

# Highway Bridge Inspection Report

**I-95 NB/EMERSON MILLS RD  
I-95 NORTHBOUND  
over  
B&ARR,EMERSON MILL RD**



**Asset Code:** 5969

**Inspection Date:** 09/08/2016

**Inspected By:** Scott Harris

**Inspection Type(s):** Routine

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**Inspector:** Scott Harris

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**Structure Number:** 5969

**Facility Carried:** I-95  
NORTHBOUND

## Highway Bridge Inspection Report

### Executive Summary

**Inspector:** Scott Harris

**Inspection Date:** 09/08/2016

**Structure Number:** 5969

**Facility Carried:** I-95  
NORTHBOUND

## Highway Bridge Inspection Report

### Location Map

## National Bridge Inventory

Status: 0 - ND

Bridge Name: I-95 NB/EMERSON MILLS RD

Sufficiency Rating: 85.7

### Inspections

(90) INSPECTION DATE	& (91) DESIGNATED INSPECTION FREQUENCY	24	09/08/2016
(92) CRITICAL FEATURE INSPECTION	& (93) CFI DATE		
(92A) FRACTURE CRITICAL DETAIL		N	
(92B) UNDERWATER INSPECTION		N	
(92C) OTHER SPECIAL INSPECTION		N	

### Identification

(1) STATE CODE	231 - Maine
(8) STRUCTURE NUMBER	5969
(5) INVENTORY ROUTE	
(5A) RECORD TYPE	1: Route carried "on" the structure
(5B) ROUTE SIGNING PREFIX	3 - STATE HIGHWAY
(5C) DESIGNATED LEVEL OF SERVICE	1 - MAINLINE
(5) INVENTORY ROUTE	95
(5) INVENTORY ROUTE	1 - NORTH
(2) HIGHWAY AGENCY DISTRICT	04 - Eastern
(3) COUNTY CODE	019 Penobscot
(4) PLACE CODE	30795
(6) FEATURES INTERSECTED	B&ARR,EMERSON MILL RD
(7) FACILITY CARRIED	I-95 NORTHBOUND
(9) LOCATION	MILE 179.2/4.5 MILE E TL
(11) MILEPOINT	177.600
(12) BASE HIGHWAY NETWORK	Inventory Route is on the Base Network
(13) LRS INVENTORY ROUTE, SUBROUTE	
(13A) LRS INVENTORY ROUTE	000000095X
(13B) SUBROUTE NUMBER	00
(16) LATITUDE	44.770327777 7778
(17) LONGITUDE	68.869147222 2222
(98A) BORDER BRIDGE CODE	
(98B) PERCENT RESPONSIBILITY	0
(99) BORDER BRIDGE STRUCT NO.	n/a

### Structure Type and Material

(43) STRUCTURE TYPE, MAIN	
(43A) KIND OF MATERIAL/DESIGN	3 - Steel
(43B) TYPE OF DESIGN/CONSTR	02 - Stringer/Multi-beam or Girder
(44) STRUCTURE TYPE, APPROACH SPANS	
(44A) KIND OF MATERIAL/DESIGN	0 - Other
(44B) TYPE OF DESIGN/CONSTRUCTION	00 - Other
(45) NUMBER OF SPANS IN MAIN UNIT	4
(46) NUMBER OF APPROACH SPANS	0
(107) DECK STRUCTURE TYPE	1 - Concrete Cast-in-Place
(108) WEARING SURFACE/PROTECTIVE SYSTEMS	
(108A) WEARING SURFACE	1 - Monolithic Concrete (concurrently placed with structural deck)
(108B) DECK MEMBRANE	0 - None
(108C) DECK PROTECTION	0 - None

### Age of Service

(27) YEAR BUILT	1962
(106) YEAR RECONSTRUCTED	-4
(42) TYPE OF SERVICE	
(42A) TYPE OF SERVICE ON BRIDGE	1 - Highway
(42B) TYPE OF SERVICE UNDER BRIDGE	4 - Highway - railroad
(28) LANES	
(28A) LANES ON THE STRUCTURE	02
(28B) LANES UNDER THE STRUCTURE	02
(29) AVERAGE DAILY TRAFFIC	12090
(30) YEAR OF AVERAGE DAILY TRAFFIC	2014
(109) AVERAGE DAILY TRUCK TRAFFIC	11
(19) BYPASS DETOUR LENGTH	1

**Geometric Data**

(48) LENGTH OF MAXIMUM SPAN (ft.)	52.0
(49) STRUCTURE LENGTH (ft.)	206.0
(50) CURB/SIDEWALK WIDTHS	
(50A) LEFT CURB SIDEWALK (ft.)	0.5
(50B) RIGHT CURB SIDEWALK (ft.)	0.5
(51) BRDG RDWY WIDTH CURB-TO-CURB (ft.)	40
(52) DECK WIDTH, OUT-TO-OUT (ft.)	43.0
(32) APPROACH ROADWAY WIDTH (ft.)	40
(33) BRIDGE MEDIAN	0 - No median
(34) SKEW (deg.)	19
(35) STRUCTURE FLARED	0 - No flare
(10) INV RTE, MIN VERT CLEARANCE (ft.)	328.05
(47) TOTAL HORIZONTAL CLEARANCE (ft.)	40
(53) VERTICAL CLEARANCE OVER BRIDGE ROADWAY (ft.)	327.76
(54) MIN VERTICAL UNDERCLEARANCE	
(54A) REFERENCE FEATURE	H - Highway beneath structure
(54B) MIN VERTICAL UNDERCLENRECE (ft.)	16.42
(55) MIN LATERAL UNDER CLEARANCE RIGHT	
(55A) REFERENCE FEATURE	H - Highway beneath structure
(55B) MIN LATERAL UNDER CLEARANCE RIGHT (ft.)	11.15
(56) MIN LATERAL UNDER CLEARANCE (ft.)	27.2

**Classification**

(112) NBIS BRIDGE LENGTH	Yes
(104) HIGHWAY SYSTEM OF THE INVENTORY ROUTE	1 - Structure/Route is on NHS
(26) FUNCTIONAL CLASSIFICATION OF INVENTORY ROUTE	01 - Rural - Principal Arterial - Interstate
(100) STRAHNET HIGHWAY DESIGNATION	Is on an Interstate STRAHNET route
(101) PARALLEL STRUCTURE DESIGNATION	R - Right structure (North or East)
(102) DIRECTION OF TRAFFIC	1-way traffic
(103) TEMP STRUCTURE	
(105) FEDERAL LANDS HIGHWAYS	Not Applicable
(110) DESIGNATED NATIONAL NETWORK	Inventory route on National Truck Network
(20) TOLL	3 - On Free Road
(21) MAINTENANCE RESPONSIBILITY	01 - State Highway Agency
(22) OWNER	01 - State Highway Agency
(37) HISTORICAL SIGNIFICANCE	4 - Not determinable

**Condition**

(58) DECK	6 - Satisfactory Condition (minor deterioration)
(59) SUPERSTRUCTURE	6 - Satisfactory Condition (minor deterioration)
(60) SUBSTRUCTURE	5 - Fair Condition (minor section loss)
(61) CHANNEL & CHANNEL PROTECTION	N - Not Applicable
(62) CULVERT	N - Not Applicable

**Load Rating and Posting**

(31) DESIGN LOAD	6 - HS 20+Mod
(63) METHOD USED TO DETERMINE OPERATING RATING	8 - Load and Resistance Factor
(64) OPERATING RATING	2.04
(65) METHOD USED TO DETERMINE INVENTORY RATING	8 - Load and Resistance Factor
(66) INVENTORY RATING	1.57
(70) BRIDGE POSTING	5 - Equal to or above legal
(41) STRUCTURE OPEN/POSTED/CLOSED	A - Open

**Appraisal**

(67) STRUCTURAL EVALUATION	5
(68) DECK GEOMETRY	7
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL	7
(71) WATERWAY ADEQUACY	N - Not Applicable
(72) APPROACH ROADWAY ALIGNMENT	7 - Better than present minimum criteria
(36) TRAFFIC SAFETY FEATURE	
36A) BRIDGE RAILINGS:	1 - Meets acceptable standards
36B) TRANSITIONS:	1 - Meets acceptable standards
36C) APPROACH GUARDRAIL	1 - Meets acceptable standards
36D) APPROACH GUARDRAIL ENDS	1 - Meets acceptable standards
(113) SCOUR CRITICAL BRIDGES	N - Not over waterway

<b>Proposed Improvements</b>
------------------------------

(75) TYPE OF WORK

(75A) TYPE OF WORK PROPOSED

(75B) WORK DONE BY

(76) LENGTH OF STRUCTURE IMPROVEMENT (ft.)

(94) BRIDGE IMPROVEMENT COST (\$K) -2

(95) ROADWAY IMPROVEMENT COST (\$K)

(96) TOTAL PROJECT COST

(97) YEAR OF IMPROVEMENT COST ESTIMATE

(114) FUTURE ADT 16926

(115) YEAR OF FUTURE ADT 2034

<b>Navigation Data</b>
------------------------

(38) NAVIGATION CONTROL N - Not applicable, no waterway

(111) PIER OR ABUTMENT PROTECTION

(39) NAV VERT CLEARANCE 0

(116) MIN NAVIGATION VERT CLEARANCE, VERT LIFT BRIDGE 0

(40) NAV HORIZONTAL CLEARANCE 0

## General Bridge Data

Structure Number: 5969

Structure Name: I-95 NB/EMERSON MILLS RD

Owner: 1 State DOT

Town: Hampden

Co-Owner: N Not applicable

Town2:

Region: 04 Eastern

Maintainer: 1 State DOT

Bridge Plans: ☐

Co-Maintainer: N Not applicable

### Structure Type

#### Main Span

Type: 1 Girder

Sub Type: 1 Deck

Construction: 1 Rolled

Material: 1 Steel

Continuity: 1 Non Continuous

Composite: 0 Unknown

Moveable: 0 No

Deck Area: 8857.86087970 (SF)  
000000

Curb Reveal Lt: 0.59055120000 (in)  
0000

Curb Reveal Rt: 0.58398952000 (in)  
0000

#### Approach Span

Type: \_

Sub Type: \_

Construction: \_

Material: \_

Continuity: \_

Composite: \_

Moveable: \_

### Repairs Done:

#### Year

#### How

1991 Maintenance

2001 Maintenance

#### Scope

Wearing Surface

Substructure Repair



**Substructures**

Shaft	Notes
Abutment 1	
Pier	
Pier	
Pier	
Abutment 2	

Foundation	Notes
Abutment 1	
Pier	
Pier	
Pier	
Abutment 2	

**Roadway**

Road/Route Name	I-95 NORTHBOUND
Abut-Abut Detour	1.0
Corridor Priority	1

## Inspection Notes

Structure Number: 5969

Town: Hampden

Structure Name: I-95 NB/EMERSON MILLS RD

Inspection Date: 09/08/2016

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### Structure Notes

Four span steel open girders. Concrete deck, abutments, piers and wearing surface.

### Wearing Surface

Concrete wearing surface with heavy wear in wheel paths and complete loss of tining in travel lanes. Was not chain dragged do to traffic conditions, but no nested cracking, potholes or delaminated concrete noted.

### Deck

NBI Item 58: 6

Scattered delamination of underside of deck including one spall (photo). All the joints have minor or past leakage but four appear to be in relatively good condition. Seal over easterly pier is failing & leaking, joint armor has minor steel damage. This effectively leaking joint seal has lead to most, if not all of the haunch spalling and now sitting on the pier cap below. May be very little support for deck in this area. All of the aluminum posts have plow damage ranging from minor to having only one anchor bolt and heavy damage. . Concrete portion of railing has scattered light map cracking. All four end posts have minor to moderate map cracking w/staining.

### Superstructure

NBI Item 59: 6

Approximately 15% overall paint system distress with sheet failure at south exterior girders, minor paint system distress on the interior girders. The last 1'-2' of each girder has paint loss and scaling rust from previous or currently leaking joints. Some section loss of bottom flange (photo). The bearings at the westerly abutment have multiple missing anchor bolts, bearing and masonry plates are misaligned for at least half.

### Substructure

NBI Item 60: 5

Concrete columns have minor to moderate, vertical and map, cracking and staining with small areas of delamination . Pier cap cracking, delaminating and spalling on the center and easterly piers. Abutment backwalls have isolated minor cracking, moderate to heavy horizontal cracking and staining of bridge seats scattered throughout. Wingwalls all generally covered with map cracking/staining.

### Culvert

NBI Item 62: N

Channel

NBI Item 61: N

Other

Special Inspection

Monitoring

Pontis Notes

Inspector: Scott Harris  
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Structure Number: 5969  
 Facility Carried: I-95  
 NORTHBOUND

### Highway Bridge Inspection Report

### Element Inspection

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
<b>12 - Reinforced Concrete Deck</b>	4 - Sev.	8879	sq. ft.	0	8839	40	
<b>107 - Steel Open Girder/Beam</b>	3 - Mod.	1236	ft.	636	400	200	
515 - Steel Protective Coating		1236	sq. ft.	0	836	400	
<b>205 - Reinforced Concrete Column</b>	3 - Mod.	12	each	6	6		
<b>215 - Reinforced Concrete Abutment</b>	3 - Mod.	86	ft.	0	74	12	
<b>234 - Reinforced Concrete Pier Cap</b>	3 - Mod.	130	ft.	84	40	6	
<b>302 - Compression Joint Seal</b>	4 - Sev.	216	ft.	0	216		
<b>311 - Movable Bearing</b>	3 - Mod.	24	each	0	6	18	
515 - Steel Protective Coating		24	sq. ft.	0		24	
<b>313 - Fixed Bearing</b>	3 - Mod.	24	each	0	6	18	
515 - Steel Protective Coating		24	sq. ft.	0		24	
<b>331 - Reinforced Concrete Bridge Railing</b>	4 - Sev.	412	ft.	0		412	
<b>801 - Beam End</b>	3 - Mod.	12	each	0	6	6	
<b>820 - Reinforced Concrete Wall</b>	3 - Mod.	25	ft.	0	13	12	
<b>843 - Rigid Wearing Surface</b>	4 - Sev.	8198	sq. ft.	0	8198		
<b>855 - Slope Protection - Concrete</b>	3 - Mod.	3000	sq. ft.	0	3000		
<b>861 - Beam End – Protective Coating</b>	3 - Mod.	12	each	0		12	
<b>862 - Beam End – Preventative Coating</b>	3 - Mod.	12	each	0		12	

## Underwater Dive Inspection Report

**Structure Number:** 5969

**Town 1:** 19280 - Hampden

**Division:** Bangor

**Location:** MILE 179.2/4.5 MILE E TL

**Tide Information:**

**Dive Entry Location:**

**Scour:**

**Comments/Hazards:**

**Bridge Name:** I-95 NB/EMERSON MILLS RD

**Town 2:**

**DiveID:** 4232

☐ Tidal:

**Photos:**

**Streambed Description:**

**Channel Description:**

**Substructure Description:**

**Inspection Team:**

**Role:**

**Dive Conditions:**

Time: Entry: AM/PM

Time: Exit: AM/PM

Water Temp:

Visibility (ft):

Max Depth (ft):

Current:

Weather:

Underwater Inspection Date:

Channel Condition:

Substr/Culvert Condition:

Inspection Cycle:

**Ratings Comments:**

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### Highway Bridge Inspection Report

#### Pictures



PHOTO 1

Description Roadway looking south



PHOTO 2

Description North joint

**Inspector:** Scott Harris  
**Inspection Date:** 09/08/2016

**Structure Number:** 5969  
**Facility Carried:** I-95  
NORTHBOUND

### Highway Bridge Inspection Report

#### Pictures



PHOTO 3

Description    Wearing surface view



PHOTO 4

Description    Scaling rail end post



Inspector: Scott Harris  
Inspection Date: 09/08/2016

Structure Number: 5969  
Facility Carried: I-95  
NORTHBOUND

### Highway Bridge Inspection Report

#### Pictures



PHOTO 5

Description

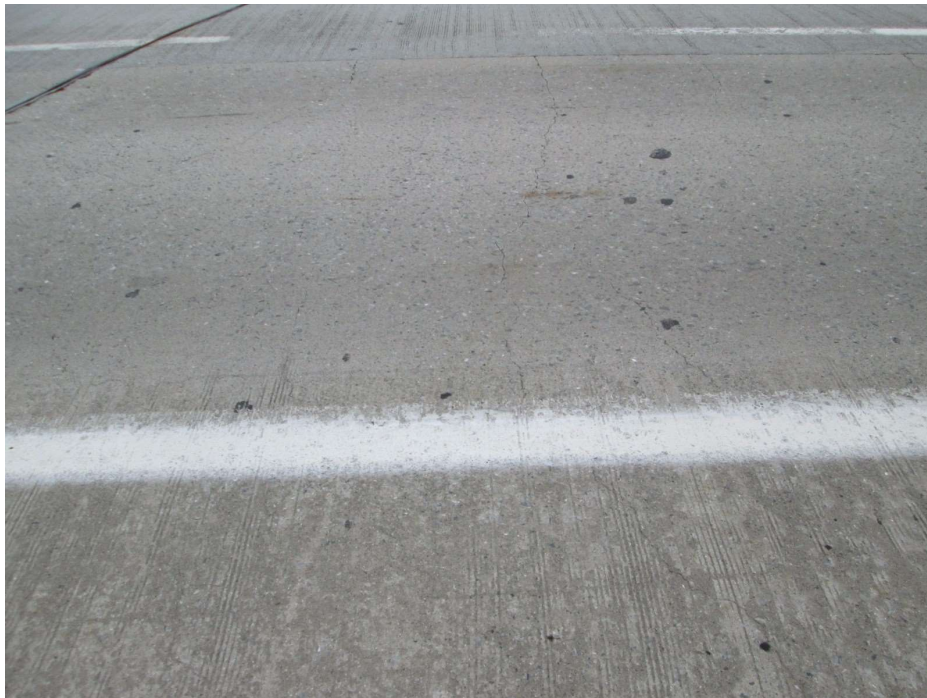


PHOTO 6

Description      Wearing surface view



**Inspector:** Scott Harris  
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NORTHBOUND

### Highway Bridge Inspection Report

#### Pictures



PHOTO 7

Description Failing joint seal & damaged armor over pier

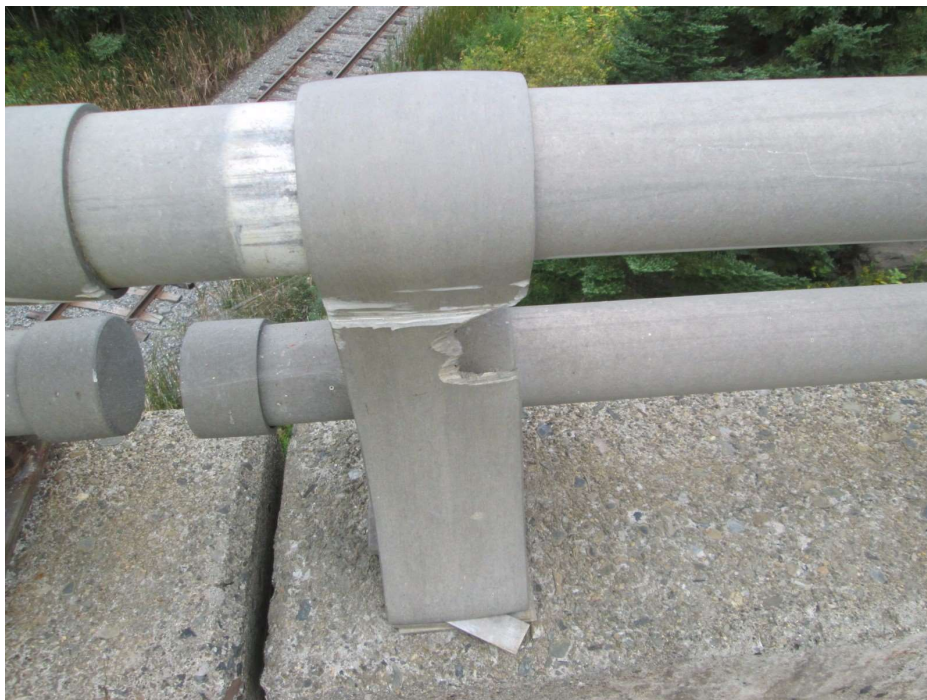


PHOTO 8

Description Damaged rail post

Inspector: Scott Harris  
Inspection Date: 09/08/2016

Structure Number: 5969  
Facility Carried: I-95  
NORTHBOUND

### Highway Bridge Inspection Report

#### Pictures



PHOTO 9

Description Damaged rail post



PHOTO 10

Description South end joint



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### Highway Bridge Inspection Report

#### Pictures



PHOTO 11

Description Missing anchor bolt at SE abutment bearing



PHOTO 12

Description south abutment

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NORTHBOUND

### Highway Bridge Inspection Report

#### Pictures



PHOTO 13

Description Interior bearing deterioration & missing anchor bolt



PHOTO 14

Description pier view south face



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### Highway Bridge Inspection Report

## Pictures



PHOTO 15

Description South span view



PHOTO 16

Description Spall with exposed re-steel pier cap top & bottom

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### Highway Bridge Inspection Report

## Pictures



PHOTO 17

Description



PHOTO 18

Description pier beam ends



**Inspector:** Scott Harris  
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NORTHBOUND

### Highway Bridge Inspection Report

#### Pictures



PHOTO 19

Description north pier



PHOTO 20

Description West side view

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NORTHBOUND

### Highway Bridge Inspection Report

## Pictures



PHOTO 21

Description Deteriorated pier beam ends



PHOTO 22

Description north pier



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NORTHBOUND

### Highway Bridge Inspection Report

## Pictures



PHOTO 23

Description span view



PHOTO 24

Description North abutment

Inspector: Scott Harris  
Inspection Date: 09/08/2016

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Facility Carried: I-95  
NORTHBOUND

### Highway Bridge Inspection Report

#### Pictures



PHOTO 25

Description Staining backwall and bridge seat north end



PHOTO 26

Description Cracking & staining fascia at north joint

### Maintenance Work Items

**Structure Number:** 5969  
**Town:** 19280

**Structure Name:** I-95 NB/EMERSON MILLS RD  
**Owner:** Harris, Scott

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Type	Work Item	Priority	Notes
Safety	Repair Bridge Rail		Repair damaged rail posts
Maintenance	Rehab Substructure		Pier rehab as needed
Preservation	Paint		Future paint job
Maintenance	Reset Bearings		Replace missing anchor bolts rehab

## MaineDOT NBIS Bridge Safety Inspection JSA

Inspector: Harris, Scott

Structure Number: 5969

Inspection Date: 09/08/2016

Structure Name: I-95 NB/EMERSON MILLS RD

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**Team Leader:** Scott B. Harris

**Additional Team Members/Visitors:**

- 1.)
- 2.)
- 3.)
- 4.)
- 5.)
- 6.)
- 7.)
- 8.)
- 9.)

**Job being performed:**

Bridge safety inspection

**Hazard:**

- ☒ Exposure to traffic

**Control:**

- ☒ Parked off road with strobe
- ☒ Less than 1 hour on bridge
- ☒ Wear standard reflective clothing and hard hat
- ☐ Spotter
- ☐ Traffic Control Crew

**Hazard:**

- ☒ Steep slopes and uneven working areas (rip rap, mud, loose fill, etc)

**Control:**

- ☒ Wear appropriate, prudent footwear
- ☐ Rope or fall protection

**Hazard:**

- ☒ Chipped Concrete or Steel (hand tools only)

**Control:**

- ☒ Wear appropriate, prudent eye/hand protection

**Hazard:**

- ☒ 6' Vertical drops

**Control:**

- ☒ Stay away from areas

**Hazard:**

☐ Water Hazards

**Control:**

☐ Evaluate conditions. Wear appropriate, prudent PPE

**Hazard:**

☐ Insects, Poison Ivy, or other environmental hazards

**Control:**

☐ Apply insect repellent and/or sunscreen

☐ Protect skin with appropriate, prudent clothing

**Hazard:**

☒ Lead paint and Avian excrement

**Control:**

☒ Wear gloves, do not scrape

**Hazard:**

☐ Heavy Manual Lifting

**Control:**

☐ Ask for assistance in donning dive gear, lifting equipment

**Hazard:**

☐ DCS, Lung Expansion

**Control:**

☐ Ascend slowly, use computers, Safety Stops (15' mark for 3 min.)

**Hazard:**

☐ Entanglement U/W

**Control:**

☐ Use knife, Comm gear

**Hazard:**

☐ Boat Traffic

**Control:**

☐ Fly Dive Flag, use spotter, contact bridge on Chan. 13

**Hazard:**

☐ Cold Water

**Control:**

☐ Use adequate dry suit underwear for water temperature

**Hazard:**☐ Live Boating**Control:**☐ Keep track of divers, avoid powering during drop-off/pick-up**Other Hazards****Other Controls****Safety Equipment Required:**☒ Hard hat☒ Vest☒ Glasses☒ Gloves☐ PFD☐ Rain Gear☐ Bug Spray☐ Sunscreen☐ First Aid☐ O2☐ AED☐ Comm Gear☐ Cell Phone**Other Safety Equipment:****Emergency Action Plan:**☒ Call 911☒ First Aid Kit☐ Fall Rescue Plan☐ Water Rescue Plan☐ Dan 1-919-684-9111☐ USCG 741-5465**Other Emergency Action Plan:**

I certify that the MaineDOT NBIS Bridge Safety Inspection JSA has been completed according to all proper procedures required by the Maine Department of Transportation.

☒ Complete

Scott B. Harris