WHITEFISH CREEK BRIDGE (BRIDGE 3355) SHPO INV. # ML-KAN-005

Location: Bridge 3355 is located on T.H. 169 about 300 feet north of CSAH 25 in Mille Lacs County's Kathio Township. The bridge allows the Whitefish Creek to flow under TH 169 into Mille Lacs Lake at Wigwam Bay.

Introduction: The Whitefish Creek Bridge (#3355) was built in two sections: the original bridge was a 16'-0" section built in 1921. The bridge was added onto and enlarged by the CCC in 1939 to its current width of 76'-0". Its headwalls and railings are built of gray random ashlar, rusticated Isle granite. H.O. Skooglun of the National Park Service designed the structure. Metal guardrails currently extend from each end of the headwalls. The highway was repaved and the guardrails extended during the summer of 2000.

Architect's Survey Date: October 6, 1999

Plans/Sketches:

1. 01/39 Reinforcing Design Plan
2. 01/39 Design Bridge Plan—Existing Conditions as of 10/99
3. Site plan sketch (MJBA 10/99)
4. 03/29/68 Letter MnDOT "Central Files" expressing concerns about the load capacity of the bridge
5. Dept. of Highways, Bridge Maintenance…*(Note: 7/8/78 repairs)*
6. MNHD Roadside Development Plans T.H. 169-18, Sheets 1 and 7 of 8
7. FHA Photos of Wood Timber/Steel and Stone Masonry Guardrails samples

MNDOT HISTORIC ROADSIDE DEVELOPMENT STRUCTURES INVENTORY

ML-KAN-005
CS 4814
Whitefish Creek Bridge (Bridge 3355)

Historic Name	Whitefish Creek Bridge (Bridge 3355)
Other Name	

CS #	4814
SHPO Inv #	ML-KAN-005

Location	TH 169 300' N of CSAH 25
City/Township	Kathio Township
County	Mille Lacs
Twp Rng Sec	43N 27W Sec 7
USGS Quad	Vineland
UTM	Z15 E438860 N5118080

Hwy	TH 169
District	3A
Reference	227.7

Acres	
Rest Area Class	NA

SP #	169-18-23-4 1804-08

Designer	Skooglun, H O, Natl Park Serv Nichols, A R, Consult Land Arch
Builder	Civilian Conservation Corps (CCC)

SHPO Review #	

Historic Use	Bridge/ Culvert/ Dam
Present Use	Bridge/ Culvert/ Dam

MHS Photo #	013535.20-24

Yr of Landscape Design	1939
Overall Site Integrity	Intact/Slightly Altered
Review Required	Yes

MnDOT Historic Photo Album	Nic 1.21

National Register Status	Eligible, see Statement of Significance

Historic Context	Roadside Development on Minnesota Trunk Highways, 1920-1960 Reinforced Concrete Highway Bridges, 1900-1945

List of Standing Structures

Feat#	Feature Type	Year Built	
01	Bridge/Culvert	1939	

NOTE: Landscape features are not listed in this table

Fieldwork Date
08-03-97

Prep by
Gemini Research
Dec. 98 G1. 94

Prep for
Site Development Unit
Cultural Resources Unit
Environmental Studies Unit

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 Whitefish Creek Bridge (Bridge 3355) is a granite-faced concrete slab bridge that carries Whitefish Creek under T.H. 169 and into Mille Lacs Lake at Wigwam Bay. 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 a utilitarian engineering function. Except for plantings, the site is generally intact in size and spatial organization.

- Recommendations:
  Stabilization: None.
  Preservation/Restoration: Purchase the parking area directly southwest of the bridge to provide for a small screened parking area, picnicking and walking. Plant new turf and trees near the parking lot that complement the Rustic Style design and place two or three wooden picnic tables, a privy and several trash receptacles throughout this area. Add interpretive signage to inform the visitors about the bridge's history and the CCC's work along T.H. 169, etc. Work Period: 1 – 3 years.

b. Visual Relationships:

- Assessment: The Bridge was designed to be viewed by vehicles driving over it, but today is easily missed by cars driving at 50-60 mph. The recently extended steel guardrails overwhelm the masonry structure, obscuring its presence to the motorist unless one is specifically looking for it.

  The bridge's design enhances the view of the highway in this scenic area and provides visual interest to the nearby resorts, cabins, and beaches. Again, the metal guardrails overwhelm the design. Today the bridge is best seen from either the beach or from a privately owned parking area located southwest of the structure.

  The view from the bridge includes Mille Lacs Lake to the east, forest and wetlands to the west, forests to the north, and resorts and cabins to the south. There is a private parking area immediately southwest of the bridge. A condominium building and marina can be seen across the bay to the northeast.

  The setting has changed little since the 1930s except that cabins to the west have been razed and buildings to the south have been remodeled. There are also more cars on the highway. Future commercial and resort development in the vicinity is likely and T.H. 169 is scheduled to be widened to a four-lane highway and/or realigned. The wetlands to the west and the lake to the east may serve to buffer the bridge somewhat from surrounding development.

- Recommendations:
  Stabilization: None.
  Preservation: Clear brush from the western side of the bridge to improve its visibility. Work Period: ASAP.
  Restoration: Clear brush from the western side of the bridge to bring it into view. Acquire additional acreage west and southwest of the bridge, including the privately owned parking area, to protect the site's visual context. 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 similar to the way that the T.H. 169 4-lane is screened from CSAH 35 just north of the Grand Casino at Vineland. Work Period: 1 – 3 years.

2. Topography

- Assessment: The site is flat except at the banks of the creek and ditches along T.H. 169.

- Recommendations: None.

3. Vegetation

- Assessment: Original landscaping plans from the 1930s (S.P. 4814-10) intended that T.H. 169 be lined with evergreens and shade trees, and that the bridge be set off with pines. This landscaping was part of a 2.8-mile Roadside Development project. Sheet 7 of the plan specifies that 32 "Western Yellow Pine" (Pinus Ponderosa) be placed in four groups of eight at the four corners of the bridge. Twenty American Elm were to be planted on the right-of-way just south of the bridge at the intersection of the highway and CSAH 25 (groups of 10 were to be placed on the northwestern and southwestern corners of the intersection). Twenty Green Ash were to be planted on both sides of T.H. 169 at Sta. 343-346.5, about 600' south of the bridge. Finally, between Sta. 328.67 and 350 (extending 1,000' north and 1,100' south of the bridge), 13,310 unspecified evergreen transplants were to be installed on both sides of T.H. 169. (See plans for S.P. 4814-10 for details on the thousands of evergreens, American Elms, Green Ash, and Lombardy Poplars that were planted as part of the 2.8-mile project.)

  Today the bridge is surrounded by grassy highway ditches, the sandy beach of Lake Mille Lacs, and dense woods to the west and north, including a large stand of evergreens. The pines, elms, most of the ash, and some of the evergreen transplants specified on the plans are missing in the immediate environs of the bridge but may be still standing in the forest to the north and west. Trees and brush growing along Whitefish Creek are currently obscuring the western facade of the bridge. Weeds are encroaching on the bridge's walkways and curbs.

- Recommendations:
  Stabilization and Preservation: cut back weeds and brush from the bridge to a distance of 6'. Reseed with appropriate groundcover to reduce erosion. Establish and follow a regular schedule of mowing and trimming. Work Period: Cut back brush ASAP; other work--annually and routine maintenance
  Restoration: Restore the original planting plan for the bridge and 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. Work Period: 1 – 3 years and provide annual and routine maintenance.

4. Circulation

a. Access:

- Assessment: Traffic on T.H. 169 is often heavy and now travels at 50-60 mph, considerably 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 an overlay that raised the elevation of the pavement about 3". There is a gravel shoulder between the edge of this pavement and the bridge's flagstone walkway and curb. The portion of the gravel shoulder closest to the curb was not disturbed during the 2000 overlay. About 3" of the curb's original 8" curb face is currently exposed above the gravel on the western side of the highway. Little, if any, of the curb face is exposed on the eastern side of the highway. During the 2000 improvements, the metal guardrails extending from the ends of the bridge were lengthened. Their added length has visually overwhelmed the stonework.

  T.H. 169 is scheduled to be widened to a four-lane highway in the near future. In one of the proposed alternatives, T.H. 169 would be realigned several hundred feet to the west and this portion of "old" T.H. 169 would become a county highway serving the lakeshore. If the road eventually becomes a county highway, traffic over the bridge may be lighter.

- Recommendations:
  Stabilization: Cut weeds back from stone curbing and keep the bridge weed-free. If the bridge is eventually transferred to county ownership because T.H. 169 is realigned, take steps to insure the bridge's future preservation and proper maintenance after the transfer. Work Period: Weeds—ASAP; maintenance—annually.

Preservation: Cut weeds back from stone curbing and keep the bridge weed-free. If the bridge is eventually transferred to county ownership because T.H. 169 is realigned, take steps to insure the bridge's future preservation and proper maintenance after the transfer. Work Period: Weeds—ASAP; maintenance—annually.
Restoration: Lower the elevation of the highway paving and gravel shoulder to increase the visibility of the stonework and restore the original curb depth. (Costs of highway modifications are not included in this document.)

If the bridge is eventually transferred to the county because T.H. 169 is realigned, take steps to insure the bridge's future preservation and proper maintenance after the transfer.

It is recommended that the highway speed limit over the bridge be reduced to 45 mph. Work Period: 1 – 5 years.

b. Pedestrian walks

- Assessment: The Bridge has 4'-wide granite flagstone walkways located just inside the stone railings. Newer roadway grades have covered parts of the edges and most of the surfaces have settled and/or heaved and are overgrown with vegetation and covered with roadway sand and gravel. Currently there is no pedestrian footpath extending north and south of the bridge and **none** is recommended. Today, walking from the highway right-of-way, across the bridge, and across the highway are not safe due to the speed and amount of traffic. The bridge is most safely approached from the parking area to the southwest and along the wide sandy beach.

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

- Recommendations:
  Stabilization: None.
  Preservation and Restoration: Despite the fact that pedestrian travel over the bridge is not recommended, the flagstone walkways should be carefully preserved because they are an integral part of the bridge structure (see Sidewalk under Structures below). Acquire the parking area southwest of the bridge (see Parking Areas below). Participate in plans for possible future development of a bike trail over the bridge. Work Period: 3 – 5 years. Land acquisition costs are not included.

c. Parking Areas

- Assessment: The Bridge was not designed with a parking area. The only possible parking is on a privately owned parking area, which is not currently in use, at the southwestern corner of the bridge. This parking area provides an excellent view of the bridge and pedestrian access to its western face.

- Recommendations:
  Stabilization/Preservation and Restoration: Acquire the parking area southwest of the bridge to provide safe public access to the bridge, provide a location for an interpretive marker, and buffer the bridge from inevitable future development. It is recommended that this acquisition be explored as soon as possible during this quiet time in the development of the immediate vicinity. If the parking area is acquired, redesign it for about 5-8 cars and landscape the remaining area with appropriate plants (inspired by S.P. 4814-10), an interpretive marker, and perhaps a portable picnic table based on historic MHD designs. Work Period: 1 – 3 years.

5. Water Features: Not applicable

6. Structures, Furnishings and Objects

a. Bridge/culvert

- Assessment: It is in generally good condition and is structurally sound. Maintenance is required. The "Bridge Maintenance, Repairs and Renewals" records show that the masonry was cleaned and regrouted and sidewalks repaired in 1978. Tops of walls are covered with about one inch of concrete topping. Condition of the mortar topping is poor. At the south end of the east wall about 2'-0" of the topping is missing. Many stone joints are in poor condition or are missing. Granite stones are missing in a few spots. Green paint (graffiti) is located on the southwest side of the west wall. Vegetation is overgrown along the walls. Exposed foundations of round fieldstone are visible at the banks of each wall indicating that the grade has settled since it was built.

- Recommendations:
  Stabilization, Preservation and/or Restoration: Completely remove the concrete topping from the walls and clean all exposed stone. Remove all mortar from all joints and prepare for repointing. Repoint all joints including the topside joints of the walls. Cutback the existing vegetation along the base of the walls to remove and repair and repoint all fieldstone foundation joints. The faces of the stone at the bridgeheads shall be cleaned and all graffiti removed from the stone in the locations named above. Replace missing stones with matching granite and/or fieldstone. Stabilize the grade to prevent erosion following masonry restoration. Work Period: 3 – 5 years.

b. Curb, stone

- Assessment: Original drawings show the curb about 8" above the roadway surface. In 2000, the highway over the bridge was resurfaced with an overlay that raised the elevation of the pavement about 3". There is a gravel shoulder between the edge of the asphalt pavement and the bridge's flagstone walkway and curb. The portion of the gravel shoulder closest to the curb was not disturbed during the 2000 overlay. About 3" of the curb's original 8" curb face is currently exposed above the gravel on the western side of the highway. Little, if any, of the curb face is exposed on the eastern side of the highway.

- Recommendations:
  Stabilization: Remove all weeds. Work Period: ASAP and annually.
  Preservation and Restoration: Remove all weeds. Regrade the driving surface to expose the curb and restore the elevation of the flagstone walking surfaces along the bridge walls as originally designed. Work Period: 3 – 5 years.

c. Guardrail, metal

- Assessment: During the 2000 improvements, the metal guardrails extending from the ends of the bridge were lengthened. Their added length has visually overwhelmed the stonework.

- Recommendations:
  Stabilization: Replace existing with timber-faced metal guardrail that is visually appropriate for the stone masonry bridge walls. See enclosed photo example. Work Period: 1 – 3 years.
  Preservation: Replace the metal guardrails with a stone masonry guardrail, similar to the picture included. Work Period: 1 – 5 years.
  Restoration: Replace the metal guardrails with a stone masonry guardrail, similar to the picture included. Work Period: 1 – 5 years.

d. Sidewalk

- Assessment: Existing flagstone is in fair to good condition. Parts of the walks are covered from a buildup of sand, gravel, and vegetation. Much of the walking surface is uneven due to freeze/thaw actions and neglected maintenance.

- Recommendations:
  Stabilization: None.
  Preservation/Restoration: Cut down asphalt driving surface to expose original 8" high concrete curb. Install new driving surface to match original grades. Repair de-

teriorated curb as described above. Remove all flagstone and catalog original location to re-install in those locations. Regrade all substrate material on which the flagstone rests. Add sand as needed and compact. Re-install existing flagstone and provide new matching stone using Isle granite for those pieces that are missing. Provide regular maintenance. Work Period: 3 – 5 years.

7. **Accessibility Considerations:** Does not apply.

8. **Health and Safety Considerations:** All construction and masonry restoration materials and methods shall be environmentally approved for the preservation of the water quality standards in the lake and creek. Extra safety precautions are needed while construction work is completed due to the high volume and speed of the traffic. No pedestrian movement over TH 169 is recommended.

9. **Environmental Considerations:** Not applicable

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. Provide a sign on each side of the highway indicating the historic bridge's location so that motorists may choose to stop on the west side to get a closer look at the construction methods used by the CCC during the 1930's. Locate an interpretive plaque in the acquired parking area that tells a brief story of the CCC and the historic roadside construction. If the parking area cannot be acquired, then the interpretive signage should be eliminated for highway safety.

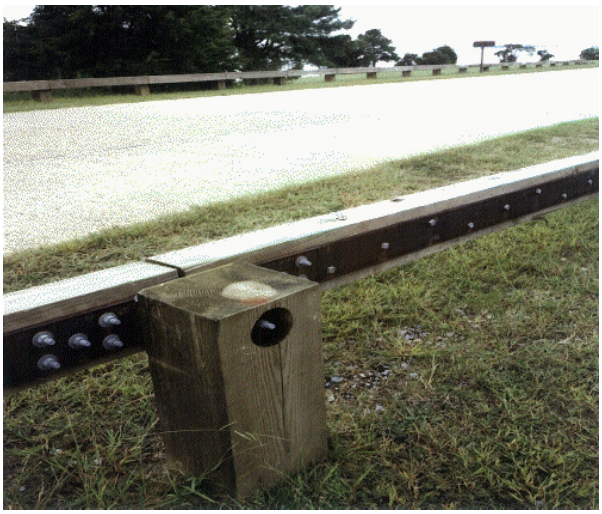
11. **Conclusion:** The restoration of this bridge is critical due to the near future highway changes proposed. *MnDOT's acquisition of the adjacent parking area to the west is imperative and should occur as soon as possible.* The parking area is currently an "eyesore" and will provide a small, safe picnicking and interpretative area for travelers.

    Because the guardrails serve a very useful purpose and fulfill safety requirements, they must be maintained. However, because of their length and current metal design, they *significantly and negatively* impact the stone bridge and its visual historic value. Therefore the replacement of these metal rails with historically sensitive designs that are already approved by the Federal Highway Administration must be undertaken when the bridge repairs occur.

    Provide interpretive signage that describes the history of the site, 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 "grass-crete."

	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	$2,860	$2,860	$45,530
Circulation			
Access road and internal roadways *(guardrail costs below)*			
Parking areas	$33,754	$33,754	$33,754
Pedestrian walks		$12,953	$15,356
Paths and trails			
Water Features			
Structures, Furnishings and Objects			
Bath house			
Bench(es), other			
Bench(es), stone			
Bridge/culvert	$72,125	$72,125	$72,125
Cave			
Council ring			
Curb, stone	$562	$6,477	$6,477
Curb, concrete			
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 (Replace w/historic)	(Timber/Steel) $18,304	(Stone Masonry) $154,880	(Stone Mas.) $154,880
Info board			
Info booth			
Marker			
Other feature			
Overlook wall			
Picnic shelter(s)			
Picnic table(s), other		$2,640	$2,640
Picnic table(s), stone			
Privies		$880	$880
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 (signage)	$6,336	$6,336	$6,336
ESTIMATED COSTS	**$133,941.00**	**$292,904.00**	**$337,978.00**

Guardrail/wall Options that are historically appropriate.



Wood Timber/steel Reinforced Guardrail

Stone Masonry Guardwall

ML-KAN-005

MATERIAL LIST

ITEM	QUANTITY	UNIT
CONCRETE - GRADE "A"	91	CU. YDS.
" " "C"	30	" "
MASONRY WALL	295	" "
CEMENT MORTAR	98	" "
CEMENT	405	BBLS.
PLASTERERS SAND FOR MASONRY	105	CU. YDS.
SHARP SAND FOR CONCRETE	62	" "
CLEAN GRAVEL FOR "	99	" "
FORM LUMBER		
" " SHIPLAP	3000	F.B.M
" " 2" x 4"	2000	" " "
" " 4" x 4"	2000	" " "
" WIRE		
" TIES	5000	NO
" SPIKES		
2" x 6" SHEETING FOR COFFER DAM	6000	F.B.M.
ANGLE IRONS 5" x 5" x ½" - 25' LONG - 162 LBS	4	NO.
ANCHOR BARS - ¾" ø - 6' (260 LBS.) WELDED TO ANGLE IRONS	50	"

REINFORCING BARS

BAR	NO.	SIZE	LENGTH	SHAPE	LOCATION
F1	46	½" ø	3'-4"	STR.	CONC. WALL FOOTING
F2	6	"	26'-6"	"	" " " WEST.
F3	8	"	5'-0"	"	" & MAS " "
F4	6	"	10'-6"	"	" " " " "
F5	8	"	15'-0"	"	" " " " "
F6	10	"	7'-2"	"	" " " " "
F7	8	"	15'-2"	"	" " " "
F8	6	"	21'-6"	"	" " " EAST
F9	6	"	10'-0"	"	" " " "
F10	10	"	6'-8"	"	" " " "
V1	54	"	10'-1"	"	" & " VERT.
V2	54	"	9'-7"	HOOK	" & " HORZ. "
V3	68	"	11'-2"	STR.	" & " VERT WEST
V4	68	"	10'-8"	HOOK	" & " "
H1	14	"	20'-0"	STR.	" " HOR. EAST
H2	14	"	20'-0"	"	" " " "
H3	16	"	25'-0"	"	" " " WEST
H4	16	"	25'-0"	"	" " " "
S1	45	1" ø	17'-5"	"	" SLAB CROSS
S2	47	1" ø	18'-0"	BENT	" " "
S3	7	½" ø	27'-6"	STR.	" 6" LOUGIT. WEST.
S4	8	"	28'-6"	BENT	" " " "
S5	8	¾" ø	24'-8"	STR.	" BEAMS - TOP
S6	8	"	"	"	" " BOTTOM -
S7	12	½" ø	1'-8"	"	" " ENDS
S8	8	"	23'-8"	BENT	" CONC. SLAB LOUGT. EAST
S9	7	"	28'-10"	STR.	" " " "
S10	14	½" ø	5'-0"	HOOK	" SLAB END LOUGIT.

TOTAL WEIGHT OF REINFORCING BARS = 8885 LBS.

Note: EXPOSED REINFORCING IN OLD STRUCTURE TO BE THOROUGHLY CLEANED AND STRAIGHTENED AS NECESSARY AND TO EXTEND INTO NEW STRUCTURE AND TO LAP OVER NEW REINFORCING STEEL WHERE POSSIBLE.

GENERAL NOTE

THE EXISTING REINFORCED CONCRETE BRIDGE WHICH WAS CONSTRUCTED BY THE MINNESOTA HIGHWAY DEPARTMENT IS TO BE EXTENDED ON BOTH SIDES BECAUSE OF THE CHANGE IN THE PRESENT HIGHWAY TO TWO LANES WITH ISLAND - THE EXTENSIONS TO MATCH UP WITH THE PRESENT STRUCTURE TO BE OF REINFORCED CONC., OF 1:2:3 MIXTURE, GRADE "A" CONSTRUCTION, REINFORCED CONCRETE. FOOTINGS UNDER MASONRY WALLS TO BE OF GRADE "C" CONCRETE.

MASONRY END WALLS IN PLACE OF CONCRETE WING WALLS TO BE BUILT OF NATIVE GRANITE WITH FLUSH MORTAR JOINTS, MORTAR OF 1:3 MIXTURE.

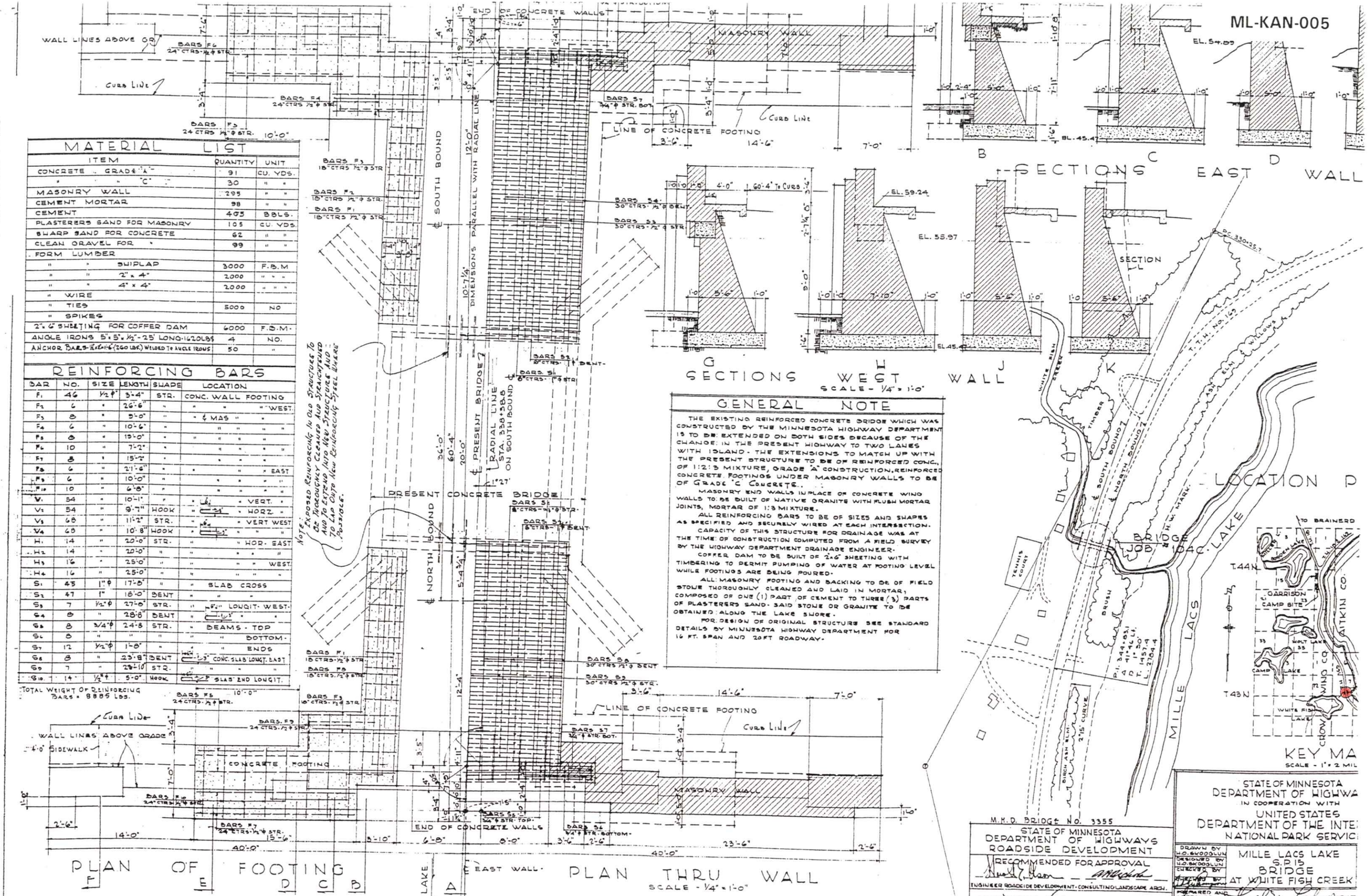
ALL REINFORCING BARS TO BE OF SIZES AND SHAPES AS SPECIFIED AND SECURELY WIRED AT EACH INTERSECTION.

CAPACITY OF THIS STRUCTURE FOR DRAINAGE WAS AT THE TIME OF CONSTRUCTION COMPUTED FROM A FIELD SURVEY BY THE HIGHWAY DEPARTMENT DRAINAGE ENGINEER.

COFFER DAM TO BE BUILT OF 2"x6" SHEETING WITH TIMBERING TO PERMIT PUMPING OF WATER AT FOOTING LEVEL WHILE FOOTINGS ARE BEING POURED.

ALL MASONRY FOOTING AND BACKING TO BE OF FIELD STONE THOROUGHLY CLEANED AND LAID IN MORTAR; COMPOSED OF ONE (1) PART OF CEMENT TO THREE (3) PARTS OF PLASTERERS SAND. SAID STONE OR GRANITE TO BE OBTAINED ALONG THE LAKE SHORE.

FOR DESIGN OF ORIGINAL STRUCTURE SEE STANDARD DETAILS BY MINNESOTA HIGHWAY DEPARTMENT FOR 16 FT. SPAN AND 20 FT ROADWAY.



M.H.D. BRIDGE NO. 3355

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
ROADSIDE DEVELOPMENT

RECOMMENDED FOR APPROVAL

ENGINEER ROADSIDE DEVELOPMENT - CONSULTING LANDSCAPE ARCH.

1-24-39
DATE

STATE OF MINNESOTA
DEPARTMENT OF HIGHWA
IN COOPERATION WITH
UNITED STATES
DEPARTMENT OF THE INTE
NATIONAL PARK SERVIC

DRAWN BY H.O. & W.O.
DESIGNED BY H.O. & W.O.
CHECKED BY
APPROVED BY
PREPARED AND APPROVED BY
DAT

MILLE LACS LAKE
S.P. 15
BRIDGE
AT WHITE FISH CREEK

Copied from MnDOT Site
Develop Unit Flat files

PLAN

GRANITE WALL

EAST ELEVATION
SCALE - 1/4" = 1'-0"

Bridge sign

conc. topping broken away see photo "Roll "20"

Report.

NATIVE GRANITE

GRADE EL

TOP CURBING ELEV.

GRANITE ARCH

CONC. BEAM

BRACKET

EL. 54.89

EL. 48.81

STREAM BED

EL. 48.24

EL. 49.47

grade

ground field stone

exposed field stone below

rubble line

exposed rubble to be

½" x 2" ANCHOR BARS TO BE WELDED TO SHELF ANGLE WITH CONTINUOUS WELD SPACED @ 2'-0" CENTERS

PRESENT CONCRETE RAILS TO BE REMOVED

EL. 57.39

EL. 55.24

EL. 54.89

NEW CONC. SLAB

EXISTING CONC. SLAB TO REMAIN.

END OF CONC. WALL

MASONRY

EAST END

SECTIONS
SCALE 3/4" = 1'-0"

WEST END

ANCHORS TO BE STAGGERED

steel is corroding

GRANITE ARCH DETAILS
SCALE - 1½" = 1'-0"

Roadside of wall – scraped out soft mortar to depth of 1½" deep. REPOINT

pressing

1⅛ - 1½" JTS.

1½" conc. top.

graffiti

NATIVE GRANITE

remove stump

TOP OF CURB

EL. GRADE AT CURB

5" x 5" x ½" L, ANCHORED 24" CTRS WITH ¾" x 18" BOLTS

EL. 53.97

EL. 54.89

Coated steel

5" x ½" STL. EXPOSED on Bottom

EL. 49.47

EL. 45.47

- WEST ELEVATION -

EAST END – WEST END
CROSS SECTIONS

EL. WEST END

EL. EAST END

14 SPACES @ 13" = 15'-6" ALT. BARS

BARS S3 & S4

BARS S5 & S6

EL. 55.97 WEST END

EL. 54.89 EAST END

16'-0"

STREAM BED

KEYWAY

EL. 45.47

GRANITE WALL

GRANITE CURB

Bad shape/slope

NORTH BOUND LANE

SOUTH BOUND LANE

EL. 57.39

EL. 55.24

PRESENT ROAD

EL. 56.76

EXISTING CONCRETE STRUCTURE

EL. 54.89

EL. 55.97

EL. 46.97

EL. 48.24 STREAM BED

EL. 45.47

Pitch ?

not sure

EAST END

TO LAKE

WEST END

BOTTOM SIDE OF FLOOR SLAB

BARS H1 FRONT HORZ. 11-0" CTRS. ½" ϕ
BARS H2 BACK HORZ. 11-0" CTRS. ½" ϕ

BARS V1 FRONT VERT. 9" CTRS. ½" ϕ STRT.
BARS V2 BACK VERT.

BARS H3 FRONT HORZ. 11-0" CTRS. ½" ϕ
BARS H4 BACK HORZ.

BARS V3 FRONT VERT. 9" CTRS. ½" ϕ STRT.
BARS V4 BACK VERT.

LONGITUDINAL "A" SECTION

NOTE:
MASONRY RETAINING WALLS ON BOTH ENDS OF BRIDGE TO BE CONSTRUCTED IN ADVANCE OF CONCRETE EXTENSIONS UP TO BOTTOM SIDE OF FLOOR SLAB. CONCRETE BEAM AND SHELF ANGLE TO BE SUPPORTED ON STONE MASONRY.

field notes – 10/6/99 MJBA

M.H.D. BRIDGE No. 3355
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
ROADSIDE DEVELOPMENT
RECOMMENDED FOR APPROVAL
ENGINEER ROADSIDE DEVELOPMENT CONSULTING LANDSCAPE ARCH.
1-24-00 DATE

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAY
IN COOPERATION WITH
UNITED STATES
DEPARTMENT OF THE INTERI
NATIONAL PARK SERVICE

DRAWN BY H.O.SKOOGLUN
DESIGNED BY H.O.SKOOGLUN
CHECKED BY
TRACED BY
PREPARED AND APPROVED BY

MILLE LACS LAKE
S.R.15
BRIDGE
AT WHITE FISH CREEK

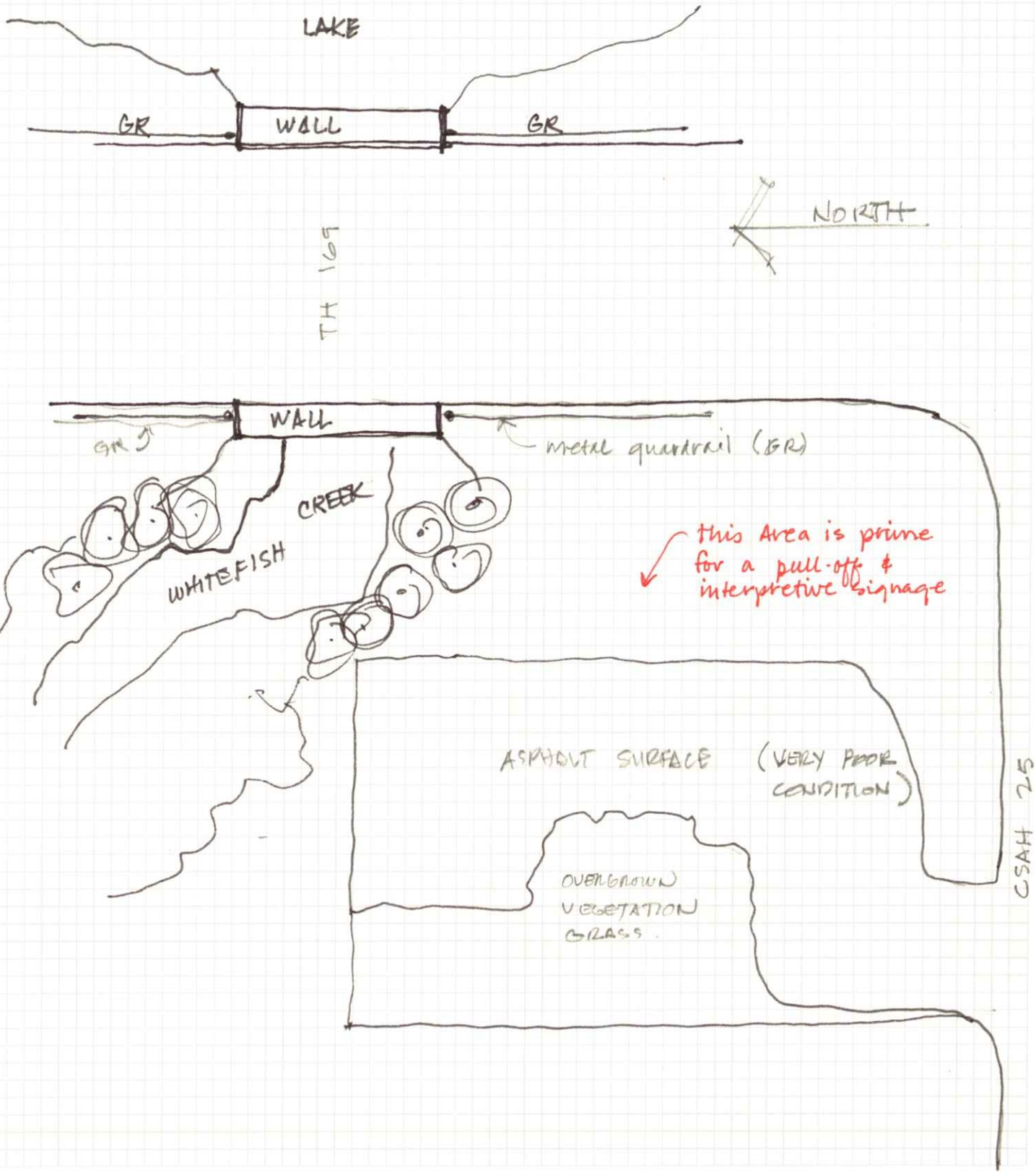
DATE

MJBA
- ARCHITECTURE
- INTERIOR DESIGN
- HISTORIC PRESERVATION

MICHAEL J. BURNS ARCHITECTS, LTD.
824 CENTER AVENUE, MOORHEAD, MN 56560 ■ 2878 LILAC LANE NE, FARGO, ND 58102
■ (218) 233-6620 ■ (701) 298-0140 ■ FAX: (218) 233-6621

Project MnDOT RPA Project No. 9919

Subject WHITEFISH BRIDGE #3355 Date 10-6-99



HIGHWAY

CENTRAL FILES

March 29, 1968

E. E. Johnson
Bridge Maintenance Supervisor

G. H. Kolstad
Chief, Centralized Operations

Bridge #3355 on T.H. 169, 4.7 miles north of Vineland

Herewith one set of prints for the slab span Bridge #3355.

It has been suggested that this structure should have a thorough reinspection as there are some aspects which may have been over looked in the routine annual inspection.

This structure originally built as a 16' slab span with 19' between curbs in 1920 was subsequently widened in 1939. The grade has been raised so that the curbs are no longer visible on the old structure or perhaps they were cut off in the widening process and there is a question as to just what the present dead load consists of.

It should be noted as to whether or not any deficiencies are showing up which could be a result of overloading on both the new and the old portion. It would be of interest to determine the exact depth of fill and what it consists of as to whether or not it is bituminous material, gravel, and so forth.

Please give this your early attention and advise.

Attachment:
Prints

cc:
J. L. Spencer
D. J. Aune
A. L. W. Anderson
R. P. Braun

GHK:lt

FORM 510-6M4-27

STATE OF MINNESOTA S.P. 169-18-23-4=4814

DEPARTMENT OF HIGHWAYS.

BRIDGE MAINTENANCE, REPAIRS AND RENEWALS

DATE 13

169-18

BRIDGE No 3355 MAINT. No 5815 LOCATION SEC. 7 TWP. 43 RGE. 27 T.H.No. COUNTY Mille Lacs

LOCATED 4.7 MILES N FROM Vineland STREAM WHITE FISH CREEK

YEAR BUILT 1920 BUILT BY Milaca Br. Co. COS. OF CONSTRUCTION $ 2750.00

DESCRIPTION 16' Slab 16' WIDTH OF ROADWAY 31 TYPE FLOOR Conc.

DATE	REPAIRS RECOMMENDED	EST. COST
[illegible]	[illegible]	[illegible]
1939	Widened Nat'l Park Service Labor	1225.00
	[illegible] Mat'l	146.00
	Plus 7314 Man hours CCC.	
1939	Material by State	2659.12
	Engineering & Supervision	615.65

DATE	REPAIRS COMPLETED	COST
1937	Reflector Buttons & Repairs	$ 125.61
1938	Repairs	$ 19.86
1941	Misc. Br. Maint. & Insp.	9.10
1958	REPAIRING	22.03
1959	Inspection	11.77
1960	Misc. Repairs	5.98
1961	By Area 3-B	8.80
7-8-75	CLEAN & regrout b Locks Repair S. DEWALKS	1,189 69

"REGROUT BLKS" — ? could have been mortar shows enough weathering

FORM 129 R
REVISED 1937

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.		FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MINN.				1	8

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
ROADSIDE DEVELOPMENT PLANS
TRUNK HIGHWAY NO. 169-18

BETWEEN N. LINE MILLE LACS CO. AND 1/2 MILE SOUTHERLY OF WHITE FISH CREEK
Give nearest Cities or Villages

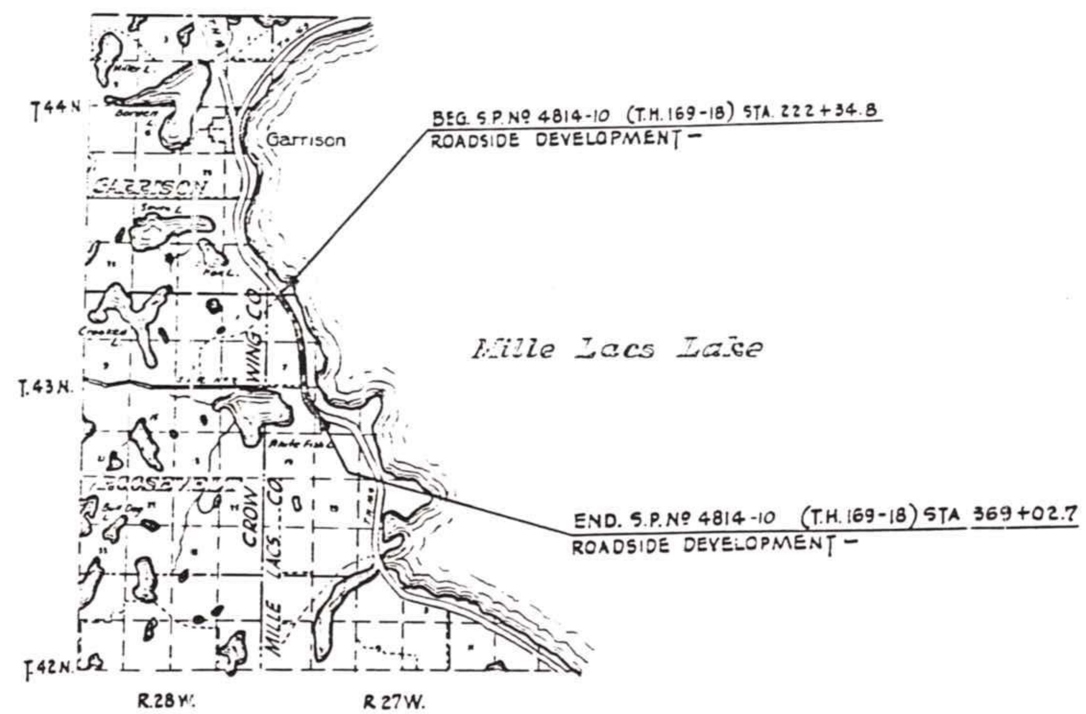
From A POINT 737.5' EAST OF N W COR. OF SEC. 6 - T43 N - R27 W. To A POINT 310.1' NORTH OF THE E 1/4 COR. OF SEC. 18 - T43 N. - R27 W.
Give proper reference to Sections, Township and Range

MINNESOTA NO. , SECTION .

GROSS LENGTH	14793.2	FEET	2.802	MILES
BRIDGES-LENGTH		FEET		MILES
EXCEPTIONS-LENGTH		FEET		MILES
NET LENGTH	14793.2	FEET	2.802	MILES

LAYOUT
Scale 1 Inch = 10560 Feet

IN COOPERATION WITH
WORK PROJECTS ADMINISTRATION



INDEX OF SHEETS

CONVENTIONAL SIGNS & ABBREVIATIONS

State Line; County Line; Township or Range Line; Section Line; Quarter Line; Sixteenth Line; Right-of-Way Line; Property Line (Except Land Lines); Vacated Platted Property; Corporate or City Limits; Trunk Highway Center Line; Retaining Wall; Steam Railroad; Electric Railroad; Railroad Right-of-Way Line; Creek; Rapids or Waterfall; Dry Run; Drainage Ditch; High Tension Line; Power Pole Line; Telephone or Telegraph Line; Culverts - Plain, With Endwalls, With Wingwalls; Drop Inlet; Guard Rail; Wire Fence; Railroad Snow Fence; Board or Highway Snow Fence; Stone Wall or Fence; Hedge; Water Pipe; Sewer Pipe; Drain Tile; Gravel Pit; Sand Pit; Clay Pit; Rock Quarry; Springs; Marsh

Timber; Brush; Orchard; Rock Ledge; Sand; Edge of Cut; Toe of Embankment; Catch Basin; Manhole; Fire Hydrant; Arc Lamp; Other Lamps (State Kind); Railroad Crossing Sign; Railroad Crossing Bell; Electric Warning Sign; Crossing Gate; Cattle Guard; Overhead (Highway Over); Underpass (Highway Under); Abutment, Wall & Pier; Girder Bridge; Truss; Trestle; Building (One Story Frame) F-Frame, C-Concrete, S-Stone, T-Tile, B-Brick, ST-Stucco; Iron Pipe; Stone Monument; Wood Stake or Hub; Meander Corner

Trunk Highway R/W Line	T.H.
Railroad R/W Line	
Present Road R/W Line	
Excavation	EXC.
Earth	E.
Loose Rock	L.R.
Solid Rock	S.R.
Embankment	F.
Overhaul	H.
Surfacing	S.
Hand Ditching	H.D.
Special Excavation	S.E.
Special Plowing	S.P.
Guard Rail	G.R.
Corrugated Metal Culvert	C.M.Culv.
Sectional Concrete Culvert	P.Culv.
Sectional Concrete Culvert (Heavy Type)	P.H.Culv.
Ton Miles	T.M.
Telephone Pole	TEL.P.
Power Pole	P.P.
Place	P.
Inplace	INP.
Replace	REP.
Right	RT.
Left	LT.
Intersection Angle	Δ
Radius	R.
Tangent	T.
Length of Curve	L.
Point of Curve	P.C.
Point of Tangent	P.T.
Point of Intersection	P.I.
Vertical Curve	V.C.
Bench Mark	B.M.
Elevation	EL.
Acres	A.

NOTE: SECTION NUMBERS SHOULD BE MADE TO READ FROM THE SOUTH

GENERAL NOTES

Location of proposed trees & shrubs shall be adjusted on the ground to conform to existing conditions such as clearance of overhead wires, sight clearance on curves, outcropping rock, and other fixed local factors.
All tree holes to be 3' in diameter and 3' in depth. Backfilled with 12" of clay and 24" of loam, unless otherwise designated.
Shrubs & vines are to be installed in beds 18" in depth and backfilled with 6" of clay & 12" of loam unless designated on plans as hole planting.
Shrubs & vines designated as hole planting are to be installed in holes 18" in diameter & 18" in depth and backfilled with 6" of clay & 12" of loam.
Planting along the open road shall be informal and natural in arrangement, avoiding straight lines in the installation of individual plants.

LETTING DATE		APPROVED	19		DISTRICT ENGINEER		
GROSS LENGTH	Feet	Miles	Feet	Miles	Feet	Miles	
EXCEPTIONS-LENGTH	Feet	Miles	Feet	Miles	Feet	Miles	
NET LENGTH	Feet	Miles	Feet	Miles	Feet	Miles	
LETTING DATE		APPROVED	19		DISTRICT ENGINEER		
GROSS LENGTH	Feet	Miles	Feet	Miles	Feet	Miles	
EXCEPTIONS-LENGTH	Feet	Miles	Feet	Miles	Feet	Miles	
NET LENGTH	Feet	Miles	Feet	Miles	Feet	Miles	
LETTING DATE		APPROVED	19		DISTRICT ENGINEER		
GROSS LENGTH	Feet	Miles	Feet	Miles	Feet	Miles	
EXCEPTIONS-LENGTH	Feet	Miles	Feet	Miles	Feet	Miles	
NET LENGTH	Feet	Miles	Feet	Miles	Feet	Miles	

ROADSIDE DEVELOPMENT PLANS
CONVENTIONAL SIGNS

EXISTING PLANT GROWTH
FOLIAGE INDICATION AT RELATIVE SCALE
COMMON (ENGLISH) NAMES

WOOD, FOREST OR GROVE
SHADE TREE — 8" ELM
D = INCH DIAMETER AT BREAST HEIGHT - 4½ FT
S = SPREAD IN FEET OR 1½ X INCH DIAMETER
EVERGREEN TREE (SCREEN TYPE)
FLOWERING TREE (SMALL TREE OR SHRUB TYPE) — H=HEIGHT
SHRUB MASS (SINGLE OR GROUPED)
HEDGEROW
CLIPPED HEDGE

PROPOSED (TO BE PLANTED)
CLASSIFICATION BASED ON RELATIVE SIZE AT MATURITY
SCIENTIFIC (LATIN) NAMES

SHADE TREE — 69
FIGURES WITHIN CIRCLES INDICATES VARIETY OF TREE ACCORDING TO KEY INDEX
FLOWERING TREE — 42
FIGURES WITHIN CIRCLES INDICATES VARIETY OF TREE ACCORDING TO KEY INDEX
EVERGREEN TREE — 11 LARGE OR SMALL
FIGURES WITHIN CIRCLES INDICATES VARIETY OF TREE ACCORDING TO KEY INDEX
SPECIMEN TREE — LARGE OR SMALL
SMALL TREES IN GROUPS
LARGE SHRUBS IN GROUPS
MEDIUM SIZE SHRUBS — 95 LONICERA MORROWI 5'
FIGURES IN FEET INDICATES SPACING
GROUND COVER — 100 CELASTRUS 5'-8'
FIRST FIGURE INDICATES QUANTITY
LAST FIGURE INDICATES SPACING IN FEET
TO BE TRANSPLANTED - FROM - TO
TO BE REMOVED
VIEW LINES
UNDESIRABLE OUTLOOKS — SCREEN
BILL BOARDS ETC.

Right of Way Approval ______ ENGINEER OF LANDS AND RIGHT OF WAY
Roadside Development Approval [signature] ENGINEER OF ROADSIDE DEVELOPMENT
Planned by ______ ENGINEER OF PLANS
Recommended for Approval ______ ENGINEER OF SURVEY AND DESIGN
Recommended for Approval ______ DISTRICT ENGINEER
Recommended for Approval ______ CONSTRUCTION ENGINEER
Approved ______ 19 ______ CHIEF ENGINEER
Recommended for Approval ______ DISTRICT ENGINEER, PUBLIC ROADS ADMINISTRATION, FEDERAL WORKS AGENCY
Approved ______ COMMISSIONER, PUBLIC ROADS ADMINISTRATION, FEDERAL WORKS AGENCY

DESIGN SQUAD FRED VOGT

1-6-01 MB

1. what year?

Mille Lacs Lake

Sta 357+50 to Sta 339+50 Lt & Rt
Pl 32 Pinus ponderosa
Pl 160 Lbs fertilizer
@ 5 Lbs. Per tree.

Gov't Lot 3

Sta 343+00 to Sta 346+50 Lt & Rt
Pl 20 Fraxinus lanceolata
Pl 100 Lbs. fertilizer
@ 5 Lbs. Per Tree

Sta 346+00 to Sta 342+50 Rt
Pl 20 Ulmus americana
Pl 101 Lbs. fertilizer
@ 5 Lbs. Per Tree.

Gov't Lot 4

Sec. 7 T. 143 N. R. 27 W.
Sec. 18 T. 143 N. R. 27 W.

Sta 329+50 to Sta 330+50 Rt & Lt
Pl 40 Cu Yds Topsoil
Pl 102 Sq Yd Sod

Sta 332+50 to Sta 334+50 Rt & Lt
Pl 40 Cu Yds Topsoil
Pl 70 Sq Yd Sod

Sta 328+67 to Sta 350+00 Lt & Rt
Pl 1. 13,310 Evergreen Transplants.
2 Acre Cleanup

Two Road Approach Pl Sta 341+83

STATE Proj. No. 4814-10 SHT. 7 of 8

1. East Side looking North

2. Looking North along TH 169

3. North End of the East Wall looking NE

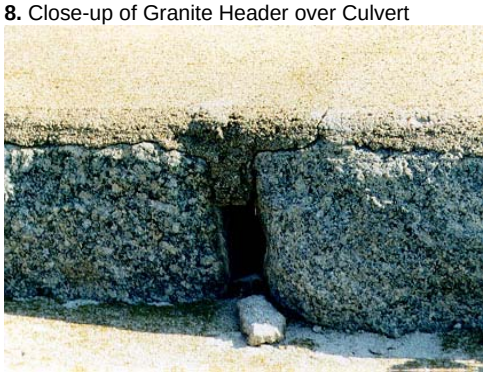
4. West Wall looking North

5. North Wall looking South *(Curb is not visible)*

6. West Wall looking South *(overgrown turf)*

7. Close-up of Flagstone Walk

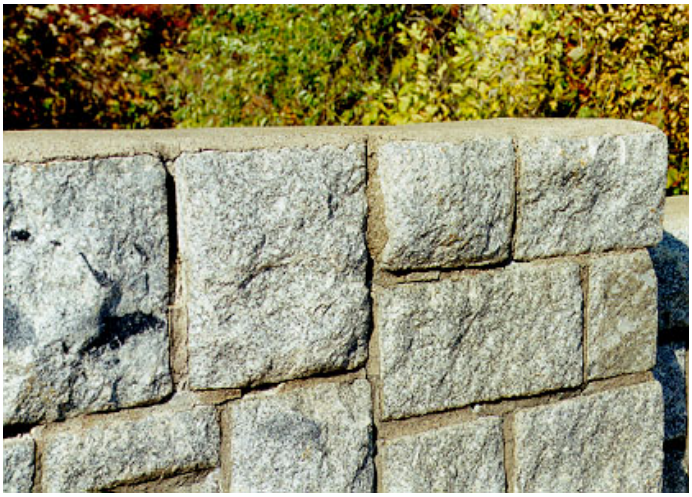
8. Close-up of Granite Header over Culvert



9. Close-up of Mortar Joint Condition.

10. Missing Stone and Poor Mortar

11. Mortar Topping at Walls *(broken and spalling)*



12. Mortar Joint Conditions

13. Patched End Caps *(spalled mortar topping above sloped stone patch and loose mortar behind)*

14. Wall End showing Poor Mortar Conditions and Overgrown Vegetation

15. Granite/Fieldstone Foundation

16. Granite/Fieldstone Foundation *(Note: fill settling)*

17. Culvert Opening *(Note: Condition of granite header and surrounding mortar joints)*

18. Graffiti on West Wall

19. Culvert Condition Showing Granite, Concrete and Water Level Variations

SITE BOUNDARIES

■ RECOMMENDED BOUNDARY OF NATIONAL REGISTER-ELIGIBLE PROPERTY

The recommended boundary of the National Register-eligible property is shown by the dashed line on the accompanying sheets entitled "Whitefish Creek Bridge (Bridge 3355) Site Boundaries." The base maps for these sheets are a Minnesota Department of Transportation (Mn/DOT) Right-of-way Map and a Mn/DOT aerial photo.

The eastern boundary of the National Register-eligible property follows the Mn/DOT right-of-way line, which is also the shoreline of Mille Lacs Lake. The western boundary follows the Mn/DOT right-of-way line and the bank of Whitefish Creek, as shown. The northern and southern boundaries are drawn at points 100' north and 100' south of the bridge's midpoint.

Boundary Justification

The recommended boundary of the National Register-eligible property encompasses the bridge and its original plantings. The plantings originally extended north and south approximately 100' from the midpoint of the bridge and east and west to approximately the right-of-way lines (see plans for S.P. 4814-10).

■ 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-eligible 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-eligible 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-eligible property and additional land described as follows:

North and south of the National Register-eligible property, it is recommended that the Conservation Zone include all Mn/DOT right-of-way extending along the trunk highway 400' north and 400' south of the eligible property. West, northwest, and southwest of the National Register-eligible property, it is recommended that the Conservation Zone extend to a line 200' west of the National Register-eligible property, as shown.

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 Mn/DOT replant and maintain its right-of-way within the Conservation Zone following historic photos and original planting plans (see sheet 7 of 8 of S.P. 4814-10).

It is further recommended that Mn/DOT purchase the 200'-deep Conservation Zone area west, northwest, and southwest of the National Register-eligible site. This parcel is one of few locations near the bridge where a visitor can park, safely view the bridge, and walk to the bank of Whitefish Creek. After acquisition, it is recommended that Mn/DOT provide safe public access to the bridge, an interpretive marker, and appropriate plantings to buffer the bridge from future nearby development that may detract from its historic character. It is recommended that the parcel be redesigned with a small parking area, an interpretive marker, a picnic table based on historic MHD designs, and plantings consistent with S.P. 4814-10. (It is also recommended that the Whitefish Creek Bridge be jointly interpreted with other CCC-built sites in the area. For more information, see the site boundary recommendations for Garrison Concourse, Garrison Pedestrian Underpass, and the T.H. 169 Culvert at St. Alban's Bay.)

■ MORE INFORMATION

For detailed information on the Whitefish Creek Bridge's structures, landscape, and significance, refer to:

Mn/DOT Historic Roadside Development Structures Inventory form for Whitefish Creek Bridge (Bridge 3355) (Gemini Research, Dec. 1998).

"Mn/DOT Historic Roadside Development Structures Preservation and Restoration Report" for Whitefish Creek Bridge (Bridge 3355) (Michael J. Burns Architects and Gemini Research 2001).

Prepared by Gemini Research May 1, 2004.

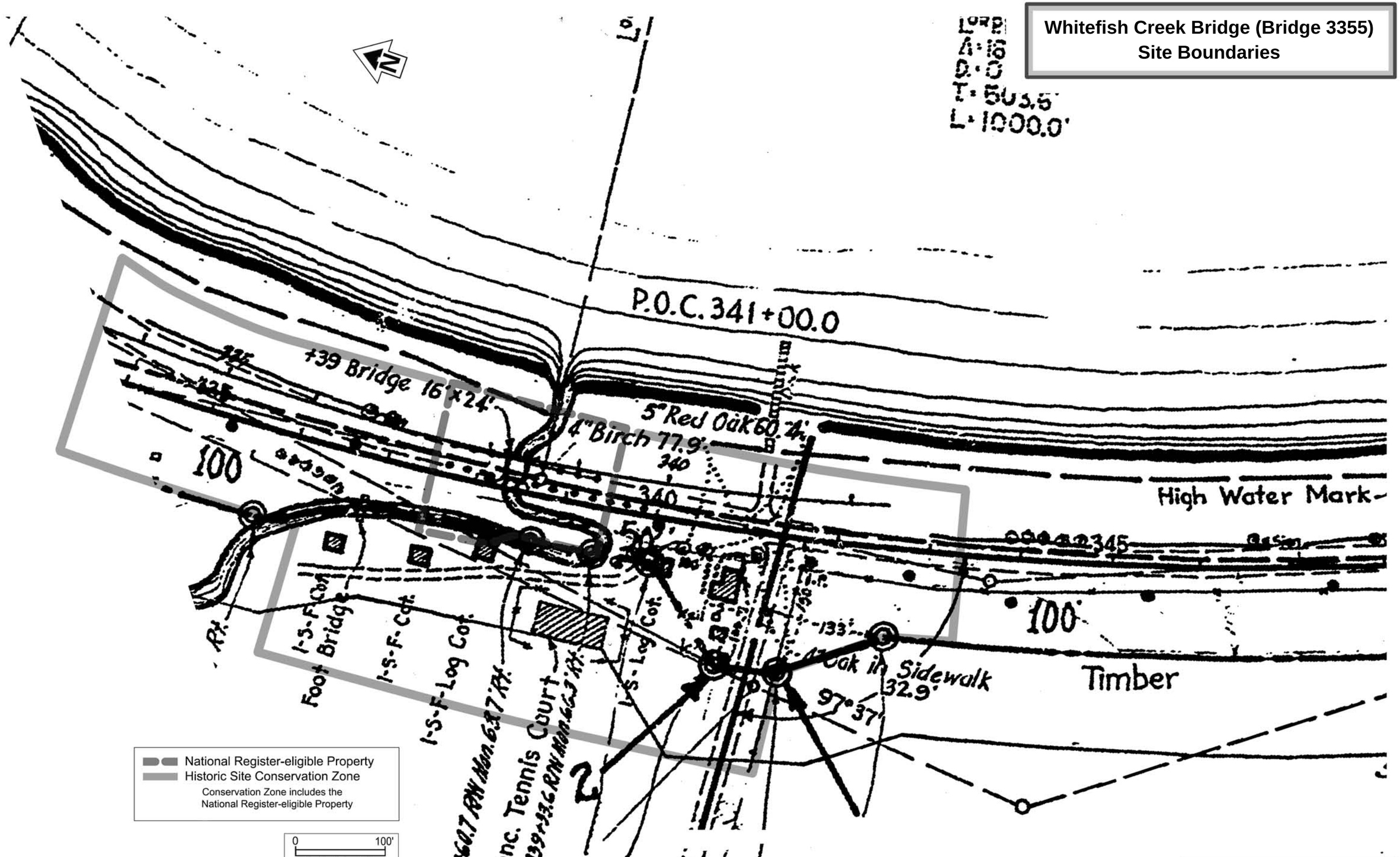
Whitefish Creek Bridge (Bridge 3355)
Site Boundaries

Photo taken Spring 1999

Sheet 1 of 2 **ML-KAN-005**

Prep by Gemini 2003 **CS 4814**

Whitefish Creek Bridge (Bridge 3355)
Site Boundaries



Sheet 2 of 2
Prep by Gemini 2003

ML-KAN-005
CS 4814