



NC DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
STRUCTURE MANAGEMENT UNIT

ATTENTION: TEMPORARY REPAIRS. SIGN NOTICE ISSUED.

## Structure Safety Report

### Routine Element Inspection - Contract

COUNTY: HALIFAX STRUCTURE NUMBER: 410138 FREQUENCY: 24 MONTHS  
FACILITY CARRIED: SR1309 MILE POST: \_\_\_\_\_  
LOCATION: 0.6 MI.W.SR1308  
FEATURE INTERSECTED: LITTLE FISHING CREEK  
LATITUDE: 36° 20' 9.4" LONGITUDE: 77° 55' 6.8"  
SUPERSTRUCTURE: TIMBER FLOOR ON I-BEAMS  
SUBSTRUCTURE: REINF.CONC.ABUTS.  
SPANS: 1@36'10'  
☐ FRACTURE CRITICAL ☐ TEMPORARY SHORING ☒ SCOUR CRITICAL ☒ SCOUR PLAN OF ACTION  
PRESENT CONDITION: Fair INSPECTION DATE: 09/01/2015  
POSTED SV: 10 POSTED TTST: 14  
OTHER SIGNS PRESENT: (3) DELINEATORS, (2) ONE LANE BRIDGE



LOOKING EAST

| Sign noticed issued for |                        | Number Required |
|-------------------------|------------------------|-----------------|
| <u>NO</u>               | <b>WEIGHT LIMIT</b>    | <u>0</u>        |
| <u>YES</u>              | <b>DELINEATORS</b>     | <u>1</u>        |
| <u>NO</u>               | <b>NARROW BRIDGE</b>   | <u>0</u>        |
| <u>NO</u>               | <b>ONE LANE BRIDGE</b> | <u>0</u>        |
| <u>NO</u>               | <b>LOW CLEARANCE</b>   | <u>0</u>        |

|                                |                                    |                                 |
|--------------------------------|------------------------------------|---------------------------------|
| INSPECTED BY<br>BYRON ATKINSON | SIGNATURE<br><i>Byron Atkinson</i> | ASSISTED BY<br>JILLA ISRAELNAIM |
|--------------------------------|------------------------------------|---------------------------------|

# Span Element Report

Structure Number: 410138

Inspection Date: 09/01/2015

Span Number 1

Span Length 36.833 Feet

Number of Beams/Girders: 6

| Element Number | Parent Number | Element Name             | Total Quantity | Level 1 Quantity | Level 2 Quantity | Level 3 Quantity | Level 4 Quantity | Maint. Quantity | Maint. Code |
|----------------|---------------|--------------------------|----------------|------------------|------------------|------------------|------------------|-----------------|-------------|
| 31             |               | Timber Deck              | 498            | 0                | 498              | 0                | 0                | 498             | 3324        |
| 107            |               | Steel Open Girder/Beam   | 222            | 222              | 0                | 0                | 0                | 0               | 3314        |
| 515            | 107           | Steel Protective Coating | 876            | 876              | 0                | 0                | 0                | 0               | 3342        |
| 217            |               | Masonry Abutments        | 28             | 28               | 0                | 0                | 0                | 0               | 3350        |
| 332            |               | Timber Bridge Railing    | 74             | 74               | 0                | 0                | 0                | 0               | 3316        |

"Near" Approach and Substructure quantities have been include for reporting purposes. The last span will also include End Bent 2 and Far Approach quantities where applicable

# Superstructure Detailed Element Quantities

Structure Number: 410138

Inspection Date: 09/01/2015

Span Number 1

| Element Location                                | Location Number | Element Number | Element Name             | Total Quantity | Level 1 Quantity | Level 2 Quantity | Level 3 Quantity | Level 4 Quantity | Maint. Quantity | Maint. Code | Priority Maintenance               |
|-------------------------------------------------|-----------------|----------------|--------------------------|----------------|------------------|------------------|------------------|------------------|-----------------|-------------|------------------------------------|
| <input checked="" type="checkbox"/> Deck        | 1               | 31             | Timber Deck              | 498            | 0                | 498              | 0                | 0                | 498             | 3324        | <input type="checkbox"/> Requested |
| <input checked="" type="checkbox"/> Bridge Rail | 1               | 332            | Timber Bridge Railing    | 37             | 37               | 0                | 0                | 0                | 0               | 3316        | <input type="checkbox"/> Requested |
| <input checked="" type="checkbox"/> Bridge Rail | 2               | 332            | Timber Bridge Railing    | 37             | 37               | 0                | 0                | 0                | 0               | 3316        | <input type="checkbox"/> Requested |
| <input checked="" type="checkbox"/> Beam        | 1               | 107            | Steel Open Girder/Beam   | 37             | 37               | 0                | 0                | 0                | 0               | 3314        | <input type="checkbox"/> Requested |
| Protective System                               |                 | 515            | Steel Protective Coating | 146            | 146              | 0                | 0                | 0                | 0               | 3342        |                                    |
| <input checked="" type="checkbox"/> Beam        | 2               | 107            | Steel Open Girder/Beam   | 37             | 37               | 0                | 0                | 0                | 0               | 3314        | <input type="checkbox"/> Requested |
| Protective System                               |                 | 515            | Steel Protective Coating | 146            | 146              | 0                | 0                | 0                | 0               | 3342        |                                    |
| <input checked="" type="checkbox"/> Beam        | 3               | 107            | Steel Open Girder/Beam   | 37             | 37               | 0                | 0                | 0                | 0               | 3314        | <input type="checkbox"/> Requested |
| Protective System                               |                 | 515            | Steel Protective Coating | 146            | 146              | 0                | 0                | 0                | 0               | 3342        |                                    |
| <input checked="" type="checkbox"/> Beam        | 4               | 107            | Steel Open Girder/Beam   | 37             | 37               | 0                | 0                | 0                | 0               | 3314        | <input type="checkbox"/> Requested |
| Protective System                               |                 | 515            | Steel Protective Coating | 146            | 146              | 0                | 0                | 0                | 0               | 3342        |                                    |
| <input checked="" type="checkbox"/> Beam        | 5               | 107            | Steel Open Girder/Beam   | 37             | 37               | 0                | 0                | 0                | 0               | 3314        | <input type="checkbox"/> Requested |
| Protective System                               |                 | 515            | Steel Protective Coating | 146            | 146              | 0                | 0                | 0                | 0               | 3342        |                                    |
| <input checked="" type="checkbox"/> Beam        | 6               | 107            | Steel Open Girder/Beam   | 37             | 37               | 0                | 0                | 0                | 0               | 3314        | <input type="checkbox"/> Requested |
| Protective System                               |                 | 515            | Steel Protective Coating | 146            | 146              | 0                | 0                | 0                | 0               | 3342        |                                    |

# Superstructure Element Defect Descriptions

Structure Number: 410138

Inspection Date: 09/01/2015

**Span Number** 1

| Span                | 1  | Deck | 1           | Component Name: Timber Deck |     |        |     |       |   |       |   |            |     |
|---------------------|----|------|-------------|-----------------------------|-----|--------|-----|-------|---|-------|---|------------|-----|
| Element:            | 31 | Name | Timber Deck | Qty:                        | 498 | Lvl 2: | 498 | Lvl 3 | 0 | Lvl 4 | 0 | Maint. Qty | 498 |
| Defect Description: |    |      |             |                             |     |        |     |       |   |       |   |            |     |

498 Square Feet of Abrasion/Wear (Timber): ABRASION TO TIMBER DECK BOARDS ALONG TOP SURFACE

| Span                | 1   | Beam | 1                      | Component Name: |    | Plate Girder |   |       |   |       |   |            |   |
|---------------------|-----|------|------------------------|-----------------|----|--------------|---|-------|---|-------|---|------------|---|
| Element:            | 107 | Name | Steel Open Girder/Beam | Qty:            | 37 | Lvl 2:       | 0 | Lvl 3 | 0 | Lvl 4 | 0 | Maint. Qty | 0 |
| Defect Description: |     |      |                        |                 |    |              |   |       |   |       |   |            |   |

REPAIR TO TOP FLANGE FROM ABUTMENT 1 TO MID-SPAN SINCE LAST CYCLE.

ALL BEAMS IN SPAN HAVE BEEN PAINTED SINCE LAST CYCLE.

## Substructure Detailed Element Quantities

Structure Number: 410138

Inspection Date: 09/01/2015

### End Bent 1

| Element Location                              | Location Number | Element Number | Element Name      | Total Quantity | Level 1 Quantity | Level 2 Quantity | Level 3 Quantity | Level 4 Quantity | Maint. Quantity | Maint. Code | Priority Maintenance               |
|-----------------------------------------------|-----------------|----------------|-------------------|----------------|------------------|------------------|------------------|------------------|-----------------|-------------|------------------------------------|
| <input checked="" type="checkbox"/> Abutments | 1               | 217            | Masonry Abutments | 14             | 14               | 0                | 0                | 0                | 0               | 3350        | <input type="checkbox"/> Requested |

### End Bent 2

| Element Location                              | Location Number | Element Number | Element Name      | Total Quantity | Level 1 Quantity | Level 2 Quantity | Level 3 Quantity | Level 4 Quantity | Maint. Quantity | Maint. Code | Priority Maintenance               |
|-----------------------------------------------|-----------------|----------------|-------------------|----------------|------------------|------------------|------------------|------------------|-----------------|-------------|------------------------------------|
| <input checked="" type="checkbox"/> Abutments | 1               | 217            | Masonry Abutments | 14             | 14               | 0                | 0                | 0                | 0               | 3350        | <input type="checkbox"/> Requested |

# Substructure Element Defect Descriptions

Structure Number: 410138

Inspection Date: 09/01/2015

## End Bent 1

| End Bent 1          | Row 1 | Abutments         | 1    |    |        |   |       |   |       |   |            |   |
|---------------------|-------|-------------------|------|----|--------|---|-------|---|-------|---|------------|---|
| Element: 217        | Name  | Masonry Abutments | Qty: | 14 | Lvl 2: | 0 | Lvl 3 | 0 | Lvl 4 | 0 | Maint. Qty | 0 |
| Defect Description: |       |                   |      |    |        |   |       |   |       |   |            |   |

LEFT SIDE TIMBER BULKHEAD ADDED SINCE LAST CYCLE.

|                     |       |                   |      |    |        |   |       |   |       |   |            |   |
|---------------------|-------|-------------------|------|----|--------|---|-------|---|-------|---|------------|---|
| End Bent 2          | Row 1 | Abutments         | 1    |    |        |   |       |   |       |   |            |   |
| Element: 217        | Name  | Masonry Abutments | Qty: | 14 | Lvl 2: | 0 | Lvl 3 | 0 | Lvl 4 | 0 | Maint. Qty | 0 |
| Defect Description: |       |                   |      |    |        |   |       |   |       |   |            |   |

RANDOM MINOR CRACKS IN MASONRY WALL UNDER BEAMS.

# National Bridge and NC Inspection Items

Structure Number: 410138

Inspection Date: 09/01/2015

## National Bridge Inventory Items

| Item                                    | Grade Scale | Grade |
|-----------------------------------------|-------------|-------|
| Item 58: Deck                           | 0 - 9 , N   | 6     |
| Item 59: Superstructure                 | 0 - 9 , N   | 6     |
| Item 60: Substructure                   | 0 - 9 , N   | 6     |
| Item 61: Channel and Channel Protection | 0 - 9 , N   | 7     |
| Item 62: Culvert                        | 0 - 9 , N   | N     |
| Item 71: Waterway Adequacy              | 0 - 9 , N   | 5     |
| Item 72: Approach Roadway Alignment     | 0 - 9 , N   | 3     |

Note: If NBI Inspection Item is not present, code NBI item with "N"

## NC SMU Inspection Items

| Item                     | Grade Scale   | Grade | Maint. Qty. | Maint. Code |
|--------------------------|---------------|-------|-------------|-------------|
| Deck Debris              | G, F, P, or C | F     | 25          | 3376        |
| Drainage System          | G, F, P, or C | G     | 0           | 3332        |
| Utilities                | G, F, P, or C |       |             |             |
| Slope Protection         | G, F, P, or C |       | 0           | 3352        |
| Wingwall                 | G, F, P, or C | G     | 0           | 3350        |
| Scour                    | G, F, P, or C | G     |             |             |
| Field Scour Evaluation   |               | O     |             |             |
| Drift                    | G, F, P, or C | G     | 0           | 3366        |
| Fender System            | G, F, P, or C |       | 0           | 3364        |
| Response to Live Load    | G, F, P, or C | G     |             |             |
| Estimated Remaining Life | 0 - 100 Years | 8     |             |             |

Note: If NC SMU Inspection Item is not present, leave NC SMU item blank

## Inspection Information

| Item                                   | Grade Scale | Grade |
|----------------------------------------|-------------|-------|
| Regulatory Sign Noticed Issued         | YES/NO      | Y     |
| Priority Maintenance Request Submitted | YES/NO      | N     |
| Inspection Time                        | Hours       | 8     |
| Traffic Control Time                   | Hours       | 0     |
| Snooper Time                           | Hours       | 0     |
| Ladder Used                            | YES/NO      | N     |
| Bucket Truck Used                      | YES/NO      | N     |
| Boat Used                              | YES/NO      | N     |
| Other Equipment Used                   | YES/NO      | N     |

# National Bridge and NC SMU Inspection Item Details

**Structure Number:** 410138

**Inspection Date:** 09/01/2015

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|             |                                      |              |   |                   |  |             |   |
|-------------|--------------------------------------|--------------|---|-------------------|--|-------------|---|
| <b>Item</b> | Approach Roadway Alignment - Item 72 | <b>Grade</b> | 3 | <b>Maint Code</b> |  | <b>Qty.</b> | 0 |
|-------------|--------------------------------------|--------------|---|-------------------|--|-------------|---|

**Details** 3 FT X 2 FT X UP TO 3 IN OF SETTLEMENT AT LEFT SIDE OF WEST APPROACH AT END BENT 1.

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|             |                               |              |   |                   |  |             |   |
|-------------|-------------------------------|--------------|---|-------------------|--|-------------|---|
| <b>Item</b> | Regulatory Sign Notice Issued | <b>Grade</b> | Y | <b>Maint Code</b> |  | <b>Qty.</b> | 0 |
|-------------|-------------------------------|--------------|---|-------------------|--|-------------|---|

**Details** MISSING DELINEATOR AT SOUTHWEST CORNER.

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|             |             |              |   |                   |      |             |    |
|-------------|-------------|--------------|---|-------------------|------|-------------|----|
| <b>Item</b> | Deck Debris | <b>Grade</b> | F | <b>Maint Code</b> | 3376 | <b>Qty.</b> | 25 |
|-------------|-------------|--------------|---|-------------------|------|-------------|----|

**Details** ROADWAY GRAVEL AT END BENT 2 SPILLING ONTO DECK OF BRIDGE.



Span 1 Deck: ABRASION TO TIMBER DECK BOARDS ALONG TOP SURFACE



Deck Debris: ROADWAY GRAVEL AT END BENT 2 SPILLING ONTO DECK OF BRIDGE



Span 1 Beam 1: REPAIR TO TOP FLANGE FROM ABUTMENT 1 TO MID-SPAN.



ONE LANE BRIDGE SIGN (WEST APPROACH)



LOOKING EAST



TYPICAL RAIL (LEFT RAIL SHOWN)



LOOKING UPSTREAM (NORTH)



LOOKING DOWNSTREAM (SOUTH)



LOOKING WEST



POSTING SIGN AT EAST APPROACH



ABUTMENT 2 PROFILE



SUPERSTRUCTURE UNDERDECK



UPSTREAM PROFILE (NORTH)



DOWNSTREAM PROFILE (SOUTH)



ABUTMENT 1 PROFILE (NOTE: LEFT SIDE TIMBER BULKHEAD ADDED SINCE LAST CYCLE)



TYPICAL RAIL POST TO BEAM CONNECTION