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BRIDGE REPLACEMENT OVER THE CEDAR RIVER
CEDAR FALLS, BLACK HAWK COUNTY
IX-218-7(41)

ENVIRONMENTAL ASSESSMENT AND
DRAFT SECTION 4(f) STATEMENT

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

and

IOWA DEPARTMENT OF TRANSPORTATION
PLANNING AND RESEARCH DIVISION
OFFICE OF PROJECT PLANNING

Submitted Pursuant to 42 USC 4332(2)(c) and 49 USC 1653(f) by

4 Sept 1985
Date of Approval
for Public Availability

D. C. Kauffman
For the Division Administrator
Federal Highway Administration

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information concerning this document:

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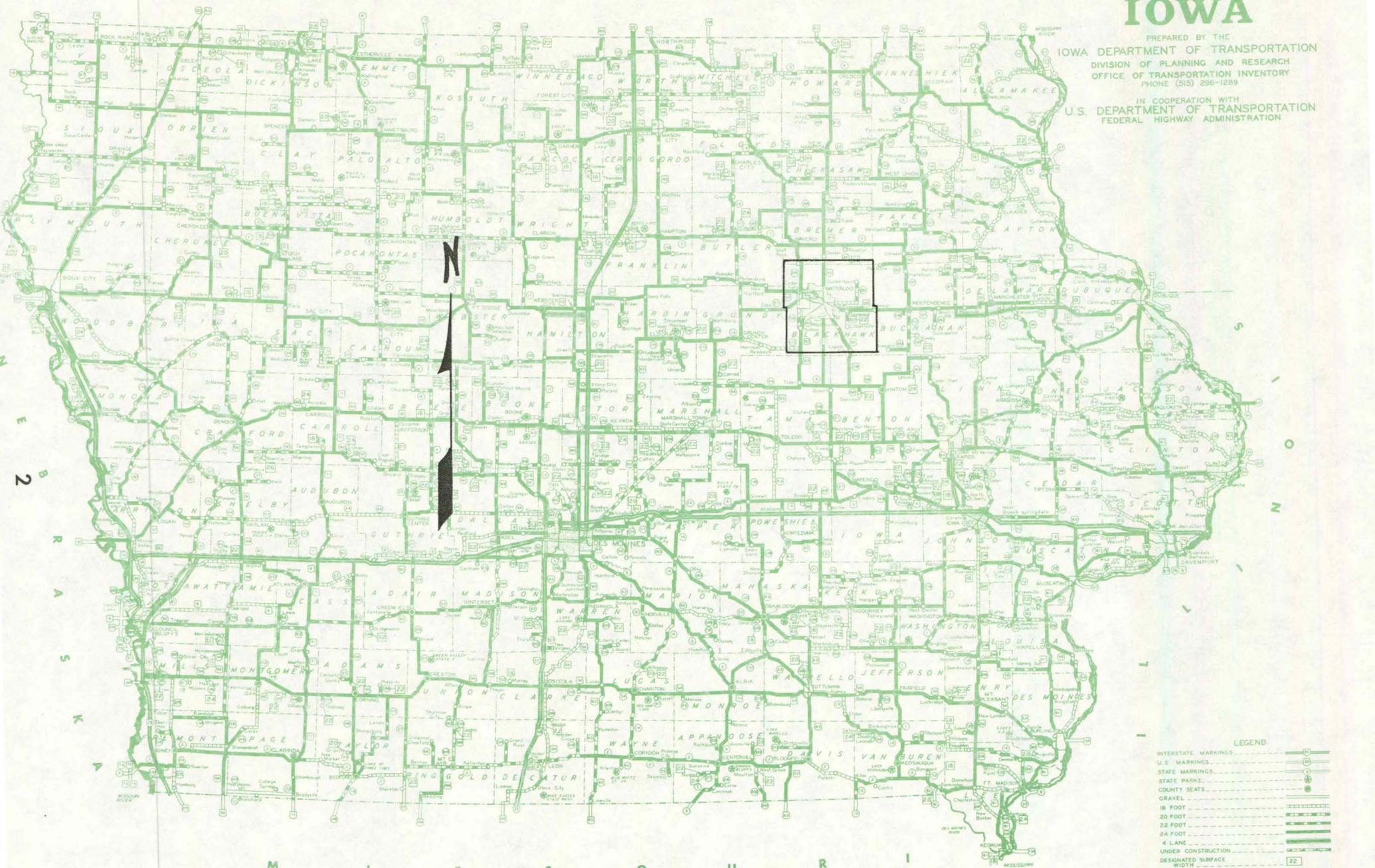
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IOWA

PREPARED BY THE
IOWA DEPARTMENT OF TRANSPORTATION
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OFFICE OF TRANSPORTATION INVENTORY
PHONE (515) 296-1289

IN COOPERATION WITH
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION



LEGEND

INTERSTATE MARKINGS	
U.S. MARKINGS	
STATE MARKINGS	
STATE PARKS	
COUNTY SEATS	
GRAVEL	
18 FOOT	
20 FOOT	
22 FOOT	
24 FOOT	
4 LANE	
UNDER CONSTRUCTION	
DESIGNATED SURFACE WIDTH	

LOCATION OF BLACK HAWK COUNTY

FIGURE 1

I. DESCRIPTION OF PROPOSED ACTION

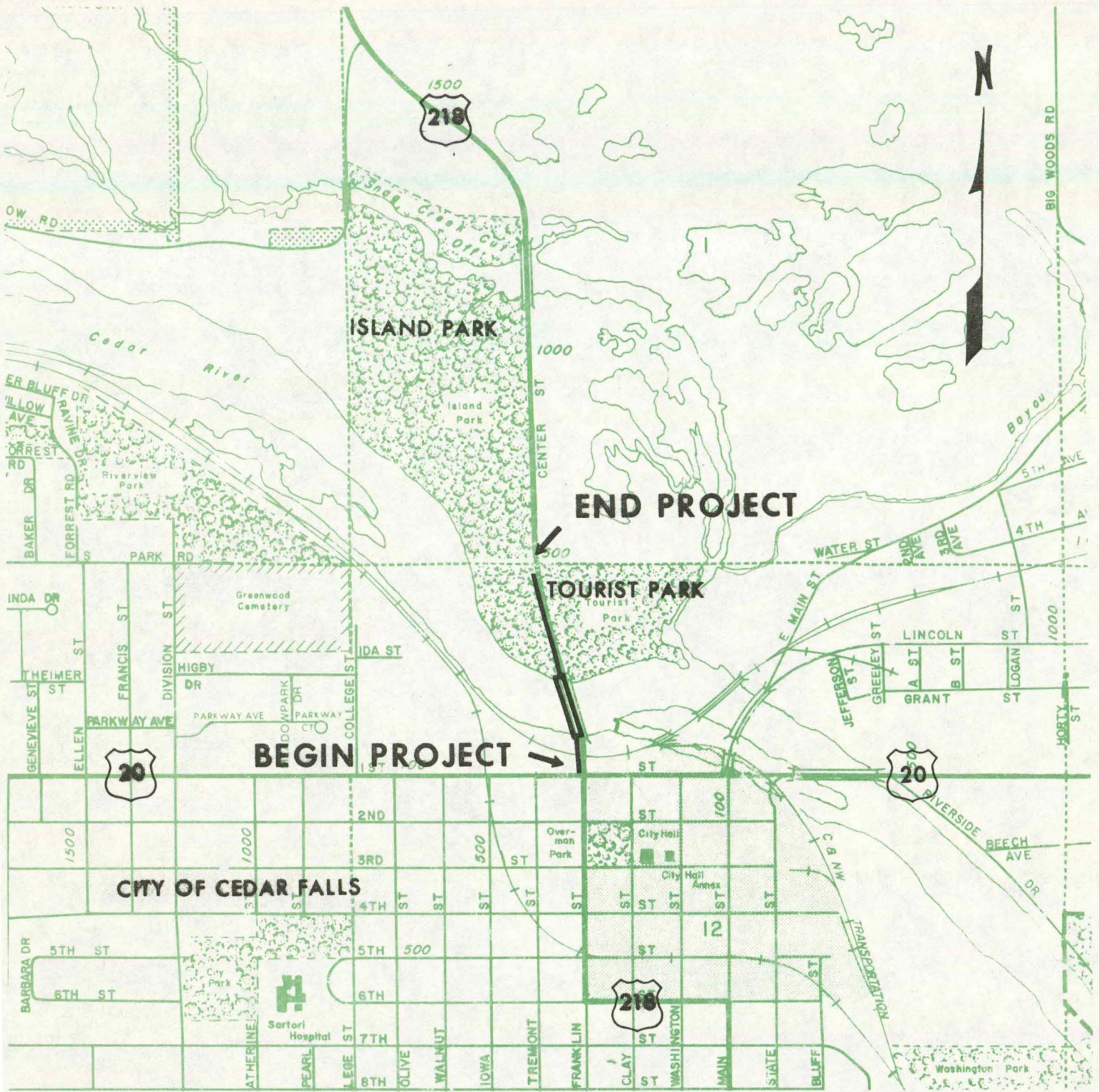
This project consists of replacing the existing US 218 bridge over the Cedar River in Cedar Falls, Black Hawk County, Iowa. A project location map is shown in Figure 2. Because the north end of the bridge is located in a city park, conversion of 4(f) land to transportation uses will be necessary as part of this improvement.

II. NEED FOR THE PROJECT

The existing 463 by 35-foot reinforced concrete arch bridge was constructed in 1916. Deck resurfacing was completed in 1956 and again in 1976. The existing pavement is 25 feet wide across the bridge, with a five-foot sidewalk on both sides.

This 69-year-old structure was inspected in 1984 and found to have numerous locations where structural concrete has deteriorated, revealing exposed structural steel at some locations. Additionally, the several resurfacings of the bridge deck have raised the driveway surface equal to the sidewalk elevation. Both sidewalks are badly broken up and there is no separation of vehicle and pedestrian traffic.

Traffic volumes across this bridge in 1984 were 12,800 vehicles per day. Predicted 1987 and 2007 volumes are 6,500 and 9,100 respectively, with 5 percent trucks. The reduction in traffic volumes is anticipated as a result of relocating US 218, a project that is currently being developed as part of the Interstate substitution program in Waterloo and Cedar Falls.



**PROJECT LOCATION
IN CEDAR FALLS**

FIGURE 2

US 218 is classified as an "arterial connector" facility within the project corridor, and serves as an important north-south link in the transportation plan of both Black Hawk County and the City of Cedar Falls. Accidents for this section of US 218 were reviewed in March 1985; the five-year accident history for the years 1979-83 indicated a total 22 accidents (3 personal injury and 19 property damage). This results in an accident rate of 862 per hundred million vehicle miles (HMVM) compared to the statewide rate of 792 per HMVM for the same period.

Construction of a new bridge would enhance the present transportation system by providing a structurally and functionally adequate bridge for the existing narrow, obsolete structure. A four-lane structure would also improve access across the river.

This project is programmed as a bridge replacement project only, with improvements limited to the bridge and roadway approaches. Some new roadway construction will be required, however, this is necessary in order to transition the new structure onto the existing roadway. Reconstruction of the remaining roadway between the Cedar River and Snag Creek bridges is not included as part of this improvement.

III. PROPOSED ALTERNATIVE

It is proposed to replace the existing US 218 bridge with a 575 by 66-foot prestressed concrete beam structure. The new bridge would be constructed on a higher grade line and would be relocated slightly to the west of the existing structure as shown

TYPICAL CROSS SECTION FOR 66-FOOT BRIDGE DECK WITH WALKWAY

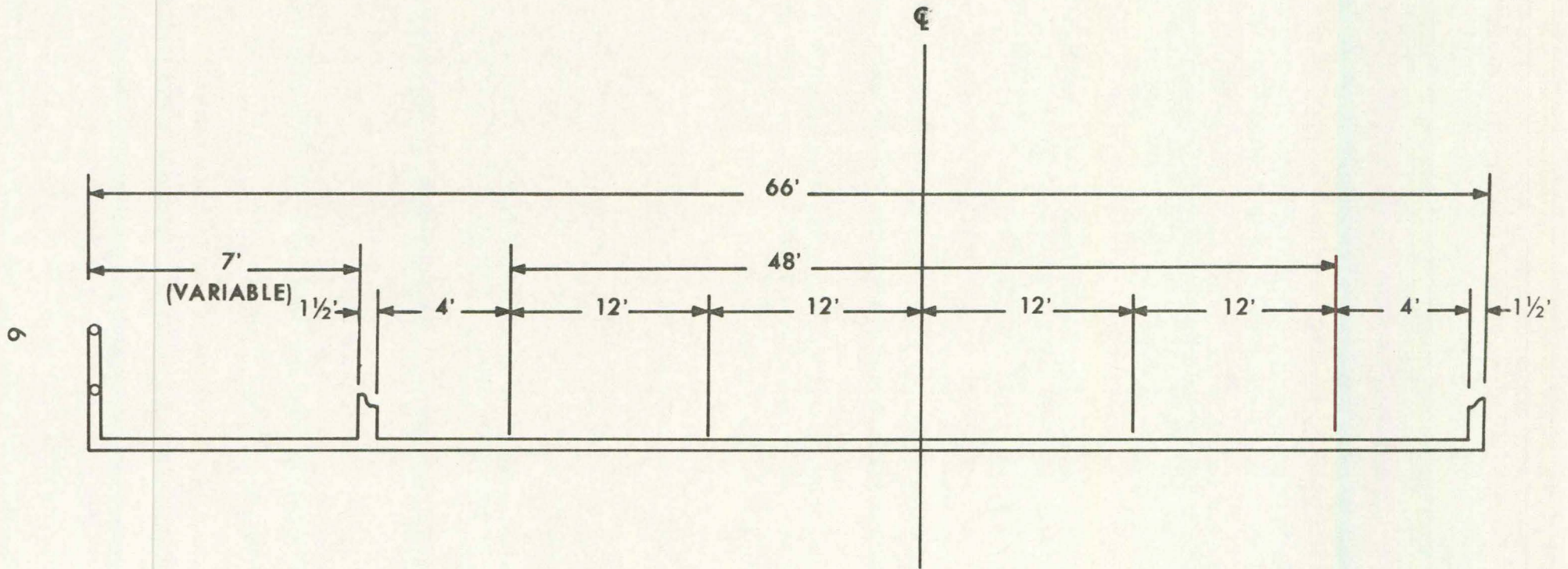


FIGURE 3

in Plate 1. A four-lane deck and pedestrian walkway on the east side would be included as part of bridge construction. A typical cross section for the new structure is shown in Figure 3.

Reconstruction of the bridge approaches will also be accomplished as a result of new bridge construction. Total reconstruction length is expected to be approximately 1,630 feet. Reconstruction of the approaches will provide a four-lane, 53-foot wide roadway leading to the bridge, tapering to tie in with the existing 24-foot roadway north of the bridge. The new structure will be constructed on an alignment slightly west of the existing bridge so that traffic can be maintained over this crossing during the construction period. Estimated construction costs for the new structure and approaches is \$2,413,000.

IV. OTHER ALTERNATIVES CONSIDERED

The "do-nothing" alternative is not a viable action. The existing bridge represents a 69-year-old structure that was designed to meet traffic demands in the 1920s and 30s and is, at present, in the last stages of its designed service life. The narrow width of the roadway on the bridge is functionally sub-standard based on capacity analysis and structurally deficient for present loads. The bridge is posted for less than legal load weights. In view of these circumstances, the "do-nothing" alternative cannot be given serious consideration as a viable option for the structure; the dual goals of safe and efficient transportation dictate either replacement, rehabilitation, or ultimate removal.

The rehabilitation alternative was also studied during initial planning stages for the project and consisted of extensive repair and rehabilitation to the structure and deck of the existing bridge, resulting in a three-lane roadway. Costs for the bridge work only were estimated to be \$934,000. This compares with a cost of \$1,600,000 for construction of a new bridge (structure only).

A rehabilitated structure would at most have a 15-year useful lifespan whereas a new structure could be expected to remain in service for up to 60 years. Therefore, rehabilitation is not considered feasible because of short life, less than desired capacity and the need to close the bridge for rehabilitation.

V. PROJECT IMPACTS

A. Socio-Economic Impacts

The primary beneficial impacts of the proposed project would be the increase in operating safety, capacity and convenience provided by a new bridge with improved access. Except as noted in the following section on right-of-way impacts, replacement of the Cedar River bridge is not expected to generate any adverse effects on the social or economic climate of the project corridor.

B. Right-of-Way Impacts

Because the new bridge will be constructed slightly west of the existing structure and will be four rather than

two lanes, additional right-of-way will be needed. Preliminary estimates indicate total new right-of-way needs to be approximately 1/2 acre. One business west of the US 218/20 interchange will be acquired as a result of new right-of-way needs. It will also be necessary to acquire the city-owned, privately operated boathouse located west of the existing bridge in Tourist Park.

In addition to those noted above, there will be minor right-of-way impacts to Tourist Park which is located on the north side of the Cedar River. Preliminary design estimates indicate total new right-of-way needs from park property to be about .10 acre. The area affected is located just west of the existing bridge near the boathouse shown in Plate 1.

A portion of this .10 acre segment is used for boat-house parking with the remaining parcel being undeveloped parkland.

C. Environmental Impacts

1. Air, Noise and Water Pollution

There will be short-term, temporary increases in noise and air pollution during construction as a result of the sound levels and exhaust emissions characteristic of heavy equipment.

Temporary deterioration of surface water quality in the vicinity of the Cedar River crossing would result from grading and bridge construction activities. Increased turbidity and siltation caused by erosion of

exposed land and disturbances of the stream bed would be the greatest construction impacts on water quality.

To reduce these impacts contractors will be required to employ applicable erosion control measures during the construction period. Such measures are required by standard Iowa DOT plans and specifications and include temporary berms, dikes, siltation basins, drains, gravel, mulches and grasses, and would pertain to haul roads and borrow sites as well as the permanent right-of-way. Suitable storage areas and careful handling of potentially harmful materials would be required of the contractor.

Project impacts to aquatic life and river habitat of the Cedar River are expected to be negligible; short-term minor sedimentation near the bridge will occur during the time of construction however, this will be minimized by appropriate erosion control measures designed to preserve the existing aquatic resources in the area.

2. Wildlife and Wildlife Habitat

Project construction will not present a significant threat to area wildlife or wildlife habitat within the corridor. The project is entirely within the Cedar Falls corporate limits, where land use includes commercial, transportation and park uses. Continued use of the existing transportation corridor will conserve existing habitat in the project area since only about

one-half acre of new right-of-way will be required for the improvement. No populations of rare or endangered species of plants or animals are known to exist within the project corridor.

3. Parks and Recreational Facilities

The Island-Tourist Park complex represents a 114-acre, city-owned recreational area providing picnicking, general recreational uses and river access for boating. Both parks are located on an island located north of the Cedar River in north central Cedar Falls. The parks are bisected by US 218 which serves as the access facility to and from the parks.

Replacement of the Cedar River bridge will require park encroachment and acquisition of the boathouse operation located in the park just northwest of the existing bridge. These impacts result because the new bridge will be constructed on an alignment slightly west of the existing structure, allowing the existing bridge to remain in operation during the construction period.

Based on preliminary design estimates, new right-of-way from the park will be about .10 acres and will be acquired in the area between the existing highway and the boathouse operation as shown in Plate 1.

4. Cultural Resources

The only identifiable cultural resource within the project corridor is the Ice House Museum located east

of US 218 south of the Cedar River. See Plate 1. This facility is listed on the National Register of Historic Places and is currently operated as a museum by the Cedar Falls Historical Society. This facility will not be impacted by the proposed improvement.

5. Farmland Protection Policy Act

Evaluation of farmland impacts for the proposed action were based on an on-site survey of land uses within the project corridor. Land use within this area is presently commercial, park and recreational, or transportation uses. There is no land used for agriculture within the corridor. Because the project corridor is located in an urban area and is clearly not farmland, Form 1006 of the Farmland Protection Policy Act of 1981 was not submitted.

6. Wetlands and Floodplain

The proposed project will have no impact on wetlands nor will the new structure encroach upon the Cedar River floodplain beyond existing conditions.

The planned new bridge will be constructed to Iowa Department of Water, Air and Waste Water Management standards and will be consistent with area flood insurance study requirements. A 404 permit will be requested from the Army Corps of Engineers as project development progresses.

VI. 4(f) CONSIDERATIONS

Replacement of the US 218 Cedar River bridge will require encroachment upon 4(f) lands in the form of right-of-way conversion of .10 acre from the Island-Tourist Park complex in Cedar Falls. No federal funds were involved in the acquisition or development of this park. As US 218 is the only access to this facility, and the age and structural condition of the existing bridge mandate replacement rather than rehabilitation, there are no reasonable or prudent alternatives to such replacement.

A. Mitigation Measures

Mitigation measures for the taking of parkland will be limited to remuneration to the city for the costs of the approximately .10-acre parcel required for the project. Construction of a new four-lane bridge and pedestrian/bicycle path across the new bridge will enhance access to the park and should offset the loss of one-tenth acre from the 114-acre park complex.

Mitigation measures for the boathouse will be in accord with the City of Cedar Falls' desire that the Iowa DOT purchase the boathouse so that the City can relocate this facility to a more desirable setting.

At the request of the Cedar Falls Parks Department, a pedestrian walkway/bicycle path on the proposed bridge, to be located on the east or downstream side, will be extended under the new structure to provide access to both sides of the park without crossing US 218. This location will also

allow access from existing parking in Tourist Park to the Ice House Museum just south of the Cedar River.

VII. SUMMARY

It has been determined that there is no feasible or prudent alternative to the planned improvement. The proposed project will have no significant adverse impacts on the quality of the environment. Replacement of the existing US 218 bridge in Cedar Falls is necessary for safe and efficient traffic service through the project area.

Unless significant impacts are identified as a result of the public availability of this environmental assessment or public information meeting and pending approval of the draft section 4(f) statement, a formal finding of No Significant Impact (FONSI) will be issued.

VIII. COMMENTS AND COORDINATION

This document will be circulated to appropriate federal, state and local agencies for review and comment. Responses from reviewing agencies will be considered during further development of the project.

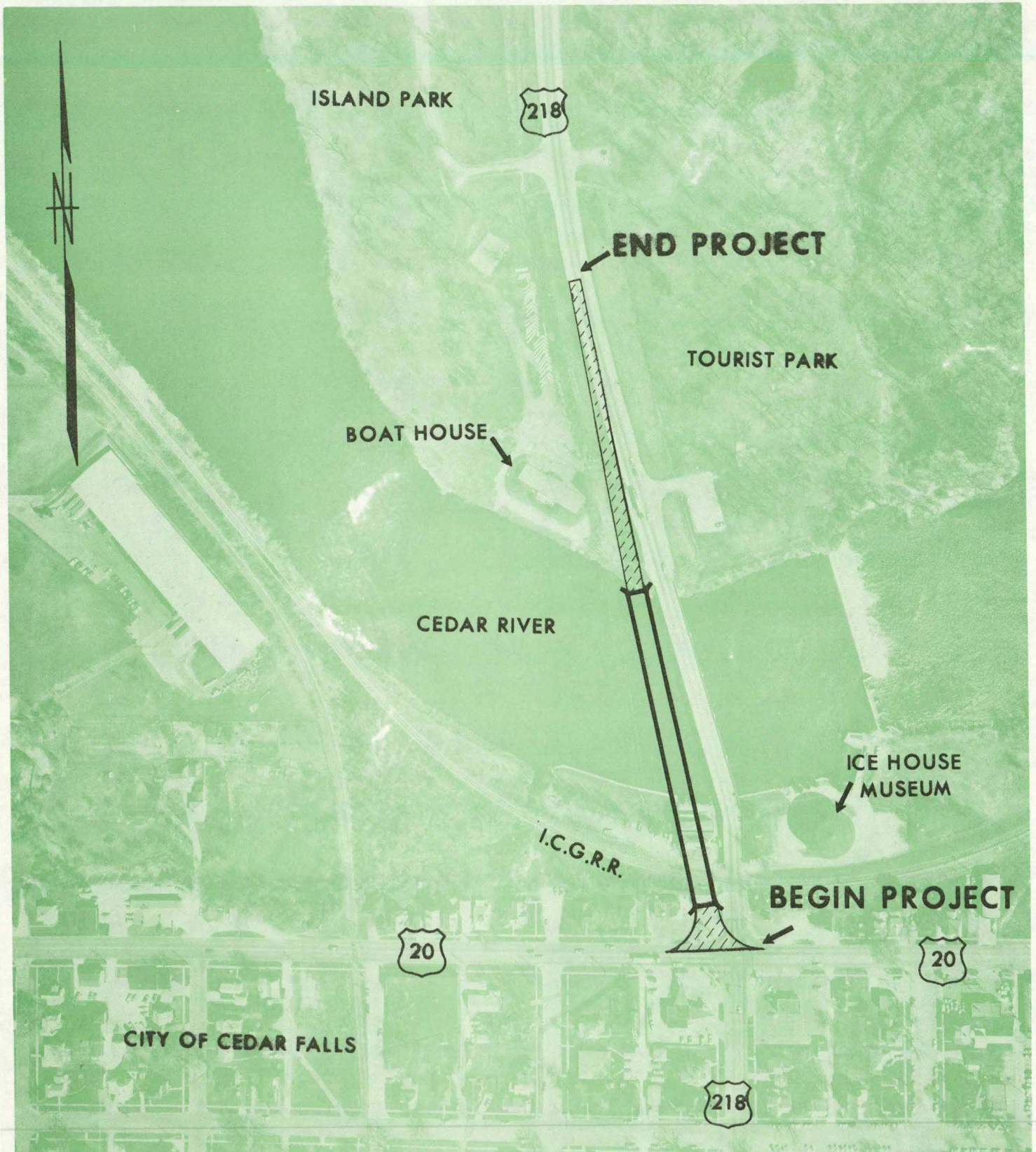
Notification of the date and place for a public information meeting for this proposed improvement will be published at the time the Environmental Assessment is made available for public review.

Early coordination of this project was completed with the following agencies:

Iowa Northland Regional Council of Governments
City of Cedar Falls
Black Hawk County Conservation Commission
Iowa State Historic Preservation Office
Iowa Conservation Commission
Iowa Office for Planning and Programming

Comments from reviewing agencies are attached beginning on page 17.

AERIAL PHOTOGRAPH OF PROJECT AREA



SCALE: 1 INCH = 250 FEET

PLATE 1

**CITY
of
CEDAR
FALLS**



PARK DEPARTMENT

Telephone (319) 277-2441

May 6, 1985

Received

MAY 10 1985

Office of
Project Planning

Mr. Thomas M. Welch
Project Engineer
Office of Planning
Planning and Research Division
Iowa Department of Transportation
800 Lincoln Way
Ames, Iowa 50010

Subject: U.S. #218 Bridge - Cedar River
Cedar Falls Project No. BR-033-1261

Dear Mr. Welch:

Thank you for allowing us to comment at an early stage in the planning process for the U.S. #218 bridge over the Cedar River in Cedar Falls. Upon further discussions with Mr. Jim Krieg, Interstate Substitution Administrator, about this project, I would first like to state that the Cedar Falls Park Department is looking forward to construction of the new bridge and we will be willing to work with the Iowa Department of Transportation during the design of this roadway. Upon reviewing the 1" = 100' scale aerial photograph that you sent to me and the impacts that the new bridge will have on Tourist Park and the City owned boathouse, I would like to comment as follows:

- 1) It appears that encroachment will take place along the easterly side of Tourist Park and it also appears on the preliminary drawings that this encroachment will have a serious impact on the usability and aesthetics surrounding the boathouse. Given this apparent impact, it would be our contention that the Iowa Department of Transportation purchase the boathouse at its fair market value or replacement value and this would allow the City to relocate the boathouse to a more desirable setting.



17

Mr. Thomas M. Welch

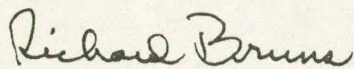
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- 2) In reviewing the plans, it appears like you intend to transition from the four (4) lane bridge into the existing two (2) lane roadway on U.S. #218. I would like to point out that the bridge on Snag Creek is approximately 52' wide and was originally designed to accommodate a four (4) lane roadway. I would like to request that you consider constructing a four (4) lane facility from the proposed bridge improvements to the Snag Creek Bridge and then north of the Snag Creek Bridge transition into the existing two (2) lane facility which exists on Highway #218 north. This would appear to me to provide a continuity of the roadway section instead of having a four (4) lane structure over Snag Creek and a two (2) lane roadway in between.
- 3) In regard to the pedestrian walkway that is proposed on the downstream side of the bridge, we are not opposed to this location if provisions can be made on the northeast side of the bridge to allow the pedestrians and bicycle traffic to transition down off the proposed walkway and underneath the proposed bridge which will allow access into Island Park, as well as a transition movement into Tourist Park.

In summary, the Cedar Falls Park Department encourages the Iowa Department of Transportation to proceed ahead with the design of this structure and we are not opposed to the acquisition of the park land or the boathouse, however, we do request that we be compensated in order to allow us to replace the facility.

Thank you for allowing us to comment at this early stage and if you have any questions or comments in regard to this letter, please feel free to contact me.

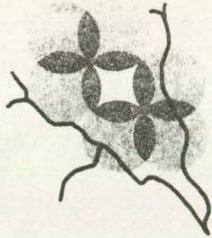
Sincerely,



Richard Bruns
Cedar Falls Park Director

JRK:RB:jrb

cc Mayor Douglas Sharp
James R. Krieg
Robert Bortle



IOWA NORTHLAND REGIONAL COUNCIL OF GOVERNMENTS

Suite N Russell Lamson Building 209 West Fifth Street Waterloo, Iowa 50701 Telephone: 319-235-0311

July 23, 1985

Received

JUL 29 1985

Office of
Project Planning

Mr. C.I. MacGillivray
Office of Project Planning
800 Lincoln Way
Ames, Iowa 50010

Dear Mr. MacGillivray:

We wish to acknowledge the receipt of your Letter of Intent to replace the U.S. 218 Bridge over the Cedar River in Cedar Falls, Black Hawk County. We have assigned a State Application Identifier to your letter; it is IA850007-068.

The procedure used by the Iowa Northland Regional Council of Governments for handling the Iowa Intergovernmental review and comment process is as follows:

- 1) Review by the INRCOG Staff Review Committee,
- 2) Review and recommendations by a Professional and/or Technical Advisory Committee,
- 3) Review and action by the Iowa Northland Regional Council of Governments, and
- 4) Notification of action taken.

The dates and times of the review of your proposal by these groups are:

Staff Review Committee - Tuesday, August 6, 1985, at 9:00 a.m.
INRCOG - Thursday, August 15, 1985, at 12:00 noon.

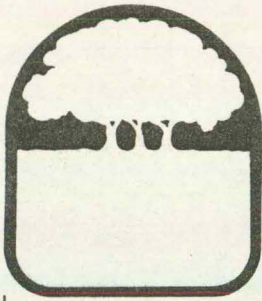
You are invited to attend any of these meetings, if you wish. Please confirm this with us if you plan to attend. If you have any questions, please call us.

Very truly yours,

Noel C. Shughart
(js)

Noel C. Shughart
Associate Planner

NCS/mt



BLACK HAWK COUNTY CONSERVATION BOARD

2410 West Lone Tree Road
Cedar Falls, Iowa 50613
(319) 266-6813

July 22, 1985

Received

JUL 23 1985

Office of
Project Planning

Harry S. Budd, Director
Office of Project Planning
Iowa Dept. of Transportation
800 Lincoln Way
Ames, IA 50010

Dear Harry:

Thank you for the opportunity to respond to impacts regarding replacement of the existing US 218 bridge over the Cedar River in Cedar Falls, ref. no. IX-218-7(41).

The Black Hawk County Conservation Board will not be directly affected by this project. We would, however, have several concerns regarding the project.

1. The existing channel not be altered.
2. Design and construction be carried out so as to minimize erosion and sedimentation.
3. Mitigation with the Cedar Falls Parks Department for loss of park land and facilities.
4. The existing bridge be left intact during construction so that a detour is not necessary.

We consider the impacts of this project to be minimal and encourage you to proceed with the needed replacement of the old bridge.

If I can be of further assistance, let me know. Thank you.

Yours in conservation,

Steve Finegan
Executive Director

SF/lm

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