

Minnesota Department of Transportation (Mn/DOT)

Historic Bridge Management Plan

Bridge Number: 5265

Executive Summary

Bridge 5265 (Garrison Pedestrian Underpass) was built in 1938 by the Civilian Conservation Corps (CCC) to carry vehicular traffic on US Highway 169 over a small creek along Lake Mille Lacs at the south edge of Garrison, Crow Wing County. It also was designed to facilitate pedestrian traffic beneath the highway. Including wingwalls, it has an overall structure length of 80 feet, an out-to-out headwall width of 44.5 feet, and a roadway width of 39.5 feet. The superstructure is a corrugated-metal, multi-plate, arch culvert with a 14-foot span and a 44-foot barrel. The substructure consists of stone masonry headwalls, wingwalls, sidewalls, and railing, with a two-cell masonry culvert beneath the concrete-slab floor of the pedestrian underpass. The stone masonry is random-coursed, rock-faced, ashlar granite.

Bridge 5265 is in fair condition. The multi-plate arch has significant corrosion near each spring line. The stone masonry headwalls and wingwalls have mortar joints in poor condition. The bridge railings are unreinforced masonry with blunt projections at the headwall pilasters. The roadway width of 39.5 feet is adequate for current standards but does not provide room for additional sidewalks or high-speed inner crash-tested railings. The load capacity is substandard with an inventory rating of HS16 and an operating rating of HS 22.

The recommended future use of the bridge is rehabilitation for continued vehicular use on-site. The bridge should be rehabilitated based on the Secretary of the Interior's Standards for Rehabilitation (Standards) [36 CFR Part 67] and Guidelines for Bridge Maintenance and Rehabilitation Based on the Secretary of the Interior's Standards (Guidelines).

Until the Federal Highway Administration (FHWA), State Historic Preservation Office (SHPO) and Minnesota Department of Transportation (Mn/DOT) have signed a historic bridge Programmatic Agreement, all proposed work on this bridge (including maintenance, preservation and stabilization activities) needs to be sent to the Mn/DOT Cultural Resources Unit (CRU) for formal review.



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I - Project Introduction

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The Minnesota Department of Transportation (Mn/DOT), in cooperation with the Minnesota State Historic Preservation Office (SHPO) and Federal Highway Administration (FHWA), has committed to preserve selected historic bridges in Minnesota that are owned by the state and managed by Mn/DOT. In consultation with SHPO and FHWA, Mn/DOT selected 24 bridges as candidates for long-term preservation. Mn/DOT's objective was to preserve the structural and historic integrity and serviceability of these bridges following the Secretary of the Interior's Standards for the Treatment of Historic Properties (Standards) [36 CFR Part 68], and their adaptation for historic bridges by the Virginia Transportation Research Council as Guidelines for Bridge Maintenance and Rehabilitation Based on the Secretary of the Interior's Standards (Guidelines). The character-defining features of each bridge received special attention. Mn/DOT also hopes to encourage other owners of historic bridges to follow its model for preservation.

The Glossary in the Appendix explains historic preservation terms used in this plan, such as historic integrity and character-defining features, and engineering terms, such as serviceability and deficiency.

Mn/DOT's ongoing efforts to manage historic bridges are intended to comply with Section 106 of the National Historic Preservation Act of 1966, as amended, and Section 4(f) of the U.S. Department of Transportation Act of 1966. This effort began with Robert M. Frame's 1985 study and list of significant and endangered bridges in Minnesota and incorporates Jeffrey A. Hess's 1995 survey and inventory of historic bridges in Minnesota that were built before 1956. That inventory identified the subject bridge as eligible for listing in the National Register of Historic Places. Using the results of the 1995 study, Mn/DOT selected individual historic bridges for long-term preservation.

To achieve its preservation objectives, Mn/DOT retained the consultant team of Mead & Hunt and HNTB to develop management plans for 22 of the 24 selected bridges. The remaining two bridges have been addressed through separate projects.

Mn/DOT requested that the team consider a full range of options for each bridge and present the option that the team judged to be best for long-term preservation with due consideration given to transportation needs and reasonable costs. For example, if two options are explored that both result in an equivalent level of preservation for the bridge (e.g., retention of historically significant features and projected life span), but one option costs significantly more than the other, the less costly option will be recommended. In cases where one option results in a significantly better level of preservation than any other reasonable options but costs more, it will be the recommended action.

Preservation objectives call for conservation of as much of the existing historic fabric of the bridge as possible. However, safety, performance and practical considerations may have dictated replacement of historic fabric, especially of a minor feature, if such action improved the overall life expectancy of a bridge.

Options that were considered for the 22 historic bridges, listed from most to least preferred, are:

1. Rehabilitation for continued vehicular use on-site
2. Rehabilitation for less-demanding use on-site, such as one-way vehicular or pedestrian/bicycle traffic
3. Relocation and rehabilitation for less-demanding use
4. Closure and stabilization following construction of bypass structure
5. Partial reconstruction while preserving substantial historic fabric

A recommended option was selected for each bridge through consultation among the consultant team, Mn/DOT and SHPO. Within the recommended option, the plan identifies stabilization, preservation and maintenance activities. Stabilization activities address immediate needs in order to maintain a bridge's structural and historic integrity and serviceability. Preservation activities are near-term or long-term steps that need to be taken to maintain a bridge's structural and historic integrity and serviceability for the foreseeable future. Preservation activities may include rehabilitation and replacement of components, as

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needed, and remedial activities to address a deficiency. Maintenance activities, along with regular structural inspections and anticipated bridge component replacement activities, are routine practices directed toward continued serviceability. Mn/DOT is responsible for final decisions concerning activities recommended in the plan.

Recommendations are intended to be consistent with the Standards. The Standards are ten basic principles created to help preserve the distinctive character of a historic property and its site, while allowing for reasonable change to meet new needs. They recommend repairing, rather than replacing, deteriorated features when possible. The Standards were developed to apply to historic properties of all periods, styles, types, materials, and sizes. They also encompass the property's site and environment as well as attached, adjacent, or related new construction.

Because the Standards cannot be easily applied to historic bridges, the Virginia Transportation Research Council prepared Guidelines, which adapted the Standards to address the special requirements of historic bridges. The Guidelines, published in the Council's 2001 Final Report: A Management Plan for Historic Bridges in Virginia, provide useful direction for undertaking historic bridge preservation and are included in the Appendix to this plan.

The individual bridge management plan draws from several existing data sources including: PONTIS, a bridge management system used by the Mn/DOT Bridge Office to manage its inventory of bridges statewide; the current Mn/DOT Structure Inventory Report and Mn/DOT Bridge Inspection Report for each bridge (the complete reports are included in the Appendix); database and inventory forms resulting from the 1995 statewide historic bridge inventory; past maintenance reports (if available, copy included in the Appendix); and other information provided by Mn/DOT. Because PONTIS uses System International (metric) units, data extracted from PONTIS are displayed in metric units.

The plan is based on information obtained from Mn/DOT in 2005, limited field examinations completed in 2005 for the purpose of making a qualitative assessment of the condition of the bridge, and current bridge design standards. Design exceptions are recommended where appropriate based on safety and traffic volume. The condition of a bridge and applicable design standards may change prior to plan implementation.

This plan includes a maintenance implementation summary at the end. This summary can be provided as a separate, stand-alone document for use by maintenance staff responsible for the bridge.

The plan for this individual bridge is part of a comprehensive effort led by Mn/DOT to manage the statewide population of historic bridges. The products of this management effort include:

1. Minnesota Historic Bridge Management Plan
2. Individual management plans for 22 bridges
3. National Register of Historic Places (NRHP) nomination forms for 2 bridges
4. Minnesota Historical Property Record (MHPR) documentation for 46 bridges

The first product, the Minnesota Historic Bridge Management Plan, is a general statewide management plan for historic bridges in Minnesota that are owned by the state, local governments or private parties. It is intended to be a single-source planning tool that will help bridge owners make management and preservation decisions relating to historic bridges. Approximately 240 historic bridges owned by parties other than Mn/DOT survive in the state as of 2005. Mn/DOT is developing this product to encourage owners of historic bridges to commit to their long-term preservation and offer guidance.

This individual plan represents the second product. The third and fourth products will be prepared as stand-alone documents.

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II - Bridge Data

Bridge Number: 5265

Date of Construction: 1938
SHPO Inventory Number: CW-GRC-005
Common Name (if any): Garrison Pedestrian Underpass

Location

Feature Carried: US 169 Northbound
Feature Crossed: Stream
Descriptive Location: 0.5 Miles South of Jct. TH 18
UTM Zone: 15 NAD: 1927
Easting: 436480 Northing: 5126260
USGS Quad Name: Garrison
Town or City: Garrison
County: Crow Wing

Structure Data

Main Span Type: 319 Steel Culvert Total Length: 14

Descriptive Information (or narrative as available)

Superstructure: single-span, multi-plate arch with granite headwalls and sidewalls
Substructure: masonry substructure
Floor/Deck: multi-plate arch carrying earth fill
Other Features: stone masonry railing

Narrative:

The granite used to construct Bridge 5265 was probably obtained from a quarry near Isle, a community located on the southeastern shore of Mille Lacs. The Isle-Warman Creek granite region contains outcroppings of red, gray, and black granite that were quarried by various companies. The Cold Spring Granite Company, for example, operated a quarry about five miles south of Isle as early as 1935. Light gray granite from the site was called Isle Granite and was marketed under the name of "Cold Spring Pearl White" granite.

Roadway Function: Mainline
Ownership: State
Custodian/Maint. Agency: State

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III - Historical Data

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Contractor	Civilian Conservation Corps (CCC)
Designer/Engineer	H.O. Skooglun, National Park Service A.R. Nichols, Consulting Landscape Architect

Significance Statement

Standing on U.S. Trunk Highway 169, Bridge 5265 overlooks what was once the north end of a picnic area on the shore of Mille Lacs Lake. This unusual bridge has two levels on a masonry substructure. The bottom level, now submerged thanks to the raised lake level subsequent to the original construction, consists of two, side-by-side, rectangular, concrete culvert barrels with masonry floors. Each barrel is approximately six feet wide and one and one-half feet high. These culverts carry the water beneath the bridge. The concrete tops of the culverts serve as the floor of the pedestrian underpass above. This underpass is created by the semi-circular, multi-plate arch, which has a 14-foot span and a 44-foot barrel, and is designed to provide dry pedestrian access to the lakeshore. Carrying the roadway slab on a layer of earth fill, the arch has granite-faced headwalls that extend along the roadway to serve as retaining walls. The masonry is rock-faced, random-coursed, ashlar. The stonework extends above the roadway to form railings, with evenly spaced, square openings. Buttresses or pilasters are positioned along the headwalls/retaining walls at regular intervals and frame the arch opening, which is further accented by pentagonal ringstones and oversized keystones. Plans for Bridge 5265, prepared by the National Park Service in January 1938, are on file with the Minnesota Department of Transportation (MNDOT). These drawings indicate that the bridge retains its original design.

In January 1938, the National Park Service completed final drawings for Bridge 5265 as part of an extensive wayside development project that was constructed from 1935 to 1940 along Minnesota Trunk Highway 169, in the vicinity of Mille Lacs Lake, by the Civilian Conservation Corps (CCC). The bridge itself was completed in 1938. Aesthetically, it is one of Minnesota's best examples of a multi-plate arch bridge. Introduced by the Armco Culvert Manufacturers Association in 1931, multi-plate was a galvanized, corrugated-iron product fabricated in curved segments to facilitate shipping in "nested" position. For bridge construction, the segments were bolted together in the field to form an arch, which was typically anchored by concrete headwalls and abutments. Frequently, the concrete work was ornamented with stone facing in order to simulate a stone-arch bridge. On occasion, as in the case of Bridge 5265, the abutments and headwalls were pure masonry with no concrete core. The new bridge type found ready acceptance with work-relief planners of the 1930s, for the masonry-veneered, multi-plate arch bridge was highly compatible with the New Deal's agenda of promoting highway beautification, local craft skills, and labor-intensive public works projects.

With its well-crafted stonework and fine architectural detailing, Bridge 5265 is eligible for the National Register for its design and workmanship under Criterion C, within the historic context of "Iron and Steel Bridges in Minnesota, 1873-1945." The Multiple Property Documentation Form (MPDF) associated with this context presents the following registration criteria for the multi-plate arch type:

"Since the multi-plate arch bridge is most notable for its modular corrugated-metal construction and stone headwalls and spandrels, these features should be clearly visible and relatively unaltered. And since the multi-plate arch bridge enjoyed its vogue at least partly because of the New Deal's encouragement of roadside beautification, the bridge's workmanship and design should be on the original site, harmonious with the general setting, of high aesthetic quality, and of New Deal vintage."

Bridge 5265 satisfies these criteria. The bridge is also eligible under Criterion A for its association with the CCC's Mille Lacs Lake wayside beautification project, within the historic contexts of "Federal Relief

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Construction in Minnesota, 1933-1941" and "Roadside Development on Minnesota Trunk Highways, 1920-1960."

The following is excerpted from MnDOT Historic Roadside Development Structures Inventory form:

HISTORICAL BACKGROUND

The Garrison Pedestrian Underpass (Bridge 5265) was constructed in 1938 by the Civilian Conservation Corps (CCC) working in cooperation with the Department of Highways and the National Park Service. The bridge was built by the enrollees of a CCC camp that was located just north of the bridge on the western side of T.H. 169. The bridge was built as part of a larger Mille Lacs Lake roadside development project that also included the construction of the Garrison Rest Area and several other roadside development facilities in the area.

In 1935-1936, in connection with the realignment of T.H. 169 (which was moved slightly west of the lakeshore), the highway department had obtained 53 acres of land in and near the town of Garrison and around Mille Lacs Lake for development of a recreational route. The project included roadside landscaping, the development of rest areas, and the construction of stone culverts, among other amenities. The project was known as the Mille Lacs Lake Highway Development Plan (also known as the Mille Lacs Lake SP-15 project) and was built using CCC labor from the Mille Lacs Lake Highway Wayside CCC Camp (also known as the Garrison CCC Camp). (The CCC camp was located on the western side of T.H. 169 just north of this bridge.)

The Garrison Pedestrian Underpass (Bridge 5265) was constructed in 1938. The construction plans (signed in 1937 and 1938) specify that the bridge's footings be granite stones to be taken from the lakeshore and that "construction to be done during the winter months in a heated shelter." The plan includes the statements "Drawn by H. O. Skooglun" and "Designed by H. O. Skooglun." The plans are signed by three officials from the Department of Highways -- Harold E. Olson (Engineer of Roadside Development), A. R. Nichols (Consulting Landscape Architect), O. L. Kipp (Construction Engineer) -- and four officials representing the National Park Service and the Minnesota State Parks Division -- Agge Thompson (CCC Camp Superintendent), Harold W. Lathrop (Minnesota Department of Conservation Park Authority), Ed Lasey (NPS Inspector), and either Earl C. Grever (NPS Regional Officer) or Donald B. Alexander (NPS Regional Officer).

H. O. Skooglun, the designer of this bridge, was with the National Park Service. Skooglun also designed three other bridges and a scenic overlook as part of the Mille Lacs Lake Highway Development Plan: the Whitefish Creek Bridge (Bridge 3355), the Garrison Creek Culvert (Bridge 5266), the T.H. 169 Culvert at St. Alban's Bay, and the Kenney Lake Overlook (all are included in this inventory). Arthur R. Nichols, Consulting Landscape Architect for the Minnesota Department of Highways, also participated in the design of these extensive roadside development improvements.

Mille Lacs Lake Highway Development Plan and the Garrison CCC Camp

This bridge was built as part of the Mille Lacs Lake Highway Development Plan, to which the work of CCC Camp SP-15 was devoted. The project operated between September of 1935 and March of 1940. It improved many miles of T.H. 169 and T.H. 18 west and north of Mille Lacs to facilitate increased recreational and commercial travel. It was the most extensive roadside development project undertaken by the CCC in the state.

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The project was planned by the Minnesota Department of Highways and the National Park Service and was built with CCC labor from the Mille Lacs Lake Highway Wayside CCC Camp (Camp SP-15) that was located on the western side of T.H. 169. The first portions of the plan to be developed were a 4-mile section of T.H. 18 northwest of Garrison, a 5.5-mile section of T.H. 169 north of Garrison, and a 7-mile section of T.H. 169 south of Garrison. A construction plan noted: "Ultimate development of the parkway and connecting waysides is to continue around the entire lake, a distance of approximately 90 miles." The project was never completed to the extent planned. However, between 1936 and 1939, the highway department and the CCC constructed at least seven known roadside development projects (with standing structures) in the Garrison area, all of which are extant and are included in this study. They are the following:

Garrison Concourse
Garrison Creek Culvert (Bridge 5266)
Garrison Pedestrian Underpass (Bridge 5265)
Garrison Rest Area
Kenney Lake Overlook
T.H. 169 Culvert at St. Alban's Bay
Whitefish Creek Bridge (Bridge 3355)

Historian Rolf Anderson writes:

The principal design work for the Mille Lacs Lake Highway Wayside projects was executed in the [National Park Service's] Minnesota Central Design Office in St. Paul, which was actually a branch office of the National Park Service Regional Office in Omaha. . . . Principal figures included Edward W. Barber, the chief architect and major designer, V. C. Martin, who designed the Kitchen Shelter [at the Garrison Rest Area], Oscar Newstrom, and N. H. Averill who completed many of the master plans and landscape designs. . . . Park Service engineers and landscape architects had experimented with a variety of styles and eventually concluded that buildings constructed with native materials and designed to harmonize with their natural settings were most appropriate (Anderson, "Mille Lacs Lake Kitchen Shelter" 1990:8-5).

The 1938 ~Annual Report~ of the highway department's Roadside Development Division summarized work completed that year in the Mille Lacs Lake area:

The construction work on a large masonry concourse overlooking Mille Lacs Lake was begun in 1936 and continued through 1937 and 1938. In addition, some major changes in alignment and design of the roadway have been made, together with the construction of several large drainage structures which were provided with rustic stone headwalls [see Garrison Creek Culvert, Whitefish Creek Bridge, T.H. 169 Culvert at St. Alban's Bay, and the Garrison Pedestrian Underpass (Bridge 5265)]. Grading operations are now in progress, extending from Garrison to 1 1/2 miles south and consist of a divided roadway of two 30 foot lanes with an island of 6 to 90 feet between (~Annual Report~ 1938:19).

CCC Camp SP-15, also known as the Mille Lacs Highway Wayside Camp, was located on the southern edge of Garrison. The camp was established in September of 1935 and was one of four CCC camps in Minnesota that were sponsored by the Department of Highways. Camp superintendent was Agge Thompson. The camp's 200 enrollees worked primarily on the Mille Lacs Lake Highway Development Project. Work on the project ended when the men of CCC Camp SP-15 were transferred on March 31,

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1940, to the St. Croix Recreational Demonstration Area (now St. Croix State Park).

The Garrison CCC Camp was one of four CCC camps in the state that were sponsored by the Minnesota Department of Highways. (Most of the state's other CCC camps were sponsored by agencies such as the Minnesota Department of Conservation (State Parks Division), the U.S. Forest Service, and the Soil Conservation Service.) The first of the four highway department camps was the Spruce Creek Camp that was established on the Cascade River on the North Shore in 1934. The other three highway department CCC camps were established in 1935. The four are listed below:

- Lakeshore (Camp SP-19), located near Knife River on the North Shore
- Leech Lake (Camp SP-16), located near Whipholt on Leech Lake
- Mille Lacs Lake (Camp SP-15), located at Garrison on Mille Lacs Lake
- Spruce Creek (Camp SP-13), located near Cascade River on the North Shore

Nine sites constructed by these camps are included in this Historic Roadside Development Structures Inventory (see individual inventory forms for each):

Built by the Spruce Creek Camp

Cascade River Overlook (includes Bridge 5132)
Spruce Creek Culvert (Bridge 8292)

Built by the Mille Lacs Lake Camp

Garrison Concourse
Garrison Creek Culvert (Bridge 5266)
Garrison Pedestrian Underpass (Bridge 5265)
Garrison Rest Area
Kenney Lake Overlook
T.H. 169 Culvert at St. Alban's Bay
Whitefish Creek Bridge (Bridge 3355)

No properties built by the Lakeshore or Leech Lake CCC camps are included in this study. (One of the principal accomplishments of the Lakeshore Camp is the elaborate Knife River Historical Marker on old Highway 61 several miles northeast of Duluth. The site is intact but in fragile condition. It is no longer on right-of-way and is now within the jurisdiction of St. Louis County Highway Department. No standing structures built by the Leech Lake CCC Camp, which operated for only six months, are known to be extant.)

The Garrison Pedestrian Underpass (Bridge 5265), built in 1938 by the CCC, is one of seven bridges recorded in this inventory that are faced with stone. It is one of 14 sites in the inventory known, or suspected, to have been built by the CCC. The bridge is one of five sites in the study that were designed by H. O. Skooglund of the National Park Service (NPS), and one of eight sites in the study that were designed by NPS designers (in collaboration with A. R. Nichols).

This property has been evaluated within the historic context "Roadside Development on Minnesota Trunk Highways, 1920-1960." It is recommended that Bridge 5265 is ELIGIBLE for the National Register under this historic context because it meets the following registration requirements:

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Significant to the History of Roadside Development. The Garrison Pedestrian Underpass is one of nine properties in this inventory that were built by the four CCC camps in Minnesota that were sponsored by the MHD. (All four camps were dedicated to roadside development.) The MHD-sponsored CCC camps improved many miles of trunk highway, as well as constructing 9 of the 68 Depression-era properties in this inventory. These numerous New Deal-era sites represent the MHD's first large-scale effort to construct roadside development facilities in the state. Bridge 5265 is an excellent example of the distinctive and well-constructed public facilities, built by the MHD in partnership with federal relief agencies, that met the objectives of roadside development while providing essential work and job training to the nation's unemployed during the Depression. (National Register Criterion A.)

Furthermore, the bridge is significant as one of seven sites that were built near Garrison by the CCC as part of the Mille Lacs Lake Highway Development Project. This 4 1/2-year-long roadside development project improved and developed T.H. 169 and T.H. 18 near Garrison for recreational purposes. It was the most extensive roadside development project undertaken by the CCC in the state. The seven properties near Garrison (four of which are bridges) are rare in the state for their variety, design quality, degree of integrity, and close geographic proximity. The properties are testimony to the success of the partnership between the MHD, the National Park Service, and the CCC. This collaboration produced functional, long-lasting, and aesthetically-superior roadside amenities that continue to enhance the experience of the traveling public today. (National Register Criterion A.)

Design Significance. The bridge is an excellent example of the application of the "National Park Service Rustic Style" to a small highway bridge. It has stonework of excellent quality. The site displays the special labor-intensive construction techniques and distinctive use of indigenous materials that characterize both the Rustic style and federal relief construction in Minnesota. (National Register Criterion C.)

Historic Context

Historic Iron and Steel Bridges in Minnesota
Federal Relief Construction in Minnesota, 1933-1941
Roadside Development on Minnesota Trunk Highways, 1920-1960

National Register Criteria C

References

Minnesota Department of Transportation Bridge Database; Bridge No. 5265 File, in Minnesota Department of Transportation, Waters Edge Building, St. Paul; Bridge No. 5265 File, in Minnesota Department of Transportation Records Storage Center (correspondence), St. Paul; Bridge No. 5265 File (plans), in Minnesota Department of Transportation District 3 Office, Brainerd, Minnesota; Rolf T. Anderson, Draft National Register of Historic Places Nomination Form for Mille Lacs Lake Kitchen Shelter, 9 October 1990, in State Historic Preservation Office (SHPO), Minnesota Historical Society, St. Paul; Fredric L. Quivik, "Iron and Steel Bridges in Minnesota," National Register of Historic Places Multiple Property Documentation Form, Sec. F, 10-11, in SHPO; field inspection by Shawn P. Rounds, 18 September 1996; "Historic Roadside Development Structures on Minnesota Trunk Highways," prepared for Minnesota Department of Transportation by Gemini Research (Susan Granger, Scott Kelly, Kay Grossman), December 1998.

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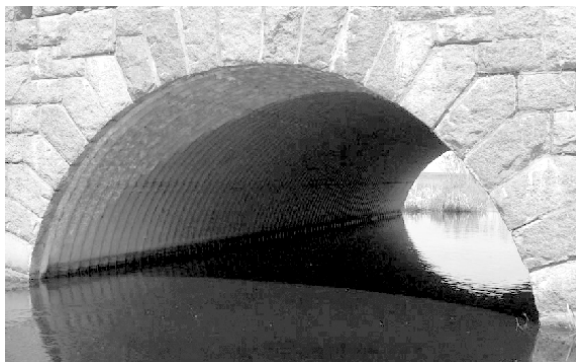
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Character-Defining Features

Character-defining features are prominent or distinctive aspects, qualities, or characteristics of a historic property that contribute significantly to its physical character. Features may include materials, engineering design, and structural and decorative details.



Feature 1. Two-level design with multi-plate arch. Bridge 5265 was designed as a multi-plate arch with a masonry culvert constructed beneath the concrete bridge floor. Located in a lakeside picnic area and wetlands, the hidden culvert allowed the stream to flow, while the bridge served as a safe and dry underpass for pedestrians crossing TH 169. This feature includes the multi-plate arch and the two-level concrete and masonry design and construction, although the subsequently raised lake level has concealed the lower culvert.



Feature 2. Rustic style architectural treatment. Bridge 5265 was constructed as part of a Civilian Conservation Corps (CCC) wayside beautification project. The masonry headwalls and abutments, designed by the National Park Service for the Minnesota Highway Department, reflect the rustic architectural style typical of New Deal era public works projects. This feature includes rock-faced, ashlar, pink and gray Isle granite; the open stone-masonry railing; and the headwall pilasters that form railing posts.



Feature 3. Lakeside setting. Bridge 5265 was designed to complement an extensive New Deal era beautification project along TH 165 around Lake Mille Lacs. A picnic area, park structures, and public boat launch are near the bridge. The lakeshore and nearby area retain elements of the original landscaping.

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IV - Engineering Data

Bridge Number: 5265

Inspection Date	10/19/2004	<i>(Inspection and inventory data in this section was provided for this project by Mn/DOT in May 2005)</i>
Sufficiency Rating [1]	82.3	
Operating Rating [1,2]	19.95	
Inventory Rating [1,2]	14.51	

Posted Load [1]	0
Design Load [1]	0
Deficiency Rating Status [1]	A

Condition Codes

Deck:	N
Superstructure:	N
Substructure:	N
Channel and Prot.:	7
Culvert:	6

Appraisal Ratings

Struct. Eval.:	6
Deck Geometry:	7
Underclearances:	N
Waterway Adequacy:	8
Appr. Alignment:	8

Smart Flag Data [1]

(A check indicates data items are listed on the Bridge Inspection Report)

Fracture Critical [1]	N
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Last Inspection Date

Waterway Data

Scour Code [1]:	Bridge 5265 has not been evaluated for scour because it is classified as a culvert-type structure.
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Roadway Data

ADT Total:	4200
Truck ADT Percentage:	4
Bypass Detour Length [2]:	59.5441

Roadway Clearances

Roadway Width [2]:	12.0396
Vert. Clearance Over Rdwy [2]:	99.99
Vert. Clearance Under Rdwy [2]:	
Lat. Under Clearance Right [2]:	0
Lat. Under Clearance Left [2]:	0

Geometry Characteristics

Skew:	0
Structure Flared:	0

[1] These items are defined in the glossary in Appendix A. [2] These items are provided in metric units.

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IV - Engineering Data

Bridge Number: 5265

Roadway Characteristics

Lane Widths: 12'

Number of Lanes: 2

Shoulders

Width: 3' northbound, west side gravel; 8'6" northbound, east side paved

Paved or Unpaved: Paved (E), Unpaved (W)

Comments: None

Guardrail

Length: NW 154', all ends

Comments: None

Vertical Curves: N/A

Horizontal Curves: 200' off of north end, curve to east

Sight distance : 1,000' S, to curve

Other information:

Development plans for this section of roadway prepared by Doug Larson

Floodplain Data

Available data indicates that Bridge 5265 will not inundate during a Q100 flood event.

Accident Data

The Mn/DOT Accident Database reports 26 accidents associated with this bridge for the 15-year period of 1990-2004.

17 – Property Damage – No Apparent Injury accidents

3 – Injury – Possible Injury accidents

5 – Injury – Non-incapacitating Injury accidents

1 – Injury – Incapacitating Injury accident

Location of Plans

Bridge Office

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V - Existing Conditions / Recommendations

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Existing Conditions

Available information was reviewed prior to assessing the options for preservation of Bridge 5265 and visiting the bridge site. This information is cited in the Project Introduction section of this plan. A site visit was conducted to qualitatively establish the following:

1. General condition of structural members
2. Conformation to available extant plans
3. Roadway geometry and alignment
4. Bridge geometry and clearances

Serviceability Observations:

Based on USGS records, the surface of Lake Mille Lacs has risen over 7 feet from 1936 to 2002. Portions of the bridge that were dry and readily accessible, including parts of the multi-plate arch, are now submerged and deteriorating. The description of the featured crossed should be changed from "dry stream" to "Mille Lacs backwater."

The bridge rails are constructed with unreinforced masonry and contain blunt projections that do not meet current safety standards.

The speed limit for northbound US 169 drops to 35 miles per hour 1/5 of a mile north of the bridge. To minimize the safety requirements associated with the bridge railings, the lower speed zone could be extended south to include the bridge. A lower speed limit would reduce the required roadway width and the crash-testing level of added safety barriers.

Concrete has been placed on top of the railings and the east curb stonework to function as a capstone. The concrete is in poor condition on the railings and extremely poor condition on the east curb.

The bridge has excellent sight distances because it carries one-way traffic and has a long tangent alignment for the south approach roadway..

Structural Condition Observations:

The mortar joints are generally in poor condition, with missing mortar, mortar that can be removed by hand, and vegetation growing in the joints.

A large tree will damage the southwest wingwall if it is not removed.

The plans indicate that the foundations are masonry spread footings. No significant settlement of the headwalls, wingwalls, or barrel was noted during the site visit. However, the combination of masonry spread footings and shallow fill over the arch crown may make it unfeasible to increase the load capacity of the bridge to an HS18 (or better) load level utilizing the current structural elements. A supplementary structural system may be necessary to improve the load capacity.

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V - Existing Conditions / Recommendations

Bridge Number: 5265

Non-Structural Observations:

Roadway drainage is accelerating the deterioration of the masonry elements on both sides of the bridge and is likely responsible for the visible efflorescence.

Date of Site Visit

August 17, 2005

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Bridge Number: 5265



Figure 1. Looking north at the bridge from the west shoulder. Note the large tree growing near the southwest corner of the bridge. Note the signs at the end of the guardrail regarding the 35 mph speed zone ¼ mile away.



Figure 2. Concrete has been placed on top of the railing to function as a capstone. Deteriorated concrete or mortar placed on the “curb” stone is also evident.



Figure 3. Looking north at the east end of the multi-plate arch. Significant corrosion is evident near the water line.



Figure 4. Looking north along the west side of the bridge.

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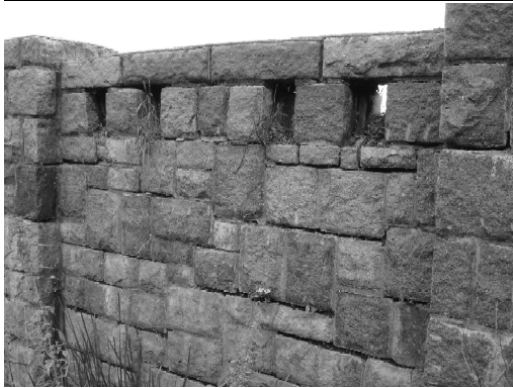


Figure 5. Deteriorated mortar joints and vegetation growing in the joints on the southwest wingwall.



Figure 6. Missing mortar in the southwest corner post.



Figure 7. Looking south along the east side of the bridge.



Figure 8. Deteriorated mortar removed by hand from one of the mortar joints in the southeast wingwall.

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V - Existing Conditions / Recommendations

Bridge Number: 5265

Overall Recommendations

With adequate roadway width, the major rehabilitation concerns include: the ability to increase the load capacity, providing a crash-tested bridge railing, and the long-term performance of the partially submerged multi-plate arch. If necessary, load-capacity issues can be resolved with a supplementary structural system and additional measures can be used to improve the durability of the multi-plate arch. Therefore, rehabilitation for continued use is recommended.

With rehabilitation for continued vehicular use on-site considered other options feasible, other less-desirable options were not considered.

Recommended Future Use:

Rehabilitation for continued vehicular use on-site.

Recommended Stabilization Activities:

1. Temporarily dewater the barrel. Prep and paint corroded portions of the multi-plate arch with a zinc-rich primer to stop active corrosion until preservation activities can be conducted. Protect substructure masonry and concrete elements from damage when dewatering. Before commencing work on submerged parts of the bridge, obtain any required permits from, and coordinate activities with, the Department of Natural Resources (DNR), the relevant Watershed District, and other agencies.
2. After prep work, and prior to painting, the remaining thickness of the arch plates shall be measured non-destructively and mapped. The thicknesses will be used in the load rating analysis.

Recommended Preservation Activities:

1. Inspect the stone masonry mortar joints. The inspection should identify the extent and depth of the mortar loss, determine if sections of the stone masonry will be required to be removed in their entirety and reconstructed, and determine if previous repointing efforts are satisfactory or need to be removed and repointed.
2. Perform a mortar analysis, consistent with the National Park Service's "Preservation Brief 2 – Repointing Mortar Joints in Historic Masonry Buildings," to determine the mortar mix for rehabilitation. Based on the analysis, the new mortar should: (a) match the historic mortar in color, texture and tooling; (b) match the repointing mortar sand with the historic mortar to the extent possible; (c) be of greater vapor permeability and less compressive strength than the stone masonry; and (d) be vapor permeable and with the same, or less, compressive strength as the historic mortar. Require repointing mortar to be consistent with the findings of the mortar analysis.
3. Based on the findings of the mortar-joint inspection and the mortar analysis, tuck point and/or reconstruct the wingwalls, headwalls, and railings. Details should be developed and implemented to remove the concrete topping placed on the railings and curbs. As recommended in National Park Service briefs, appropriate flashing, capstone details, and sealing should be utilized in reconstructed elements to minimize the intrusion of water into the masonry elements.
4. Perform a comprehensive, analytical, load rating of the bridge. The analysis should consider the elevated water table and include assessments of the masonry footings and the multi-plate arch. If the load-rating analysis deems it necessary, add a supplementary structural system. The structural system should have minimal impact to the existing structure. The limited fill over the arch may require the use of specialized slab and piling systems. Micropiling can be considered as a means to shorten the span of the slab and minimize impact to the existing rock footings. To minimize the thickness of

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the supplementary slab, prestressing or post-tensioning can be considered. All work involving the addition of a supplementary structural system shall be in compliance with the Secretary's Standards.

5. Rehabilitate the multi-plate arch. When the structural condition warrants, remove the arch elements utilizing balanced excavation procedures and avoiding damage to the masonry footings. Steel connections between individual multi-plate arch components shall be disassembled to facilitate the rehabilitation of all metal elements. Components with negligible section loss shall be regalvanized. If necessary, steel elements with significant section loss may be replaced. All elements shall be galvanized with a zinc thickness suitable for submerged, splash-zone, or atmospheric conditions. Reassemble and install the rehabilitated arch. Backfill the arch with balanced procedures to minimize unbalanced earth loads. Install a geotextile membrane below the pavement and above the backfill to minimize the amount of roadway water reaching the multi-plate arch.

6. Re-sign northbound US 169 to include the bridge within the 35-mph speed zone. Provide a low-profile TL-2 traffic barrier on a slab if no supplementary structural system is installed. If a supplementary structural system is used, integrate the barrier with the structural system. In concert with the railing, add roadway drainage features to minimize the amount of drainage that reaches the masonry curbs, headwalls and wingwalls.

If traffic must be maintained at the current site during rehabilitation, additional costs associated with temporary structures, traffic control, and phased construction would significantly increase total project costs. Because those costs would also be incurred with a replacement structure they have not been included.

Projected Inspections to Monitor Bridge Condition

Routine:

Conduct routine inspections annually. Implement the resulting recommended maintenance efforts within a 12-month period.

Special:

Conduct an in-depth arm's length masonry inspection at 5-year intervals. Implement the recommended maintenance or repair efforts within a 24-month period.

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V - Existing Conditions / Recommendations

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Recommended Maintenance Activities

1. Flush railings, headwalls, and wingwalls with water annually, preferably in the spring.
2. Seal pavement cracks on a 5-year cycle.
3. Clean the roadway drainage system annually.
4. Clean the stone masonry. Prior to rehabilitation efforts, test cleaning methods on small area of the bridge. A simple water wash and scrubbing with natural bristle or synthetic bristle brush should be attempted first and used if found to be effective. If water washing and scrubbing is found to be ineffective, more aggressive means should be tested. Limit any pressure washing to pressures no higher than 300 psi. Clean the entire exposed surface of the stone masonry using the selected cleaning method. The cleaning should be accomplished in a manner consistent with the National Park Service's "Preservation Brief 1, Assessing Cleaning and Water-Repellent Treatments for Historic Masonry Buildings." Extensively clean the stone masonry on a 30-year cycle.
5. Repoint, or remove and re-set, stone masonry identified as deteriorated in the arm's length inspection on a five-year cycle.

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VI - Projected Agency Costs

Bridge Number: 5265

Qualifier Statement

The opinions of probable costs provided below are in 2006 dollars. The costs were developed without benefit of preliminary plans and are based on the above identified tasks using engineering judgment and/or gross estimates of quantities and historic unit prices and are intended to provide a programming level of estimated costs. Refinement of the probable costs is recommended once preliminary plans have been developed. The estimated preservation costs include a 20% contingency and 5% mobilization allowance of the preservation activities, excluding soft costs (see Appendix D, Cost Detail, Item 5: Other). Actual costs may vary significantly from those opinions of cost provided herein.

For itemized activity listing and costs, see Appendix D.

Summarized Costs

Maintenance costs: \$8,800 annualized

Stabilization activities (not annualized)

Superstructure: \$20,000

Substructure: \$0

Railing: \$0

Deck: \$0

Other: \$10,000

Total: \$30,000

Preservation activities (Costs for a supplementary structural system are not included.)

Superstructure: \$200,000

Substructure: \$300,000

Railing: \$150,000

Deck: \$20,000

Other: \$142,000

Contingency: \$168,000

Total: \$980,000

Applicable Funding

The majority of funding for the rehabilitation and reuse of historic bridges in the state of Minnesota is available through federal funding programs. The legislation authorizing the various federal funding programs is the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU).

SAFETEA-LU programs include the Transportation Enhancement (TE) Fund, the Surface Transportation Program (STP), the Highway Bridge Replacement and Rehabilitation Program (HBRRP), National Highway System Funds, and the National Historic Covered-Bridge Preservation Program. A program not covered by SAFETEA-LU, the Save America's Treasures Program, is also available for rehabilitation and reuse of historic bridges that have national significance.

Other than the Save America's Treasures Program, the federal funds listed above are passed through Mn/DOT for purposes of funding eligible activities. While the criteria for determining eligible activities are determined largely by federal guidelines, Mn/DOT has more discretion in determining eligible activities under the TE fund.

The federal funding programs typically provide 80-percent federal funding and require a 20-percent state/local match. Typical eligible activities associated with these funds include replacement or rehabilitation of structurally deficient or functionally obsolete bridges for vehicular and, non-vehicular uses, painting, seismic retrofit, and preventive maintenance. If a historic bridge is relocated, the

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VI - Projected Agency Costs

Bridge Number: 5265

estimated cost of demolition can be applied to its rehabilitation at a new site. It should be noted that the federal funds available for non-vehicular uses are limited to this estimated cost of demolition. However, TE funds can be applied to bridge rehabilitation for non-vehicular use.

State or federal bridge bond funds are available for eligible rehabilitation or reconstruction work on any publicly owned bridge or culvert longer than 20 feet. State bridge bond funds are available for up to 100 percent of the "abutment to abutment" cost for bridges or culverts longer than 10 feet that meet eligibility criteria.

A more in-depth discussion regarding funding can be found in the Minnesota Historic Bridge Management Plan.

Special Funding Note

N/A

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Appendices

Bridge Number: 5265

Appendix A. Glossary of Preservation and Engineering Terms

Glossary

Appraisal ratings – Five National Bridge Inventory (NBI) inspection ratings (structural evaluation, deck geometry, under-clearances, waterway adequacy, and approach alignment, as defined below), collectively called appraisal ratings, are used to evaluate a bridge’s overall structural condition and load-carrying capacity. The evaluated bridge is compared with a new bridge built to current design standards. Ratings range from a low of 0 (closed bridge) to a high of 9 (superior). Any appraisal item not applicable to a specific bridge it is coded N.

Approach alignment – One of five NBI inspection ratings. This rating appraises a bridge’s functionality based on the alignment of its approaches. It incorporates a typical motorist’s speed reduction because of the horizontal or vertical alignment of the approach.

Character-defining features – Prominent or distinctive aspects, qualities, or characteristics of a historic property that contribute significantly to its physical character. Features may include structural or decorative details and materials.

Condition rating – Level of deterioration of bridge components and elements expressed on a numerical scale according to the NBI system. Components include the substructure, superstructure, deck, channel, and culvert. Elements are subsets of components, e.g., piers and abutments are elements of the component substructure. The evaluated bridge is compared with a new bridge built to current design standards. Component ratings range from 0 (failure) to 9 (new); element ratings range from 1 (poor) to 3 (good). In rating a bridge’s condition, Mn/DOT pairs the NBI system with the newer and more sophisticated Pontis element inspection information, which quantifies bridge elements in different condition states and is the basis for subsequent economic analysis.

Deck geometry – One of five NBI inspection ratings. This rating appraises the functionality of a bridge’s roadway width and vertical clearance, taking into account the type of roadway, number of lanes, and Average Daily Traffic (ADT).

Deficiency – The inadequacy of a bridge in terms of structure, serviceability, and/or function. Structural deficiency is determined through periodic inspections and is reflected in the ratings that are assigned to a bridge. Service deficiency is determined by comparing the facilities a bridge provides for vehicular, bicycle, and pedestrian traffic with those that are desired. Functional deficiency is another term for functionally obsolete (see below). Remedial activities may be needed to address any or all of these deficiencies.

Deficiency rating – A nonnumeric code indicating a bridge’s status as structurally deficient (SD) or functionally obsolete (FO). See below for the definitions of SD and FO. The deficiency rating status may be used as a basis for establishing a bridge’s eligibility and priority for replacement or rehabilitation.

Design exception – A deviation from standard bridge design practices that takes into account environmental, scenic, aesthetic, historic, and community factors that may have bearing upon a transportation project. A design exception is used for federally funded projects where federal standards are not met. Approval requires appropriate justification and documentation that concerns for safety, durability, and economy of maintenance have been met.

Design load – The usable live-load capacity that a bridge was designed to carry, expressed in metric tons according to the allowable stress, load factor, or load resistance factor rating methods. An additional code was recently added to assess design load by a rating factor instead of tons. This code is used to determine if a bridge has sufficient strength to accommodate traffic demands. A bridge that is posted for load restrictions may not be adequate to accommodate present or expected truck traffic.

Fracture critical – Classification of a bridge having primary superstructure or substructure components subject to tension stresses and which are non-redundant. A failure of one of these components could lead to collapse of a span or the bridge. Tension members of truss bridges are often fracture critical. The associated inspection date is a numerical code that includes frequency of inspection in months, followed by year, and month of last inspection.

Functionally obsolete (FO) – The FHWA classification of a bridge that cannot meet current or projected traffic needs because of inadequate horizontal or vertical clearance, inadequate load-carrying capacity, and/or insufficient opening to accommodate water flow under the bridge.

Historic fabric – The material in a bridge that was part of original construction or a subsequent alteration within the historic period (e.g., more than 50 years old) that has significance in and of itself. Historic fabric includes both character-defining and minor features. Minor features have less importance and may be replaced more readily.

Historic bridge – A bridge that is listed in, or eligible for listing in, the National Register of Historic Places.

Historic integrity – The authenticity of a bridge's historic identity, evidenced by the survival and/or restoration of physical characteristics that existed during the bridge's historic period. A bridge may have integrity of location, design, setting, materials, workmanship, feeling, and association.

Inspections – Periodic field assessments and subsequent consideration of the fitness of a structure and the associated approaches and amenities to continue to function safely.

Inventory rating – The load level a bridge can safely carry for an indefinite amount of time expressed in metric tons or by the rating factor described in design load (see above). Inventory rating values typically correspond to the original design load for a bridge without deterioration.

Maintenance – Work of a routine nature to prevent or control the process of deterioration of a bridge.

Minnesota Historical Property Record (MHPR) – A documentary record of an important architectural, engineering, or industrial site, maintained by the MHS as part of the state’s commitment to historic preservation. MHPR typically includes large-format photographs and written history, and may also include historic photographs, drawings, and/or plans. This state-level documentation program is modeled after a federal program known as the Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER).

National Bridge Inventory – Bridge inventory and appraisal data collected by the FHWA to fulfill the requirements of the National Bridge Inspection Standards (NBIS). Each state maintains an inventory of its bridges subject to NBIS and sends an annual update to the FHWA.

National Bridge Inspection Standards – Federal requirements for procedures and frequency of inspections, qualifications of personnel, inspection reports, and preparation and maintenance of state bridge inventories. NBIS applies to bridges located on public roads.

National Register of Historic Places – The official inventory of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, and culture, which is maintained by the Secretary of the Interior under the authority of the National Historic Preservation Act of 1966 (as amended).

Non-vehicular traffic – Pedestrians, non-motorized recreational vehicles, and small motorized recreational vehicles moving along a transportation route that does not serve automobiles and trucks. Includes bicycles and snowmobiles.

Operating rating – Maximum permissible load level to which a bridge may be subjected based on a specific vehicle type, expressed in metric tons or by the rating factor described in design load (see above).

Posted load – Legal live-load capacity for a bridge usually associated with the operating or inventory ratings as determined by a state transportation agency. A bridge posted for load restrictions may be inadequate for truck traffic.

Pontis – Computer-based bridge management system to store inventory and inspection data and assist in other bridge data management tasks.

Preservation – Preservation, as used in this report, refers to historic preservation that is consistent with the Secretary of the Interior’s *Standards for the Treatment of Historic Properties*. Historic preservation means saving from destruction or deterioration old and historic buildings, sites, structures, and objects, and providing for their continued use by means of restoration, rehabilitation, or adaptive reuse. It is the act or process of applying measures to sustain the existing form, integrity, and material of a historic building or structure, and its site and setting. Mn/DOT’s *Bridge Preservation, Improvement and Replacement Guidelines* (BPIRG) describe preservation differently, focusing on repairing or delaying the deterioration of a bridge without significantly improving its function and without considerations for its historic integrity.

Preventive maintenance – The planned strategy of cost-effective treatments that preserve a bridge, retard future deterioration, and maintain or improve its functional condition without increasing structural capacity.

Reconstruction – The act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location. Activities should be consistent with the Secretary of the Interior's *Standards for the Treatment of Historic Properties*.

Rehabilitation – The act or process of returning a historic property to a state of utility through repair or alteration which makes possible an efficient contemporary use, while preserving those portions or features of the property that are significant to its historical, architectural, and cultural values. Historic rehabilitation, as used in this report, refers to implementing activities that are consistent with the Secretary of the Interior's *Standards for the Treatment of Historic Properties*. As such, rehabilitation retains historic fabric and is different from replacement. However, Mn/DOT's *Bridge Preservation, Improvement and Replacement Guidelines* (BPIRG) describe rehabilitation and replacement in similar terms.

Restoration – The act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time. Activities should be consistent with the Secretary of the Interior's *Standards for the Treatment of Historic Properties*.

Scour – Removal of material from a river's bed or bank by flowing water, compromising the strength, stability, and serviceability of a bridge.

Scour critical rating – A measure of bridge's vulnerability to scour (see above), ranging from 0 (scour critical, failed, and closed to traffic) to 9 (foundations are on dry land well above flood water elevations). This code can also be expressed as U (unknown), N (bridge is not over a waterway), or T (bridge is over tidal waters and considered low risk).

Serviceability – Level of facilities a bridge provides for vehicular, bicycle, and pedestrian traffic, compared with current design standards.

Smart flag – Special Pontis inspection element used to report the condition assessment of a deficiency that cannot be modeled, such as cracks, section loss, and steel fatigue.

Stabilization – The act or process of sustaining a bridge by means of making minor repairs until a more permanent repair or rehabilitation can be completed.

Structurally deficient – Classification indicating NBI condition rating of 4 or less for any of the following: deck condition, superstructure condition, substructure condition, or culvert condition. A structurally deficient bridge is restricted to lightweight vehicles; requires immediate rehabilitation to remain open to traffic; or requires maintenance, rehabilitation, or replacement.

Structural evaluation – Condition of a bridge designed to carry vehicular loads, expressed as a numeric value and based on the condition of the superstructure and substructure, the inventory load rating, and the ADT.

Sufficiency rating – Rating of a bridge’s structural adequacy and safety for public use, and its serviceability and function, expressed on a numeric scale ranging from a low of 0 to a high of 100. It is a relative measure of a bridge’s deterioration, load capacity deficiency, or functional obsolescence. Mn/DOT may use the rating as a basis for establishing eligibility and priority for replacement or rehabilitation. Typically, bridges rated between 50 and 80 are eligible for rehabilitation and those rated 50 and below are eligible for replacement.

Under-clearances – One of five NBI inspection ratings. This rating appraises the suitability of the horizontal and vertical clearances of a grade-separation structure, taking into account whether traffic beneath the structure is one- or two-way.

Variance - A deviation from standard bridge design practices that takes into account environmental, scenic, aesthetic, historic, and community factors that may have bearing upon a transportation project. A design variance is used for projects using state aid funds. Approval requires appropriate justification and documentation that concerns for safety, durability and economy of maintenance have been met.

Vehicular traffic – The passage of automobiles and trucks along a transportation route.

Waterway adequacy – One of five NBI inspection ratings. This rating appraises a bridge’s waterway opening and passage of flow through the bridge, frequency of roadway overtopping, and typical duration of an overtopping event.

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Historic Bridge Management Plan

Appendices

Bridge Number: 5265

Appendix B. Guidelines for Bridge Maintenance and Rehabilitation Based on the Secretary of the Interior's Standards

Guidelines for Bridge Maintenance and Rehabilitation Based on the Secretary of the Interior's Standards

1. The original character-defining qualities or elements of a bridge, its site, and its environment should be respected. The removal, concealment, or alteration of any historic material or distinctive engineering or architectural feature should be avoided.
2. All bridges shall be recognized as products of their own time. Alterations that have no historical basis and that seek to create a false historical appearance shall not be undertaken.
3. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
4. Distinctive engineering and stylistic features, finishes, and construction techniques or examples of craftsmanship that characterize an historic property shall be preserved.
5. Deteriorated structural members and architectural features shall be retained and repaired, rather than replaced. Where the severity of deterioration requires replacement of a distinctive element, the new element should match the old in design, texture, and other visual qualities and where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
6. Chemical and physical treatments that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the most environmentally sensitive means possible.
7. Significant archaeological and cultural resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
8. New additions, exterior alterations, structural reinforcements, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
9. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Source: Ann Miller, et al. *A Management Plan for Historic Bridges in Virginia*. Charlottesville, Va.: Virginia Transportation Research Council, 2001.

Minnesota Department of Transportation (Mn/DOT)

Historic Bridge Management Plan

Appendices

Bridge Number: 5265

- Appendix C.**
- Current Mn/DOT Structure Inventory Report**
 - Current Mn/DOT Bridge Inspection Report**
 - Past Maintenance Reports (if available)**
 - Other Reports (if available)**

Mn/DOT STRUCTURE INVENTORY REPORT

Bridge ID: 5265

US 169 NB OVER DRY STREAM

Date: 01/04/2006

* IDENTIFICATION *	* ROADWAY DATA *	Def. Status ADEQ Suff. Rating 82.3
Agency Br. No. (5265) (RS 1) - 1 District 03 Maint. Area 3A County 18 CROW WING (35) City 1410 GARRISON Township Placecode 23192 Desc. Loc. 0.5 MI S OF JCT TH 18 Sect. 13 Tnsp. 044N Range 28W Lat. 46d 17m 16s UTM-Y 5126363.66 Long. 93d 49m 26s UTM-X 436527.96 Toll Bridge (Road) NO Custodian STATE Owner STATE Inspector DISTRICT 3 BMU Agreement No Year Built 1938 Yr Fed Rehab Year Remod. Temp. Skew 0 Plan Avail. CENTRAL	Route System (Fed) USTH Mn. Route System USTH Route Number 169 Roadway Name US 169 Roadway Function MAINLINE Roadway Type 1 WAY TRAF Control Section 1804 BDG. Reference Point 233+00.293 Date Opened to Traffic 01-01-1938 Detour Length 37 mi Lanes 2 ON BRIDGE (1) ADT 4,100 HCADT 82 ADT Year 2004 Functional Class RUR/PR ART OTH Nat'l. Hwy. System NHS STRAHNET NOT STRAHNET Truck Net NOT TRUCKNET Fed. Lands Hwy. N/A OnBaseNet ON BASENET	* WATERWAY DATA *
		Drng. Area Wtrwy. Opening 80 sq ft Navigation Control NO PERM REQD Nav. Vert./Hrz Clr. Nav. Vert. Lift Clr. MN Scour Code E-CULVERT Scour Eval. Year
		* INSPECTION DATA *
		Inspection Date 10-19-2004 (VTZP) Inspection Frequency 24 Inspector DISTRICT3
		Condition Codes Appraisal Ratings
		Deck N Struct. Eval. 6 Superstruct. N Deck Geometry 7 Substruct. N Underclearances N Chan. & Prot. 7 Waterway Adeq'cy 8 Culvert 6 Appr. Alignment 8
* STRUCTURE DATA *	* ROADWAY CLEARANCES *	Other Inspection Codes
Service On HIGHWAY Service Under STREAM MN Main Span 312 STEEL/ARCH MN MSpn Det Def MN Appr. Span MN ASpn Det Def Culvert Type 14'X7' ARCH Barrel Length 44 ft No. Main Spans 1 No. Appr.Span 0 Total Spans 1 NBI Len. (?) NO Main Span Length 14.0 ft Structure Length 14.0 ft Abut. Mat'l. Abut. Fnd. Type NOT APPL Pier Mat'l. Pier Fnd. Type NOT APPL Deck Width Deck Material NOT APPL Wear Surf. Type BITUMINOUS Wear Surf. Inst. Yr. Wr. Crs/Fill Depth Deck Membrane NONE Deck Rebars NOT/APPL Deck Rebars Inst. Yr. Structure Area Roadway Area Swk Width L/R Curb Ht. L/R Rail L/R/FHWA 02 02 NO Ped. Fencing NOT APPL Hist. Significance NATL REGISTER Bird Nests (?) NO	If Divided NB-EB SB-WB Rdwy. Wid. Rd 1/Rd 2 39.5 ft Vrt. Clr. Ovr. Rd 1/Rd 2 Max Vert Clr Rd 1/ Rd 2 Horz U/Clr - Rd 1/Rd 2 Lat UndClr Left/Right RR UndClr Vert/Lat Appr. Surface Width 32.0 ft Median Width	Open, Posted, Cisd. A Rail Rating 0 Pier Protection Appr. Guardrail 1 Scour Critical 8 Appr. Trans. 1 Deck Pct. Unsnd. Appr. Term. 1
	* ROADWAY TIS DATA *	In Depth Inspections
	TIS 1st KEY TIS 2nd KEY Route System 02 Route Number 00000169 High End 7 Low End 7 Direction N Reference Pt. 233+00.293 Interchg. Elem.	Y/N Freq. Last Insp. Frac. Critical Pinned Asbly. Underwater Spec. Feat.
	* MISC. BRIDGE DATA *	* PAINT DATA *
	Struct. Flared Parallel Struct. RIGHT Field Conn. ID Cantilever ID Permit Code A N Permit Code B N Permit Code C N Permit Code Fut.	Year Painted Pct. Unsound Total Painted Area Primer Type Finish Type
	* BRIDGE SIGNS *	* CAPACITY RATINGS *
	Posted Load NO SIGNS Traffic NO SIGNS Horizontal DELINEATORS Vertical NOT APPL	Design Load UNKN MN Operating Rating HS 22.0 Inventory Rating HS 16.0 Posting Veh: Semi: Dbl: Rtg Date 01-01-1938
		* IMPROVEMENT DATA *
		Prop. Work Work By Prop. Structure Length Width Appr. Rdwy. Work Bridge Cost Approach Cost 0 Project Cost Data - Year/Method

Mn/DOT BRIDGE INSPECTION REPORT

Inspector: DISTRICT3

BRIDGE 5265 US 169 NB OVER DRY STREAM**INSP. DATE: 10-19-2004**

County: CROW WING

Location: 0.5 MI S OF JCT TH 18

Length: 14.0 ft

City: GARRISON

Route: USTH 169 Ref. Pt.: 233+00.293

Deck Width:

Township:

Control Section: 1804 Maint. Area: 3A

Rdwy. Area / Pct. Unsnd:

Section: 13 Township: 044N Range: 28W

Local Agency Bridge Nbr: 5265

Paint Area / Pct. Unsnd:

Span Type: STEEL / ARCH

NBI Deck: N Super: N Sub: N Chan: 7 Culv: 6

Open, Posted, Closed: OPEN

Appraisal Ratings - Approach: 8 Waterway: 8

MN Scour Code: E-CULVERT

Def. Stat: ADEQ Suff. Rate: 82.3

Load Posting: NO SIGNS Traffic Signs: NO SIGNS Horiz. Cntl. Signs: DELINEATORS Vert. Cntl. Signs: NOT APPL

STRUCTURE UNIT: 0

ELEM NBR	ELEMENT NAME	STR UNIT	ENV	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4	QTY CS 5
331	CONCRETE RAILING	0	2	10-19-2004	161 LF	141	20	0	0	N/A
				10-21-2003	161 LF	141	20	0	0	N/A
	Notes: BAD MORTAR JOINTS IN RAILINGS , HEADWALLS, AND CURBING SHOULD BE TUCK POINTED.									
240	STEEL CULVERT	0	2	10-19-2004	43 LF	0	43	0	0	N/A
				10-21-2003	43 LF	0	43	0	0	N/A
	Notes: BOTTOM 2' VERY RUSTY ENTIRE LENGTH.									
964	CRITICAL FINDING	0	2	10-19-2004	1 EA	1	0	N/A	N/A	N/A
				10-21-2003	1 EA	1	0	N/A	N/A	N/A
	Notes: DO NOT DELETE THIS CRITICAL FINDING SMART FLAG.									
981	SIGNING	0	2	10-19-2004	1 EA	1	0	0	N/A	N/A
				10-21-2003	1 EA	1	0	0	N/A	N/A
	Notes:									
982	GUARDRAIL	0	2	10-19-2004	1 EA	1	0	0	N/A	N/A
				10-21-2003	1 EA	1	0	0	N/A	N/A
	Notes:									
984	DRAINAGE	0	2	10-19-2004	1 EA	1	0	0	N/A	N/A
				10-21-2003	1 EA	1	0	0	N/A	N/A
	Notes: WASHOUTS ON BOTH ENDS OF THE BRIDGE WEST SIDE.									
986	CURB & SIDEWALK	0	2	10-19-2004	1 EA	0	1	0	N/A	N/A
				10-21-2003	1 EA	0	1	0	N/A	N/A
	Notes: MORTAR JOINTS IN SOME SPOTS NEED TUCK POINTING.									
987	ROADWAY OVER CULVERT	0	2	10-19-2004	1 EA	1	0	0	N/A	N/A
				10-21-2003	1 EA	1	0	0	N/A	N/A
	Notes:									

General Notes: INSPECTED 19 OCT 04 LARSON/PICKAR

Inspector's Signature

Reviewer's Signature / Date



Garrison Pond Underpass

3

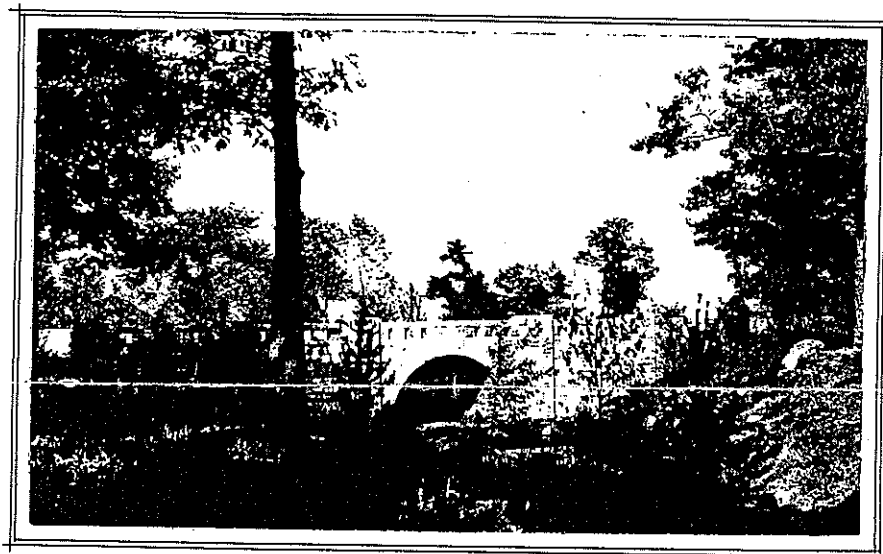
MASONRY CULVERT END WALLS.



Shakopee Culvert

4

Vol 7 Page 34
Nichols, A.R. Photo album.
Ca. 1937-41.



MINNESOTA HISTORIC BRIDGE SURVEY-LIST WORKSHEET

C = Aesthetics
A = Fed Relief
Sig Route

Bridge No.: 5265 Type: 312 County: CROW WING

NR CRITERION "A," associated with events in (transportation, other) history:
trunk highway, early _____, later _____ belt/parkway _____ blazed trail
interstate _____ historic/significant crossing _____ in historic district
federal relief program RR grade-separation program _____

NR CRITERION "B," associated with life of person(s) significant in the past:
no ?? yes: _____

NR CRITERION "C," engineering, architecture, aesthetics:
computer-generated "C" list: original list added MULTIPLATE W/STONE
notable engineering: design/type: representative / unusual / unique / RR-related
standard plan: documented / looks like / ?? _____
size: # spans / span-length / structure-length / width _____
notable architecture, ornamentation, other aesthetic features: none
style: neoclassical/WPA/moderne/rustic detail: railing/lighting/pier/abutment
material: stone/RC/metal/wood function: rural/urban/gateway/park/beltway/
when built bridge was: first / early / common / rare / later / last _____
now bridge is: only / rare / common / ?? _____ in _____
notable: engineer / builder / fabricator / architect CCC
meets a registration requirement established for its type: MEETS MULTIPLATE REQUIREMENTS

DOCUMENTATION, overall: good some unconfirmed/unreliable none
maintenance card Record Center file plans historic photos Improvement Bu.
known: year-built engineer builder fabricator architect _____

DESIGN INTEGRITY, overall: no serious problems questionable marginal n
altered/damaged/removed/replaced: railings abutments/piers lighting appro
widened: yes ?? moved: yes ??

SURVEY: YES NO CONSIDER ?? _____

County: Crow Wing Township/City: _____ Longitudinal Axis: N-S

Bridge No./Name: 5265 Carries US 169 Over NB over Dry Stream

Bridge Plate(s) and Location(s): sign "5265"
No other

Main Span(s) _____
Approach Span(s) _____
Approach Span(s) _____

Concrete: Through Arch Deck Arch Through Girder Deck Girder T-Beam Slab
Rigid Frame Culvert
Steel: Through Girder (Plate) Deck Girder (Plate) Stringer Stringer with outer channels
Other: _____

If Concrete Arch(es): Barrel or Rib (number of:) Spandrels: Open or Filled
If Concrete: Reinforcing bar visible Spalling / Type: inner arch faced
If Stringer/Girder: Number of stringers / girders: 1 Bridging between stringers: yes (type:) no cut blocks of rock irregular course
Railing: Concrete Balustrade or Solid Parapet / with recessed panels (number:) inner arch faced
Metal: Pipe in concrete posts Angle Sections Channel Sections Lattice w/ sheets of corrugated metal
Wood _____
Other guardrails attached to inner faces of end posts
Flared solid concrete panels at ends: yes no

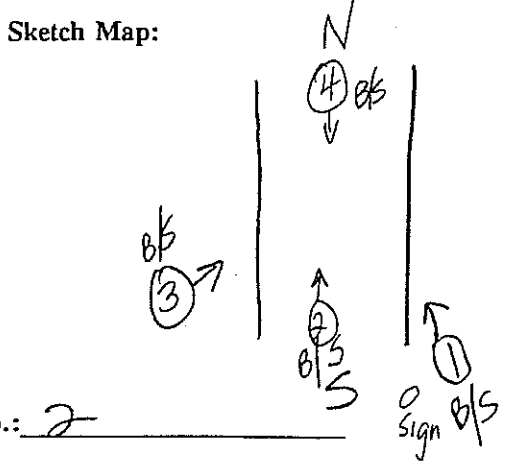
concr. coping

Abutments: Stone: Straight Wing Walls: T U Piers: Stone
Concrete: Straight Stub Wing Walls: T U Concrete: Solid Other:
Piles: Steel (I or H) Beams Wood, with back wall of: Steel (I or H) Beams
Wing Walls (if different than back wall) of: Built-up Steel
Other: _____ Cutwaters: Upstream Downstream
Other: _____

Bearings (Type / Location): _____

Connections : Bolted Pinned Riveted Welded Other _____

Esthetics (Ornamentation, Unusual Features): nic stone work both elevations



Integrity: excl
Historic District Potential: ?

Recorder: SPR Date: 9/18/95 Roll / Photo No.: 2

bridge number : 005265
county code : 18
county name : CROW WING
city code : 1410
feature crossed : NB OVER DRY STREAM
owner : 01
constr district : 3
section : 13
township : 044
range : 28W
bdg route/system : 02
bdg route number : 169
main span type : 312
appr span type :
number main spans : 01
number appr spans :
total number spans : 001
main span length : 14.00
structure length : 14.00
left sidewalk width :
right sidewalk width :
rdwy width over - rdwy 1 : 39.50
rdwy width over - rdwy 2 :
deck width :
year built : 1938
year remodeled :
design load : 0
inventory rating : 2160
operating rating : 2220
rating month :
rating year :
skew angle : 00
structure flared : 0
type of service : 15
descriptive location : 0.5 MI S OF JCT TH 18
open month : 01
open year : 38
improvement type :
left railing type : 02
right railing type : 02
year painted :

expansion device type : NN
expansion device cond :
exp device installed year :
deck material : N
abutment material :
abutment foundation : N
pier material :
pier foundation : N
field connection type :
cantilever bearing type :
builder code :
main span definition :
appr span definition :
historical category : 1
Significance Criteria A : SIGNIFICANT ROUTE
Significance Criteria B :
Significance Criteria C : AESTHETICS

MEMO

January 3, 1940

Mr. E. J. Miller
Bridge Engineer
Office

Re: Bridge No. ³³⁸⁵~~5265~~ - Mille Lacs Co.
Bridge No. 5266 - Crow Wing Co.
Bridge No. ~~5266~~ - Crow Wing Co.

Replying to your recent letter regarding the above numbered bridges, we are submitting, herewith, cost data of expenditures by the National Park Service and the State:

Bridge No. ³³⁵⁵~~5265~~ - White Fish Creek

Expenditure by National Park Service	Skilled labor	\$1225.00 + 7394 man days
	Material	<u>146.00</u>
	Total	\$1371.00 + 7394 man days
Expenditures by State	Material	\$2659.12
	Engineering & Supervision	<u>615.28</u>
	Total	<u>\$3274.40</u>

Total cash expenditure -Federal & State - \$4645.40

Bridge No. 5266 - Carlson Creek

Expenditure by National Park Service * * * * .	Skilled labor	\$ 694.00 + 3800 man days
	Material	<u>61.94</u>
	Total	\$ 755.94 + 3800 man days

Expenditure by State * * * Material \$1021.36

Total cash expenditure-Federal & State - \$1777.30

Bridge No. ~~5266~~ - Pedestrian Underpass

Expenditure by National Park Service	Skilled labor	\$ 893.50 + 4500 man days
	Material	<u>97.59</u>
	Total	\$ 991.09 + 4500 man days

*Orig. for 5265
Miller*

5265

row wing

A = sig r T

C = aesth

938 312 1 span (124')

yes = integrity aesth / Route? UST# 169

br. log confirms multiplate + date

Maintenance card indicates built by
C.C.C. - National Park Service
14x40 mult. plate, 39' roadway

state-furnished material \$2039.46 + 97.57
Nat'l Park Service labor (7394 CCC man days) 893.

multiplate arch culvert purchased from
Lyle Culvert Co. of Middleton, Ohio

road not widened
but divided at that site

picture of similar bridge near this one on 11
featured in 1937-1938 biennial report

NW 1/4 up oak

1989 MINNESOTA DEPARTMENT OF TRANSPORTATION - STRUCTURE INVENTORY

8/29/1990

S.S. = 1804

DISTRICT - JURISDICTION

* IDENTIFICATION *
 No. 5265
 District 3 Maint Area 3A
 County **CROW WING**
 City GARRISON
 Township
 STH 169 MAIN LINE
 Route Number Function
 Rdwy Type I RDWY OF DIV
 B OVER DRY STREAM
 Name of Feature Crossed
 1.5 MI S OF JCT TH 18
 Descriptive Location
 Sec 13 Twp 044 Rge 28W
 Reference Pt 233+00.293
 Lat 17.3° Longitude 93° 49.4'
 Detour Length 37 Mi
 STATE HWY STATE HWY
 Maint Resp Owner
 Fed-Aid System FAP
 02 RURAL PRIN ARTERIAL
 Functional Classification
 Year Built 1938 Rem
 Date Open To Traffic 01/38
 Lanes on Br 2 Under
 2487 130 1988
 A.D.T. HCA DT Year
 Rdwy Appr Width 32 32
 Shld Surf
 Median Skew 00
 Defense Sys NO Temp
 Plan Available CENTRAL

* STRUCTURE DATA *
 15 HWY/STREAM
 Type of Service
 Type Main Span 312
 STEEL ARCH
 Type Approach Span
 Fract NON-APL /
 Critl Member Proc Date
 Specl
 Feat Member Proc Date
 14'X7' ARCH 44 Ft
 Culvert Type Length
 No Spans 1 1
 Main Appr Total
 Length 14.0 14.0 Ft
 Max Spn Total
 SDWK WID Lt Rt
 Rdwy Width OVER 39.5
 If Divided Nb-Eb Sb-Wb
 Deck Width (Out-Out)
 Vert Clear Over Ft Ft
 Vert Clear Under Ft Ft
 Max Vert Clear Ft Ft
 Underclear Lat Rt Lt
 Type Wearing Surface ASPHALT
 Depth of W.C. & Fill 0.00 Ft
 Deck Protection System-Yr
 Coated Rebar
 RAILINGS Type 02 02
 Condition 6 6
 Base Height
 Curb Height 00" 00"
 Approach Guardrails 5

Suff Rating 86.3 ADEQ Status

* SUBSTRUCTURE DATA *
 Abut NON-APPLY
 Pier NON-APPLY
 Mater'l Foundat'n

* WATERWAY DATA *
 Proc E Scour Dr Area
 Waterway Opening 80
 Navig Clear/Prot
 Vert Horiz

* APPROACH PANELS *
 Near 3N A
 Far 3N A
 Type Cond Length

* PAINT DATA *
 Yr Pntd.....
 Type.....
 Area.....
 % Unsound.....
 * EXPANSION *
 * DEVICE *
 Type.....NN
 Condition.....
 Yr Instl.....

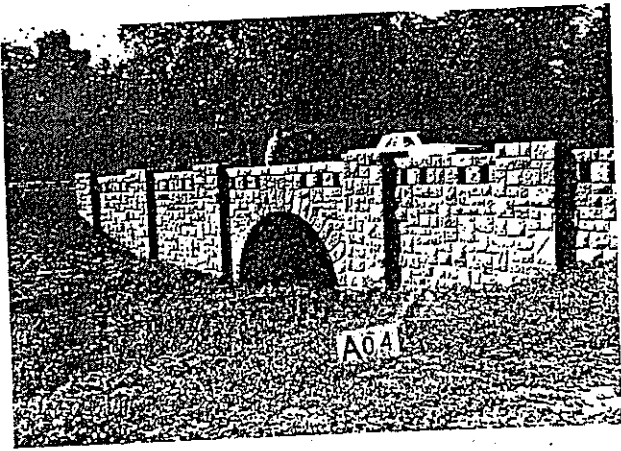
* CAPACITY RATINGS *
 Design Load UNK/OTH
 Operating HS 22.0
 Inventory HS 16.0
 Posting LEGAL
 Rating Date
 Need New Rating NO

* CONDITION CODES *
 Area 616
 Structure Roadway
 Deck NON-APPL N
 Material %Unsd
 Superstructure.....N
 Substructure.....N
 Channel & Protection..8
 Culvert & Wall.....8
 Inspection Date 10/09/89
 Insp. Freq..12 Plan

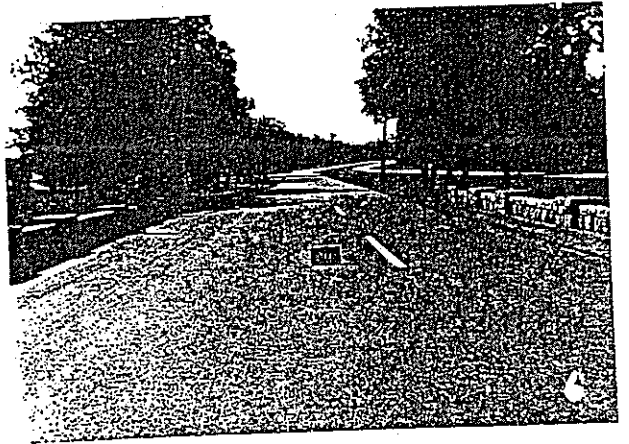
* APPRAISAL RATINGS *
 Structure Eval.....8
 Deck Geometry.....5
 Underclearances.....N
 Safe Load Capacity.....7
 Waterway Adequacy.....8
 Approach Alignment.....8
 * BRIDGE SIGNS *
 Posted Load 0 Traffic 0
 Horizontal 1 Vertical N

* IMPROVEMENT DATA *
 Prop Work
 Prop Structure
 Length Width
 Prop Adt Year
 Appr Rdwy Work
 Bridge Cost
 Appr Cost
 Project Cost
 Yr of Improv Data

1865205



1865206



1800050



1965

1965

1951

MEMO

March 14, 1938

If you are satisfied that all the points of the specification are met with, we have a certified analysis report of the various base metals we have taken approval and we note by you in the field.

Yours very truly,

Mr. Geo. Jenks
Project Engineer
Garrison, Minnesota

Re: Multi-Plated for S.P. 169-18-223-4B Bridge 5265

We have just been informed that an order has been placed with the Lyle Culvert Company for one (1) multi-plate arch culvert for the above project.

In checking up with the Lyle Culvert Company, we find that this culvert material will be shipped directly from the plant at Middletown, Ohio. Therefore, it will be impossible to make source inspection on this item. I am enclosing the specification which covers this material and would like to draw your attention to the following items. These items should be reported by you. We do not have any particular form for this item so that if you will just give us all the points of inspection as we request them on an ordinary sheet of paper, it will be satisfactory and will suffice. The items which you should check in the field in the specifications are as follows:

All bolts, nuts and washers shall be thoroughly galvanized. Visual inspection of this will be sufficient. We would, however, like to have you submit about one-half (1/2) dozen bolts, nuts and washers to the laboratory for further tests. We will not use this for acceptance. It will just be for a matter of record.

Regarding the spelter coating of the finished plates, visual inspection shall be made as to the quality of the coating and it shall be free from any injurious defects such as blisters, flux and uncoated spots. We would like to have you identify and give us all the markings that are given. We would also like to have you make a gage determination of the thickness of the plates with a micrometer or a U.S. Standard Gage for sheet and plate iron steel so that we can have a gage determination. In addition to the specification requirements, we would also like to have you obtain the shipping weights from the railroad storage agent covering the entire weight of the shipment. The other details, such as the forming and the description of the plates can be checked against the plans, a copy of which I presume you have.

FILE ROOM
MARCH 15 1938
8:00 AM

Wing
Cove

Mr. Geo. Jenks - 2

If you are satisfied that all the points of the specifications are met with, we have a certified analysis record of the various base metals so that final approval can be made by you in the field.

Yours very truly,

DEPARTMENT OF HIGHWAYS

W. L. Hindermann
Laboratory Chief

WLH/MM

Enc.

cc- Harold Olson

RECEIVED
MAR 10 1935
HIGHWAY
FILE ROOM

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

ANNUAL REPORT OF THE ACCOMPLISHMENTS
OF ROADSIDE DEVELOPMENT ALONG
THE TRUNK HIGHWAYS IN MINNESOTA

1938

Included in this report, in addition to the regular Federal Aid Projects, are the accomplishments of Federal Relief Agencies working in conjunction with the State Highway Department, namely: Works Progress Administration, National Youth Administration and the Civilian Conservation Camps, under supervision of the National Park Service and the Minnesota Department of Highways. On the relief projects, the total value cost of each item has been obtained by using estimated unit costs based on previous years cost data, type of labor employed and material involved.

CONSTRUCTION DIVISION

ROADSIDE DEVELOPMENT

Legend

On all trunk highway federal allotments made to the State in 1938, it was mandatory that at least one per cent of these funds be expended for Roadside Development Projects, to be constructed by the Department of Highways. The Department of Highways has also received a great many requests from various civic organizations throughout the State for work of this nature. Consequently, projects have been programmed and completed within the last year consisting of the flattening of shoulders and backslopes and the providing of ground cover for same; the elimination of old construction scars along the highways; the construction of roadside parking areas and picnic grounds; the construction of stone concourses and overlooks to take advantage of panoramic views; the landscaping of bridge approaches and the approaches into cities and towns; the development of natural springs along the roadsides by providing a turnout and protection for the spring to make it safe for public use; the perpetuation of historic markers, and the eliminating of a traffic hazard by the setting of these markers back from the roadway and providing a suitable turnout which allows the public to park off of the highway while reading the historic legend.

Wherever a roadside development project was constructed within the corporate limits of a municipality, we were usually able to obtain a maintenance resolution whereby the municipality assumed the maintenance of the area improved.

The National Youth Administration has cooperated with the Department of Highways in the construction of roadside parking areas, the perpetuation of historic markers and the development of natural roadside springs. They have also cooperated to the extent of constructing 190 combination picnic tables and benches, 123 refuse containers, 72 fireplace grates, 6 project stoves and 6 project signs, in shops at the various youth centers.

Considerable work has also been accomplished thru the cooperation of the National Park Service under E.C.W., whereby we were allotted work projects from three two hundred men CCC Camps for Roadside Development work along our trunk highways. One of these camps located at Fort Ridgely on T.H. #4 has done a great deal of flattening of backslopes, together with the seeding and sodding of same. Another camp at the Gooseberry River on T.H. #61 has worked on a stone masonry concourse wall and has also done some grading, flattening of slopes, seeding and sodding. The third camp located at Garrison on T.H. #169 has done a considerable amount of stone masonry work such as granite stone curbing thru the corporate limits of Garrison and the completion of a stone masonry concourse on Mille Laos Lake, together with the development of a roadside parking area. Work was also started on the grading of a divided two lane highway

from Garrison southerly on which two large granite faced drainage structures have been completed.

The work that these camps have accomplished, as shown by the work items and entirely on trunk highway right of way, is worth thousands of dollars to the State.

In the metropolitan area of the Twin Cities and Duluth under a Works Progress Administration setup, a great deal of work has been performed such as developing roadside parking areas, constructing stone masonry concourses, installation of stone sidewalk curb and gutter, flattening and topsoiling slopes, and landscaping of areas involved.

The State direct labor projects consisted of the development of roadside parking areas, perpetuation of historic markers and landscaping of available right of way. These improvements were located in areas where no relief labor was to be had and where we had had requests from civic organizations and the District and District Maintenance Engineers.

The accomplishments of the CCC Camps, the National Youth Administration, the N.P.A. and the Federal Projects, along the trunk highway system of the State, have been carefully recorded, and for the year of 1938 show a direct value to the State in the sum of \$ 501,325.45

Landscape design has also had a marked effect on all grading projects under construction during the past year, due to the streamlining across section, the conservation of existing timber on the right of way beyond the construction stakes, and the planting for erosion control and ground cover. Landscape design is also playing an important part in collaboration with road design, in the original location, alignment and construction plans for all highway projects, thus endeavoring to obtain a closer adaptation of the work to natural topography.

It is recommended that some legislation be enacted for the regulation of advertising signs and all sales and commercial enterprises within a reasonable distance from the highway right of way in the interest of safety. It is also recommended that legislation be adopted for the preservation of trees upon state-owned lands adjoining the State Highways and for the encouragement of tree planting and preservation upon private lands adjoining these highways.

GOOSEBERRY (continued)

Statement of Quantities

<u>Item</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Cost</u>	<u>Total</u>
Concrete footings	C.Y.	29	20.00	580.00
Stone masonry wall	C.Y.	529	16.00	8,464.00
Excavation (borrow)	C.Y.	875	.50	437.50
Excavation (solid rock)	C.Y.	623	3.50	2,180.50
Excavation (earth)	C.Y.	4100	.40	1,640.00
Estimated Unit Cost Value to State				\$ 13,302.00
Actual State Expenditures				6,907.28
State Participation				51.9%

MILLE LACS LAKE HIGHWAY WAYSIDE - Crow Wing County
National Park Service

C.C.C. LABOR

The construction work on a large masonry concourse overlooking Mille Lacs Lake was begun in 1936 and continued thru 1937 and 1938. In addition, some major changes in alignment and design of the roadway have been made, together with the construction of several large drainage structures which were provided with rustic stone headwalls. Grading operations are now in progress, extending from Garrison to 1 1/2 miles south and consists of a divided roadway of two 30 foot lanes with an island of 6 to 90 feet between.

S.P. 169-23-4A

Statement of Quantities

<u>Item</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Cost</u>	<u>Total</u>
Excavation (earth)	C.Y.	17342	.25	4,335.50
Excavation (overhaul)	C.Y.S.	16196	.015	242.94
Excavation (wet earth)	C.Y.	607	.75	455.25
Furnish & install deciduous shrubs	Shrub	600	.60	360.00
Furnish & install deciduous trees	Tree	115	6.00	690.00
Furnish & install evergreen trees	Tree	80	7.50	600.00
Stone Masonry bridges	Bridge	1	2700.00	2,700.00
Stone masonry bridge	Bridge	1	7200.00	7,200.00
Clearing	Acres	40.42	40.00	1,616.80
Grubbing	Acres	6.84	100.00	684.00
Clearing	Trees	84	1.00	84.00
Grubbing	Trees	84	3.50	294.00
Trail construction	Lin. Ft.	10600	.08	848.00
Shelter - 90%	Each	1	2500.00	2,250.00
Rustic guard rail	Lin. Ft.	160	.85	136.00

continued

concourse, not area, - see spec
pp 19-21 (mixed together)

MILLE LACS LAKE HIGHWAY WAYSIDE (continued)

<u>Item</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Cost</u>	<u>Total</u>
Latrines	Each	2	350.00	700.00
Metal fireplaces	Each	16	4.00	64.00
Markers	Marker	1	150.00	150.00
Markers	Marker	1	50.00	50.00
Well	Well	1	150.00	150.00
Gravel surfacing	C.Y.	2050	.25	512.50
Gravel surfacing haul	C.Y.Mi.	2050	.15	1,537.50
Furnish & install 24" S.C. culvert	Lin.Ft.	84	2.75	231.00
Drop inlets	Each	3	25.00	75.00
Manhole	Each	1	50.00	50.00
Furnish & install 8" drain tile	Lin.Ft.	580	.70	406.00
Furnish & install 18" C.M. culvert	Lin.Ft.	42	1.55	65.10
Estimated Unit Cost Value to State				\$ 26,487.59
Actual State Expenditures				5,111.79
State Participation				19.3%

S.P. 169-35-23-1

Statement of Quantities

<u>Item</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Cost</u>	<u>Total</u>
Cleanup	Acre	29.6	30.00	888.00
Markers	Marker	1	150.00	150.00
Gravel surfacing	C.Y.	400	.25	100.00
Gravel surfacing haul	C.Y.Mi.	2000	.15	300.00
Breakdown backslopes	Sta.	80	2.50	200.00
Seeding	Acres	3	40.00	120.00
Sodding	Sq.Yds.	280	.25	70.00
Furnish & install fence	Rod	42	.85	35.70
Demolish house	Each	1	250.00	250.00
Demolish barn	Each	1	50.00	50.00
Demolish shed	Each	1	25.00	25.00
Remove old foundation	Each	1	50.00	50.00
Furnish & install evergreen trees	Tree	12	7.50	90.00
Estimated Unit Cost Value to State				\$ 2,328.70
Actual State Expenditures				449.42
State Participation				19.3%

MILLIE LACS LAKE HIGHWAY WAYSIDE (continued)

S.P. 18-18-24

Statement of Quantities

<u>Item</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Cost</u>	<u>Total</u>
Excavation (earth)	C.Y.	13900	.25	3,475.00
Excavation haul	C.Y.Mi.	41700	.15	6,255.00
Excavation clay surfacing	C.Y.	2316	.50	1,158.00
Excavation clay surfacing haul	C.Y.Mi.	8175	.15	1,226.25
Sodding	Sq.Yds.	7300	.25	1,825.00
Seeding	Acres	5	40.00	200.00
Masonry curb	Lin. Ft.	3610	.90	3,249.00
Gravel surfacing	C.Y.	850	.25	212.50
Gravel surfacing haul	C.Y.Mi.	4250	.15	637.50

Estimated Unit Cost Value to State \$ 18,238.25

Actual State Expenditures 3,519.80

State Participation 19.3%

C.S. = 1804

DISTRICT Jurisdiction

Today : 12/9/97

IDENTIFICATION

Bridge # : 5265
 District : 3 Maint Area : 3A
 County : CROW WING
 City : GARRISON
 Township :
 USTH 169 MAIN LINE
 Route Number Function
 Rdwy Type : 1 RDWY OF DIV
 NB OVER DRY STREAM
 Name of feature Crossed :
 0.5 MI S OF JCT TH 18
 Descriptive Location :
 Sec: 13 Twp : 044 Rge : 28W
 Reference Point : 233+00.293
 46 deg 17'18" 93 deg 49'24"
 Latitude : Longitude :
 Detour Length 37 Mi
 STATE HWY STATE HWY
 Maint Respons Owner
 Nat'l Hwy Sys : YES
 02 RURAL PRIN ARTERIAL
 Functional Classification
 Yr Built : 1938 Yr Remod :
 Date Opened : 1/38
 Lanes On : 2 Lanes Under:
 3700 145 1994
 ADT : HCADT : Yr Adt :
 Roadway Appr Width : 32 32
 Shld Surf
 Median : 00°
 Type On Und Skew
 Defense System : NO Temp :
 Plan Available : CENTRAL

STRUCTURE DATA

15 HWY/ STREAM
 Type of Service : Over / Under
 Type Main Span . . 312
 STEEL ARCH
 Type Appr Span
 Fract
 Critl NON-APL / /
 Spec / /
 Feat Member Proc Date
 14'X7' ARCH 44 Ft.
 Culvert Type Length
 Num of Spans : 1 1
 Appr Main Total
 Length : 14.0 14.0 Ft.
 Main Span Total
 Sdwk Wid Left : Right :
 Rdwy Width Over : 39.5 Over :
 Under : Under :
 If Divided Nb-Eb Sb-Wb
 Deck Width (Out-Out) Ft.
 Vert Clear Over : Ft. Ft.
 Vert Clear Under : Ft. Ft.
 Max Vert Clear : Ft. Ft.
 Underclear Lat : Rgt Left
 Type Wearing Surface : ASPHALT
 Depth of WC & Fill : 0.00 Ft.
 Deck Protection System : Year
 Coated Rebar :
 Railings : Type LT 02 RT 02
 Condition 6 6
 Rail Height "" ""
 Curb Height 0" 0"
 Approach Guardrails : 5

Suff Rating : 82.5 Status : ADEQ

SUBSTRUCTURE DATA

Abut : NON-APPLY
 Pier : NON-APPLY
 Material Foundation -

WATERWAY DATA

A10/93 E
 UWI Insp & Date Scour Dr Area :
 Waterway Opening : 80
 Navig Cntl / Prot : NO/
 Vert Clr : Horz Clr :

APPROACH PANELS

Near :	3N	A
Far :	3N	A
	Type	Condition Length

PAINT DATA

Yr Painted :
 Type:
 Area :
 % Unsound :

EXPANSION DEVICE

Type NN
 Condition
 Year Installed

CAPACITY RATING

Design Load :	UNK/OTH
Operating :	HS 22.0
Inventory :	HS 16.0
Posting :	LEGAL
Rating Date :	
Need New Rating:	NO

CONDITION CODES

616
 Structure Area Rdwy Area
 Deck : NOT APPL N
 Material %Unsd
 Superstructure N
 Substructure N
 Channel & Protection 7
 Culvert & Wall 7
 Inspection Date : 10/15/96
 Inspec Freq : 12 Plan :

APPRAISAL RATINGS

Structure Evaluation 6
 Deck Geometry 7
 Underclearances N
 Safe Load Capacity 7
 Waterway Adequacy 8
 Approach Alignment 8

BRIDGE SIGNS

Posted Load : 0 Traffic : 0
 Horizontal : 1 Vertical : N

IMPROVEMENT DATA

Prop Work:
 Prop Structure :
 Length : Width :
 Proj Adt : Year :
 Appr Rwy Work :
 Bridge Cost :
 Appr Cost :
 Project Cost :
 Year of Data :

GARRISON PED UNDERPASS (BRIDGE 5265)

SHPO INV. # CW-GRC-005

Location: The bridge is located about .75 miles north of CSAH 26, on the southern edge of Garrison and on the northern edge of the Garrison Rest Area. It carries the northbound lane of T.H. 169 over a small creek in Section 24 of Garrison Township.

Introduction: The CCC built the bridge in 1938. Originally the bridge was designed to allow pedestrians to pass safely from one side of the highway to the other. Today the underpass is filled with water and overgrown wetland vegetation. It was designed by H. O. Skooglun of the National Park Service. The design follows the "Rustic Style" with granite facing and headwalls. Modern guardrails extend from each end of the bridge diminishing its prominence and visibility to the passing motorists. The bridge's construction follows the design and is in generally good condition.

Architect's Survey Date: October 6, 1999

Plans/Sketches:

1. MHD Design Plan, Sections and Elevations, dated 12/37
2. MHD Design Location Plan, dated 12/37
3. MJBA annotated field notes (10/6/99): MHD Design Plan, Sections and Elevations, dated 12/37
4. MJBA Recommendations using drawing #1
5. MHD Bridge Maintenance, Crow Wing Co., 7/18/78: "regROUT and clean stone railings"
6. FHA Guardrail Photo Samples

**MNDOT HISTORIC ROADSIDE DEVELOPMENT
STRUCTURES INVENTORY**

CW-GRC-005
CS 1804

Garrison Ped Underpass (Bridge 5265)

Historic Name Other Name	Garrison Ped Underpass (Bridge 5265)	CS # SHPO Inv #	1804 CW-GRC-005
Location	On TH 169 .75 mi N of CSAH 26	Hwy District Reference	TH 169 3A 233
City/Township County Twp Rng Sec USGS Quad UTM	Garrison, City of Crow Wing 44N 28W Sec 13 Garrison Z15 E436550 N5125610	Acres Rest Area Class	NA
Designer	Skoogle, H O, Natl Park Serv Nichols, A R, Consult Land Arch	SP #	169-23-4A
Builder	Civilian Conservation Corps (CCC)	SHPO Review #	
Historic Use Present Use	Bridge/ Culvert/ Dam Bridge/ Culvert/ Dam	MHS Photo #	013535.05-14
Yr of Landscape Design	1938	MnDOT Historic Photo Album	Nic 5.22 Nic 7.34 Ols 1.57
Overall Site Integrity	Intact/Slightly Altered		
Review Required	Yes		
National Register Status	Listed, see Statement of Significance		
Historic Context	Iron and Steel Highway Bridges, 1873-1945 Roadside Development on Minnesota Trunk Highways, 1920-1960		
List of Standing Structures			
Feat#	Feature Type	Year Built	Fieldwork Date
01	Bridge/Culvert	1938	08-03-97
			Prep by
			Gemini Research Dec. 98 G1. 105
			Prep for
			Site Development Unit Cultural Resources Unit Environmental Studies Unit
NOTE: Landscape features are not listed in this table			
Final Report	Historic Roadside Development Structures on Minnesota Trunk Highways (1998)		

Stabilization/Preservation/Restoration

1. Spatial Organization and Land Patterns

a. Functional Relationships:

- **Assessment:** The Garrison Pedestrian Underpass (Bridge 5265), which was listed on the National Register in 1998, is a granite-faced multi-plate steel bridge that carries a small creek under T.H. 169 and into Mille Lacs Lake at the northern end of the Garrison Rest Area. The bridge was designed in the National Park Service Rustic Style to blend with its natural setting and to visually enhance T.H. 169 (then part of the "Minnesota Scenic Highway") while at the same time serving both vehicles and pedestrians.

The bridge was built in 1938 as part of a several-year project to realign and improve portions of T.H. 169 along the western shore of the lake. It was originally planned that the bridge would carry both lanes of T.H. 169. However, sometime between 1938 when the bridge was built and 1940-41 when the realignment was completed plans were changed to so that T.H. 169 was divided north of bridge 5265, rather than only south of the bridge. Bridge 5265 ended up carrying only northbound traffic, and metal culvert was built to carry the southbound lanes. (The highway project also included the establishment of the Garrison Rest Area. The original highway alignment along the water's edge became the rest area's internal road.)

The bridge was also designed to serve as a pedestrian underpass that allowed visitors to safely walk from the Garrison Rest Area to a proposed picnic area on the western side of T. H. 169. The western picnic area was never developed and pedestrians did not apparently use the underpass after the highway was divided in 1940-41.

In 1995 Mn/DOT initiated plans to reconvey a significant amount of right-of-way across T.H. 169 west, northwest, and southwest of Bridge 5265 and the Garrison Rest Area (SHPO Review 96-0323). This land includes right-of-way landscaping designed by A. R. Nichols and implemented by the CCC, as well as the former site of the CCC Camp itself, which is eligible for the National Register ("Phase I Archaeological Investigation ..." Mather et al 1995:15). Plans for the reconveyance are apparently still under review.

- **Recommendations:**

Stabilization: None.

Preservation and Restoration: It is recommended that Mn/DOT curtail plans to reconvey right-of-way west, northwest, and southwest of the bridge and instead carefully preserve these forested areas to buffer Bridge 5265 and the Garrison Rest Area from future development. This would provide future opportunity to interpret for the public the former CCC camp northwest of the bridge (also National Register eligible) and would retain public ownership of land adjacent to one of the state's largest lakes in an area of projected commercial and residential development. **Work Period:** ASAP.

b. Visual Relationships:

- **Assessment:** The bridge was designed to be viewed both by vehicles driving over it and by visitors to the Garrison Rest Area (and even by boats on the lake). Today the bridge is easily missed by cars driving at 50-60 mph because of its small scale and its overwhelming modern metal guardrails. Today the bridge is best seen by pedestrians from the northern end of the rest area. (Only its eastern facade can be safely viewed.)

The view from the bridge is intact. It includes Mille Lacs Lake to the east, undeveloped forest to the west, the southern edge of downtown Garrison to the north, and the Garrison Rest Area and the wooded right-of-way to the south. The Garrison Concourse is visible to the northeast along the shoreline.

Future commercial and resort development in the vicinity is likely. T.H. 169 is scheduled to be widened to a four-lane highway and/or realigned. Mn/DOT owner-

ship of the rest area to the south and adjacent right-of-way to the west and northwest may serve to protect the bridge's setting somewhat. (See Spatial Organization above.)

- **Recommendations:**

Stabilization: None.

Preservation and Restoration: Replace the modern visually detracting guardrails. (See Item 5.a below.) Maintain the visual links between the bridge and the Garrison Rest Area to the south, the site of the former CCC camp to the northwest, and the Mille Lacs shoreline and the Garrison Concourse to the northeast.

If a new T.H. 169 roadway is built west of the current alignment, plant appropriate natural buffers to screen the new, modern highway from the historic bridge. (See Spatial Organization above for recommendations regarding potential right-of-way reconveyance.) **Work Period:** ASAP.

2. Topography

- **Assessment:** The site is gently rolling except along the lakeshore and the bridge headwalls. Water levels are much higher now than when the underpass was built. The walking surface is covered with water obliterating any view of the walking surface, its condition and/or its location.

- **Recommendations:** None.

3. Vegetation

- **Assessment:** The bridge is located along a portion of T.H. 169 that was landscaped in the late 1930s by the CCC, the MHD, and the National Park Service. (The project extended north of Garrison toward both Brainerd and Aitkin and south of Garrison along T.H. 169 to Vineland Bay near the Rum River.) Original planting plans that specifically focus on the bridge have not been identified. A tree-planting plan for a "Forest Planting Demonstration Area" across T.H. 169 from the Garrison Rest Area shows extensive existing trees around the bridge including Norway and white pine. (The plan sheet is labeled "Minnesota S.P. 15 Mille Lacs Lake Tree Planting" dated Oct., 1938, signed the same month.)

An historic photo taken by the MHD in 1940 show the eastern facade of the bridge with at least one dozen newly-installed evergreens and many mature deciduous trees (Olson album, vol. 1, pg. 57).

Today grassy highway ditches, overgrown weeds and brush in the creek bed, and mature deciduous and evergreen trees surround the bridge. Weeds are encroaching on the bridge's stonework. The northern end of the Garrison Rest Area south of the bridge has mowed grass and deciduous and evergreen trees.

- **Recommendations:**

Stabilization and Preservation: Cut back weeds and brush from the bridge to a distance of 6' and keep it trimmed back. Establish and follow a regular schedule of mowing and trimming. **Work Period:** ASAP.

Restoration: Cut back weeds and brush. Conduct research (either in plan archives or with historic photos) to determine original plantings and restore the original planting plan around the bridge and along the nearby right-of-way. If plants specified in the original plans are not available, use substitute plants of similar size, shape, color, and texture. Establish and follow a regular schedule of mowing and trimming. Keep the stonework clear of weeds. **Work Period:** Cut back weeds—ASAP; Other work—5 - 10 years.

4. Circulation

a. Roads

- **Assessment:** See Spatial Organization above for discussion of original design intent. Traffic on T.H. 169 is often heavy and now travels at 50-60 mph, consid-

erably faster than when the bridge first opened. Because of the volume and speed of the traffic, slowing to view the bridge is dangerous.

In 2000, the highway over the bridge was resurfaced with a mill and inlay. Previous highway overlays had already obscured the face of the bridge's original 8"-9" stone curbing. During the 2000 improvements, the metal guardrails extending from the ends of the bridge were lengthened, which seriously detract from the site. (See Guardrails, 6.c)

T.H. 169 is scheduled to be widened to a four-lane highway or realigned in the near future. The bridge is potentially threatened by this highway project if it is widened to a four-lane. Another alternative at this location is to bypass downtown Garrison by shifting the highway westward and turning the current T.H. 169 alignment into a county road.

- **Recommendations:**

Stabilization and Preservation: Cut weeds back from stone curbing and keep the bridge weed-free. (Costs are included with Vegetation, Item 3 above.) **Work Period:** ASAP.

Restoration: Lower the elevation of the highway to restore the original curb depth. (Costs of highway modifications are not included in this document.) **Work Period:** 1 - 3 years.

It is recommended that the highway speed limit over the bridge be reduced to 45 mph and a no-passing zone be implemented to increase safety. **Work Period:** 1 - 3 years.

If the bridge is eventually transferred to the county because T.H. 169 is realigned, take steps to ensure the bridge's future preservation and proper maintenance after the transfer. **Work Period:** as soon as planning begins.

b. Parking

- **Assessment:** The bridge was not designed with a parking area, but parking was available at the adjacent Garrison Rest Area. The rest area's parking area was redesigned in 1969.

- **Recommendations:** None.

c. Paths and trails

- **Assessment:** The bridge was used for about three years (1938-ca. 1941) as a pedestrian underpass with a footpath that linked the Garrison Rest Area with the CCC camp on the western side of T.H. 169. The underpass was abandoned when the new divided highway was built in 1940-41.

The bridge was designed with no pedestrian walkway on its deck.

Due to the speed and amount of traffic on the bridge, it is unsafe to walk along the highway, across the highway, and across the bridge. There is a nice view of the eastern face of the bridge from the northern portion of the Garrison Rest Area.

Current plans for the reconstruction of T.H. 169 include discussion of a bike trail along the western shore of Mille Lacs that would presumably include the bridge.

- **Recommendations:**

Stabilization: None.

Preservation and Restoration: Facilitate safe pedestrian access to the bridge from the rest area. **Work Period:** ASAP. Participate in plans for possible future development of a bike trail over or near the bridge. **Work Period:** As soon as planning begins.

5. **Water Features:** Not applicable

6. **Structures, Furnishings and Objects**

a. Bridge/culvert

- **Assessment:** The visible granite curb, which is part of the east headwall is in very poor condition—likely from salt use for road maintenance and safety. The curb along the west headwall is completely covered with turf. New grading for highway drainage has been raised resulting in the dirt and turf build-up along the west headwall.

All stone joints are in poor condition—most are cracked; some are missing; some have been recently patched inappropriately, etc. Mortar topping is in poor condition. A section on the north end of the east wall was loose and easily removed exposing the poor mortar condition of the joints underneath. Without proper attention the stones in this part of the wall will begin to fall out.

The stone curbs at the pedestrian walkway are currently covered with high water and overgrown vegetation.

Corrosion is occurring along the bottom 16" or so of the galvanized culvert, which created the pedestrian walkway. The granite base on which the culvert is imbedded was not visible so the stone and joint conditions are not known, but can be assumed to be in poor condition due to extended water coverage and lack of maintenance.

- **Recommendations:**
Stabilization/Preservation/Restoration: Remove all mortar topping and joints, including vegetation; do not replace mortar topping; repoint all joints and reset those stones that require it; repair and restore stone curbing along east and west headwalls and at the pedestrian walkway below; stabilize corrosive action on the culvert and provide means for preventing further decay; restore and stabilize the granite base and concrete walkway in the culvert. Work Period: 1 - 3 years.

b. Curb, concrete

- **Assessment:** 6" x 4'-0" sections of curb extend along the highway surface and from the bridge headwalls the length of the metal guardrails. Their general condition is good; however, most of the curb face has been covered from the numerous asphalt overlays that have been installed. The curb appears to provide edging between the asphalt and turf surfaces. Excess turf exists between the concrete and asphalt.

- **Recommendations:**
Stabilization: Remove all excess turf from stone joints. Work Period: ASAP.
Preservation: Remove all excess turf from stone joints. Remove and replace all seriously decaying stone pieces and/or joints as required to preserve the stone curb and its present location. Work Period: ASAP.
Restoration: Remove all excess turf from stone joints. Regrade the asphalt road surfaces to expose the original curb face depth; remove the curb, piece-by-piece, and restore the substrate; replace stone as needed and reinstall the stone pieces in their original locations; and repoint as required. (Costs of highway modifications are not included in the this document.) Work Period: 1 - 5 years.

c. Guardrails

- **Assessment:** The recent metal guardrail extensions overwhelm the bridge visually and negatively impact its historic prominence and value.
- **Recommendations:**

Stabilization: Replace timber/steel guardrails with historically appropriate designs.
Work Period: 1 - 3 years.
Preservation/Restoration: Replace metal guardrails with historically appropriate designs. **Work Period:** 1 - 5 years.



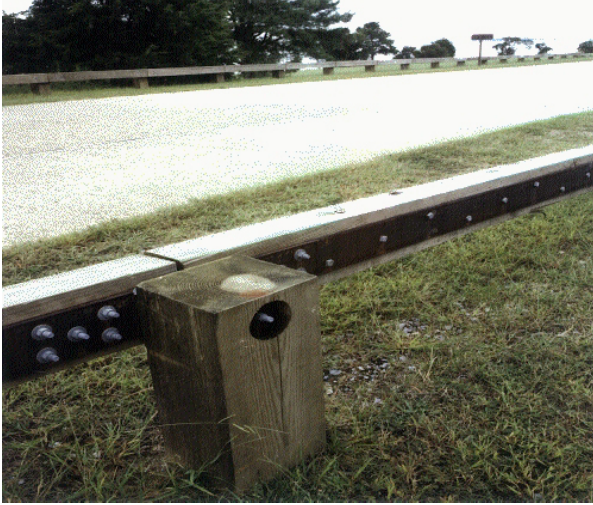
Steel-backed two-rail wooden guardrail

- 7. Accessibility Considerations:** None.
- 8. Health and Safety Considerations:** All work along this bridge requires safety precautions due to the high volume and speed of the traffic.
- 9. Environmental Considerations:** All construction materials shall be environmentally safe to protect the surrounding environment and the water quality.
- 10. Other Considerations/Recommendations:** Signage is recommended to be done as soon as possible to raise the public's awareness of this site's historic importance and educational value. Bridge 5265 was built as part of a joint CCC, National Park Service, and MHD project to improve and landscape many miles of T.H. 169 and T.H. 18 near Mille Lacs Lake for recreational and commercial purposes. The project included highway realignment, roadside landscaping, and the construction of several stone bridges, scenic overlooks, stone curbing, the Garrison Concourse, and the Garrison Rest Area. It was the most extensive roadside development project undertaken by the CCC in the state. It is recommended that the following sites, all part of the project, be linked together with site interpretation: Garrison Concourse, Kenney Lake Overlook, Garrison Pedestrian Underpass, T.H. 169 Culvert at St. Alban's Bay, and Whitefish Creek Bridge.

Place an interpretive marker at the northern end of the Garrison Rest Area near the bridge that describes the history of the bridge, its designers and builders. The panel design should be simple and unobtrusive. If necessary, create a sensitively designed, hard-surfaced access to the panel such as "grasscrete."
- 11. Conclusion:** This bridge is an unusual example of the National Park Rustic Style and uses similar details from the military architecture following World War I. It also exemplifies a creative, sensitive and responsive means of moving people and water along the same route simultaneously without imposition. The bridge deserves more recognition because of its aesthetic, functional and historic significance. It is our recommendation that all preservation and restoration methods stated above be implemented as soon as possible to restrict any further deterioration. The metal guardrails must be removed and replaced with ones that are both historically sensitive to the bridge and its setting and provide appropriate highway safety.

	Stabilization	Preservation	Restoration
Spatial Organization and Land Patterns			
Off-site impacts			
Functional relationships			
Visual relationships			
Cultural landscape limits (land acquisition)			
Topography			
Character-defining feature			
Non-contributing corrective work			
Vegetation	4,400	4,400	15,890
Circulation			
Access road and internal roadways			45,028
Parking areas			
Pedestrian walks			
Paths and trails (signage path)		31,680	31,680
Water Features			
Structures, Furnishings and Objects			
Bath house			
Bench(es), other			
Bench(es), stone			
Bridge/culvert	153,076	153,076	153,076
Cave			
Council ring			
Curb, stone		2,429	7,286
Curb, concrete	634		
Dam			
Dock			
Drinking fountain(s)			
Entrance Wall			
Fireplace(s), other			
Fireplace(s), stone			
Flagpole(s), other			
Flagpole(s), stone			
Flagstone pad			
Footbridge			
Foundation of building			
Gravestone			
Guardrail, stone--Other	27,456	232,320	232,320
Info board			
Info booth			
Marker			
Other feature			
Overlook wall			
Picnic shelter(s)			
Picnic table(s), other			
Picnic table(s), stone			
Privies			
Refuse container(s), stone			
Restroom building			
Retaining wall			
Rock garden			
Sea wall			
Sidewalk			
Signpost, other			
Signpost, stone			
Spring water outlet			
Statue			
Storage building			
Trail steps			
Wall			
Well/pump			
Accessibility Considerations			
Health and Safety Considerations			
Environmental Considerations			
Other Considerations (Interpretive & highway signage)	6,336	6,336	6,336
ESTIMATED COSTS	\$191,902	\$430,241	\$491,616

Other examples of historically appropriate guardrails are shown below.



Wood Timber/steel Reinforced Guardrail



Stone Masonry Guardwall

GENERAL NOTE

CULVERTS BELOW UNDERPASS TO DRAIN SWAMPY AREA WEST OF THE PICNIC GROUNDS AND CAMP SITE. THIS DRAINAGE TAKES PLACE AT THE BRIDGE THAW OF ACCUMULATED SNOW AND ICE. CAPACITY OF CULVERTS APPROVED BY THE DIVISION OF DRAINAGE OF THE STATE HIGHWAY DEPARTMENT SUBSIDIARY WHICH STRUCTURE IS TO BE BUILT IS OF WATER BEARING SAND CAPABLE OF CARRYING 4000 POUNDS PER SQUARE FOOT.

ALSO THE EXCAVATION FOR UNDERPASS STRUCTURE TO BE DONE WITH POWER COOPER DAM TO BE BUILT OF 2'x6" SHEETING AND TIMBERING TO PERMITS PUMPING OF WATER AT FOOTING LEVEL WHILE FOOTINGS ARE BEING CONSTRUCTED. ALL FOOTING MASONRY WORK TO BE OF FIELD STONE THOROUGHLY CURD AND LAID IN MORTAR COMPOSED OF ONE (1) PART OF CEMENT TO THREE (3) PARTS OF PLASTER SAND. SAID STONE OR GRANITE TO BE OBTAINED ALONG LAKE LAKE IN MORTAR AS MENTIONED ABOVE. GRANITE TO BE OF PEPPERED MONOLITHIC CONCRETE ELEMENT IN UNDERPASS TO BE OF PEPPERED MONOLITHIC CONCRETE PARTS OF CLEAN GRAVEL FLOOR TO BE TROWLED TO A SHARP FINISH, AND TO BE AS SHOWN ON DRAWINGS.

REINFORCING RODS TO BE OF SPECIFIED LENGTH AND SECURELY WIRE AT EACH INTERSECTION.

MULTI PLATE STEEL ARCH TO BE OF NUMBER FIVE (5) GAUGE THRUPLATE BOLTED TOGETHER ACCORDING TO MANUFACTURERS SPECIFICATIONS AND SHOP DRAWINGS TO BE LAID IN AN UNBALANCED CHANNEL ANCHORED IN THE MASONRY FOOTING. CONSTRUCTION TO BE DONE DURING THE WINTER MONTHS IN A HEATED SHED.

PUBLIC PICNIC GROUNDS
60 ACRES.

C A K F

MATERIAL LIST

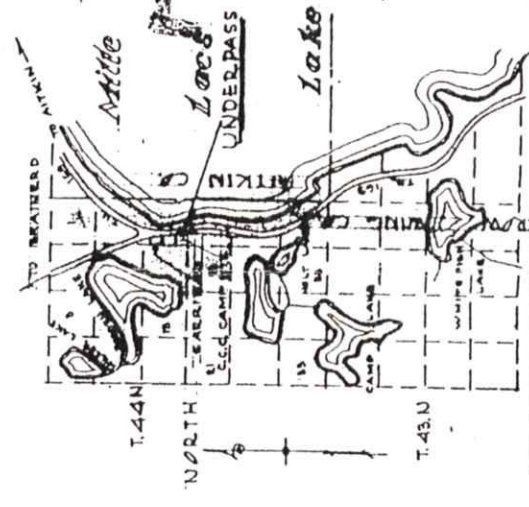
ITEM	QUANTITY	UNIT
STEEL MASONRY	327	CU. YDS.
CONCRETE	52	"
CEMENT	245	BOLS.
MASTERS SAND - MASONRY	171	CU. YDS.
SAND FOR CONCRETE	7	"
GRAVEL FOR CONCRETE	15	"
4" STEEL PLATES CURVED	4	"
2" STEEL MAINPINS PERMES AND COVERS	12	"
MULTI PLATE STEEL ARCH	1	"
1000' 1/4 GAUGE TIE WIRE - #10 GAUGE	1	"
SHEETING AND TIMBERING FOR COPPER DAM	1	"

REINFORCING RODS

BAR NO.	SIZE	LENGTH	SHAPE	REMARKS
A	10	31'	STRAIGHT	CORNER
A'	8	31'	DELT	
B	11	12'-0"	STR.	
C	11	14'-0"	DELT	
D	14	24'-0"	STR.	
E	24	6'	STR.	

TOTAL WEIGHT OF REINFORCING RODS 1660 LBS.

KEY MAP
SCALE 1" = 1 MILE.

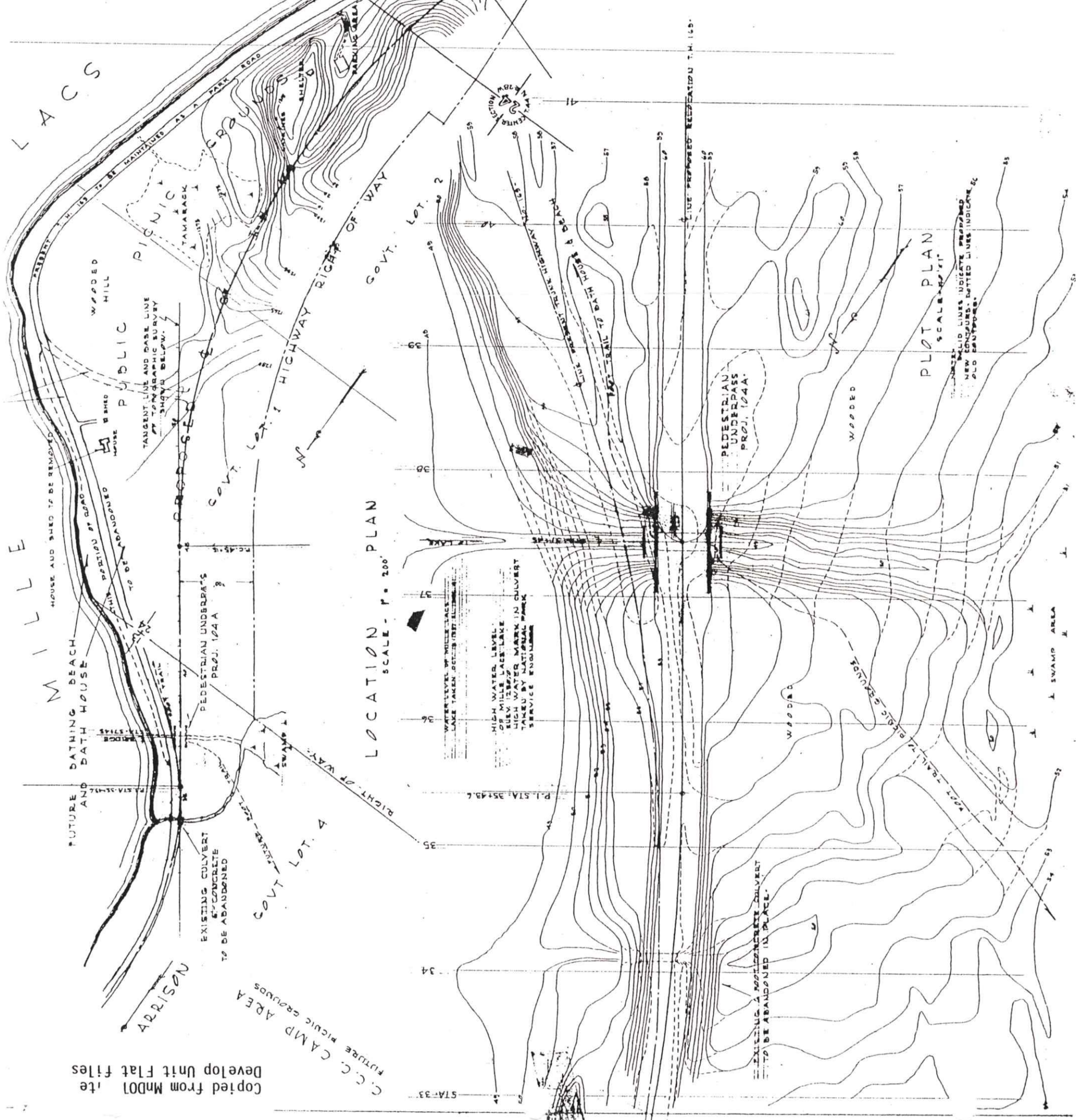


UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

MINNESOTA BRIS.
MILLE LACS LAKE
PEDESTRIAN UNDERPASS

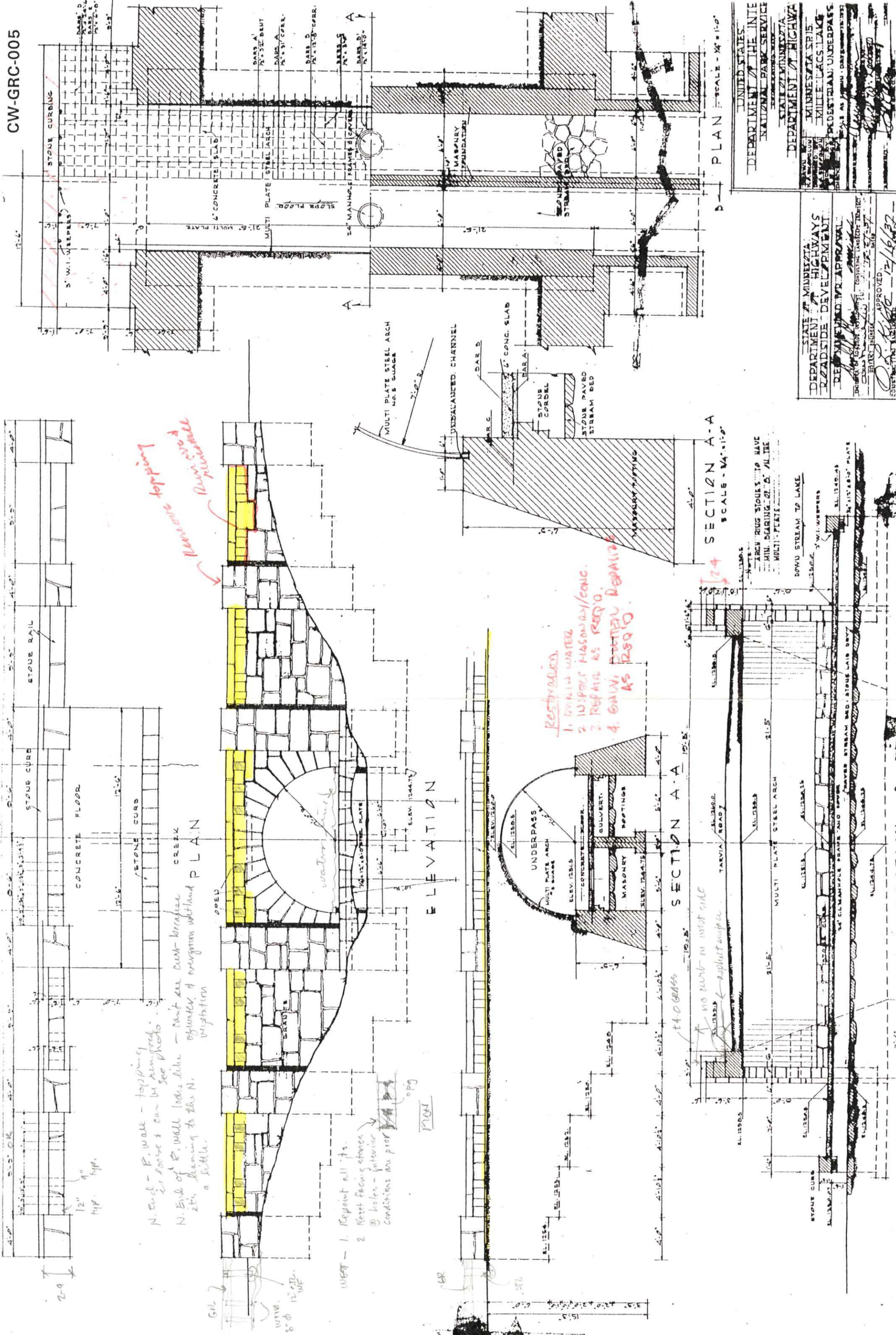
APPROVED: [Signature]
DATE: 12/11/37



STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
ROADSIDE DEVELOPMENT

RECOMMENDED FOR APPROVAL

APPROVED: [Signature]
DATE: 12/11/37



N. End - E. Wall - topping
is loose & can be removed.
See photo.

N. End of S. wall looks like
it's leaning to the N.
a little.

can't see curb because
of growth of vegetation
upland

Masonry Topping
Restoration

WEST - 1. Repoint all Jts.
2. Rest facing stones
@ holes - future
conditions are poor

Restoration
1. POINT WATER
2. REPAIR MASONRY/CONC.
3. REPAIR AS REQ'D.
4. GRASS RESTORATION
AS REQ'D.

14-0 GRASS
no curb on west side
asphalt surface

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
MINNESOTA SP15
MILL LACS LAKE
PEDESTRIAN UNDERPASS

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
ROADSIDE DEVELOPMENT
DESIGNED BY APPROVAL
APPROVED: 12/16/87

SECTION A-A
SCALE - 1/4" = 1'-0"

SECTION B-B
SCALE - 1/4" = 1'-0"



1. View from picnic area looking north at East End of Underpass



2. Underpass looking South in Median



3. View of West Wall across TH 169—looking NW



4. South End of Underpass looking North



5. East side Guardrail looking North



6. West side Wall looking South



7. North end of West side Wall (*Note: condition of curb and mortar*)



8. North end of East Wall looking East



9. East Wall looking West from Lake Edge



10. North End of East Wall looking Southwest



11. North end of West Wall looking Southeast from Median



12. East Wall looking Northwest



13. Close-up of Joints and Openings in Wall



14. Midsection of West Wall looking East (Note Vegetation)



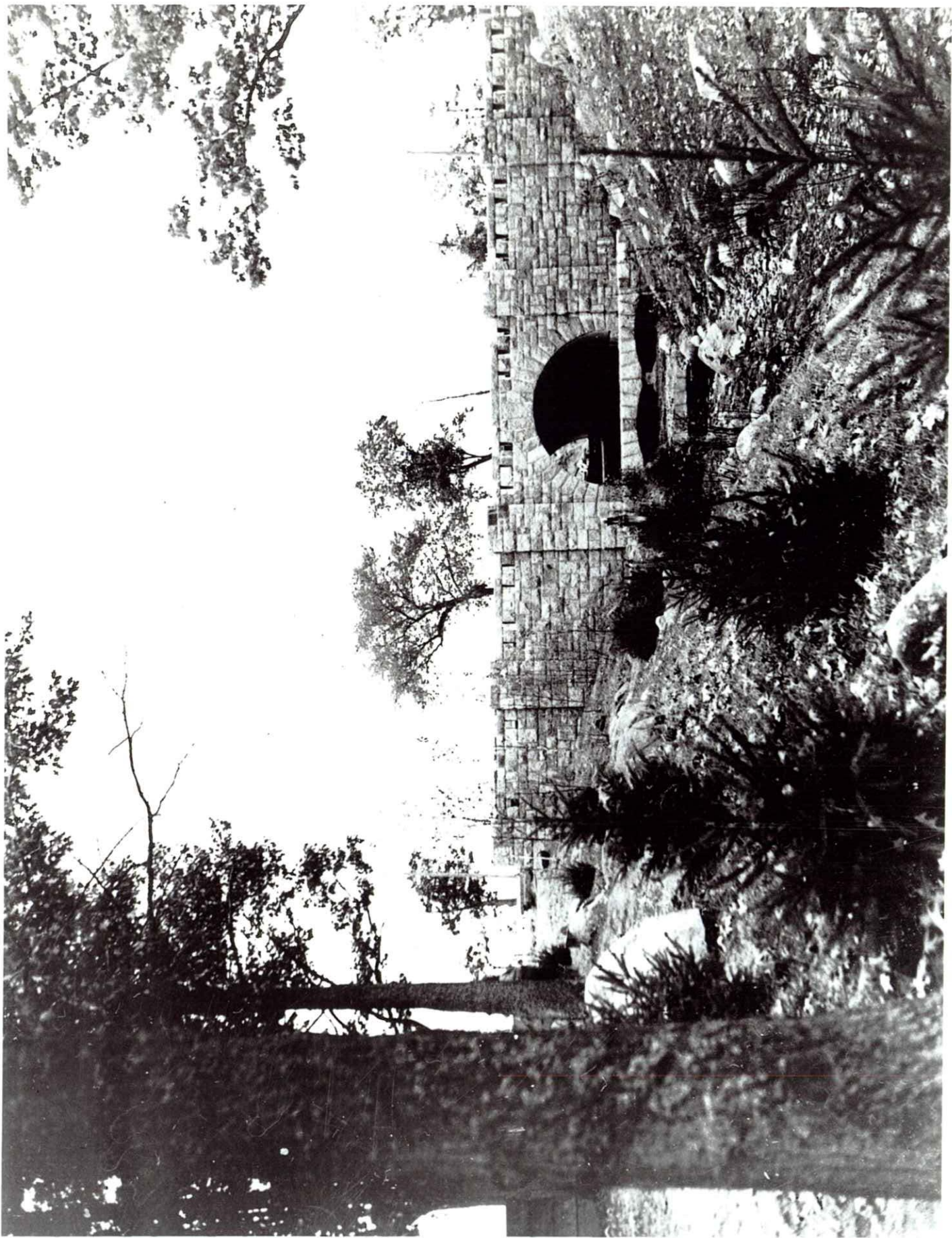
15. North End of East Wall looking West



16. Missing Mortar Topping



17. Close-up View of Missing Mortar and Condition of Underlying Stone Joint



SITE BOUNDARIES

■ BOUNDARY OF NATIONAL REGISTER-LISTED PROPERTY

The Garrison Pedestrian Underpass (Bridge 5265) is listed on the National Register of Historic Places. The boundary of the National Register-listed property is shown by the dashed line on the sheets entitled "Garrison Pedestrian Underpass Site Boundaries" (two pages) and accompanying sheets entitled "Mille Lacs Lake CCC Roadside Development, Garrison Section" (four) pages).

The base maps for the "Site Boundaries" sheets are a Minnesota Department of Transportation (Mn/DOT) right-of-way map and an aerial photo. The base maps for the "Mille Lacs Lake CCC Roadside Development" sheets are a Mn/DOT right-of-way map and an aerial photo.

The eastern boundary of the National Register-listed property follows the shoreline of Mille Lacs Lake, which is also the Mn/DOT right-of-way line. The western boundary follows the eastern edge of the eastern shoulder of the T.H. 169's southbound lane. The northern and southern boundaries are drawn at points 100' north and 100' south of the bridge's midpoint.

Boundary Justification

The boundary of the National Register-listed site encompasses the property historically associated with the bridge.

■ RECOMMENDED BOUNDARY OF MN/DOT HISTORIC SITE CONSERVATION ZONE

The recommended boundary of the Mn/DOT Historic Site Conservation Zone is also shown on the accompanying sheets. The Conservation Zone encompasses both the National Register-listed property, marked by the dashed line, and adjacent areas marked by the solid line.

Boundary Justification

The Mn/DOT Historic Site Conservation Zone is recommended to provide a special management zone that includes both the National Register-listed site and a larger area that encompasses part of the historic property's early physical and visual "context" or setting.

Preserving the property's physical and visual setting will help protect its historic integrity and enhance the public's understanding of, and appreciation for, the historic site design. The Conservation Zone will help buffer the site from elements that may detract from its historic character.

It is recommended that the Conservation Zone boundaries include the National Register-listed property and additional land described as follows:

The Conservation Zone for the Garrison Pedestrian Underpass is combined with the Conservation Zone for two nearby related properties, the Garrison Concourse (CW-GRC-001) and the T.H. 169 Culvert at St. Alban's Bay (CW-GRT-002). All three properties were built and landscaped as part of the same CCC roadside development project. Jointly sponsored by the CCC, the National Park Service, and the Minnesota Department of Highways, this project was the most extensive roadside development project

undertaken by the CCC in the state. The project included highway realignment, roadside landscaping, and the construction of several stone bridges and scenic overlooks including the Garrison Rest Area, the Garrison Concourse, Whitefish Creek Bridge, the Garrison Pedestrian Underpass, the T.H. 169 Culvert at St. Alban's Bay, the Garrison Creek Culvert, and the Kenney Lake Overlook (on T.H. 18). The sheets entitled "Mille Lacs Lake CCC Roadside Development, Garrison Section" show a subsection of this designed historic landscape.

The Conservation Zone boundaries in the Garrison area generally follow current Mn/DOT right-of-way lines (which tend to be the same as 1930s highway right-of-way lines in this area). Most of the Conservation Zone is currently owned by Mn/DOT. Near the southern edge of Garrison, the Conservation Zone includes the former site of the CCC camp, now an undeveloped wooded parcel.

It is recommended that Mn/DOT retain all current right-of-way within the Conservation Zone. It is further recommended that Mn/DOT preserve the Conservation Zone by taking such actions as special right-of-way planting and maintenance, acquiring additional property or scenic easements, and/or creating partnership agreements with individuals or groups interested in preserving the historic property and its setting. The Mn/DOT Cultural Resources Unit should be consulted regarding these activities.

In particular, it is recommended that all portions of the Conservation Zone be rehabilitated and maintained in a manner consistent with the original design intent. The original roadside landscaping included contouring the highway slopes, planting thousands of native trees and shrubs, installing hundreds of feet of granite curbing, and creating well-landscaped traffic islands, among other work. Mn/DOT should work closely with the City of Garrison and the Mn/DNR toward this goal, and historic plans and photos should be used to guide treatment activities.

It is also recommended that the roadside development sites within the Conservation Zone be linked by bicycle and pedestrian paths and jointly interpreted with uniform signs or markers that discuss the designers and builders of the larger roadside development project.

■ **MORE INFORMATION**

For detailed information on the Garrison Pedestrian Underpass's structures, landscape, and significance, refer to:

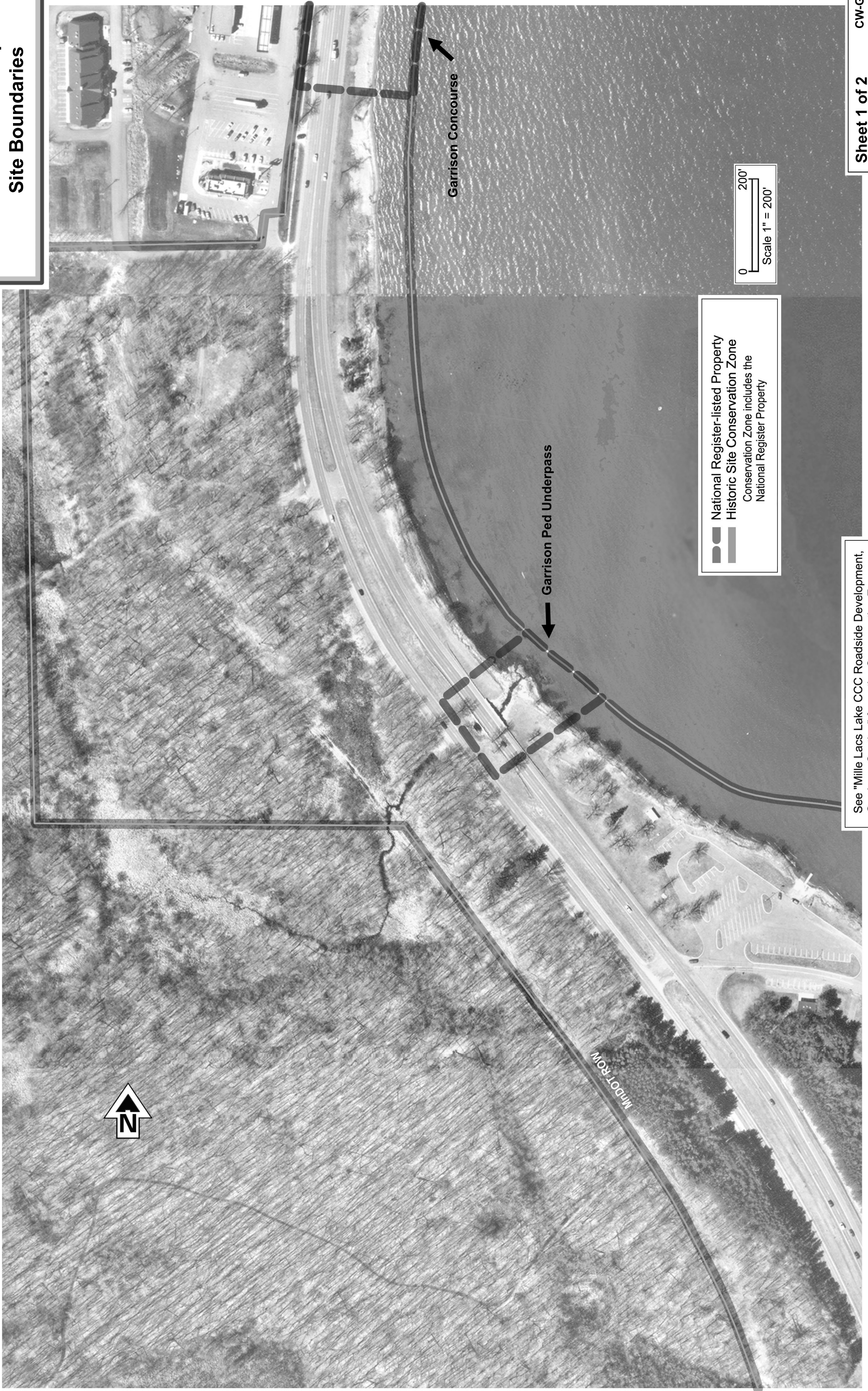
"Accomplishment Map" of CCC roadside development work along Mille Lacs, Minnesota Department of Highways and National Park Service, signed March 1939.

Mn/DOT Historic Roadside Development Structures Inventory form for Garrison Pedestrian Underpass (Bridge 5265) (Gemini Research, Dec. 1998).

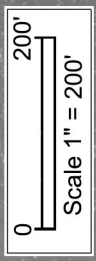
Mn/DOT Historic Roadside Development Structures Preservation and Restoration Report for Garrison Pedestrian Underpass (Bridge 5265) (Michael J. Burns Architects and Gemini Research 2001).

Prepared by Gemini Research May 1, 2004.

**Garrison Ped Underpass
Site Boundaries**



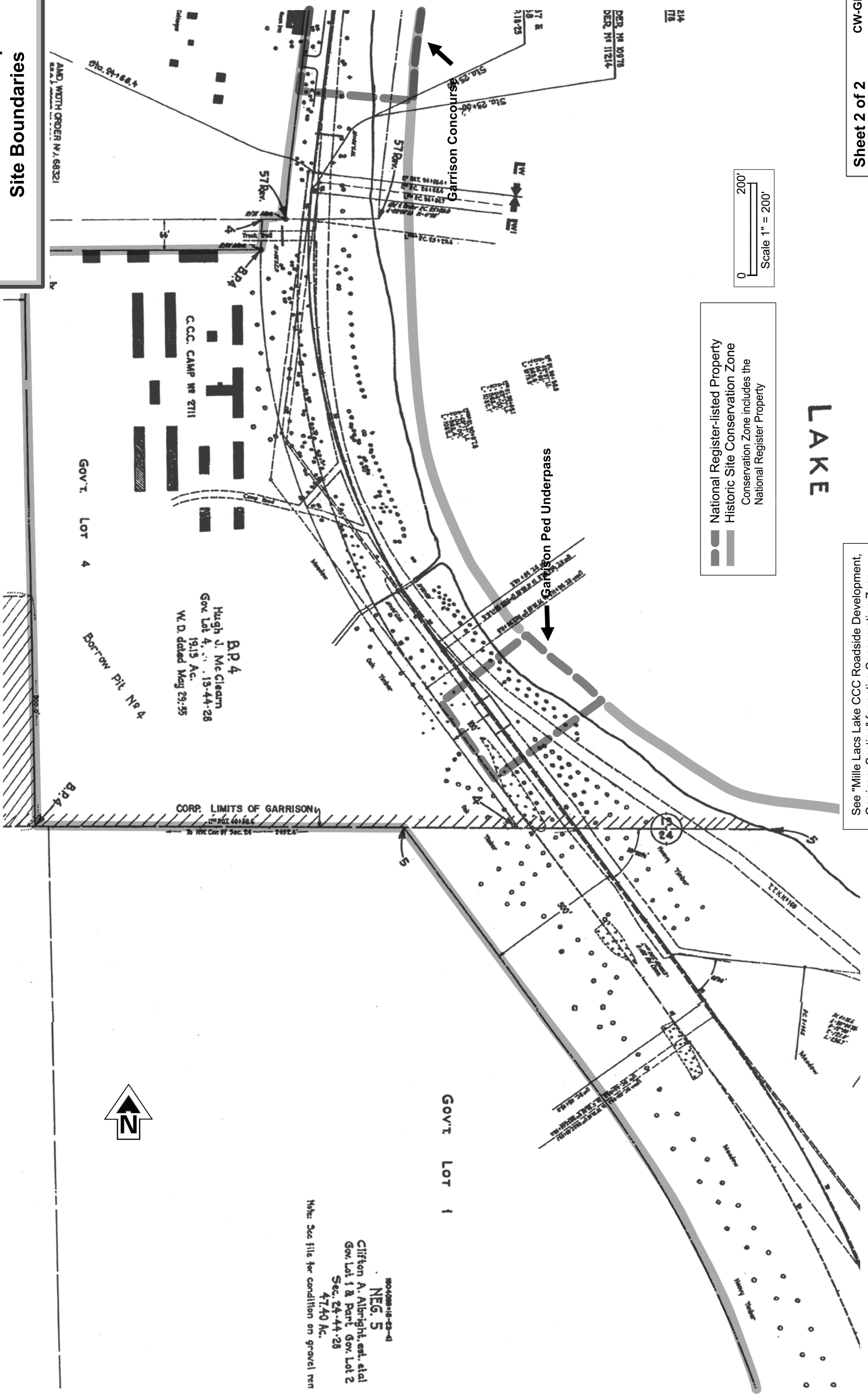
National Register-listed Property
 Historic Site Conservation Zone
 Conservation Zone includes the
 National Register Property



See "Mille Lacs Lake CCC Roadside Development,
Garrison Section" for entire Conservation Zone

Photo taken Spring 1999

**Garrison Ped Underpass
Site Boundaries**



See "Mille Lacs Lake CCC Roadside Development, Garrison Section" for entire Conservation Zone

NEG. 5
1804000-18-23-4
Clifton A. Albright, et. al
Gov. Lot 1 & Part Gov. Lot 2
Sec. 24-44-26
47.40 Ac.
Note: See file for condition on gravel run

**MNDOT HISTORIC ROADSIDE DEVELOPMENT
STRUCTURES INVENTORY**

CW-GRC-005
CS 1804

Garrison Ped Underpass (Bridge 5265)

Historic Name Other Name	Garrison Ped Underpass (Bridge 5265)	CS # SHPO Inv #	1804 CW-GRC-005
Location	On TH 169 .75 mi N of CSAH 26	Hwy District Reference	TH 169 3A 233
City/Township County Twp Rng Sec USGS Quad UTM	Garrison, City of Crow Wing 44N 28W Sec 13 Garrison Z15 E436550 N5125610	Acres Rest Area Class	NA
Designer	Skoogle, H O, Natl Park Serv Nichols, A R, Consult Land Arch	SP #	169-23-4A
Builder	Civilian Conservation Corps (CCC)	SHPO Review #	
Historic Use Present Use	Bridge/ Culvert/ Dam Bridge/ Culvert/ Dam	MHS Photo #	013535.05-14
Yr of Landscape Design	1938	MnDOT Historic Photo Album	Nic 5.22 Nic 7.34 Ols 1.57
Overall Site Integrity	Intact/Slightly Altered		
Review Required	Yes		
National Register Status	Listed, see Statement of Significance		
Historic Context	Iron and Steel Highway Bridges, 1873-1945 Roadside Development on Minnesota Trunk Highways, 1920-1960		
List of Standing Structures			
Feat#	Feature Type	Year Built	Fieldwork Date
01	Bridge/Culvert	1938	08-03-97
			Prep by
			Gemini Research Dec. 98 G1. 105
			Prep for
			Site Development Unit Cultural Resources Unit Environmental Studies Unit
NOTE: Landscape features are not listed in this table			
Final Report	Historic Roadside Development Structures on Minnesota Trunk Highways (1998)		

■ BRIEF

The Garrison Pedestrian Underpass (Bridge 5265) carries the northbound lane of T.H. 169 over a small creek in Section 24 of Garrison Township within the southern limits of the City of Garrison. It is located near the western shore of Mille Lacs Lake, about .75 miles north of CSAH 26. The bridge is adjacent to the northern end of the Garrison Rest Area. (See separate inventory form for the rest area.)

■ STANDING STRUCTURES

Pedestrian Underpass (Bridge 5265). Built 1938 by the CCC. Designed by H. O. Skooglun of the National Park Service. Bridge 5265 is a granite-faced bridge on lake boulder footings that carries the northbound lane of T.H. 169 over a small unnamed creek that flows eastward into Mille Lacs. The bridge is located at the northern end of the Garrison Rest Area. The bridge originally carried both lanes of T.H. 169, which was an undivided, 43'-wide roadway when the bridge was built. In addition, the bridge served as a pedestrian underpass to move rest area visitors to the western side of T.H. 169 where it was planned that a picnic area be built.

Bridge 5265 has a multi-plate steel culvert (supplied by the Lyle Culvert Company) that is 14' wide and 125' long. Pedestrians passed through the steel culvert, one level above the water flow. The water was originally carried through two shallow, 6'-wide box culverts located below the concrete floor of the pedestrian underpass. The pedestrian underpass is now carrying water, and the two box culverts are currently submerged.

The bridge's headwalls are faced with random ashlar, rockfaced, Isle granite in shades of pink and gray. Each headwall has a semicircular stone arch with radiating voussoirs that outline the culvert opening. The headwalls are buttressed with six stone piers and 18"-wide bridge railings that are punctuated by a series of rectangular, lancet-like slits. There is no pedestrian sidewalk, but the inner side of the railings was originally lined with a stone curb that was designed to be about 8"-9" high (according to the original plans). (The curb is no longer visible due to increases in pavement thickness.) Metal guardrails (each about 155' long) have been added to the ends of each railing.

At the time of its completion, the pedestrian underpass led between the Mille Lacs Highway Wayside CCC Camp SP-15 on the western side of T.H. 169 and the lakeshore and rest area. The picnic area west of the bridge was apparently never developed. (The land west of T.H. 169 at this location is currently forested and apparently undeveloped.)

■ OTHER LANDSCAPE FEATURES AND PLANTINGS

The topography of the site is gently rolling. The bridge stands within the grassy T.H. 169 right-of-way. There do not appear to be any plantings specifically associated with the bridge.

■ SETTING

Bridge 5265 is located at the northern end of the Garrison Rest Area on Pike Point on the western shore of Mille Lacs. The bridge is surrounded by Mille Lacs Lake on the east, the

T.H. 169 right-of-way and the lakeshore on the north, Garrison Rest Area on the south, and forested land on the west.

■ **INTEGRITY**

Alterations

The bridge appears to have been built fairly close to original plans.

The bridge originally carried both lanes of T.H. 169 and now carries only the northbound lane. The floor of the pedestrian walkway is under water. Increases in the thickness of the pavement have buried the stone curbing along the inner side of the railings. Metal guardrails have been added to the ends of each railing.

In general, the site retains integrity of location, design, setting, materials, workmanship, feeling, and association.

Notes on Condition

Bridge 5265 appears to be in fair to good condition.

■ **HISTORICAL BACKGROUND**

The Garrison Pedestrian Underpass (Bridge 5265) was constructed in 1938 by the Civilian Conservation Corps (CCC) working in cooperation with the Department of Highways and the National Park Service. The bridge was built by the enrollees of a CCC camp that was located just north of the bridge on the western side of T.H. 169. The bridge was built as part of a larger Mille Lacs Lake roadside development project that also included the construction of the Garrison Rest Area and several other roadside development facilities in the area.

In 1935-1936, in connection with the realignment of T.H. 169 (which was moved slightly west of the lakeshore), the highway department had obtained 53 acres of land in and near the town of Garrison and around Mille Lacs Lake for development of a recreational route. The project included roadside landscaping, the development of rest areas, and the construction of stone culverts, among other amenities. The project was known as the Mille Lacs Lake Highway Development Plan (also known as the Mille Lacs Lake SP-15 project) and was built using CCC labor from the Mille Lacs Lake Highway Wayside CCC Camp (also known as the Garrison CCC Camp). (The CCC camp was located on the western side of T.H. 169 just north of this bridge.)

The Garrison Pedestrian Underpass (Bridge 5265) was constructed in 1938. The construction plans (signed in 1937 and 1938) specify that the bridge's footings be granite stones to be taken from the lakeshore and that "construction to be done during the winter months in a heated shelter." The plan includes the statements "Drawn by H. O. Skooglund" and "Designed by H. O. Skooglund." The plans are signed by three officials from the Department of Highways -- Harold E. Olson (Engineer of Roadside Development), A. R. Nichols (Consulting Landscape Architect), O. L. Kipp (Construction Engineer) -- and four officials representing the National Park Service and the Minnesota State Parks Division -- Agge Thompson (CCC Camp Superintendent), Harold W. Lathrop (Minnesota Department of Conservation Park Authority),

Garrison Ped Underpass (Bridge 5265)

Ed Lasey (NPS Inspector), and either Earl C. Grever (NPS Regional Officer) or Donald B. Alexander (NPS Regional Officer).

H. O. Skooglun, the designer of this bridge, was with the National Park Service. Skooglun also designed three other bridges and a scenic overlook as part of the Mille Lacs Lake Highway Development Plan: the Whitefish Creek Bridge (Bridge 3355), the Garrison Creek Culvert (Bridge 5266), the T.H. 169 Culvert at St. Alban's Bay, and the Kenney Lake Overlook (all are included in this inventory). Arthur R. Nichols, Consulting Landscape Architect for the Minnesota Department of Highways, also participated in the design of these extensive roadside development improvements.

Mille Lacs Lake Highway Development Plan and the Garrison CCC Camp

This bridge was built as part of the Mille Lacs Lake Highway Development Plan, to which the work of CCC Camp SP-15 was devoted. The project operated between September of 1935 and March of 1940. It improved many miles of T.H. 169 and T.H. 18 west and north of Mille Lacs to facilitate increased recreational and commercial travel. It was the most extensive roadside development project undertaken by the CCC in the state.

The project was planned by the Minnesota Department of Highways and the National Park Service and was built with CCC labor from the Mille Lacs Lake Highway Wayside CCC Camp (Camp SP-15) that was located on the western side of T.H. 169. The first portions of the plan to be developed were a 4-mile section of T.H. 18 northwest of Garrison, a 5.5-mile section of T.H. 169 north of Garrison, and a 7-mile section of T.H. 169 south of Garrison. A construction plan noted: "Ultimate development of the parkway and connecting waysides is to continue around the entire lake, a distance of approximately 90 miles." The project was never completed to the extent planned. However, between 1936 and 1939, the highway department and the CCC constructed at least seven known roadside development projects (with standing structures) in the Garrison area, all of which are extant and are included in this study. They are the following:

- Garrison Concourse
- Garrison Creek Culvert (Bridge 5266)
- Garrison Pedestrian Underpass (Bridge 5265)
- Garrison Rest Area
- Kenney Lake Overlook
- T.H. 169 Culvert at St. Alban's Bay
- Whitefish Creek Bridge (Bridge 3355)

Historian Rolf Anderson writes:

The principal design work for the Mille Lacs Lake Highway Wayside projects was executed in the [National Park Service's] Minnesota Central Design Office in St. Paul, which was actually a branch office of the National Park Service Regional Office in Omaha. . . . Principal figures included Edward W. Barber, the chief architect and major designer, V. C. Martin, who designed the Kitchen Shelter [at the Garrison Rest Area], Oscar Newstrom, and N. H. Averill who completed many of the master plans and landscape designs. . . . Park Service engineers and landscape architects had experimented with a variety of styles and eventually concluded that buildings constructed with native materials and designed to harmonize with their natural settings were most appropriate (Anderson, "Mille Lacs Lake Kitchen Shelter" 1990:8-5).

The 1938 *Annual Report* of the highway department's Roadside Development Division summarized work completed that year in the Mille Lacs Lake area:

The construction work on a large masonry concourse overlooking Mille Lacs Lake was begun in 1936 and continued through 1937 and 1938. In addition, some major changes in alignment and design of the roadway have been made, together with the construction of several large drainage structures which were provided with rustic stone headwalls [see Garrison Creek Culvert, Whitefish Creek Bridge, T.H. 169 Culvert at St. Alban's Bay, and the Garrison Pedestrian Underpass (Bridge 5265)]. Grading operations are now in progress, extending from Garrison to 1 1/2 miles south and consist of a divided roadway of two 30 foot lanes with an island of 6 to 90 feet between (*Annual Report* 1938:19).

CCC Camp SP-15, also known as the Mille Lacs Highway Wayside Camp, was located on the southern edge of Garrison. The camp was established in September of 1935 and was one of four CCC camps in Minnesota that were sponsored by the Department of Highways. Camp superintendent was Agge Thompson. The camp's 200 enrollees worked primarily on the Mille Lacs Lake Highway Development Project. Work on the project ended when the men of CCC Camp SP-15 were transferred on March 31, 1940, to the St. Croix Recreational Demonstration Area (now St. Croix State Park).

The Garrison CCC Camp was one of four CCC camps in the state that were sponsored by the Minnesota Department of Highways. (Most of the state's other CCC camps were sponsored by agencies such as the Minnesota Department of Conservation (State Parks Division), the U.S. Forest Service, and the Soil Conservation Service.) The first of the four highway department camps was the Spruce Creek Camp that was established on the Cascade River on the North Shore in 1934. The other three highway department CCC camps were established in 1935. The four are listed below:

- Lakeshore (Camp SP-19), located near Knife River on the North Shore
- Leech Lake (Camp SP-16), located near Whipholt on Leech Lake
- Mille Lacs Lake (Camp SP-15), located at Garrison on Mille Lacs Lake
- Spruce Creek (Camp SP-13), located near Cascade River on the North Shore

Nine sites constructed by these camps are included in this Historic Roadside Development Structures Inventory (see individual inventory forms for each):

Built by the Spruce Creek Camp
Cascade River Overlook (includes Bridge 5132)
Spruce Creek Culvert (Bridge 8292)

Built by the Mille Lacs Lake Camp
Garrison Concourse
Garrison Creek Culvert (Bridge 5266)
Garrison Pedestrian Underpass (Bridge 5265)
Garrison Rest Area
Kenney Lake Overlook
T.H. 169 Culvert at St. Alban's Bay
Whitefish Creek Bridge (Bridge 3355)

No properties built by the Lakeshore or Leech Lake CCC camps are included in this study. (One of the principal accomplishments of the Lakeshore Camp is the elaborate Knife River Historical Marker on old Highway 61 several miles northeast of Duluth. The site is intact but in fragile condition. It is no longer on right-of-way and is now within the jurisdiction of St. Louis County Highway Department. No standing structures built by the Leech Lake CCC Camp, which operated for only six months, are known to be extant.)

■ **PREVIOUS SHPO REVIEWS**

See a Section 106 review for a Mn/DOT undertaking that would reconvey a 4,500'-long parcel of the T.H. 169 right-of-way across the highway west of the Garrison Rest Area. The review began in 1995 (SHPO review #96-0323). (See Garrison Rest Area inventory file for more information.)

Bridge 5265 was also determined to be eligible for the National Register by the Mn/DOT Historic Bridge Inventory in 1997. (See Statement of Significance below.)

■ **STATEMENT OF SIGNIFICANCE**

The Garrison Pedestrian Underpass (Bridge 5265), built in 1938 by the CCC, is one of seven bridges recorded in this inventory that are faced with stone. It is one of 14 sites in the inventory known, or suspected, to have been built by the CCC. The bridge is one of five sites in the study that were designed by H. O. Skooglun of the National Park Service (NPS), and one of eight sites in the study that were designed by NPS designers (in collaboration with A. R. Nichols).

This property has been evaluated within the historic context "Roadside Development on Minnesota Trunk Highways, 1920-1960." It is recommended that Bridge 5265 is ELIGIBLE for the National Register under this historic context because it meets the following registration requirements:

Significant to the History of Roadside Development. The Garrison Pedestrian Underpass is one of nine properties in this inventory that were built by the four CCC camps in Minnesota that were sponsored by the MHD. (All four camps were dedicated to roadside development.) The MHD-sponsored CCC camps improved many miles of trunk highway, as well as constructing 9 of the 68 Depression-era properties in this inventory. These numerous New Deal-era sites represent the MHD's first large-scale effort to construct roadside development facilities in the state. Bridge 5265 is an excellent example of the distinctive and well-constructed public facilities, built by the MHD in partnership with federal relief agencies, that met the objectives of roadside development while providing essential work and job training to the nation's unemployed during the Depression. (National Register Criterion A.)

Furthermore, the bridge is significant as one of seven sites that were built near Garrison by the CCC as part of the Mille Lacs Lake Highway Development Project. This 4 1/2-year-long roadside development project improved and developed T.H. 169 and T.H. 18 near Garrison for recreational purposes. It was the most extensive roadside development project undertaken by the CCC in the state. The seven properties near Garrison (four of which are bridges) are rare in the state for their variety, design quality, degree of integrity, and close geographic proximity. The properties are testimony to the success of the partnership between the MHD,

the National Park Service, and the CCC. This collaboration produced functional, long-lasting, and aesthetically-superior roadside amenities that continue to enhance the experience of the traveling public today. (National Register Criterion A.)

Design Significance. The bridge is an excellent example of the application of the "National Park Service Rustic Style" to a small highway bridge. It has stonework of excellent quality. The site displays the special labor-intensive construction techniques and distinctive use of indigenous materials that characterize both the Rustic style and federal relief construction in Minnesota. (National Register Criterion C.)

Bridge 5265 was also determined to be eligible for the National Register by the Mn/DOT Historic Bridge Inventory and was officially listed on the National Register in 1998. The National Register nomination form states, "With its well-crafted stonework and fine architectural detailing, Bridge No. 5265 is eligible for the National Register for its design and workmanship under [National Register] Criterion C, within the historic context of 'Iron and Steel Bridges in Minnesota, 1873-1945'" (Hess Sept. 1997).

The bridge may also be associated with the "Federal Relief Construction, 1933-1943" and "Tourism and Recreation in the Lake Regions, 1870-1945" historic contexts.

■ **OTHER COMMENTS**

This property may require further evaluation for potential archaeological resources.

T.H. 169 past this site is very busy during the summer months.

■ **REFERENCES**

An Appraisal Inventory of Work Done with WPA and Other Federal Relief Funds Through the Functioning of the Department of Highways, State of Minnesota. May 9, 1938. Highway Department Records, Subject Files Box 7, Relief Labor, Minnesota Historical Society.

Anderson, Rolf T. "Federal Relief Construction in Minnesota, 1933-1941." National Register Multiple Property Documentation Form. Oct. 9, 1990; amended Aug. 30, 1993.

Anderson, Rolf T. "Garrison Concourse." National Register of Historic Places Registration Form. Oct. 9, 1990.

Anderson, Rolf T. "Mille Lacs Lake Kitchen Shelter/Garrison Wayside Shelter." National Register of Historic Places Registration Form. Oct. 9, 1990.

Annual Report of the Accomplishments of Roadside Development Along the Trunk Highways in Minnesota. Minnesota Department of Highways. 1938 and 1939.

Biennial Report of the Commissioner of Highways of Minnesota for 1937-1938. March 1, 1939.

Hess, Jeffrey A. "Bridge No. 5265." National Register of Historic Places Registration Form. Sept. 1997.

Hess, Jeffrey A. Minnesota Historic Bridge Inventory Form for Bridge 5265. Hess-Roise and Co. for Mn/DOT Historic Bridge Study. 1997.

"Master Plan Report - Minnesota S.P. 15 - Mille Lacs Lake." Circa 1930s. Copy in Mn/DOT Site Development Unit flat files.

Mather David, Elizabeth J. Abel, and Art Hoppin. *Phase I Archaeological Investigation of a Proposed Mn/DOT T.H. 169 Right-of-Way Reconveyance (C.S. 1804) at Garrison, Crow Wing County, Minnesota.* Prepared for the Minnesota Department of Transportation by Loucks and Associates. October, 1995.

"Minnesota Department of Highways. Waysides and Rest Areas Overnight Parking and Camping Policies." Typewritten manuscript. 1975. Site Development Unit files.

Minnesota State Park and Recreational Area Plan. Minnesota Department of Conservation. Division of State Parks. March 1939.

Site Plans. Minnesota Department of Transportation, St. Paul.

■ ADDITIONAL BACKGROUND INFORMATION

Mille Lacs is the state's second-largest lake in square area and has approximately 150 miles of shoreline. T.H. 169 follows the shore of Mille Lacs Lake for about 20 miles.

The Mille Lacs area has a long tradition of Native American habitation. By the mid-1600s, Mille Lacs was called "Mde Wakan" by the Dakota and was an important religious and cultural center. The Ojibwe called the lake "minsi sagaigon" meaning "everywhere lakes" because of the many lakes located in the vicinity. The French translated the Ojibwe name into "Mille Lacs" meaning "thousand lakes." Mille Lacs is now the cultural center for the Mille Lacs Anishinabe. The Mille Lacs Anishinabe band currently has about 2,800 members.

The town of Garrison was named for Oscar E. Garrison, a land surveyor, who homesteaded in the area in 1882. An earlier town at this location was called "Midland."

Local Stone

The granite used to construct Bridge 5265 was probably obtained from a quarry near Isle, a community located on the southeastern shore of Mille Lacs. The Isle-Warman Creek granite region contains outcroppings of red, gray, and black granite that were quarried by various companies. The Cold Spring Granite Company, for example, operated a quarry about five miles south of Isle as early as 1935. Light gray granite from the site was called Isle Granite and was marketed under the name of "Cold Spring Pearl White" granite.

Minnesota Department of Transportation (Mn/DOT)

Historic Bridge Management Plan

Appendices

Bridge Number: 5265

Appendix D. Cost Detail

Mn/DOT Historic Bridge Management Plan
BRIDGE No. 5265 MAINTENANCE/STABILIZATION/PRESERVATION (M/S/P) Activity Listing and Costs

Notes:

- 1 Costs are presented in 2006 dollars.
- 2 Unit costs are presented to the dollar or cent depending on the precision of the specific value.

MAINTENANCE COST SUMMARY

	ITEM	ANNUAL COSTS
1.00	SUPERSTRUCTURE	\$ -
2.00	SUBSTRUCTURE	\$ 3,800
3.00	RAILINGS	\$ 2,300
4.00	DECK	\$ 300
5.00	OTHER	\$ 2,400
		\$ 8,800

1.00 SUPERSTRUCTURE

REF. No.	ITEM / DESCRIPTION OF WORK	EXPECTED LIFE CYCLE - YEARS	ITEM QTY	QTY UNIT	UNIT COST	ITEM TOTAL	ANNUAL COST
1.05					\$ -	\$ -	\$ -
1.10					\$ -	\$ -	\$ -
1.15					\$ -	\$ -	\$ -
1.20					\$ -	\$ -	\$ -
1.25					\$ -	\$ -	\$ -
1.30					\$ -	\$ -	\$ -
1.35					\$ -	\$ -	\$ -
1.40					\$ -	\$ -	\$ -
1.45					\$ -	\$ -	\$ -
1.50					\$ -	\$ -	\$ -
						\$ -	\$ -

2.00 SUBSTRUCTURE

REF. No.	ITEM / DESCRIPTION OF WORK	EXPECTED LIFE CYCLE - YEARS	ITEM QTY	QTY UNIT	UNIT COST	ITEM TOTAL	ANNUAL COST
2.05	Flush headwalls and wingwalls w/ water	1	1	LS	\$ 1,000.00	\$ 1,000	\$ 1,000
2.10	Tuckpointing	5	1	LS	\$ 10,000.00	\$ 10,000	\$ 2,000
2.15	Extensively clean masonry	30	1	LS	\$ 25,000.00	\$ 25,000	\$ 833
2.20					\$ -	\$ -	\$ -
2.25					\$ -	\$ -	\$ -
2.30					\$ -	\$ -	\$ -
2.35					\$ -	\$ -	\$ -
2.40					\$ -	\$ -	\$ -
2.45					\$ -	\$ -	\$ -
2.50					\$ -	\$ -	\$ -
						\$ 36,000	\$ 3,833

3.00 RAILINGS

REF. No.	ITEM / DESCRIPTION OF WORK	EXPECTED LIFE CYCLE - YEARS	ITEM QTY	QTY UNIT	UNIT COST	ITEM TOTAL	ANNUAL COST
3.05	Flush curbs and railings with water	1	1	LS	\$ 500.00	\$ 500	\$ 500
3.10	Tuckpointing	5	1	LS	\$ 5,000.00	\$ 5,000	\$ 1,000
3.15	Extensively clean masonry	30	1	LS	\$ 25,000.00	\$ 25,000	\$ 833
3.20					\$ -	\$ -	\$ -
3.25					\$ -	\$ -	\$ -
3.30					\$ -	\$ -	\$ -
3.35					\$ -	\$ -	\$ -
3.40					\$ -	\$ -	\$ -
3.45					\$ -	\$ -	\$ -
3.50					\$ -	\$ -	\$ -
						\$ 30,500	\$ 2,333

4.00 DECK

REF. No.	ITEM / DESCRIPTION OF WORK	EXPECTED LIFE CYCLE - YEARS	ITEM QTY	QTY UNIT	UNIT COST	ITEM TOTAL	ANNUAL COST
4.05	Seal cracks in roadway pavement	10	1	LS	\$ 2,500.00	\$ 2,500	\$ 250
4.10					\$ -	\$ -	\$ -
4.15					\$ -	\$ -	\$ -
4.20					\$ -	\$ -	\$ -
4.25					\$ -	\$ -	\$ -
4.30					\$ -	\$ -	\$ -
4.35					\$ -	\$ -	\$ -
4.40					\$ -	\$ -	\$ -
4.45					\$ -	\$ -	\$ -
4.50					\$ -	\$ -	\$ -
						\$ 2,500	\$ 250

5.00 OTHER

REF. No.	ITEM / DESCRIPTION OF WORK	EXPECTED LIFE CYCLE - YEARS	ITEM QTY	QTY UNIT	UNIT COST	ITEM TOTAL	ANNUAL COST
5.05	Routine Bridge Inspection	1	1	LS	\$ 600	\$ 600	\$ 600
5.10	Arm's length masonry inspection	5	1	LS	\$ 4,000	\$ 4,000	\$ 800
5.15	Clean roadway drainage appurtenances	1	1	LS	\$ 1,000	\$ 1,000	\$ 1,000
5.20					\$ -	\$ -	\$ -
5.25					\$ -	\$ -	\$ -
5.30					\$ -	\$ -	\$ -
5.35					\$ -	\$ -	\$ -
						\$ 5,600	\$ 2,400