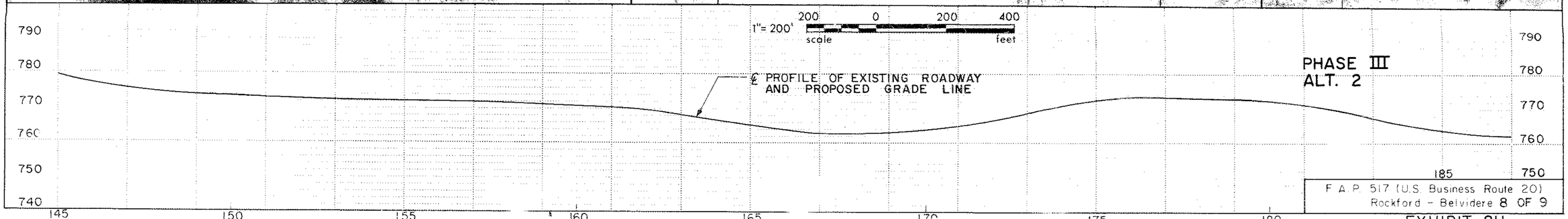


F A P 517 (U.S. Business Route 20)
Rockford – Belvidere 6 OF 9

EXHIBIT 8F


NORMA BECKMAN, TRUSTEE
ESTATE OF TURE BLOOM
BEAVER ALLEY ROAD
ROW
BENJAMIN FARINA
JACK A. & ADELAIDE F. MOORE
TRUSTEES
THE NATIONAL BANK & TRUST OF SYCAMORE TRUSTEE
JOSEPH M. & SUSAN M. FROST
YOUNG T. & BETH MAE HONG
DANA L. PETERSON & FIRST NATIONAL BANK & TRUST CO. OF BELVIDERE, TESTAMENTARY TRUSTEE
PROPOSED R.O.W.
FAMILY FUN LAND
FRANK GAY'S MARQUEE
105 U.S. BUS. RTE 20
110
115
120
125
130
135
140
145
EASEMENT
EXISTING R.O.W.
RICHARD H. NELSON
AQUA SUPPLY CO.
EDNA LORENE RAUSCH TRUSTEE
JOHN W. & JERRY A ACKERMAN
JOE FARINA
NATILIE P. YARGER
THE BELVIDERE NATIONAL BANK & TRUST CO., TRUSTEE
UNITED BANK OF ILLINOIS, N.A., TRUSTEE
PL
790
780
770
760
750
℄ PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
1"= 200'
200 0 200 400
scale feet
ALT 2
F.A.P. 517 (U.S. Business Route 20)
Rockford – Belvidere 7 OF 9





F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere 8 OF 9

EXHIBIT 8H

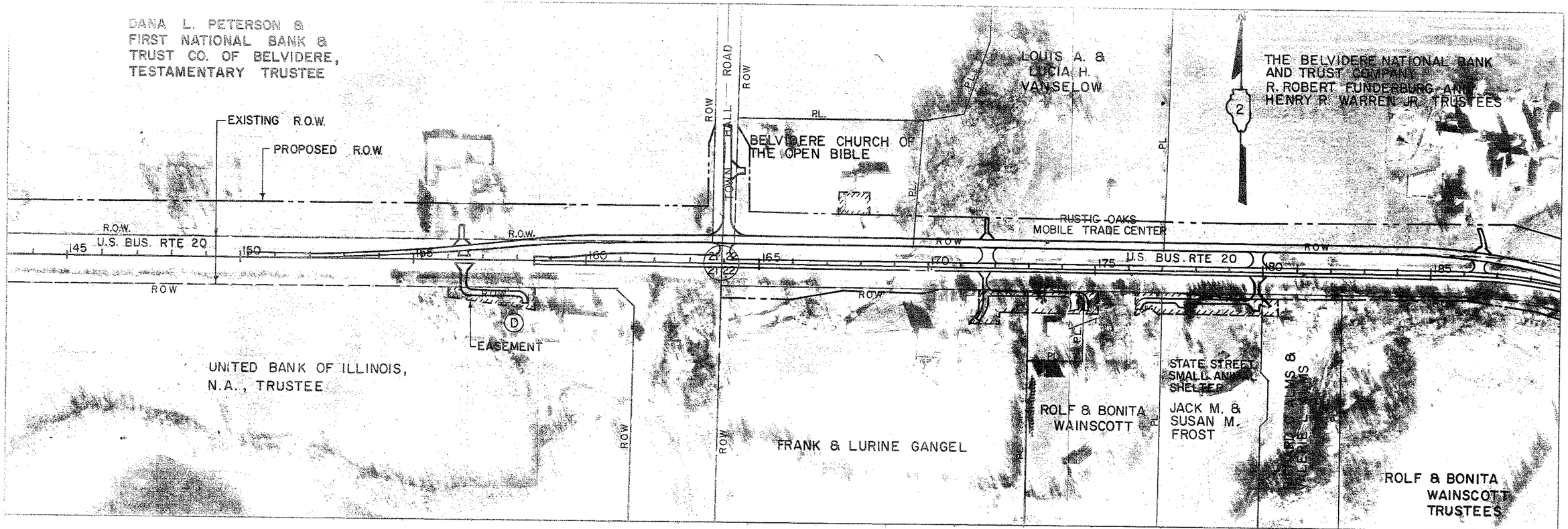
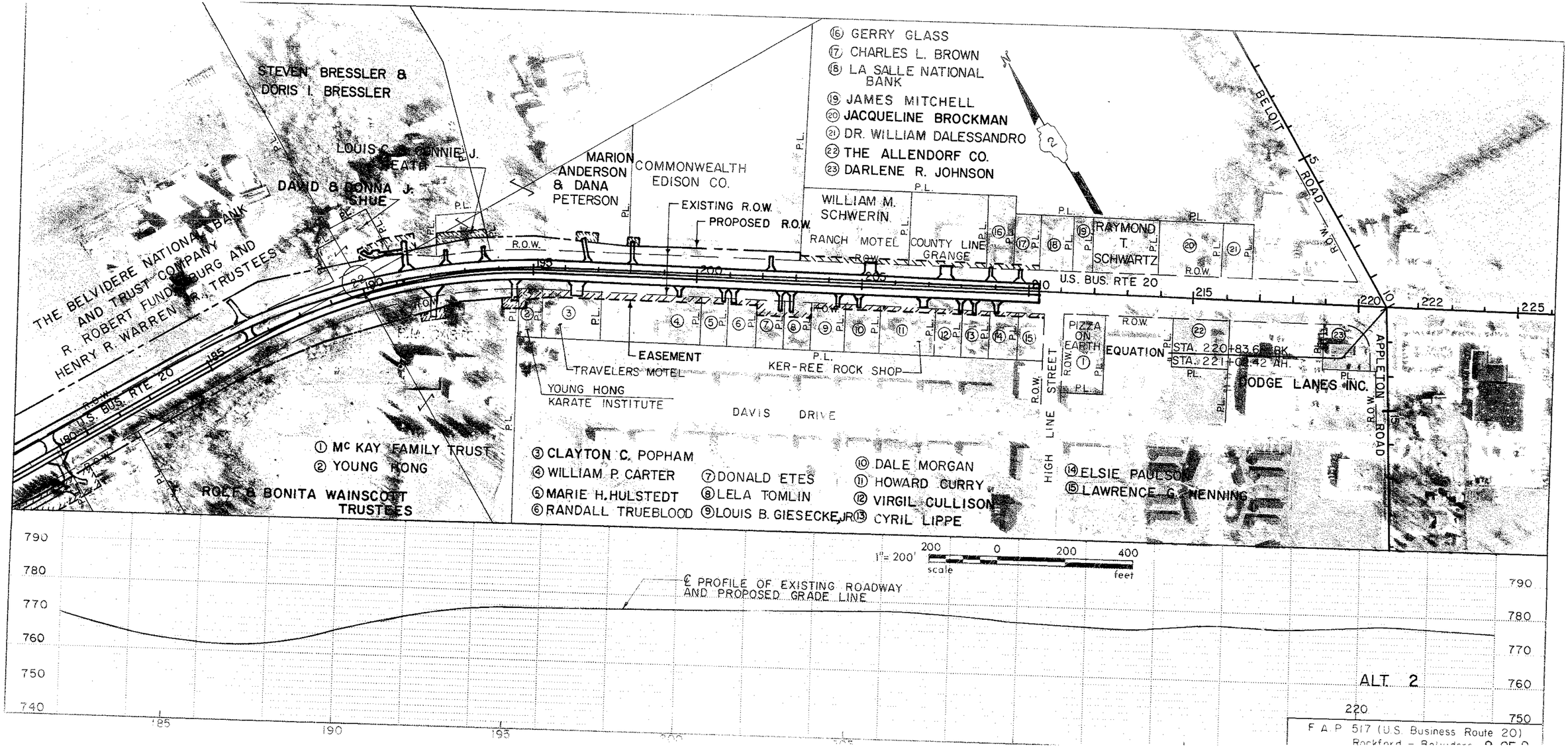

DANA L. PETERSON &
FIRST NATIONAL BANK &
TRUST CO. OF BELVIDERE,
TESTAMENTARY TRUSTEE
EXISTING R.O.W.
PROPOSED R.O.W.
R.O.W.
U.S. BUS. RTE 20
ROW
TOWN HALL ROAD
BELVIDERE CHURCH OF
THE OPEN BIBLE
LOUIS A. &
LUCIA H.
VANSELOW
THE BELVIDERE NATIONAL BANK
AND TRUST COMPANY,
R. ROBERT FUNDERBURG AND
HENRY R. WARREN JR. TRUSTEES
RUSTIC OAKS
MOBILE TRADE CENTER
EASEMENT
UNITED BANK OF ILLINOIS,
N.A., TRUSTEE
FRANK & LURINE GANGEL
ROLF & BONITA
WAINSCOTT
STATE STREET
SMALL ANIMAL
SHELTER
JACK M. &
SUSAN M.
FROST
ROLF & BONITA
WAINSCOTT
TRUSTEES
1"= 200'
scale
200 0 200 400
feet
℄ PROFILE OF EXISTING ROADWAY
AND PROPOSED GRADE LINE
PHASE II
ALT. 2
ALT. 2
790
780
770
760
750
145
150
155
160
165
170
175
180
185
F A P 5 7 (U.S Business Route 20)
Rockford - Belvidere 8A OF 9

EXHIBIT 8I


STEVEN BRESSLER & DORIS I. BRESSLER
LOUIS C. & CONNIE J. BEATH
DAVID & DONNA J. SHUE
THE BELVIDERE NATIONAL BANK AND TRUST COMPANY R. ROBERT FUNDENBURG AND HENRY R. WARREN JR. TRUSTEES
MARION ANDERSON & DANA PETERSON
COMMONWEALTH EDISON CO.
EXISTING R.O.W.
PROPOSED R.O.W.
WILLIAM M. SCHWERIN
RANCH MOTEL
COUNTY LINE GRANGE
RAYMOND T. SCHWARTZ
U.S. BUS. RTE 20
BELOIT ROAD
APPLETON ROAD
HIGH LINE
STREET
EASEMENT
TRAVELERS MOTEL
YOUNG HONG KARATE INSTITUTE
KER-REE ROCK SHOP
DAVIS DRIVE
PIZZA ON EARTH
EQUATION
STA. 220+83.6 BK
STA. 221+0.42 AH.
LODGE LANES INC.
ROLF & BONITA WAINSCOTT TRUSTEES
① Mc KAY FAMILY TRUST
② YOUNG HONG
③ CLAYTON C. POPHAM
④ WILLIAM P. CARTER
⑤ MARIE H. HULSTEDT
⑥ RANDALL TRUEBLOOD
⑦ DONALD ETES
⑧ LELA TOMLIN
⑨ LOUIS B. GIESECKE, JR.
⑩ DALE MORGAN
⑪ HOWARD CURRY
⑫ VIRGIL CULLISON
⑬ CYRIL LIPPE
⑭ ELSIE PAULSON
⑮ LAWRENCE G. HENNING
⑯ GERRY GLASS
⑰ CHARLES L. BROWN
⑱ LA SALLE NATIONAL BANK
⑲ JAMES MITCHELL
⑳ JACQUELINE BROCKMAN
㉑ DR. WILLIAM DALESSANDRO
㉒ THE ALLENDORF CO.
㉓ DARLENE R. JOHNSON
1" = 200'
scale
200 0 200 400
feet
℄ PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
790
780
770
760
750
740
185
190
195
220
ALT. 2
F.A.P. 517 (U.S. Business Route 20)

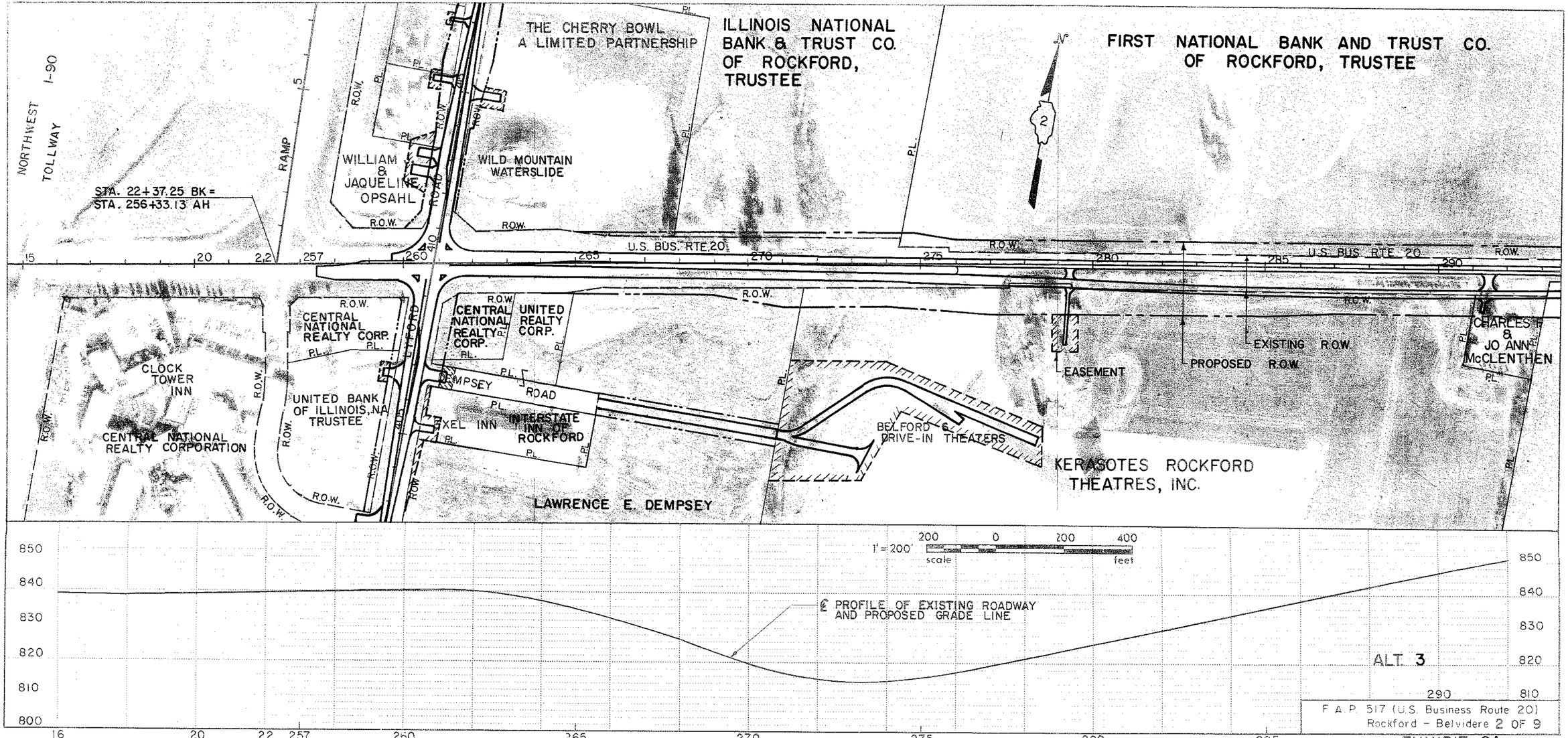
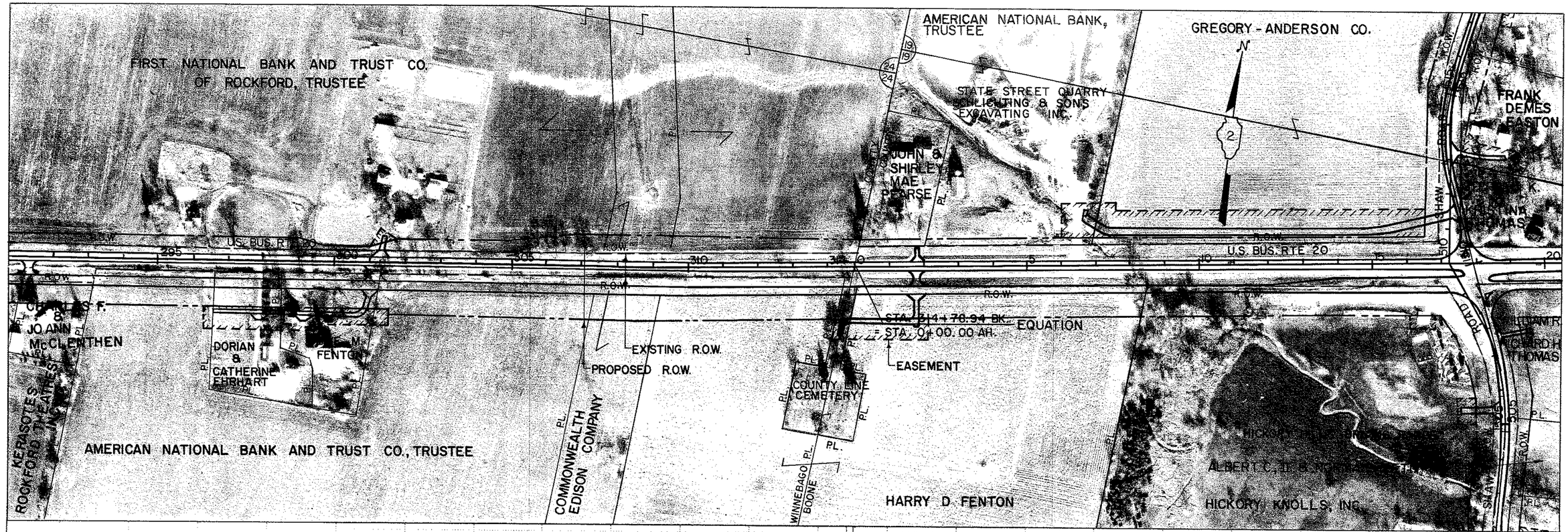
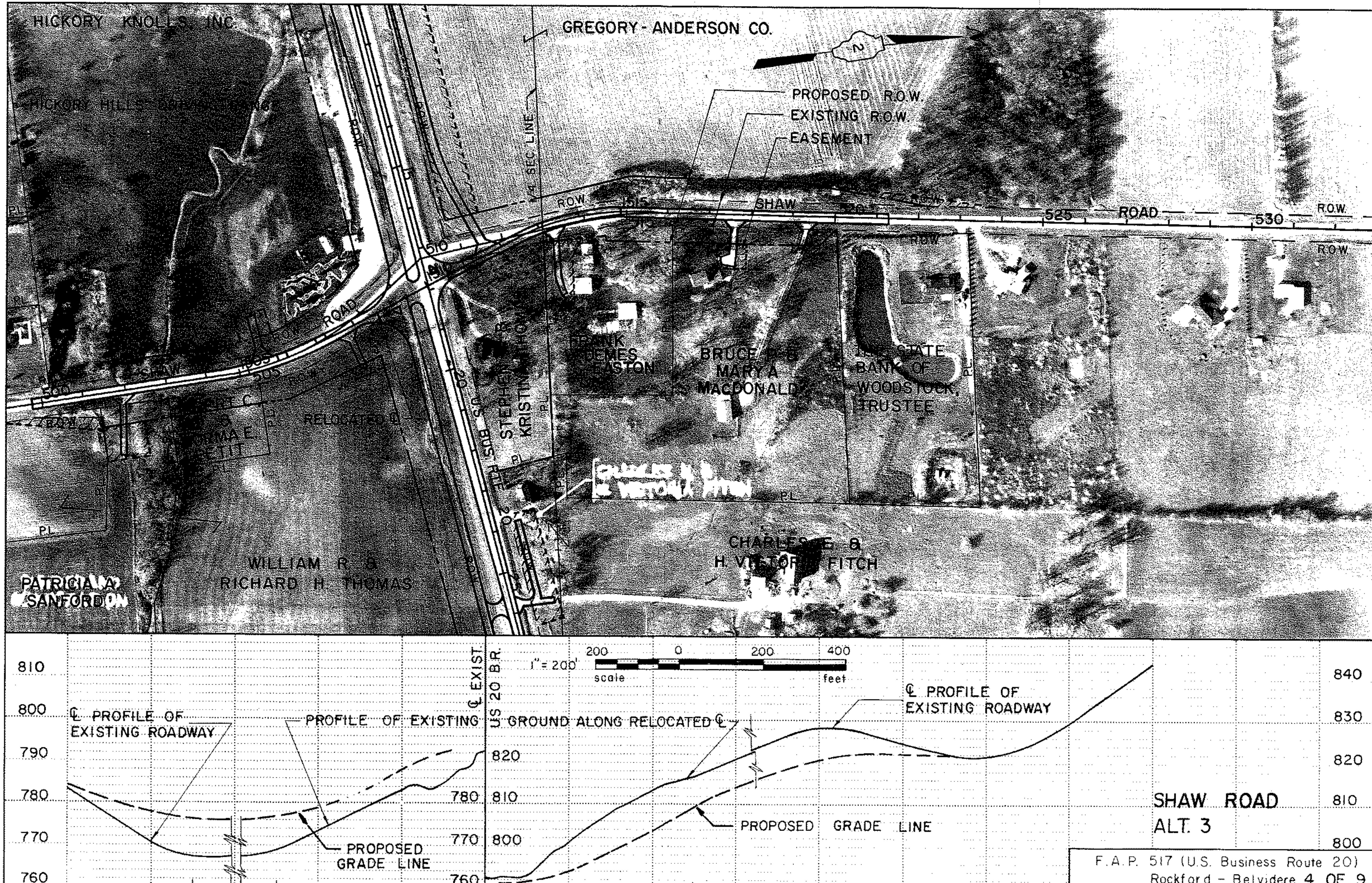

NORTHWEST TOLLWAY I-90
RAMP
STA. 22+37.25 BK =
STA. 256+33.13 AH
THE CHERRY BOWL A LIMITED PARTNERSHIP
ILLINOIS NATIONAL BANK & TRUST CO. OF ROCKFORD, TRUSTEE
FIRST NATIONAL BANK AND TRUST CO. OF ROCKFORD, TRUSTEE
WILLIAM & JAQUELINE OPSAHL
WILD MOUNTAIN WATERSLIDE
ROAD
R.O.W.
P.L.
U.S. BUS. RTE. 20
CLOCK TOWER INN
CENTRAL NATIONAL REALTY CORPORATION
CENTRAL NATIONAL REALTY CORP.
UNITED REALTY CORP.
UNITED BANK OF ILLINOIS, N.A. TRUSTEE
DEMPSEY ROAD
EXEL INN
INTERSTATE INN OF ROCKFORD
BELFORD DRIVE-IN THEATERS
KERASOTES ROCKFORD THEATRES, INC.
LAWRENCE E. DEMPSEY
EASEMENT
PROPOSED R.O.W.
EXISTING R.O.W.
CHARLES H. & JO ANN McCLENTHEN
1" = 200'
200 0 200 400
scale feet
℄ PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
850
840
830
820
810
800
15 20 22 257 260 265 270 275 280 285 290
ALT. 3
F.A.P. 517 (U.S. Business Route 20)
Rockford – Belvidere 2 OF 9

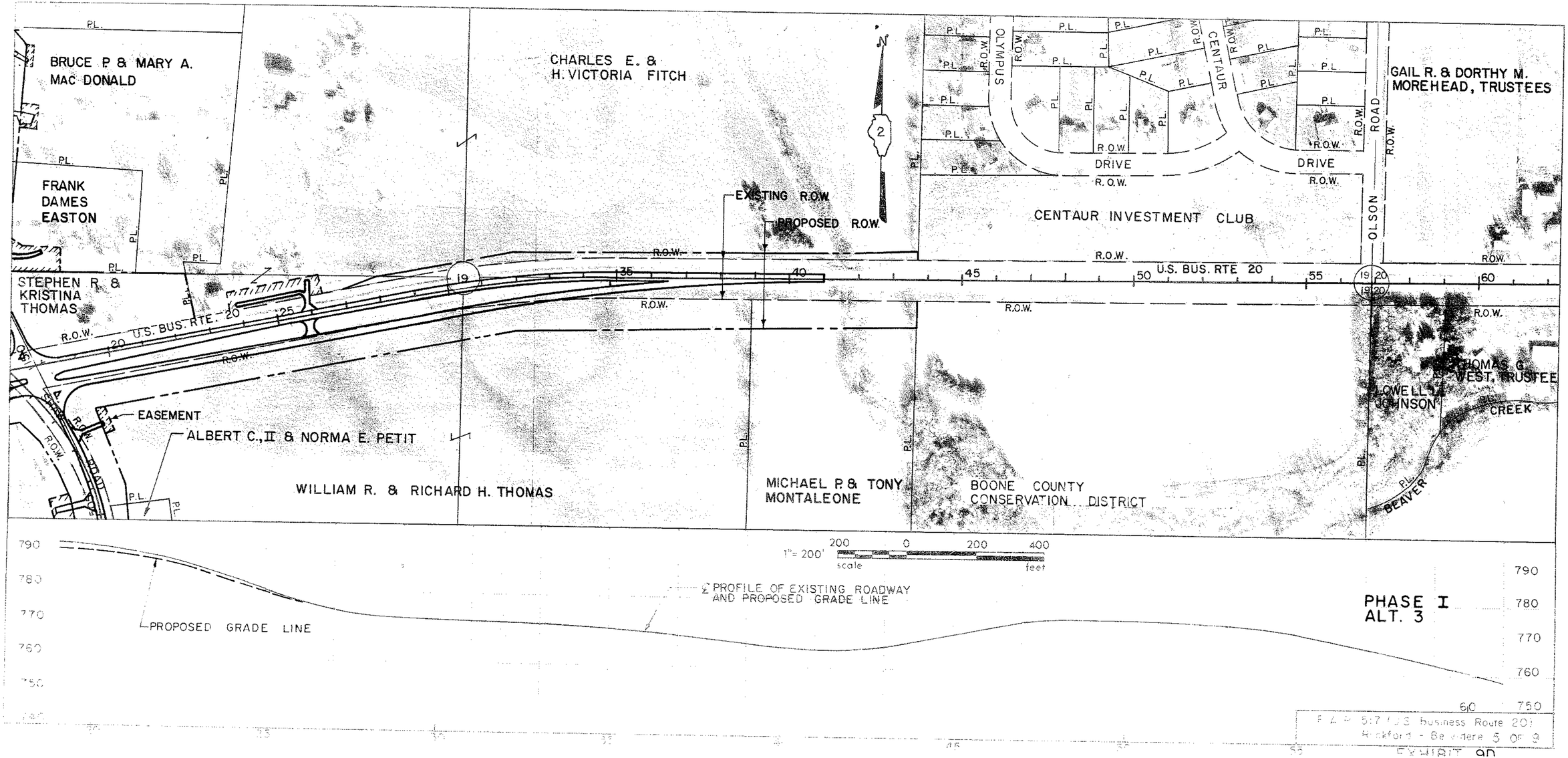
EXHIBIT 9A



F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere 3 OF 9

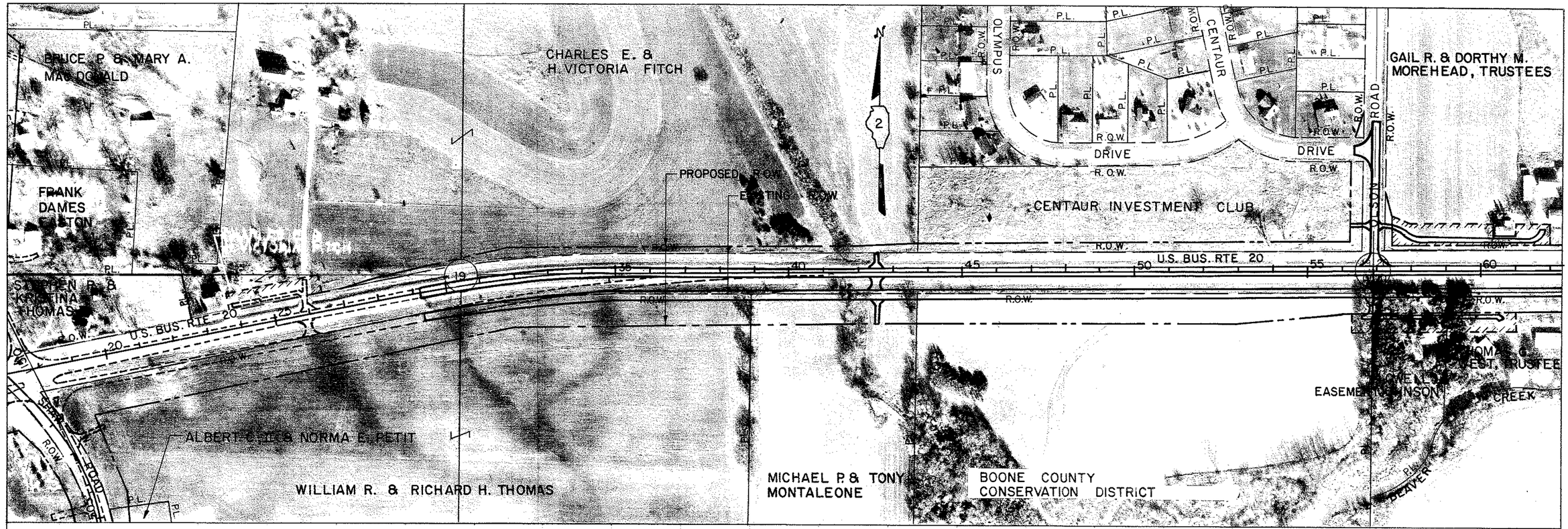
EXHIBIT 2B

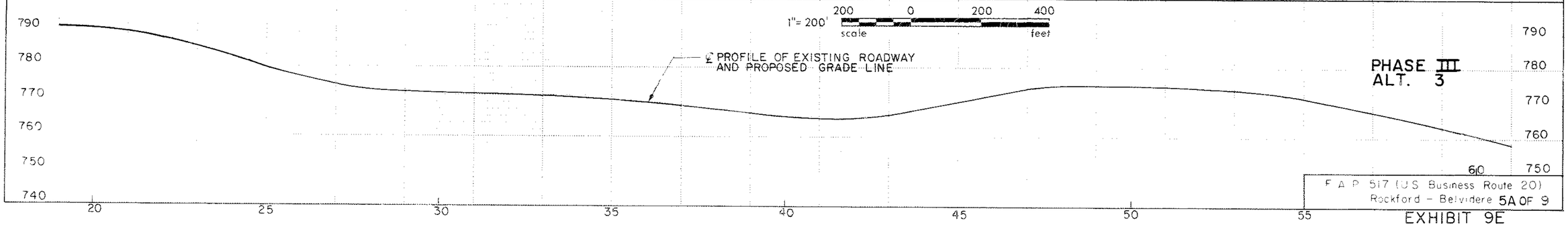

HICKORY KNOLLS, INC.
GREGORY - ANDERSON CO.
HICKORY HILLS
PROPOSED R.O.W.
EXISTING R.O.W.
EASEMENT
SEC. LINE
SHAW ROAD
ROAD
R.O.W.
PL
FRANK DEMES EASTON
BRUCE P. & MARY A. MACDONALD
THE STATE BANK OF WOODSTOCK, TRUSTEE
STEPHEN KRISTIN
BUS. RTE. 20
RELOCATED ℄
CHARLES E. & H. VICTORIA FITCH
WILLIAM R. & RICHARD H. THOMAS
PATRICIA A. SANFORD
℄ PROFILE OF EXISTING ROADWAY
PROFILE OF EXISTING GROUND ALONG RELOCATED ℄
PROPOSED GRADE LINE
℄ EXIST. US 20 B.R.
1" = 200'
scale
feet
200 0 200 400
810 800 790 780 770 760
820 810 800 760
840 830 820 810 800
SHAW ROAD
ALT. 3
F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere 4 OF 9



F. A. P. 5:7 (U.S. business Route 20)
Rockford - Belvidere 3 OF 9

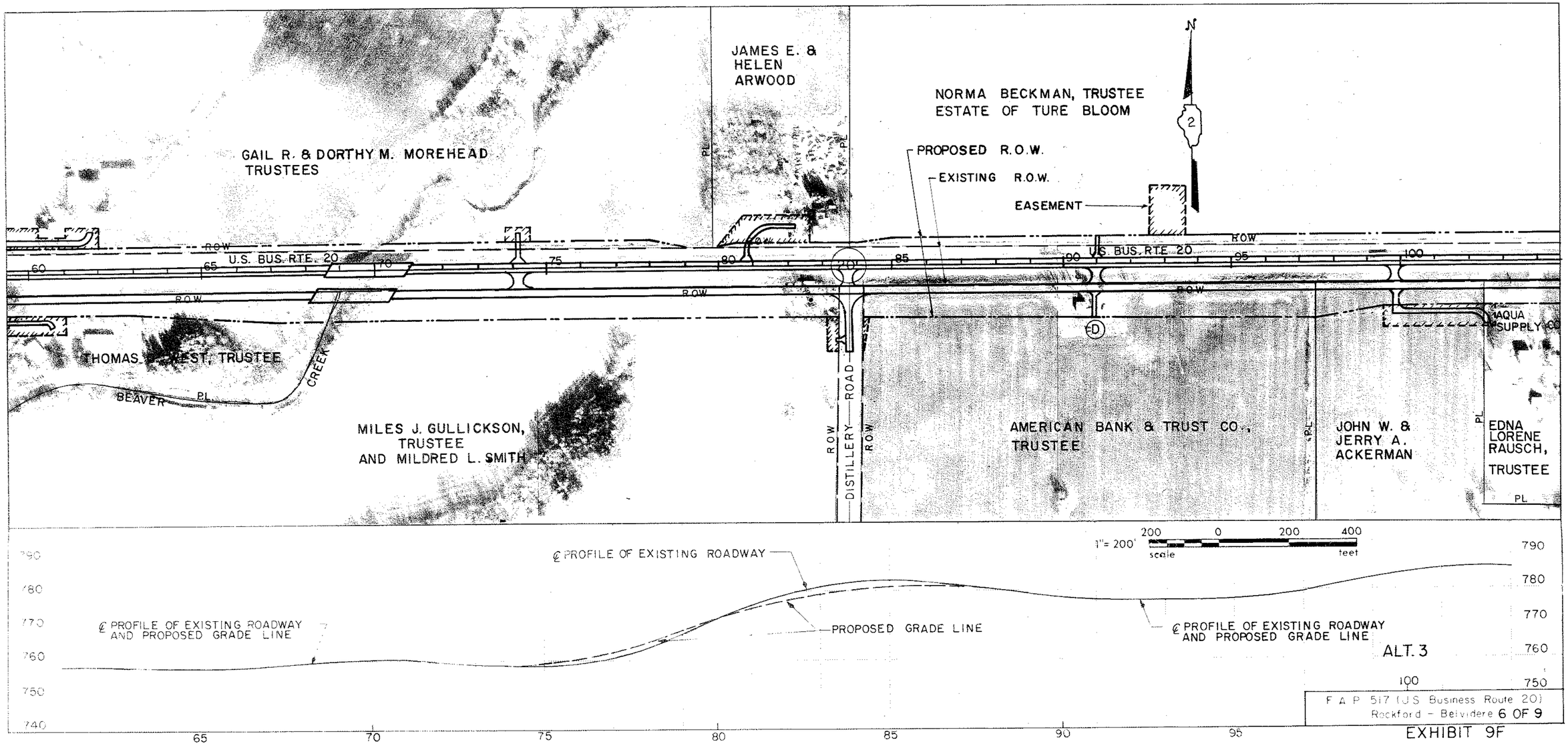
EXHIBIT 9D

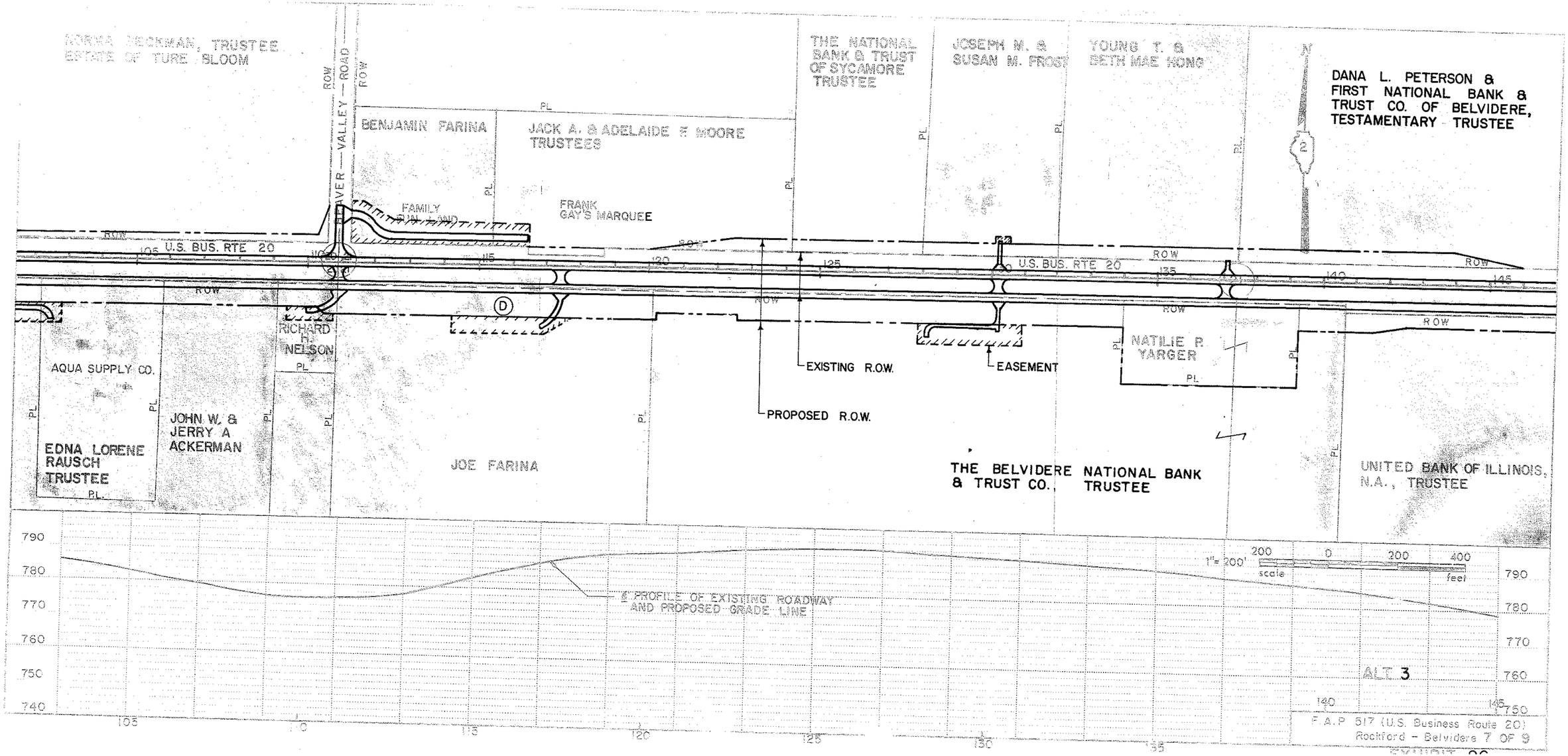




F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere 5A OF 9

EXHIBIT 9E


JAMES E. & HELEN ARWOOD
NORMA BECKMAN, TRUSTEE
ESTATE OF TURE BLOOM
GAIL R. & DORTHY M. MOREHEAD TRUSTEES
PROPOSED R.O.W.
EXISTING R.O.W.
EASEMENT
N
2
ROW
U.S. BUS. RTE. 20
60
65
70
75
80
85
90
95
100
PL
THOMAS E. WEST, TRUSTEE
BEAVER CREEK
MILES J. GULLICKSON, TRUSTEE AND MILDRED L. SMITH
DISTILLERY ROAD
AMERICAN BANK & TRUST CO., TRUSTEE
JOHN W. & JERRY A. ACKERMAN
AQUA SUPPLY CO.
EDNA LORENE RAUSCH, TRUSTEE
℄ PROFILE OF EXISTING ROADWAY
℄ PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
PROPOSED GRADE LINE
1"= 200'
200 0 200 400
scale feet
790
780
770
760
750
740
65
70
75
80
85
90
95
100
ALT. 3
F A P 517 (U.S. Business Route 20)
Rockford - Belvidere 6 OF 9
EXHIBIT 9F


NORMA BECKMAN, TRUSTEE
ESTATE OF TURE BLOOM
ROW
BEAVER VALLEY ROAD
ROW
BENJAMIN FARINA
JACK A. & ADELAIDE F. MOORE
TRUSTEES
THE NATIONAL BANK & TRUST OF SYCAMORE TRUSTEE
JOSEPH M. & SUSAN M. FROST
YOUNG T. & BETH MAE HONG
DANA L. PETERSON & FIRST NATIONAL BANK & TRUST CO. OF BELVIDERE, TESTAMENTARY TRUSTEE
N
2
PL
FAMILY FUN LAND
FRANK GAY'S MARQUEE
ROW
105 U.S. BUS. RTE 20
110
115
120
125
130
135
140
145
U.S. BUS. RTE 20
ROW
D
RICHARD P. NELSON
AQUA SUPPLY CO.
EDNA LORENE RAUSCH TRUSTEE
JOHN W. & JERRY A ACKERMAN
JOE FARINA
EXISTING R.O.W.
EASEMENT
PROPOSED R.O.W.
NATILIE P. YARGER
THE BELVIDERE NATIONAL BANK & TRUST CO., TRUSTEE
UNITED BANK OF ILLINOIS, N.A., TRUSTEE
790
780
770
760
750
740
℄ PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
1"= 200'
200 0 200 400
scale
feet
ALT 3
F.A.P 517 (U.S. Business Route 20)
Rockford - Belvidere 7 OF 9

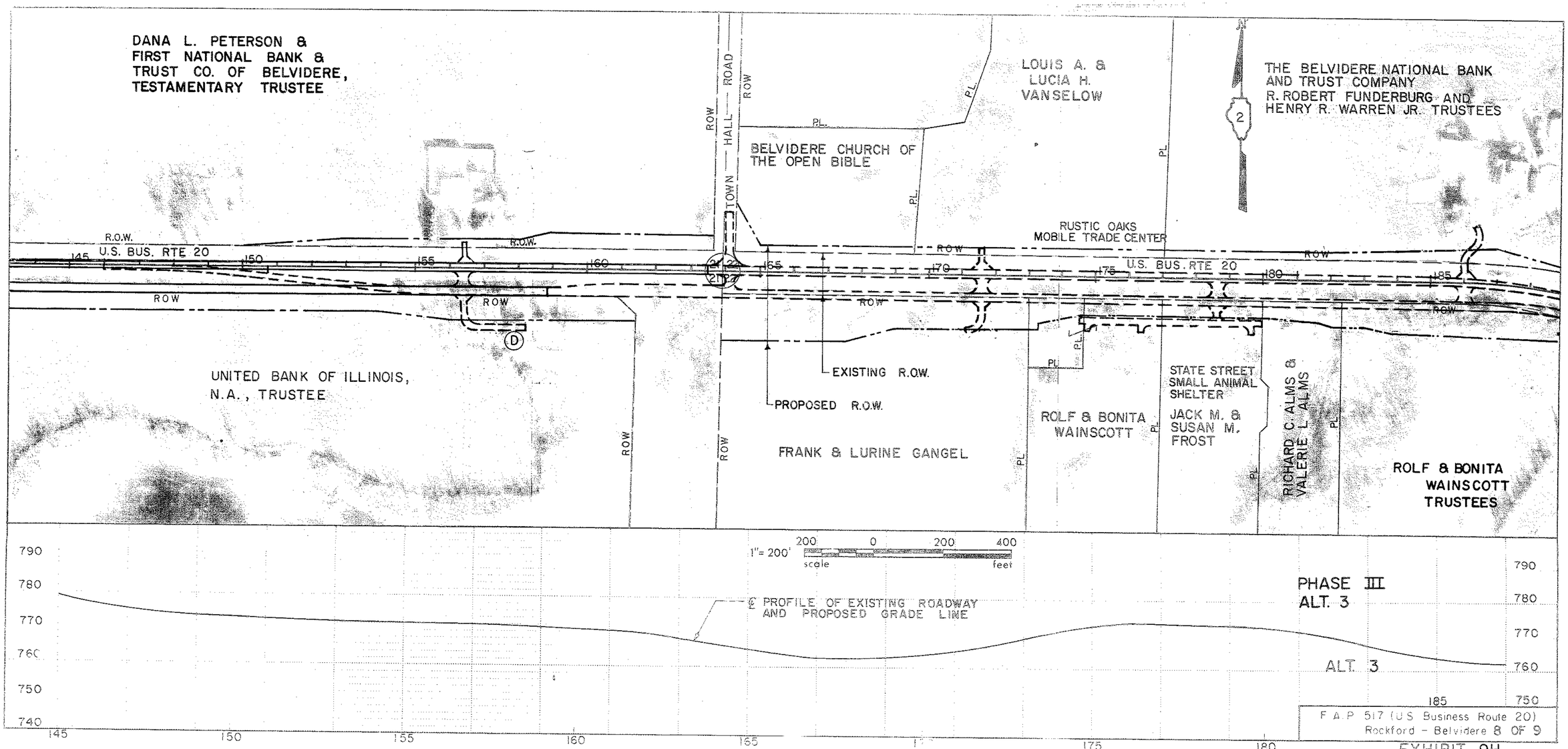
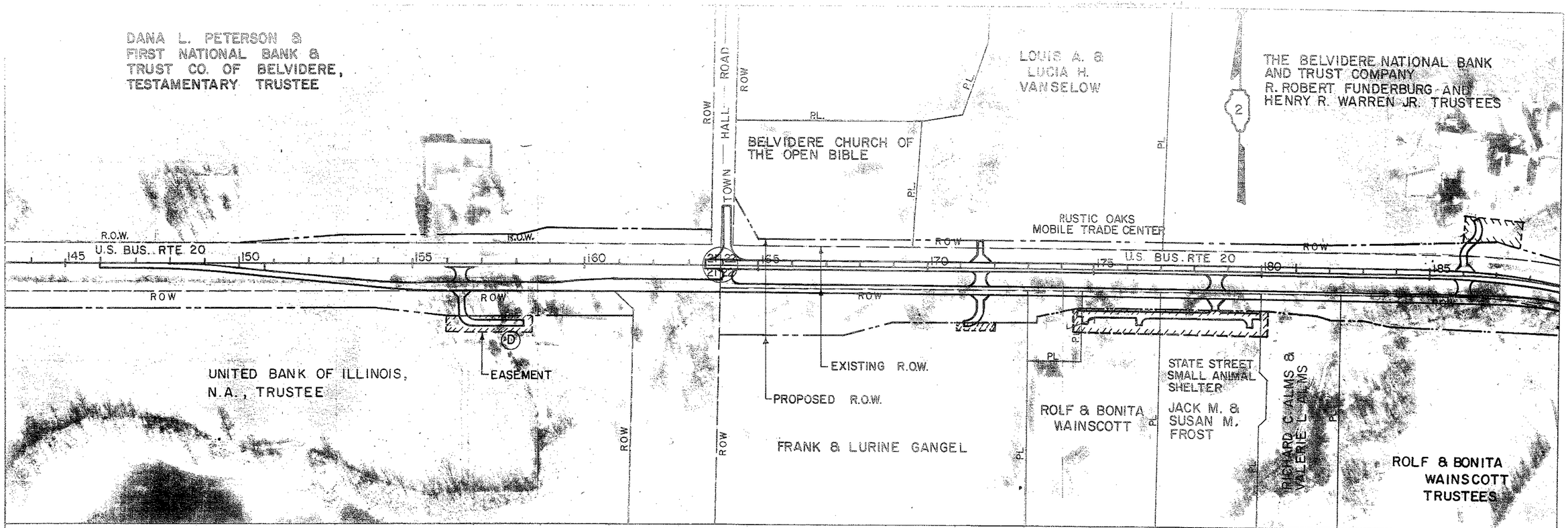
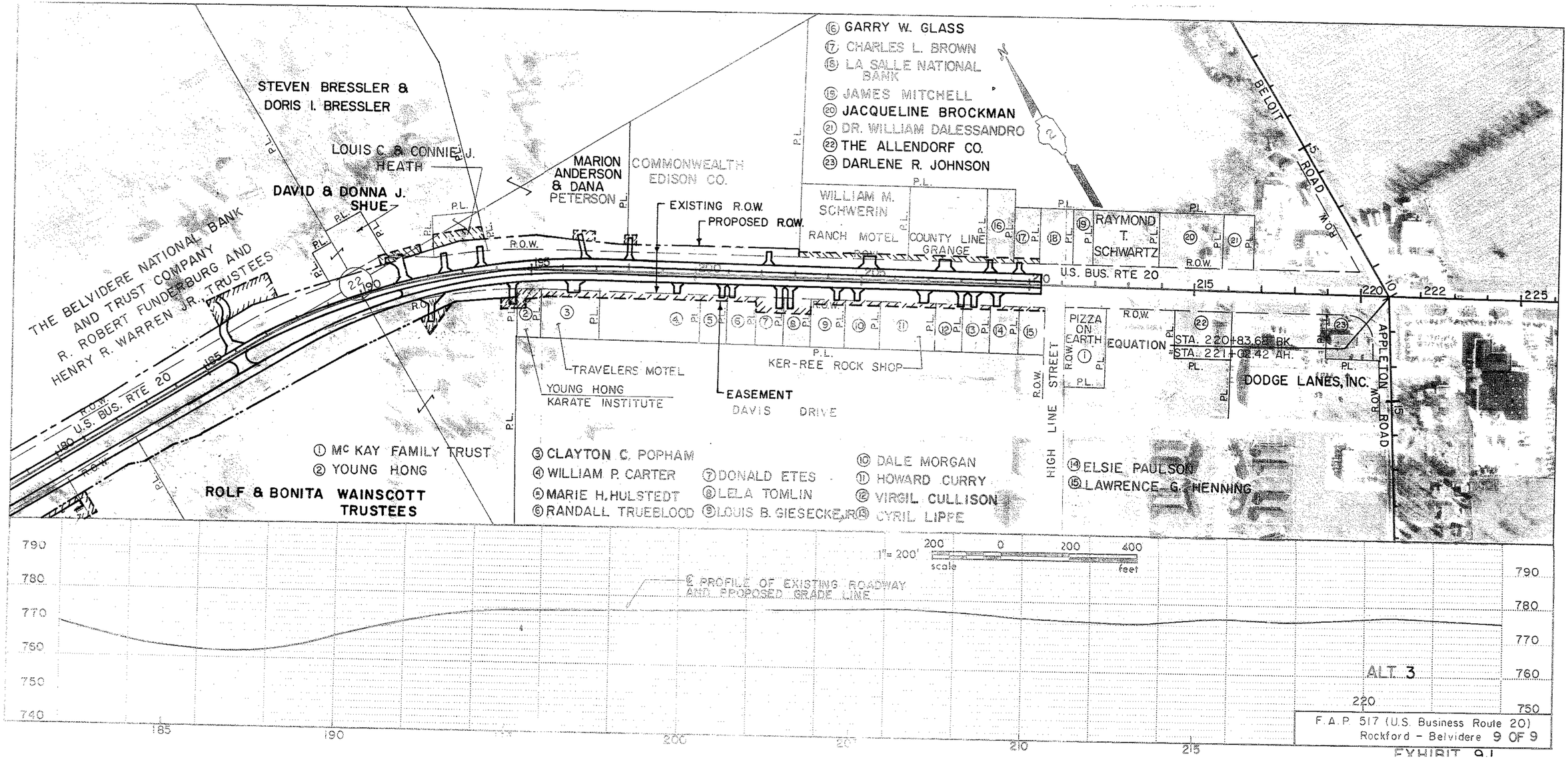

DANA L. PETERSON &
FIRST NATIONAL BANK &
TRUST CO. OF BELVIDERE,
TESTAMENTARY TRUSTEE
HALL — TOWN ROAD
ROW
P.L.
BELVIDERE CHURCH OF
THE OPEN BIBLE
LOUIS A. &
LUCIA H.
VANSELOW
THE BELVIDERE NATIONAL BANK
AND TRUST COMPANY
R. ROBERT FUNDERBURG AND
HENRY R. WARREN JR. TRUSTEES
2
R.O.W.
U.S. BUS. RTE 20
145
150
155
160
165
170
175
180
185
RUSTIC OAKS
MOBILE TRADE CENTER
D
UNITED BANK OF ILLINOIS,
N.A., TRUSTEE
EXISTING R.O.W.
PROPOSED R.O.W.
FRANK & LURINE GANGEL
ROLF & BONITA
WAINSCOTT
STATE STREET
SMALL ANIMAL
SHELTER
JACK M. &
SUSAN M.
FROST
RICHARD C. ALMS &
VALERIE L. ALMS
ROLF & BONITA
WAINSCOTT
TRUSTEES
1"= 200'
200 0 200 400
scale feet
790
780
770
760
750
740
℄ PROFILE OF EXISTING ROADWAY
AND PROPOSED GRADE LINE
PHASE III
ALT. 3
ALT. 3
F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere 8 OF 9

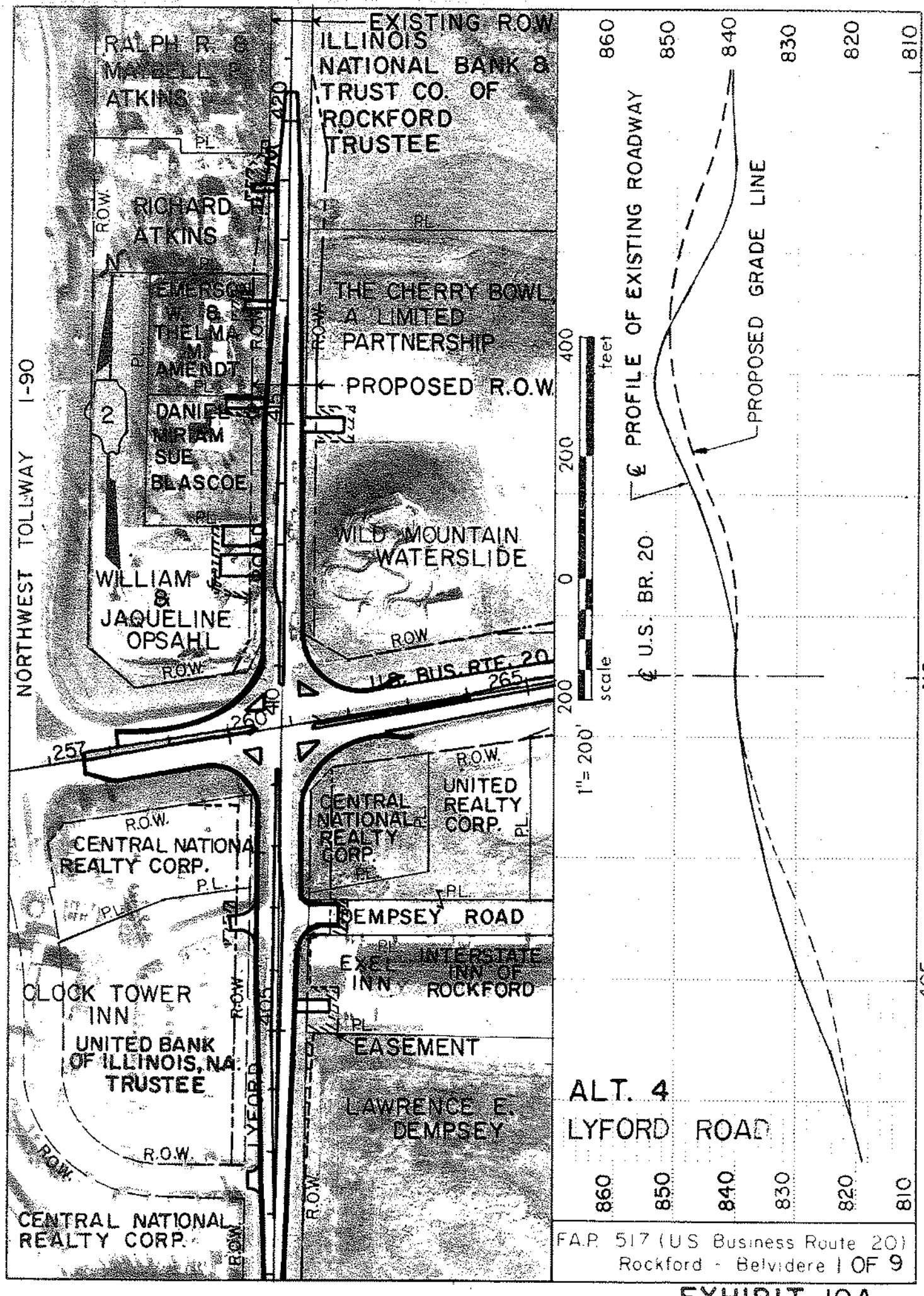
EXHIBIT 9H



F.A.P. 517 (US Business Route 20)
Rockford Belvidere 8A OF 9

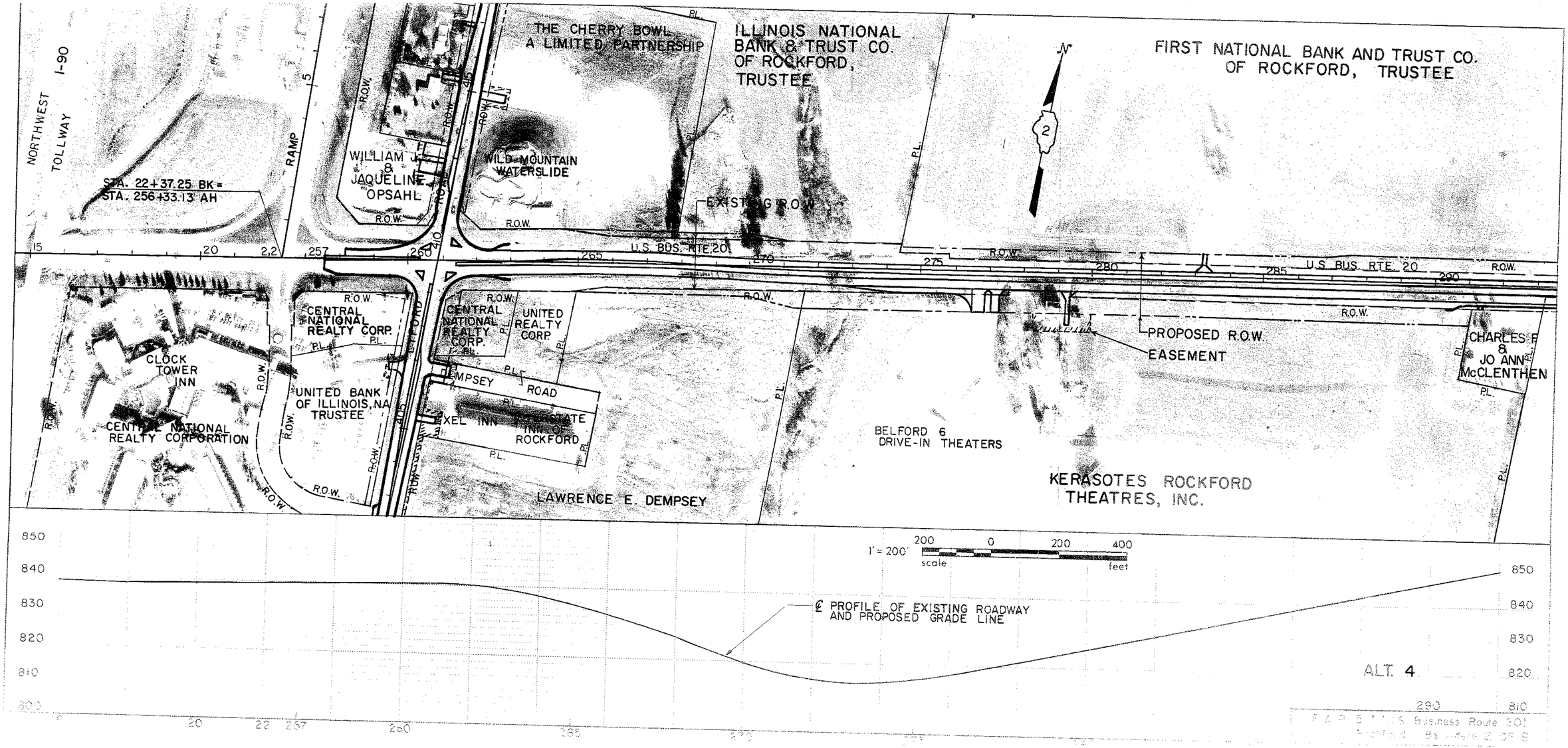
EXHIBIT 9I

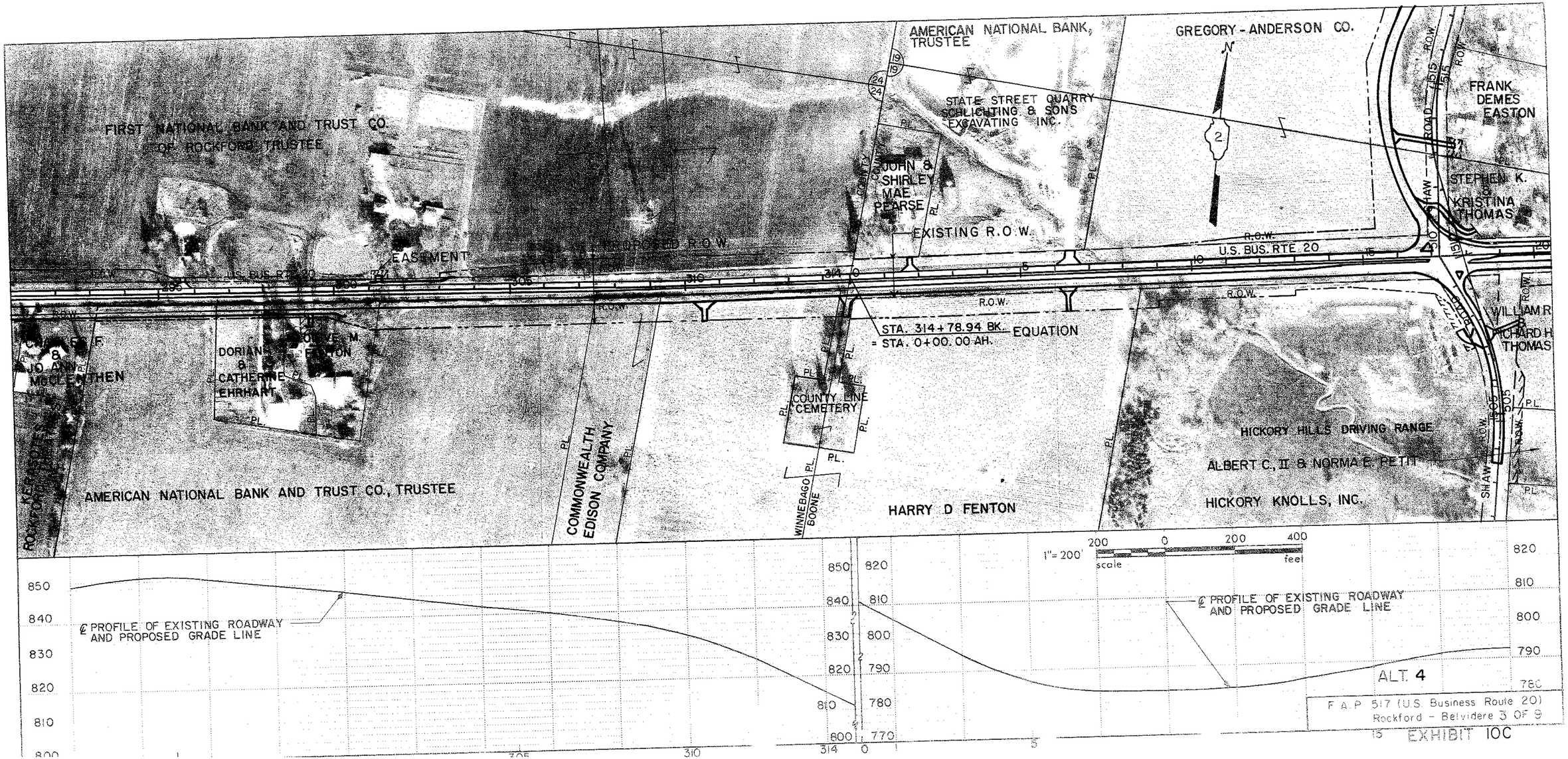

STEVEN BRESSLER & DORIS I. BRESSLER
LOUIS C. & CONNIE J. HEATH
DAVID & DONNA J. SHUE
THE BELVIDERE NATIONAL BANK AND TRUST COMPANY R. ROBERT FUNDERBURG AND HENRY R. WARREN JR., TRUSTEES
MARION ANDERSON & DANA PETERSON
COMMONWEALTH EDISON CO.
EXISTING R.O.W.
PROPOSED R.O.W.
WILLIAM M. SCHWERIN
RANCH MOTEL
COUNTY LINE GRANGE
RAYMOND T. SCHWARTZ
U.S. BUS. RTE 20
BELOIT 5 ROAD
APPLETON ROAD
HIGH LINE STREET
TRAVELERS MOTEL
YOUNG HONG KARATE INSTITUTE
KER-REE ROCK SHOP
EASEMENT
DAVIS DRIVE
PIZZA ON EARTH
EQUATION
STA. 220+83.68 BK
STA. 221+02.42 AH.
DODGE LANES, INC.
① Mc KAY FAMILY TRUST
② YOUNG HONG
ROLF & BONITA WAINSCOTT TRUSTEES
③ CLAYTON C. POPHAM
④ WILLIAM P. CARTER
⑤ MARIE H. HULSTEDT
⑥ RANDALL TRUEBLOOD
⑦ DONALD ETES
⑧ LELA TOMLIN
⑨ LOUIS B. GIESECKE, JR.
⑩ DALE MORGAN
⑪ HOWARD CURRY
⑫ VIRGIL CULLISON
⑬ CYRIL LIPPE
⑭ ELSIE PAULSON
⑮ LAWRENCE G. HENNING
⑯ GARRY W. GLASS
⑰ CHARLES L. BROWN
⑱ LA SALLE NATIONAL BANK
⑮ JAMES MITCHELL
⑳ JACQUELINE BROCKMAN
㉑ DR. WILLIAM DALESSANDRO
㉒ THE ALLENDORF CO.
㉓ DARLENE R. JOHNSON
1" = 200' scale
200 0 200 400 feet
℄ PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
790
780
770
760
750
740
185
190
200
205
210
215
220
ALT. 3
F.A.P. 517 (U.S. Business Route 20)
Rockford – Belvidere 9 OF 9
EXHIBIT 9.1



FAP 517 (US Business Route 20)
Rockford - Belvidere 1 OF 9

EXHIBIT 10A

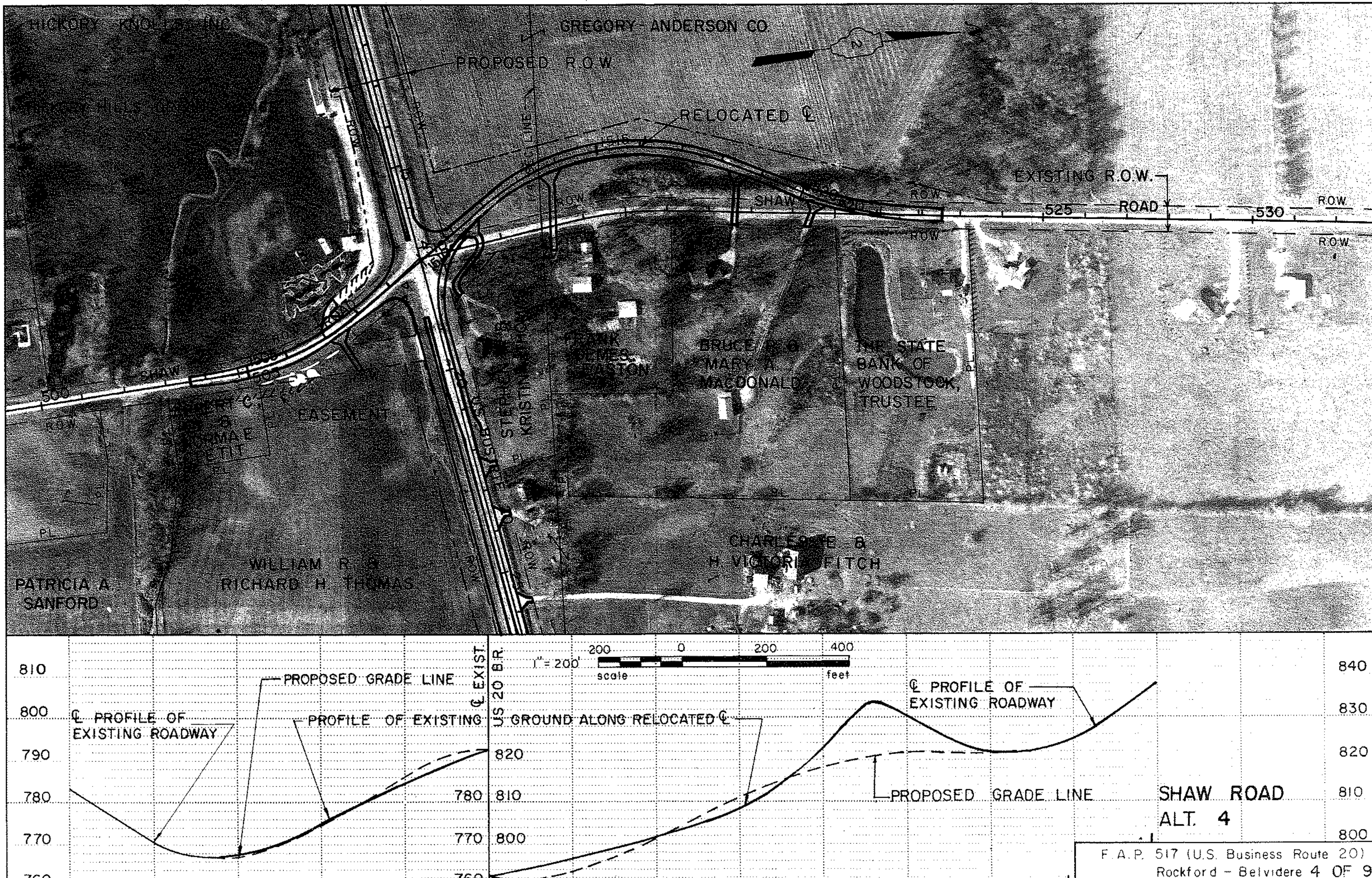

NORTHWEST TOLLWAY I-90
RAMP
STA. 22+37.25 BK = STA. 256+33.13 AH
WILLIAM J. & JAQUELINE OPSAHL
THE CHERRY BOWL A LIMITED PARTNERSHIP
WILD MOUNTAIN WATERSLIDE
ILLINOIS NATIONAL BANK & TRUST CO OF ROCKFORD, TRUSTEE
FIRST NATIONAL BANK AND TRUST CO. OF ROCKFORD, TRUSTEE
EXISTING R.O.W.
U.S. BUS. RTE. 20
U.S BUS RTE. 20
R.O.W.
PROPOSED R.O.W. EASEMENT
CLOCK TOWER INN
CENTRAL NATIONAL REALTY CORPORATION
CENTRAL NATIONAL REALTY CORP.
UNITED REALTY CORP
UNITED BANK OF ILLINOIS, N.A. TRUSTEE
DEMPSEY ROAD
EXEL INN
INTERSTATE INN OF ROCKFORD
LAWRENCE E. DEMPSEY
BELFORD 6 DRIVE-IN THEATERS
KERASOTES ROCKFORD THEATRES, INC.
CHARLES R. & JO ANN McCLENTHEN
BELFORD
1" = 200'
200 0 200 400
scale feet
℄ PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
850
840
830
820
810
800
ALT. 4



ALT. 4

F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere 3 OF 9

EXHIBIT 10C

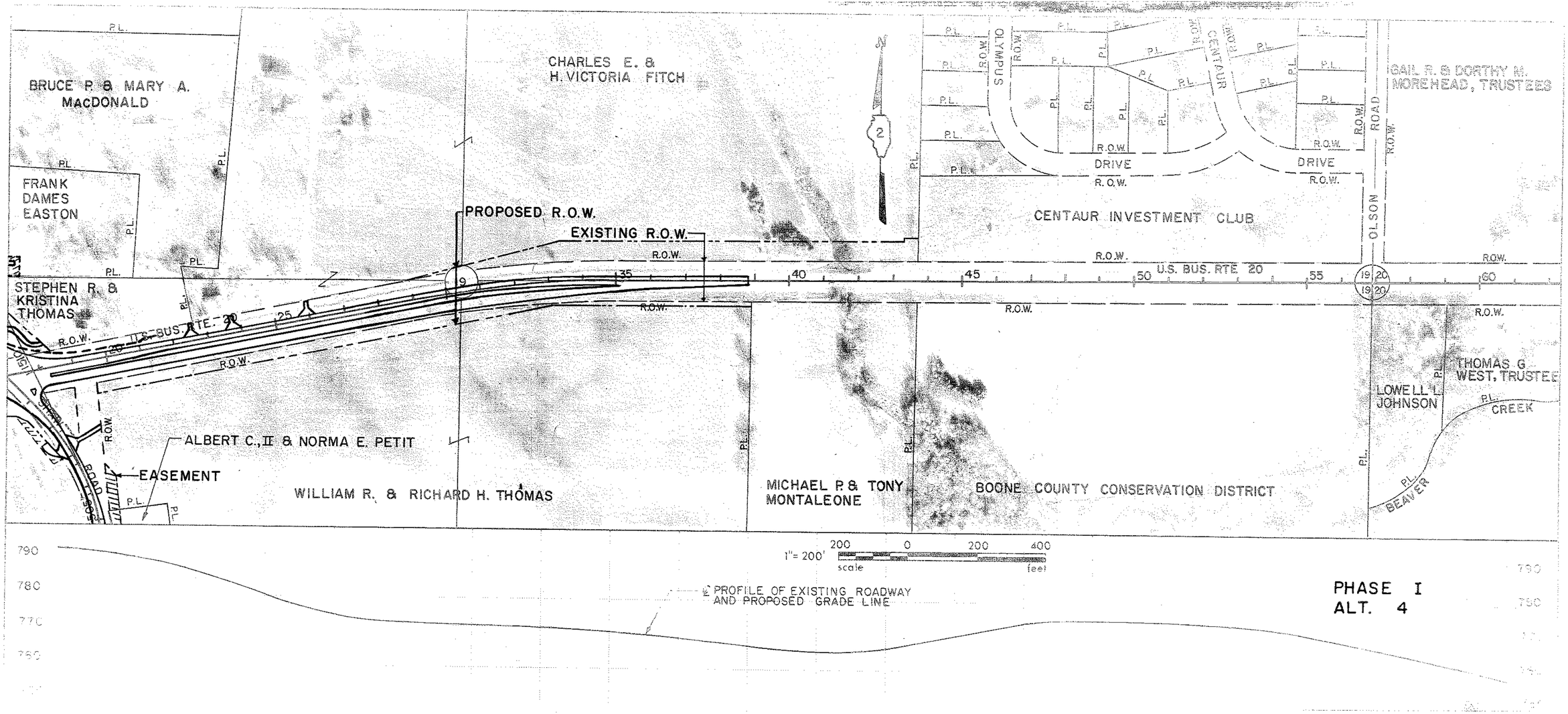


GREGORY - ANDERSON CO
PROPOSED R.O.W.
RELOCATED ℄
EXISTING R.O.W.
SHAW
ROAD
R.O.W.
525
530
500
505
1515
EASEMENT
BRUCE R. & MARY A. MACDONALD
THE STATE BANK OF WOODSTOCK, TRUSTEE
CHARLES E. & H. VICTORIA FITCH
WILLIAM R. & RICHARD H. THOMAS
PATRICIA A. SANFORD
1" = 200'
200 0 200 400
scale
feet
℄ EXIST. US 20 B.R.
PROPOSED GRADE LINE
℄ PROFILE OF EXISTING ROADWAY
PROFILE OF EXISTING GROUND ALONG RELOCATED ℄
℄ PROFILE OF EXISTING ROADWAY
PROPOSED GRADE LINE
810
800
790
780
770
760
820
810
800
760
840
830
820
810
800
500
503
1505
1510
1515
1520
523
525

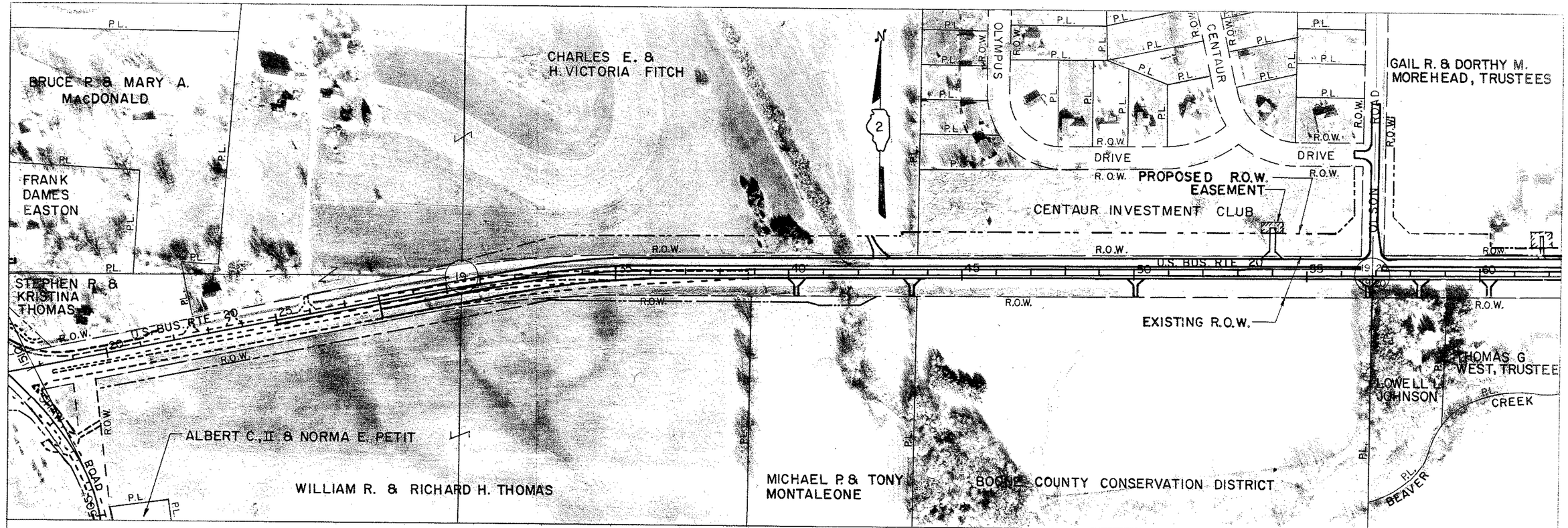
SHAW ROAD
ALT. 4

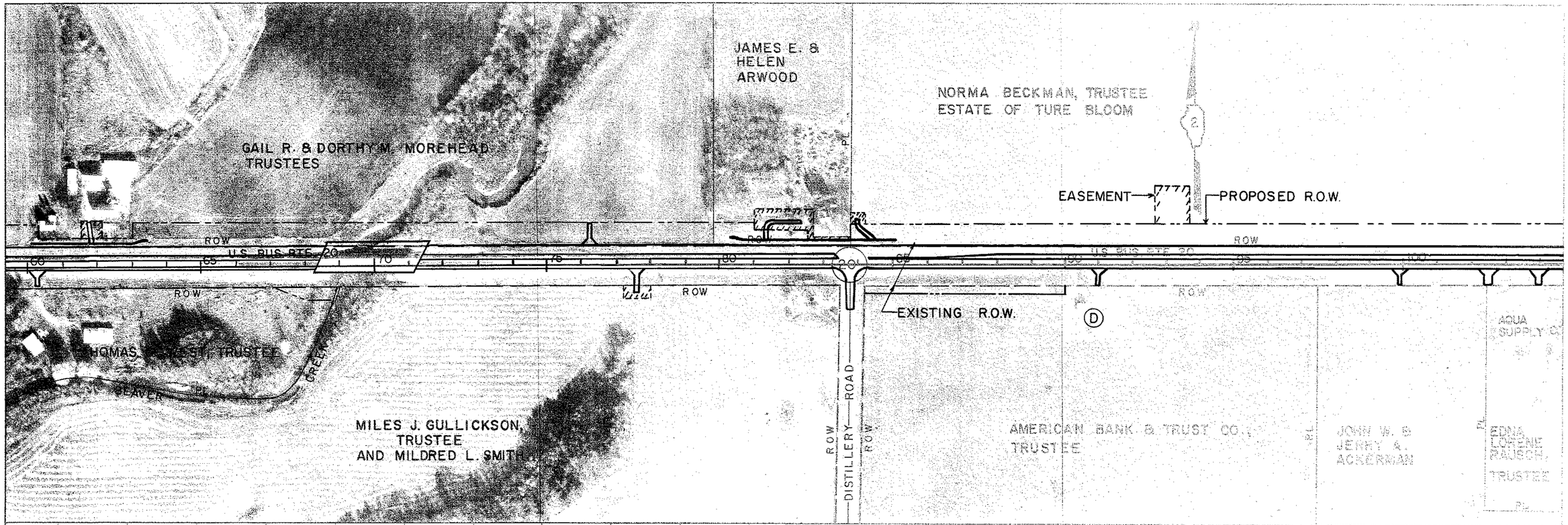
F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere 4 OF 9

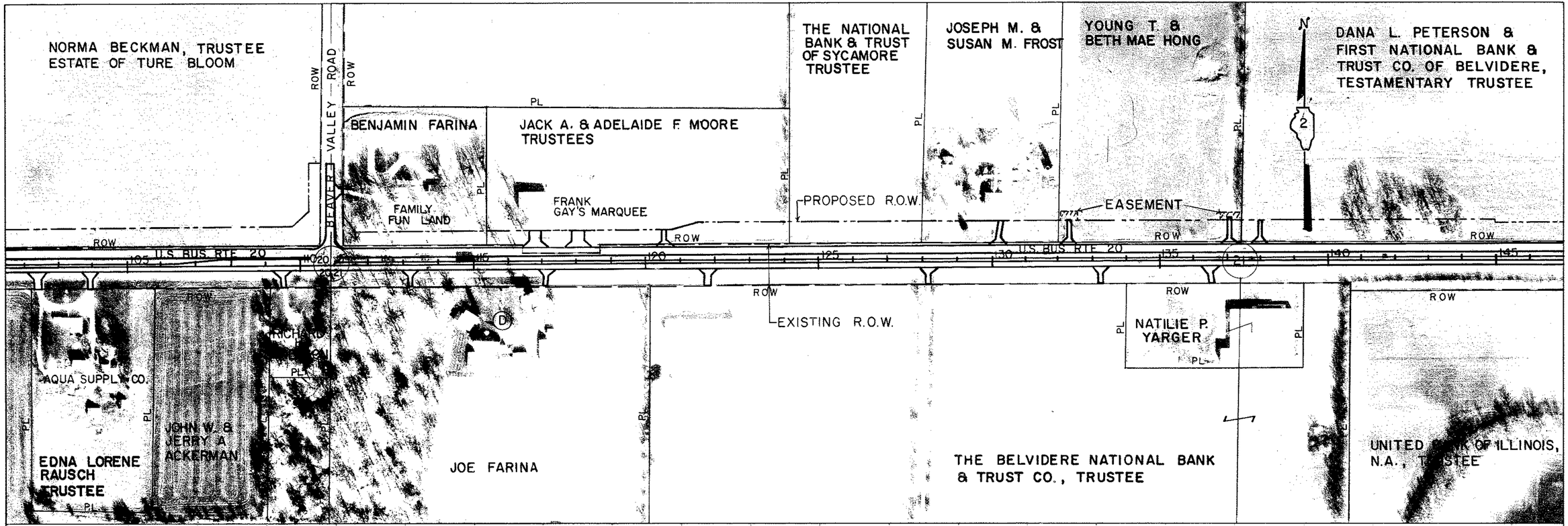
EXHIBIT 10D


BRUCE P & MARY A. MACDONALD
FRANK DAMES EASTON
CHARLES E. & H. VICTORIA FITCH
STEPHEN R. & KRISTINA THOMAS
ALBERT C., II & NORMA E. PETIT
EASEMENT
WILLIAM R. & RICHARD H. THOMAS
MICHAEL P. & TONY MONTALEONE
BOONE COUNTY CONSERVATION DISTRICT
CENTAUR INVESTMENT CLUB
GAIL R. & DORTHY M. MOREHEAD, TRUSTEES
THOMAS G. WEST, TRUSTEE
LOWELL L. JOHNSON
PROPOSED R.O.W.
EXISTING R.O.W.
U.S. BUS. RTE. 30
U.S. BUS. RTE 20
OLYMPUS
CENTAUR
DRIVE
OLSON ROAD
CREEK
BEAVER
R.O.W.
P.L.
1" = 200'
scale
200 0 200 400
feet
℄ PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
790
780
770
760
PHASE I
ALT. 4

IOE


BRUCE R. & MARY A. MacDONALD
FRANK DAMES EASTON
CHARLES E. & H. VICTORIA FITCH
STEPHEN R. & KRISTINA THOMAS
ALBERT C., II & NORMA E. PETIT
WILLIAM R. & RICHARD H. THOMAS
MICHAEL P. & TONY MONTALEONE
BOONE COUNTY CONSERVATION DISTRICT
CENTAUR INVESTMENT CLUB
GAIL R. & DORTHY M. MOREHEAD, TRUSTEES
THOMAS G. WEST, TRUSTEE
LOWELL L. JOHNSON
OLYMPUS
CENTAUR
DRIVE
ROAD
CREEK
BEAVER
U.S. BUS RTE 20
R.O.W.
P.L.
PROPOSED R.O.W. EASEMENT
EXISTING R.O.W.
1"= 200'
200 0 200 400
scale feet
PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
790
780
770
760
750
740
PHASE III
ALT. 4

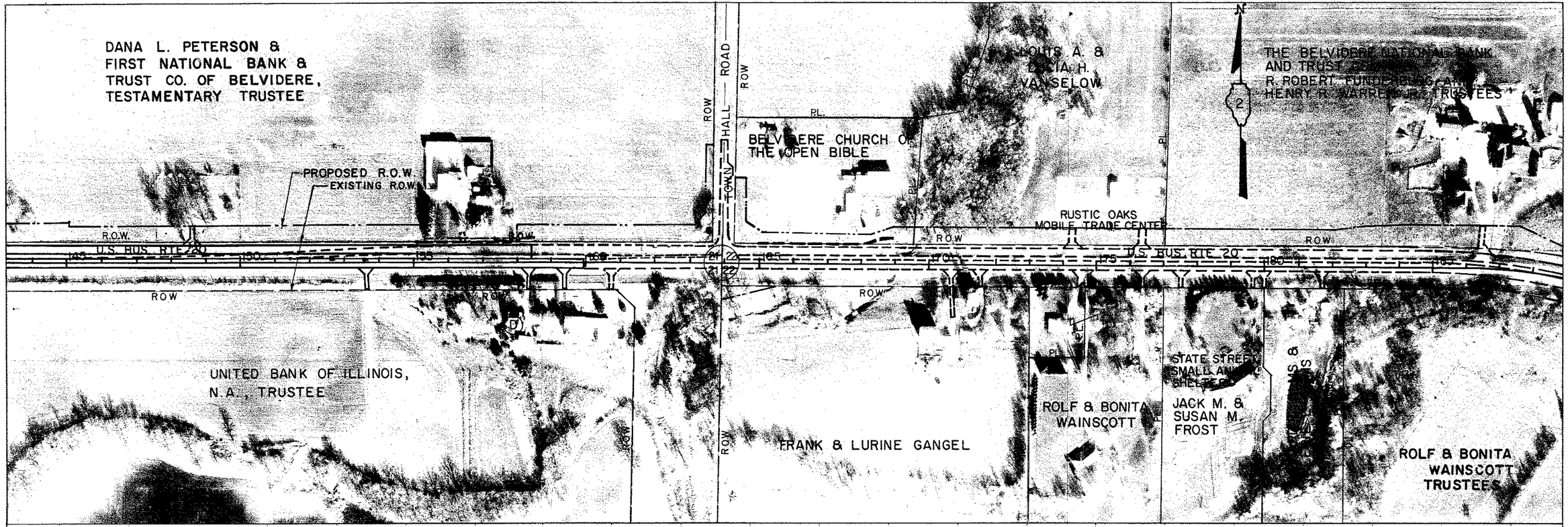

GAIL R. & DORTHY M. MOREHEAD
TRUSTEES
JAMES E. & HELEN ARWOOD
NORMA BECKMAN, TRUSTEE
ESTATE OF TURE BLOOM
EASEMENT
PROPOSED R.O.W.
ROW
U.S. BUS. RTE. 20
EXISTING R.O.W.
THOMAS
TRUSTEE
BEAVER
CREEK
MILES J. GULLICKSON, TRUSTEE
AND MILDRED L. SMITH
DISTILLERY ROAD
AMERICAN BANK & TRUST CO., TRUSTEE
JOHN W. & JERRY A. ACKERMAN
EDNA LORENE RAUSCH, TRUSTEE
AQUA SUPPLY CO.
65
70
75
80
85
90
95
100
790
780
770
760
750
740
℄ PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
1" = 200'
Scale
4



ALT. 4

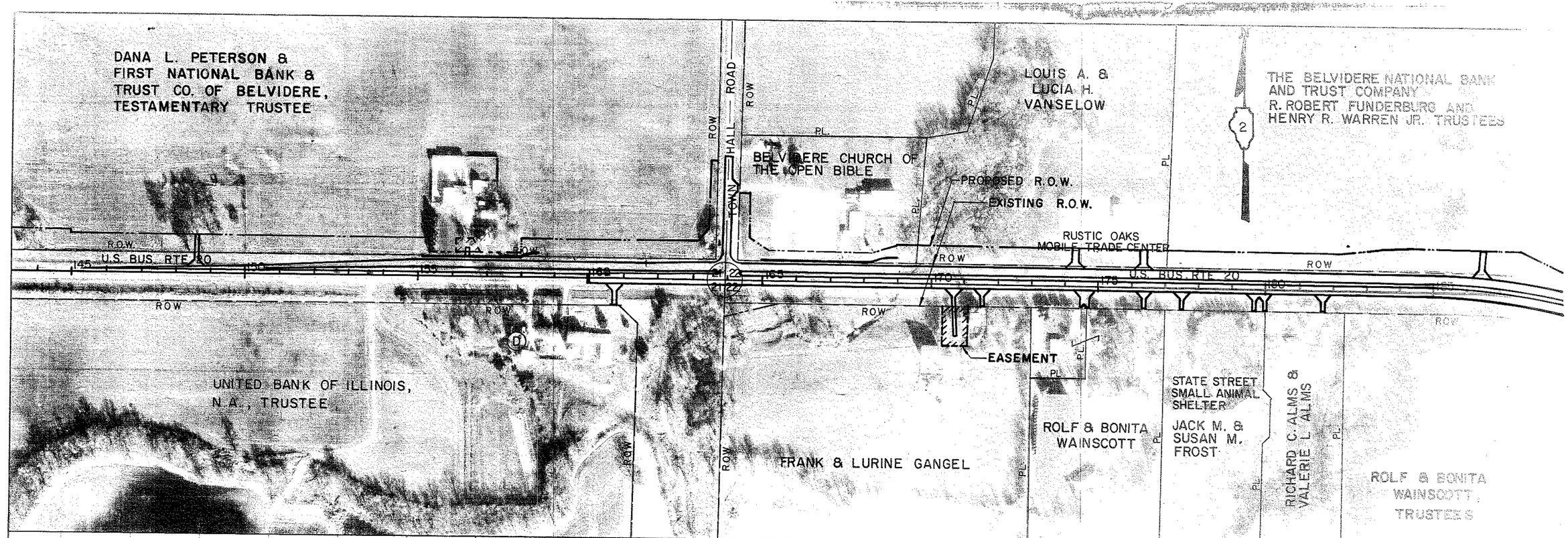
F A P 517 (U.S. Business Route 20)
Rockford – Belvidere 7 OF 9

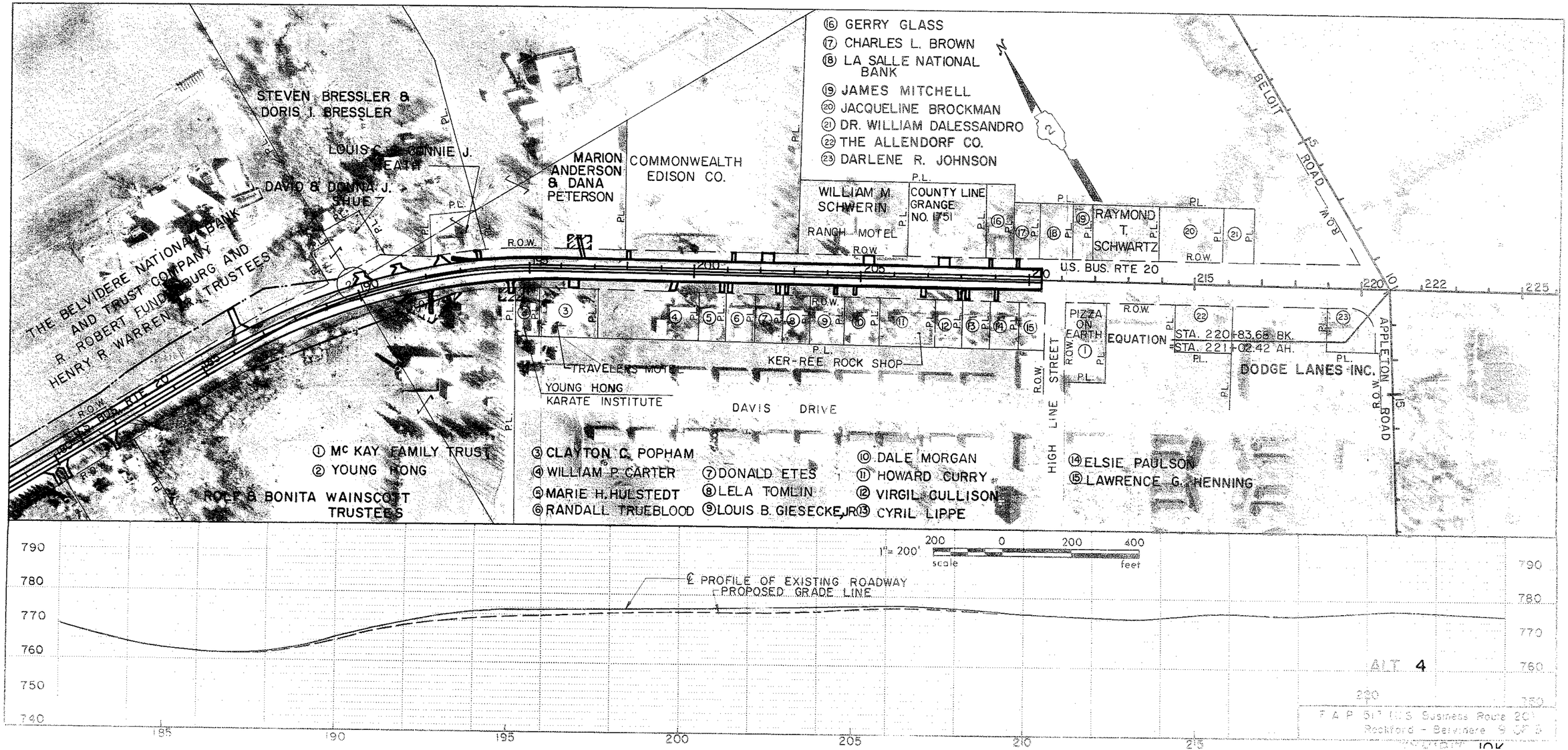
EXHIBIT 10H



F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere 8 OF 9

EXHIBIT 101

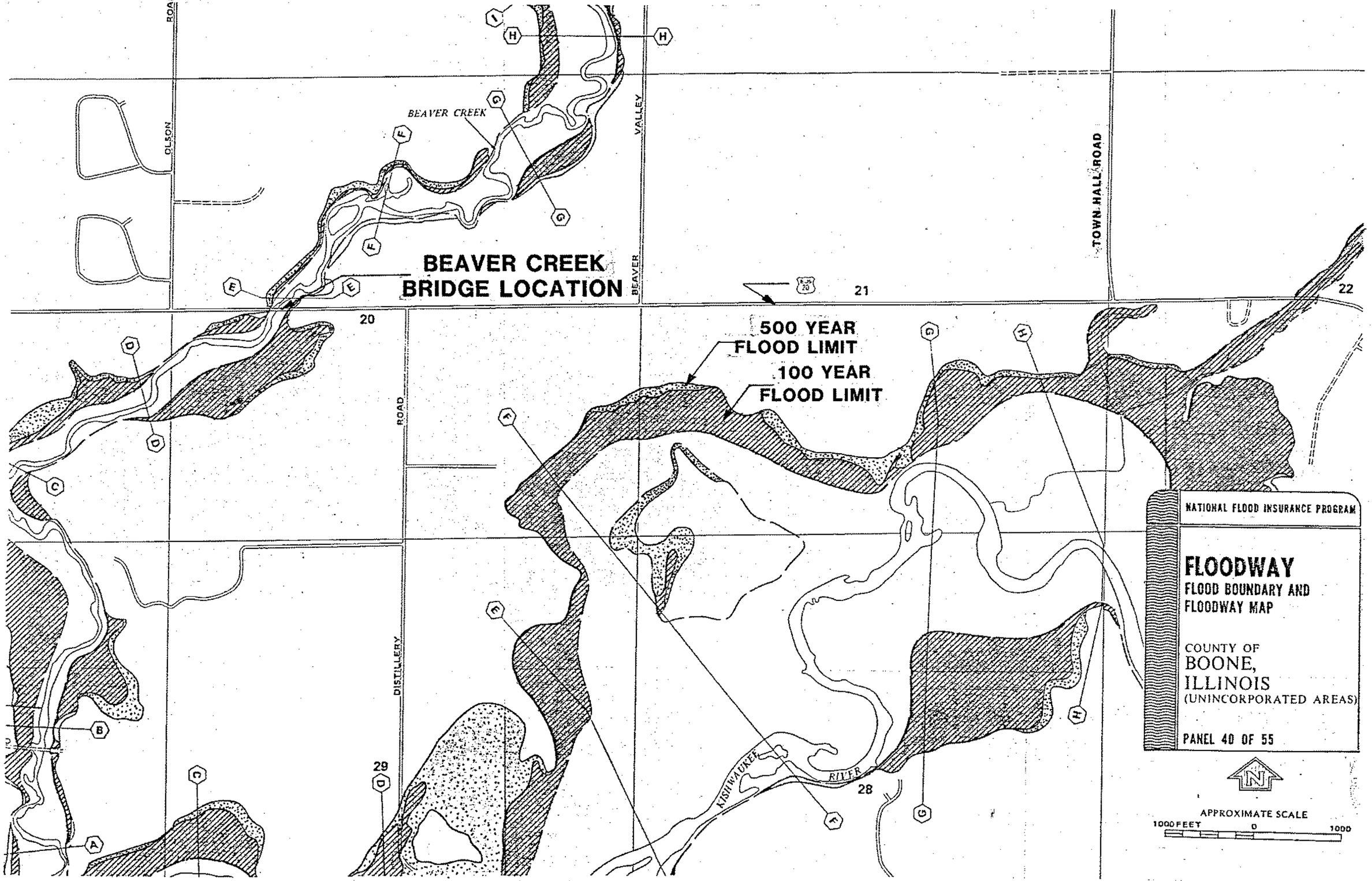

DANA L. PETERSON &
FIRST NATIONAL BANK &
TRUST CO. OF BELVIDERE,
TESTAMENTARY TRUSTEE
UNITED BANK OF ILLINOIS,
N.A., TRUSTEE
LOUIS A. &
LUCIA H.
VANSELOW
THE BELVIDERE NATIONAL BANK
AND TRUST COMPANY
R. ROBERT FUNDERBURG AND
HENRY R. WARREN JR. TRUSTEES
BELVIDERE CHURCH OF
THE OPEN BIBLE
PROPOSED R.O.W.
EXISTING R.O.W.
RUSTIC OAKS
MOBILE TRADE CENTER
EASEMENT
FRANK & LURINE GANGEL
ROLF & BONITA
WAINSCOTT
STATE STREET
SMALL ANIMAL
SHELTER
JACK M. &
SUSAN M.
FROST
RICHARD C. ALMS &
VALERIE L. ALMS
ROLF & BONITA
WAINSCOTT,
TRUSTEES
HALL TOWN ROAD
U.S. BUS. RTE. 20
ROW
PL
790
780
770
760
750
740
145
150
155
160
165
170
175
180
185
1" = 200'
200 0 200 400
scale feet
℄ PROFILE OF EXISTING ROADWAY
AND PROPOSED GRADE LINE
PHASE II
ALT. 4

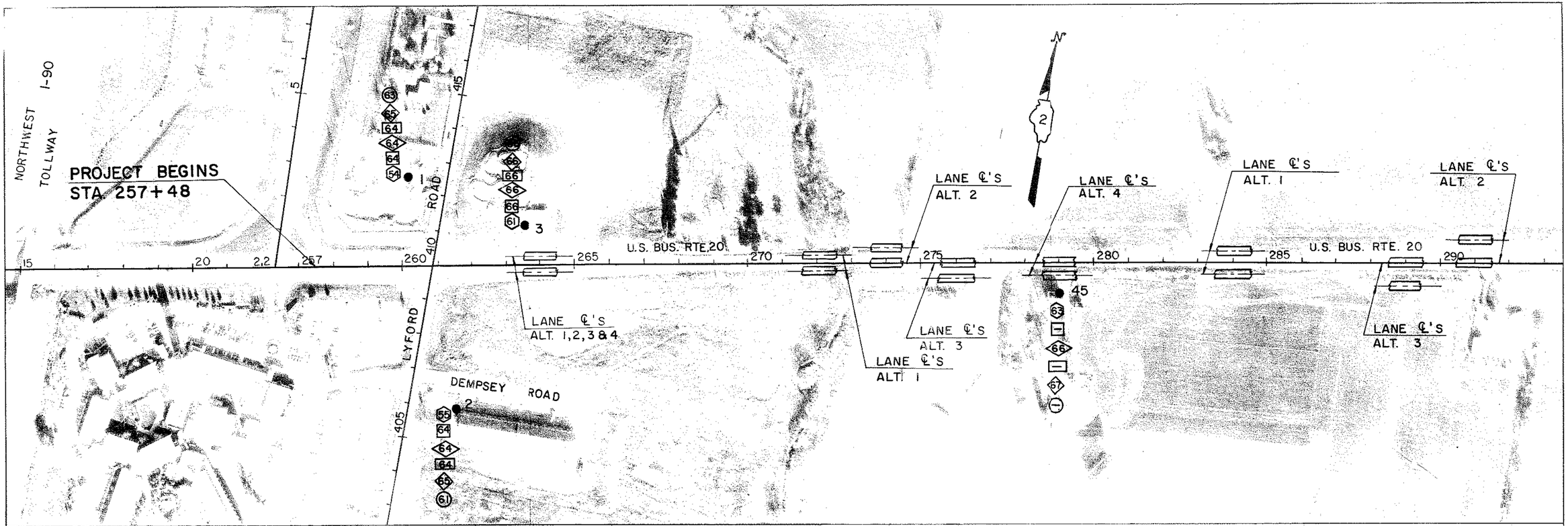

STEVEN BRESSLER & DORIS J. BRESSLER
LOUIS C. & CONNIE J. HEATH
DAVID & DONNA J. SHUE
THE BELVIDERE NATIONAL BANK AND TRUST COMPANY R. ROBERT FUNDERBURG AND HENRY R. WARREN, TRUSTEES
MARION ANDERSON & DANA PETERSON
COMMONWEALTH EDISON CO.
⑯ GERRY GLASS
⑰ CHARLES L. BROWN
⑱ LA SALLE NATIONAL BANK
⑲ JAMES MITCHELL
⑳ JACQUELINE BROCKMAN
㉑ DR. WILLIAM DALESSANDRO
㉒ THE ALLENDORF CO.
㉓ DARLENE R. JOHNSON
WILLIAM M. SCHWERIN
COUNTY LINE GRANGE NO. 1751
RANCH MOTEL
RAYMOND T. SCHWARTZ
BELOIT ROAD
U.S. BUS. RTE 20
TRAVELERS MOTEL
KER-REE ROCK SHOP
YOUNG HONG KARATE INSTITUTE
DAVIS DRIVE
HIGH LINE STREET
PIZZA ON EARTH
EQUATION
STA. 220+83.66 BK.
STA. 221+02.42 AH.
DODGE LANES INC.
APPLETON MOR ROAD
① Mc KAY FAMILY TRUST
② YOUNG HONG
③ CLAYTON C. POPHAM
④ WILLIAM P. CARTER
⑤ MARIE H. HULSTEDT
⑥ RANDALL TRUEBLOOD
⑦ DONALD ETES
⑧ LELA TOMLIN
⑨ LOUIS B. GIESECKE, JR.
⑩ DALE MORGAN
⑪ HOWARD CURRY
⑫ VIRGIL CULLISON
⑬ CYRIL LIPPE
⑭ ELSIE PAULSON
⑮ LAWRENCE G. HENNING
ROLF & BONITA WAINSCOTT TRUSTEES
1" = 200'
scale
feet
℄ PROFILE OF EXISTING ROADWAY
PROPOSED GRADE LINE
ALT 4
F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere
SHEET 10K

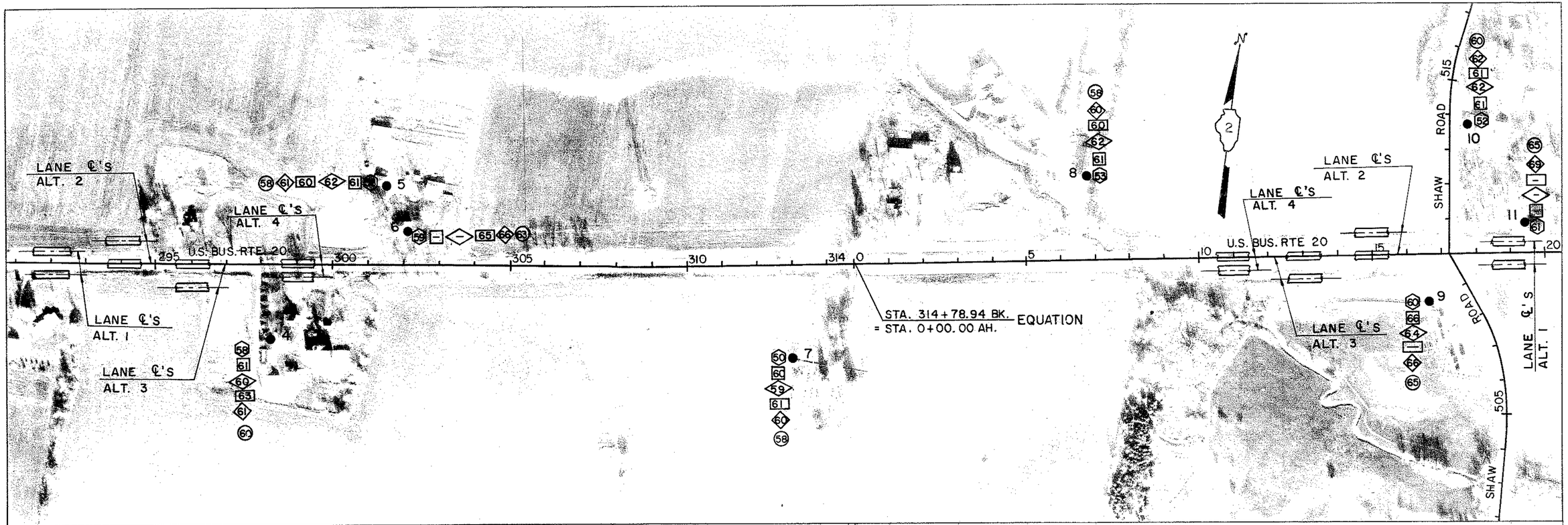
FA.P. 517
(U.S. Business Route 20)
Rockford – Belvidere

FLOODPLAIN MAP

EXHIBIT
II A


BEAVER CREEK
BEAVER CREEK
BRIDGE LOCATION
500 YEAR
FLOOD LIMIT
100 YEAR
FLOOD LIMIT
OLSON ROAD
BEAVER VALLEY
TOWN HALL ROAD
DISTILLERY ROAD
KISHWAUKEE RIVER
20
21
22
28
29
NATIONAL FLOOD INSURANCE PROGRAM
FLOODWAY
FLOOD BOUNDARY AND
FLOODWAY MAP
COUNTY OF
BOONE,
ILLINOIS
(UNINCORPORATED AREAS)
PANEL 40 OF 55
APPROXIMATE SCALE
1000 FEET
0
1000


NORTHWEST TOLLWAY I-90
PROJECT BEGINS
STA. 257+48
LYFORD ROAD
DEMPSEY ROAD
U.S. BUS. RTE. 20
LANE ℄'S ALT. 1,2,3&4
LANE ℄'S ALT. 2
LANE ℄'S ALT. 4
LANE ℄'S ALT. 1
LANE ℄'S ALT. 3
LANE ℄'S ALT. 2
LANE ℄'S ALT. 3
1" = 200'
200 0 200 400
scale feet
LEGEND
NOISE ANALYSIS RECEPTOR LOCATION
1984 MEASURED EXISTING Leq
2008 BUILD ALT # 1 Leq
2008 BUILD ALT # 2 Leq
2008 BUILD ALT # 3 Leq
2008 NO ACTION Leq
2008 BUILD ALT # 4 Leq
NOISE ANALYSIS
F A P 517 (U.S. Business Route 20)
Rockford - Belvidere 1 OF 7
EXHIBIT 12 A



LEGEND

●	NOISE	ANALYSIS RECEPTOR LOCATION	
⬡	1984	MEASURED EXISTING	Leq
□	2008	BUILD ALT # 1	Leq
◇	2008	BUILD ALT # 2	Leq
▭	2008	BUILD ALT # 3	Leq
◇	2008	NO ACTION	Leq
○	2008	BUILD ALT # 4	Leq

NOISE ANALYSIS

F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere 2 OF 7

EXHIBIT 12 B

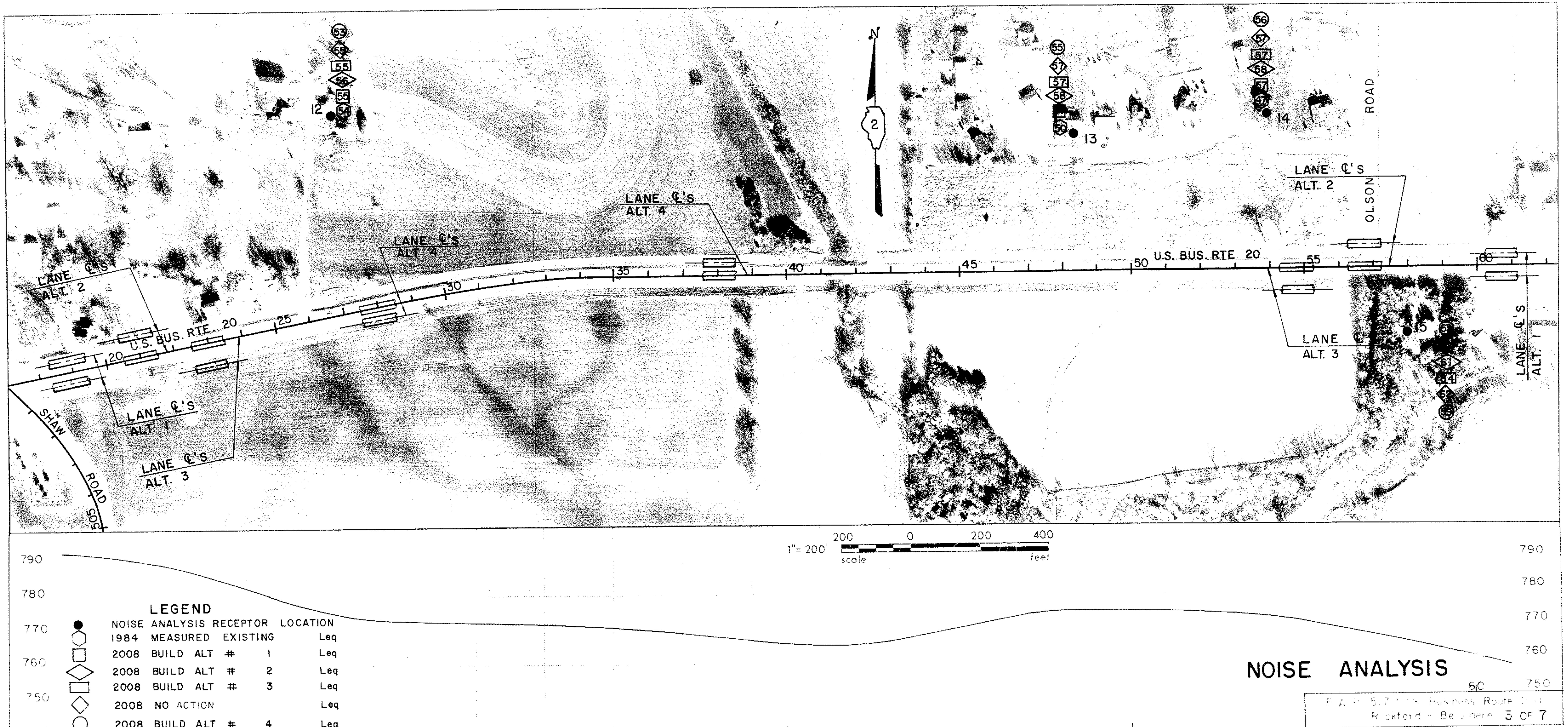
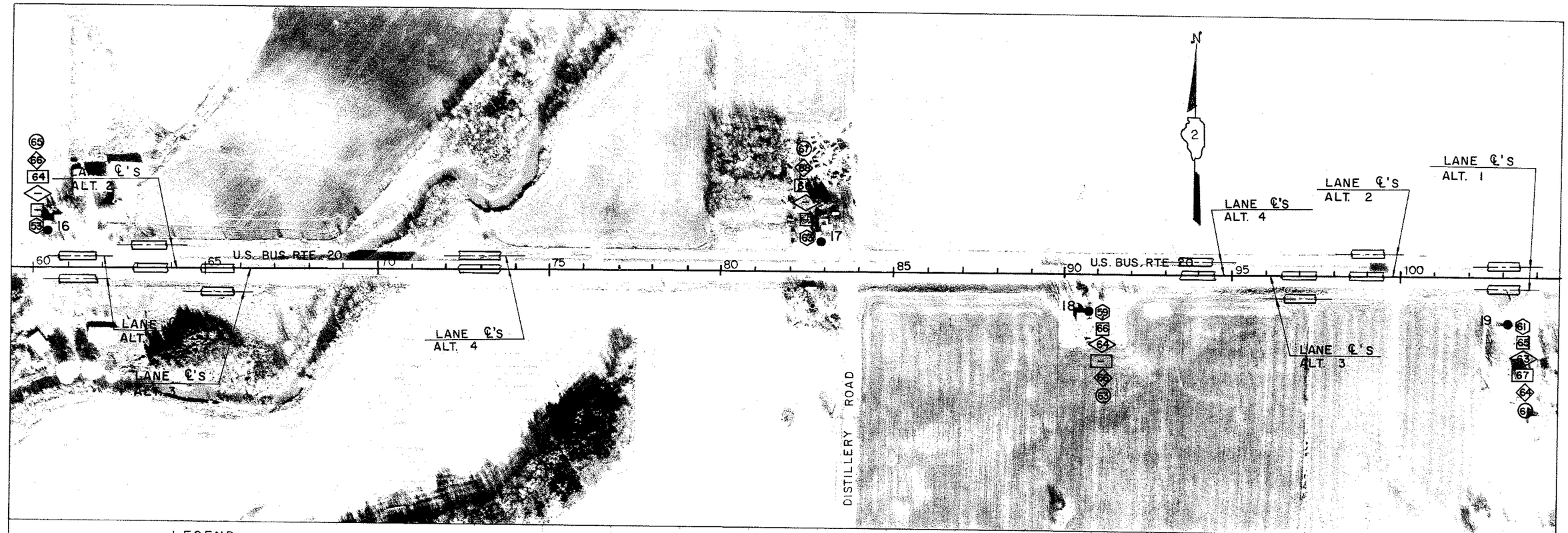

LANE ℄'S ALT. 2
LANE ℄'S ALT. 4
LANE ℄'S ALT. 4
LANE ℄'S ALT. 2
U.S. BUS. RTE. 20
U.S. BUS. RTE. 20
LANE ℄'S ALT. 1
LANE ℄'S ALT. 3
LANE ℄ ALT. 3
LANE ℄'S ALT. 1
SHAW ROAD
OLSON ROAD
1" = 200'
scale
feet
LEGEND
NOISE ANALYSIS RECEPTOR LOCATION
1984 MEASURED EXISTING Leq
2008 BUILD ALT # 1 Leq
2008 BUILD ALT # 2 Leq
2008 BUILD ALT # 3 Leq
2008 NO ACTION Leq
2008 BUILD ALT # 4 Leq
NOISE ANALYSIS
3 OF 7

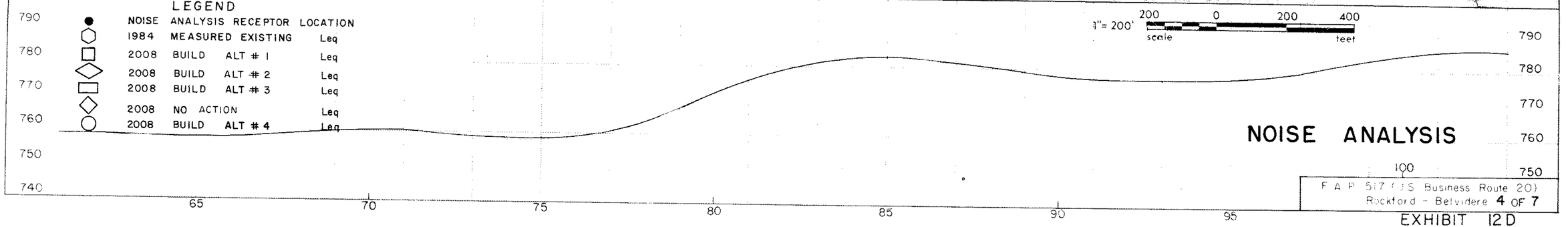
EXHIBIT 12C



LEGEND

	NOISE	ANALYSIS RECEPTOR	LOCATION
●	1984	MEASURED EXISTING	Leq
⬡	2008	BUILD ALT # 1	Leq
◇	2008	BUILD ALT # 2	Leq
□	2008	BUILD ALT # 3	Leq
◇	2008	NO ACTION	Leq
○	2008	BUILD ALT # 4	Leq

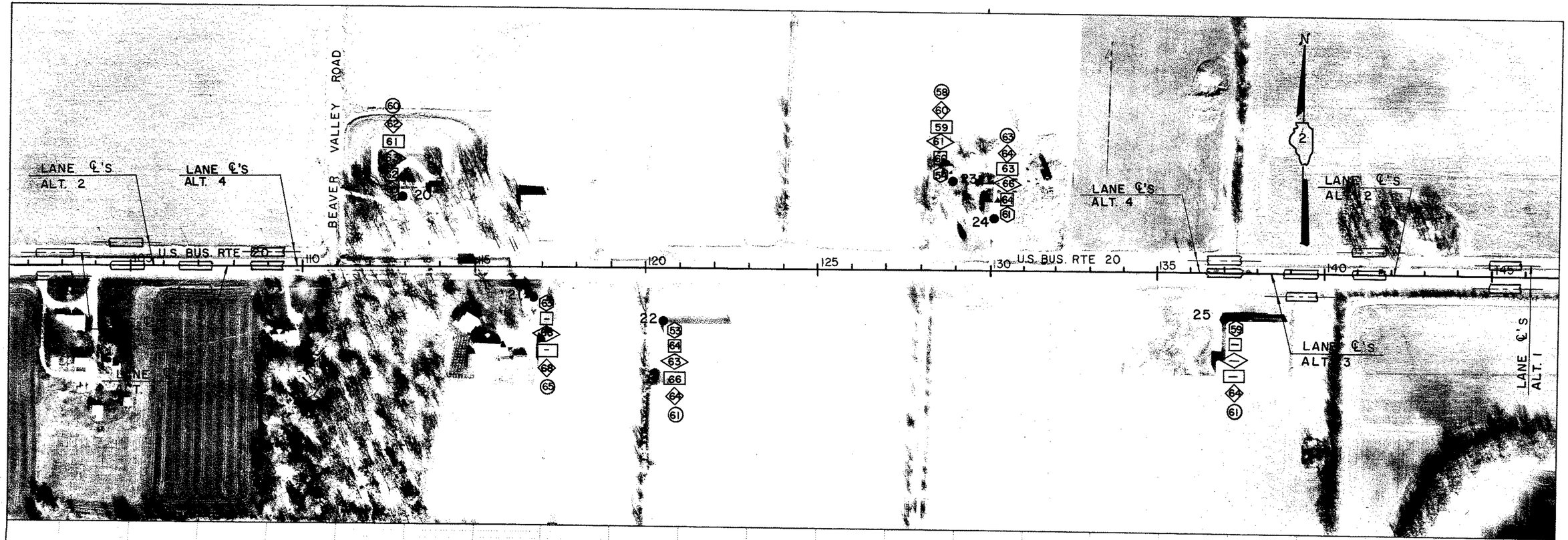
1"= 200' scale: 200 0 200 400 feet



NOISE ANALYSIS

F A P 517 (U.S. Business Route 20)
Rockford - Belvidere 4 OF 7

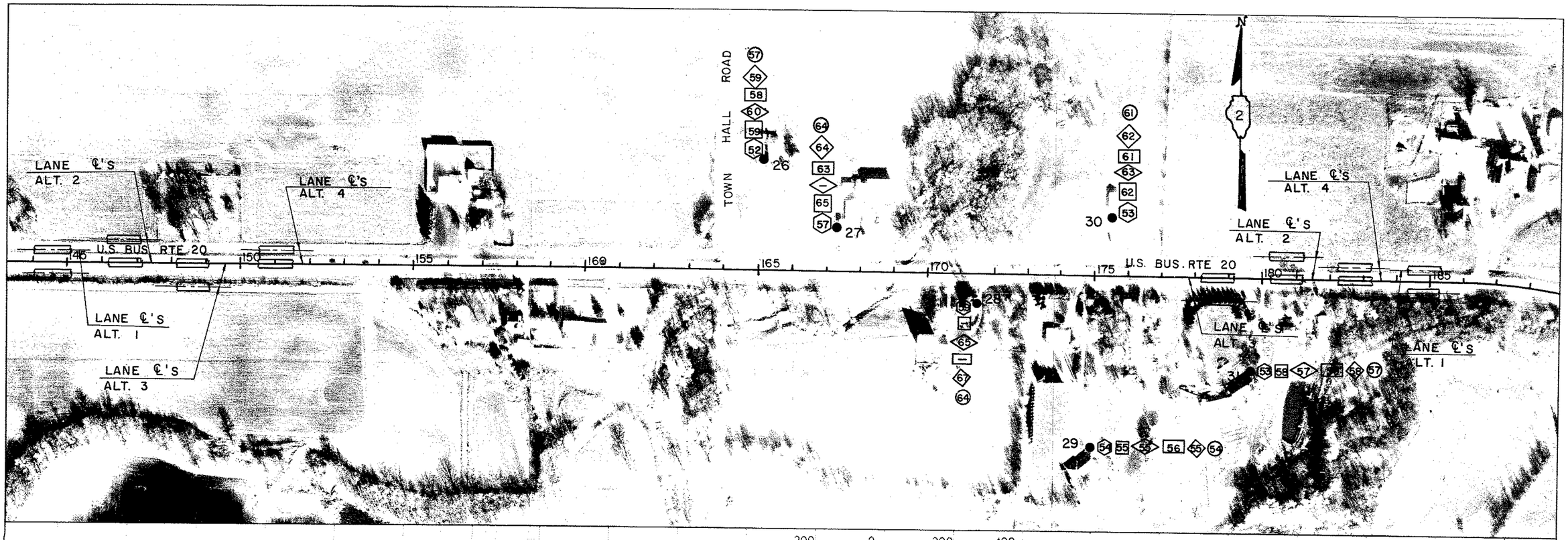
EXHIBIT 12 D



NOISE ANALYSIS

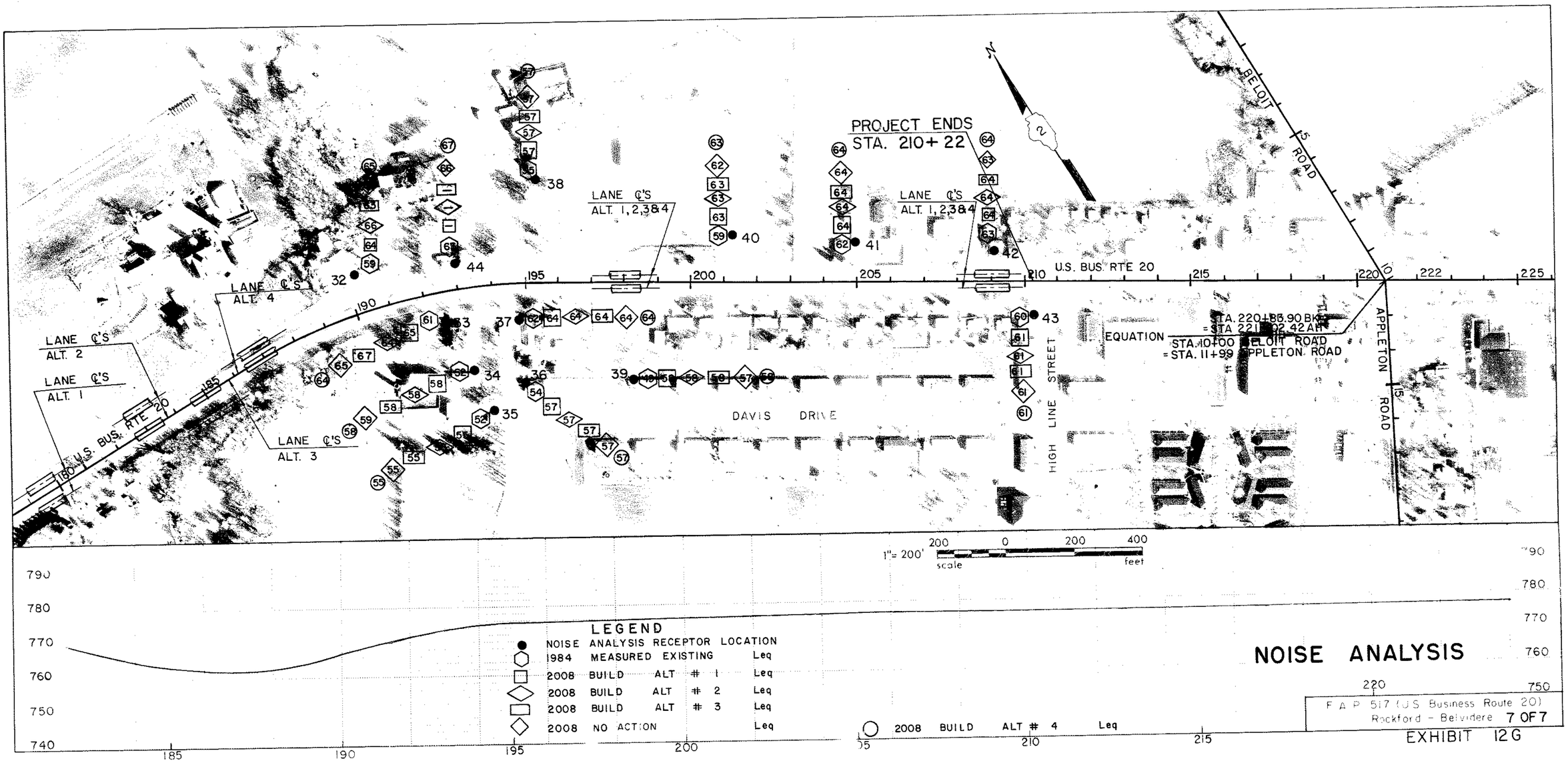
F.A.P. 517 (U.S. Business Route 20)
Rockford – Belvidere 5 OF 7

EXHIBIT 12 F



F A P 517 (U S Business Route 20)
Rockford - Belvidere 6 OF 7

EXHIBIT 12 F


PROJECT ENDS
STA. 210+22
LANE ℄'S
ALT. 1,2,3&4
LANE ℄'S
ALT. 1,2,3&4
LANE ℄'S
ALT. 4
LANE ℄'S
ALT. 2
LANE ℄'S
ALT. 1
LANE ℄'S
ALT. 3
U.S. BUS. RTE 20
U.S. BUS. RTE 20
DAVIS DRIVE
HIGH LINE STREET
BELOIT ROAD
APPLETON ROAD
EQUATION
STA. 10+00 BELOIT ROAD
= STA. 11+99 APPLETON ROAD
STA. 220+86.90 BK
= STA. 221+02.42 AH
N
1"= 200'
200 0 200 400
scale
feet
LEGEND
NOISE ANALYSIS RECEPTOR LOCATION
1984 MEASURED EXISTING Leq
2008 BUILD ALT # 1 Leq
2008 BUILD ALT # 2 Leq
2008 BUILD ALT # 3 Leq
2008 NO ACTION Leq
2008 BUILD ALT # 4 Leq
NOISE ANALYSIS
F A P 517 (U.S. Business Route 20)
Rockford - Belvidere 7 OF 7
EXHIBIT 12 G

DEPARTMENT OF THE ARMY
ROCK ISLAND DISTRICT, CORPS OF ENGINEERS
CLOCK TOWER BUILDING
ROCK ISLAND, ILLINOIS 61201

AUG 15 '83

REPLY TO ATTENTION OF:
Operations Division

August 12, 1983

RECEIVED - DIST. 2

	TO	FILE	ACT.
	DIST. ENGR.		
	ASST. DIST. ENGR.		
	ADM. SERV.		
	CONST.		
	DESIGN		
	LOC. RDS.		
	MAINT.		
	MAT.		
	PLAN.		
	LAND ACQ.		
	TRAFFIC		
	CONFER WITH ME		
	SEE ME		

Mr. W. L. Kevern
Illinois Department of Transportation
Division of Highways/District 2
819 Depot Avenue
Dixon, Illinois 61021

Dear Mr. Kevern:

Reference is made to your letter dated July 14, 1983, requesting information on the location of the headwater points of various streams in relation to your upgrading U.S. 20BR between Belvidere and Rockford, Illinois.

Based on the information provided, your proposed project crosses Beaver Creek in Section 20, Township 44 North, Range 3 East, Boone County, Illinois. This crossing is located below the headwaters of Beaver Creek and the stream has a normal flow greater than 5 cubic feet per second. Therefore, this portion of your proposed project will require Deparment of the Army authorization. This authorization may be in the form of a nationwide permit or may require processing of an individual permit.

The remaining stream crossings within your project alignment are located above the headwaters of their respective streams and the streams have a normal flow of less than 5 cubic feet per second.

Concerning your request for this agency to become a cooperating agency, our only involvement will be in reviewing the final Environmental Assessment. Please forward a copy of your Environmental Assessment to this office when you reach final design stage.

Should you have any questions, please contact our Regulatory Functions Branch by letter, or telephone Mr. John Betker, 309/788-6361, extension 6367.

Sincerely,

Raymond Horton P.E.

Henry G. Pfiester, P.E.
Chief, Operations Division

EXHIBIT 13A
SHEET 1 OF 1

STATE OF ILLINOIS
OFFICE OF THE GOVERNOR
SPRINGFIELD 62706

JAMES R. THOMPSON
GOVERNOR

SUBJECT: **SIGNOFF**
US BR20, FAP 517, Expressway Construction - Early Warning

FUNDING: USDOTFHwyA - $8,895,000; Applicant - $2,965,000
SAI# 83 07 12 13

TO: Steve Washko
Illinois Department of Transportation
Division of Highways
2300 South Dirksen Parkway
Springfield, Illinois 62764

The Illinois State Clearinghouse has processed the subject notification. Representatives of State agencies whose activities might be affected by action on this project has been provided an opportunity for review and comment. Based on the information provided and responses of interested parties, it has been determined that:

- (X) The proposed project is not in conflict with the State's plans, policies and priorities.
- ( ) The proposed project is not in conflict with the State's plans, policies and priorities. However, the attached comment(s) and/or recommendations(s) should be taken into consideration by the applicant and the funding agency.
- ( ) The proposed project is not in conflict with the State's plans, policies and priorities provided the provision(s) outlined in the attachment(s) is/are met.
- ( ) The proposed project is found to be in conflict with the plans, policies and priorities of the State. See attachment(s) for further explanation.

This letter is valid for two years from this date. An updated SF 424 must be submitted to the State Clearinghouse if revision, continuation or augmentation is sought from the funding agency. Please reference the State Application Identifier (SAI) in any future correspondence concerning this project.

Michelle Curtis
Illinois State Clearinghouse

8-18-83
Date

CC:

EXHIBIT 13B
SHEET 1 OF 1

Illinois Department of Conservation
life and land together

LINCOLN TOWER PLAZA • 524 SOUTH SECOND STREET • SPRINGFIELD 62701-1787
CHICAGO OFFICE - ROOM 100, 160 NORTH LASALLE 60601-3184

January 14, 1986

Mr. William D. Ost
Ill. Dept. of Transportation
819 Depot Avenue
Dixon, IL 61021

Re: Boone County
FA 517 (Business Rt. 20)

Attn: Alex Paisley

Dear Mr. Ost:

The Department of Conservation has reviewed the materials provided on the project referenced above.

Based on the relative impacts of the four alternates proposed, this agency recommends the adoption of alternate #4 as the most preferable from an environmental standpoint.

Sincerely,

Kenneth L. Litchfield
Resource Planner
Division of Planning

KLL:bp

JAN 21 '86

RECEIVED DIST. 2		
	DIST. ENGINEER	
	ASST. DIST. ENGR.	
TO		FILE ACT
	ADM. SERV.	
	CONST.	
	DESIGN	
	LAND ACQ.	
	DOC. RDS.	
	MAINT.	
	MAT'LS.	
	PLAN.	
	TRAFFIC.	

EXHIBIT 13C

Illinois Historic Preservation Agency

Old State Capitol • Springfield • 62701

RECEIVED

JAN 27 1986

ENVIRONMENT

January 16, 1986

Mr. M. J. Macchio
Engineer of Location and Environment
Illinois Department of Transportation
2300 S. Dirksen Parkway
Springfield, IL 62764

DEPT. OF TRANSPORTATION
RECEIVED
JAN 24 1986
BUREAU OF LOCATION
AND ENVIRONMENT

Attn: J. Paul Biggers

RE: FAP 517 (U.S. Route 20)
Rockford to Belvidere
Winnebago and Boone Counties

Dear Mr. Macchio:

We have reviewed the information you provided concerning the A. M. Smith, Ezra May and Peter Clark Houses in Belvidere Township, Boone County. In our opinion, none of these structures are eligible for the National Register of Historic Places.

Please retain this letter as evidence of compliance with section 106 of the National Historic Preservation Act of 1966, as amended. As such, this letter should be a part of the final report for the referenced project.

Sincerely,

William G. Farrar

William G. Farrar
Deputy State Historic
Preservation Officer

WGF:AMH:ps

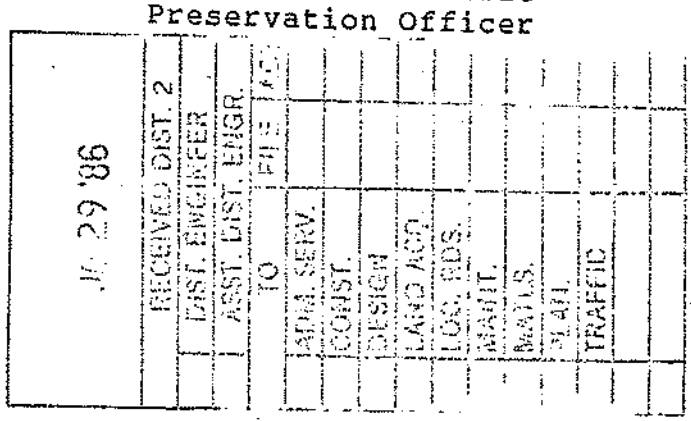


EXHIBIT 13D

Illinois Department of Transportation
Division of Highways / District 2
819 Depot Avenue / Dixon, Illinois 61021
815 / 284-2271

PLANNING
Project and Environment
FA Route 517 (Business Route 20)
Section L-BR
Boone County

July 15, 1985

Mr. Thomas Groutage, Field Supervisor
U.S. Department of Interior Fish and
Wildlife Service
Rock Island Field Office
1830 Second Avenue
Rock Island, IL 61201

Dear Mr. Groutage:

The Illinois Department of Transportation, District 2, is currently studying the reconstruction of BR 20 between Rockford and Belvidere. This project was reviewed in the field with Mr. Kenneth Litchfield on March 26, 1985. We are requesting an environmental review of this project by your agency.

The proposed project is described in the enclosed report (Attachment 1).

An Ecological Assessment has been enclosed to aid your review of this project (Attachment 2).

Right-of-way will be acquired for this project. The amount to be acquired varies with each proposed alternate.

Traffic will be maintained by stage construction.

This request for comments is being made in accordance with the Federal Highway Administration requirements for early coordination of proposed actions that may affect your areas of interest or expertise. If comments are not received from your office within 30 days (plus a reasonable amount of time for time in

EXHIBIT 13E
SHEET 1 OF 2

the mail), it will be assumed that no comments will be forthcoming.

If you have any questions or comments, please contact Patrick Malone at 815/284-5455.

Very truly yours,

William D. Ost
District Engineer

By: Alex Paisley
District Planning and
Programming Engineer

AP/PAM/db

Attachments

No Response Received After 90 Days

EXHIBIT 13E

ROCKFORD AREA TRANSPORTATION STUDY

TRANSPORTATION IMPROVEMENT PROGRAM

HIGHWAY AND TRANSIT PROGRAMS

ANNUAL AND MULTI-YEAR PROGRAMS
(for FY 1986)

Prepared by Technical Staff
and
Published by

Planning Division, Department of Community Development
425 East State Street
Rockford, Illinois 61104

This report was prepared in cooperation with the U.S. Department of Transportation, Federal Highway Administration, Urban Mass Transportation Administration and Illinois Department of Transportation. The contents, views, policies and conclusions expressed in this report are not necessarily those of the above agencies.

AGENCY: ILLINOIS DEPARTMENT OF TRANSPORTATION

ROCKFORD AREA TRANSPORTATION STUDY
TRANSPORTATION IMPROVEMENT PROGRAM

MULTI-YEAR ELEMENT
FY87 - FY90
JULY 1986 TO JUNE 1990

PROJECT NUMBER	PROJECT	FROM	TO	LENGTH (MILES)	IMPROVEMENT	TOTAL COST ($000)	REVENUE SOURCE	FY87-FY90 COST ($000)
I-45	U.S. 20 BR/ State St.	Lyford Rd. to Shaw Rd.		1.28	Additional lanes, Reconstruction, & Land Acquisition	1,600	FAP SS	1,200 400
I-81	U.S. 20 BR/ State St.	Mulford Rd.			Signal Modernization	60	HES SS Local	56 2 2
I-70	U.S. 20 BR	Rockton Ave. to 7th St.		1.16	Resurface	440	SS	440
I-82	U.S. 20 BR/ State St.	IL 70/ Kilburn Ave.			Signal Modernization	40	HES SS	36 4
I-73	U.S. 20 BR/ Walnut St.	Madison, 1st, 2nd, 3rd, 6th, & 7th Streets			Signal Modernization & Intersection Improvement	300	SS	300
I-49	IL 2/ Church St	Jefferson St. to S. Main St.		0.50	Resurface, Intersection Improvements, & Land Acquisition	426	FAP SS Local	235.5 87.5 103
I-52	IL 2/ Main St.	Morgan St. to Beltline Rd.		3.50	Resurface	1,240	FAP SS Local	930 310 NA
I-78	IL 2/ Wyman St.	Green St. to Chestnut St.		0.07	Resurface	25	FAP SS	18.75 6.25
I-76	IL 2/ Main St.	Morgan & Montague Sts.			Signal Modernization	80	FAP SS Local	72 4 4
I-83	IL 70	Drainage ditch .25 miles east of Meridian Rd.			Preliminary Engineering	20	SS	20

EXHIBIT 13F

REQUEST FOR
BIOLOGICAL SURVEY & ASSESSMENT

SAI NUMBER 83-07-12-15

To: Bureau of Location & Environment Attn: J. Paul Biggers

From: IDOT District Number 2 By: Ralph C. Wehner

Subject: Biological Field Survey and Assessment

Date: June 7, 1984

Please initiate the necessary literature search and/or field reconnaissance survey to determine if any threatened and/or endangered species, any potential or actual habitat of such species, or any other areas of particular ecological interest will be affected by the proposed improvement as described below:

ROUTE AND LOCATION

Route - FA 517, Section (2MFT & L)RS-2

Termini - U.S. 20 BR, (Lyford Road to Highline Road)

Project Length - 5 miles

County - Boone and Winnebago

Project Number - P-92-002-83 Job Number -

PROPOSED PROJECT APPROVAL DATE - FY 86 ESTIMATED YEAR OF CONSTRUCTION - Multi-Year

NOTE: Good clear 8½ x 11 map or strip map folded to 8½ x 11 should be attached indicating the project alignment to be surveyed.

REMARKS:

- RESULTS OF SURVEY -

Further studies not required (✓) - (See Remarks) All roadside vegetation was agricultural land, and a private picnic area with large bur oaks. The crossing at Beaver Creek has at most a narrow corridor of small trees at (less than 6 inches dbh on the north side and less than 8 inches dbh on the south side) thus not providing suitable habitat for the Indiana bat.

Further studies required ( ) - (See Remarks)

Signed Douglas B Rose

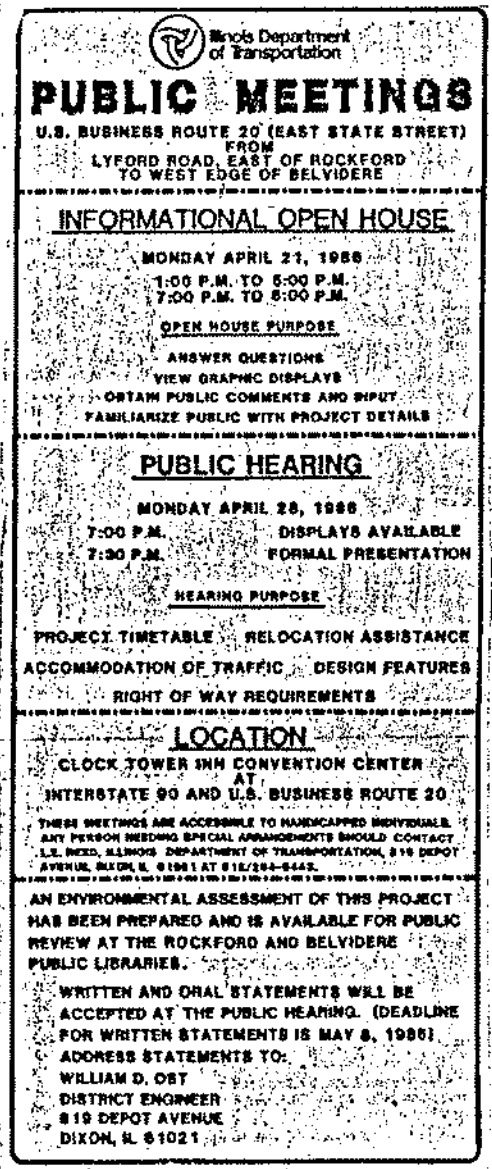
Date Dec. 7, 1984

Charles M. Pesina

cc: Department of Conservation - Natural Heritage Section

EXHIBIT 13G

EXHIBIT 131



Illinois Department of Transportation

PUBLIC MEETINGS

U.S. BUSINESS ROUTE 20 (EAST STATE STREET)
FROM
LYFORD ROAD, EAST OF ROCKFORD
TO WEST EDGE OF BELVIDERE

INFORMATIONAL OPEN HOUSE

MONDAY APRIL 21, 1986
1:00 P.M. TO 5:00 P.M.
7:00 P.M. TO 8:00 P.M.

OPEN HOUSE PURPOSE

ANSWER QUESTIONS
VIEW GRAPHIC DISPLAYS
OBTAIN PUBLIC COMMENTS AND INPUT
FAMILIARIZE PUBLIC WITH PROJECT DETAILS

PUBLIC HEARING

MONDAY APRIL 28, 1986
7:00 P.M. DISPLAYS AVAILABLE
7:30 P.M. FORMAL PRESENTATION

HEARING PURPOSE

PROJECT TIMETABLE, RELOCATION ASSISTANCE
ACCOMMODATION OF TRAFFIC, DESIGN FEATURES
RIGHT OF WAY REQUIREMENTS

LOCATION

CLOCK TOWER INN CONVENTION CENTER
AT
INTERSTATE 90 AND U.S. BUSINESS ROUTE 20

THESE MEETINGS ARE ACCESSIBLE TO HANDICAPPED INDIVIDUALS. ANY PERSON NEEDING SPECIAL ARRANGEMENTS SHOULD CONTACT L.E. REED, ILLINOIS DEPARTMENT OF TRANSPORTATION, 319 DEPOT AVENUE, DIXON, IL 61021 AT 815/284-5443.

AN ENVIRONMENTAL ASSESSMENT OF THIS PROJECT HAS BEEN PREPARED AND IS AVAILABLE FOR PUBLIC REVIEW AT THE ROCKFORD AND BELVIDERE PUBLIC LIBRARIES.

WRITTEN AND ORAL STATEMENTS WILL BE ACCEPTED AT THE PUBLIC HEARING. (DEADLINE FOR WRITTEN STATEMENTS IS MAY 8, 1986)
ADDRESS STATEMENTS TO:
WILLIAM D. OBT
DISTRICT ENGINEER
319 DEPOT AVENUE
DIXON, IL 61021

STATE OF ILLINOIS
County of Winnebago } CITY OF ROCKFORD; ss.

ROCKFORD NEWSPAPERS, INC., a corporation organized and existing under and pursuant to the laws of the State of Delaware, with its principal office in City of Rockford, Winnebago County, Illinois, certifies that it is publisher of

The Rockford Register Star;

that such paper is a secular newspaper of general circulation in said county; that it is printed and published in the City, County, and State aforesaid. It hereby further certifies that a notice, of which the annexed notice is a true copy, has been legally published in said newspaper two time for 2 ~~consecutive~~ days;

That the first publication was on the 10 day of Apr 1986;

That the last publication was on the 15 day of Apr 1986.

It further certifies that said newspaper has been regularly published for one year prior to the first publication of said notice.

IN WITNESS WHEREOF the said Rockford Newspapers, Inc., publisher aforesaid, has hereunto caused its corporate name to be hereunto signed on this 22 day of Apr, A.D. 1986, by its duly authorized agent pursuant to a resolution adopted by the Board of Directors of Rockford Newspapers, Inc. on the 17th day of June, 1977, as follows:

RESOLVED, that a certificate of publication of legal notices may be signed on behalf of this corporation and its corporate name with or without its corporate seal by any or either of the following officers or agents: President, Secretary, Ass't Secretary, Comptroller, or Cashier.

ROCKFORD NEWSPAPERS, INC.

By Kathy Burfield

Its Cashier

Printers Fee $ 321.10 Paid _____, 19____.

Illinois Department of Transportation

PUBLIC MEETINGS

U.S. BUSINESS ROUTE 20 (EAST STATE STREET)
FROM
LYFORD ROAD, EAST OF ROCKFORD
TO WEST EDGE OF BELVIDERE

INFORMATIONAL OPEN HOUSE

MONDAY APRIL 21, 1986
1:00 P.M. TO 5:00 P.M.
7:00 P.M. TO 8:00 P.M.

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VIEW GRAPHIC DISPLAYS
OBTAIN PUBLIC COMMENTS AND INPUT
FAMILIARIZE PUBLIC WITH PROJECT DETAILS

PUBLIC HEARING

MONDAY APRIL 28, 1986
7:00 P.M. DISPLAYS AVAILABLE
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PROJECT TIMETABLE RELOCATION ASSISTANCE
ACCOMMODATION OF TRAFFIC DESIGN FEATURES
RIGHT OF WAY REQUIREMENTS

LOCATION

CLOCK TOWER INN CONVENTION CENTER
AT
INTERSTATE 90 AND U.S. BUSINESS ROUTE 20

THESE MEETINGS ARE ACCESSIBLE TO HANDICAPPED INDIVIDUALS. ANY PERSON NEEDING SPECIAL ARRANGEMENTS SHOULD CONTACT L.E. REED, ILLINOIS DEPARTMENT OF TRANSPORTATION, 819 DEPOT AVENUE, DIXON, IL 61021 AT 815/284-5443.

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WRITTEN AND ORAL STATEMENTS WILL BE ACCEPTED AT THE PUBLIC HEARING. (DEADLINE FOR WRITTEN STATEMENTS IS MAY 8, 1986)
ADDRESS STATEMENTS TO:
WILLIAM D. OST
DISTRICT ENGINEER
819 DEPOT AVENUE
DIXON, IL 61021

COUNTY OF BOONE,
STATE OF ILLINOIS, } ss.

CERTIFICATE OF PUBLICATION

M. Dee Brown being first duly sworn on his oath deposes and says that the BELVIDERE DAILY REPUBLICAN is a secular newspaper of general circulation printed and published in the city of Belvidere, in the county of Boone and State of Illinois and that said newspaper has been so printed and published and of general circulation in said city and county for more than ten years continuously last past. Affiant further says that said newspaper is published by Belvidere Daily Republican Co. Affiant further says that he is empowered by said corporation to act as Classified Advertising Mgr. therefor and is the authorized agent of said publishers, duly empowered, authorized, and directed to make and execute Certificates of Publication as to and concerning notices and publications appearing or published in said newspaper required by law to be published or certified. Affiant further says and certifies that the

Public

Notice in the matter of
Retail...
Display Ad...
Public Meetings....

of which the printed copy attached to this certificate is a true and correct copy, was duly published in 2 (two) issues of said

BELVIDERE DAILY REPUBLICAN

for 2 successive Weeks the first publication of said notice being in the issue of said newspaper dated and published on the 9 day of April A. D. 19 86 and the last publication thereof being in the issue dated and published on the 14 day of April A. D. 19 86 in conformity to the statute in such case made and provided and to all of which he hereby certifies as the authorized agent of said publisher.

Given under our hand at Belvidere, Illinois, 9 day of April A. D. 19 86

Publication fee due $ 188.75

BELVIDERE DAILY REPUBLICAN CO., Publishers.

M. Dee Brown

Classified Adv. Mgr. and the authorized agent of said publisher.

Subscribed and sworn to before me this 9 day of April A. D. 19 86

Margaret Venezia
Notary Public.

EXHIBIT 13J

BELVIDERE — BOONE COUNTY
REGIONAL PLANNING COMMISSION

1550 PEARL STREET • BELVIDERE, ILLINOIS 61008 • (815) 544-5271

April 30, 1986

William D. Ost
District Engineer
IL Dept. of Transportation
Div. of Highways/District 2
819 Depot Avenue
Dixon, Illinois 61021

Reference: FAP Route 517 - U.S. 20 Business Route
Section (2MFT&L) RS-2
Rockford-Belvidere Expressway

Dear Mr. Ost:

The Belvidere/Boone County Regional Planning Commission has reviewed the four alternatives under consideration for the construction of the referenced improvement to Business Rt. 20.

The Commission wishes to express its concern relative to the preferred Alternative Number 4 and its policy of no access control. The Commission is in the midst of a study concerning revision of the Growth Corridor area of the Belvidere/Boone County Land Use Plan. Business Rt. 20 is the main circulation element in this area and there is considerable apprehension over the possibility of uncontrolled strip commercial development adjacent to that facility.

Substantial amounts of public monies will be expended on this improvement and the efficacy of such public expense and the potential long-term detriment to private property values if such development does occur is a major part of this concern. It is the Commission's feeling that control of access to abutting properties is an essential element to our joint jurisdiction's ability to plan for future growth and development in the long-term best interests of the entire community.

It is therefore recommended that consideration be given to Alternate Number 2, the route similar to Alternate Number 4 but with access control. If that is not feasible then some provision within Alternate Number 4 is requested for control of access.

EXHIBIT 13k
1 OF 2

We appreciate this opportunity for comment and input to the process.

Sincerely,

Robert Reed
Planning Director

RR/vp

MAY 05 '86

RECEIVED DIST. 2

	TO	FILE	ACT
	DIST. ENGINEER		
	ASST. DIST. ENGR.		
	ADM. SERV.		
	CONST.		
	DESIGN		
	LAND ACQ.		
	LOC. RDS.		
	MAINT.		
	P.U.L.S.		
✓	PLAN.	AP	
	TRAFFIC		

EXHIBIT 13K
2 OF 2

Illinois Department of Transportation
Division of Highways / District 2
819 Depot Avenue / Dixon, Illinois 61021
815 / 284-2271

PLANNING
Projects and Environment
FA Route 517
Section (2MFT&L)RS-2
Boone and Winnebago Counties
US BUS 20 from Lyford Road to Belvidere

May 22, 1986

Mr. Robert Reed, Planning Director
Belvidere-Boone County Regional Planning Commission
1550 Pearl Street
Belvidere, IL 61008

Dear Mr. Reed:

This letter is to acknowledge receipt of your April 30, 1986 written comments regarding the improvement of U.S. Business Route 20 from Lyford Road to Belvidere.

Your concerns relative to Alternate 4, (as designated at the April 28, 1986 Public Hearing for this project) will be noted in the Design Report and Environmental Assessment as they are finalized.

As you stated, Alternate 4 which basically provides an arterial street design, provides no access control. The design however was developed in response to an overwhelming rejection of higher type facilities provided by Alternates 1, 2 and 3 by persons attending public meetings for the project or contacting our office. Legislative interest in the project also supported the type of improvement designated as Alternate 4.

While it is true that the facility provided by Alternate 4 (two sets of 24-foot driving lanes separated by a flush 14-foot-wide median) may encourage strip development, there will still be opportunities to promote an orderly growth through zoning. In addition, any new entrances would be subject to control by the Illinois Department of Transportation by virtue of the Illinois Highway Code, Article 4-210. On the basis of the Department's authority a "Policy on Permits for Access Driveways to State Highways" has been developed. The policy contained therein will permit only driveways that are found to be safe in terms of sight distance and impacts to through traffic.

EXHIBIT 13L

The need to provide a high-speed, access-controlled highway between Rockford and Belvidere is somewhat reduced by the presence of I-90 and U.S. 20. These routes parallel US BR 20 two to three miles south and provide the access-controlled highways most desired by through trips. We anticipate the trips on BR 20 as short commuter type with destinations and origins between Rockford and Belvidere.

In addition, please keep in mind that the completion of four lanes between the two communities will involve 3 phases, the latter two being contingent upon growth in the area. The completion of the 4 lanes is expected to be long range. When the four lanes between Rockford and Belvidere are completed, the traffic volume increases are expected to cause travel speeds compatible with the proposed design.

The expenditure of funds mentioned in your letter would be much higher and impacts much greater if an access-controlled highway was constructed. For example, Alternates 1, 2 and 3, which included access control, would cost approximately $18.2 to $19.5 million and require 70 to 73 acres of right-of-way, including 9 to 13 homes and 4 or 5 businesses. By contrast Alternate 4 costs approximately $14.3 million, requires 37 acres of right-of-way and one home.

In view of the support for Alternate 4 by the overwhelming number of persons expressing opinions, the majority of public officials that we have been in contact with, an evaluation of the socio-economic impacts, and consideratons and the availability of nearby expressways for through trips, we are recommending Alternate 4.

Orderly development along U.S. BR 20 will be the responsibility of local units of government that have the authority to control growth. In addition, the previously-mentioned Department policies will help control new entrances. Through these means, it is expected that U.S. BR 20 can provide a reasonably safe highway for the users, while preserving the rights of adjacent property owners.

If you have any questions or desire to make additional comments, contact David Lutyens at 815/284-5448.

Very truly yours,

William D. Ost
District Engineer

By: Alex Paisley
District Planning and
Programming Engineer

DEL/cl/2901w

EXHIBIT 13L
2 OF 2

STATE OF ILLINOIS

OFFICE OF THE GOVERNOR

SPRINGFIELD 62706

JAMES R. THOMPSON
GOVERNOR

May 30, 1986
SUBJECT: Boone & Winnebago Co., DS, US 20 (FAP 517) Reconstruction: Lyford Rd. to High Line Street
SAI#: 83-07-12-13

TO: Steve Washko
Illinois Department of Transportation
Division of Highways
2300 South Dirksen Parkway
Springfield, Illinois 62764

The Illinois State Clearinghouse has processed the subject notification. Representatives of State agencies whose activities might be affected by action on this project has been provided an opportunity for review and comment. Based on the information provided and responses of interested parties, it has been determined that:

__X__ The proposed project is not in conflict with the State's plans, policies and priorities.

_____ The proposed project is not in conflict with the State's plans, policies and priorities. However, the attached comment(s) and/or recommendation(s) should be taken into consideration by the applicant and the funding agency.

_____ The proposed project is not in conflict with the State's plans, policies and priorities provided the provision(s) outlined in the attachment(s) is/are met.

_____ The proposed project is found to be in conflict with the plans, policies and priorities of the State. See attachment(s) for further explanation.

This letter is valid for two years from this date. An updated SF 424 must be submitted to the State Clearinghouse if revision, continuation or augmentation is sought from the funding agency. Please reference the State Application Identifier (SAI) in any future correspondence concerning this project.

Illinois State Clearinghouse
May 30, 1986

CC: #18

EXHIBIT 13M