

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

US Army Corps of Engineers

U.S. Department of Defense

1986

Gavins Point Dam, South Dakota, to Ponca State Park, Nebraska

Follow this and additional works at: <http://digitalcommons.unl.edu/usarmyceomaha>



Part of the [Civil and Environmental Engineering Commons](#)

"Gavins Point Dam, South Dakota, to Ponca State Park, Nebraska" (1986). *US Army Corps of Engineers*. 38.
<http://digitalcommons.unl.edu/usarmyceomaha/38>

This Article is brought to you for free and open access by the U.S. Department of Defense at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in US Army Corps of Engineers by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

*Missouri National
Recreational River
Nebraska and South Dakota
General Design
Memorandum MRR-1*

Gavins Point Dam, South Dakota,
to Ponca State Park, Nebraska



OMAHA DISTRICT CORPS OF ENGINEERS
DEPARTMENT OF THE ARMY
JULY 1980

SUPPLEMENT NO. 1, MARCH 1986

MRDPD-ER (MROPD-A/17 Apr 86) 1st End

Galloway/tw/7280

SUBJECT: Missouri National Recreational River, Supplement No. 1 to General
Design Memorandum

DA, Missouri River Division, Corps of Engineers, P.O. Box 103, Downtown
Station, Omaha, Nebraska 68101-0103

APR 24 1986

TO: Commander, Omaha District, ATTN: MROPD-A

Subject Supplement is approved.

FOR THE COMMANDER:



Encls wd

LEE W. TUCKER
Colonel, Corps of Engineers
Deputy Commander

CF:

DAEN-CWO-R, w/encls (5 cys)

MISSOURI NATIONAL RECREATIONAL RIVER
CAVINS POINT DAM, SOUTH DAKOTA
TO
PONCA STATE PARK, NEBRASKA
GENERAL DESIGN MEMORANDUM MRR-1

SUPPLEMENT NO. 1
MYRON GROVE RIVER ACCESS

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, KANSAS CITY

March 1986

Department of the Army
Omaha District, Corps of Engineers
6014 U.S. Post Office and Courthouse
Omaha, Nebraska 68102-4978

Missouri National Recreational River
Gavins Point Dam, South Dakota
to
Fonca State Park, Nebraska

General Design Memorandum MRF-1

Supplement No. 1
Myron Grove River Access
Clay County, South Dakota
March 1986

Table of Contents

Paragraph	Title	Page No.
1	Authority	1
2	Purpose	1
3	Need for Development	1
4	Existing Conditions	2
5	Proposed Development	2
6	Responsibilities for Development	2
7	Summary of Estimated Costs	3
8	Cost Allocation	3
9	Economic Feasibility	4
10	Conclusion	4
11	Recommendations	4
APPENDIX A	Location Map	
B	Existing Boat Ramps	
C	Environmental Assessment	
D	Development Plan	
E	Precast Boat Ramp Details	
F	Boat Ramp Profile	
G	Firap Cross-Section	

Department of the Army
Omaha District, Corps of Engineers
6014 U.S. Post Office and Courthouse
Omaha, Nebraska 68102-4978

Missouri National Recreational River
Gavins Point Dam, South Dakota
to
Ponca State Park, Nebraska

General Design Memorandum MRR-1

Supplement No. 1
Myron Grove River Access
Clay County, South Dakota

March 1986

1. Authority. - Construction of the Missouri National Recreational River (MNRR) was authorized by Section 707 of the National Parks and Recreation Act of 1978 (PL 95-625) which amended Section 3(a) of the Wild and Scenic Rivers Act (PL 90-542). The Corps role in developing the MNRR under the administration of the Department of the Interior was defined in a Cooperative Agreement between the Assistant Secretary for Fish, Wildlife, and Parks and the Chief of Engineers signed respectively on 4 January 1980 and 1 February 1980. Construction funding was provided in the 1985 Supplemental Appropriations Act (PL 99-88).

2. Purpose. - The purpose of this document is to supplement the General Design Memorandum MRR-1 for development of a public recreation facility and access to the Missouri National Recreational River at Myron Grove Game Production Area. This location is on the boundary between the site identified on Plate 5 of the GDM and Myron Grove Game Production Area. The tract identified in the GDM has not been acquired. The project consists of an access road, parking, turnaround, boat ramp, boat dock, night light and vault toilet facilities at a total cost of \$59,233.

3. Need for the Development. - Although the 59 mile reach of the MNRR below Gavins Point Dam (FM 811) offers many outdoor recreation opportunities, there are only three public boat ramps between the Gavins Point/Yankton area and Ponca State Park (RM 752). Two of these ramps are in Cedar County, Nebraska and one is in Clay County, South Dakota. The counties of Union, Clay and Yankton, which border the river in this reach, have expressed interest in securing additional river access for boating, fishing, hunting, canoeing, sightseeing and general recreation activities. Between 1970 and 1980 these three counties increased in population by an average of 6.2 percent to over 44,000. The

SDGFP has also been aware of the need for additional recreation opportunity in the southeast corner of the state. A major obstacle is the lack of public boat launching and parking facilities. Development of Myron Grove River Access Point (RM 787.2) will respond to public demand for river access in an area that is not adequately provided for. (Appendix A and B)

4. Existing Conditions. - The South Dakota Department of Game, Fish and Parks (SDGFP) has been operating the 90 acre Myron Grove Game Production Area with limited public access to the river. The site selected for recreation development is on three acres in the southeast corner of the area. Access is provided by a one mile gravel county road which connects to a hard-surfaced county road. The latter extends nine miles east to Vermillion as County Road A or as County Road W-2, five miles north to Highway 50, then 15 miles west to Yankton. The gravel road terminates at a barricade adjacent to the development site. There is presently an undeveloped parking area on the site near the road terminus. From there a primitive trail leads to the river where small boats are being launched over the bank.

The Myron Grove site is located on the convex side of a meander in the river and has experienced very minor erosion losses since the construction of Gavins Point Dam. At this location the river constricts to approximately 1000' in width, with a velocity of 2-3 feet per second within 75 feet of the bankline. The channel depth averages 8-10 feet 30 feet from the bankline. Sufficient river depths should continue to exist adjacent to the boat ramp to allow for long term use without channel maintenance.

The Myron Grove Game Production Area was surveyed for cultural resources in 1980 by the Omaha District's South Dakota archeologist. No significant sites were discovered during the course of the pedestrian investigation, therefore, the area is clear from a cultural resources standpoint.

Results of a site specific environmental assessment are presented in Appendix C.

5. Proposed Development. - The Myron Grove site was recommended by the Clay County Board of Commissioners and the SDGFP to meet the need for increased public access to the MNRR. Development plans include a 115' square gravel surfaced parking area, a 400' x 20' gravel surfaced access road from the parking area to the river, a 130' x 80' graveled turnaround, a 17' x 50' boat ramp, 200' of riprap, boat dock, night light and a vault toilet. (Appendices D, E, F and G)

6. Responsibilities for Development. - South Dakota Game, Fish and Parks, in cooperation with the Government, will design and construct the proposed facilities at Myron Grove. Costs of

design and construction will be shared equally by the Government and SDGFP in accordance with the cost-sharing provisions of the FY 1985 Supplemental Appropriations Act, PL 99-88. The State will pay all costs in full. The State will then present billing documents to the CCE, and the government will reimburse 50 percent of the total eligible costs. The District Engineer will approve all designs and construction. Operation and maintenance costs are a non-Federal responsibility. Title to the land will remain with the sponsor but the land will be dedicated in perpetuity for recreation and game production purposes.

7. Summary of Estimated Costs.

Item	Unit <u>Designation</u>	Unit <u>Cost</u>	Quantity	Total <u>Cost</u>
Mobilization				\$ 1,500
Tree Removal	Ea.	75.00	50	3,750
Excavation	C.Y.	2.50	2000	5,000
Compacted Gravel	C.Y.	10.00	430	4,300
Spalls	C.Y.	30.00	40	1,200
Riprap	C.Y.	35.00	340	11,900
Top Soil	C.Y.	2.00	100	200
Eoatrap Flank	Ea.	200.00	17	3,400
Eoatrap Flank Installation	Ea.	125.00	17	2,125
Eoat Dock	Ea.	1000.00	1	1,000
Guard Rails	Ft.	15.00	90	1,350
Vault Toilet	Ea.	4000.00	1	4,000
Night Light	Ea.	2000.00	1	2,000
Wheel Stops	Ea.	40.00	40	1,600
Plantings				2,000
LEFR	Ac.	500.00	3	1,500
Subtotal				46,825
Contingencies 10%				4,682
Direct Cost				51,507
Engineering & Design 9%				4,636
Supr. & Admin. 6%				3,090
Total Estimated Cost				\$59,233

8. Cost Allocation. - Total estimated costs for construction of the Myron Grove River Access Point are \$59,233. In accordance with PL 99-88, development will be cost-shared 50/50 with SDGFP. The non-Federal share will be \$28,116 which is \$29,616 less the \$1,500 credited for LEFR. The Federal share will be \$29,617.

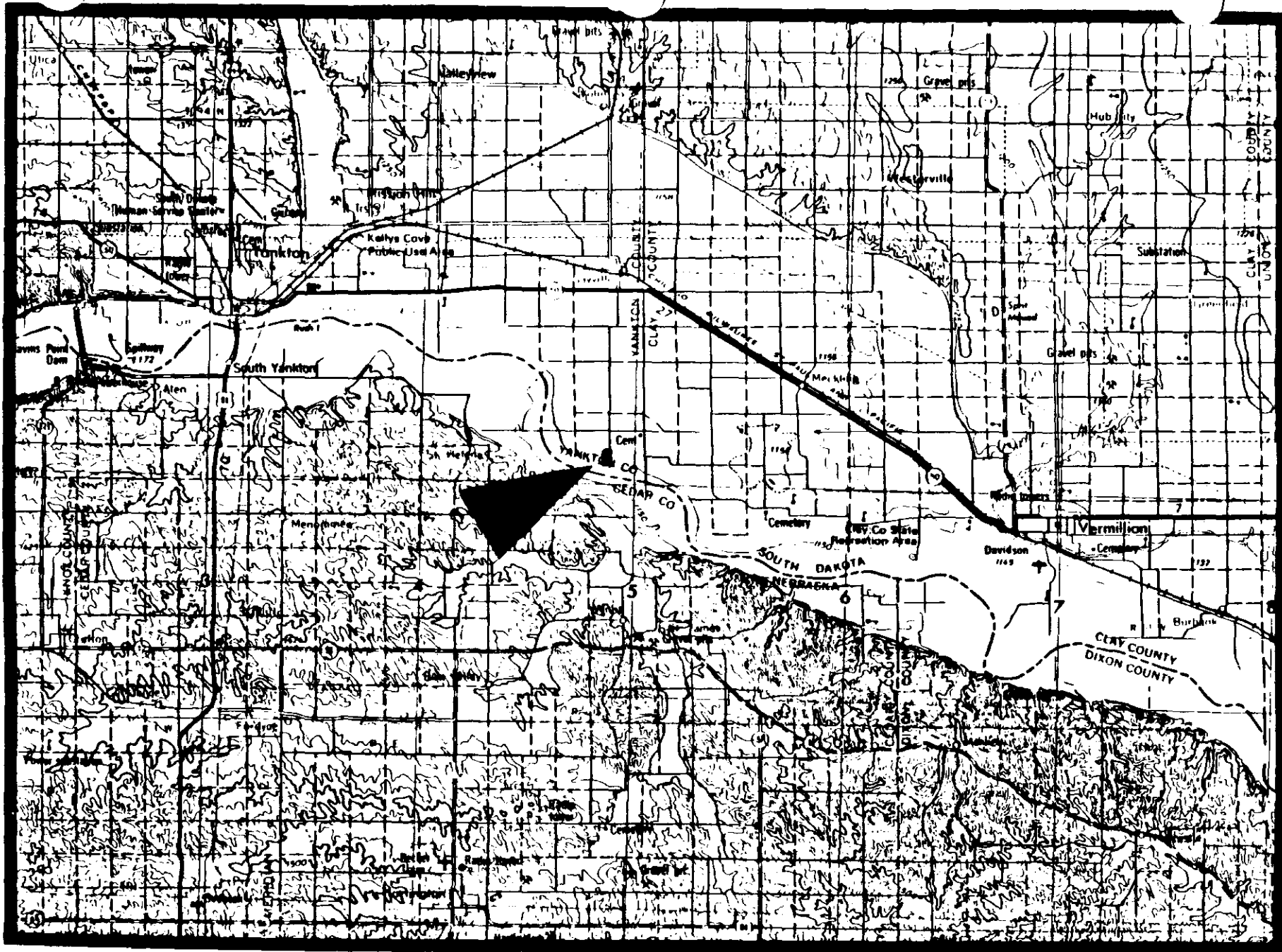
9. Economic Feasibility. The following economic feasibility information is based on local benefits and does not address the nationally recognized values of the river. The benefits of national visitation are not calculable. According to the 1975 South Dakota Comprehensive Outdoor Recreation Plan (SCORP), in this region of the state, 70 percent of recreation activity takes place on 22 peak days each year. The SCORP indicates that 40 boats per day can be accommodated by a one-lane boat ramp with an average of 2.5 people per boat. Using these figures the number of boats a one-lane boat ramp can accommodate during the recreation season is 1257. The 1986 estimated value of a recreation-day is \$5.69.

With a capacity for 1257 boats, an average of 2.5 people per boat, and the \$5.69 value of one recreation-day, the average annual benefit is estimated to be \$17,880.

The economic life of the boat ramp is expected to be 10 years at 8 5/8 percent interest. Based on a total project cost of \$59,233, the total average annual operation and maintenance costs are estimated to be \$11,378. The economic benefit to cost ratio is 1.6.

10. Conclusion. - The designation of this stretch of the Missouri River as a part of the National Wild and Scenic Rivers System included specific goals. Three of these goals were (1) to improve public access, (2) develop recreational areas, and (3) provide streambank stabilization. The shared effort of SDGFP and COE will be addressing these three goals and provide a much needed facility along the MRRF. Construction and development of the Myron Grove site can be accomplished during FY 1986.

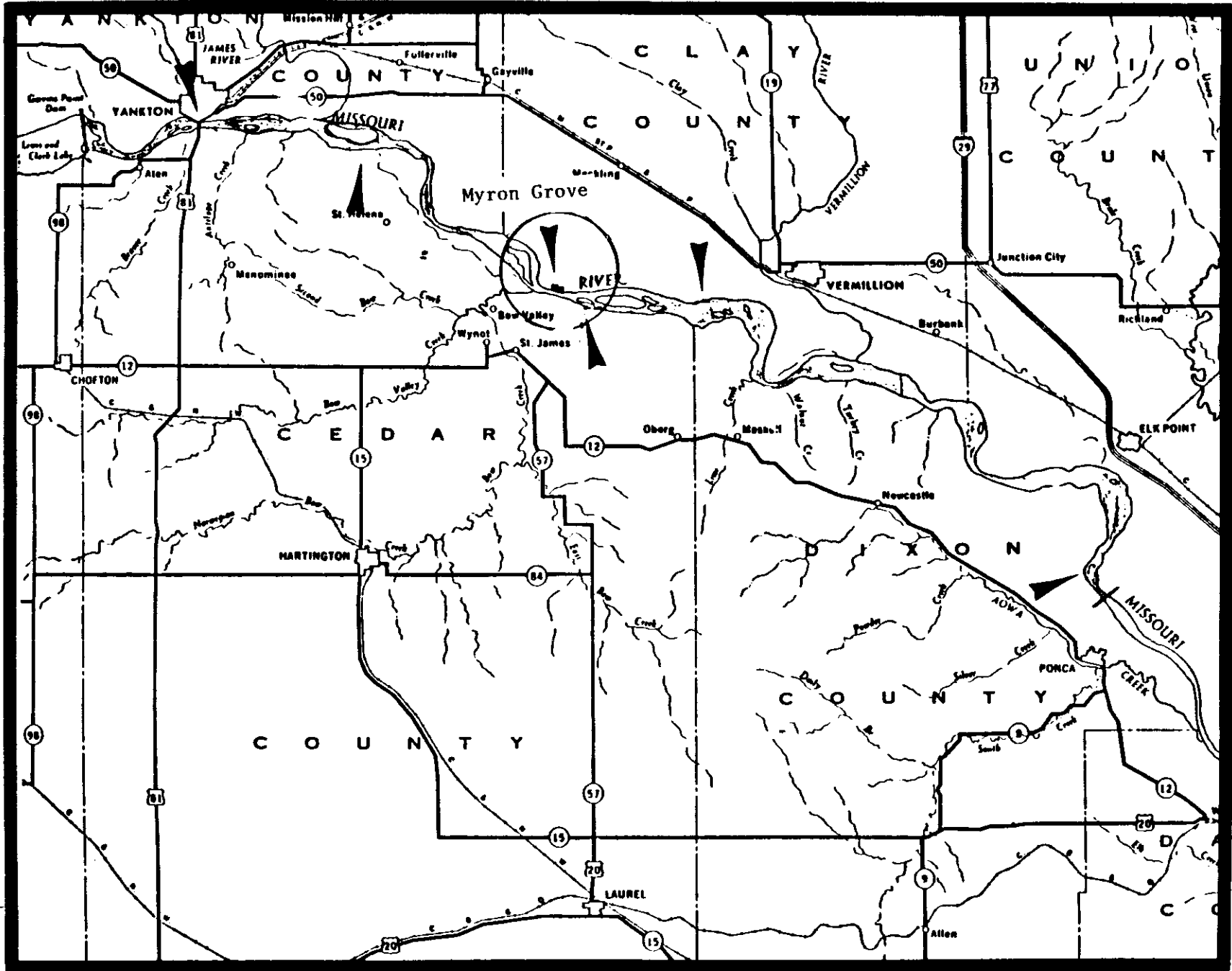
11. Recommendation. - It is recommended that this supplement be approved as submitted and be made a part of the Missouri National Recreational River Nebraska and South Dakota, General Design Memorandum MRR-1.



MYRON GROVE RIVER ACCESS POINT, CLAY COUNTY

SOUTH DAKOTA

MISSOURI NATIONAL REC... ONAL RIVER, NE, SD



APPENDIX B

▲ Existing Public Boat Ramps
Myron Grove Game Production Area

FINDING OF NO SIGNIFICANT IMPACT
MYRON GROVE RECREATION DEVELOPMENT
MISSOURI NATIONAL RECREATIONAL RIVER

An environmental assessment has been prepared for construction of a recreation facility for the Missouri National Recreational River (MNRR). The facility would insure safe access to the MNRR for the boating public. An environmental impact statement describing the full environmental effects of the MNRR development was prepared in 1980.

Adverse impacts of this site specific action include temporary deterioration of air and water quality associated with construction activities. However, these impacts are not considered significant. The recreation development will have no adverse impact on the least tern and bald eagle, endangered species, or the piping plover, a threatened species.

The assessment has been prepared pursuant to the National Environmental Policy Act. This assessment also insures compliance with the Endangered Species Act. Compliance with Section 404 of the Clean Water Act is in progress. No long-term impacts on water quality are anticipated.

It is my finding that the potential Federal action would not have significant adverse impacts on the human environment and, therefore, an environmental impact statement will not be prepared.

Date:



STEVEN G. WEST
Colonel, Corps of Engineers
District Engineer

ENVIRONMENTAL ASSESSMENT
MYRON GROVE RECREATION DEVELOPMENT
MISSOURI NATIONAL RECREATIONAL RIVER
APRIL 1986

Authority: Construction of the Missouri National Recreational River (MNRR) was authorized by Section 707 of the National Parks and Recreation Act of 1978 (PL-95-625) which amended Section 3(a) of the Wild and Scenic Rivers Act (PL-90-542). The Corps' role in developing the MNRR under the administration of the Department of the Interior was defined in a Cooperative Agreement between the Assistant Secretary for Fish, Wildlife, and Parks and the Chief of Engineers signed respectively on 4 January 1980 and 1 February 1980. Construction funding was provided in the 1985 Supplemental Appropriations Act (PL-99-88).

Description of the Project:

a. General: There are three earlier reports that describe the MNRR development; the Final Environmental Impact Statement for the MNRR, the MNRR General Design Memorandum by the Corps of Engineers, and the MNRR Management Plan by the Department of Interior. The 59 mile reach of the MNRR offers many outdoor recreation opportunities for activities such as hunting, fishing, boating, and picnicking. Downstream from Gavins Point Dam (RM 811) recreational use decreases due to the diminishing amount of recreational facility development and access points. Currently, there are three public boat ramps between the Gavins Point Dam/Yankton area and Ponca State Park (RM 752) at the downstream end of the MNRR. Two of these are in Cedar County, Nebraska and one is located in Clay County, South Dakota. The site that has been identified for recreational development is the Myron Grove Game Production Area (RM 787). Although this is not one of the exact locations identified for potential recreation development in the General Design Memorandum, it is adjacent to an area that was originally identified for this purpose.

b. Existing Conditions: The South Dakota Department of Game, Fish, and Parks (SDGFP) has been operating the 90 acre Myron Grove Game Production Area with limited public access to the river. The site selected for recreation development is on three acres in the southeast corner of the area. Access is provided by a one mile gravel county road which connects to a hard-surfaced county road. The latter extends nine miles east to Vermillion as County Road A or as County Road W-2, five miles north to Highway 50, then 15 miles west to Yankton. The gravel road terminates at a barricade adjacent to the development site. There is presently an underdeveloped parking area on the site near the road terminus. From there a primitive trail leads to the river where boats are launched over the bank.

The Myron Grove site is located on the convex side of a meander in the river and has experienced minor erosion losses since the construction of Gavins Point Dam. At this location, the river constricts to approximately 1000' in width; therefore, sufficient river depths should continue to exist adjacent to the boat ramp to allow for long term use without channel maintenance.

The FEIS identified 48 species of mammals which inhabit the recreational river project area. All of these species could be expected to occur in the vicinity of the proposed recreation development.

A list of fish species that are found in the MNRR corridor can be found in the FEIS. These species would be expected to be found in the project vicinity.

As described in the FEIS many species of birds are year round residents as well as spring and fall migrants. Especially spectacular are the annual spring and fall migrations of waterfowl and shorebirds along the river corridor. The interior least tern and bald eagle both listed as Federal endangered species and piping plover listed as threatened may occur near the proposed recreational development. Both interior least terns and piping plover breeding colonies occur on sandbars between Yankton, South Dakota and Ponca State Park. Tern and plover breeding colonies have been recorded as close as 1-1/2 miles (1.6 km) from the proposed recreational development. Bald eagles may use the project area incidentally as winter migrants but are not known to use it as a major roost area.

Cultural Resources: The Myron Grove Game Production Area was surveyed for cultural resources in 1980 by the Omaha District's South Dakota archeologist. No significant sites were discovered during the course of the pedestrian investigation.

Environmental Effects:

a. Fish, wildlife, and vegetation. The proposed project will have a short term adverse effect during the construction of the road and parking lot. Removal of 50 trees 12" - 36" in diameter is required to widen the existing path and create the gravel turnaround. A short term decrease in air and water quality may occur during construction activities. The 200 ft. of riprap will create a stable substrate for aquatic invertebrates. The facility will not impact the visual quality of either Jakes Island or the high bluffs across the river. All adverse effects are temporary and therefore not considered significant.

The proposed upgrading of the recreation facilities at Myron Grove will benefit the boating public by ensuring safe access to the MNRR.

b. Endangered Species. The interior least tern and piping plover are summer residents to the MNRR. Breeding takes place on bare alluvial sandbars or islands. Piping plover breeding habitat is similar to the interior least terns but plovers are more tolerant of vegetation. Arrival, nest initiation, egg laying, incubation and post fledging period for both species takes place from mid-May to early August. After a 20 day incubation period the least tern chicks hatch and will fledge in another 20 days. Piping plovers have a four week incubation period and a five week brooding period. The terns feed on small fish such as minnows. Piping plovers feed on small invertebrates such as insects and crustaceans which are found along shorelines.

The closest interior least terns and piping plovers have been recorded nesting to the proposed development is at St. Helens Island East, which is 1-1/2 miles upstream. The closest nesting colony downstream is approximately 6 miles from the proposed site near Clay County Park.

The actual construction associated with upgrading the recreation facility is not expected to directly affect the known nesting colonies or sandbars which could potentially be used for nesting. The facility is located in a rather narrow section of the river where sandbar availability is low at most flows. It is unlikely that human activities constrained to the site would affect terns or plovers because of the distance to the nearest potential nesting sites. It is also unlikely that the recreation facility would be a source of access for foot travel or all terrain vehicles (ATV's) to sandbars where tern and plover breeding activity may be taking place.

However, one of the factors which led the U.S. Fish and Wildlife Service to list the two species as threatened and endangered was the negative effect of recreation activities on their reproductive success.

The Nebraska Game and Parks Commission (NG&PC) in annual interior least tern surveys of the Missouri River have recorded negative impacts from recreation activity. Observed activities included boating, skiing, fishing, driftwood collection, picnicking, sunbathing, and fireworks displays.

River traffic itself did not significantly affect nesting activities. Boating activities did not appear to evoke defensive behavior in nesting terns. However, when people left their boats and walked on the sandbars where nesting activities were in progress, the birds did respond. Data from annual tern surveys showed that human disturbance on sandbars was insignificant until the 4th of July weekend when all sandbars being observed had some evidence of human activity.

Boating activities originating at the recreation site have the potential to contribute to human disturbances at nesting colonies. Boaters originating at the recreation site could choose to stop on sandbars occupied by terns and plovers. However, that potential exists now because of the use the present site receives as a boat launching area. The greatest potential exists on holiday weekends during the summer months.

A NG&PC annual interior least tern survey report recommends that known colonies be posted with signs explaining the delicate nesting requirements and requesting that recreationists respect these needs and exhibit caution in their actions. Signs could also be posted at the access site educating the public about tern and plover needs. However, these two strategies could be counter productive and contribute to the human disturbance by alerting curiosity seekers to the presence of terns and plovers. Wardens or volunteers stationed at access sites and near colonies during peak recreation weekends cautioning boaters about terns and plovers could be used to help alleviate the problem.

In summary, there will be no adverse impact to the interior least tern or piping plover as a result of the Myron Grove recreation development for the following reasons: 1) The Myron Grove recreation facility will not be

constructed in close proximity to tern/plover nesting colonies; 2) foot travel and all terrain vehicles originating at the site will not have access to nesting colonies; 3) public education by signs and/or wardens would eliminate the possible adverse impact of boating recreation which might occur because of development.

Endangered Species Act compliance on the MNRR will be completed when specific features are identified and prior to any additional development.

Formal section 7 consultation on the Missouri River operations is currently underway. This consultation will include the MNRR reach of the Missouri River.

Considering the possible incidental use by eagles of the immediate area and the lack of any adverse effect on the major components of eagle habitat, the upgrading of the recreation facilities at Myron Grove will have no effect on the bald eagle.

BIBLIOGRAPHY

1. Anonymous, Nebraska Game and Parks Commission. Undated. Interior Least Tern Nesting Survey, 1981.
2. Carlson, Dave, Ross Lock, Nebraska Game and Parks Commission. Undated. Interior Least Tern Nesting Survey, 1981.
3. Dinan, J. J., Nebraska Game and Parks Commission. Undated. Missouri River Interior Least Tern Nesting Survey, 1982.
4. Dinan, John, Ross Lock and Dave Carlson, Nebraska Game and Parks Commission. June 1985. Missouri River Least Tern and Piping Plover Habitat Management Proposal presented to the Army Corps of Engineers.
5. U.S. Department of the Army, Omaha District Corps of Engineers. July 1980. Missouri National Recreational River Final Environmental Impact Statement.
6. U.S. Department of the Interior, Heritage Conservation and Recreation Service. Missouri National Recreational River Management Plan.
7. U.S. Department of the Army, Omaha District Corps of Engineers. July 1980. Missouri National Recreational River Nebraska and South Dakota General Design Memorandum MRR-1, Gavins Point Dam, South Dakota to Ponca State Park, Nebraska.
8. U.S. Department of Interior, Fish and Wildlife Service. May 28, 1985. "Endangered and Threatened Wildlife and Plants; Interior Population of the Least Tern Determined to be Endangered." Final Rule. Federal Register. Vol. 50, No. 102, pp. 21784-21792.
9. Vandell, George, South Dakota Fish, Game and Parks. March 1986. Personal Communication.

Douglas C. Latka
Prepared by: Douglas C. Latka
Environmental Resources Specialist
April 1986

Richard D. Gorton
Approved by: Richard D. Gorton
Chief, Environmental Analysis Branch
April 1986

ENVIRONMENTAL REVIEW

a. Archeological and Historic Preservation Act, as amended, 16 U.S.C. 469, et seq.

No resources will be impacted.

b. Clean Air Act, as amended, 42 U.S.C. 1857h-7, et seq.
Because of the scope of the activity, the impact will be temporary and localized and therefore not significant.

c. Clean Water Act, as amended, (Federal Water Pollution Control Act) 33 U.S.C. 1251, et seq.

A Section 404 evaluation is in progress. No significant impact is expected.

d. Coastal Zone Management Act, as amended, 16 U.S.C. 1451, et seq. Not applicable. The proposed project does not involve a coastal zone.

e. Endangered Species Act, as amended, 16 U.S.C. 1531, et seq.

Two endangered species and a threatened species were evaluated and no impact is anticipated.

f. Estuary Protection Act, 16 U.S.C. 1221, et seq. Not applicable. The proposed project does not involve an estuary.

g. Federal Water Project Recreation Act, as amended, 16 U.S.C. 460-1(12), et seq.

Not applicable.

h. Fish and Wildlife Coordination Act, as amended, 16 U.S.C. 661, et seq.

Not applicable.

i. Land and Water Conservation Fund Act, as amended, 156 U.S.C. 4601-4601-11, et seq.

Not applicable.

j. Marine Protection, Research, and Sanctuaries Act, 33 U.S.C. 1401, et seq. Not applicable. The proposed project does not involve the discharge of materials into the ocean.

k. National Historic Preservation Act, as amended, 16 U.S.C. 470a, et seq.

No resources will be impacted.

l. National Environmental Policy Act, as amended, 42 U.S.C. 4321, et seq.

This assessment and review ensures compliance with the National Environmental Policy Act.

m. Rivers and Harbors Act, 33 U.S.C. 401, et seq.

n. Watershed Protection and Flood Prevention Act, 16 U.S.C. 1101, et seq. Not applicable. This statute imposes no requirements on the proposed project.

o. Wild and Scenic Rivers Act, as amended, 16 U.S.C. 1271, et seq.

The development is part of implementing a National Recreational River.

p. Floodplain Management (E.O. 11988)

No adverse impacts on flood plain are anticipated.

q. Protection of Wetlands (E.O. 11990)

The proposed development will not have any adverse effects on wetlands.

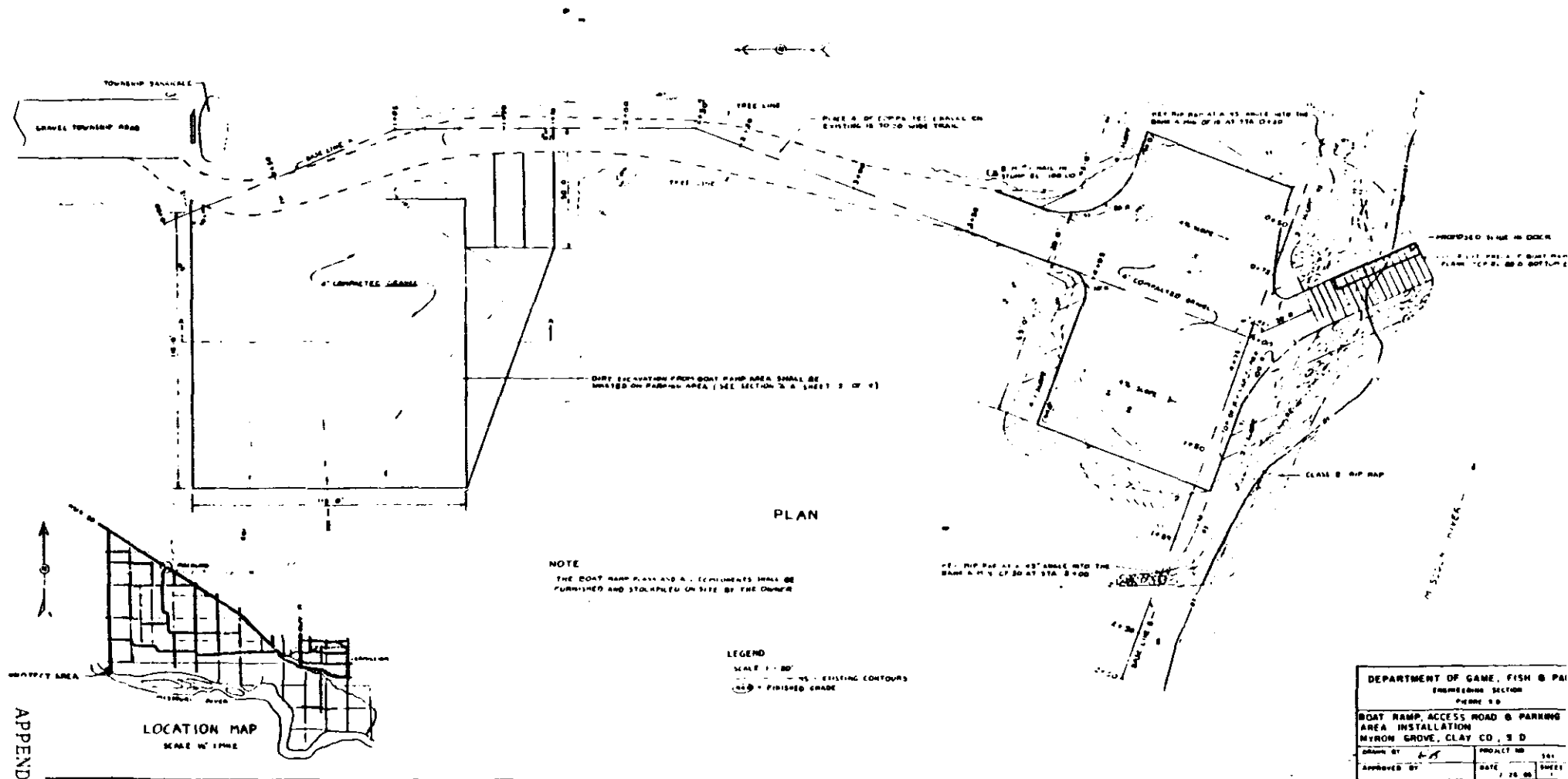
r. CEQ Memorandum, August 11, 1980, Analysis of Impacts on Prime or Unique Agricultural Lands in Implementing NEPA.

Not applicable.

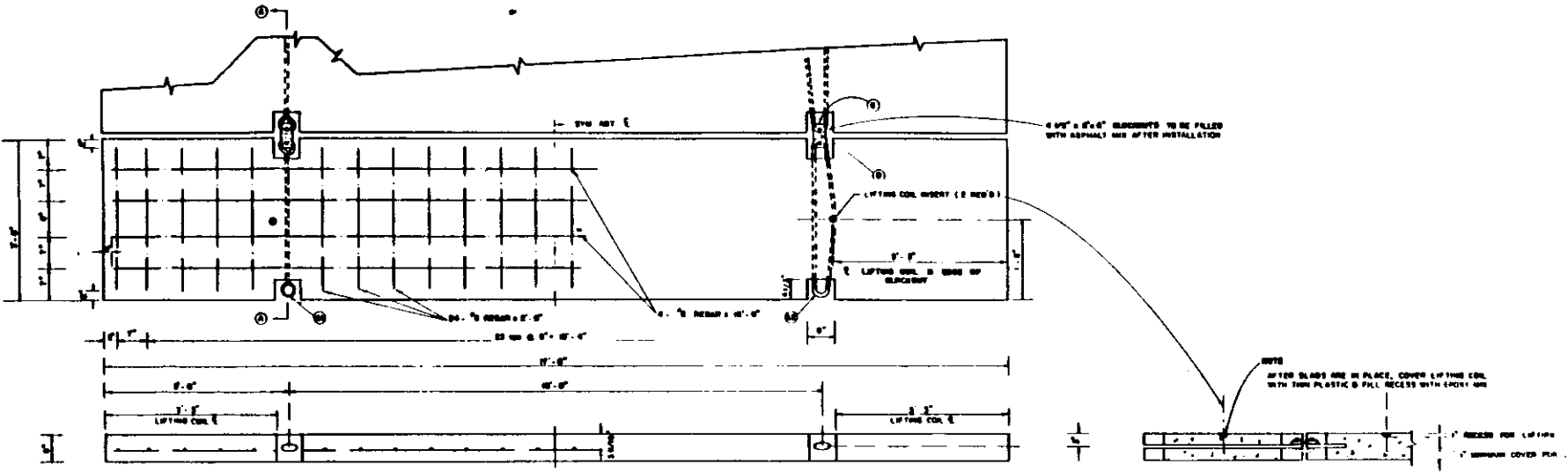
s. CEQ Memorandum, August 10, 1980, Interagency Consultation to Avoid or Mitigate Adverse Effects on Rivers in the Nationwide Inventory. Not applicable. The proposed project would not involve rivers in the Nationwide Inventory.

Not applicable.

BOAT RAMP, ACCESS ROAD & PARKING AREA INSTALLATION - MYRON GROVE, CLAY CO., S. D.

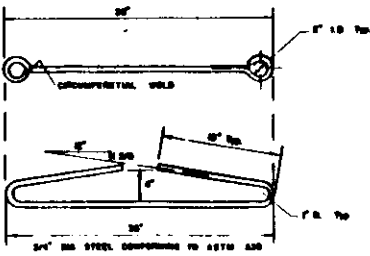


EXAMPLE OF PLANK & COMPONENTS FURNISHED BY THE OWNER

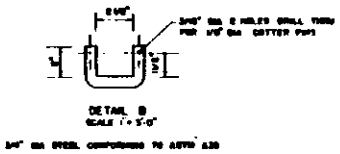


PLAN & ELEVATION
SCALE 1/4" = 1'-0"

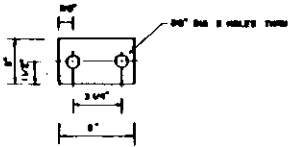
SECTION A - A
SCALE 1" = 1'-0"



DETAIL A
DETAIL B
SCALE 1/2" = 1'-0"



DETAIL B
SCALE 1" = 3'-0"
3/4" DIA STEEL CONFORMING TO ASTM A305



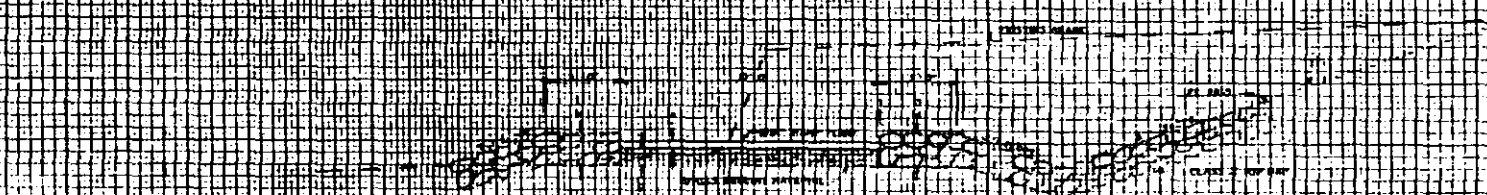
DETAIL C
SCALE 1" = 1'-0"
3/4" DIA x 3" x 6" CONFORMING TO ASTM A305

NOTE
EITHER OF THE ABOVE STEEL BAR DESIGNS WILL BE ACCEPTABLE

APPENDIX E



SECTION A-A
SCALE 1" = 10'



TYPICAL BOAT RAMP SECTION
SCALE 1" = 10'



BOAT RAMP PROFILE
SCALE 1" = 10'

BOAT RAMP ACCESS R
AND PARKING AREA
MYRON GROVE, CLAY C

