VERMONT
AGENCY OF TRANSPORTATION

Route VT100 /
Structure #00025 / (Fracture Critical, Routine, Servi-Lift)
VT 00100 ML over DEERFIELD RIVER
Team Lead: Justin White, **Inspection Date:** 04/25/2023

Town: 178 - READSBORO

District 1, 3 - BENNINGTON County

Owner: 1 - State Highway Agency

Maintenance Responsibility: 1 - State Highway Agency

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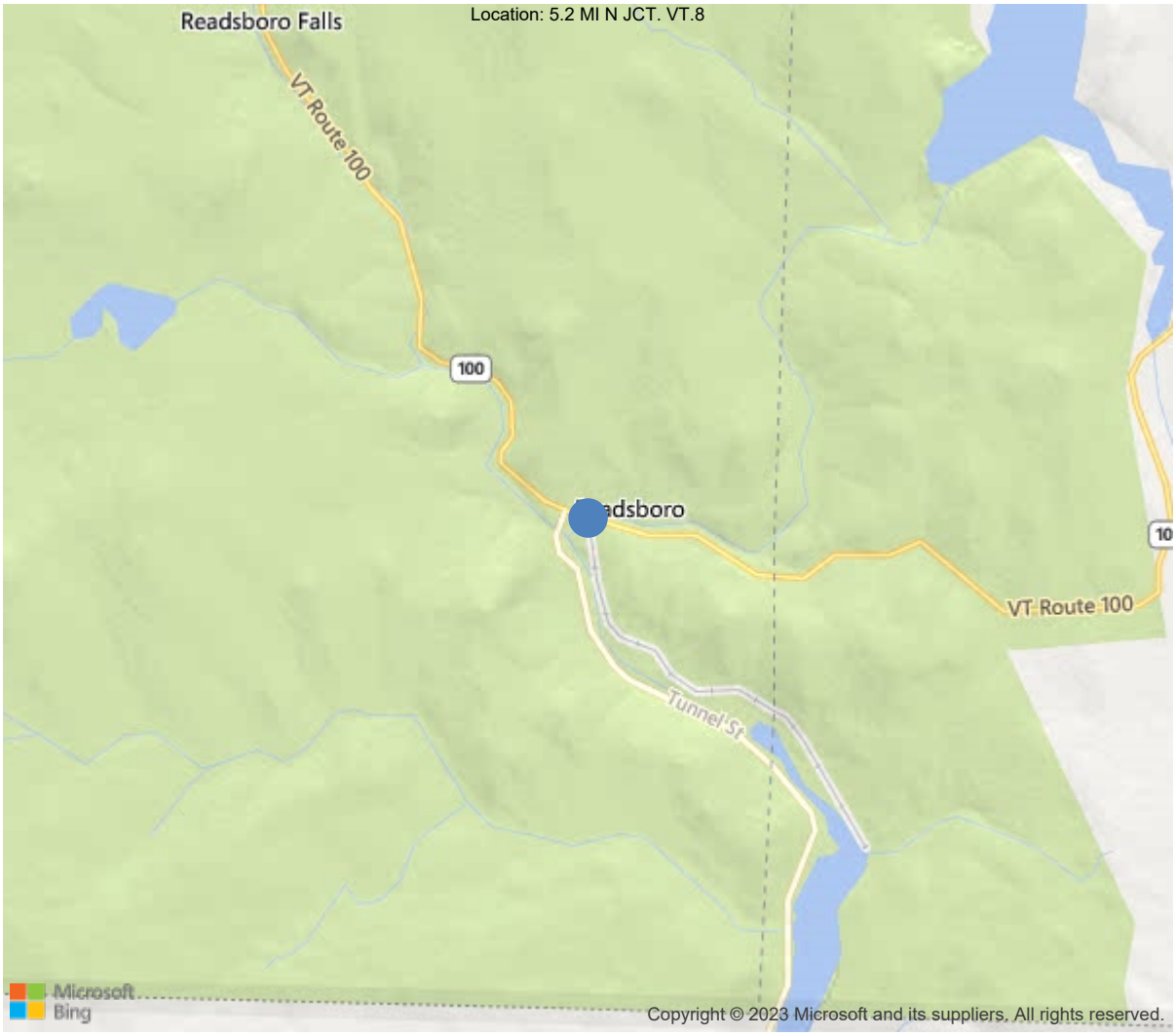

42.77122, -72.94511

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Route VT100 /

Structure #00025 / (Fracture Critical, Routine, Servi-Lift)

VT 00100 ML over DEERFIELD RIVER

Team Lead: Justin White, **Inspection Date:** 04/25/2023

IDENTIFICATION	
(1) State Names	50 - Vermont
(8) Structure Number	200102002502092
(5) Inventory Route	1
(2) Highway Agency District	1 - District 1
(3) County Code	3 - BENNINGTON
(4) Place Code	58525
(6) Features Intersected	DEERFIELD RIVER
(7) Facility Carried	VT 00100 ML
(9) Location	5.2 MI N JCT. VT.8
(11) Mile Point	0 mi
(12) Base Highway Network	No
(13) LRS Inventory Rte & Subrte	
(16) Latitude	42.7712194444444
(17) Longitude	-72.9451138888889
(98) Border Bridge State Code	
(99) Border Bridge Structure No.	
STRUCTURE TYPE AND MATERIAL	
(43) Main Structure Type	43
Material	4 - Steel continuous
Type	3 - Girder and floorbeam system
(44) Approach Structure Type	00
Material	0 - Other
Type	0 - Other
(45) No. of Spans in Main Unit	3
(46) No. of Approach Spans	0
(107) Deck Structure Type	1 - Concrete Cast-in-Place
(108) Wearing Surface/Protective System	
Type of Wearing Surface	1 - Monolithic Concrete (concurrently pl
Type of Membrane	0 - None
Type of Deck Protection	0 - None
AGE AND SERVICE	
(27) Year Built	1954
(106) Year Reconstructed	0
(42) Type of Service	55
On	5 - Highway-pedestrian
Under	5 - Waterway
(28) Lane	
On	2
Under	0
(29) Average Daily Traffic	1000
(30) Year of ADT	2018
(109) Truck ADT	6 %
(19) Bypass, Detour Length	5 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	130 ft
(49) Structure Length	340 ft
(50) Curb or Sidewalk Width	
Left	2 ft
Right	5.8 ft
(51) Bridge Roadway Width Curb to Curb	28.6 ft
(52) Deck Width Out to Out	38.7 ft
(32) Approach Roadway Width (W/Shoulders)	30 ft
(33) Bridge Median	0 - No median
(34) Skew	45 Deg
(35) Structure Flared	0 - No flare
(10) Inventory Route Min Vert Clear	99.99 ft
(47) Inventory Route Total Horiz Clear	28.6 ft
(53) Min Vert Clear Over Bridge Rdwy	99.99 ft
(54) Min Vert Underclear	0 ft
Ref:	
(55) Min Lat Underclear RT	0 ft
Ref:	
(56) Min Lat Underclear LT	0 ft
NAVIGATION DATA	
(38) Navigation Control	0 - No navigation control on w
(111) Pier Protection	
(39) Navigation Vertical Clearance	0 ft
(116) Vert-Lift Bridge Nav Min Vert Clear	0 ft
(40) Navigation Horizontal Clearance	0 ft

CLASSIFICATION	
(112) NBIS Bridge Length	Y
(104) Highway System	0
(26) Functional Class	7 - Rural Major Collector
(100) Defense Highway	0 - The inventory route is not
(101) Parallel Structure	N - No parallel structure exis
(102) Direction of Traffic	2 - way traffic
(103) Temporary Structure	
(105) Federal Lands Highways	0 - N/A
(110) Designated National Network	0 - The inventory route is not
(20) Toll	3 - On free road. The structu
(21) Maintain	1 - State Highway Agency
(22) Owner	1 - State Highway Agency
(37) Historical Significance	5 - Bridge is not eligible for
CONDITION	
(58) Deck	4
(59) Superstructure	5
(60) Substructure	6
(61) Channel & Channel Protection	8
(62) Culverts	N
LOAD RATING AND POSTING	
(31) Design Load	4 - M 18 / H 20
(63) Operating Rating Method	2
(64) Operating Rating	
Type	2 - Allowable Stress(AS)
Rating	49
(65) Inventory Rating Method	2 - Allowable Stress(AS)
(66) Inventory Rating	
Type	
Rating	32
(70) Bridge Posting	5 - Equal to or above legal loads
(41) Structure Open/Posted/Closed	A - Open, no restriction
APPRAISAL	
(67) Structural Evaluation	5
(68) Deck Geometry	5
(69) Clearances, Vertical/Horizontal	N
(71) Waterway Adequacy	8
(72) Approach Roadway Alignment	8
(36A) Bridge Railings	0 - Inspected feature does not meet
(36B) Transitions	0 - Inspected feature does not meet
(36C) Approach Guardrail	1 - Inspected feature meets current
(36D) Approach Guardrail Ends	1 - Inspected feature meets current
(113) Scour Critical Bridges	8 - Bridge foundations determined t
PROPOSED IMPROVEMENTS	
(75) Type of Work	35 - Bridge rehabilitation bec
(76) Length of Structure Improvement	340 ft
(94) Bridge Improvement Cost (Multiply value by 1000)	$ 4605
(95) Roadway Improvement Cost (Multiply value by 1000)	$ 50
(96) Total Project Cost (Multiply value by 1000)	$ 4655
(97) Year of Improvement Cost Estimate	2020
(114) Future ADT	1050
(115) Year of Future ADT	2028

INSPECTIONS *

(90) Inspection Date			04/25/2023
(91) Frequency			12
(92) Critical Feature Inspection	Done	Freq. (Mon)	Date
A: Fracture Critical Detail	Yes	24	04/25/2023
B: Underwater Inspection	No		
C: Other Special Inspection			

* The inspection date and frequency information in this box contains the current NBI date and frequency information. Please refer to the report header for the date this inspection was conducted.

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VT 00100 ML over DEERFIELD RIVER
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Deck

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Reinforced Concrete Deck	SF	13159	0	6581	5263	1315
1080	Delamination/Spall/Patched Area	SF	6578	0	0	5263	1315
1130	Cracking (RC and Other)	SF	6581	0	6581	0	0
305	Assembly Joint without Seal	LF	77	0	77	0	0
2370	Metal Deterioration or Damage	LF	77	0	77	0	0
330	Metal Bridge Railing	LF	680	0	272	204	204
1000	Corrosion	LF	680	0	272	204	204
804	Concrete Fascia	LF	680	644	0	36	0
1080	Delamination/Spall/Patched Area	LF	36	0	0	36	0

58 - Deck (4 - POOR CONDITION - advanced section loss, deterioration, spalling or scour)
Large spalled areas and delams throughout with many areas penetrating up to and beyond the second layer of reinforcing.

A21 - Deck Wearing Surface Condition (3 - Satisfactory)
Scattered transverse and longitudinal cracking w/ separation and some small voids

A24 - Deck Curb Condition (2 - Good)
Scattered map cracking w/ some minor separation.

A25 - Deck Sidewalk Condition (3 - Good)
Scattered map cracking w/ some minor separation

A28 - Deck Rail Condition (5 - Poor)
Deep pitting and advanced section loss around the tube steel at the connections to the posts w/ perforations and some detached members along the bottom rail.

A31 - Deck Post Condition (5 - Poor)
Deep pitting w/ some varying sized perforations in the webs surrounding the rail connections. Large slotted perforations found in the web along the lower fascia connections of the posts as well.

A34 - Deck Joint Condition (3 - Satisfactory)
Welded plate steel now covers most of the joint w/ minor rust staining and pitting throughout.

A36 - Deck Joint Trough Condition (5 - Poor)
Troughs failed a long time ago and no longer exist so runoff is allowed to fall onto the elements below.

A38 - Deck Drain Condition (5 - Poor)
Many of the ends have rotted out with one upstream drain near the abutment 1 end having over half of the section gone.

A39 - Deck Fascia Condition (3 - Satisfactory)
Scattered cracking w/ some small spalls and delams throughout.

APPROACH

72 - Approach Roadway Alignment (8 - Equal to present desirable criteria)

A13 - Approach Rail Condition (3 - Satisfactory)
Scattered minor bending throughout w/ scrape marks and minor rust staining.

A16 - Approach Post Condition (3 - Satisfactory)

Check marks and minor splitting throughout with some areas of minor rot.

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Route VT100 /
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VT 00100 ML over DEERFIELD RIVER
Team Lead: Justin White, **Inspection Date:** 04/25/2023

Superstructure

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
107	Steel Open Girder/Beam	LF	660	330	198	132	0
1000	Corrosion	LF	330	0	198	132	0
515	Steel Protective Coating	SF	10780	0	6468	3234	1078
3420	Peeling/Bubbling/Cracking	LF	10780	0	6468	3234	1078
113	Steel Stringer	LF	1980	990	732	198	60
1000	Corrosion	LF	990	0	732	198	60
515	Steel Protective Coating	SF	7536	3768	1508	1507	753
3420	Peeling/Bubbling/Cracking	LF	3768	0	1508	1507	753
152	Steel Floor Beam	LF	960	720	144	96	0
1000	Corrosion	LF	240	0	144	96	0
515	Steel Protective Coating	SF	5643	3668	564	847	564
3420	Peeling/Bubbling/Cracking	LF	1975	0	564	847	564
311	Movable Bearing	EA	6	0	2	4	0
1000	Corrosion	EA	6	0	2	4	0
313	Fixed Bearing	EA	2	0	2	0	0
1000	Corrosion	EA	2	0	2	0	0

59 - Superstructure (5 - FAIR CONDITION - all primary structural elements are sound but may have minor section loss, cracking, spalling or scour.)

Riveted Girders have scattered areas of paint peel w/ exposed primer and minor rust staining/scaling. Areas along the outer edges of the flanges have pack rust inbetween the bolted/riveted plates with minor bending where saturation from the soffit above affects the beams. The beam ends at the abutments have heavy rust scale w/ minor section loss.

A55 - Lateral Bracing Condition (2 - Good)

Areas of paint peel with exposed primer and small areas of rust staining/scaling in the ends.

A56 - Floor Beams Condition (4 - Satisfactory)

Beam ends have small areas of rust scale w/ deep pitting and minor section loss in the webs. The floor beams at the abutment ends have heavy rust scale throughout w/ moderate section loss, areas of section loss in the flanges are significant with minimal section remaining. The angled plate brackets of the floor beam extensions in the downstream ends of the abutment floor beams have 6”+/- cracks. The upstream floorbeam extension at abutment 2 has heavy rust scale extending down below the utility pipe with moderate section loss in the web, and minimal section remaining in the top flange.

A58 - Stringer Condition (5 - Poor)

The stringers have heavy rust scale at the abutment ends w/ small slotted perforations (1"- 3") in the webs in many areas. The upstream stringers at abutment 2 have extensive section loss. The exterior stringer has a 47" slotted perforation and 2"+/- of depth, and the first interior stringer has much of the beam end gone w/ settlement, the length of the perforation measuring 46", and what remains of the beam end now resting on the second floor beam. The upstream stringer has heavy rust scale with moderate to heavy section loss in the bottom flange at the floor beam seats. The upstream stringer at floorbeam 16 (from abutment 1) has deep pitting w/ 1/4" of section loss in the lower area of the web and a 3" perforation in the exterior of the bottom flange.

A63 - Bearing Condition (3 - Satisfactory)

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Heavy rust scale w/ minor to moderate section loss at the abutments. Pier bearings are in good condition.

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Route VT100 /
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VT 00100 ML over DEERFIELD RIVER
Team Lead: Justin White, **Inspection Date:** 04/25/2023

Substructure

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
205	Reinforced Concrete Column	EA	4	0	4	0	0
1130	Cracking (RC and Other)	EA	4	0	4	0	0
210	Reinforced Concrete Pier Wall	LF	53	48	5	0	0
1130	Cracking (RC and Other)	LF	5	0	5	0	0
215	Reinforced Concrete Abutment	LF	109	0	80	29	0
1080	Delamination/Spall/Patched Area	LF	105	0	78	27	0
1130	Cracking (RC and Other)	LF	4	0	2	2	0
234	Reinforced Concrete Pier Cap	LF	109	87	22	0	0
1130	Cracking (RC and Other)	LF	22	0	22	0	0
800	Reinforced Concrete Wing/Retaining Wall	EA	2	1	0	1	0
1080	Delamination/Spall/Patched Area	EA	1	0	0	1	0

60 - Substructure (6 - SATISFACTORY CONDITION - structural elements show some minor deterioration.)
Abutment 1 has map cracks scattered throughout w/ areas of light staining. The bridge seat has scattered surface spalling w/ a large voided area near the upstream bearing.
Abutment 2 has scattered small spalls throughout with small voids and exposed reinforcing. No new changes were found in the sustained full height vertical settlement crack near the upstream end.

A71 - Abutment End Walls Condition (5 - Fair)
Large areas of voided spalling below the joints with heavy saturation, scaling, and exposed reinforcing. The abutment 2 wall has scattered small spalls throughout w/ small voids and exposed reinforcing.

A77 - Retaining/Wingwall Condition (3 - Good)
Map cracks scattered throughout w/ areas of light to moderate saturation. The abutment 2 walls have scattered areas w/ efflorescence and rust staining.

A81 - Pier Seat/Cap Condition (3 - Good)
Map cracking in the ends w/ light staining and some minor to moderate saturation.

A83 - Pier Shaft Condition (3 - Good)
The pier 1 wall is in good condition. Pier 2 wall has a full height vertical shrinkage crack w/ minor separation.

A85 - Pier Columns Condition (3 - Good)
Map cracking w/ light staining, scattered small areas of efflorescence and rust staining. The fascia ends have small lineal spalls w/ scaling and exposed reinforcing found in the pier 2 ends.

A86 - Pier Footings Condition (3 - Good)
Minor abrasion/deterioration

CHANNEL

61 - Channel Condition (8 - Banks are protected or well vegetated. River control devices such as spur dikes and embankment protection are not required or are in a stable condition.)

GENERAL OBSERVATION

This structure should be considered for an extensive rehabilitation project or replacement, see maintenance report.

VERMONT
AGENCY OF TRANSPORTATION

Asset **#200102002502092**(Fracture Critical, Routine, Servi-Lift)
District: 1, **County:** 3
Team Lead: Justin White, **Inspection Date:** 04/25/2023

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Reinforced Concrete Deck	SF	13159	0	6581	5263	1315
1080	Delamination/Spall/Patched Area	SF	6578	0	0	5263	1315
1130	Cracking (RC and Other)	SF	6581	0	6581	0	0
107	Steel Open Girder/Beam	LF	660	330	198	132	0
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205	Reinforced Concrete Column	EA	4	0	4	0	0
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305	Assembly Joint without Seal	LF	77	0	77	0	0
2370	Metal Deterioration or Damage	LF	77	0	77	0	0
311	Movable Bearing	EA	6	0	2	4	0
1000	Corrosion	EA	6	0	2	4	0
313	Fixed Bearing	EA	2	0	2	0	0
1000	Corrosion	EA	2	0	2	0	0

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Asset **#200102002502092**(Fracture Critical, Routine, Servi-Lift)
District: 1, **County:** 3
Team Lead: Justin White, **Inspection Date:** 04/25/2023

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
330	Metal Bridge Railing	LF	680	0	272	204	204
1000	Corrosion	LF	680	0	272	204	204
800	Reinforced Concrete Wing/Retaining Wall	EA	2	1	0	1	0
1080	Delamination/Spall/Patched Area	EA	1	0	0	1	0
804	Concrete Fascia	LF	680	644	0	36	0
1080	Delamination/Spall/Patched Area	LF	36	0	0	36	0

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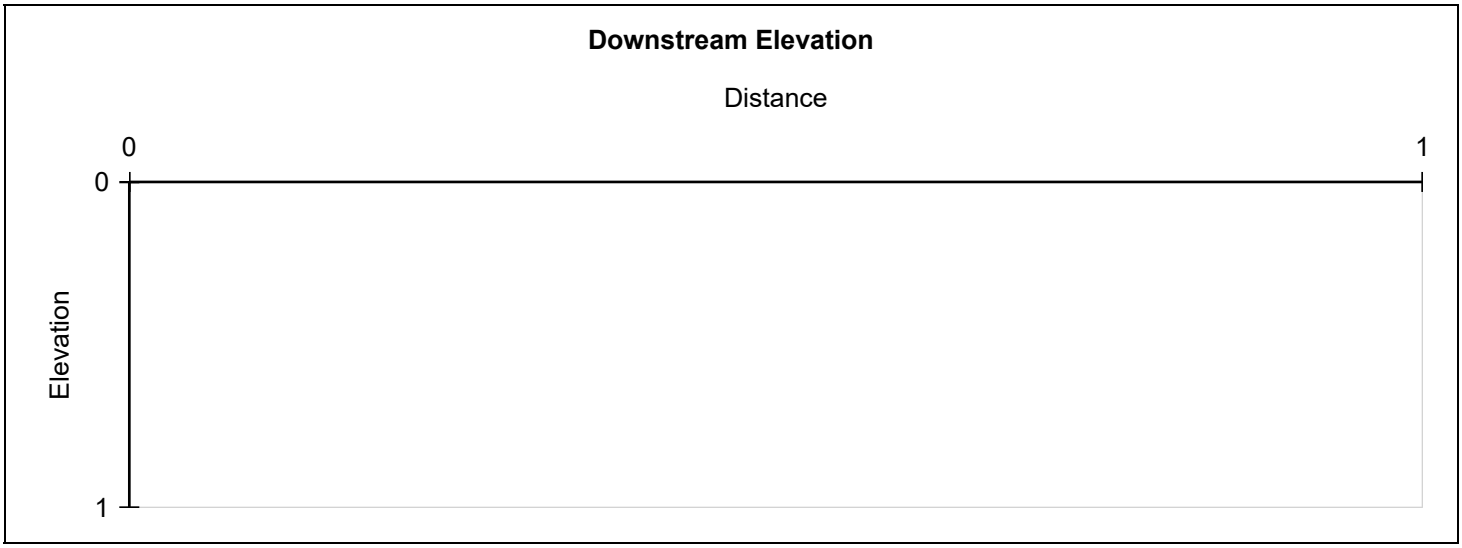
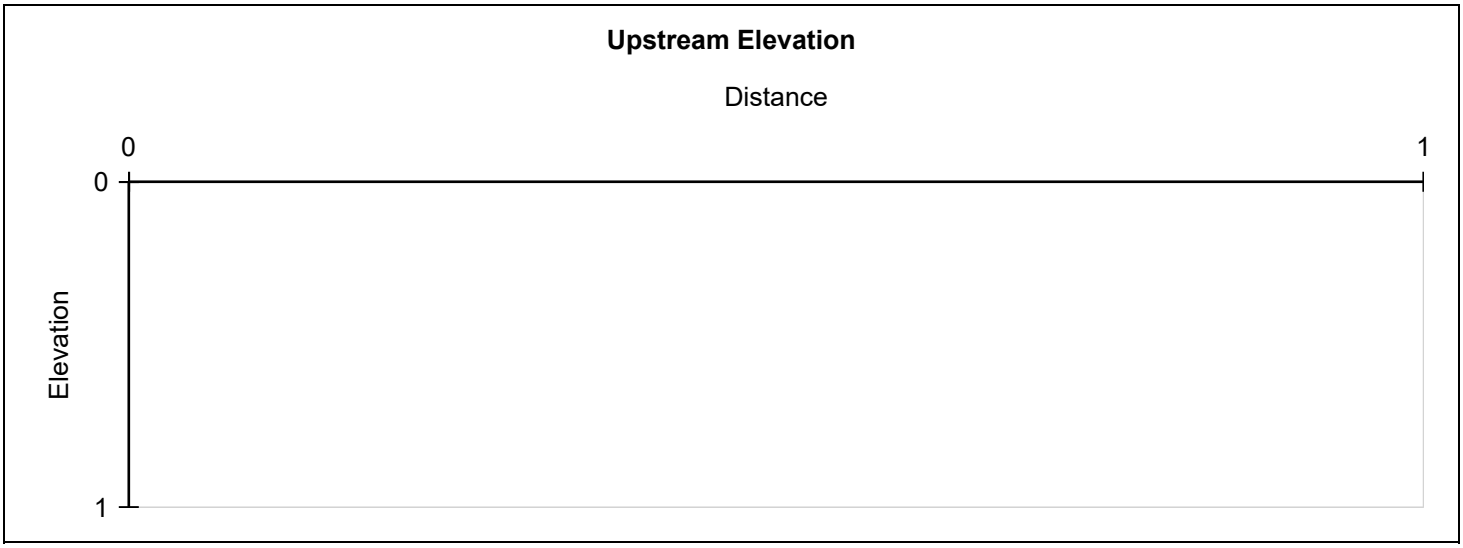
Channel Profile

Waterway Flow:	Top of Water:
Origin:	Bottom of Beam:

Station	Distance	Downstream	Upstream





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North approach

South approach

Deck

Downstream rail

Downstream rail

Section loss upstream rail

Guardrail posts

Joint 2

Joint 1

Joint 1

Sidewalk

Downstream fascia/Sidewalk soffit

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Upstream fascia

Span 1

Span 2

Span 3

Abutment 1 floor beam and stringer ends

Abutment 1 downstream floor beam extension

Abutment 2 floor beam and stringer ends

Abutment 2 downstream floor beam extension

Abutment 2 upstream floor beam extension

Upstream interior stringer over abutment 2

Upstream stringer over abutment 2

Nail/Screw laminated timber stringers (repair) over abutment 2

Upstream stringer at floor beam 16

Girder flange

Girder flange

Bearing abutment 2

Abutment 2

Vertical crack abutment 2

NE wing

Pier 2

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Pier 1

Abutment 1

Downstream channel

Upstream channel

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Maintenance Needs

Date Reported: 06/02/2021

Priority:	4 - Maintenance Finding - Next Inspection Cycle	**Status:**	Open
Type of Work:	3 - General - Replacement project	**Component:**	General

Deficiency Description

The deck continues to develop large spalled areas that penetrate up to and beyond the second layer of reinforcing with exposed rotted strands. The abutment backwalls have deep voided spalls that undermine the joints with exposed reinforcing and heavy scaling. The stringer beam ends continue to deteriorate with varying size perforations throughout with the upstream stringers at abutment 2 being the worst with 3'+/- of the ends having basically failed.

Remarks

This structure should be considered for an extensive rehabilitation project or replacement.

Span 2

Upstream interior stringer over abutment 2