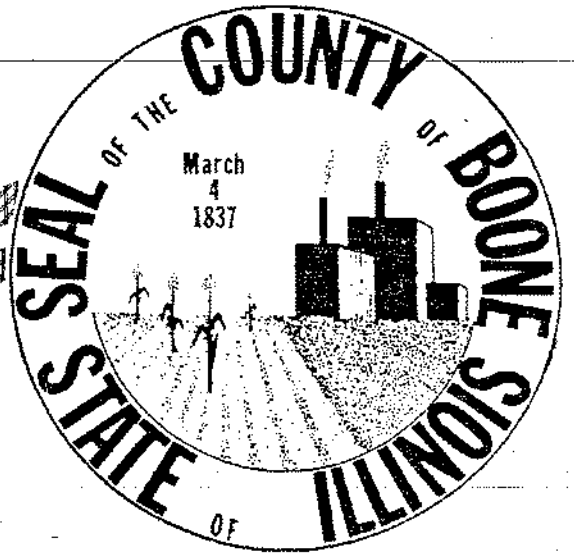
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DISTRICT NO. 2

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



FINAL
DESIGN REPORT

PREPARED BY
MISSMAN, STANLEY & ASSOCIATES
Consulting Civil Engineers
ROCK ISLAND, ILLINOIS

86-11

FILE COPY

Illinois Department of Transportation

Memorandum

To: R. C. Davis

From: Alex Paisley By: L. E. Reed

Subject: NOTICE OF DESIGN APPROVAL AND COMMITMENTS

Date: November 7, 1986

FA Route 517 (U.S. Business Route 20)
Section (2 MFT & L)R-2
Winnebago and Boone Counties
Lyford Road (Rockford) to High Line Street (Belvidere)

Attached is one copy for each construction section, plus one additional copy of the Project/Environmental Reports approved on August 26, 1986, in which we have highlighted commitments made during the location phase. These commitments are also outlined on the attached sheet for your convenience. The Locations Project File is available for complete review purposes in the Locations Section of the Bureau of Planning.

We have also enclosed the final environmental document (Finding Of No Significant Impact) for this project. No environmental commitments were made.

If you have any questions, please contact Lynn Cassidy at extension 453.

P-12/LAC/cl/0279z1
Attachment
cc: J. Shular - 1 copy of Project/Environmental Reports
W. R. Heacock - 1 copy for each construction section of Project/Environmental Reports
G. W. Dickson - Applicable Portions of Project/Environmental Reports
J. D. McCoy - Applicable Portions of Project/Environmental Reports
File

FILE COPY
LEK

Illinois Department of Transportation

Memorandum

To: John Shular

From: Alex Paisley By: L. E. Reed

Subject: PROJECT COMMITMENTS

Date: Novmeber 6, 1986

FA Route 517 (U.S. Business Route 20)
Section (2 MFT & L)R-2
Winnebago and Boone Counties
Job No. P-92-002-83
Construction Section Termini: From Lyford Road (Rockford) to High Line Street (Belvidere)

The undersigned acknowledges on behalf of his staff the commitments made for this project and certifies that they have been forwarded in accordance with District Policy and Procedures Guideline No. 81-1 dated February 4, 1981, and revised on May 25, 1984.

Submit only those memos to the Assistant District Engineer that transmits the Design Report from Planning, commitments made by any other bureau, and a final memo from the Bureau of Construction certifying that all applicable commitments have been carried out in the construction phase.

	BUREAU CHIEF SIGNATURE	DATE
PLANNING		
DESIGN		
LAND ACQ.		
TRAFFIC		
CONSTRUCTION		

P-12/LAC/c1/0279z2

0280z

FA Route 517 (U.S. Business Route 20)
Section (2 MFT & L)R-2
Winnebago and Boone Counties
Lyford Road (Rockford) to
High Line Street (Belvidere)

COMMITMENTS - LOCATION PHASE

1. If any vehicular barrier is deemed necessary by the Belvidere Church of the Open Bible, located Left of Station 166, it will be the responsibility of the church and they will receive compensation for it in the right-of-way negotiation process. See page 35 of the report.

LOR
AP

Illinois Department of Transportation

Memorandum

To: W. D. Ost Attn: Alex Paisley

From: M. J. Macchio By: Allan L. Abbott

Subject: LOCATION AND ENVIRONMENT
LOCATION STUDIES

Date: August 26, 1986

Combined Report
FA Route 517 (U.S. Business Route 20)
Section (2 MFT & L) R-2
From Lyford Road (Rockford)
to High Line Street (Belvidere)
Winnebago and Boone Counties
P-92-002-83

We have completed our review of the combined report submitted by your office on July 25, 1986 for the subject improvement. This project consists of stage constructing a four-lane roadway between Rockford and Belvidere. This project is included in the Multi-Year Program utilizing FAP funds.

This project requires additional right-of-way consisting of residential, commercial, and agricultural properties. A public hearing was held on April 28, 1986 at the Clock Tower Inn Convention Center in Rockford, Illinois.

The Environmental Assessment has been reviewed by the FHWA and attached is their letter of August 21, 1986 providing their "Finding of No Significant Impact" for this project.

Design approval is given for this project based on recommendations by your office as contained in the combined report and as discussed at the coordination meetings held on August 28, 1983 and April 11, 1985.

Attachment

M. J. Macchio / Allan L. Abbott MLH

MLH:lf/2229o

cc: J. R. Olds
W. E. Burns Attn: R. Stubbs, V. Taylor, W. Archer
J. P. Biggers

TABLE OF CONTENTS

APPENDICES

LIST OF TABLES

LIST OF EXHIBITS

Exhibit No.	Title
1	Project Location Map
2	Planned and Existing Area Roadways
3A - 3B	Existing Typical Sections
4	Existing Land Use
5	Proposed Land Use
5A	Proposed Future Developments
6B, 6C, 6G & 6H	Proposed Typical Sections Phase I Resurfacing and Phase II in Belvidere Sideroads Alternate 4
8A - 8C	Intersection Design Study for U.S. BR 20/Lyford Road Alternate 4
9D	Structure Plan for F.A.P. 517 over Beaver Creek Alternate 4
11	Floodplain Map
12A -12T	Comments
13B	Plan and Profile: Lyford Road - Alt. 4
23A -23I	Alternate 4, Phase I (4 lane)*
24A -24I	Alternate 4, Phase III
25A -25E	Alternate 4, Phase II
26A -26K	Alternates 1, 2, 3 & 4 Phase I (resurfacing)

*includes Shaw Road for this alternate

LIST OF EXHIBITS

APPENDIX D (SEPARATE DOCUMENT)

EXHIBIT NO.	TITLE
6A-6F	PROPOSED TYPICAL SECTIONS LYFORD ROAD INTERSECTION, ALTERNATES 1, 2 AND 3 PHASE 1 RESURFACING PHASE 2 IN BELVIDERE SIDEROADS ALTERNATE 1 ALTERNATE 2 ALTERNATE 3
7A-7C	INTERSECTION DESIGN STUDY U.S. BR 20/LYFORD ROAD ALTERNATES 1, 2 AND 3
9A	STRUCTURE PLAN F.A.P. 517 OVER BEAVER CREEK ALTERNATE 2
9B	STRUCTURE PLAN F.A.P. 517 OVER BEAVER CREEK ALTERNATE 3
9C	STRUCTURE PLAN F.A.P. 517 OVER BEAVER CREEK EXISTING BRIDGE - ALTERNATES 2 AND 3
10A-10G	ACCESS CONTROL PLAN, ALTERNATES 1, 2 AND 3
13A	PLAN AND PROFILE LYFORD ROAD, ALTERNATES 1, 2 AND 3
14A-14I	PLAN AND PROFILE - ALTERNATE 1
15A-15I	PLAN AND PROFILE - ALTERNATE 1
16A-16D	PLAN AND PROFILE - ALTERNATE 1
16E	PLAN AND PROFILE - ALTERNATES 1, 2 AND 3
17A-17I	PLAN AND PROFILE - ALTERNATE 2
18A-18I	PLAN AND PROFILE - ALTERNATE 2
19A-19D	PLAN AND PROFILE - ALTERNATE 2
20A-20I	PLAN AND PROFILE - ALTERNATE 3
21A-21F	PLAN AND PROFILE - ALTERNATE 3
22A-22D	PLAN AND PROFILE - ALTERNATE 3

SYNOPSIS

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 which would closely follow the existing alignment of F.A. 517 (U.S. BR 20). 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 involves the construction of four lanes on the eastern end of the project, from Town Hall Road to High Line Street (0.9 miles). In Phase III, the remaining center portion will be reconstructed as a four-lane roadway 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.

Project Results

Construction of this project will provide for improved, safer and more efficient handling of traffic along U.S. BR 20 from Rockford to Belvidere, aid in accomplishing the Winnebago and Boone County Land Use Plan, and enhance system linkage of the state highway system between Rockford and Belvidere.

The project is compatible with other planned highway projects in the two county area.

Project Alternates

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 report were as follows:

Alternate 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.

The completed cross section for Alternate 1 consists of two 12 foot lanes in each direction, separated by a 22 foot curbed median, with a 10 foot outside shoulder, from Lyford Road east to Station 278+90 (see Exhibit 6D); then two 12 foot lanes in each direction, separated by a 44 foot grassed median, with an 8 foot inside shoulder and a 10 foot outside shoulder, from Station 286+00 east to Station 185+82 in Belvidere; and finally, two 12 foot lanes in each direction, separated by a flush 14 foot median, with 10 foot outside shoulders, from Station 195+61 east to High Line Street.

This alternate includes the construction of dual two-lane structures across Beaver Creek and the improvement of Lyford and Shaw Roads both north and south of U.S. BR 20.

The estimated construction cost for Alternate 1 is $14.54 million (1984 prices). Project right-of-way for Alternate 1 will cost an additional estimated $2.84 million (1984 prices). Right-of-way for the project will require the purchase of approximately 67.6 acres of non-public land and will displace 16 residences and four businesses.

Alternate 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.

The completed cross section for Alternate 2 consists of two 12 foot lanes in each direction, separated by a 22 foot curbed median, with a 10 foot outside shoulder, from Lyford Road east to Station 265+18 (see Exhibit 6E); then two 12 foot lanes in each direction, separated by a 44 foot grassed median, with an 8 foot inside shoulder and a 10 foot outside shoulder, from Station 286+00 east to Station 184+38 in Belvidere; and finally two 12 foot lanes in each direction, separated by a 14 foot flush median, with 10 foot outside shoulders, from Station 191+48 east to High Line Street.

This alternate includes the construction of an additional two-lane structure across Beaver Creek north of the existing structure and the improvement of Lyford and Shaw Roads both north and south of U.S. BR 20.

The estimated construction cost for Alternate 2 is $13.96 million (1984) prices). Project right-of-way for Alternate 2 will cost an additional estimated $2.22 million (1984 prices). Right-of-way for this alternate will require the purchase of approximately 69.1 acres of non-public land and will displace 10 residences, 4 businesses, and one church.

Alternate 3

Construction of a four-lane divided highway with the 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.

The completed cross section for Alternate 3 consists of two 12 foot lanes in each direction, separated by a 22 foot curbed median, with a 10 foot outside shoulder, from Lyford Road east to Station 263+84 (see Exhibit 6F); then, two 12 foot lanes in each direction, separated by a 44 foot grassed median, with an 8 foot inside shoulder and a 10 foot outside shoulder, from Station 286+00 east to Station 186+48 in Belvidere; and finally, two 12' lanes in each direction, separated by a flush 14 foot median, with 10 foot outside shoulders, from Station 191+48 east to High Line Street.

This alternate includes the construction of an additional two-lane structure across Beaver Creek south of the existing structure and the improvement of Lyford and Shaw Roads both north and south of U.S. BR 20.

The estimated construction cost for Alternate 3 is $14.02 million (1984 prices). Right-of-way for Alternate 3 will cost an additional estimated $2.36 million (1984 prices). Right-of-way for Alternate 3 will require the purchase of approximately 71.1 acres of non-public land and will displace 13 residences and five businesses.

Alternate 4

Construction of a four-lane highway with a flush median using the best combined alignment determined from the previous alternates. This alternate is classified as a suburban Area Service highway with no access control.

The cross section for Alternate 4 consists of two 12 foot lanes in each direction, separated by a 14 foot flush median, with 10 foot outside shoulders, from Lyford Road east to High Line Street (see Exhibit 6H).

This alternate includes the widening of the existing two lane structure across Beaver Creek and the improvement of Lyford and Shaw Roads both north and south of U.S. BR 20.

The estimated construction cost for Alternate 4 is $12.10 million (1984 prices). Project right-of-way for Alternate 4 will cost an additional estimated $0.49 million (1984 prices). Right-of-way for this alternate will require the purchase of approximately 34.9 acres of non-public land and will displace one residence.

TABLE S

ALTERNATE SUMMARY

	ALTERNATE 1	ALTERNATE 2	ALTERNATE 3	ALTERNATE 4
Design Speed (MPH)	60	60	60	45
Access Control	Partial	Partial	Partial	None
Median Width	44'	44'	44'	14'
Right-of-Way (Acres)	69.6	71.1	73.1	36.9
Temp. Easements (Acres)	16.4	15.3	16.1	2.6
Residential Relocations	16	11	13	1
Business Relocations	3	4	6	0
Earthwork (1,000 C.Y.)	440	433	299	218
Borrow (1,000 C.Y.)	0	0	37	0
PROJECT COST ($1,000)	19,566.3	18,277.5	18,500.0	14,407.1

Environmental Impacts

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

The primary negative impact of the four proposed alternates is the right-of-way required for the ultimate improvement. Also, Alternates 1, 2 and 3 require considerable displacement of residences and businesses along the corridor.

The proposed project has one major stream crossing over Beaver Creek. This crossing is below the headwaters of Beaver Creek and this stream has a normal flow greater than 5 cubic feet per second at the crossing. An individual 404 Permit will be applied for subsequent to approval of the final design plans.

A permit for construction of the proposed project will be required and will be obtained from the IDOT Division of Water Resources during preparation of contract plans.

The proposed alternates will have no significant impact on the ecology. No threatened or endangered species will be affected by this project.

The historical impact report identifies 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. Alternate 4 minimizes the historical impact of this project.

This project is consistent with the Illinois State Implementation Plan for Air Pollution Control.

Generally, increased road usage, not roadway improvements, may produce noise levels at or above the abatement criteria at specific locations. Overall, any of the build alternates will improve noise conditions.

Traffic Control

A proposed traffic plan has been devised to handle construction traffic through the various alternates and phases of the U.S. BR 20 project. During construction, traffic is to be maintained on U.S. BR 20; in some locations it will be necessary to utilize temporary runarounds or auxiliary traffic lanes built adjacent to the existing roadways (see Appendix A).

The County and Township roads (Lyford Road, Shaw Road, Olson Road, Distillery Road, Beaver Valley Road and Town Hall Road) which are crossed by the proposed project (each of which will have an at-grade intersection with the proposed project), will remain open to traffic during construction by utilizing runarounds and auxiliary lanes.

Recommendation

Based on the study of this project, the review comments of coordinating agencies and evaluation of the comments received at the public hearing, the conclusion and recommendation of this report is that Alternate 4 be constructed.

As opposed to Alternates 1, 2 and 3, Alternate 4 is preferred for several reasons.

1. Public hearing and meeting responses were overwhelmingly in favor of Alternate 4 since it provided for no access control, over the 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 and causes the least amount and 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 prmit requirements for state highways.

I. NEED FOR THE IMPROVEMENT

A. PROJECT LIMITS

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 miles 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 just west of Town Hall Road to a point just west of High Line Street (0.9 miles). Phase III consists of constructing four lanes for the remaining two lane portion from east of Shaw Road to west of Town Hall Road (2.5 miles). One structure, over Beaver Creek, will be built in conjunction with Phase III of the proposed project.

U.S. BR 20 west of Lyford Road and east of High Line Street are presently four lane facilities. Thus the proposed project limits offer the logical termini for the design study.

B. 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.

C. SOCIAL AND ECONOMIC CONSIDERATIONS

U.S. Business Route (BR) 20 is one of three existing state highways connecting Belvidere and Rockford (see Exhibit 2). 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 provides 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 20 is 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.

D. 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 12L), 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.

E. 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.

F. 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 . Present posted speed limits less than 55 mph are: 45 mph from I-90 easterly for 0.70 miles; 50 mph from Town Hall Road easterly for 0.50 miles; 45 mph from 0.50 miles east of Town Hall Road easterly for 0.25 miles to the Ranch Motel; 35 mph from the Ranch Motel easterly for 0.25 miles to Beloit Road.

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 addition, a significant portion of the Boone County section has concrete gutters adjacent to the pavement, a feature not presently allowed for design speeds over 45 mph.

In general, the existing ditch slopes on both sides of the highway are deficient in that they do not provide for the standard design slopes previously listed. Insofar as the existing profile is concerned, there are ten locations of substandard vertical curves as shown in Table i which will require upgrading due to the rural 60 mph design speed criteria and one curve which needs rebuilding because of sight distance problems associated with the access control requirements from a sideroad.

In addition, there are several locations where trees, mailboxes, signs and utility poles are located closer than 34 feet from the edge of pavement; 34 ft. being the required clear zone for a 60 mph design speed. Further, the existing box culverts are substantially undersized and in at least one location near the Belford 6 Theaters, the residents of the area report over-the-road flooding during periods of heavy rain.

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.

The existing crest vertical curve on Lyford Road approximately 500 feet north of U.S. BR 20 is deficient in length to meet the 40 mph design speed criteria. The existing crest and sag vertical curves on Shaw Road north of U.S. BR 20 do not meet the 40 mph design speed criteria. The 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.

TABLE i

Substandard Vertical Curves (60 mph Rural Criteria)

P.I. Sta.	Grade In	Grade Out	Existing Length V.C. (Ft.)	Minimum Stopping Sight Distance (Ft.) Crest	Sag	Existing Design Speed (MPH)
294+00	+2.08	-1.24	400	536		55
310+00	-1.24	-5.05	500	615		56
5+00	-5.05	-0.70	400		476	57
20+00	+2.00	-3.60	900	904		60
47+50	+2.16	-0.28	300	391		55
54+00	-0.28	-2.08	200	291		55
70+00	+0.80	-0.82	200	262		54
77+24	-0.04	+5.00	406		551	54
82+87	+5.00	-1.25	720	1009		55
102+00	+1.78	-1.72	500	565		58

G. SAFETY

An important factor in determining a need for a highway improvement project is the current accident rate of the existing facility. The subject of accident rates and their mitigation is covered in some detail in an Accident Analysis prepared for this project (see Appendix B). However, 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 access control, the removal of all direct commercial access as well as the provision 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.

H. 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 (2) traffic lanes at 24 feet each for any Area Service highway where the projected 20 year traffic is over 1200 design hourly volume (DHV). U.S. BR 20 from Lyford Road to High Line Street has a projected DHV of 1360 for the year 2008.

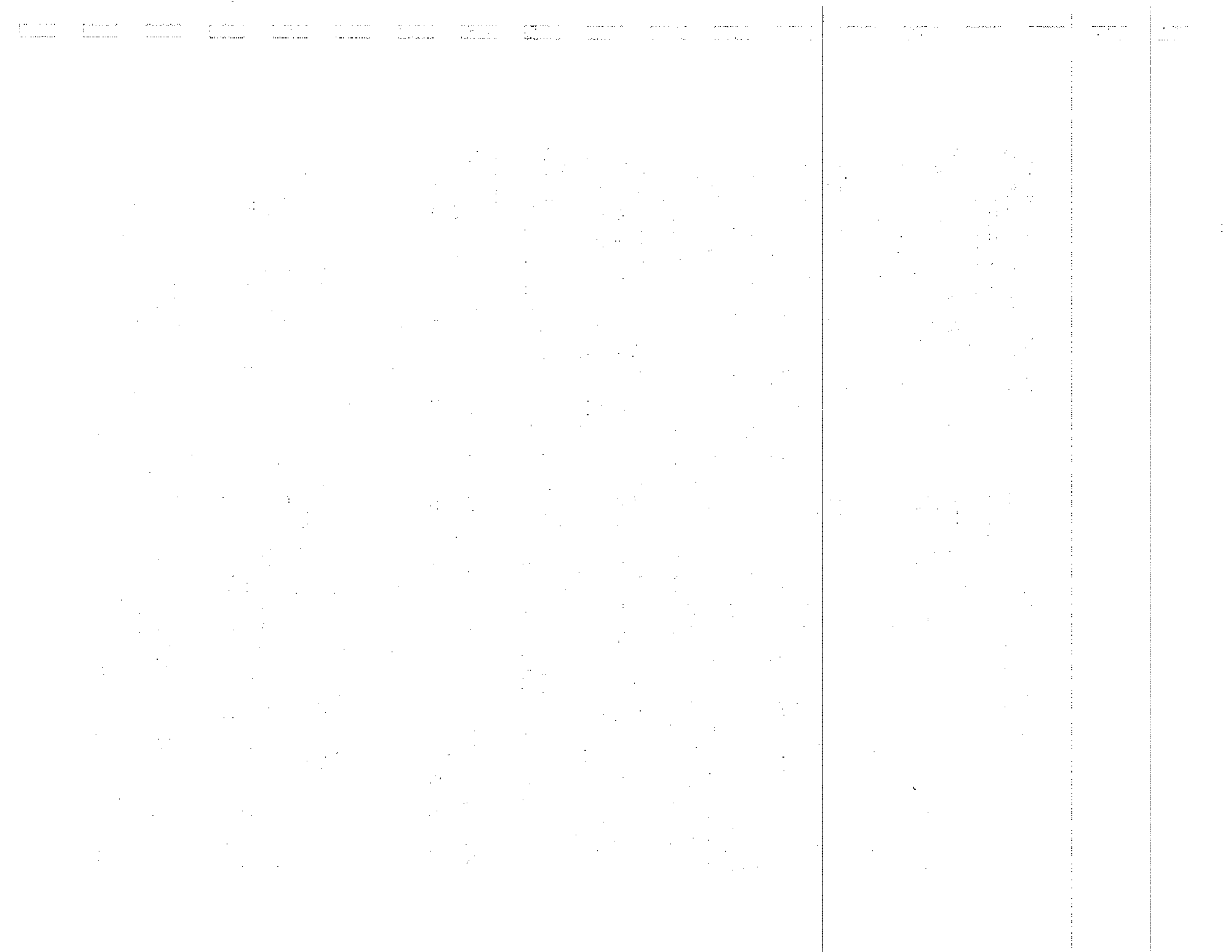
I. STRUCTURAL CONDITION AND MAINTENANCE

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. STUDY AREA CHARACTERISTICS

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 4 is implemented, the existing right-of-way will be increased by 36.9 acres to a total of 119.6 acres. 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 as well as those of the other alternates are shown in Table 8.

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 alternates 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.

The Illinois Department of Agriculture has completed its studies of the agricultural impacts of the four alternates. The Department of Agriculture recommends the implementation of Alternate No. 4 as having the least negative overall agricultural impacts (see Exhibit 12G and 12H).

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), Slippery 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 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 field 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 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.

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. Belvidere is the county seat of Boone County.

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.

There are a number of existing potential reservoir sites in Winnebago and Boone Counties. 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 history 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 set 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-H-6; 11-Bo-195) located Right 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 Station 91. This is a one-story frame house located approximately 0.1 mile east 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 five 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 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 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.

The area immediately surrounding the U.S. BR 20 project corridor is served on three sides by major traffic facilities. 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.

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.

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. SURROUNDING NEIGHBORHOODS

The general character of the land along the project corridor is agricultural in natture 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 religious 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

Public facilities and services of particular interest to this project include school bus routes and water and sewer networks.

In Winnebago County, School District No. 205 currently has one bus per day that utilizes U.S. BR 20 as far east as the 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.

In Boone County, School District 100 presently has 6 buses per day traveling along U.S. BR 20 west to the county line. City of Belvidere 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.

Law enforcement along the project corridor is provided by either the Winnebago or the Boone County Sheriff's Department. Fire protection is under jurisdiction of the Cherry Valley Fire Protection District or the Boone County Fire Protection District.

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. At the western starting point of the project existing U.S.

BR 20 begins as dual 24' PCC pavements with curb and gutter on the inside edges and a 16' grassed median. Approximately 600' to the east this tapers to a 22' wide bituminous concrete surface over a PCC base with 6' shoulders, which extends to the Boone County line. There is no access control in this area and the right-of-way varies from 180' at Lyford Road to 66' from a point 2,100' west of the county line to the county line itself. The average daily traffic is 6,700 vehicles. From the Boone County line to the east terminus of the project at High Line Street, U.S. BR 20 consists of a 24' bituminous concrete surface over PCC pavement with 10' shoulders. There is no access control in the area and the existing right-of-way is generally 120'. The posted speed limit is 55, except for approximately 2,500' at the west end of the project which has a 45 mph limit, a 1,900' stretch beginning 400' east of Town Hall Road which is posted for 50 mph, a 1,900' length posted 45 mph extending easterly from the 50 mph zone, and a 400' length of 35 mph posted speed extending to High Line Street. The average daily traffic (ADT) in this area is 7,200 vehicles.

The existing conditions of intersecting side roads along U.S. BR 20 are listed in Table ii. See Exhibits 3A and 3B for existing typical sections.

TABLE ii

EXISTING SIDE ROAD DATA

Location	Surface Width	Shoulder Width	Posted Speed Limit	Exist. R.O.W.	Current ADT	Access Control
Lyford Rd. North	20'	4'	40	66'	2200	None
Lyford Rd. South	24'	7'	45	100'	3700	None
Shaw Rd. North	22'	4'	None	63'	1300	None
Shaw Rd. South	22'	6'	45	66'	1300	None
Olson Rd.	22'	6'	40	66'	1100	None
Distillery Road	20'	4'	None	66'	100	None
Beaver Valley Rd.	20'	4'	40	66'	600	None
Town Hall Road	20'	4'	None	66'	700	None
High Line Street	30'	Curb & Gutter	30	64'	400	None

G. 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 supply for Belvidere is obtained from 8 deep wells, none in the immediate project area. Rockford's water supply is derived from 35 deep groundwater wells, none located in the project area. There is no municipal water service from Rockford east of I-90. The remainder of the homes and commercial establishments along or near U.S. BR 20 are served by private wells.

H. 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.

I. PRIOR STUDIES

One prior transportation study which is relevant to the proposed project concerns the reconstruction of U.S. BR 20 at the eastern terminus of this improvement. That study provides details necessary to determine the location and method of abutting the new eastern construction with the projected highway section from the west. The study, a Final Combined Design Report dated October, 1983, was prepared for the FHWA and IDOT and is entitled:

Federal Aid Primary Route 517
U.S. Business Route 20
Highline Street to Illinois Route 76
City of Belvidere
Boone County, Illinois

An additional transportation study was also performed at the eastern end of the immediate project area. It concerns the construction of an eastern bypass around the City of Belvidere, with its western terminus intersecting U.S. BR 20 at Beloit Road. This study, consisting of a Design Report and an Environmental Assessment dated May, 1983, was prepared for the FHWA and IDOT and is entitled:

S.B.I. Route 76
Belvidere Bypass
Boone County, Illinois

III. ALTERNATIVES NOT STUDIED IN DETAIL

A. 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.

B. 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.

Public transportation is not expected to have a significant impact on projected traffic volumes for the U.S. BR 20 corridor, nor will it solve existing non-traffic related problems.

C. 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.

Widening and Resurfacing

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 widening and resurfacing would be the most economical of the lesser action alternatives and would create the least environmental impacts (by leaving existing conditions outside of the roadway pretty much as they are), 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.

Two-Lane Reconstruction

Reconstruction of the roadway as a two-lane facility would solve some of the problems 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.

Narrower Median

The lesser action version of a rural four-lane highway would involve the reduction of the median width.

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 3 foot deep, 4 foot wide ditch with 4:1 sideslopes. Three feet is considered the minimum desirable depth for a ditch, in order to adequately provide for roadway surface and subsurface drainage. 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 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) makes the following comments in its 1984 A Policy on Geometric Design of Highways and Streets.

> "Insofar as through traffic is concerned, a desired ease and freedom of operation, in the sense of physical and psychological separation from opposing traffic, obtains when medians are about 40 feet or wider. With such widths the facility truly is divided. The noise and air pressure of opposing traffic is not noticeable and at night the glare of headlights is greatly reduced...."

The AASHTO manual also displays the following information:

Median width, feet	Provides
4	Minimum pedestrian refuge.
15-25	Space for median lane and protection for vehicles making left exit turns.
22-40	Protection for vehicles crossing divided highway.
20-58	Space for U-turns by vehicles moving from inside to outside lanes.
32-64	Space for U-turns by vehicles moving from inside to inside lanes.

The first figures in the above table are for passenger cars and the second are for single unit trucks. The future land use along the U.S. BR 20 corridor would indicate that the single unit truck figures should apply to this project. Since the median can be crossed only at designated points, there exists the potential for many U-turns; thus, particular attention should be paid to the median width requirements for these movements.

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.

D. ALIGNMENT RELOCATION

Given that the locations of east and west termini of this project are fixed, 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.

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 is not feasible since the route would cut through a large electrical substation, with subsequent costly results.

E. 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.

IV. ELEMENTS OF DESIGN

A. ROUTE CLASSIFICATIONS

U.S. BR 20 is classified as a State Highway System Arterial, with the sideroads being considered Collector or Land Access roadways on the Local Highway System.

U.S. BR 20 is further categorized as an Area Service Class highway, Shaw Road south of U.S. BR 20 as a Class D Highway, Shaw Road north of U.S. BR 20, Olson Road, Beaver Valley Road and Town Hall Road as Class E Highways and Distillery Road as a Class G Highway. Classes for the sideroads are determined by design traffic volumes.

For Alternate 4, an urban section is proposed on U.S. BR 20 for the entire length of the project. This design will comply with a TWS-4 categorization. In conjunction with this treatment of the mainline as a closed suburban corridor, Lyford Road will be designed as a TS-3 roadway.

For Alternates 1, 2 and 3, at each end of the project, where speed limits below 55 mph are currently posted, an urban section is proposed. This would match existing urban sections at the west and east termini of the improvement. In the area currently posted for 55 mph traffic a rural section was proposed.

B. LEVEL OF SERVICE

Minimum levels of service for the proposed facility are determined by the class of the road.

For U.S. BR 20 a minimum level of service "C" is required. This represents traffic moving at a stable flow but with lower operating speeds. A minimum operating speed of 20 mph during peak hour traffic might be expected for Alternate 4; likewise, the rural portions of the other alternates might anticipate a minimum operating speed of 50 mph.

Of the sideroads, only Lyford Road has to meet a requirement for a minimum level of service. For Alternate 4 a minimum level of service "C" is required, resulting in stable flow with acceptable delay.

C. TRAFFIC DATA

Traffic data for the anticipated construction year and twenty years later is shown in Table 1 for various sections of U.S. BR 20 and the sideroads. Appropriate truck volume information is also included

Projected traffic volumes for the No-Action Alternate are considered the same as those for the proposed project.

D. GENERAL REQUIREMENTS

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.

Table 2 lists the design policies which are incorporated in the design of this project. These State of Illinois design criteria meet Federal Highway Administration design and safety policies by being in conformance with the geometric policies of the American Association of State Highway and Transportation Officials.

Design criteria for new mainline construction was taken from the Illinois Department of Transportation's Policies and Procedures Manual for the Bureau of Location and Environment. IDOT's Federal-Aid Procedures for Local Highway Improvements of the Bureau of Local Roads and Streets furnished the guidelines for the design of the sideroads. Design policies for the Phase I resurfacing portion of U.S. BR 20 were based on minimum guidelines for 3R type work on other than expressways and freeways, found in IDOT's Federal-Aid Procedures for Local Highway Improvements of the Bureau of Local Roads and Streets.

E. TYPICAL SECTIONS

Typical sections have been prepared for the proposed project based on the design policies presented in Table 2. They are shown for Alternate 4 in Exhibits 6B, 6C, 6G and 6H. Typical sections for the other alternates may be found in Appendix D.

In conjunction with the development of the Alternate 4 concept (as discussed in Section V A), an urban section was selected for this proposal. This section will utilize a 14 foot, flush median, which will allow for the construction of left-turn lanes at sideroads, as well as providing a bi-directional left-turn lane away from the intersection areas. Outside of currently urbanized 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; on U.S. BR 20 west of Lyford Road and in Belvidere and on Lyford Road, the use of curb and gutter is anticipated. In general, roadside drainage toward the highway will be intercepted by roadway ditches, as is now the case. In some instances, however, to avoid the need to acquire 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. See Exhibits 6G and 6H.

TABLE 1

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 2
DESIGN POLICIES [1]

	U.S. ER 20 Urban Design	U.S. ER 20 Phase I Resurfacing	Lyford Road	Shaw Road (south)	Shaw Road (north) Olson Road Beaver Valley Road Town Hall Road	Distillery Road
Design Speed	45 [2]	55 [3]	30	50	50	40
Median Width	14' des. 4' min.					
Number of Lanes	4	2	2	2	2	2
Surface Width	2 @ 26' [4]	24'	30'	24'	22'	20'
Shoulder Width		8' des. 6' min.		8'	6'	4'
Paved Shoulder Width [5]		3'				
Earth Slopes						
Fill/Front		existing		4:1 under 25' 2:1 over 25' [6]	3:1 under 10' 2:1 over 10'	3:1 under 6' 2:1 over 6'
Cut/Back		existing		4:1 under 15' 3:1 15' to 25'	3:1 under 10' 2:1 over 10'	3:1 under 10' 2:1 over 10'
Horizontal Alignment						
Min. Radius (Max. D) [7]	716.20' (8° 00')	(619.41 (9° 15')	301.56 (19° 00')	763.94' (7° 30')	763.04' (7° 30')	467.72 (12° 15')
Min. Curve Length [8]	250'	(250'	100'	300' - 500'	300' - 500'	200' - 500'
Max. Superelevation [9]	0.05 ft./ft.	(0.08 ft./ft.	0.04 ft./ft.	0.08 ft./ft.	0.08 ft./ft.	0.08 ft./ft.
Superelevation Runoff [10]	137.5' curbed med. 206.25' flush med.	(137.5	100'	24' per .01 SE with min. 150'	24' per .01 SE with min. 150'	21' per .01 SE with min. 125'
Vertical Alignment		(				
Max. Grade [11]	5.5% level 6.5% rolling	13 (6.5% level (7.5% rolling	8% level 9% rolling	6% level 7% rolling	6% level 7% rolling	7% level 8% rolling
Min. Curve Length-K [12]		(				
Sag	70	(60	40	90	90	60
Crest-stopping	80	(80	30	110	110	60
Crest-passing	890	(890	400	1,050	1,050	730

NOTES:
1. For deviations from policy see Section IIIT. Design policies shown are for Alternate 4 conditions.
2. Minimum design speed is 30 mph.
3. Portions of the resurfacing project in Belvidere have regulatory speeds less than 55. The horizontal and vertical alingment in these areas will be designed for the posted speed limit as per 3R policies.
4. Without parking, and for curb and gutter on outside edge of pavement - 2 @ 24' for shoulders.
5. Any remaining unpaved shoulder widths will be of aggregate material.
6. Guardrail shall be used at the edge of shoulder.
7. D (degree of curve) is the central angle subtending 100 feet of arc.
8. No curve will be required at PI's where Δ is less than 0° 15'.
9. Based on the minimum radius.
10. 2/3 of transition length to be on tangent.
11. Minimum grade of 0.30% with curb and gutter.
12. Based on stopping distance criteria. Length of vertical curve is product K value and algebraic difference of adjacent grades, with minimum of three times design speed.
13. Based on 55 MPH with 10 MPH allowed reduction..

F. PAVEMENT ANALYSIS

The Illinois Department of Transportation's Design Manual provides an analytical approach for the determination of structural design thickness of pavements based upon the anticipated traffic loadings. The purpose of pavement analysis is to determine the most economical design which provides the structural requirements necessary to support the anticipated volume and type of traffic.

A preliminary pavement analysis was prepared in accordance with procedures outlined in this manual. U.S. BR 20 was evaluated as a Class I road using data obtained from existing road core samples, traffic projections 10 years from the anticipated date of construction and an estimated Illinois Bearing Ratio of 3.0.

For resurfacing U.S. BR 20 an average bituminous concrete overlay thickness of 4 inches would be required. In the case of resurfacing existing lanes, IDOT's policy is to apply a maximum overlay thickness of 2 inches. Thus, the additional 2 inch thickness requirement would have to be scheduled as a future improvement.

The most economic design for new mainline construction was determined to be a rigid pavement design consisting of 8 inches of continuously reinforced PCC pavement on a 4 inch thick aggregate sub-base.

A final pavement design will be developed during preparation of contract plans by utilizing the soils report for the project to determine an accurate bearing ratio to use.

G. GRADELINES

In order to maintain traffic on the existing route during construction of Alternate 4, and to meet existing sideroads and entrance grades, the proposed gradeline generally follows the existing gradeline, with several exceptions. These variations occur in order to increase vertical curve lengths to meet the proper design speed criteria, to obtain a minimum grade for drainage, or to allow adjacent urban areas to drain toward the roadway. See the description of the Alternate 4 in Section V for a detailed explanation of the differences between the proposed and existing gradelines.

H. INTERSECTION DESIGN

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

Preliminary design indicates Lyford Road 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 6C, 6G and 6H).

Preliminary design indicates 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.

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

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.

The projected improvements to Lyford Road were centered within the existing right-of-way, since the presence of commercial establishments on both sides prevented shifting the roadway either east or west without incurring significant additional economic damages to the individual properties involved. See Section VII for an additional discussion concerning the centering of the proposed roadway north of U.S. BR 20.

Shaw Road will be relocated approximately 70 feet east of its intersection with U.S. BR 20 for the first three alternates, and 20 feet east for the fourth. It 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 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.

Sideroads connected to U.S. BR 20 were designed with a minimum gradeline of -0.5% down from the intersected roadway. This was done in order to prevent drainage, debris and snowmelt from flowing onto the mainline, causing slick or icy conditions to develop.

Traffic volumes on Lyford Road require additional lanes and channelization, thus warranting preparation of an Intersection Design Study for the Lyford Road - U.S. BR 20 intersection. The IDS is included in this report as Exhibits 8A - 8C.

The other sideroads did not have sufficient traffic volume to necessitate an IDS.

I. TRAFFIC SIGNAL WARRANTS

The Lyford Road - U.S. BR 20 intersection will require signalization at the time of construction. This is based on Warrant 1, Minimum Vehicular Volume, found in Section 4C-3 of IDOT's Manual on Uniform Traffic Control Devices. Traffic data justification is shown on the Intersection Design Studies, Exhibit 8A.

J. LIGHTING

Lighting will be required at the Lyford Road - U.S. BR 20 intersection. The accident analysis data compiled in Appendix B indicates that this intersection exceeds current statewide averages for current accident rates. Lighting will increase safety and improved nighttime traffic operations. The intersection is currently unlit. Luminaires will be mounted on the mast arm poles at the intersection.

K. SIGHT DISTANCE

Case III sight distance based on a 45 mph design speed is provided for entrances and intersecting sideroads on U.S. BR 20.

Likewise, Case III sight distance is provided for entrances onto sideroads within the areas of reconstruction. To do this, the proposed crest vertical curves on the north legs of Lyford and Shaw Roads needed to be lowered as much as possible. This will accommodate safe crossing movements by passenger cars on the sideroads.

In order to provide Case III sight distance for the commercial entrances on Lyford Road, Lt. Stations 412+55 and 413+10, the gradeline will be based on a 40 mph design speed but receive a 30 mph posted speed limit.

L. DRAINAGE

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.

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.

There is one major stream crossing required, over Beaver Creek, located at Sta. 69+81.

Coordination with the U.S. Army Corps of Engineering has established that this crossing is 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 location (see Exhibit 12S). 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.

The design criteria which was used for the bridge was a 50-year flood frequency. Hydraulic data for the design (50-year) flood, the 100-year flood, and the 500-year flood was calculated and is shown in Table 5 for Alternate 4.

From Table 5 it can be seen that an increase of 0.34 feet in upstream floodwater surface elevations can be expected due to Alternate 4 construction, the same as currently exists. Any additional areas at the edge of the 100-year floodplain which would be flooded (in a 100-year flood) by these increases in the water surface elevation were inspected. No buildings or roads were found in these areas, which are 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.

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, where practical. Tile lines located deep enough to require crossing the proposed roadway are not expected; however, if encountered, they will be rebuilt between the right-of-way lines, with access structures at each end. Those sections to be rebuilt will be replaced by storm sewer, a minimum of 8 inches in diameter or 2 inches larger than the existing tile line. 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.

TABLE 5

ALTERNATE 4

WATERWAY INFORMATION

STATION 69+81

Drainage Area = 70.6 sq. mi. Low Grade Elev. = 758.3 @ Sta. 63+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head-Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	50	3728	1075	1075	754.6	0.28	0.28	754.88	754.88
Base	100	4252	1121	1121	754.8	0.34	0.34	755.14	755.14
Overtopping									
Max. Calc.	500	5448	1227	1227	755.5	0.54	0.54	756.04	756.04

Perforated underdrains will be used to drain the U.S. BR 20 and Lyford Road subgrades.

Existing natural drainage patterns will be maintained.

M. EROSION CONTROL

Permanent erosion controls, such as grass seeding, sodding or ditch linings, and temporary erosion control measures, such as basins, ditch checks, mulch barriers and mulches, will be included as part of the construction plans.

Minimization of soil erosion problems during construction will be accomplished by implementing IDOT special provisions for Erosion Control Plans, Erosion Control and Protection of Waterways, Lakes and Reservoirs.

N. MAJOR STRUCTURES

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 can be utilized as a portion of a four-lane crossing.

Due to the narrow median proposed for Alternate 4, this concept will require a single structure. To accomplish this, the existing structure will be reconstructed to provide the necessary width of deck. See Exhibit 9D for the Structural Plan.

The pier configuration for the proposed structure is arranged in a manner to minimize in-stream work and eliminate the need for any channel relocation. However, due to the meandering of the creek, 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.

The only other major structure on the project for Alternate 4 is a proposed retaining wall about 155' long left of Stas. 82+50-84+05. This will be a sheet pile or L-shaped reinforced concrete retaining wall, averaging about 7 feet in height, and used to avoid the necessity of acquiring the residence behind it.

O. SAFETY

For new construction, clear zone widths are determined from Figure 2-110.01 of the Illinois Department of Transportation's Design Manual. The clear zone is the minimum allowable distance from the edge of traveled way to a roadside obstacle. Obstacles within this distance have to be removed, relocated or shielded by a longitudinal barrier (normally guardrail).

The predominant clear zone width, which is for the 45 mph design speed portion of U.S. BR 20, is 23 feet. Clear zone widths for the sideroads will be based on the above cited figure.

An additional safety feature to be observed along the mainline is the use of a minimum 4:1 sideslope within the clear zone for sideroads or entrances.

If any vehicular barrier is deemed necessary by the Belvidere Church of the Open Bible along the U.S. BR 20 right-of-way in front of their parking lot, located left of Station 166, it will be the responsibility of the Church and they will receive compensation for it in the right-of-way negotiation process.

For the resurfacing portion of U.S. BR 20, safety treatment according to 3R policies will be followed. The clear zone for the 55 mph portion of U.S. BR 20, in this case, will be 18 feet. Where speed limits are less than 45 mph, the clear zone will be 10 feet in width. In addition, guardrail installations shall be upgraded to current standards; ends of culverts terminating within the clear zone shall be protected by grating or guardrail; sign and light supports within the clear zone shall be breakaway; obstructions within the clear zone extending 4 inches or more above the groundline shall be eliminated; trees located within the clear zone shall be removed; and curbs or gutters adjacent to the pavement will be removed.

P. ACCESS CONTROL

No access control along U.S. BR 20 is proposed for Alternate 4. An Access Control Plan showing the partial access control considered for Alternates 1, 2 and 3 can be found in Appendix D.

Access control will be employed on this project for only one condition. 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.

Field entrances, service roads and drives will be constructed as per current IDOT policies on widths, pavement type and thickness and sideslopes. Entrances behind curb and gutter will receive a concrete apron. The remainder of any entrance reconstruction past the apron area will be built of materials similar to those used for the existing drives. Field entrances which currently have an earth surface will not be rebuilt with any surface material.

Q. PEDESTRIAN FACILITIES

Due to the concept of the project, with shoulders and open ditches incorporated into the typical sections, no sidewalks are proposed for this project. Although no sidewalks are proposed along U.S. BR 20 in Belvidere or on Lyford Road for Alternate 4, the proposed curb and gutter sections there lend themselves to future sidewalk construction.

The "Year 2000 Plan" of the Rockford-Winnebago Planning Commission identifies a potential pathway location crossing U.S. BR 20 at the Commonwealth Edison Company property, Station 308+50. Since this would accommodate pedestrians, the possibility of a pedestrian bridge at this location may have to be investigated in the future if the pathway eventually becomes a reality.

R. BIKEWAYS

There are no formally marked bikeways included in this project.

The potential pathway mentioned as a pedestrian facility will also accommodate bicyclists; future provisions for a pedestrian bridge over U.S. BR 20 and would likewise serve bikes.

No other bikeways exist or are planned for the project area.

S. SIGNING

All route markings and other necessary signing will be installed in accordance with IDOT's Manual on Uniform Traffic Control Devices.

Left-turn arrows will be placed in the bi-directional left turn lane at entrance locations for Alternate 4.

T. POLICY DEVIATIONS

In some instances, physical characteristics or traffic peculiarities of a site require that geometrics vary from preferred policies at that location.

On the west leg of the Lyford Road - U.S. BR 20 intersection, the close proximity of the intersection to the I-90 ramps required several design modifications. The development lengths of the left and right turn lanes are not to preferred lengths. In addition, the length of the storage lane for left turns may not be sufficient to allow left turning vehicles to pass vehicles stacked in the thru lanes during peak hours.

Due to the existing 16 foot median on the west approach to Lyford Road, this width was carried through the intersection and several hundred feet to the east, where it begins to widen to the desired 14 foot width.

Under the Alternate 4 concept, the south leg of Lyford Road is designed as a TS-3 roadway, instead of using a TS-2 classification, which the traffic volumes warrant. This was due to the fact that the Lyford Road reconstruction begins by meeting an existing two lane pavement.

The Shaw Road - U.S. BR 20 intersection presents a significant problem on the north approach. Because the current steep grade begins at the edge of the existing pavement, any widening, in conjunction with providing initial drainage away from the mainline, leads to extreme depths of cut in this area. In order to minimize the impacts to adjacent residences, a grade-line based on a 40 mph design speed is proposed on this leg of the intersection. A design speed of 40 mph is also proposed on the south leg, in order to reduce right-of-way requirements for the Hickory Hills Driving Range. This concept has been approved by the township highway commissioner. In addition, due to the stop condition at U.S. BR 20, the first vertical curve south of the intersection is based on a 30 mph design speed.

The horizontal curves north of Shaw Road on Alternate 4 do not utilize the full superelevation rate, due to their close proximity to a stop-condition at the intersection.

The functional classification of Olson, Beaver Valley and Town Hall Roads, based on traffic volumes, calls for a 50 mph design speed. However, this traffic is mainly generated by development just north of U.S. BR 20 and probably does not accurately reflect the true class of these roads. Widening the pavement, together with providing initial drainage away from the mainline, leads to major reconstruction of the three roads. These items, along with the presence of a stop condition at the intersections, favors the use of a 40 mph design for the vertical alignment of these sideroads.

3R policy pertains to roadways with an ADT of 5,000 or less. However, these guidelines would be appropriate for the conditions found in the Phase I resurfacing portion of this project, even though existing traffic volumes exceed 5,000 ADT.

U. BORROW PITS AND WASTE DISPOSAL SITES

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.

Alternate 4 will produce excess excavation which must be disposed of off the right-of-way. The rolling nature of the terrain and the potential commercial as well as agricultural use of adjacent land should make disposal sites readily available nearby.

V. UTILITIES

A general description of the utilities located in the U.S. BR 20 corridor as well as the companies providing service can be found in Section II B. Specific locations of these utilities are shown on the plan sheets, Exhibits 13B and 23A to 25E.

Estimated quantities of utility relocations for Alternate 4 is shown in Table 6.

The utilities requiring adjustment are located within existing right-of-way. Therefore, the costs incurred in any necessary relocation will be the responsibility of the particular utility company involved.

TABLE 6
UTILITY RELOCATIONS
(Lineal Feet)

		Telephone		Electrical		Gas
		Aerial	Buried	Aerial	Buried	
Alt. 4-Phase	I	8,400	4,200	7,000	400	10,300
Phase	II	1,400	400	2,900	300	3,800
Phase	III	500	800	8,200	0	5,200

W. TRAFFIC MAINTENANCE

A Traffic Control Plan has been prepared for this project and is included as Appendix A of this report. This analysis determines what measures will be necessary for handling traffic at the time of construction. It recommends that traffic on U.S. BR 20 be maintained during construction by utilizing runarounds and auxiliary lanes. In a similar fashion, traffic can be maintained on Lyford and Shaw Roads during their reconstruction. Staged construction and runarounds will enable Olson, Distillery, Beaver Valley and Town Hall Roads to remain open during construction. In addition, local residents can be expected to utilize the existing road network surrounding the project site. This system of roads should be adequate to serve those people who live adjacent to the route and desire to avoid as much of the construction area as possible. Access will be maintained to private and commercial entrances during construction.

X. ACCIDENT AND SKID REDUCTION ANALYSIS

Recent accident history of U.S. BR 20 in this area has been studied in an Accident Analysis and is included in this report as Appendix B. This study categorized the numbers, types and locations of accidents that occurred along this route from 1980 through 1982. Special attention is given to wet pavement accidents in order to determine the need for skid reduction procedures. 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.

Y. RECYCLING

In order to determine the feasibility of recycling a portion of the existing bituminous surfacing, a Recycling Analysis was performed. This study is included as Appendix C of this report. It concluded that recycling was not advantageous for this project.

Z. REFERENCES

Manual of Policies and Procedures, prepared by the Illinois Department of Transportation, Bureau of Location and Environment, Springfield, Illinois.

Design Manual, prepared by the Illinois Department of Transportation, Bureau of Design, Springfield, Illinois.

Standard Specifications for Road and Bridge Construction, 1983, prepared by the Illinois Department of Transportation, Springfield, Illinois.

Manual on Uniform Traffic Control Devices, prepared by the Illinois Department of Transportation, Springfield, Illinois.

Federal-Aid Procedures for Local Highway Improvements, prepared by the Illinois Department of Transportation, Bureau of Local Roads and Streets, Springfield, Illinois.

V. PROPOSED PROJECT

A. GENERAL

No-Action Alternate

When considering any highway improvement it is always prudent to consider the No-Action Alternative and the social, economic and environmental effects it will have. As seen previously, the following appear to be the major effects of the No-Action Alternate:

1. As the main carrier of business and social related traffic between Rockford and Belvidere its ability to effectively serve this need will diminish as the roadway deteriorates and traffic increases.

2. In Winnebago County the trend toward commercial development beginning at Lyford Road and extending to the Boone County line would be impaired. In Boone County the projected trend toward greatly increased suburban residential development would be impaired by the No-Action Alternate.

3. The safety of the motoring public will be compromised by allowing a number of existing conditions to remain that don't meet the current design criteria for an Area Service highway. In addition, several of the sideroads need upgrading adjacent to U.S. BR 20.

4. Implementation of the No-Action Alternate will perpetuate the existing "missing link" in a complete four-lane system on U.S. BR 20 from west of Rockford to east of Belvidere.

5. The No-Action Alternate would result in a Level of Service D approaching E by the year 2008.

6. An additional overlay thickness requirement would not be addressed by the No-Action Alternate.

7. A low pavement serviceability rating as well as a low "road ride" rating would not be addressed by the No-Action Alternate.

8. Above average maintenance costs would likely continue to increase under the No-Action Alternate.

9. Above average accident rates would likely continue and probably increase as traffic demands increase and road deterioration continues under the No-Action Alternate.

The major reasons for implementing one of the build alternates can thus be seen.

Lesser Action Alternates

Of the lesser action alternates discussed previously in this report, the Widening and Resurfacing Alternate fails to reduce many of the existing substandard design criteria along U.S. BR 20. The level of service described in Section I would fall below acceptable limits and traffic volumes would prohibit efficient movement of vehicles within approximately 11 years after construction takes place.

A Two-Lane Reconstruction Alternate would address many of the safety inadequacies along U.S. BR 20. However, this alternate would still retain the problems inherent in a two-lane facility; namely, an inability to efficiently handle projected traffic volumes. The construction cost for this alternate would be substantial.

The Narrow Median Alternate requires construction of a four lane facility and has been described in Section III.

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 at Station 257+48, 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.

The 22 foot curbed median will be constructed in the 45 mph speed zone, widening to a 44 foot open ditch median at Station 286+00, the beginning of the 55 mph speed zone. The open ditch median continues to the Winnebago-Boone County line, a distance of about 5,731 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. This section will be constructed to Station 210+22, a point just west of 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.).

Lyford Road will be reconstructed from Station 400+24, a distance of about 976 feet south, to Station 420+48, about 1,048 feet north of U.S. BR 20, for a total length of approximately 2,024 feet (0.38 mi.). See Exhibit 13A for plan and profile.

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. Building a retaining wall to save the parking spaces would have involved the relocation of a new sanitary sewer line and the construction of a large storm sewer line to carry drainage from a box culvert under U.S. BR 20; coupled with the cost of the retaining wall this would have meant an additional cost of approximately $81,000 to the project. Entrance to the Belford 6 Drive-In Theater will be via a service road connection to Lyford Road south of the intersection. In order to reduce the right-of-way requirements of a wider pavement, the gradeline for the southern portion of the road construction was lowered, with the maximum cut of approximately 4 feet occurring at the entrance to the Exel Inn.

North of U.S. BR 20, Lyford Road passes between two commercial properties, a gas station/restaurant and vacant lot (the waterslide shown on the plans has been removed). In order to reduce the amount of right-of-way needed from these properties, about 500 feet of gutter is planned for each side of the road, instead of ditches. Meeting a 40 mph design speed for the crest vertical curve with the proposed gradeline will mean that: the gradeline will be lowered about 2 feet between the two commercial properties the crest of the hill now located at the former waterslide entrance will be moved about 90 feet north; and, the grade north of the hill will be raised, to a maximum height of around 6 feet above the existing roadbed.

Average right-of-way requirements proposed for Lyford Road are about 130 feet to the south and 135 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, in order for them to not exceed the standards for desirable grades.

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 these 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; as a part of the 1959 work, about 22% of the roadway in the project area was rebuilt to correct horizontal and vertical curve problems.

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 Station 257+48, 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 Station 201+66, the western end of an improvement constructed in 1984 as F.A.P. 517, Section 83-00057-00-WR. 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 about one-third mile west of Town Hall Road to Station 210+22, a point just west of High Line Street where the existing roadway section is the same as the proposed. In Belvidere, Phase II will require the removal of about 856 feet of tapered pavement installed as part of the 1984 improvement. Phase III will consist of 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. The locations of Phase I, Phase II, and Phase III are depicted on Exhibit 1A.

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 Section VB.

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 VII B and VII 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 construction of a four-lane highway with flush median on the alignment of an existing two-lane roadway (U.S. BR 20).

Construction starts at Station 257+48, 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, 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.

Lyford Road will be reconstructed from Station 400+24, a distance of about 976 feet south, to Station 420+48, about 1,048 feet of U.S. BR 20, for a total length of approximately 2,024 feet (0.38 mi.). See Exhibit 13B for plan and profile.

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 crest vertical curve will correspond to a 40 mph design, in order to provide adequate sight distance for the commercial entrances, Lt. Stations 412+55 and 413+70.

Average right-of-way requirements proposed for Lyford Road will be reduced to about 115 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.

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 VC.

B. PRELIMINARY STUDIES

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 Exhibits 14A to 14I, 15A to 15I and 16A to 16E for plan and profile of Alternate 1.

For the ultimate design of the project, the proposed median begins at the west end of the project by meeting the existing 16 foot curbed median. This median width proceeds east to Sta. 263+08, when it begins transitioning to 22 feet at Sta. 265+76. The 22 foot curbed median ends at Sta. 278+90, widening to a 44 foot grassed, open ditched median at Sta. 286+00. This median design continues to Sta. 185+82, when it starts to taper to a 14 foot width by Sta. 195+61. The transition takes place on a curve located just to the northwest of the beginnings of the Belvidere residential portion of U.S. BR 20. At Sta. 191+48 the median becomes a paved, flush median. The 14 foot paved, flush median continues from Sta. 195+61 to the end of the project where it matches the existing roadway.

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 Exhibits 17A to 17I, 18A to 18I and 19A to 19D for plan and profile of Alternate 2.

For the ultimate design of the project, the proposed median begins at the west end of the project by meeting the existing 16 foot curbed median. This median width proceeds east to Sta. 265+18, when it begins transitioning to 22 feet at Sta. 276+10. The 22 feet curbed median ends at Sta. 275+96, widening to a 44 foot grassed, open ditched median at Sta. 286+00. This median design continues to Sta. 300+50, where the westbound lanes begin to shift north in order to widen the median to a maximum width of about 72 feet at Sta. 312+00. The westbound lanes shift back to the 44 foot median by Sta. 7+50. This median design continues to Sta. 184+38, when it starts to taper to a 14 foot width by Sta. 195+65. The transition takes places on a curve located just to the northwest of the beginnings of the Belvidere residential portion of U.S. BR 20. At Station 191+48 the median becomes a paved, flush median centered on the existing alignment. The 14 foot paved, flush median continues from Sta. 195+65 to the end of the project where it matches the existing roadway.

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 Exhibits 20A to 20I, 21A to 21I and 22A to 22D for plan and profile of Alternate 3.

For the ultimate design of the project, the proposed median begins at the west end of the project by meeting the existing 16 foot curbed median. This median width proceeds east to Sta. 263+84, when it begins transitioning to 22 feet at Sta. 274+76. The 22 foot curbed median ends at Sta. 275+96, widening to a 44 foot grassed, open ditched median at Sta. 286+00. This median design continues to Sta. 186+48, when it starts to taper to a 14 foot width by Sta. 195+78. The transition takes place on a curve located just to the northwest of the beginnings of the Belvidere residential portion of U.S. BR 20. At Station 191+48 the median becomes a paved, flush median centered on the existing alignment. The 14 foot paved, flush median continues from Sta. 195+78 to the end of the project where it matches the existing roadway.

SUMMARY OF PRELIMINARY STUDIES

EARTHWORK

Earthwork:	Excavation	Embankment
Alternate 1	44,000 C.Y.	186,000 C.Y.
Alternate 2	433,000 C.Y.	120,000 C.Y.
Alternate 3	299,000 C.Y.	205,000 C.Y.

Alternate 1 and 2 require no borrow and a substantial quantity of waste earth will be generated.

Alternate 3, because of the time difference between Phases I and II and Phase 3 is such that, including a shrinkage factor, 370,000 cu. yd. of borrow will be required. Thus alternate required the handling of both waste and borrow.

RIGHT-OF-WAY

ALTERNATE	WIDTH (FT.) RANGE/MAJORITY	ADDITIONAL ACRES	REMOVAL RESIDENCES/BUSINESS	EASEMENTS ACRES
1	180-270/210-240	70	16/0	67/16
2	180-240/220-240	71	10/1 church	63/15
3	180-280/210-240	73	13/1	63/16

SIDE ROAD RIGHT-OF-WAY

ALTERNATE	ROAD	WIDTH (FT.)	TEMPORARY EASEMENTS
1	Shaw	150 North 160 South	4
	Olson	130	
	Distillery	66	
	Beaver Valley	80	
	Town Hall	110	
2	Shaw		
	Olson	120	
	Distillery	66	
	Beaver Valley	100	
	Town Hall	110	
3	Shaw		6
	Olson	110	
	Distillery	66	
	Beaver	85	
	Town Hall	90	

SUMMARY OF PRELIMINARY STUDIES

SIDE ROAD RECONSTRUCTION

ALTERNATE	ROAD	LENGTH FROM CENTERLINE	CUT/FILL	NOTE
1	Shaw	2447	*	Exhibit 14G & 14H
	Olson	500	4 Ft. Cut	
	Distillery	140		
	Beaver Valley	280	1 Ft. Cut	
	Town Hall	340	1 Ft. Cut	

*In order to meet the 50 mph design speed for the south leg of Shaw Road, the proposed gradeline will be higher than existing, reaching a maximum fill of about 8 feet. The north leg is based upon a 40 mph design speed. Even with the reduced design speed the geometric and drainage requirements result in a severe undercut situation. The cut reaches a maximum of 13.5 feet and is 4 feet or greater for about 900 feet. To alleviate the need for a ditch, thus saving the house 390 feet north of the intersection, a gutter is proposed on the east edge of pavement.

ALTERNATE	ROAD	LENGTH FROM CENTERLINE	CUT/FILL	NOTE
2	SHAW	2427	*	Exhibit 17G & 17H
	Olson	515	4 Ft. Cut	
	Distillery	115	1 Ft. Cut	
	Beaver Valley	340	1 Ft. Cut	
	Town Hall	400	1 Ft. Cut	

*The maximum fill on the south approach will be around 7.5 feet, while on the north approach the maximum cut will be nearly 15.5 feet with over 930 feet, 4 feet or greater.

ALTERNATE	ROAD	LENGTH FROM CENTERLINE	CUT/FILL	NOTE
3	Shaw	2120	**	Exhibit 20G & 20H
	Olson	430	2.5 Ft. Cut	
	Distillery	250	1.5 Ft. Fill	
	Beaver Valley	175	0.5 Ft. Cut	
	Town Hall	170	0.0	

**The maximum fill on the south approach will be around 9 feet while on the north approach the maximum cut will be nearly 12 feet with 810 feet, 4 feet or greater.

SUMMARY OF PRELIMINARY STUDIES

DEVIATION BETWEEN EXISTING AND PROPOSED GRADELINES

Station Equation 314+78.94 = 0+00

ALTERNATE	STATIONS	PROPOSED	RESULT
1	304-3+50	Grade Reduction	7 Ft. Max. Cut @ 311
	16-26	Crest lowered to increase sight distance off of Shaw Road	2 Ft. Max. Cut @ 20
	74-88	Increase curve length and flatten grade between curves	1.5 Ft. Fill @ 78 2 Ft. Max. Cut @ 84

2 Deviations are the same as in Alternate 1 except:

304-3+50	North lanes will shift further to widen the median and flatten grade
65+50-74+00	Proposed second bridge for westbound lanes Beaver Creek will have deeper beams, thus to maintain the same high water clearance the proposed gradeline will be raised about 6 inches

3 Deviations are the same as in Alternate 1

CHANNEL RELOCATIONS

Alternate 1	Sta. 166	130 Feet Right
	Fill in farm pond left of Sta. 300	
Alternate 2	Fill in farm pond left of Sta. 300	
Alternate 3	10 Right	250 feet in length
	165 Right	400 feet in length
	185 Right	110 feet in length
	187 Right	120 feet in length

Alternate 2 does not require the purchase of right-of-way from the Boone County Conservation District located right of Stations 44-57.

C. ALTERNATE 4 (PROPOSED PROJECT)

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 V C, this alternate proposes removing and replacing the existing pavement. See Exhibits 23A to 23I, 24A to 24I and 25A to 25E for plan and profile of Alternate 4.

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 1,073 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.

For the ultimate design of the project, the proposed median begins at the west end of the project by meeting the existing 16 foot curbed median. This median width proceeds east to Sta. 265+19, when it begins transitioning to 14 feet at Sta. 274+76. The 14 foot median width continues for the remainder of the project length. Only the median west of Lyford Road is curbed, the rest is a paved, flush design.

At the western end of the project, the proposed four lanes begin by being centered on the existing alignment, then, proceeding east, they shift to the right (south), so that by Sta. 274+76 the westbound two lanes are centered on the existing alignment. This section continues to Sta. 31+08, where the alignment begins to shift to the left, so that at Sta. 36+56 the eastbound two lanes are centered on the existing alignment; this transition takes place at the curve located just east of Shaw Road. The left offset configuration continues east to Sta. 185+11, where it is centered on the existing alignment by Sta. 195+92; this transition takes place on a curve located just to the northwest of the beginnings of the Belvidere residential portion of U.S. BR 20. The proposed four lanes continue to be

centered to the end of the project, where they match the existing roadway. The right offset occurs only in Phase I, whereas the left offset configuration is found not only in Phase II, but comprises Phase III in its entirety.

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.

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.

Earthwork quantities for Alternate 4 are 79,000 cubic yards of excavation and 40,000 cubic yards of embankment for Phase I, 39,000 cubic yards of excavation and 18,000 cubic yards of embankment for Phase II and 100,000 cubic yards of excavation and 38,000 cubic yards of embankment for Phase III. This indicates that no borrow will be required for this alternate; in fact, large quantities of waste earth will be generated.

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.

With regard to snow drifting, Alternate 4 provides less storage capacity than the open ditches and wider median proposed in the first three alternates. Also, the construction of a retaining wall Lt. 82+50 to 84+05 will increase potential for snow drifting through this location. If drifting does materialize in this area, the installation of snow fence behind the retaining wall should alleviate the problem.

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 (Station 503+28) and continue to around 1,335 feet north (Station 522+55) of the mainline, resulting in a total length of approximately 2,000 feet (0.38 mi.). See Exhibits 23G and 23H.

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. In addition, due to the stop condition at U.S. BR 20 on Shaw Road, the first vertical curve south of the intersection is based on a 30 mph design speed. By utilizing a lower design speed for south Shaw Road than the other alternates, the substantial embankment construction required in those cases has been reduced to a height of 3 feet or less. This lower gradeline also reduces the length of reconstruction on the south leg of the intersection, thus eliminating the need of replacing the pipe culvert located about 90 feet south of the end of construction.

By shifting the north approach of Shaw Road farther west than Alternates 1, 2 and 3, the severe undercut situation present in the previous alignment has been substantially reduced. There are two cut areas on the Alternate 4 gradeline, with maximum cuts of 4.5 feet and 13 feet; the depth of cut is 4 feet or greater for about 400 feet. Entrance to the State Street Quarry will be off U.S. BR 20, since there will be no access control proposed for this alternate.

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; two for reconstructing entrances so that they will not exceed standards for desirable grades, and the other for the purposes of constructing a temporary runaround to maintain traffic on Shaw Road during construction.

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. Providing initial sideroad drainage away from the mainline pavement will require maximum cuts of about 3 feet for Olson Road, 1 foot for Distillery and Beaver Valley Roads and 2 feet for Town Hall Road. 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 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.

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 structure, 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 6A, indicated that it would be more costly to construct the wall than to purchase the residence.

TABLE 6A

ECONOMIC ANALYSIS (ALTERNATE 4)
RETAINING WALLS

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

VI. IMPACTS OF THE PROPOSED PROJECT

A. SOCIAL IMPACTS

A 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.

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.

A number of residential displacements consist of a single family dwelling 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.

For available replacement housing it appeared there was an ample supply of homes offered for sale to satisfy the relocation needs of the project.

Home loans, although high by historic standards, appear to be available from local lending institutions. 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.

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."

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 takes 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.

Several minor impacts in regard 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.

In the short term, small population changes would result on each of the four alternates due to the acquisition of dwelling units to enable construction to be completed. 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 thirteen dwelling units. First, 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. Second, as previously mentioned, the present sparse population along the project tends to inhibit the development of traditional community values and thus strong community values do not exist.

Over the longer term, the increases in population, both in numbers and density, that will accompany the project 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. This is especially true in the case of Alternate 4, which proposes no access control.

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.

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.

The Boone County Conservation District's tract of land is restricted from being used as park land until the year 2019. Alternates 1 and 3 require the acquisition of additional right-of-way from the District. The legal stipulations involved in the sale of this tract of land prohibits use of the land for anything other than agricultural purposes until the year 2019. Thus, no Section 4 (f) statement will be necessary.

B. ECONOMIC IMPACTS

A 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 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 good or services. For Alternate 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 acquistion under Alternate 2. Other than Franklin Park Wire, the possible acquisition and subsequent relocation of business 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.

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

Relocation assistance will be provided to all business properties that will be acquired in accordance with the "Uniform Relocation Assistance and Real Property Acquistion 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 IV P, it will be more economical to acquire the commercial interests of several additional properties than to construct a service road to the nearest sideroad.

Under the Alternate 4 proposed, 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.

The additional strip of right-of-way required from the Commonwealth Edison Company property located approximately 1,000 feet west of High line Street on the north side of U.S. BR 20 will have no impact.

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.

The overall effect of the project on property values will be virtually the same for Alternates 1 thru 3; Alternate 4, having smaller right-of-way requirements, results in less loss of property. 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.

Conflicts 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 no room to relocate the field the house will be purchased and the residents relocated.

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. Alternate 4 results in yearly tax losses of $2,322 and $637 for Winnebago and Boone Counties, respectively.

There are currently no plans by the Rockford Mass Transit District to serve the U.S. BR 20 corridor under study.

Using standard employment generation factors for highway construction projects, estimated costs and a construction period of 18 months, the number of on-site, off-site, and total induced jobs for each of the build alternates was computed. Man-years of employment generation came to 1,034 on Alternate 4.

A detailed breakdown of total estimated costs for the various alternates and phases of the project can be seen on Table 7. It can be seen that, for Phase I, Alternate 4 is the least expensive to build at $5,132,900, 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 $3,050,000 and Alternate 3 at $3,069,800. 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.

A summary of the total estimated costs for each alternate is listed in Table 7A. Alternate 4 is the least expensive to build at a total project cost of $14,407,100. This Alternate 4 cost is $3,865,400 less than the next lowest estimated cost of $18,272,500 for Alternate 2. Costs for Alternates 1 and 3 are $19,566,300 and $18,500,000 respectively.

C. ARCHAEOLOGICAL/HISTORIC/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 on 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 Eyra 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 12K 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.

TABLE 7
ALTERNATE 4 - RECOMMENDED ALTERNATE
PROJECT COST ESTIMATE
(1984 Base In 1000's)

Line	Work Classification	Phase I 4 Lanes	Phase I Resurfacing	Phase II	Phase III	Totals
1.	Clear and Grub; Demolition	$ 11.5	$ 0	$ 0.8	$ 1.2	13.5
2.	a. Mainline Grading and Drainage	435.0	7.8	379.6	563.0	1,385.4
	b. Frontage Road Grading and Drainage	96.5	31.8	12.8	38.3	179.4
3.	a. Mainline Subbase, Base, Surface and Shoulders	2,156.9	391.2	1,191.1	3,121.5	6,860.7
	b. Frontage Road Subbase, Base, Surface and Shoulders	577.4	16.2	54.3	86.0	733.9
4.	Railroad Grade Separations	0	0	0	0	0
5.	Highway Grade Separations including earthwork and pavement (w/o ramps)	0	0	0	0	0
6.	Interchanges (structure, crossroad and ramp earthwork, crossroad and ramp pavements)	0	0	0	0	0
7.	Major Structures	0	0	0	661.1	661.1
8.	Walls (retaining or reinforced earth)	56.4	0	0	36.1	92.5
9.	a. Guardrail, Fencing and Lighting	30.3	29.4	36.4	36.4	132.5
	b. Traffic Control	100.0	20.0	50.0	70.0	240
	c. Signing	10.0	0	10.0	10.0	30
10.	a. Erosion Control	50.0	0	25.0	55.0	130
	b. Landscaping	69.6	27.3	29.7	81.6	208.2
	c. Rest Areas or Other Amenities	0	0	0	0	0
	d. Other Environmental Mitigation	0	0	0	0	0
11.	Traffic Maintenance					
	a. Crossovers	25.8	0	0	0	25.8
	b. Temporary Roadways	200.3	0	99.9	8.3	308.5
12.	All Other Items	0	0	0	0	0
13.	Subtotal (Lines 1-13)	3,819.7	523.7	1,889.6	4,768.5	11,001.5
14.	Contingencies (10% of Line 13)	382.0	52.4	189.0	476.9	1,100.3
15.	CONSTRUCTION COST (lines 13 and 14)	4,201.7	567.1	2,078.6	5,245.4	12,101.8
16.	Right-Of-Way	300.0	0	105.0	85.0	490
17.	Utility Adjustments	0	0	0	0	0
18.	Preliminary Engineering (5% of Line 15)	210.1	28.8	103.9	262.3	605.1
19.	Construction Engineering (10% of Line 15)	420.1	57.6	207.9	424.5	1,210.2
20.	TOTAL PROJECT COST (Lines 15,16,17,18,19)	5,132.0	662.5	2,495.4	6,117.2	14,407.1

TABLE 7
COST ESTIMATE

*Four Lane Portion

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, subbese, 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	0	0	0	0
7. Major structures.	135.0	135.0	135.0	56.4	0	0	0	0	0	910.4	570.6	538.4	661.1
8. Walls (retaining or reinforced earth)	39.4	36.2	38.6	30.3	29.4	54.6	54.6	54.6	36.4	36.4	36.4	36.4	36.4
9. a. Guardrail, fencing and lighting	150.0	100.0	100.0	100.0	20.0	45.0	36.0	36.0	50.0	105.0	84.0	84.0	70.0
b. Traffic control	10.0	10.0	10.0	10.0	0	5.0	5.0	5.0	10.0	10.0	10.0	10.0	10.0
c. Signing	50.0	50.0	50.0	50.0	0	30.0	30.0	30.0	25.0	70.0	70.0	70.0	55.0
10. a. Erosion Control	87.0	88.5	86.7	63.6	27.3	41.4	41.1	41.1	29.7	108.6	110.7	99.9	81.6
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												
11. Traffic Maintenance	25.8	25.8	25.8	25.8	0	0	0	0	0	124.0	163.0	163.0	0
a. Crossovers	262.9	167.8	129.9	200.3	0	85.9	94.4	91.9	99.9	25.3	8.3	8.3	8.3
b. Temporary roadways	0	0	0	0	0	0	0	0	0	0	0	0	0
12. All other items	4770.5	4571.9	4561.5	3819.7	523.7	2295.3	2208.7	2303.0	1889.6	5628.8	5389.3	5358.7	4768.5
13. Subtotal (Lines 1-12)	477.1	457.2	456.2	382.0	52.4	229.5	220.9	230.3	189.0	562.9	538.9	535.9	476.9
14. Contingencies (10% of Line 13)	5247.6	5029.1	5017.7	4201.7	576.1	2524.8	2429.6	2533.3	2078.6	6191.7	5928.2	5894.6	5245.4
15. CONSTRUCTION COST (Lines 13,14)	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
16. Right-Of-Way	0	0	0	0	0	0	0	0	0	0	0	0	0
17. Utility Adjustments	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
18. Prelim. Eng. (5% 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
19. Const. Eng. (10% of Line 15)	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
20. TOTAL PROJECT COST (Lines 15, 16, 17, 18, 19)													

TABLE 7 SHEET 2 OF 2

TABLE 7A
COST ESTIMATE BY ALTERNATE
1984 ESTIMATED COSTS IN $1,000'S

	ALT. 1	ALT. 2	ALT. 3	ALT. 4
PHASE I RESURF.	576.1	576.1	576.1	576.1
PHASE I CONST.	5,247.6	5,029.1	5,017.7	4,201.7
PHASE II CONST.	2,524.8	2,429.6	2,533.3	2,078.6
PHASE III CONST.	6,191.7	5,928.2	5,894.6	5,245.4
TOTAL CONST. COST	14,540.2	13,963.0	14,021.7	12,101.8
RIGHT-OF-WAY COST	2,845.0	2,220.0	2,365.0	490.0
TOTAL ENG. COST	2,181.1	2,094.5	2,103.3	1,815.3
TOTAL PROJECT COST	19,566.3	18,277.5	18,500.0	14,407.1

D. LAND USE/AGRICULTURAL

There are several potential future facilities planned, as well as comprehensive land use plan for the Winnebago County portion of the project. As previously outlined in Section II I., 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 I. 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 future area planning as outlined in the Land Use Plan by the Belvidere-Boone county Regional Planning Commission.

The proposed improvement, if any of the first three alternates are implemented, will have to 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 sideroads 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.

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.

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.

The Department of Agriculture studied the impacts of the four alternates by use of the State Land Evaluation and Site Assessment (LESA) System. 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 alternate 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; and Alternate 4 amounts to 157.60.

After analyzing this data, the IDOA issued an initial report which did not 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 further concluded that the implementation of any of these 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.

Property required to be purchased as right-of-way for all four alternates is shown in Table 8, 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, 64.6 acres for Alternate 1. Alternate 4, however, requires only 36.9 acres of right-of-way, far less (47%) than the next closest alternate.

E. 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.

Alternate 4 takes less additional right-of-way than any one of the other alternates except the no build option. Alternate 4 does not utilize an extensive frontage road system in the

TABLE 8
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	

residential and commercial areas, which reduces impacts to both agricultural ground and wooded habitat.

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 Station 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 bridge on the north side, 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. Alternate 4 proposes 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. Alternate 4 avoids 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.

Two vertebrate and 64 plant species on the state list 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 12M. 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.

F. WATER QUALITY/RESOURCES

The No-Action Alternative would not have affected the water quality or resources of the area. Erosion and subsequent sedimentation, possible with highway construction, would not 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.

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. The probability of contamination of surface and/or groundwater supplies or any public water supply system is not foreseen.

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 project will not result in the impoundment of any existing stream.

The U.S. BR 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. 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 11).

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, the amount of encroachment of the proposed roadway into the 100 year Kishwaukee floodplain would not create significant impacts on the natural and beneficial flood plain values; they will not result in any change in flood risk or damage; and they do not have significant potential for interruption of emergency service or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant.

G. 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.

H. NOISE

A Traffic Noise Analysis has been completed in accordance with IDOT's Traffic Noise and Vibration Manual.

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 increases 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. Noise barrier walls were proposed at these locations which would reduce projected noise levels by 4 dBA to the existing noise levels. The construction of noise barrier walls at these locations is not cost effective (over $3,000 at each location). Anticipated noise levels for the proposed project at

these locations are expected to be within 1 dBA of the "no-action" alternate. For these reasons, the construction of noise barrier walls for this project is not considered feasible and is not recommended.

Projected noise levels for the build alternates do not exceed, and generally are well below the abatement criteria. Therefore, the proposed project is not expected to have significant impact on the surrounding area with regard to noise levels.

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.

I. OTHER RESOURCES/IMPACTS

The construction of any phase of this project would impact the material resources of the area. A comparison of the amounts of material resources to be used on the various alternates of the two phases can be found in the Environmental Assessment for this project. The only mining activity in Boone or Winnebago Counties is rock quarrying. The project would have no effect on the future availability of the rock deposits.

Improved traffic flow, along with an improved road surface, leads to the use of less direct and indirect vehicular energy consumption annually, if the proposed project is constructed. The presence of more lane miles for the proposed project would induce more annual energy use for indirect maintenance.

Despite the energy utilized for indirect construction and the differential in indirect maintenance, total annual energy consumption for the proposed project is less than the No-Action Alternate. With regard to the first three build alternates, 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 and 3.

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.

Alternate 4 Phase I will require 39,000 cubic yards of waste to be removed from the jobsite.

19,000 cubic yards of waste are anticipated from Alternate 4 Phase 2.

For Phase III, Alternate 4 is expected to generate 62,000 cubic yards of waste.

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

The Illinois Department of Transportation has concluded 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 Illinois Department of Transportation Standard Specifications prohibit construction noise during normal sleeping hours.

J. IMPACT/ALTERNATE COMPARISON

A summary of the environmental impacts of the proposed project is shown in Table 9. 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 9

IMPACT/ALTERNATE SUMMARY

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		

VII. 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 (12A)(12S)
Illinois State Clearinghouse (12B)
Belvidere & Boone County Regional Planning Commission
Winnebago County Department of Planning and Economic Development
*Soil Conservation Service
Illinois Department of Agriculture
Federal Highway Administration
Illinois Department of Conservation
State Historic Preservation Officer (12K)
Illinois Archaeological Survey
Illinois Environmental Protection Agency
U.S. Fish and Wildlife Service
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
Illinois State Clearinghouse (12T)

*Coordination was initiated by I.D.O.T. on March 18, 1985 and the enclosed response (Exhibit 12I) 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 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 received from people at this meeting are recorded in the memorandum included as Exhibit 12C. 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.

A memorandum detailing significant comments received at this meeting is included as Exhibit 12D. Responses to these comments 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. Stations 170-177.

Entrance to the property Rt. Station 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 Information 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 (Exhibit 12E). 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 Information 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.

Alternate 4 concept, timetable and construction phasing were explained. This proposal was overwhelmingly favored over the original three alternates by the people in attendance. A report on the proceedings of this meeting can be found in Exhibit 12F.

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 12 N, 12 O and 12 P). 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 12 O and 12 P. 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 12 Q for a copy of his letter.

RESPONSE: See Exhibit 12 R for the written response provided to Mr. Reed.

D. COORDINATION WITH FEDERAL HIGHWAY ADMINISTRATION

Coordination with the Federal Highway Administration has been an on-going process throughout the development of this project. Information on the status of the study has been conveyed to FHWA officials at the Bi-Monthly Environmental Coordination Meetings held by the IDOT District 2 Office.

Notes from these meetings pertaining to this project are included as Exhibit 12J in this report.

APPENDIX A

TRAFFIC CONTROL PLAN

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

Table of Contents

TRAFFIC CONTROL PLAN

PHASE I

General

Under Phase I, the existing two lanes of U.S. BR 20 from Lyford Road to a point one-quarter mile east of Shaw Road will be upgraded to a four lane facility, utilizing one of three alternate alignments; the remainder of existing U.S. BR 20 to the west edge of Belvidere will be resurfaced. In addition, two major sideroads (Lyford Road and Shaw Road) will require major reconstruction during Phase I. This report will analyze the various ways traffic can be handled during the construction of each of the three alternate alignments and the costs related to each.

U.S. BR 20

The forecasted 1988 ADT for this route is 7600 vehicles.

The first means to consider in handling this traffic is a marked detour route. The proposed detour route would begin at the intersection of U.S. BR 20 and Perryville Road, utilize Perryville Road southbound to its intersection with U.S. 20, continue east on U.S. 20 to its intersection with ILL. 76 in Belvidere, and continue north to the intersection of ILL. 76 and BR 20 in Belvidere. (See Exhibit A-1 page A-21) The adverse travel distance involved is 2.2 miles. In determining adverse travel costs it has been assumed that 50% of passenger cars, 90% of single unit vehicles, and 90% of multi-unit vehicles would utilize the marked detour. The cost per vehicle mile used in this and all other adverse travel cost calculations is $.20 for passenger cars, $.70 for single unit vehicles, and $.90 for multi-unit vehicles. In addition, a 500 day closure period is assumed as well as a 50% road user sharing of adverse travel costs. Using the above assumptions, the total adverse travel costs are $532,500.

The other method of handling construction traffic is through a combination of stage construction utilizing temporary runarounds and auxiliary traffic lanes built adjacent to the existing two-lane roadway. To enable one to compare both the method and costs involved for each of the three Phase I alternates it is necessary to briefly discuss the construction details and cost estimates.

Alternate 1 (Exhibit A-2) page A-22 consists of constructing a four lane facility centered on the existing alignment. To use this alignment stage construction and runaround construction would be necessary.

The total estimated cost for the detour runaround crossovers and auxiliary lanes on Alternate 1 above is $191,200.

Alternate 2 (Exhibit A-2), consists of adding two lanes north of the existing two-lane facility and would require auxiliary lanes and temporary crossover construction.

Box culverts will be built utilizing stage construction and requiring no runarounds.

The total estimated cost for the runaround, crossovers and auxiliary lane on Alternate 2 is $96,100.

By utilizing Alternate 3 (Exhibit A-3), which consists of constructing two lanes south of the existing lanes, auxiliary lanes and crossovers would be required.

Box culverts will be constructed utilizing stage construction and not require any runarounds or auxiliary lanes.

The total cost estimate for implementing auxiliary lanes and crossovers on Alternate 3 is $58,200.

Alternate 4, as shown on Exhibit A-3, involves constructing a four-lane facility centered on the existing alignment with a 14 foot flush median. The following auxiliary lanes and stage construction would be required:

1. STATIONS 261-279
   Construct a 12' and variable width auxiliary lane adjacent to the existing north edge of pavement with a temporary crossover at Lyford Road. Construct the new EB lanes with traffic on the existing road and auxiliary lane. Following completion of the EB lanes, reroute traffic on the new EB lanes and construct the WB lanes.

2. STATIONS 279-27
   Construct the new EB lanes with traffic remaining on the existing lanes utilizing the appropriate traffic control standards. Temporary lane closures may be necessary during paving operations.

3. STATIONS 27-49
   Construct a 20' and variable width auxiliary lane adjacent to the existing north edge of pavement and construct a permanent tie-in to two lane pavement from Station 26+80 - 38+75 including the south half of permanent pavement from Sta. 34+00 - 38+75. Construct a variable width auxiliary lane adjacent to the south edge of the tie-in from Sta. 29+00 - 48+00 to allow two-way traffic on the new EB lanes during construction of WB lanes.

The total estimated costs for auxiliary lanes and crossovers for Alternate 4 of Phase I is $140,400.

Lyford Road

Lyford Road reconstruction is required for 1000' south and 1100' north of U.S. BR 20. The same horizontal and vertical alignment on Lyford Road will be used for each of the first three alternates for U.S. BR 20. The 1988 projected ADT for the north leg of Lyford Road is 2,450 vehicles while that for the south is 4,850 vehicles. Since there is a considerable difference in projected ADT for the north and south legs of Lyford Road, this report will separately analyze the method of handling construction traffic.

As in previous analyses, construction period traffic can be handled by a marked detour or stage construction and runarounds.

On north Lyford Road, closing the road at its intersection with U.S. 20 would create varying lengths of adverse travel. Assuming most traffic would use U.S. BR 20, Bell School Road, and Rote/Squaw Prairie Road (See Exhibit A-1), as an alternate route, the average adverse travel distances would be 1.2 miles for north-south traffic, 0.3 miles for southbound turning east, and 0.9 miles for southbound turning west. It will further be assumed that 75 percent of projected traffic would use the detour for a 120 day closure period. Using the above assumptions, the previously used vehicle costs and the 50 percent user cost sharing, the total adverse travel costs are $21,200.

Keeping north Lyford Road open to traffic would require stage construction and runaround construction. Specifically, a 22' wide, 1200' long runaround would be required on the east side of the existing lanes to handle two-way traffic during construction of the new west half of pavement. After constructing the west half of new pavement and a 300' long variable width auxiliary lane from Station 417-420, two-way traffic will be placed on the new west lanes while the east lanes are constructed. The total estimated cost for the runarounds described above is $23,100.

Traffic on south Lyford Road could also be detoured on the local road system during construction. It is assumed that traffic would use Newberg Road, Bell School Road and Rote/Squaw Prairie Road if south Lyford Road were closed to traffic. Adverse travel distances would be 2.0 miles for northbound traffic, 0.8 miles for northbound traffic turning east, and 1.8 miles for northbound traffic turning west. These distances assume that U.S. BR 20 would remain open to traffic. It will again be assumed that 75% of the projected traffic would use the local road detour for a 120 day closure period with the same

vehicle costs and 50% user cost sharing. The total estimated adverse travel costs for south Lyford Road are $85,300.

Traffic can be maintained on south Lyford Road during construction in a manner similar to north Lyford Road. Initially, traffic would be routed on a 22' wide runaround constructed adjacent to the existing east edge of pavement from Stations 399-410, while construction is completed on the west half of pavement. After completion of the west half of pavement and the construction of a variable width auxiliary lane adjacent to the west edge of new pavement from Stations 399-402, traffic would be routed on the new west half while the new east half is constructed. The total cost of the above described runarounds is estimated to be $22,600.

Shaw Road

On Alternates 1, 2 and 3 the reconstruction of Shaw Road is necessary for 1400' north and 1000' south, while Alternate 4 requires the reconstruction of 1300' north and 600' south. The horizontal alignment will be the same for the south approach and similar for the north approach on Alternates 1, 2 and 3, however, a different vertical alignment is necessary for each. Alternate 4, on the other hand requires a substantially modified horizontal alignment as well as a modified vertical alignment. The 1988 projected ADT for north Shaw Road is 850 vehicles while that for south Shaw Road is 1500 vehicles. Because of the difference in traffic for north and south Shaw Road, each will be analyzed separately for the method of handling construction traffic. As before, construction period traffic can be handled by a marked detour over local roads or by stage construction and runarounds.

Closing north Shaw Road at U.S. BR 20 would create adverse travel for southbound traffic only, because there are few traffic generators between U.S. BR 20 and Rote/Squaw Prairie Road, the first east-west road north of U.S. BR 20. (See Exhibit A-1).

For calculating adverse travel costs, an adverse travel distance of 3.8 miles will be used along with a 120 day closure period. In addition, it will be assumed that 75% of the existing traffic would use the detour, vehicle costs will be the same as in previous analyses, and the 50% user cost sharing will be used. Total adverse travel costs for north Shaw Road are estimated to be $22,200.

The total estimated cost of a runaround for Alternates 1, 2 or 3 is $23,500. Alternate 4 will require a 180' runaround to the east of existing Shaw Road immediately north of existing BR 20 and a 420' runaround on the west side of the proposed new pavement from Station 1519+50 to 1523+50. Construction of the new alignment of Shaw Road from Station 1510+50 - 1520+50 would proceed utilizing the existing Shaw Road and the south runaround,

then the new alignment and the north runaround would be used for completion of Shaw Road from Station 1520+50 - 1522+50. The estimated cost of the required runarounds is $18,000.

In analyzing the possibility of closing south Shaw Road to traffic at U.S. BR 20 it is necessary to consider adverse travel for northbound traffic, northbound traffic turning east, and northbound traffic turning west. It is assumed that Newberg Road, Bell School Road and Rote Road would be used as a marked detour route. (See Exhibit A-1) The adverse travel distances involved would be 3.8 miles for northbound traffic, 1.9 miles for northbound traffic turning east, and 4.7 miles for northbound traffic turning west. As for north Shaw Road, a 120 day closure period, 75% of traffic using the detour, the same vehicle costs and a 50% user cost sharing will be assumed in computing adverse travel costs for south Shaw Road. Using the above assumptions, the total adverse travel costs are $51,000.

Maintaining traffic on South Shaw Road can be accomplished on Alternates 1, 2 and 3 by stage construction and the construction of a 22' wide, 1000' long runaround on the east side of the proposed new pavement. The total cost estimate for the runaround construction on South Shaw Road is $28,300 for these alternates. Alternate 4, on the other hand, would require a 650' long detour on the east side at a cost of $22,000.

PHASE II

General

Phase II involves construction of a four-lane facility from Town Hall Road to High Line Street in Belvidere. For Alternates 1, 2 and 3, a 44 foot median will be utilized to the west edge of Belvidere, where it transitions to a 14 foot flush median. Construction in Belvidere will consist of widening and resurfacing for these alternates. Alternate 4 features a new four-lane facility with a 14-foot flush median from Town Hall Road to High Line Street. In addition, moderate reconstruction will be required on Town Hall Road. As in Phase I construction, traffic can be handled either with a marked detour or a combination of stage construction and detour runarounds. Phase II is expected to be constructed at a future date approximately five years after Phase I. Therefore, 1993 traffic projections will be used.

U.S. BR 20

The year 1993 projected ADT, with Phase I construction on U.S. BR 20 complete and the Belvidere East Bypass in operation, is 10,125 vehicles.

In analyzing a marked detour we will assume the same marked detour route as in Phase I, the same vehicle costs, the same percentage of traffic using the detour, a 50% user sharing of adverse travel costs, and a 500-day closure period. Using the above assumptions, the total adverse travel costs for Phase II are $709,100.

The alternative to a marked detour for handling construction traffic is a combination of stage construction and runarounds.

Under Alternate 1 (Exhibit A-2), which involves constructing a four-lane facility centered on the existing alignment, stage construction and runarounds would be required. The total estimated cost for auxiliary lanes on Alternate 1 of Phase II is $83,000.

Construction of Alternate 2 (Exhibit A-2), which involves building the WB lanes north of the existing lanes to the west edge of Belvidere, then centering the four lanes on the existing alignment, would involve construction staging and auxiliary lane construction. The total cost to construct the auxiliary lanes for Alternate 2 of Phase II is $91,500.

Alternate 3 construction (Exhibit A-3) which involves building the EB lanes south of the existing road to the west edge of Belvidere, where the four lanes center on the existing alignment, and would require auxiliary lanes. The total estimated cost for Alternate 3, Phase II auxiliary lanes is $89,000.

Alternate 4 implementation (Exhibit A-3) on Phase II, which calls for constructing a new four-lane facility with a 14' flush median, locates the WB lanes north of the existing pavement to the west edge of Belvidere, then centers the four lanes on the existing alignment; this requires the following auxiliary lanes:

1. STATION 150-163
   Construct the new WB lanes including the tie-in utilizing a variable width auxiliary lane adjacent to the existing south edge of pavement from Sta. 148-161. Following construction of the new tie-in and WB lanes, employ the appropriate traffic control standards to reroute two-way traffic onto the newly completed WB lanes and construct the new EB lanes.

2. STATION 163+175
   Construct a variable width auxiliary lane adjacent to the existing south edge of pavement to allow stage construction of the proposed box culvert.

3. STATION 175-180
   Construct the new WB lanes utilizing the existing lanes

and employing the appropriate traffic control measures. After completing the WB lanes reroute two-way traffic onto them to allow completion of the EB lanes.

4. STATION 180-210
Construct a variable width auxiliary lane adjacent to the existing south edge of pavement to allow construction of the WB pavement as well as stage construction of the box culvert at Station 187. Following completion of the WB lanes, reroute two-way traffic onto the new WB lanes via the appropriate traffic control standards to allow completion of the EB lanes.

The total estimated costs of the auxiliary lanes for Alternate 4 of Phase II is $97,000.

Town Hall Road

As in previous analyses, it is necessary to consider both closing Town Hall Road at the U.S. BR 20 and maintaining traffic by constructing a runaround.

In order to calculate the adverse travel costs involved in detouring traffic over local roads it is necessary to make several assumptions. The logical detour route for traffic with origins or destinations west of Town Hall Road is Squaw Prairie Road and Beaver Valley Road, while that for east origins or destinations is Squaw Prairie Road and Beloit Road. (See Exhibit A-1) The average adverse travel distance is 1.6 miles with an assumed closure period of 60 days. Since the major traffic generator is a subdivision 2.5 miles north of U.S. BR 20 and it involves no adverse travel for alternate access routes, it is assumed that only 30% of the 1993 projected ADT of 725 vehicles would use detour routes. Finally, it is assumed that the vehicle mix would be 90% passenger cars and 10% single unit vehicles. The total calculated adverse travel cost is $2,700.

Traffic can be maintained on Town Hall Road during construction by constructing a 10' wide, 400' long runaround adjacent to the existing east edge of pavement. With traffic routed on the runaround, removal and reconstruction would be completed on the west half. Traffic would then be routed on the new west pavement while the east pavement is removed and reconstructed. The total estimated cost for this runaround for Town Hall Road is $2,900.

PHASE III

General

Phase III construction involves completing the four-lane

facility between Shaw Road and Town Hall Road. As before, Alternates 1, 2 and 3 involve three different alignments with a 44 foot median, while Alternate 4 involves constructing two new lanes immediately north of the existing lanes with a 14 foot flush median. Phase III is expected to be constructed at a future date more consistant with year 2008 traffic projections.

U.S. BR 20

The year 2008 projected ADT with Phases I and II in place is 13,550 vehicles. In considering a marked detour route we will assume the same route as in Phases I and II, the same vehicle costs, the same percentage of user traffic, a 50% user sharing of adverse travel costs, and a 500-day closure period. Using the above assumptions, the total adverse travel costs for Phase III are $948,700.

As in Phases I and II, construction traffic can be handled with a combination of stage construction and auxiliary lanes.

To compare each of the four alternates in terms of maintaining traffic, it is necessary to more closely examine each of the alternates.

Alternate 1 of Phase III involves constructing a four-lane facility centered on the existing alignment from Shaw Road to Town Hall Road and would require the following auxiliary lanes and staging. The total estimated cost of the auxiliary lanes and crossovers for Alternate 1 of Phase III is $141,000.

Alternate 2 of Phase III calls for completing the four lane facility between Shaw Road and Town Hall Road by building the two WB lanes to the north of the existing road. A temporary crossover is necessary to maintain traffic. The total cost estimate for the temporary crossovers necessary to maintain traffic is $163,000.

Alternate 3 of Phase III involves completing the four lane facility from Shaw Road to Town Hall Road with the two EB lanes being located south of the existing road. A temporary crossover would be required to maintain traffic. The total estimated cost for the required temporary crossovers is $163,000.

Alternate 4 of Phase III is the completion of the four lane facility from Shaw Road to Town Hall Road with the WB lanes being built north of the existing facility and incorporating a 14 foot flush median.

Since flush median facilities would be in place on both ends of this proposed improvement, temporary crossovers can be implemented by using the appropriate traffic control standards. With two-way traffic on the existing lanes, construct the new WB

lanes. Following completion of the WB lanes, reroute two-way traffic on the new WB lanes and complete the EB lanes.

Since no construction is necessary to effect temporary crossovers, there is no cost to be attributed to maintenance of traffic.

Olson Road

As in previous analyses, two methods of handling construction period traffic must be considered. It is first necessary to examine closing Olson Road at its intersection with U.S. BR 20. The second method, as before, will be utilizing stage construction with a detour runaround.

In analyzing a road closure with a marked detour over local roads the 2008 projected ADT of 1700 vehicles is assumed to consist of 90% passenger cars and 10% single unit vehicles. Since the main traffic generators are two subdivisions within a half mile of U.S. BR 20 it is further assumed that 90% of the existing traffic would use the detour route. The logical routing of detoured traffic would be over Squaw Prairie Road and Shaw Road for westbound traffic and over Squaw Prairie Road and Beaver Valley Road for eastbound traffic (See Exhibit A-1). The average adverse travel distance involved is 1.5 miles and a 60 day closure period will be assumed. Furthermore, the same vehicle costs and the 50% user cost sharing will be used. Using the above assumptions, the total adverse travel cost is $17,200.

The second method of handling construction period traffic, utilizing stage construction and a runaround must also be analyzed. A 20' wide, 500' long runaround can be constructed west of the existing Olson Road pavement, with traffic being routed on that runaround while constructing the new pavement in its entirety. The total estimated cost of the runaround is $5,800.

Distillery Road

Unlike previous analyses, there appears to be only one method reasonably available for handling traffic during construction. That method, which is maintaining traffic with a runaround, is dictated by the fact that U.S. BR 20 is the only access point to Distillery Road. Access can be maintained during construction by constructing a 5' wide, 150' long auxiliary lane adjacent to the existing east edge of pavement and removing and reconstructing the new west half of pavement. Traffic would then be routed onto the new west half of pavement while the east half is removed and reconstructed. The total estimated cost for the runaround is $900, a minimal cost to maintain access for a 2008 projected ADT of 150 vehicles.

Beaver Valley Road

It is necessary to examine both closing Beaver Valley Road and utilizing a marked detour route and maintaining traffic with a runaround. In calculating the adverse travel costs involved in closing the road at U.S. BR 20, it is assumed that the projected 2008 ADT of 850 vehicles will consist of 90% passenger cars and 10% single unit vehicles. An average adverse travel distance of 1.0 miles is based on using Squaw Prairie Road and Olson Road for westbound traffic and Squaw Prairie Road and Town Hall Road for eastbound traffic (See Exhibit A-1). In addition, since only six residences are located along the first mile to the north and one business located near U.S. BR 20, it will be assumed that only 20% of the projected traffic would remain on Beaver Valley Road for the estimated 60 day closure period. Vehicle costs and a 50% user cost sharing are also assumed. The total adverse travel costs are calculated to be $1,300.

Maintaining traffic on Beaver Valley Road during construction can be accomplished by construction a 5' wide, 300' long auxiliary lane adjacent to the existing east edge of pavement. Traffic would be routed on the auxiliary lane and existing east half of pavement during removal and reconstruction of the new west half of pavement. Following completion of the west half, traffic will be routed on the west half and the east half removed and reconstructed. The total estimated costs for the runaround described above is $1,600.

RECOMMENDATIONS

Phase I

As can be seen in Table A-1, there is a clear cut cost savings for each of the four alternates in maintaining traffic during construction utilizing runarounds and auxiliary lanes for U.S. BR 20. There are also obvious cost savings for a runaround and auxiliary lanes for south Lyford Road and south Shaw Road. There is a slight cost disadvantage to maintaining traffic on north Lyford Road and north Shaw Road. However, the negative public relation effect as well as the disruption to the north-south traffic flow at this intersection during construction would appear to more than offset the slight difference in cost. It is therefore recommended that for Phase I, under any of the four alternates, that traffic be maintained during construction by using detour runarounds and auxiliary lanes.

Phase II

One can see from Table A-2 that considerable cost savings can be realized on all four alternate alignments if traffic on U.S. BR 20 during construction is maintained by utilizing runarounds and auxiliary lanes. Town Hall Road has a minimal cost disadvantage for maintaining traffic during construction. For all alternate alignments of Phase II, therefore, it is recommended that traffic be maintained by use of runarounds and auxiliary lanes.

Phase III

Table A-3 shows that, as is the case in Phases I and II, there is a considerable cost savings on all four alternate alignments if construction traffic is maintained by utilizing crossovers and auxiliary lanes. Of the side roads, Olson Road shows a favorable cost advantage for maintaining traffic during construction, Beaver Valley Road shows a minimal disadvantage, and Distillery Road was not considered for a detour because it has no other access except U.S. BR 20. It is therefore recommended that construction traffic on all four alternates be maintained using auxiliary lanes and crossovers. In addition, it can be seen that Alternate 4 is the preferred alternate in regard to maintaining traffic.

TABLE A-1
PHASE I TRAFFIC CONTROL PLAN ALTERNATES

ALTERNATE 1

	U.S. BR 20	North Lyford Rd.	South Lyford Rd.	North Shaw Rd.	South Shaw Rd.
Traf. Maint. Cost Estimate	$191,200	$23,100	$22,600	$23,500	$28,300
Adverse Travel Miles	2.2	1.2	2.0	3.8	3.8
Adverse Travel Costs	$532,500	$21,200	$85,300	$22,200	$51,000

ALTERNATE 2

Traf. Maint. Cost Estimate	$ 96,100	$23,100	$22,600	$23,500	$28,300
Adverse Travel Miles	2.2	1.2	2.0	3.8	3.8
Adverse Travel Costs	$532,500	$21,200	$85,300	$22,200	$51,000

ALTERNATE 3

Traf. Maint. Cost Estimate	$ 58,200	$23,100	$22,600	$23,500	$28,300
Adverse Travel Miles	2.2	1.2	2.0	3.8	3.8
Adverse Travel Costs	$532,500	$21,200	$85,300	$22,200	$51,000

ALTERNATE 4

Traf. Maint. Cost Estimate	$140,400	$23,100	$22,600	$18,000	$22,000
Adverse Travel Miles	2.2	1.2	2.0	3.8	3.8
Adverse Travel Costs	$532,500	$21,200	$85,300	$22,200	$51,000

TABLE A-2
PHASE II TRAFFIC CONTROL PLAN ALTERNATES

	U.S. BR 20	TOWN HALL ROAD
ALTERNATE 1		
Traffic Maintenance Cost Estimate	$ 83,000	$ 2,900
Adverse Travel Miles	2.2	1.6
Adverse Travel Costs	$709,100	$ 2,700
ALTERNATE 2		
Traffic Maintenance Cost Estimate	$ 91,500	$ 2,900
Adverse Travel Miles	2.2	1.6
Adverse Travel Costs	$709,100	$ 2,700
ALTERNATE 3		
Traffic Maintenance Cost Estimate	$ 89,000	$ 2,900
Adverse Travel Miles	2.2	1.6
Adverse Travel Costs	$709,100	$ 2,700
ALTERNATE 4		
Traffic Maintenance Cost Estimate	$ 97,000	$ 2,900
Adverse Travel Miles	2.2	1.6
Adverse Travel Costs	$709,100	$ 2,700

TABLE A-3
PHASE III TRAFFIC CONTROL PLAN ALTERNATES

ALTERNATE 1

	U.S.BR 20	OLSON RD.	DISTILLERY RD.	BEAVER VALLEY RD.
Traf. Maint. Cost Estimate	$141,000	$ 5,800	$ 900	$ 1,600
Adverse Travel Miles	2.2	1.5	Not Applicable	1.0
Adverse Travel Costs	$948,700	$17,200	Not Applicable	$ 1,300

ALTERNATE 2

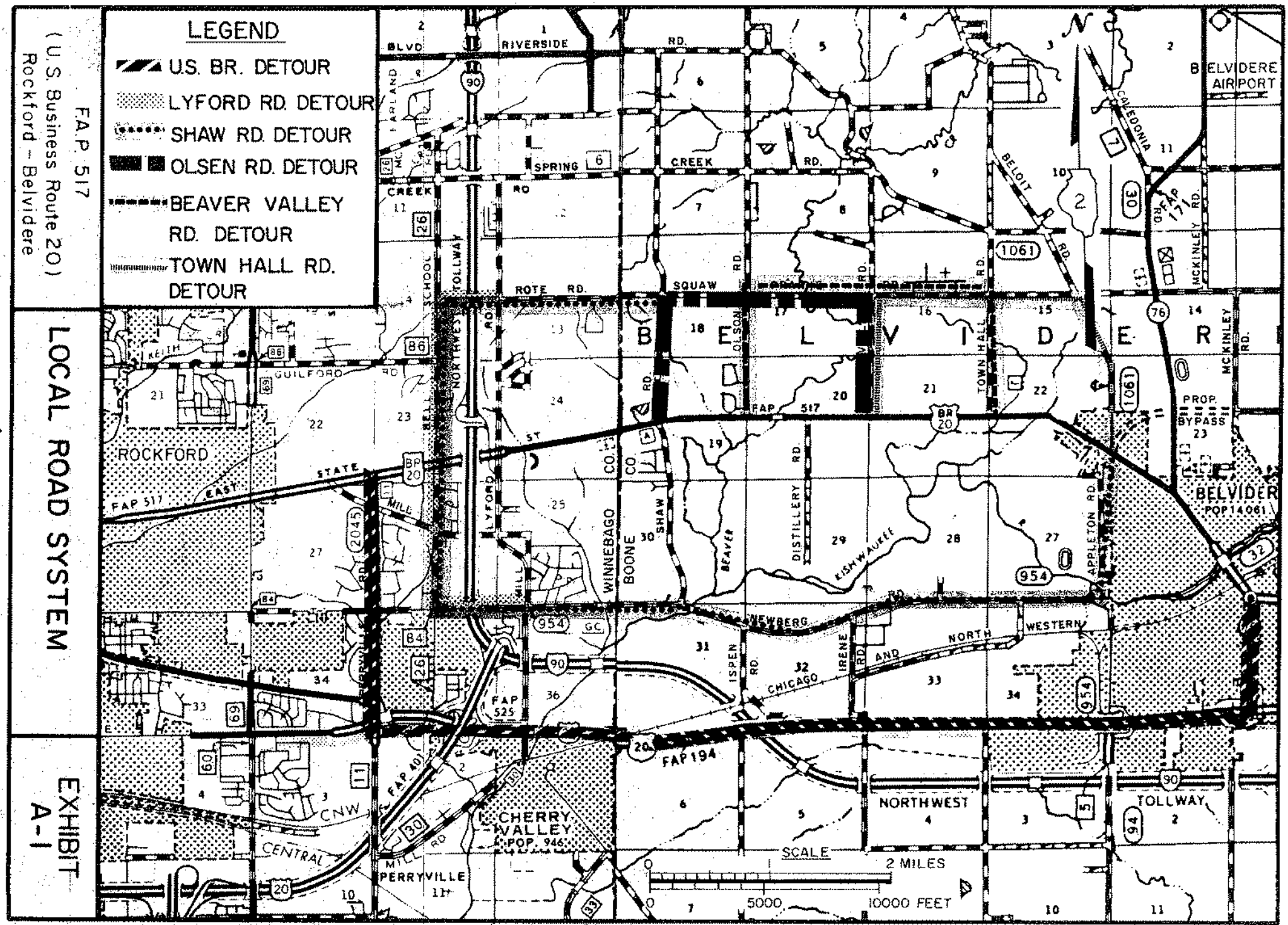
Traffic Maint. Cost Estimate	$163,000	$ 5,800	$ 900	$ 1,600
Adverse Travel Miles	2.2	1.5	Not Applicable	1.0
Adverse Travel Costs	$948,700	$17,200	Not Applicable	$ 1,300

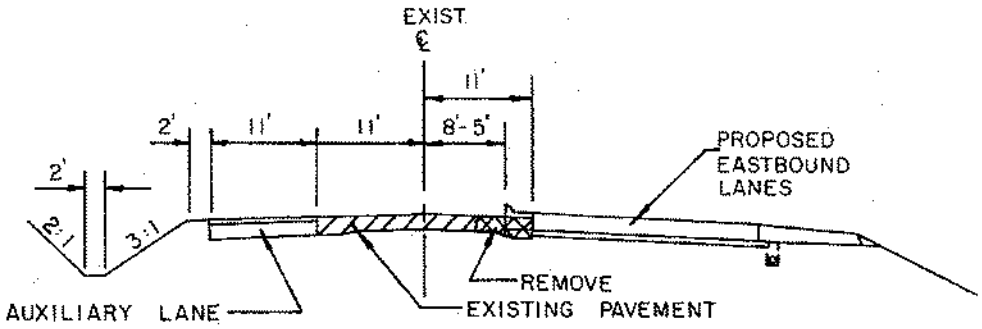
ALTERNATE 3

Traffic Maint. Cost Estimate	$163,000	$ 5,800	$ 900	$1,600
Adverse Travel Miles	2.2	1.5	Not Applicable	1.0
Adverse Travel Costs	$948,700	$17,200	Not Applicable	$1,300

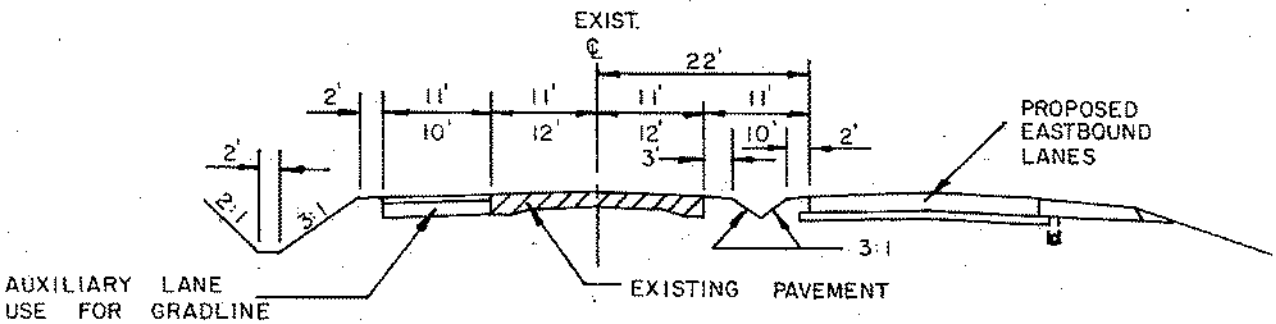
ALTERNATE 4

Traffic Maint. Cost Estimate	$ 0	$ 5,800	$ 900	$ 1,600
Adverse Travel Miles	2.2	1.5	Not Applicable	1.0
Adverse Travel Costs	$948,700	$17,200	Not Applicable	$ 1,300


LEGEND
U.S. BR. DETOUR
LYFORD RD. DETOUR
SHAW RD. DETOUR
OLSEN RD. DETOUR
BEAVER VALLEY RD. DETOUR
TOWN HALL RD. DETOUR
FA.P. 517
(U.S. Business Route 20)
Rockford - Belvidere
LOCAL ROAD SYSTEM
EXHIBIT A-1
BELVIDERE
ROCKFORD
CHERRY VALLEY
POP. 946
PERRYVILLE
SCALE
2 MILES
5000
10000 FEET
A-16

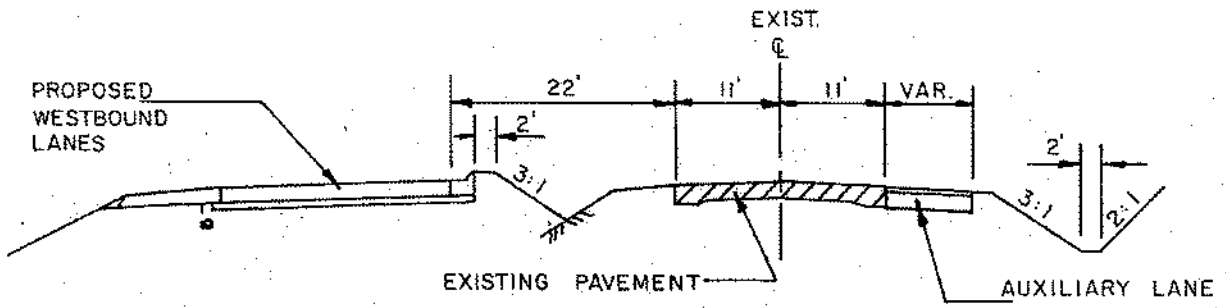


ALTERNATE 1
22' MEDIAN

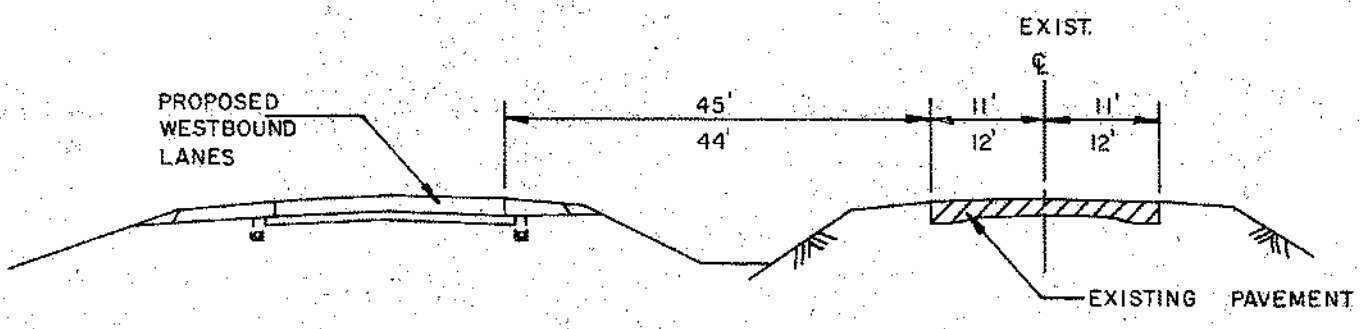


ALTERNATE 1*
44' MEDIAN

*SHOWN FOR PHASES I & II
REVERSE FOR PHASE III

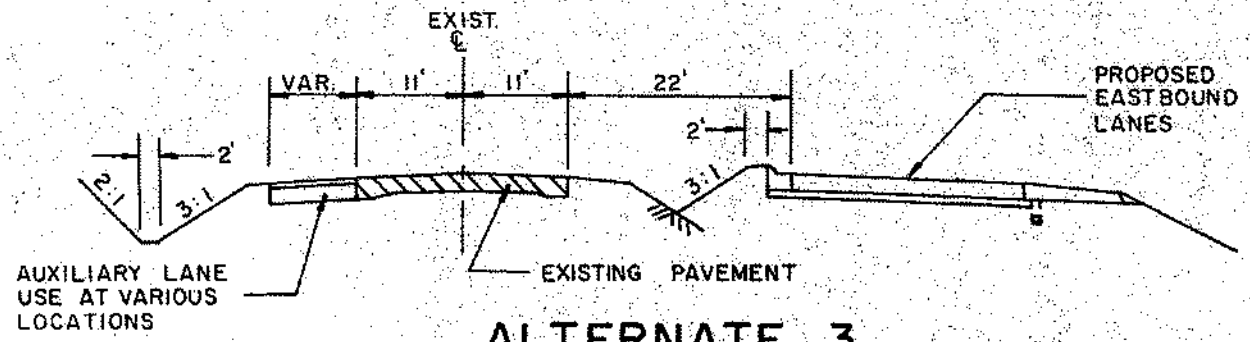


ALTERNATE 2
22' MEDIAN

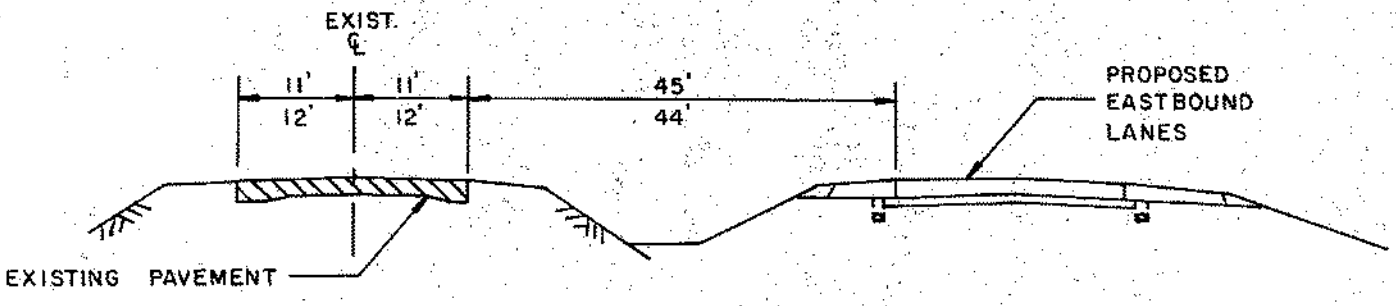


ALTERNATE 2
44' MEDIAN

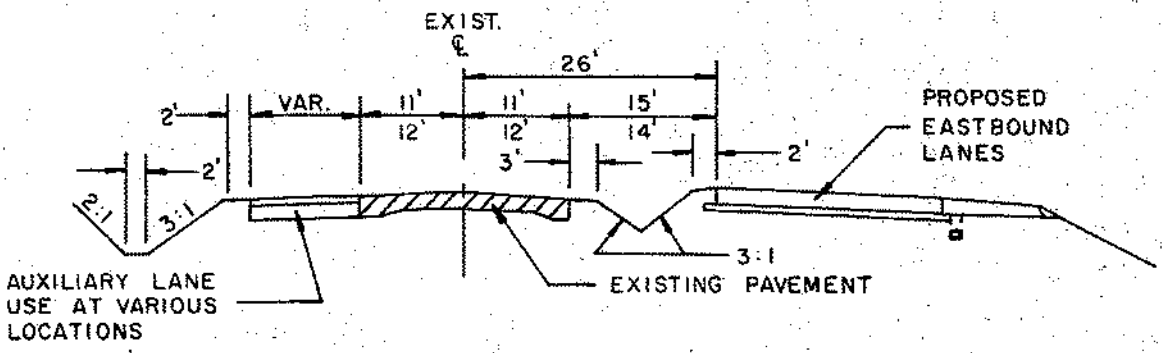
F.A.P. 517 (U. S. Business Route 20) Rockford - Belvidere	CONSTRUCTION STAGING ALTERNATES 1 & 2	EXHIBIT A-2



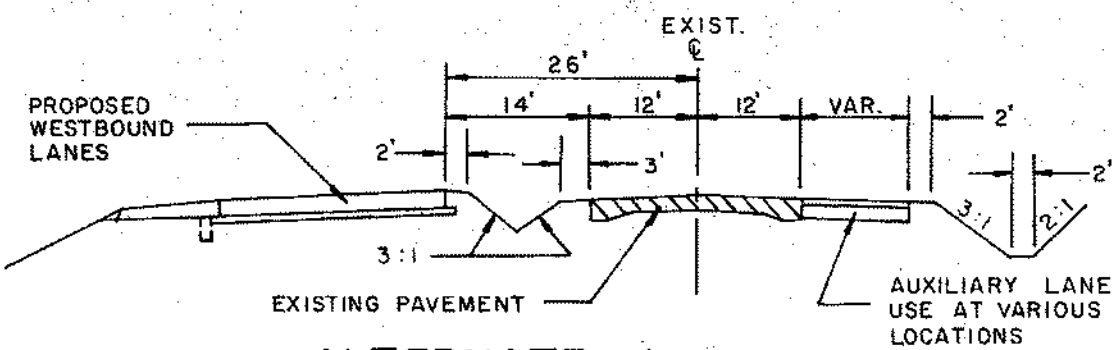
ALTERNATE 3
22' MEDIAN



ALTERNATE 3
44' MEDIAN



ALTERNATE 4
PHASE I



ALTERNATE 4
PHASE II

F.A.P. 517 (U.S. Business Route 20) Rockford – Belvidere	CONSTRUCTION STAGING ALTERNATES 3 & 4	EXHIBIT A - 3

APPENDIX B

ACCIDENT ANALYSIS

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

Table of Contents

ACCIDENT ANALYSIS

GENERAL

In preparing the accident analysis for this study, the accident data for 1980 - 1982 was utilized since it was the latest 3 year data available. Calculations of accident rates at all intersections with over one accident in a one year period as well as for the entire 5 mile project were made for 1980, 1981 and 1982. The results of these calculations as well as the statewide average accident rates for the periods are shown in Exhibit B-1. Accident spot maps for 1980 - 1982 are included as Exhibits B-2 thru B-4. A Collision Diagram Summary Sheet appears as Table B-1. Schematic collision diagrams for the Lyford Road and Belford 6 Theater intersections for 1980 thru 1982 are included as Exhibits B-5 and B-6. Accident Frequency Charts for Intersections and Non-Intersections appear as Exhibits B-7 and B-8.

The proposed project will be divided into three phases. Under Phase I, the existing two lanes of U.S. BR 20 from Lyford Road to a point one-quarter mile east of Shaw Road will be reconstructed as a a four-lane facility; the remainder of existing U.S. BR 20 will be resurfaced to the west edge of Belvidere and receive shoulder and other safety improvements. In addition, two major sideroads (Lyford Road and Shaw Road) will require major reconstruction during Phase I. Phase II construction involves adding two lanes from Town Hall Road to Highline Street in Belvidere; the existing two lanes will be reconstructed. Phase III consists of reconstructing the remaining portion between Shaw and Town Hall Roads as a four-lane facility. In addition to subdividing the project into three phases, four alternate alignments are being considered. The first three alternates utilize a divided highway configuration, whereas a 14 foot flush median is proposed for the fourth alternate. For all phases of Alternates 1, 2 and 3, the upgrading from a two lane to a four lane facility will require partial access control, leading to removal of direct commercial access and a minimum spacing for agricultural and residential entrances and median crossovers. Alternate 4, however, will have no access control on any phase.

DATA ANALYSIS

As can be seen on Exhibit B-1, statewide average accident rates for all types of accidents are exceeded for the entire project for each of the three years and for many of the intersections for one or more years. In addition, the intersection accident data in Exhibit B-7 highlights certain types of accidents whose frequency exceeds statewide averages. These will be discussed in more detail on an individual intersection basis along with proposed corrective measures.

At the Lyford Road - U.S. BR 20 intersection two types of accidents stand out as far as exceeding statewide averages, those being angle collisions and night accidents. Likely contributing factors are the heavy traffic count in each direction, a stop sign controlling Lyford Road traffic, and the 100 foot north-south width of the intersection. Redesign of the intersection as part of Phase I will increase capacity by the addition of left turn lanes on U.S. BR 20, increase the safety of cross traffic by installation of traffic signals, and increase the night safety by installation of lighting.

The existing commercial entrance of the Belford 6 Drive-In Theater off U.S. BR 20 has had an abnormally high accident rate for two of the three years of accident statistics. Two types of accidents that stand out by their high incidence in relation to statewide averages are the turning-type accident and night accidents. Accident reduction can be expected for Alternate 4 at this location, due to the construction of additional thru lanes and a bi-directional left-turn lane past the theater entrance. In addition, a right-turn lane will be constructed at the theater entrance, similar to the one currently in place at that location. These factors should substantially improve safety for turning traffic.

The intersection of Shaw Road and U.S. BR 20 had an accident rate in 1981 which exceeded statewide averages. The category of accidents which stands out in the statistics is the rear end accident. It is likely that the addition of two thru lanes as well as left turn lanes during Phase I will reduce the likelihood of stopped vehicles being struck from the rear.

The Olson Road intersection with U.S. BR 20 has shown a lower overall accident rate in each of the three years studies as compared to statewide averages. Its safety should be enhanced on Phase I due to resurfacing and shoulder improvements and on Phase III by the addition of two thru lanes and a left turn lane.

Only two accidents have occurred at the Distillery Road intersection during the three years studies. However safety is likely to be improved for the same reasons as for Olson Road.

The intersection of Beaver Valley Road and U.S. BR 20 has experienced an accident rate in each of the three study years which is nearly equal to the statewide averages. The accident rate should be decreased by both the implementation of Phase I and Phase III for the reasons listed for Olson Road.

The final intersection with U.S. BR 20 on the project is Town Hall Road. Again, accident rates for each of the three study years are lower than statewide averages. As before, safety would be improved on Phase I due to resurfacing and shoulder improvements and on Phase II by the addition of two thru lanes and a left turn lane.

The non-intersection portions of U.S. BR 20 have also exhibited above average accident rates for each of the years studied. Only rear-end type accidents have exceeded the averages in each of the years where statewide statistics were available. The two additional thru lanes and bi-directional left-turn lane proposed for Alternate 4 should result in a reduction of rear-end accidents. In addition, the increased skid resistance of new pavement will likely help decrease this category of accident.

WET PAVEMENT ACCIDENTS

Analyzing of wet pavement accidents will be done in accordance with IDOT's "Procedure for Identifying, Analyzing, and Improving Wet Pavement Accident Locations Within Rehabilitation/Resurfacing Projects."

Using Table 4 of the above referenced procedure, three cluster sites can be identified on the project. The first site is the Lyford Road intersection with U.S. BR 20. As can be seen on Exhibits C-2 thru C-4, four wet pavement accidents occurred in the three year analysis period. The accidents consisted of two turning, one angle, and one rear end type. The overall improvement of this intersection, including the installation of turn lanes, traffic signals, and lighting should decrease the likelihood of these types of wet pavement accidents recurring. The second cluster site is at the Beaver Creek bridge. In the three year period, four wet pavement accidents occurred at or near the bridge site. This location has been significantly improved by the completion of a new bridge at the site in 1983. The addition of two more lanes and a second bridge on Phase III will further increase the safety at this high accident location.

The third cluster site is U.S. BR 20 from Lyford Road to Shaw Road, which is the area to be improved to four lanes under Phase I. In the three year period there were twelve wet pavement accidents in that 1.5 mile section of road. These accidents consisted primarily of rear end or turning type accidents. Several improvements on Phase I will serve to lessen these wet pavement accidents. First, for Alternate 4, a bi-directional left-turn lane is proposed. Second, an additional two lanes of paving will be installed, and third, the existing two lane pavement will be rebuilt, thus providing the skid-resistant surface of new pavement.

IDOT SPOT SAFETY SYSTEM

The IDOT Spot Safety System is used to rank intersections and roadway sections as to their accident potential based on past accident records. The following color schemes are used to rate the probability of future accidents:

1. Yellow - unlikely to repeat as a high accident location.

2. Green - likely to repeat as a high accident location.

3. Red - will repeat as a high accident location; safety measures should be investigated.

In the 1980 - 1982 analysis period there were several sections that were color coded within the project limits.

In 1980, a section of U.S. BR 20 from Lyford Road to a point 0.6 mile east was ranked as a "red section." The accident spot maps for 1981 and 1982 (Exhibits B-3 and B-4) confirm this ranking. As previously discussed, however, safety improvements in this section of roadway will include the redesign of the Lyford Road intersection including signals, adding two lanes of traffic, and rerouting the commercial entrance of a drive-in theater from U.S. BR 20 to Lyford Road.

In 1981 a "yellow section" was identified on a 1.3 mile section extending east from the Beaver Creek bridge. A "red spot" was identified at the Beaver Creek bridge. As predicted by the yellow section there were fewer accidents in 1982 in the 1.3 mile section. A new bridge has been constructed over Beaver Creek, which should significantly reduce the accident potential at that "red spot" location.

In 1982, a "green section" was identified for a 0.9 mile section of U.S. BR 20 extending east from a point 0.1 mile east of the Lyford Road intersection. As previously noted, the entire area will have two additional lanes and, in addition, either a number of commercial, field, and private entrances will be removed or relocated (including the drive-in entrance just east of Lyford Road) or a bi-directional left-turn lane will be constructed.

CONCLUSIONS

The current accident rates for the entire project as well as at several intersections exceed statewide averages. In addition, the IDOT Spot Safety System has identified several hazardous areas on the project. The type of improvements proposed should serve to lessen the accident rates at all the identified high accident areas as well as improve the safety potential for the entire project length.

TABLE B-1
COLLISION DIAGRAM SUMMARY 1980 - 1982

TYPE OF COLLISION	ON ROAD TOTAL-%	OFF ROAD TOTAL-%	ON/OFF ROAD TOTAL-%	INTERSECTION	NON-INTERSECTION
Overturned	0 - 0	5 - 17.24	5 - 5.32	1	4
Animal	10 - 15.38	0 - 0	10 - 10.64	1	9
Fixed Object	0 - 0	19 - 65.52	19 - 20.21	7	12
Other Non-Collision	1 - 1.54	5 - 17.24	6 - 6.38	2	4
Rear End	23 - 35.38	0 - 0	23 - 24.47	15	8
Head On	1 - 1.54	0 - 0	1 - 1.06	1	0
Sideswipe - Same Dir.	2 - 3.08	0 - 0	2 - 2.13	2	0
Sideswipe - Opp. Dir.	5 - 7.69	0 - 0	5 - 5.32	1	4
Angle	8 - 12.31	0 - 0	8 - 8.51	7	1
Turning	15 - 23.08	0 - 0	15 - 15.96	11	4
	65 -100.00	29 -100.00	94 -100.00	48	46

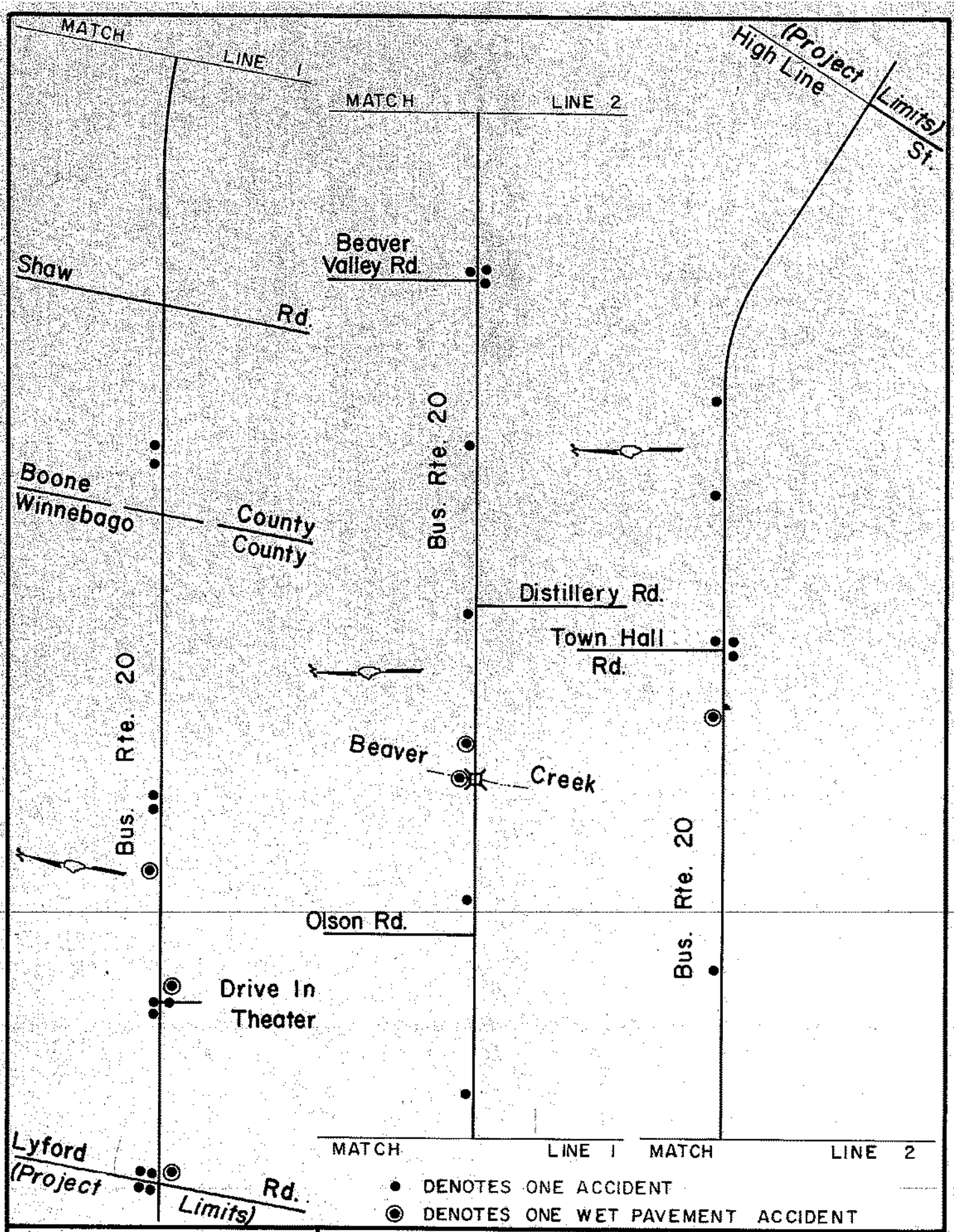
PAVEMENT CONDITION	NO. OF ACCIDENTS	%
Wet	21	22.34
Dry or Other	73	77.66
TOTAL	94	100.00

ACCIDENT RATES*

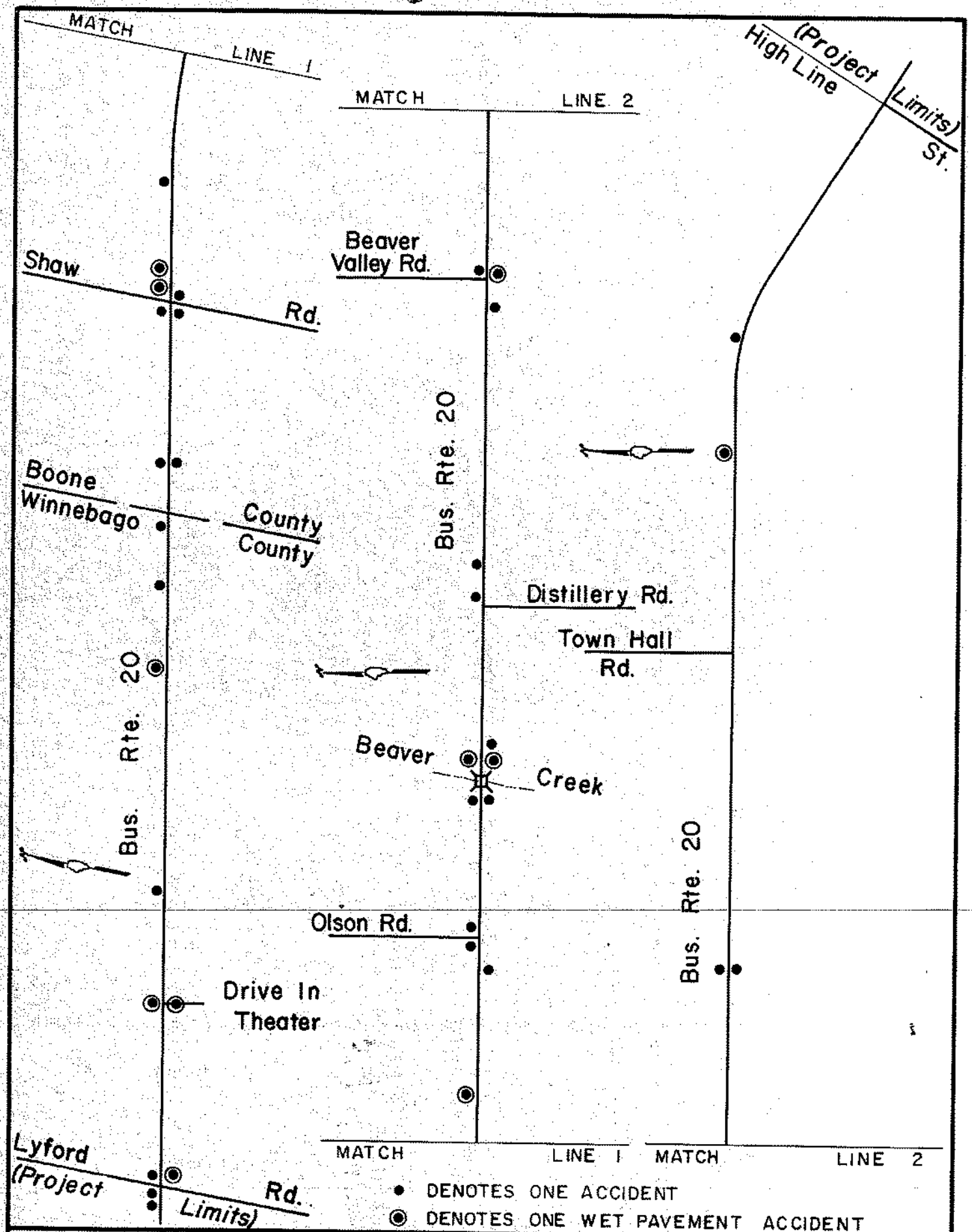
	1980	1981	1982
Lyford Road Int.	1.69	1.35	1.69
State	1.20	1.20	1.10
Drive-In Theater Entrance	1.50	0.75	1.88
State	1.20	1.20	1.10
Beaver Valley Road Int.	1.15	1.15	1.15
State	1.20	1.20	1.10
Town Hall Road Int.	1.13	0	0
State	1.20	1.10	1.10
Shaw Road Int.	0	1.90	0.76
State	1.20	1.20	1.10
Olson Road Int.	0	1.15	0
State	1.20	1.20	1.10
Entire Project	260.9	313.1	243.5
State	185	180	190

* Number of accidents per million vehicles entering the intersection for intersections and number of accidents per hundred million vehicle miles traveled for the entire section.

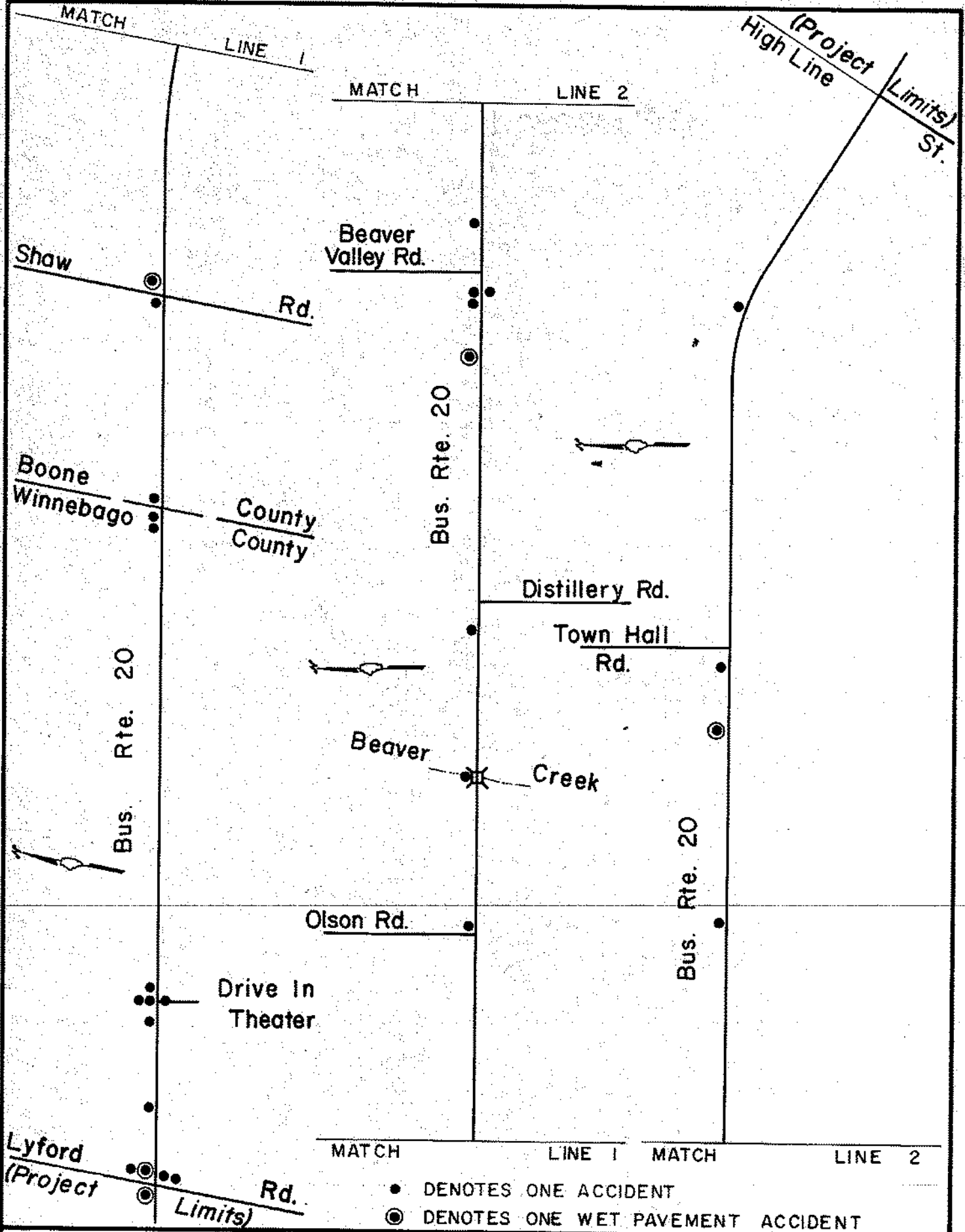
F.A.P. 517 (U.S. Business Route 20) Rockford - Belvidere	ACCIDENT RATES PROJECT / STATE WIDE	EXHIBIT B-1



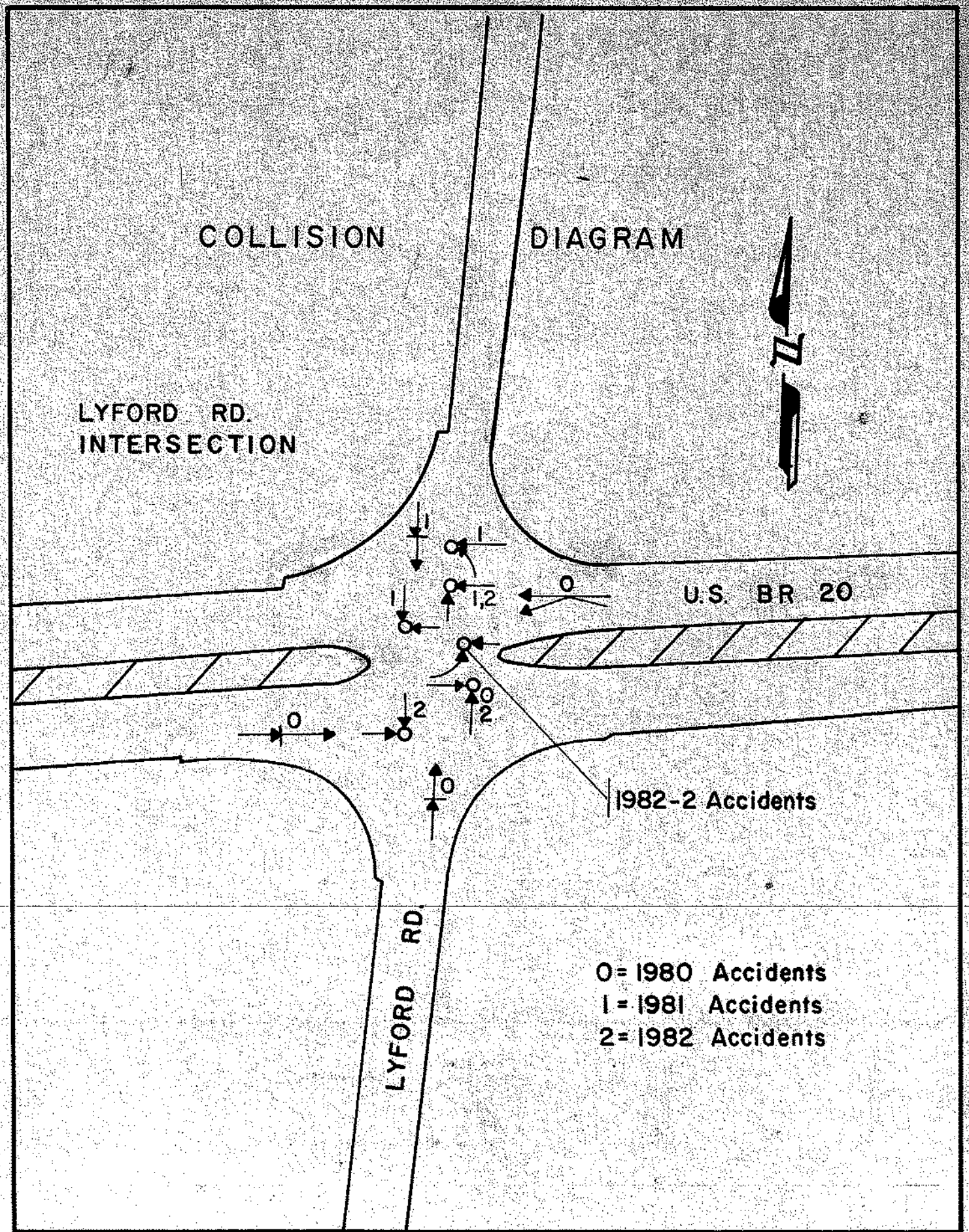
F.A.P. 517 (U. S. Business Route 20) Rockford – Belvidere	1980 TRAFFIC ACCIDENT SPOT MAP	EXHIBIT B-2



F.A.P. 517 (U.S. Business Route 20) Rockford – Belvidere	1981 TRAFFIC ACCIDENT SPOT MAP	EXHIBIT B-3



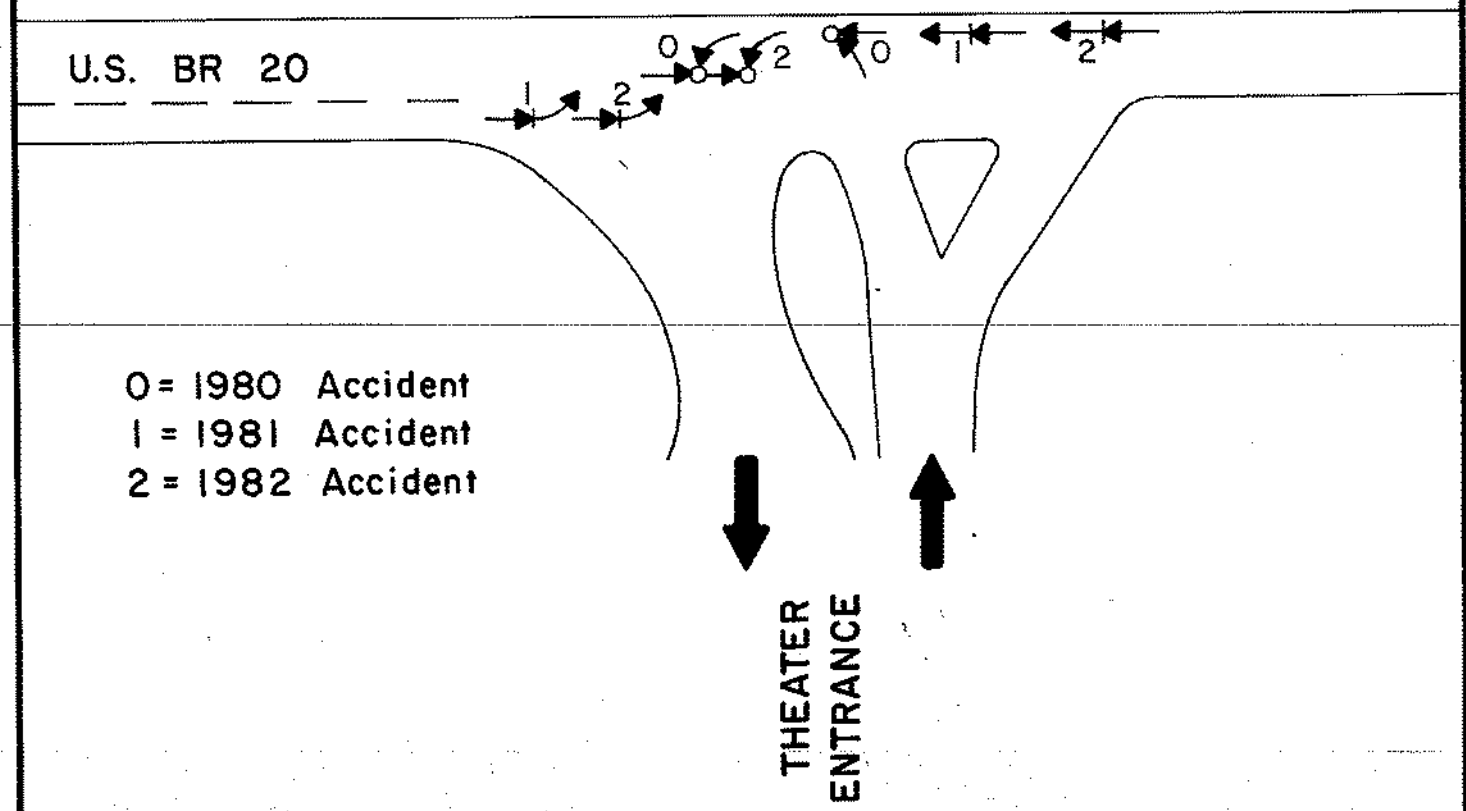
F.A.P. 517 (U. S. Business Route 20) Rockford - Belvidere	1982 TRAFFIC ACCIDENT SPOT MAP	EXHIBIT B-4



F.A.P. 517 (U. S. Business Route 20) Rockford – Belvidere	COLLISION DIAGRAM LYFORD RD. / U.S. BR 20	EXHIBIT B-5

COLLISION DIAGRAM

BELFORD 6
THEATER ENTRANCE



F.A.P. 517 (U.S. Business Route 20) Rockford - Belvidere	COLLISION DIAGRAM BELFORD 6 THEATER ENTRANCE / U.S. B.R. 20	EXHIBIT B-6

ACCIDENT FREQUENCY: INTERSECTIONS (1980 - 1982)

	A. ANGLE	B. ANIMAL	C. BICYCLIST	D. FIXED OBJECT - OFF ROAD	E. HEAD ON	F. OTHER NON-COLL.	G. OTHER NON-COLL. - OFF ROAD	H. OTHER OBJECT - OFF ROAD	I. OVERTURNED - OFF ROAD	J. OVERTURNED - ON ROAD	K. PARKED VEHICLE	L. PEDESTRIAN	M. REAR END - BOTH MOVING	N. REAR END - ONE STOPPED	O. SIDESWIPE - OPP DIRECTION	P. SIDESWIPE - SAME DIRECTION	Q. TURNING	NIGHT ACCIDENTS	WET ACCIDENTS
LYFORD RD.	46.2			7.7										23.1		7.7	23.1	30.8	30.8
STATE	20.3	0.5	0.5	9.8	0.4		3.7	0.4	2.1		0.7	0.4	4.4	17.0	1.6	2.0	36.0	18.8	21.8
THEATER ENT.				20.0									10.0	10.0			60.0	60.0	30.0
STATE	20.3	0.5	0.5	9.8	0.4		3.7	0.4	2.1		0.7	0.4	4.4	17.0	1.6	2.0	36.0	18.8	21.8
SHAW RD.	16.7						16.7							66.7				0	50.0
STATE	20.3	0.5	0.5	9.8	0.4		3.7	0.4	2.1		0.7	0.4	4.4	17.0	1.6	2.0	36.0	18.8	21.8
OLSON RD.									33.3					33.3			33.3	33.3	0
STATE	20.3	0.5	0.5	9.8	0.4		3.7	0.4	2.1		0.7	0.4	4.4	17.0	1.6	2.0	36.0	18.8	21.8
DISTILLERY RD.		50.0											50.0					0	0
STATE	20.3	0.5	0.5	9.8	0.4		3.7	0.4	2.1		0.7	0.4	4.4	17.0	1.6	2.0	36.0	18.8	21.8
BEAVER VALLEY RD				22.2	11.1		11.1							22.2	11.1	11.1	11.1	11.1	11.1
STATE	20.3	0.5	0.5	9.8	0.4		3.7	0.4	2.1		0.7	0.4	4.4	17.0	1.6	2.0	36.0	18.8	21.8
TOWN HALL RD.				50.0										50.0				25.0	0
STATE	20.3	0.5	0.5	9.8	0.4		3.7	0.4	2.1		0.7	0.4	4.4	17.0	1.6	2.0	36.0	18.8	21.8

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

ACCIDENT FREQUENCY
INTERSECTIONS

EXHIBIT
B-7

ACCIDENT FREQUENCY: NON-INTERSECTION

	YEAR	A. ANGLE	B. ANIMAL	C. BICYCLIST	D. FIXED OBJECT - OFF ROAD	E. HEAD ON	F. OTHER NON-COLL.	G. OTHER NON-COLL. - OFF ROAD	H. OTHER OBJECT - OFF ROAD	I. OVERTURNED - OFF ROAD	J. OVERTURNED - ON ROAD	K. PARKED VEHICLE	L. PEDESTRIAN	M. REAR END - BOTH MOVING	N. REAR END - ONE STOPPED	O. SIDESWIPE - OPP DIRECTION	P. SIDESWIPE - SAME DIRECTION	Q. TURNING	NIGHT ACCIDENTS	WET ACCIDENTS
	80	7.1	14.3		21.4				7.1	7.1				14.3	7.1	14.3		7.1	57.1	28.6
STATE	80	NOT AVAILABLE																		
	81		15.0		35.0					15.0				10.0	10.0			15.0	40.0	25.0
STATE	81	14.8	11.2	0.5	24.0	2.3		10.5	1.0	8.5		3.0	0.7	5.6	7.0	6.4	4.6	10.7	44.8	18.4
	82		30.8		15.4		7.7	15.4						7.7	7.7	15.4			53.8	15.4
STATE	82	3.0	12.7	0.4	21.2	2.1		10.2	1.7	8.6		2.9	0.9	6.2	7.0	0.6	4.6	10.5	43.6	20.3

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

ACCIDENT FREQUENCY
NON-INTERSECTIONS

EXHIBIT B-8

APPENDIX C

RECYCLING ANALYSIS

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

RECYCLING ANALYSIS

In May of 1983 it became the policy of IDOT to study each project's potential for reclamation and recycling. To access the potential for recycling on this project, only the four-lane portion of Phase I will be considered.

The existing pavement on the resurfacing portion of Phase I would be structurally deficient for design traffic, even if a 2 inch overlay is placed over the surface currently there. Thus, the reduction in load carrying capacity, due to cold milling off a portion of the existing bituminous surface, would have to be compensated for by adding an additional thickness of bituminous concrete to the overlay. Because the removal of existing surfacing would only require its subsequent replacement, the resurfacing portion of Phase I is not considered feasible for recycling.

It is anticipated that Phases II and III will not be constructed in the foreseeable future, so a present day recycling analysis for these phases would not be meaningful in light of the rapidly changing developments in the recycling field.

All alternates of the four-lane portion of Phase I involve removal of the existing pavement. Due to the small variation in pavement removal quantities between the three alternates, an average value will be used to represent all cases.

Where total removal of pavement is involved, "ripping and crushing" would be the preferred removal technique, since it would yield more material and is more economical to perform. For this reason, the advantages and disadvantages of the cold milling method will not be discussed.

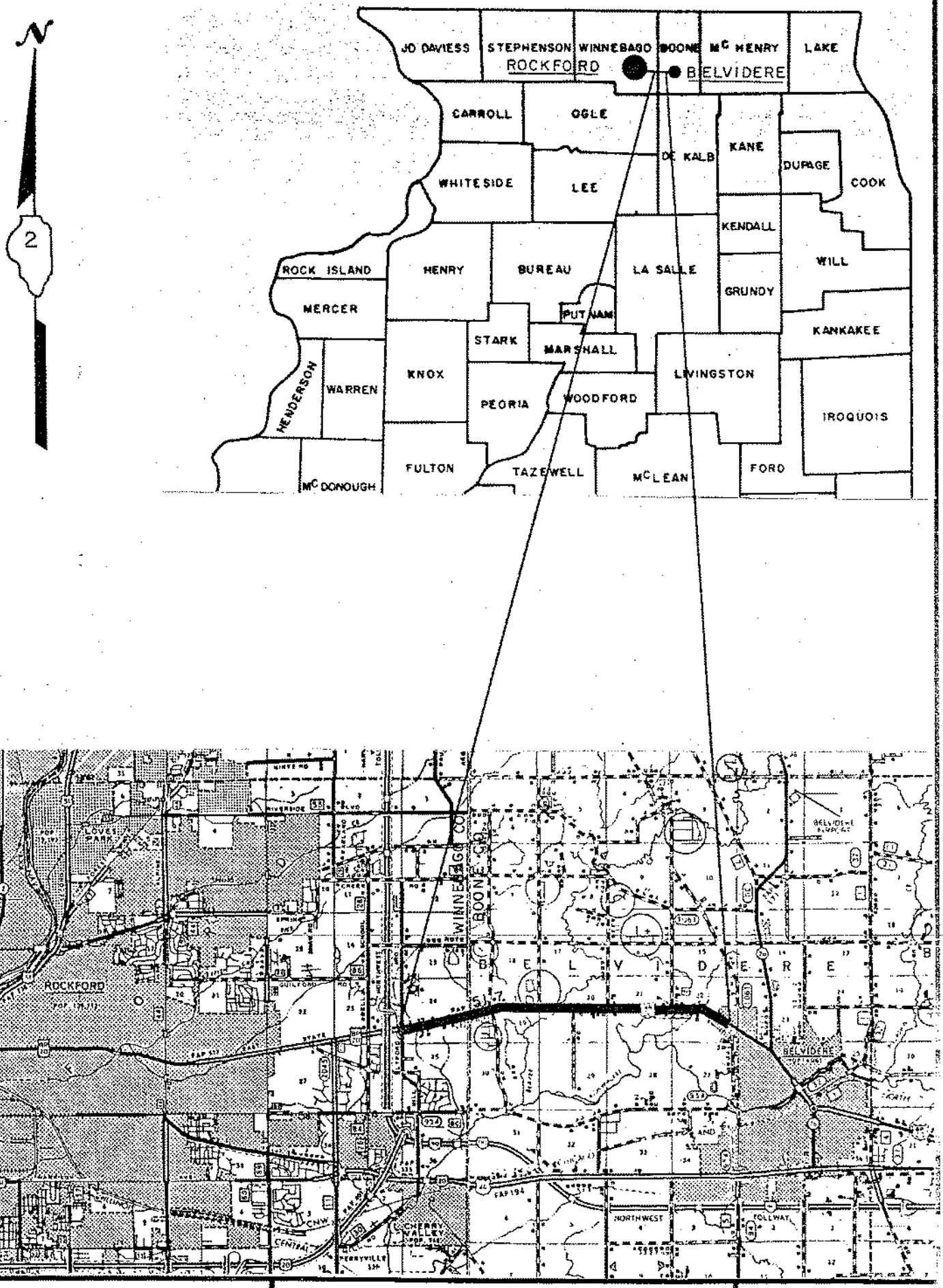
The main advantage of the ripping and crushing approach to recycling on this project is the generation of a valuable by-product, the reclaimed mix.

For purposes of the following cost estimate, it is assumed that a uniform 3 inches of overlay exists in the 1-1/2 mile length of the four-lane portion of Phase I.

Removal Cost (26,000 sq. yds. @ $1.00)		$ 26,000
Crushing Cost (4,400 tons @ $1.00)		4,400
Hauling Coat (4,400 tons @ $3.00)		13,200
Added Heating Cost (4,400 tons @ $1.75)		7,700
Initial Plant Set-Up Cost (4,400 tons @ $2.00)		8,800
	SUBTOTAL	$ 60,100
Bituminous Savings (50-50 mix) (8,800 tons @ $5.00)		- 44,000
	TOTAL RECYCLING COST	$ 16,100
4-LANE PHASE I PROJECT COST	$4,000,000 - $5,000,000	

Due to the similar nature of the four alternates with regard to recycling, there is no preferred alternate in this regard.

The creation of a valuable by-product is the only advantage to recycling for this project, and this is negated by an additional 0.3% to 0.4% increase in cost, as shown above. Therefore, recycling is not recommended for this project.



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

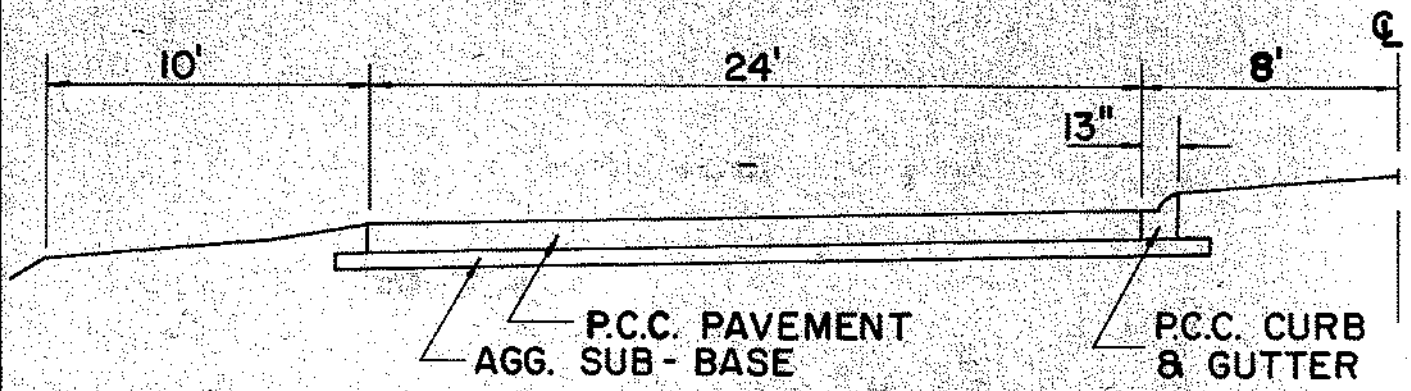
PROJECT LOCATION MAP

EXHIBIT
I

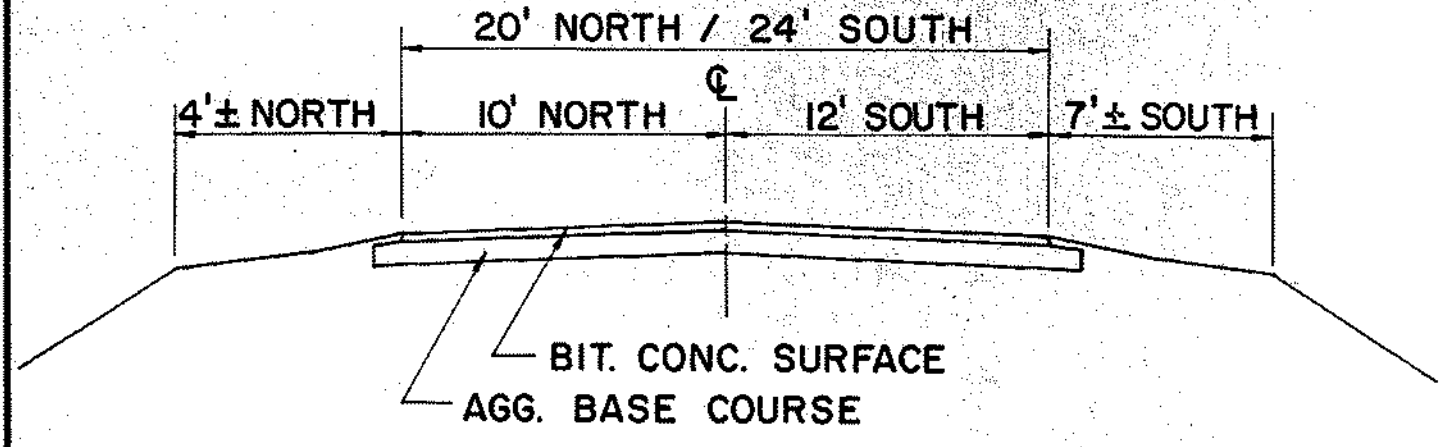
FAP 517
(U.S. Business Route 20)
Rockford - Belvidere

PLANNED AND EXISTING AREA ROADWAYS

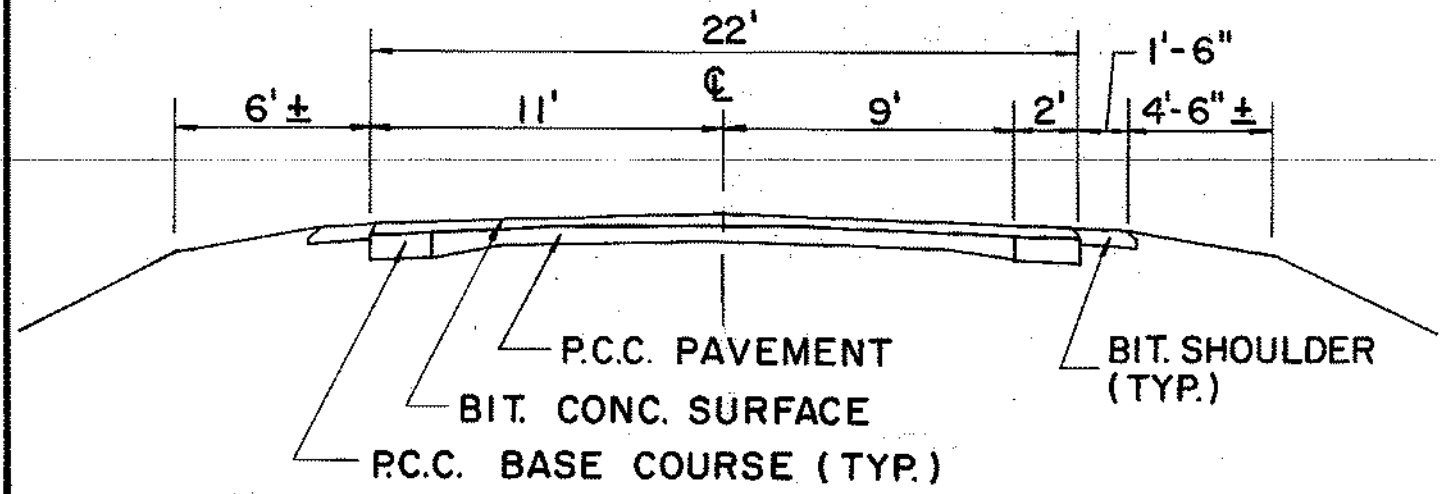
EXHIBIT 2



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

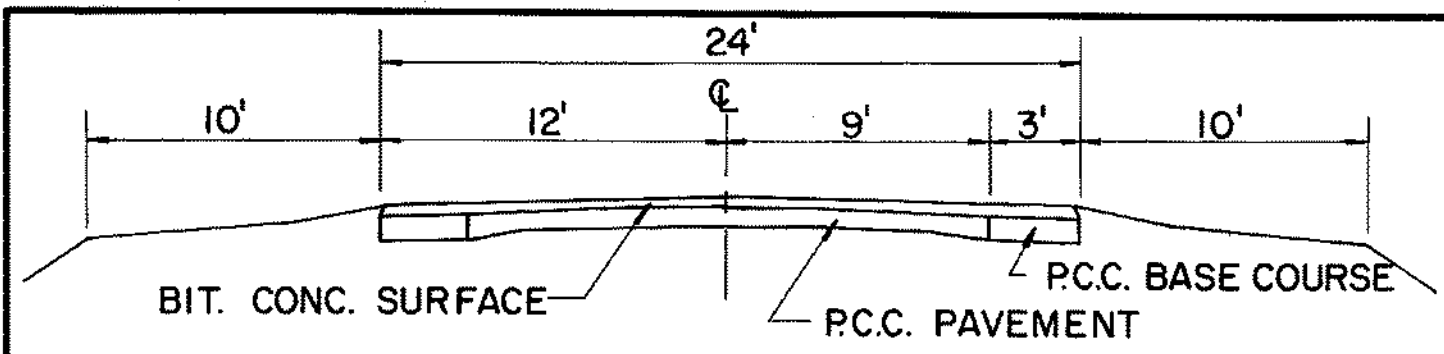


LYFORD ROAD



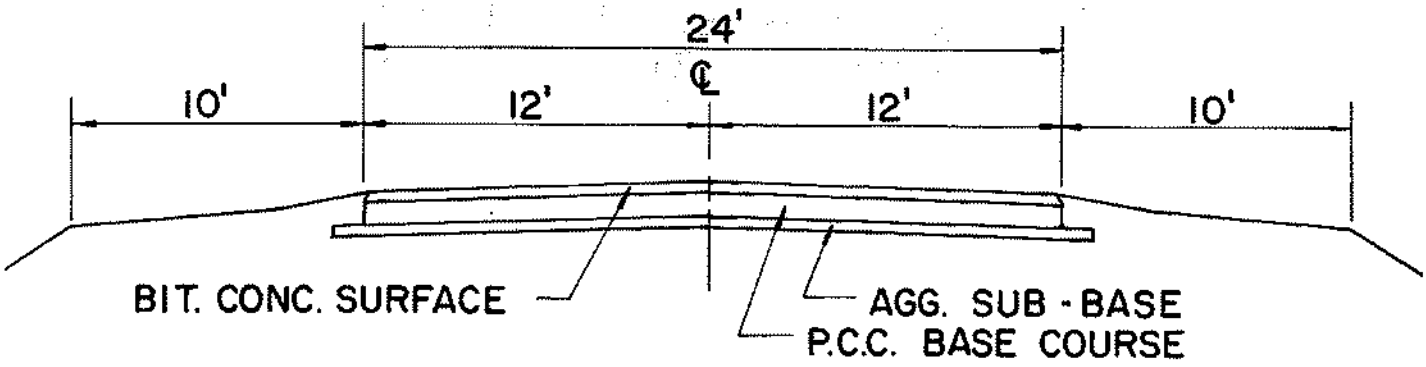
U.S. BUSINESS ROUTE 20
LYFORD ROAD TO COUNTY LINE

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



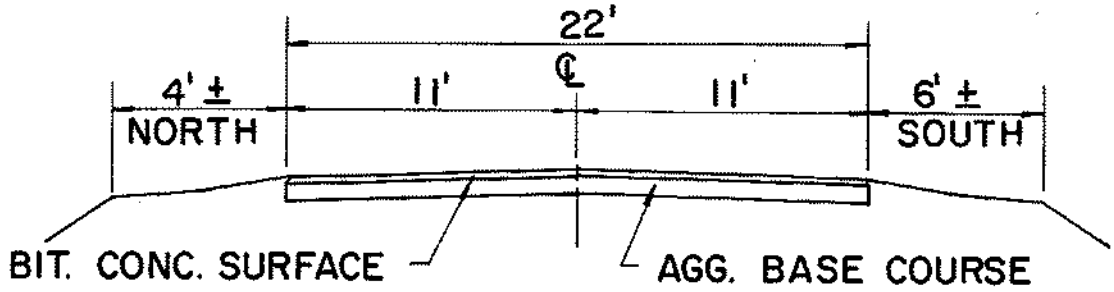
U.S. BUSINESS ROUTE 20

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

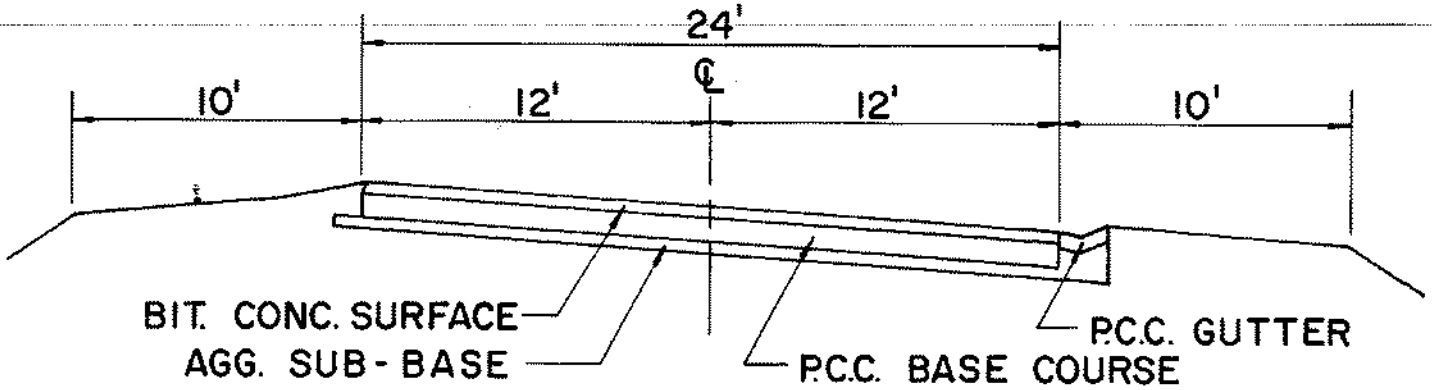


U.S. BUSINESS ROUTE 20

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

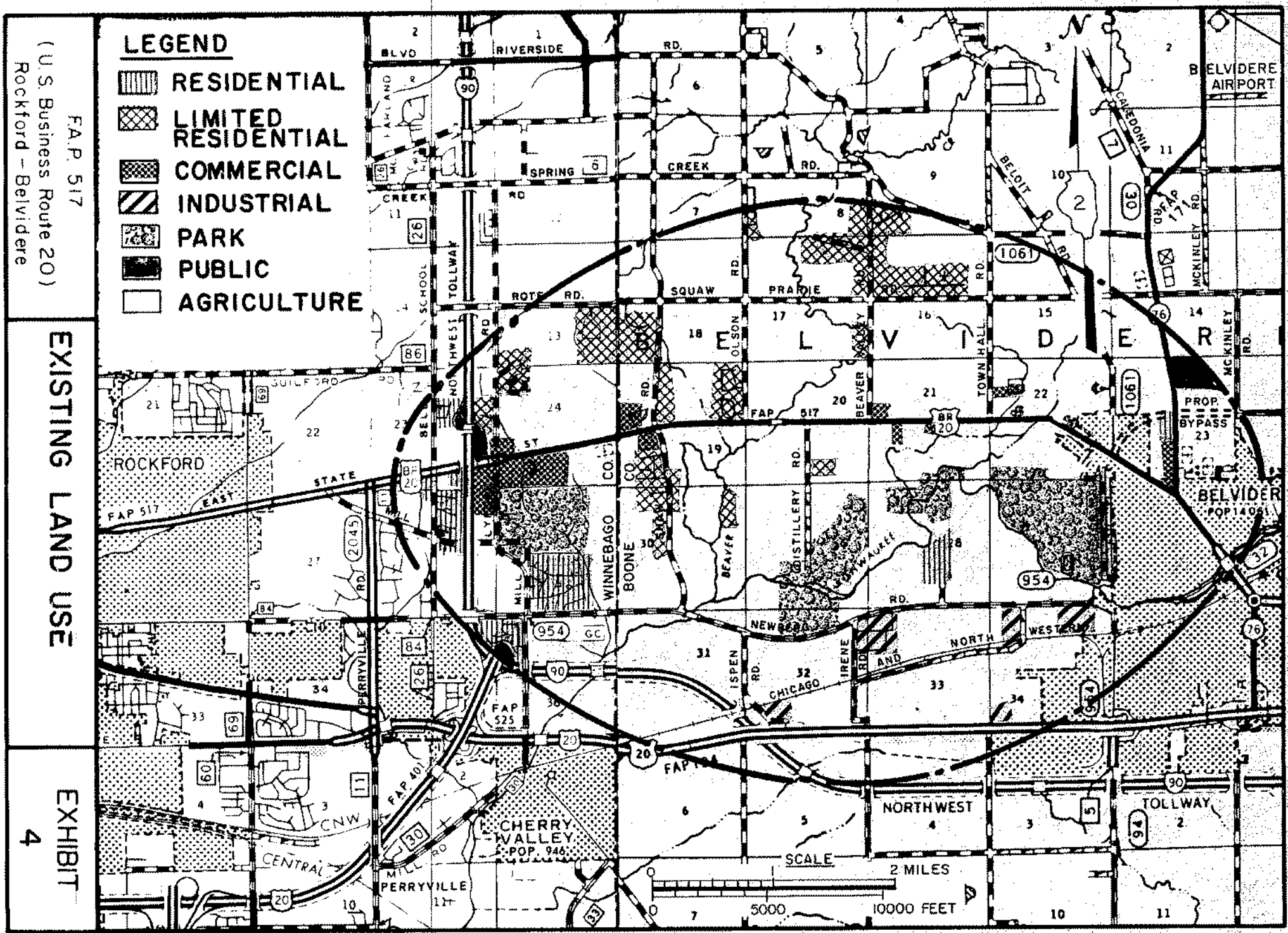


EXHIBIT 4

EXISTING LAND USE

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

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

PROPOSED LAND USE

EXHIBIT
5

LEGEND

- RESIDENTIAL
- LIMITED RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- PARK
- PUBLIC
- AGRICULTURE

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

PROPOSED FUTURE DEVELOPMENTS

EXHIBIT 5A

FUTURE DEVELOPMENTS

1 BICYCLE PATH OR URBAN TRAIL

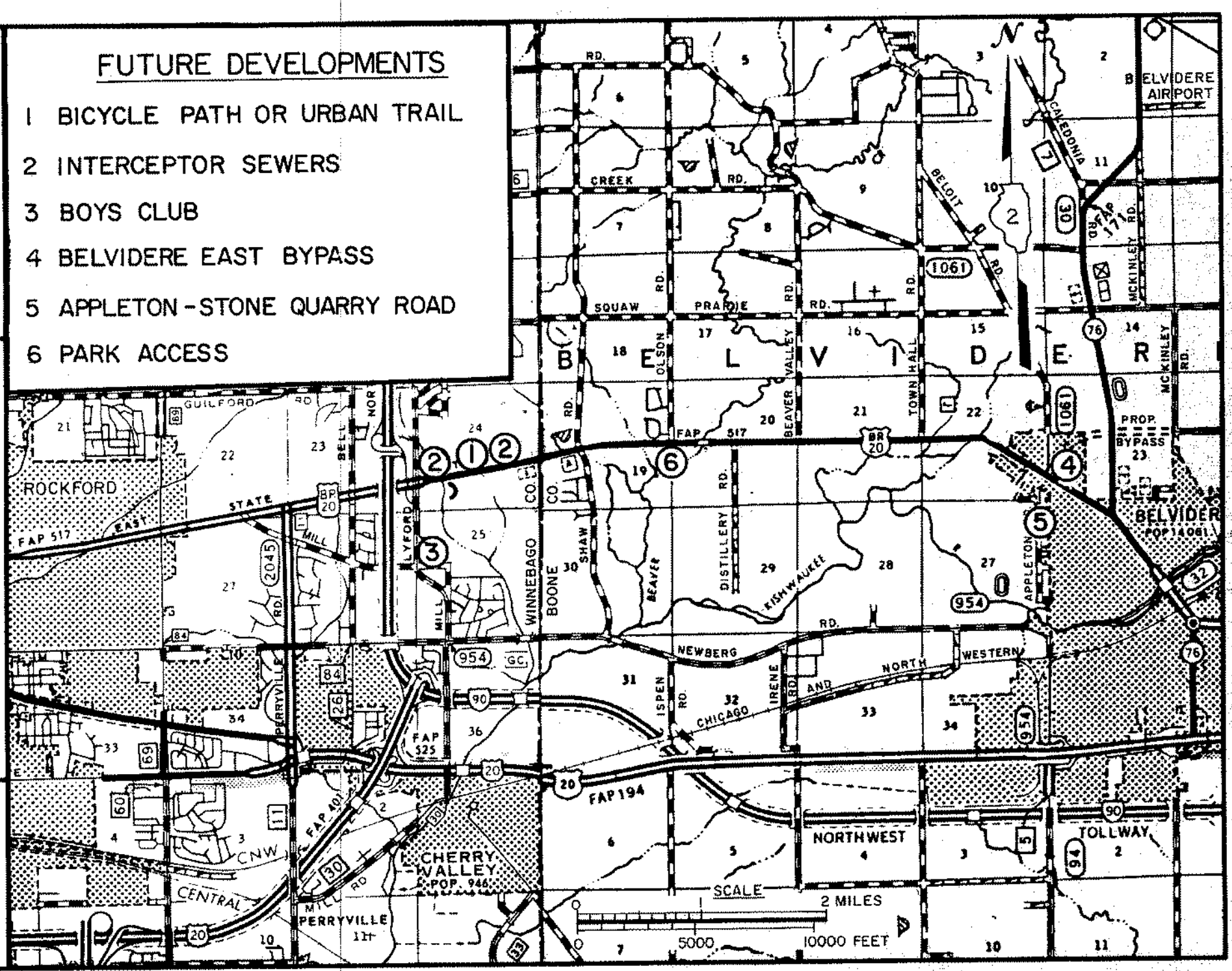
2 INTERCEPTOR SEWERS

3 BOYS CLUB

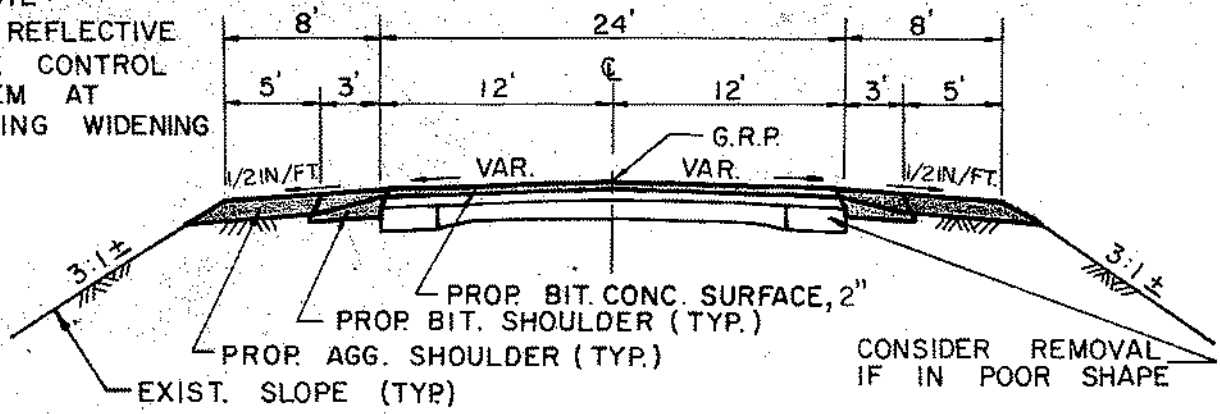
4 BELVIDERE EAST BYPASS

5 APPLETON - STONE QUARRY ROAD

6 PARK ACCESS



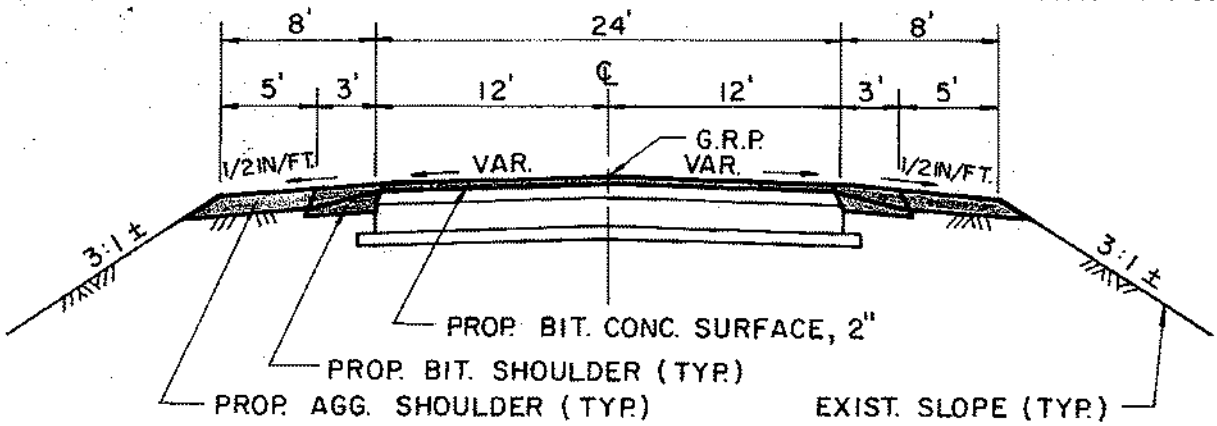
NOTE:
USE REFLECTIVE CRACK CONTROL SYSTEM AT EXISTING WIDENING JOINT.



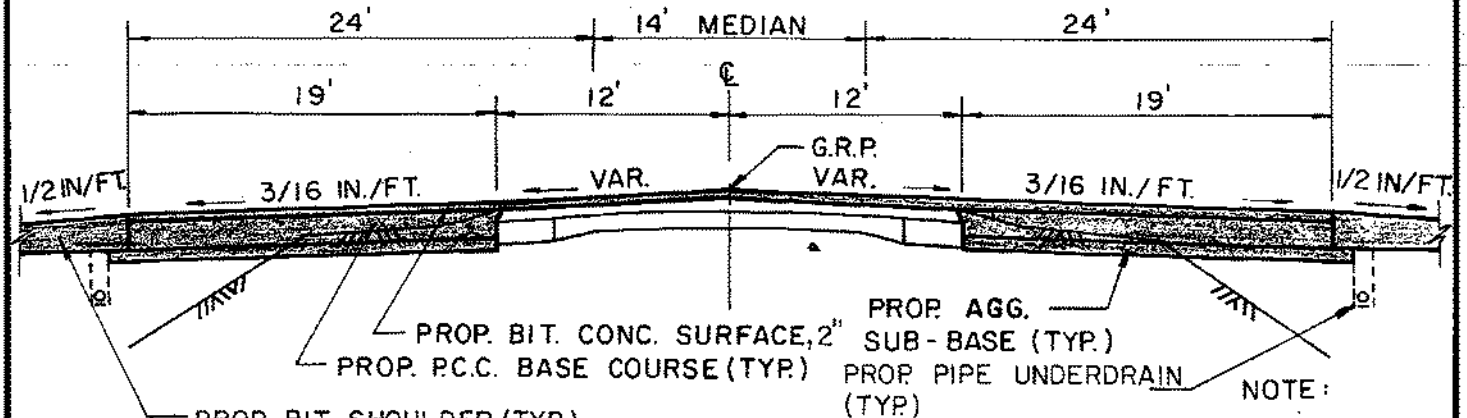
G.R.P. = GRADE REFERENCE POINT

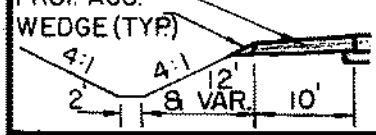
U.S. BUSINESS ROUTE 20 EAST OF SHAW ROAD (PHASE I)

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



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

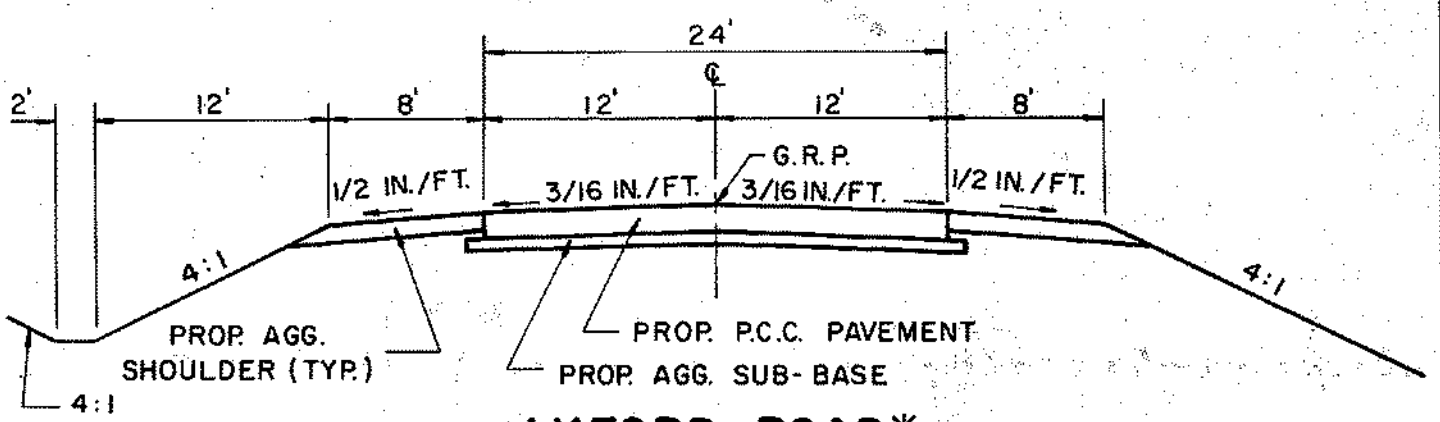




U.S. BUSINESS ROUTE 20 IN BELVIDERE (PHASE II)*

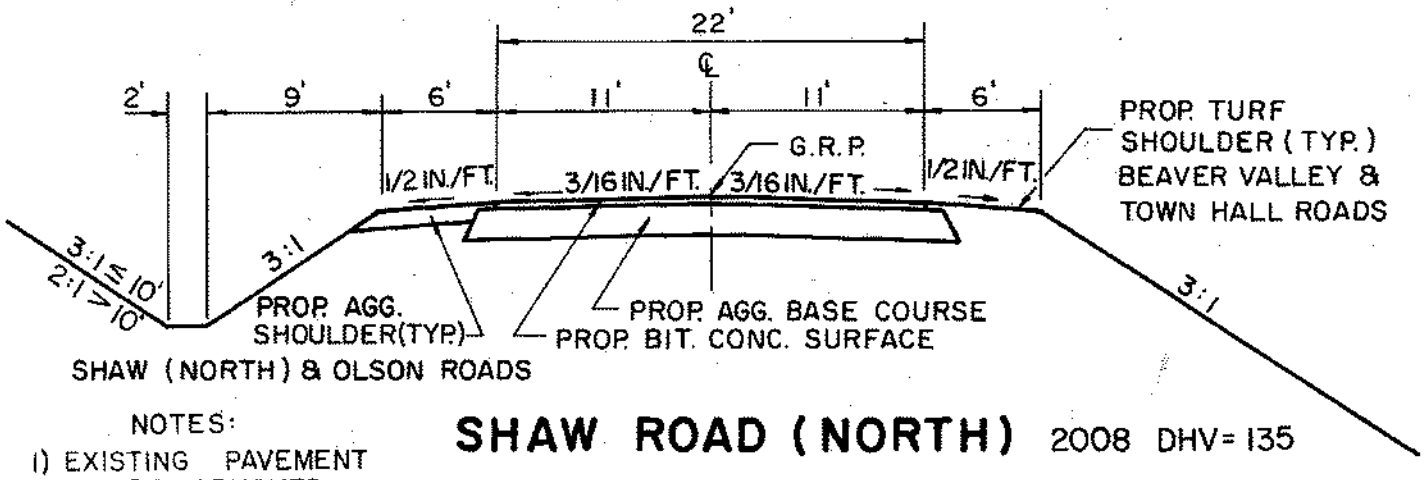
NOTE:
BASE COURSE THICKNESS TO BE DETERMINED DURING CONTRACT PLAN PREPARATION.
* FOR ALTS. 1, 2 & 3

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

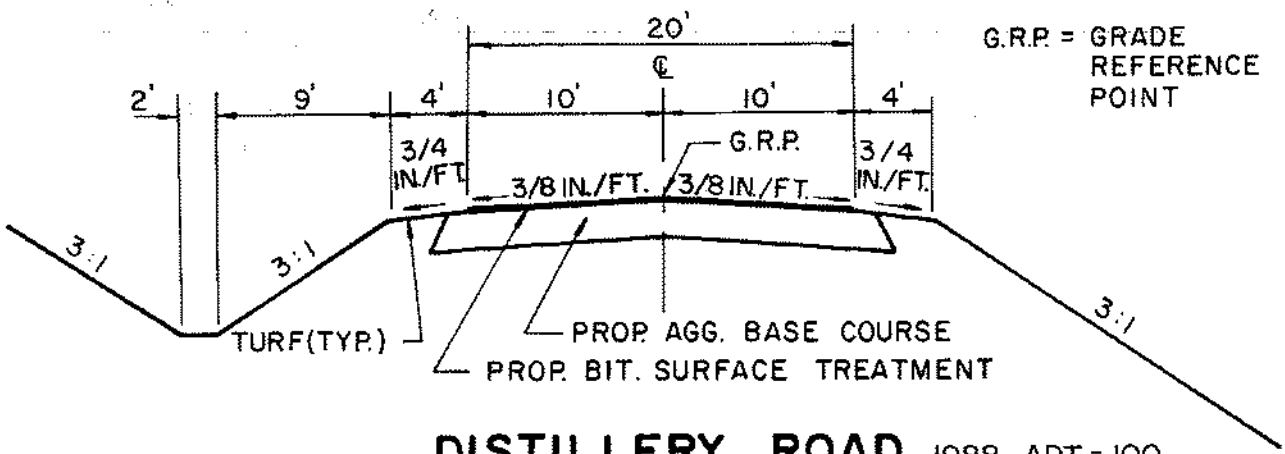
OLSON ROAD 2008 DHV = 170

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

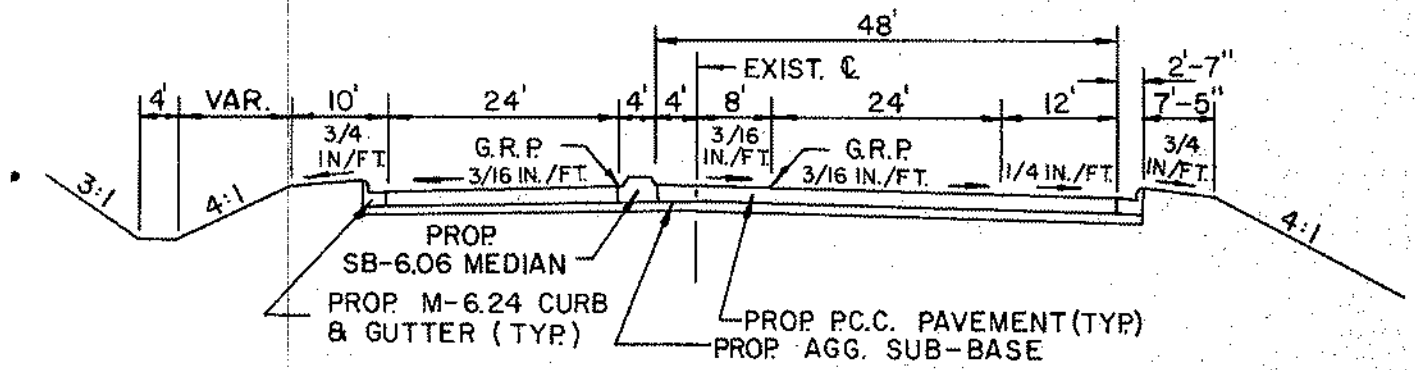
* FOR ALTERNATES 1, 2 & 3

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

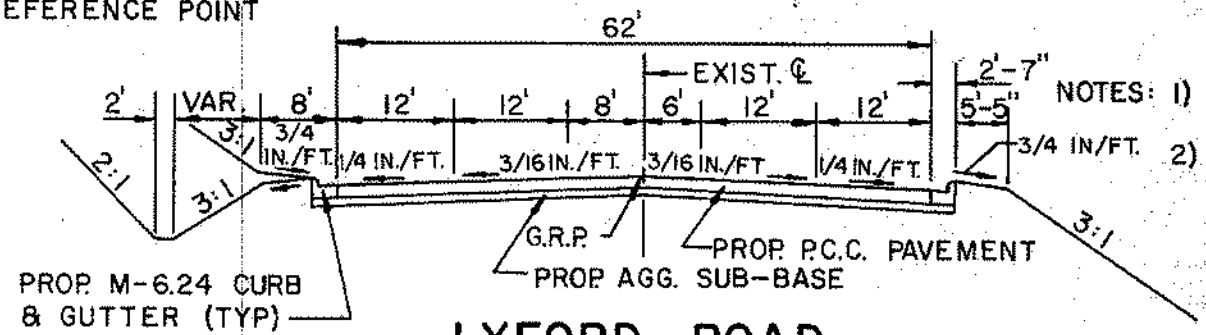
PROPOSED TYPICAL SECTIONS - ALT. 4

EXHIBIT 6G



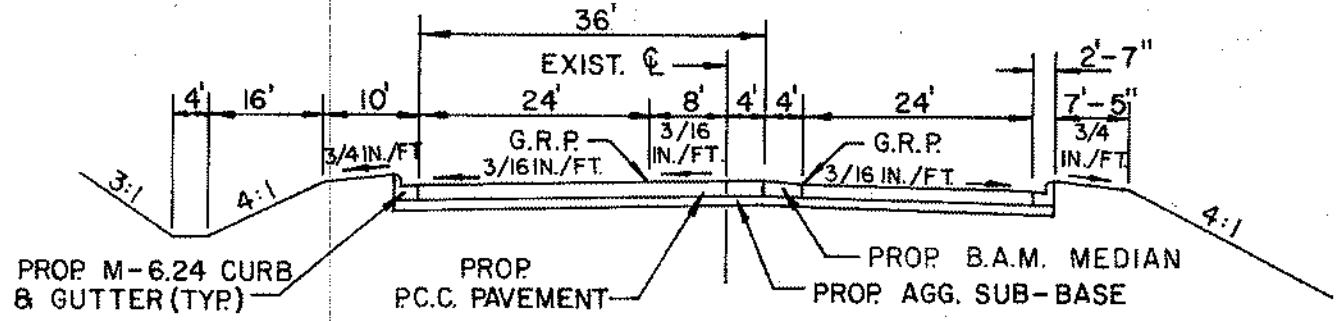
U.S. BUSINESS ROUTE 20
WEST LEG, LYFORD ROAD INTERSECTION

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

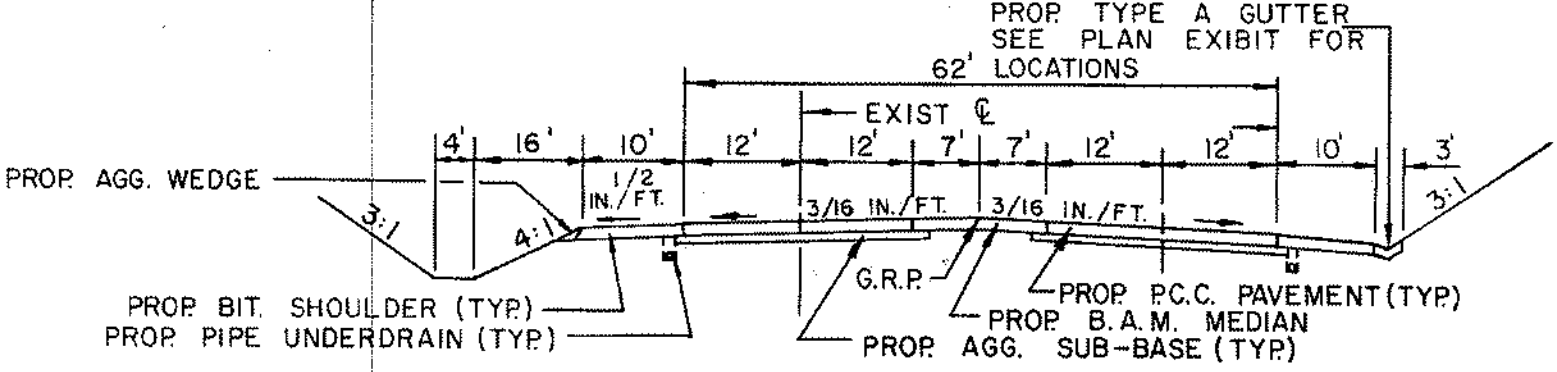


U.S. BUSINESS ROUTE 20
EAST LEG, LYFORD ROAD INTERSECTION

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

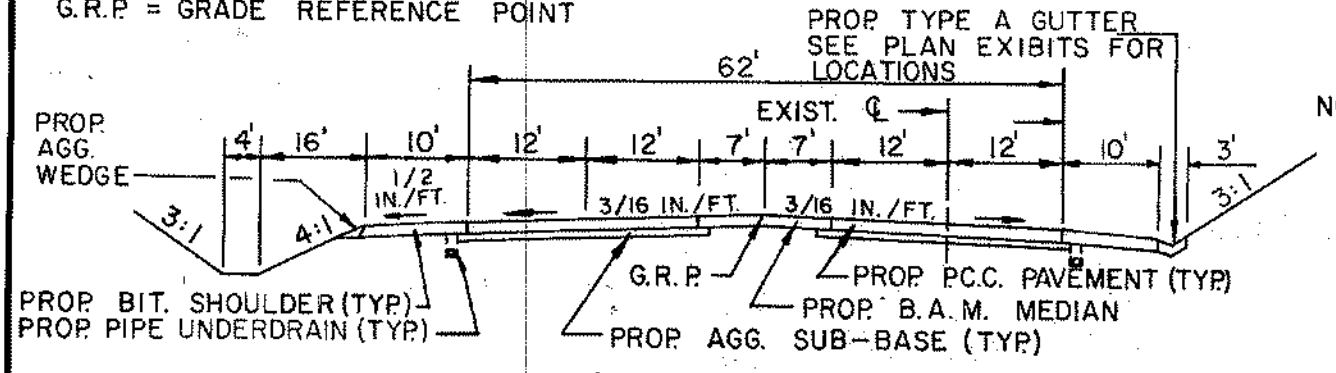
PROPOSED TYPICAL SECTIONS - ALT. 4

EXHIBIT 6H



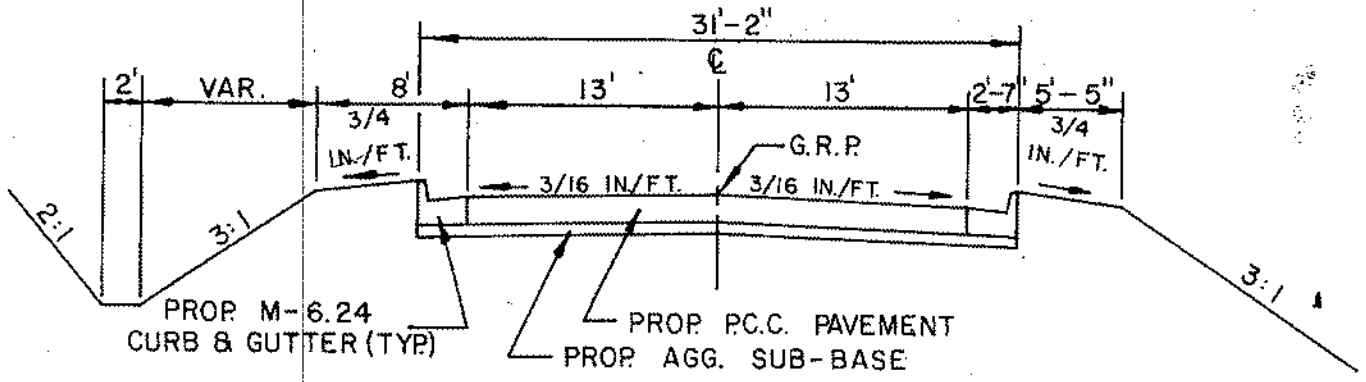
U.S. BUS. RTE. 20
LYFORD TO SHAW ROADS (PHASE I)

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

CAPACITY DESIGN STUDY

4	PHASE	AREA	O.B.D.	PEAK HOUR FACTOR	0.80
75	SEC CYCLE	POPULATION	175,000	COMBINED (PPHF)	0.94

		A	A	A	B	B	C	C	D	D
APPROACH		LT.	THRU	RT.	LT.	THRU+RT	LT.	THRU+RT	LT.	THRU+RT
BUS STOP CONDITION		NONE								NONE
PARKING CONDITION		NONE								NONE
STORAGE DISTANCE (FT.)		147	251	248	133	250	25*	305*	268*	135*
CHARTS USED		188,178	4	18B	188,178	4	17B	4	①	4
W-?		12'	24'	12'	12'	24'	12'	24'	12'	24'
	A.M.	.10	.25	.51	.10	.25	AMB.	.24	.21+AMB	.49
	P.M.	.10	.23	.55	.10	.23	AMB.	.20	.27+.20	.51
SERVICE VOLUME FOR DESIGN LEVEL OF SERVICE D	A.M.	235	675	700	235	675	70	560	350	1140
	P.M.	235	625	760	235	605	90	465	490	1220
CAPACITY LEVEL OF SERVICE E	A.M.	255	710	760	255	710	100	590	375	1200
	P.M.	255	660	825	255	635	100	490	535	1285
2008 30TH MAX HOUR TRAFFIC	A.M.	55	490	485	145	640	25	545	215	180
	P.M.	160	625	215	60	515	15	175	485	530
1988 8TH MAX HOURLY TRAFFIC	A.M.		265			235		100		95
	P.M.		300			185		35		175

① CHARTS 18A & 17B IN A.M.; CHARTS 18A & 17A FORMULA IN P.M.

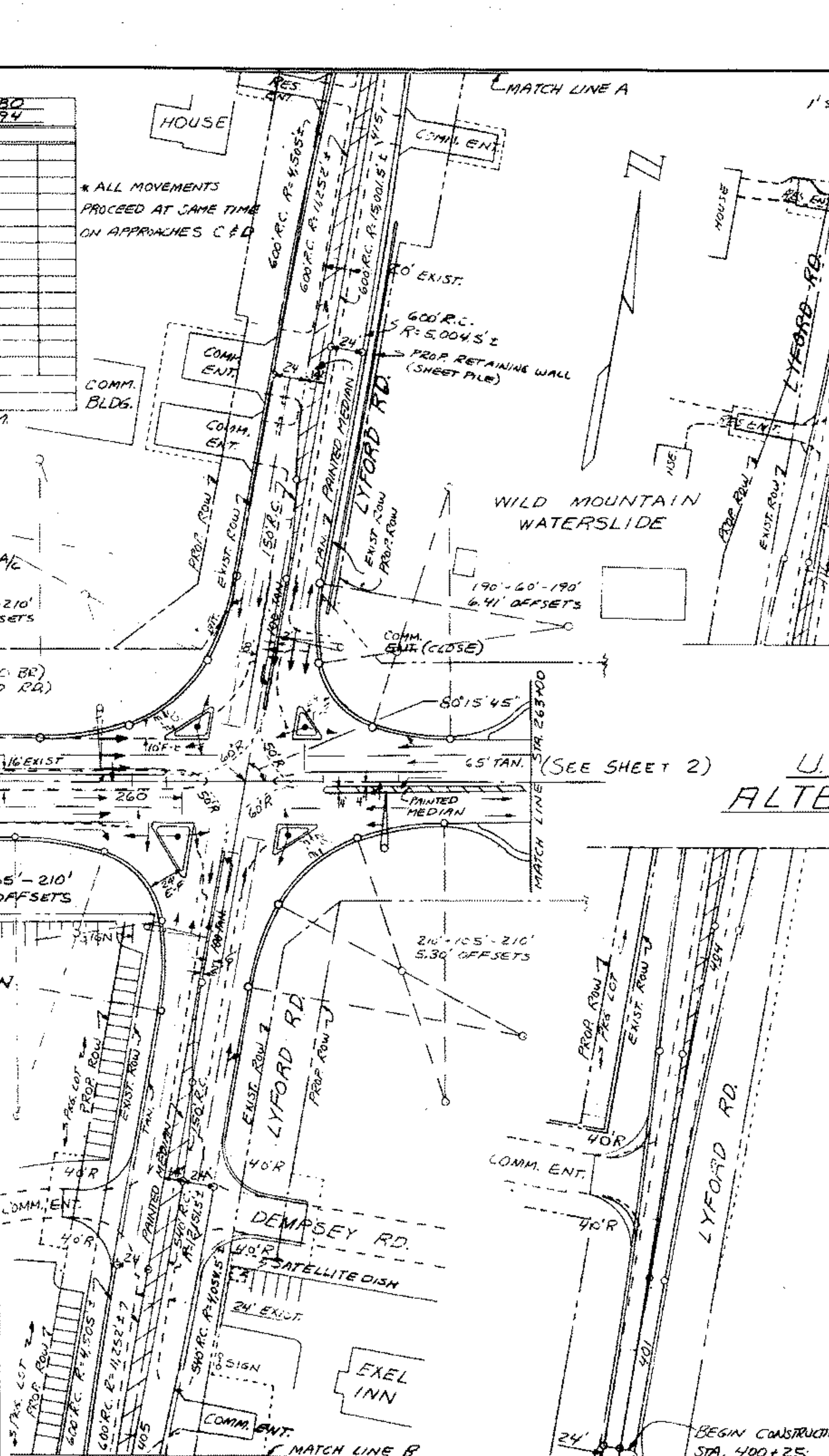
* ALL MOVEMENTS PROCEED AT SAME TIME ON APPROACHES C & D

SIGNAL CLEARANCE TIMES

PHASE I $T = \frac{15}{(22)(.35)}(60 + \frac{70\pm}{.98} + 67 + 10) = 4.06$ SEC. $\frac{4.06}{75} = .05$ A/C

PHASE II $T = \frac{15}{(22)(.35)}(60 + \frac{62}{.98} + 67 + 10) = 3.90$ SEC. $\frac{3.90}{75} = .05$ A/C

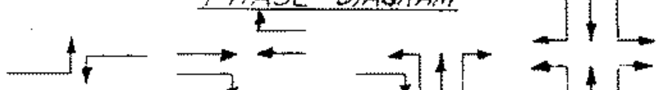
PHASES III & IV $T = \frac{15}{(22)(.50)}(25 + \frac{64}{.98} + 21 + 10) = 4.13$ SEC. $\frac{4.13}{75} = .05$ A/C



U.S. 20 BR
ALTERNATE 4

END CONSTRUCTION STA. 420+50

PHASE DIAGRAM



A.M.	G/C = .10	A/C = .05	G/C = .25	A/C = .05	G/C = .21	A/C = .05	G/C = .24	A/C = .05
P.M.	G/C = .10	A/C = .05	G/C = .23	A/C = .05	G/C = .27	A/C = .05	G/C = .20	A/C = .05

TRAFFIC DATA

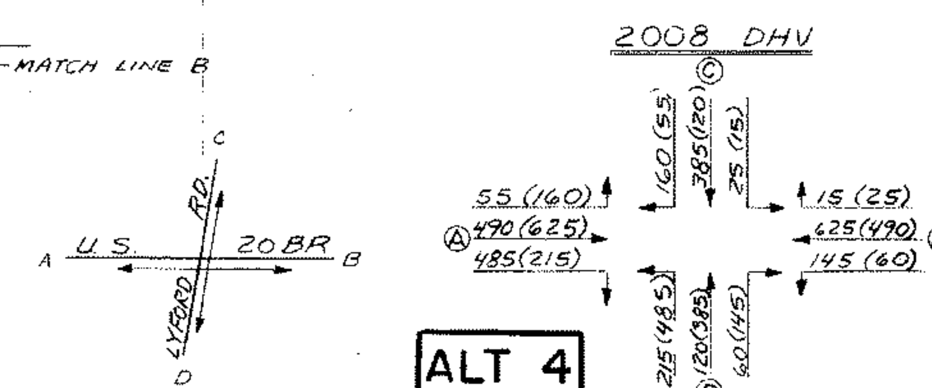
MOVEMENT	YEAR 1988 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30TH MAX HOUR	ESTIMATED PERCENT INCREASE BY 19__	YEAR 19__ 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY 19__	YEAR 2008 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB	300	380						490	625
AD	165	105						485	215
AC	20	60						55	160
BA	380	300						625	490
BC	5	10						15	25
BD	40	25						145	60
CD	110	40						385	120
CA	60	20						160	55
CB	10	5						25	15
DC	40	110						120	385
DB	25	40						60	145
DA	105	165						215	485
TOTAL A	1030	1030						2030	2030
TOTAL B	760	760						1360	1360
TOTAL C	245	245						760	760
TOTAL D	485	485						1410	1410

ELEMENTS CONTROLLING DESIGN

1. DESIGN DESIGNATION 2030-M-45 WEST 1360-M-45 EAST 760-M-30 NORTH 1410-M-30 SOUTH
2. U.S. 20 BR IS THE PREFERENCE ROUTE
3. ANTICIPATED YEAR OF CONSTRUCTION 1988
4. TRAFFIC CONTROL TO BE TRAFFIC CONTROL SIGNALS AT TIME OF CONSTRUCTION, BASED ON WARRANT NO. 1.
5. RETURNS DESIGNED FOR A WB-60 DESIGN VEHICLE
6. A LT. & A RT. DESIGNED FOR PASSING STORED A THRU VEHICLES.
7. EXISTING & PROPOSED POSTED SPEED LIMIT = 45 MPH ON U.S. BR 20. EXISTING POSTED SPEED LIMIT = 40 MPH ON LYFORD ROAD.
8. PROPOSED POSTED SPEED LIMIT = 30 MPH ON LYFORD ROAD. M-6.24 CURB AND GUTTER ON CORNER ISLANDS, EXCEPT RETURN EDGE USE M-6.06.
9. ALL 12' LANES, UNLESS OTHERWISE NOTED.
10. ------ INDICATES TEMPORARY CONSTRUCTION EASEMENTS.

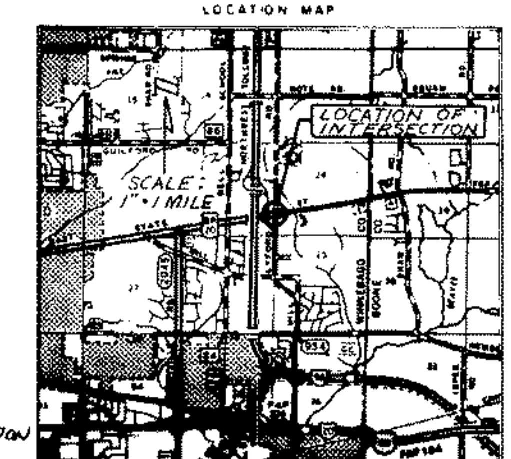
GENERAL NOTES

1. PROFILES ARE/NOT PROVIDED, SINCE APPROACH GRADES ARE 2% OR LESS (EXCEPT NORTH APPROACH LYFORD RD., SEE SHEET 2)
2. TYPE ____ CURB AND GUTTER TO BE USED ON OUTER EDGES OF PAVEMENT
3. TYPE ____ CURB AND GUTTER TO BE USED ON CHANNELIZING ISLAND (NONE)
4. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT, UNLESS OTHERWISE NOTED.
5. AREA SURROUNDING INTERSECTION IS DEVELOPED COMMERCIALLY.
6. PROPOSED R.O.W. SHOWN IS APPROXIMATE. FINAL R.O.W. TO BE DETERMINED DURING PREPARATION OF FINAL R.O.W. PLATS.
7. PROPOSED TRAFFIC CONTROL SIGNALS TO BE INTERCONNECTED WITH EXISTING SIGNALS TO THE WEST.
8. SEE SHEET 3 FOR PROPOSED ENTRANCE PROFILES.
9. ENTRANCES TO CONFORM TO "POLICY ON PERMIT" FOR ACCESS DRIVEWAYS TO STATE HIGHWAYS."



ALT 4

LOCATION MAP



ALTERNATE A
INTERSECTION DESIGN STUDY

U.S. ROUTE 20 (BR)
WITH
ROUTE (LYFORD RD.)

SEC NO (2 MFT & L) RS-2 PROJ NO. ____

JOB NO P-92-002-83 COUNTY WINNEBAGO

SCALE 0 50' 100'

DESIGNED BY MISSMAN-STANLEY & ASSOC. DATE 1985

SATISFACTORY [signature] GEOMETRICS ENGINEER DATE 5/9/85

SATISFACTORY [signature] DISTRICT TRAFFIC ENGINEER DATE 5-2-85

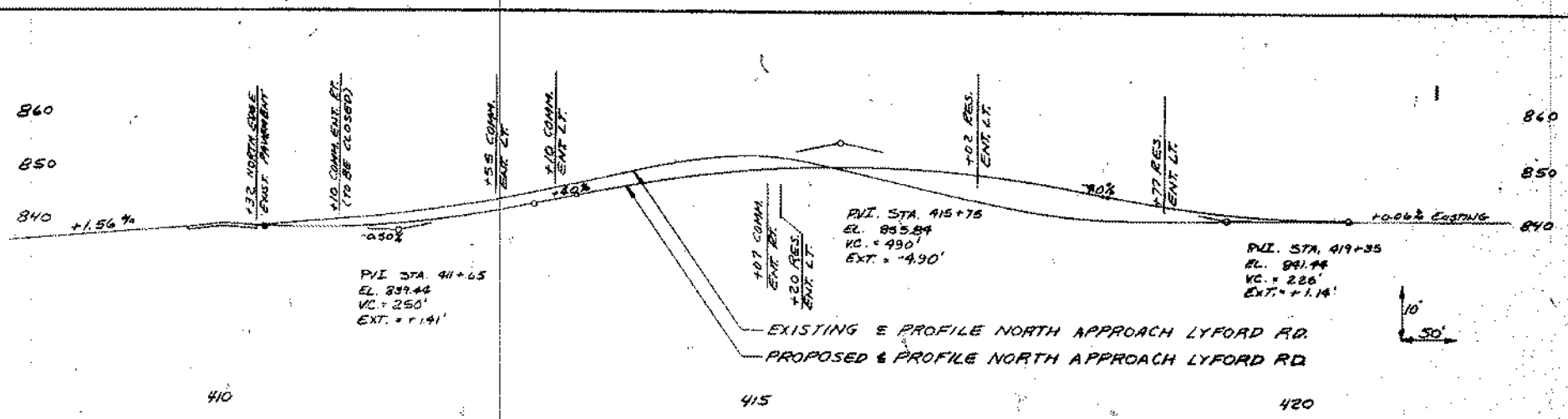
SATISFACTORY ____ FEDERAL HIGHWAY ADMINISTRATION DATE ____

SATISFACTORY ____ DISTRICT PLANNING ENGINEER DATE ____

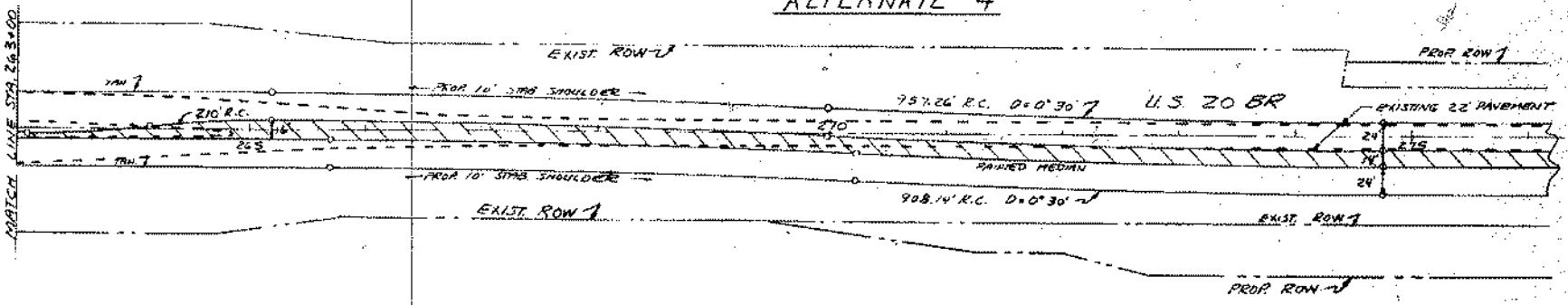
APPROVED [signature] DISTRICT ENGINEER DATE 6-10-85

SHEET 1 OF 3

EXHIBIT 8A



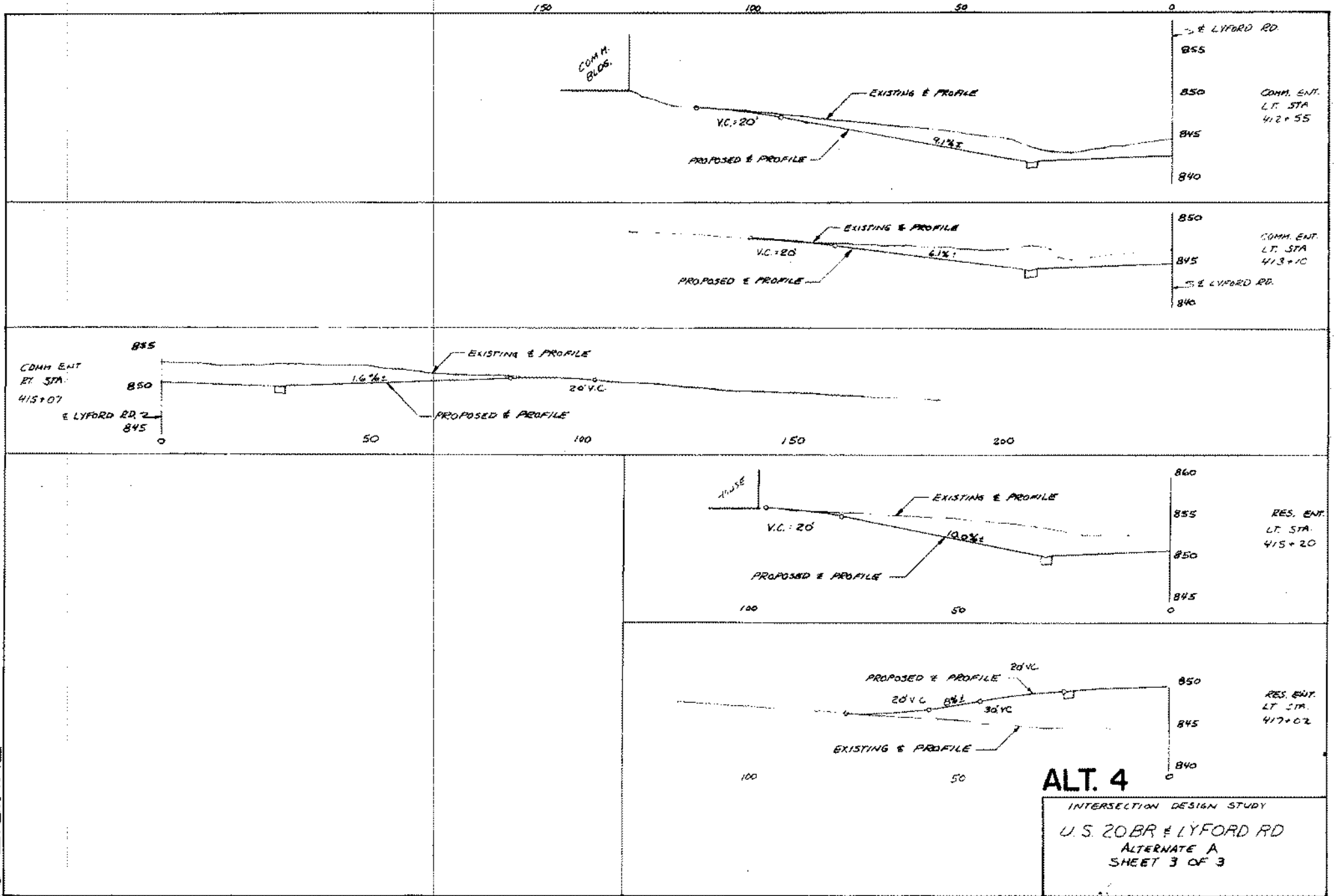
U.S. 20 BR
ALTERNATE 4



ALT. 4

INTERSECTION DESIGN STUDY
U.S. 20 BR & LYFORD RD.
ALTERNATE A
SHEET 2 OF 3

EXHIBIT 8B



ALT. 4

INTERSECTION DESIGN STUDY

U.S. 20BR ℄ LYFORD RD

ALTERNATE A

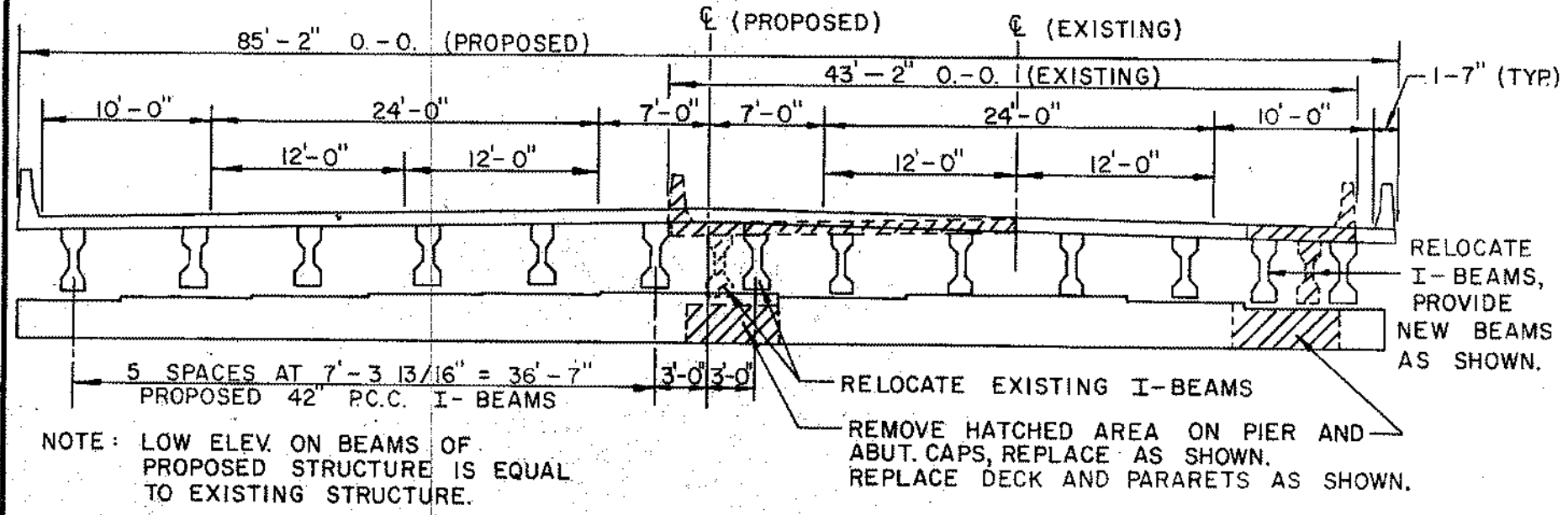
SHEET 3 OF 3

EXHIBIT 8C

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

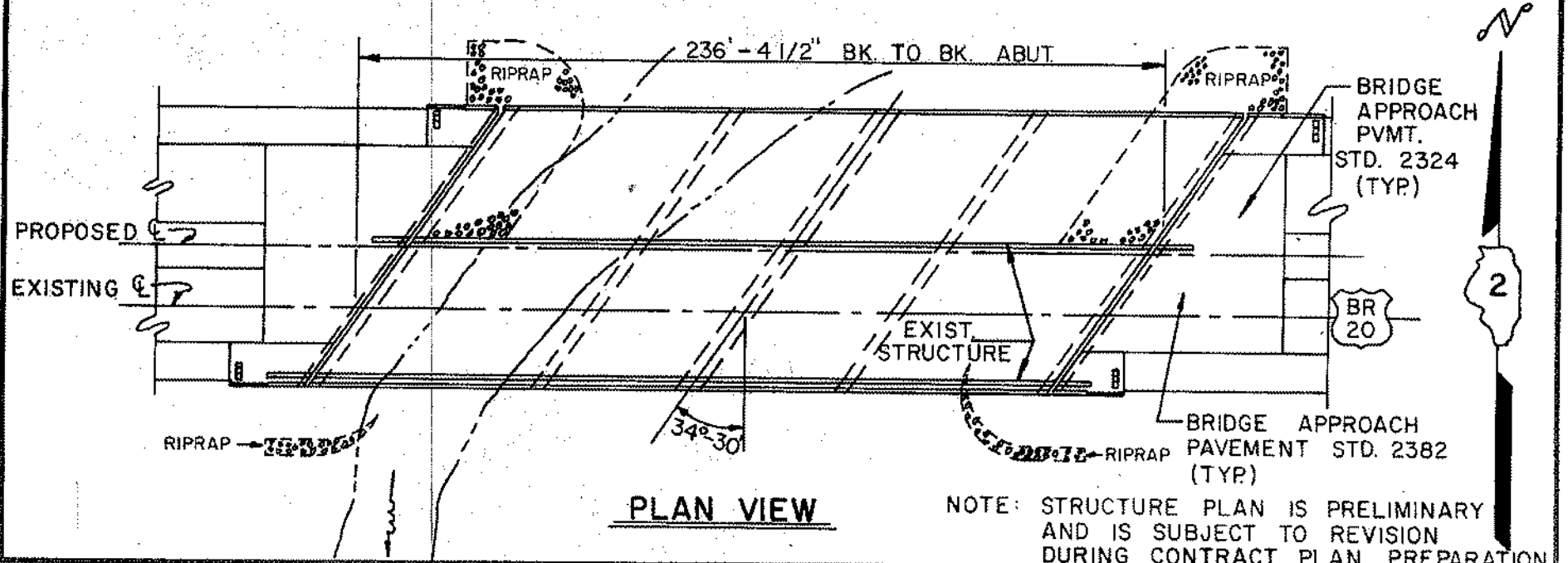
STRUCTURE PLAN
F.A.P. 517 OVER BEAVER CREEK
ALTERNATE 4

EXHIBIT
9D



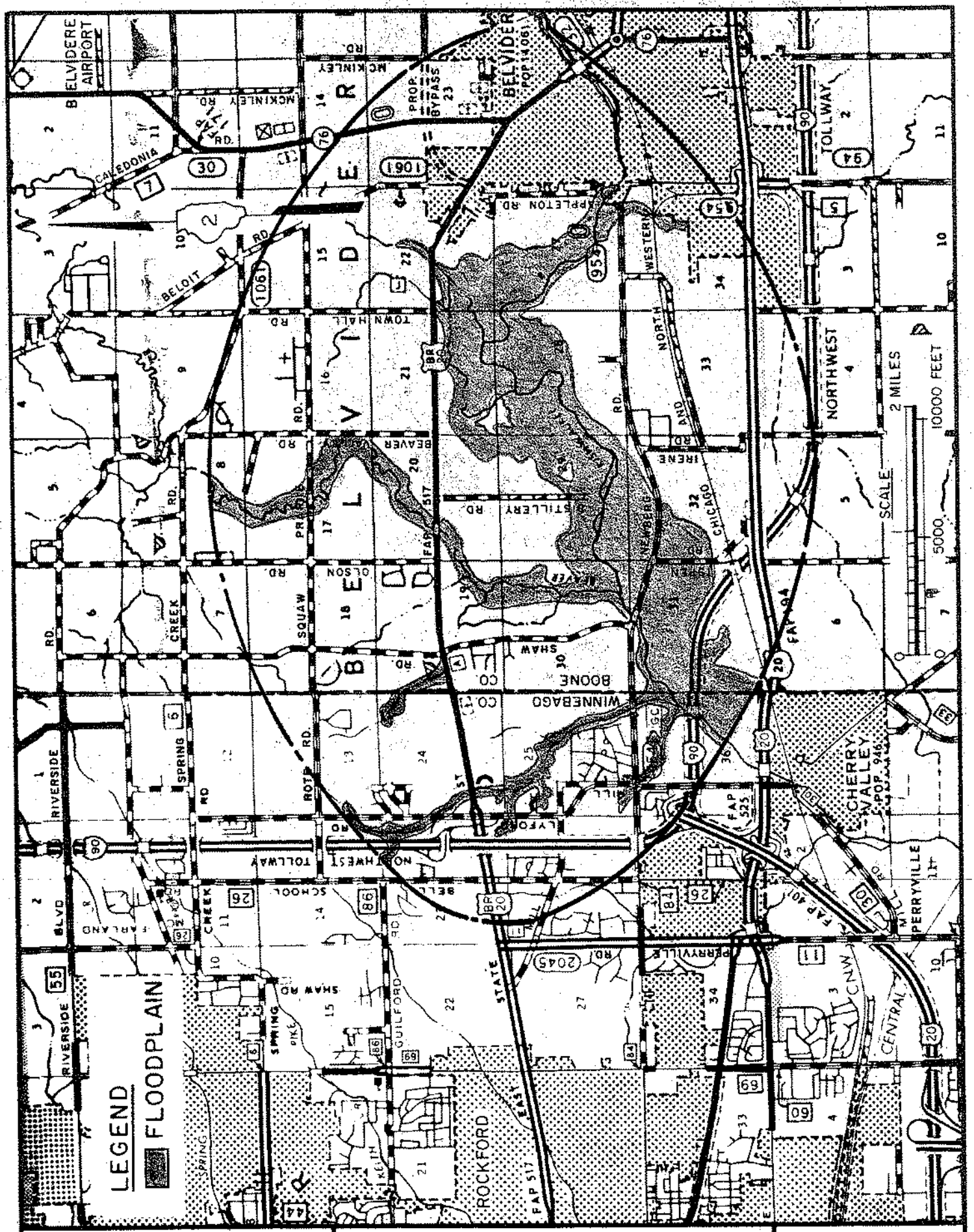
NOTE: LOW ELEV. ON BEAMS OF PROPOSED STRUCTURE IS EQUAL TO EXISTING STRUCTURE.

CROSS SECTION
SHOWING TYPICAL WIDENING DETAIL



PLAN VIEW

NOTE: STRUCTURE PLAN IS PRELIMINARY AND IS SUBJECT TO REVISION DURING CONTRACT PLAN PREPARATION



F.A.P. 517 (U.S. Business Route 20) Rockford - Belvidere	FLOODPLAIN MAP	EXHIBIT II A

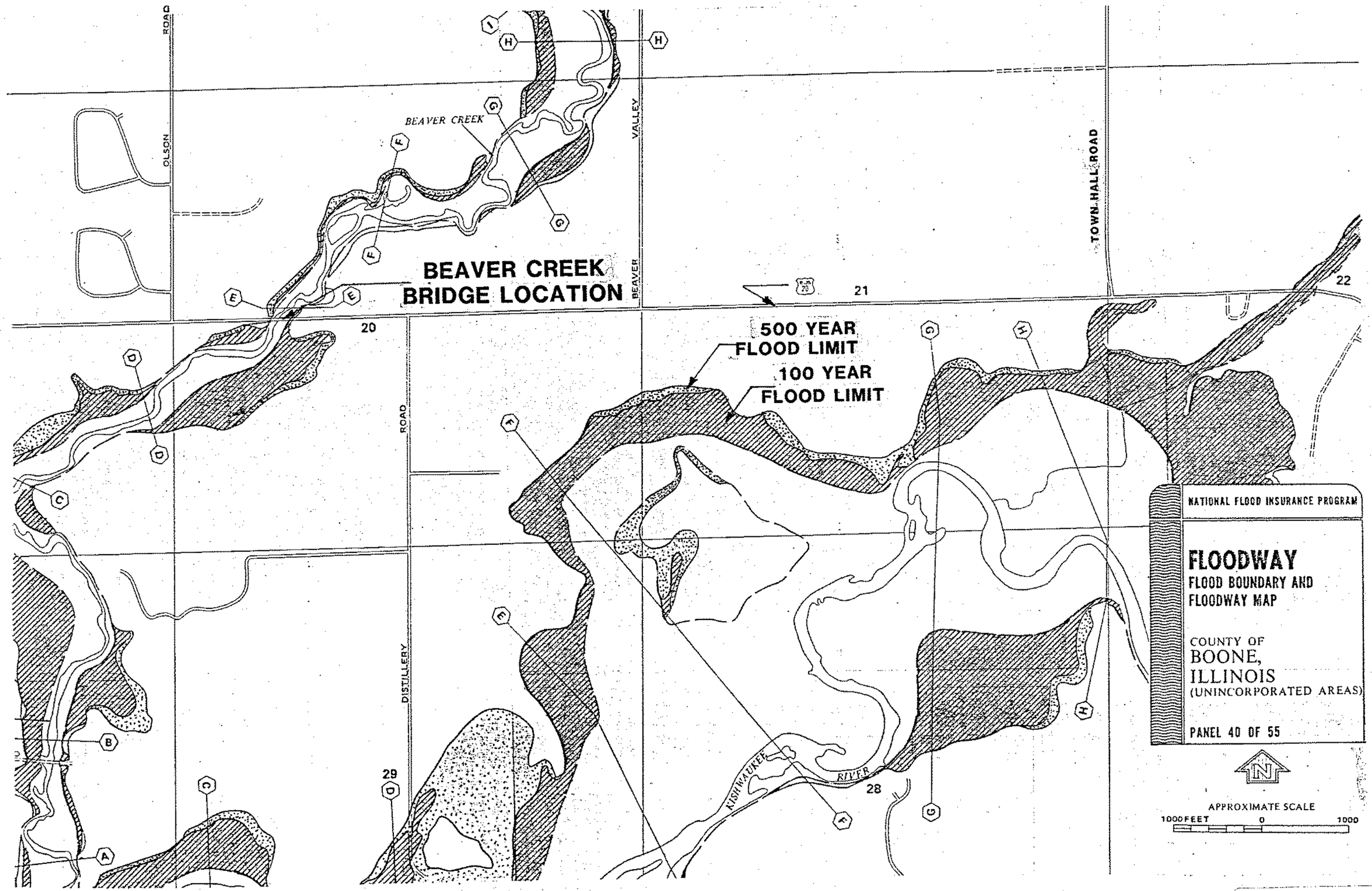

BEAVER CREEK
BEAVER CREEK
BRIDGE LOCATION
500 YEAR
FLOOD LIMIT
100 YEAR
FLOOD LIMIT
OLSON ROAD
BEAVER VALLEY ROAD
TOWN HALL ROAD
DISTILLERY ROAD
KISHWAUKEE RIVER
20
21
22
28
29
NATIONAL FLOOD INSURANCE PROGRAM
FLOODWAY
FLOOD BOUNDARY AND
FLOODWAY MAP
COUNTY OF
BOONE,
ILLINOIS
(UNINCORPORATED AREAS)
PANEL 40 OF 55
N
APPROXIMATE SCALE
1000 FEET 0 1000

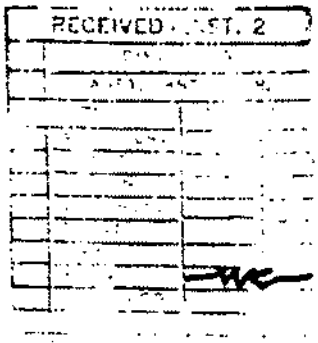
EXHIBIT 11B

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



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 J. Hotton P.E.

Henry G. Pfiester, P.E.
Chief, Operations Division

EXHIBIT 12A
SHEET 1 OF 1

STATE OF ILLINOIS
OFFICE OF THE GOVERNOR
SPRINGFIELD 62706

JAMES R. THOMPSON
GOVERNOR

AUG 22 1983

BUREAU OF LOCATION AND DESIGN

SUBJECT: **SIGNOFF**
US BR20, FAP 517, Expressway Construction - Early Warning

FUNDING: USDOTFHwyA - $8,895,000; Applicant - $2,965,000
SAI# 83 07 12 13

RECEIVED
AUG 22 1983
LOC Studies

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:

- (●) 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 12B
SHEET 1 OF 1

Illinois Department of Transportation

Memorandum

To: Files

From: Richard Mardauss

Subject: Informational Meeting

Date: December 15, 1983

FA 517
Section (L&2MFT)RS-2
Business Route 20 Lyford Rd. - Belvidere
Winnebago/Boone Counties
P-92-002-83

Yesterday Dave Lutyens, Dick Mills and I represented District 2 at an Informational Meeting which was arranged to inform area residents that a proposal to improve Business 20 from Lyford Rd. to Belvidere is in the preliminary design stage. Kevin Koski of Missman, Stanley & Associates was also in attendance.

The meeting was held in the mobile office in the parking lot of the Clock Tower Inn near the intersection of Business 20 and Lyford Rd. Fifty five people attended the meeting. Most of the visitors were local residents who live adjacent to Business 20 and who had received meeting notices in the mail. Graphical displays showing conceptual drawings of both phases of the proposed improvement were presented.

One resident, Mr. W. L. Anderson, who lives on the north side of Route 20 just west of the Boone County Line, fears that recent improvements to his property (a pond built near existing ROW) will be affected by Phase 1 of the improvement.

Several residents told us that the existing pavement in the vicinity of the Kersotes Theaters floods after heavy rains. We were also told that snow drifts often block the pavement at the top of the first hill east of the theater complex.

Several residents were concerned about the steepness of the 5 percent grade just west of the Boone County Line. One man who has a private entrance at the bottom of this tangent implied by his comments that Case III sight distance was inadequate at

EXHIBIT 12 C
SHEET 1 OF 2

his point of access. Others said that vehicles frequently have difficulty climbing this grade in the winter time. We were told that the Boone County maintenance trucks stop at Shaw Rd. when they apply salt and that Winnebago County trucks plow to Shaw Rd.

It was suggested that this 5 percent grade would be salted sooner if Boone County maintenance forces salted to the county line.

A number of people expressed a desire to be added to our project mailing list. Their names and addresses are on the attached sheet.

RDM:D1/E
Attachment
cc: Kevin Koski

F.A.P. 517 DATA COLLECTION MEETING
Clock Tower Inn - Rockford
1-5 p.m. and 6:30 - 7:30 p.m.

June 5, 1984

IDOT Personnel: David Lutyens
Richard Mardauss
Richard Mills

M.S. & A. Personnel: Kevin Koski
Dennis Martin

The following comments were received from people attending the data collection meeting:

Two people indicated that the commercial - appearing buildings Rt. Stas. 120-123 are used by the property owner for storage of his farm equipment and are not commercial in nature. As far as can be determined, the property owner was not in attendance so this was not verifiable.

One of the property owners of the property Lt. Stas. 170-177 stated that although they had contiguous property that abutted Town Hall Road, the parcel adjacent to BR 20 was accessible only from this road due to the presence of the creek along the west edge of this parcel.

A resident of the property at Rt. Sta. 300 indicated that she might prefer an access point as Sta. 298. She also objected to maintaining service drives for others, particularly with regard to the cemetery, the access for which would apparently cross her property.

The manager of the Belford 6 Drive-In Theaters stated that the access provided to them by extending Dempsey Road would create problems for them due to head-lights from incoming vehicles on Dempsey Road interferring with the picture at their eastern drive-in theater. He indicated that an access road provided at their south property line would be more preferable. He also said that they currently have a holding area sufficient to accommodate 250-300 cars between the highway and their ticket booth. He further indicated that his engineering people will look into possible solutions and contact IDOT in the near future.

A number of questions concerning maintenance jurisdiction of common service drives came up.

Several people expressed dissatisfaction with the existing intersection at Shaw Road and the sight distances on the north approach. They indicated a desire to see the conditions improved.

Several people expressed concern over the sight distance on the north approach of Lyford Road, especially with regard to the new gas station entrance. They indicated a desire to see this condition improved.

Two persons representing the quarry Lt. Stas. 1-7 expressed dissatisfaction with the adverse travel and additional maintenance required by the proposed service drive from the quarry to Shaw Road.

One person objected to a combined entrance between Frank Gay's Marquee and Family Fund Land, shown for Alternate 2, because of the different clientele catered to by each business.

WDO

July 2, 1984

Mr. Ralph C. Wehner
District Engineer
District 2
Illinois Dept. of Transportation
819 Depot
Dixon, Illinois 61021

Subject: Business U. S. Route 20 from Lyford to Shaw Rd.

Dear Mr. Wehner:

On June 21, 1984 a meeting was held by some of the landowners on Business Route U.S. 20 to discuss the three alternative road plans presented by your staff in Rockford on June 5, 1984 to generate public comments. The purpose of the landowners' meeting was to submit comments to your Department regarding the proposed road changes. Our comments are as follows:

1. We feel the greatest government priority at this time of a National and State economic slowdown is the prudent expenditure of taxpayer dollars. It is our consensus that all three of the alternatives for change in Business Route U.S. 20 from Lyford Rd. to Shaw Rd. are a waste of taxpayer dollars. As residents on this road we are familiar with the traffic count and accident rate on this span of highway. The volume of traffic cannot possibly justify the expenditure of millions of tax dollars to construct a 4-lane freeway divided by a grass median with minimum access from service roads.

2. In 1956 a substantial amount of right of way was purchased to widen this road, which has not been done in the 28 years since the right of way was purchased from landowners. Traffic patterns have changed nullifying the need to widen Busi- Route U.S. 20.

   a. The Northwest Tollway was built diverting traffic to and from Chicago from U. S. 20 to I-90.

   b. The 4-lane minimum access By-Pass 20 was constructed to connect with I-90 and to provide local traffic a fast and safe route between Rockford and Belvidere.

   c. There has been no commercial or residential growth generating traffic on Business Route U.S. 20 except for the business' servicing the I-90 interchange and the Belford Drive In Theater.

EXHIBIT 12E
SHEET 1 OF 4

d. We feel the traffic flow to the Belford Drive In Theater is a unique problem that could be resolved by continuation of the 4-lane highway from Lyford Rd. to the Drive In Theater which is approximately 2/10 of a mile. We have serious concerns that relocating the theater entrance from Business U.S. 20 to South Lyford Road, which is a township road will create more problems than are solved and will create severe traffic congestion.

3. To make Business Route U.S. 20 a safer road with less winter maintenance, the elevation needs to be reduced over approximately 4/10 of a mile between Lyford and and Shaw Road, the grade elevation should be reduced 4 ft. and half of the material removed should be used to raise the valleys east and west of the hills in front of the Belford Drive In Theater in Winnebago County on the west and the stone quarry in Boone County on the east. This levelling of the grade elevation would improve visability, smooth out the flow of traffic with far less energy requirements and far less winter maintenance and accident problems. The road should be resurfaced.

4. There are so few driveway access to Business Route U.S. 20 between Lyford and Shaw Roads that the expenditure for minimum access by service roads exceeds any benefit that could be derived. There are only 8 driveways on the south side of the road and 5 on the north side. The proposal to acquire right of way for minimum access service roads used by several landowners, to be built by the state and turned over to the landowner to maintain for himself and his neighbors is ludicrous and irresponsible.

5. We request that the date for Ill. Dept. of Transportation meetings be scheduled during the month of September or October. The first public display was held in the winter when a severe ice storm prevented a good turnout. If this should happen again, the meeting should be rescheduled.

During and after your 6-5-84 presentation several land owners requested copies of the maps of the three proposals so they could better analyze the project to make constructive comments. It is a surprise to us that these requests were denied although these engineering maps were presented at a public meeting for public comment and were prepared at public expense and were placed on public display. If this road project had merit it would not be necessary for your agency to deny land owners copies of the proposed alternatives. When your are considering disrupting our homes and business to change our land from private to public use, the least we are entitle to are copies of maps to study.

In summary we emphasize:

1. This project is a waste of taxpayer dollars.

2. The traffic count and accident rate does not justify a 4-lane highway east of the Belford Drive In Theater.

3. Business Route U.S. 20 would be safer if the hills were reduced and the valleys built up to make a level road. A level 2-lane road would be safer than a hilly 4-lane road.

4. There is no justification for a divided highway with minimum access by service roads as there are only a few land owners requiring access.

5. Your proposal to have a land owner maintain private service roads for his neighbors is ludicrous.

6. Date for meetings of the Dept. of Transportation should be scheduled during months with good weather. If bad weather prevents public attendance another meeting should be held.

7. Maps of alternatives, prepared with public funds and publicly displayed should be copied and made available to the public upon request.

We respectfully request that our comments be carefully considered and appropriate changes be made to your plans for Business Route U.S. 20 between Lyford and Shaw Road.

Very truly yours,

Landowners affected
by the proposed change
in Business Route U.S.20
between Lyford and Shaw Roads

Tim Fitch

EXHIBIT 12E
SHEET 3 OF 4

Copy Sent To:

Senator Allan J. Dixon

Senator Charles H. Percy

Congresswoman Lynn Martin

Governor James Thompson

State Senator Joyce Holmberg ✓

State Representative Ron Waite ✓

Highway Commission Jerry Tassoni ✓

Township Supervisor Richard E. Baer ✓

Township Trustee Michael P. Dunn

Township Trustee Vivian Hickey

Township Trustee Wm. J. Howard

Township Trustee Ray Olson

Chairman Winn. Co. Board Pat Scott ✓

Comm. of Highways Gene Wieland ✓

Representative E. J. Giorgi ✓

Representative John Hallock, Jr. ✓

Representative James Kelly

EXHIBIT 12 E
SHEET 4 OF 4

F.A. Route 517
Section (2 MFT & L) RS-2
Winnebago & Boone Counties

PUBLIC MEETING
Guilford - Hope Grange Hall
Rockford, Illinois
January 31, 1985

Presenters:	Larry Reed	Illinois Department of Transportation, District 2
	Dave Lutyens	Illinois Department of Transportation, District 2
	Mick Kazmerski	Illinois Department of Transportation, District 2
	Kevin Koski	Missman, Stanley & Associates

In addition to the presenters, there were 60 people attending this meeting, including State Representative Ronald A. Wait.

Colored 1" = 50' scale plan and profile displays of the three stages of Alternate 4 were available for public inspection beginning at 7:00 p.m.

Larry Reed began the presentation portion of the meeting at 7:30 p.m. with an introduction.

The main part of the presentation was delivered by Dave Lutyens, who made the following remarks:

An explanation of the public hearing process, indicating that an additional informal meeting, similar to this one, would be held to demonstrate design refinements. This would be followed by a formal Public Hearing, probably in the summer, at which time statements would be taken.

Noted that final approval of the recommended alternate is expected in the fall, followed by preparation of contract plans and ROW documents.

An explanation of the three stages of the project and the necessity for a four lane facility in the project area.

An explanation of the development of the concept of Alternate 4 and noting that, compared to the previous three alternates (divided highway with partial access control), it would promote growth along the corridor due to the lack of access control, could be expected to result in a somewhat higher accident rate and would require a lower speed limit (45 mph).

Pointed out that Alternate 4 would be less expensive, require about one half the right-of-way area needed for the other alternates, and needs to take only one residence.

Discussed the reason for the proposed residential take (expense of retaining wall, sight problems).

EXHIBIT 12 F
SHEET 1 OF 3

Explained the concept of the 14 ft. flush median (bi-directional left turn lane as well as fully developed left turn lane at intersections).

Explained the reasons for the curb and gutter segments in front of residences (to save ROW) and the reasons for using shoulders where possible (no additional ROW required). Also noted that curb and gutter may only be placed next to the pavement for speed limits of 45 mph or less.

Explained that the 5% grade at the County line (Sta. 310 - Sta. 5) is acceptable for a 45 mph design speed, but that it would be looked at in view of past complaints regarding problems with snow.

Pointed out that the only significant alignment change from the previous alternates occurs at the north leg of Shaw Road (to help properties on east side). Also noted that this was the only area where more right-of-way was required.

Explained the reasons for temporary easements.

Pointed out the grade change in Belvidere and explained the reason (drainage).

Noted that the remaining two lane portions of the project (Stages 2 and 3) will retain their current speed limits until they are reconstructed as four lane segments.

Asked that anyone who was not receiving meeting notices by mail (and wanted them) leave their name and address.

Larry Reed added the following comments to the presentation:

Explained how the right-of-way savings were shown on the colored displays (Kevin Koski explained that the alternate compared to was the one with the additional two lanes on the same side as Alternate 4).

Discussed the process of selecting the recommended alternate.

Pointed out that there were disadvantages to isolated segments of curb and gutter adjacent to the pavement (snow plowing) and that these areas may be revised to a Type A gutter adjacent to the pavement or a Type A gutter moved to the edge of the shoulder.

Addressed the problem of the lane transition location, indicating that, from a geometrics standpoint, incorporating it into the horizontal curve east of Shaw Road was preferable to placing it on a tangent roadway section.

Following the presentation, time was allowed for questions and comments from the audience. Most questions concerned minor design details, alternate selection procedures, the timetable for construction, land acquisition and the need for a four lane facility.

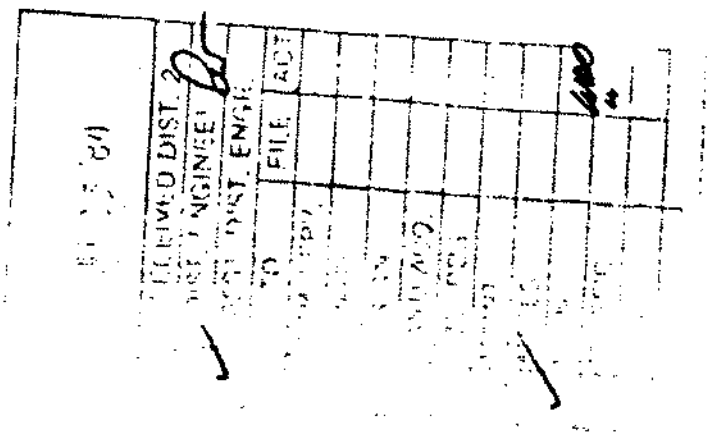
One person noted that the 5% grade just west of the Distillery Road (Stas. 77-83) becomes snow-packed and hazardous for westbound traffic under certain conditions. Dave Lutyens pointed out that the grade is acceptable for a lower design speed (45 mph) but that this area would be examined further.

Representative Wait spoke on the process of selecting an alternative and the role of public input in this procedure; he complimented IDOT on its responsiveness to the concerns of the residents along the route. He also cautioned those present to examine very carefully the specific impacts to their property and warned them that design changes might occur at any time until construction was complete.

It was the overwhelming consensus of the people present that Alternate 4 was preferable to the other three alternates.

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.

EXHIBIT 12 G
SHEET 1 OF 3

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

EXHIBIT 12 G
SHEET 3 OF 3

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.

EXHIBIT 12 H
SHEET 1 OF 4

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, 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

EXHIBIT 12H
SHEET 2 OF 4

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

EXHIBIT 12H
SHEET 3 OF 4

STATE OF ILLINOIS
Agricultural Land Evaluation and Site Assessment System

ART VI-B	Maximum	Alternative Site Rating			
Illinois Site Assessment CORRIDOR Factors	Points	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

EXHIBIT 12H
SHEET 4 OF 4

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:

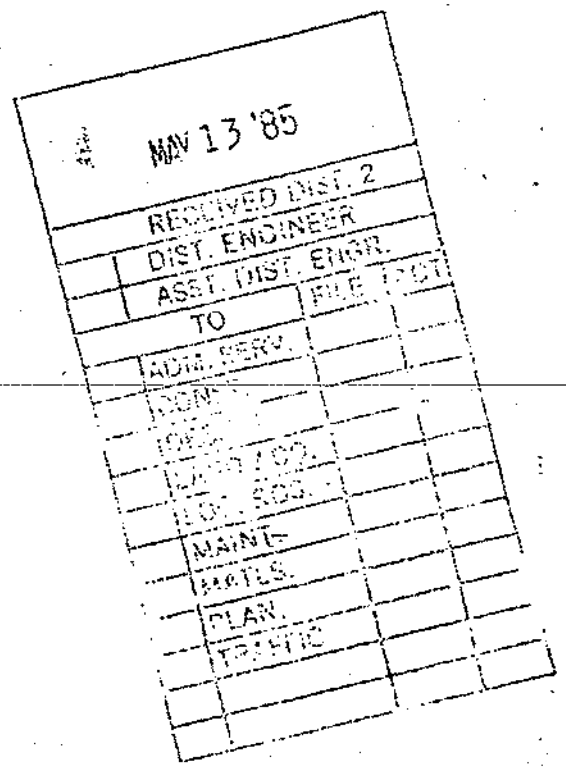
Attached is the AD-1006 form, Farmland Conversion Impact Rating, for your proposed project FAP 517, Rockford-Belvidere Expressway.

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)			
Name Of Project: Rockford-Belvidere Expwy, FAP 517, Sec. (2MFT&L)RS-2	Date Of Land Evaluation Request: March 18, 1985		
Proposed Land Use: Highway	Federal Agency Involved: Federal Highway Administratic		
PART II (To be completed by SCS)	County And State: Boone and Winnebago, Illinois		
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 ☐	Date Request Received By SCS: 3-21-85	
Major Crop(s): Corn, Soybeans, Oats	Farmable Land In Govt. Jurisdiction: Acres: 29633500 %97	Acres Irrigated: 0	Average Farm Size: 232
Name Of Land Evaluation System Used: State of Illinois	Name Of Local Site Assessment System: None	Amount Of Farmland As Defined in FPPA: Acres: 27696200 %91	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.

EXHIBIT 12I
SHEET 2 OF 2

(See Instructions on reverse side)

Form AD-1006 (10-83)

BI-MONTHLY ENVIRONMENTAL COORDINATION MEETING NOTES

US 20 BR Rockford-Belvidere Expressway

August 24, 1983

Mr. Ost stated that the Department is initiating the study of the reconstruction of US 20 BR between Lyford Road on the east edge of Rockford and High Line Road in Belvidere from its existing two lane configuration to a four lane at-grade expressway. Since it involves the construction of additional through lanes, an Environmental Assessment must be prepared for this project. This project will be described in two distinct stages of construction. Stage I will reconstruct the existing pavement from two lanes to four lanes from the Lyford Road intersection east of Rockford through the Shaw Road intersection which is one quarter mile east of the Winnebago-Boone County line. The rest of US 20 BR from Shaw Road to High Line Road will be resurfaced. It is not necessary to reconstruct this portion of US 20 BR initially since it had been upgraded while this portion of the highway was in IDOT District 1. The Environmental Assessment and Design Report to be prepared for this project will show the ultimate reconstruction of US 20 BR to a four lane at-grade expressway between the Shaw Road and High Line Road limits as future Stage II construction. Mr. Ost stated that the only apparent controversy or difficulty in this project will be a potential historic impact on several of the houses which lie along US 20 BR. Mr. Boyd emphasized the need of the Department to conform to the latest FHWA directories regarding the length and scope of all environmental assessments. He offered to meet with the consulting engineer preparing this project if it would be necessary to inform them of the format to be followed and the scope of the Environmental Assessment.

April 11, 1985

Mr. Lutyens opened the discussion by stating that it was his intent to bring the participants up to date on what the Department has accomplished on this project since the last Bi-Monthly Meeting discussion. The original intent of the Department was to study primarily one typical section and type of roadway which would be a partially-access-controlled expressway between Rockford and Belvidere. He noted that in the vicinity of the I-90 interchange, the Department intended to use a 22-foot raised median to extend the existing raised median cross section from the interchange with Interstate 90 easterly to Shaw Road which is the first Township Road the highway intersects in Boone County.

The ultimate project would then, on a curve, be widened to a 44-foot grassed, depressed median which would continue easterly on this cross section toward Belvidere. All direct commercial access to this facility would be extinguished in

EXHIBIT 12 J
SHEET 1 OF 3

BI-MONTHLY ENVIRONMENTAL COORDINATION MEETING NOTES

US 20 BR Rockford-Belvidere Expressway

April 11, 1985 (continued)

accordance with policy and all private entrances and side roads would have to meet minimum spacing of a partially-access-controlled expressway. As this cross section approached Belvidere, it would be tapered down to a five-lane cross section at Highline Road in Belvidere to meet an existing five-lane cross section which was constructed last year on this portion of U.S. 20 BR. However, to study all possible impacts the Department had proposed that this cross section be designed for three different alternates which basically consisted of either constructing the two new lanes of pavement to the north of the existing pavement, to the south of the existing pavement, or reconstructing the full four lanes centered on the existing centerline. This concept and its three alternates were presented to the public at a public informational meeting. A strong objection was raised by adjacent property owners who objected to both the purpose and need for the project and the width of the proposed construction with the resultant loss of farmland. After further meetings with the property owners, Mr. Lutyens conveyed the view of the Department that the traffic needs served by this freeway are not long distance trips but would be locally generated by the current growth of commercial development in the vicinity of the Interstate 90 interchange with U.S. 20BR. A review of the land use plan showed that the long term growth pattern around this U.S. 20 BR corridor is that of low to medium density residential in Boone County and commercial in Winnebago County. Therefore, at the urging of affected land owners, the Department has developed a fourth alternate for this project which consists of the construction of four lanes of traffic separated by a 14-foot flush median throughout the entire project length.

This alternate would be constructed on the premise of ongoing growth of urbanization which is expected to take place along the highway corridor. It is expected that the project will be constructed in three phases, the first phase being from Interstate 90 easterly to Shaw Road in Winnebago County, the second being an extension from Belvidere westerly to meet anticipated urban growth in that corridor, and finally in the long range planning a connection of these two sections with a five-lane cross section as urbanization of the corridor proceeds. Mr. Lutyens pointed out that this design would therefore be a 45 mph design and the speed limit on the highway would have to be adjusted appropriately. He did point out that west of the project there is currently a portion of U.S. 20 BR that is access controlled with curbs immediately adjacent to the travel lane and posted for 55 mph which is contrary to design policy. Mr. Lutyens pointed out that this alternate would lower the right-of-way impact of the project from 62 acres to approximately 30 acres and would lower the cost of the project from an estimated $19 million to $12 million. He noted that the Department was proposing storm sewer in some areas to minimize right-of-way impacts on rural residences.

In response to a question by Mr. Johnson, Mr. Lutyens stated that the project had been designed to full BLE standards and that no waivers would be required. In response to a question by Mr. Lutyens, Mr. Merida stated that he would not mind reviewing the environmental assessment for this project directly after it had

BI-MONTHLY ENVIRONMENTAL COORDINATION MEETING NOTES

US 20 BR Rockford-Belvidere Expressway

April 11, 1985 (continued)

been reviewed by the Central Office, instead of having the Central Office review it and send it back to the consultant for corrections before forwarding it to the FHWA. This will be acceptable provided there are not an excessive amount of necessary corrections to be made.

EXHIBIT 12 J
SHEET 3 OF 3

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

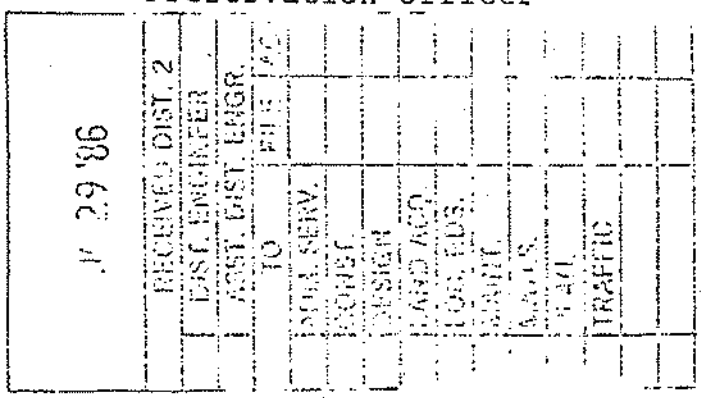


EXHIBIT 12K

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)
1-45	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
1-81	U.S. 20 BR/ State St.	Mulford Rd.			Signal Modernization	60	HES SS Local	56 2 2
1-70	U.S. 20 BR	Rockton Ave. to 7th St.		1.16	Resurface	440	SS	440
1-82	U.S. 20 BR/ State St.	IL 70/ Kilburn Ave.			Signal Modernization	40	HES SS	36 4
1-73	U.S. 20 BR/ Walnut St.	Madison, 1st, 2nd, 3rd, 6th, & 7th Streets			Signal Modernization & Intersection Improvement	300	SS	300
1-49	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
1-52	IL 2/ Main St.	Morgan St. to Baltline Rd.		3.50	Resurface	1,240	FAP SS Local	930 310 NA
1-78	IL 2/ Wyman St.	Green St. to Chestnut St.		0.07	Resurface	25	FAP SS	18.75 6.25
1-76	IL 2/ Main St.	Morgan & Montague Sts.			Signal Modernization	80	FAP SS Local	72 4 4
1-83	IL 70	Drainage ditch .25 miles east of Meridian Rd.			Preliminary Engineering	20	SS	20

EXHIBIT 12L

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-Ye

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 Donald B Rose

Date Dec. 7, 1984

Charles N. Pierce

cc: Department of Conservation - Natural Heritage Section

EXHIBIT 12M

Illinois Department of Transportation

Memorandum

To: File

From: Larry Hill and Dave Lutyens

Subject: Public Informational Meeting

Date: April 21, 1986

FAP Route 517 (US 20BR)
Section (2MFT&L)RS-2
Rockford-Belvidere Expressway
Boone & Winnebago County

On the above date a Public Informational Meeting was held for the above project at the Clock Tower Convention Center between 1:00 p.m. and 5:00 p.m. and 7:00 p.m. and 8:00 p.m. A 1" = 50' display of Alternate 4 was presented with reduced versions of Alternates 1, 2, and 3 also presented. The meeting was attended by 89 persons. Media coverage was by all 3 TV stations and the Rockford Register-Star.

The tone of the meeting was very positive, with all present seeming to favor the project and the effort the Department had taken in establishing Alternate 4 as the preferred alternate. The following statements were noted:

1. Eugene Seele has purchased Trust #207 from Thomas G. West (Station 60+ to 65+) Total = 6.5 acres.

2. A request was received to minimize damage to the trees on the right-of-way line Left of Station 40-42.

3. Some adverse comments were received concerning leaving in the steep grade on US20BR. It was explained that this is adequate for the design speed.

4. A comment was noted that the south leg of Shaw Road is steep and sometimes difficult in winter. A request was made to see if anything could be done to lower the gradeline. It was explained that this is adequate for the design speed.

EXHIBIT 12N
1 OF 2

5. Mr. Robert Reed of the Boone/Belvidere Planning Commission stated that the Centaur Subdivision is ready to subdivide commercial lots on their property fronting US20BR. He requested that we furnish the clearance of the low steel of the Beaver Creek bridge above ground line and its suitability for clearing a recreational trail for snowmobilers, bicyclists and equestrians. He also requested a copy of the final right-of-way limits.

6. The "foundation" at Station 83+ (Right) was said to be a building--the foundation was under the trees.

7. Concern was expressed by the owners of the Hickory Hills Driving Range at Shaw Road to minimizing construction and land acquisition impacts on their parking area.

8. Mr. Richard Atkins (N. Lyford Road) asked that we investigate an easterly shift of Lyford Road to reduce impacts to the homes on the west side. He has some tree that he is concerned about. Mr. Atkins suggested that the shift might be feasible since all the homes are on the west side and the water slide on the east side has gone out of business.

9. Mr. and Mrs. John Pearse (just east of county line--north side of road) have syrup producing maples that are about on the right-of-way line and are concerned about the affect of the project on the trees. They were told that it appears that the trees will be saved and efforts will be made to assure such.

LRH/c1/2663w

EXHIBIT 12N
2 OF 2

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, 619 DEPOT AVENUE, DIXON, IL 61021 AT 815/284-5441.

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. OST
DISTRICT ENGINEER
619 DEPOT AVENUE
DIXON, IL 61021

EXHIBIT 120

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 four time for ~~1 successive~~ days;

That the first publication was on the 10 day of Apr 19 86;

That the last publication was on the 15 day of Apr 19 86;

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 23 day of Apr, A.D. 19 86, 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 Durfield

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.

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, 819 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. 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 12P

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 12Q
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.		
UTILS.		
PLAN.	AP	
TRAFFIC		

EXHIBIT 12Q
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 12R
1 OF 2

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 12R
2 OF 2

DEPARTMENT OF THE ARMY
ROCK ISLAND DISTRICT, CORPS OF ENGINEERS
CLOCK TOWER BUILDING — P.O. BOX 2004
ROCK ISLAND, ILLINOIS 61204-2004

REPLY TO
ATTENTION OF:

May 6, 1986

Operations Division

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

Dear Mr. Ost:

Reference is made to your letter dated April 15, 1986, and the accompanying Draft Environmental Assessment, concerning the proposed construction of bridges (FAP 517) over various streams at the following locations:

a. An unnamed tributary to the Kishwaukee River in Section 24, Township 44 North, Range 2 East, Winnebago County, Illinois.

b. An unnamed tributary to Beaver Creek in Section 19, Township 44 North, Range 3 East, Boone County, Illinois.

c. Beaver Creek in Section 20, Township 44 North, Range 3 East, Boone County, Illinois.

d. An unnamed tributary to the Kishwaukee River on the west edge of Section 22, Township 44 North, Range 3 East, Boone County, Illinois.

e. An unnamed tributary to the Kishwaukee River in the middle of Section 22, Township 44 North, Range 3 East, Boone County, Illinois.

Reference is also made to our letter dated August 12, 1983, concerning improvements to FAP 517.

Based on the information provided, this office has determined that the above crossings will require Department of the Army authorization. This authorization may be in the form of nationwide permits or may require processing of individual permits.

EXHIBIT 12S
1 OF 2

A nationwide permit for specific construction activities was issued in the Federal Regulations published in the Federal Register dated July 22, 1982, under 33 CFR 330.5. Enclosed is our Fact Sheet No. 2 describing the activities, conditions, and management practices for the subject nationwide permits for specific categories of construction activities. Those projects meeting the conditions of the nationwide permits will not require application and processing of an individual Department of the Army permit. If a project involves activities which will not meet the nationwide permits' limitations and conditions, please submit a Department of the Army application for the stream crossing including detailed plans showing creek locations, cross sections, and calculations for quantities of fill material required for the proposed work.

Our Fact Sheet No. 1, which was associated with projects located above the headwaters of streams at the time of our August 12, 1983, letter, is no longer in effect. Enclosed is a Public Notice dated October 5, 1984, which explains changes for nationwide permits in Illinois.

Should you have any questions, please contact our Regulatory Functions Branch by letter, or telephone Mr. Neal Johnson, 309/788-6361, extension 369.

Sincerely,

Steven J. VanderHorn P.E.

Henry G. Pfiester, P.E.
Chief, Operations Division

Enclosure

EXHIBIT 12S
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.

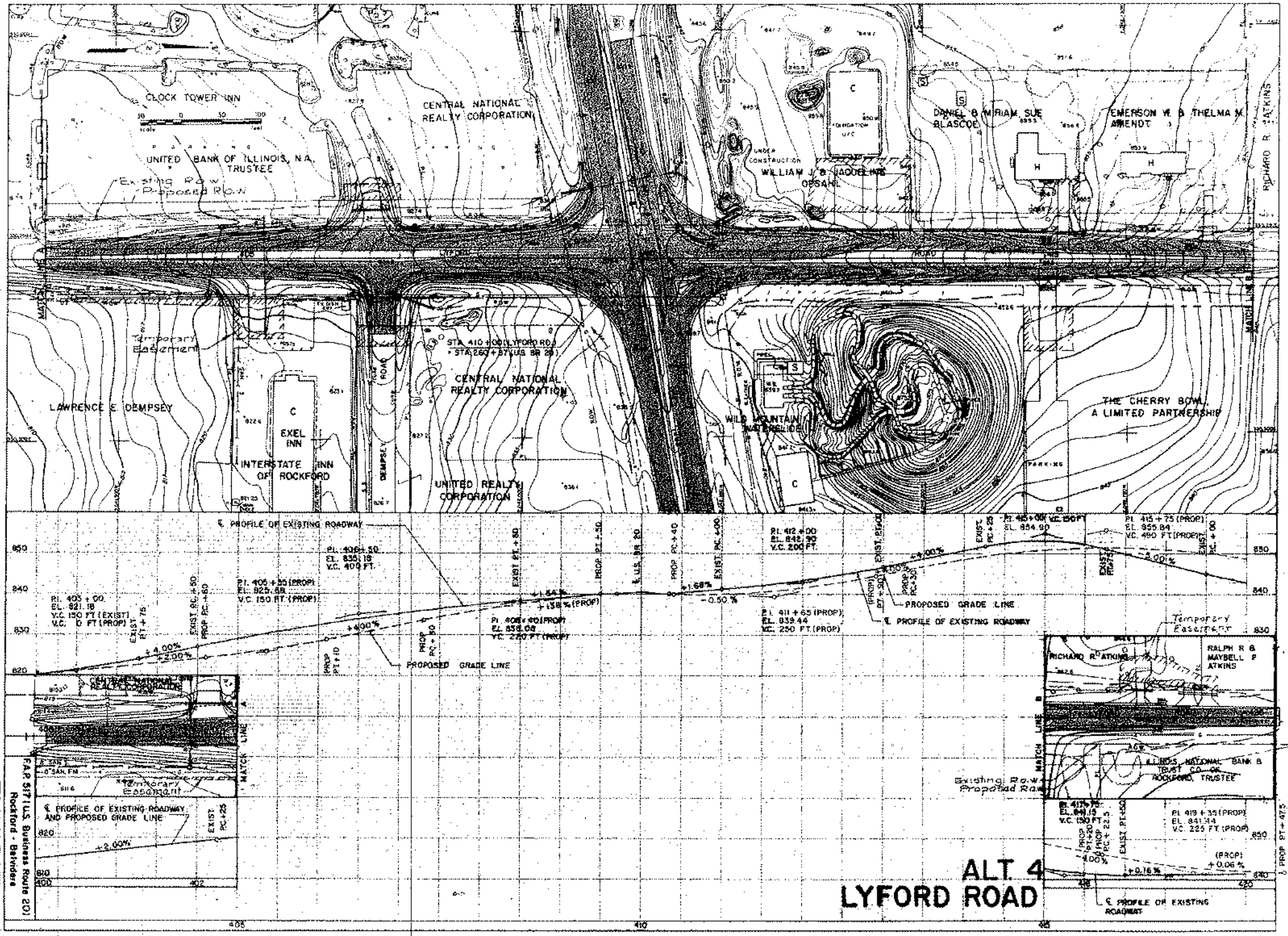
_____ The proposed project is found to be in conflict with the plans, policies and priorities of the State. See attachment(s) for further explanation.

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.

Tom J. Berkshire
Illinois State Clearinghouse
May 30, 1986

CC: #18

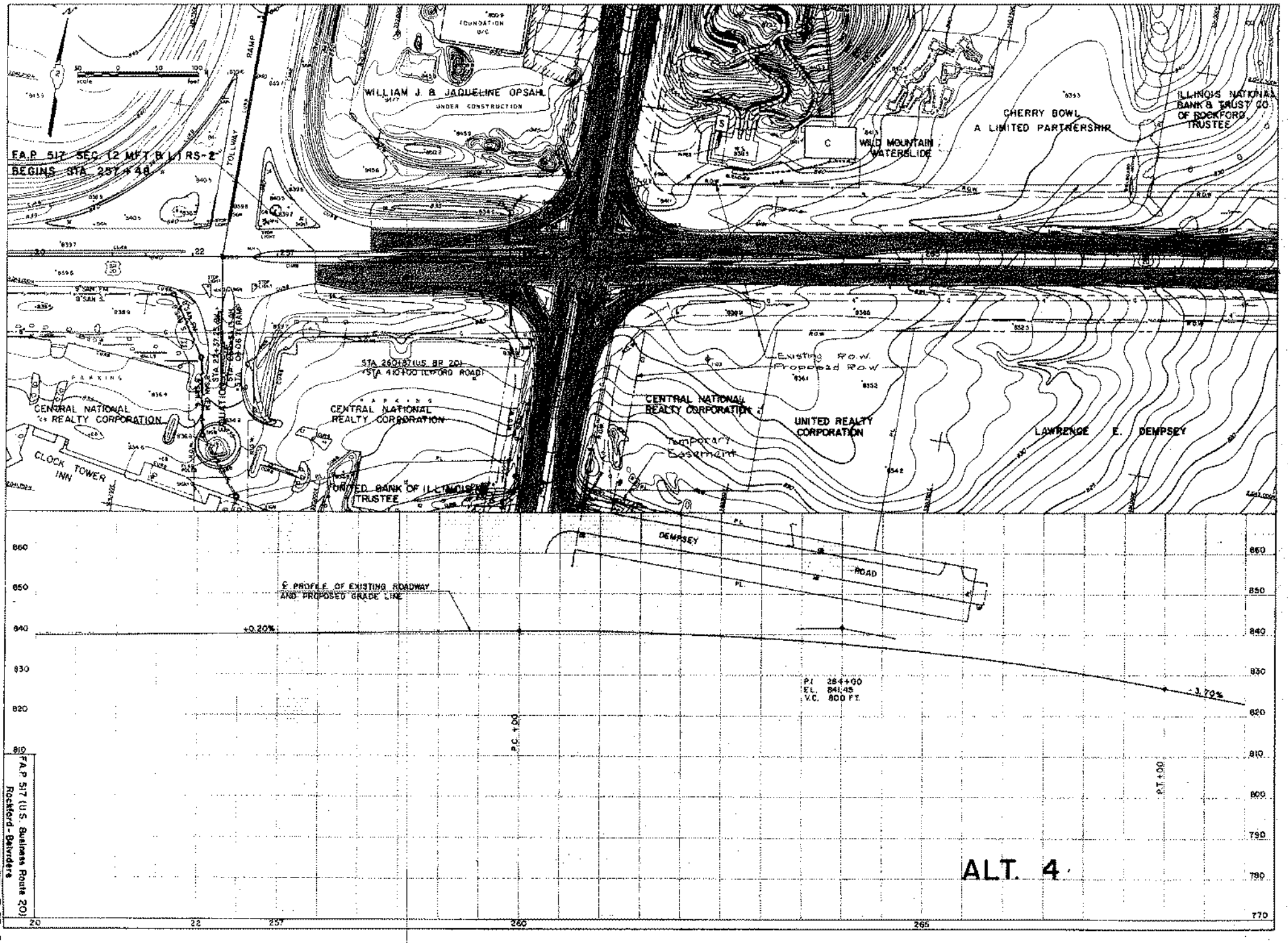
EXHIBIT 12T



ALT 4
LYFORD ROAD

EXHIBIT 13B

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


F.A.P. 517 SEC. 12 MFT B L 1 RS-2
BEGINS STA. 257+48
WILLIAM J. & JAQUELINE OPSAHL
UNDER CONSTRUCTION
CHERRY BOWL
A LIMITED PARTNERSHIP
ILLINOIS NATIONAL BANK & TRUST CO. OF ROCKFORD, TRUSTEE
WILD MOUNTAIN WATERSLIDE
CENTRAL NATIONAL REALTY CORPORATION
CLOCK TOWER INN
UNITED BANK OF ILLINOIS TRUSTEE
STA. 260+87.45 BR 201
STA. 410+00 (ILFORD ROAD)
Existing R.O.W.
Proposed R.O.W.
Temporary Easement
UNITED REALTY CORPORATION
LAWRENCE E. DEMPSEY
DEMPSEY ROAD
℄ PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
+0.20%
-3.79%
P.I. 261+00
EL. 841.45
V.C. 800 FT.
P.C. 1+00
P.T. 9+00
FA.P. 517 (U.S. Business Route 20)
Rockford - Belvidere
ALT. 4
EXHIBIT 23A

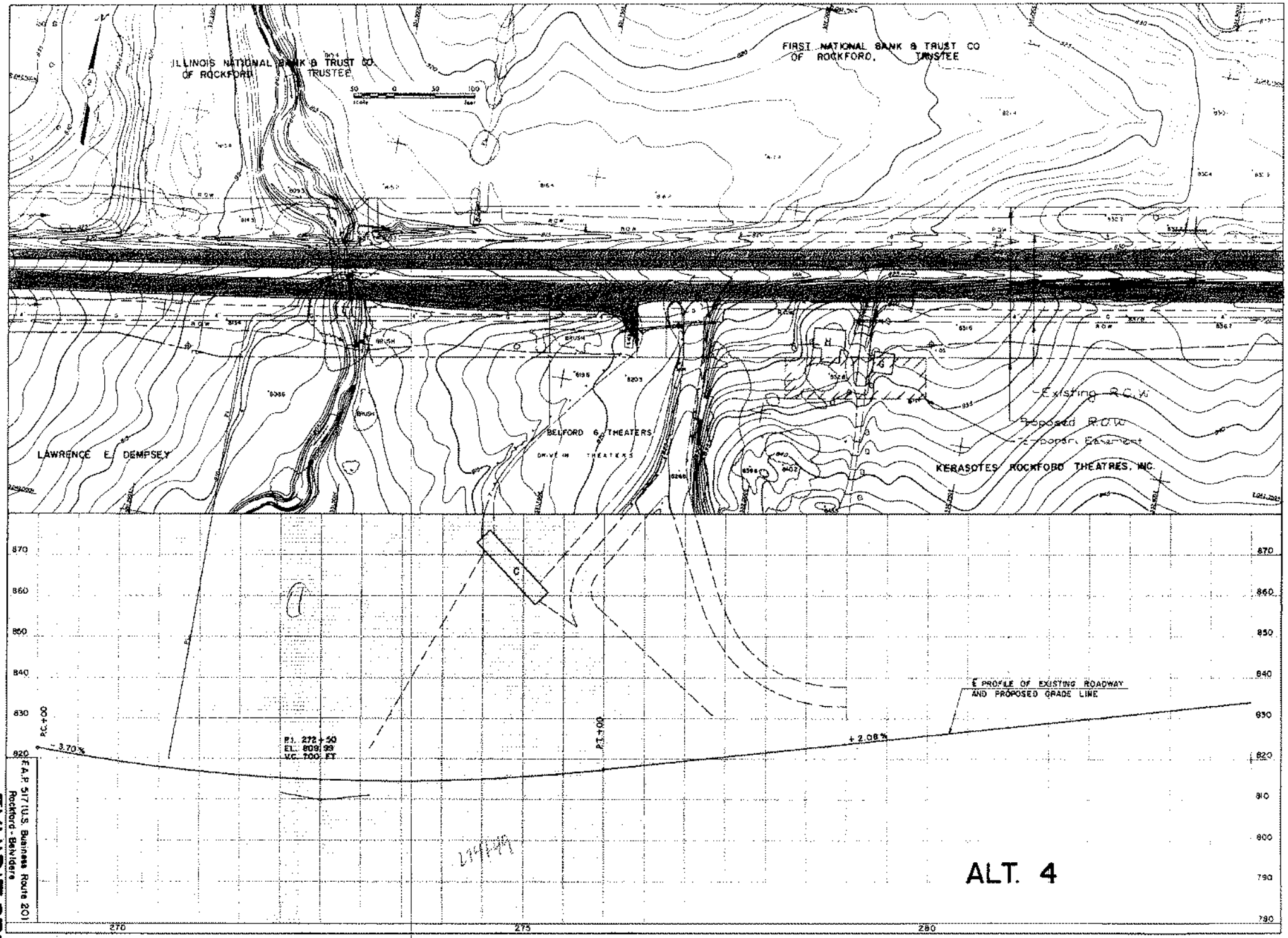

ILLINOIS NATIONAL BANK & TRUST CO. OF ROCKFORD, TRUSTEE
FIRST NATIONAL BANK & TRUST CO OF ROCKFORD, TRUSTEE
LAWRENCE E. DEMPSEY
BELFORD & THEATERS
DRIVE-IN THEATERS
KERASOTES ROCKFORD THEATRES, INC.
Existing R.O.W.
Proposed R.O.W.
Proposed Easement
ROW
BRUSH
50 0 50 100
scale feet
870
860
850
840
830
820
P.C. 269+00
- 3.70%
El. 272+50
El. 809.99
V.C. 700 FT
P.T. 276+00
+ 2.08%
℄ PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
ALT. 4
270
275
280
F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere

EXHIBIT 23B

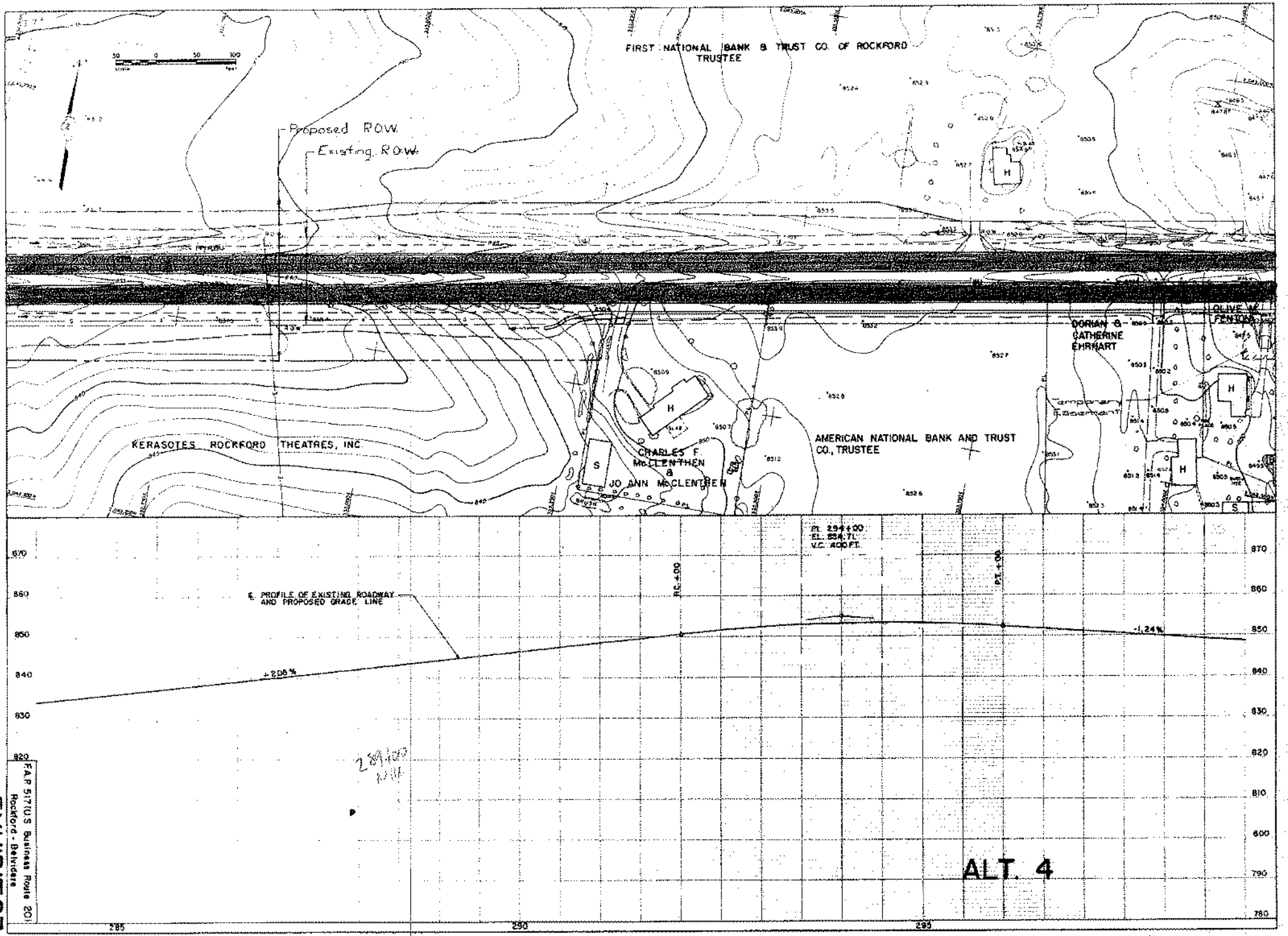
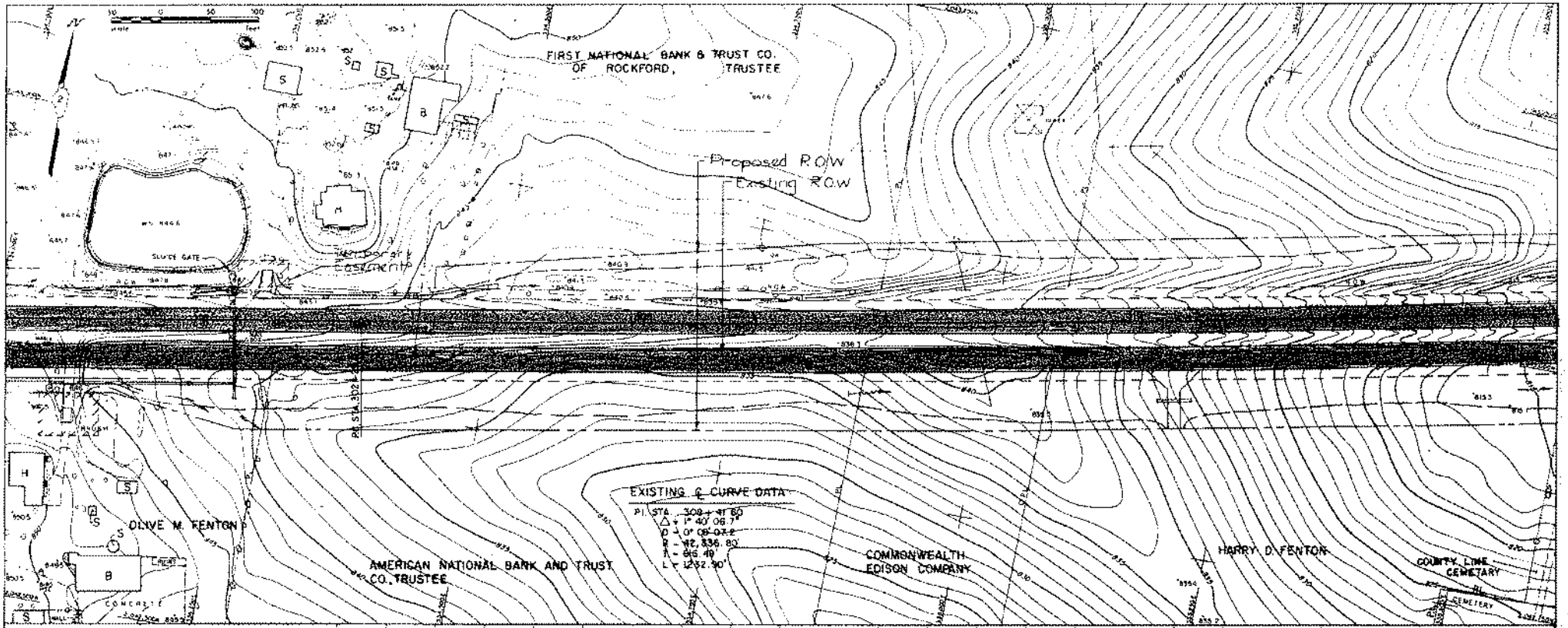
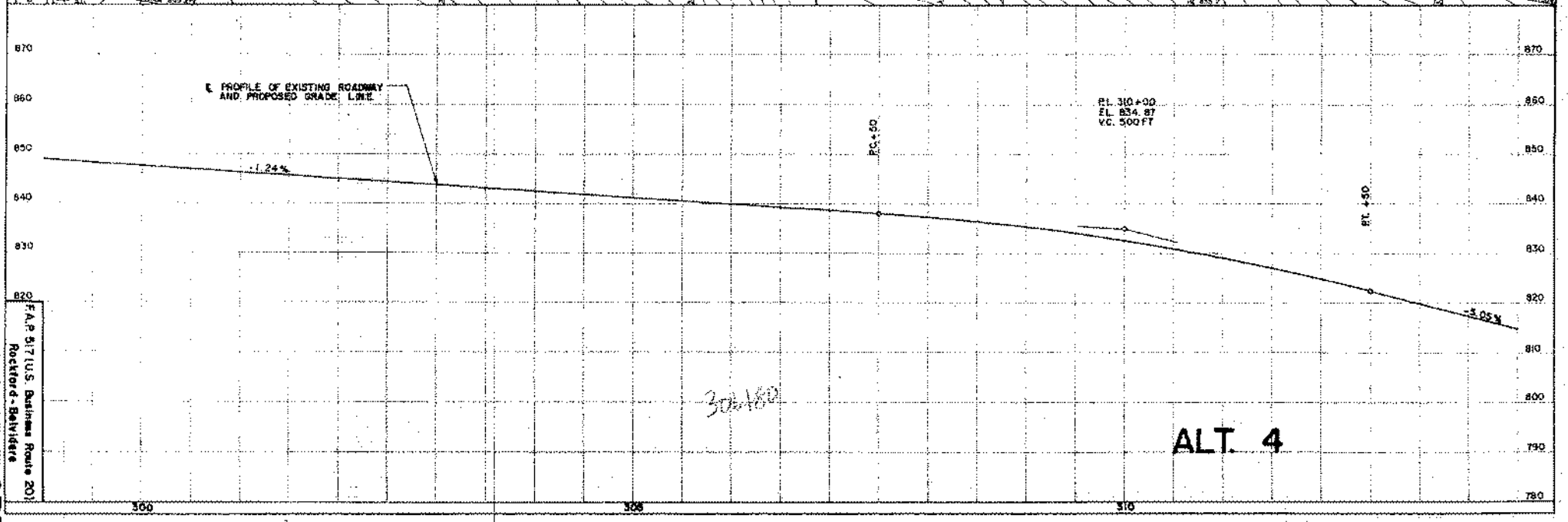

FIRST NATIONAL BANK & TRUST CO. OF ROCKFORD
TRUSTEE
Proposed R.O.W.
Existing R.O.W.
KERASOTES ROCKFORD THEATRES, INC
CHARLES F. McCLENTHEN & JO ANN McCLENTHEN
AMERICAN NATIONAL BANK AND TRUST CO., TRUSTEE
DORIAN G. & CATHERINE EHRHART
OLIVE W. FENTON
℄ PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
P.I. 294+00
EL. 854.71
V.C. 400 F.T.
P.C.+00
P.T.+00
+2.08%
-1.24%
870
860
850
840
830
820
810
800
790
780
285
290
295
ALT. 4
F.A.P. 517 U.S. Business Route 20
Rockford - Belvidere

EXHIBIT 23C



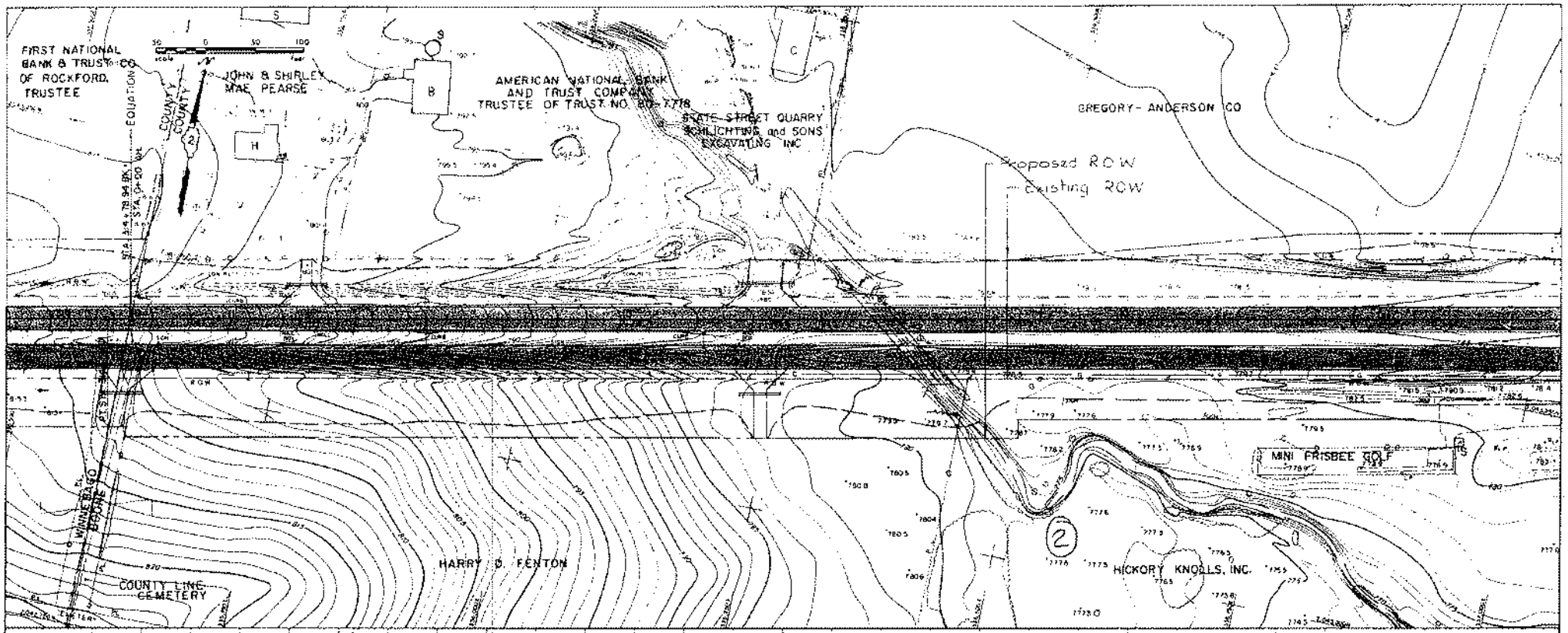


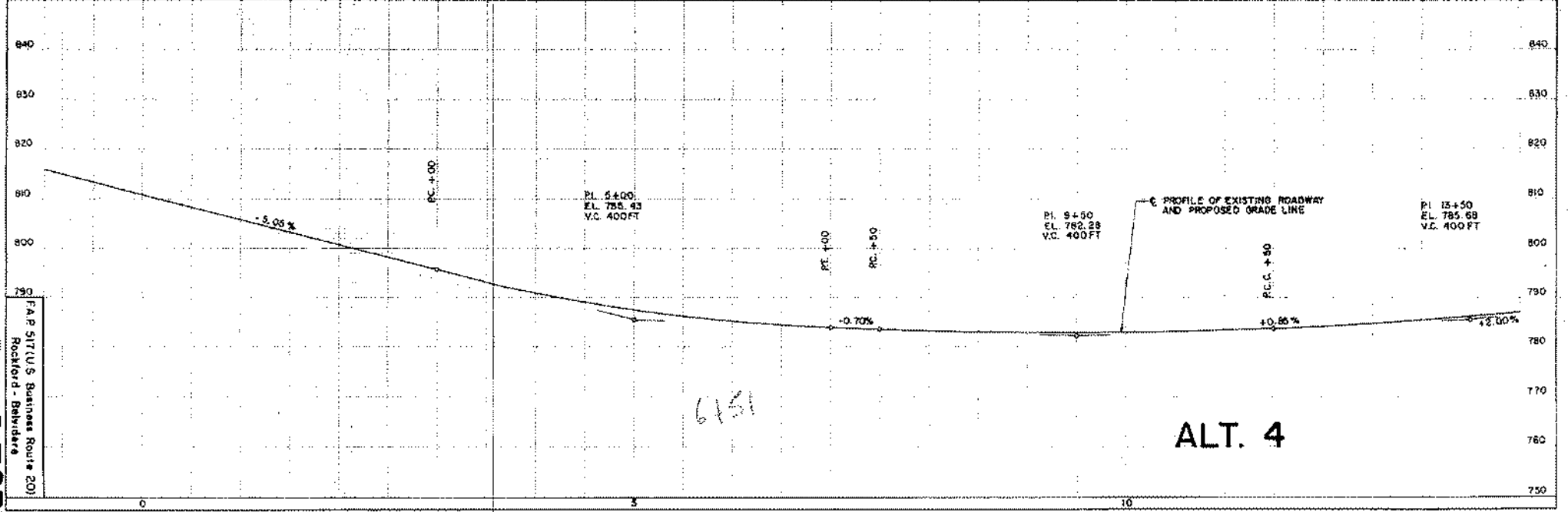
F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere

308+41.60

ALT. 4

EXHIBIT 23D



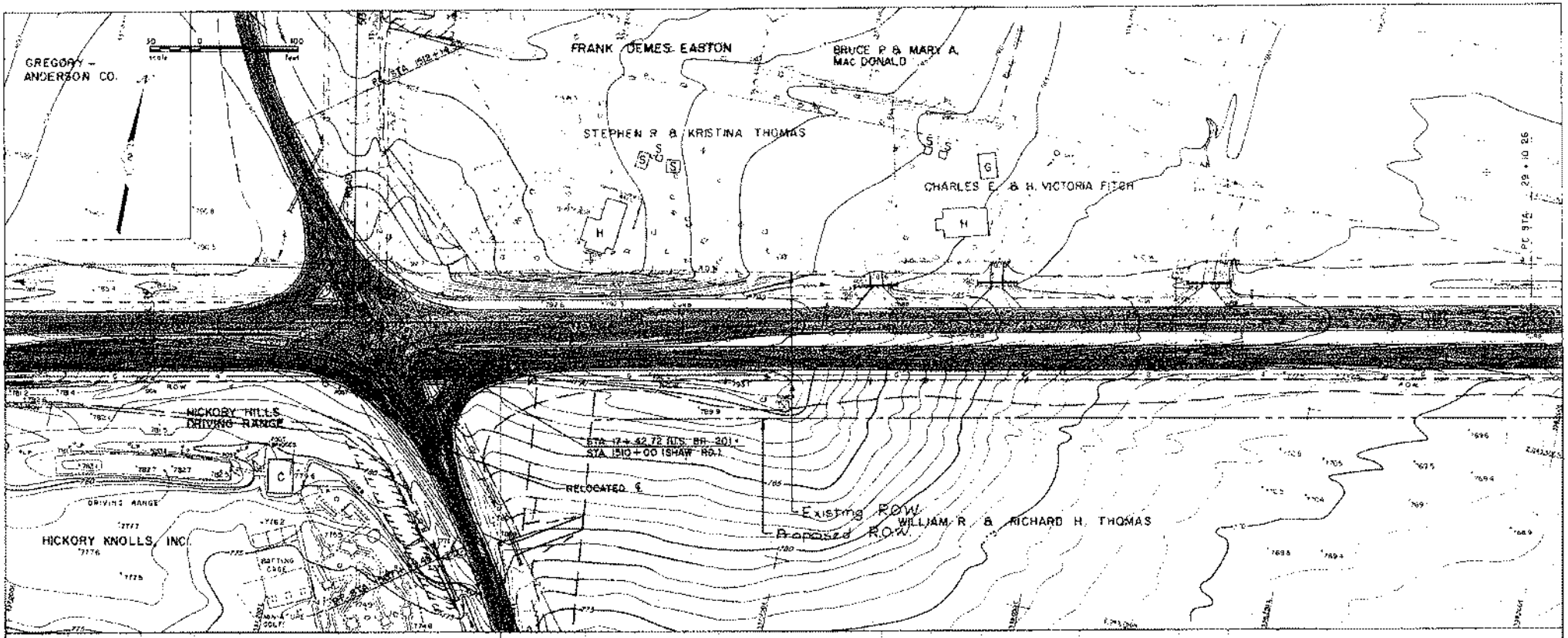


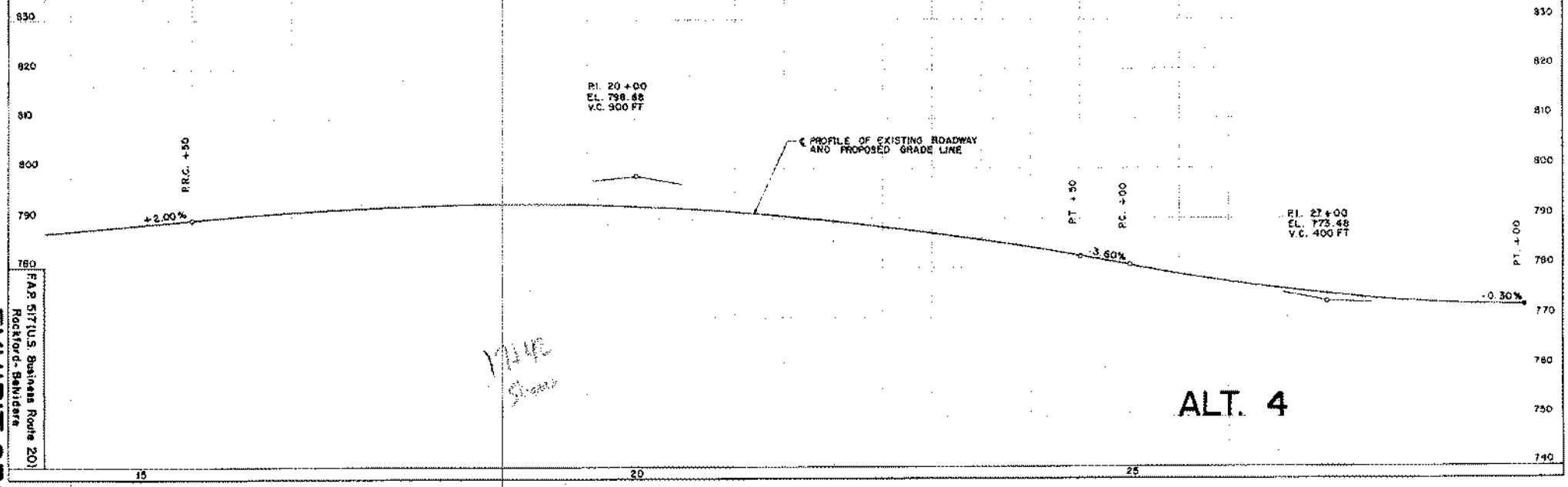
FAP 317 (U.S. Business Route 20)
Rockford - Belvidere

6151

ALT. 4

EXHIBIT 23E





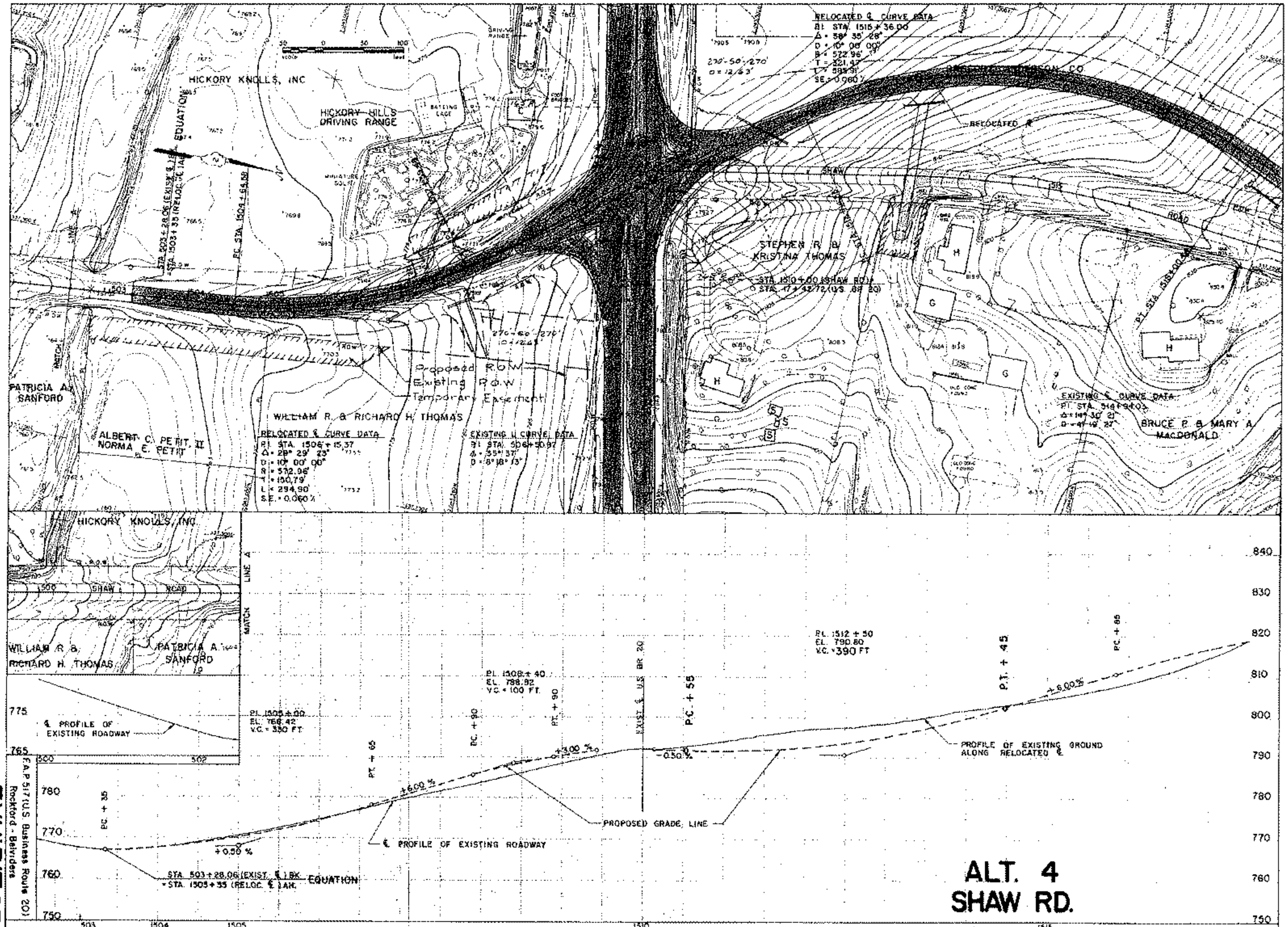
FAP 517 (U.S. Business Route 20)
Rockford - Belvidere

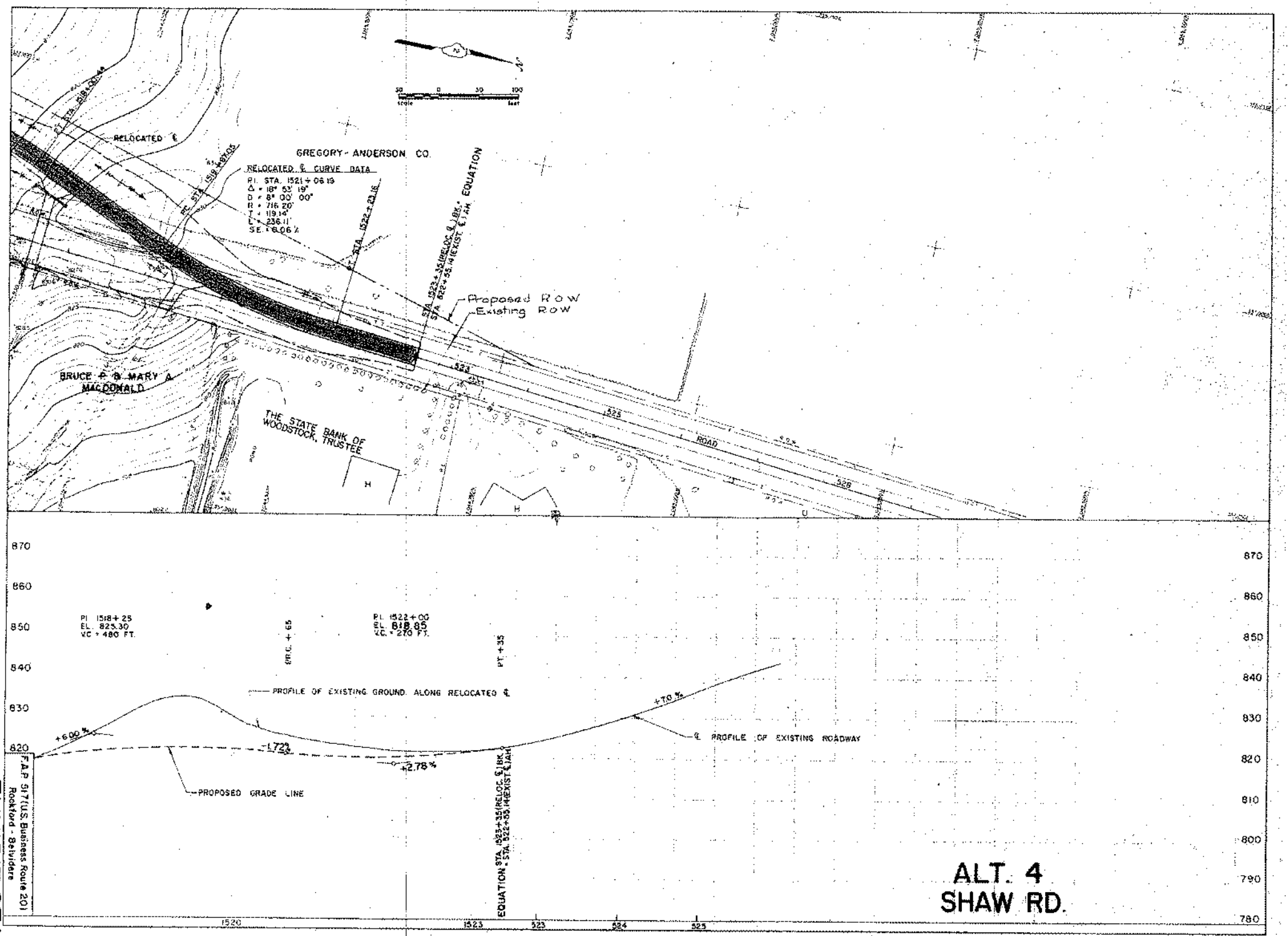
ALT. 4

EXHIBIT 23F

EXHIBIT 23G

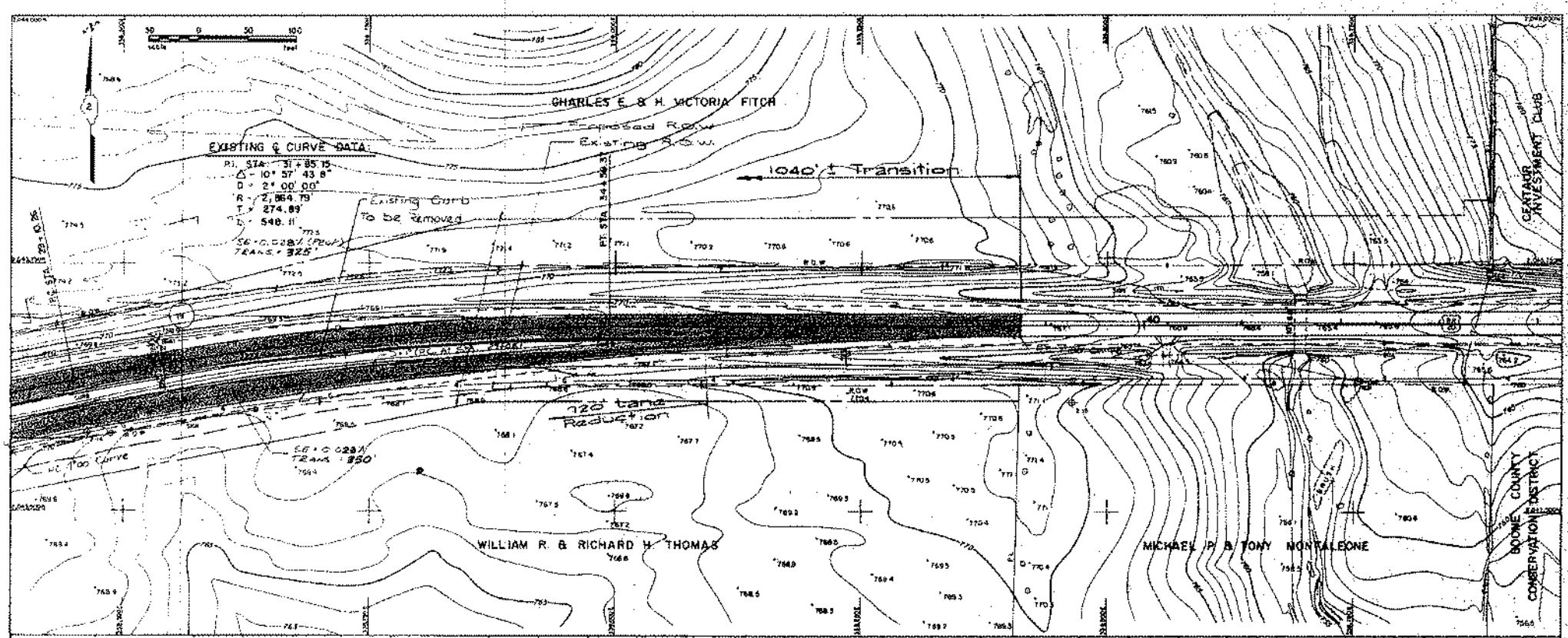
F.A.P. 517 (U.S. Business Route 20) Rockford - Belvidere





ALT. 4
SHAW RD.

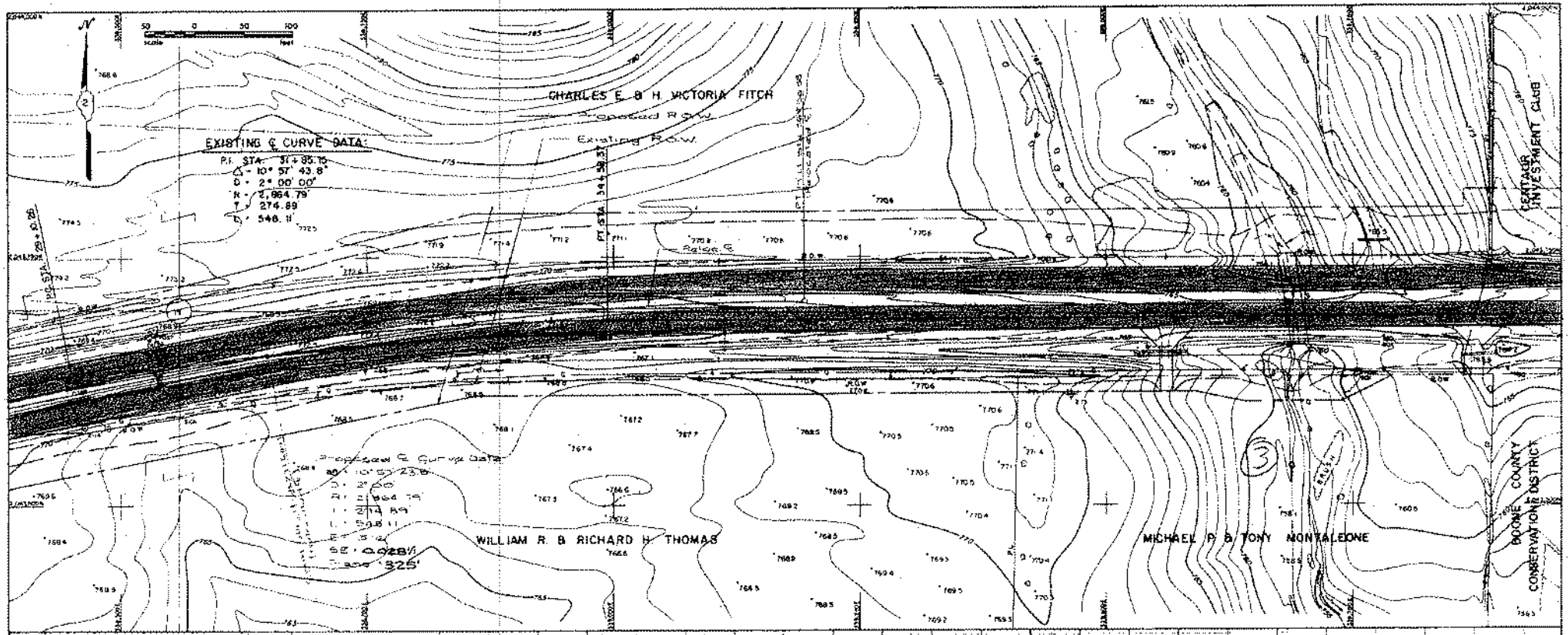
EXHIBIT 23H

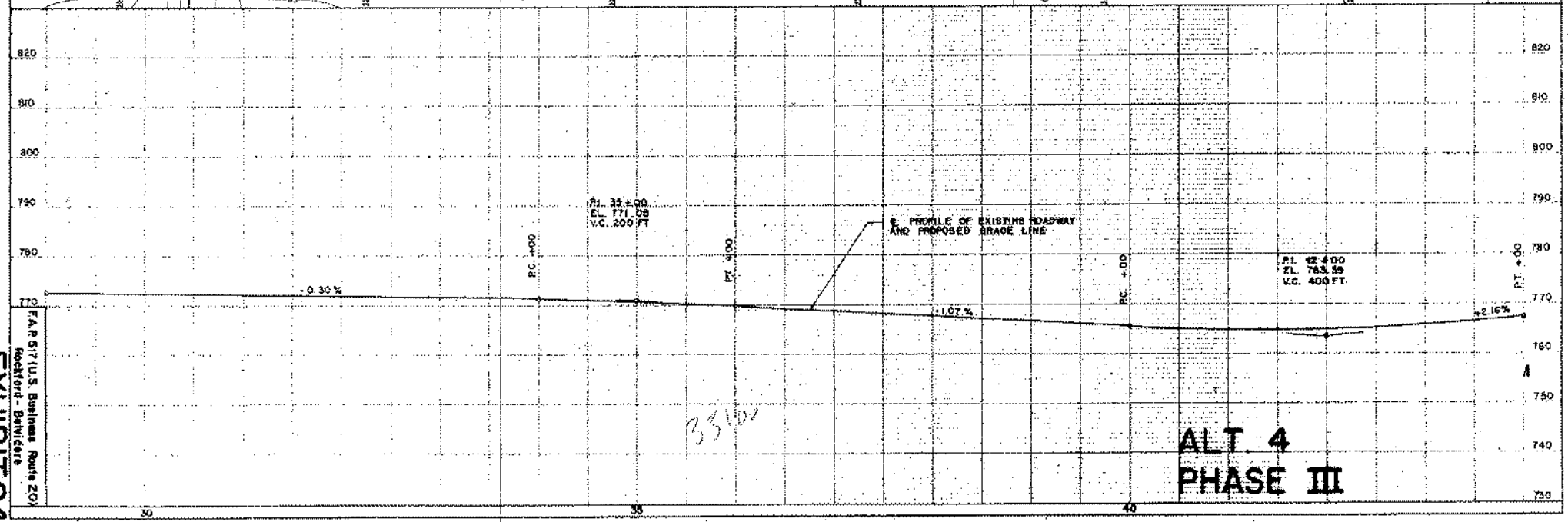


F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere

ALT. 4
PHASE I

EXHIBIT 231

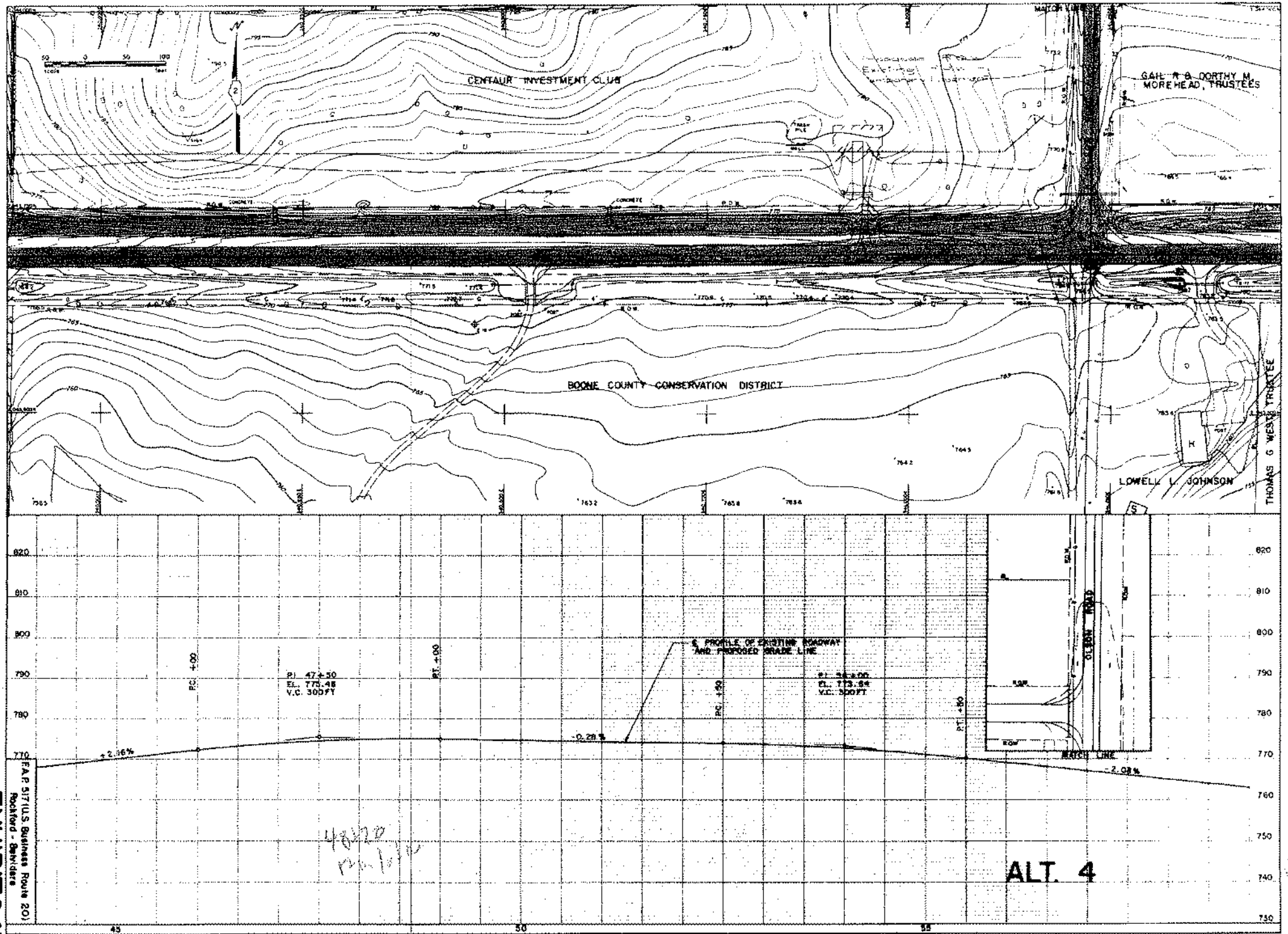




33+00

ALT 4
PHASE III

EXHIBIT 24A


CENTAUR INVESTMENT CLUB
GAIL R & DORTHY M. MOREHEAD, TRUSTEES
BOONE COUNTY CONSERVATION DISTRICT
LOWELL L. JOHNSON
THOMAS G WESSE TRUSTEE
OLSON ROAD
PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
P.I. 47+50
EL. 775.48
V.C. 300FT
P.I. 54+00
EL. 773.84
V.C. 300FT
+2.16%
-0.29%
-2.08%
MATCH LINE
F.A.P. 317 (U.S. Business Route 20)
Rockford - Belvidere
ALT. 4
EXHIBIT 24B

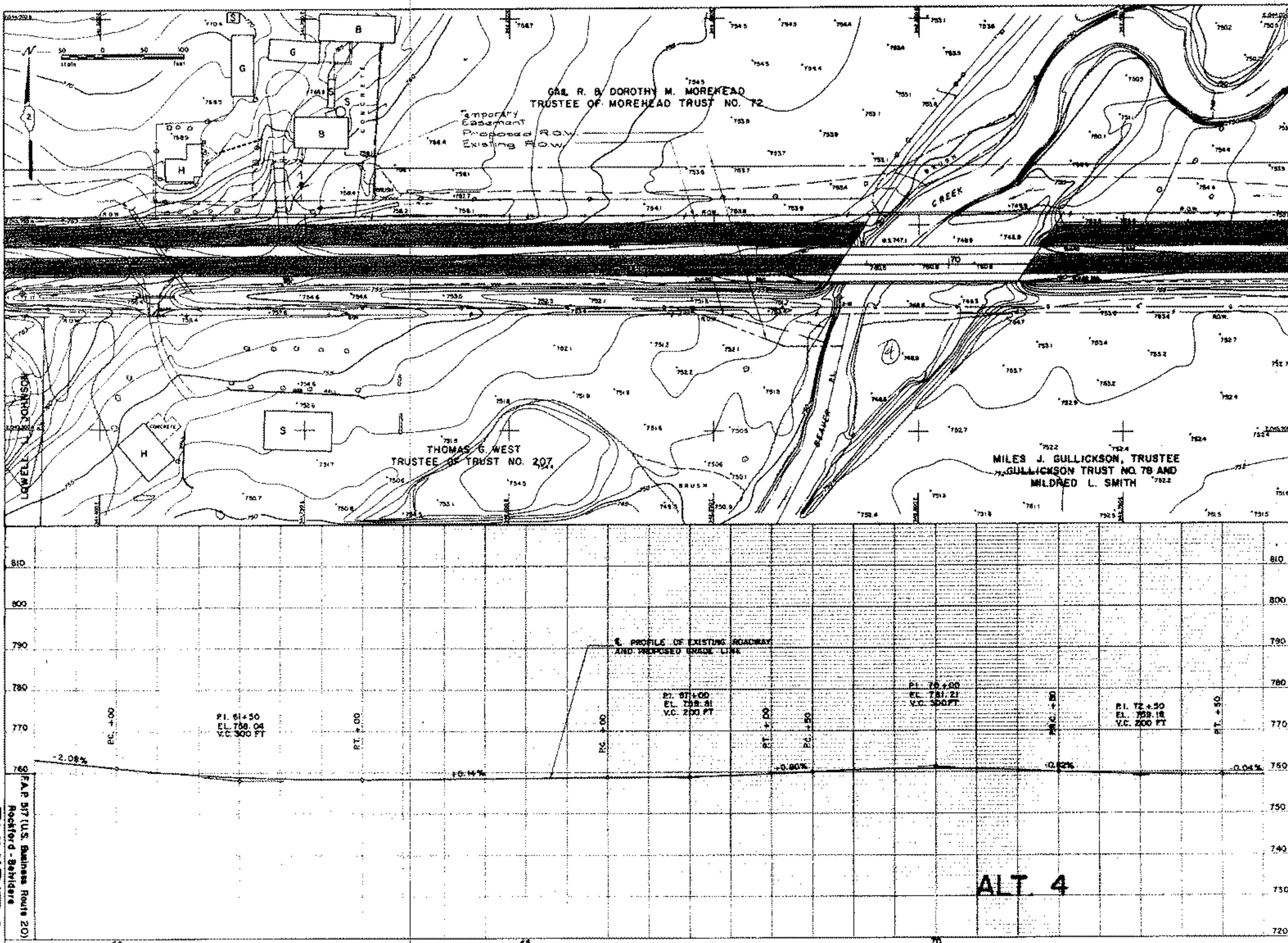
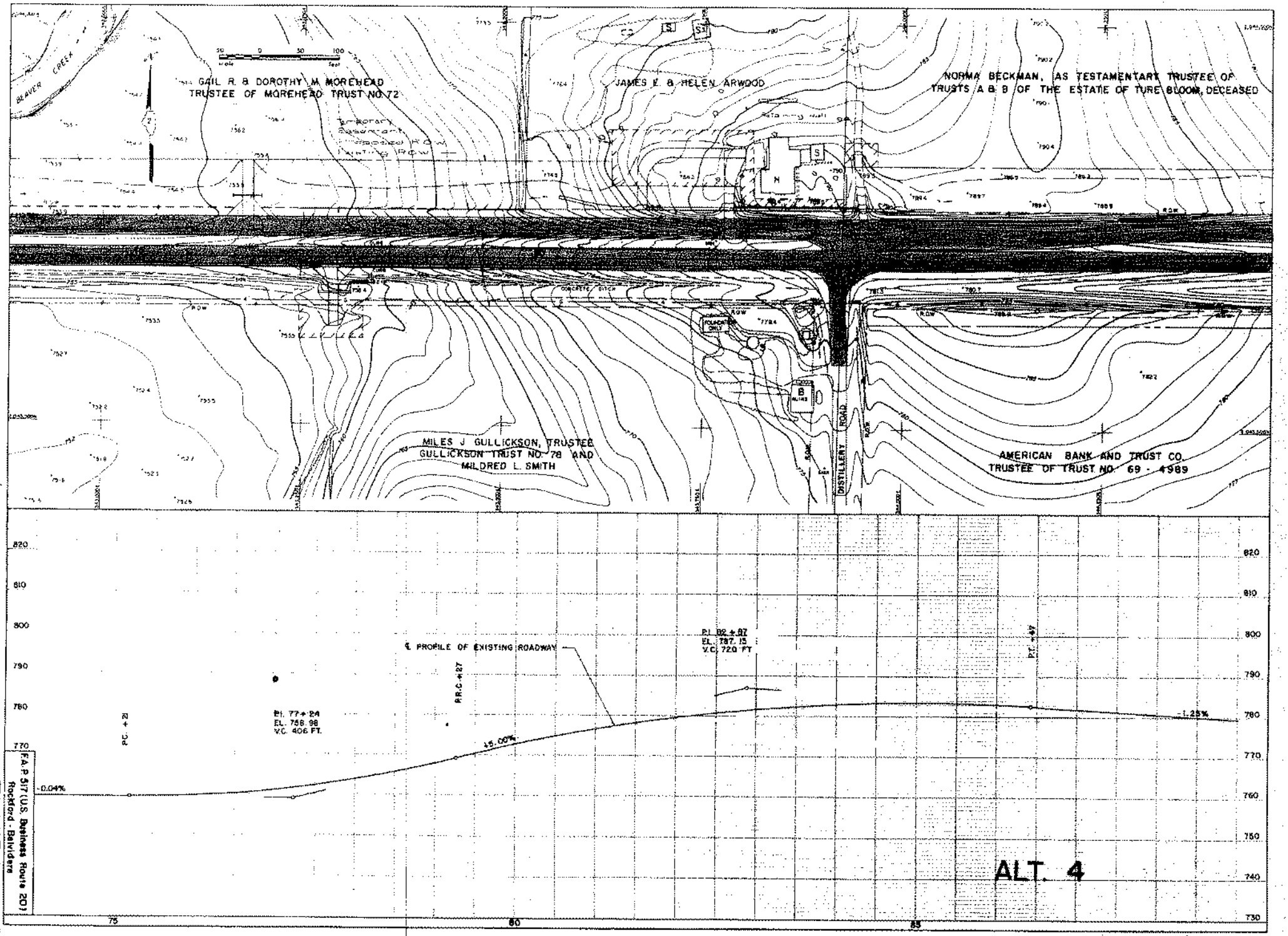
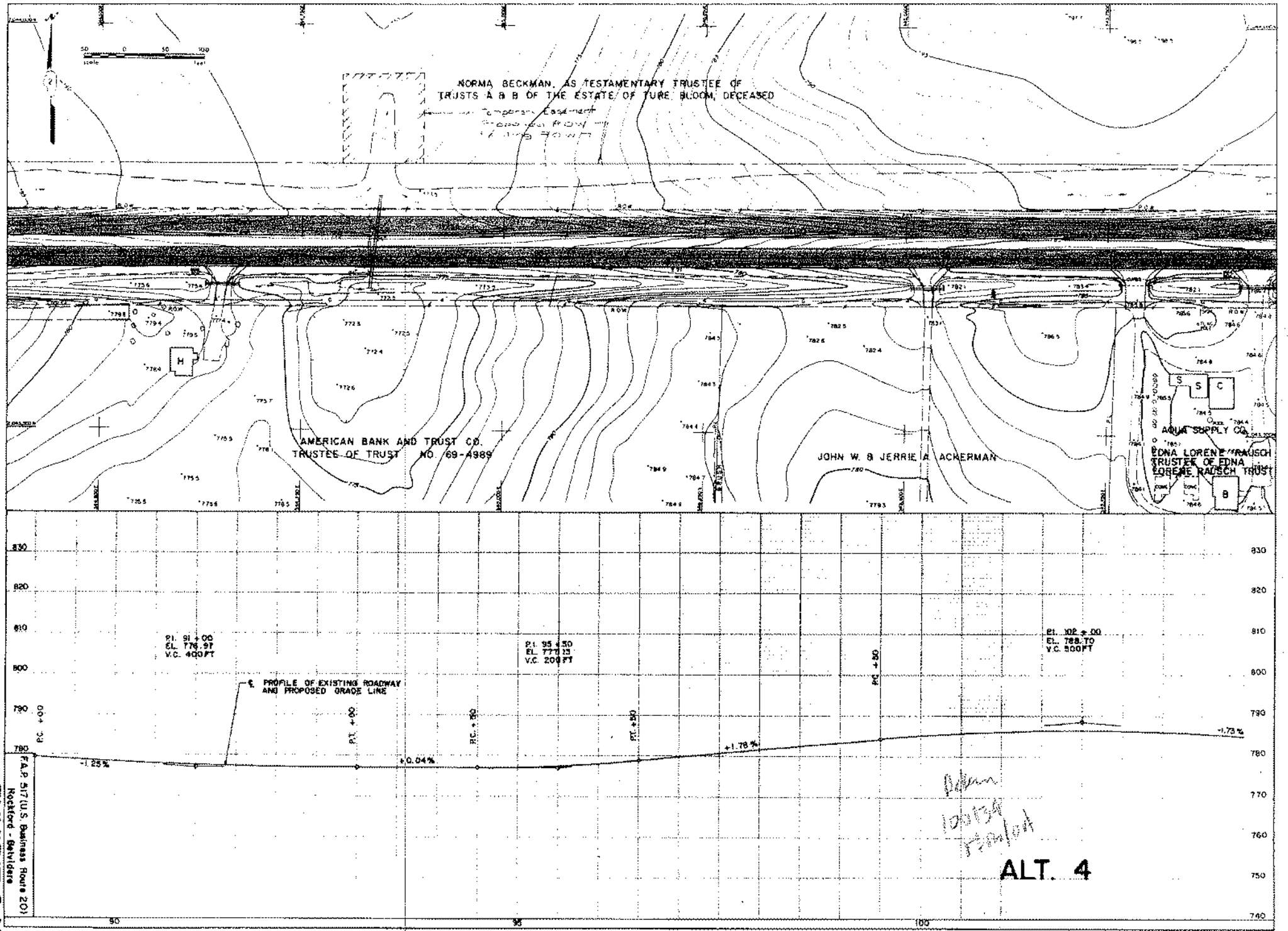

GAIL R. & DOROTHY M. MOREHEAD
TRUSTEE OF MOREHEAD TRUST NO. 72
Temporary Easement
Proposed R.O.W.
Existing R.O.W.
CREEK
BEAVER
THOMAS G. WEST
TRUSTEE OF TRUST NO. 207
MILES J. GULLICKSON, TRUSTEE
GULLICKSON TRUST NO. 78 AND
MILDRED L. SMITH
LOWELL L. JOHNSON
℄ PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
P.I. 61+50
EL. 758.04
V.C. 300 FT
P.I. 67+00
EL. 758.81
V.C. 200 FT
P.I. 70+00
EL. 761.21
V.C. 300 FT
P.I. 72+50
EL. 759.18
V.C. 200 FT
-2.08%
+0.14%
+0.80%
-0.82%
-0.04%
ALT. 4
F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere

EXHIBIT 24C


GAIL R. & DOROTHY M. MOREHEAD
TRUSTEE OF MOREHEAD TRUST NO. 72
JAMES E. & HELEN ARWOOD
NORMA BECKMAN, AS TESTAMENTARY TRUSTEE OF
TRUSTS A & B OF THE ESTATE OF TURE BLOOM, DECEASED
MILES J. GULLICKSON, TRUSTEE
GULLICKSON TRUST NO. 78 AND
MILDRED L. SMITH
AMERICAN BANK AND TRUST CO.
TRUSTEE OF TRUST NO. 69 - 4989
DISTILLERY ROAD
℄ PROFILE OF EXISTING ROADWAY
P.I. 82+87
EL. 787.15
V.C. 720 FT
P.I. 77+24
EL. 756.98
V.C. 406 FT.
P.R.C. 4+27
P.T. +97
-0.04%
+5.00%
-1.25%
820
810
800
790
780
770
760
750
740
730
75
80
85
F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere
EXHIBIT 24D
ALT. 4



ALT. 4

EXHIBIT 24E

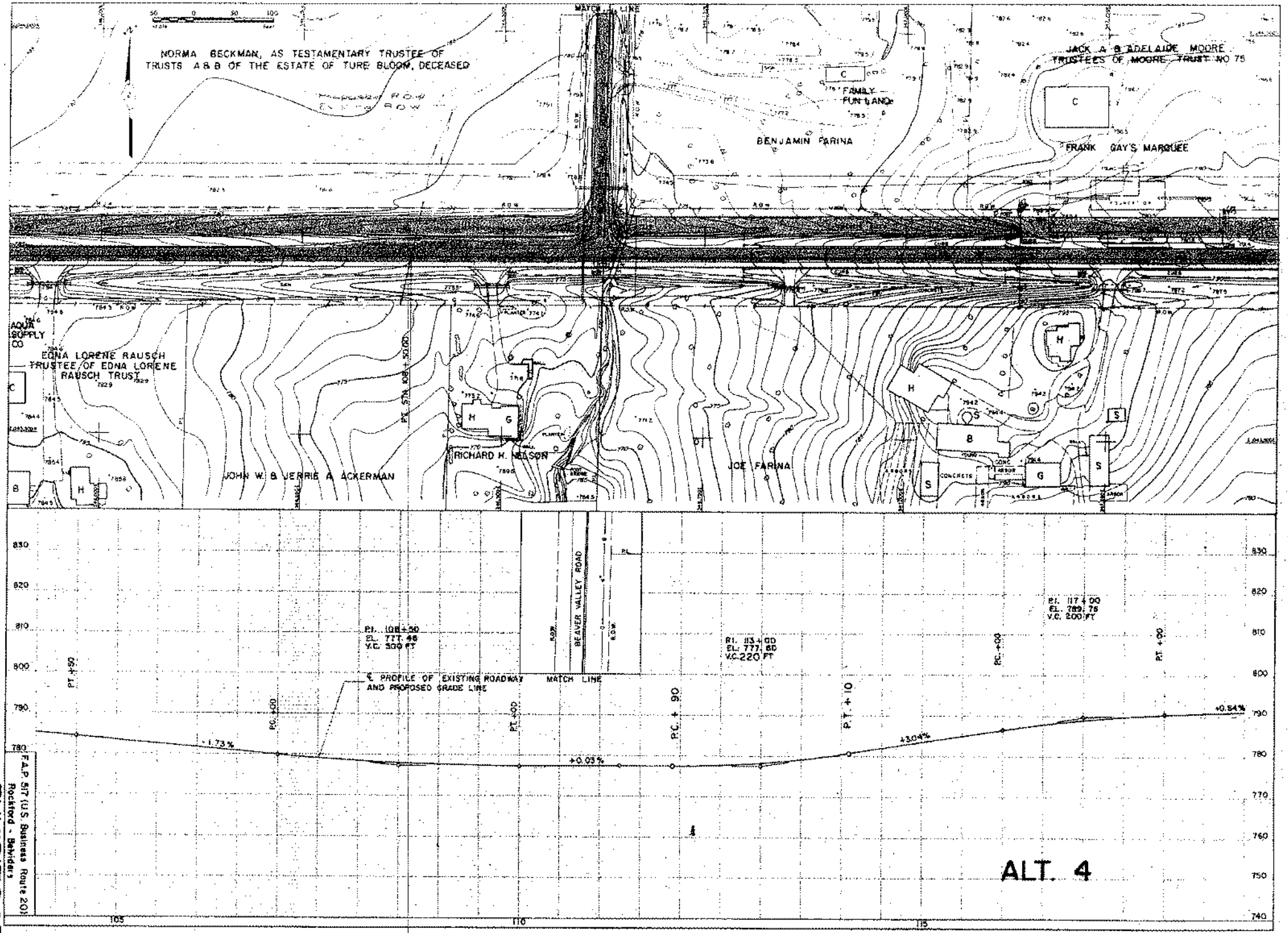
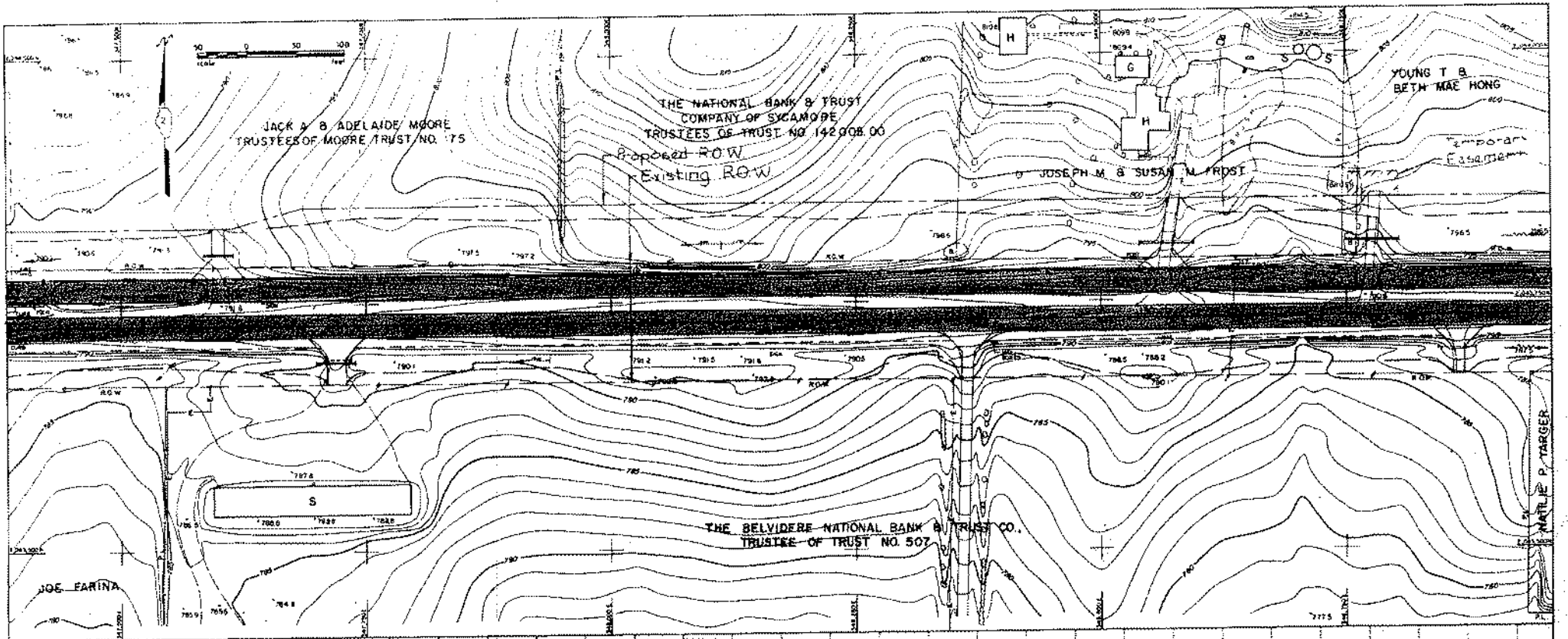
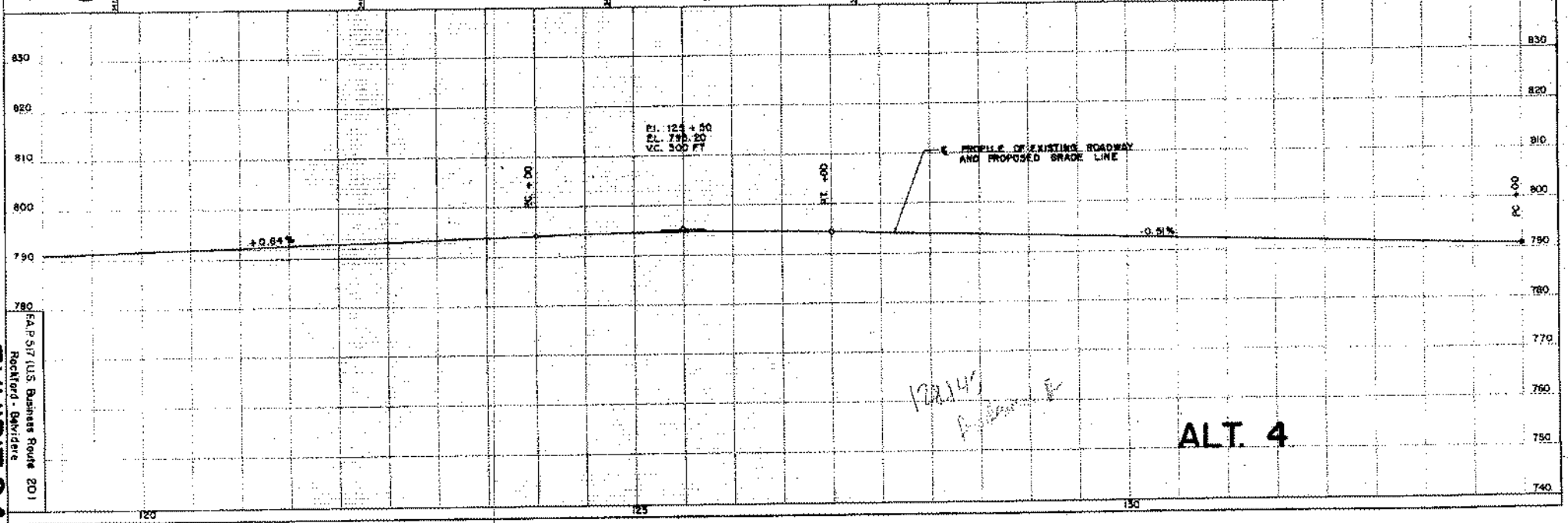

NORMA BECKMAN, AS TESTAMENTARY TRUSTEE OF TRUSTS A B & B OF THE ESTATE OF TURE BLOOM, DECEASED
JACK A & ADELAIDE MOORE TRUSTEES OF MOORE TRUST NO 75
FAMILY FUN LAND
BENJAMIN FARINA
FRANK GAY'S MARQUEE
AQUA SUPPLY CO
EDNA LORENE RAUSCH TRUSTEE OF EDNA LORENE RAUSCH TRUST
JOHN W. & JERRIE A. ACKERMAN
RICHARD H. NELSON
JOE FARINA
BEAVER VALLEY ROAD
MATCH LINE
℄ PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
P.I. 108+50
EL. 777.46
V.C. 500 FT
P.I. 113+00
EL. 777.60
V.C. 220 FT
P.I. 117+00
EL. 789.76
V.C. 200 FT
P.T. +50
P.C. +00
P.T. +00
P.C. + 90
P.T. + 10
P.C. +00
P.T. +00
-1.73%
+0.05%
+4.04%
+0.84%
830
820
810
800
790
780
770
760
750
740
105
110
115
F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere
ALT. 4

EXHIBIT 24F



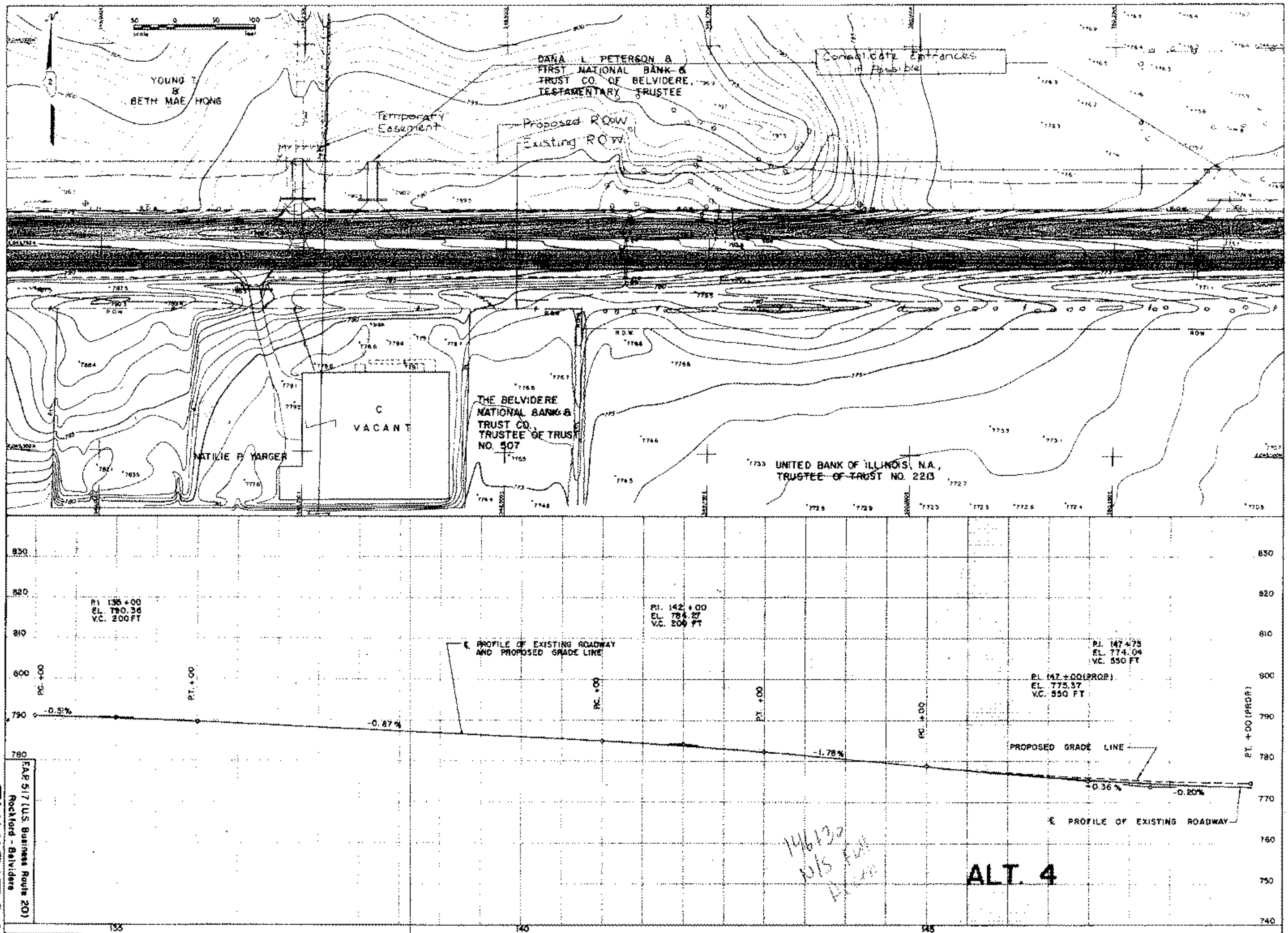


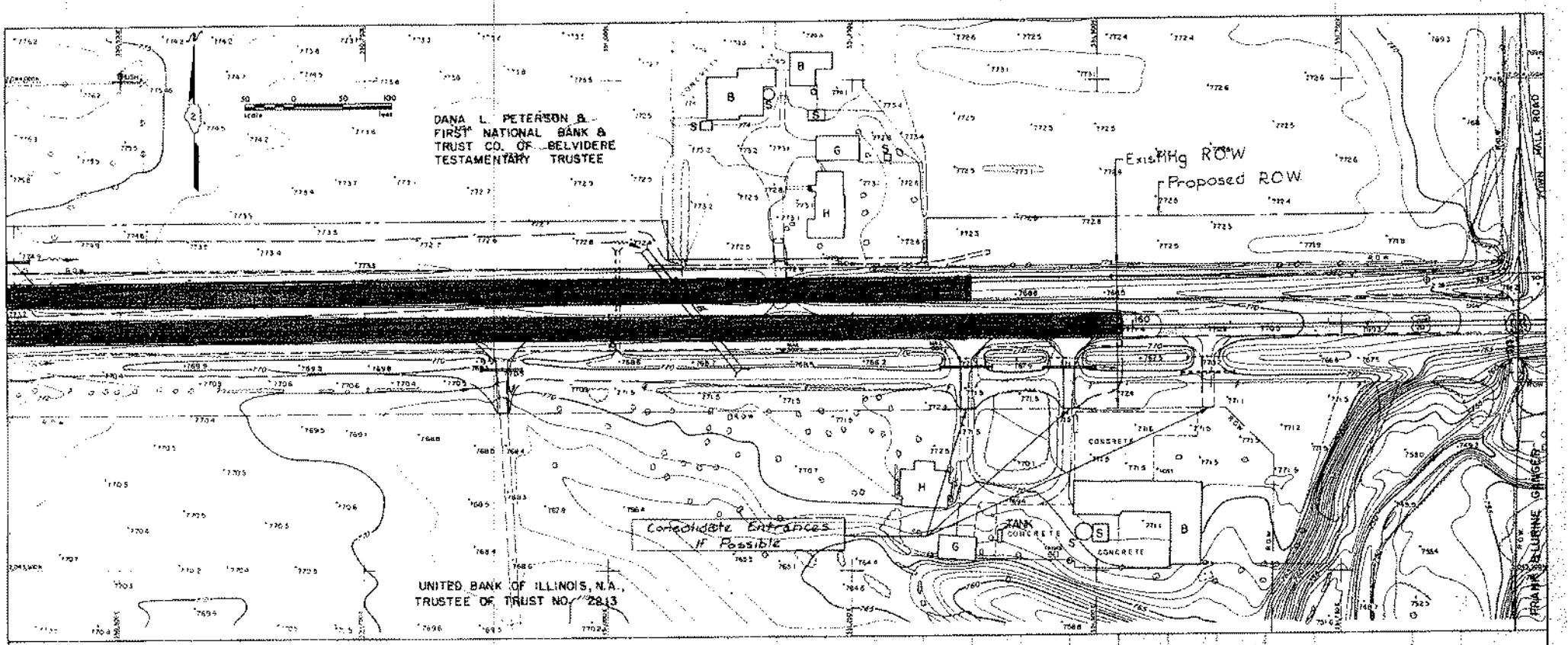
F.A.P. 317 (U.S. Business Route 20)
Rockford - Belvidere

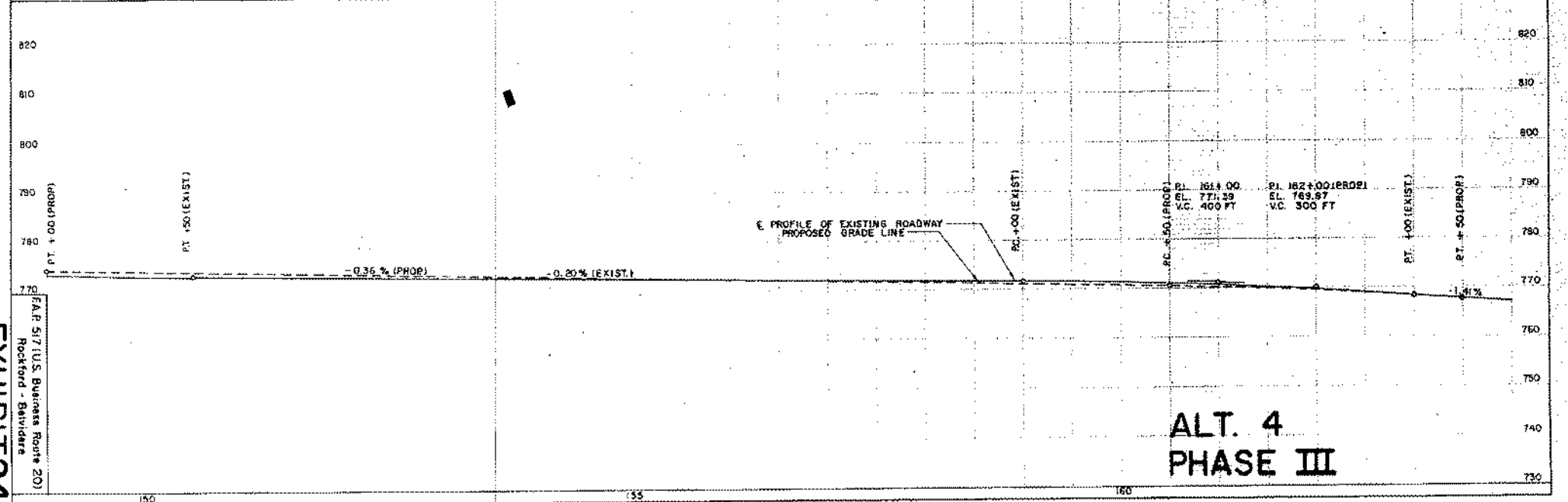
ALT. 4

EXHIBIT 24G

EXHIBIT24H


YOUNG T. & BETH MAE HONG
DANA L. PETERSON & FIRST NATIONAL BANK & TRUST CO. OF BELVIDERE, TESTAMENTARY TRUSTEE
Consolidate Entrances if Possible
Temporary Easement
Proposed ROW
Existing ROW
R.O.W.
C VACANT
NATILIE P. YARGER
THE BELVIDERE NATIONAL BANK & TRUST CO., TRUSTEE OF TRUST NO. 507
UNITED BANK OF ILLINOIS, N.A., TRUSTEE OF TRUST NO. 2213
P.I. 135+00 EL. 790.36 V.C. 200 FT
P.I. 142+00 EL. 784.27 V.C. 200 FT
℄ PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
P.I. 147+75 EL. 774.04 V.C. 550 FT
P.I. 147+00 (PROP.) EL. 775.37 V.C. 550 FT
-0.51%
-0.87%
-1.78%
-0.36%
-0.20%
PROPOSED GRADE LINE
℄ PROFILE OF EXISTING ROADWAY
ALT. 4
FAP 517 (U.S. Business Route 20) Rockford - Belvidere
135
140
145

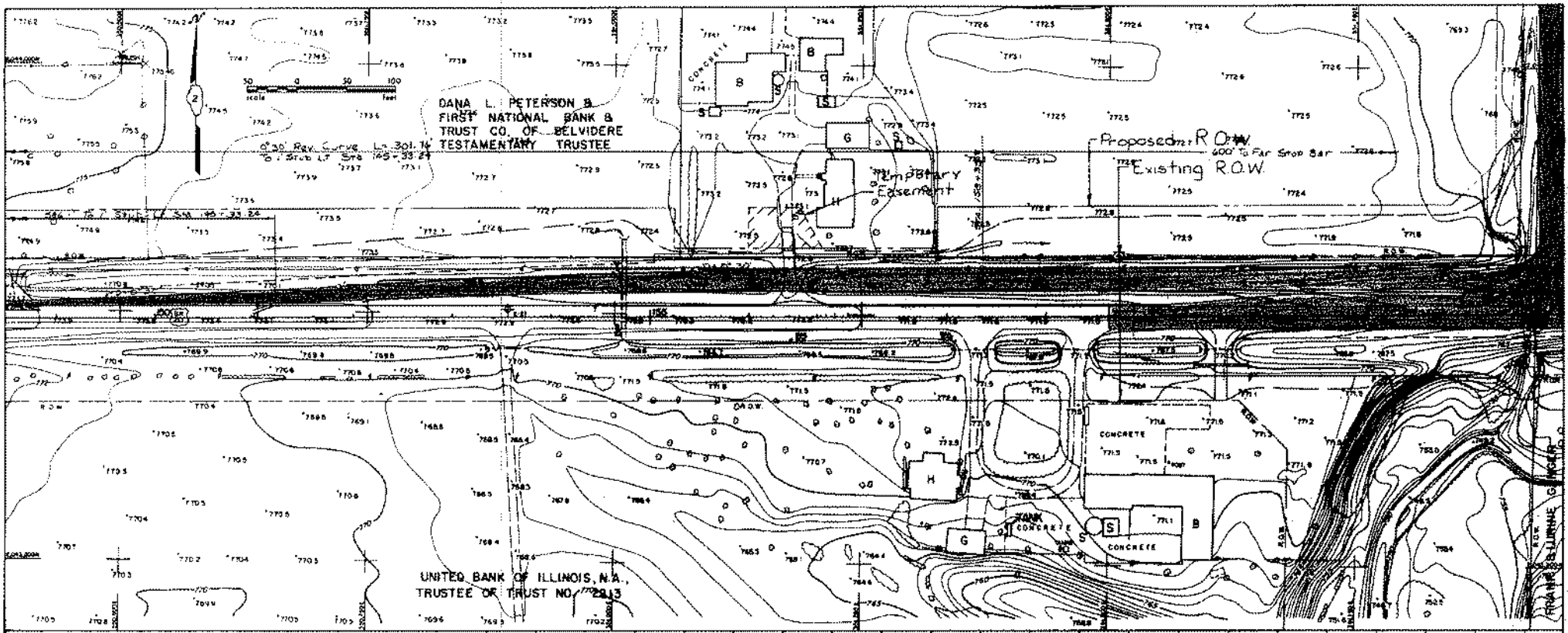


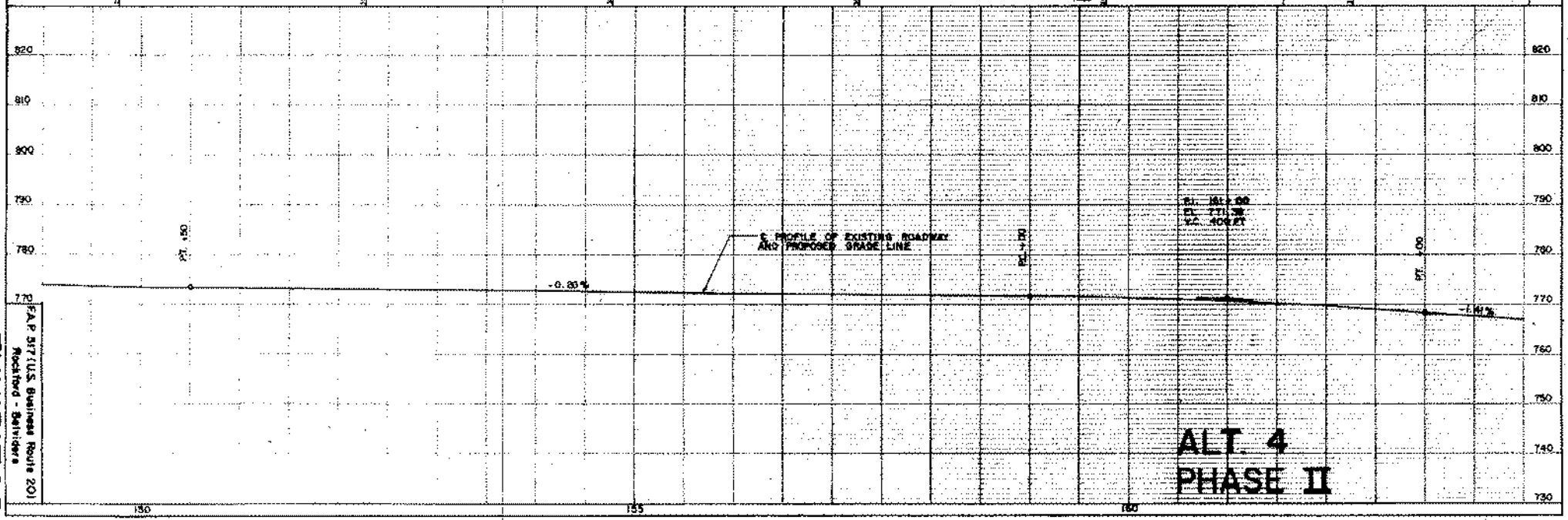


ALT. 4
PHASE III

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

EXHIBIT 24





ALT. 4
PHASE II

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

EXHIBIT 25A

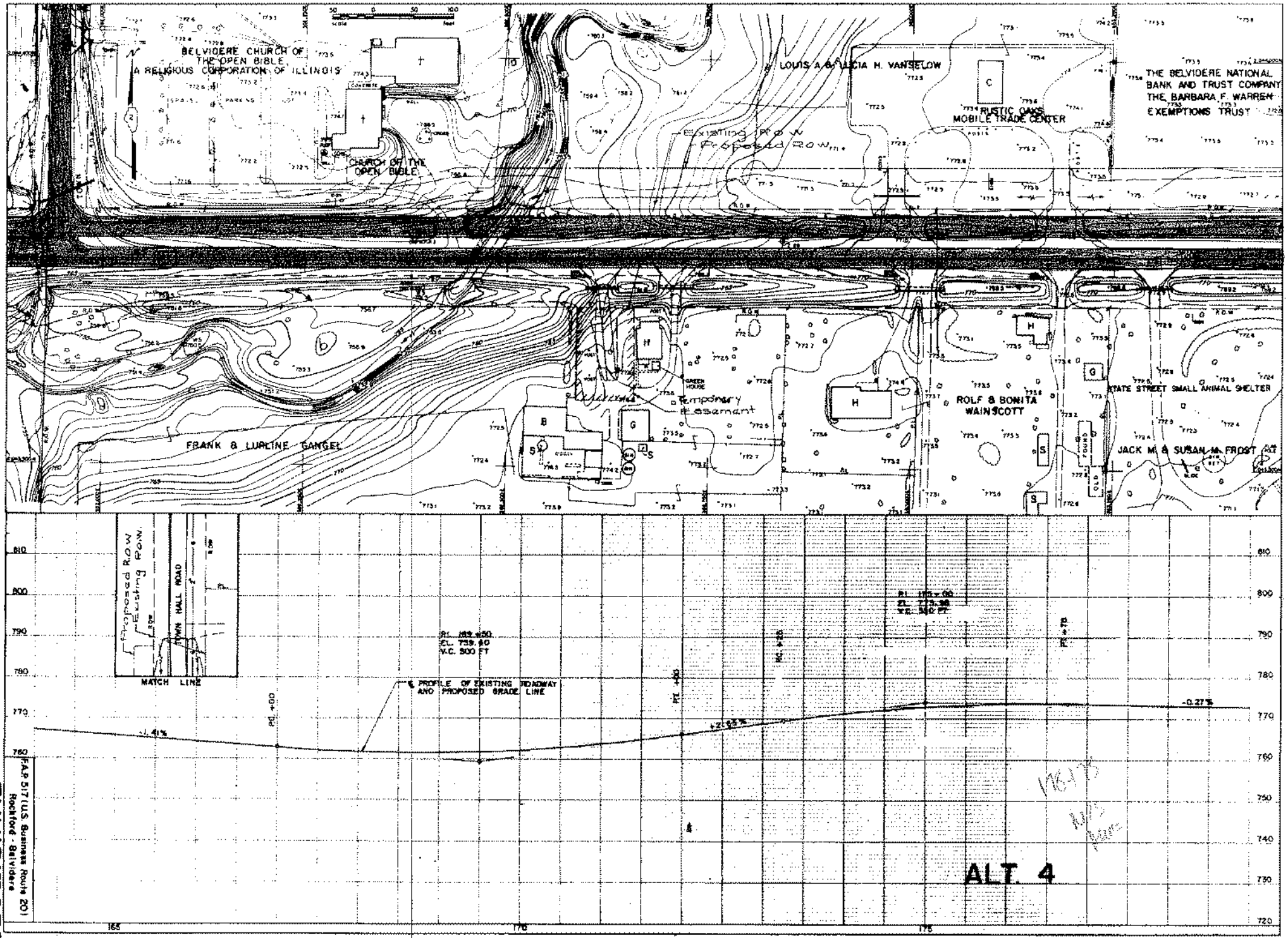
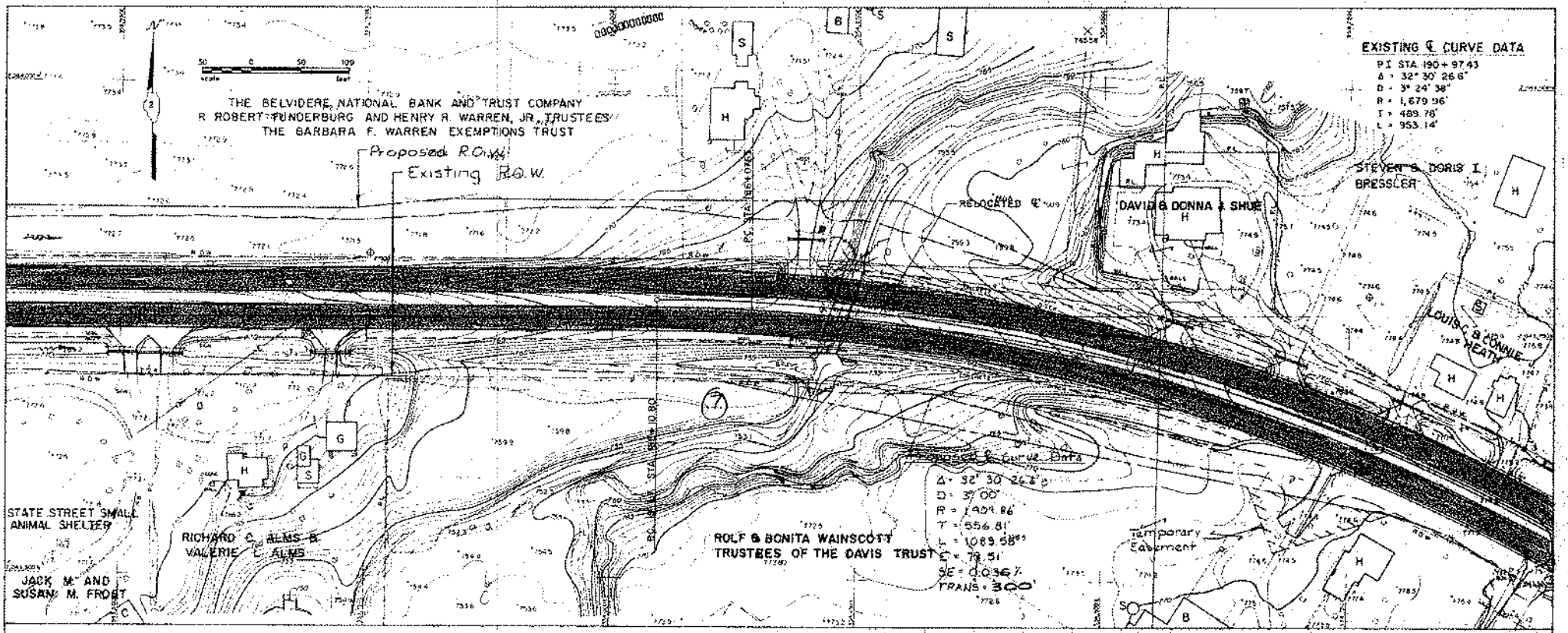
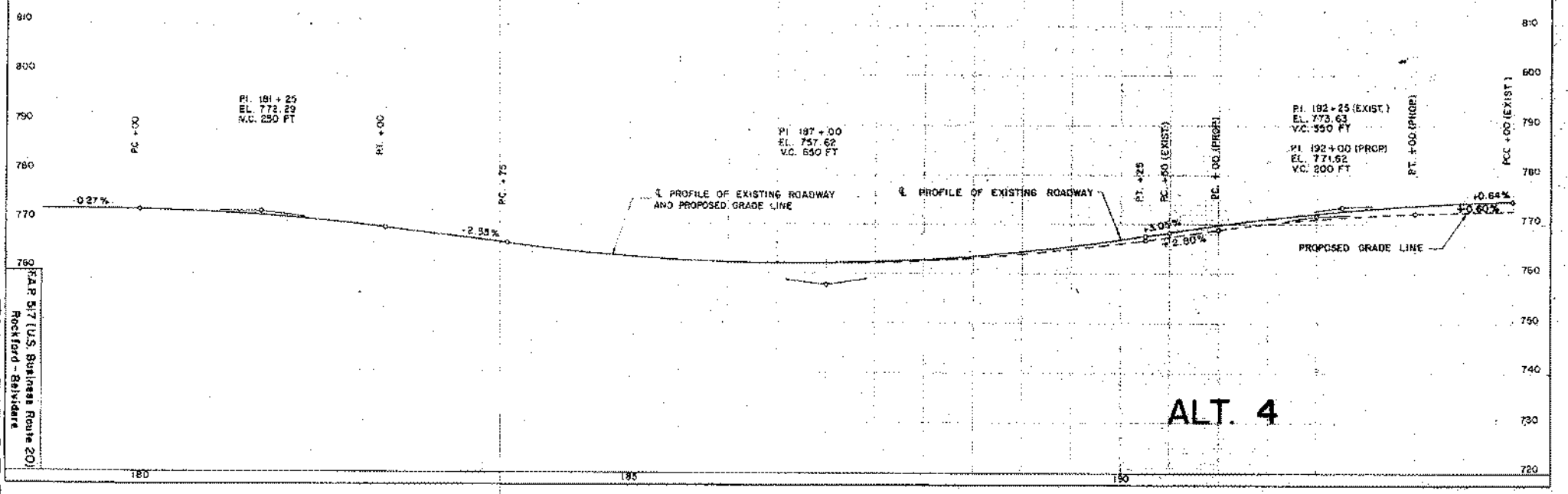

BELVIDERE CHURCH OF THE OPEN BIBLE, A RELIGIOUS CORPORATION OF ILLINOIS
CHURCH OF THE OPEN BIBLE
LOUIS A. & LUCIA H. VANSELOW
RUSTIC OAKS MOBILE TRADE CENTER
THE BELVIDERE NATIONAL BANK AND TRUST COMPANY THE BARBARA F. WARREN EXEMPTIONS TRUST
Existing R.O.W.
Proposed R.O.W.
Temporary Easement
ROLF & SONITA WAINSCOTT
STATE STREET SMALL ANIMAL SHELTER
JACK M. & SUSAN M. FROST
FRANK & LURLINE GANGEL
Proposed R.O.W.
Existing R.O.W.
TOWN HALL ROAD
MATCH LINE
℄ PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
-1.41%
+2.65%
-0.27%
ALT. 4
F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere

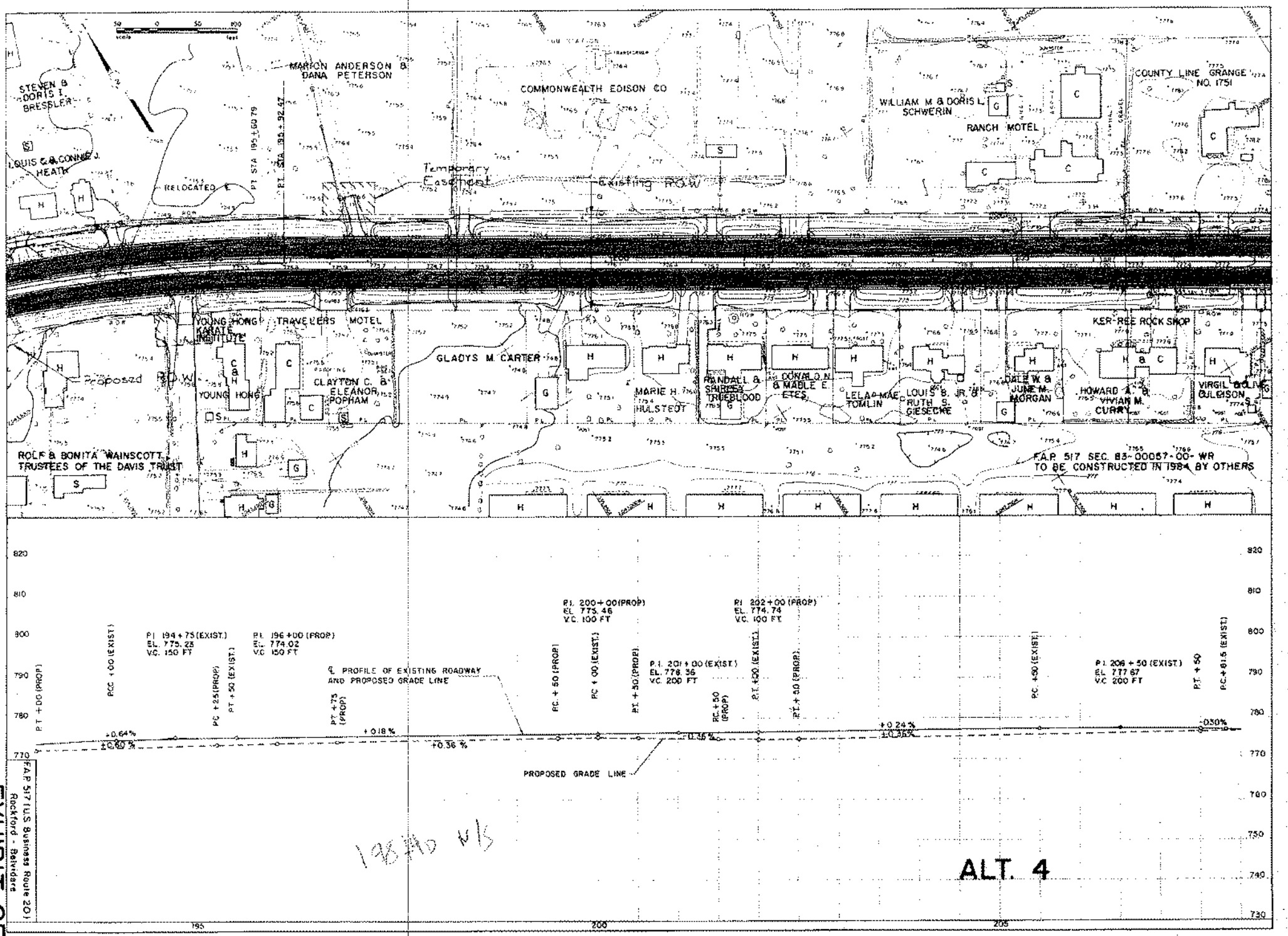
EXHIBIT 25B





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

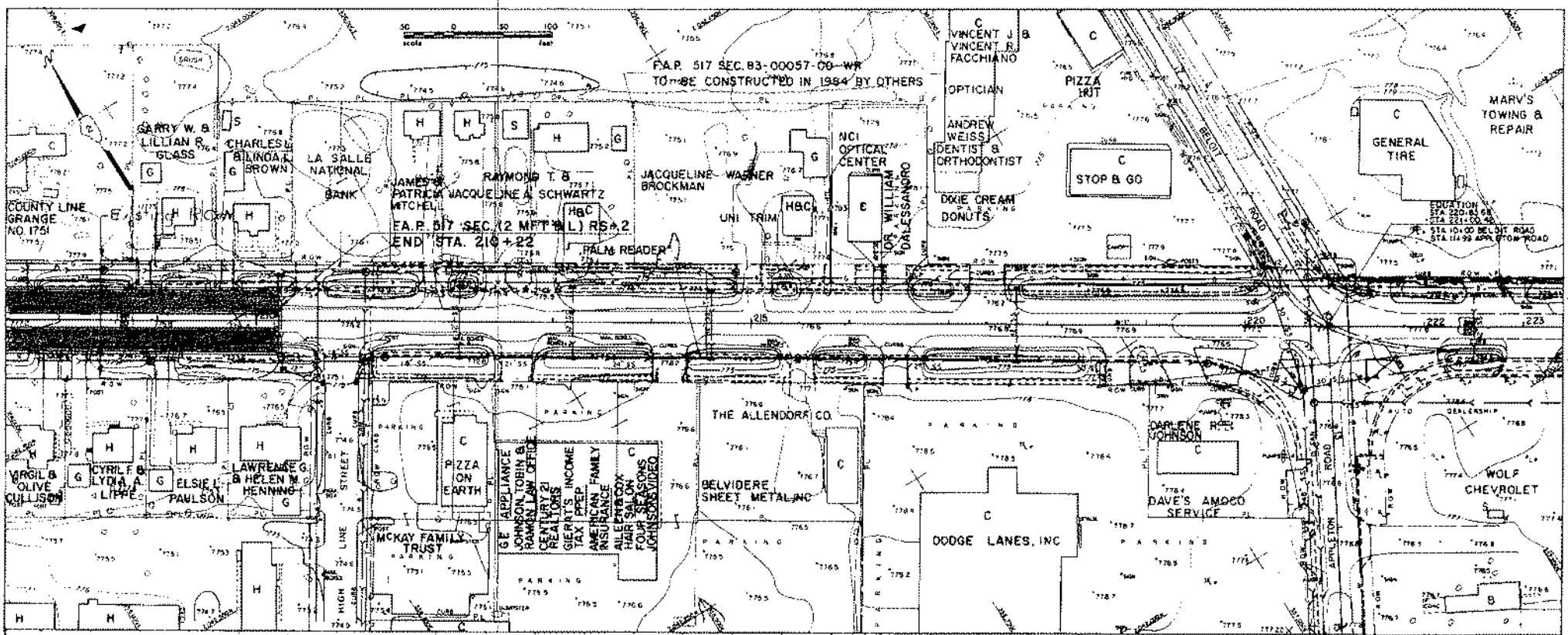
EXHIBIT 25C

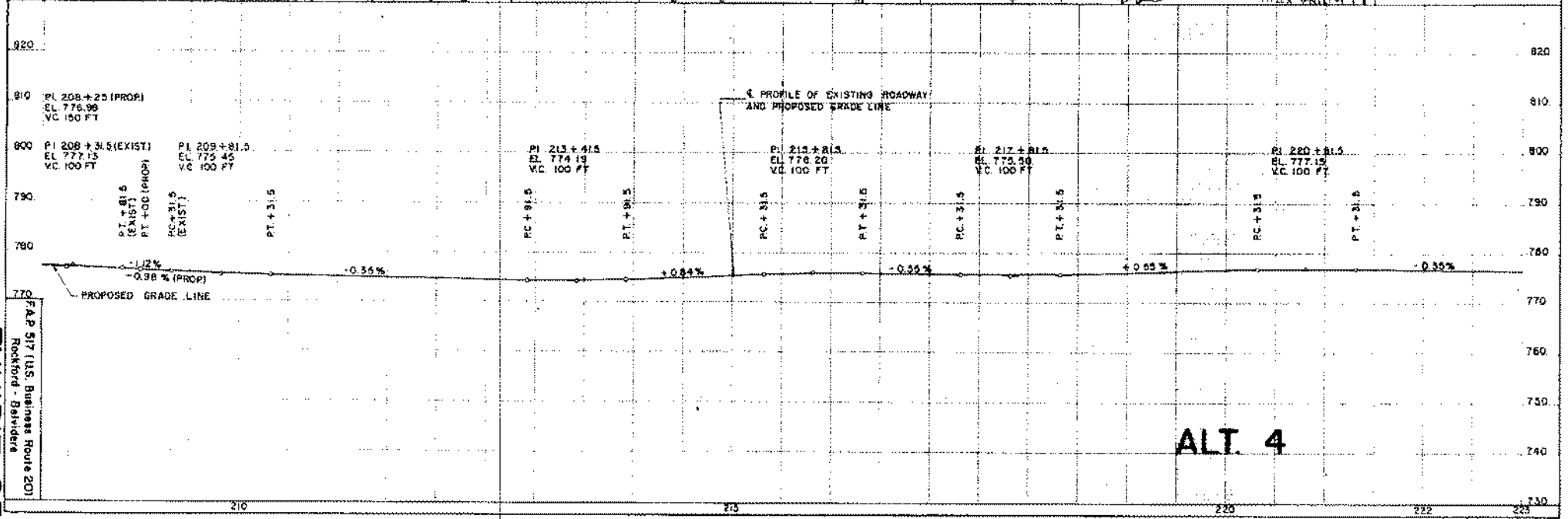


F.A.P. 517 (U.S. Business Route 20) Rockford - Belvidere

EXHIBIT 25D

ALT. 4

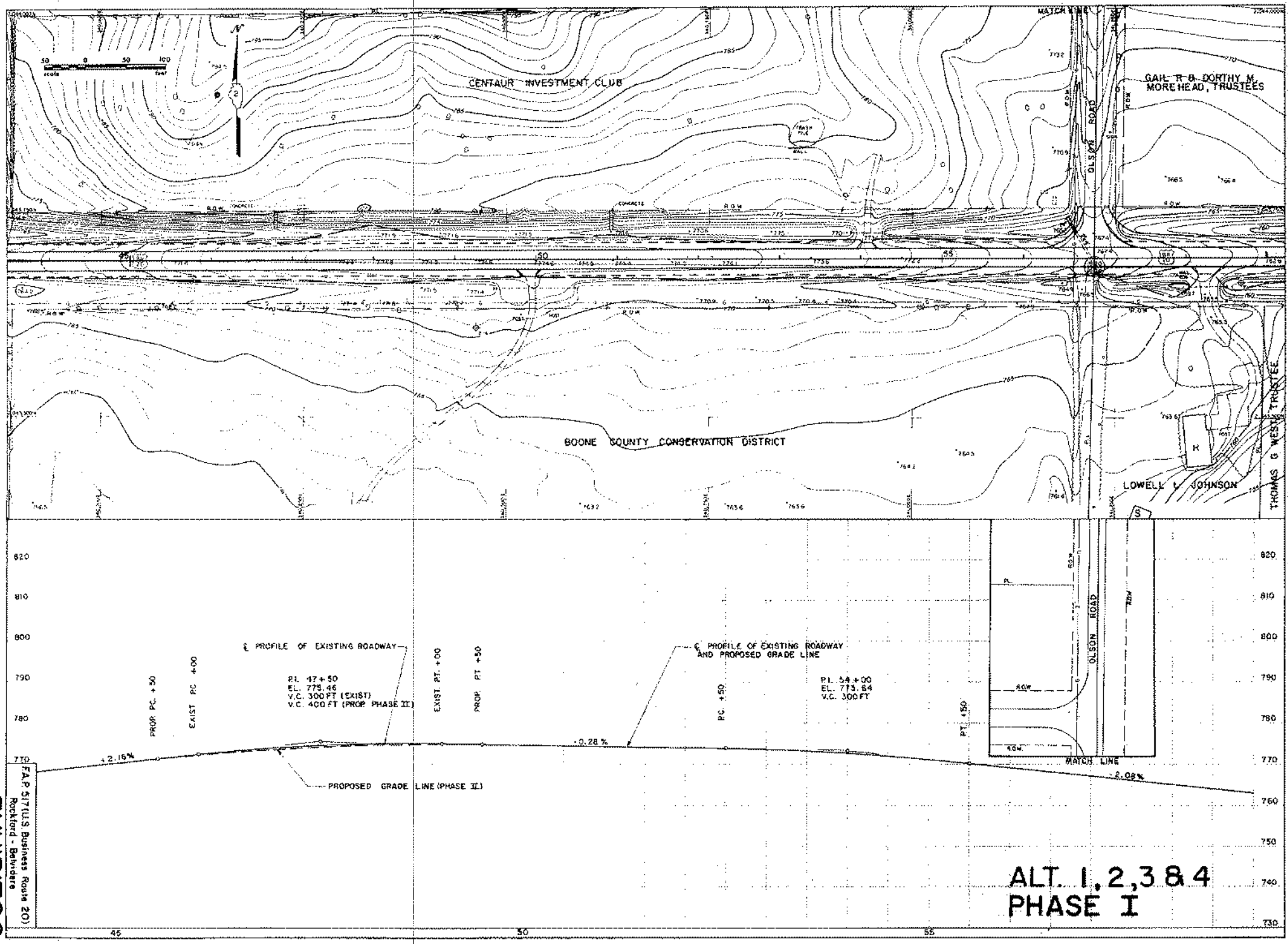




ALT. 4

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

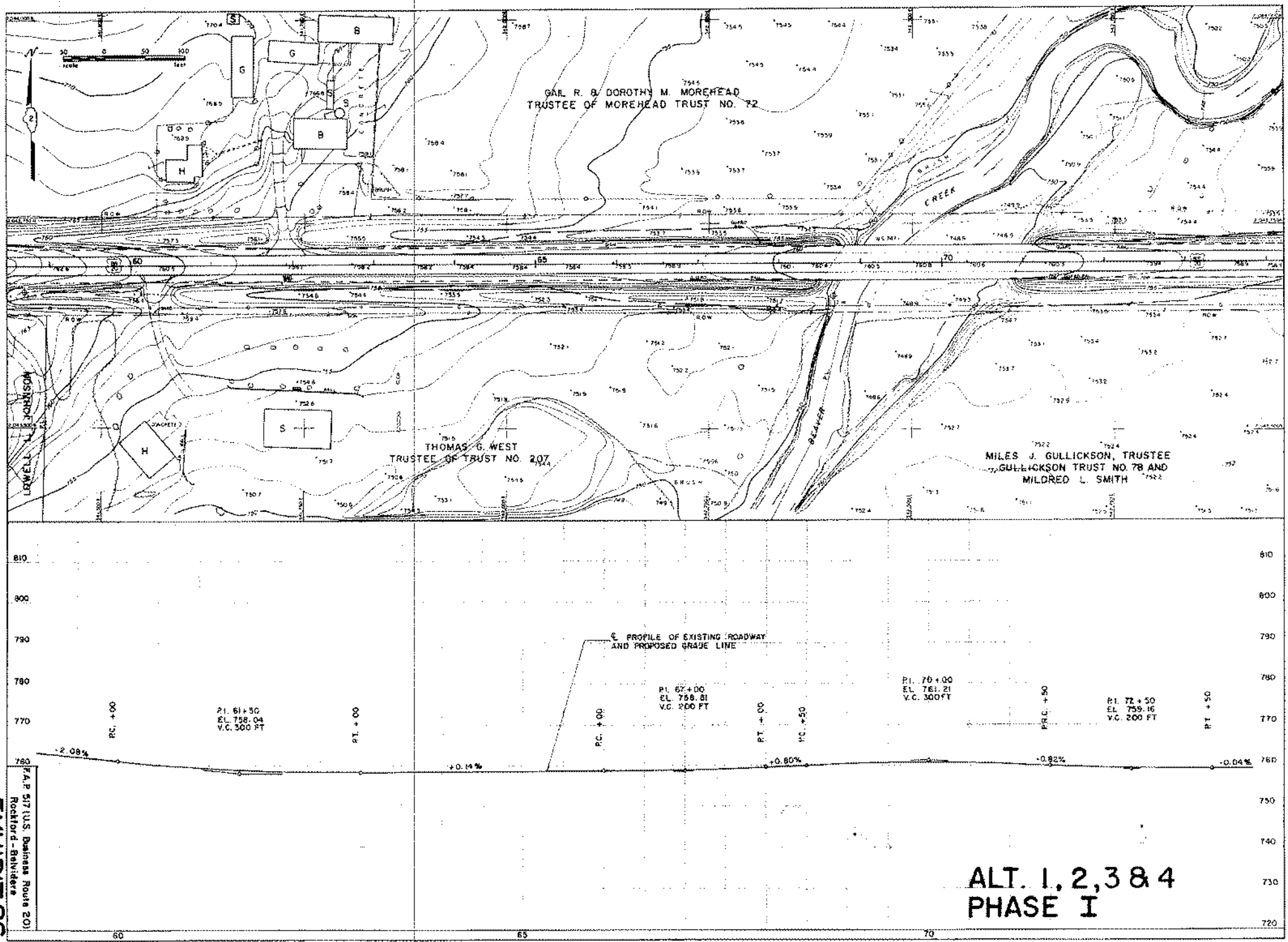
EXHIBIT 25



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

EXHIBIT 26A

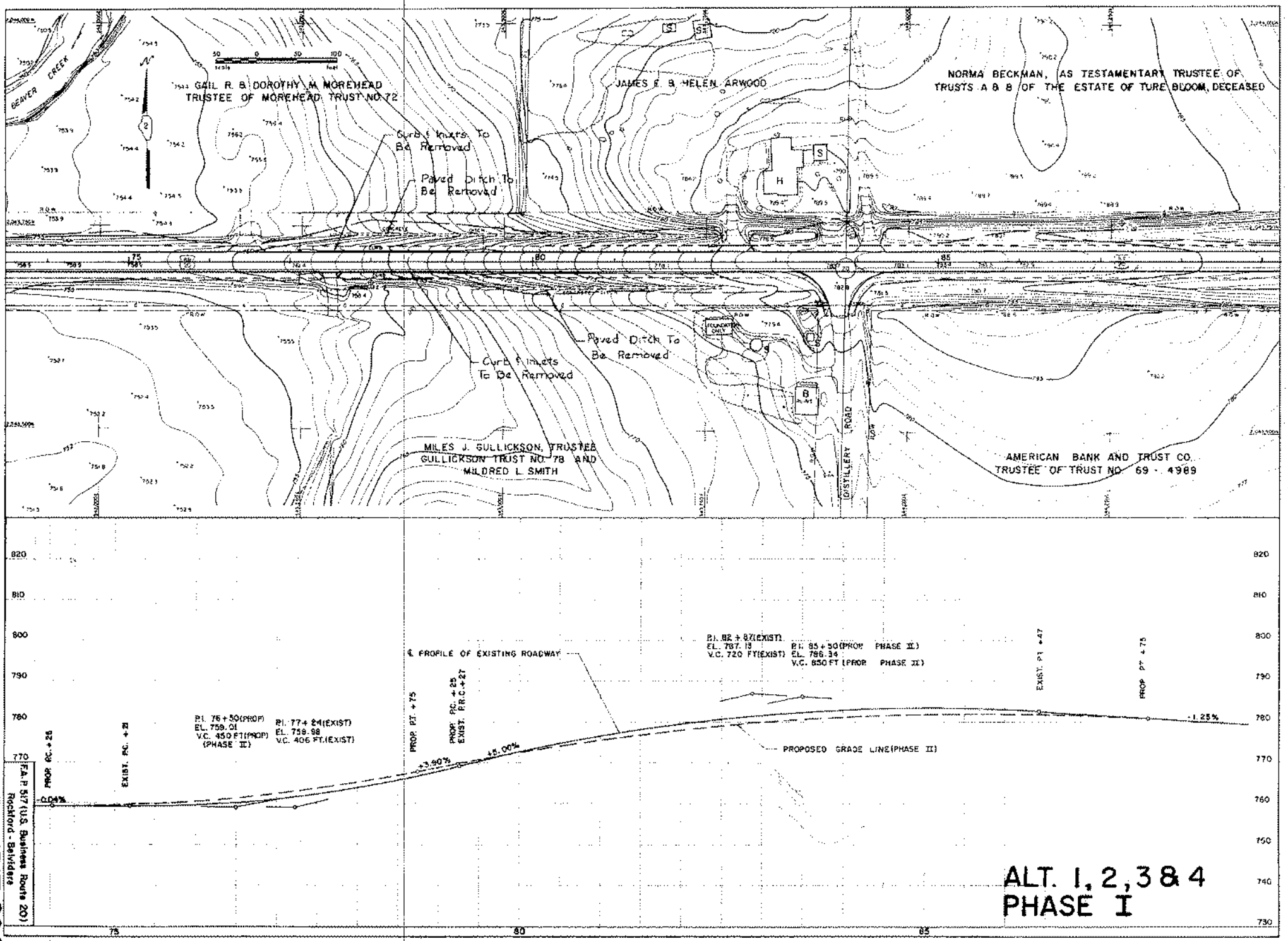
ALT. 1, 2, 3 & 4
PHASE I



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

ALT. 1, 2, 3 & 4
PHASE I

EXHIBIT 26B



ALT. 1, 2, 3 & 4
PHASE I

EXHIBIT 26C

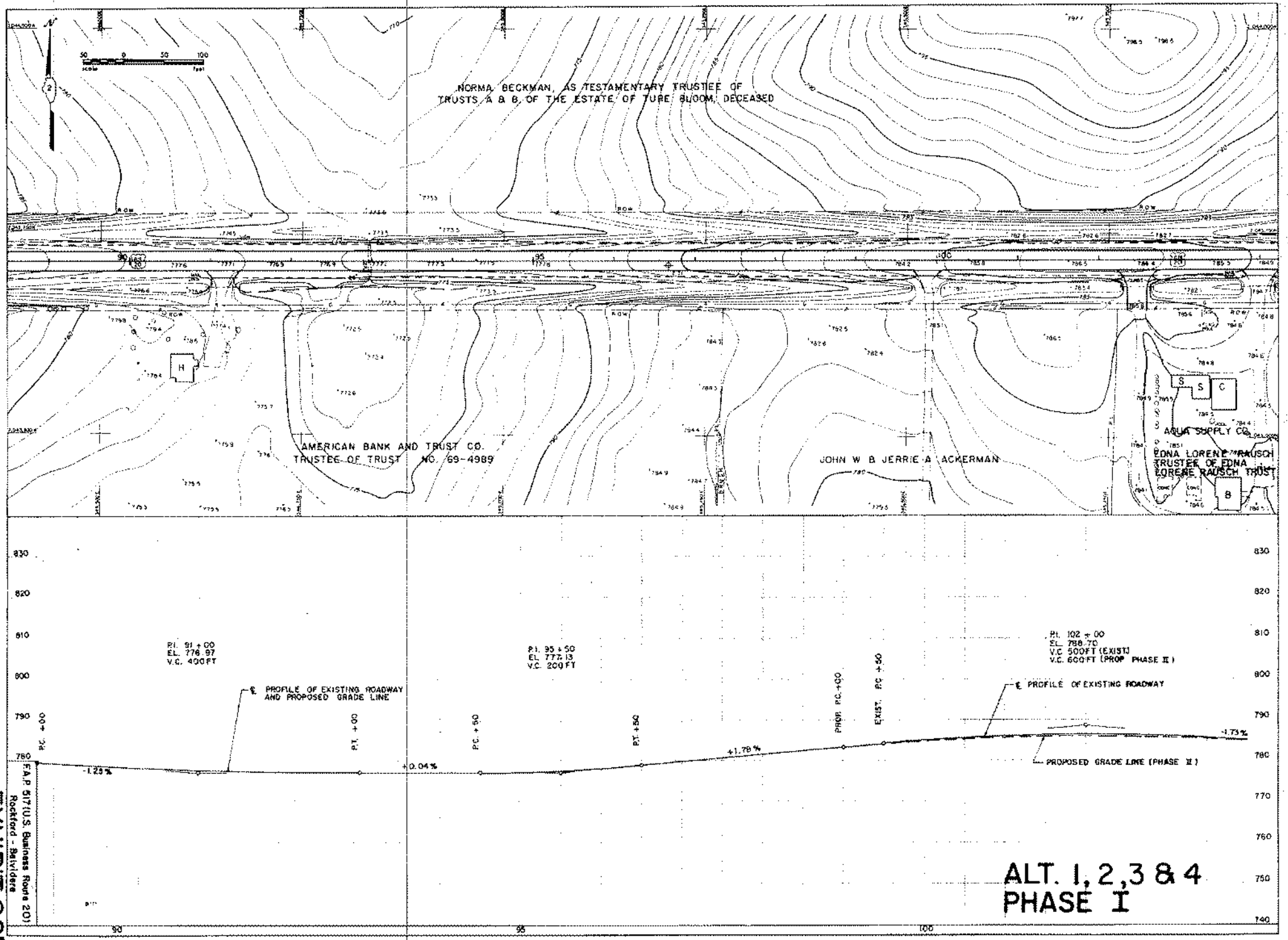
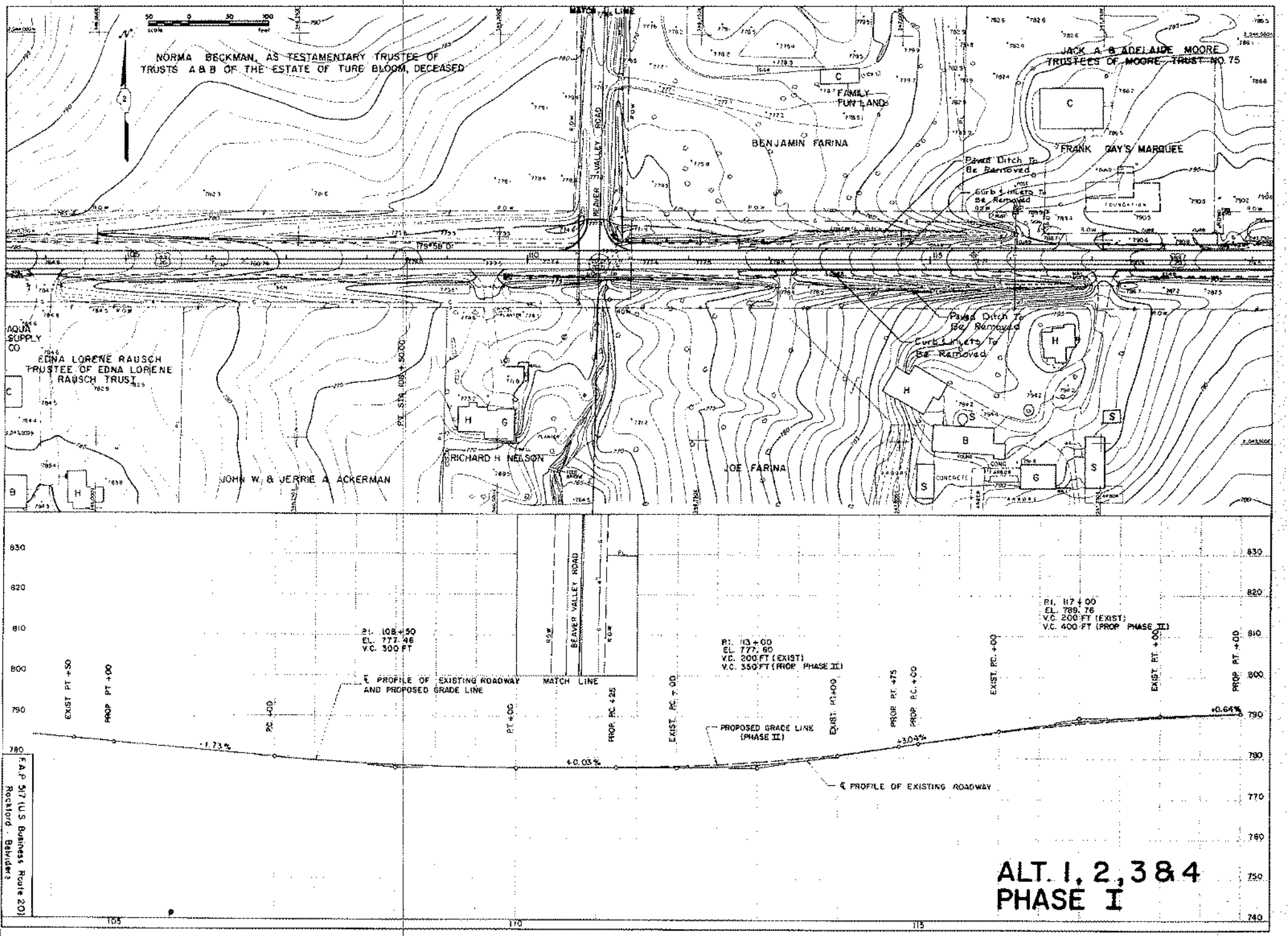
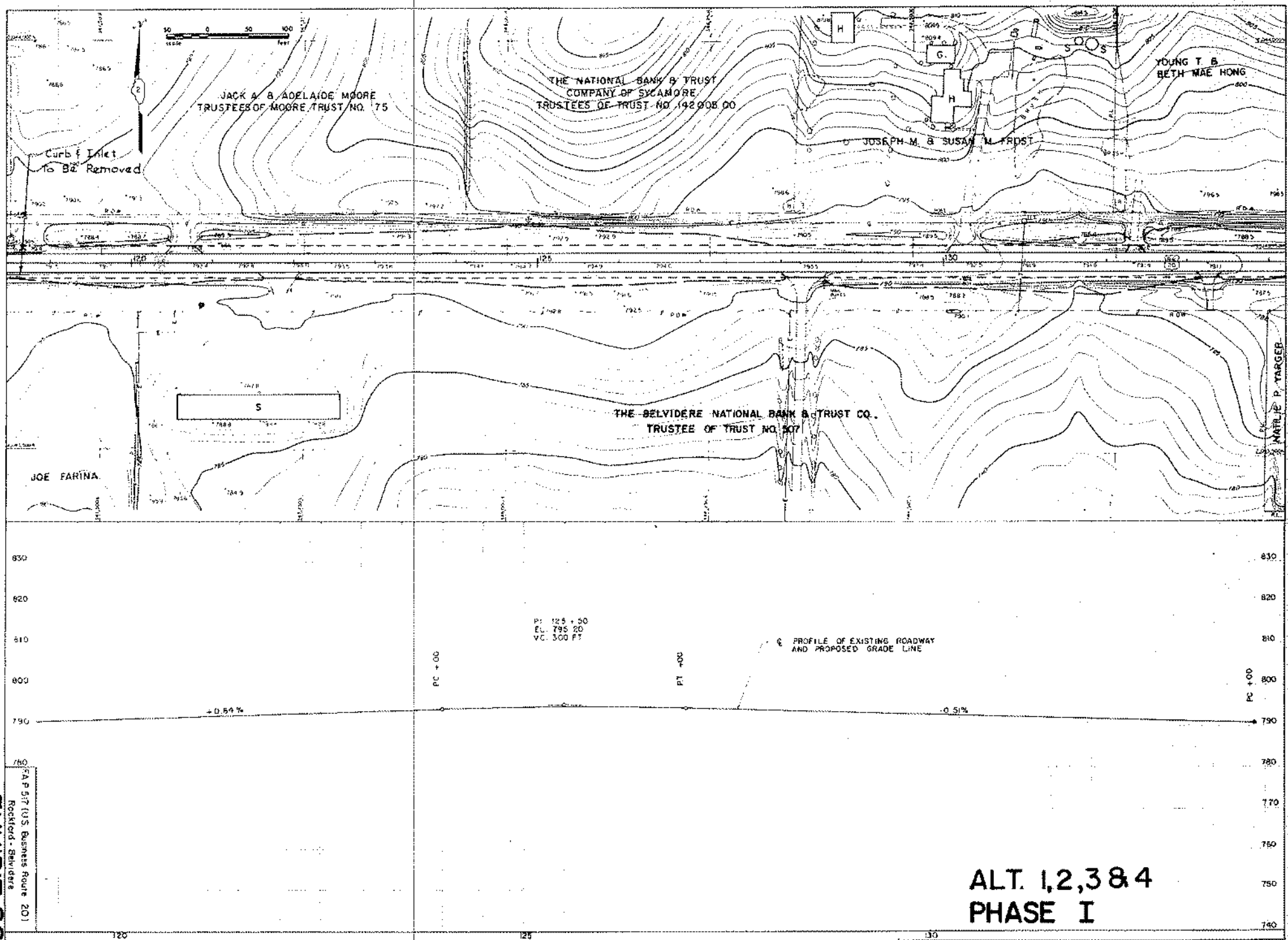


EXHIBIT 26D

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

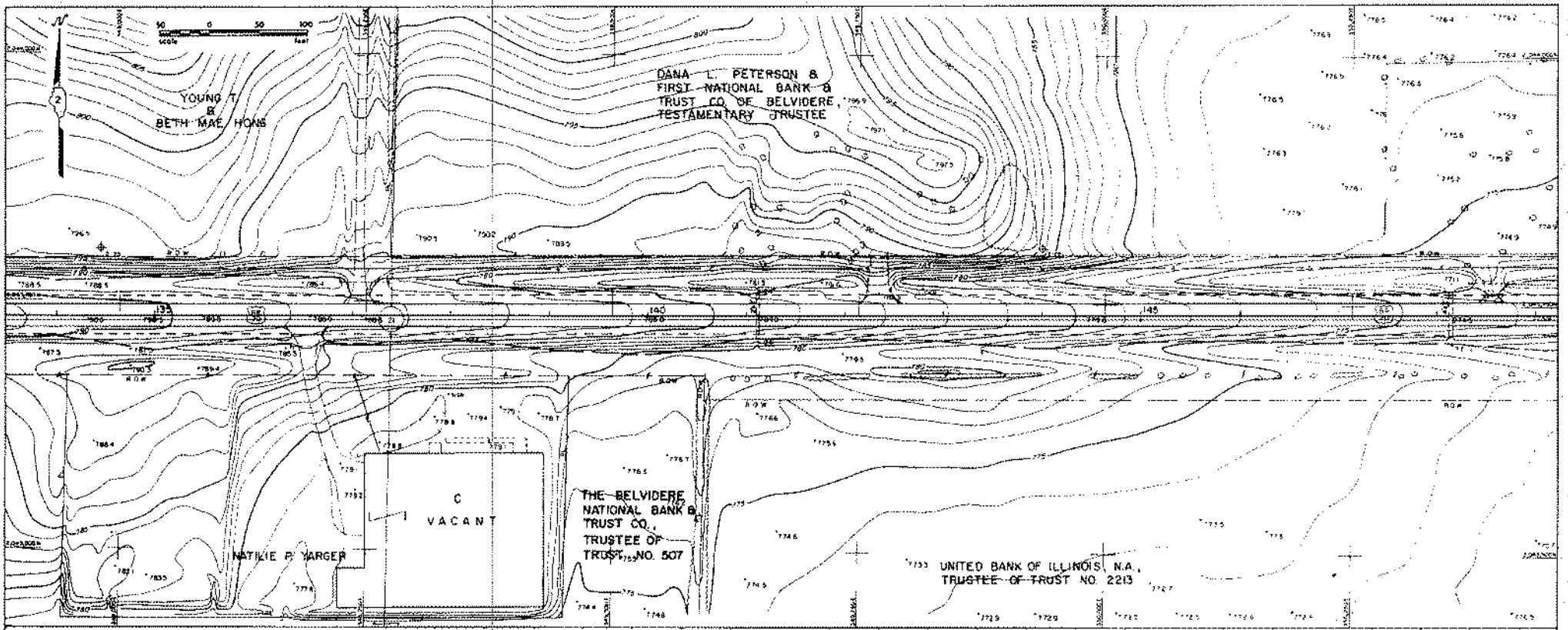
ALT. 1, 2, 3 & 4
PHASE I

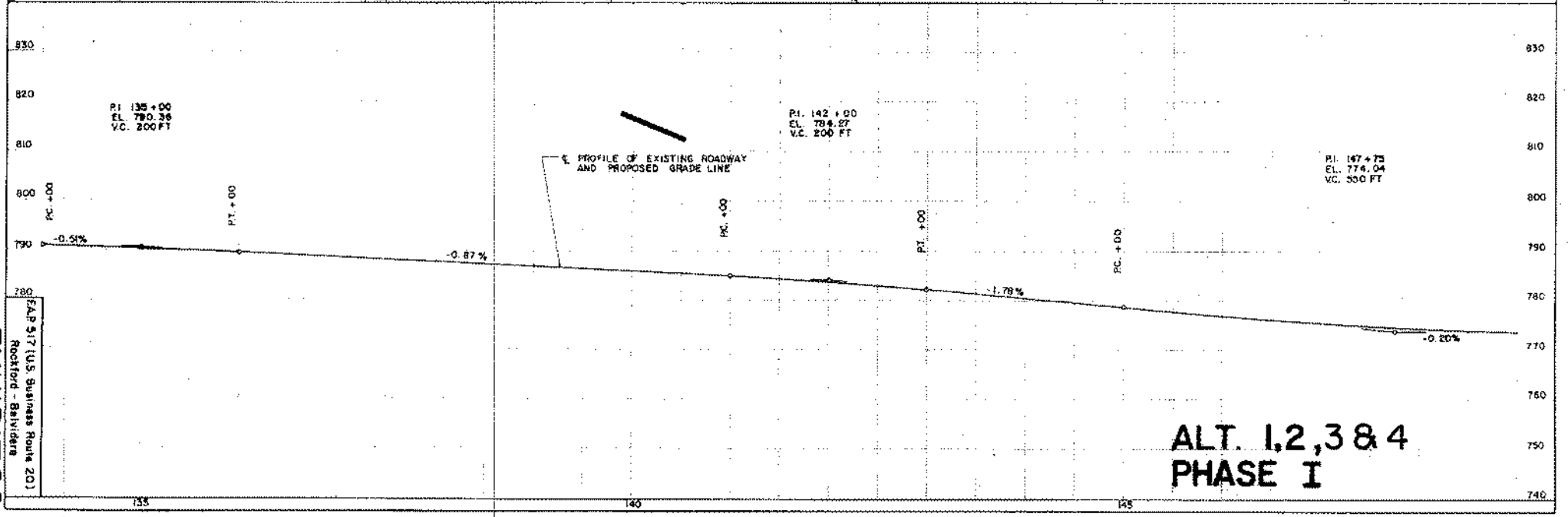

NORMA BECKMAN, AS TESTAMENTARY TRUSTEE OF TRUSTS A & B OF THE ESTATE OF TURE BLOOM, DECEASED
JACK A. & ADELAIDE MOORE TRUSTEES OF MOORE TRUST NO. 75
BENJAMIN FARINA
FAMILY FUN LAND
FRANK GAY'S MARQUEE
Paved Ditch To Be Removed
Curb & Inlets To Be Removed
AQUA SUPPLY CO
EDNA LORENE RAUSCH TRUSTEE OF EDNA LORENE RAUSCH TRUST
RICHARD H. NELSON
JOHN W. & JERRIE A. ACKERMAN
JOE FARINA
BEAVER VALLEY ROAD
MATCH LINE
P.I. 108+50
EL. 777.46
V.C. 300 FT
P.I. 113+00
EL. 777.60
V.C. 200 FT (EXIST)
V.C. 350 FT (PROP. PHASE II)
P.I. 117+00
EL. 789.76
V.C. 200 FT (EXIST)
V.C. 400 FT (PROP. PHASE II)
℄ PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
PROPOSED GRADE LINE (PHASE II)
℄ PROFILE OF EXISTING ROADWAY
EXIST PT +50
PROP PT +00
PC +00
PT +00
PROP PC +25
EXIST PC +00
EXIST PT +00
PROP PT +75
PROP PC +00
EXIST PC +00
EXIST PT +00
PROP PT +00
-1.73%
+0.03%
+3.04%
+0.64%
F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere
ALT. 1, 2, 3 & 4
PHASE I
EXHIBIT 26E



ALT. 1,2,3 & 4
PHASE I

EXHIBIT 26F

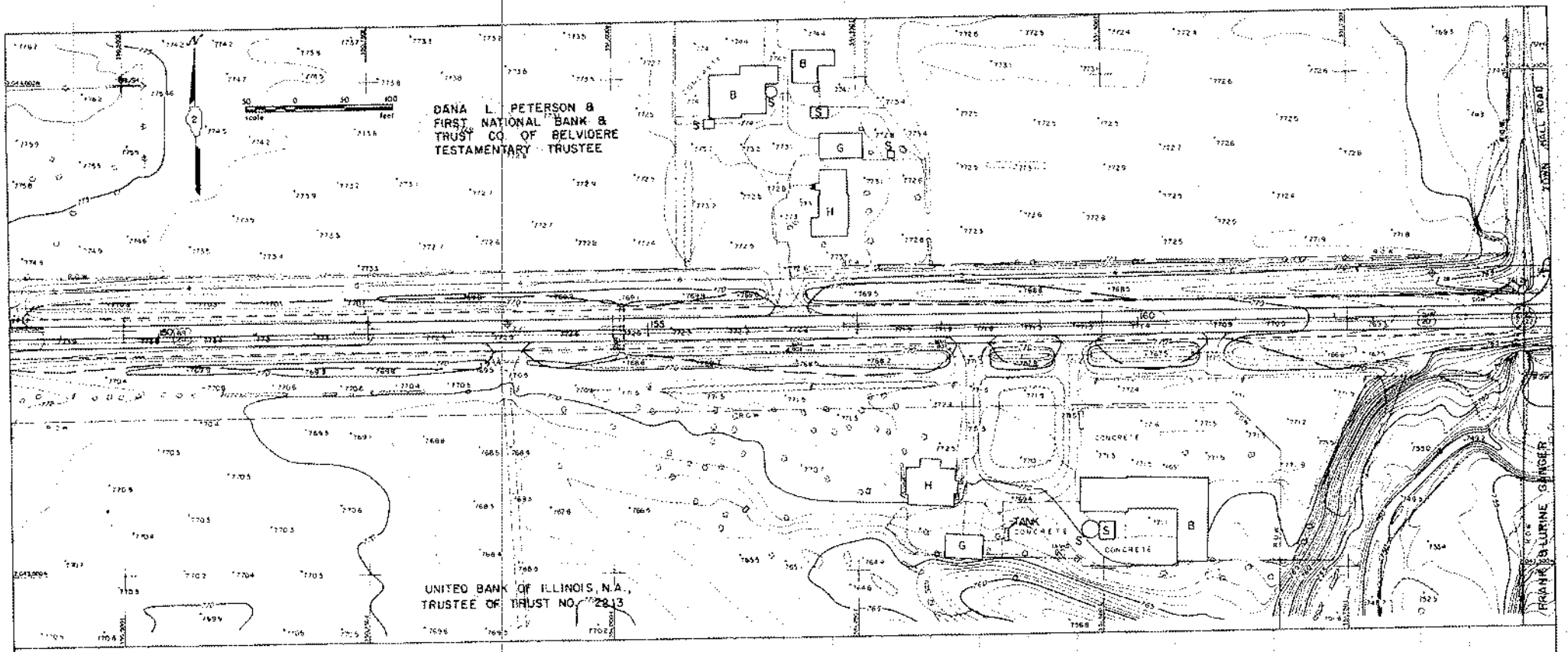


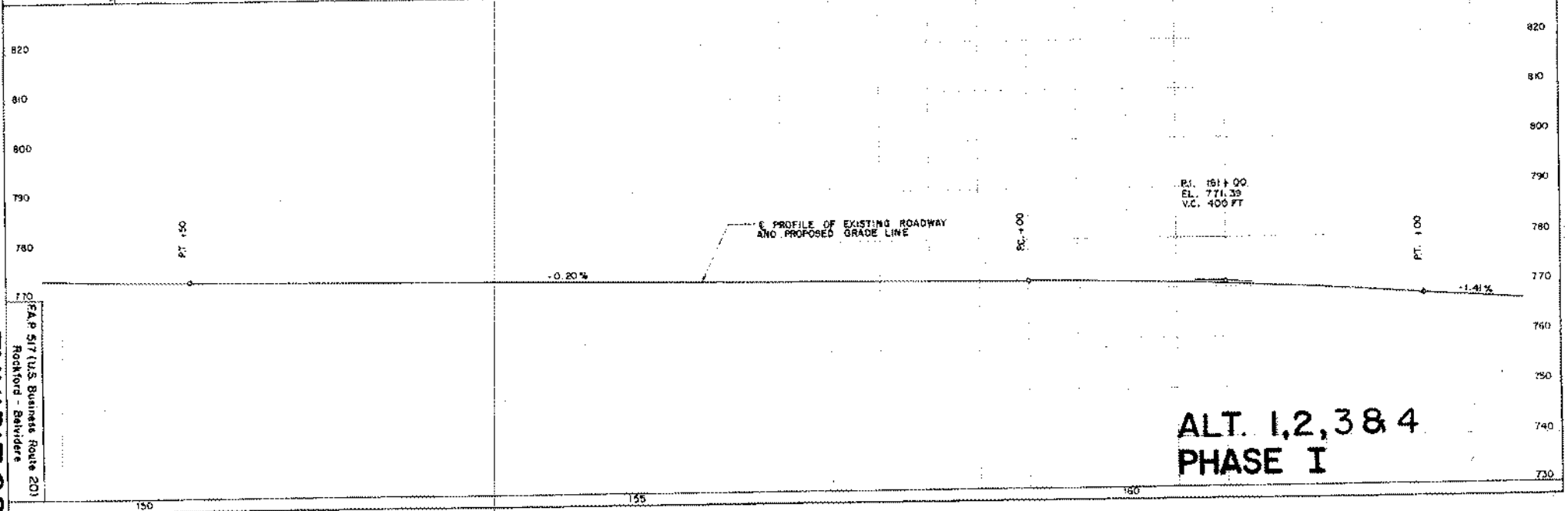


FAP 317 (U.S. Business Route 20)
Rockford - Belvidere

ALT. 1,2,3 & 4
PHASE I

EXHIBIT 26 G

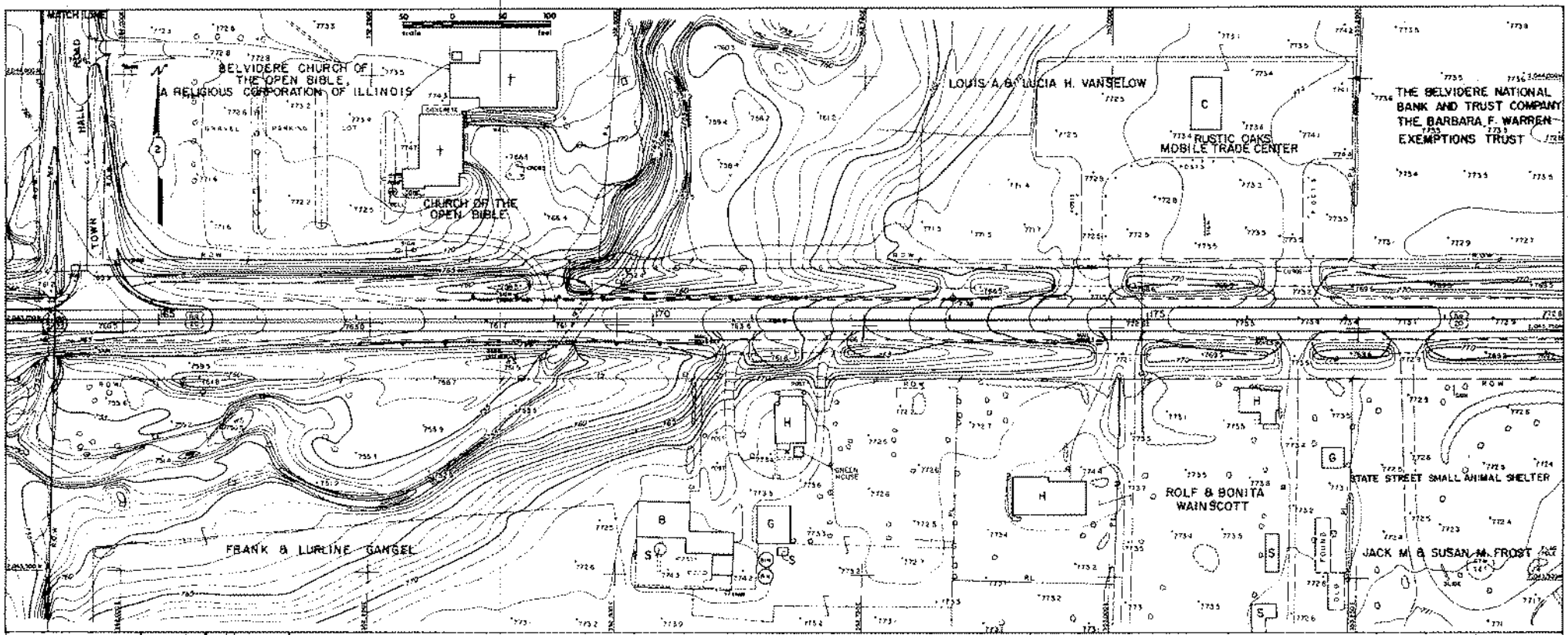


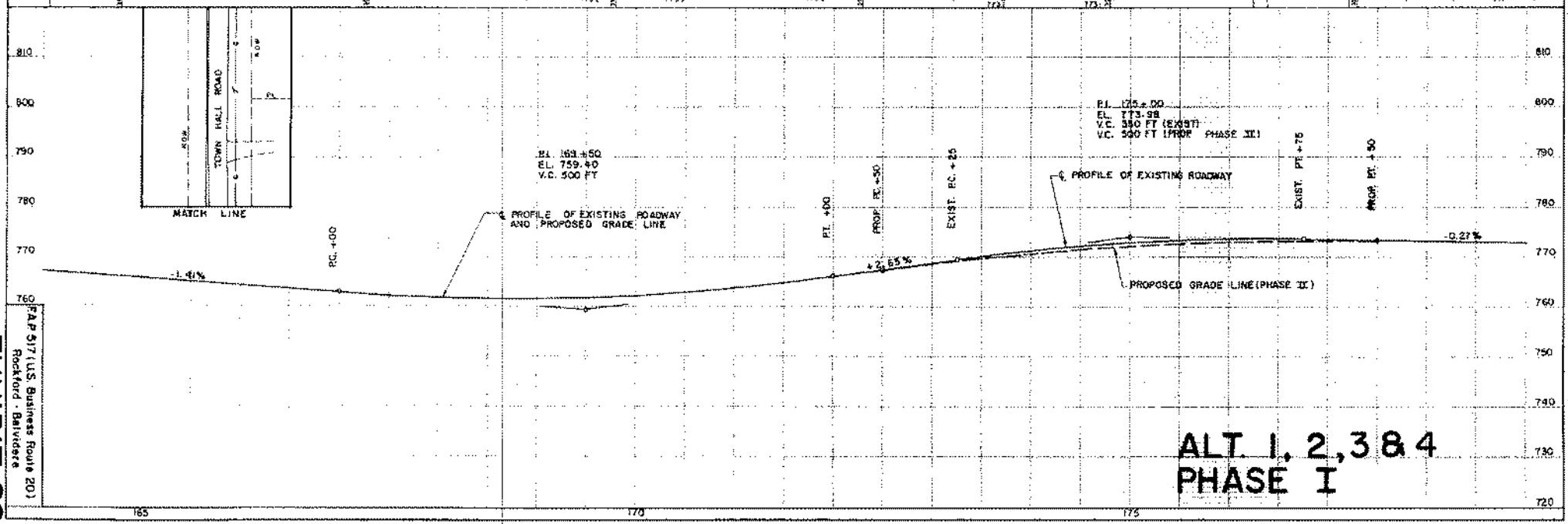


F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere

ALT. 1,2,3 & 4
PHASE I

EXHIBIT 26H

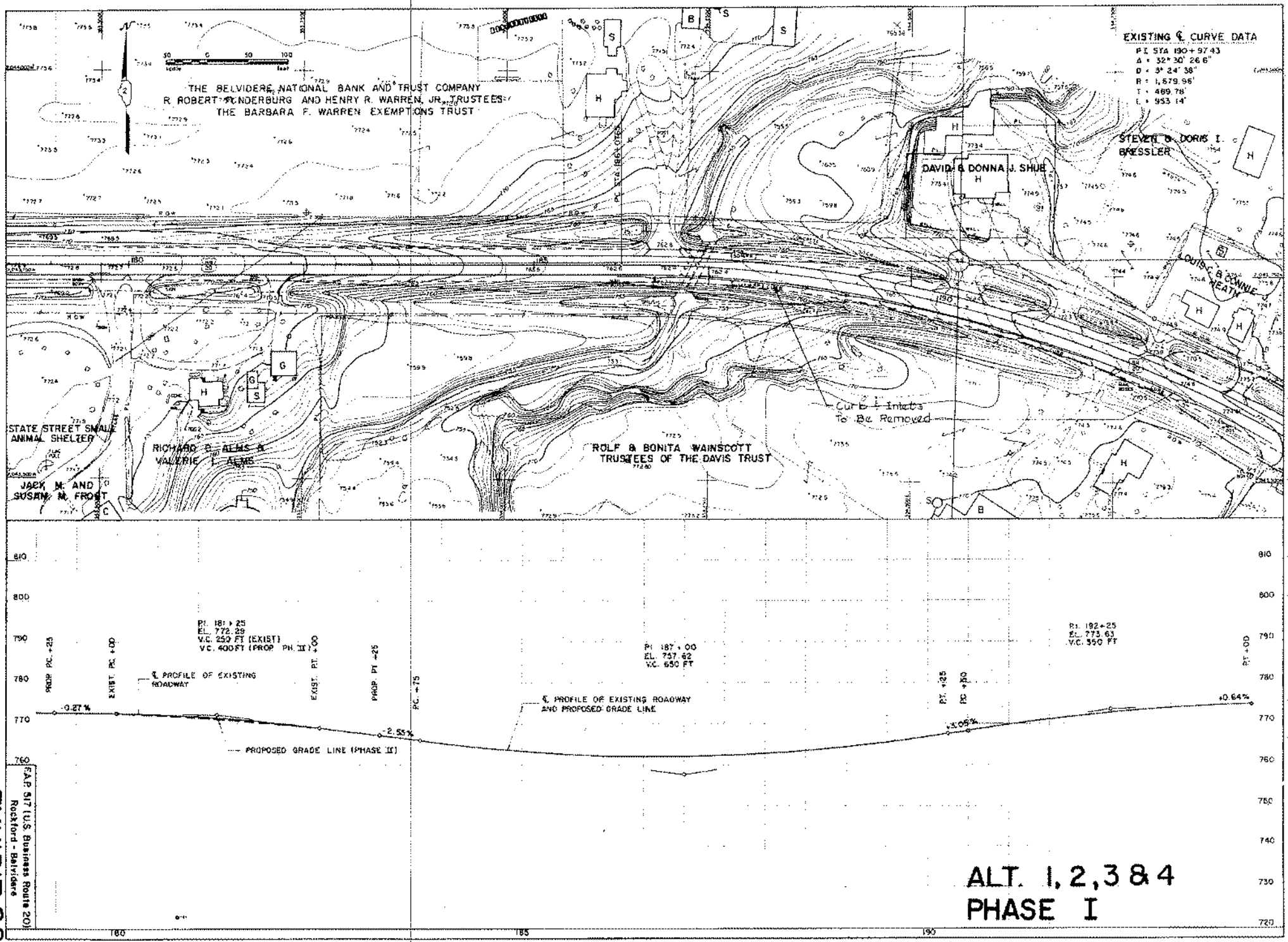




F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere

ALT 1, 2, 3 & 4
PHASE I

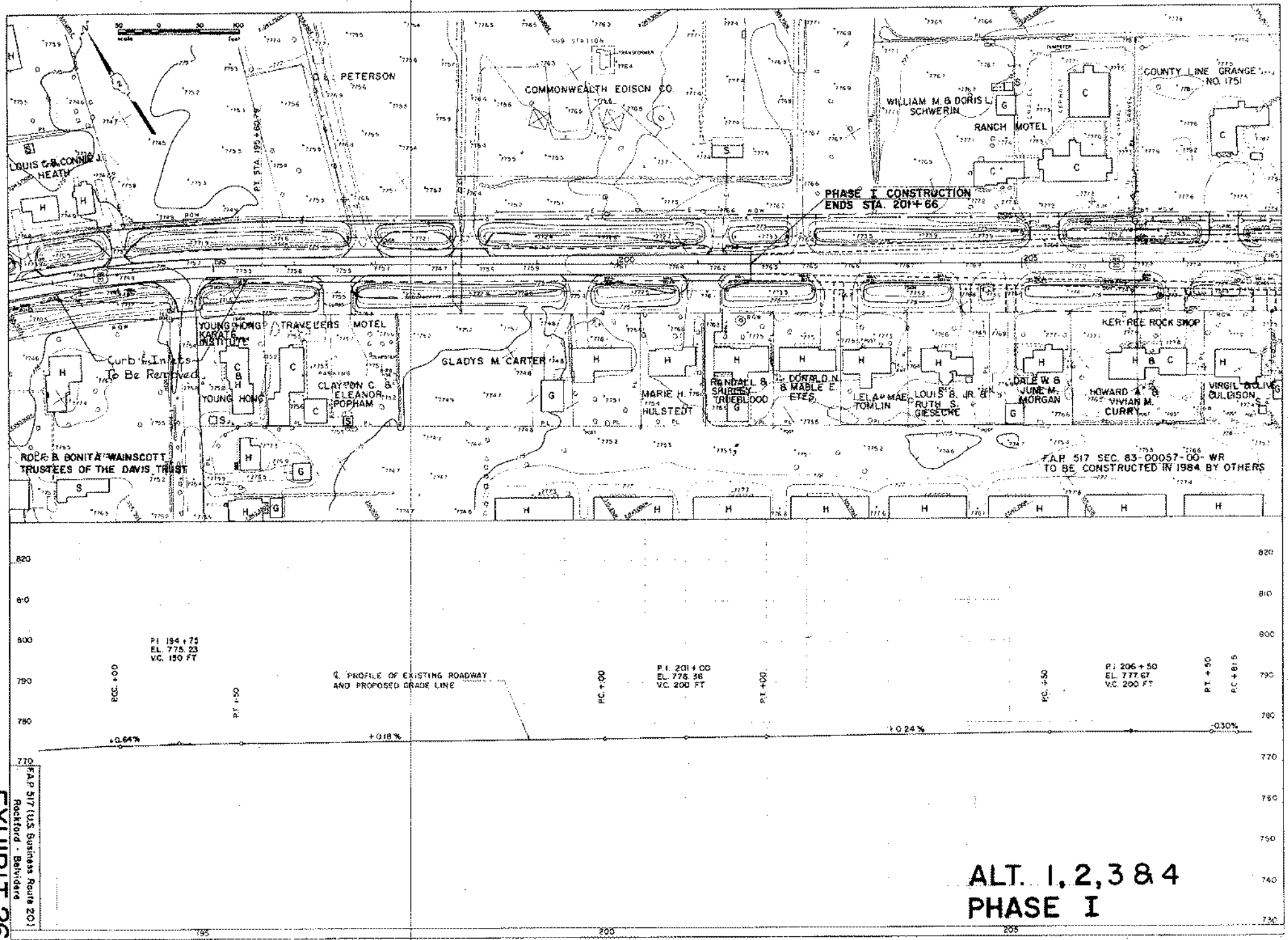
EXHIBIT 26I



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

EXHIBIT 26J

ALT. 1, 2, 3 & 4
PHASE I


C. L. PETERSON
COMMONWEALTH EDISON CO.
WILLIAM M. & DORIS L. SCHWERIN
RANCH MOTEL
COUNTY LINE GRANGE NO. 1751
LOUIS C. & CONNIE J. HEATH
PHASE I CONSTRUCTION ENDS STA. 201+66
YOUNG HONG KARATE INSTITUTE
TRAVELERS MOTEL
Curb Inlets To Be Removed
GLADYS M. CARTER
CLAYTON C. & ELEANOR POPHAM
MARIE H. HULSTEDT
RANDALL S. & SURREY TRUEBLOOD
DONALD N. & MABLE E. EFES
LELA MAE TOMLIN
LOUIS B. JR. & RUTH S. GIESECKE
DALE W. & JUNE M. MORGAN
KER-REE ROCK SHOP
HOWARD A. & VIVIAN M. CURRY
VIRGIL & CLINE CULBISON
ROY & BONITA WAINSCOTT TRUSTEES OF THE DAVIS TRUST
F.A.P. 517 SEC. 83-00057-00-WR TO BE CONSTRUCTED IN 1984 BY OTHERS
P.I. 194+75 EL. 775.23 V.C. 150 FT
P.I. 201+00 EL. 776.36 V.C. 200 FT
P.I. 206+50 EL. 777.67 V.C. 200 FT
℄ PROFILE OF EXISTING ROADWAY AND PROPOSED GRADE LINE
+0.64%
+0.18%
+0.24%
-0.30%
F.A.P. 517 (U.S. Business Route 20)
Rockford - Belvidere
EXHIBIT 26 K
ALT. 1, 2, 3 & 4
PHASE I