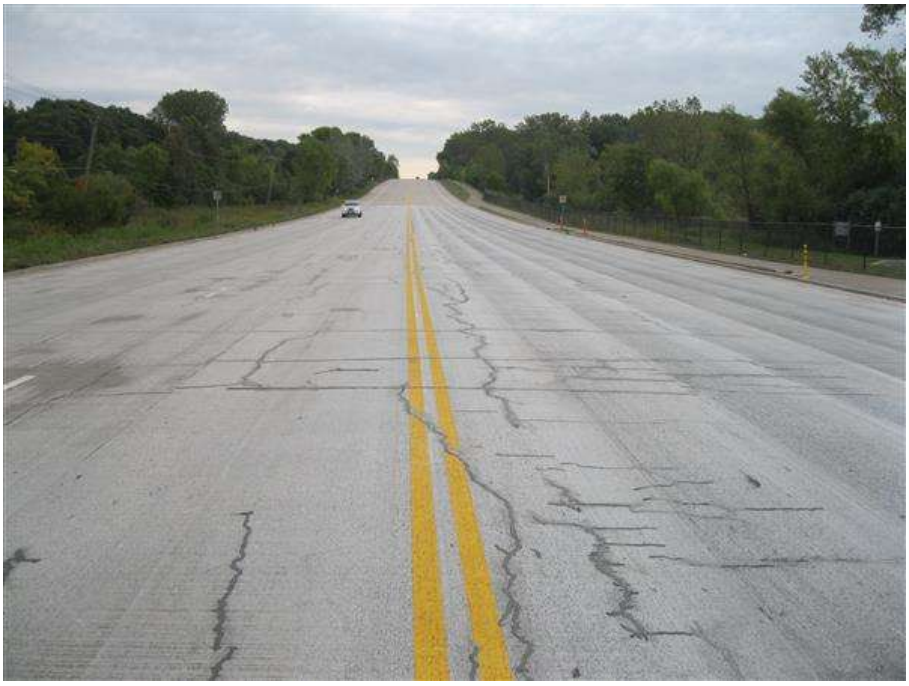
2016 ROUTINE
BRIDGE INSPECTION REPORT



BRIDGE # 62590
CSAH 96 over SUCKER CREEK UNSTABLE MA

DISTRICT: Metro **COUNTY:** Ramsey **CITY/TOWNSHIP:** Vadnais Heights

STATE: Minnesota

Date of Inspection: 09/08/2016
Equipment Used: Chain Drag

Owner: County Highway Agency

Inspected By: Bodelson, Dan

Report Written By: Dan Bodelson
Report Reviewed By: Nicklaus Fischer
Final Report Date: 10/20/2016

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Minnesota Structure Inventory Report

Bridge ID: 62590 **CSAH 96 over SUCKER CREEK UNSTABLE MA** Date: 09/08/2016

+GENERAL+

Agency Br. No.		**Crew**	
District	05	**Maint. Area**	
County	062 - Ramsey		
City	Vadnais Heights		
Township			
Desc. Loc.	0.5 MI E OF JCT CSAH 54		
Sect., Twp., Range	19 - 030N - 22W		
Latitude	45 ° 4 ' 44.68 ''		
Longitude	93 ° 5 ' 55.38 ''		
Custodian	02 - County Highway Agency		
Owner	02 - County Highway Agency		
BMU Agreement			
Year Built	1999		
MN Year Reconstructed			
FHWA Year Reconstructed			
MN Temporary Status			
Bridge Plan Location	3 - COUNTY		
Date Opened to Traffic			
On - Off System	1 - ON		
Legislative District	54B		
Potential ABC	2 - N/A		

+STRUCTURE+

Service On	1 - Highway
Service Under	0 - Other
Main Span Type	2 - Concrete Continuous
Main Span Design	09 - Slab Span
Main Span Detail	
Appr. Span Type	
Appr. Span Design	
Appr. Span Detail	
Skew	0
Culvert Type	
Barrel Length	
Cantilever ID	

Number of Spans

MAIN: 15 **APPR:** 0 **TOTAL:**

Main Span Length	30.0	**ft.**
Structure Length	434.7	**ft.**
Deck Width (Out-to-Out)	68.1	**ft.**
Deck Material	1 - Concrete Cast-in-Place	
Wear Surf Type	1 - Monolithic Concrete	
Wear Surf Install Year		
Wear Course/Fill Depth	0.00 **ft.**	
Deck Membrane	0 - None	
Deck Rebars	1 - Epoxy Coated Reinforcing	
Deck Rebars Install Year	1999	
Structure Area (Out-to-Out)	29603	**sq. ft.**
Roadway Area (Curb-to-Curb)	29084	**sq. ft.**

Sidewalk Width	**50A. Lt**	0.00 **ft.**	**50B. Rt**	0.00	**ft.**
Curb Height	**Lt**	0.33 **ft.**	**Rt**	0.33	**ft.**
Rail Type	**Lt**	NN	**Rt**	NN	

+ROADWAY+

Bridge Match ID (TIS)	0
Roadway O/U Key	Route On Structure
Route Sys	04 - CSAH **Number** 96
Roadway Name or Description	CSAH 96
Level of Service	1 - MAINLINE
Roadway Type	2 - 2-way traffic
Control Section (TH Only)	
Reference Point	004+00.777
Detour Length	1.0 **mi.**
Lanes	**ON** 4 **UNDER** 0
	ADT 20916 **YEAR** 2008
HCADT	**ADTT** **%**
Functional Class	16 - Urban - Minor Arterial

+RDWY DIMENSIONS+

If Divided	**NB-EB**	**SB-WB**
Roadway Width	66.90 **ft.**	**ft.**
Vertical Clearance	**ft.**	**ft.**
Max. Vert. Clear.	**ft.**	**ft.**
Horizontal Clear.	**ft.**	**ft.**
Lateral Clearance	**ft.**	**ft.**

Appr. Surface Width	67.0	**ft.**
Bridge Roadway Width	66.9	**ft.**
Median Width On Bridge		**ft.**

+MISC. BRIDGE DATA+

Structure Flared	0 - No flare
Parallel Structure	N - No parallel structure
Field Conn. ID	
Abutment Foundation (Material/Type)	1 - CONC 4 - PILE BENT
Pier Foundation (Material/Type)	1 - CONC 4 - PILE BENT
Historic Status	5 - Not eligible

+PAINT+

Year Painted	
Unsound Paint %	
Painted Area	**sq. ft.**
Primer Type	
Finish Type	

+BRIDGE SIGNS+

Posted Load	0 - Not Required
Traffic	0 - Not Required
Horizontal	0 - Not Required
Vertical	N - Not Applicable

+INSPECTION+

Userkey	102
Structurally Deficient	N
Functionally Obsolete	N
Sufficiency Rating	98.0
Routine Inspection Date	09/08/2016
Routine Inspection Frequency	24
Inspector Name	Bodelson, Dan
Status	A - Open

+NBI CONDITION RATINGS+

Deck	6	**Unsound Deck %**
Superstructure	6	
Substructure	7	
Channel	N	
Culvert	N	

+NBI APPRAISAL RATINGS+

Structure Evaluation	6
Deck Geometry	9
Underclearances	N
Waterway Adequacy	N
Approach Alignment	8

+SAFETY FEATURES+

Bridge Railing	N - NOT REQUIRED
GR Transition	N - NOT REQUIRED
Appr. Guardrail	N - NOT REQUIRED
GR Termini	N - NOT REQUIRED

+IN DEPTH INSP.+

	Y/N	**Freq**	**Date**
Frac. Critical	N		
Underwater	N		
Pinned Asbly.	N		
Spec. Feat.			

+WATERWAY+

Drainage Area (sq. mi.)			
Waterway Opening (sf.)			
Navigation Control	N - Not applicable, no		
Pier Protection			
Nav. Clr. (ft.)	**Vert.** 0.0	**Horiz.** 0.0	
Nav. Vert. Lift Bridge Clear. (ft.)			
MN Scour Code	A - NON	**Year**	

+CAPACITY RATINGS+

Design Load	9 - HS 25 (OR GREATER)	
Operating Rating	2 - HS TRUCK	36.4
Inventory Rating	2 - HS TRUCK	21.8
Posting	**VEH:** **SEMI:**	**DBL:**
Rating Date	10/25/2013	

Overweight Permit Codes

A N - N/A **B** N - N/A **C** N - N/A

MINNESOTA BRIDGE INSPECTION REPORT

10/20/2016

Inspector: CO Bridge

BRIDGE 62590 CSAH 96 OVER SUCKER CREEK UNSTABLE MA

County: Ramsey
City: Vadnais Heights
Township:
Section: 19 Township: 030N Range: 22W
Span Type: 2 - Concrete Continuous 1 - Slab
List:
NBI Deck: 6 Super: 6 Sub: 7 Chan: N

Location: 0.5 MI E OF JCT CSAH 54
Route: 04 - CSAH 96 Ref. Pt.: 004+00.777
Control Section:
Maint. Area:
Local Agency Bridge Nbr.:
Culv: N
Open, Posted, Closed: A - Open
MN Scour Code: A - NON WATERWAY

Length: 434.7 ft.
Deck Width: 68.1 ft.
Rdwy. Area/ Pct. Unsnd: 29084 sq. ft. / %
Paint Area/ Pct. Unsnd: sq. ft. / %
Culvert: N/A
Postings:

Appraisal Ratings - Approach: 8 Waterway: N
Required Bridge Signs - Load Posting: 0 - Not Required Traffic: 0 - Not Required
Horizntal: 0 - Not Required Vertical: N - Not Applicable

Unofficial Structurally Deficient N
Unofficial Functionally Obsolete N
Unofficial Sufficiency Rating 98.0

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
38	Reinforced Concrete Slab	Routine	09/08/2016	29603 SF	0	26695	2908	0
		Migrated Values		29603 SF	0	26695	2908	0
	Notes: Concrete Slab with Bituminous Overlay Notes: [2016] Migrator assumed CS1. [2016] Structure is an at-grade bridge with concrete wearing surface.							
	510 - Wearing Surfaces	Routine	09/08/2016	29084 SF	0	26176	2908	0
		Migrated Values		29084 SF	0	26176	2908	0
	Notes: Concrete Slab with Bituminous Overlay Notes: [2016] Cracks are sealed & bridge was diamond ground in 2014. - CONCRETE WEARING SURFACE [2014] Crack sealed bridge deck in 2014 [2012] Numerous minor- moderate longitudinal & transverse cracks occurring. Moderate spalls are present. Distress area is between 2% and 10% of total deck area. [2003-2004] Numerous but tight longitudinal and transverse cracks.							
215	Reinforced Concrete Abutment	Routine	09/08/2016	135 LF	135	0	0	0
		Migrated Values		135 LF	135	0	0	0
	Notes: [2002-2016] Unable to see under land bridge. No sign of movement or deterioration. Structure is an at-grade bridge. Bridge consists of 132.5m supported slab spans.							
300	Strip Seal Expansion Joint	Routine	09/08/2016	135 LF	0	67	0	68
		Migrated Values		135 LF	0	67	0	68
	Notes: [2016] Strip seal has been flushed & cleaned, 50% in condition state #2 & #3. 50% has severe deterioration. [2014] 1" opening should be cleaned out [2010-2012] 50% in condition state #2 & #3. 50% has severe deterioration. Strip seal should be replaced. [2006-2008] 100% in condition state #2. Strip seal should be replaced. [2003-2008] There is a 6' puncture at the SE corner. 50% in condition 2. [2003-2008] Signs of deterioration. Needs to be cleaned and flushed at both ends for further inspection. [2010] The west expansion joint has a gap of 0.12' at 56 degrees. [2010] The east expansion joint has a gap of 0.16' @56 degrees.							

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ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
321	Reinforced Concrete Approach Slab	Routine	09/08/2016	4020 SF	0	2010	2010	0
		Migrated Values		4020 SF	0	2010	2010	0

Notes: [2016] 67' x 30' = 2010 SF x 2 = 4020 SF of Approach Slab.
[2016] Migrator assumed an approach slab length of 20FT and used the inventory quantity of 67FT for the width.
[2016] East Approach has 0.5 x 1.5', 1' x 1' & 0.5' x 0.5' moderate spalls
[2016] West Approach has 1.0' x 0.5' & 0.5' x 0.5' moderate spalls.
[2014] Diamond ground surface for noise & grade differance, sealed cracks in deck & approach panels in 2014
[2014-2016] 0.5' x 7.0' spall in NW corner
[2003-2016] There is settlement of concrete pavement at east & west approach slabs resulting in impact on approach panels.
[2010-2012] The west approach slab has a 30' of moderate longitudinal cracking north side, 20' of minor cracking at centerline of the west approach and a 13' diagonal crack at the SW corner. [2012] The west concrete approach slab also has moderate settlement at the west end.
[2008-2012] The east approach has a 12' diagonal crack @ SE corner. [2008] There is an 8' area of delamination at the NW corner of the east approach.
[2006-2012] There is a 3' X 0.5' area of major delamination at the SE corner with some settlement.
[2002-2012] Both slabs contain minor to moderate cracking. [2003-
[2003-2012] There is deterioration of Styrofoam expansion joints (E8S joint) at both ends. Hot pour has cohesion failure.

800	Critical Deficiencies or Safety Hazards	Routine	09/08/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0

Notes: NO CRITICAL FINDINGS OBSERVED DURING THE LAST INSPECTION.

810	Concrete Decks - Cracking & Sealing	Routine	09/08/2016	7552 LF	0	7552	0	0
		Migrated Values		7552 LF	0	7552	0	0

Notes: [2014-2016] Sealed cracks in 2014
[2003-2012] Numerous unsealed moderate longitudinal, transverse & diagonal deck cracking.

892	Slopes & Slope Protection	Routine	09/08/2016	1 EA	0	0	1	0
		Migrated Values		1 EA	0	0	1	0

Notes: Use this element to rate the condition of slopes and slope protection.
[2016] There is moderate to major settlement on both north & south sides of bridge behind curb.

894	Deck & Approach Drainage	Routine	09/08/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0

Notes: [2014-2016] Grade has major settlement behind all 4 LP-4 catch basins
[2014] Should seal in front of NE catch basin (between curb & top) & angle plate should be reattached on NW LP-4
[2006-2012] Moderate settlement of CB @ SE corner bridge & approach slab.

895	Sidewalk, Curb, & Median	Routine	09/08/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0

Notes: [2016] 7.0' of damaged curb on SW corneer of bridge.
[2014-2016] Moderate settlement behind north curb, Major settlement behind south curb
[2014] Curb has been replaced on all 4 corners of bridge
[2008-2012] There are 2 areas of deterioration of the curb @ SW corner. [2008-2012] There is deterioration of curb located at the 4- LP-4's.
[2012] Curb OK at the SE corner- has been repaired.
[2012] There is moderate- major settlement behind the curb on both sides. Need fill behind curb at the NE CB. The settlement is 2' low X 2.5' W X 18' length.

900	Protected Species	Routine	09/08/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0

Notes: Use this element to track the presence of protected species living on this structure.
[2016] No protective species found.

General Notes: [2016] The bridge safety inspection was completed by Dan Bodelson & Brian Essler on 9/08/2016.
[2014] The bridge safety inspection was completed by D. Bodelson & B. Essler on 9/18/2014.
[2012] The bridge safety inspection was completed by B. Wieman & D. Bodelson on 9/24/2012.
Land Bridge was built in 1999. There is a settlement problem of detached bike path adjacent to the south side of bridge.
Bike path was repaired in 2002.
There are 2 culverts running perpendicular underneath the land bridge. [2010] Inspection was completed by B. Wieman 10/19/2010.
[2008] Inspection was completed by B. Wieman 8/26/2008.
Inspection was completed by Bret Wieman 10/19/2006.
[2008] There is settlement of approach roadway @ both ends. [2008] There is 2.5' of settlement behind the curb @ NE LP-4.
[2003-2008] There is deterioration of Styrofoam expansion joints (E8S joint) at both ends. Hot pour has cohesion failure.

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ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4

[2006] There is major settlement behind the curb on the north side. Boulevard requires fill.
Land Bridge was built in 1999. There is a settlement problem of detached bike path adjacent to the south side of bridge.
Bike path was repaired in 2002.
There are 2 culverts running perpendicular underneath the land bridge.

58. Deck NBI:	Concrete has moderate cracking & wear.
36A. Brdg Railings NBI:	No Guardrail
36B. Transitions NBI:	No Guardrail
36C. Appr Guardrail NBI:	No Guardrail
36D. Appr Guardrail Terminal NBI:	No Guardrail
59. Superstructure NBI:	Concrete has moderate cracking with minor spalling.
60. Substructure NBI:	Concrete has minor cracking with isolated spalls.
61. Channel NBI:	Structure is an at-grade bridge.
62. Culvert NBI:	Structure is an at-grade bridge.
71. Waterway Adeq NBI:	Structure is an at-grade bridge.
72. Appr Roadway Alignment NBI:	No speed reduction required.
Inventory Notes:	

Dan Bodelson
Inspector's Signature

Nicklaus Fischer
Reviewer's Signature

Pictures

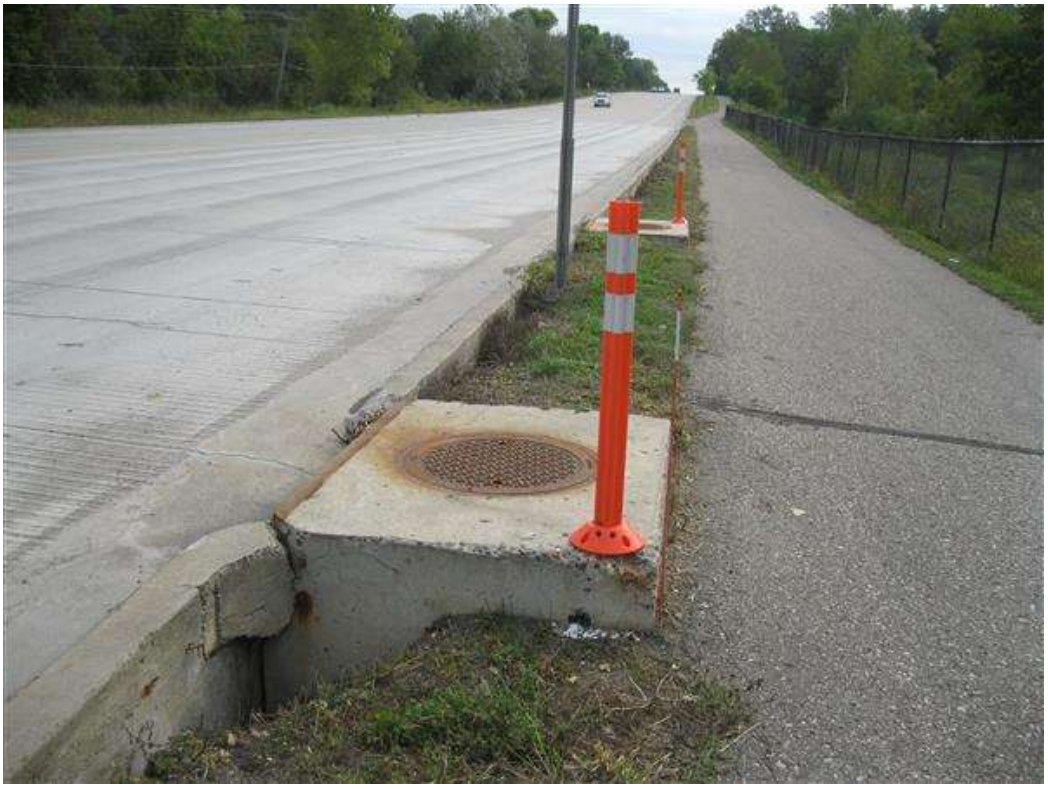

Photo 1 -

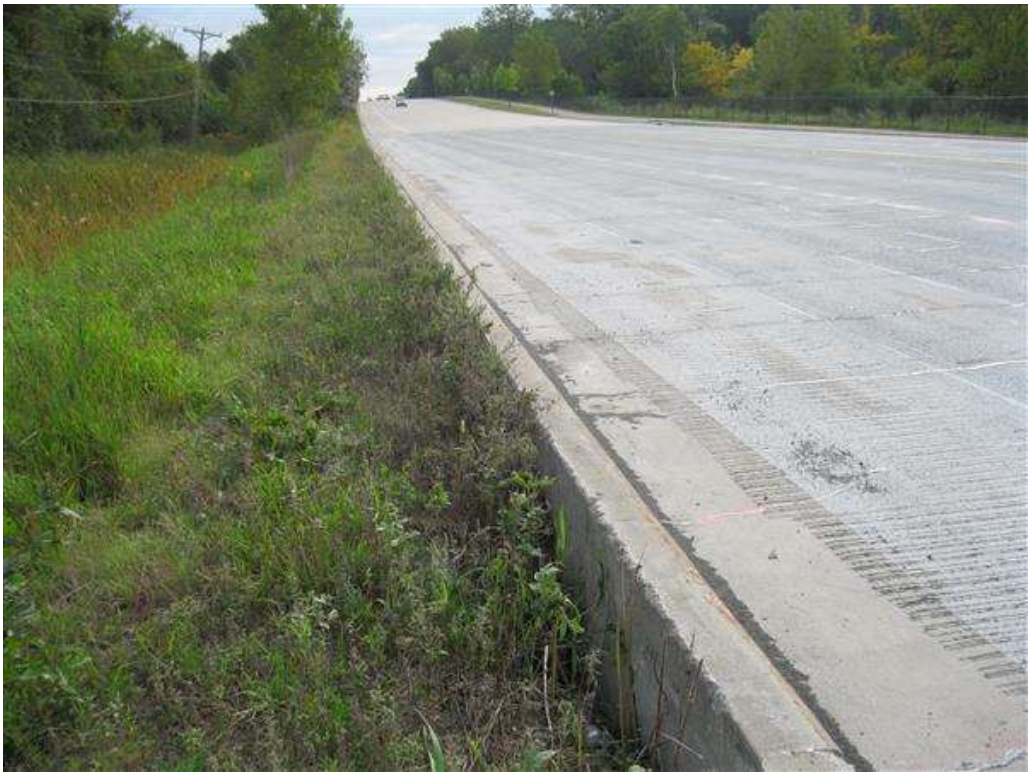

Photo 2 -

Pictures

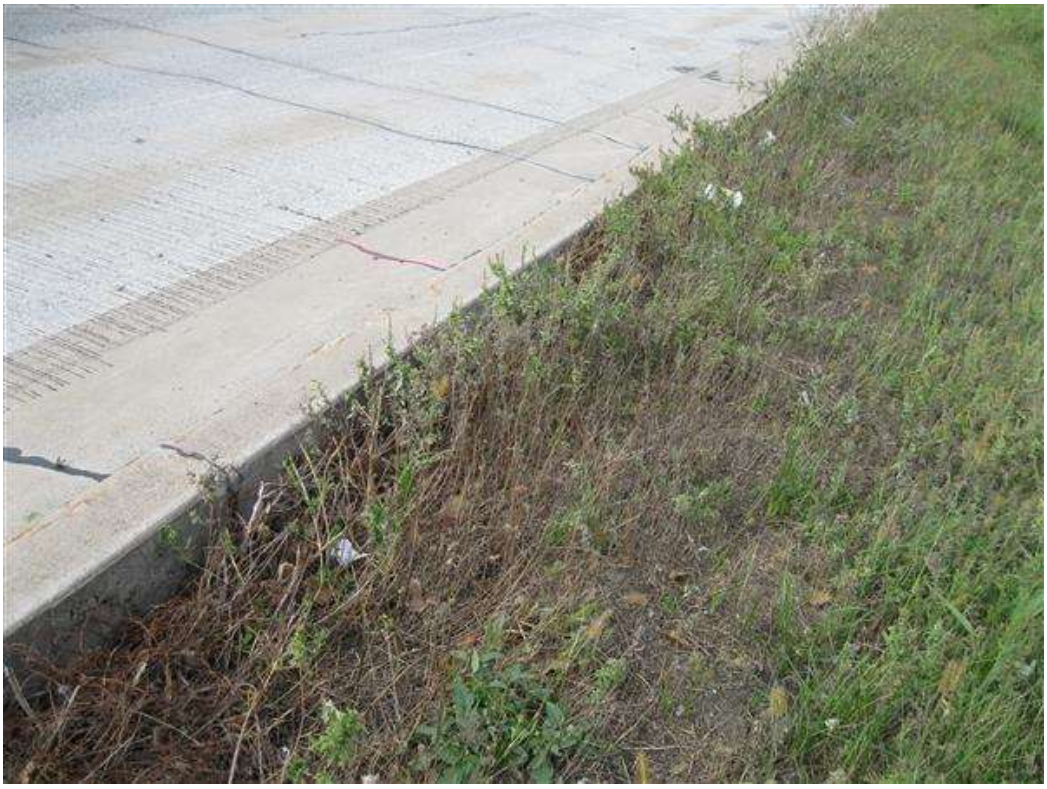

Photo 3 - curb north side-2.JPG

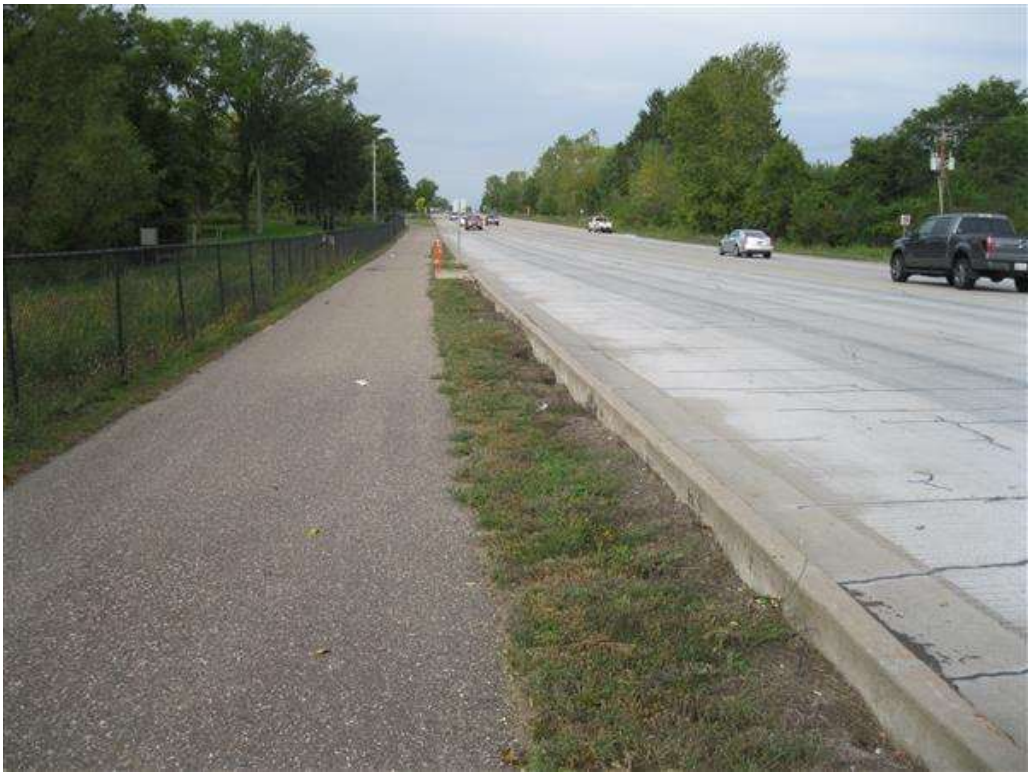

Photo 4 - curb south side.JPG

Pictures

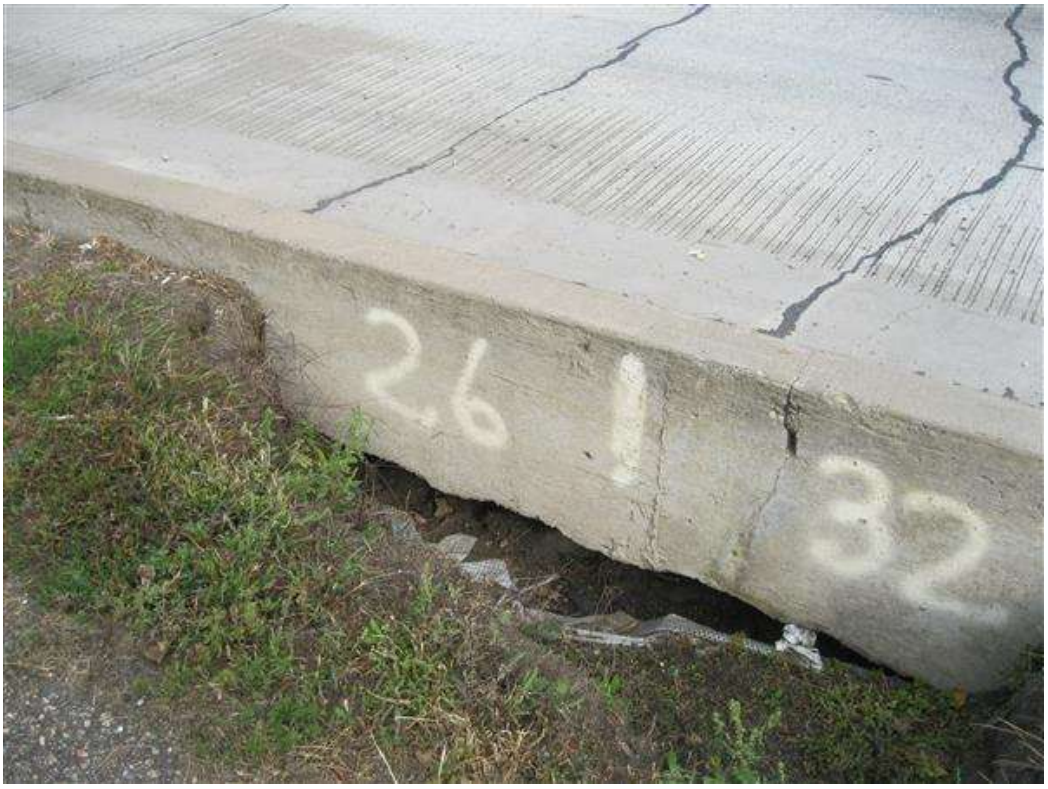

Photo 5 - curb south side-2.JPG

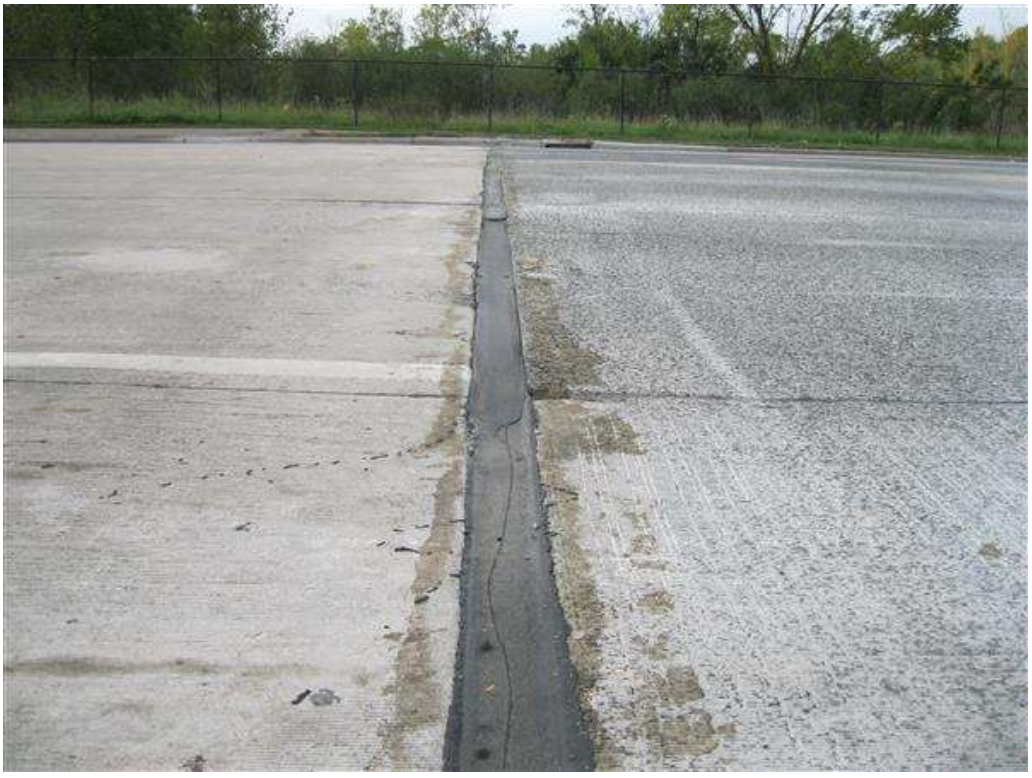

Photo 6 - east E-8 joint.JPG

Pictures

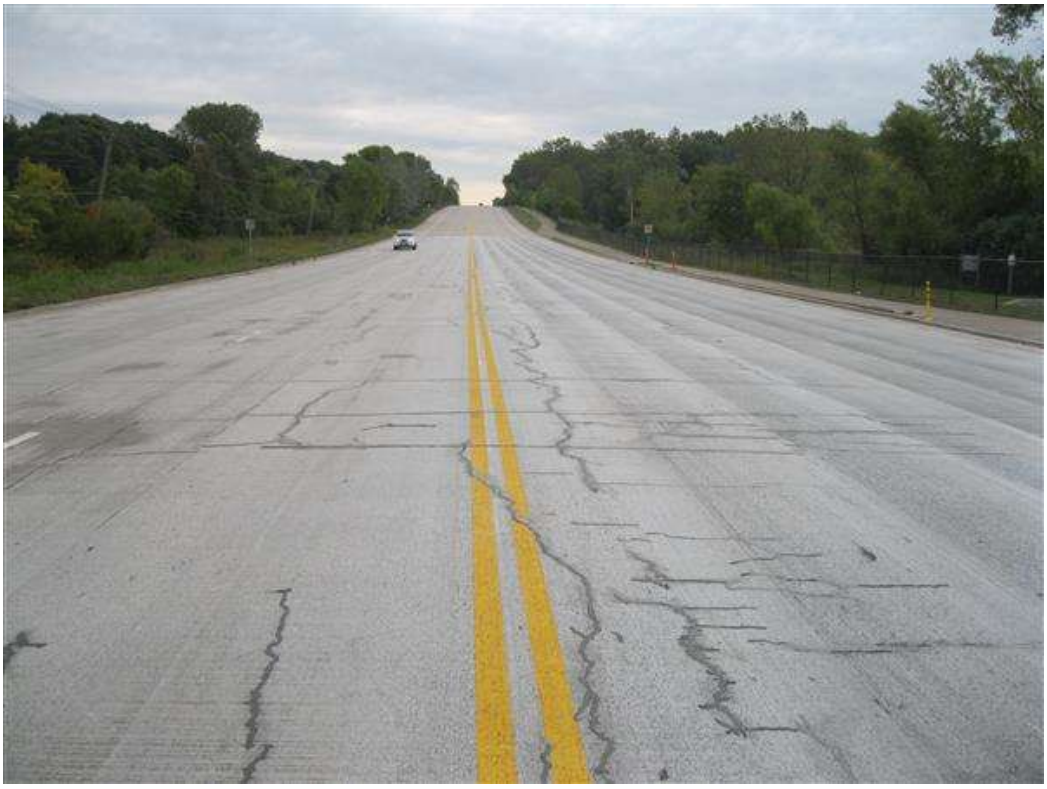

Photo 7 - looking east.JPG

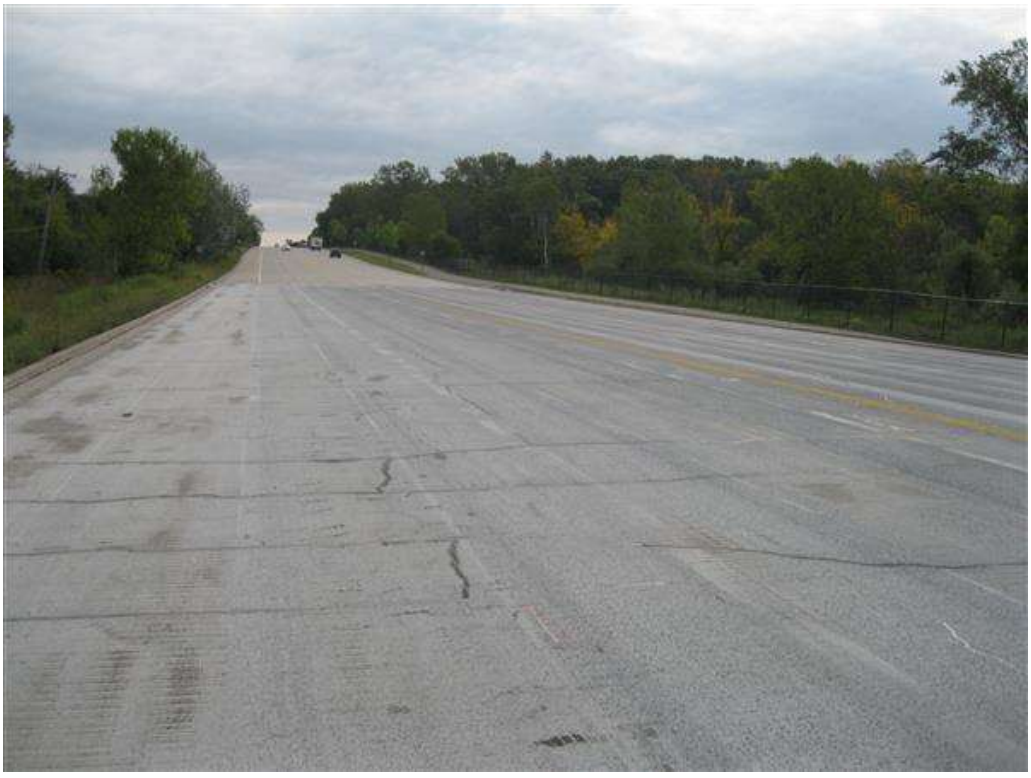

Photo 8 - looking east-2.JPG

Pictures

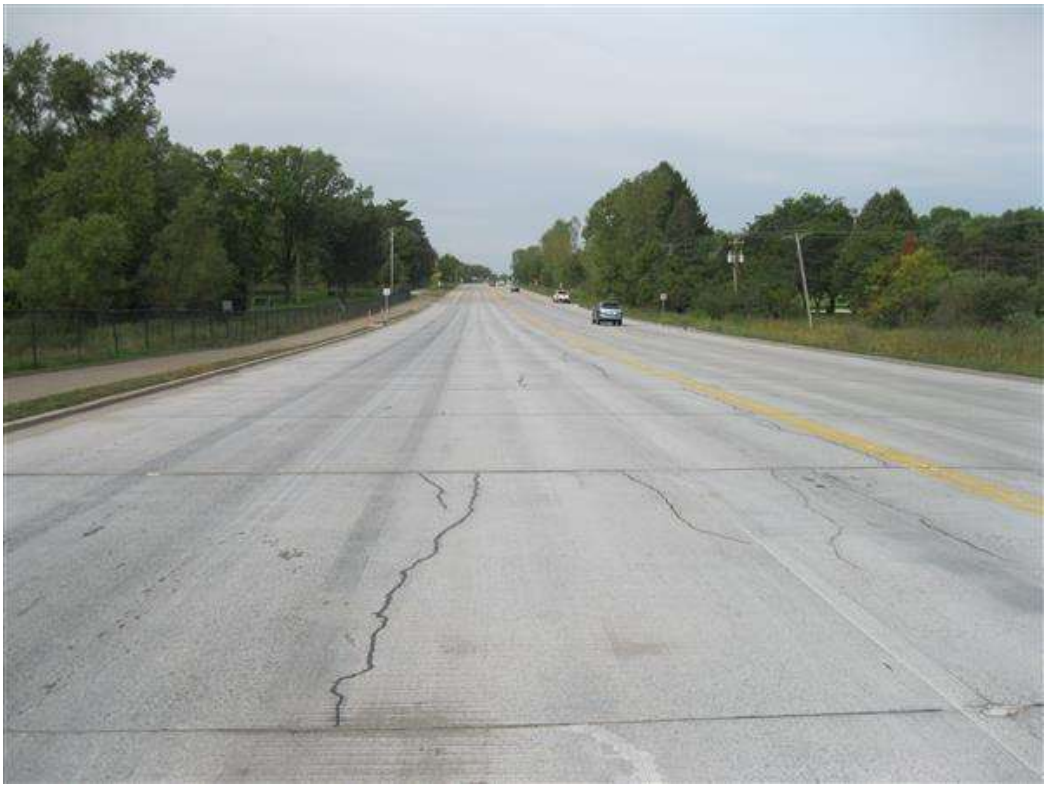

Photo 9 - looking west.JPG

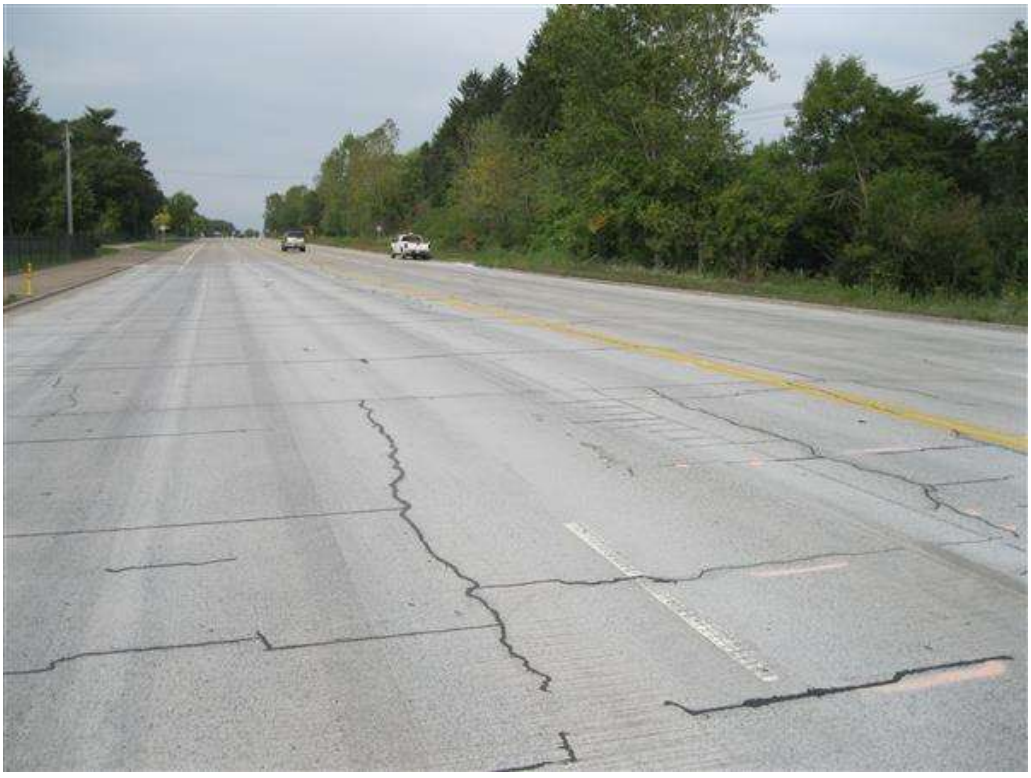

Photo 10 - looking west-2.JPG

Pictures

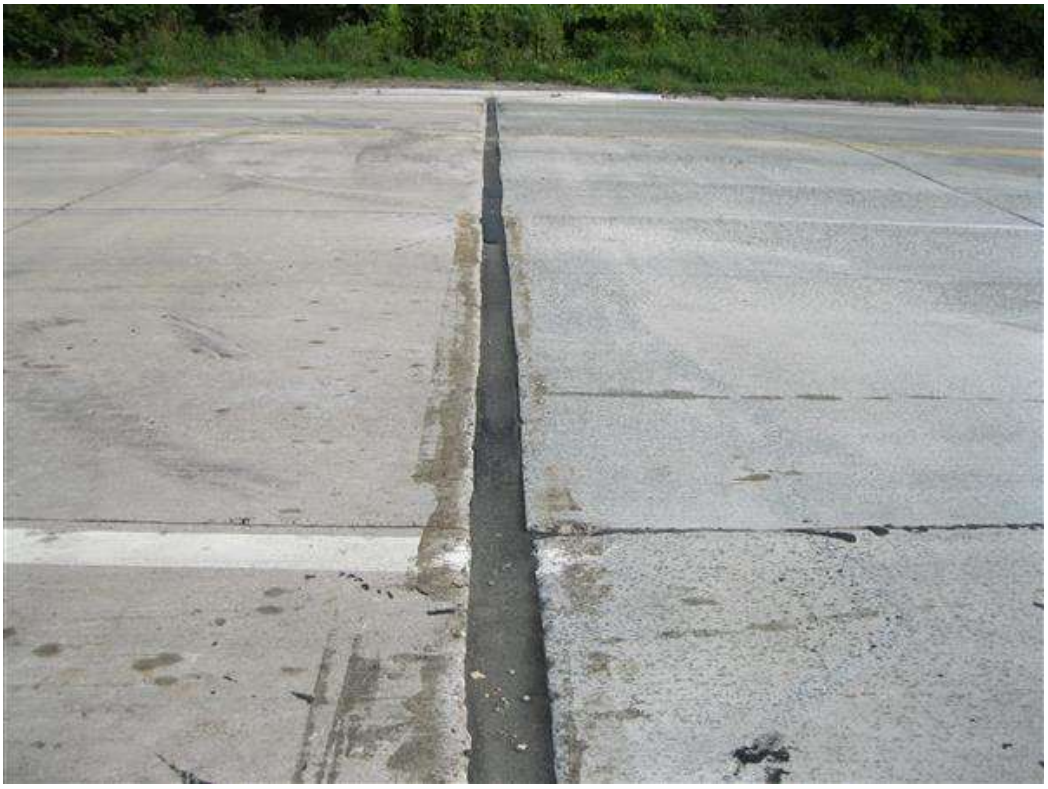

Photo 11 - west E-8 joint.JPG