2016 ROUTINE BRIDGE INSPECTION REPORT



BRIDGE # 4533 CSAH 77 over MC RY

DISTRICT: Metro COUNTY: Ran

COUNTY: Ramsey CITY/TOWNSHIP: New Brighton

STATE: Minnesota

Date of Inspection: 11/16/2016 Equipment Used:

Owner: County Highway Agency

Inspected By: Bodelson, Dan

STATUTE 1858 + VILLAN

Report Written By: Dan Bodelson Report Reviewed By: Nicklaus Fischer Final Report Date: 12/02/2016

Table of Contents

SECTION	PAG
COVER	1
SI&A	2
STRUCTURE INVENTORY	3
ROUTINE INSPECTION DATA	4
ELEMENTS	8
PICTURES	13
MAINTENANCE	24
STRUCTURAL ASSESSMENT REPORT - ROUTINE	25

Minnesota Structure Inventory Report

Bridge ID: 4533 CSAH 77	over MC RY	Date: 12/02/2016
GENERAL	ROADWAY	INSPECTION
Agency Br. No.	Bridge Match ID (TIS) 0	Userkey 102
District Metro	Roadway O/U Key Route On Structure	Unofficial Structurally Deficient Y
Maint. Area Crew	Route Sys 04 - CSAH Number 77	Unofficial Functionally Obsolete N
County 062 - Ramsey	Roadway Name or Description	Unofficial Sufficiency Rating 43.6
City New Brighton	CSAH 77	Routine Inspection Date 11/16/2016
Township	Level of Service 1 - MAINLINE	Routine Inspection Frequency 12
Desc. Loc. 0.2 MI E OF JCT CSAH 45	Roadway Type 2 - 2-way traffic	Inspector Name CO Bridge
Sect., Twp., Range 29 - 030N - 23W	Control Section (TH Only)	Status P - Posted for Load
Latitude Deg 45 Min 3 Sec 36.49	Reference Point 001+00.820	NBI CONDITION RATINGS
Longitude Deg 93 Min 11 Sec 43.43	Detour Length 5.0 mi	Deck 5 - Fair Condition
Custodian 02 - County Highway Agency	Lanes On 4 Under 0	Unsound Deck %
Owner 02 - County Highway Agency	ADT 8366 Year 2008	Superstructure 4 - Poor Condition
BMU Agreement	HCADT 0 ADTT 0 %	Substructure 5 - Fair Condition
Year Built 1926	Functional Class 16 - Urban - Minor Arterial	Channel N - Not Applicable
MN Year Reconstructed 1973	RDWY DIMENSIONS	Culvert N - Not Applicable
HWA Year Reconstructed	If Divided NB-EB SB-WB	NBI APPRAISAL RATINGS
MN Temporary Status	Roadway Width 52.00 ft. ft.	Structure Evaluation 4
Bridge Plan Location 3 - COUNTY	Vertical Clearance ft. ft.	Deck Geometry 4
On Off System 1 ON	Max. Vert. Clear. ft. ft.	Underclearances 3
Legislative District 50B	Horizontal Clear. 51.9 ft. ft.	Water Adequacy N - Not Applicable
	Lateral Clearance ft. ft.	Approach Alignment 6 - Equal to present minimu
	Appr. Surface Width 43.0 ft.	SAFETY FEATURES
	Bridge Roadway Width 52.0 ft.	Bridge Railing 1 - MEETS STANDARDS
Service Under 2 Deitrood	Median Width On Bridge ft.	GR Transition 0 - SUBSTANDARD
Main Span Type		Appr. Guardrail 1 - MEETS STANDARDS
5 - Prestress or Precast 11 - Channel Span	Structure Flared 0 - No flare	GR Termini 1 - MEETS STANDARDS
Main Span Detail	Parallel Structure N - No parallel structure	IN DEPTH INSP.
Appr. Span Type	Field Conn. ID	Y/N Freq Date
	Abutment Foundation 1 - CONC	Frac. Critical N
Appr. Span Detail	(Material/Type) 5-11 TYPE ABUT	Underwater N
Skew 0	Pier Foundation 1 - CONC	Pinned Asbiy. N
Culvert Type	(Material/Type) 3 - ETG PILE	
Barrel Length ft.		
Cantilever ID	Historic Status 5 - Not eligible	Drainage Area (sq. mi.) Waterway Opening
NUMBER OF SPANS	PAINT	Navigation Control N - Not applicable no waterw
MAIN: 3 APPR: 0 TOTAL: 3	Year Painted	Pier Protection
Main Span Length 22.0 ft.	Unsound Paint %	Nav. Clr. (ft.) Vert. ft. Horiz. ft.
Structure Length 65.9 ft.	Painted Area sq. ft.	Nav. Vert. Lift Bridge Clear. (ft.)
Deck Width (Out-to-Out) 63.5 ft.	Primer Type	MN Scour Code A - NON WATER Year
Deck Material 2 - Concrete Precast Panels	Finish Type	CAPACITY RATINGS
Wear Surf Type 6 - Bituminous	BRIDGE SIGNS	Design Load 5 - HS 20
Wear Surf Install Year		Operating Rating 1 - LF (LF) HS 42.2
Wear Course/Fill Depth 0.20 ft.	Posted Load 2 - Vehicle & Semi (Type R12-5)	Inventory Rating 1-LF(LF) HS 25.4
Deck Membrane 0 - None	Traffic 0 - Not Required	Posting VEH: 26 SEMI: 40 DBL: 40
Deck Rebars 0 - None	Horizontal 1 - Object Markers	Rating Date 06/10/2011
Deck Rebars Install Year Structure Area (Out to Out) 4485	Vertical 0 - Not Required	Minnesota Permit Codes
Bradway Area (Out-to-Out) 4185 sq. ft.		A: N - N/A
Sidewalk Width 1 t 4 50 4 Pt 4 50 4		B : N - N/A
Curb Height It 0.75 4 Pt 0.75 4		C: N - N/A
Rail Type Lt 14 Rt 14		

Minnesota Structure Inventory Report

Bridge ID: 4533 CSAH 77 over MC RY

Date: 11/08/2016

+ G E N E R A L +	+ R O A D W A Y +	+INSPECTION+			
Agency Br. No. Crew	Bridge Match ID (TIS) 0	Userkev 102			
District 05 Maint. Area	Roadway O/U Key Route On Structure	Structurally Deficient Y			
County 062 - Ramsey	Poute Svs 04 - CSAH Number 77	Functionally Obsolete N			
City New Brighton	Roadway Name or Description	Sufficiency Rating 43.6			
Township	CSAH 77	Routine Inspection Date 11/16/2016			
Desc. Loc. 0.2 MI E OF JCT CSAH 45	Level of Service 1 - MAINLINE	Routine Inspection Frequency 12			
Sect., Twp., Range 29 - 030N - 23W	Roadway Type 2 - 2-way traffic	Inspector Name Bodelson. Dan			
Latitude 45 ° 3 ' 36.49 "	Control Section (TH Only)	Status P - Posted for Load			
Longitude 93 ° 11 ' 43.43 "	Reference Point 001+00.820				
Custodian 02 - County Highway Agency	Detour Length 5.0 mi	+NBI CONDITION RATINGS+			
Owner 02 - County Highway Agency	Lanes ON 4 LINDER 0	Deck 5 Unsound			
BMU Agreement	ADT 8366 YEAR 2008	Superstructure 4 Deck %			
Year Built 1926	HCADT ADTT %	Substructure 5			
MN Year Reconstructed 1973	Functional Class 16 - Urban - Minor Arterial	Channel N			
FHWA Year Reconstructed		Culvert N			
MN Temporary Status					
Bridge Plan Location 3 - COUNTY	+RDWY DIMENSIONS+				
Date Opened to Traffic	If Divided NB-EB SB-WB	Structure Evaluation 4			
On - Off System 1 - ON	Roadway Width 52.00 ft. ft.	Deck Geometry 4			
Legislative District 50B	Vertical Clearance ft. ft.	Underclearances 3			
Potential ABC 2 - N/A	Max. Vert. Clear. ft. ft.	Waterway Adequacy N			
	Horizontal Clear. 51.9 ft. ft.	Approach Alignment 6			
+ STR U C T U R E +	Lateral Clearance ft. ft.				
Service On 5 - Highway-pedestrian	Appr. Surface Width 43.0 ft.	+SAFEIT FEATURES+			
Service Under 2 - Railroad	Bridge Roadway Width 52.0 ft.	Bridge Railing 1 - MEETS STANDARDS			
Main Span Type 5 - Prestress or Precast	Median Width On Bridge ft.	GR Transition 0 - SUBSTANDARD			
Main Span Design 11 - Channel Span		Appr. Guardrail 1 - MEETS STANDARDS			
inan opan zooign					
Main Span Detail	+MISC. BRIDGE DATA+	GR Termini 1 - MEETS STANDARDS			
Main Span Detail Appr. Span Type	+ MISC. BRIDGE DATA+ Structure Flared 0 - No flare	GR Termini 1 - MEETS STANDARDS			
Main Span Detail Appr. Span Type Appr. Span Design	+ MISC. BRIDGE DATA+ Structure Flared 0 - No flare Parallel Structure N - No parallel structure	GR Termini 1 - MEETS STANDARDS + IN DEPTH INSP.+			
Main Span Detail Appr. Span Type Appr. Span Design Appr. Span Detail	+ MISC. BRIDGE DATA+ Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID	GR Termini 1 - MEETS STANDARDS + I N DEPTH I NSP. + Y/N Freq Date			
Main Span Detail Appr. Span Type Appr. Span Detail Appr. Span Detail Skew 0	+ MISC. BRIDGE DATA+ Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment 1 - CONC	GR Termini 1 - MEETS STANDARDS + I N D E P T H I N S P. + Y/N Freq Date Frac. Critical N			
Main Span Detail Appr. Span Type Appr. Span Design Appr. Span Detail Skew 0 Culvert Type	+ M I S C. B R I D G E D A T A + Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID 1 - CONC Foundation 5 - U TYPE ABUT	GR Termini 1 - MEETS STANDARDS + I N D E P T H I N S P. + Y/N Freq Date Frac. Critical N Underwater N			
Main Span Detail Appr. Span Type Appr. Span Detail Skew 0 Culvert Type Barrel Length	+ MISC. BRIDGE DATA+ Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment 1 - CONC Foundation 5 - U TYPE ABUT Bior Foundation 1 - CONC	GR Termini 1 - MEETS STANDARDS + I N D E P T H I N S P. + Y/N Freq Date Frac. Critical N Underwater N Pinned Asbly. N			
Main Span Detail Appr. Span Type Appr. Span Detail Skew 0 Culvert Type Barrel Length Cantilever ID	+ MISC. BRIDGE DATA+ Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment 1 - CONC Foundation 5 - U TYPE ABUT Pier Foundation 1 - CONC (Material/Type) 2 - ETO DUE	GR Termini 1 - MEETS STANDARDS +IN DEPTH INSP.+ Y/N Freq Date Frac. Critical N Underwater N Pinned Asbly. N Spec. Feat. V			
Main Span Detail Appr. Span Type Appr. Span Detail Skew 0 Culvert Type Barrel Length Cantilever ID	+ MISC. BRIDGE DATA+ Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment 1 - CONC Foundation 5 - U TYPE ABUT Pier Foundation 1 - CONC (Material/Type) 3 - FTG PILE	GR Termini 1 - MEETS STANDARDS + I N D E P T H I N S P. + Y/N Freq Date Frac. Critical N Underwater N Pinned Asbly. N Spec. Feat.			
Main Span Detail Appr. Span Type Appr. Span Design Appr. Span Detail Skew 0 Culvert Type Barrel Length Cantilever ID Number of Spans	+ MISC. BRIDGE DATA+ Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment 1 - CONC Foundation 5 - U TYPE ABUT Pier Foundation 1 - CONC (Material/Type) 3 - FTG PILE Historic Status 5 - Not eligible	GR Termini 1 - MEETS STANDARDS + I N D E P T H I N S P. + Y/N Freq Date Frac. Critical N Underwater N Pinned Asbly. N Spec. Feat. + W A T E R W A Y +			
Main Span Detail Appr. Span Type Appr. Span Design Appr. Span Detail Skew 0 Culvert Type Barrel Length Cantilever ID Number of Spans MAIN: 3 APPR: 0 TOTAL:	+ MISC. BRIDGE DATA+ Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment 1 - CONC Foundation 5 - U TYPE ABUT Pier Foundation 1 - CONC (Material/Type) 3 - FTG PILE Historic Status 5 - Not eligible	GR Termini 1 - MEETS STANDARDS +1N DEPTH IN SP.+ Y/N Freq Date Frac. Critical N Underwater N Underwater N Pinned Asbly. N Spec. Feat. + W A T E R W A Y + Drainage Area (sq. mi.)			
Main Span Detail Appr. Span Type Appr. Span Design Appr. Span Design Appr. Span Detail Skew 0 Culvert Type Barrel Length Cantilever ID Number of Spans MAIN: 3 APPR: 0 TOTAL: Main Span Length 22.0 ft.	+ MISC. B R I D G E D A T A + Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment 1 - CONC Foundation 5 - U TYPE ABUT Pier Foundation 1 - CONC (Material/Type) 3 - FTG PILE Historic Status 5 - Not eligible + P A I N T +	GR Termini 1 - MEETS STANDARDS +1N DEPTH IN SP.+ Y/N Freq Date Frac. Critical N Underwater N Underwater N Pinned Asbly. N Spec. Feat. + W A T E R W A Y + Drainage Area (sq. mi.) Waterway Opening (sf.)			
Main Span Detail Appr. Span Type Appr. Span Design Appr. Span Detail Skew 0 Culvert Type Barrel Length Cantilever ID Number of Spans MAIN: 3 APPR: 0 TOTAL: Main Span Length 22.0 ft. Structure Length 65.9 ft.	+ MISC. B R IDGE D ATA + Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment 1 - CONC Foundation 5 - U TYPE ABUT Pier Foundation 1 - CONC (Material/Type) 3 - FTG PILE Historic Status 5 - Not eligible + P A I N T +	GR Termini 1 - MEETS STANDARDS + I N D E P T H I N S P. + Y/N Freq Date Frac. Critical N Underwater N Underwater N Pinned Asbly. N Spec. Feat. + W A T E R W A Y + Drainage Area (sq. mi.) Waterway Opening (sf.) N - Not applicable, no			
Main Span Detail Appr. Span Type Appr. Span Design Appr. Span Detail Skew 0 Culvert Type Barrel Length Cantilever ID Number of Spans MAIN: 3 APPR: 0 TOTAL: Main Span Length 22.0 ft. Structure Length 65.9 ft. Deck Width (Out-to-Out) 63.5 ft.	+ MISC. B R IDGE D ATA + Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment 1 - CONC Abutment 1 - CONC Foundation 5 - U TYPE ABUT Pier Foundation 1 - CONC (Material/Type) 3 - FTG PILE Historic Status 5 - Not eligible + P A I N T + Year Painted	GR Termini 1 - MEETS STANDARDS + I N D E P T H I N S P. + Y/N Freq Date Frac. Critical N Underwater N Underwater N Pinned Asbly. N Spec. Feat. Drainage Area (sq. mi.) Waterway Opening (sf.) Navigation Control N - Not applicable, no Pier Protection N Not applicable, no			
Main Span Detail Appr. Span Type Appr. Span Detail Skew 0 Culvert Type Barrel Length Cantilever ID MAIN: 3 APPR: 0 TOTAL: Main Span Length 22.0 ft. Structure Length 65.9 ft. Deck Width (Out-to-Out) 63.5 ft. Deck Material 2 - Concrete Precast Panels	+ MISC. B R IDGE D ATA + Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment 1 - CONC Abutment 1 - CONC Foundation 5 - U TYPE ABUT Pier Foundation 1 - CONC (Material/Type) 3 - FTG PILE Historic Status 5 - Not eligible + P A I N T + Year Painted Unsound Paint %	GR Termini 1 - MEETS STANDARDS + I N D E P T H I N S P. + Y/N Freq Date Frac. Critical N Underwater N Underwater N Pinned Asbly. N Spec. Feat. + W A T E R W A Y + Drainage Area (sq. mi.) Waterway Opening (sf.) Navigation Control N - Not applicable, no Pier Protection Nav. Clr. (ft.)			
Main Span Detail Appr. Span Type Appr. Span Detail Skew 0 Culvert Type Barrel Length Cantilever ID Number of Spans MAIN: 3 APPR: 0 TOTAL: Main Span Length 22.0 ft. Structure Length 65.9 ft. Deck Width (Out-to-Out) 63.5 ft. Deck Material 2 - Concrete Precast Panels Wear Surf Type 6 - Bituminous	+ MISC. B R IDGE D ATA + Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment 1 - CONC Abutment 1 - CONC Foundation 5 - U TYPE ABUT Pier Foundation 1 - CONC (Material/Type) 3 - FTG PILE Historic Status 5 - Not eligible + P A I N T + Year Painted Unsound Paint % Painted Area sq. ft.	GR Termini 1 - MEETS STANDARDS + I N D E P T H I N S P. + Y/N Freq Date Frac. Critical N Underwater N Underwater N Pinned Asbly. N Spec. Feat. + W A T E R W A Y + Drainage Area (sq. mi.) Waterway Opening (sf.) Navigation Control N - Not applicable, no Pier Protection Nav. Clr. (ft.) Vert. 0.0 Horiz. 0.0 Nav. Vert. Lift Bridge Clear. (ft.)			
Main Span Detail Appr. Span Type Appr. Span Design Appr. Span Design Appr. Span Detail Skew 0 Culvert Type Barrel Length Cantilever ID Number of Spans MAIN: 3 APPR: 0 TOTAL: Main Span Length 22.0 ft. Structure Length 65.9 ft. Deck Width (Out-to-Out) 63.5 ft. Deck Material 2 - Concrete Precast Panels Wear Surf Type 6 - Bituminous Wear Surf Install Year	+ MISC. B R I D G E D A T A + Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment 1 - CONC Abutment 1 - CONC Foundation 5 - U TYPE ABUT Pier Foundation 1 - CONC (Material/Type) 3 - FTG PILE Historic Status 5 - Not eligible + P A I N T + Year Painted Unsound Paint % Painted Area sq. ft. Primer Type	GR Termini 1 - MEETS STANDARDS + I N D E P T H I N S P. + Y/N Freq Date Frac. Critical N Underwater N Underwater N Pinned Asbly. N Spec. Feat. + W A T E R W A Y + Drainage Area (sq. mi.) Waterway Opening (sf.) Navigation Control N - Not applicable, no Pier Protection Nav. Clr. (ft.) Vert. 0.0 Horiz. 0.0 Nav. Vert. Lift Bridge Clear. (ft.) MN Scour Code A - NON			
Main Span Detail Appr. Span Type Appr. Span Design Appr. Span Design Appr. Span Detail Skew 0 Culvert Type Barrel Length Cantilever ID Number of Spans MAIN: 3 APPR: 0 TOTAL: Main Span Length 22.0 ft. Structure Length 65.9 ft. Deck Width (Out-to-Out) 63.5 ft. Deck Material 2 - Concrete Precast Panels Wear Surf Type 6 - Bituminous Wear Surf Install Year Wear Course/Fill Depth 0.20 ft.	+ MISC. B R I D G E D A T A + Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment 1 - CONC Abutment 1 - CONC Foundation 5 - U TYPE ABUT Pier Foundation 1 - CONC (Material/Type) 3 - FTG PILE Historic Status 5 - Not eligible + P A I N T + Year Painted Unsound Paint % Primer Type sq. ft. Finish Type Sq. ft.	GR Termini 1 - MEETS STANDARDS +1N DEPTH INSP.+ Y/N Freq Date Frac. Critical N Underwater N Underwater N Pinned Asbly. N Spec. Feat. + W A T E R W A Y + Drainage Area (sq. mi.) Waterway Opening (sf.) Navigation Control N - Not applicable, no Pier Protection Nav. Clr. (ft.) Vert. 0.0 Horiz. 0.0 Nav. Vert. Lift Bridge Clear. (ft.) MN Scour Code A - NON Year			
Main Span Detail Appr. Span Type Appr. Span Design Appr. Span Design Appr. Span Detail Skew 0 Culvert Type Barrel Length Cantilever ID Number of Spans MAIN: 3 APPR: 0 TOTAL: Main Span Length 22.0 ft. Structure Length 65.9 ft. Deck Width (Out-to-Out) 63.5 ft. Deck Material 2 - Concrete Precast Panels Wear Surf Type 6 - Bituminous Wear Surf Install Year Wear Course/Fill Depth 0.20 ft. Deck Membrane 0 - None	+ MISC. B R IDGE D ATA + Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment 1 - CONC Abutment 1 - CONC Foundation 5 - U TYPE ABUT Pier Foundation 1 - CONC (Material/Type) 3 - FTG PILE Historic Status 5 - Not eligible + P A I N T + Year Painted Unsound Paint % Primer Type Finish Type	GR Termini 1 - MEETS STANDARDS +1N DEPTH IN SP.+ Y/N Freq Date Frac. Critical N Underwater N N Spec. Feat. + W A T E R W A Y + Drainage Area (sq. mi.) Waterway Opening (sf.) Not applicable, no Pier Protection N - Not applicable, no Nav. Clr. (ft.) Vert. 0.0 Horiz. 0.0 Nav. Vert. Lift Bridge Clear. (ft.) MN Scour Code A - NON + C A P A C IT Y R A T I N G S +			
Main Span Detail Appr. Span Type Appr. Span Design Appr. Span Detail Skew 0 Culvert Type Barrel Length Cantilever ID Number of Spans MAIN: 3 APPR: 0 TOTAL: Main Span Length 22.0 ft. Structure Length 65.9 ft. Deck Width (Out-to-Out) 63.5 ft. Deck Material 2 - Concrete Precast Panels Wear Surf Type 6 - Bituminous Wear Surf Install Year Wear Course/Fill Depth 0.20 ft. Deck Membrane 0 - None Deck Rebars 0 - None	+ MISC. B R IDGE D ATA + Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment 1 - CONC Abutment 1 - CONC Foundation 5 - U TYPE ABUT Pier Foundation 1 - CONC (Material/Type) 3 - FTG PILE Historic Status 5 - Not eligible + P A I N T + Year Painted Unsound Paint % Painted Area sq. ft. Primer Type Finish Type	GR Termini 1 - MEETS STANDARDS +1N DEPTH IN SP.+ Y/N Freq Date Frac. Critical N Underwater N Underwater N Pinned Asbly. N Spec. Feat. Local Action VATER WAY+ Drainage Area (sq. mi.) Waterway Opening (sf.) Navigation Control N - Not applicable, no Pier Protection Nav. Clr. (ft.) Nav. Clr. (ft.) Vert. 0.0 Horiz. 0.0 Nav. Vert. Lift Bridge Clear. (ft.) MN Scour Code A - NON Year + C A P A C I T Y R A T I N G S + Design Load 5 - HS 20 Sector			
Main Span Detail Appr. Span Type Appr. Span Design Appr. Span Design Appr. Span Detail Skew 0 Culvert Type Barrel Length Cantilever ID Number of Spans MAIN: 3 APPR: 0 TOTAL: Main Span Length 22.0 ft. Structure Length 65.9 ft. Deck Width (Out-to-Out) 63.5 ft. Deck Material 2 - Concrete Precast Panels Wear Surf Type 6 - Bituminous Wear Surf Install Year Wear Course/Fill Depth 0.20 ft. Deck Membrane 0 - None Deck Rebars 0 - None	+ MISC. B R IDGE D ATA + Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment 1 - CONC Abutment 1 - CONC Foundation 1 - CONC Material/Type) 3 - FTG PILE Historic Status 5 - Not eligible + P A I N T + Year Painted Unsound Paint % Painted Area sq. ft. Primer Type Finish Type	GR Termini 1 - MEETS STANDARDS +1N DEPTH IN SP.+ Y/N Freq Date Frac. Critical N Underwater N Underwater N Pinned Asbly. N Spec. Feat. Luderway Opening (sf.) Navigation Control N - Not applicable, no Pier Protection N - Not applicable, no Pier Protection Nav. Clr. (ft.) Vert. 0.0 Horiz. 0.0 Nav. Clr. (ft.) Vert. NoN Year Year + C A P A C I T Y R A T I N G S + Design Load 5 - HS 20 Operating Rating 2 - HS TRUCK 42.2			
Main Span Detail Appr. Span Type Appr. Span Design Appr. Span Detail Skew 0 Culvert Type Barrel Length Cantilever ID Number of Spans MAIN: 3 APPR: 0 TOTAL: Main Span Length 22.0 ft. Structure Length 65.9 ft. Deck Width (Out-to-Out) 63.5 ft. Deck Material 2 - Concrete Precast Panels Wear Surf Type 6 - Bituminous Wear Surf Install Year Wear Surf Install Year Wear Course/Fill Depth 0.20 ft. Deck Rebars 0 - None Deck Rebars Install Year 4185 Structure Area (Out-to-Out) 4185	+ MISC. B R IDGE D ATA + Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment 1 - CONC Abutment 1 - CONC Foundation 5 - U TYPE ABUT Pier Foundation 1 - CONC (Material/Type) 3 - FTG PILE Historic Status 5 - Not eligible + P A I N T + Year Painted Unsound Paint % Painted Area sq. ft. Primer Type Finish Type + B R I D G E SI G N S + Posted Load 2 - Vehicle & Semi (Type R12-5)	GR Termini 1 - MEETS STANDARDS +1N DEPTH INSP.+ Y/N Freq Date Frac. Critical N Underwater N Underwater N Pinned Asbly. N Spec. Feat. Drainage Area (sq. mi.) Waterway Opening (sf.) Navigation Control N - Not applicable, no Pier Protection N - Not applicable, no Nav. Clr. (ft.) Vert. 0.0 Horiz. 0.0 Nav. Clr. (ft.) Vert. 0.0 Horiz. 0.0 Nav. Vert. Lift Bridge Clear. (ft.) MN Scour Code A - NON Year - - - + C A P A C I T Y R A T I N G S + - Design Load 5 - HS 20 - Operating Rating 2 - HS TRUCK 42.2 Inventory Rating 2 - HS TRUCK 25.4			
Main Span DetailAppr. Span TypeAppr. Span DesignAppr. Span DesignAppr. Span DetailSkew0Culvert TypeBarrel LengthCantilever IDNumber of SpansMAIN: 3APPR: 0TOTAL:Main Span Length22.0 ft.Structure Length6 - BiturniousDeck Width (Out-to-Out)63.5 ft.Deck Material2 - Concrete Precast PanelsWear Surf Type6 - BiturniousWear Surf Install YearVear Surf Install YearWear Course/Fill Depth0.20 ft.Deck Rebars0 - NoneDeck Rebars Install Year4185Structure Area (Out-to-Ut)3423Structure Area (Curb-to-Curb)3423Structure Area (Curb-to-Curb)3423	+ MISC. B R IDGE D ATA + Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment 1 - CONC Abutment 1 - CONC Foundation 5 - U TYPE ABUT Pier Foundation 1 - CONC (Material/Type) 3 - FTG PILE Historic Status 5 - Not eligible + P A I N T + Year Painted Unsound Paint % Painted Area sq. ft. Primer Type Finish Type + B R I D G E SI G N S + Posted Load 2 - Vehicle & Semi (Type R12-5) Traffic 0 - Not Required	GR Termini 1 - MEETS STANDARDS +1N DEPTH INSP.+ Y/N Freq Date Frac. Critical N Underwater N Underwater N Pinned Asbly. N Spec. Feat. VATERWAY+ Drainage Area (sq. mi.) Waterway Opening (sf.) Navigation Control N - Not applicable, no Pier Protection N - Not applicable, no Nav. Clr. (ft.) Vert. 0.0 Horiz. 0.0 Naver. A-NON Year + C A P A C I T Y R A T I N G S + Design Load 5 - HS 20 Operating Rating Operating Rating 2 - HS TRUCK 42.2 Inventory Rating 2 - HS TRUCK 25.4			
Main Span Detail Appr. Span Type Appr. Span Detail Appr. Span Detail Skew 0 Culvert Type Barrel Length Cantilever ID Main Span Length Structure Length Deck Width (Out-to-Out) 6 - Bituminous Wear Surf Type 6 - Bituminous Wear Surf Type 6 - Bituminous Wear Surf Type 0 - None Deck Membrane 0 - None Deck Rebars 0 - None Deck Rebars Install Year Structure Area (Out-to-Out) 4 - None Deck Rebars Install Year Structure Area (Out-to-Out) 4 - None Deck Rebars Install Year Structure Area (Out-to-Out) 4 - None Deck Rebars Install Year Structure Area (Out-to-Out) 4 - None Deck Rebars Install Year Structure Area (Out-to-Curb) 3 - A - None Deck Rebars Install Year Structure Area (Out-to-Curb) <	+ MISC. B R IDGE D ATA + Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment 1 - CONC Abutment 1 - CONC Foundation 5 - U TYPE ABUT Pier Foundation 1 - CONC (Material/Type) 3 - FTG PILE Historic Status 5 - Not eligible + P A I N T + Year Painted Unsound Paint % Painted Area sq. ft. Primer Type Finish Type + B R I D G E SI G N S + Posted Load 2 - Vehicle & Semi (Type R12-5) Traffic 0 - Not Required Horizontal 1 - Object Markers	GR Termini 1 - MEETS STANDARDS +1N DEPTH INSP.+ Y/N Freq Date Frac. Critical N Underwater N Underwater N Pinned Asbly. N Spec. Feat. VIN Freq Date Frac. Critical N Underwater N N Pinned Asbly. N Spec. Feat. N Drainage Area (sq. mi.) Waterway Opening (sf.) Navigation Control N - Not applicable, no Pier Protection Nav. Clr. (ft.) Vert. 0.0 Horiz. 0.0 Nav. Vert. Lift Bridge Clear. (ft.) MN Scour Code A - NON Year + C A P A C I T Y R A T I N G S + Design Load 5 - HS 20 Operating Rating 2 - HS TRUCK 42.2 Inventory Rating 2 - HS TRUCK 42.2 Inventory Rating 2 - HS TRUCK 40 Rating Date 06/10/2011 DBL: 40 40 Rating Date 06/10/2011			
Main Span Detail Appr. Span Type Appr. Span Detail Skew 0 Culvert Type Barrel Length Cantilever ID Number of Spans MAIN: 3 APPR: 0 TOTAL: Main Span Length 22.0 ft. Structure Length 65.9 ft. Deck Width (Out-to-Out) 63.5 ft. Deck Material 2 - Concrete Precast Panels Wear Surf Type 6 - Bituminous Wear Surf Install Year Wear Course/Fill Depth 0.20 ft. Deck Rebars 0 - None Deck Rebars 0 - None Deck Rebars 0 - None Deck Rebars Install Year 4185 sq. ft. Roadway Area (Curb-to-Curb) 3423 sq. ft. Roadway Area (Curb-to-Curb) 3423 sq. ft. Sidewalk Width 50A. Lt 4.50 ft. Sidewalk Width 50A. Lt 4.50 ft.	+ MISC. B R I D G E D A T A + Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment 1 - CONC Abutment 1 - CONC Foundation 5 - U TYPE ABUT Pier Foundation 1 - CONC (Material/Type) 3 - FTG PILE Historic Status 5 - Not eligible + P A I N T + Year Painted Unsound Paint % Painted Area sq. ft. Primer Type Finish Type + B R I D G E SI G N S + Posted Load 2 - Vehicle & Semi (Type R12-5) Traffic 0 - Not Required Horizontal 1 - Object Markers Vertical 0 - Not Required	GR Termini 1 - MEETS STANDARDS +1N DE PTH IN SP.+ Y/N Freq Date Frac. Critical N N Underwater N N Pinned Asbly. N Spec. Feat. Drainage Area (sq. mi.) Waterway Opening (sf.) Navigation Control N - Not applicable, no Pier Protection Nav. Clr. (ft.) Vert. 0.0 Horiz. 0.0 Nav. Vert. Lift Bridge Clear. (ft.) MN Scour Code A - NON Year + C A P A C IT Y R A T I N G S + Design Load 5 - HS 20 Operating Rating Operating Rating 2 - HS TRUCK 42.2 Inventory Rating 2 - HS TRUCK 25.4 Posting VEH: 26 SEMI: 40 DBL: 40 Rating Date 06/10/2011 Overweight Permit Codes			
Main Span Detail Appr. Span Type Appr. Span Detail Skew 0 Culvert Type Barrel Length Cantilever ID Number of Spans MAIN: 3 APPR: 0 TOTAL: Main Span Length 22.0 ft. Structure Length 65.9 ft. Deck Width (Out-to-Out) 63.5 ft. Deck Material 2 - Concrete Precast Panels Wear Surf Type 6 - Bituminous Wear Surf Install Year Wear Course/Fill Depth 0.20 ft. Deck Membrane 0 - None Deck Rebars Install Year 4185 sq. ft. Roadway Area (Curb-to-Curb) 3423 sq. ft. Structure Area (Out-to-Curb) 3423 sq. ft. Sidewalk Width 50A. Lt 4.50 ft. St. Stidewalk Width 50A. Lt 4.50 ft. Rt 0.75 ft. Rai Type Lt 14 Rt 14	+ MISC. B R I D G E D A T A + Structure Flared 0 - No flare Parallel Structure N - No parallel structure Field Conn. ID Abutment 1 - CONC Abutment 1 - CONC Foundation 5 - U TYPE ABUT Pier Foundation 1 - CONC (Material/Type) 3 - FTG PILE Historic Status 5 - Not eligible + P A I N T + Year Painted Unsound Paint % Painted Area sq. ft. Primer Type Finish Type + B R I D G E SI G N S + Posted Load 2 - Vehicle & Semi (Type R12-5) Traffic 0 - Not Required Horizontal 1 - Object Markers Vertical 0 - Not Required	GR Termini 1 - MEETS STANDARDS +1N DE PTH IN SP.+ Y/N Freq Date Frac. Critical N Underwater N Underwater N Pinned Asbly. N Spec. Feat. Frac. Critical N N Spec. Feat. N Drainage Area (sq. mi.) Waterway Opening (sf.) Navigation Control N - Not applicable, no Pier Protection N - Not applicable, no Nav. Cir. (ft.) Vert. 0.0 Nav. Cir. (ft.) Vert. 0.0 MN Scour Code A - NON Year + C A P A C I T Y R A T I N G S + Design Load 5 - HS 20 Operating Rating 2 - HS TRUCK 42.2 Inventory Rating 2 - HS TRUCK 25.4 Posting VEH: 26 SEMI: 40 DBL: 40 Rating Date 06/10/2011 Overweight Permit Codes A N - N/A B N - N/A C N - N/A			

MINNESOTA BRIDGE INSPECTION REPORT

12/02/201	6
-----------	---

BRIDGE 4533 CSAH 77 OVER MC RY ROUTINE INSP. DATE: 11/16/2016 0.2 MI E OF JCT CSAH 45 County: Ramsey Location: Length: 65.9 ft. City: New Brighton Route: 04 - CSAH 77 Ref. Pt.: 001+00.820 Deck Width: 63.5 ft. Township: Control Section: Rdwy. Area/ Pct. Unsnd: 3423 sq. ft. / % Section: 29 Township: 030N Range: 23W Maint. Area: Paint Area/ Pct. Unsnd: sq. ft. / % Span Type: 5 - Prestressed Concrete 2 -Local Agency Bridge Nbr .: Culvert: N/A Stringer/Multi-beam or Girder List: Postinas: 26 40 40 NBI Deck: 5 Super: 4 Sub: 5 Chan: Ν Culv: N Open, Posted, Closed: P - Posted for Load MN Scour Code: A - NON WATERWAY Appraisal Ratings - Approach: Ν 6 Waterway: **Unofficial Structurally Deficient** Υ Required Bridge Signs - Load Posting: 2 - Vehicle & Semi (Type Traffic: 0 - Not Required Unofficial Functionally Obsolete N R12-5) Horizntal: 1 - Object Markers Vertical: 0 - Not Required **Unofficial Sufficiency Rating** 43.6 ELEM QTY OTY QTY QTY QTY NBR ELEMENT NAME ENV REPORT TYPE QUANTITY CS 1 CS 3 CS 4 INSP. DATE CS 2 CS 5 0 0 013 **Bituminous Overlay (Concrete** 2 Routine 11/16/2016 4187 SF 0 0 4187 Deck) 0 0 4187 0 Routine 4187 SF 0 11/19/2015 Notes: [2010-2015] There is moderate to major longitudinal and transverse cracking of bituminous overlay. [2009-2015] There is deck leakage @ deck joints (transverse cracking) & along pre-cast sections- 6 on each side of centerline (longitudinal cracking). Milled an average of 1 1/4" and paved 0.20' in July 2007. Difficult to determine the condition of concrete deck due to the bituminous overlay. Reinforced Concrete Column 10 EA 0 7 3 0 N/A 205 2 Routine 11/16/2016 Λ 7 3 0 10 EA N/A Routine 11/19/2015 Notes: [2015] The north side of column #3 & #5 at the top has exposed re-bar with corrosion. [2013-2015] Minor spalls are present. The north side of #7 column at the top has exposed re-bar with corrosion. [2003-2015] Numerous minor horizontal & vertical cracking. Rebar and form tie corrosion is present on columns. Reinforced Concrete 128 LF 0 54 74 0 N/A 2 215 Routine 11/16/2016 Abutment Routine 11/19/2015 128 LF Ω 54 74 0 N/A Notes: [2015] There is spall at the NW corner abutment back wall. [2014-2015] There is a major 1" delamination on the top of the west abutment between channels 5 & 15. [2014-2015] There is a major spall at west abutment below #16 channel. [2013-2015] The west abutment contains minor to moderate spalls throughout. There is a major spall at west abutment below #5 channel. [2010-2015] The east abutment contains major spalls at channel #5, channels #3 & #16 at construction joints. [2008-2015] There are 2 moderate vertical cracks in each abutment with delamination at the construction joints. [2003-2015] There are 36 LF of horizontal cracks on east abut. & 35 LF on west abut. 4" below the abutment seat. Scaling at abutment seats. Hairline cracks outside edges of SE & SW corners of bridge seats 1994-2015. Sealed in 1982. Reappeared in 1983. Visible 1983-2015. [2013-2014] There is delamination at the NW corner abutment back wall. **Reinforced Concrete Footing** 10 EA 0 10 0 0 N/A 220 2 Routine 11/16/2016 10 EA 0 10 0 0 N/A Routine 11/19/2015 Notes: [2015] Minor spalls are present with numerous minor horizontal & vertical cracking. **Reinforced Concrete Pier Cap** 128 LF 0 54 74 0 234 2 Routine N/A 11/16/2016 128 LF 0 54 74 0 Routine 11/19/2015 N/A Notes: [2014-2015] There is moderate delamination on the north construction joint of the east pier cap.

[2009-2015] There is moderate vertical cracking at construction joints. There are moderate spalls underneath side of concrete caps. There are 36 LF of horizontal cracking on each pier cap.

ROUTINE INSP. DATE: 11/16/2016

									11/10/20	
ELEM NBR	ELEMENT NAME	ENV	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4	QTY CS 5
333	Masonry, Other or Combination Material Ra	2 iling	Routine	11/16/2016	200 LF	0	182	18	N/A	N/A
			Routine	11/19/2015	200 LF	0	182	18	N/A	N/A
	Notes: [2015] 7 [2015] T [2014-2! [2009-2! [2004-2! [2004-2! [2009-2! [2009-2! [2004-2! Railing i	[2015] 18 LF in (5% of concrete here is moderat 015] There is lor 015] There is lor 015] There is mo 015] Concrete p 014] There is mo 014] 50% of con s a combination	CS 3 & 182 LF in CS posts have moderate te spalls on #9, #11 & ngitudinal cracking on ajor delamination with arapet needs repair & oderate delamination crete posts have mod concrete parapet & n	2. spalls & delamir #12 posts on the top of railing the top of railing the section loss sou paint. Galvanizi of #9, #11 & #12 derate spalling & netal railing.	hation with corror e south side. e east 1/2 of the west 1/2 of the th side on the # ng protection is posts on the so delamination w	osion prese north side north side t5 post. chalking o buth side. ith corrosio	ent. railing. railing. on metal rai	iling.		
375	Pre-cast Concrete Chanr	nel 2	Routine	11/16/2016	1320 LF	0	138	980	202	N/A
			Routine	11/19/2015	1320 LF	0	138	980	202	N/A
	 [2014] East span has major delamination on channels #1, #4, #5, #9, #12, & #14. [2013-2014] West span has major spalls w/ exposed rebar on channels #3, #7, #9, #11, #15, #16, #19, #21. [2013-2014] Center span has major spalls w/ exposed rebar on channels #3, #7, #10, #15, #19, #21 [2013-2014] Center span has major spalls w/ exposed rebar on channels #3, #7, #10, #15, #19, #21 [2009-2014] Numerous minor shear & flexure cracking exist throughout all pre-cast channel spans. Also conta through from the deck. 100% in condition state 3. Span #1 [2013-2014] Channel #1, #10, #14, #15, #18 & #20 have longitudinal cracking w/corrosion 100% length. #14 & #15 have 8' of delamination with section loss. Chan. #2 & #3 has exposed re-bar w/section loss 100% length. Also leaching through from the deck. Chan. #2 & #3 has exposed re-bar w/section loss. Chan. #8 & #0 has long. crack. w/corr. Chan. #4, #6, #7& #12 has long. crack. w/corr. 50% length. Chan. #8 & #0 has long. crack. w/corr. 100% length. Chan. #8 has 4' exposed re-bar w/ sect. loss. Chan. #8 & #10 have 2' of delamination w/ sect. loss @ pier. Channel #14 & #15 have 4' delamination @ abutr has 6' of delam. w/ sect. loss. Chan. #13 has a 4' long. crack. w/corr. 100% length with 50% delam. & section loss. Span #2 [2011-2014] Chan. #2 & #3 have cracking 100% length with 50% delam. & section loss. Span #2 [2011-2014] Chan. #2 & #13 have long. crack. w/corr. 50% length. #7 has 2' delamination w/section loss. Chan. #1, #4, #5, #16 & #17 have 2' crack. w/corr. 50% length. #7 has 2' delamination w/section loss. Chan. #1, #4, #5, #16 & #17 have 2' crack. w/corr. 50% length. #7 has 2' delamination w/section loss. Chan. #1, #4, #15 have cracking 100% length. Chan. #4 has 4' crack w/corr. @ west pier & east pier. Chan. #4, #4, #15 have cracking 100% length. Chan. #1 has 4' crack w/corr.						Major efflue ains some l ment. Char 2' crack. w. ngth. ngth.	nce on leaching n. #18 /corr. @		
	Chan. #	8, #18, #19 & #2 14 has a 1' spall	20 have long crack. w I & 6' longitudinal crac	/corr. 100% leng k with corrosion	th. Channel #19	has 8' of	delam. w/ e	exposed re	-bar & sect	. loss.
387	Reinforced Concrete Wir	igwall 2	Routine	11/16/2016	4 EA	0	3	1 4	0	N/A
			Routine	11/19/2015	4 EA	U	3	I	U	N/A

Notes: [2013-2015] Minor spalls present on all concrete wingwalls. [2008-2015] There is a major spall at the NW corner bridge seat. [2003-2015] There is minor cracking with evidence of corrosion at the SW & NW corners. [2005-2015] There also is some cracking all corners at back wall bridge seats.

BRID	GE 4533 CS	SAH 77 OVE	R MC RY				ROUTINE INSP. DATE: 11/16/2016				16
ELEM NBR	ELEMEN	IT NAME	ENV	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4	QTY CS 5
407	Bituminous App Roadway	oroach	2	Routine	11/16/2016	2 EA	0	2	0	0	N/A
	·			Routine	11/19/2015	2 EA	0	2	0	0	N/A
		Notes: [2010 [2007] New I	0-2015] Moc mill & overla	lerate cracking with s y. Milled an average	ettlement preser of 1 1/4" and pay	nt at both ends. /ed 0.20' in July	2007.				
964	Critical Finding	Smart Flag	2	Routine	11/16/2016	1 EA	1	0	N/A	N/A	N/A
				Routine	11/19/2015	1 EA	1	0	N/A	N/A	N/A
		Notes: DO N	NOT DELET	E THIS CRITICAL FI	NDING SMART	FLAG.					
965	Concrete Shea Smart Flag	r Cracking	2	Routine	11/16/2016		0	0	0	0	N/A
				Routine	11/19/2015		0	0	0	0	N/A
		Notes:									
981	Signing		2	Routine	11/16/2016	1 EA	1	0	0	0	0
				Routine	11/19/2015	1 EA	1	0	0	0	0
		Notes: [2003	3-2015] Hori	zontal clearance sigr	ns are in place. L	oad posting sig	ns are in p	olace.			
982	Approach Guar	rdrail	2	Routine	11/16/2016	1 FA	0	1	0	N/A	N/A
302		urun	2	Routine	11/19/2015	1 EA	0	1	0	N/A	N/A
		Notes: [200	7-2015] The	re is moderate dama	ge to all four seg	ments but still f	unctions a	s intended.			
001	Deck & Approa	ch Drainage	î	Poutino	11/16/2016	1 E Δ	0	1	0	NI/A	
904	Been a Apprea		2	Routine	11/19/2015	1 EA	0	1	0	N/A	N/A
		Notes: [200	5-2015] Drai	ns off the bridge easi	t and west. Drain	age is operating	g properly.				
985	Slopes & Slope	Protection	2	Routine	11/16/2016	1 FA	0	1	0	N/A	N/A
000			2	Routine	11/19/2015	1 EA	0	1	0	N/A	N/A
		Notes: [200 [2005-2015] Slope protec	9-2015] Slop Minor to mo tion consists	be protection has moderate erosion at the sof grouted rip rap.	derate deteriorati SW & NW corne	on. Grouted rip ers.	rap has m	oderate cra	icking and	settlement	
986	Curb & Sidewa	lk	2	Routine	11/16/2016	1 EA	0	1	0	N/A	N/A
				Routine	11/19/2015	1 EA	0	1	0	N/A	N/A
		Notes: [2014 [2013-2015] [2012-2015] [2004-2015]	4-2015] The Major horizo Minor crack Settlement o	re is a 2" settlement of ontal crack w/ spalling ing and moderate sp of sidewalk at the NE	of walk @ SE co g along face of no alling are presen & NW corners h	rner of bridge. orth curb (44') t. ave been patch	ed with bit	tuminous.			
988	Miscellaneous	Items	2	Routine	11/16/2016		0	0	0	N/A	N/A
				Routine	11/19/2015		0	0	0	N/A	N/A
		Notes:									
	General Notes	s: 2016 Bridg 2015 Bridg 2014 Bridg 2013 Bridg 2013 Bridg 2012 Bridg 2011 Bridg 2010 Bridg	e safety ins e safety ins	Dection was complete pection was complete pection was complete pection was complete pection was complete pection was conducted pection by B. Wiemar	ed by Dan Bodels ed by Brian Essle ed by Dan Bodels ed by Dan Bodels ed by Dan Bodels ed by B. Wieman ed by B. Wieman n & D. Bodelson	son, Brian Essle or & Dan Bodels son, Brian Essle son & Brian Ess on 11/26/2012. on 11/9/2011. on 11/02/2010.	er & Rob G son on 11/ er & Randy ler on 11/0	Gaetz on 11 19/2015. / Bussiere (07/2013.	/16/2016. on 11/21/20	014.	

ROUTINE INSP. DATE: 11/16/2016

ELEM NBR	ELEMENT	NAME	ENV	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4	QTY CS 5
		2010 Also ins 2009 Bridge 2008 Bridge 2007 Bridge Bridge rating Graffiti is on a Bridge #4533	spected by safety insp safety insp safety insp by TKDA abutment, 3 was cons	MN/DOT Bridge Dep ection by B. Wieman ection by B. Paine & ection by B. Wieman 11/28/2006. Inventory pier columns & wing tructed in 1926. Bridg	ot. as part of com on 7/21/2009. B. Wieman 10/2 7/26/2007 . y rating - HS 24. walls 2003-2015 ge #4533 was re	npliance review. 7/2008. 9, Operating rati 5. modeled in 1973	ing HS 41.4	5.			
58	. Deck NBI:	There is majo There is deck	or longitudi k leakage @	nal and transverse cr deck joints (transve	racking of bitumi erse cracking) &	nous overlay. along pre-cast s	sections				
36A. Brdg R	ailings NBI:	Vehichular ra	ilings mee	t current standards.							
36B. Tran	sitions NBI:	: Guardrail transitions do not meet current standards. Posts are 3' spacing @ bridge, not 1'-6 3/4" as per MnDOT Standard Plate									
36C. Appr Gu	ardrail NBI:	Approach gua	ardrail mee	ets current standards							
36D. App Te	or Guardrail rminal NBI:	Guardrail terr	minations r	neet current standard	ds.						
59. Superstr	ucture NBI:	Major spalls v	w/ exposed	l rebar & significant s	ection loss on cl	hannels					
60. Substr	ucture NBI:	Major delami Minor spalls v	nation & sp with expose	oalls on abutment ed rebar on columns							
61. Cł	nannel NBI:	No Water									
62. 0	Culvert NBI:	Bridge									
71. Waterway	Adeq NBI:	No Water									
72. App Alig	or Roadway nment NBI:	Minor speed	reduction of	due to horizontal & ve	ertical curves						
Inver	ntory Notes:										

Dan Bodelson

Inspector's Signature

Nicklaus Fischer

Reviewer's Signature

MINNESOTA BRIDGE INSPECTION REPORT

12/02/2016

Inspector: CO Bridge

BRIDGE 4533 CSAH 77 OVER MC RY

County	: Ramsey I	ocation: 0.2 MI E	OF JCT CSAH 4	45	Length:	65.9	9 ft.	
City:	New Brighton	Route: 04 - CSAH 7	77 Ref. Pt.: 0	01+00.820	Deck Width	: 63.5	5 ft.	
Townsh	nip: (Control Section:			Rdwy. Area	/ Pct. Unsnd	: 3423 sq. ft. / %	6
Section	: 29 Township: 030N Range: 23W	Maint. Area:			Paint Area/	Pct. Unsnd:	sq. ft. / %	
Span T	ype: 5 - Prestressed Concrete 2 -	Local Agency Brid	ge Nbr.:		Culvert:	N/A		
List:	Stringer/Multi-beam or Girder				Postings:	26	40	40
NBI De	ck: 5 Super: 4 Sub: 5 Chan	N Culv: N						
		Open, Pos	ted, Closed: P -	Posted for Loa	ad			
		MN Scour	Code: A - NON	WATERWAY				
Apprais	al Ratings - Approach: 6 Waterway:	Ν			Unoff	icial Structur	ally Deficient	Y
Require	ed Bridge Signs - Load Posting: 2 - Vehicle a R12-5)	& Semi (Type T	raffic: 0 - N	lot Required	Unoff	icial Function	nally Obsolete	Ν
	Horizntal: 1 - Object M	larkers V	/ertical: 0 - N	lot Required	Unoff	icial Sufficie	ncy Rating	43.6
ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY C CS 2 C	QTY QTY CS 3 CS 4	
16	Reinforced Concrete Top Flange	Routine	11/16/2016	4185 SF	0	418 3	055 712	
		Migrated Values		4185 SF	0	418 3	055 712	
	Notes: [2016] Migrator assumed CS1. [2016] Extensive delamination & spalling [2016] 10% - 418 SF CS2, 73% - 3055 S	, exposed rebar with F CS3, 17% - 712 S	n section loss. SF CS4 - see atta	ched file.				
	510 - Wearing Surfaces	Routine	11/16/2016	3423 SF	3081	0 3	342 0	
		Migrated Values		3423 SF	3081	0 :	342 0	
	Notes: Bituminous Overlay Notes: [2010 [2009-2016] There is deck leakage @ de cracking). Milled an average of 1 1/4" and paved 0. Difficult to determine the condition of cor	2016] There is mod ck joints (transverse 20' in July 2007. crete deck due to th	lerate to major lo e cracking) & alor ne bituminous ove	ngitudinal and t ng pre-cast sec erlay.	ransverse cr tions- 6 on e	acking of bit ach side of c	uminous overla centerline (longi	y. tudinal

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4	
110	Reinforced Concrete Open Girder/Beam	Routine	11/16/2016	2640 LF	0	248	1936	456	
		Migrated Values		2640 LF	0	248	1936	456	
	Notes: [2016] Migrator estimated the q per precast section) by the deck length [2016] 1320 ft. of precast sections x 2 = [2016] 10% - 248ft. CS2, 73% - 1936 ft [2015-2016] Spans 1,2,3,6,7,8,9,10,11, 4,5,12,13,16 & 17 have major delamina [2014-2016] West span has major dela [2014-2016] Center span has major dela [2014-2016] East span has major dela [2013-2016] Center span has major spall [2013-2016] Center span has major spalls [2009-2014] Numerous minor shear & f the deck.100% in condition state 3. Span #1 [2013-2014] Channel #1, #10, #14, #15 #14 & #15 have 8' of delamination with Chan. #2 & #3 has exposed re-bar w/sc Chan. #5 has 4' long. crack. w/corr. Ch Chan. #8 10 have 2' of delamination w sect. loss. Chan. #13 has a 4' longitudinal crack & Chan. #11 has a 4' longitudinal crack & Chan. #11, #18 & #19 have long. crack. Chan. #11, #18 & #19 have long. crack Span #2 [2011-2014] Chan. #2 & #3 have cracki Chan. #1, #4, #5, #16 & #17 have 2' cra Chan. #6, #7, #11, #12 & #13 have long. Chan. #14 & #15 have cracking 100% I Chan. #18, #19 & #20 cracking w/corr. Span #3 [2011-2014] Chan. #7, #10, #13, #15, # Chan. #1, #2 & #3 have long. crack. w/ Chan. #4 & #15 have 50% long. crack. w/ Chan. #4 & #15 have 50% long. crack. w/ Chan. #6 has 1' long. crack. w/corr. @ Chan. #8, #18, #19 & #20 have long cr Chan. #6 has 1' long. crack. w/corr. @ Chan. #8, #18, #19 & #20 have long cr Chan. #14 has a 1' spall & 6' longitudin	uantity of the channe = 2640 ft. beams. ., CS3, 17% - 456 ft 14,15,18,19 & 20 hav- tition. mination on channels amination on channels s w/ exposed rebar of alls w/ exposed rebar of lexure cracking exist 5, #18 & #20 have lor section loss 100% leng an. #4, #6, #7& #12 h 100% length. Chan. # / sect. loss @ pier. C 6" moderate spall w/ w/corrosion. ing 100% length with ng w/corr. 100% leng ack. w/corr. @ each p g. crack. w/corr. 50% ed re-bar & sect. loss ength. Chan. #14 & # 100% L. Chan #19 ha et 16, #17 has long. crac corr. 75% length. delamination w/ exp i/corrosion. #4 has 2' pier. ack. w/corr. 100% ler ack. w/corr. 100% ler	- CS4 - see attac ve major spalls v s #1, #10, #12, & els #2, #6, & #9. #1, #4, #5, #9, # on channels #3, # on channels #3, # throughout all pu- ngitudinal crackin throughout all pu- ngitudinal crackin %8 has 4' expose hannel #14 15 h (corr. @ abutmen 50% delam. & s gth & delam. w/ exp as delam. w/ exp ack. w/corr. 50% osed re-bar & se delam. @ abut. ngth. Channel #1 n.	he quantity by m ched file. vith exposed rel #14. #12, & #14. #7, #9, #11, #15, #7, #10, #15, # 3, #10, #11, #19 re-cast channel hg w/corrosion 7 g through from t w/corr. 50% leng d re-bar w/ sec have 4' delamina ht. section loss. exposed re-bar w/ sec have 4' delamina ht. section loss. exposed re-bar & s bosed re-bar & s length. ection loss @ ea 9 has 8' of dela	bar and so bar and so	the number me signific , #21. Majo so contains th. butment. Cl s 75% L. pier & 2' c oss. 75% length 100% lengt int. bsed re-bar	r of vertical ant section or effluence some lead han. #18 ha rack. w/cor han. h.	beams (2 beam loss. Spans e on channel #4 ching through from as 6' of delam. w r. @ east pier.	s m
205	Reinforced Concrete Column	Routine	11/16/2016	10 EA	0	6	4	0	
		Migrated Values		10 EA	0	6	4	0	

Notes: [2016] Major delamination on column # 6, move to CS3 [2015-2016] The north side of column #3 & #5 at the top has exposed re-bar with corrosion. [2013-2016] Minor spalls are present. The north side of #7 column at the top has exposed re-bar with corrosion. [2003-2016] Numerous minor horizontal & vertical cracking. Rebar and form tie corrosion is present on columns.

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4	
215	Reinforced Concrete Abutment	Routine	11/16/2016	196 LF	0	105	91	0	
		Migrated Values		196 LF	0	105	91	0	
	Notes: [2016] Migrator added 40 LF to [2016] 17' on all 4 wingwalls with 128' o [2016] 3 wingwalls @ 17' = 51' + 54' ab [2016] There is spall at the NW corner [2014-2016] There is a major 1" delam [2014-2016] There is a major spall at w [2013-2016] The west abutment contai [2008-2016] The east abutment contai [2008-2016] There are 2 moderate vert [2003-2016] There are 36 LF of horizon Scaling at abutment seats. Hairline cra Sealed in 1982. Reappeared in 1983. V [2013-2016] There is delamination at th	a abutment quantity to of abutment = 196 ft. but. = 105 ft. CS2 - 1 v abutment back wall. ination on the top of th vest abutment below # ns minor to moderate ns major spalls at cha tical cracks in each at ntal cracks on east ab cks outside edges of /isible 1983-2015. ne NW corner abutme	account for wing Total. wingwall @ 17' w he west abutmer #16 channel. spalls throughou nnel #5, channe butment with dela ut. & 35 LF on w SE & SW corner nt back wall.	gwalls (CS1:0 C vith 74' abut. = 9 nt between chan ut. There is a ma ls #3 & #16 at ca amination at the rest abut. 4" belo s of bridge seats	S2:30 CS 1 ft. CS3. nels 5 & 1 ajor spall a onstruction construct ow the abo s 1994-20	3:10 CS4:0 5. at west abu n joints. ion joints. utment seat 15.). tment belo t.	w #5 channe	əl.
	Wingwall notes: [2013-2015] Minor spa [2008-2015] There is a major spall at th [2003-2015] There is minor cracking w [2005-2015] There also is some cracking	alls present on all com ne NW corner bridge s ith evidence of corros ng all corners at back	crete wingwalls. seat. ion at the SW & wall bridge seat	NW corners. s.					
220	Reinforced Concrete Pile Cap/Footing	Routine	11/16/2016	106 LF	0	106	0	0	
		Migrated Values		106 LF	0	106	0	0	
	Notes: [2016] Migrator assumed 10LF [2016] 9.5' between 5 piers = 4 x 9.5' = [2015-2016] Minor spalls are present w	per EA quantity, a tot 38' + 7.5' on north & vith numerous minor h	al of 100 LF. south ends =53 orizontal & vertio	ft. x 2 (east & w cal cracking.	est piers)	= 106' total	CS 2		
234	Reinforced Concrete Pier Cap	Routine	11/16/2016	128 LF	0	54	74	0	
		Migrated Values		128 LF	0	54	74	0	
	Notes: [2014-2016] There is moderate [2009-2016] There is moderate vertical 36 LF of horizontal cracking on each pi	delamination on the cracking at construct er cap.	north constructic ion joints. There	n joint of the ea are moderate s	st pier cap palls unde	o. erneath side	e of concre	te caps. The	ere are
330	Metal Bridge Railing	Routine	11/16/2016	200 LF	0	200	0	0	
		Migrated Values		200 LF	0	200	0	0	
 Notes: [2016] Migrator assumed concrete/metal combination type rail. [2016] 200 ft. CS 2 for Metal Bridge Rail. [2016] Minor chalking & fading of finish coat. [2015] 18 LF in CS 3 & 182 LF in CS 2. [2015-2016] 75% of concrete posts have moderate spalls & delamination with corrosion present. [2015-2016] There is moderate spalls on #9, #11 & #12 posts on the south side. [2014-2016] There is longitudinal cracking on top of railing the east 1/2 of the north side railing. [2009-2016] There is major delamination with section loss south side on the #5 post. [2004-2016] Concrete parapet needs repair & paint. Galvanizing protection is chalking on metal railing. [2009-2014] There is moderate delamination of #9, #11 & #12 posts on the south side. [2004-2014] 50% of concrete parapet & metal railing. 									
	515 - Steel Protective Coating	Routine	11/16/2016	260 SF	0	260	0	0	
		Migrated Values	-	260 SF	0	260	0	0	
	Notes: [2016] Migrator assumed CS1 a [2016] 200 LF x 1.3' high = 260 SF [2016] Minor chalking & fading of finish	and a quantity of 999 s	SF.						

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4	
331	Reinforced Concrete Bridge Railing	Routine	11/16/2016	200 LF	0	100	100	0	
		Migrated Values		200 LF	0	100	100	0	
	Notes: [2016] Migrator assumed conc [2016] 100 LF in CS2 & 100 LF in CS3 [2016] 30' of moderate delamination or [2016] major 1' x 6" spall on post # 11 [2015] 18 LF in CS 3 & 182 LF in CS 2	rete/metal combinatio for Concrete Bridge n east half of north sic on north side with cra	n type rail. Rail. Je of railing. Icks & delaminati	on on all posts o	on north s	ide.			
	[2015] 75% of concrete posts have mo [2015] There is moderate spalls on #9, [2014-2015] There is longitudinal crack [2009-2015] There is longitudinal crack [2006-2015] There is major delamination [2004-2015] Concrete parapet needs r [2009-2014] There is moderate delami [2004-2014] 50% of concrete posts ha Railing is a combination concrete para	derate spalls & delam #11 & #12 posts on t king on top of railing th king on top of railing th on with section loss se epair & paint. Galvani nation of #9, #11 & #' ve moderate spalling pet & metal railing.	nination with corr the south side. he east 1/2 of the he west 1/2 of the outh side on the izing protection is 12 posts on the s & delamination v	osion present. e north side railin e north side railin #5 post. s chalking on mo outh side. vith corrosion pr	ng. ing. etal railing resent.	ŀ.			
800	Critical Deficiencies or Safety Hazards	Routine	11/16/2016	1 EA	1	0	0	0	
		Migrated Values		1 EA	1	0	0	0	
	Notes: NO CRITICAL FINDINGS OBS	ERVED DURING TH	IE LAST INSPEC	TION.					
822	Bituminous Approach Roadway	Routine	11/16/2016	2 EA	0	2	0	0	
		Migrated Values		2 EA	0	2	0	0	
	Notes: [2016] Moderate cracks over p [2010-2016] Moderate cracking with se [2007] New mill & overlay. Milled an av	iers. ettlement present at b rerage of 1 1/4" and p	oth ends. baved 0.20' in Jul	y 2007.					
883	Concrete Shear Cracking	Routine	11/16/2016	1 EA	1	0	0	0	
		Migrated Values		1 EA	1	0	0	0	
	Notes: Use this element to monitor the [2016] no shear cracking present.	e presence of shear c	racking on concr	ete elements. P	ay particu	lar attentior	n to the cor	ncrete pier caps.	
890	Load Posting or Vertical Clearance Signing	Routine	11/16/2016	1 EA	1	0	0	0	
		Migrated Values		1 EA	1	0	0	0	
	Notes: [2016] Structure requires a ver [2003-2016] Horizontal clearance sign:	tical clearance sign of s are in place. Load p	r load posting sig osting signs are	n. in place.					
891	Other Bridge Signing	Routine	11/16/2016	1 EA	1	0	0	0	
		Migrated Values		1 EA	1	0	0	0	
	Notes: [2003-2016] Horizontal clearan	ce signs are in place.	. Load posting sig	gns are in place	•				
892	Slopes & Slope Protection	Routine	11/16/2016	1 EA	0	1	0	0	
		Migrated Values		1 EA	0	1	0	0	
_	Notes: [2009-2016] Slope protection h [2005-2016] Minor to moderate erosion Slope protection consists of grouted rip	as moderate deterior a at the SW & NW cor p rap.	ation. Grouted rip rners.	orap has moder	ate cracki	ng and sett	lement.		
893	Guardrail	Routine	11/16/2016	1 EA	0	1	0	0	
		Migrated Values		1 EA	0	1	0	0	
	Notes: [2007-2016] There is moderate [2016] Guardrail transitions do not mee	e damage to all four se et current standards	egments but still - Posts are 3' spa	functions as intencing @ bridge,	ended. not 1'-6 3/	/4" as per N	InDOT Sta	ndard Plate	
894	Deck & Approach Drainage	Routine	11/16/2016	1 EA	0	1	0	0	
		Migrated Values		1 EA	0	1	0	0	
	Notes: [2005-2016] Drains off the brid	ge east and west. Dra	ainage is operatir	ng properly.					

-

ELEM NBR	ELEM	ENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4	
895	Sidewalk, Curb, 8	& Median	Routine	11/16/2016	1 EA	0	1	0	0	
			Migrated Values		1 EA	0	1	0	0	
	Notes: [2016] [2016] 1' x 1' m [2014-2015] Th [2013-2016] Mi [2012-2016] Mi [2004-2016] Se	There is a 3" settlement hajor spall in SW corner of here is a 2" settlement of ajor horizontal crack w/ s inor cracking and modera attlement of sidewalk at t	of walk @ SE corner of walk. walk @ SE corner of palling along face of a te spalling are prese he NE & NW corners	of bridge, should bridge. north curb (44') nt. have been patcl	t be patched wit	h bitumino Ious.	ous.			
900	Protected Species	S	Routine	11/16/2016	1 EA	1	0	0	0	
			Migrated Values		1 EA	1	0	0	0	
	Notes: Use this [2061] No prote	s element to track the prective species found.	esence of protected s	pecies living on	this structure.					
	General Notes:	2016 Bridge safety insp 2015 Bridge safety insp 2014 Bridge safety insp 2013 Bridge safety insp 2013 Bridge safety insp 2011 Bridge safety insp 2010 Bridge safety insp 2010 Also inspected by 2009 Bridge safety insp 2008 Bridge safety insp 2007 Bridge safety insp Bridge rating by TKDA Graffiti is on abutment, Bridge #4533 was consp	bection was complete bection was complete bection was complete bection was complete bection was complete bection was conducte bection by B. Wieman MN/DOT Bridge Dep bection by B. Wieman MN/DOT Bridge Dep bection by B. Wieman bection by B. Paine & bection by B. Paine & bection by B. Nieman 11/28/2006. Inventory pier columns & wing structed in 1926. Bridge	d by Dan Bodels d by Brian Essle d by Dan Bodels d by Dan Bodels d by B. Wieman d by B. Wieman & D. Bodelson on 7/21/2009. B. Wieman 10/2 7/26/2007 . y rating - HS 24. walls 2003-2015 ge #4533 was re	on, Brian Essle r & Dan Bodels on, Brian Essle on & Brian Essle on 11/26/2012. on 11/02/2010. npliance review. 7/2008. 9, Operating rat on deled in 197	r & Rob G on on 11/1 r & Randy er on 11/0 ing HS 41 3.	aetz on 11/ 9/2015. Bussiere c 7/2013.	/16/2016. on 11/21/20	014.	
	58. Deck NBI:	There is major longitud There is deck leakage	inal and transverse cl @ deck joints (transve	racking of bitumi erse cracking) &	nous overlay. along pre-cast	sections				
36A. E	Brdg Railings NBI:	Vehichular railings mee	et current standards.							
36B	. Transitions NBI:	Guardrail transitions do Posts are 3' spacing @	not meet current sta bridge, not 1'-6 3/4"	ndards. as per MnDOT §	Standard Plate					
36C. Ap	pr Guardrail NBI:	Approach guardrail me	ets current standards							
36	D. Appr Guardrail Terminal NBI:	Guardrail terminations	meet current standard	ds.						
59. Su	perstructure NBI:	Major spalls w/ expose	d rebar & significant s	ection loss on c	hannels					
60. \$	Substructure NBI:	Major delamination & s Minor spalls with expos	palls on abutment ed rebar on columns							
	61. Channel NBI:	No Water								
	62. Culvert NBI:	Bridge								
71. Wa	terway Adeq NBI:	No Water								
7	2. Appr Roadway Alignment NBI:	Minor speed reduction	due to horizontal & ve	ertical curves						
	inventory notes.									

Dan Bodelson

Inspector's Signature

Nicklaus Fischer

Reviewer's Signature



Photo 1 -



Photo 2 -



Photo 3 -



Photo 4 -



Photo 5 -



Photo 6 -



Photo 7 -



Photo 8 -



Photo 9 -



Photo 10 -



Photo 11 -



Photo 12 -



Photo 13 -



Photo 14 -



Photo 15 -



Photo 16 -



Photo 17 -



Photo 18 -



Photo 19 -



Photo 20 -



Photo 21 -



Photo 22 -

Maintenance

Element	Source Code	Work Code	Description	P/R	Priority	Work Order #	Year Due	Last Viewed	Entered	Start Date	Completed
---------	-------------	-----------	-------------	-----	----------	--------------	----------	-------------	---------	------------	-----------

BRIDGE STRUCTURAL ASSESSMENT REPORT

PURPOSE:

This report is a structural assessment of the structure and its ability to carry loads based on conditions identified in the attached bridge inspection report. The assessment is only a cursory review intended to provide guidance as to the relative hazards for structural conditions and deficiencies identified. This report is mandatory for all fracture critical bridges and is completed by the Minnesota Bridge Office upon receipt of the 7 Day FC Report; however, it is an OPTIONAL tool for agencies to utilize at their discretion for all other inspection types.

BRIDGE NO.: 4533	BRIDGE OWNER: County I	Highway Agency				
DATE INSPECTED: 11/16/2016	STRUCTURE TYPE: Prestressed Concrete					
FACILITY CARRIED: CSAH 77	FEATURES INTERSECTED: MC RY					
TYPE OF INSPECTION: ✓ ROUTINE □ FRACTURE □ □ PINNED ASS □ □ SPECIAL: □ □ DAMAGE: □ Check all that apply: □ COMPLEX:	CRITICAL EMBLY:					
Redundancy: Load Path Structural Internal	Connection□RivetedType:□Bolted□Welded□Other:					
 Was a critical finding identified during this inspection or upon □ Yes □ No structural review? 						
a) If selected " Yes " above, state briefly the finding(s):						
 2. If a critical finding was identified, what is the current status? Pending Resolved N/A 						
a) Briefly state actions taken:						
3. Does the condition of any bridge component indicate impaired function? Examples of bridge components with impaired function include elements that are: frozen or immoveable, out-of-plumb or misaligned, distorted or structurally deformed, excessively						

deteriorated, cracked, broken, eroded or scoured.

a) If selected "**Yes**" above, state briefly the component(s) and condition(s):

4.	Does the overall condition of the bridge, or any of its components	☐ Yes	🗌 No
	mentioned in Question 3, suggest the need for detailed structural		
	analysis and/or a revised load rating?		

- a) If selected "**Yes**", state the reason for this recommendation and indicate a proposed timeframe in accordance with State of Minnesota Rule 8810.9500 (Subpart 2):
- 5. Based on the structural assessment of these findings, recommendations include:

Repair/Maintenance	Monitoring Plan
Complex	Increased Inspection Frequency

Explain recommended actions:

6. Other comments:

Bridge Office Reviewer