

BRIDGE REPAIR SCOPING REPORT

Page 1 of 5

Bridge No. 22801

T.H. CSAH 1 over I 90

District No. 07

Date:

12/6/2017

RECOMMENDED WORK TYPE AND JUSTIFICATION:

- No Deck Repairs Recommended at this Time
- Defer until Future Overlay Replacement
 - Defer until Future Deck Replacement
 - See additional comments below for other work items

Is Primary Need Bridge or Roadway?	Roadway
Anticipated Fiscal Year of Project:	2019
Year Recommended Action No Longer Valid:	2024
Was a Field Visit Performed by the Bridge Office?	no
Is a Future Field Visit Recommended?	yes
Request More Detailed Inspection From District?	yes
See Page 3 Notes on Specific Items to Provide More Detail	

- Remove and Patch Type D, E, & F Recommended
- Deck Delamination and Existing Patches < 10%

- Mill & Overlay Recommended
- Cost < 30% of New Bridge
 - Underside of Deck Condition Satisfactory
 - Epoxy Coated Rebar Top and Bottom
 - Deck Delamination and Existing Patches < 25%

Overlay Type Recommended

- Low Slump Concrete
- Epoxy Chip Seal Wearing Course
- PPC Wearing Course
- Ultrathin Bonded Wearing Course
- Limited Service Low Slump Concrete

- Redeck Recommended
- Cost < 70% of New Bridge
 - Underside of Deck Condition Fair/Poor
 - Uncoated Rebar Top or Bottom
 - Substructure Condition Good/Satisfactory
 - Deck Width Adequate
 - Increased Vertical Clearance Needed
 - Mill & Overlay Not Recommended
 - Many Deck Repairs Anticipated Due to Delamination Survey or Previous 100% Type 1 Repairs
 - High Unit Cost Due to Needs of Deck Repairs, Joints, Barriers, End Posts

- Widen with New Substructures (requires preliminary plan)

- Replace Superstructure
- Cost < 70% of New Bridge
 - Substructure Condition Good/Satisfactory
 - Deck Width Adequate
 - Redeck Not Recommended
 - Substructure Condition Will Not Match the Life of the Deck
 - Scour
 - Fatigue
 - Load Rating
 - Deck Width Not Adequate
 - History of Bridge Hits/Increased Vertical Clearance Needed

- New Bridge
- Cost of Repairs > 70% of New Bridge
 - Complete Form A for bridge replacement costs

REQUIRED DESIGN EXCEPTIONS:
ADDITIONAL COMMENTS:

(include notes for joints, barriers, end post, pier strut, paint, widening, MOT, access, roadway work, etc.)

Proposed scope of work includes mill and overlay, Type A-C deck patches, strip seal expansion joints, shotcrete repairs at abutments and piers, end posts, approach panels.

The piers were considered for the addition of crash struts. The side piers are outside of the clear zone of 30'. The center pier has a lateral clearance of 28' per the inventory report, which is just inside the clear zone. Pier protection is not required per the BPIG, but the center pier does meet 2 of the 4 risk factors for consideration of pier struts. Given the age of the bridge, lack of crash history at this location, 3 column piers, and lateral clearance almost outside of the clear zone, we recommend that pier struts not be added to this bridge. New guardrail will be installed around the piers.

District Review: Name/Date
Bridge Office Review: Name/Date

Dustin Thomas 12/6/17

eDIGS#: 2045651; Revised: 11/8/2017

INVENTORY DATA AND PAST REPAIRS

Year Built: 1975
 Current ADT: 455
 Design Speed: 55
 Current Deck Roadway Width: 46.5
 Min. Roadway Width per BPIG:
 Approach Roadway Width: 44.0
 Min. Vertical Clearance: 16.4
 Min. Vertical Clearance per BPIG:
 Design Live Load: HS 20

Deck

Year Deck Built: 1975
 Original Thickness & Rebar Cover: 8.5, 9.5, 1.875
 Current Thickness & Rebar Cover: 10, 11, 3.375
 Original Wearing Surface (mono/LS): mono
 Top Mat Rebar Type: Black
 Bottom Mat Rebar Type: Black

Overlay

Year Installed: 1987
 Type: LS
 Thickness: 2.04
 Mill Depth: 0.5
 Type 1 Repair Quantity (Per Plan): 100
 Type 3 Repair Quantity (Per Plan): 20

Expansion Joints

Original Location: Abut
 If over Piers, Joint Type:
 Current Joint Location: Abut
 Current Joint Type: strip seal
 Year Installed: 1987
 Are Joints Leaking?

Barriers

	Left	Right
Type:	8	8
Reconstructed in Past:		
Meet 10 kip & Geometry?	Yes	Yes
End Post Needed?	Yes	Yes
Deck Thickness OK for Rebar Anchorages?		
Barrier Condition:	Good - all in CS1	

INSPECTION AND BRIM DATA

BRIM

Decision Matrix Work Type and Timeframe: Redeck 2038-43
 Expert Review Work Type and Timeframe: Redeck 2022-27
 BPI (Score, District Rank, Statewide Rank): 89, 126 of 242
 Remaining Service Life (RSL) predicted for deck: 11
 Time at Current Deck NBI: 8
 Predicted Time to Reach Next Deck NBI:

NBI

Inspection Date: 8/8/2017
 Deck: 6
 Superstructure: 7
 Substructure: 7

Deck Condition

Date of Most Recent Delamination Survey: 8/8/2017
 % Unsound: 1.0%
 Method (chain drag, GPR, IR)? chain drag
 Should a Deck Delamination Survey be Requested? complete

	CS1	CS2	CS3	CS4
Deck Element Condition:	15355	12	0	0
Wearing Course Element:	11943	2265	0	0

 Wearing Course Crack Density (LF/SF): **1.58**
 Request Additional Investigation (chloride, corrosion potential, etc)?

Superstructure and Substructure Condition (see attached inspection report)

	CS1	CS2	CS3	CS4
Beam Element Condition:	1340	48	0	0
Pier Cap Element Condition:	141	10	0	0
Pier Column Element Condition:	6	3	0	0
Abutment Element Condition:	105	40	0	0

Paint Condition for Superstructure:
 Should a Substructure Delamination Survey be Requested?

Load Rating

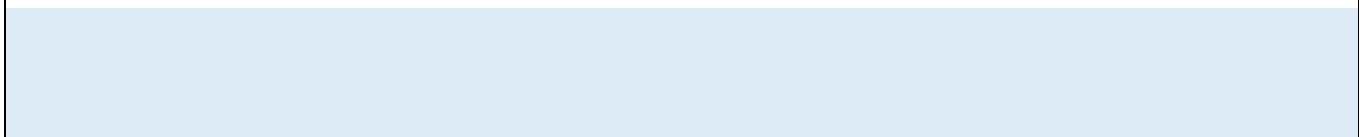
Current Rating (Inventory): HS 21.6
 Permit Restrictions: 1, 1, 1
 If PCB, is Shear On?
 Request LRFR Rating?
 Request Substructure Analysis? no
 LRFR Inventory after const. RF= 0.84
 Permit Restrictions after const: 1, 1, 1

OTHER CONSIDERATIONS:

(scour, fatigue, OSOW Superload, bridge hit history, deck drains, etc.)
 The original monolithic deck received a mill and overlay in 1987. The existing overlay is very heavily cracked and has been patched by the D7 bridge crews. The underside of the deck appears to be in good condition based on Google Earth photo and inspection report. There is 12 SF of CS2 deck above pier 2. Replacement of the concrete wearing course is recommended to remove chlorides from the wearing course, decrease crack sealing maintenance, and extend the life of the bridge deck. The bridge would also be a good candidate for an epoxy chip seal overlay instead of low slump concrete since the in-place wearing course does not have much delamination but is very heavily cracked.

Depending on additional information gathered regarding beam condition, shotcrete repairs or exposed rebar painting should be considered for inclusion in the work.

The Type G barrier without pipe meets the geometry and 10-kip design load requirements per the BPIG for a preservation project. Since the barriers are in good condition, it is recommended that they remain in place.



ADDITIONAL NEEDS

Staging/MOT

Detour? yes

Staged/Under Traffic?

Crossovers?

ABC Stages 1 and 2 results:

Any documented accident history on or below the bridge?

If work must be staged, can temporary closures be employed for curing of deck or low slump wearing course?

Is a non-programmatic catex required due to pear hour or night/weekend traffic impacts?

Staging Comments: The bridge will be closed during the work

ADDITIONAL INFORMATION REQUESTED FROM DISTRICT

Photos of beams and deck underside condition. Document SE corner fascia beam crack orientation, rust stains, and patch from vehicle impact.

Can collection of this data wait until next safety inspection? no

if so, add note in SIMS for next inspection with scoping contact info

if not, request special inspection

DISTRICT/STAKEHOLDER CONSIDERATIONS

Approach Roadway

Will Guardrail Section Connecting to Bridge be Updated? (if so, roadway std plan to be used) yes - M31 guardrail

Will approach panels be replaced, repaired, or raised? replaced

Is additional bridge width needed for shoulders, turn lanes, acceleration lanes, etc.?

Any proposed lane or cross slope changes on the bridge? (If so, will need topo survey of in place bridge deck and approach roadway) no

What is the proposed design speed after roadway improvement? 55 mph

Describe Any Approach Roadway Work on the Project: The primary work on the project is an unbonded concrete overlay on I90 mainline below the bridge. This is a 17New/Chapter 3 project.

Is it necessary to tie bridge and roadway work/funding, or can it be separated?

Desired service life of bridge repair to match next roadway project:

Anticipated work type and year of next approach pavement project:

Ped./Bike Needs

Left Right

Current Sidewalk Width:

Desired Sidewalk Width:

Describe any bike/ped improvements?

Other Considerations

Will pier protection be included (see BPIG Chapter 8)? no

Is this a high stakeholder participation area?

Will aesthetics be needed?

Will work occur on railroad right-of-way?

Are there utilities on the bridge that need to be maintained or added?

Will bridge work affect waterway opening (if so, need hydraulics survey)

Environmental considerations (work in water, asbestos, bats, lead paint, protected vegetation, etc)?

What is the proposed project delivery method?

What is the purpose and need of the corridor project?

Are there any needs or goals of the project that might affect the bridges?

List any other bridges in the project that will receive repairs 22802, 46824, 46831, 46835, 46836

Complete Form A if bridge replacement option is to be considered or for complex bridge types

ADDITIONAL COMMENTS:

[Redacted area for additional comments]

Prepared By District: Name/Date

BRIDGE SCOPING COST ESTIMATE

RDWY. AREA: 14208 SF T.H. CSAH 1 over I90
 Length: 305.5' Rdwy Width: 50.3' Year Built: 1975
 Other Features: Parapet abut, Type G barrier without pipe, 3 column piers
 Tentative Letting Date: November 16, 2018 State Project: 4680-129
 Bridge Designer: TBD Current ADT: 455
 RT Rail Code: 8 Meets 10k? Inv. Ratings: HS21.6
 LT Rail Code: 8 Meets 10k? After Constr.: no permit restrict
 Is the bridge Historic or Historic Eligible? no Posted Speed: 55 mph

Major Preservation
 Rehabilitation

User Input

SCOPE EST INCLUDES... For FY 2019
 Part of roadway project to install unbonded concrete overlay on I90. Include mill and overlay, deck patches, expansion joints, shotcrete, end posts, approach panels.

SCOPING RECOMMENDATIONS BY DISTRICT BRIDGE ENGINEER

Year of Est.: 2018

	Comment	Scope of work		Units	Planning Level Unit Cost	Planning Level Est Cost
		Yes =	Est Quantity			
		X				
Prep	Scarify _____			sf	\$2.25	
	REMOVE CONCRETE WEARING COURSE	X	14208	sf	\$2.50	\$35,520
	BRIDGE DECK PLANING			sf	\$0.90	
Deck Primary Repair	Redeck			sf	\$0.00	
	Concrete Wearing Course (3U17A) >12,000 sf	X	16221	sf	\$6.00	\$97,327
	CRACK PRETREATMENT FOR CHIP SEAL WEARING COURSE			sf	\$1.00	
	POLYMER WEARING COURSE TYPE EPOXY			sf	\$4.75	
	Other W.C. (See Comments) (polyester - 12/SF)			sf	\$12.00	
	SEAL CRACKS WITH EPOXY BY CHASE METHOD			gal	\$750.00	
	MMA FLOOD SEAL			sf	\$1.75	
SUPERSTRUCTURE	REMOVE AND PATCH TYPE A	X	426	sf	\$30.00	\$12,787
	REMOVE AND PATCH TYPE B	X	426	sf	\$55.00	\$23,443
	REMOVE AND PATCH TYPE C	X	142	sf	\$75.00	\$10,656
	REMOVE AND PATCH TYPE D			sf	\$45.00	
	REMOVE AND PATCH TYPE E			sf	\$60.00	
	REMOVE AND PATCH TYPE F			sf	\$85.00	
	SILANE 40 PERCENT			sf	\$1.00	
	INSTALL ANODES			each	\$100.00	
	RECONSTRUCT EXP JT _____	X	101	lin ft	\$900.00	\$90,594
	REPLACE WATERPROOF GLAND			lin ft	\$175.00	
	Reseal Poured Deck Joints			lin ft	\$15.00	
	RECONSTRUCT BEARINGS			each	\$3,000.00	
	GREASE BEARINGS			each	\$675.00	
	Repaint			sf	\$13.00	
	Spot Paint			sf	\$14.00	
	Drainage Modifications			each	\$0.00	
	INSPECT COVER PLATE WELDS			LS	\$5,000.00	
	WELD REPAIR, SPLICE PLATE REPAIR			each	\$5,500.00	
	ULTRASONIC IMPACT TREATMENT			each	\$750.00	
	CONCRETE SURFACE REPAIR			sf	\$160.00	
	SOUND AND REMOVE LOOSE CONCRETE			sf	\$3.00	
	CLEAN AND PAINT REINFORCEMENT			sf	\$25.00	
	Repair beam end - concrete surface repair			sf	\$160.00	
	SEAL EXISTING CONCRETE BEAM END			each	\$225.00	
Other (See Comments)			sf			
Other (See Comments)			sf			
Barrier, Railings	Replace Railing			lin ft	\$225.00	
	Repair Railing (Type F)			lin ft	\$160.00	
	RECONSTRUCT END POST	X	4	each	\$6,000.00	\$24,000
	SILANE 40 PERCENT			sf	\$1.00	
	Special Surface Finish			sf	\$2.25	
	Type G Barrier with Pipe Retrofit			lin ft	\$100.00	
	Other (See Comments)			sf		
Other (See Comments)			LS			

BRIDGE SCOPING COST ESTIMATE

BRIDGE NO.: 22801

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Year of Est.: 2018

SUBSTRUCTURE	Comment	Bridge Element	Scope of work		Units	Planning Level Unit Cost	Planning Level Est Cost
			Yes = X	Est Quantity			
		REPAIR PAVING BRACKET			lin ft	\$90.00	
		RECONSTRUCT PAVING BRACKET			lin ft	\$225.00	
		Pier Struts			lin ft	\$0.00	
		CONCRETE SURFACE REPAIR	X	100	sf	\$160.00	\$16,000
		DISTRIBUTED GALVANIC ANODE			lin ft	\$250.00	
		Other Galv Protection					
		REMOVE SURFACE FINISH			sf	\$1.75	
		SILANE 40 PERCENT			sf	\$1.00	
		SPECIAL SURFACE FINISH (INPLACE)			sf	\$3.00	
		Repair Substructure			each		
		Need Structural Analysis					
		REPAIR STRUCTURAL CRACKS			lin ft	\$150.00	
		Other (See Comments)			LS		
		Other (See Comments)			LS		
MISC		Slope Paving Repair			sf	\$30.00	
		Reseal Slope Paving Joint			lin ft	\$25.00	
		Repair or OL Appr Panels			sf	\$10.00	
		Rout and Seal Cracks			lin ft	\$150.00	
		Accelerated Bridge Construction			LS		
		Other (See Comments)					
		Other (See Comments)					
Grading Plan		Replace Appr Panels	X	2013	sf	\$15.00	\$30,198
		Drainage modifications					
		Guardrails	X		lin ft	\$15.00	\$0
		Replace E8 Joints			lin ft	\$60.00	
		Reseal Poured Jts			lin ft	\$15.00	
		Mill and Replace Bituminous Pvmt			SY	\$110.00	
	Other (See Comments)			LF	\$100.00		

Item	Comment	Yes = X	Subtotal	
Complete new load rating?		X	\$34,053	
Is a Design Exception necessary?				
Are Loop Detection Systems visible on bridge or approach panels?				
Traffic control staged?				
Complete closure recommended?		X		
Estimated Major Preservation cost less than 30%, or Rehabilitation cost less than 70%, of new bridge?		X		
			Subtotal	\$340,526
			Mob. @ 10%	\$34,053
			Add'l for Staging inefficiency @ 0%	\$0
			Subtotal (Enter for NID in MSD)	\$375,000
			(Year of Est: 2018)	
			Risk or Contingency at 10%	\$37,500

BRIDGE SCOPING COST ESTIMATE \$412,500

Item Notes	Child needs to be funded by BIP	Cost with Risk
	Traffic Control Needs Identified	\$ -
	Drainage Needs Identified	\$ -
	RTMC Needs Identified	\$ -
	Pavement Needs Identified	\$ -
	Other Needs Identified	\$ -
Subtotal Project Cost		\$ 412,500
Escalation to year of letting:	Year of Estimate: 2018 Inflation factor from OTSM: 1.04	\$ 429,000

Replacement cost from Replace Cost Estimate worksheet \$2,315,146

Ratio Rehab/Replace = $\frac{\$412,500}{\$2,315,146} = 17.8\%$

MINNESOTA STRUCTURE INVENTORY REPORT

Bridge ID: 22801

CSAH 1 over I 90

Date: 12/05/2017

+ GENERAL +	+ ROADWAY +	+ INSPECTION +
Agency Br. No.	Bridge Match ID (TIS) 2	Deficient Status ADEQ
District 7 Maint. Area 7A	Roadway O/U Key 1-ON	Sufficiency Rating 98.7
County 22 - FARIBAULT	Route Sys/Nbr CSAH 1	Last Inspection Date 08-08-2017
City	Road Name CSAH 1	Inspection Frequency 24
Township JO DAVIESS	National Highway System N	Inspector Name DISTRICT 7
Desc. Loc. 6.0 MI W OF JCT TH 169	Roadway Function MAINLINE	Status A-OPEN
Sect., Twp., Range 05 - 102N - 28W	Roadway Type 2 WAY TRAF	+ NBI CONDITION RATINGS +
Latitude 43d 39m 58.81s	Control Section (TH Only)	Deck 6
Longitude 94d 13m 39.69s	Ref. Point	Superstructure 7
Custodian STATE HWY	Date Opened to Traffic 01-01-1975	Substructure 7
Owner STATE HWY	Detour Length 9 mi.	Channel N
Inspection By DISTRICT 7	Lanes 2 Lanes ON Bridge	Culvert N
Year Built 1975	ADT (YEAR) 455 (2003)	+ NBI APPRAISAL RATINGS +
MN Year Remodeled	HCA DT	Structure Evaluation 7
FHWA Year Reconstructed	Functional Class. RUR/MAJOR COLL	Deck Geometry 9
Bridge Plan Location CENTRAL	+ RDWY DIMENSIONS +	Underclearances 5
Potential ABC NO	If Divided NB-EB SB-WB	Waterway Adequacy N
	Roadway Width 46.5 ft	Approach Alignment 8
	Vertical Clearance	+ SAFETY FEATURES +
Service On HIGHWAY	Max. Vert. Clear.	Bridge Railing 1-MEETS STANDARDS
Service Under HIGHWAY	Horizontal Clear. 46.4 ft	GR Transition 1-MEETS STANDARDS
Main Span Type PRESTR BM SPAN	Lateral Clr. - Lt/Rt	Appr. Guardrail 1-MEETS STANDARDS
Main Span Detail	Appr. Surface Width 44.0 ft	GR Termini 0-SUBSTANDARD
Appr. Span Type	Bridge Roadway Width 46.5 ft	+ IN DEPTH INSP. +
Appr. Span Detail	Median Width on Bridge	Frac. Critical N
Skew	+ MISC. BRIDGE DATA +	Underwater N
Culvert Type	Structure Flared NO	Pinned Asbly. N
Barrel Length	Parallel Structure NONE	
Number of Spans	Field Conn. ID	+ WATERWAY +
MAIN: 4 APPR: 0 TOTAL: 4	Cantilever ID	Drainage Area
Main Span Length 85.5 ft	Foundations	Waterway Opening
Structure Length 305.5 ft	Abut. CONC - FTG PILE	Navigation Control NOT APPL
Deck Width 50.3 ft	Pier CONC - FTG PILE	Pier Protection
Deck Material C-I-P CONCRETE	Historic Status NOT ELIGIBLE	Nav. Vert./Horz. Clr.
Wear Surf Type LOW SLUMP CONC	On - Off System ON	Nav. Vert. Lift Bridge Clear.
Wear Surf Install Year 1987	+ PAINT +	MN Scour Code A-NON WATERWAY
Wear Course/Fill Depth 0.17 ft	Year Painted Pct. Unsound	Scour Evaluation Year
Deck Membrane NONE	Painted Area	+ CAPACITY RATINGS +
Deck Rebars NONE	Primer Type	Design Load HS 20
Deck Rebars Install Year	Finish Type	Operating Rating HS 44.00
Structure Area 15,367 sq ft	+ BRIDGE SIGNS +	Inventory Rating HS 21.60
Roadway Area 14,208 sq ft	Posted Load NOT REQUIRED	Posting
Sidewalk Width - L/R	Traffic NOT REQUIRED	Rating Date 09-10-2003
Curb Height - L/R 0.25 ft 0.25 ft	Horizontal NOT REQUIRED	Overweight Permit Codes
Rail Codes xxxx x 08	Vertical NOT REQUIRED	A: 1

MINNESOTA STRUCTURE INVENTORY REPORT

Bridge ID: 22801

CSAH 1 over I 90

Date: 12/05/2017

+ GENERAL +	+ ROADWAY +	+ INSPECTION +
Agency Br. No.	Bridge Match ID (TIS) 1	Deficient Status ADEQ
District 7 Maint. Area 7A	Roadway O/U Key 2-UNDER	Sufficiency Rating 98.7
County 22 - FARIBAULT	Route Sys/Nbr ISTH 90	Last Inspection Date 08-08-2017
City	Road Name I 90	Inspection Frequency 24
Township JO DAVIESS	National Highway System Y	Inspector Name DISTRICT 7
Desc. Loc. 6.0 MI W OF JCT TH 169	Roadway Function MAINLINE	Status A-OPEN
Sect., Twp., Range 05 - 102N - 28W	Roadway Type 2 WAY TRAF	+ NBI CONDITION RATINGS +
Latitude 43d 39m 58.81s	Control Section (TH Only) 2280	Deck 6
Longitude 94d 13m 39.69s	Ref. Point 113+00.265	Superstructure 7
Custodian STATE HWY	Date Opened to Traffic 01-01-1975	Substructure 7
Owner STATE HWY	Detour Length 9 mi.	Channel N
Inspection By DISTRICT 7	Lanes 4 Lanes UNDER Bridge	Culvert N
Year Built 1975	ADT (YEAR) 8,200 (2004)	+ NBI APPRAISAL RATINGS +
MN Year Remodeled	HCA DT 1,394	Structure Evaluation 7
FHWA Year Reconstructed	Functional Class. RUR/PR ART ISTH	Deck Geometry 9
Bridge Plan Location CENTRAL	+ RDWY DIMENSIONS +	Underclearances 5
Potential ABC NO	If Divided NB-EB SB-WB	Waterway Adequacy N
	Roadway Width 37.0 ft 37.0 ft	Approach Alignment 8
	Vertical Clearance 16.4 ft 16.6 ft	+ SAFETY FEATURES +
	Max. Vert. Clear. 16.4 ft 16.6 ft	Bridge Railing 1-MEETS STANDARDS
	Horizontal Clear. 82.3 ft 82.3 ft	GR Transition 1-MEETS STANDARDS
	Lateral Clr. - Lt/Rt 28.4 ft 29.9 ft	Appr. Guardrail 1-MEETS STANDARDS
	Appr. Surface Width 128.0 ft	GR Termini 0-SUBSTANDARD
	Bridge Roadway Width 74.0 ft	+ IN DEPTH INSP. +
	Median Width on Bridge 54.0 ft	Frac. Critical N
	+ MISC. BRIDGE DATA +	Underwater N
	Structure Flared NO	Pinned Asbly. N
	Parallel Structure NONE	
	Field Conn. ID	+ WATERWAY +
	Cantilever ID	Drainage Area
	Foundations	Waterway Opening
	Abut. CONC - FTG PILE	Navigation Control NOT APPL
	Pier CONC - FTG PILE	Pier Protection
	Historic Status NOT ELIGIBLE	Nav. Vert./Horz. Clr.
	On - Off System ON	Nav. Vert. Lift Bridge Clear.
	+ PAINT +	MN Scour Code A-NON WATERWAY
	Year Painted Pct. Unsound	Scour Evaluation Year
	Painted Area	+ CAPACITY RATINGS +
	Primer Type	Design Load HS 20
	Finish Type	Operating Rating HS 44.00
	+ BRIDGE SIGNS +	Inventory Rating HS 21.60
	Posted Load NOT REQUIRED	Posting
	Traffic NOT REQUIRED	Rating Date 09-10-2003
	Horizontal NOT REQUIRED	Overweight Permit Codes
	Vertical NOT REQUIRED	A: 1
+ 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 85.5 ft		
Structure Length 305.5 ft		
Deck Width 50.3 ft		
Deck Material C-I-P CONCRETE		
Wear Surf Type LOW SLUMP CONC		
Wear Surf Install Year 1987		
Wear Course/Fill Depth 0.17 ft		
Deck Membrane NONE		
Deck Rebars NONE		
Deck Rebars Install Year		
Structure Area 15,367 sq ft		
Roadway Area 14,208 sq ft		
Sidewalk Width - L/R		
Curb Height - L/R 0.25 ft 0.25 ft		
Rail Codes xxxx x 08		

12/05/2017

MINNESOTA BRIDGE INSPECTION REPORT

Inspected by: DISTRICT 7

BRIDGE 22801 CSAH 1 OVER I 90

INSP. DATE: 08-08-2017

County: FARIBAULT	Location: 6.0 MI W OF JCT TH 169	Length: 305.5 ft
City:	Route: Isth 90 Ref. Pt.: 113+00.265	Deck Width: 50.3 ft
Township: JO DAVIESS	Control Section: 80 Maint. Area: 7A	Rdwy. Area / Pct. Unsd: 14,208 sq ft
Section: 05 Township: 102N Range: 28W	Local Agency Bridge Nbr:	Paint Area / Pct. Unsd:
Span Type: PRESTR BM SPAN		Culvert: N/A
NBI Deck: 6 Super: 7 Sub: 7 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: 98.7
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	08-08-2017	1 EA	1	0	0	0
		08-05-2015	1 EA	1	0	0	0

Notes: No critical structural deficiencies or serious safety hazards are present on this structure.

12	REINFORCED CONCRETE DECK	08-08-2017	15,367 SF	15,355	12	0	0
		08-05-2015	15,367 SF	15,367	0	0	0

Notes: [2015] 2017- 12 SF cracks above center pier with efflorescence.

510 WEARING SURFACE	08-08-2017	14,208 SF	11,943	2,265	0	0
	08-05-2015	14,208 SF	13,924	0	284	0

Notes: *Low Slump Overlay with Uncoated Rebar Notes: (22) [2005] Cracks sealed in 2002 still sealed this date, 7/28/2005, mono patches around strip steel joints look good. Excellent candidate for bridge sealing. Bridge Maintenance crew sealed cracks summer 2002 (122) Over 2,000+ LF of sealable deck cracks. 2009-2013- Deck cracks unsealed areas of potential spalling. 2015- Spalled areas repaired in 2013. 1 SF of spill SB fog line south end. 2017- 2,050 SF sealed, 100 SF unsealed, 105 SF patched area.*

810	CONC WEAR SURF-CRACKING SEALING	08-08-2017	22,500 LF	21,000	1,500	0	0
		08-05-2015	0 LF	0	0	0	0

Notes: Crew resealed deck 2002.
 2007-Cracks are still over 90% sealed this date.
 2009- Cracks are open and unsealed approx 2000 LF with debonding at center of bridge on the center line approx 10 sqft area.
 2011-90% sealed
 2013- 90% unsealed at this date
 2015- Cracks sealed 2013. 100LF new unsealed cracks.
 2017- Deck has 20,500LF sealed, 1,000LF unsealed. Approaches have 500 LF sealed, 500LF moderate unsealed.

300	STRIP SEAL DECK JOINT	08-08-2017	100 LF	100	0	0	0
		08-05-2015	100 LF	100	0	0	0

Notes: (90) Expansion joints filled with rock should be cleaned out before winter.
 2009- Missing bolts on SS cover plates on the west end.
 2013- [2017] Pack rust forming between concrete and extrusion.

301	POURED SEAL JOINT	08-08-2017	410 LF	400	10	0	0
		08-05-2015	251 LF	0	251	0	0

Notes: Bridge crew sealed summer 2002 (91) Pourables have failed need resealing.
 2009- Pourables are open and unsealed.
 2011-The joint at the So. headwall has a total of 4LF by 3" of spalls and delams.
 2013- Sealed in 2012.
 2015- Loss of adhesion on all joints. Headwall spalls repaired.
 2017- 10 LF loss of adhesion.

331	REINFORCED CONC BRIDGE RAILING	08-08-2017	610 LF	610	0	0	0
		08-05-2015	610 LF	610	0	0	0

Notes: Crew repaired and resealed railing 2002 (102) Numerous areas of spalling with exposed rebar.
 2007-Railing surface protection still intact.
 2009- Surface protection has failed there are spalls with rebar exposure present.
 2013 Spalls repaired and rail sealed in 2013.
 2015-[2017] NW corner curbplate missing bolt on sliding side.

321	CONCRETE APPROACH SLAB	08-08-2017	3,018 SF	0	3,018	0	0
		08-05-2015	5,120 SF	0	5,120	0	0
Notes: [2016] Migrator assumed an approach slab length of 20FT and used the inventory quantity of 128FT for the width. Bridge crew repaired and sealed summer 2002. (100) Both approach panels have many large cracks w/ spall areas. (Approx. 1,000 LF between panels) 2007-Both panels have patched area, and there are moderate to severe unsealed in both panels approx 50 LF. 2009- Both approaches have unsealed moderate to severe cracking with map cracks. 2011-cracks are 80% sealed. 6SF shallow delam in the NB panel on the S. end near the fog line. 2013- 80% unsealed cracks. 2015- Cracks sealed in 2014. 2017- 1x1 spall NW corner next to curb line. Map cracking on both.							
205	REINFORCED CONCRETE COLUMN	08-08-2017	9 EA	6	3	0	0
		08-05-2015	9 EA	6	3	0	0
Notes: (58) Increased spalling of NW column of pier 3. 2007-Spalled column has been repaired however repair area is showing cracks. 2011-2013- pier 3 col. 1 the patched area is cracked but solid. 2015- Column #7 has cracking in patch and a small spall above patch. 2017- Center median column 1 has 1 SF spall.							
215	REINFORCED CONCRETE ABUTMENT	08-08-2017	145 LF	105	40	0	0
		08-05-2015	141 LF	101	40	0	0
Notes: [2016] Migrator added 40 LF to abutment quantity to account for wingwalls (CS1:40 CS2:0 CS3:0 CS4:0). (62) Both abutments have areas of spalling and cracks with rust showing. (215) [2005] South abutment showing recent spalls (1' x 1'). [2013] 8 new areas. 2015- Spalls patched in 2014. Abutments sealed 2014. 2017- Added for 11 FT wings. Wingwall notes: 2015- Sealed in 2014.							
234	REINFORCED CONCRETE PIER CAP	08-08-2017	151 LF	141	10	0	0
		08-05-2015	151 LF	141	10	0	0
Notes: 2013- Minor surface cracks N pier, staining under south pier (rust). 2015-[2017] Minor cracking on all caps.							
109	PRESTRESSED CONC GIRDER OR BEAM	08-08-2017	1,388 LF	1,340	48	0	0
		08-05-2015	1,388 LF	1,340	48	0	0
Notes: (109) [2005] Several girders showing rust staining from stirrups, recent high load impact on EB passing lane fascia girder - no strands exposed. 2007-There is a patched area on second girder in WB passing lane, seems to be more notable staining from stirrups. 2009-2013- Fascia girder at SE corner just above abutment bearing area has a visible crack (inside) in top of web just below top flange crack extends out 6'-8' has been marked and noted for monitoring. 2015-[2017] WB west side fascia girder 20ft in from center pier has rust present on bottom side of lower flange.							
311	EXPANSION BEARING	08-08-2017	26 EA	26	0	0	0
		08-05-2015	26 EA	26	0	0	0
Notes: [2017] Abutment bearings greased in 2014, showing good signs of movement.							
313	FIXED BEARING	08-08-2017	10 EA	10	0	0	0
		08-05-2015	10 EA	10	0	0	0
Notes: [2017]							
855	SECONDARY MEMBERS (SUPER)	08-08-2017	1 EA	1	0	0	0
		08-05-2015	1 EA	1	0	0	0
Notes: none 2015-[2017] Changed quantity to 1 per field manual.							
880	IMPACT DAMAGE	08-08-2017	1 EA	0	1	0	0
		08-05-2015	1 EA	0	1	0	0
Notes: See note for element 109 2007[2017]-EB fascia girder over passing lane has a 1' x 1' damage area from high load.							
883	CONCRETE SHEAR CRACKING	08-08-2017	1 EA	1	0	0	0
		08-05-2015	1 EA	1	0	0	0
Notes: Use this element to monitor the presence of shear cracking on concrete elements. Pay particular attention to the concrete pier caps and prestressed concrete beams.							
891	OTHER BRIDGE SIGNING	08-08-2017	1 EA	1	0	0	0
		08-05-2015	1 EA	1	0	0	0

Notes: 2011[2017]-delineator signs missing WB

892	SLOPES & SLOPE PROTECTION	08-08-2017	1 EA	1	0	0	0
		08-05-2015	1 EA	1	0	0	0
Notes: (985) [2003] Small tree growth needs cutting. [2005] Slopes need brush cutting. 2007-Slopes need to be reoiled there is minor damage to south slope due to rodent/animal burrow. 2009- Bottom of slope wood form has has been damaged by tractor preparing roadway ditches for new prairie vegetation. 2011-2013- needs brushing. 2015-[2017] Slopes oiled in 2014.							
893	GUARDRAIL	08-08-2017	1 EA	0	1	0	0
		08-05-2015	1 EA	0	1	0	0
Notes: 2007-Guard rail WB driving lane side is tilted/leaning at a 20 degree angle. 2009- NW corner of WB I-90 guardrail has a washout that is causing the posts to lean allowing to much space beneath the guardrail plate approx 3' . Posts at center guardrail enclosure appear to be deteriorating at ground level. 2013[2017]-Tip down ends on guardrails.							
894	DECK & APPROACH DRAINAGE	08-08-2017	1 EA	1	0	0	0
		08-05-2015	1 EA	1	0	0	0
Notes: [2017]							
900	PROTECTED SPECIES	08-08-2017	1 EA	1	0	0	0
		08-05-2015	1 EA	0	1	0	0
Notes: [2016] Migrator determined the presence of swallows on this structure based on data in the inventory or comments in the general/miscellaneous notes. 2017- No birds or nest present at this date.							

General Inspected 7/28/2005 by Larry A Cooper 25 nests 7-31-2007-Inspected Larry Cooper and Harlan McCorkell. Inspected

Notes: 7/14/2009 Larry Cooper and Gary Swedberg.

2011 R Gaffke, R Chouanard

Inspected 8/06/2013 by Jay spencer and Levi witte

Inspected 8/5/2015 Jeff Robb, Jeff Warmka.

Inspected 8/8/2017 Jeff Robb, Levi Witte.

Appr Guardrail [0] Twist downs. Speed limit greater than 40mph

Terminal :