STRUCTURES INSPECTION FIELD REPORT

ROUTINE ARCH & SPECIAL MEMBER INSPECTION

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

CITY/TOWN	8.-STRUCTURE NO.	11-Kilo. POINT	41-STATUS	90-ROUTINE INSP. DATE
MANCHESTER	M02001-8AM-MUN-BRI	000.000	A:OPEN	NOV 4, 2020

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	Joseph Dideo

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	Chi Kline	Chi Kline

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

ITEM 58 — DECK: N

		DEF
1. Wearing Surface	6	M-P
2. Deck Condition	N	-
3. Spandrel Fill	H	-
4. Curbs	6	M-P
5. Median	N	-
6. Sidewalks	5	M-P
7. Parapets	N	-
8. Railing	4	S-A
9. Anti Missile Fence	N	-
10 Drainage System	5	M-P
11 Lighting Standards	N	-
12 Utilities	N	-
13 Deck Joints	N	-
14	N	-
15	N	-
16	N	-

CURB REVEAL (In millimeters): N 84, S 86

ITEM 59 — SUPERSTRUCTURE: 4

		DEF
1. Arch/Arch Ring	5	M-P
2. Keystone Area	4	S-A
3. Stringers	N	-
4. Floorbeams	N	-
5. Spandrel Walls	5	M-P
6. Spring Lines	6	M-P
7. Diaphragms/Cross Frames	N	-
8. Conn Plt's, Gussets & Angles	N	-
9. Pin & Hangers	N	-
10 Masonry Joints	7	-
11 Rivets & Bolts	N	-
12 Welds	N	-
13 Deformation/Flattening	7	-
14 Member Alignment	7	-
15 Paint/Coating	N	-
16	N	-

Year Painted: N

COLLISION DAMAGE: *Please explain*
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION: *Please explain*
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION: *Please explain*
None (X) Minor ( ) Moderate ( ) Severe ( )

ITEM 60 — SUBSTRUCTURE: 7

	Dive	Cur		DEF
1. Abutments			7	
a. Pedestals	N	N		-
b. Bridge Seats	N	N		-
c. Backwalls	N	N		-
d. Breastwalls	N	H		-
e. Wingwalls	N	7		M-P
f. Slope Paving/Rip-Rap	N	N		-
g. Pointing	N	N		-
h. Footings	N	H		-
i. Piles	N	N		-
j. Scour	N	7		-
k. Settlement	N	7		-
l.	N	N		-
m.	N	N		-
2. Piers or Bents			N	
a. Pedestals	N	N		-
b. Caps	N	N		-
c. Columns	N	N		-
d. Stems/Webs/Pierwalls	N	N		-
e. Pointing	N	N		-
f. Footing	N	N		-
g. Piles	N	N		-
h. Scour	N	N		-
i. Settlement	N	N		-
j.	N	N		-
k.	N	N		-
3. Pile Bents			N	
a. Pile Caps	N	N		-
b. Piles	N	N		-
c. Diagonal Bracing	N	N		-
d. Horizontal Bracing	N	N		-
e. Fasteners	N	N		-

UNDERMINING (Y/N) If YES please explain: N

COLLISION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

APPROACHES

		DEF
a. Appr. pavement condition	6	M-P
b. Appr. Roadway Settlement	7	-
c. Appr. Sidewalk Settlement	6	M-P
d.	N	-

OVERHEAD SIGNS (Attached to bridge) (Y/N): N

		DEF
a. Condition of Welds	N	-
b. Condition of Bolts	N	-
c. Condition of Signs	N	-

Any Fracture Critical Member: (Y/N): N

Any Cracks: (Y/N): N

I-60 (Dive Report): N *I-60 (This Report):* 7

93B-U/W (DIVE) Insp 00/00/0000

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

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
MANCHESTER	8AM	M-02-001	M02001-8AM-MUN-BRI	NOV 4, 2020

ITEM 61 — CHANNEL & CHANNEL PROTECTION: 7

	Dive	Cur	DEF
1.Channel Scour	N	7	-
2.Embankment Erosion	N	N	-
3.Debris	N	7	-
4.Vegetation	N	8	-
5.Utilities	N	N	-
6.Rip-Rap/Slope Protection	N	N	-
7.Aggradation	N	7	-
8.Fender System	N	N	-

STREAM FLOW VELOCITY: Tidal (X) High ( ) Moderate ( ) Low ( ) None ( )

ITEM 61 (Dive Report): N *ITEM 61 (This Report):* 7

93b-U/W INSP. DATE: 00/00/0000

ITEM 36 — TRAFFIC SAFETY

	36	COND	DEF
A. Bridge Railing	0	4	S-A
B. Transitions	0	N	-
C. Approach Guardrail	0	N	-
D. Approach Guardrail Ends	0	N	-

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=NotRequired) Legibility/ Visibility	At bridge E	At bridge W	Other Advance E	Other Advance W

CLEARANCE POSTING *Not* [X]

	N ft	N in	S ft	S in	meter
Actual Field Measurement		0		0	
Posted Clearance		0		0	

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

ACCESSIBILITY (Y/N/P)

	Needed	Used
Lift Bucket	N	N
Ladder	P	N
Boat	N	N
Waders	Y	Y
Inspector 50	N	N
Rigging	N	N
Staging	N	N
Traffic Control	N	N
RR Flagger	N	N
Police	N	N
Other:		
LOWTIDE	Y	Y

TOTAL HOURS: 40

PLANS (Y/N): N

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

TAPE#: _____

List of field tests performed:
Visual and hands-on inspection.

RATING

Rating Report (Y/N): N

Date: 00/00/0000

Inspection data at time of existing rating
I 58: - I 59: - I 60: - Date :00/00/0000

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

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

REASON: _____

CONDITION RATING GUIDE (For Items 58, 59, 60 and 61)

	CODE	CONDITION	DEFECTS
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
C	2	CRITICAL	Advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stablility. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service - beyond corrective action.

DEFICIENCY REPORTING GUIDE

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].

STRUCTURES INSPECTION FIELD REPORT

ROUTINE ARCH & 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 4, 2020

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	Sunny	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

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		See remarks in comments section.	5	4	Not Rated			S-A
B	Item 59.2 - Keystone Area	N		See remarks in comments section.	4	4	Not Rated			S-A
C	Item 36a - Bridge Railing	N		See remarks in comments section.	5	4	Not Rated			S-A
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	-

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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**

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
MANCHESTER	8AM	M-02-001	M02001-8AM-MUN-BRI	NOV 4, 2020

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.

See **Sketch 1** for a location map, **Sketch 2** for an elevation and streambed profile, and **Photos 1- 6** 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.

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 58.1 - Wearing Surface

The bituminous wearing surface exhibits scattered cracks up to 1/2" wide, some that have been sealed. The westbound lane has an area of heavy wear up to 18" wide x 1/2" deep for the full length of the bridge **(Photo 7)**. The western end of the eastbound lane has an area of cracking 2'-0" long x 6'-5" wide x up to ¼" deep. There is a concrete patch approximately 2'-3" wide x 2'-4" long adjacent to the drain at the north curb. The patch has scattered cracks up to 1/8" wide.

Item 58.4 - Curbs

On the south curb near the west abutment, two sections of granite curb are misaligned up to 2" high. The north and south curb lines have moderate debris accumulation.

Item 58.6 - Sidewalks

Both the north and south sidewalks have an uneven surface throughout. The north sidewalk has scattered cracks up to ¼" wide. The south sidewalk exhibits scattered cracks up to 1-1/2" wide around previous patchwork throughout **(Photo 8)**. The northeast section of sidewalk has settled approximately 2" below the top of curb.

The south sidewalk deck underside has widespread areas of delamination, pop-outs, and multiple spalls with exposed reinforcing. Adjacent to the arch at midspan there is an 8'-6" long x 15" wide x 1 1/2" deep spall **(Photo 9)**.

Item 58.8 - Railing

Both the north and south elevations have a chain-link fence with moderate to heavy surface corrosion to the rails.

On the north railing, the first post from the west end and the top rail are bent away from the roadway but are secure.

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
MANCHESTER	8AM	M-02-001	M02001-8AM-MUN-BRI	NOV 4, 2020

REMARKS

Item 58.8 - Railing (Cont'd)

(S-A Deficiency) At the northwest corner, the chain link fabric is unsecured along the bottom rail for 5'-0" long resulting in a potential gap and fall hazard (Photo 10). The chain link fabric is secured to the top rail and west corner post with zip ties and bailing wire. The bottom of the northwest outside post is fractured but is stable and secure with an interior post inside the visible outer post.

(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 (Photo 11). The bottom railing of the northeast fence panel is detached from its receivers and hangs loosely (Photos 11 & 12).

The south chain link fabric is detached along the bottom rail for the full length. At the south east corner post the bottom rail is detached from its reciever.

Item 58.10 - Drainage System

The drainage grate at the north curb has heavy debris build-up on the cover and within the drain.

APPROACHES

Approaches a - Appr. pavement condition

The approach roadways have scattered longitudinal and transverse cracking throughout, some of which have been sealed. The westbound approach has an area of raveling up to 16" wide x 1" deep. Along the north curb line of the west bound approach there is a depression in the pavement, 15" long x 22' wide x up to 2" deep.

ITEM 59 - SUPERSTRUCTURE

Item 59.1 - Arch/Arch Ring

A majority of the arch is coated in shotcrete repairs which exhibit scattered hairline cracks, efflorescence, rust staining, moisture staining, and is hollow sounding. Masonry stones not covered with shotcrete exhibit hairline cracking throughout the arch barrel. Specific deficiencies and locations are as follows:

- 14'-0" south of north fascia: 6" wide x 12" high x 2'-8" deep void near the west spring line.
- 18'-0" south of north fascia: 10" diameter x 5'-0" deep void near the west spring line **(Photo 13)**.
- 7'-0" north of south fascia: Full arch length x up to 1/2" wide crack in the shotcrete along arch section interface. At the west spring line, the shotcrete ends resulting in exposed stone masonry with a void between the stones up to 4" wide x 2'-8" deep between the north and south arch sections **(Photo 14)**.

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 appears unchanged since the previous inspection. Specific deficiencies relating to the missing keystones are as follows:

- **2'-6" From North Fascia: 2'-0" long x 9" wide x 6" deep void (Photo 15).**
- **7'-0" From North Fascia: 3'-0" long x 9" wide x 6" deep void (Photo 16). Note: Dimensions have been updated from previous SM report, but condition appears unchanged.**
- **14'-0" From North Fascia: 12" long x 9" wide x 6" deep void. Stones surrounding void settled up to 6". Note: Dimensions have been updated from previous SM report, but condition appears unchanged.**

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
MANCHESTER	8AM	M-02-001	M02001-8AM-MUN-BRI	NOV 4, 2020

REMARKS

Item 59.2 - Keystone Area (Cont'd)

- **18'-0" From North Fascia: 6" long x 12" wide x 9" deep void. Note: Location has been updated from previous SM report, but condition appears unchanged.**
- **22'-0" From North Fascia: 5'-0" long x 12" wide x 6" deep void (Photo 17).**
- **35'-0" From North Fascia: Two missing keystones up to 7" long x 11" wide x 8" deep void (Photo 18). Note: Newly reported deficiency, but does not appear to be new or unchanged from previous SM inspection.**

Item 59.5 - Spandrel Walls

The north and south spandrel walls are primarily coated in shotcrete which exhibit scattered cracks up to 1/16" wide with efflorescence and scattered hollow areas throughout. Specific deficiencies are as follows:

- West side of north wall: 2'-0" wide x 2'-0" high x 3-1/2" deep spall in the shotcrete with exposed wire mesh below drainpipe **(Photo 19).**
- West side of north wall at arch: 3'-6" wide x up to 18" high x 3" deep spall in the shotcrete with exposed and deteriorated wire mesh.
- Center of north wall: 18" high crack up to 1/2" wide at top of wall.
- West end of south wall: Shotcrete is missing resulting in exposed masonry stones with voids up to 21" deep **(Photo 20).**

Item 59.6 - Spring Lines

The east spring line deficiencies are as follows:

- 9'-0" south of north fascia: 24" wide x 10" high x 10" deep void due to a missing stone **(Photo 21).**
- 10'-6" north of south wingwall: 4" wide x 18" high x 16" deep void.
- 13'-0" north of south wingwall: 5" wide x 8" high x 16" deep void.

ITEM 60 - SUBSTRUCTURE

Item 60.1 - Abutments

Item 60.1.d - Breastwalls

The breastwalls were below the water line at the time of inspection, no visible signs of distress were observed.

Item 60.1.e - Wingwalls

The south wingwalls are considered the concrete channel leading to the lock. South wingwall typical defects include spalling at construction joints and scaling up to 1/16" deep. On the southeast wingwall there is a spall resulting in a void 3" wide x 6" high x 6" deep **(Photo 22).**

For the purpose of this inspection, the wingwalls on the north side of the bridge end 8'-0" from the bridge at the front face of the adjacent building (the channel walls continue upstream **(Photo 4)**). The north wingwalls exhibit scattered hollow areas of shotcrete **(Photo 23)**. On the northeast wingwall there is a void 1" high x 11" long x 21" deep.

Item 60.1.g - Pointing

Arch construction appears to be dry laid stone masonry and no pointing was found on the structure.

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REMARKS

Item 60.1.j - Scour
There is a concrete pad that drops-off to the channel bed 21'-0" south of the north fascia. There is up to a 3'-10" deep drop after the concrete pad that levels out to approximately 2'-8" deep. This was variable due to uneven stream bed. Drop line measurements along the upstream north fascia reveal between 0" to 6" of aggradation since previous inspection.

TRAFFIC SAFETY

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

Item 36b - Transitions
There are no transitions as there are no approach guardrails for this bridge.

Item 36c - Approach Guardrail
There are no approach guardrails for this bridge. The bridge is abutted by a structure at the northeast corner, a street at the northwest corner, and a structure at the southwest corner.

Item 36d - Approach Guardrail Ends
There are no approach guardrail ends for this bridge as there is no approach guardrail.

Sketch / Photo Log
Sketch 1 : Location Map
Sketch 2 : Upstream Channel Profile.
Photo 1 : General - North Elevation
Photo 2 : General - South Elevation
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 : Wearing Surface- Westbound Lane: Heavy wear full length x 18" wide x 1/2" deep with scattered cracking.
Photo 8 : Sidewalks - South Sidewalk: Area of cracks up to 1-1/2" wide.
Photo 9 : Sidewalks - Underside of South Sidewalk: Widespread demalination, spalling, and exposed reinforcement. Spalling up to 8'-6" long x 15" wide x 1-1/2" deep adjacent to spandrel wall.
Photo 10 : Railing - Northwest Corner: Chain link fabric is unsecured along bottom rail for 5'-0" length resulting in a potential gap and fall hazard.
Photo 11 : Railing - Northeast Corner: Post is detached at its base and secured only to the adjacent property's wooden post.
Photo 12 : Railing - Northeast Panel: The bottom railing is detached from the receivers and hangs loosely.
Photo 13 : Arch/Arch Ring - 18'-0" south of north fascia: 10" diameter x 5'-0" deep void near the west spring line.
Photo 14 : Arch/Arch ring - 7'-0" north of south fascia: Shotcrete ends at west spring line resulting in exposed masonry with a void 4" w x 2'-8" deep.
Photo 15 : Keystone Area - 2'-6" from north fascia: Missing keystones resulting in a 2'-0" long x 9" wide x 6" deep void.
Photo 16 : Keystone Area - 7'-0" from north fascia: Missing keystones resulting in a 3'-0" long x 9" wide x 6" deep void.
Photo 17 : Keystone Area - 22'-0" from north fascia: Missing keystones resulting in a 5'-0" long 12" wide x 6" deep void.

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
MANCHESTER	8AM	M-02-001	M02001-8AM-MUN-BRI	NOV 4, 2020

REMARKS

Sketch / Photo Log (Cont'd)

Photo 18 : Keystone Area: 35'-0" from north fascia: Two missing keystones resulting in voids up to 7" long x 11" wide x 8" deep.

Photo 19 : Spandrel Walls - West side of north wall: Spall in shotcrete under drain pipe, 2'-0" wide x 2'-0" high x 3-1/2" deep with exposed wire mesh.

Photo 20 : Spandrel Walls - East side of south wall: Missing shotcrete resulting in visible voids between masonry stones up to 21" deep. Surrounding shotcrete has areas of cracking and efflorescence.

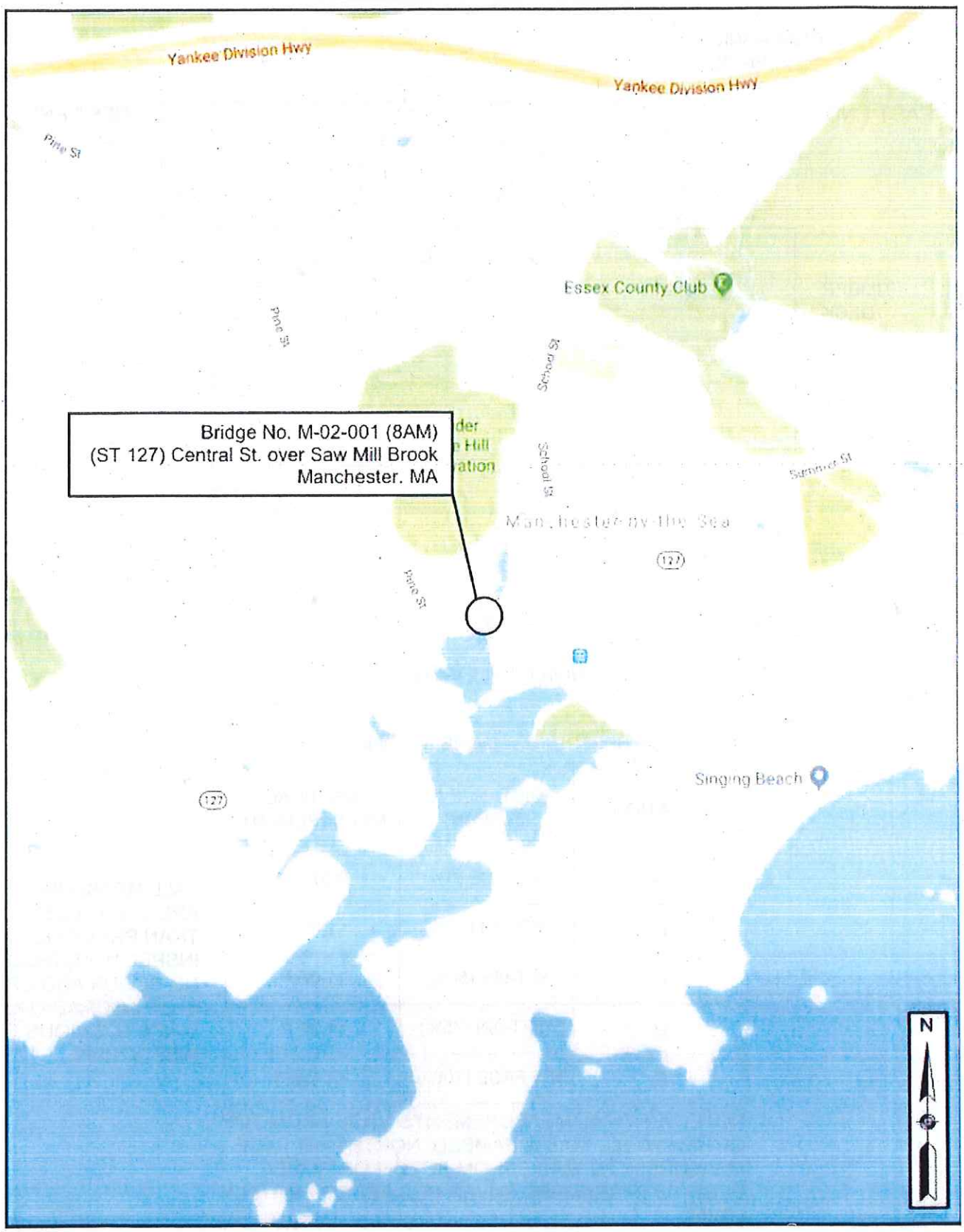
Photo 21 : Spring Line - 9'-0" south of north fascia: East spring line with a void 24" wide x 10" high x 10" deep due to missing stone.

Photo 22 : Wingwalls - Southeast Wingwall: Spalling at construction joints has resulted in a void 3" wide x 6" high x 6" deep. Typical scaling 1/16" deep covers walls.

Photo 23 : Wingwalls - Northeast Wingwall: Cracking and isolated hollow areas in shotcrete at the top of the stone masonry. Voids between stones up to 21" deep.

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
MANCHESTER	8AM	M-02-001	M02001-8AM-MUN-BRI	NOV 4, 2020

SKETCHES



Sketch 1: Location Map

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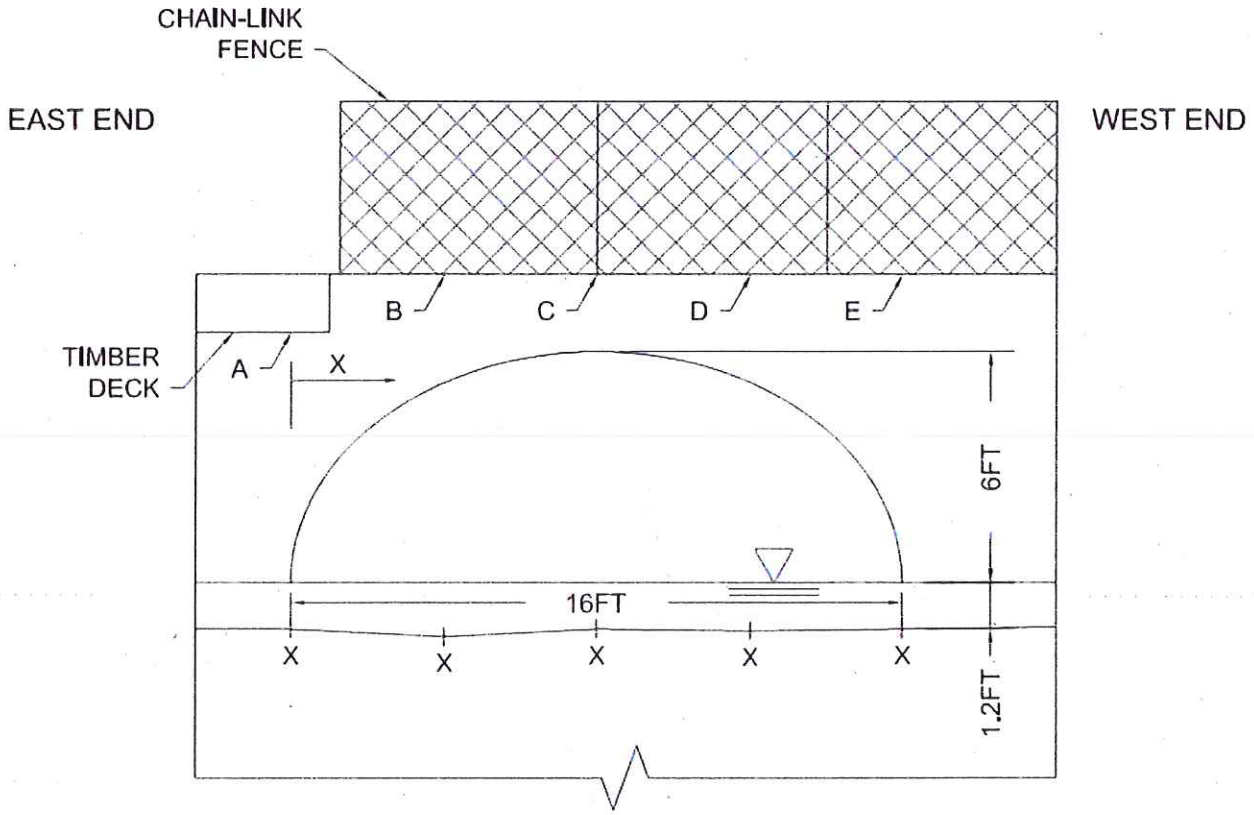
SKETCHES



NORTH ELEVATION

UPSTREAM CHANNEL PROFILE		
LOCATION	DISTANCE X (% SPAN)	VERTICAL MEASUREMENT *
A	NE FACE (0%)	9.67FT
B	4FT-0IN (25%)	11.0FT
C	8FT-0IN (50%)	11.0FT
D	12FT-0IN (75%)	11.0FT
E	NW FACE (100%)	11.08FT

NOTE: VERTICAL MEASUREMENTS MADE FROM TOP OF HEADWALL TO STREAMBED. NORTHEAST FACE MEASUREMENT MADE FROM BOTOM OF TIMBER DECK TO STREAMBED (RIVER BED APPROXIMATELY LEVEL.

*ALL MEASUREMENTS ARE 0" to 6" LESS THAN PREVIOUS INSPECTION. THUS, NO SCOUR AND UP TO 6" OF AGGRADATION SINCE PREVIOUS INSPECTION.

Sketch 2: Upstream Channel Profile.

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PHOTOS

Photo 1: General - North Elevation

Photo 2: General - South Elevation

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PHOTOS

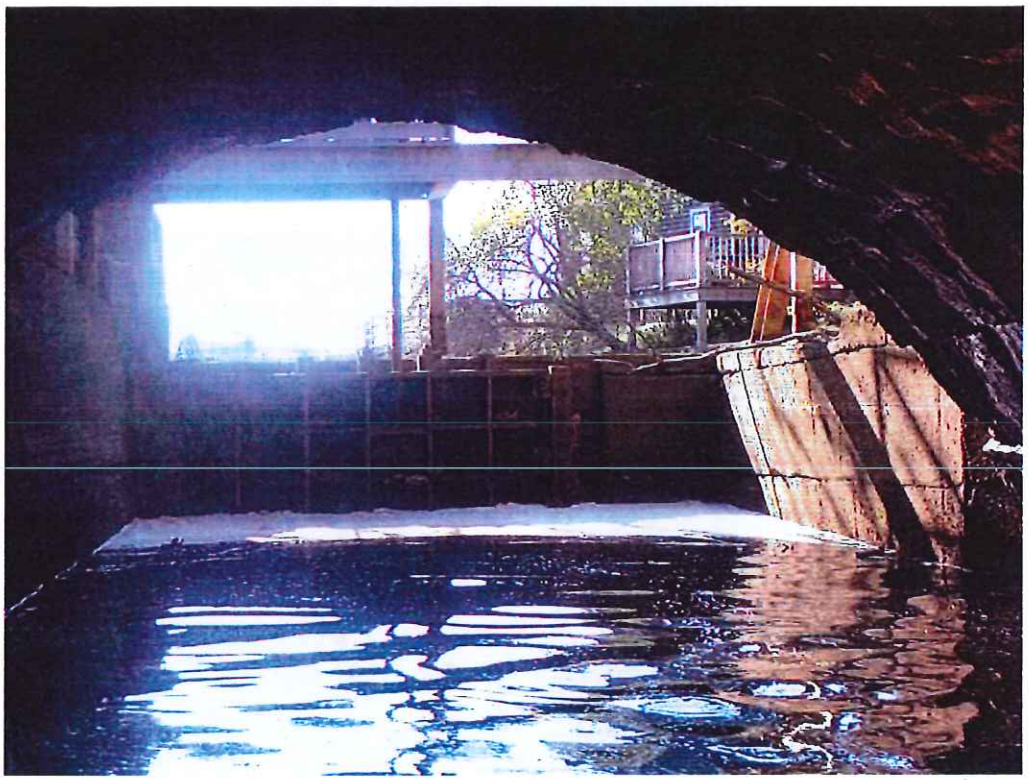

Photo 3: General - Downstream, looking south.

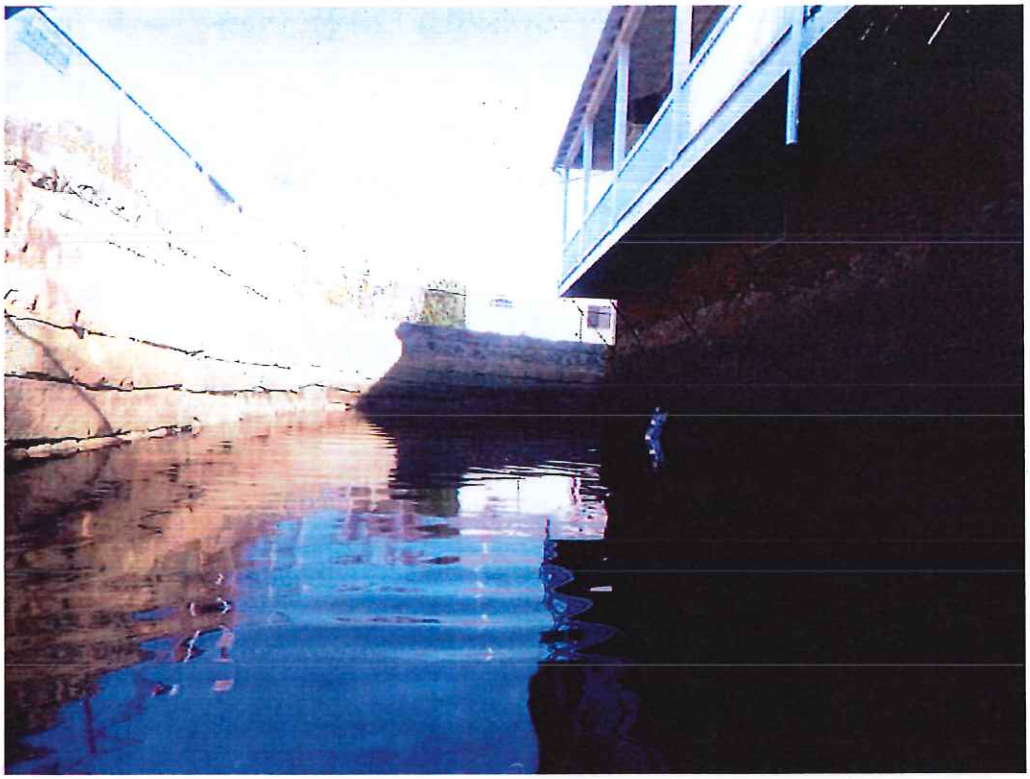

Photo 4: General - Upstream, looking north.

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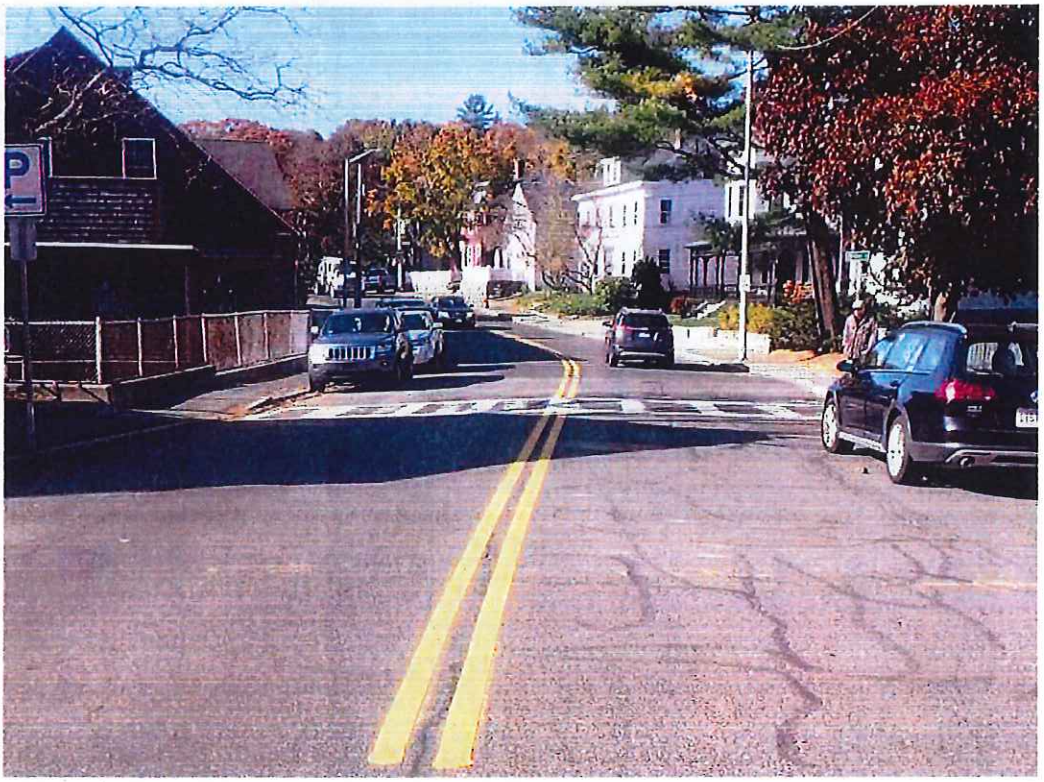

Photo 5: General - East approach, looking west.

Photo 6: General - West approach, looking east.

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PHOTOS

Photo 7: Wearing Surface- Westbound Lane: Heavy wear full length x 18" wide x 1/2" deep with scattered cracking.

Photo 8: Sidewalks - South Sidewalk: Area of cracks up to 1-1/2" wide.

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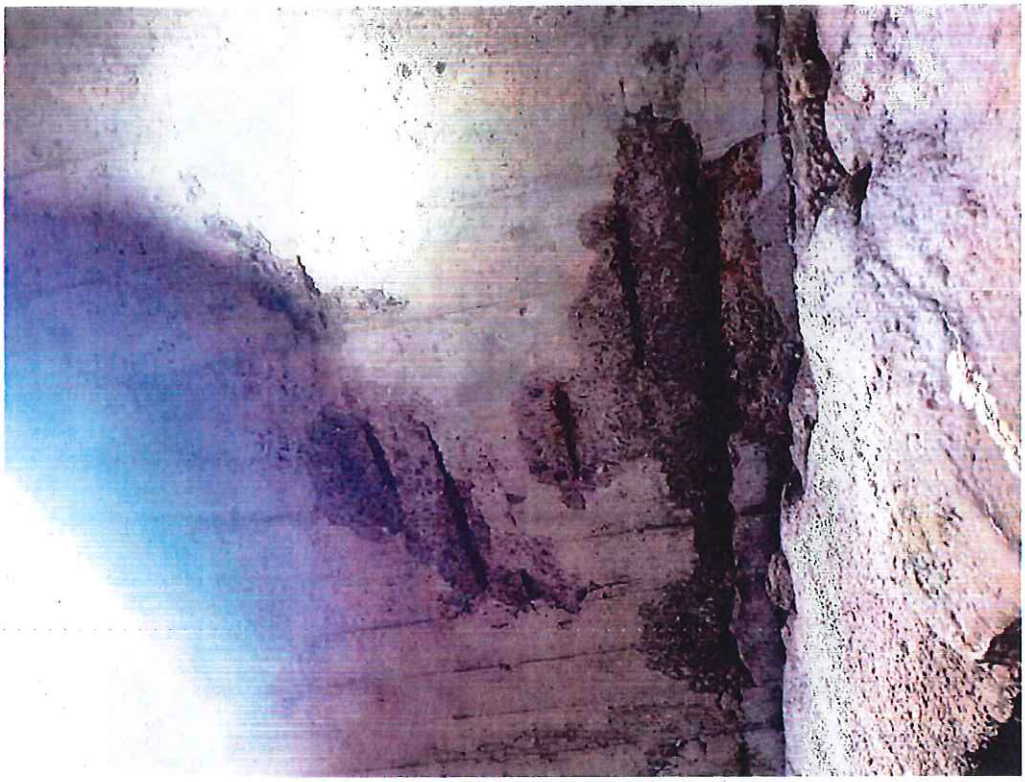

Photo 9: Sidewalks - Underside of South Sidewalk: Widespread demalination, spalling, and exposed reinforcement. Spalling up to 8'-6" long x 15" wide x 1-1/2" deep adjacent to spandrel wall.

Photo 10: Railing - Northwest Corner: Chain link fabric is unsecured along bottom rail for 5'-0" length resulting in a potential gap and fall hazard.

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Photo 11: Railing - Northeast Corner: Post is detached at its base and secured only to the adjacent property's wooden post.

Photo 12: Railing - Northeast Panel: The bottom railing is detached from the receivers and hangs loosely.

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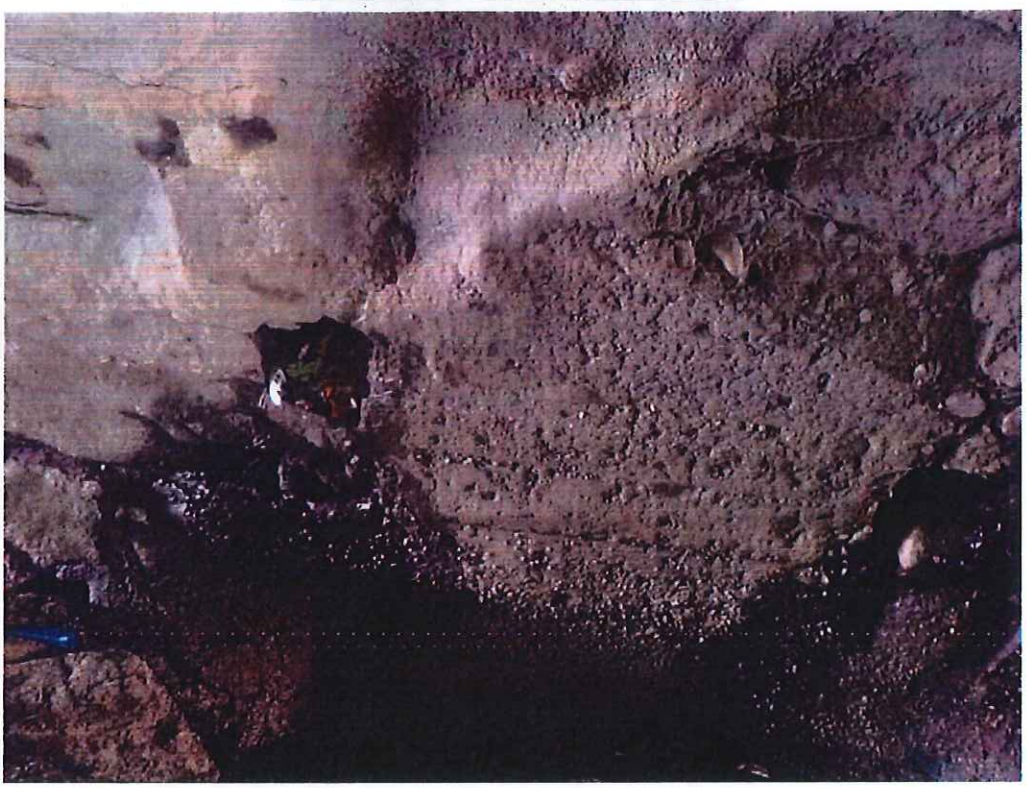

Photo 13: Arch/Arch Ring - 18'-0" south of north fascia: 10" diameter x 5'-0" deep void near the west spring line.

Photo 14: Arch/Arch ring - 7'-0" north of south fascia: Shotcrete ends at west spring line resulting in exposed masonry with a void 4" w x 2'-8" deep.

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PHOTOS

Photo 15: Keystone Area - 2'-6" from north fascia: Missing keystones resulting in a 2'-0" long x 9" wide x 6" deep void.

Photo 16: Keystone Area - 7'-0" from north fascia: Missing keystones resulting in a 3'-0" long x 9" wide x 6" deep void.

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PHOTOS

Photo 17: Keystone Area - 22'-0" from north fascia: Missing keystones resulting in a 5'-0" long 12" wide x 6" deep void.

Photo 18: Keystone Area: 35'-0" from north fascia: Two missing keystones resulting in voids up to 7" long x 11" wide x 8" deep.

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PHOTOS

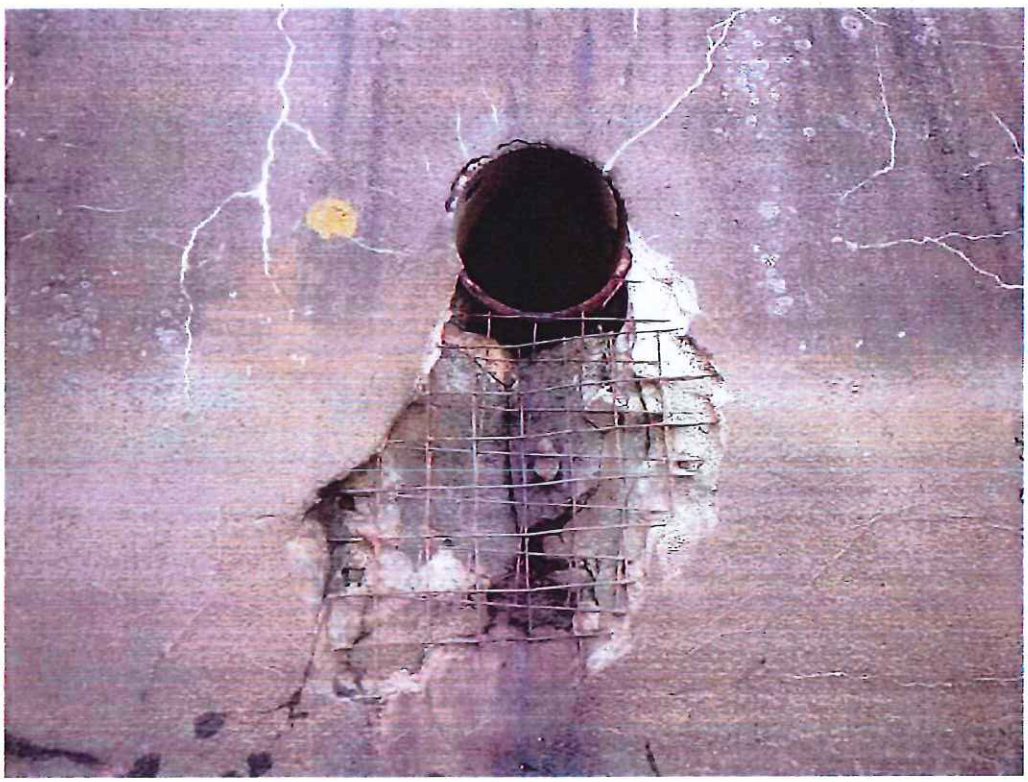

Photo 19: Spandrel Walls - West side of north wall: Spall in shotcrete under drain pipe, 2'-0" wide x 2'-0" high x 3-1/2" deep with exposed wire mesh.

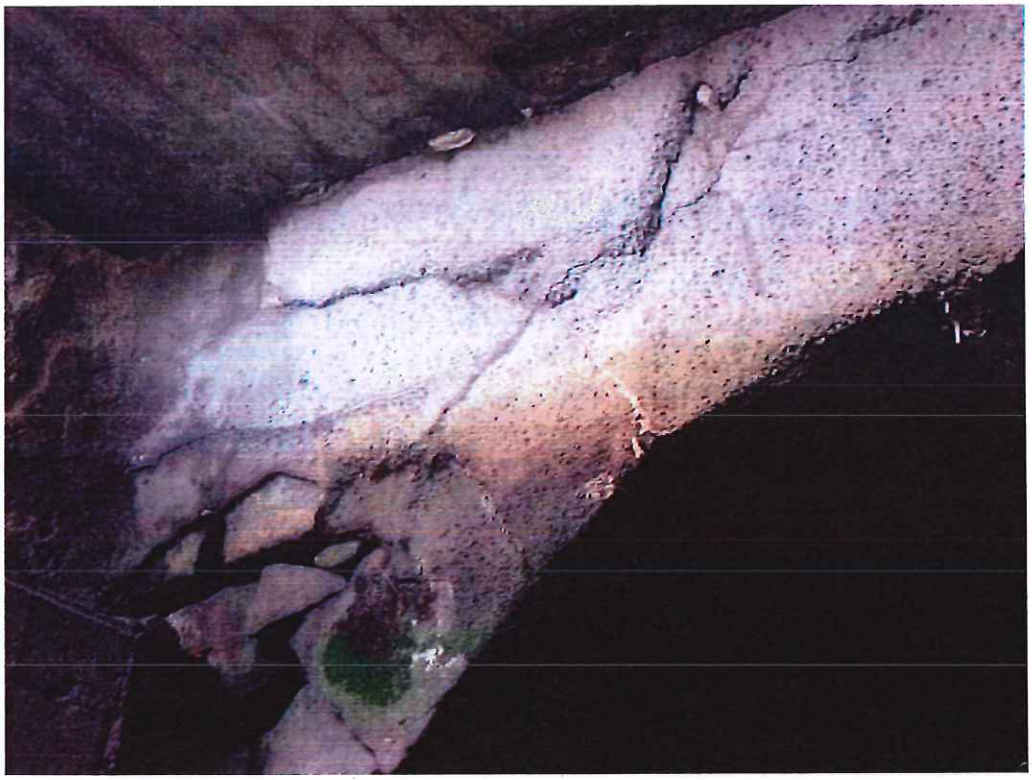

Photo 20: Spandrel Walls - East side of south wall: Missing shotcrete resulting in visible voids between masonry stones up to 21" deep. Surrounding shotcrete has areas of cracking and efflorescence.

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PHOTOS

Photo 21: Spring Line - 9'-0" south of north fascia: East spring line with a void 24" wide x 10" high x 10" deep due to missing stone.

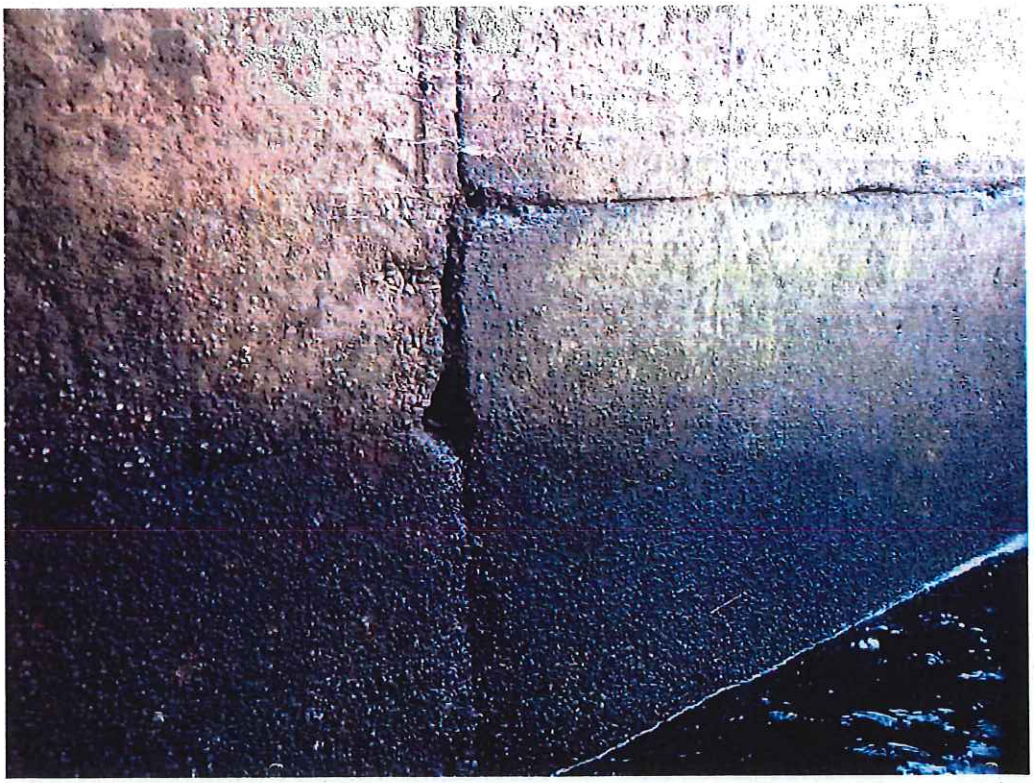

Photo 22: Wingwalls - Southeast Wingwall: Spalling at construction joints has resulted in a void 3" wide x 6" high x 6" deep. Typical scaling 1/16" deep covers walls.

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PHOTOS

Photo 23: Wingwalls - Northeast Wingwall: Cracking and isolated hollow areas in shotcrete at the top of the stone masonry. Voids between stones up to 21" deep.