

# Mn/DOT BRIDGE INSPECTION REPORT

**BRIDGE 9340**

**I 35W OVER RR, MISS R, 2ND ST & RD**

**INSP. DATE: 06-10-2005**

County: HENNEPIN	Location: 1.0 MI NE OF JCT TH 94	Length: 1,907.0 ft
City: MINNEAPOLIS	Route: Isth 35W Ref. Pt.: 018+00.538	Deck Width: 113.3 ft (Varies)
Township:	Control Section: 2783 Maint. Area: METRO	Rdwy. Area / Pct. Unsnd: 201,511 sq ft 6 %
Section: 25 Township: 029N Range: 24W	Local Agency Bridge Nbr:	Paint Area / Pct. Unsnd: 490,200 sq ft 15 %
Span Type: CSTL BEAM SPAN		
NBI Deck: 5 Super: 4 Sub: 6 Chan: 7 Culv: N	Open, Posted, Closed: OPEN	
Appraisal Ratings - Approach: 8 Waterway: 9	MN Scour Code: L-STBL;LOW RISK	Def. Stat: S.D. Suff. Rate: 50.0
Required Bridge Signs - Load Posting: NOT REQUIRED	Traffic: NOT REQUIRED	
Horizontal: NOT REQUIRED	Vertical: NOT APPLICABLE	

**STRUCTURE UNIT: 0**

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4	QTY CS 5
22	LS O/L (CONC DECK)	2	06-10-2005	201,853 SF	0	0	201,853	0	0
			06-16-2004	201,853 SF	0	0	201,853	0	0
	Notes: 3 lanes + on/off ramp each direction (2 FT shoulders). [1978] Low slump overlay (extensive full depth repairs). [1993] Spalls & patched areas along finger joints. [1998] Median copings replaced (stay-in-place steel forms), exterior copings patched with "gunnite". [1998] Partial chaining of NBL found 1,665 SF of delamination & 47 SF of spall. [1999] Ground penetrating radar survey (FWHA) found deck to be 6% unsound. [2001] Mill and Patch repair of deck by Contract.								
48	LS O/L (CONC SLAB)	2	06-10-2005	17,233 SF	0	17,233	0	0	0
			06-16-2004	17,233 SF	0	17,233	0	0	0
	Notes: Spans 12 - 14 have a 2 FT deep CIP concrete voided slab (continuous).								
300	STRIP SEAL JOINT	2	06-10-2005	946 LF	852	0	94	N/A	N/A
			06-16-2004	946 LF	852	0	94	N/A	N/A
	Notes: [1978] Type H strip seal at abutments, pier 11, and stringer expansion joints (7 total). [1998] Strip gland replaced at pier 11, north abutment. South abutment joint (SBL) repaired with new product (hot pour with steel mesh). Steel extrusion was too corroded to install new gland. [1995] Pier 11 joint has numerous leaks (SBL & NBL), glands in the stringer joints have pulled out in scattered locations.								
301	POURED DECK JOINT	2	06-10-2005	1,017 LF	1,000	0	17	N/A	N/A
			06-16-2004	1,017 LF	1,000	0	17	N/A	N/A
	Notes: Deck has 1,017 LF of transverse poured joints. [1997] All have leaching below (with some deck spalling).								
303	ASSEMBLY DECK JOINT	2	06-10-2005	326 LF	191	110	25	N/A	N/A
			06-16-2004	326 LF	191	110	25	N/A	N/A
	Notes: Open finger joints at truss ends and span 2 hinge. [1998] Rubber "skirts" installed below truss end finger joints. The face exposed to the open finger joints have extensive section loss (surface pitting & holes in stiffeners).								
412	APPR RELIEF JOINT	2	06-10-2005	226 LF	0	226	0	N/A	N/A
	Notes: Relief joint at approaches. 52 LF SBL 4" wide; 52 LF NBL 3 1/2" wide; south approach. 26 LF SBL ramp 2" wide; 48 LF SBL 1" wide; 48 LF NBL 1" wide; north approach. Relief joints need re-sealing.								
321	CONC APPROACH SLAB	2	06-10-2005	4 EA	0	4	0	0	N/A
			06-16-2004	4 EA	0	4	0	0	N/A
	Notes: [1991] All 4 approach panels have transverse cracks.								
331	CONCRETE RAILING	2	06-10-2005	7,831 LF	7,000	831	0	0	N/A
			06-16-2004	7,831 LF	7,831	0	0	0	N/A
	Notes: [1998] 4018 LF Railings re-constructed. 3813 LF Split median J-rail installed (with removeable pre-cast caps). Exterior railings (originally code 12) were retrofit (32" high concrete face added, horizontal steel railings removed). Vertical cracks.								
107	PAINTED STEEL GIRDER	2	06-10-2005	10,596 LF	0	9,000	1,400	110	86
			06-16-2004	10,596 LF	0	9,000	1,400	110	86

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Notes: [1968] Bridge painted with lead base system. Approach spans have welded beams (depth transitions from 48" to 33"), with riveted connections. Spans 1 & 2 have 33" deep rolled beams with welded cover plates (square ends). [1995] Beams have salt film, minor chalking throughout, fascia beams have section loss: pitting, flaking & surface rust along the bottom flange. [1999] Beams along median (and at hinge) re-painted. Spot painting contract: truss ends, hinge joints, and area below median painted with zinc system. Paint system is 15% unsound.									
113	PAINT STEEL STRINGER	2	06-10-2005	14,896 LF	0	14,700	0	150	46
			06-16-2004	14,896 LF	0	14,700	0	150	46
Notes: 27" deep rolled stringers (truss spans). [1995] Stringers have section loss: pitting, flaking & surface rust corrosion at expansion joints. [1999] Median stringers re-painted. [91/2000] Stringer/floorbeam connections are "working". Several bolts are loose or missing.									
131	PAINT STL DECK TRUSS	2	06-10-2005	2,127 LF	0	0	1,880	215	32
Notes: Main truss members have numerous poor weld details (some cracked tack welds). [1995] Interiors of truss members have section loss: pitting, flaking & surface rust, severe pigeon debris, at the floorbeam & sway frame brace connections ( with pack rust & surface pitting). [1999] Pigeons screens placed on truss member openings.									
152	PAINT STL FLOORBEAM	2	06-10-2005	3,348 LF	0	2,000	725	600	23
			06-16-2004	3,348 LF	0	2,000	725	600	23
Notes: [1986] Crossbeam web stiffeners cracked at SE rocker hinge (rocker bearing had frozen). Cracks were welded/drilled out, and bracing was added (attached to approach span beams). [1992/98] Several cracks found in crossbeam & end floorbeam at the NE rocker hinge. Some cracks were drilled out, and bracing was added (attached to approach span beams). [1998/99] End floorbeams & "crossbeams re-painted. Floorbeam trusses have numerous poor weld details, section loss: pitting, flaking & surface rust, some have holes, (plug welds & tack welds in tension zones). [1994] Floorbeam trusses have salt film, chalking throughout. [1999] Median portions of floorbeam trusses (and sway braces) re-painted.									
373	STEEL HINGE	2	06-10-2005	18 EA	0	4	0	0	14
			06-16-2004	18 EA	0	4	0	0	14
Notes: [1986] SE crossbeam rocker hinge pin replaced. Section loss at hinges, (open finger joint) steel has moderate pitting, flaking & surface rust. [1999] Crossbeam rocker hinge bearings re-painted (all show evidence of recent movement). [1995] Span 2: all hinge bearings are locked in full expansion (beam ends contacting). [1999] Span 2 hinge bearings re-painted.									
380	SECONDARY ELEMENTS	2	06-10-2005	1 EA	0	0	1	0	N/A
			06-16-2004	1 EA	0	0	1	0	N/A
Notes: [1995] Pinned braces between floorbeam truss & stringers are working.									
311	EXPANSION BEARING	2	06-10-2005	125 EA	75	44	6	N/A	N/A
			06-16-2004	125 EA	75	44	6	N/A	N/A
Notes: [94/2000] Some abutment bearings are rusty (joints leaking). [1996] South abutment bearings are in full contraction. [1994] Main truss roller bearings have section loss: pitting, flaking & surface rust, moderate corrosion.									
313	FIXED BEARING	2	06-10-2005	35 EA	35	0	0	N/A	N/A
			06-16-2004	35 EA	35	0	0	N/A	N/A
Notes:									
205	CONCRETE COLUMN	2	06-10-2005	52 EA	49	3	0	0	N/A
			06-16-2004	52 EA	49	3	0	0	N/A
Notes: [1969] Pier 9: east column damaged by train derailment (minor scrapes & spalls). [1993] Pier 7: west column has a vertical crack. [2000] Pier 11: west column has a minor spall. [1996] Pier 1 has tipped slightly northward. Likely related to hinge failure in span 2 (south abutment bearings are in full contraction).									
210	CONCRETE PIER WALL	2	06-10-2005	168 LF	168	0	0	0	N/A
			06-16-2004	168 LF	168	0	0	0	N/A
Notes:									
215	CONCRETE ABUTMENT	2	06-10-2005	255 LF	230	25	0	0	N/A
			06-16-2004	255 LF	230	25	0	0	N/A

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Notes: [1991] Both abutments have minor cracking & staining.									
234	CONCRETE CAP	2	06-10-2005	819 LF	669	150	0	0	N/A
			06-16-2004	819 LF	669	150	0	0	N/A
Notes: [1998] Pier 11: cap has extensive "gunnite" repairs.									
356	FATIGUE CRACKING	2	06-10-2005	1 EA	0	1	0	N/A	N/A
			06-16-2004	1 EA	0	1	0	N/A	N/A
Notes: [98/2000] Numerous fatigue cracks found in approach spans. Cracks were located at negative moment diaphragm connections where the stiffener was not welded to the top flange. In span 9, the 3rd beam from the east had a 4 FT long crack in the web (it was reinforced with bolted plates). Most existing cracks were drilled out, and the diaphragm connections were lowered to reduce stress levels. [2004] Crack found in cope north approach crossbeam at beam G1C bottom flange 2 1/2" east side, 2" west side.									
357	PACK RUST	2	06-10-2005	1 EA	0	0	1	0	N/A
			06-16-2004	1 EA	0	0	1	0	N/A
Notes: [1995] Truss members have flaking & surface rust corrosion at the floorbeam & sway brace connections (with pack rust & some section loss, surface pitting).									
358	CONC DECK CRACKING	2	06-10-2005	1 EA	0	1	0	0	N/A
			06-16-2004	1 EA	0	1	0	0	N/A
Notes: [1993] Overlay has 3,000 LF of transverse cracks. [1998] Cracks sealed.									
359	CONC DECK UNDERSIDE	2	06-10-2005	1 EA	0	0	1	0	0
			06-16-2004	1 EA	0	0	1	0	0
Notes: [1997/98] Underside of deck has a moderate amount of transverse leaching cracks, with some areas of leaching map cracks & spalling (particularly in the north approach spans). [1998] Removal of median copings damaged deck in adjacent bays (some areas have been patched).									
360	SETTLEMENT	2	06-10-2005	1 EA	1	0	0	N/A	N/A
			06-16-2004	1 EA	1	0	0	N/A	N/A
Notes:									
361	SCOUR	2	06-10-2005	1 EA	1	0	0	N/A	N/A
			06-16-2004	1 EA	1	0	0	N/A	N/A
Notes: [2004] Underwater Inspection by "Ayres Associates" found no evidence of scour or changes to structure condition.									
363	SECTION LOSS	2	06-10-2005	1 EA	0	1	0	0	N/A
			06-16-2004	1 EA	0	1	0	0	N/A
Notes: Section loss: pitting, flaking & surface rust on steel.									
964	CRITICAL FINDING	2	06-10-2005	1 EA	1	0	N/A	N/A	N/A
			06-16-2004	1 EA	1	0	N/A	N/A	N/A
Notes:									
966	FRACTURE CRITICAL	2	06-10-2005	1 EA	1	0	0	N/A	N/A
			06-16-2004	1 EA	1	0	0	N/A	N/A
Notes: See in-depth report for location of F/C members.									
981	SIGNING	2	06-10-2005	1 EA	1	0	0	0	0
			06-16-2004	1 EA	1	0	0	0	0
Notes: OH sign bridge mounted on exterior railings at north end of truss, sign post mounted on west rail at south end of truss.									
982	GUARDRAIL	2	06-10-2005	1 EA	1	0	0	N/A	N/A
			06-16-2004	1 EA	1	0	0	N/A	N/A

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Notes: Plate beam guardrail SE & SW corners, north & south median I 35W. [1998] Approach guardrail repaired (impact attenuator at NB off ramp).									
984	DRAINAGE	2	06-10-2005	1 EA	0	0	1	N/A	N/A
			06-16-2004	1 EA	0	0	1	N/A	N/A
Notes: Pier 6: horizontal drain trough has inadequate slope (usually clogged). [1998/99] Drain troughs below truss end finger joints removed & replaced with rubber "skirts". [2000] "Skirts" above crossbeam rockers are clogged.									
985	SLOPES	2	06-10-2005	1 EA	1	0	0	N/A	N/A
			06-16-2004	1 EA	1	0	0	N/A	N/A
Notes: [1994] North abutment slope paving has 20 LF of horizontal cracks.									
986	CURB & SIDEWALK	2	06-10-2005	1 EA	0	1	0	N/A	N/A
			06-16-2004	1 EA	0	1	0	N/A	N/A
Notes: [1993] Curb below exterior railings have spalling & delamination.									
988	MISCELLANEOUS	2	06-10-2005	1 EA	0	1	0	N/A	N/A
			06-16-2004	1 EA	0	1	0	N/A	N/A
Notes: Rail mounted deck lighting, under deck lighting, and river navigation lights. [1994] Light post on west rail ("W5/3 L") has a 6" vertical split (plow damage). [1999] Automated de-icing system installed on deck (control room constructed on NW approach corner).									

General Notes: \*Bridge #9340, Year 2005  
 Bridge constructed in 1967.

See "Fracture Critical" report for additional information.

Inspectors: K Fuhrman, V Desens.

Inspector's Signature

Reviewer's Signature / Date