STRUCTURES INSPECTION FIELD REPORT

SPECIAL MEMBER INSPECTION

2-DIST	B.I.N.	BR. DEPT. NO.
04	8AM	M-02-001

CITY/TOWN	8.-STRUCTURE NO.	11-Kilo. POINT	90-ROUTINE INSP. DATE	93*-SPEC. MEMB. INSP. DATE
MANCHESTER	M02001-8AM-MUN-BRI	000.000	Nov 4, 2020	Nov 15, 2021

07-FACILITY CARRIED	MEMORIAL NAME/LOCAL NAME	27-YR BUILT	106-YR REBUILT	*YR REHAB'D (NON 106)
ST127 CENTRAL ST		1850	1900	0000

06-FEATURES INTERSECTED	26-FUNCTIONAL CLASS	DIST. BRIDGE INSPECTION ENGINEER J. Dideo
WATER SAW MILL BROOK	Urban Minor Arterial	

43-STRUCTURE TYPE	22-OWNER	21-MAINTAINER	TEAM LEADER C. Kline	PROJ MGR Michael Baker Intl Inc
811 : Masonry Arch - Deck	Town Agency	Town Agency		

107-DECK TYPE	WEATHER	TEMP. (air)	TEAM MEMBERS
N : Not applicable	Clear	7°C	T. GLEASON

WEIGHT POSTING — *Not Applicable* X

	H	3	3S2	Single
Actual Posting	N	N	N	N
Recommended Posting	N	N	N	N

Waived Date: 00/00/0000 EJDMT Date: 00/00/0000

Signs In Place (Y=Yes,N=No, NR=Not Required) / Legibility/ Visibility

	At bridge E	At bridge W	Advance E	Advance W
Signs In Place				
Legibility/ Visibility				

PLANS (Y/N): N

(V.C.R.) (Y/N): N

TAPE#:

RATING

Rating Report (Y/N): N Date: ----

Recommend for Rating or Rerating (Y/N): N

If YES please give priority: HIGH ( ) MEDIUM ( ) LOW ( )

REASON:

Inspection data at time of existing rating

I 58: - I 59: - I 60: - I 62: - Date :00/00/0000

SPECIAL MEMBER(S):

	MEMBER	CRACK (Y/N):	WELD'S CONDITION (0-9)	LOCATION OF CORROSION, SECTION LOSS (%), CRACKS, COLLISION DAMAGE, STRESS CONCENTRATION, ETC.	CONDITION PREVIOUS (0-9)	CONDITION PRESENT (0-9)	INV. RATING OF MEMBER FROM RATING ANALYSIS H-20	3	3S2	Deficiencies
A	Item 58.8 - Railing	N	N	See remarks in comments section.	4	3	Not Rated			C-H-I
B	Item 59.2 - Keystone Area	N	N	See remarks in comments section.	4	4	Not Rated			S-A
C	Item 36a - Bridge Railing	N	N	See remarks in comments section.	4	3	Not Rated			C-H-I
D										
E										

List of field tests performed:

Visual and Hands-on Inspection

	I-58	I-59	I-60	I-62
(Overall Previous Condition)	-	4	7	-
(Overall Current Condition)	-	4	7	-

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

M= Minor Deficiency - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion of steel, Minor scouring, Clogged drainage, etc.

S= Severe/Major Deficiency - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroded rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.

C-S= Critical Structural Deficiency - A deficiency in a structural element of a bridge that poses an extreme unsafe condition due to the failure or imminent failure of the element which will affect the structural integrity of the bridge.

C-H= Critical Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

URGENCY OF REPAIR:

I = Immediate- [Inspector(s) immediately contact District Bridge Inspection Engineer (DBIE) to report the Deficiency and to receive further instruction from him/her].

A = ASAP- [Action/Repair should be initiated by District Maintenance Engineer or the Responsible Party (if not a State owned bridge) upon receipt of the Inspection Report].

P = Prioritize- [Shall be prioritized by District Maintenance Engineer or the Responsible Party (if not a State owned bridge) and repairs made when funds and/or manpower is available].

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

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REMARKS

BRIDGE ORIENTATION

Bridge M-02-001 (8AM) carries State Route 127 (Central Street) over Saw Mill Brook in the town of Manchester, MA. The bridge is oriented in the east/west direction. The elevations are labeled north and south. The approaches and abutments are labeled east and west. Saw Mill Brook is tidal beneath the bridge.

Refer to **Sketch 1** for a location map and **Photos 1-7** for general photos of the bridge.

GENERAL REMARKS

The structure consists of a dry laid stone masonry arch supported by stone masonry breastwalls. There is a concrete slab section supporting the south sidewalk. The north (upstream) wingwalls consist of dry laid masonry and the south (downstream) wingwalls are reinforced concrete extending to a tide gate downstream of the bridge. The south side of the bridge has a cast in place concrete rail base supporting the chain link fence bridge railing and a granite rail base supporting the fence along the west approach.

ACCESS REMARKS

The bridge was inspected during the day at low tide using waders and hand tools. The underside was accessed by climbing down the northeast embankment wall approximately 50 yards upstream and walking down to the bridge.

ITEM 58 - DECK

Item 58.8 - Railing

The north and south bridge railings, along with the associated retaining wall and wingwall railings, are comprised of a chain link fence.

Fence posts, rails, and fabric have scattered areas of moderate to heavy surface corrosion throughout. In addition, specific deficiencies are as follows:

North Elevation Bridge Railing

The first post from the west end and the top rail are bent away from the roadway but are secure.

(S-A Deficiency) The base of the northeast corner post has 100% section loss resulting in it being detached at its base and is secured to the adjacent property's wooden fence post only (refer to Photo 8). The bottom rail of the northeast fence panel is detached from its receivers and hangs loosely (refer to Photo 9). At the northwest corner panel, the bottom rail is detached from its receiver and hangs loosely.

Northwest Retaining Wall Railing

(C-H-I Deficiency) At the south corner, the chain link fabric was unsecured along the bottom rail for 6'-0" long and was unsecured and disconnected to the top rail and corner post for 2'-8" long, resulting in a fall hazard of approximately 9 feet (refer to Photo 10). Four (4) zip ties were added by inspectors to secure the disconnected chain link fabric: Three (3) to the corner post and one (1) to the bottom rail (refer to Photo 11). MassDOT was notified of the above deficiencies by phone and email.

(S-A Deficiency) The bottom of the south corner outside post has 100% section loss resulting in the post being disconnected at the base. However, there is an additional post inside the outer post that is stable and secure.

The chain link fabric of the 4th panel from the south corner post is detached and mostly unsecured along the bottom rail.

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REMARKS

Item 58.8 - Railing (Cont'd)

(S-A Deficiency) At the 5th panel from the south corner, the posts (4th and 5th from corner) and panel are very loose and movable by hand. The 4th post has 100% section loss and is detached at its base. The 5th panel consists of a plywood board covered with supplemental chain link fencing (refer to Photo 12).

At the 5th post from the south corner, the top rail of the 6th panel has 100% section loss and is detached from the post **(refer to Photo 13)**.

South Elevation Bridge Railing
The south chain link fabric is detached along the bottom rail for the full length. At the southeast corner post, the top rail is detached from its receiver.

Southeast Wingwall Railing
At the 2nd panel from the north, there is no bottom rail and there is a gap between the chain link fabric and the top of the wingwall **(refer to Photo 14)**.

Southwest Wingwall Railing
At the 3rd post west of the bridge, the granite rail base is cracked resulting in a loose post that appears detached within the base **(refer to Photo 15)**. At the west corner of the south railing, the top rail is detached from its receiver.

ITEM 59 - SUPERSTRUCTURE

Item 59.2 - Keystone Area
(S-A Deficiency) Keystones are missing throughout the arch barrel, primarily towards the north fascia. The missing keystone areas are covered in shotcrete which appear unchanged since the previous inspection. Specific deficiencies relating to missing keystones are as follows:

- **2'-6" From North Fascia: 2'-0" long x 9" wide x 6" deep void (refer to Photo 16).**
- **7'-0" From North Fascia: 3'-0" long x 9" wide x 6" deep void (refer to Photo 17).**
- **14'-0" From North Fascia: 12" long x 9" wide x 6" deep void. Stones surrounding void settled up to 6" (refer to Photo 18).**
- **18'-0" From North Fascia: 6" long x 12" wide x 9" deep void (refer to Photo 19).**
- **22'-0" From North Fascia: 5'-0" long x 12" wide x 6" deep void (refer to Photo 20).**
- **35'-0" From North Fascia: Two missing keystones up to 7" long x 11" wide x 8" deep void (refer to Photo 21).**

TRAFFIC SAFETY

Item 36a - Bridge Railing
The chain-link fences on both sides of the bridge are nonstandard. See Item 58.8 - Railing for deficiencies.

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REMARKS

Sketch / Photo Log

Sketch 1 : Location Map
Photo 1 : General - North Elevation.
Photo 2 : General - South Elevation (Bridge 8AM partially hidden beyond tide gate).
Photo 3 : General - Downstream, looking south.
Photo 4 : General - Upstream, looking north.
Photo 5 : General - East approach, looking west.
Photo 6 : General - West approach, looking east.
Photo 7 : General - Typical underside, looking south.
Photo 8 : North Elevation Bridge Railing - East Corner: Section loss resulting in the post being detached at its base. Post is otherwise secured to adjacent property's wooden fence post with tension bands.
Photo 9 : North Elevation Bridge Railing - Northeast Panel: The bottom railing is detached from the receivers and hangs loosely.
Photo 10 : NW Retaining Wall Railing - South Corner: The chain link fabric was unsecured along bottom rail for 6'-0" and disconnected from top rail and corner post for 2'-8" L resulting in a fall hazard of approx. 9 feet.
Photo 11 : NW Retaining Wall Railing - South Corner: Supplemental zip ties were installed by inspectors to secure chain link fabric. Four (4) zip ties total.
Photo 12 : NW Retaining Wall Railing - 5th Panel from South Corner: The Posts and panel are very loose and movable by hand. The panels consists of a plywood board and supplemental chain link fabric.
Photo 13 : NW Retaining Wall Railing - 6th Panel from South Corner: At the 5th post from the south corner, the top rail has 100% section loss resulting in it being detached from the post and hanging loosely.
Photo 14 : SE Wingwall Railing - 2nd Panel from North: The panel has no bottom rail and there is a gap between the chain link fabric and the top of the wingwall.
Photo 15 : SW Wingwall Railing: The granite rail base is cracked at the 3rd post west of the bridge. Post is loose and appears detached within the base.
Photo 16 : Keystone Area - 2'-6" from North Fascia: Missing keystones resulting in a 2'-0" long x 9" wide x 6" deep void.
Photo 17 : Keystone Area - 7'-0" from North Fascia: Missing keystones resulting in a 3'-0" long x 9" wide x 6" deep void.
Photo 18 : Keystone Area - 14'-0" from North Fascia: Missing keystones resulting in a 12" long x 9" wide x 6" deep void. Stones around void settled up to 6".
Photo 19 : Keystone Area - 18'-0" from North Fascia: Missing keystones resulting in a 6" long x 12" wide x 9" deep void.
Photo 20 : Keystone Area - 22'-0" from North Fascia: Missing keystones resulting in a 5'-0" long x 12" wide x 6" deep void.
Photo 21 : Keystone Area - 35'-0" from North Fascia: Two missing keystones resulting in an up to 7" long x 11" wide x 8" deep void.

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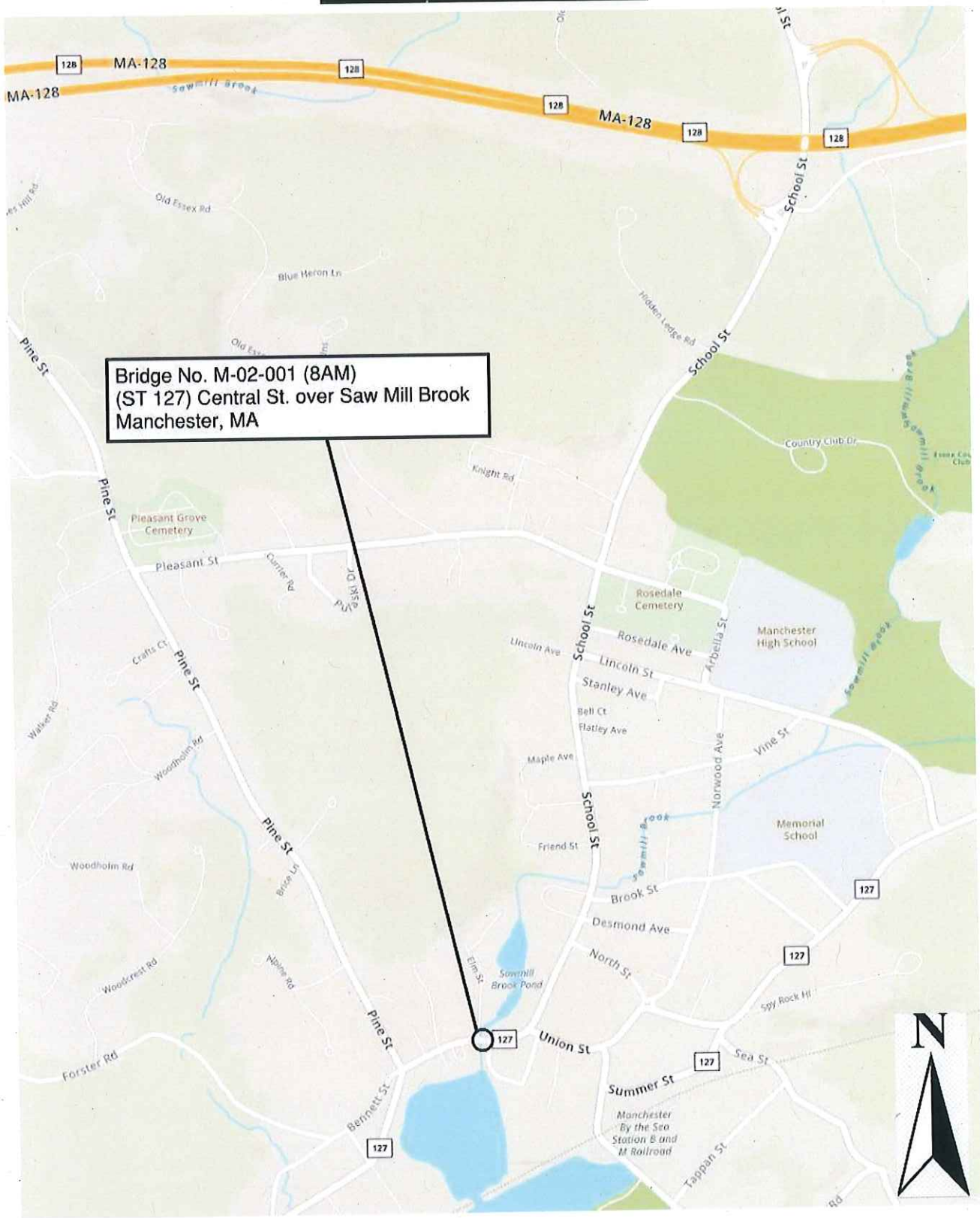
SKETCHES



Sketch 1: Location Map

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PHOTOS

Photo 1: General - North Elevation.

Photo 2: General - South Elevation (Bridge 8AM partially hidden beyond tide gate).

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PHOTOS

Photo 3: General - Downstream, looking south.

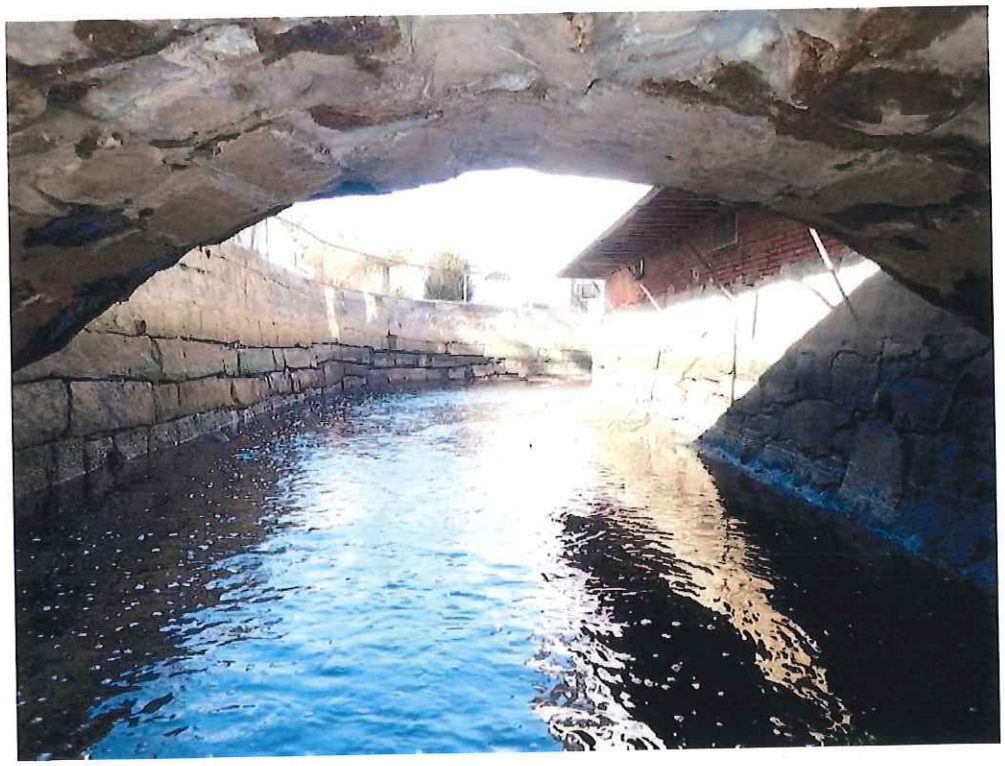

Photo 4: General - Upstream, looking north.

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Photo 5: General - East approach, looking west.

Photo 6: General - West approach, looking east.

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Photo 7: General - Typical underside, looking south.

Photo 8: North Elevation Bridge Railing - East Corner: Section loss resulting in the post being detached at its base. Post is otherwise secured to adjacent property's wooden fence post with tension bands.

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Photo 9: North Elevation Bridge Railing - Northeast Panel: The bottom railing is detached from the receivers and hangs loosely.

Photo 10: NW Retaining Wall Railing - South Corner: The chain link fabric was unsecured along bottom rail for 6'-0" and disconnected from top rail and corner post for 2'-8" L resulting in a fall hazard of approx. 9 feet.

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Photo 11: NW Retaining Wall Railing - South Corner: Supplemental zip ties were installed by inspectors to secure chain link fabric. Four (4) zip ties total.

Photo 12: NW Retaining Wall Railing - 5th Panel from South Corner: The Posts and panel are very loose and movable by hand. The panels consists of a plywood board and supplemental chain link fabric.

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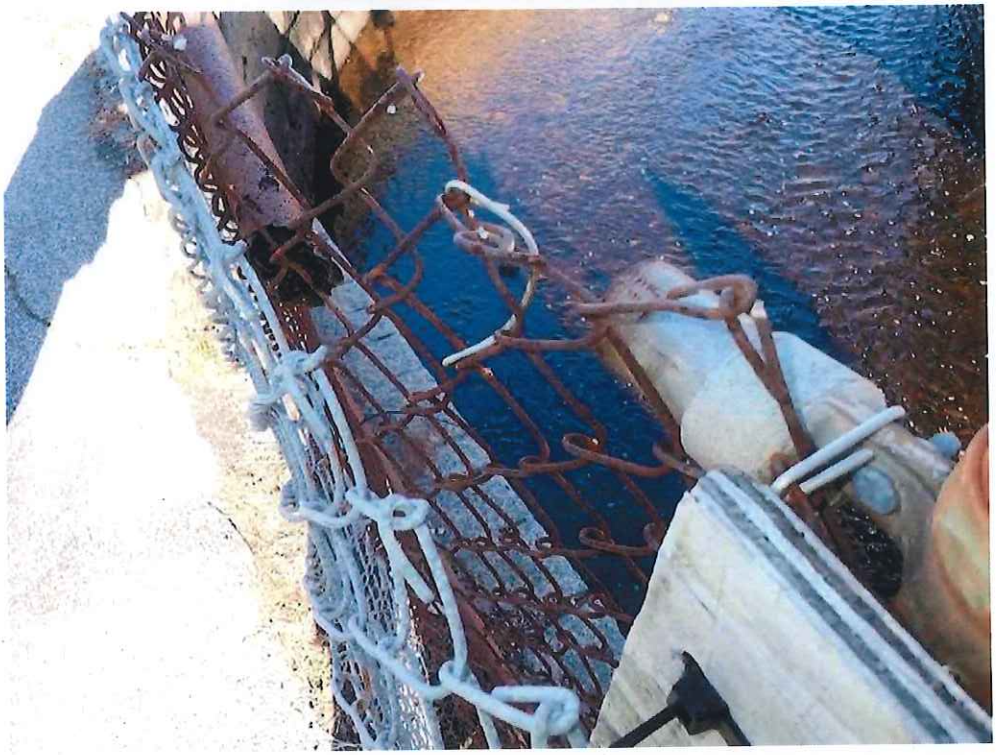

Photo 13: NW Retaining Wall Railing - 6th Panel from South Corner: At the 5th post from the south corner, the top rail has 100% section loss resulting in it being detached from the post and hanging loosely.

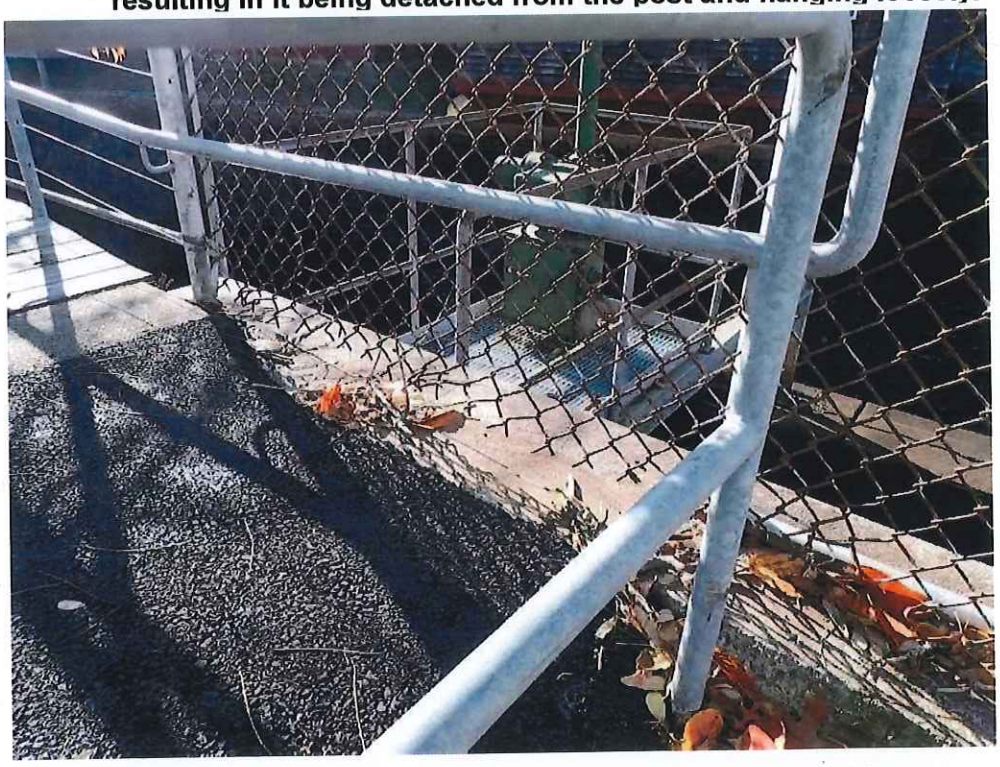

Photo 14: SE Wingwall Railing - 2nd Panel from North: The panel has no bottom rail and there is a gap between the chain link fabric and the top of the wingwall.

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PHOTOS

Photo 15: SW Wingwall Railing: The granite rail base is cracked at the 3rd post west of the bridge. Post is loose and appears detached within the base.

Photo 16: Keystone Area - 2'-6" from North Fascia: Missing keystones resulting in a 2'-0" long x 9" wide x 6" deep void.

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PHOTOS

Photo 17: Keystone Area - 7'-0" from North Fascia: Missing keystones resulting in a 3'-0" long x 9" wide x 6" deep void.

Photo 18: Keystone Area - 14'-0" from North Fascia: Missing keystones resulting in a 12" long x 9" wide x 6" deep void. Stones around void settled up to 6".

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PHOTOS

Photo 19: Keystone Area - 18'-0" from North Fascia: Missing keystones resulting in a 6" long x 12" wide x 9" deep void.

Photo 20: Keystone Area - 22'-0" from North Fascia: Missing keystones resulting in a 5'-0" long x 12" wide x 6" deep void.

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PHOTOS

Photo 21: **Keystone Area - 35'-0" from North Fascia: Two missing keystones resulting in an up to 7" long x 11" wide x 8" deep void.**