2016 ROUTINE
BRIDGE INSPECTION REPORT

BRIDGE # 62541
COMO AVE over BNSF RR

DISTRICT: Metro **COUNTY:** Ramsey **CITY/TOWNSHIP:** St Paul

STATE: Minnesota

Date of Inspection: 10/20/2016

Equipment Used: Full Body Harness, Confined Space Entry, Other, Other - Reachall UB-60 & Lift Truck (both provided by City of St. Paul)

Owner: County Highway Agency

Inspected By: Engel, Michael; Grau, Joe; Lee, Joseph; Reimer, Dan

Report Written By: Joseph Lee

Report Reviewed By: Glenn Pagel

Final Report Date: 12/15/2016

Table of Contents

Minnesota Structure Inventory Report

Bridge ID: 62541 **COMO AVE over BNSF RR** Date: 12/09/2016

+GENERAL+

Agency Br. No.	**Crew**
District	05 **Maint. Area**
County	062 - Ramsey
City	St Paul
Township	
Desc. Loc.	AT WESTERN AVE
Sect., Twp., Range	25 - 029N - 23W
Latitude	44 ° 57 ' 55.15 "
Longitude	93 ° 7 ' 2.67 "
Custodian	02 - County Highway Agency
Owner	02 - County Highway Agency
BMU Agreement	
Year Built	1985
MN Year Reconstructed	
FHWA Year Reconstructed	
MN Temporary Status	
Bridge Plan Location	4 - MUNICIPAL
Date Opened to Traffic	10/1/1985
On - Off System	1 - ON
Legislative District	65A
Potential ABC	2 - N/A

+STRUCTURE+

Service On	5 - Highway-pedestrian
Service Under	2 - Railroad
Main Span Type	3 - Steel
Main Span Design	01 - Beam Span
Main Span Detail	
Appr. Span Type	
Appr. Span Design	
Appr. Span Detail	
Skew	0
Culvert Type	
Barrel Length	
Cantilever ID	

Number of Spans

MAIN: 3 **APPR:** 0 **TOTAL:**

Main Span Length	109.3	**ft.**
Structure Length	342.7	**ft.**
Deck Width (Out-to-Out)	68.6	**ft.**
Deck Material	1 - Concrete Cast-in-Place	
Wear Surf Type	4 - Low Slump Concrete	
Wear Surf Install Year	1985	
Wear Course/Fill Depth	0.17	**ft.**
Deck Membrane	0 - None	
Deck Rebars	1 - Epoxy Coated Reinforcing	
Deck Rebars Install Year	1985	
Structure Area (Out-to-Out)	23509	**sq. ft.**
Roadway Area (Curb-to-Curb)	17825	**sq. ft.**

Sidewalk Width	**50A. Lt**	6.00 **ft.**	**50B. Rt**	6.00	**ft.**
Curb Height	**Lt**	0.83 **ft.**	**Rt**	0.83	**ft.**
Rail Type	**Lt**	21	**Rt**	21	

+ROADWAY+

Bridge Match ID (TIS)	0
Roadway O/U Key	Route On Structure
Route Sys	04 - CSAH **Number** 32
Roadway Name or Description	CSAH 32-COMO AVE
Level of Service	1 - MAINLINE
Roadway Type	2 - 2-way traffic
Control Section (TH Only)	
Reference Point	004+00.501
Detour Length	1.0 **mi.**
Lanes	**ON** 2 **UNDER** 0
	ADT 7300 **YEAR** 2005
HCADT	**ADTT** **%**
Functional Class	16 - Urban - Minor Arterial

+RDWY DIMENSIONS+

If Divided	**NB-EB**	**SB-WB**
Roadway Width	52.00 **ft.**	**ft.**
Vertical Clearance	**ft.**	**ft.**
Max. Vert. Clear.	**ft.**	**ft.**
Horizontal Clear.	51.9 **ft.**	**ft.**
Lateral Clearance	**ft.**	**ft.**

Appr. Surface Width	52.0	**ft.**
Bridge Roadway Width	52.0	**ft.**
Median Width On Bridge		**ft.**

+MISC. BRIDGE DATA+

Structure Flared	0 - No flare
Parallel Structure	N - No parallel structure
Field Conn. ID	4 - Bolted
Abutment Foundation (Material/Type)	1 - CONC 3 - FTG PILE
Pier Foundation (Material/Type)	1 - CONC 3 - FTG PILE
Historic Status	5 - Not eligible

+PAINT+

Year Painted	1986
Unsound Paint %	0
Painted Area	**sq. ft.**
Primer Type	D - Organic Zinc - 3309
Finish Type	H - Vinyl

+BRIDGE SIGNS+

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

+INSPECTION+

Userkey	199
Structurally Deficient	N
Functionally Obsolete	N
Sufficiency Rating	95.3
Routine Inspection Date	10/20/2016
Routine Inspection Frequency	12
Inspector Name	Lee, Joseph
Status	A - Open

+NBI CONDITION RATINGS+

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

+NBI APPRAISAL RATINGS+

Structure Evaluation	6
Deck Geometry	9
Underclearances	4
Waterway Adequacy	N
Approach Alignment	8

+SAFETY FEATURES+

Bridge Railing	1 - MEETS STANDARDS
GR Transition	0 - SUBSTANDARD
Appr. Guardrail	0 - SUBSTANDARD
GR Termini	0 - SUBSTANDARD

+IN DEPTH INSP.+

	Y/N	**Freq**	**Date**
Frac. Critical	N	24	10/23/2013
Underwater	N		
Pinned Asbly.	N		
Spec. Feat.			

+WATERWAY+

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

+CAPACITY RATINGS+

Design Load	5 - HS 20	
Operating Rating	2 - HS TRUCK	41.1
Inventory Rating	2 - HS TRUCK	21.0

Posting VEH: **SEMI:** **DBL:**

Rating Date 1/31/2006

Overweight Permit Codes

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

MINNESOTA BRIDGE INSPECTION REPORT

12/15/2016

Inspector: CO Bridge

BRIDGE 62541 COMO AVE OVER BNSF RR

County: Ramsey
City: St Paul
Township:
Section: 25 Township: 029N Range: 23W
Span Type: 3 - Steel 2 - Stringer/Multi-beam or Girder
List:
NBI Deck: 6 Super: 6 Sub: 6 Chan: N

Location: AT WESTERN AVE
Route: 04 - CSAH 32 Ref. Pt.: 004+00.501
Control Section:
Maint. Area:
Local Agency Bridge Nbr.:
Culv: N
Open, Posted, Closed: A - Open
MN Scour Code: A - NON WATERWAY

Length: 342.7 ft.
Deck Width: 68.6 ft.
Rdwy. Area/ Pct. Unsnd: 17825 sq. ft. / %
Paint Area/ Pct. Unsnd: sq. ft. / 0%
Culvert: N/A
Postings:

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

Unofficial Structurally Deficient N
Unofficial Functionally Obsolete N
Unofficial Sufficiency Rating 95.3

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
12	Reinforced Concrete Deck	Routine	10/20/2016	23509 SF	23471	23	15	0
		Migrated Values		23509 SF	23471	23	15	0

Notes: Minor isolated delamination's are scattered. 2010-16
Efflorescence is present. Little to no build up. 2011-16
[2013] Underside of Span #2 (at center of span) has 15 SF of spall (exposed rebar with section loss - Photo 3) and 10 SF of delamination. Loose concrete above the railroad was chipped off in 2013.
There are scattered delamination's on the underside of the deck throughout the bridge.
Approx. 38 SF of delams / spalls at the under deck. 2015-16

510 - Wearing Surfaces	Routine	10/20/2016	17825 SF	17422	403	0	0
	Migrated Values		17825 SF	17422	403	0	0

Notes: Low Slump Overlay with Epoxy on Top Mat Only Notes:
Only the top mat of deck reinforcement is epoxy coated (the bottom mat is not epoxy coated) - see plan sheets 3 & 12 (of 39).
There are numerous longitudinal and transverse sealed cracks in the deck. 2004-05
The older sealed joints in the wearing course have deteriorated. 2006-16
Resealing of cracks needed. 2011-16
Unsealed cracks less than .012". 2016
Sealed and unsealed cracks from .012" to .05" wide. CS-2 2016

BRIDGE 62541 COMO AVE OVER BNSF RR

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
102	Steel Closed Web/Box Girder	Routine	10/20/2016	138 LF	138	0	0	0
		Migrated Values		138 LF	138	0	0	0

Notes: The steel pier caps are constructed of ASTM A-588 weathering steel - the exterior surfaces were painted in 1986, but the internal surface were never painted. The steel caps should be considered to be part of the "superstructure". There are backer bars along the top flange/web welds inside the cap.

Pier #1 (Exterior): [2009/2013] The cap faces have extensive pigeon debris throughout, with minor corrosion. The cap faces and bottom flange have flaking rust at the ends (4 LF at each end) - Photo 5. The cap faces and bottom flange have flaking rust between the 2nd & 3rd beams from the south (10 LF section - Photo 6) and at the 2nd beam from the north (4 LF section - Photo 7).

Pier #1 (Interior): [2000/2013] North end of cap (11 ft. section from entrance hatch to the interior stiffener of the 2nd bearing from the north) has extensive flaking rust (minor section loss) on the bottom flange. The flaking his extends approximately 3-5” up the web plates and internal stiffeners (Photos 8 & 9). [2009/2013] At the center of the cap (east face at top flange/web weld), the backer bar has a 1 ft. section that appears to have some leakage (Photo 10). No weld flaws are evident on the exterior at this location. [2000/2013] South end of cap (11 ft. section from entrance hatch to the interior stiffener of the 2nd bearing from the south) has minor surface corrosion (failure of protective layer) on the bottom flange.

Pier #2 (Exterior):[2009/2013] The cap faces have extensive pigeon debris throughout, with minor corrosion. The cap faces and bottom flange have flaking rust at the ends - 10 LF at the north end (Photo 11) and 20 LF at the south end (Photo 12).

Pier #2 (Interior): [2000/2013] North end of cap (11 ft. section from entrance hatch to the interior stiffener of the 2nd bearing from the north) has extensive flaking rust (minor section loss) on the bottom flange (Photos 13, 14 & 15). The flaking his extends approximately 6-8” up the web plates and internal stiffeners. [2000/2013] South end of cap (20 ft. section from entrance hatch to the interior stiffener of the 3rd bearing from the south) has extensive flaking rust (minor section loss) on the bottom flange (Photos 16 & 17). The flaking his extends approximately 3” up the web plates and internal stiffeners. Moisture is present on the underside of the top flange at the east end (Photo 18).

[2015 FC] The pier caps have been painted inside and out. There are small micro pits in the surface at the interior of the cap, but no measureable loss of thickness. The north end diaphragms on both piers are starting to show showing minor surface corrosion in the interiors, especially in the corners. Pier 1 on the north end has blast residue up to 1/2" deep extending 10' into the cap from the north access door. (Photos 8 - 11) Removed by the contractor in 2015. (2016)

	515 - Steel Protective Coating	Routine	10/20/2016	2553 SF	2553	0	0	0
		Migrated Values		2553 SF	2553	0	0	0

Notes:
Weathering Steel looks good. 2016

107	Steel Open Girder/Beam	Routine	10/20/2016	2646 LF	2600	46	0	0
		Migrated Values		2646 LF	2600	46	0	0

Notes: [1986] Beam ends at abutments and piers painted with zinc/vinyl system (the remainder is unpainted weathering steel).
Some section loss has occur at the beam ends of all fascia beams prior to repainting. 2014
[2015 FC] The beam ends have been repainted at the joints on the piers and abutments with a zinc/vinyl system .
Pack Rust Notes:
All beam ends, bearings and steel pier caps were painted in 2015 with a zinc/vinyl system.

	515 - Steel Protective Coating	Routine	10/20/2016	39753 SF	39753	0	0	0
		Migrated Values		39753 SF	39753	0	0	0

Notes: The beam ends were repainted in 2015.

205	Reinforced Concrete Column	Routine	10/20/2016	4 EA	0	0	4	0
		Migrated Values		4 EA	0	0	4	0

Notes: All four pier columns have cracking at the top. (with leaching and rust staining.) 2010-15
[2015 FC] No change.
Minor map cracking is present - cracks at the top are of moderate width. 2016

BRIDGE 62541 COMO AVE OVER BNSF RR

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	10/20/2016	178 LF	154	22	2	0
		Migrated Values		178 LF	154	22	2	0

Notes: 2 sq.ft. spall from fire damage at the south abutment inside parapet face. 2005-08
There are rust stains on the ends of the face of the abutments under the facia beams. 2008-16
There is 8 LF of staining at each end of the east abut. and 8 LF of staining on the south end of the west abut. (8 LF of spall at W.abut, S.end) 2011-15
Cracking present at S.side west abut. 2011-15

2 SF spall on the W. abut. - S. end. Deeper than 1" and greater than 6" in diameter. 2016
There are gaps at the wing walls and adjacent retaining walls. 2011-16
The NW.side gap is 4" +/-. 2011

Cork joint filler is falling out. 2010-16
Gap at wing wall foamed. 2012
Monitor movement. 2012-15 - No change in 2016

300	Strip Seal Expansion Joint	Routine	10/20/2016	384 LF	384	0	0	0
		Migrated Values		384 LF	384	0	0	0

Notes: There are a total of 6 strip seal joints (Type 3) - there are strip seal joints at both abutments, and two strip seal joints above each steel pier cap. The plan quantity is 384 ft. (64 LF at each joint).
[2015 FC] The joints have all been replaced.

301	Pourable Joint Seal	Routine	10/20/2016	138 LF	138	0	0	0
		Migrated Values		138 LF	138	0	0	0

Notes: All poured sealant was redone in 2015.

310	Elastomeric Bearing	Routine	10/20/2016	4 EA	4	0	0	0
		Migrated Values		4 EA	4	0	0	0

Notes: The steel pier caps bear upon elastomeric pads on top of each column (4 ft. diameter, 2-3/4" thick) - see plan sheet 25 of 39.
These are actually fixed bearings, with four anchor bolts (3-1/2" diameter and 5 ft. long) at each bearing (see plan sheet 11 of 39).
[2013] The elastomeric pads have slight bulging along the edges - the coverings have some rust staining, but this appears to be coming down from the steel pier cap.

313	Fixed Bearing	Routine	10/20/2016	16 EA	16	0	0	0
		Migrated Values		16 EA	16	0	0	0

Notes: The beams have fixed bearings at abutments - the fascia bearings do not have anchor bolts, but are designated as "fixed" on the plans (see plans sheets 2, 10 & 26 (of 39).
Repainted in 2015.

314	Pot Bearing	Routine	10/20/2016	32 EA	0	32	0	0
		Migrated Values		32 EA	0	32	0	0

Notes: There are a total of 32 pot bearings supporting the steel beams where they bear upon the steel pier caps (16 at each pier cap). There is an elastomeric pad inside the cylinders. 24 of these are guided expansion pot bearings - the 8 pot bearings on the west side of Pier #2 are fixed - see plan sheets 10, 25 & 26 (of 39).
Freckled rust is present-2016
[2009/2013] All of the pot bearings have surface corrosion and are covered with pigeon debris. Scrape marks along the guide keys seem to indicate recent movement (Photo 1). Gap measurements taken on the north fascia bearings also show some slight movement.
All bearings were painted in 2015 with a zinc/vinyl system.

321	Reinforced Concrete Approach Slab	Routine	10/20/2016	2080 SF	2053	26	1	0
		Migrated Values		2080 SF	2053	26	1	0

Notes: (2009) N.W. approach sinking, 2.5" +/-
Sealed longitudinal cracking at both approaches. 2016
New hot sealant placed at cold joints. 2012 and 2015
6 SF concrete patch at the W. approach - N. end. 2016
1 SF temporary patch at the W. approach - S. end. 2016
Pop outs from ¼" to ½" deep are present. 2016

BRIDGE 62541 COMO AVE OVER BNSF RR

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
330	Metal Bridge Railing	Routine	10/20/2016	682 LF	682	0	0	0
		Migrated Values		682 LF	682	0	0	0
	Notes: Steel chain link fence (galvanized). 2016							
	515 - Steel Protective Coating	Routine	10/20/2016	4092 SF	0	4092	0	0
		Migrated Values		4092 SF	0	4092	0	0
	Notes: Anchor bolts and nuts are rusty. 2016 Minor coating deterioration. 2016							
331	Reinforced Concrete Bridge Railing	Routine	10/20/2016	682 LF	682	0	0	0
		Migrated Values		682 LF	682	0	0	0
	Notes: NW parapet out, 1" west. 2010-15 Minor vertical cracks are present. 2016							
800	Critical Deficiencies or Safety Hazards	Routine	10/20/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
	Notes: No critical findings observed. 2010-16							
810	Concrete Decks - Cracking & Sealing	Routine	10/20/2016	4578 LF	2977	1144	457	0
		Migrated Values		4578 LF	2977	1144	457	0
	Notes: [2013]-2015 There are unsealed transverse cracks in the overlay (mainly in the traffic lanes) - they should be sealed to prevent further deterioration on the underside of the deck (Photo 2). Many cracks have been previously routed and sealed, most of the sealant has failed. 2016 Unsealed cracks present from .012" to .05" wide. 2016							
855	Secondary Members (Superstructure)	Routine	10/20/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0
	Notes: This element includes the steel diaphragms connection the steel beams. 2016 [2013] Some of the steel diaphrams located adjacent to the steel pier caps have flaking rust (minor section loss) due to deck joint leakage (Photo 4).							
856	Secondary Members (Substructure)	Routine	10/20/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
	Notes: Crash struts. 2016							
881	Steel Section Loss	Routine	10/20/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
	Notes: [2013] There is minor section loss on the steel pier caps - mainly inside the steel caps at the ends (on the bottom flange, base of web plates, and base of the internal stiffeners. All beam ends, bearings and steel pier caps were painted in 2015 with a zinc/vinyl system.							
884	Substructure Settlement & Movement	Routine	10/20/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
	Notes: NW wing wall movement. Monitor.							
892	Slopes & Slope Protection	Routine	10/20/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
	Notes: The 3-ply waterproofing is almost completely missing or pulled away, only about 15 ft. is still functional. 2013-16 Concrete slope protection is in good condition. 2011-16 Abut. joint waterproofing needs replacing. 2011-16							
893	Guardrail	Routine	10/20/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
	Notes: Steep drop at bridge approach shoulders. FHWA Item #36-D (Guardrail Terminations) Recoded to " 0-Substandard". 2011-13 Posted speed does NOT exceed 40 MPH. 2014-16 [2011] West approach has 3-cable guardrail. (does not meet current standards for bridge approach)							

BRIDGE 62541 COMO AVE OVER BNSF RR

ELEM NBR	ELEMENT NAME	REPORT TYPE	INSP. DATE	QUANTITY	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
894	Deck & Approach Drainage	Routine	10/20/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
	Notes: Use this element to rate the condition, function, and adequacy of the drainage system.							
895	Sidewalk, Curb, & Median	Routine	10/20/2016	1 EA	0	1	0	0
		Migrated Values		1 EA	0	1	0	0
	Notes: The sidewalks have several cracks. sealed 2012 Small pop out are present through out. 2016 1 SF spall at the NE corner. 2016 Moderate cracking and isolated spalling is present. 2016							
899	Miscellaneous Items	Routine	10/20/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
	Notes: There are three bridge rail-mounted deck lights - one on the south rail and two on the north rail (there are original). An active 20" watermain runs along the south side of the bridge. 2010-16 The watermain prevents snooper access from the S.side of the bridge. 2011 St. Paul Regional Water contacts : Emergency-Dispatch Desk 651-266-6868 Questions about watermain call Brad Eilts 651-266-6830 [2013] The bridge was originally striped with four 12 ft. vehicular lanes. Around 2005, the bridge was re-striped to carry two vehicular lanes, a center median, and two 6 ft. bicycle lanes on each shoulder.							
900	Protected Species	Routine	10/20/2016	1 EA	1	0	0	0
		Migrated Values		1 EA	1	0	0	0
	Notes: Use this element to track the presence of protected species living on this structure. None found in 2016.							

General Notes: Fracture Critical Inspection by MnDOT on Oct. 15, 2009 (final report dated Aug. 30, 2010)
Fracture Critical Inspection by MnDOT on Nov. 30, 2011 (final report dated Mar. 15th 2012)
Fracture Critical Inspection by MnDOT on Oct. 23, 2013
Fracture Critical Inspection by MnDOT on Oct. 20 2015, The exterior of Cap 1 was not inspected due to no available railroad flagger.

BNSF Railway contacts: Mike Anderson 763-782-3310 or 612-749-3401 michael.anderson5@bnsf.com
Lane Gilliland (612) 219-4219

Element: 966 (Fracture Critical)
Quantity: 1 EACH
Q1: 1
Q2: 0
Q3: 0
Q4: 0
Q5: 1
Notes: The two steel box pier caps are classified as "Fracture Critical".

58. Deck NBI: [2013] Rating lowered from 7 to 6 due to delamination and spalling on the underside of the deck (exposed reinforcement has section loss).

36A. Brdg Railings NBI:

36B. Transitions NBI:

36C. Appr Guardrail NBI:

36D. Appr Guardrail Terminal NBI:

59. Superstructure NBI: [2011] Rating lowered from 7 to 6 due to (minor section loss) on the steel pier caps.

60. Substructure NBI: [2011] Rating lowered from 7 to 6 due due staining and cracking on the pier columns and abutment. Both west wingwalls are separating from the adjacent retaining walls.

61. Channel NBI:

62. Culvert NBI:

71. Waterway Adeq NBI:

BRIDGE 62541 COMO AVE OVER BNSF RR

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

72. Appr Roadway Alignment NBI: [2013] Approach roadway alignment is straight - no speed reduction required.

Inventory Notes: Year Painted: Should be 2015; beam ends and pier caps were repainted.

Joseph Lee
Inspector's Signature

Glenn Pagel
Reviewer's Signature

1. JMF002 Pier 1 S Column.jpg

2. JMF006 Pier 2 S Column.jpg

3. 003 Pier 2 north Column 1.5 lf Crack.jpg

4. 029 Pier 1 Joint Looking South.jpg

5. 030 Pier 2 Joint Looking South.jpg

6. JMF005 Pier 1 Steel Cap.jpg

7. 028 Pier 1 South Access Door.jpg

8. 016 Minor Corrosion in the End Diaphragm at the North End.jpg

9. 017 Minor Corrosion in the End Diaphragm at the North End.jpg

10. 018 Minor Corrosion in the End Diaphragm at the North End.jpg

11. 027 Pier 1 Cracked Paint at Beam 1.jpg

12. 023 Pier 1 Paint Puddled at Beam 5.jpg

13. 026 Pier 1 Paint Puddled at Beam 7.jpg

14. 024 Pier 1 Cap Near the North End.jpg

15. JMF003 Pier 2 Steel Cap.jpg

16. 002 Beam 4 Connection to Pier 2 Repainted.jpg

17. 004 Pier 2 North Door.jpg

18. 005 Pier 2 Interior at North End New Paint.jpg

19. 014 Minor Corrosion in the End Diaphragm Corners at the South End.jpg

20. 015 Minor Corrosion in the End Diaphragm Corners at the South End.jpg

21. 006 Pier 2 Interior at North End New Paint.jpg

22. 007 Pier 2 Interior at North End New Paint.jpg

23. 009 Pier 2 Interior at North End New Paint.jpg

24. 011 Pier 2 Paint Pooled at Beam 5.jpg

25. 010 Pier 2 Paint Pooled at Beam 6.jpg

26. 012 Pier 2 South End.jpg

27. 013 Pier 2 South End.jpg

28. N Sidewalk near E end.JPG

29. NW end (1).JPG

30. NW end (2).JPG

31. SE opening (1).JPG

32. SE opening (2).JPG

33. SE opening (3).JPG

34. SE opening (4).JPG

35. SW opening (1).JPG

36. SW opening (2).JPG

37. SW opening (3).JPG

38. SW opening (4).JPG

39. W Abutment, S end.JPG

40. W Approach, EB lane.JPG

41. W Approach, SW corner.JPG