MINNESOTA STRUCTURE INVENTORY REPORT

Bridge ID: 9183 **MN 105 over I 90** Date: 05/11/2022

+ GENERAL +

Agency Br. No. **Crew** OWAT
District 6 **Maint. Area** 6B
County 50 - MOWER
City
Township AUSTIN
Desc. Loc. AT THE JCT TH 105
Sect., Twp., Range 05 - 102N - 18W
Latitude 43d 39m 59.96s
Longitude 93d 01m 12.07s
Custodian STATE HWY
Owner STATE HWY
Insp Responsibility DISTRICT 6
Year Built 1959
Date Opened to Traffic 01-01-1960
MN Year Remodeled
FHWA Year Reconstructed
Bridge Plan Location CENTRAL
Potential ABC YES

+ STRUCTURE +

Service On HIGHWAY
Service Under HIGHWAY
Main Span Type CSTL BEAM SPAN
Main Span Detail
Appr. Span Type
Appr. Span Detail
Skew 30R
Culvert Type
Barrel Length
Number of Spans
MAIN: 4 APPR: 0 TOTAL: 4
Main Span Length 85.0 ft
Structure Length 264.5 ft
Deck Width 35.4 ft
Deck Material C-I-P CONCRETE
Wear Surf Type LOW SLUMP CONC
Wear Surf Install Year 2006
Wear Course/Fill Depth 0.17 ft
Deck Membrane NONE
Deck Rebars NONE
Deck Rebars Install Year
Structure Area 9,363 sq ft
Roadway Area 7,933 sq ft
Sidewalk Width - L/R
Curb Height - L/R 0.75 ft 0.75 ft
Rail Codes - L/R 11 11

+ ROADWAY ON BRIDGE +

Facility MN 105
Functional Class URB/MINOR ART
ADT (YEAR) 5,805 (2019)
HCADT 174
National Highway System N
Route Sys/Nbr (TIS) MNTH 105
Ref. Point (TIS) 013+00.583
Detour Length 4 mi.
Lanes 2 Lanes ON Bridge
Control Section (TH Only) 5007
Function MAINLINE
Type 2 WAY TRAF
Bridge Match ID 2
Roadway Key 1-ON

+ RDWY DIMENSIONS ON BRIDGE +

If Divided	NB-EB	SB-WB
Roadway Width	30.0 ft	
Vertical Clearance		
Max. Vert. Clear.		
Horizontal Clear.	29.9 ft	
Appr. Surface Width	40.0 ft	
Bridge Roadway Width	30.0 ft	
Median Width on Bridge	NA	

+ MISC. BRIDGE DATA +

Structure Flared NO
Parallel Structure NONE
Field Conn. ID RIVETED
Cantilever ID FRICTION
Foundations
Abut. CONC - FTG PILE
Pier CONC - FTG PILE
Historic Status NOT ELIGIBLE
On - Off System ON

+ PAINT +

Year Painted 2005
Painted Area 14,300 sf
Primer Type ORGANIC ZINC
Finish Type URETHANE

+ BRIDGE SIGNS +

Posted Load NOT REQUIRED
Traffic NOT REQUIRED
Horizontal OBJECT MARKERS
Vertical NOT REQUIRED

+ INSPECTION +

Deficient Status S.D.
Sufficiency Rating 59.2
Last Routine Insp Date 09-13-2021
Routine Insp Frequency 12
Inspector Name DISTRICT 6
Status A-OPEN

+ NBI CONDITION RATINGS +

Deck	4
Superstructure	6
Substructure	5
Channel	N
Culvert	N

+ NBI APPRAISAL RATINGS +

Structure Evaluation	5
Deck Geometry	4
Underclearances	3
Waterway Adequacy	N
Approach Alignment	8

+ SAFETY FEATURES +

Bridge Railing	0-SUBSTANDARD
GR Transition	0-SUBSTANDARD
Appr. Guardrail	0-SUBSTANDARD
GR Termini	0-SUBSTANDARD

+ SPECIAL INSPECTIONS +

Frac. Critical N
Underwater N
Pinned Asbly. N

+ WATERWAY +

Drainage Area
Waterway Opening
Navigation Control NOT APPL
Pier Protection
Nav. Vert./Horz. Clr.
Nav. Vert. Lift Bridge Clear.
MN Scour Code A-NON WATERWAY
Scour Evaluation Year

+ CAPACITY RATINGS +

Design Load HS 20+MOD
Operating Rating HS 38.40
Inventory Rating HS 23.00
Posting
Rating Date 04-28-2004
Overweight Permit Codes
A: 1 B: 1 C: 1

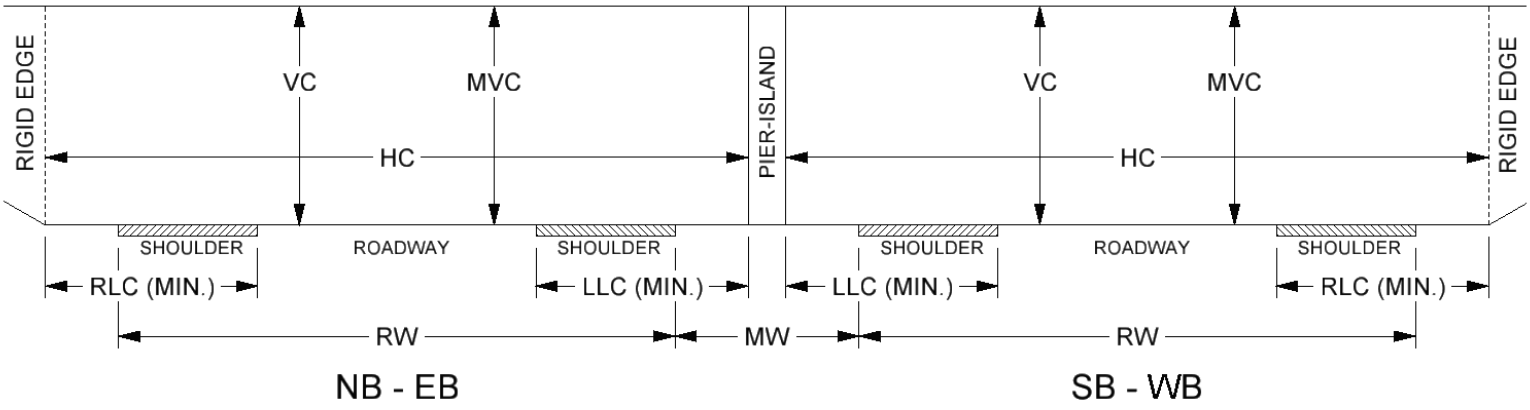
MINNESOTA STRUCTURE INVENTORY REPORT
Roadway Under Bridge

Bridge ID: 9183 — I 90 under MN 105 — Date: 05/11/2022

+ FEATURES +			+ DIMENSIONS +			
Item Description	NBI (if appl)	Value	Item Description	Diagram Abbrev.	Values NB-EB	Values SB-WB *
Road Name		I 90	**Roadway Width**	RW	38.0 ft	36.5 ft
Functional Class.	26	URB/PR ART ISTH	**Vertical Clearance**	VC	16.4 ft	16.7 ft
ADT (YEAR)	29 (& 30)	16,715 (2019)	**Max. Vert. Clear**	MVC	16.4 ft	16.7 ft
HCADT	109	2,173	**Horizontal Clear**	HC	62.5 ft	62.6 ft
National Highway System	104	Y	**Lateral Clr. - Lt**	LLC	28.0 ft	
Route Sys/Nbr (TIS)		ISTH 90	**Lateral Clr. - Rt**	RLC	8.0 ft	
Ref. Point (TIS)		175+00.771	**Median Width**	MW	54.0 ft	
Detour Length	19	4 mi.				
Lanes	28B	4 Lanes UNDER Bridge				
Control Section (TH Only)		5080				
Function	5C	MAINLINE				
Type	102	2 WAY TRAF				
Bridge Match ID		1				
Roadway Key	5A	2-UNDER				

* Entered only if this record is for a divided roadway

DIVIDED HIGHWAY WITH MEDIAN OBSTRUCTION



RIGID EDGE IS A TOE OF SLOPE STEEPER THAN 1 TO 3 OR A FIXED OBJECT SUCH AS GUARDRAIL, PIER STRUT OR OTHER BARRIER.

LLC (LEFT LATERAL CLEARANCE) IS THE MEASUREMENT FROM THE OUTSIDE EDGE OF THE ROADWAY TO THE RIGID EDGE. LEFT IS DETERMINED WHEN FACING THE DIRECTION OF TRAVEL. LLC IS THE MINIMUM DIMENSION AFTER MEASURING IN BOTH DIRECTIONS.

RLC (RIGHT LATERAL CLEARANCE) IS THE MEASUREMENT FROM THE OUTSIDE EDGE OF THE ROADWAY TO THE RIGID EDGE. RIGHT IS DETERMINED WHEN FACING THE DIRECTION OF TRAVEL. RLC IS THE MINIMUM DIMENSION AFTER MEASURING IN BOTH DIRECTIONS.

05/11/2022
Crew: OWAT
Insp Responsibility: DISTRICT 6

MINNESOTA BRIDGE INSPECTION REPORT

BRIDGE 9183 MN 105 OVER I 90 **INSP. DATE: 09-13-2021**

County: MOWER
City:
Township: AUSTIN
Section: 05 Township: 102N Range: 18W
Main Span Type: CSTL BEAM SPAN

Location: AT THE JCT TH 105
Route (TIS): MNTH 105 Ref Pt (TIS): 013+00.583
Control Section: 5007 Maint. Area: 6B
Local Agency Bridge Nbr:

Length: 264.5 ft
Deck Width: 35.4 ft
Rdwy. Area 7,933 sq ft
Paint Area 14,300 sq ft
Culvert : N/A

NBI Deck: 4 Super: 6 Sub: 5 Chan: N Culv: N
Open, Posted, Closed: OPEN

Appraisal Ratings - Approach: 8 Waterway: N
MN Scour Code: A-NON WATERWAY Def. Stat: S.D. Suff. Rate: 59.2
Required Bridge Signs - Load Posting: NOT REQUIRED Traffic: NOT REQUIRED
Horizontal: OBJECT MARKERS Vertical: NOT REQUIRED

ELEM NBR	ELEMENT NAME	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
800	CRITICAL DEFS OR SAFETY HAZARDS	09-13-2021	1 EA	1	0	0	0
		09-28-2020	1 EA	1	0	0	0

Notes: [2013-2021] - No critical findings noted at the time of inspection.

12	REINFORCED CONCRETE DECK	09-13-2021	9,363 SF	8,696	622	44	1
		09-28-2020	9,363 SF	8,696	622	44	1

Notes: [2013-2015] - There are scattered transverse cracks and numerous full depth patched areas beneath the deck surface.
[2017] - 600sf of patches (600sf-CS2). 4sf of rebar spall (4sf-CS3). 210lf of cracks with efflorescence (210x0.1=21sf-CS2)
[2019] - 8sf of rebar spall (8sf-CS3), 1sf delamination in span 3 in left lane between girders 1 and 2 (1sf-CS2). Joint patch north of pier 3 is cracked and stained full width (36sf-CS3). 19"x3" hole in the deck adjacent to extrusion over pier 3 at center lane (1sf-CS4).
[2020] - No change.

Span #1 -
[2021] - 24sf of patches (24sf-CS2). 6sf of rebar spalls (6sf-CS3). 40lf of cracking with leaching at strip seal joint for the entire length (4sf-CS2).

Span #2 -
[2021] - 22sf of rust staining along girder 3 (22sf-CS2). 100sf of patches (100sf-CS2). 2 rebar spalls in bay 3 near pier 2 (2sf-CS3).

Span #3 -
[2021] - 72sf of patches (72sf-CS2). 13sf of rust staining (13sf-CS2).

Span #4 -
[2021] - 80sf of patches (80sf-CS2). 6sf of rust staining (6sf-CS2). 3sf of rebar spalls (3sf-CS3). Moderate width cracks at the hinge joint (8sf-CS2).

510	*WEARING SURFACE*	*09-13-2021*	*7,933 SF*	*7,608*	*324*	*0*	*1*
		09-28-2020	*7,933 SF*	*7,608*	*324*	*0*	*1*

Notes: Low Slump Overlay with Uncoated Rebar Notes: A concrete overlay was placed in 2006.

[2013-2015] - There are no spalls, delamination, or patches noted in the surface of the deck.
[2017] - 1800lf of unsealed deck cracks (1800x0.1=180sf-CS2).
[2019] - 19"x3" hole in the deck adjacent to extrusion over pier 3 at center lane (1sf-CS4), heavy scaling from plow scrapes along pier joints 2'x2'x36'= (144sf-CS2).
[2020-2021] - No change.

810	CONC WEAR SURF-CRACKING SEALING	09-13-2021	2,070 LF	0	2,070	0	0
		09-28-2020	1,800 LF	0	1,800	0	0

Notes: [2017] - 1800lf of unsealed deck cracks.
[2019] - No change.
[2020] - Cracks were recently sealed.
[2021] - 1800lf of sealed deck cracks and 270lf of sealed approach cracks (2070lf-CS2).

300	STRIP SEAL DECK JOINT	09-13-2021	144 LF	139	3	0	2
		09-28-2020	144 LF	140	2	0	2

Notes: New waterproof strip seal expansion joints were placed in 2006.

South Joint -

[2015] - Joint is clean and functioning as intended.
[2017-2020] - No change. Joint is full of debris.
[2021] - Joint is broke and offset at centerline (1lf-CS2).

Pier 1 Joint -
[2015] - Joint is clean and functioning as intended.
[2017-2021] - No change. Joint is full of debris.

Pier 3 Joint -
[2015] - Joint is clean and functioning as intended.
[2017] - No change
[2019] - Pier 3 extrusion broken at centerline with loss of anchorage (2'-CS4)
[2020] - No change. Joint is full of debris.
[2021] - Daylight is visible from below deck from behind extrusion.

North Joint -
[2015] - Joint is clean and functioning as intended.
[2017] - 2 areas of leaking behind G4 and G5 on the north abutment (2'-CS2)
[2019-2021] - No change. Joint is full of debris.

815	PLOW FINGERS	09-13-2021	1 EA	0	1	0	0
		09-28-2020	1 EA	0	1	0	0

Notes: South End -
[2021] - 1 missing finger.

Span # 1 over Hinge -
[2021] - 0 missing fingers.

Span # 4 over Hinge -
[2021] - 1 missing finger.

North End -
[2021] - 0 missing fingers.

301	POURED SEAL JOINT	09-13-2021	200 LF	52	20	100	28
		09-28-2020	200 LF	52	20	100	28

Notes: [2020-2021] - 20' of joint with loss of adhesion (20'-CS2). 100' of missing joint (100'-CS3). 28' of spall adjacent to the joints (28'-CS4).

South approach -
[2021] - Transverse joints are unsealed with 7lf of spalling, longitudinal joints remain sealed.

North approach -
[2021] - 75lf unsealed and 7lf in need of repair.

816	APPROACH RELIEF JOINT	09-13-2021	56 LF	0	2	12	42
		09-28-2020	56 LF	0	0	56	0

Notes: These are the E-eight joints located at the roadway ends of both approach slabs.

South Joint -
[2017] - South joint has failed. 12' of spall adjacent to joint.
[2018-2021] - No change.
[2021] - Joint measures 2-3/4" at the east end and 3-1/2" at the west end.

North Joint -
[2017] - North joint has failed. 6' of spall adjacent to joint.
[2018-2021] - No change.
[2021] - Joint measures 1" at the east end and 2" at the west end.

330	METAL BRIDGE RAILING	09-13-2021	528 LF	520	6	2	0
		09-28-2020	528 LF	520	6	2	0

Notes: The railing consist of short concrete railing posts and concrete railing section with a single line aluminum pipe section mounted on top.

West Rail -
[2015] - Metal post 12 from the north end is damaged at the base (1'-CS3).
[2017-2021] - No change.

East Rail -
[2015] - The 5th steel post in from the north end is broken at the bottom (1'-CS3).
[2017] - Several areas scraped and gouged (6'-CS2).
[2019-2021] - No change.

331	REINFORCED CONC BRIDGE RAILING	09-13-2021	528 LF	480	15	33	0
		09-28-2020	528 LF	480	15	33	0

Notes: The railing consist of short concrete railing posts and concrete railing section with a single line aluminum pipe section mounted on top.
There are numerous concrete railing posts with minor vertical or random and small chips or spalls along the edges.

West Rail -
[2015] - 6 concrete railing posts with small 2" X 2" rebar spalls.
[2017] - 13' of cracking. 20' of delamination, spall, and staining.
[2019] - No change.
[2020] - Fresh SSF.
[2021] - No change.

East Rail -
[2015] - 2 concrete railing posts with small 2" X 2" rebar spalls and 2 concrete railing section with small 2" X 2" rebar spalls.
[2017] - 2' of cracking, 13' of delamination, spall, and staining.
[2019] - No change.
[2020] - Fresh SSF.
[2021] - No change.

321	CONCRETE APPROACH SLAB	09-13-2021	3,192 SF	3,159	28	5	0
		09-28-2020	3,192 SF	3,171	17	4	0

Notes: South Approach Slab -
[2015] - There is a small 3" x 6" spalled area along the south bound lane near the center line. There are 3 sealed transverse cracks.
[2017] - No change
[2019] - 12"x4" spall at poured joint in northbound lane. (1sf-CS3). 72' of transverse cracks (7sf-CS2).
[2020] - No change
[2021] - 2"x12' spall next to E-8 joint (2sf-CS3). 120lf of sealed cracks (12sf-CS2).

North Approach Slab -
[2015] - There is a small 3" x 8" spalled area along the north bound lane near the center line near the end block. There are 4 sealed transverse cracks.
[2017] - No change
[2019] - 24"x4" patch at centerline (1sf-CS2). 2 - 4"x4" and 1 - 11"x4" spalls along poured joints (3sf-CS3). 85' of cracks (9sf-CS2).
[2020] - No change.
[2021] - 150lf of sealed cracks (15sf-CS2).

107	STEEL GIRDER OR BEAM	09-13-2021	1,056 LF	864	192	0	0
		09-28-2020	1,056 LF	864	192	0	0

Notes: All steel beams in Spans 2 & 3 have welded cover plates at the mid spans.

Span # 1
[2013-2019] - West fascia beam is starting to fade in color faster than the rest of the paint system.
[2020] - 6lf of rust (6'-CS2).
[2021] - No change.

Span # 2 -
Most beams appear to be flat with no camber. All areas of active corrosion were cleaned and paint through the paint warranty done in fall of 2007.
[2013] - West fascia beam is starting to fade in color faster than the rest of the paint system.
[2015] - Paint is chipped were the traffic impact is. beam 5 the east fascia beam has a high impact scrape over the right hand lane that was cleaned and painted over in the fall of 2007. There are a few areas of staining along the top flange and a few areas of concrete staining due to the deck overlay in 2006. All 5 beams have a few small scattered rust spots along the bottom of the bottom flange.
[2017-2019] - No change.
[2020] - 172lf of rust (172'-CS2).
[2021] - No change.

Span # 3 -

Most beams appear to be flat with no camber. All areas of active corrosion were cleaned and paint through the paint warranty done in fall of 2007.
[2013] - West fascia beam is starting to fade in color faster than the rest of the paint system.
There are a few areas of concrete staining due to the deck overlay in 2006. All beams have a few scattered area of rust staining along the top flange next to the concrete. All 3 interior beams have a few small scattered rust spots along the bottom of the bottom flange.
[2017-2019] - No change.
[2020] - 120lf of rust (12'-CS2).
[2021] - No change.

Span # 4 -
[2013-2019] - West fascia beam is starting to fade in color faster than the rest of the paint system.
[2020] - 2lf of rust (2'-CS2).
[2021] - No change.

515	*STEEL PROTECTIVE COATING*	*09-13-2021*	*8,624 SF*	*0*	*7,562*	*862*	*200*
		09-28-2020	*8,624 SF*	*0*	*7,562*	*862*	*200*

Notes: All steel members were cleaned and painted in 2005 under a contract with a 3 coat zinc rich paint system.
[2017] - Paint is chalky. corrosion at joints and along the lower flanges. (scattered)
[2019] - No change.
[2020] - Areas of rust, peeling and flaking paint (200sf-CS4).
[2021] - No change.

205	REINFORCED CONCRETE COLUMN	09-13-2021	9 EA	5	3	1	0
		09-28-2020	9 EA	5	3	1	0

Notes: All 9 columns were cleaned and sealed in 2005.

Pier # 1 Columns -
[2015] - Column 2 has a 21"x8" rebar spall and 8" X 72" delaminated area along the north side.
[2017] - 12"x8" delamination over the rebar spall (CS3).
[2019 -2021] - No change.

Pier # 2 Columns -
[2015] - OK.
[2017] - Column 1 has a horizontal crack on the west face (CS2). Column 3 has 3 horizontal cracks on the east face (CS2).
[2019 -2021] - No change.

Pier # 3 Columns -
[2015] - Column 1 has 3 minor horizontal crack along the west side.
[2017] - Column 3 has a horizontal crack on the east face and 3 horizontal cracks on the north face (CS2).
[2019-2021] - No change.

215	REINFORCED CONCRETE ABUTMENT	09-13-2021	107 LF	81	24	2	0
		09-28-2020	107 LF	81	24	2	0

Notes: Both abutments were cleaned and sealed in 2005.

South Abutment -
[2015] - 14 vertical cracks scattered across the front face with some extending across the bridge seat and up the parapet wall with staining or leaching. There is a small 3" X 3" spalled area along the front face near the east end. The patched area over the utility access hole is cracked and leaching. There is some standing water near the center of the bridge due to the holes in the strip seal joint above.
[2017-2019] - No change.
[2020] - 2"x8" spall in parapet wall between BM1 and BM 2 (1'-CS3).
[2021] - No change.

North Abutment -
[2015] - 12 vertical cracks scattered across the front face with some extending across the bridge seat and up the parapet wall with staining or leaching. There is a small 1" X 2" rebar spall at the east end (1'-CS3). There is a 8" X 16" spalled area along the parapet wall behind the east fascia beam. The patched area over the utility access hole is cracked and leaching at each end.
[2017-2021] - No change.

Wingwall Notes -
NW Wingwall -
[2015-2020] - Has a small minor chipped and patched area at the far end.
[2021] - 2' of cracking and delamination.

SW Wingwall -
[2019-2021] - 1' horizontal crack at bottom of the end post.

234	REINFORCED CONCRETE PIER CAP	09-13-2021	106 LF	87	15	4	0
		09-28-2020	106 LF	87	15	4	0

Notes: All 3 piers were cleaned and sealed in 2005.

Pier # 1 -
[2015] - 1 or 2 vertical cracks over each of the outside end columns, there are 2 vertical cracks over the center column and 4 or 5 short vertical cracks along the bottom between the column that extend under the cap.
[2017] - Full height vertical cracks at column 3. top down vertical crack near column 2. bottom up vertical crack between columns 1 and 2. top down vertical crack over column 1.
[2019] - Minor 4"x1" rebar spall on bottom adjacent to column 3.
[2020-2021] - No change.

Pier # 2 -
[2015] - 1 vertical cracks over each of the outside end columns, 2 vertical cracks over the center column and 4 or 5 short vertical cracks along the bottom between the column that extend under the cap.
[2017] - Top down vertical crack over column 1. bottom up vertical crack between columns 1 and 2. top down vertical crack over column 2. bottom up vertical crack between columns 2 and 3. top down vertical crack over column 3.
[2019-2021] - No change.

Pier # 3 -
[2015] - 1 vertical or random crack over each of the outside end columns,. 2 vertical cracks over the center columns and 4 or 5 short vertical cracks along the bottom between the column that extend under the cap. There is a small rebar spall on the bottom on the east side of column 1 approximately 3" X 3" in size.
[2017] - Top down vertical crack over column 2. (3) bottom up vertical cracks between columns 2 and 3. top down vertical crack over column 1.
[2019] - 3 - 6"x4" delaminated / spalled areas on bottom between columns 2 and 3.
[2020-2021] - No change.

311	EXPANSION BEARING	09-13-2021	10 EA	10	0	0	0
		09-28-2020	10 EA	10	0	0	0

Notes: The expansion bearings are located along pier 1 & 3. All bearings were cleaned and painted in 2005.

Pier 1 Bearings -
[2013-2021] - The expansion bearings show little or no deterioration.

Pier 3 Bearings -
[2013-2021] - The expansion bearings show little or no deterioration.

313	FIXED BEARING	09-13-2021	15 EA	5	4	6	0
		09-28-2020	15 EA	5	4	6	0

Notes: Fixed bearings are located along both abutments and pier 2. All bearings were cleaned and painted in 2005.

South Abutment Bearings -
[2019] - The bearings have peeling paint and surface corrosion along the bottom of the masonry plates. (4-CS2). Bearing 4 lead sheet is extruding.
[2020] - Broken bolt on B1 sole plate (1-CS3).
[2021] - No change.

Pier 2 Bearings -
[2015-2017] - The fixed bearings show little or no deterioration (5-CS1).
[2021] - No change.

North Abutment Bearings-
[2017] - The bearings have peeling paint and surface corrosion along the bottom of the masonry plates.
[2020] - 2 broken bolts on B1 sole plate, flaking rust is present on all (5-CS3).
[2021] - No change.

850	STEEL HINGE ASSEMBLY	09-13-2021	10 EA	0	10	0	0
		09-28-2020	10 EA	0	10	0	0

Notes: Span # 1 Hinge -
[2013] - No measurable changes in the hinges at time of inspection still only minor rusting and staining.
[2015] - All 5 hinges were cleaned and painted in 2005. All 5 hinges are expanded over center from 1 to 1 1/4 inches. All hinges have areas of rust staining.
[2017-2021] - No change.

Span # 4 Hinge -
[2013] - No measurable changes in the hinges at time of inspection still only minor rusting and staining.
[2015] - All 5 hinges were cleaned and painted in 2005. All 5 hinges are expanded over center from 1 to 1 1/4 inches. All hinges have areas of rust staining.
[2017-2021] - No change.

855	SECONDARY MEMBERS (SUPER)	09-13-2021	1 EA	0	1	0	0
		09-28-2020	1 EA	0	1	0	0

Notes: Bolted steel diaphragms.

Span # 1 -
The diaphragms between all 5 beams at the hinge joints have rust staining from above and bearings 3, 4 & 5 have concrete staining from deck overlay above. The end diaphragms over the abutment between beams 1 & 2. 2 & 3 and 3 & 4 have rust staining along the top edge.
[2019] - Minor corrosion under joints.
[2020-2021] - No change.

Span # 4 -
The diaphragms between all 5 beams at the hinge joints have rust staining from above and bearings 3, 4 & 5 have concrete staining from deck overlay above. The end diaphragms over the abutment between beams 1 & 2. 3 & 4 and 4 & 5 have rust staining along the top edge. Facia stiffeners are welded top and bottom.
[2019] - Minor corrosion under joints.
[2020-2021] - No change.

856	SECONDARY MEMBERS (SUB)	09-13-2021	1 EA	1	0	0	0
		09-28-2020	1 EA	1	0	0	0

Notes: These are the crash barriers placed between the columns at piers 1 & 3.

[2013-2017] - No deterioration noted.
[2019] - Minor vertical cracking on pier 1.
[2020-2021] - No change.

880	IMPACT DAMAGE	09-13-2021	1 EA	1	0	0	0
		09-28-2020	1 EA	1	0	0	0

Notes: [2015] - Span 2 West facia beam is scraped and B3 centerline East bound I-90 was impacted by MNDOT snowplow truck in 2014. No significant damage.
[2017-2021] - No change.

882	STEEL CRACKING	09-13-2021	1 EA	1	0	0	0
		09-28-2020	1 EA	1	0	0	0

Notes: [2016] Fatigue prone details are present on the primary steel superstructure elements, monitor them for cracking. The Steel Fatigue Detail Ranking code for this structure is 4. Check BSIPM section D.7.10 and 'SIA - One Column' in SIMS for additional details regarding this topic.
[2017] - Partial length cover plates and lateral bracing to girder bottom flange details. Facia stiffeners are welded top and bottom.
[2017-2021] - No steel cracking noted

883	CONCRETE SHEAR CRACKING	09-13-2021	1 EA	0	1	0	0
		09-28-2020	1 EA	0	1	0	0

Notes: [2019] - Shear cracks typical at outside end columns on all three pier caps.
[2020-2021] - No change.

891	OTHER BRIDGE SIGNING	09-13-2021	1 EA	0	1	0	0
		09-28-2020	1 EA	1	0	0	0

Notes: Horizontal Delineators -

[2013-2020] - All signs were in place and in good condition at the time of this inspection.
[2021] - Sign missing on post at pier 2 (CS2).

892	SLOPES & SLOPE PROTECTION	09-13-2021	1 EA	0	0	1	0
		09-28-2020	1 EA	0	0	1	0

Notes: South Slope -
Numerous random cracks with some scattered small spalls and exposed rebar near the center and the west side. The slope was overlaid some time in the past. [2013] - The overlay has spalled out on the east side an area 1' x 3' with exposed rebar.
[2015] - East side of slope has a 1' x 2' spall with exposed rebar.
[2017] - Most of slope is undermined.
[2019] - West side has a 6'x3' area of hole in concrete and exposed rebar, east side has 11'x3' and 2'x2' holes in concrete with exposed rebar.
[2020] - No change.

[2021] - Moderate cracking.

North Slope -
The slope has been reconstructed at some time in the past.
[2017] - Cracking throughout.
[2019-2021] - No change.

893	GUARDRAIL	09-13-2021	1 EA	1	0	0	0
		09-28-2020	1 EA	1	0	0	0

Notes: [2013-2021] - All guard railing sections were intact and functioning as intended at the time of this inspection.

894	DECK & APPROACH DRAINAGE	09-13-2021	1 EA	0	1	0	0
		09-28-2020	1 EA	1	0	0	0

Notes: [2015] - There is peeling paint and rust at all drain pipe ends extending up 3-6". All deck drains were open at the time of this inspection.
[2017-2020] - No change.
[2021] - Drain extension in span 2 bay 1 near pier 2 is missing (CS2).

895	SIDEWALK, CURB, & MEDIAN	09-13-2021	1 EA	0	1	0	0
		09-28-2020	1 EA	0	1	0	0

Notes: [2013-2021] - There are numerous sealed transverse cracks along both sides with random cracking and a small spall at the southwest corner.

900	PROTECTED SPECIES	09-13-2021	1 EA	0	1	0	0
		09-28-2020	1 EA	0	1	0	0

Notes: [2017-2021] - No protected species noted

General Notes: BR 9183

All beams, bearings and columns are numbered from the west and all spans and piers are numbered from the south.

[2011] - Inspected by Robert Pyfferoen.
[2013] - Inspected by Gary Waletzki.
[2015] - Inspected by Gary Waletzki.
[2017] - Inspected by Tom Miles.
[2019] - Inspected by Tom Miles.
[2020] - Inspected by Tom Miles and Chad Hockens.
[2021] - Inspected by Tony Bale.

Deck: [4] [2017] - Numerous patches on the underdeck. Moderate cracking.
[2019] - NBI 4 due to advanced cracking and hole at the extrusion.

Brdg Railings: [0] Type 11 - Substandard for all speeds.

Appr Guardrail Terminal : [0] ELT end terminals - substandard.

Superstructure: [6] [2017] - Minor paint failure and corrosion.
[2020] - NBI 6 due to moderate paint failure and corrosion.

Substructure: [5] [2017] - Minor spall and moderate cracking.
[2019] - NBI is a 5 due to Isolated structural cracking. shear cracking in pier caps.

Appr Roadway Alignment: [8] [2017] - No speed reduction required.

MINNESOTA STRUCTURE INVENTORY REPORT

Bridge ID: 50803 **US 218 SB over I 90** Date: 05/11/2022

+ GENERAL +

Agency Br. No. **Crew** OWAT
District 6 **Maint. Area** 6B
County 50 - MOWER
City AUSTIN
Township
Desc. Loc. AT THE W JCT TH 218
Sect., Twp., Range 33 - 103N - 18W
Latitude 43d 40m 50.42s
Longitude 92d 59m 36.98s
Custodian STATE HWY
Owner STATE HWY
Insp Responsibility DISTRICT 6
Year Built 1966
Date Opened to Traffic 01-01-1967
MN Year Remodeled
FHWA Year Reconstructed
Bridge Plan Location CENTRAL
Potential ABC YES

+ STRUCTURE +

Service On HIGHWAY
Service Under HIGHWAY
Main Span Type PRESTR BM SPAN
Main Span Detail
Appr. Span Type
Appr. Span Detail
Skew
Culvert Type
Barrel Length

Number of Spans
MAIN: 4 APPR: 0 TOTAL: 4

Main Span Length 55.9 ft
Structure Length 191.7 ft
Deck Width 44.6 ft
Deck Material C-I-P CONCRETE
Wear Surf Type LOW SLUMP CONC
Wear Surf Install Year 1986
Wear Course/Fill Depth 0.17 ft
Deck Membrane NONE
Deck Rebars NONE
Deck Rebars Install Year
Structure Area 8,550 sq ft
Roadway Area 7,481 sq ft
Sidewalk Width - L/R
Curb Height - L/R 0.67 ft 0.67 ft
Rail Codes - L/R 03 03

+ ROADWAY ON BRIDGE +

Facility US 218
Functional Class URB/OTH PR ART
ADT (YEAR) 6,600 (2016)
HCADT 594
National Highway System Y
Route Sys/Nbr (TIS) USTH 218
Ref. Point (TIS) 014+00.988
Detour Length 5 mi.
Lanes 3 Lanes ON Bridge
Control Section (TH Only) 5009
Function MAINLINE
Type 1 WAY TRAF
Bridge Match ID 2
Roadway Key 1-ON

+ RDWY DIMENSIONS ON BRIDGE +

If Divided	NB-EB	SB-WB
Roadway Width	39.0 ft	
Vertical Clearance		
Max. Vert. Clear.		
Horizontal Clear.	38.9 ft	
Appr. Surface Width	40.0 ft	
Bridge Roadway Width	39.0 ft	
Median Width on Bridge	NA	

+ MISC. BRIDGE DATA +

Structure Flared NO
Parallel Structure LEFT
Field Conn. ID
Cantilever ID

Foundations
Abut. CONC - FTG PILE
Pier CONC - FTG PILE
Historic Status NOT ELIGIBLE
On - Off System ON

+ PAINT +

Year Painted
Painted Area
Primer Type
Finish Type

+ BRIDGE SIGNS +

Posted Load NOT REQUIRED
Traffic NOT REQUIRED
Horizontal OBJECT MARKERS
Vertical NOT REQUIRED

+ INSPECTION +

Deficient Status F.O.
Sufficiency Rating 65.1
Last Routine Insp Date 09-16-2021
Routine Insp Frequency 24
Inspector Name DISTRICT 6
Status A-OPEN

+ NBI CONDITION RATINGS +

Deck	6
Superstructure	5
Substructure	5
Channel	N
Culvert	N

+ NBI APPRAISAL RATINGS +

Structure Evaluation	5
Deck Geometry	3
Underclearances	5
Waterway Adequacy	N
Approach Alignment	8

+ SAFETY FEATURES +

Bridge Railing	1-MEETS STANDARDS
GR Transition	1-MEETS STANDARDS
Appr. Guardrail	1-MEETS STANDARDS
GR Termini	1-MEETS STANDARDS

+ SPECIAL INSPECTIONS +

Frac. Critical N
Underwater N
Pinned Asbly. N

+ WATERWAY +

Drainage Area
Waterway Opening
Navigation Control NOT APPL
Pier Protection
Nav. Vert./Horz. Clr.
Nav. Vert. Lift Bridge Clear.
MN Scour Code A-NON WATERWAY
Scour Evaluation Year

+ CAPACITY RATINGS +

Design Load HS 20
Operating Rating HS 33.30
Inventory Rating HS 19.90
Posting
Rating Date 05-29-2003

Overweight Permit Codes
A: 1 B: 1 C: 1

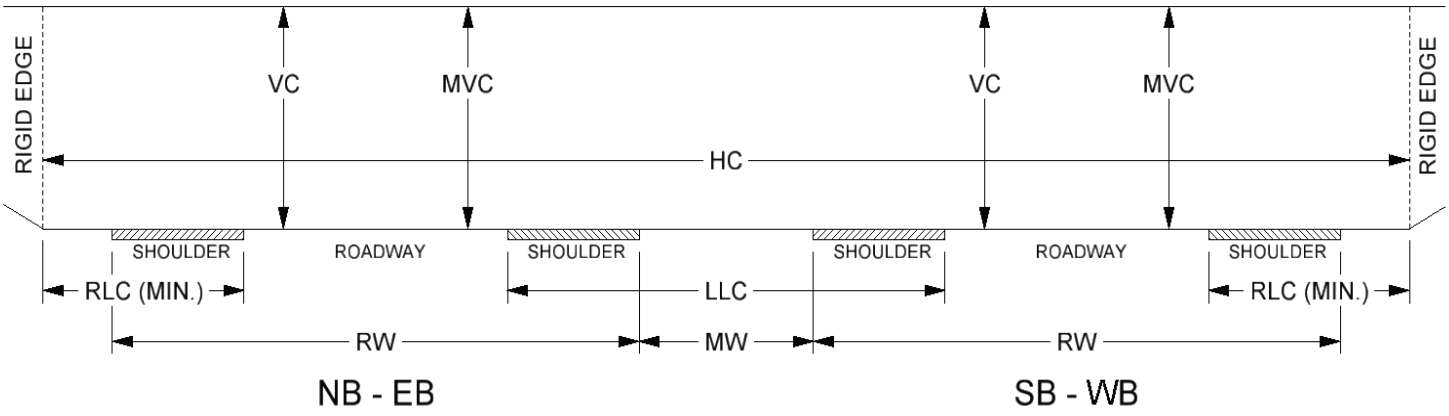
MINNESOTA STRUCTURE INVENTORY REPORT
Roadway Under Bridge

Bridge ID: 50803 — I 90 under US 218 SB — Date: 05/11/2022

+ FEATURES +			+ DIMENSIONS +			
Item Description	NBI (if appl)	Value	Item Description	Diagram Abbrev.	Values NB-EB	Values SB-WB *
Road Name		I 90	**Roadway Width**	RW	38.0 ft	38.0 ft
Functional Class.	26	URB/PR ART ISTH	**Vertical Clearance**	VC	17.4 ft	16.7 ft
ADT (YEAR)	29 (& 30)	18,316 (2019)	**Max. Vert. Clear**	MVC	17.4 ft	16.7 ft
HCADT	109	2,015	**Horizontal Clear**	HC	52.9 ft	52.9 ft
National Highway System	104	Y	**Lateral Clr. - Lt**	LLC	17.4 ft	
Route Sys/Nbr (TIS)		ISTH 90	**Lateral Clr. - Rt**	RLC	11.4 ft	
Ref. Point (TIS)		177+00.458	**Median Width**	MW	30.0 ft	
Detour Length	19	5 mi.				
Lanes	28B	4 Lanes UNDER Bridge				
Control Section (TH Only)		5080				
Function	5C	MAINLINE				
Type	102	2 WAY TRAF				
Bridge Match ID		1				
Roadway Key	5A	2-UNDER				

* Entered only if this record is for a divided roadway

DIVIDED HIGHWAY WITHOUT MEDIAN OBSTRUCTION



RIGID EDGE IS A TOE OF SLOPE STEEPER THAN 1 TO 3 OR A FIXED OBJECT SUCH AS GUARDRAIL, PIER STRUT OR OTHER BARRIER.

LLC (LEFT LATERAL CLEARANCE) IS THE MEASUREMENT BETWEEN OUTSIDE ROADWAY EDGES.

RLC (RIGHT LATERAL CLEARANCE) IS THE MEASUREMENT FROM THE OUTSIDE EDGE OF THE ROADWAY TO THE RIGID EDGE. RIGHT IS DETERMINED WHEN FACING THE DIRECTION OF TRAVEL. RLC IS THE MINIMUM DIMENSION AFTER MEASURING IN BOTH DIRECTIONS.

05/11/2022
Crew: OWAT
Insp Responsibility: DISTRICT 6

MINNESOTA BRIDGE INSPECTION REPORT

BRIDGE 50803 US 218 SB OVER I 90 **INSP. DATE: 09-16-2021**

County: MOWER
City: AUSTIN
Township:
Section: 33 Township: 103N Range: 18W
Main Span Type: PRESTR BM SPAN

Location: AT THE W JCT TH 218
Route (TIS): USTH 218 Ref Pt (TIS): 014+00.988
Control Section: 5009 Maint. Area: 6B
Local Agency Bridge Nbr:

Length: 191.7 ft
Deck Width: 44.6 ft
Rdwy. Area 7,481 sq ft
Paint Area
Culvert : N/A

NBI Deck: 6 Super: 5 Sub: 5 Chan: N Culv: N

Open, Posted, Closed: OPEN

Appraisal Ratings - Approach: 8 Waterway: N

MN Scour Code: A-NON WATERWAY Def. Stat: F.O. Suff. Rate: 65.1

Required Bridge Signs - Load Posting: NOT REQUIRED Traffic: NOT REQUIRED
Horizontal: OBJECT MARKERS Vertical: NOT REQUIRED

ELEM NBR	ELEMENT NAME	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
800	CRITICAL DEFS OR SAFETY HAZARDS	09-16-2021	1 EA	1	0	0	0
		09-25-2019	1 EA	1	0	0	0

Notes: [2013-2021] - No critical findings were observed at the time of this inspection.

12	REINFORCED CONCRETE DECK	09-16-2021	8,550 SF	8,478	7	65	0
		09-25-2019	8,550 SF	8,481	7	62	0

Notes: The slab overhang and edge of curb over pier 3 on both sides are tight together with spalls or delaminated areas.

Span 1 -
[2015] - There are scattered transverse cracks beneath the deck with leaching or efflorescence showing. Both overhangs have several scattered small spalls with some having exposed rebar. There are 11 spalls along the west side and 16 along the east side.
[2017] - 21sf of rebar spall and delamination on the east side. 16' of rebar spall and delamination on the west side. 20' of cracking with efflorescence in span 1.
[2019] - 5 of cracks (1sf-CS2). 3sf of delamination (3sf-CS2). 10sf of spall (10sf-CS3). 15sf of deterioration (15sf-CS3).
[2021] - No change.

Span 2 -
[2015] - There are scattered transverse cracks beneath the deck with leaching or efflorescence showing. Both overhangs have several scattered small spalls with some having exposed rebar. There are 11 spalls along the west side and 16 along the east side.
[2017] - no change
[2019] - 12 of cracks (1sf-CS2). 15sf of spall (15sf-CS3).
[2021] - East bound overhang has 3sf of delamination (3sf-CS3).

Span 3 -
[2015] - There are scattered transverse cracks beneath the deck with leaching or efflorescence showing. Both overhangs have several scattered small spalls with some having exposed rebar. There are 11 spalls along the west side and 16 along the east side.
[2017] - no change
[2019] - 15 of cracks (2sf-CS2). 8sf of spall (8sf-CS3).
[2021] - No change.

Span 4 -
[2015] - There are scattered transverse cracks beneath the deck with leaching or efflorescence showing. Both overhangs have several scattered small spalls with some having exposed rebar. There are 11 spalls along the west side and 16 along the east side.
[2017] - 2'x8' area of random cracking and delamination as well as 16' of additional cracking between beams 4 and 5 at the north abutment.
[2019] - 6' of cracks (1sf-CS2). 1sf of spall (1sf-CS3). 13sf of deterioration (13sf-CS3).
[2021] - No change.

510	*WEARING SURFACE*	*09-16-2021*	*7,481 SF*	*7,330*	*151*	*0*	*0*
		09-25-2019	*7,481 SF*	*7,350*	*131*	*0*	*0*

Notes: Low Slump Overlay with Uncoated Rebar Notes: A low slump concrete overlay was placed in 1986.

[2015] - There are several spalls located along the strip seal joints.
South End - has a small 8" X 6" patched area along the compression joint near the west end.
North End - the left hand lane and left hand ramp lane have areas of chipped concrete due to the settlement of the approach

slab.
[2015] - Entire width has scaled concrete 1' wide (45sf-CS2).
[2017] - 860lf of sealed deck cracks (86sf-CS2)
[2019] - No change.
[2021] - Span 4 has 20sf of cracking (20sf-CS2).

810	CONC WEAR SURF-CRACKING SEALING	09-16-2021	860 LF	0	860	0	0
		09-25-2019	860 LF	0	860	0	0

Notes: [2017-2021] - 860lf of sealed deck cracks.

300	STRIP SEAL DECK JOINT	09-16-2021	84 LF	0	84	0	0
		09-25-2019	84 LF	0	84	0	0

Notes: New waterproof strip seal expansion joints were placed over Piers 1 & 3 in 1986.

Pier 1 Joint -
[2013-2017] - Both joints are full of dirt and debris at time of inspection.
[2019] - The joint opening measures 1-1/2".
[2021] - No change.

Pier 3 Joint -
[2013-2017] - Both joints are full of dirt and debris at time of inspection.
[2019] - The joint opening measures 1-1/2".
[2021] - No change.

301	POURED SEAL JOINT	09-16-2021	142 LF	63	15	64	0
		09-25-2019	142 LF	119	15	8	0

Notes: New approaches on the north end are unsealed.
[2017] - 8' of missing material over pier 2.
[2019] - 15' joint with loss of adhesion (15'-CS2).
[2021] - 64' of missing joint (64'-CS3).

302	COMPRESSION DECK JOINT	09-16-2021	72 LF	0	0	72	0
		09-25-2019	72 LF	0	0	72	0

Notes: These are the compression joints located at each end of the bridge.

South End Joint -
[2015] - There is approximately 36 linear feet of joint material that has lost adhesion.
[2017] - Joint is missing.
[2019-2021] - No change.

North End Joint -
[2015] - There is approximately 36 linear feet of joint material that has lost adhesion and spalling concrete.
[2017] - Joint removed by bridge crews.
[2019-2021] - No change.

816	APPROACH RELIEF JOINT	09-16-2021	36 LF	0	0	36	0
		09-25-2019	36 LF	0	0	36	0

Notes: These are the E-eight joints located at the roadway ends of both approach slabs.

South E8 Joint -
[2011] - Joint openings at west side 1" and east 1/2"and joint is unsealed its entirety.
[2013-2015] - W- 4-1/8", E- 2 3/8'. (CS3)
[2017-2021] - No change.

North E8 Joint-
[2017] - Removed by Owatonna Bridge Crew during panel replacement. No joint reinstalled.

331	REINFORCED CONC BRIDGE RAILING	09-16-2021	382 LF	360	22	0	0
		09-25-2019	382 LF	360	22	0	0

Notes: West Rail -
[2015] - There are 10 to 12 concrete posts with vertical or random cracks and some small chips along the edges.
[2017-2021] - No change.

East Rail -
[2015] - There are 10 to 12 concrete posts with vertical or random cracks and some small chips along the edges.
[2017-2021] - No change.

321	CONCRETE APPROACH SLAB	09-16-2021	2,700 SF	889	3	1,808	0
		09-25-2019	2,700 SF	889	3	1,808	0

Notes: South Approach Slab -
[2013] - 2 full width cracks in the right lane. 3'x1' pothole in the left lane and a 3' x 1' in the ramp lane.
[2015] - 3 full width sealed transverse cracks and an unsealed longitudinal crack along side the construction joint in the left hand lane. There is an area of random cracking with delamination along the center line construction joint. The approach has settled slightly from 1/4 to 1/2 of an inch across the entire width.
[2017] - The panel has settled 1-1/4" and moves under load. 200' of cracking. 12sf of spall (1800sf-CS3)
[2019] - 40' of spall along longitudinal joints (4sf-CS3). 4sf of spall along E8 (4sf-CS3). The panel has settled 1" across the entire width (CS3)
[2021] - No change.

North Approach Slab -
[2017] - New panel installed by Owatonna Bridge Crew. 19' of cracking (2sf-CS2). no joints in new panel.
[2019] - 27' of cracks (3sf-CS2)
[2021] - No change.

205	REINFORCED CONCRETE COLUMN	09-16-2021	6 EA	6	0	0	0
		09-25-2019	6 EA	6	0	0	0

Notes: Pier 1 -
[2015-2021] - All columns are in good condition.

Pier 2 -
[2015-2021] - All columns are in good condition.

Pier 3 -
[2015-2021] - All columns are in good condition.

215	REINFORCED CONCRETE ABUTMENT	09-16-2021	115 LF	48	67	0	0
		09-25-2019	115 LF	48	67	0	0

Notes: These contraction type abutments.

South Abutment -
The abutment is stained at ends due to water leaking from behind abutment.
[2015] - There are 16 vertical cracks scattered across the front face and end diaphragms with some leaching. The front face is stained due to water leaking through the end diaphragm joint. Both outside end diaphragms have steel drain pipes sticking out with heavy corrosion at each end.
[2017] - There is 9' of gland leaking at each end. 24' of leaching and staining. 11' of cracking.
[2019-2021] - No change.

North Abutment -
The abutment is stained at ends due to water leaking from behind abutment.
[2015] - There is 13 vertical cracks scattered across the front face and end diaphragms with some leaching. The front face is stained due to water leaking through the end diaphragm joint. There is a small 1' X 1' rebar spall along the top edge at the east end.
[2017] - There is 14' of gland leaking at the ends.
[2019-2021] - No change.

Wingwall Notes -
[2015] - NE wing - short diagonal crack near the front edge with staining.
[2019-2021] - No change.

234	REINFORCED CONCRETE PIER CAP	09-16-2021	135 LF	74	34	27	0
		09-25-2019	135 LF	75	34	26	0

Notes: Pier 1 -
[2015] - There are 7 patched areas along the bottom and along both sides of the cap and all patched areas have random cracking with some delamination (23'-CS3). There is a horizontal crack along the top on the south side between girders between girders 4 & 5 with a 4" X 18" delaminated area (1'-CS2). The west end of the cap has vertical or random crack with a 6" x 36" area of delaminated concrete (1'-CS2). There are 2 or 3 vertical cracks near each end of the cap over the outside columns that can be seen on both sides (3'-CS2). There are approximately 20 square feet of delaminated concrete (20'-CS2).
[2017] - No change
[2019] - The south face - 25"x16"x9" delamination between G4/G5. 28"x30"x4" and 56"x22" delamination between col 1 and 2. 32"x10"x4" rebar spall over col. 2. 14"x15" delamination under G4. 20"x7" delamination over col. 1. 16"x18" rebar spall between col. 1 and 2. North face - 2'x4" patch and 14"x21" delamination between col. 1 and 2.
[2021] - No change.

Pier 2 -
[2015] - There are 2 or 3 vertical cracks near each end of the cap on the north side only (3'-CS2).

[2017-2021] - No change.

Pier 3 -
[2015] - There is 3 or 4 vertical or random cracks along both sides over the end columns (4'-CS2). South Side - the bottom edge has 2 patched areas (42"x8"x5" over col. 1) and (32"x13"x4" between col. 1 and 2) and both are spalled (3'-CS3). North Side - has a small 6" X 12" patched area over the east column (1'-CS2). West End - has a 6" X 18" spall. East End - has a 8" X 24" rebar spall (1'-CS3).
[2017-2019] - No change.
[2021] - The spall on the west end of the cap is now 12"x24" (2'-CS3).

109	PRESTRESSED CONC GIRDER OR BEAM	09-16-2021	1,180 LF	1,100	49	31	0
		09-25-2019	1,180 LF	1,104	47	29	0

Notes: Span 1 -
[2015] - the west fascia girder on the west side has a small 8" X 10" rebar spall over pier 1. The east fascia girder over pier 1 has a small 3" X 3" spalled area.
[2017] - 6"x6" spall on lower flange of east fascia over pier 1. 10' of chair staining (CS2)
[2019-2021] - No change.

Span 2 -
[2015] - the west fascia girder on the west side has a small 8" X 8" rebar spall over pier 1. The east fascia girder over pier 1 has a 2"x1" spall in the web and 6"x6" spalled area and a 1' X 1' delaminated area on the bottom flange with rust staining along the web. The east fascia girder over pier 2 has a small rebar spall on both sides. Girder 4 has a small 4" X 6" steel plate exposed along the bottom flange on the east side. The west fascia along the east side has 14 small 3" X 3" spalled areas due to placement of overhead sign bolts.
[2017] - 16' of chair staining (CS2). south end of beams are spalling 1' in due to exposed strands.
[2019] - No change.
[2021] - G4 - 2' area of spall (2'-CS2).

Span 3 -
[2015] - The west fascia girder on the east side has a small patch along the web over pier 2 and the west fascia over pier 3 has a vertical crack with a 1" X 18" spall area along the web and a 8" X 10" rebar spall along the bottom flange. The east fascia girder on the east side has a small 12"x12" rebar spall in the web over pier 2 and 3"x3" rebar spall over the left lane. The east fascia girder has 2 small chips along the bottom flange on the west side. The east fascia over pier 3 has a 8" X 10" rebar spall along the bottom flange. Girder 3 has a small 4" X 4" spall along the west side in the web over the center line. Both fascia girders over pier 3 have small 8" X 8" rebar spalls. The ends of girders 2, 3, 5, & 6 all have small rebar spalls along the bottom flange over pier 3.
[2017] - 16' of chair staining (CS2).
[2019-2021] - No change.

Span 4 -
[2015] - The west fascia girder on the west side has a small 6" X 8" rebar spall over pier 3. Girder 2 has a cracked and delaminated area over pier 3 along the bottom flange on both sides.
[2017] - 8' of chair staining (CS2). 12"x8" area of spall an delamination. 2"x2" spall on the east side of beam 2 at the center of the span.
[2019] - No change.
[2021] - G1 - 15"x24" spall /delamination with LOS on exposed cable (2'-CS3).

311	EXPANSION BEARING	09-16-2021	14 EA	0	14	0	0
		09-25-2019	14 EA	0	14	0	0

Notes: Moveable bearings are located along the north side of pier 1 and along the south side of pier 3.

[2017] - All bearings have failed galvanizing with minor surface corrosion (14-CS2).
[2019-2021] - No change.

313	FIXED BEARING	09-16-2021	34 EA	19	15	0	0
		09-25-2019	34 EA	19	15	0	0

Notes: Fixed bearings are located at both abutments, along the south side of the pier 1, both sides of pier 2 and along the north side of pier 3.

South Abutment Bearings -
[2015] - Bearings 1, 4 & 5 have failed galvanizing with active corrosion (3-CS2).
[2017-2021] - No change.

Pier 1 Bearings -
[2015] - All 5 bearings have failed galvanizing with active corrosion (5-CS2).
[2017-2021] - No change.

Pier 2 Bearings -
The fixed bearings show little or no deterioration.
[2017-2021] - No change.

Pier 3 Bearings -
All 5 bearings have failed galvanizing with active corrosion (5-CS2).
[2017-2021] - No change.

North Abutment Bearings -
Both fascia bearings have failed galvanizing with active corrosion (2-CS2).
[2017-2021] - No change.

855	SECONDARY MEMBERS (SUPER)	09-16-2021	1 EA	0	1	0	0
		09-25-2019	1 EA	0	1	0	0

Notes: Cast in place concrete diaphragms.

[2015] - There are 2 concrete diaphragms with small rebar spalls, one is located in span # 3 over pier 3 between girders 3 & 4 and the other is located in span # 4 over pier 3.
[2017-2019] - No change.
[2021] - There is a delamination over pier 3 (CS2).

883	CONCRETE SHEAR CRACKING	09-16-2021	1 EA	1	0	0	0
		09-25-2019	1 EA	1	0	0	0

Notes: [2017-2021] - No shear cracking noted at the time of this inspection.

891	OTHER BRIDGE SIGNING	09-16-2021	1 EA	1	0	0	0
		09-25-2019	1 EA	1	0	0	0

Notes: Horizontal Delineators -
[2013-2019] - All signs were in place and in good condition at the time of this inspection.

Bridge Mounted OH sign over the EB I90 lanes -
[2019] - Signs are firmly attached and in good condition.
[2021] - No change.

892	SLOPES & SLOPE PROTECTION	09-16-2021	1 EA	0	1	0	0
		09-25-2019	1 EA	0	1	0	0

Notes: [2015] - Both concrete slopes have scattered minor random cracks.
[2017-2021] - No change.

893	GUARDRAIL	09-16-2021	1 EA	0	0	1	0
		09-25-2019	1 EA	0	0	1	0

Notes: There are areas of minor impact damage along the northwest and northeast side along trunk highway 218 above with a small 4" X 4" tear along the northwest side. There are is also small minor area of impact damage along the southeast side.
[2013] - 1' area with section loss at the connection plate at the SE corner.
[2015] - Median guardrail has failed galvanizing.
[2017] - Median guardrail is corroded with section loss.
[2019-2021] - No change.

894	DECK & APPROACH DRAINAGE	09-16-2021	1 EA	1	0	0	0
		09-25-2019	1 EA	1	0	0	0

Notes: Catch basins are located along the west side of both approach slabs.
[2013-2021] - Both catch basins are in good condition at the time of this inspection. No drainage issues noted.

895	SIDEWALK, CURB, & MEDIAN	09-16-2021	1 EA	0	1	0	0
		09-25-2019	1 EA	0	1	0	0

Notes: West Side -
Scattered minor random cracks along the tops with horizontal cracks along the front face and a few scattered small chips.
[2015] - spalls at the curb cover plates.
[2017-2019] - No change.
[2021] - The NW curb has a 2"lip up to the bridge deck. Over pier 1 there is a 18"x56" spall on curb and over pier 2 there is a 12"x18" spall.

East Side -
Scattered random cracks along the tops with horizontal cracks along the front face with scattered small chips, staining and small delaminated areas.
[2013] - 2'x1' spall/delamination by the 6th post on top of the curb.
[2015] - Spall is now 2' x 4' at curb plate and also a 18" x 18" spall at curb plate over pier 3.
[2017-2021] - No change.

899	MISCELLANEOUS ITEMS	09-16-2021	1 EA	0	1	0	0
		09-25-2019	1 EA	0	1	0	0

Notes: The vertical cork joints between the wingwalls and the abutments are deteriorated or completely gone. This has allowed water to pass through the open joint.
[2019-2021] - No change.

There are utility pipes thru both abutments and attached to the under side of the deck between girders 1 & 2
[2017-2021] - All pipes are firmly attached at this time.

900	PROTECTED SPECIES	09-16-2021	1 EA	0	1	0	0
		09-25-2019	1 EA	0	1	0	0

Notes: [2017-2021] - There were no protected species noted at the time of this inspection..

General Notes: BR50803
NOTE: All girders, columns and bearings are numbered from the west and all spans and piers are numbered from the south.

[2009] - inspected by Brian Haugen and Steve Miller.
[2011] - inspected by Robert Pyfferoen.
[2013] - inspected by Tom Miles.
[2015] - inspected by Gary Waletzki and Tony Bale assisted.
[2017] - inspected by Tom Miles and Chad Hockens
[2019] - inspected by Tom Miles.
[2021] - inspected by Keith Rosenau.

Deck: [6] [2013] - NBI 6 - Moderate deck cracking and rebar spalls on overhangs.

Brdg Railings: [1] [2021] - Type 03 - Meets standards for all speeds.

Superstructure: [5] [2017] - NBI 5 - Moderate spall at beam ends over piers with exposed rebar

Substructure: [5] [2017] - NBI 5 - Moderate delamination and spall on pier caps

Appr Roadway Alignment: [8] [2017] - NBI 8 - No speed reduction required.

MINNESOTA STRUCTURE INVENTORY REPORT

Bridge ID: 50804 **US 218 NB over I 90** Date: 05/11/2022

+ GENERAL +

Agency Br. No. **Crew** OWAT
District 6 **Maint. Area** 6B
County 50 - MOWER
City AUSTIN
Township
Desc. Loc. AT THE W JCT TH 218
Sect., Twp., Range 33 - 103N - 18W
Latitude 43d 40m 50.40s
Longitude 92d 59m 36.08s
Custodian STATE HWY
Owner STATE HWY
Insp Responsibility DISTRICT 6
Year Built 1966
Date Opened to Traffic 08-01-1986
MN Year Remodeled 1986
FHWA Year Reconstructed 1986
Bridge Plan Location CENTRAL
Potential ABC YES

+ STRUCTURE +

Service On HWY;PED
Service Under HIGHWAY
Main Span Type PRESTR BM SPAN
Main Span Detail
Appr. Span Type
Appr. Span Detail
Skew
Culvert Type
Barrel Length

Number of Spans
MAIN: 4 APPR: 0 TOTAL: 4

Main Span Length 55.9 ft
Structure Length 191.7 ft
Deck Width 49.0 ft
Deck Material C-I-P CONCRETE
Wear Surf Type LOW SLUMP CONC
Wear Surf Install Year 1986
Wear Course/Fill Depth
Deck Membrane NONE
Deck Rebars NONE
Deck Rebars Install Year
Structure Area 9,393 sq ft
Roadway Area 7,093 sq ft
Sidewalk Width - L/R 8.0 ft
Curb Height - L/R 0.83 ft 0.83 ft
Rail Codes - L/R 03 21

+ ROADWAY ON BRIDGE +

Facility US 218
Functional Class URB/OTH PR ART
ADT (YEAR) 6,550 (2019)
HCADT 590
National Highway System Y
Route Sys/Nbr (TIS) USTH 002
Ref. Point (TIS) 014+00.988
Detour Length 5 mi.
Lanes 2 Lanes ON Bridge
Control Section (TH Only) 5009
Function MAINLINE
Type 1 WAY TRAF
Bridge Match ID 2
Roadway Key 1-ON

+ RDWY DIMENSIONS ON BRIDGE +

If Divided	NB-EB	SB-WB
Roadway Width	37.0 ft	
Vertical Clearance		
Max. Vert. Clear.		
Horizontal Clear.	36.9 ft	
Appr. Surface Width	37.0 ft	
Bridge Roadway Width	37.0 ft	
Median Width on Bridge	NA	

+ MISC. BRIDGE DATA +

Structure Flared NO
Parallel Structure RIGHT
Field Conn. ID
Cantilever ID

Foundations
Abut. CONC - FTG PILE
Pier CONC - FTG PILE
Historic Status NOT ELIGIBLE
On - Off System ON

+ PAINT +

Year Painted
Painted Area
Primer Type
Finish Type

+ BRIDGE SIGNS +

Posted Load NOT REQUIRED
Traffic NOT REQUIRED
Horizontal OBJECT MARKERS
Vertical NOT REQUIRED

+ INSPECTION +

Deficient Status ADEQ
Sufficiency Rating 80.9
Last Routine Insp Date 09-16-2021
Routine Insp Frequency 24
Inspector Name DISTRICT 6
Status A-OPEN

+ NBI CONDITION RATINGS +

Deck	5
Superstructure	5
Substructure	6
Channel	N
Culvert	N

+ NBI APPRAISAL RATINGS +

Structure Evaluation	5
Deck Geometry	6
Underclearances	5
Waterway Adequacy	N
Approach Alignment	8

+ SAFETY FEATURES +

Bridge Railing	1-MEETS STANDARDS
GR Transition	1-MEETS STANDARDS
Appr. Guardrail	1-MEETS STANDARDS
GR Termini	1-MEETS STANDARDS

+ SPECIAL INSPECTIONS +

Frac. Critical N
Underwater N
Pinned Asbly. N

+ WATERWAY +

Drainage Area
Waterway Opening
Navigation Control NOT APPL
Pier Protection
Nav. Vert./Horz. Clr.
Nav. Vert. Lift Bridge Clear.
MN Scour Code A-NON WATERWAY
Scour Evaluation Year

+ CAPACITY RATINGS +

Design Load HS 20
Operating Rating HS 28.50
Inventory Rating HS 17.10
Posting
Rating Date 08-26-2003

Overweight Permit Codes
A: 1 B: 1 C: 1

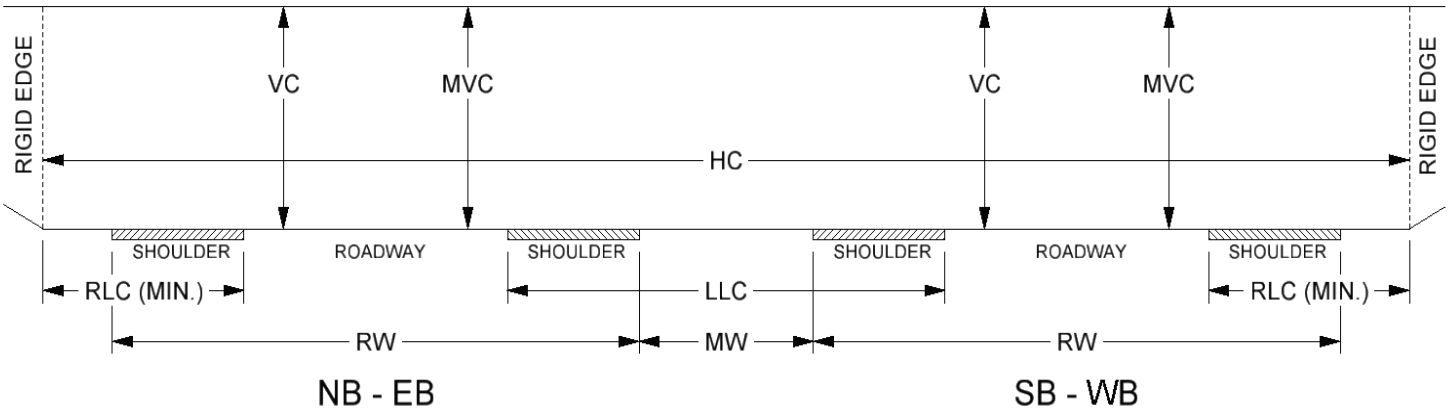
MINNESOTA STRUCTURE INVENTORY REPORT
Roadway Under Bridge

Bridge ID: 50804 I 90 under US 218 NB Date: 05/11/2022

+ FEATURES +			+ DIMENSIONS +			
Item Description	NBI (if appl)	Value	Item Description	Diagram Abbrev.	Values NB-EB	Values SB-WB *
Road Name		I 90	**Roadway Width**	RW	38.0 ft	38.0 ft
Functional Class.	26	URB/PR ART ISTH	**Vertical Clearance**	VC	17.3 ft	16.6 ft
ADT (YEAR)	29 (& 30)	18,316 (2019)	**Max. Vert. Clear**	MVC	17.3 ft	16.6 ft
HCADT	109	2,015	**Horizontal Clear**	HC	52.9 ft	52.9 ft
National Highway System	104	Y	**Lateral Clr. - Lt**	LLC	17.4 ft	
Route Sys/Nbr (TIS)		ISTH 90	**Lateral Clr. - Rt**	RLC	11.4 ft	
Ref. Point (TIS)		177+00.474	**Median Width**	MW	30.0 ft	
Detour Length	19	5 mi.				
Lanes	28B	4 Lanes UNDER Bridge				
Control Section (TH Only)		5080				
Function	5C	MAINLINE				
Type	102	2 WAY TRAF				
Bridge Match ID		1				
Roadway Key	5A	2-UNDER				

* Entered only if this record is for a divided roadway

DIVIDED HIGHWAY WITHOUT MEDIAN OBSTRUCTION



RIGID EDGE IS A TOE OF SLOPE STEEPER THAN 1 TO 3 OR A FIXED OBJECT SUCH AS GUARDRAIL, PIER STRUT OR OTHER BARRIER.

LLC (LEFT LATERAL CLEARANCE) IS THE MEASUREMENT BETWEEN OUTSIDE ROADWAY EDGES.

RLC (RIGHT LATERAL CLEARANCE) IS THE MEASUREMENT FROM THE OUTSIDE EDGE OF THE ROADWAY TO THE RIGID EDGE. RIGHT IS DETERMINED WHEN FACING THE DIRECTION OF TRAVEL. RLC IS THE MINIMUM DIMENSION AFTER MEASURING IN BOTH DIRECTIONS.

05/11/2022
Crew: OWAT
Insp Responsibility: DISTRICT 6

MINNESOTA BRIDGE INSPECTION REPORT

BRIDGE 50804 US 218 NB OVER I 90 **INSP. DATE: 09-16-2021**

County: MOWER
City: AUSTIN
Township:
Section: 33 Township: 103N Range: 18W
Main Span Type: PRESTR BM SPAN

Location: AT THE W JCT TH 218
Route (TIS): USTH 002 Ref Pt (TIS): 014+00.988
Control Section: 5009 Maint. Area: 6B
Local Agency Bridge Nbr:

Length: 191.7 ft
Deck Width: 49.0 ft
Rdwy. Area 7,093 sq ft
Paint Area
Culvert : N/A

NBI Deck: 5 Super: 5 Sub: 6 Chan: N Culv: N

Open, Posted, Closed: OPEN

Appraisal Ratings - Approach: 8 Waterway: N

MN Scour Code: A-NON WATERWAY Def. Stat: ADEQ Suff. Rate: 80.9

Required Bridge Signs - Load Posting: NOT REQUIRED Traffic: NOT REQUIRED
Horizontal: OBJECT MARKERS Vertical: NOT REQUIRED

ELEM NBR	ELEMENT NAME	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
800	CRITICAL DEFS OR SAFETY HAZARDS	09-16-2021	1 EA	1	0	0	0
		09-25-2019	1 EA	1	0	0	0

Notes: [2013-2021] - No critical findings were observed at the time of this inspection.

12	REINFORCED CONCRETE DECK	09-16-2021	9,393 SF	8,997	42	354	0
		09-25-2019	9,393 SF	9,009	42	342	0

Notes: There are scattered transverse cracks and corner diagonal cracks beneath the deck with some leaching or efflorescence showing. There are a few areas of delaminated concrete along some of the transverse cracks. The slab is tight together over pier 3 causing spalling along the overhang.

Span 1 -
[2015] - 1' x 20" rebar spall and a 1' x 3' delamination between G1-G2. Between G2-G3 has a full length longitudinal crack with rust staining.
[2017] - 6' of cracking under the west overhang. 18'x1' spall between G2/G3. 6"x3' delamination and rebar spall between G1/G2. 48' of transverse cracking and staining.
[2019] - 41' of cracks (4sf-CS2). 2sf of delamination between G4/G5 (2sf-CS2). 4sf of spall between G1/G2 (4sf-CS3). 86sf of deterioration (86sf-CS3).
[2021] - No change.

Span 2 -
There are several small delaminated area beneath the deck located over the east bound right shoulder 6 sq ft.
[2015] - Delamination are now rebar spalls over the shoulder between G1-G2, G5-G6, and G6-G7. Full length longitudinal crack between G3-G4 with rust staining. [2017] - 12' of cracking under the west overhang. 3'c2' spall between G6/G7. (2) 8'x1' areas of cracking and delamination. 3'x2' spall between G5/G6. 3'x3' spall between G1/G2 at the south end. 2' x length of span staining and deterioration between G3/G4.
[2019] - 37' of cracks (4sf-CS2). 32sf of spall (32sf-CS3). 128sf of deterioration between G3/G4 and GG7 (128sf-CS3). 1sf of patch (1sf-CS2).
[2021] - There is spalled area that are 1'x4" between G3-G4 . (4'-CS3).

Span 3 -
4 delaminated areas some over traffic between G6-G7 both lanes. 2 - 20' long cracks with rust staining between G4-G5 . Delaminated area over pier 3 west side. [2017] - 28' of cracking under the west overhang. 2/3 length of span x 2' wide cracking and staining between G3/G4. 2'x2' delamination between G4/G5. 35"x46" spall and delamination on the west side of pier 3. 4'x2' delamination over the median guardrail between G6/G7. 1'x1', 3'x1', and 2'x2' rebar spall
[2019] - 18' of cracks (2sf-CS2). 12sf of delamination between G6/G7 (12sf-CS2). 9sf of spall between G6/G7 (9sf-CS3). 60sf of deterioration between G3/G4 (60sf-CS3).
[2021] - There are 2 spalled area that is 1'x4" and 1'x3' over the Left lane EB between G6-G7. (7'-CS3)

Span 4 -
1' x 2' rebar spall over pier 3 west side. 20' long rust stained crack between G2-G3. 4 delaminated areas between G4-G5.
[2017] - 19'x2' area of crack staining and saturated concrete between G2/G3. 1'x3' and 2'x3' delamination. 35' of cracking.
[2019] - 27' of cracks (3sf-CS2). 15sf of delamination (15sf-CS2). 3sf of spall over pier 3 (3sf-CS3). 20sf of deterioration between G2/G3 (20sf-CS3).
[2021] - No change.

510	*WEARING SURFACE*	*09-16-2021*	*7,093 SF*	*6,945*	*148*	*0*	*0*
		09-25-2019	*7,093 SF*	*6,945*	*148*	*0*	*0*

Notes: Low Slump Overlay with Uncoated Rebar Notes: A low slump concrete overlay was placed in 1986.

There is a 6" X 10' patched area at the south end of the deck along the pourable joint in the right hand lane. There is a 6" x 8" spall over pier 2 at the pourable joint intersection at the centerline.
[2015] - Several small spalls next to both of the strip seal joints.
[2017] - 1'x1' patch on centerline over pier 2 (1sf-CS2). 600lf of sealed deck cracks
{2019] - 1468' of cracks x 0.1 = (147sf-CS2)
[2021] - No change.

810	CONC WEAR SURF-CRACKING SEALING	09-16-2021	1,468 LF	0	1,468	0	0
		09-25-2019	1,468 LF	0	1,468	0	0

Notes: NOTE: 1468 LF of cracks were sealed under contract in 2016.
[2017] - There are approximately 1468lf of sealed deck cracks
[2019-2021] - No change.

300	STRIP SEAL DECK JOINT	09-16-2021	76 LF	0	0	76	0
		09-25-2019	76 LF	0	0	76	0

Notes: Pier1 -
[2019] - The joint measures 1" (CS3)
[2021] - The measurement was 3/4".

Pier 2 -
[2017] - Joint over pier 2 is leaking onto the pier cap from under the right lane. (2'-CS2)
[2019] - The measurement was 3/4" (CS3)
[2021] - The measurement was 1/2".

330	METAL BRIDGE RAILING	09-16-2021	192 LF	182	10	0	0
		09-25-2019	192 LF	182	10	0	0

Notes: There is single line concrete railing on the west side and solid F type concrete railing on the east side with a chain link fence mounted along the top of the railing.

East Rail -
[2017] - All the anchor bolts have surface corrosion. cross bracing has separated on 5th panel from south. (10'-CS2)
[2019-2021] - No change.

515	*STEEL PROTECTIVE COATING*	*09-16-2021*	*1,152 SF*	*1,037*	*0*	*115*	*0*
		09-25-2019	*1,152 SF*	*1,037*	*0*	*115*	*0*

Notes: [2017] - The chain link fence has failed paint on all posts, bracing, and anchors
[2019] - (10%-CS3 and the rest CS1)
[2021] - No change.

331	REINFORCED CONC BRIDGE RAILING	09-16-2021	382 LF	285	57	0	40
		09-25-2019	382 LF	285	57	0	40

Notes: There is single line concrete railing on the west side and solid F type concrete railing on the east side with a chain link fence mounted along the top of the railing.
Both railings were cleaned and sealed in 2007.

West Rail -
6 to 8 scattered posts with vertical or random cracks.
[2017] - No change
[2019] - Posts are sheared over pier 3 (40'-CS4)
[2021] - No change.

East Rail -
4 to 5 vertical cracks per rail section with some staining or leaching.
[2017] - New paint. No staining or leaching noted.
[2019-2021] - No change.

321	CONCRETE APPROACH SLAB	09-16-2021	2,989 SF	2,954	15	20	0
		09-25-2019	2,989 SF	2,954	15	20	0

Notes: New approach in both lanes on south end and left lane on north end by Owatonna Bridge Crew.

North Approach Slab -
[2017] - The left lane has 7 sf of spall (7sf-CS3). 1 unsealed transverse crack (13x0.1=1sf-CS2).
[2019] - There is 95' of cracking (10SF-CS2)
[2021] - No change.

South Approach Slab -
[2017] - There is 1 unsealed transverse crack across both lanes (49'x0.1=5sf-CS2). 6' of spall on the right shoulder at the SE corner (6sf-C32)
[2019] -There is 7sf of spalling (7SF-CS3).

[2021] - No change.

205	REINFORCED CONCRETE COLUMN	09-16-2021	9 EA	6	3	0	0
		09-25-2019	9 EA	6	3	0	0

Notes: Pier 1 Columns -
[2017] - 3 radial cracks on bottom of column 1. Surface cracking on column 3.
[2019-2021] - No change.

Pier 2 Columns -
No deterioration noted.
[2017-2021] - No change.

Pier 3 Columns-
Column 3 has random cracking withy some staining along the east and north side.
[2017-2021] - No change.

215	REINFORCED CONCRETE ABUTMENT	09-16-2021	175 LF	132	40	3	0
		09-25-2019	175 LF	132	40	3	0

Notes: South Abutment -
There are 11 vertical cracks scattered across the front face and end diaphragms with some leaching. There is a small 4" X 7" rebar spall in the front face located 2 feet in from the west end (CS3). The front face is stained due to water leaking through the end diaphragm joint ends where the conduit pipes extend through the end diaphragm and at each end.
[2017] - 7' of staining and leaking. utility pipes between G3/G4 are leaking onto the abutment
[2019-2021] - No change.

North Abutment -
There are 11 vertical cracks scattered across the front face and end diaphragms with some leaching. The front face is stained due to water leaking through the end diaphragm joint ends and where the conduit pipes extend through the end diaphragm and at the east end.
[2017] - 15' of staining
[2019-2021] - No change.

Wingwall Notes -
SW wing - 1 minor diagonal crack near the bottom. SE wing - 2 minor horizontal cracks. NW wing - short minor vertical crack near the bottom next to the bridge seat.
[2021] - No change.

234	REINFORCED CONCRETE PIER CAP	09-16-2021	147 LF	117	25	5	0
		09-25-2019	147 LF	117	25	5	0

Notes: Pier 1 -
There is 2 areas of random cracking along the bottom between columns 1 & 2 and a vertical crack on the north side near the center between columns 1 & 2 (3'-CS2). Both ends of the cap have short vertical or random cracks (2'-CS2).
[2015] - No change.
[2017] - 9"x10" delamination on west end and a 4"x4" rebar spall at lower corner (1'-CS3)
[2019] - 10 small patches on south side near east end (10'-CS2). Shear cracking over column 1 on both sides. (4'-CS3)
[2021] - No change.

Pier 2 -
There are 3 vertical cracks on both sides of the cap over column 1 (3'-CS2).
[2015-2021] - No change.

Pier 3 -
2 transverse cracks along the bottom between columns 1 & 2 that extend under the cap (3'-CS2). There is a diagonal crack on the south side over column 2 (1'-CS2). There is a horizontal crack along the top edge over column with a possible area of delaminated concrete (1'-CS2). Both ends of the cap have 1 short vertical crack with leaching (2'-CS2).
[2015-2021] - No change.

109	PRESTRESSED CONC GIRDER OR BEAM	09-16-2021	1,370 LF	1,309	34	27	0
		09-25-2019	1,370 LF	1,309	34	27	0

Notes: Span 1 -
The west fascia has a small 2" X 4" rebar spall along the bottom flange over pier 1. Girder 3 has a vertical and small 6" X 6" rebar spall at the north end.
[2017] - 41" hairline crack on the top flange of the east fascia at the south abutment. 4' of chair staining (CS2)
[2019-2021] - No change.

Span 2 -
The west fascia girder has a small 4" X 8" rebar spall on the bottom flange over pier 1, a small 4" X 1' spall along the web over pier 1 and 4 small rust spots along the web. Girders 3, 5 & 6 have small patched areas along the top flange over the

right hand shoulder. Girders 2, 3, 4 & 5 all have small cracks and delaminated areas over pier 1 and girders 3, 4 & 5 also have small spalled areas along the bottom flanges.
[2017] - 12' of chair staining (CS2)
[2019-2021] - No change.

Span 3 -
The west fascia girder on the west side over pier 3 has a 1' X 1' rebar spall on the bottom web and 2" X 3" rebar spall on the bottom of the bottom flange.
[2015] - The crack and delamination is now a 1' x 1' rebar spall. Girders 2, 3,4, 5, 6 & 7 each have small rebar spall at the north end over pier 3. Girder 3 has a vertical rebar spall on the east side over the centerline.
[2017] - 12' of chair staining (CS2)
[2019-2021] - No change.

Span 4 -
The west fascia girder along the west side over pier 3 has a small 6"x6" rebar spall on the bottom flange. Girder 2 has 1' X 1' rebar spall and full width crack along the bottom over pier 3. Girder 3 has a small spalled area along the bottom flange on the east side over pier 3.
[2017] - 4' of chair staining (CS2) 1'x3' and 2'x3' delamination (CS3)
[2019-2021] - No change.

311	EXPANSION BEARING	09-16-2021	18 EA	0	18	0	0
		09-25-2019	18 EA	0	18	0	0

Notes: Moveable bearings are located along the north side of pier 1 and along the south side of pier 2.

[2017-2021] - All expansion bearings have minor surface corrosion on the bottom plates (CS2).

313	FIXED BEARING	09-16-2021	46 EA	0	46	0	0
		09-25-2019	46 EA	0	46	0	0

Notes: Fixed bearings are located at both abutments, along the south side of pier 1, along both sides of pier 2 and along the north side of pier 3.

[2017-2021] - All fixed bearings have minor surface corrosion on the bottom plates (CS2).

855	SECONDARY MEMBERS (SUPER)	09-16-2021	1 EA	0	1	0	0
		09-25-2019	1 EA	0	1	0	0

Notes: CIP concrete diaphragms

[2019] - There is leaching cracks in end diaphragms. end diaphragms are back from the abutment face approximately 6 1/2" at the east corners. (Assumed to be due to the widening)
[2021] - No change.

883	CONCRETE SHEAR CRACKING	09-16-2021	1 EA	0	1	0	0
		09-25-2019	1 EA	0	1	0	0

Notes: [2017] - No shear cracking noted
[2019] - Minor shear cracking over column 1 on pier 1.
[2021] - No change.

891	OTHER BRIDGE SIGNING	09-16-2021	1 EA	0	1	0	0
		09-25-2019	1 EA	0	1	0	0

Notes: Horizontal Delineators -
[2013-2019] - All signs were in place and in good condition at the time of this inspection.

Bridge ID signs next to piers -
[2015] - The sign read 50804 for both bridges.
[2017-2021] - IDs now read 50803 for both bridges

892	SLOPES & SLOPE PROTECTION	09-16-2021	1 EA	1	0	0	0
		09-25-2019	1 EA	1	0	0	0

Notes: There are scattered minor random cracks in the original slope protection blocks.
[2017-2021] - No change.

893	GUARDRAIL	09-16-2021	1 EA	0	0	1	0
		09-25-2019	1 EA	0	0	1	0

Notes: [2015] - There is failing galvanizing in all sections. All guard railing sections were intact at the time of this inspection.
[2017] - The median guardrail is corroded with section loss.
[2019-2021] - No change.

894	DECK & APPROACH DRAINAGE	09-16-2021	1 EA	1	0	0	0
		09-25-2019	1 EA	1	0	0	0

Notes: [2015] - No drainage issues.

[2017] - There is an open joint along the edge of the catch basin casting at the NE corner.
[2019-2021] - No change.

895	SIDEWALK, CURB, & MEDIAN	09-16-2021	1 EA	0	0	1	0
		09-25-2019	1 EA	0	1	0	0

Notes: West Side - nearly the entire front face has horizontal cracking with some spalls or rebar spalls. The back of the curb over pier 3 is cracked and delaminated. There are 9 sidewalk sections that have delamination and rebar spalling.
[2015] Pier 3 back of curb now spall 1' x 16" also a 2' x 4' delaminated area south of the curb plate. 1' x 2' spall at back of curb over pier 1.
[2017] - sidewalk curb plates have raised up
[2019] - Rail is tight over pier 3.
[2021] - The west curb has extensive horizontal cracking and moderate spalling.

East Side - the sidewalk has scattered transverse cracks with numerous areas of superficial map cracking.
[2015] 1' x 3' settled/spalled area next to south E-8 joint. Small spall on the south curb next to poured joint.
[2017] - sidewalk curb plates have raised up
[2019-2021] - No change.

899	MISCELLANEOUS ITEMS	09-16-2021	1 EA	0	1	0	0
		09-25-2019	1 EA	0	1	0	0

Notes: The vertical cork joints between the wingwalls and the abutments have deteriorated.
[2017-2021] - No change.

Two conduit lines between girders 3 and 4
[2019] - The conduits are heavily corroded at abutments.
[2021] - No change.

900	PROTECTED SPECIES	09-16-2021	1 EA	0	1	0	0
		09-25-2019	1 EA	0	1	0	0

Notes: [2021] - No protected species were noted at the time of this inspection.

General Notes: BR50804
NOTE: All girders, columns and bearings are numbered from the west and all spans and piers are numbered from the south.

[2013] - inspected by Gary Waletzki.
[2015] - inspected by Gary Waletzki and Tony Bale.
[2017] - inspected by Tom Miles and Chad Hockens
[2019] - inspected by Tom Miles.
[2021] - inspected by Keith Rosenau.

Deck: [5] [2017] - NBI 5 - Moderate underdeck spalling.

Brdg Railings: [1] [2021] - Type 03 and 21 - Meets standards for <40mph.

Superstructure: [5] [2017] - NBI 5 - Moderate spall at beam ends with exposed reinforcement.

Substructure: [6] [2017] - NBI 6 - Minor delamination and spall on pier caps.

Appr Roadway Alignment: [8] [2015] - NBI 8 - No speed reduction required.

MINNESOTA STRUCTURE INVENTORY REPORT

Bridge ID: 9180 **CSAH 45 over I 90** Date: 05/11/2022

+ GENERAL +

Agency Br. No. **Crew** OWAT
District 6 **Maint. Area** 6B
County 50 - MOWER
City AUSTIN
Township
Desc. Loc. 0.7 MI E OF W JCT TH 218
Sect., Twp., Range 34 - 103N - 18W
Latitude 43d 40m 49.98s
Longitude 92d 58m 47.02s
Custodian STATE HWY
Owner STATE HWY
Insp Responsibility DISTRICT 6
Year Built 1959
Date Opened to Traffic 01-01-1960
MN Year Remodeled
FHWA Year Reconstructed
Bridge Plan Location CENTRAL
Potential ABC YES

+ STRUCTURE +

Service On HWY;PED
Service Under HIGHWAY
Main Span Type PRESTR BM SPAN
Main Span Detail
Appr. Span Type
Appr. Span Detail
Skew 10R
Culvert Type
Barrel Length

Number of Spans
MAIN: 4 APPR: 0 TOTAL: 4

Main Span Length 44.5 ft
Structure Length 143.0 ft
Deck Width 64.3 ft
Deck Material C-I-P CONCRETE
Wear Surf Type LOW SLUMP CONC
Wear Surf Install Year 1983
Wear Course/Fill Depth 0.25 ft
Deck Membrane NONE
Deck Rebars NONE
Deck Rebars Install Year
Structure Area 9,195 sq ft
Roadway Area 7,438 sq ft
Sidewalk Width - L/R 5.0 ft 5.0 ft
Curb Height - L/R 0.67 ft 0.67 ft
Rail Codes - L/R 19 19

+ ROADWAY ON BRIDGE +

Facility CSAH 45
Functional Class URB/MINOR ART
ADT (YEAR) 11,400 (2016)
HCADT
National Highway System N
Route Sys/Nbr (TIS) CSAH 45
Ref. Point (TIS) 006+00.100
Detour Length 5 mi.
Lanes 4 Lanes ON Bridge
Control Section (TH Only)
Function MAINLINE
Type 2 WAY TRAF
Bridge Match ID 2
Roadway Key 1-ON

+ RDWY DIMENSIONS ON BRIDGE +

If Divided	NB-EB	SB-WB
Roadway Width	52.0 ft	
Vertical Clearance		
Max. Vert. Clear.		
Horizontal Clear.	51.9 ft	
Appr. Surface Width	52.0 ft	
Bridge Roadway Width	52.0 ft	
Median Width on Bridge	NA	

+ MISC. BRIDGE DATA +

Structure Flared NO
Parallel Structure NONE
Field Conn. ID
Cantilever ID

Foundations
Abut. CONC - FTG PILE
Pier CONC - FTG PILE
Historic Status NOT ELIGIBLE
On - Off System ON

+ PAINT +

Year Painted
Painted Area
Primer Type
Finish Type

+ BRIDGE SIGNS +

Posted Load NOT REQUIRED
Traffic NOT REQUIRED
Horizontal NOT REQUIRED
Vertical NOT REQUIRED

+ INSPECTION +

Deficient Status F.O.
Local Planning Index 68
Last Routine Insp Date 09-21-2021
Routine Insp Frequency 24
Inspector Name DISTRICT 6
Status A-OPEN

+ NBI CONDITION RATINGS +

Deck	5
Superstructure	6
Substructure	5
Channel	N
Culvert	N

+ NBI APPRAISAL RATINGS +

Structure Evaluation	5
Deck Geometry	4
Underclearances	3
Waterway Adequacy	N
Approach Alignment	8

+ SAFETY FEATURES +

Bridge Railing 0-SUBSTANDARD
GR Transition N-NOT REQUIRED
Appr. Guardrail N-NOT REQUIRED
GR Termini N-NOT REQUIRED

+ SPECIAL INSPECTIONS +

Frac. Critical N
Underwater N
Pinned Asbly. N

+ WATERWAY +

Drainage Area
Waterway Opening
Navigation Control NOT APPL
Pier Protection
Nav. Vert./Horz. Clr.
Nav. Vert. Lift Bridge Clear.
MN Scour Code A-NON WATERWAY
Scour Evaluation Year

+ CAPACITY RATINGS +

Design Load HS 20
Operating Rating HS 36.80
Inventory Rating HS 26.80
Posting
Rating Date 07-25-2003

Overweight Permit Codes
A: 1 B: 1 C: 1

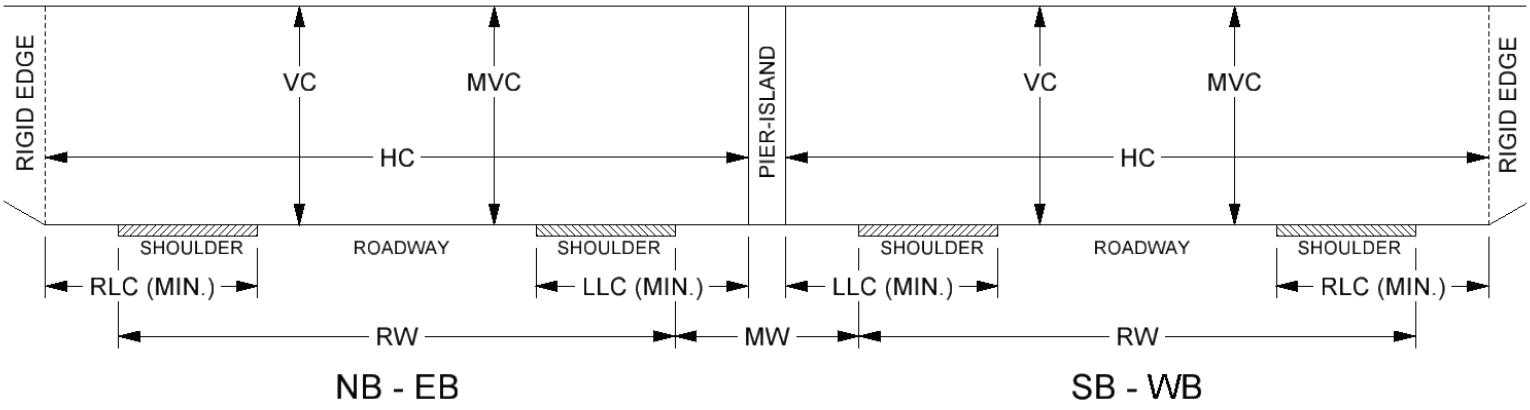
MINNESOTA STRUCTURE INVENTORY REPORT
Roadway Under Bridge

Bridge ID: 9180 I 90 under CSAH 45 Date: 05/11/2022

+ FEATURES +			+ DIMENSIONS +			
Item Description	NBI (if appl)	Value	Item Description	Diagram Abbrev.	Values NB-EB	Values SB-WB *
Road Name		I 90	**Roadway Width**	RW	40.5 ft	40.5 ft
Functional Class.	26	URB/PR ART ISTH	**Vertical Clearance**	VC	16.9 ft	16.8 ft
ADT (YEAR)	29 (& 30)	18,316 (2019)	**Max. Vert. Clear**	MVC	16.9 ft	16.8 ft
HCADT	109	2,015	**Horizontal Clear**	HC	40.8 ft	40.8 ft
National Highway System	104	Y	**Lateral Clr. - Lt**	LLC	5.4 ft	
Route Sys/Nbr (TIS)		ISTH 90	**Lateral Clr. - Rt**	RLC	9.4 ft	
Ref. Point (TIS)		178+00.156	**Median Width**	MW	3.0 ft	
Detour Length	19	5 mi.				
Lanes	28B	4 Lanes UNDER Bridge				
Control Section (TH Only)		5080				
Function	5C	MAINLINE				
Type	102	2 WAY TRAF				
Bridge Match ID		1				
Roadway Key	5A	2-UNDER				

* Entered only if this record is for a divided roadway

DIVIDED HIGHWAY WITH MEDIAN OBSTRUCTION



RIGID EDGE IS A TOE OF SLOPE STEEPER THAN 1 TO 3 OR A FIXED OBJECT SUCH AS GUARDRAIL, PIER STRUT OR OTHER BARRIER.

LLC (LEFT LATERAL CLEARANCE) IS THE MEASUREMENT FROM THE OUTSIDE EDGE OF THE ROADWAY TO THE RIGID EDGE. LEFT IS DETERMINED WHEN FACING THE DIRECTION OF TRAVEL. LLC IS THE MINIMUM DIMENSION AFTER MEASURING IN BOTH DIRECTIONS.

RLC (RIGHT LATERAL CLEARANCE) IS THE MEASUREMENT FROM THE OUTSIDE EDGE OF THE ROADWAY TO THE RIGID EDGE. RIGHT IS DETERMINED WHEN FACING THE DIRECTION OF TRAVEL. RLC IS THE MINIMUM DIMENSION AFTER MEASURING IN BOTH DIRECTIONS.

05/11/2022
Crew: OWAT
Insp Responsibility: DISTRICT 6

MINNESOTA BRIDGE INSPECTION REPORT

BRIDGE 9180 CSAH 45 OVER I 90 **INSP. DATE: 09-21-2021**

County: MOWER
City: AUSTIN
Township:
Section: 34 Township: 103N Range: 18W
Main Span Type: PRESTR BM SPAN

Location: 0.7 MI E OF W JCT TH 218
Route (TIS): CSAH 45 Ref Pt (TIS): 006+00.100
Control Section: Maint. Area: 6B
Local Agency Bridge Nbr:

Length: 143.0 ft
Deck Width: 64.3 ft
Rdwy. Area 7,438 sq ft
Paint Area
Culvert : N/A

NBI Deck: 5 Super: 6 Sub: 5 Chan: N Culv: N

Open, Posted, Closed: OPEN

Appraisal Ratings - Approach: 8 Waterway: N

MN Scour Code: A-NON WATERWAY Def. Stat: F.O. Suff. Rate: 60.0

Required Bridge Signs - Load Posting: NOT REQUIRED Traffic: NOT REQUIRED
Horizontal: NOT REQUIRED Vertical: NOT REQUIRED

ELEM NBR	ELEMENT NAME	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
800	CRITICAL DEFS OR SAFETY HAZARDS	09-21-2021	1 EA	1	0	0	0
		09-24-2019	1 EA	1	0	0	0

Notes: [2013-2021] - No critical findings were observed at the time of this inspection.

12	REINFORCED CONCRETE DECK	09-21-2021	9,195 SF	8,733	341	121	0
		09-24-2019	9,195 SF	8,733	341	121	0

Notes: [2017-2021] - All spans have areas of deterioration. 224lf of moderate cracks (224x0.1=22sf-CS2). 319sf of sound patches (319sf-CS3). 121sf of spalls and delamination (121sf-CS3).

Span #1 -
[2015] - There are scattered transverse and random cracks with efflorescence and some rust stains beneath the deck, a small spalled area in Span 1 and several full depth patched areas.

Span #2 -
[2015] - There are scattered transverse and random cracks with efflorescence and some rust stains beneath the deck. There are no areas of delaminated concrete beneath the deck, over traffic lanes.

Span #3 -
[2015] - There are scattered transverse and random cracks with efflorescence and some rust stains beneath the deck. There are no areas of delaminated concrete beneath the deck, over traffic lanes.

Span #4 -
[2015] - There are scattered transverse and random cracks with efflorescence and some rust stains beneath the deck.

510	*WEARING SURFACE*	*09-21-2021*	*7,438 SF*	*6,697*	*727*	*14*	*0*
		09-24-2019	*7,438 SF*	*6,704*	*727*	*7*	*0*

Notes: Low Slump Overlay with Uncoated Rebar Notes: A low slump concrete overlay was placed in 1983.

There are scattered cracks that are delaminated. The distressed surface area of spalls and delamination is greater than 2%.
[2017] - 172sf of solid patches. 2000' of deck cracks.
[2019] - 172sf of solid patches (172sf-CS2). 4385' of deck cracks (4385x0.1=439sf-CS2). 16sf of delamination (16sf-CS2). 7sf of spall (7sf-CS3).

Span # 1 -
[2013] - Has a patched area next to the compression joint in the left hand lane approximately 1' X 1'. 1' x 1' spall south end, north bound lane at center line. 3' x 12' cracking delaminated area with 3 bituminous patches, south bound right hand lane at pier 1. There is a 1.5' x 12' patched area along the west side of the deck adjacent to the joint over pier 1.
[2015-2021] - No change.

Span #2 -
[2015] - 2 patched areas. South bound , right hand lane 3' x 8'. Left hand lane at pier 1, 3' x 4'.
[2017-2019] - No change.
[2021] - 1'x6" spall at the north end near centerline and a 2'x2' bituminous patch in the left lane at the south end (3sf-CS3).

Span # 3 -
[2019] - No deterioration noted.
[2021] - 1'x3' spall at the north end near centerline and a 3"x3" spall at the east end (4sf-CS3).

Span # 4 -

[2015] - 2 small spalled areas, one 2" X 2" spall is near the centerline, the other spall is 8" X 8" and is in the right hand lane north bound side. Appears to be slightly higher than span 3 across the entire length, plus or minus 1/4". South bound lane has 2 cracked and delaminated areas; 2' x 4' right hand lane and 3' x 8' left hand lane. North bound lane has 2' x 5' concrete patch at the north end, right hand lane.
[2017-2021] - No change.

810	CONC WEAR SURF-CRACKING SEALING	09-21-2021	4,385 LF	0	4,385	0	0
		09-24-2019	4,385 LF	0	4,385	0	0

Notes: NOTE: 4385 LF of cracks were sealed under contract in 2016.
[2017] - Approximately 4385lf of sealed deck cracks.
[2019] - Cracks remain mostly sealed.
[2021] - Cracks sealant has deteriorated.

301	POURED SEAL JOINT	09-21-2021	575 LF	56	180	155	184
		09-24-2019	575 LF	438	129	1	7

Notes: [2013] - All deck joints have small areas where the joint material has lost adhesion. There are areas of lost adhesion and spalling concrete along some joints at the approach slabs.
[2015] - Joints are spalled at both ends and at the north approach panel.
[2017] - 65' of joint with lost adhesion on the south end (65'-CS2). 64' of lost adhesion on the north end (64'-CS2). 15' of delamination adjacent to joint (1'-CS3). 7' of spall adjacent to joint (7'-CS4).
[2019] - No change.
[2021] - All but 56lf of joints are unsealed missing or spalled.

South approach -
[2021] - Unsealed, missing or spalled.

Pier #1 -
[2021] - Has 12lf of joint that remains sealed.

Pier #2 -
[2021] - Has 20lf of joint that remains sealed.

Pier #3 -
[2021] - Has 24lf of joint that remains sealed.

North approach -
[2021] - Unsealed missing or spalled.

330	METAL BRIDGE RAILING	09-21-2021	286 LF	283	3	0	0
		09-24-2019	286 LF	283	3	0	0

Notes: The railing consists of single line concrete railing with two lines of aluminum pipe railing mounted on top.

West Rail -
[2017] - 9th and11th post from the south on the west rail has damage on top (aluminum is missing) (2'-CS2).
[2019-2021] - No change.

East Rail -
[2017] - The 3rd post from the south on the east rail is missing a piece (1'-CS2).
[2019-2021] - No change.

331	REINFORCED CONC BRIDGE RAILING	09-21-2021	286 LF	242	44	0	0
		09-24-2019	286 LF	242	44	0	0

Notes: The railing consists of single line concrete railing with two lines of aluminum pipe railing mounted on top.

West Rail -
[2015] - There are a few concrete railing posts with minor vertical or random cracks. The concrete railing section have scattered areas of light scaling and 1 vertical crack located near the center. Both railings were cleaned and sealed in 2007.
[2017] - Majority of posts have spall at the base on both sides (44'-CS2).
[2019-2021] - No change.

East Rail -
[2015] - There are a few concrete railing posts with minor vertical or random cracks. The concrete railing section have scattered areas of light scaling and 1 vertical crack located near the center. Both railings were cleaned and sealed in 2007.
[2017] - Majority of posts have spall at the base on both sides (44'-CS2).
[2019] - NE end post has a 9"x6" spall.
[2021] - No change.

321	CONCRETE APPROACH SLAB	09-21-2021	3,360 SF	0	1,680	1,680	0
		09-24-2019	3,360 SF	0	1,680	1,680	0

Notes: South Approach Slab -
[2013] - 1 full width unsealed transverse crack. There is a patch in the north bound lane next to the joint. There is an area of random cracking with delamination along the west side next to the gutter and a small spall along the east side gutter. The approach sidewalks at the southwest and southeast corners have settled as much as 1 to 2 inches. South bound near center, right hand lane has a 4' x 5' area of random cracking with delamination. North bound, south end, right hand lane has a 1' x 12' concrete patch.
[2015] - Transverse cracks across all lanes 2' and 4' feet from poured joint. Areas of delaminated concrete after sounding with chain. Full width unsealed transverse crack 8 feet from north of joint and 12 feet north of joint this is roadway to approach.
[2017] - 100sf of patches. 7sf of spall. 250' of cracks. Overall significant deterioration (CS3).
[2019-2021] - No change.

North Approach Slab -
[2013] - 1 full width unsealed transverse crack. There is a small set-45 patch in the north bound lane at the bridge end. There is an area of new concrete repair (2011) along NW curb and sidewalk. There are 2' wide by full lane width bituminous patches at the north end for the full width of the panel.
[2015] - At center line midway across deck 2' x 3' spall / delaminated and a 2' x 2' at north end right lane north bound. Full width delaminated area 3' feet wide out from E-8 joint.
[2017] - Overall moderate deterioration (CS2).
[2019-2021] - No change.

205	REINFORCED CONCRETE COLUMN	09-21-2021	12 EA	0	12	0	0
		09-24-2019	12 EA	0	12	0	0

Notes: Pier # 1 Columns -
All 4 columns have scattered minor random or vertical cracks. There is a small 3" X 5" rebar spall on the west side of column 1.
[2015] - All of the columns are suffering from concrete special surface treatment breaking down chipping and peeling off.
[2017] - 1 full height vertical crack on columns 2 and 3. 11"x6" spall on the east side of column 3.
[2019] - Col. 1 - 2 horizontal and 1 vertical crack. 4"x5" rebar spall on the west face. col. 2 - 2 vertical cracks. col. 3 - 5"x9" spall on east face at the crash wall.
[2021] - No change.

Pier # 2 Columns -
All 4 columns have minor vertical cracks on the north and south sides with columns 1 & 4 having horizontal cracks near the top. Columns 2 & 3 have 1 full height vertical cracks on east side.
[2015] - All of the columns are suffering from concrete special surface treatment breaking down chipping and peeling off.
[2017-2021] - No change.

Pier # 3 Columns -
All 4 columns have minor vertical cracks on the north and south sides with columns 1 & 4 having horizontal cracks near the top. Column 2 and 3 have areas of recent concrete repair (2011). Column 3 has a vertical crack at the northwest corner with a 6" x 54" with delamination. All of Pier 3 has new concrete surface treatment all around (2011).
[2015] - All of the columns are suffering from concrete special surface treatment breaking down chipping and peeling off.
[2017] - Horizontal cracks on columns 3 and 4.
[2019] - Col. 1 - 3.5"x4" spall on the SE edge. col. 2 - 2 vertical cracks on the south face. 4'x9" spall on the SE edge. col. 3 - 1"x11"x5" spall along the SW edge. 2 vertical and 1 horizontal crack. 8"x54" delamination on the NW edge. col. 4 - 4 rust stains from old guardrail connection.
[2021] - No change.

215	REINFORCED CONCRETE ABUTMENT	09-21-2021	175 LF	46	129	0	0
		09-24-2019	175 LF	46	129	0	0

Notes: Abutments are stained from leaking joints along end diaphragm. New concrete surface treatment (2011) at west end of abutment and wingwall.

South Abutment -
[2015] - 11 full height vertical cracks and several shorter vertical cracks scattered across the front face with some staining or leaching between girders 1 & 2 and 8 & 9. There are diagonal cracks with leaching at both outside end diaphragms. All end diaphragms have areas of horizontal or random cracking with leaching.
[2017] - 8"x6' delamination on the top of the abutment between G7/G8. 5'x15" delamination between G6/G7. 18" leaching horizontal crack at the SE corner. 10"x18" spall at the SW corner (100%-CS2).
[2019] - No change.
[2021] - Now delaminated along the top edge from girder 6 to girder 8. (CS2).

North Abutment -
[2015] - 15 full height vertical cracks scattered across the front face with some staining or leaching between girders 1 & 2

and 8 & 9. All end diaphragms have areas of horizontal or random cracking with leaching. There are diagonal cracks with leaching at both outside end diaphragms. The front face at east end is stained due to water leaking through the end diaphragm joint.
[2017] - 24 full height vertical cracks. 14' of scattered leaching and staining (100%-CS2).
[2019] - No change.
[2021] - 6"X6" spall under girder 1 (CS2).

Wingwall Notes -
[2011] - NW wing patched at the connection point to the abutment.
[2015] - SW wing - has horizontal leaching cracks near the bottom. SE wing - has horizontal leaching cracks near the bottom.
[2017-2021] - No change. Wings are all in CS1.

234	REINFORCED CONCRETE PIER CAP	09-21-2021	193 LF	121	72	0	0
		09-24-2019	193 LF	121	72	0	0

Notes: Pier # 1 -
[2015] - There are 2 vertical cracks in the bottom of the cap between each of the columns along both sides of the cap that extend onto the bottom. Near the bottom on both sides of the cap along those vertical cracks there are random cracks each 2 to 3 feet in length extending from the vertical cracks with areas of delaminated concrete. There is approximately 40 square feet of delaminated concrete.
[2017] - Horizontal cracking a few inches up along the bottom of the cap between the columns. cap is cracked and delaminated for 24'.
[2019] - 14'x1' delamination on the bottom edge between columns 3 and 4. (6) 3"x3" spall on the bottom between columns 1 and 2 and also between columns 3 and 4. 4'x6" delamination on the bottom edge between columns 2 and 3.
[2021] - No change.

Pier # 2 -
[2015] - There are 2 vertical cracks near the bottom in between all of the columns, some of the cracks extend under the cap.
North side - along the bottom edge between columns 1 & 2 and 2 & 3 are short horizontal cracks extending from the vertical cracks with areas of delaminated concrete. There is approximately 10 square feet of delaminated concrete. South side - Between columns 1 & 2 has horizontal crack near bottom by column 2 with delamination. Approximately 15sf.
[2017-2021] - No change.

Pier # 3 -
[2015] - There are 2 vertical cracks near the bottom in between all of the columns. All of Pier 3 has new concrete surface treatment all around (2011). South Side - has horizontal crack near the bottom between all columns. Top of pier cap has been patched (2011). North Side - has areas of repair (2011) along top and bottom of cap between columns.
[2017] - Patch between columns is deteriorated.
[2019] - 4' crack on north face between columns 2 and 3. full length horizontal crack on bottom between columns 2 and 3 and between columns 3 and 4. 11 vertical cracks.
[2021] - 8lf of deteriorated patches and rust stained delamination (CS-2).

109	PRESTRESSED CONC GIRDER OR BEAM	09-21-2021	1,465 LF	1,399	64	2	0
		09-24-2019	1,465 LF	1,399	64	2	0

Notes: Span #1 -
All girders have numerous small rust spots located along the bottom of the bottom flanges.
[2017] - Chair staining on all girders for the entire length (3"x1' CS2).
[2021] - No change.

Span # 2 -
All girders have numerous small rust spots located along the bottom of the bottom flanges.
[2015] - Girders 1, 2, 4, 7 & 9 have small patched areas on the west side of the bottom flanges due to high load impacts, most patches have random cracks and are discolored. The west fascia girder over pier 1 have 3/16 of an inch (plus or minus) gap between them with small 2" X 3" delaminated areas at the ends.
[2017] - Chair staining on all girders for the entire length (3"x1' CS2).
[2019] - No change.
[2021] - Partially patched areas on Girders 7, 9, and 1, covering exposed strands.

Span # 3 -
All girders have numerous small rust spots located along the bottom of the bottom flanges.
girders 1, 3, 8 & 11 have small chips on the east side of the bottom flanges due to high load impacts. The east fascia girder has a small 4" X 8" rebar spall at the south end along the bottom flange over pier 2. The west fascia girders over pier 3 have a 1/4 inch gap between them and a small 4" X 8" rebar spall along the bottom flange. West fascia girder has small chip bottom of bottom flange 8" x 8". Girder 6 at south end has a small spall at end of bottom flange over Pier 3. Girder 10 approximately 2 feet out from pier 2 has a vertical cracks along the web on the west side.
[2013] - Several interior beams have cracks and delamination at the end of beam webs over Pier 2

[2015] - No change.
[2017] - Chair staining on all girders for the entire length (3"x1' CS2). 4"x8" rebar spalls on both fascia beams of span 3 (2'-CS3).
[2019-2021] - No change.

Span # 4 -
All girders have numerous small rust spots located along the bottom of the bottom flanges.
[2015] - Girder 9 has a vertical crack in the web approximately 2 feet out from the north abutment.
[2017] - Chair staining on all girders for the entire length (3"x1' CS2).
[2019-2021] - No change.

311	EXPANSION BEARING	09-21-2021	22 EA	0	22	0	0
		09-24-2019	22 EA	0	22	0	0

Notes: Moveable bearings are located along the north side of pier 1 and along the south side of pier 3.

[2013-2015] - Bearings are functional with no LOS.
[2017] - All bearings have failed galvanizing with active surface corrosion (CS2).
[2019-2021] - No change.

313	FIXED BEARING	09-21-2021	40 EA	0	40	0	0
		09-24-2019	40 EA	0	40	0	0

Notes: Fixed bearings are located along the south side of pier 1, along both sides of pier 2 and the north side of pier 3. (abutment bearings are enclosed there for not rated)

[2013-2015] - Bearings are functional with no LOS.
[2017] - All fixed bearings have failed galvanizing with active surface corrosion.
[2019] - Flaking rust on bottom plates.
[2021] - No change.

855	SECONDARY MEMBERS (SUPER)	09-21-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: Concrete diaphragms.

[2017] - Cracked diaphragm between girders 7 and 8 over pier 1.
[2019-2021] - No change.

856	SECONDARY MEMBERS (SUB)	09-21-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: Crash barriers placed between the columns at piers 1 & 3 and the solid concrete jersey barrier along both sides of pier 2.

Pier # 1 -
[2015] - Each barrier has 1 vertical crack.
[2017-2021] - No change.

Pier # 2 -
[2015] - The wall between columns 2 & 3 along the north side has a 2 foot long area along the top edge that was impacted with a small spalled area as deep as 1 1/2 to 2 inches.
[2017-2021] - No change.

Pier # 3 -
[2015] - Each barrier has 1 vertical crack and each has exposed snap tie wires with active corrosion.
[2017-2021] - No change.

880	IMPACT DAMAGE	09-21-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: Check notes for element 109.
[2017-2021] - No change in condition. (CS2-due to patches)

883	CONCRETE SHEAR CRACKING	09-21-2021	1 EA	1	0	0	0
		09-24-2019	1 EA	1	0	0	0

Notes: [2017-2021] - No shear cracking noted.

892	SLOPES & SLOPE PROTECTION	09-21-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: South Slope -
[2015] - There are scattered concrete blocks with random cracks and heaving. There is a small washout along the southwest wingwall.
[2021] - Heaved up as much as 10"to12" at the east end.
[2017-2021] - No change.

North Slope -
[2015] - The rocks are covered with liquid bituminous, some areas are thinning with areas of vegetation growth. The west end of slope has been repaired (2011) with aggregate and grout.
[2017-2021] - No change.

893	GUARDRAIL	09-21-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: [2013-2015] - All guard railing sections were intact at the time of this inspection. The mentioned guardrail is under the bridge on I 90.
[2017] - Minor damage to all guardrail.
[2019] - Westbound guardrail damaged, end treatment damaged.
[2021] - No change.

894	DECK & APPROACH DRAINAGE	09-21-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: [2013-2015] - There are no drainage related issues.
[2017] - Ponding water along the east sidewalk.
[2019-2021] - No change.

895	SIDEWALK, CURB, & MEDIAN	09-21-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: West Side - The joint over piers have been patched and sealed.
East Side - The joint over piers have been patched and sealed.

[2015] - Settlement at sidewalk approaches NW, SW & SE corners have been repaired with a bituminous wedge.
[2017] - No change.
[2019-2021] - 2'x9" delamination over pier 1 and pier 2.

899	MISCELLANEOUS ITEMS	09-21-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: The vertical cork joints between the wingwalls and the abutments have deteriorated,
[2017-2021] - No change.

Metal conduit on outside of east facia,
[2019-2021] - No issues noted.

Utility conduit between east facia and 1st interior girder.
[2019-2021] - Leaking at abutments.

900	PROTECTED SPECIES	09-21-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: [2017-2021] - No protected species noted.

General Notes: Bridge 9180

NOTE: All girders, columns and bearings are numbered from the west and all spans and piers are numbered from the south.

[2011] - Inspected by Robert Pyfferoen.
[2013] - Inspected by Robert Pyfferoen.
[2015] - Inspected by Gary Waletzki.
[2017] - Inspected by Tom Miles and Chad Hockens.
[2019] - Inspected by Tom Miles.
[2021] - Inspected by Chad Hockens.

Deck: [5] [2017] - Moderate underdeck spall. Spalled and patched areas are greater than 2 percent.

Brdg Railings: [0] Type 19 - Substandard for all speeds.

Superstructure: [6] [2017] - Minor staining. Spalls with rebar exposed and spall in ends with patches.

Substructure: [5] [2017] - Moderate delamination and spalls on pier caps. Cracking at abutments with leaching and patches with cracking at columns.

Appr Roadway Alignment: [8] [2017] - No speed reduction or sight distance issues.

MINNESOTA STRUCTURE INVENTORY REPORT

Bridge ID: 6868 **I 90 WB over CEDAR RIVER** Date: 05/11/2022

+ GENERAL +

Agency Br. No. **Crew** OWAT
District 6 **Maint. Area** 6B
County 50 - MOWER
City AUSTIN
Township
Desc. Loc. 0.8 MI E OF W JCT TH 218
Sect., Twp., Range 34 - 103N - 18W
Latitude 43d 40m 50.40s
Longitude 92d 58m 29.86s
Custodian STATE HWY
Owner STATE HWY
Insp Responsibility DISTRICT 6
Year Built 1958
Date Opened to Traffic 06-01-1980
MN Year Remodeled 1980
FHWA Year Reconstructed
Bridge Plan Location DISTRICT
Potential ABC YES

+ STRUCTURE +

Service On HIGHWAY
Service Under STREAM
Main Span Type PRESTR BM SPAN
Main Span Detail
Appr. Span Type
Appr. Span Detail
Skew 20L
Culvert Type
Barrel Length

Number of Spans
MAIN: 3 APPR: 0 TOTAL: 3

Main Span Length 59.0 ft
Structure Length 174.9 ft
Deck Width 53.0 ft
Deck Material C-I-P CONCRETE
Wear Surf Type LOW SLUMP CONC
Wear Surf Install Year 1980
Wear Course/Fill Depth 0.17 ft
Deck Membrane NONE
Deck Rebars NONE
Deck Rebars Install Year
Structure Area 9,270 sq ft
Roadway Area 8,622 sq ft
Sidewalk Width - L/R
Curb Height - L/R
Rail Codes - L/R 22 22

+ ROADWAY ON BRIDGE +

Facility I 90
Functional Class URB/PR ART ISTH
ADT (YEAR) 12,200 (2018)
HCADT 1,342
National Highway System Y
Route Sys/Nbr (TIS) ISTH 90
Ref. Point (TIS) 178+00.396
Detour Length 5 mi.
Lanes 3 Lanes ON Bridge
Control Section (TH Only) 5080
Function MAINLINE
Type 1 WAY TRAF
Bridge Match ID 1
Roadway Key 1-ON

+ RDWY DIMENSIONS ON BRIDGE +

If Divided	NB-EB	SB-WB
Roadway Width	49.3 ft	
Vertical Clearance		
Max. Vert. Clear.		
Horizontal Clear.	49.2 ft	
Appr. Surface Width	46.0 ft	
Bridge Roadway Width	49.3 ft	
Median Width on Bridge	NA	

+ MISC. BRIDGE DATA +

Structure Flared NO
Parallel Structure LEFT
Field Conn. ID
Cantilever ID

Foundations
Abut. CONC - FTG PILE
Pier CONC - FTG PILE
Historic Status NOT ELIGIBLE
On - Off System ON

+ PAINT +

Year Painted
Painted Area
Primer Type
Finish Type

+ BRIDGE SIGNS +

Posted Load NOT REQUIRED
Traffic NOT REQUIRED
Horizontal OBJECT MARKERS
Vertical NOT APPLICABLE

+ INSPECTION +

Deficient Status ADEQ
Sufficiency Rating 90.3
Last Routine Insp Date 09-15-2021
Routine Insp Frequency 24
Inspector Name DISTRICT 6
Status A-OPEN

+ NBI CONDITION RATINGS +

Deck	5
Superstructure	6
Substructure	7
Channel	6
Culvert	N

+ NBI APPRAISAL RATINGS +

Structure Evaluation	6
Deck Geometry	4
Underclearances	N
Waterway Adequacy	8
Approach Alignment	8

+ SAFETY FEATURES +

Bridge Railing	1-MEETS STANDARDS
GR Transition	1-MEETS STANDARDS
Appr. Guardrail	1-MEETS STANDARDS
GR Termini	1-MEETS STANDARDS

+ SPECIAL INSPECTIONS +

Frac. Critical N
Underwater Y 60 mo 05/2021
Pinned Asbly. N

+ WATERWAY +

Drainage Area 238.0 sq mi
Waterway Opening 2170 sq ft
Navigation Control NO PRMT REQD
Pier Protection
Nav. Vert./Horz. Clr.
Nav. Vert. Lift Bridge Clear.
MN Scour Code R-CRIT;MONITOR
Scour Evaluation Year 1994

+ CAPACITY RATINGS +

Design Load H 20
Operating Rating HS 38.00
Inventory Rating HS 20.60
Posting
Rating Date 09-17-2003

Overweight Permit Codes
A: 1 B: 1 C: 1

05/11/2022
Crew: OWAT
Insp Responsibility: DISTRICT 6

MINNESOTA BRIDGE INSPECTION REPORT

BRIDGE 6868 I 90 WB OVER CEDAR RIVER **INSP. DATE: 09-15-2021**

County: MOWER
City: AUSTIN
Township:
Section: 34 Township: 103N Range: 18W
Main Span Type: PRESTR BM SPAN

Location: 0.8 MI E OF W JCT TH 218
Route (TIS): ISTH 90 Ref Pt (TIS): 178+00.396
Control Section: 5080 Maint. Area: 6B
Local Agency Bridge Nbr:

Length: 174.9 ft
Deck Width: 53.0 ft
Rdwy. Area 8,622 sq ft
Paint Area
Culvert : N/A

NBI Deck: 5 Super: 6 Sub: 7 Chan: 6 Culv: N

Open, Posted, Closed: OPEN

Appraisal Ratings - Approach: 8 Waterway: 8

MN Scour Code: R-CRIT;MONITOR Def. Stat: ADEQ Suff. Rate: 90.3

Required Bridge Signs - Load Posting: NOT REQUIRED Traffic: NOT REQUIRED
Horizontal: OBJECT MARKERS Vertical: NOT APPLICABLE

ELEM NBR	ELEMENT NAME	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
800	CRITICAL DEFS OR SAFETY HAZARDS	09-15-2021	1 EA	1	0	0	0
		09-24-2019	1 EA	1	0	0	0

Notes: [2013-2021] - No critical findings were observed at the time of this inspection.

12	REINFORCED CONCRETE DECK	09-15-2021	9,270 SF	8,236	988	46	0
		09-24-2019	9,270 SF	8,898	360	12	0

Notes: [2013] - There are scattered transverse cracks some small spalls and a few patched areas beneath the deck. There are areas of underdeck patching and plywood in place. [2017] - Minor cracking with efflorescence (1800x0.1=180sf-CS2).

Span #1 -
West of pier 1 between G11 and G12 there is an area of cracking and rust staining.
[2017-2019] - Several full depth patches with plywood attached. (CS2).
[2021] - 24"x11" delamination in facia south side above spall in facia girder (2sf-CS2). 8'x4' area of heavy rust staining and saturation between G11 and G12 (32sf-CS3).

Span #2
Between girders 6 and 7 is a spall 20" on center 5' west of Pier 2.
[2015] 2' x 2" between G10 -11 near pier 1.
[2017-2019] - 4sf of delamination and spalling with exposed rebar with LOS. between B11/12 (CS3). map cracking between B5/6, B6/7, and B7/8 from pier 1 to first diaphragm east (CS2)
[2021] - Approximately 20% of the deck is in CS-2 due to patches and water saturation (625sf-CS2). 8"x8" area of delaminated concrete on outside of slab above pier 1 on the south side (1sf-CS2).

Span #3 -
2 small rebar spalls between girder 5 & 6 near the diaphragm. There is a delamination between G11 and G12
[2017-2019] -] - 6sf of delamination between B11/12 (CS3).
[2021] - 2- 6" rust stains between beams 1 and 2 indicating rebar corrosion (2sf-CS3).

510	*WEARING SURFACE*	*09-15-2021*	*8,622 SF*	*7,971*	*635*	*16*	*0*
		09-24-2019	*8,622 SF*	*7,971*	*645*	*6*	*0*

Notes: Low Slump Overlay with Uncoated Rebar Notes: A low slump concrete overlay was placed in 1980.

*The deck surface has numerous scattered area of delaminated concrete found during spot checking with hammer unsound 2 - 10%. ** Should find time during next inspection to chain drag entire deck surface. ** East end of deck has a 1' x 3' spall at end block.*
Over Pier # 1 - there are 3 small patched area in the left hand lane along the joint. Left hand lane has a 1' x 3' spall near center line, a 6" x 36" spall along shoulder. Right hand lane near shoulder has a 1' x 1' delamination. There is a crack at pier 1 that is unsealed and spalling. Span # 2 - 2 small 1' x 1' patched areas in the right hand shoulder, the patch was made to seal a hole made by the foundations crew for test drilling. Over pier 2 there is a large open crack and 2 spalls in the center of the left lane and shoulder of the right lane.
[2015] - 1' x 1' spall at the right shoulder. West end paving block is 80% filled with bituminous due to deteriorated concrete. large open crack 1" - 2" wide across the entire deck over pier 1. 2'x3' spall in the center lane right wheel path of span 2.
[2017] - 208sf of patches (CS2). 3800lf of sealed cracks (3800x0.1=380sf-CS2). 57lf of large open cracks (57x0.1=6sf-CS3)
[2019] - 21'x12' patch in the right lane.
[2021] - The east end block has 12sf of bituminous patch and 1sf of failed patch (13sf-CS3). 3sf of failed patch in span 2 (3sf-CS3).

810	CONC WEAR SURF-CRACKING SEALING	09-15-2021	4,368 LF	0	4,368	0	0
		09-24-2019	4,368 LF	0	4,368	0	0

Notes: NOTE: 4368 LF of cracks were sealed under contract in 2016.
[2017] - 4368lf of sealed deck cracks.
[2019] - Cracks remain mostly sealed.
[2021] - Crack sealant has deteriorated.

300	STRIP SEAL DECK JOINT	09-15-2021	100 LF	0	0	0	100
		09-24-2019	100 LF	0	0	0	100

Notes: New waterproof strip seal expansion joints where placed at both ends in 1980.

West End -
[2005] - Joint opening measured 1 inch at the south end, 3/8 of an inch at the centerline and 5/8 of an inch at the north end. Joint is not working as intended closing up.
[2007] - Joint opening measured 1 inch at the south end, 3/8 of an inch at the centerline and 1/2 of an inch at the north end.
[2009-2013] - OK, the strip seal joint was full of dirt and debris . South end - 1" Center line - 1/4" North end - 3/4".
[2015-2021] - Joint is not functioning as intended.

East End -
[2005] - Joint opening measured 1 1/4 of an inch at the south end, 1 inch at the centerline and 1 1/2 inches at the north end.
[2007] - Joint opening measured 1 1/8 of an inch at the south end, 5/8 of an inch at the centerline and 1/2 inches at the north end.
[2009-2013] - The strip seal joint was full of dirt and debris . South end - 1" Center line - 1/4" North end - 3/8".
[2015-2021] - Closed to 1/2". joint is not functioning as intended.

815	PLOW FINGERS	09-15-2021	1 EA	0	0	0	1
		09-24-2019	1 EA	0	0	0	1

Notes: West End -
[2017-2021] - 11 missing plow straps.

East End -
[2017-2021] - 9 missing plow straps.

301	POURED SEAL JOINT	09-15-2021	36 LF	0	0	36	0
		09-24-2019	36 LF	0	0	36	0

Notes: All joints have areas where the joint material has lost adhesion and spall approximately 280 linear feet. Construction joint at west end block has spall and is filled with concrete nearly full width of joint.

Pier #2 - Part of this joint has been filled in with epoxy.

[2015] - No change.
[2019] - Remainder of joints have been removed due to concrete patching.
[2021] - No change.

816	APPROACH RELIEF JOINT	09-15-2021	72 LF	0	0	0	72
		09-24-2019	72 LF	0	0	0	72

Notes: These are the E-eight joints located at the roadway ends of both approach slabs.

West End E-eight Joints -
[2009-2013] - The joint has failed or is missing. 1/2" wide at both ends.
[2015-2021] - Joint is closed and not functioning as intended.

East End E-eight Joints -
[2009-2017] - The joint has failed or is missing. South end - 1/2" North end - 1 1/2".
[2019] - 2' spall on approach roadway.
[2021] - Joint is closed and not functioning as intended.

331	REINFORCED CONC BRIDGE RAILING	09-15-2021	400 LF	279	119	2	0
		09-24-2019	400 LF	279	119	2	0

Notes: South Rail -
There are 2 to 5 vertical cracks per rail section with most staining or leaching. There are scattered small stone pop-outs and scrapes along the lower portions of the railing on both sides.
[2019-2021] - No change.

North Rail -
[2015] - There are 2 to 5 vertical cracks per rail section with most staining or leaching. There are scattered small stone pop-outs and scrapes along the lower portions of the railing on both sides.

near the west end over the end block there is an open random crack as much as 3/8 of an inch wide with exposed rebars, the crack is completely through the railing and extends down to the parapet wall.
[2017] - 8" of the approach rail is broken off at the NW connection (CS3). 3"x2" spall along the top edge on the north rail. there is a 4" wide x full height crack over pier 2 on the north rail.
[2019-2021] - No change.

321	CONCRETE APPROACH SLAB	09-15-2021	1,840 SF	0	1,827	13	0
		09-24-2019	1,840 SF	0	1,829	11	0

Notes: West Approach Slab -
[2015] - 2 diagonal cracks along the opposite corners. There is a small 1' X 2' spalled area at the west end in the right hand lane next to the joint. The left lane and shoulder have settled from 2 1/4 inches next to the railing to zero at the centerline. spalled area along end block patched with bituminous nearly full width. Concrete is spalling along a crack in the NW corner.
[2017] - 253sf of sound patches (CS2). 5sf of unsound patches (CS3).
[2019] - 7'x7' triangular piece broken and settled at northwest corner. 1'x1' spall at E8 joint filled with bituminous. 2 full length cracks (40'). 8'x12' patch in left lane.
[2021] - No significant change.

East Approach Slab -
[2015] - 1 diagonal crack at the northeast corner with an area of delaminated concrete and small patch at the north end that is cracked and delaminated. There are 2 set-45 patches along the end block joint. 6" x 24" cracking delamination along end.
[2017] - 12sf of sound patches(CS2). 6sf of unsound patches (CS3). remainder has moderate deterioration.
[2019] - 3 full length cracks (60'). 3'x28" patch along north rail. full width by 1' patch at strip seal joint. 12' of bituminous patch. 2'x4" delamination at centerline by paving block.
[2021] - No significant change.

205	REINFORCED CONCRETE COLUMN	09-15-2021	6 EA	6	0	0	0
		09-24-2019	6 EA	6	0	0	0

Notes: Scour monitoring sign attached to the north column on the east side.

Pier 1 -
[2015-2019] - No deterioration noted.
[2021] - Underwater Inspection: Concrete surfaces were smooth and sound with no notable defects observed (3-CS1).

Pier 2 -
[2015-2019] - No deterioration noted.
[2021] - Underwater Inspection: Concrete surfaces were smooth and sound with no notable defects observed (3-CS1).

215	REINFORCED CONCRETE ABUTMENT	09-15-2021	160 LF	40	87	33	0
		09-24-2019	160 LF	60	87	13	0

Notes: West Abutment -
Both abutments are stained from leaking joints.
[2015] - 19 vertical cracks scattered across the front face and most extend across the bridge seat and up the parapet wall with rust staining or leaching. The parapet wall at both ends have fracture cracking with leaching and delaminated concrete. South end has a 4' X 5' area of random cracking and leeching. and delamination with rebar spall. North end delamination is 3' X 4' in size. The parapet wall has horizontal cracking along the bottom behind girders 5, 6, 7, 8 & 9.
[2017] - 21"x21" rebar spall at the top of the SW backwall. the remainder below the spall is heavily deteriorated. 10 vertical cracks. 40"x38" rebar spall and delamination at the NW backwall.
[2019] - 2"x21" delamination between girders 11 and 12 at cold joint.
[2021] - 25lf of leaching, cracking, rust staining and delamination (25lf-CS3).

East Abutment -
Both abutments are stained from leaking joints.
[2015] - 12 vertical cracks scattered across the front face and most extend across the bridge seat and up the parapet wall with rust staining or leaching. There are areas of random cracking along the top edge under girders 1, 3, 4, 6, 7 & 10 with delaminated areas under girders 1, 3 & 4 a total of approximately 6 square feet. The parapet wall at the south end has random cracking with heavy leaching and there are scattered small exposed rebar's along the bottom. There is a 8"x3" spall along the top edge between G11 and G12.
[2017] - 6"x5" spall at step under G11. 3"x3' cracking along top edge between G9/G10. 4"x18" horizontal cracking and staining along top edge between G6/G7. 11" horizontal crack between G5/G6. 24"x6"x6" rebar spall between G3/G4. 36" horizontal crack under G3. random cracking with efflorescence on the south 3'.
[2019] - No change.
[2021] - 8lf of spalling, cracking with rust staining and leaching and delamination (8lf-CS3).

Wingwall Notes -
[2015] - SW Wingwall - Has a small delamination top. Has random cracking with leaching. NW Wingwall - Has random

cracking with leaching and a large crack that extends down from the railing above with spalling. There is a 9" x 21" x 12" deep rebar spall at the corner. SE Wingwall - Has a 3' area of random cracking with heavy leaching. NE Wingwall - Has 1 vertical crack.
[2017] - SW wing has random cracking and rebar spall at the corner. 9"x6", 21"x5" rebar spall on top edge of wing. cracked and deteriorated for 9'. NW wing has a 1'x40" rebar spall at the connection.
[2019-2021] - No significant change.

220	REINFORCED CONCRETE FOOTING	09-15-2021	100 LF	100	0	0	0
		09-24-2019	100 LF	100	0	0	0

Notes: [2016] - Underwater Inspection - The footing was exposed around the upstream column of Pier 2. The footing was exposed along the west side of the middle column of Pier 2. The footing was exposed along the east side of the downstream column of Pier 1. The footing was exposed along the upstream and east side of the middle column of Pier 1.
[2017-2019] - Unable to inspect during routine inspection.

[2021] - Underwater Inspection: The footing was exposed along the north and east side of the downstream column of Pier 1, with maximum vertical exposure of 1.2 feet. The footing was exposed along the north and east sides of the middle column of Pier 1, with maximum vertical exposure reaching 2.6 feet on the east side of the footing. The footing was exposed along the north, east, and south sides of the upstream column of Pier 1, with maximum vertical exposure of 3.4 feet. The footing was exposed around the upstream column of Pier 2, with vertical exposure varying from flush at the southeast corner, to 3.4 feet maximum vertical exposure along the upstream nose of the footing. The footing was exposed along the north and west side of the middle column of Pier 2, with 0.8 foot of vertical exposure. (100 LF CS1)

234	REINFORCED CONCRETE PIER CAP	09-15-2021	106 LF	84	18	4	0
		09-24-2019	106 LF	88	18	0	0

Notes: Pier # 1 -
[2015-2019] - A few scattered vertical and random cracks with some staining on both sides and random cracking at each end of the cap. West Side - has a 20" x 16" vertical rebar spall above column 2 approximately 1' X 1' in size.
[2021] - 3" delamination between pier caps at the north bottom corner that travels to inside of cap approximately 24" between caps. (1lf-CS3). The south end of thee cap has a 28" x 40" full width patch that is starting to deteriorate (3lf-CS3). Minor diagonal crack under Girder 4 on the east side.

Pier # 2 -
A few scattered vertical and random cracks with some staining on both sides and random cracking at each end of the cap. West Side - has a 24" x 10" vertical rebar spall near the south end. East Side - Has an area of map cracking above column 2. The SW corner has a rebar spall 8" x 12".
[2015-2021] - No change.

109	PRESTRESSED CONC GIRDER OR BEAM	09-15-2021	2,090 LF	2,046	37	7	0
		09-24-2019	2,090 LF	2,053	37	0	0

Notes: Span #1 -
The south fascia girder on the south side has several small patches and some small delaminated areas along the top flange at span 1 at 10' and 20' from pier 1.
[2015-2017] - There is exposed rebar with minor corrosion on the bottom of most all girders due to lack of coverage.
[2019] - Girder 11 has a 14" horizontal crack on bottom flange (1'CS2).
[2021] - 5lf of spalling on south side of south facia girder (5lf-CS3).

Span #2 -
[2015-2019] - Girder 10 and 11 in span 2 just east of pier 1 have rebar spall in the bottom flange due to inadequate concrete coverage. G5 span 2 East end has a diagonal crack and an area of delamination. Span 2 G1 East end is spalling behind the bearing.
[2021] - Girder 4 has a 8"x4" delamination above pier 1 (1lf-CS3) and girder 6 has a 4"x4" spall on the top flange near pier 2 (1lf-CS3).

Span #3 -
Girder # 4 in span 3 Pier 2 has 2 rebar spalls in the bottom flange South fascia beam at east abutment has spalling and delamination concrete at end of beam. G8 bottom West end span 3 there are 4 small rebar spalls, also G4 has a small rebar spall.
[2015-2017] - There is exposed rebar with minor corrosion on the bottom of most all girders due to lack of coverage.
[2019] - 3'x6" spall on top of flange of girder 1 (1'CS2).
[2021] - No significant change.

310	ELASTOMERIC EXPANSION BEARING	09-15-2021	6 EA	6	0	0	0
		09-24-2019	6 EA	6	0	0	0

Notes: West Abutment Pad -
[2001] - Pad was tilted backwards into expansion 1 inch at 65 degrees F.
[2003] - Pad was tilted backwards into expansion 1 1/2 inches.
[2005] - Inspection pad was tilted backwards into expansion 1 1/4 inches at 45 degrees F.
[2007-2013] - Inspection pad was tilted backwards into expansion 1 1/2 inches at 82 degrees F.

[2017] - 1 1/4" at 62 degrees.
[2019-2021] - No change.

East Abutment Pad -
[2001] - Pad was tilted backwards into expansion 1 inch at 65 degrees F.
[2003] - Pad was tilted backwards into expansion 1 inch.
[2005] - Pad was tilted backwards into expansion 1/4 inches at 45 degrees F.
[2007] - Pad was tilted backwards into expansion 1/4 inches at 45 degrees F.
[2013] - Pad was tilted back 3/4" at 82 degrees F .
[2017] - 3/4" at 62 degrees.
[2019-2021] - No change.

311	EXPANSION BEARING	09-15-2021	44 EA	0	22	21	1
		09-24-2019	44 EA	0	22	22	0

Notes: Moveable bearings are located at both abutments and along both sides of pier 2. The original bearings along the east side of pier 2 were fixed bearings they were modified during widen reconstruction in 1979 to moveable bearings.

West Abutment Bearings -
All 11 bearings have failed paint with surface corrosion. All Bearings have minor loss of section.
[2017] - All bearings have failed paint with flaking rust (11'CS3).
[2019-2021] - No change.

Pier # 2 Bearings -
All 22 bearings have failed paint with minor surface corrosion.
[2015] - Pack rust between beam and top of fascia bearings on South end.
[2017-2019] - All bearings have failed paint with minor surface corrosion. (CS2)
[2021] - Pack rust between masonry plate and upper bearing at girder 1 is raising girder approximately 3/16" (1-CS3).

East Abutment Bearings -
All 11 bearings have failed paint with surface corrosion and minor loss of section.
[2017] - All bearings have failed paint with flaking rust (11'CS3).
[2019-2021] - No change.

313	FIXED BEARING	09-15-2021	22 EA	0	21	1	0
		09-24-2019	22 EA	0	22	0	0

Notes: Fixed bearings are located at both sides of pier 1.

Pier # 1 Bearings -
All 22 bearings have failed paint with active corrosion.
[2015] - Pack rust between beam plate and top of fascia bearings on South end. (1-CS3).
[2017-2021] - No significant change.

855	SECONDARY MEMBERS (SUPER)	09-15-2021	1 EA	0	1	0	0
		09-24-2019	10 EA	0	10	0	0

Notes: All concrete diaphragms have minor cracking at the haunches.
[2015-2021] - No change.

883	CONCRETE SHEAR CRACKING	09-15-2021	1 EA	1	0	0	0
		09-24-2019	1 EA	1	0	0	0

Notes: [2017-2021] - No shear cracking noted.

885	SCOUR	09-15-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: [2021] DO NOT DELETE. THIS ELEMENT MUST BE RATED FOR ALL BRIDGES (not culverts) OVER WATER. INSPECTOR TO RATE CONDITION STATE PER GUIDANCE IN CHAPTER B OF THE BSIPM.

R - Scour critical. Monitoring required. The scour monitoring sign is attached to the east side of pier 2 near the north end
[2016] - Underwater Inspection - The footing was exposed around the upstream column of Pier 2, with vertical exposure varying from none at the southeast corner, to 2.3 feet maximum vertical exposure along the upstream side of the footing. The footing was exposed along the west side of the middle column of Pier 2, with 0.8 feet of vertical exposure. A 6 foot radius by 2 to 3 feet deep scour depression was present at the upstream end of Pier 2. The footing was exposed along the east side of the downstream column of Pier 1, with maximum vertical exposure of 1.2 feet. The footing was exposed along the upstream and east side of the middle column of Pier 1, with maximum vertical exposure reaching 2.1 feet on the east side of the footing.
[2017-2019] - No change.

[2021] - Underwater Inspection: The footing was exposed along the north and east side of the downstream column of Pier 1, with maximum vertical exposure of 1.2 feet. The footing was exposed along the north and east sides of the middle

column of Pier 1, with maximum vertical exposure reaching 2.6 feet on the east side of the footing. The footing was exposed along the north, east, and south sides of the upstream column of Pier 1, with maximum vertical exposure of 3.4 feet. The footing was exposed around the upstream column of Pier 2, with vertical exposure varying from flush at the southeast corner, to 3.4 feet maximum vertical exposure along the upstream nose of the footing. The footing was exposed along the north and west side of the middle column of Pier 2, with 0.8 foot of vertical exposure. A 6 foot radius by 2 to 3 feet deep scour depression was present at the upstream end of Pier 2. (1-CS2)

891	OTHER BRIDGE SIGNING	09-15-2021	1 EA	1	0	0	0
		09-24-2019	1 EA	1	0	0	0

Notes: Signs Required: Horizontal Clearance

[2013-2021] - All signs were in place and in good condition at the time of this inspection.

892	SLOPES & SLOPE PROTECTION	09-15-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: [2015] - There are small washouts under some of the deck drains. Vandals have rearranged some of the rip-rap along the east slope.
[2017] - Riprap is missing on the east slope.
[2019-2021] - No change.

893	GUARDRAIL	09-15-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: [2015-2017] - All guard railing sections were intact at the time of this inspection. There is minor impact damage to the east end center median section.
[2019] - Bullpen guardrail is corroded and tipped away from traffic.
[2021] - No change.

894	DECK & APPROACH DRAINAGE	09-15-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: [2015-2017] - All deck drains were open at the time of this inspection.
[2019] - Debris on deck restricting drains.
[2021] - No change.

899	MISCELLANEOUS ITEMS	09-15-2021	1 EA	1	0	0	0
		09-24-2019	1 EA	1	0	0	0

Notes: There is an electric line running along the full length of the west abutment, this line feed power to the cantilevered overhead sign near the northwest corner of the bridge.
[2017-2019] - No change.
[2021] - Graffiti on both abutments.

900	PROTECTED SPECIES	09-15-2021	2 EA	0	0	1	1
		09-24-2019	2 EA	0	0	1	1

Notes: [2013-2021] - Swallow nests are present. Evidence of bats present.

General Notes: BR 6868

NOTE: All girders, columns and bearings are numbered from the south, all spans and piers are numbered from the west. . There are scour monitoring signs on the bridge.

NOTE: After the flooding of September 2010, BR#6868 was inspected for evidence of scour, flood related damage and/or timber debris accumulation. Bridge was monitored for scour using sonar. There were no significant areas of scour located nor were there any significant flood related issues found. There is a tree wrapped around column 3 of pier 1.

NOTE: Bridge has a scour code rating of "R"
NOTE: Underwater inspection was completed in 2008.
[2015] - Inspected using under deck snooper truck by Tom Miles and Tony Bale
[2015] - Inspected by Gary Waletzki.
[2017] - Inspected by Tom Miles. under deck snooper truck inspection by Gary Waletzki and Tony Bale.
[2019] - Inspected by Tom Miles. Snooper inspection done by Steve Miller and Tony Bale.
[2021] - Inspected by Chad Hockens, snooper inspection by Steve Miller and Chad Hockens.
[2021] - Underwater Inspection: Collins Engineers Inc.

Deck: [5] [2015] - Moderate deterioration
[2019] - Extensive patching and cracking.

Brdg Railings: [1] Type 22 - Meets standards for all speeds.

Superstructure: [6] [2015] - Moderate scaling
[2019] - Minor cracking and spalling.

Substructure: [7] [2015] - Extensive scale/cracking.
[2019] - Delamination and spalling at abutment ends and wings.

[2021] - Underwater Inspection: NBI has been reviewed and confirmed with the underwater portion of bridge inspected.

Channel: [6] NBI rating lowered due to results of underwater inspection showing exposure of the footings as follows:
Pier 2: Around the upstream column, with vertical exposure varying from none at the southeast corner, to 3 feet maximum vertical exposure along the upstream side of the footing. Along the west side of the middle column with 0.7 foot of vertical exposure. A 6 foot radius by 2 to 3 feet deep scour depression was present at the upstream end.
Pier 1: Along the east side of the downstream column with a maximum vertical exposure of 1 foot. Along the upstream and east side of the middle column with a maximum vertical exposure reaching 3 feet on the east side of the footing. Around the upstream column 3.5 feet vertically along the east side.

[2021] - Underwater Inspection: No significant changes have occurred to the channel bottom configuration or condition since the 2016 underwater inspection.

Waterway Adeq: [8] [2019] - Slight chance of overtopping.

Appr Roadway Alignment: [8] [2015] - No speed reduction required.

MINNESOTA STRUCTURE INVENTORY REPORT

Bridge ID: 6869 **I 90 EB over CEDAR RIVER** Date: 05/11/2022

+ GENERAL +

Agency Br. No. **Crew** OWAT
District 6 **Maint. Area** 6B
County 50 - MOWER
City AUSTIN
Township
Desc. Loc. 0.8 MI E OF W JCT TH 218
Sect., Twp., Range 34 - 103N - 18W
Latitude 43d 40m 49.75s
Longitude 92d 58m 29.47s
Custodian STATE HWY
Owner STATE HWY
Insp Responsibility DISTRICT 6
Year Built 1958
Date Opened to Traffic 06-01-1980
MN Year Remodeled 1980
FHWA Year Reconstructed
Bridge Plan Location DISTRICT
Potential ABC YES

+ STRUCTURE +

Service On HIGHWAY
Service Under STREAM
Main Span Type PRESTR BM SPAN
Main Span Detail
Appr. Span Type
Appr. Span Detail
Skew 20L
Culvert Type
Barrel Length

Number of Spans
MAIN: 3 APPR: 0 TOTAL: 3

Main Span Length 58.9 ft
Structure Length 174.9 ft
Deck Width 52.8 ft
Deck Material C-I-P CONCRETE
Wear Surf Type LOW SLUMP CONC
Wear Surf Install Year 1980
Wear Course/Fill Depth 0.17 ft
Deck Membrane NONE
Deck Rebars NONE
Deck Rebars Install Year
Structure Area 9,235 sq ft
Roadway Area 8,622 sq ft
Sidewalk Width - L/R
Curb Height - L/R
Rail Codes - L/R 22 22

+ ROADWAY ON BRIDGE +

Facility I 90
Functional Class URB/PR ART ISTH
ADT (YEAR) 12,211 (2019)
HCADT 1,343
National Highway System Y
Route Sys/Nbr (TIS) ISTH 90
Ref. Point (TIS) 178+00.402
Detour Length 5 mi.
Lanes 3 Lanes ON Bridge
Control Section (TH Only) 5080
Function MAINLINE
Type 1 WAY TRAF
Bridge Match ID 1
Roadway Key 1-ON

+ RDWY DIMENSIONS ON BRIDGE +

If Divided	NB-EB	SB-WB
Roadway Width	49.3 ft	
Vertical Clearance		
Max. Vert. Clear.		
Horizontal Clear.	49.2 ft	
Appr. Surface Width	46.0 ft	
Bridge Roadway Width	49.3 ft	
Median Width on Bridge	NA	

+ MISC. BRIDGE DATA +

Structure Flared NO
Parallel Structure RIGHT
Field Conn. ID
Cantilever ID

Foundations
Abut. CONC - FTG PILE
Pier CONC - FTG PILE
Historic Status NOT ELIGIBLE
On - Off System ON

+ PAINT +

Year Painted
Painted Area
Primer Type
Finish Type

+ BRIDGE SIGNS +

Posted Load NOT REQUIRED
Traffic NOT REQUIRED
Horizontal OBJECT MARKERS
Vertical NOT APPLICABLE

+ INSPECTION +

Deficient Status ADEQ
Sufficiency Rating 78.5
Last Routine Insp Date 09-15-2021
Routine Insp Frequency 24
Inspector Name DISTRICT 6
Status A-OPEN

+ NBI CONDITION RATINGS +

Deck	5
Superstructure	6
Substructure	5
Channel	6
Culvert	N

+ NBI APPRAISAL RATINGS +

Structure Evaluation	5
Deck Geometry	4
Underclearances	N
Waterway Adequacy	8
Approach Alignment	8

+ SAFETY FEATURES +

Bridge Railing	1-MEETS STANDARDS
GR Transition	1-MEETS STANDARDS
Appr. Guardrail	1-MEETS STANDARDS
GR Termini	1-MEETS STANDARDS

+ SPECIAL INSPECTIONS +

Frac. Critical N
Underwater Y 60 mo 05/2021
Pinned Asbly. N

+ WATERWAY +

Drainage Area 238.0 sq mi
Waterway Opening 2170 sq ft
Navigation Control NO PRMT REQD
Pier Protection
Nav. Vert./Horz. Clr.
Nav. Vert. Lift Bridge Clear.
MN Scour Code R-CRIT;MONITOR
Scour Evaluation Year 1994

+ CAPACITY RATINGS +

Design Load HS 20
Operating Rating HS 38.00
Inventory Rating HS 20.60
Posting
Rating Date 09-17-2003

Overweight Permit Codes
A: 1 B: 1 C: 1

05/11/2022
Crew: OWAT
Insp Responsibility: DISTRICT 6

MINNESOTA BRIDGE INSPECTION REPORT

BRIDGE 6869 I 90 EB OVER CEDAR RIVER **INSP. DATE: 09-15-2021**

County: MOWER
City: AUSTIN
Township:
Section: 34 Township: 103N Range: 18W
Main Span Type: PRESTR BM SPAN

Location: 0.8 MI E OF W JCT TH 218
Route (TIS): ISTH 90 Ref Pt (TIS): 178+00.402
Control Section: 5080 Maint. Area: 6B
Local Agency Bridge Nbr:

Length: 174.9 ft
Deck Width: 52.8 ft
Rdwy. Area 8,622 sq ft
Paint Area
Culvert : N/A

NBI Deck: 5 Super: 6 Sub: 5 Chan: 6 Culv: N

Open, Posted, Closed: OPEN

Appraisal Ratings - Approach: 8 Waterway: 8
Required Bridge Signs - Load Posting: NOT REQUIRED
Horizontal: OBJECT MARKERS

MN Scour Code: R-CRIT;MONITOR
Traffic: NOT REQUIRED
Vertical: NOT APPLICABLE

Def. Stat: ADEQ Suff. Rate: 78.5

ELEM NBR	ELEMENT NAME	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
800	CRITICAL DEFS OR SAFETY HAZARDS	09-15-2021	1 EA	1	0	0	0
		09-24-2019	1 EA	1	0	0	0

Notes: [2013-2021] - No critical findings were observed at the time of this inspection.

12	REINFORCED CONCRETE DECK	09-15-2021	9,235 SF	8,613	534	88	0
		09-24-2019	9,235 SF	8,756	467	12	0

Notes: There are a few scattered patched areas beneath the deck. There is a 12" X 20" spall in Span 2 between beams 6 & 7. There is a 12" x 30" spalled and delam. area on the coping over pier 2 and 2 more spalled areas to the East 12' x 3' and 12' x 4'.

Span #1 -
[2015] - Span 1 has a delam between G1-2.
[2017-2019] - Span 1 - areas of map cracking between girder lines (120sf-CS2).
[2021] - 24"x32" spall between G1 and G2 (6sf-CS3). Delam above pier caps 1'x2'x11" (8sf-CS2). Through deck patches at joints over pier. Rebar pattern is visible from the bottom of the deck.

Span #2 -
[2017-2019] - Span 2- rebar spall with LOS between G6/7 (2sf-CS3). spall between G1/2 (4sf-CS3). 7sf of delamination (7sf-CS2). patches with poor consolidation and exposed rebar between G2/3 (6sf-CS3). 1800lf of cracking (1800x0.1=180sf-CS2).
[2021] - 57sf of spalling and 11sf of delamination between G1 and G2 some spalls as deep as 1-3/4" (57sf-CS3) and (11sf-CS2). Deck saturation over pier 2 at the south end with leaching 8'x6' (48sf-CS2). South side facia over pier 2 has a 3'x1' area of loose delamination with 1sf of spalling up to 2" deep (3sf-CS3)

Span #3 -
[2017-2019] - Span 3 - 20sf of map cracking with efflorescence between G1/2 (20sf-CS2). through deck patching at joint over pier. 1400lf of cracking (1400x0.1=140sf-CS2).
[2021] - South side deck facia near pier 2 has a 10'x1' area of loose delamination with 3sf of rebar spalling with minor loss of section up to 2.5" deep (10sf-CS3).

510	*WEARING SURFACE*	*09-15-2021*	*8,622 SF*	*8,145*	*457*	*20*	*0*
		09-24-2019	*8,622 SF*	*8,143*	*477*	*2*	*0*

Notes: Low Slump Overlay with Uncoated Rebar Notes: A low slump concrete overlay was placed in 1980.

[2017] - 89sf of patches (89sf-CS2). 22lf of open cracks (22x0.1=2sf-CS3). 3879 of sealed cracks (3879x0.1=388sf-CS2)
[2019] - No change.
[2021] - West paving block has 20sf of failed patches (20sf-CS3).

810	CONC WEAR SURF-CRACKING SEALING	09-15-2021	3,879 LF	0	3,879	0	0
		09-24-2019	3,879 LF	0	3,879	0	0

Notes: NOTE: 3879 LF of cracks were sealed under contract in 2016.
[2017] - 3879lf of sealed deck cracks.
[2019] - Cracks remain mostly sealed.
[2021] - Crack sealing is deteriorated.

300	STRIP SEAL DECK JOINT	09-15-2021	100 LF	0	0	0	100
		09-24-2019	100 LF	0	0	0	100

Notes: New waterproof strip seal joints were placed at both end in 1980.

West End -

[2005] - Joint opening was 1 1/2 inches wide at the south end, 1 inch wide at the center line and 1 1/4 inches wide at the north end and the joint was full of dirt and debris.
[2007] - Inspection the joint opening was 1 3/8 of an inch wide at the south end, 5/8 of an inch wide at the center line and 1 inch wide at the north end and the joint was full of dirt and debris.
[2013] - The strip seal joint was full of dirt and debris. South end - 1 1/4" Center line - 1/2" North end - 3/4"
[2015] - Joint is leaking onto the abutment.
[2017-2021] - Joint is tight (50'-CS4).

East End -
[2005] - Joint opening was 2 inches wide at the south end, 1 1/2 inches wide inch at the center line and 2 1/4 inches wide at the north end and the joint was full of dirt and debris.
[2007] - Joint opening was 2 inches wide at the south end, 1 1/4 inches wide inch at the center line and 2 inches wide at the north end and the joint was full of dirt.
[2013] - The strip seal joint was full of dirt and debris. South end - 1 7/8" Center line - 1" North end - 1 7/8"
[2015] - Joint is leaking onto the abutment.
[2017-2021] - Joint is tight (50'-CS4).

815	PLOW FINGERS	09-15-2021	1 EA	0	0	0	1
		09-24-2019	1 EA	0	0	0	1

Notes: West End -
[2019-2021] - 8 missing plow straps.

East End -
[2019-2021] - 6 missing plow straps.

301	POURED SEAL JOINT	09-15-2021	68 LF	0	0	68	0
		09-24-2019	68 LF	0	50	18	0

Notes: [2017] - 18' of spall adjacent to the joints (CS3). 26' over pier 2 and 24' over pier 1 is missing (CS2). remainder of joints have been removed due to patching.
[2019] - No change.
[2021] - Joint sealant is missing and joints are deteriorated (CS3).

816	APPROACH RELIEF JOINT	09-15-2021	72 LF	0	0	0	72
		09-24-2019	72 LF	0	0	0	72

Notes: These are the E-eight joints located at the roadway ends of both approach slabs.

Both joints were re-cut to 4 inches wide in 1999.

West Joint -
[2015] - Joint is closed and not functioning as intended.
[2017-2021] - No change.

East Joint -
[2015] - Joint is closed and not functioning as intended.
[2017-2021] - No change.

331	REINFORCED CONC BRIDGE RAILING	09-15-2021	400 LF	261	137	2	0
		09-24-2019	400 LF	263	137	0	0

Notes: South Rail -
[2015] - 3 to 5 vertical cracks per rail section with some staining or leaching. The lower portion of the railing on both sides have scattered areas of light scaling and scrapes. Small spalled area near the west end along the top edge.
[2017] - South rail has a 3' horizontal crack on top of the rail. 45 vertical scattered cracks and numerous small spall.
[2019] - 2' of cracking at east connection plate.
[2021] - 24"x6" spall at the east end expansion joint (1sf-CS3). 12"x8" spall at west end near curb (1sf-CS3).

North Rail -
3 to 5 vertical cracks per rail section with some staining or leaching. The lower portion of the railing on both sides have scattered areas of light scaling and scrapes.
[2015-2021] - No change.

321	CONCRETE APPROACH SLAB	09-15-2021	1,840 SF	0	1,838	2	0
		09-24-2019	1,840 SF	0	1,840	0	0

Notes: West Approach Slab -
[2015] - 1' x 2' patched area in the ramp lane next to E8 joint. There is heavy spalling along the end block for the entire width of the bridge.
[2017] - 30'x1' patch at the paving block. 3'x1' patch at the west end of the ramp lane. overall moderate deterioration (CS2).
[2019] - Spall along joints (73'x1'). ~100' sealed cracks.
[2021] - 2' bituminous patch near E-8 joint in ramp lane (2sf-CS3).

East Approach Slab -
[2015] - Spalling concrete along the joint along the left hand lane and right hand lane. The end block has a patched area in the center lane.
[2017] - 53'x1' patch at the paving block. open longitudinal joints with spall. Overall moderate deterioration.
[2019] - 40' of cracks with spall. Spalling along both joints (106'x1').
[2021] - No significant change.

205	REINFORCED CONCRETE COLUMN	09-15-2021	6 EA	4	2	0	0
		09-24-2019	6 EA	4	2	0	0

Notes: [2021] - Underwater Inspection: The concrete below the waterline was in good condition. (6 EA CS1, routine qty controls)

Pier # 1 Columns -
Column 2 has a 32" x 20" rebar spall at the top at the southeast side.
[2015-2021] - No significant change.

Pier # 2 Columns -
Column 3 has a 19" x 18" rebar spall at the top northwest corner.
[2015-2021] - No change.

215	REINFORCED CONCRETE ABUTMENT	09-15-2021	160 LF	0	105	55	0
		09-24-2019	160 LF	97	47	16	0

Notes: West Abutment -
16 vertical cracks scattered across the front face most of the cracks extend across the bridge seat and up the parapet wall with some staining or leaching. There are 2 rebar spalls 1' X 1' each and a small 6" X 6" spalled area under girder 2, a small chips along the top edge under girders 3, 4, 9 & 10 and a 2" X 12" exposed rebar at the north end. The parapet wall at the south end along the bottom has spalling with exposed rebar's and random or horizontal cracking along the bottom between girders 2 through 6. The parapet wall has a small chipped area along the top edge between girders 3 & 4 and an exposed rebar near the north end. During 2007 inspection there was standing water along the top of the bridge seat between girders 7, 8, 9, 10 & 11. Utility access hole between girder 10 & 11 has deteriorating block. Abutment is stained from leaking joints. There is a 16" x 8" rebar spall under girder 10. 2013
[2015] - No change.
[2017] - 5"x6" spall under G2 (CS3). 18"x16" rebar spall under G2 (CS3). 9"x2" spall between G3/G4 (CS3). 16"x8"x7" rebar spall under G10 (CS3). Heavy delamination at the backwall in the NW corner and SW corner (CS3). Footing is exposed.
[2019-2021] - No change.

East Abutment -
14 vertical cracks scattered across the front face most of the cracks extend across the bridge seat and up the parapet wall with some staining or leaching. There is a 1' x 1' rebar spall on top of the bridge seat at the south side of girder 2. There is a 1" X 8" exposed rebar under girder 2, an area of horizontal or random cracking along the top edge under girder 3 and between girders 7 & 8 with a small 3" X 10" delaminated area and an area of fracture cracking with leaching near the north end. The utility access hole in the parapet wall between girders 11 & 12 is open allowing dirt and debris to spill out on the beam seat. During 2007 inspection there was standing water along the top of the bridge seat between girders 3, 4, 5 & 6. Abutment is stained from leaking joints.
[2015] - No change.
[2017] - 15" horizontal crack between G7/G8. 20"x7" area of deteriorated concrete and spall between G2/G3.
[2019] - No change.
[2021] - 2'x4' spall in parapet wall at south end and a 8" spall between G2 and G3. Access hole between G2 and G3 is washed out. 50lf of the abutment has rust stained cracking leaching and delamination or spalling (50lf-CS3).

Wingwall Notes -
[2017] - SE wing has a 1' open vertical crack and heavy delamination at the backwall at the SE corner. NE wing has 13' horizontal crack along the top edge. Heavy delamination at the backwall at the NE corner (30"xfull height) (CS3).
[2019-2021] - No change.

220	REINFORCED CONCRETE FOOTING	09-15-2021	45 LF	45	0	0	0
		09-24-2019	45 LF	45	0	0	0

Notes: [2016] - Underwater Inspection - The footing was exposed along the upstream and east side of the upstream column of Pier 1 up to 1.7 feet vertically. The footing was exposed along the downstream and east side of the downstream column of Pier 1 up to 1 foot vertically.
[2017-2019] - Unable to inspect during routine inspection as noted.

[2021] - Underwater Inspection: The footing was exposed along the upstream and east side of the upstream column of Pier 1, with maximum vertical exposure reaching 2.3 feet at the upstream east corner of the footing. The footing was exposed along the east side of the middle column of Pier 1, with 0.6 feet of maximum vertical exposure. The footing was exposed along the downstream and east sides of the downstream column of Pier 1, with 0.8 foot of vertical exposure. (45 LF CS1)

234	REINFORCED CONCRETE PIER CAP	09-15-2021	106 LF	47	39	20	0
		09-24-2019	106 LF	62	30	14	0

Notes: Pier # 1 -
4 or 5 vertical cracks scattered along the top edge on both sides and 1 or 2 vertical cracks along each end of the cap. West Side - has short random cracks near the top edge under girder 4 as well as an 8" spall top of the cap between girders 1 & 2. East Side - There is a 20" x 16" rebar spall directly above column 2, a 30" x 10" spall on the bottom edge of the cap just north of column 2. There is an 82" x 15" spalled/delaminated area located 10' south of column 3 on the bottom edge of the cap south of column 3, and a 48" x 24" spalled area just south of column 3. The entire bottom edge of the cap is either cracked, delaminated or spalled.
[2015-2019] - No change.
[2021] - 4"X6" delamination on top of cap next to B2 on the east side (1lf-CS2).18"x18" delamination under G4 on the west face (2lf-CS2). 16"x8" delamination on the bottom edge between spalls on east face. (3lf-CS2).

Pier # 2 -
3 or 4 vertical cracks scattered along the top edge on both sides and 1 or 2 vertical cracks along each end of the cap. West Side - There is a 58" x 18" rebar spall on the bottom of the cap north of column 2. There is also a 16" x 14" spall directly above column 2. East Side - has 1 small cracked area along the bottom just to the south of column 3.
[2015-2019] - No change.
[2021] - 10"x36" delamination under G3 over column 2 (3lf-CS2). 60"x20"x2-1/4" deep rebar spall with minor loss of section on the bottom of the cap north of column 2 (5lf-CS3). 12"x10" rebar spall on east face under G8 (1lf-CS3).

109	PRESTRESSED CONC GIRDER OR BEAM	09-15-2021	2,090 LF	2,048	31	11	0
		09-24-2019	2,090 LF	2,068	20	2	0

Notes: There are a few short vertical or random cracks along both fascia girders at the ends over the abutments and piers.
[2015-2017] - There are rebar spalls with minor rust (CS3) on some of the girders due to lack of coverage.

Span #1 -
[2021] - G2 has a 12"x12" delaminated patch west of the diaphragm and a 1' patched area near pier 1. there is 8lf of patch on the south side of G2 with 2' of delaminated patch over the diaphragm (9lf-CS2) and (3lf-CS3).

Span #2 -
[2019] - Crack / delam on back side of girder 5 over pier 1. There is a 6" dia. spall on bottom flange of B3 over Pier 1.
[2021] - G6 has a 10"x12"x3" deep spall on the east end over pier 2 (1lf-CS3) with a similar sized spall at he end of G7 as well (1sf-CS3).Spalling at the east end of G3 6"x6"and G4 10"x8" over pier 2 2'to4" deep (1lf-CS2) and (1lf-CS3).

Span #3 -
There is a 6" X 12" spall on B11 top flange near mid span.
[2021] - 24"x6" spall on the top flange of G7 over pier 2 (2lf-CS3)

310	ELASTOMERIC EXPANSION BEARING	09-15-2021	6 EA	4	0	0	2
		09-24-2019	6 EA	4	0	0	2

Notes: West Abutment Pad -
[2003] - Pad was tilted into expansion 1/2 to 3/4 of an inch at 50 degrees F.
[2009] - Pad was tilted into expansion 1/2 to 3/4 of an inch at 45 degrees F.
[2013] - Pad was tilted into expansion 3/4 of an inch at 82 degrees F.
[2015] - No change.
[2017] - 1 1/4" (> 25% deformation)
[2019-2021] - No change.

East Abutment Pad -
[2003] - Pad was tilted into expansion 1/2 to 3/4 of an inch at 50 degrees F.
[2009] - Pad was tilted into expansion 1/2 to 3/4 of an inch at 45 degrees F.
[2013] - Pad was tilted into expansion 1 3/4 inches at 82 degrees F.
[2015] - No change.
[2017] - 1 3/4" (>25% deformation)
[2019-2021] - No change.

311	EXPANSION BEARING	09-15-2021	44 EA	0	0	44	0
		09-24-2019	44 EA	0	0	44	0

Notes: Moveable bearings are located at both abutments and along both sides of pier 2. The original bearings along the east side of pier 2 were fixed, during reconstruction in 1979 those fixed bearings were modified into moveable bearing.

West Abutment Bearings -
All 11 bearings have failed paint with active corrosion and minor loss of section.
[2017] - All bearings have failed paint with active surface corrosion.
[2019-2021] - No change.

Pier # 2 Bearings -
All 22 bearings have failed paint with active surface corrosion.
[2015] - Pack rust under North fascia bearings. The end 4 bearings have more corrosion then the others. Flaking rust on B2,3, and 4 on the East side.
[2017] - All bearings have failed paint with active surface corrosion.
[2019] - No change.
[2021] - Pack rust is causing upper deflection of an 1/8" of both north facia bearings, Bearing 10 is up as high as 1/2" near center (3CS3).
Upwards deflection of bearings is typical on the west side of pier from 1/8" to1/2" (CS3).

East Abutment Bearings -
All 11 bearings have failed paint with active corrosion and minor loss of section.
[2017] - All bearings have failed paint with active surface corrosion.
[2019-2021] - No change.

313	FIXED BEARING	09-15-2021	22 EA	0	0	22	0
		09-24-2019	22 EA	0	0	22	0

Notes: Fixed bearings are located along both sides of pier 1.

[2015-2021] - All bearings have failed paint with active surface corrosion.

855	SECONDARY MEMBERS (SUPER)	09-15-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: Diaphragms.

Span 2 Pier 1 Girder 10-11 concrete diaphragm has a 8" x 8" spall.
[2015-2021] - No change.

883	CONCRETE SHEAR CRACKING	09-15-2021	1 EA	1	0	0	0
		09-24-2019	1 EA	1	0	0	0

Notes: [2017-2021] - No shear cracking noted.

885	SCOUR	09-15-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: [2021] DO NOT DELETE. THIS ELEMENT MUST BE RATED FOR ALL BRIDGES (not culverts) OVER WATER. INSPECTOR TO RATE CONDITION STATE PER GUIDANCE IN CHAPTER B OF THE BSIPM.

R - Scour critical. Monitoring required. The scour monitoring sign is attached along the eat side near the north end of pier 2 at bridge 6868.
[2016] - Underwater Inspection - The footing was exposed along the upstream and east side of the upstream column of Pier 1 up to 1.7 feet vertically.
[2017-2019] - Unable to inspect during routine inspection, as noted.

[2021] - Underwater Inspection: The footing was exposed along the upstream and east side of the upstream column of Pier 1, with maximum vertical exposure reaching 2.3 feet at the upstream east corner of the footing. The footing was exposed along the east side of the middle column of Pier 1, with 0.6 feet of maximum vertical exposure. The footing was exposed along the downstream and east sides of the downstream column of Pier 1, with 0.8 foot of vertical exposure. (1 EA CS2)

891	OTHER BRIDGE SIGNING	09-15-2021	1 EA	1	0	0	0
		09-24-2019	1 EA	0	0	1	0

Notes: Signs Required: Horizontal Clearance

[2015] - All signs were in place at the time of this inspection. The NW delineator is damaged and facing away from traffic.
[2017-2019] - NW delineator is missing.
[2021] - Concrete median wall no delineator needed.

892	SLOPES & SLOPE PROTECTION	09-15-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: Vandals have rearranged some of the rip-rap along both slopes. There are small areas of slope erosion under some of the deck drains.
[2015] - No change.
[2017] - Abutment footings are exposed.
[2019] - Dugout / shelter excavated along the west abutment.
[2021] - No change.

893	GUARDRAIL	09-15-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: [2013-2015] - All guard railing sections were intact at the time of this inspection.

[2017-2019] - Median guardrail is damaged and corroded.
[2021] - Damage at southwest end terminal 2nd post is missing. (CS2).

894	DECK & APPROACH DRAINAGE	09-15-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: All deck drains were open at the time of this inspection.
[2015-2017] - No change.
[2019-2021] - Debris on the deck is restricting drains.

899	MISCELLANEOUS ITEMS	09-15-2021	1 EA	1	0	0	0
		09-24-2019	1 EA	1	0	0	0

Notes: There is an electric line running along the entire length of the west abutment, line was in good condition at the time of this inspection.
[2017-2021] - No change.

900	PROTECTED SPECIES	09-15-2021	2 EA	0	0	1	1
		09-24-2019	2 EA	0	0	1	1

Notes: [2017-2021] - Swallow nests are present and evidence of bats present.

General Notes: BR 6869

Bridge has a scour code rating of "R". There are scour monitoring signs located on Bridge 6868.

All girders, columns and bearings are numbered from the south, all spans and piers are numbered from the west.

After the flooding of September 2010, BR#6869 was inspected for evidence of scour, flood related damage and/or timber debris accumulation. Bridge was monitored for scour using sonar. There were no significant areas of scour located nor were there any significant flood related issues found.

[2008] - Underwater inspection was completed in 2008.
[2011] - Inspected by Robert Pyfferoen. underdeck snooper truck inspection.
[2012] - Underwater inspection performed by Collins Engineering.
[2015] - Inspected using a under deck snooper by Tom Miles and Tony Bale.
[2015] - Inspected by Gary Waletzki.
[2017] - Inspected by Tom Miles. underdeck snooper truck inspection by Gary Waletzki and Tony Bale
[2019] - Inspected by Tom Miles. Snooper inspection done by Steve Miller and Tony Bale.
[2021] - Underwater Inspection: Collins Engineers, INC.
[2021] - Inspected by Chad Hockens, snooper inspection by Steve Miller and Chad Hockens.

Deck: [5] [2015] - Deck has moderate deterioration
[2019] - Extensive cracking and patching.

Brdg Railings: [1] Type 22 - Meets standards for all speeds.

Superstructure: [6] [2015] - Minor cracking/spalling.
[2021] - NBI is 6 due to deterioration of the bearings.

Substructure: [5] [2019] - Delamination/spalling at abutment ends.

[2021] - Underwater Inspection: NBI has been reviewed and confirmed with the underwater portion of bridge inspected.

Channel: [6] NBI rating lowered due to results of underwater inspection showing exposure of the footings as follows:
Pier 1: Along the upstream and east side of the upstream column with maximum vertical exposure reaching 3.5 feet at the upstream east corner. Along the east side of the middle column with 1 foot of maximum vertical exposure. Along the downstream and east sides of the downstream column with 1.5 feet if vertical exposure.

[2021] - Underwater Inspection: No significant changes have occurred to the channel bottom configuration or condition since the 2016 underwater inspection.

Appr Roadway Alignment: [8] [2015] - No speed reduction required.

MINNESOTA STRUCTURE INVENTORY REPORT

Bridge ID: 9218 **PEDESTRIAN over CEDAR RIVER** Date: 05/19/2022

+ GENERAL +

Agency Br. No. **Crew** OWAT
District 6 **Maint. Area** 6B
County 50 - MOWER
City AUSTIN
Township
Desc. Loc. 0.9 MI E OF W JCT TH 218
Sect., Twp., Range 34 - 103N - 18W
Latitude 43d 40m 51.08s
Longitude 92d 58m 30.16s
Custodian STATE HWY
Owner STATE HWY
Insp Responsibility DISTRICT 6
Year Built 1958
Date Opened to Traffic 01-01-1959
MN Year Remodeled
FHWA Year Reconstructed
Bridge Plan Location NO PLAN
Potential ABC N.A.

+ STRUCTURE +

Service On PED-BICYCLE
Service Under STREAM
Main Span Type PRESTR BM SPAN
Main Span Detail
Appr. Span Type
Appr. Span Detail
Skew
Culvert Type
Barrel Length

Number of Spans

MAIN: 3 APPR: 0 TOTAL: 3

Main Span Length 57.5 ft
Structure Length 176.0 ft
Deck Width 6.7 ft
Deck Material C-I-P CONCRETE
Wear Surf Type N/A
Wear Surf Install Year
Wear Course/Fill Depth
Deck Membrane NONE
Deck Rebars NONE
Deck Rebars Install Year
Structure Area 1,179 sq ft
Roadway Area 969 sq ft
Sidewalk Width - L/R
Curb Height - L/R
Rail Codes - L/R NN NN

+ ROADWAY ON BRIDGE +

Facility PEDESTRIAN
Functional Class
ADT (YEAR)
HCADT
National Highway System N
Route Sys/Nbr (TIS) 0
Ref. Point (TIS)
Detour Length
Lanes
Control Section (TH Only)
Function N/A
Type NOT APPLI
Bridge Match ID 1
Roadway Key 1-ON

+ RDWY DIMENSIONS ON BRIDGE +

If Divided	NB-EB	SB-WB
Roadway Width		
Vertical Clearance		
Max. Vert. Clear.		
Horizontal Clear.		
Appr. Surface Width		
Bridge Roadway Width		
Median Width on Bridge	NA	

+ MISC. BRIDGE DATA +

Structure Flared NO
Parallel Structure NONE
Field Conn. ID
Cantilever ID

Foundations

Abut. CONC - FTG PILE
Pier CONC - FTG PILE
Historic Status NOT ELIGIBLE
On - Off System OFF

+ PAINT +

Year Painted
Painted Area
Primer Type
Finish Type

+ BRIDGE SIGNS +

Posted Load NOT REQUIRED
Traffic NOT REQUIRED
Horizontal NOT REQUIRED
Vertical NOT APPLICABLE

+ INSPECTION +

Deficient Status ADEQ
Sufficiency Rating
Last Routine Insp Date 09-16-2021
Routine Insp Frequency 24
Inspector Name DISTRICT 6
Status A-OPEN

+ NBI CONDITION RATINGS +

Deck	7
Superstructure	7
Substructure	7
Channel	7
Culvert	N

+ NBI APPRAISAL RATINGS +

Structure Evaluation	7
Deck Geometry	N
Underclearances	N
Waterway Adequacy	9
Approach Alignment	N

+ SAFETY FEATURES +

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

+ SPECIAL INSPECTIONS +

Frac. Critical	N
Underwater	N
Pinned Asbly.	N

+ WATERWAY +

Drainage Area
Waterway Opening 2000 sq ft
Navigation Control NO PRMT REQD
Pier Protection
Nav. Vert./Horz. Clr.
Nav. Vert. Lift Bridge Clear.
MN Scour Code N-STBL;LIM SCOUR
Scour Evaluation Year 1994

+ CAPACITY RATINGS +

Design Load
Operating Rating
Inventory Rating
Posting
Rating Date

Overweight Permit Codes

05/19/2022
Crew: OWAT
Insp Responsibility: DISTRICT 6

MINNESOTA BRIDGE INSPECTION REPORT

BRIDGE 9218 PEDESTRIAN OVER CEDAR RIVER **INSP. DATE: 09-16-2021**

County: MOWER
City: AUSTIN
Township:
Section: 34 Township: 103N Range: 18W
Main Span Type: PRESTR BM SPAN

Location: 0.9 MI E OF W JCT TH 218
Route (TIS): Ref Pt (TIS):
Control Section: Maint. Area: 6B
Local Agency Bridge Nbr:

Length: 176.0 ft
Deck Width: 6.7 ft
Rdwy. Area 969 sq ft
Paint Area
Culvert : N/A

NBI Deck: 7 Super: 7 Sub: 7 Chan: 7 Culv: N
Open, Posted, Closed: OPEN

Appraisal Ratings - Approach: N Waterway: 9
MN Scour Code: N-STBL;LIM SCOUR Def. Stat: ADEQ Suff. Rate:
Required Bridge Signs - Load Posting: NOT REQUIRED Traffic: NOT REQUIRED
Horizontal: NOT REQUIRED Vertical: NOT APPLICABLE

ELEM NBR	ELEMENT NAME	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
800	CRITICAL DEFS OR SAFETY HAZARDS	09-16-2021	1 EA	1	0	0	0
		09-24-2019	1 EA	1	0	0	0
	Notes: [2013-2021] - No critical findings were noted at the time of inspection.						
12	REINFORCED CONCRETE DECK	09-16-2021	1,179 SF	1,155	24	0	0
		09-24-2019	1,179 SF	1,155	24	0	0
	Notes: [2013-2015] - There are scattered transverse cracks with efflorescence beneath the deck. [2017] - 235lf of cracks with efflorescence (324x0.1=24sf-CS2). [2021] - No change.						
510	*WEARING SURFACE*	*09-16-2021*	*969 SF*	*945*	*24*	*0*	*0*
		09-24-2019	*969 SF*	*945*	*24*	*0*	*0*
	Notes: Top of Concrete Deck with Uncoated Rebar Notes: *[2013-2015] - There are no spalls, delamination or patches noted in the surface of the deck.* *[2017] - 241lf of mostly sealed deck cracks (241x0.1=24sf-CS2).* *[2019-2021] - No change.*						
810	CONC WEAR SURF-CRACKING SEALING	09-16-2021	241 LF	0	241	0	0
		09-24-2019	241 LF	0	241	0	0
	Notes: [2017-2021] - 241lf of mostly sealed deck cracks.						
301	POURED SEAL JOINT	09-16-2021	28 LF	27	0	1	0
		09-24-2019	28 LF	27	0	1	0
	Notes: [2015] - All joint sealed at time of inspection. [2017] - 1' of missing joint over pier 1. [2019-2021] - No change.						
330	METAL BRIDGE RAILING	09-16-2021	400 LF	400	0	0	0
		09-24-2019	400 LF	400	0	0	0
	Notes: The railing consist of concrete corner end posts with galvanized steel railing posts and galvanized railing section between them. The galvanized steel railing has scattered areas where the galvanizing is starting to break down with no active corrosion noted at the time of this inspection. [2013-2015] - No change. [2017-2019] - No structural deterioration. All anchorages are secure. [2021] - Section 8 on the south rail has had a slide extension added on to keep rail from falling out of expansion cup during contraction, section 15 on the south rail has pulled out from its expansion cup and is wedged against it. Inspector was able to return the rail to its proper alignment with a prybar and hammer. (Monitor).						
515	*STEEL PROTECTIVE COATING*	*09-16-2021*	*2,267 SF*	*0*	*2,267*	*0*	*0*
		09-24-2019	*2,267 SF*	*0*	*2,267*	*0*	*0*
	Notes: [2017-2021] - Galvanized surface is failing.						
331	REINFORCED CONC BRIDGE RAILING	09-16-2021	4 LF	0	4	0	0
		09-24-2019	4 LF	0	4	0	0
	Notes: Concrete corner posts. [2017-2021] - All corner posts have small corner chips and a few random cracks.						

321	CONCRETE APPROACH SLAB	09-16-2021	150 SF	145	5	0	0
		09-24-2019	150 SF	145	5	0	0

Notes: West Approach Slab -
[2013-2015] - Approximately 20 linear feet of sealed random cracks.
[2017] - West - 23lf of sealed random cracking (2sf-CS2).
[2019-2021] - No change.

East Approach Slab -
[2013-2015] - Approximately 20 linear feet of sealed random cracks.
[2017] - East - 27lf of sealed random cracking (3sf-CS2).
[2019-2021] - No change.

205	REINFORCED CONCRETE COLUMN	09-16-2021	2 EA	2	0	0	0
		09-24-2019	2 EA	2	0	0	0

Notes: Pier 1 -
[2013-2021] - No deterioration noted.

Pier 2 -
[2013-2021] - No deterioration noted.

215	REINFORCED CONCRETE ABUTMENT	09-16-2021	62 LF	57	4	1	0
		09-24-2019	62 LF	57	4	1	0

Notes: West Abutment -
[2013] - Minor vertical cracks in the front face. The parapet wall has diagonal cracks near the top at the outside corners. There is a small area of delaminated concrete along the top edge of the parapet wall at the south side (CS-2). SW Wingwall - has random and diagonal crack near the top next to the parapet wall with a small delaminated area.
[2015-2021] - No change.

East Abutment -
[2013] - Minor vertical cracks in the front face. The parapet wall has diagonal cracks near the top at the outside corners. There are some scattered small chips along the south side.
[2015-2021] - No change.

Wingwall Notes -
SE Wingwall - has 1 short diagonal crack with leaching near the front. NE Wingwall - has minor random cracks.
[2017] - 6"x2" spall at SE corner (1'-CS2). heavy leaching at the SE corner (1'-CS3). SE wing - 2"x2" chip spall (1'-CS2). NE wing - area of leaching (1'-CS2)
[2019-2021] - No change.

234	REINFORCED CONCRETE PIER CAP	09-16-2021	13 LF	8	5	0	0
		09-24-2019	13 LF	8	5	0	0

Notes: Pier 1 -
[2013] - 2 vertical or random cracks with minor leaching 1 located under each of the girders, there is 1 vertical crack at the south end, a small chipped area along the top edge at the south end and a small 1" X 3" rebar spall located on the east side near the south end.
[2015-2021] - No change.

Pier 2 -
[2013] - 2 vertical or random cracks with minor leaching 1 located under each of the girders, there is 1 vertical crack at the south end and minor chips on the south end along the top edge.
[2015-2021] - No change.

109	PRESTRESSED CONC GIRDER OR BEAM	09-16-2021	352 LF	311	41	0	0
		09-24-2019	352 LF	311	41	0	0

Notes: Span #1 -
[2013-2015] - Span 1 - both girders have minor random cracking along the ends over the abutment.
[2017] - Chair stains on the bottom of both girders for the full length (approx. 12'-CS2).
[2019] - Span 1 has 5"x2" rebar spall on south face of south girder (1'-CS2).
[2021] - No change.

Span #2 -
[2017] - Chair stains on the bottom of both girders for the full length (approx. 12'-CS2).
[2019-2021] - No change.

Span #3 -
[213-2017] - Both girders have minor random cracking along the ends over the abutment. Span 3 has 4" x 3" rebar spall on the south side at south girder, also 2 small areas of delamination (4'-CS2).
[2017] - Chair stains on the bottom of both girders for the full length (approx. 12'-CS2).

[2019-2021] - No change.

311	EXPANSION BEARING	09-16-2021	6 EA	0	5	1	0
		09-24-2019	6 EA	0	6	0	0

Notes: Located at the abutments and the east side of pier 1.

West Abutment Bearings -
Both bearings have failed paint with minor surface corrosion.
[2013-2021] - No change.

Pier # 1 Bearings -
Both bearings have failed paint with some surface corrosion.
[2013-2021] - No change.

East Abutment Bearings -
Both bearings have failed paint with minor surface corrosion.
[2013-2019] - No change.
[2021] - Minor section loss on nuts on the north bearing.

313	FIXED BEARING	09-16-2021	6 EA	0	6	0	0
		09-24-2019	6 EA	0	6	0	0

Notes: Located on the west side of pier 1 and both sides of pier 2.

Pier # 1 Bearings -
Both have failed paint with minor surface corrosion.
[2013-2021] - No change.

Pier # 2 Bearings -
All 4 bearings have failed paint with minor surface corrosion.
[2013-2021] - No change.

855	SECONDARY MEMBERS (SUPER)	09-16-2021	1 EA	1	0	0	0
		09-24-2019	1 EA	1	0	0	0

Notes: Cast in place concrete diaphragms.

[2019-2021] - No defects at this time.

883	CONCRETE SHEAR CRACKING	09-16-2021	1 EA	1	0	0	0
		09-24-2019	1 EA	1	0	0	0

Notes: [2017-2021] - No shear cracking noted.

885	SCOUR	09-16-2021	1 EA	1	0	0	0

Notes: [2021] - No scour visible at time of inspection.

892	SLOPES & SLOPE PROTECTION	09-16-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: [2013-2017] - The slopes at the abutments and wingwalls are in stable condition at the time of this inspection.
[2019-2021] - No riprap on slope , minor erosion from foot traffic.

894	DECK & APPROACH DRAINAGE	09-16-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: [2013-2015] - No drainage issues noted at time of inspection.

2 drain pipes located at the west end between the I90 bridges and the pedestrian bridge.
[2017-2021] - Erosion is occurring below the bottom pipe (CS2).

895	SIDEWALK, CURB, & MEDIAN	09-16-2021	1 EA	1	0	0	0
		09-24-2019	1 EA	1	0	0	0

Notes: [2013] - Both have approach sidewalks have been repaired recently.
[2015-2021] - No issues noted.

900	PROTECTED SPECIES	09-16-2021	1 EA	0	0	1	0
		09-24-2019	1 EA	0	0	1	0

Notes: [2017-2021] - Swallow nests are present.

General Notes: Bridge 9218

All girders and bearings are numbered from south and all spans and piers are numbered from the west.

[2011] - Inspected by Robert Pyfferoen.
[2013] - Inspected by Tom Miles.
[2015] - Inspected by Gary Waletzki.
[2017] - Inspected by Tom Miles and Derek Stecker.
[2019] - Inspected by Tom Miles and Gary Lovelace.
[2021] - Inspected by Chad Hockens.

Deck: [7] Minor cracking.

Brdg Railings: [N] Ped. Br. , no cars etc.

Transitions: [N] Ped. Br. GR not req.

Appr GuardraiIl: [N] Ped. Br. GR not req.

Appr Guardrail Terminal : [N] Ped. Br. GR not req.

Superstructure: [7] Minor paint failure.
[2019] - Minor, isolated delamination / spalling.

Substructure: [7] Minor cracking.

Channel: [7] [2017] - There are minor areas of bank erosion both up and down stream.

Waterway Adeq: [9] [2017] - Chance of overtopping is remote.

Appr Roadway Alignment: [N] Pedestrian Bridge.

MINNESOTA STRUCTURE INVENTORY REPORT

Bridge ID: 9178 **I 90 WB over 6TH ST NE** Date: 05/11/2022

+ GENERAL +

Agency Br. No. **Crew** OWAT
District 6 **Maint. Area** 6B
County 50 - MOWER
City AUSTIN
Township
Desc. Loc. 1.3 MI W OF E JCT TH 218
Sect., Twp., Range 35 - 103N - 18W
Latitude 43d 40m 50.85s
Longitude 92d 58m 02.18s
Custodian STATE HWY
Owner STATE HWY
Insp Responsibility DISTRICT 6
Year Built 1958
Date Opened to Traffic 11-01-1986
MN Year Remodeled 1985
FHWA Year Reconstructed
Bridge Plan Location CENTRAL
Potential ABC YES

+ STRUCTURE +

Service On HIGHWAY
Service Under HIGHWAY
Main Span Type PRESTR BM SPAN
Main Span Detail
Appr. Span Type
Appr. Span Detail
Skew
Culvert Type
Barrel Length

Number of Spans
MAIN: 3 APPR: 0 TOTAL: 3

Main Span Length 47.5 ft
Structure Length 121.5 ft
Deck Width 46.0 ft
Deck Material C-I-P CONCRETE
Wear Surf Type LOW SLUMP CONC
Wear Surf Install Year 1985
Wear Course/Fill Depth 0.17 ft
Deck Membrane NONE
Deck Rebars NONE
Deck Rebars Install Year
Structure Area 5,589 sq ft
Roadway Area 5,177 sq ft
Sidewalk Width - L/R
Curb Height - L/R
Rail Codes - L/R 22 22

+ ROADWAY ON BRIDGE +

Facility I 90
Functional Class URB/PR ART ISTH
ADT (YEAR) 10,150 (2016)
HCADT 1,218
National Highway System Y
Route Sys/Nbr (TIS) ISTH 90
Ref. Point (TIS) 178+00.778
Detour Length 0 mi.
Lanes 2 Lanes ON Bridge
Control Section (TH Only) 5080
Function MAINLINE
Type 1 WAY TRAF
Bridge Match ID 1
Roadway Key 1-ON

+ RDWY DIMENSIONS ON BRIDGE +

If Divided	NB-EB	SB-WB
Roadway Width	42.6 ft	
Vertical Clearance		
Max. Vert. Clear.		
Horizontal Clear.	42.5 ft	
Appr. Surface Width	38.0 ft	
Bridge Roadway Width	42.6 ft	
Median Width on Bridge	NA	

+ MISC. BRIDGE DATA +

Structure Flared NO
Parallel Structure LEFT
Field Conn. ID
Cantilever ID

Foundations
Abut. CONC - FTG PILE
Pier CONC - FTG PILE
Historic Status NOT ELIGIBLE
On - Off System ON

+ PAINT +

Year Painted
Painted Area
Primer Type
Finish Type

+ BRIDGE SIGNS +

Posted Load NOT REQUIRED
Traffic NOT REQUIRED
Horizontal OBJECT MARKERS
Vertical NOT APPLICABLE

+ INSPECTION +

Deficient Status ADEQ
Sufficiency Rating 97.0
Last Routine Insp Date 09-16-2021
Routine Insp Frequency 24
Inspector Name DISTRICT 6
Status A-OPEN

+ NBI CONDITION RATINGS +

Deck 5
Superstructure 6
Substructure 6
Channel N
Culvert N

+ NBI APPRAISAL RATINGS +

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

+ SAFETY FEATURES +

Bridge Railing 1-MEETS STANDARDS
GR Transition 1-MEETS STANDARDS
Appr. Guardrail 1-MEETS STANDARDS
GR Termini 1-MEETS STANDARDS

+ SPECIAL INSPECTIONS +

Frac. Critical N
Underwater N
Pinned Asbly. N

+ WATERWAY +

Drainage Area
Waterway Opening
Navigation Control NOT APPL
Pier Protection
Nav. Vert./Horz. Clr.
Nav. Vert. Lift Bridge Clear.
MN Scour Code A-NON WATERWAY
Scour Evaluation Year

+ CAPACITY RATINGS +

Design Load HS 20+MOD
Operating Rating HS 36.60
Inventory Rating HS 26.80
Posting
Rating Date 08-13-2003

Overweight Permit Codes
A: 1 B: 1 C: 1

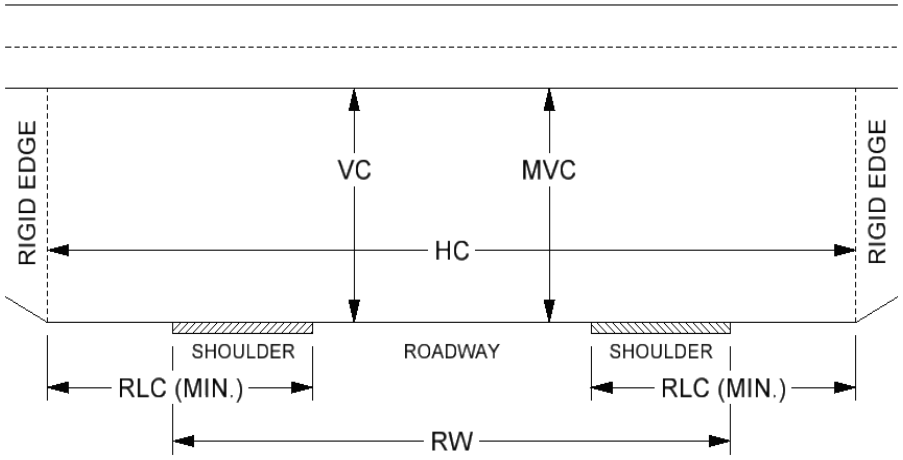
MINNESOTA STRUCTURE INVENTORY REPORT
Roadway Under Bridge

Bridge ID: 9178 — MUN 164 under I 90 WB — Date: 05/11/2022

+ FEATURES +			+ DIMENSIONS +			
Item Description	NBI (if appl)	Value	Item Description	Diagram Abbrev.	Values NB-EB	Values SB-WB *
Road Name		MUN 164	**Roadway Width**	RW	41.0 ft	
Functional Class.	26	URB COLL	**Vertical Clearance**	VC	16.0 ft	
ADT (YEAR)	29 (& 30)	4,000 (1981)	**Max. Vert. Clear**	MVC	16.0 ft	
HCADT	109		**Horizontal Clear**	HC	44.1 ft	
National Highway System	104	N	**Lateral Clr. - Lt**	LLC		
Route Sys/Nbr (TIS)		MUN 164	**Lateral Clr. - Rt**	RLC	10.4 ft	
Ref. Point (TIS)		000+00.066	**Median Width**	MW	NA	
Detour Length	19	5 mi.				
Lanes	28B	2 Lanes UNDER Bridge				
Control Section (TH Only)						
Function	5C	MAINLINE				
Type	102	2 WAY TRAF				
Bridge Match ID		2				
Roadway Key	5A	2-UNDER				

* Entered only if this record is for a divided roadway

UNDIVIDED HIGHWAY
2 WAY TRAFFIC



RIGID EDGE IS A TOE OF SLOPE STEEPER THAN 1 TO 3 OR A FIXED OBJECT SUCH AS GUARDRAIL, PIER STRUT OR OTHER BARRIER.

RLC (RIGHT LATERAL CLEARANCE) IS THE MEASUREMENT FROM THE OUTSIDE EDGE OF THE ROADWAY TO THE RIGID EDGE. RIGHT IS DETERMINED WHEN FACING THE DIRECTION OF TRAVEL. RLC IS THE MINIMUM DIMENSION AFTER MEASURING IN BOTH DIRECTIONS.

05/11/2022
Crew: OWAT
Insp Responsibility: DISTRICT 6

MINNESOTA BRIDGE INSPECTION REPORT

BRIDGE 9178 I 90 WB OVER 6TH ST NE **INSP. DATE: 09-16-2021**

County: MOWER
City: AUSTIN
Township:
Section: 35 Township: 103N Range: 18W
Main Span Type: PRESTR BM SPAN

Location: 1.3 MI W OF E JCT TH 218
Route (TIS): ISTH 90 Ref Pt (TIS): 178+00.778
Control Section: 5080 Maint. Area: 6B
Local Agency Bridge Nbr:

Length: 121.5 ft
Deck Width: 46.0 ft
Rdwy. Area 5,177 sq ft
Paint Area
Culvert : N/A

NBI Deck: 5 Super: 6 Sub: 6 Chan: N Culv: N
Open, Posted, Closed: OPEN

Appraisal Ratings - Approach: 8 Waterway: N
MN Scour Code: A-NON WATERWAY Def. Stat: ADEQ Suff. Rate: 97.0
Required Bridge Signs - Load Posting: NOT REQUIRED Traffic: NOT REQUIRED
Horizontal: OBJECT MARKERS Vertical: NOT APPLICABLE

ELEM NBR	ELEMENT NAME	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
800	CRITICAL DEFS OR SAFETY HAZARDS	09-16-2021	1 EA	1	0	0	0
		09-24-2019	1 EA	1	0	0	0

Notes: [2013 - 2021] - No critical findings were noted at the time of inspection.

12	REINFORCED CONCRETE DECK	09-16-2021	5,589 SF	4,774	570	245	0
		09-24-2019	5,589 SF	4,774	570	245	0

Notes: [2015] - There are scattered transverse cracks with efflorescence beneath the deck and 3 small spalls near the east end between the north fascia and first interior girders. There are scattered area of saturated concrete/rust stains, and large cracks located between girders 6 & 7 in all 3 spans. There are no areas of concrete delaminated over traffic lanes.
[2017 - 2019] - 25 transverse cracks with light staining (25x4.5'x0.1=11sf-CS2).
Span #1 -
[2017 2019] - 2 full length longitudinal cracks with staining between G6/G7 (244sf-CS3). 9" x5" rebar spall (1sf-CS3) and 14"x5" area of spall (1sf-CS2) between G7/G8 at the west abutment.
[2021] - 17sf of rust stains.

Span #2 -
[2017 2019] - 2 full length longitudinal cracks with staining between G6/G7 (244sf-CS3). Patches over both piers from previous joint replacement (552sf-CS2). Transverse cracking adjacent to patches. 3'x2' patch near mid-span between G1/G2 (6sf-CS2).
[2021] - 20sf of rust stains.

Span #3 -
[2017 2019] - 2 full length longitudinal cracks with staining between G6/G7 (244sf-CS3).

510	*WEARING SURFACE*	*09-16-2021*	*5,177 SF*	*5,030*	*145*	*2*	*0*
		09-24-2019	*5,177 SF*	*5,032*	*145*	*0*	*0*

Notes: Low Slump Overlay with Uncoated Rebar Notes: A low slump concrete overlay was placed in 1985.
[2017] - 1300lf of sealed deck cracks (1300x0.1=130sf-CS2). 2sf spall at joint over pier 2 (2sf-CS2).
[2019] - 2'x1', 2'x3', 1'x2', 16"x1', 1'x1' delamination., 4"x2" delamination at poured joint and other small delamination present. (13sf-CS2).
[2021] - Crack widths are up to .030".
Span #1 -
[2021] - 16 - 4" spalls along the east joint.

Span #2 -

Span #3 -
[2021] - 8 - 4" spalls along the west joint, and a 1' x 1' and 1' x 6" spall in the right lane at P2 joint (2sf - cs3).

810	CONC WEAR SURF-CRACKING SEALING	09-16-2021	1,636 LF	0	1,636	0	0
		09-24-2019	1,636 LF	0	1,636	0	0

Notes: NOTE: 1636 LF of cracks were sealed under contract in 2016.
[2017] - 1636lf of sealed deck cracks
[2019 - 2021] - Cracks remain mostly sealed, crack widths are up to .030" wide.

300	STRIP SEAL DECK JOINT	09-16-2021	86 LF	0	43	43	0
		09-24-2019	86 LF	43	43	0	0

Notes: New waterproof strip seal expansion joints were placed at both ends in 1985.

[2013-2015] - Strip seals are full of dirt and debris.
[2017] - The east joint gap is close to design limits (CS3).
West end -
[2019] - Open 1-1/2" (CS1).
[2021] - Open 1" wide at the RL fog line, full length vertical offset up to ½" (cs3) with minor corrosion along the shoulders.

East end -
[2019 - Open 1" (CS2).
[2021] - Open ½" wide at the RL fogline, most is open 1" wide. vertical offset in the LL with 23lf of corrosion.

301	POURED SEAL JOINT	09-16-2021	316 LF	266	32	16	2
		09-24-2019	316 LF	312	0	4	0

Notes: [2017 - 2019] - 4lf of joint that has lost adhesion
West end -
[2021] - 20lf of joint is unsealed, 12lf of material is missing.

Pier #1 -
[2021] - 6lf of joint is unsealed, 1lf of material is missing.

Pier #2 -
[2021] - 6lf of joint is unsealed, 3lf of material is missing, and 2lf of joint that needs repair.

East end -
[2021] - Sealed.

816	APPROACH RELIEF JOINT	09-16-2021	52 LF	0	0	0	52
		09-24-2019	52 LF	0	0	0	52

Notes: These are the E-eight joints at the roadway ends of both approach slabs.

West Joint -
[2017 - 2019] - Material is missing and both joints have failed.
[2021] - 1½" wide, all unsealed with 8lf of sealant missing in the LL (cs4).

East Joint -
[2017 - 2019] - Material is missing and both joints have failed.
[2021] - ½" wide (cs4).

331	REINFORCED CONC BRIDGE RAILING	09-16-2021	300 LF	89	210	1	0
		09-24-2019	300 LF	121	178	1	0

Notes: South Rail -
[2015 - 2017] - 3 to 5 vertical cracks per rail section with some staining or leaching (28'lf-CS2/side).
[2019] - 4"x6" spall on back side at east extrusion.
[2021] - 60 vertical cracks with leaching, 2 areas of rust staining at the west joint.

North Rail -
[2015 - 2021] - 3 to 5 vertical cracks per rail section with some staining or leaching (28'lf-CS2/side). The lower portion of all rail sections have areas of scaling (150'-CS2).

321	CONCRETE APPROACH SLAB	09-16-2021	1,520 SF	1,500	20	0	0
		09-24-2019	1,520 SF	1,500	20	0	0

Notes: West Approach Slab -
[2015 - 2017] - small minor spall along the end block near the center line and both catch basins have settled slightly. West end along E-8 joint is slightly higher 1/4" to 1/2" than the mainline
[2019] - Material leaking out utility openings with voids under panel.

East Approach Slab -
[2015 - 2012] - Roadway slab adjacent to the east end has heaved slightly 1/4" to 1/2" across the entire width.

205	REINFORCED CONCRETE COLUMN	09-16-2021	6 EA	6	0	0	0
		09-24-2019	6 EA	6	0	0	0

Notes: Pier 1 -
[2015 - 2021] - All columns have scattered minor vertical or random cracks.

Pier 2 -
[2015 - 2021] - All columns have scattered minor vertical or random cracks.

215	REINFORCED CONCRETE ABUTMENT	09-16-2021	132 LF	73	45	14	0
		09-24-2019	132 LF	73	45	14	0

Notes: Face of each abutment beam seat is stained from leaking water through end joint. Also both abutments special surface finish is failing and flaking.

West Abutment -
[2013 - 2015] - 14 vertical cracks scattered across the front face, most of the cracks extend across the bridge seat and up the parapet wall with some staining or leaching. The patched area over the utility access hole between girders 1 & 2 along the parapet wall is deteriorated and now is open. There is random cracking at each end of the parapet wall.
[2017 - 2019] - 6 vertical cracks with leaching (6'-CS2). random minor cracking on the remainder. 3' of the abutment at the south end is wet and stained due to leaking from the open drain hole in the parapet and 4' at the north end.
[2021] - Random cracks with leaching at the parapet to wing connection. 1' x 2' rebar spall/delam at the south end.

East Abutment -
[2013] - 19 vertical cracks scattered across the front face, most of the cracks extend across the bridge seat and up the parapet wall with some staining or leaching. The front face has areas of map cracking at both ends with rebar spalls and delamination at the south end approximately 8 square feet. The top of the bridge seat, south end, extending in 8' has light to moderate scaling.
[2015] - Concrete surface treatment is failing and map cracking is present.
[2017 - 2019] - 14' of random cracking with heavy leaching on the south end (14'CS3). 10' cracking with leaching (10'-CS2). random minor cracking on the remainder. SSF has failed.
[2021] - 3' of deep spalling near B2.

Wingwall Notes -
[2017] - SW wing 7' random cracking with leaching (7'-CS2).
SE wing 6' horizontal crack with leaching (6'-CS2). [2019] - SE - 4"x6" spall.
NW wing 7' horizontal cracks with leaching (7'-CS2).
NE wing 4' horizontal cracks with leaching (4'-CS2). Random minor cracking on remainder.

234	REINFORCED CONCRETE PIER CAP	09-16-2021	92 LF	67	22	3	0
		09-24-2019	92 LF	67	22	3	0

Notes: Pier # 1 -
[2013 - 2015] - 4 or 5 minor vertical cracks along the top edge near each end of the cap over the outside columns and 3 or 4 vertical cracks along the bottom edge between the columns, all cracks can be seen on both sides of the cap. Both ends of the cap have 2 or 3 vertical cracks and horizontal cracks that extend 1 or 2 feet onto both the east and west sides. West Side - there is a 3 foot long horizontal crack near the top edge under girder 2 as well as a diagonal crack near south end. 4" x 36" long delamination under girder 2.
[2017 - 2021] - 5 vertical cracks. 3' of horizontal cracking and delamination under G2 on the west side (CS3). random cracking on the north end. 1' x thickness of random cracking and delamination at the top on the south end.

Pier # 2 -
[2013 - 2015] - 4 or 5 minor vertical cracks along the top edge near each end of the cap over the outside columns and 3 or 4 vertical cracks along the bottom edge between the columns, all cracks can be seen on both sides of the cap. There are minor vertical or random cracks on the south end.
[2017 - 2021] - 2 vertical cracks and random cracking on both ends.

109	PRESTRESSED CONC GIRDER OR BEAM	09-16-2021	970 LF	930	32	8	0
		09-24-2019	970 LF	950	20	0	0

Notes: Span # 1 -
[2015 - 2019] - Both fascia girders near the mid span along the outside surface at the top flange have staining and short vertical cracks. South fascia over the west abutment has diagonal and random cracking along the top flange as well as 2 vertical cracks, one near mid span, the other 10' west of the pier, which can be seen from both sides. North fascia has 3 vertical cracks. One near centerline, one 10' west of pier, the last 4' west of pier. The cracks at 4' and 10" can be seem from both sides. North fascia girder has 2 rebar spalls on bottom flange, located 10' from west abutment, 7" x 8" and 5" x 3" (2lf - cs3).
[2021] - G7 has a 2" rebar spall in the web on the north side, 3' from the abutment (1lf - cs3). Cracks measure .006" wide in 2021 (cs2).

Span # 2 -
[2015 - 2019] - The east ends of girders 6 & 7 have small exposed rebar on the bottom of the bottom flanges near pier 2 (cs3). Girders 7 & 8 have small chips over the south bound lane due to high load impacts. [2021] - G8 is patched South fascia has a 3" rebar spall at end of web south face over Pier 1 (cs3).

Span # 3 -
[2015 - 2021] - South fascia girder over the east abutment, east end has a small exposed rebar along the bottom of the bottom flange, also has 5 vertical cracks, two near the abutment, one at the center, the other two at 10' & 7' east of pier 2. The cracks at 10' & 7' can be seen from both sides. South fascia has a 3" delaminated area at end of beam bottom of web, north face over Pier 2. North fascia girder over pier 2 has a small exposed rebar on the bottom of the bottom flange as well as 3 vertical cracks, they are located at 7', 9', 10' east of pier and can all be seen from both sides.
[2021] - G3 has a 4" x 5" delam on the bottom at the bearing.

311	EXPANSION BEARING	09-16-2021	24 EA	0	11	13	0
		09-24-2019	24 EA	0	13	11	0

Notes: The expansion bearings are located along both abutments and along the west side of pier 2.

West Abutment Bearings -
[2015] - Bearings have failed galvanizing with active surface corrosion (CS2).
[2017 - 2019] - Bearings 1, 2, 5, 6, 7 and 8 have flaking rust (6-CS3).
[2021] - All 8 bearings have moderate corrosion with flaking rust (cs3).

Pier # 2 Bearings -
[2013] - Bearings have failed galvanizing with active surface corrosion (CS2).
[2015 - 2021] - Bearings 1 and 8 have flaking rust (2-CS3).

East Abutment Bearings -
[2015 - 2021] - Bearings have failed galvanizing with active surface corrosion (CS2) Bearings 1-2-3 have flaking rust (3-CS3).

Abutment bearings are offset into expansion. Measurements have been taken from center of sole plate to center of bearing assembly.
[2011-2017] - W = 0.5" E = 2.0"

313	FIXED BEARING	09-16-2021	24 EA	0	24	0	0
		09-24-2019	24 EA	0	24	0	0

Notes: The fixed bearings are located at the both sides of pier 1 and along the east side of pier 2.

[2015 - 2021] - All fixed bearings have failed galvanizing with active surface corrosion (CS2).

855	SECONDARY MEMBERS (SUPER)	09-16-2021	1 EA	0	0	1	0
		09-24-2019	1 EA	0	1	0	0

Notes: Concrete diaphragms

Over East Abutment - the end diaphragms between girders 5 & 6 have small delaminated areas.
Over Pier # 1 - [2013] - 5 diaphragms with cracking and exposed rebars (cs3). [2015] - Between G 1-2 large spall on bottom side.
Over Pier # 2 - [2013-2015] - Diaphragms between girders 1 & 2, 2 & 3 and 5 & 6 have random cracking with exposed rebars.

[2017 - 2021] - No change.

883	CONCRETE SHEAR CRACKING	09-16-2021	1 EA	1	0	0	0
		09-24-2019	1 EA	1	0	0	0

Notes: [2017 - 2021] - No shear cracking noted.

891	OTHER BRIDGE SIGNING	09-16-2021	1 EA	1	0	0	0
		09-24-2019	1 EA	1	0	0	0

Notes: Signs Required: Horizontal Clearance

[2015 - 2021] - All signs were in place and in good condition at the time of this inspection.

892	SLOPES & SLOPE PROTECTION	09-16-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: West Slope -
There is an erosion hole 1' X 1' X 3' deep behind the southwest catch basin.

[2013 - 2017] - Scattered blocks with heaving or settlement. The top row of blocks on each slope have been removed
[2019] - Slope is undermined and settled.

East Slope -
[2013] - Scattered blocks with heaving or settlement. Along the south side a few blocks have tipped into a washout hole.
[2015] - Slope has been repaired by bridge crew.
[2017] - 4'x2' area of settlement near the center of the abutment.
[2019] - Slope is undermined and settled.
[2021] - Slope erosion from the approach panel to the top of the slope along the north wing. 2 paving blocks are removed near the center and cracked/deteriorated blocks on the south side near the bottom.

893	GUARDRAIL	09-16-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: [2015] - There are 2 small areas of minor impact damage to the east end center median guardrail with 2 bent sections and 2 posts pushed backwards slightly.
[2017] - Median guardrail is corroded.
[2019 - 2021] - The east bullnose has impact damage.

894	DECK & APPROACH DRAINAGE	09-16-2021	1 EA	1	0	0	0
		09-24-2019	1 EA	1	0	0	0

Notes: All catch basins have been repaired.
[2017 - 2021] - No drainage issues noted.

895	SIDEWALK, CURB, & MEDIAN	09-16-2021	1 EA	1	0	0	0

Notes: [2021] - Element added for Approach panel curbs.
West approach - O.K.

East approach - Small rebar spall on the top of the north curb.

900	PROTECTED SPECIES	09-16-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: [2017 - 2021] - No protected species noted.

General Notes: Bridge 9178
All girders, columns and bearings are numbered from the south and all spans and piers are numbered from the west.

[2011] - Inspected by Robert Pyfferoen.
[2013] - Inspected by Gary Waletzki.
[2015] - Inspected by Gary Waletzki.
[2017] - Inspected by Tom Miles.
[2019] - Inspected by Tom Miles.
[2021] - Inspected by Tony Bale.

Deck: [5] [2017] - Moderate cracking. Minor delamination.
[2019] - Moderate deterioration between girders 6 and 7 full length.

Brdg Railings: [1] Type 22 - meets standards for all speeds

Superstructure: [6] [2017] - Minor cracking and spall.

Substructure: [6] [2017] - Moderate cracking. Minor spall.

Appr Roadway Alignment: [8] [2017] - No speed reduction or sight distance issues.

MINNESOTA STRUCTURE INVENTORY REPORT

Bridge ID: 9179 **I 90 EB over 6TH ST NE** Date: 05/11/2022

+ GENERAL +

Agency Br. No. **Crew** OWAT
District 6 **Maint. Area** 6B
County 50 - MOWER
City AUSTIN
Township
Desc. Loc. 1.3 MI W OF E JCT TH 218
Sect., Twp., Range 35 - 103N - 18W
Latitude 43d 40m 50.05s
Longitude 92d 58m 02.18s
Custodian STATE HWY
Owner STATE HWY
Insp Responsibility DISTRICT 6
Year Built 1958
Date Opened to Traffic 11-01-1986
MN Year Remodeled 1985
FHWA Year Reconstructed
Bridge Plan Location CENTRAL
Potential ABC YES

+ STRUCTURE +

Service On HIGHWAY
Service Under HIGHWAY
Main Span Type PRESTR BM SPAN
Main Span Detail
Appr. Span Type
Appr. Span Detail
Skew
Culvert Type
Barrel Length

Number of Spans
MAIN: 3 APPR: 0 TOTAL: 3

Main Span Length 47.5 ft
Structure Length 121.5 ft
Deck Width 46.0 ft
Deck Material C-I-P CONCRETE
Wear Surf Type LOW SLUMP CONC
Wear Surf Install Year 1985
Wear Course/Fill Depth 0.17 ft
Deck Membrane NONE
Deck Rebars NONE
Deck Rebars Install Year
Structure Area 5,589 sq ft
Roadway Area 5,177 sq ft
Sidewalk Width - L/R
Curb Height - L/R
Rail Codes - L/R 22 22

+ ROADWAY ON BRIDGE +

Facility I 90
Functional Class URB/PR ART ISTH
ADT (YEAR) 10,300 (2019)
HCADT 1,133
National Highway System Y
Route Sys/Nbr (TIS) ISTH 90
Ref. Point (TIS) 178+00.779
Detour Length 0 mi.
Lanes 2 Lanes ON Bridge
Control Section (TH Only) 5080
Function MAINLINE
Type 1 WAY TRAF
Bridge Match ID 1
Roadway Key 1-ON

+ RDWY DIMENSIONS ON BRIDGE +

If Divided	NB-EB	SB-WB
Roadway Width	42.6 ft	
Vertical Clearance		
Max. Vert. Clear.		
Horizontal Clear.	42.5 ft	
Appr. Surface Width	38.0 ft	
Bridge Roadway Width	42.6 ft	
Median Width on Bridge	NA	

+ MISC. BRIDGE DATA +

Structure Flared NO
Parallel Structure RIGHT
Field Conn. ID
Cantilever ID

Foundations
Abut. CONC - FTG PILE
Pier CONC - FTG PILE
Historic Status NOT ELIGIBLE
On - Off System ON

+ PAINT +

Year Painted
Painted Area
Primer Type
Finish Type

+ BRIDGE SIGNS +

Posted Load NOT REQUIRED
Traffic NOT REQUIRED
Horizontal OBJECT MARKERS
Vertical NOT APPLICABLE

+ INSPECTION +

Deficient Status ADEQ
Sufficiency Rating 97.0
Last Routine Insp Date 09-15-2021
Routine Insp Frequency 24
Inspector Name DISTRICT 6
Status A-OPEN

+ NBI CONDITION RATINGS +

Deck 5
Superstructure 6
Substructure 6
Channel N
Culvert N

+ NBI APPRAISAL RATINGS +

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

+ SAFETY FEATURES +

Bridge Railing 1-MEETS STANDARDS
GR Transition 0-SUBSTANDARD
Appr. Guardrail 1-MEETS STANDARDS
GR Termini 1-MEETS STANDARDS

+ SPECIAL INSPECTIONS +

Frac. Critical N
Underwater N
Pinned Asbly. N

+ WATERWAY +

Drainage Area
Waterway Opening
Navigation Control NOT APPL
Pier Protection
Nav. Vert./Horz. Clr.
Nav. Vert. Lift Bridge Clear.
MN Scour Code A-NON WATERWAY
Scour Evaluation Year

+ CAPACITY RATINGS +

Design Load H 20
Operating Rating HS 36.60
Inventory Rating HS 26.80
Posting
Rating Date 08-13-2003

Overweight Permit Codes
A: 1 B: 1 C: 1

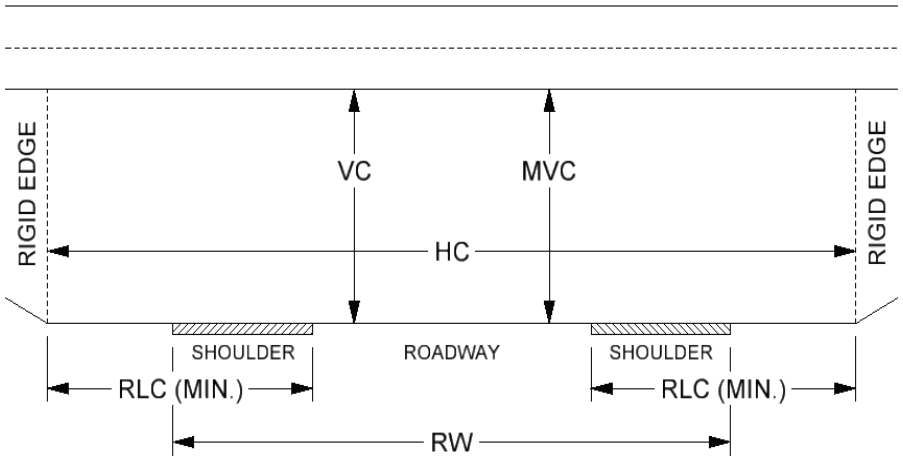
MINNESOTA STRUCTURE INVENTORY REPORT
Roadway Under Bridge

Bridge ID: 9179 — MUN 164 under I 90 EB — Date: 05/11/2022

+ FEATURES +			+ DIMENSIONS +			
Item Description	NBI (if appl)	Value	Item Description	Diagram Abbrev.	Values NB-EB	Values SB-WB *
Road Name		MUN 164	**Roadway Width**	RW	41.0 ft	
Functional Class.	26	URB COLL	**Vertical Clearance**	VC	15.8 ft	
ADT (YEAR)	29 (& 30)	4,000 (1981)	**Max. Vert. Clear**	MVC	15.8 ft	
HCADT	109		**Horizontal Clear**	HC	44.1 ft	
National Highway System	104	N	**Lateral Clr. - Lt**	LLC		
Route Sys/Nbr (TIS)		MUN 164	**Lateral Clr. - Rt**	RLC	10.4 ft	
Ref. Point (TIS)		000+00.046	**Median Width**	MW	NA	
Detour Length	19	5 mi.				
Lanes	28B	2 Lanes UNDER Bridge				
Control Section (TH Only)						
Function	5C	MAINLINE				
Type	102	2 WAY TRAF				
Bridge Match ID		2				
Roadway Key	5A	2-UNDER				

* Entered only if this record is for a divided roadway

UNDIVIDED HIGHWAY
2 WAY TRAFFIC



RIGID EDGE IS A TOE OF SLOPE STEEPER THAN 1 TO 3 OR A FIXED OBJECT SUCH AS GUARDRAIL, PIER STRUT OR OTHER BARRIER.

RLC (RIGHT LATERAL CLEARANCE) IS THE MEASUREMENT FROM THE OUTSIDE EDGE OF THE ROADWAY TO THE RIGID EDGE. RIGHT IS DETERMINED WHEN FACING THE DIRECTION OF TRAVEL. RLC IS THE MINIMUM DIMENSION AFTER MEASURING IN BOTH DIRECTIONS.

05/11/2022
Crew: OWAT
Insp Responsibility: DISTRICT 6

MINNESOTA BRIDGE INSPECTION REPORT

BRIDGE 9179 I 90 EB OVER 6TH ST NE **INSP. DATE: 09-15-2021**

County: MOWER
City: AUSTIN
Township:
Section: 35 Township: 103N Range: 18W
Main Span Type: PRESTR BM SPAN

Location: 1.3 MI W OF E JCT TH 218
Route (TIS): ISTH 90 Ref Pt (TIS): 178+00.779
Control Section: 5080 Maint. Area: 6B
Local Agency Bridge Nbr:

Length: 121.5 ft
Deck Width: 46.0 ft
Rdwy. Area 5,177 sq ft
Paint Area
Culvert : N/A

NBI Deck: 5 Super: 6 Sub: 6 Chan: N Culv: N
Open, Posted, Closed: OPEN

Appraisal Ratings - Approach: 8 Waterway: N
MN Scour Code: A-NON WATERWAY Def. Stat: ADEQ Suff. Rate: 97.0
Required Bridge Signs - Load Posting: NOT REQUIRED Traffic: NOT REQUIRED
Horizontal: OBJECT MARKERS Vertical: NOT APPLICABLE

ELEM NBR	ELEMENT NAME	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
800	CRITICAL DEFS OR SAFETY HAZARDS	09-15-2021	1 EA	1	0	0	0
		09-24-2019	1 EA	1	0	0	0

Notes: [2013 - 2021] - No critical findings noted at the time of inspection.

12	REINFORCED CONCRETE DECK	09-15-2021	5,589 SF	4,815	701	73	0
		09-24-2019	5,589 SF	4,815	701	73	0

Notes: [2013 - 2015] - There are numerous transverse and random cracks with leaching or efflorescence beneath the deck. There are 2 spall areas beneath the deck, located in Span 2 near Pier 2. There are no areas of concrete delamination, beneath the deck over traffic lanes.
[2017] - 6'x46' patched areas over both piers from past joint replacements (552sf-CS2).

Span #1 - [2017] 68sf of cracks (CS2). 2sf of stain between G7/G8 (CS3). 48sf of cracks with stain along the south side of G5 (48sf-CS3). 4sf of delamination with staining over pier 1 between G1/G2 (4sf-CS3).

Span #2 - [2017] 36sf of cracks (CS2). 19sf of rebar spall near pier 2 between G1/G2, and G7/G8 (CS3).

Span #3 - [2017] 41sf of cracks (CS2). 4sf patch between G5/G6 (CS2).
[2019 - 2021] - 7"x3" rebar spall in south overhang near east abutment.

510	*WEARING SURFACE*	*09-15-2021*	*5,177 SF*	*4,997*	*165*	*15*	*0*
		09-24-2019	*5,177 SF*	*5,043*	*134*	*0*	*0*

Notes: Low Slump Overlay with Uncoated Rebar Notes: A low slump concrete overlay was placed in 1985.
[2017] - 1,568lf of sealed deck cracks (1,568 x 0.1 = 156sf - CS2).
Span #1 -
[2021] - 8" x 15' bituminous patch at the paving block (15sf - cs3).

Span #2 -
[2013 - 2015] - 3" x 1' spall in the right lane Span 2 at the construction joint. (1sf-CS2).
[2019] - 2'x2' patch in right lane (4sf-CS2). 2'x2' delamination in left lane (4sf-CS2) at pier 1.

Span #3 -

810	CONC WEAR SURF-CRACKING SEALING	09-15-2021	1,568 LF	0	1,568	0	0
		09-24-2019	1,568 LF	0	1,568	0	0

Notes: NOTE; 1568 LF of cracks were sealed under contract in 2016.
[2017] - 1568lf of sealed deck cracks.
[2019] - Cracks remain mostly sealed.
[2021] - Cracks are mostly unsealed. 100lf of cracks in approaches.

300	STRIP SEAL DECK JOINT	09-15-2021	86 LF	0	43	43	0
		09-24-2019	86 LF	0	43	43	0

Notes: New waterproof strip seal joints were placed at both ends in 1985.

[2013 - 2015] - Strip seal joints were mostly filled with dirt and debris at the time of this inspection..
West joint -
[2017] - West joint open 1 1/4".
[2019] - West joint open 3/4" (CS3).
[2021] - 1" wide, 26lf of corrosion.

East joint -
[2017] - East joint open 1".
[2019] - East joint open 1" (CS2).
[2021] - Closed to ½" or less wide in the north half, corrosion present in the south shoulder.

301	POURED SEAL JOINT	09-15-2021	325 LF	231	51	7	36
		09-24-2019	325 LF	268	0	27	30

Notes: [2013 - 2015] - The concrete joints at approach slabs have areas where the joint material has lost adhesion or is spalled, approximately 60 linear feet.
[2017 - 2019] - 30lf of spall adjacent to west joint. 27lf of failed joint
West end -
[2021] - 15lf of joint has lost adhesion, 2lf of material is missing, and 18lf is in need of repair.

Pier #1 -
[2021] - 3lf of joint material has lost adhesion.

Pier #2 -
[2021] - 7lf of joint has lost adhesion, 1lf of material is missing.

East end -
[2021] - 26lf of joint has lost adhesion, 4lf of material is missing, and 18lf is in need of repair.

816	APPROACH RELIEF JOINT	09-15-2021	52 LF	0	0	0	52
		09-24-2019	52 LF	0	0	0	52

Notes: These are the E-eight joints located at the roadway ends of both approach slabs.
[2021] - Both joints have failed (cs4). Closed tight at the west end and in the left lane at the east end. Right lane east end has moderate spalling of the concrete.

West Joint -
[2015 - 2019] - E-8 joints are no longer functioning as intended. They are closed up and have lost material and sealant.

East Joint -
[2015 - 2019] - E-8 joints are no longer functioning as intended. They are closed up and have lost material and sealant.

331	REINFORCED CONC BRIDGE RAILING	09-15-2021	300 LF	101	198	1	0
		09-24-2019	300 LF	104	195	1	0

Notes: South Rail -
[2013 - 2021] - 3 to 8 vertical cracks per rail section with some staining or leaching. On the south side rail the 4th section from the west end has a 1' X 6 " x 5" deep spall along the bottom next to the joint (1'-CS3).
[2021] - 48 vertical cracks with leaching.

North Rail -
[2013 - 2019] - 3 to 8 vertical cracks per rail section with some staining or leaching. Along the lower portion of the north railing full length light scaling (150lf - CS2).

321	CONCRETE APPROACH SLAB	09-15-2021	1,520 SF	1,477	10	20	13
		09-24-2019	1,520 SF	1,477	10	20	13

Notes: West Approach Slab -
[2013 - 2015] - 1 full length longitudinal crack near the centerline and 3" X 12' spall along the end block in the right hand lane. The concrete curbing and both catch basins are cracked with small spalls on the south side. There is a 3" x 12' and 6" x 2' spall across the right lane.
[2017] - 60lf of cracks.
[2019 - 2021] - Spalls are partially patched with bituminous. 4"x8" bituminous patch in the right lane.

East Approach Slab -
[2013 - 2015] - 1 full length longitudinal crack at the center of the left hand lane. There is a small 2" X 6" spalled area along the end block joint in the left hand lane. There is a small rebar spall on the curb over the north catch basin and the curb and gutter over the south catch basin has cracked and settled as much as 1 to 1 1/2 inches.
[2017] - 2'x6" spall in the right lane at the E8. 2"x17' spall along the paving block. 20lf of cracks.
[2019 - 2021] - 40lf of cracks. 7"x7' and 3'x8" patches. Spall along paving block has been partially patched with bituminous.

205	REINFORCED CONCRETE COLUMN	09-15-2021	6 EA	2	4	0	0
		09-24-2019	6 EA	2	4	0	0

Notes: Pier # 1 Columns -
[2013 - 2015] - Column 1 has a horizontal crack and a 2' X 2' rebar spall on the north side (CS2). Column 3 has 2 small

chips along the northeast and southeast edges (CS2).
[2017 - 2021] - Column 2 has a 3"x4" spall on the NE corner (CS2).

Pier # 2 Columns -
[2013 - 2021] - Column 1 has horizontal and vertical cracks near the top at the southeast corner with possible delamination approximately 2 square feet in size. There is an exposed rebar along the name plate on the west side (CS2).

215	REINFORCED CONCRETE ABUTMENT	09-15-2021	146 LF	86	58	2	0
		09-24-2019	146 LF	86	58	2	0

Notes: West Abutment -
[2013 - 2015] - 12 vertical cracks scattered across the front face, most cracks extend across the bridge seat and up the parapet wall with some staining or leaching. There is a small 4" X 10" rebar spall in the front face at the south end. The parapet wall has random cracking with some staining at each end.
[2017 - 2021] - 4"x2" spall with rust staining under G8 (1'-CS2). 11 vertical leaching cracks (11'-CS2). 6"x8" rebar spall under G1 (1'-CS3).

East Abutment -
[2013 - 2015] - 17 vertical cracks scattered across the front face, most cracks extend across the bridge seat and up the parapet wall with some staining or leaching. The parapet wall has an area of random cracking and small 3" X 12" spall behind the south fascia girder.
[2017] - 17 vertical and random cracks (17'-CS2). 14"x5" spall on the topped edge at the south end and 8"x4" rebar spall on the backwall at the south end (1'-CS3).
[2019 - 2021] - 2.5'x4' delamination on parapet wall behind girder 8 (2'-CS2).

Wingwall Notes -
SW Wingwall - [2013] 2 horizontal and 2 vertical cracks with staining. [2017] - SW wing 7' random leaching cracks (7'-CS2).
SE Wingwall - [2013] Diagonal and vertical cracks near both the bottom and the top with leaching. [2017] - SE wing 7' of random leaching cracks (7'-CS2).
NW Wingwall - [2013 4 horizontal and 4 vertical cracks with staining. [2017] - 12' leaching horizontal crack (12'-CS2).
NE Wingwall - [2013] Diagonal and vertical cracks near both the bottom with leaching. [2017 - NE wing 1' horizontal leaching crack (1'-CS2).
[2019] - no change

234	REINFORCED CONCRETE PIER CAP	09-15-2021	92 LF	76	16	0	0
		09-24-2019	92 LF	76	16	0	0

Notes: Pier # 1:
[2013 - 2021] - 3 vertical cracks along the bottom edge of the cap between the columns that can be seen on both sides of the cap and the south end has random cracking that extends around both sides of the cap. There is a small cracked and delaminated area along the bottom at the north side of column 2.
West Side - has a 1' long horizontal crack near the bottom just to the north of columns which is possible delaminated.

Pier # 2:
[2013 - 2021] - 4 vertical cracks along the bottom edge of the cap between the columns that can be seen on both sides of the cap. There are 2 delaminated areas on the west side and bottom, one is under girder 2 (2'x4") near the bottom and the other is under girder 4 (2'x2") near the top.

109	PRESTRESSED CONC GIRDER OR BEAM	09-15-2021	970 LF	929	31	10	0
		09-24-2019	970 LF	929	31	10	0

Notes: Span # 1 -
[2013 - 2015] - The east ends of girders 1, 2 & 8 have random cracks and small spall's over pier 1. Girder 7 has a small exposed rebar on the bottom of the bottom flange. The north fascia girder near the center has a rust stain on the web. The south fascia girder at the west end over the abutment has short random cracks near the top.
[2017] - vertical cracks are propagating from transverse deck cracks into the beams. This is noted primarily on span 1. the south fascia has 9 cracks located approximately every 2'. G2 - 3, G3, G4, G7 each have 1. G7 on span 3 also has 1 crack. (16'-CS2)
[2019] - Girder 8 has 1" rust stain on north face. (1'-CS2).

Span # 2 -
[2013 - 2019] - Girder 8 has a small exposed rebar on the bottom of the bottom flange near pier 1.

Span # 3 -
[2013 - 2019] - The west ends of girders 2, 3, 5, 6, 7 & 8 over pier 2 have diagonal cracks and small spalls. The both fascia

girders at the east end over the abutment have short random cracks near the top.

311	EXPANSION BEARING	09-15-2021	24 EA	0	13	11	0
		09-24-2019	24 EA	0	16	8	0

Notes: The expansion bearings are located at both abutments and along the west side of pier 2.

West Abutment Bearings -
Some abutment bearings are offset into expansion, measurement was taken from center of sole plate to center of bearing assembly.
[2011-2017] - measurements at 75 deg. F. : W = 0" E =0.75"
All 8 bearings have failed galvanizing with surface corrosion (CS2). There is with active corrosion and minor loss of section along bearings 1,6, 7 & 8 (4-CS3). At bearing 7 there is a broken bolt at south side of the bearing assembly.
[2017 - 2021] - No change.

Pier # 2 Bearings -
All 8 bearings have failed galvanizing with surface corrosion (8-CS2).
[2017 - 2021] - No change.

East Abutment Bearings -
Some abutment bearings are offset into expansion, measurement was taken from center of sole plate to center of bearing assembly.
[2011 - 2017] - measurements at 75 deg. F. : W = 0" E =0.75"
All 8 bearings have failed galvanizing with surface corrosion (CS2). There is active corrosion and minor loss of section at bearings 1,3,4,5,7 & 8 (6 - CS3).
[2017 - 2019] - No change.

313	FIXED BEARING	09-15-2021	24 EA	0	24	0	0
		09-24-2019	24 EA	0	24	0	0

Notes: The fixed bearings are located at both sides of pier 1 and along the east side of pier 2.

[2013 - 2019] - All fixed bearings have failed galvanizing with surface corrosion (CS2).

855	SECONDARY MEMBERS (SUPER)	09-15-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: Concrete diaphragms

Over Pier # 1 -
[2013 - 2021] - small rebar spalls along the bottom of the interior diaphragms.

Over Pier # 2 -
[2013 - 2021] - interior diaphragm next to the north fascia girder has a small rebar spall along the bottom edge. There is a 2' x 6' delamination along the bottom edge of the diaphragm next to the south fascia girder.

883	CONCRETE SHEAR CRACKING	09-15-2021	1 EA	1	0	0	0
		09-24-2019	1 EA	1	0	0	0

Notes: [2017 - 2021] - No shear cracking noted.

891	OTHER BRIDGE SIGNING	09-15-2021	1 EA	1	0	0	0
		09-24-2019	1 EA	1	0	0	0

Notes: Signs Required: Horizontal Clearance

[2013 - 2021] - All signs were in place and in good condition at the time of this inspection.

892	SLOPES & SLOPE PROTECTION	09-15-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: [2015] - Both slopes have been repaired by contract 2014 construction season. Good condition.

[2017] - Various loose blocks and settlement on both slopes
[2019 - 2021] - 2'x8' area of erosion around the SE wing and extending 1' under the approach panel

893	GUARDRAIL	09-15-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: [2017] - Median guardrail is corroded
[2019 - 2021] - New guardrail on west end.

894	DECK & APPROACH DRAINAGE	09-15-2021	1 EA	1	0	0	0
		09-24-2019	1 EA	1	0	0	0

Notes: [2017 - 2021] - No drainage issues noted.

900	PROTECTED SPECIES	09-15-2021	1 EA	0	1	0	0
		09-24-2019	1 EA	0	1	0	0

Notes: [2017 - 2021] - No protected species noted.

General Notes: Bridge 9179

All girders, columns and bearings are numbered from the south and all spans and piers are numbered from the west.
Bridge slopes replaced by contractor during 2014 construction season.

[2011] - Inspected by Robert Pyfferoen.
[2013] - Inspected by Gary Waletzki.
[2015] - Inspected by Gary Waletzki.
[2017] - Inspected by Tom Miles.
[2019] - Inspected by Tom Miles.
[2021] - Inspected by Tony Bale.

Deck: [5] [2017] - Moderate cracking.
[2019] - Moderate spalling in span 2 with exposed rebar.

Brdg Railings: [1] Type 22 - meets standards for all speeds

Superstructure: [6] [2017] - Minor vertical cracks in beams.

Substructure: [6] [2017] - Moderate cracking and minor spall.

Appr Roadway Alignment: [8] [2017] - No speed reduction or sight distance issues.

MINNESOTA STRUCTURE INVENTORY REPORT

Bridge ID: 9201 **US 218 over I 90** Date: 05/11/2022

+ GENERAL +

Agency Br. No. **Crew** OWAT
District 6 **Maint. Area** 6B
County 50 - MOWER
City AUSTIN
Township
Desc. Loc. AT THE E JCT TH 218
Sect., Twp., Range 36 - 103N - 18W
Latitude 43d 40m 26.51s
Longitude 92d 56m 21.78s
Custodian STATE HWY
Owner STATE HWY
Insp Responsibility DISTRICT 6
Year Built 1959
Date Opened to Traffic 01-01-1960
MN Year Remodeled
FHWA Year Reconstructed
Bridge Plan Location CENTRAL
Potential ABC YES

+ STRUCTURE +

Service On HWY;PED
Service Under HIGHWAY
Main Span Type CSTL BEAM SPAN
Main Span Detail
Appr. Span Type
Appr. Span Detail
Skew 5R
Culvert Type
Barrel Length

Number of Spans
MAIN: 4 APPR: 0 TOTAL: 4

Main Span Length 55.5 ft
Structure Length 180.8 ft
Deck Width 37.3 ft
Deck Material C-I-P CONCRETE
Wear Surf Type LOW SLUMP CONC
Wear Surf Install Year 2007
Wear Course/Fill Depth 0.17 ft
Deck Membrane NONE
Deck Rebars NONE
Deck Rebars Install Year
Structure Area 6,744 sq ft
Roadway Area 5,425 sq ft
Sidewalk Width - L/R 2.5 ft 2.5 ft
Curb Height - L/R 0.67 ft 0.67 ft
Rail Codes - L/R 19 19

+ ROADWAY ON BRIDGE +

Facility US 218
Functional Class URB/MINOR ART
ADT (YEAR) 3,900 (2019)
HCADT 507
National Highway System N
Route Sys/Nbr (TIS) USTH 218
Ref. Point (TIS) 012+00.183
Detour Length 8 mi.
Lanes 2 Lanes ON Bridge
Control Section (TH Only) 5008
Function MAINLINE
Type 2 WAY TRAF
Bridge Match ID 2
Roadway Key 1-ON

+ RDWY DIMENSIONS ON BRIDGE +

If Divided	NB-EB	SB-WB
Roadway Width	30.0 ft	
Vertical Clearance		
Max. Vert. Clear.		
Horizontal Clear.	29.9 ft	
Appr. Surface Width	30.0 ft	
Bridge Roadway Width	30.0 ft	
Median Width on Bridge	NA	

+ MISC. BRIDGE DATA +

Structure Flared NO
Parallel Structure NONE
Field Conn. ID RIVETED
Cantilever ID FRICTION

Foundations
Abut. CONC - FTG PILE
Pier CONC - FTG PILE
Historic Status NOT ELIGIBLE
On - Off System ON

+ PAINT +

Year Painted 2005
Painted Area 9,200 sf
Primer Type ORGANIC ZINC
Finish Type URETHANE

+ BRIDGE SIGNS +

Posted Load NOT REQUIRED
Traffic NOT REQUIRED
Horizontal OBJECT MARKERS
Vertical NOT REQUIRED

+ INSPECTION +

Deficient Status S.D.
Sufficiency Rating 71.7
Last Routine Insp Date 09-21-2021
Routine Insp Frequency 12
Inspector Name DISTRICT 6
Status A-OPEN

+ NBI CONDITION RATINGS +

Deck	4
Superstructure	6
Substructure	6
Channel	N
Culvert	N

+ NBI APPRAISAL RATINGS +

Structure Evaluation	6
Deck Geometry	4
Underclearances	3
Waterway Adequacy	N
Approach Alignment	8

+ SAFETY FEATURES +

Bridge Railing	0-SUBSTANDARD
GR Transition	0-SUBSTANDARD
Appr. Guardrail	1-MEETS STANDARDS
GR Termini	1-MEETS STANDARDS

+ SPECIAL INSPECTIONS +

Frac. Critical N
Underwater N
Pinned Asbly. N

+ WATERWAY +

Drainage Area
Waterway Opening
Navigation Control NOT APPL
Pier Protection
Nav. Vert./Horz. Clr.
Nav. Vert. Lift Bridge Clear.
MN Scour Code A-NON WATERWAY
Scour Evaluation Year

+ CAPACITY RATINGS +

Design Load HS 20+MOD
Operating Rating HS 34.80
Inventory Rating HS 20.80
Posting
Rating Date 04-22-2004

Overweight Permit Codes
A: 1 B: 1 C: 1

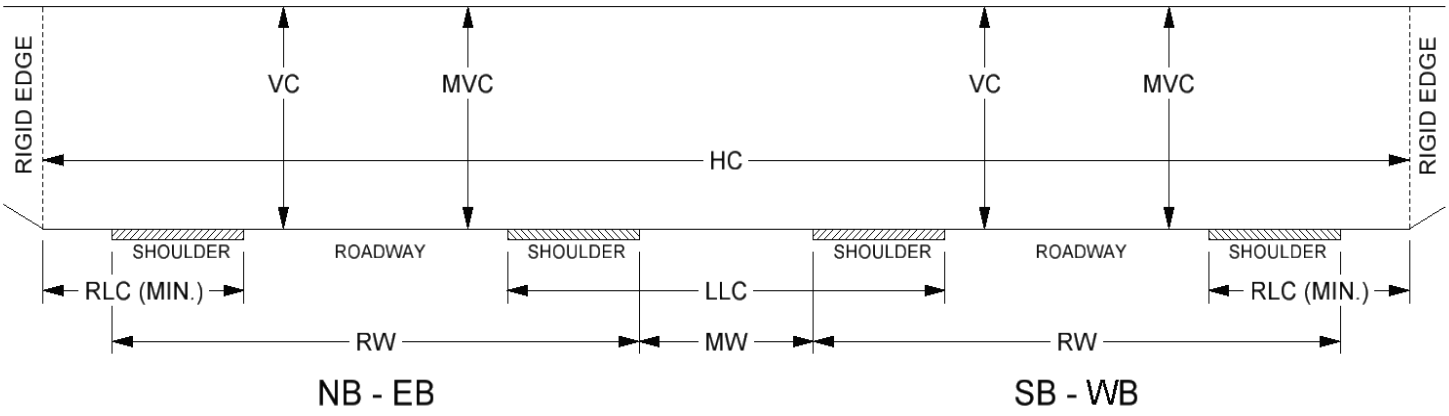
MINNESOTA STRUCTURE INVENTORY REPORT
Roadway Under Bridge

Bridge ID: 9201 I 90 under US 218 Date: 05/11/2022

+ FEATURES +			+ DIMENSIONS +			
Item Description	NBI (if appl)	Value	Item Description	Diagram Abbrev.	Values	
					NB-EB	SB-WB *
Road Name		I 90	**Roadway Width**	RW	38.0 ft	35.0 ft
Functional Class.	26	URB/PR ART ISTH	**Vertical Clearance**	VC	16.1 ft	16.2 ft
ADT (YEAR)	29 (& 30)	17,215 (2019)	**Max. Vert. Clear**	MVC	16.1 ft	16.2 ft
HCADT	109	1,894	**Horizontal Clear**	HC	52.4 ft	52.4 ft
National Highway System	104	Y	**Lateral Clr. - Lt**	LLC	18.7 ft	
Route Sys/Nbr (TIS)		ISTH 90	**Lateral Clr. - Rt**	RLC	8.9 ft	
Ref. Point (TIS)		180+00.312	**Median Width**	MW	32.0 ft	
Detour Length	19	8 mi.				
Lanes	28B	4 Lanes UNDER Bridge				
Control Section (TH Only)		5080				
Function	5C	MAINLINE				
Type	102	2 WAY TRAF				
Bridge Match ID		1				
Roadway Key	5A	2-UNDER				

* Entered only if this record is for a divided roadway

DIVIDED HIGHWAY WITHOUT MEDIAN OBSTRUCTION



RIGID EDGE IS A TOE OF SLOPE STEEPER THAN 1 TO 3 OR A FIXED OBJECT SUCH AS GUARDRAIL, PIER STRUT OR OTHER BARRIER.

LLC (LEFT LATERAL CLEARANCE) IS THE MEASUREMENT BETWEEN OUTSIDE ROADWAY EDGES.

RLC (RIGHT LATERAL CLEARANCE) IS THE MEASUREMENT FROM THE OUTSIDE EDGE OF THE ROADWAY TO THE RIGID EDGE. RIGHT IS DETERMINED WHEN FACING THE DIRECTION OF TRAVEL. RLC IS THE MINIMUM DIMENSION AFTER MEASURING IN BOTH DIRECTIONS.

05/11/2022
Crew: OWAT
Insp Responsibility: DISTRICT 6

MINNESOTA BRIDGE INSPECTION REPORT

BRIDGE 9201 US 218 OVER I 90 **INSP. DATE: 09-21-2021**

County: MOWER
City: AUSTIN
Township:
Section: 36 Township: 103N Range: 18W
Main Span Type: CSTL BEAM SPAN

Location: AT THE E JCT TH 218
Route (TIS): USTH 218 Ref Pt (TIS): 012+00.183
Control Section: 5008 Maint. Area: 6B
Local Agency Bridge Nbr:

Length: 180.8 ft
Deck Width: 37.3 ft
Rdwy. Area 5,425 sq ft
Paint Area 9,200 sq ft
Culvert : N/A

NBI Deck: 4 Super: 6 Sub: 6 Chan: N Culv: N

Open, Posted, Closed: OPEN

Appraisal Ratings - Approach: 8 Waterway: N

MN Scour Code: A-NON WATERWAY Def. Stat: S.D. Suff. Rate: 71.7

Required Bridge Signs - Load Posting: NOT REQUIRED Traffic: NOT REQUIRED
Horizontal: OBJECT MARKERS Vertical: NOT REQUIRED

ELEM NBR	ELEMENT NAME	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
800	CRITICAL DEFS OR SAFETY HAZARDS	09-21-2021	1 EA	1	0	0	0
		09-14-2020	1 EA	1	0	0	0

Notes: [2013-2021] - No critical findings were observed at the time of this inspection.

12	REINFORCED CONCRETE DECK	09-21-2021	6,744 SF	0	6,710	34	0
		09-14-2020	6,744 SF	0	6,715	29	0

Notes: Span 1 -
[2015] - There are numerous transverse cracks or random cracks with leaching, efflorescence or rust staining beneath the deck, along with some scattered patched areas. There are several concrete spalls with exposed rebar beneath the deck, at all spans.
[2017] - 76sf of rebar spall scattered throughout. small rebar spalls on both overhangs. 93sf of patches. (11) 8'x width areas of cracking and delamination. random cracking throughout.
[2018] - No change
[2019] - 5sf of spall/rebar spall (5sf-CS3). 6"x length rust staining along the drip lines on both sides. the remainder is cracked/delaminated/saturated (CS2).
[2020] - No change
[2021] - There is 3SF of spalling next to the joint (3sf-CS3).

Span 2 -
[2015] - There are numerous transverse cracks or random cracks with leaching, efflorescence or rust staining beneath the deck, along with some scattered patched areas. There are several concrete spalls with exposed rebar beneath the deck, at all spans. There are no concrete delamination over traffic lanes.
[2017] - 76sf of rebar spall scattered throughout. small rebar spalls on both overhangs. 93sf of patches. (11) 8'x width areas of cracking and delamination. random cracking throughout.
[2018] - No change
[2019] - 10sf of spall/rebar spall (10sf-CS3). 14'x2' delamination on the bottom side of the old joint between G2/G4 (28sf-CS2). 6"x length rust staining along the drip lines on both sides. 266' of transverse cracking with efflorescence (27sf-CS2).
[2020] - Spall over the center lane between G1 and G2 (2sf-CS3) and between G2-G3 (1sf-CS3)
[2021] - 2sf delamination over the right lane EB removed by OBC. (2sf-CS3).

Span 3 -
[2015] - There are numerous transverse cracks or random cracks with leaching, efflorescence or rust staining beneath the deck, along with some scattered patched areas. There are several concrete spalls with exposed rebar beneath the deck, at all spans. There are no concrete delamination over traffic lanes.
[2017] - 76sf of rebar spall scattered throughout. small rebar spalls on both overhangs. 93sf of patches. (11) 8'x width areas of cracking and delamination. random cracking throughout.
[2018] - No change
[2019] - 6sf of spall/rebar spall (6sf-CS3). 190' of transverse cracking with efflorescence (19sf-CS2). 6"x length rust staining along the drip lines on both sides.
[2020] - No change

Span 4 -
[2015] - There are numerous transverse cracks or random cracks with leaching, efflorescence or rust staining beneath the deck, along with some scattered patched areas. There are several concrete spalls with exposed rebar beneath the deck, at all spans. There are no concrete delamination over traffic lanes.
[2017] - 76sf of rebar spall scattered throughout. small rebar spalls on both overhangs. 93sf of patches. (11) 8'x width areas of cracking and delamination. random cracking throughout.

[2018] - No change.
[2019] - 5sf of spall/rebar spall (5sf-CS3). 180sf of patch (180sf-CS2). 6"x length rust staining along the drip lines on both sides. The remainder is cracked/delaminated/saturated (CS2).
[2020] - There is a 2'x4' piece of plywood attached to deck.
[2021] - No change.

510	*WEARING SURFACE*	*09-21-2021*	*5,425 SF*	*0*	*0*	*5,425*	*0*
		09-14-2020	*5,425 SF*	*0*	*0*	*5,425*	*0*

Notes: Low Slump Overlay with Uncoated Rebar Notes: A low slump concrete overlay placed in 2006 by the Owatonna Bridge Crew.

There are 2 small shallow deck spalls, approx. 4" dia. in Span 3 NBL.
[2015] - 8" x 10" spall next to the NB South strip seal.
[2017] - 14"x4" and 29"x18" patch in the NBL of span 2 adjacent to the south strip seal. 5"x9", 27"x14" patch in SBL adjacent to the north joint. 2"x2" spall in the NBL at mid span. Heavy map cracking over 100% of the deck.
[2018] - NBL - south joint has a 6" x 10" spall. SBL - South hinge joint has a 4" x 4" spall. SBL - North joint has a 2" x 8" spall.
[2019] - Delamination along joints (NBL-7"x12". SBL-2"x3", 3"x3"). Spalling (NBL-10"x13", 6"x12", 3"x5". SBL-5"x12", 4"x7", 3"x12"). Patching (NBL-16"x48". SBL-28"x12", 16"x12").
[2020] - Span 2 - 12" x 48" patch, Span 3 - 1' x 15", 1' x 30", 3" x 12" spall.
[2021] - 1'x4' and 1'x2' spalls next to the strip seal joint (CS3).

810	CONC WEAR SURF-CRACKING SEALING	09-21-2021	2,620 LF	0	0	2,620	0
		09-14-2020	2,620 LF	0	0	2,620	0

Notes: [2013-2015] - Approximately 2620 linear feet of unsealed deck cracks.
[2017-2018] - Heavy map cracking covering the entire deck. (CS3)
[2019-2020] - No change
[2021] - All cracks are unsealed.

300	STRIP SEAL DECK JOINT	09-21-2021	120 LF	114	6	0	0
		09-14-2020	120 LF	116	4	0	0

Notes: Waterproof strip seal expansion joints were placed at both ends and over the hinge joints in 2006.

Joint 1 -
[2015] - All joints are filled with dirt and debris at the time of this inspection.
[2017 - 2018] - No change in condition. No evidence of leaking.
[2019] - East plate missing 1 bolt on top (1'-CS2)
[2020-2021] - No change.

Joint 2 -
[2015] - All joints are filled with dirt and debris at the time of this inspection.
[2017-2018] - No change in condition. No evidence of leaking.
[2019] - West plate missing 2 bolts on top. The east plate missing 1 bolt on top. There is minor surface corrosion on extrusion (2'-CS2). Open 1/2" on west side and 1"-1 1/4" on the east side.
[2020] No change.
[2021] - Front curb plate bolt is loose (2'-CS2).

Joint 3 -
[2015] - All joints are filled with dirt and debris at the time of this inspection.
[2017-2018] - No change in condition. No evidence of leaking.
[2019] - West plate missing 1 bolt on top. Open 3/4" on the west side and 1" on the east side.
[2020] - No change.
[2021] - West curb plate is missing 2 bolts on the top (2'-CS2).

Joint 4 -
[2015] - All joints are filled with dirt and debris at the time of this inspection.
[2017-2018] - No change in condition. No evidence of leaking.
[2019] - Minor surface corrosion on extrusion.
[2020-2021] - No change.

301	POURED SEAL JOINT	09-21-2021	170 LF	0	0	66	104
		09-14-2020	170 LF	0	0	66	104

Notes: [2015] - Both approach slabs have areas where the joint material has lost adhesion or spalling concrete, approximately 104 linear feet and area of spalling along the construction joints (104'-CS4).
[2017-2019] - No change
[2020] - North joints: All joints are missing sealant (CS3). South joints: 30' of missing joint (CS3).
[2021] - No change.

330	METAL BRIDGE RAILING	09-21-2021	360 LF	358	2	0	0
		09-14-2020	360 LF	358	2	0	0

Notes: West Rail -
[2017-2021] - No structural damage. All anchorages are secure.

East Rail -
[2017-2018] - No structural damage. All anchorages are secure.
[2019] - East rail has 2 posts with minor gouges.
[2020-2021] - No change.

515	*STEEL PROTECTIVE COATING*	*09-21-2021*	*1,015 SF*	*0*	*1,015*	*0*	*0*
		09-14-2020	*1,015 SF*	*0*	*1,015*	*0*	*0*

Notes: [2017] - Galvanizing is faded.
[2019 - 2021] - No change.

331	REINFORCED CONC BRIDGE RAILING	09-21-2021	360 LF	0	351	9	0
		09-14-2020	360 LF	0	351	9	0

Notes: West Rail -
[2015] - The concrete posts and rail sections have scattered vertical and random cracks with small chips along the edges of some concrete posts and light scaling along the top surfaces of the concrete rail sections.
[2017] - Minor deterioration throughout the rails
[2018] - No change
[2019] - 3 spall/delamination
[2020] - All the SSF has failed.
[2021] - No change.

East Rail -
[2015] - The concrete posts and rail sections have scattered vertical and random cracks with small chips along the edges of some concrete posts and light scaling along the top surfaces of the concrete rail sections.
[2017] - Minor deterioration throughout the rails
[2018] - No change
[2019] - 6 spall/delamination
[2020] - All the SSF has failed.
[2021] - No change.

321	CONCRETE APPROACH SLAB	09-21-2021	4,320 SF	4,234	80	6	0
		09-14-2020	4,320 SF	4,234	80	6	0

Notes: South Approach Slab -
[2015] - Has a small spall along nearly the entire length of the center line construction joint. There is a full width concrete patch along the end due to placement of new strip seal joint in 2006. There is a large patch in front of the west curb. (38sf-CS2)
[2017-2018] - No change
[2019] - 20"x4" spall at centerline (1sf-CS3). 4"x12" spall in the NBL (1sf-CS3)
[2020] - There is a 1' X 2' spall in the gutter line east curb (2sf-CS2).
[2021] - No change.

North Approach Slab -
[2015] - There are spalled areas scattered along the construction joints 2"x20' wide and a large patched area along the west side. There is a full width concrete patch along the end due to placement of new strip seal joint in 2006.
[2017] - 1'x38' patch at the strip seal (38sf-CS2). 2'x10" spall in the east gutter line (2sf-CS3).
[2018] - No change
[2019] - 12"x4" spall in patch in the southbound lane (1sf-CS3), 20'x4" spall at center line (1sf-CS3). 5' of cracking (1sf-CS2)
[2020-2021] - No change.

107	STEEL GIRDER OR BEAM	09-21-2021	900 LF	733	157	10	0
		09-14-2020	900 LF	745	145	10	0

Notes: There are welded cover plates on all beams at negative moment over Pier 2.

Span 1 -
[2015] - All beams have scattered areas of rust staining along the edge of the top flange next to the concrete deck. All 5 beams along the abutments have rust staining along the bottom of the bottom flanges extending outwards 1 to 2 inches. The diaphragm between the beams 4 & 5 at the hinge joint has rust straining.
[2017] - No change.
[2019] - 1" at the end of all beams and end diaphragms have flaking rust (5'-CS3).
[2020] - No change
[2021] - G1 - 18"x12' area of rust staining on the outside face (12'-CS2).

Span 2 -
[2015] - All beams have scattered areas of rust staining along the edge of the top flange next to the concrete. Beams 4 & 5 each have 2 or 3 each have 2 or 3 small rust spots along the bottom of the bottom flanges.
[2015] - Patched/painted area B1 outside over traffic lane.
[2017-2021] - No change.

Span 3 -
All beams have scattered areas of rust staining along the edge of the top flange next to the concrete. Beam 3 has 1 small rust spots along the bottom of the bottom flange near the center line. Beams 4 and 5 each have 2-3 small rust spots along the bottom flanges.
[2017] - No change.
[2018] - B5 has surface corrosion along the bottom flange.
[2019-2020] - No change.
[2021] - Surface corrosion behind the WB sign (12'-CS2).

Span 4 -
All beams have scattered areas of rust staining along the edge of the top flange next to the concrete. The secondary diaphragms between beams 2 & 3 and 4 & 5 near the hinge joints have rust staining. The end of beam 3 has active corrosion at the hinge.
[2017] - No change.
[2018] - End of B3 has corrosion at the interface with concrete diaphragm.
[2019] - 1" at the end of all beams and end diaphragms has flaking rust (5'-CS3).
[2020-2021] - No change.

515	*STEEL PROTECTIVE COATING*	*09-21-2021*	*7,050 SF*	*0*	*5,541*	*1,502*	*7*
		09-14-2020	*7,050 SF*	*0*	*5,559*	*1,484*	*7*

Notes: All steel members were cleaned and painted in 2005 with a 3 coat zinc rich paint system.

[2015] - Both fascia beams have fading paint.
[2017] - Chalky paint. Surface corrosion along upper flanges
[2018] - No change
[2019] - Areas of blistering paint near hinges.
[2020] - There is 1sf of flaking paint. Several areas of rust on the flanges at welded on stiffeners. 2sf of blistering paint over the west bound lane. Span 3 - G5 has 1SF of flaking paint along the bottom flange. The west fascia had a 18" x 12' sign removed and is missing some paint.
[2021] - The fascia on B1 has chipped and pealing paint (18sf-CS3).

205	REINFORCED CONCRETE COLUMN	09-21-2021	6 EA	4	1	1	0
		09-14-2020	6 EA	4	1	1	0

Notes: All columns were cleaned and sealed in 2005.

Pier 1 Columns -
[2015] - The east column has a 2' X 1' rebar spall on the west side. There is a 2' x 2' area of cracked and delaminated concrete below the spall. There are horizontal cracks on the South side. The West column has a minor diag. crack on the South side.
[2017] - 42" vertical crack at the west edge of the south face. 30"x42" area of delamination and rebar spall with LOS on the west face (1-CS3)
[2018-2021] - No change.

Pier 2 Columns -
[2020] - No deterioration noted.
[2021] - No change.

Pier 3 Columns -
[2015] - Both columns have 4 minor random cracks. Column 1 has a 16" x 16" cracked/delaminated area on the South side (1-CS2).
[2017] - 3 small spall on the north face of column 2 from the utility attachment .
[2018-2021] - No change.

215	REINFORCED CONCRETE ABUTMENT	09-21-2021	101 LF	81	20	0	0
		09-14-2020	101 LF	81	20	0	0

Notes: South Abutment -
11 vertical cracks scattered across the front face and end diaphragms with some leaching (11'-CS2).
[2017] - No change
[2019] - Leaking and staining full width of abutment under the end diaphragms.
[2020-2021] - No change.

North Abutment -
[2015] - 9 vertical cracks scattered across the front face and end diaphragms with some leaching (9'-CS2).
[2017-2018] - No change
[2019] - Leaking and staining full width of abutment under the end diaphragms.
[2020-2021] - No change.

Wingwall Notes -
[2019-2021] - No deterioration noted

234	REINFORCED CONCRETE PIER CAP	09-21-2021	112 LF	62	50	0	0
		09-14-2020	112 LF	62	50	0	0

Notes: All 3 pier caps were cleaned and sealed in 2005.

Pier 1 -
[2015] - There are 4 to 5 minor vertical cracks near each end over the columns with 3 or 4 short vertical cracks along the bottom edge between the columns with most extending under the cap. There is a horizontal crack at each end of the cap extend inwards 4 to 5 feet and the west end of the cap has a small 4" X 4" cracked and delaminated area. .
[2017-2018] - No change
[2019] - Random cracking over both columns (20'-CS2)
[2020-2021] - No change.

Pier 2 -
[2015] - There are 4 to 5 minor vertical cracks near each end over the columns with 3 or 4 short vertical cracks along the bottom edge between the columns with most extending under the cap (14'-CS2).
[2017-2021] - No change.

Pier 3 -
[2015] - There are 4 to 5 minor vertical cracks near each end over the columns with 3 or 4 short vertical cracks along the bottom edge between the columns with most extending under the cap. There are 2 small spalls adjacent to the utility conduit above the East column. (16'-CS2)
[2017-2021] - No change.

311	EXPANSION BEARING	09-21-2021	10 EA	9	0	1	0
		09-14-2020	10 EA	9	0	1	0

Notes: Moveable bearings are located at piers 1 & 3.

Pier 1 Bearings -
[2015] - All 5 bearings were cleaned and painted in 2005 under a contract. No deterioration noted.
[2017-2021] - No change.

Pier 3 Bearings -
[2015] - All 5 bearings were cleaned and painted in 2005 under a contract. The anchor rod along the east side of bearings 4 is heaved upwards 4 to 5 inches (1-CS3). [2017-2021] - No change.

313	FIXED BEARING	09-21-2021	5 EA	5	0	0	0
		09-14-2020	5 EA	5	0	0	0

Notes: Fixed bearings are located at pier 2.

Pier 2 Bearings -
[2015] - All 5 bearings were cleaned and painted under contract in 2005. No deterioration noted.
[2017-2021] - No change.

850	STEEL HINGE ASSEMBLY	09-21-2021	10 EA	0	0	0	10
		09-14-2020	10 EA	0	10	0	0

Notes: South Hinges (span 1) -
All hinges are expanded past center by approximately 1 inch. All 5 hinges have areas of failed paint with active surface corrosion. Bearings 1 & 5 have rust staining and cement staining due to placement of concrete overlay above.
[2015-2021] - No change
[2021] - Expansion is beyond the design limits does not move as intended (5-CS4).

North Hinges (span 4) -
All hinges are expanded past center by approximately 1 inch. All 5 hinges have areas of failed paint with active surface corrosion.
[2015-2021] - No change
[2021] - Expansion is beyond the design limits does not move as intended (5-CS4).

855	SECONDARY MEMBERS (SUPER)	09-21-2021	1 EA	0	1	0	0
		09-14-2020	1 EA	0	1	0	0

Notes: Concrete end diaphragms and intermediate bolted steel diaphragms.

North abutment - The end diaphragms along both sides of beams 2, 3, 4 & 5 have small cracked or delaminated areas on both sides. The end diaphragms between beams 1 & 2 and 3 & 4 have full width horizontal or random cracking. South abutment -There are small delaminated areas on each side of the interior beams along the end diaphragms. All interior end diaphragms have full width horizontal or random cracking.
[2019] - End diaphragms have horizontal cracks across the top ends with leaking and staining. Steel diaphragms have minor corrosion at hinge joints.
[2020-2021] - No change

881	STEEL SECTION LOSS	09-21-2021	1 EA	1	0	0	0
		09-14-2020	1 EA	1	0	0	0

Notes: Minor section loss noted on steel beams, prior to recent paint contract.
[2015-2021] - No change

882	STEEL CRACKING	09-21-2021	1 EA	1	0	0	0
		09-14-2020	1 EA	1	0	0	0

Notes: [2016] Fatigue prone details are present on the primary steel superstructure elements, monitor them for cracking. The Steel Fatigue Detail Ranking code for this structure is 3. Check BSIPM section D.7.10 and 'SIA - One Column' in SIMS for additional details regarding this topic.
[2017] - Partial length cover plate details
[2017-2021] - No steel cracking noted at the time of this inspection.

883	CONCRETE SHEAR CRACKING	09-21-2021	1 EA	1	0	0	0
		09-14-2020	1 EA	1	0	0	0

Notes: [2017-2021] - No shear cracking noted at the time of this inspection.

891	OTHER BRIDGE SIGNING	09-21-2021	1 EA	1	0	0	0
		09-14-2020	1 EA	1	0	0	0

Notes: Horizontal Delineators -
[2015-2019] - All signs are in place and in good condition at the time of this inspection.

Bridge Mounted OH sign on the east fascia beam over the right hand lane of west bound I90 -
[2017] -The sign was in good condition and firmly attached at the time of this inspection.
[2018] - South light fixture wobbles under traffic.
[2019] - The light fixture has been fixed. Sign is in good condition.
[2020-2021] - No change

892	SLOPES & SLOPE PROTECTION	09-21-2021	1 EA	0	1	0	0
		09-14-2020	1 EA	0	1	0	0

Notes: [2015] - Slopes are aggregate with bit topping. Slopes are in good condition.
[2017] - No change
[2018] - North slope aggregate is loose.
[2019-2021] - No change

893	GUARDRAIL	09-21-2021	1 EA	0	0	1	0
		09-14-2020	1 EA	0	0	1	0

Notes: TH 218 (roadway over) there are some new plate beam sections placed away from beam ends at all corners.
TH 90, the guard railing around pier 2 is set too high and the north side posts and plate beam are leaning outwards towards the roadway. There is no guardrail at the SW corner. [2013 - 2015]
[2017] - Median guardrail is heavily corroded. the SE guardrail has been recently impacted.
[2018] - No change
[2019] - Westbound guardrail under the bridge is damaged.
[2020] - The NE guardrail on the roadway over has minor damage.
[2021] - No change.

894	DECK & APPROACH DRAINAGE	09-21-2021	1 EA	0	1	0	0
		09-14-2020	1 EA	0	1	0	0

Notes: [2015-2018] - All deck drains were open at the time of this inspection.
[2019] - Ponding water along both curbs.
[2020] - No change
[2021] - There is a new 12 PVC pipe connected to the catch basin on the NE corner.

895	SIDEWALK, CURB, & MEDIAN	09-21-2021	1 EA	0	1	0	0
		09-14-2020	1 EA	0	1	0	0

Notes: The sidewalks on both sides have scattered areas of map cracking with some small stone pop-outs.

[2013] - West Side - the front face of the curb in spans 1 & 2 has horizontal or random cracking with small delamination and 2 small exposed rebars along span 1. Most cover plates are missing at least 1 bolt and are loose or missing.
[2015-2020] - No change

[2021] - There is cracking on the face of the west curb.

899	MISCELLANEOUS ITEMS	09-21-2021	1 EA	0	1	0	0
		09-14-2020	1 EA	0	1	0	0

Notes: Vertical cork joints between the abutments and wingwalls have deteriorated.
[2019-2021] - No change

3 utility lines attached beneath the deck (2 between G1/G2 and 1 between G4/G5). The east utility pipe has some scattered areas of loose and missing insulation. West utility pipe - O.K.
[2017-2019] - No change
[2020] - The electrical line hangers are corroding on the east coping.
[2021] - No change.

900	PROTECTED SPECIES	09-21-2021	1 EA	0	1	0	0
		09-14-2020	1 EA	0	1	0	0

Notes: [2021] - No protected species were noted at the time of this inspection.

General Notes: BR 9201

All beams, bearings and concrete columns are numbered from the west and all spans and piers are numbered from the south to the north.

[2011] - inspected by Robert Pyfferoen.
[2013] - inspected by Tom Miles.
[2015] - inspected by Gary Waletzki and Tony Bale assisted.
[2017] - inspected by Tom Miles and Derek Stecker
[2018] - inspected by Tom Miles.
[2019] - inspected by Tom Miles and Keith Rosenau.
[2020] - inspected by Tom Miles and Keith Rosenau.
[2021] - inspected by Keith Rosenau.

Deck: [4] [2017] - NBI 4 - Advanced cracking in wearing surface, spalling and delamination.

Brdg Railings: [0] [2021] - Type 19 - Substandard for all speeds.

Appr Guardrail Terminal : [1] [2021] - ET-Plus

Superstructure: [6] [2017] - NBI 6 - Moderate corrosion

Substructure: [6] [2015] - NBI 6 - Minor cracking and spall.

Appr Roadway Alignment: [8] [2017] - NBI 8 - No speed reduction required