

# **BRIDGE NO. 04805**

78600 - VOLUNTOWN FORGE HILL ROAD over PACHAUG RIVER

Routine Inspection 8/05/2020

Inspected by: Team 4



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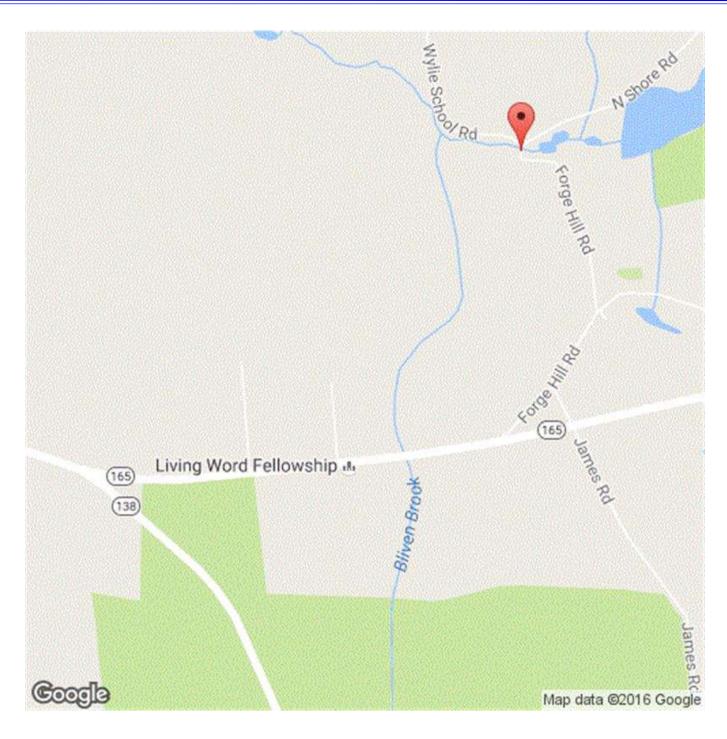
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Form: Location

Inspection type: Routine Inspection Date: 8/05/2020 Inspected by: Team 4

:Bridge No 04805

Town: VOLUNTOWN



Location Map # 1

# **In-Depth Components**

Bridge: 04805

Town: 78600 - VOLUNTOWN



Carried: FORGE HILL ROAD

Crossed: PACHAUG RIVER

In-Depth - 1

Component: Concrete Superstructure

Comments:

Reinforced concrete Slab.

Access

Requirements:

Waders.

Last Inspected:

08/16/2020

Frequency: 24

Inspection Due Date:

08/16/2022

:Bridge No 04805

Town: VOLUNTOWN
Carried: FORGE HILL ROAD
Crossed: PACHAUG RIVER
Inventory Route: Non-NHS

# **STRUCTURE INVENTORY & APPRAISAL**

INSPECTION	STRUCTURE TYPE & MATERIALS
Structurally Deficient N Functionally Obsolete Y	(43) Structure Type, Main
Sufficiency Rating 60.6	A) Material 1 - Concrete
(90) Inspection Date 08/05/2020 (91) Frequency 24	B) Design Type 01 - Slab
Indepth Insp No Proposed next Indepth Year	(44) Structure Type, Approach
Deck Survey Date 1/1/1900 Class 01	A) Material 0 - Other
Access 0 - None Flagman 0	B) Design Type 00 - Other
Frequency Date Type	(45) Number of Spans, Main Unit 001
Fracture	(46) Number of Approach Spans 0000
Underwater	(107) Deck Structure Type 1 - Concrete Cast-in-Place
Special	(108) Wearing Surface/Protection Systems
——— IDENTIFICATION ————	A) Type of Wearing Surface 6 - Bituminous
Bridge Name 04805	
Town Code - Name 78600 - VOLUNTOWN	B) Type of Membrane 0 - None
(5) Inventory Route	C) Type of Deck Protection 0 - None
(A) Record Type 1: Route carried "on" the structure	Substructure
(B) Signing Prefix 5 - CITY STREET	A) Material 2 - CONCRETE
(C) Level of Service 0 - NONE OF THE BELOW	B) Design Type 1 - FULL HEIGHT STEM
(D) Route Number. 00000	Paint
(E) Dir Suffix 0 - NOT APPLICABLE	Туре
(6A) Featured Intersected PACHAUG RIVER	Year
(6B) Critical Facility Indicator	Comment
(7) Facility Carried FORGE HILL ROAD	———— GEOMETRIC DATA ————
(9) Location 0.6 MI NORTH OF ROUTE 165	(48) Length of Maximum Span 20 ft.
(11) Mile Post 0.1 Miles	(49) Structure Length 22 ft.
(16) Latitude 41 Deg. 34 Min. 51.88 Sec.	(50) Curb or Sidewalk Widths
(17) Longitude -71 Deg. 49 Min. 14.53 Sec.	A) Left 0 ft. 6 in. B) Right 0 ft. 6 in.
(98) Border Bridge	(51) Bridge Roadway Width Curb to Curb 20 ft. 2 in.
(A) State Code (B) Percent Responsibility %	(52) Deck Width, Out to Out 23 ft. 6 in.
(C) Border Town Name	(32) Approach Roadway Width 17 ft.
(99) Border Bridge Structure No.	(1)

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(33) Bridge Median	0 - No median	AGE AND SERVICE
Deck Area	sq. ft.	Year Built 1920 (106) Year Reconstructed 0000
(34) Skew Angle	00 deg.	(42) Type of Service
(35) Structure Flared	0 - No flare	A) On 1 - Highway
(10) Inv. Rte. Min. Vert. Clea	arance 99 ft. 99 in.	B) Under 5 - Waterway
(47) Inv. Rte. Total Horiz. Cl	Ir. 20 ft. 2 in.	(28) Number of Lanes
Log Inv. Rte. Total Hori	z. Clr. 20 ft. 2 in.	A) On 02 B) Under 00
RLog Inv. Rte. Total Ho	oriz. Clr. 0 ft. 0 in.	(29) Average Daily Traffic 463
(53) Min. Vert. Clearence O	ver Bridge 99 ft. 99 in.	Is Above Half ADT?
(54) Log-Min. Vert. Undercle	earance N ref. 0 ft. 0 in.	(109) Precent Truck 7 %
(55) Min. Lat Underclearance	e on Right N ref. 0 ft. 0 in.	(30) Years of ADT 2020
(56) Min. Lat Underclearance	te on Left 0 ft. 0 in.	(19) Bypass, Detour Length 6 Miles
	CONDITION —————	APPRAISALS
(58) Deck	5	(67) Structural Evaluation 5
(59) Superstructure	5	(68) Deck Geometry 3
(60) Substructure	5	(69) Underclearances, Vert. & Horiz.
(61) Channel & Channel Pro	otections 6	(71) Waterway Adequacy 5
(62) Culverts	N	(72) Approach Roadway Alignment 3
(36) Traffic Safety Features		(113) Scour Critical 5
A) Bridge Railing	s 0	COMMENTS
B) Transitions	0	
C) Approach Gua	ardrail 0	
D) Approach Gua	ardrail Ends 0	
	WATERWAY	CLASSIFICATION ————————————————————————————————————
Drainage Basin Waterway	3699	(112) NBIS Bridge Length Yes
(38) Navigation Control	0 - No navigation control on waterway (bridge permit not required)	(104) Highway System 0 - Structure/Route is NOT on NHS
(39) Navigation Vertical Cle	earance 0 ft.	(26) Functional Class 09 - Rural - Local
(40) Navigation Horiz. Clr.	O ft.	(100) Defense Highway 0 - Not a STRAHNET route
(111) Pier/Abutment Naviga	ation	(101) Parallel Structure N - No parallel structure
(116) Vert-Lift Brg Nav Min	0 ft. 0 In.	(102) Direction of Traffic 2 - 2-way traffic

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(103) Temporary Stru	ıcture			PROPOSE	ED IMPROVEMENTS ————
(110) Designated Nat Network	tional 0 - Inven	ntory route not on networ	rk	(75A) Type of Work Proposed	
(20) Toll	3 - On F	ree Road		(75B) Work Done By	
(21) Maintain		vn or Township Highway	Agency	(76) Length of Structure Impro	vement ft.
(22) Owner		vn or Township Highway		(94) Bridge Improvement Cost	\$
			Agency	(95) Roadway Improvement C	ost \$
Report Class	L - LOC			(96) Total Project Cost	\$
(37) Historical Signific		eligible for National Regis	ster	(97) Year of Improvement Esti	
Other Destant Cine 4	— POSTED S			(114) Future ADT	688
Other Posted Sign 1		0 - Blank		(115) Year of Future ADT	2040
Other Posted Sign 2		0 - Blank	1	DOT Bridge Program List No	
Posted Load Single U	_	Actual Recomende	ea   tons	Project No	
Posted Load Semi-Tr			tons	Advertised Date	
Posted Load 4 Axle T	ruck [		tons		ATING & POSTING —
Posted Load 3S2 Tru	ıck		tons	(31) Design Load	0 - Unknown
All Vehicles			tons	(63) Operating Rating Type	0 - Field evaluation and documented engineering judgment
Posted Vert. Clearan	ce on Bridge	ft. in.		(64) Operating Rating	47
Posted Vert. Underclo	earance [	ftin.		(65) Inventory Rating Type	0 - Field evaluation and documented engineering judgment
Posted Speed Limit of	on Bridge [	m.p.h.		(66) Inventory Rating	36
	- OTHER FEA	TURES ———		Evaluation Code	E - Evaluated
Fence Required	No			Year of Evaluation	2019
Fence Present	No			(70) Bridge Posting	5 - Equal to or above legal loads
Fence Type	Blank			(41) Structure Status	A - Open
Fence Height					
Fence Material	Blank				
Fence Top Type	Blank				
Barrel Ladders	No				
Stand Pipes	No				
Catwalks	No				
Moveable Inspection	System	No			
Haunches Present ov	er Roadway				
Utilities	N   No Utilities p	present			

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Town: VOLUNTOWN
Carried: FORGE HILL ROAD
Crossed: PACHAUG RIVER
Inventory Route: Non-NHS

#### **INSPECTOR'S SIGNATURES:**

1)	Mike Holding	Date: 08/06/2020	P.E. SIGNATURE:		Date:
2)	11111	Date: 08/06/2020	P.E. #		_
	Jackeny Latina	<u> </u>	Reviewed By:		Date: 08/06/2020
3)		Date:		William Freem A. William Freeman, Jr.	_
4)		 Date:			

:Bridge No 04805

Town: VOLUNTOWN
Carried: FORGE HILL ROAD
Crossed: PACHAUG RIVER
Inventory Route: Non-NHS

# FIELD INSPECTION REPORT

Location:	0.6 MI NORTH	OF ROUTE 165	Year Built:	1920		Snoope	er Required:	
Main Material:	1 - Concrete		Year Rebuilt	0000		Snoope	er Used:	
Main Design:	01 - Slab							
Inspectors:	r:		el Holdridge		Visits: Visit Date: 08/05/2020	Temp:	Start Time: 08:35 AM	End Time: 10:15 AM
Inspector:	EII:	Task:			- 00/03/2020		00.33 AW	10.13 AIVI
Freeman Jr.,W Holdridge,Mich		BSE -	nspector		_			
LaLima,Zacha			nspector		_			
Lacima, Zacma	ı y	DOL 1	Поресто		_			
58. DECK:	inforced concrete	slab (Element #	± 38)				(	Overall Rating: 5
Lo	g direction south	to north.						
	<u>Rating</u>							
Deck -	Overlay: 4  Str. Condition: 5	Bituminous con -Transverse, lo -Delaminated a -Vegetation gro -Full width transpatched areas. South deck end -Large bitumino -Large surface North deck end -± 20 SF patch See attached si -Top of Reinford	ngitudinal and rolling both curb owth along curb sverse cracks and the curb patched are spall 26 in. x 1 to the curb area (settled ketch.	random cra lines full le lines. It deck end eas with he 3 in. x 2½	ngth up to 8 s open up to aved and se in with exposin.) with adjace	feet wide  1 in. with  ttled area ed deck.	adjacent bitu	uminous breaking up and
Book		-Deck is integral -Large surface -Large areas of -Longitudinal cr -See item 59 (g -± 29% total de -See attached s	al with Superstrong spall with exposing delaminated be racking with effluirders) for under the deterioration	ucture . sed concre ituminous i orescence erside.	ite at the sout	h deck e	, , ,	
				_				

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Curbs: 6	Concrete: -Isolated areas of severe scale areas up to 1 in. deep.	
	-Sand and debris covered.	
	-Vegetation growth along curblines.	
	-Southbound curb reveal is 4½ inches taken midspan.	
	-Northbound curb reveal is 5 inches taken midspan.	
Median: N		
Sidewalks: N		
Parapet: 7	Concrete railbase: -Areas of light scale.	
	-Random hairline cracks.	
Railing: 7	Angle iron rail and posts: -Areas of light rust throughout.	
	-Areas of peeling paint.	
Paint: N		
Fence: N		
Drains: N		
Lighting Standard: N		
Overall Utility Condition Rating Utility Type/Size	N - Not Applicable	
	Itilities present	
Construction Joints: N		
	No formal joints at deck ends.	
Haunches Present over travely		
APPROACH CONDITION:		
	Overall Rating: 5	
Rating		
Approach Slab: N		
Relief Joints: N		
Approach Guide Rail: 5	Metal beam rail on steel posts: -Minor scrapes and dents.	
	Southbound trailing end: -(1) Section bent MBR(1) Bent post.	
Approach Pavement: 5	Bituminous concrete approach wearing surface: Transverse, longitudinal and random cracks open up to 1 inch.	
	Rituminaus patches with adjacent hituminaus breaking up	
	-Bituminous patches with adjacent bituminous breaking up.	

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	-Raveling.
	-Settlement on the north approach up to ± ¾ inch.
Approach Embankment: 8	
Trafic Safety F	<u>Features</u>
Bridge Railings: 0	
Transitions: 0	
Approach Guardrails: 0	
Approach Guardrail Ends: 0	
59. SUPERSTRUCTURE:	
Reinforced concrete	e slab (Element 38) Overall Rating: 5
Rating	
Bearing Devices: N	
Stringers: N	
Girders: 5	Reinforced concrete slab: -Longitudinal, diagonal and map cracks cracks open hairline to 1/16 inch with and without efflorescenceStalactites with active leakage along both deck edges (full length)Inlet side deck edge (vertical face) at abutment #1, hollow area 24 in. long x 6 in. high. Also,horizontal and diagonal hairline cracks with efflorescence (full length)large surface spall (26 in x 16 in. x 2½ in. deep) with exposed rebar that have heavy laminar rust with 50% section loss near the centerline of deck adjacent to abutment #1, -Patched area (30 in. X 50 in.) near the centerline of deck adjacent to abutment #2,patch is hollow and has cracks open up to 1/8 inOutlet side edge of deck underside, hollow area (full length x up to 24 in. wide). Hollow area extends up vertical face (up to 14 in. high)Outside face of slab has horizontal and diagonal cracks full length with efflorescence open up to .030 in.
	-See attached sketch.
Floor Beams: N	
Trusses - General: N	
Trusses - Portals: N	
Trusses - Bracing: N	
Paint: N	
Rust: N	
Machinery Movable Span: N	
Rivets & Bolts: N	
Welds - Cracks: N	
Timber Decay: N	
Concrete Cracking: 5	See above items.
Collision Damage: 8	

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Crossed: PACHAUG RIVER Inventory Route: Non-NHS

1 7	-
Member Alignment: 8	
Deflection Under Load: N	
Vibration Under Load: N	
Stand Pipes: N	
Catwalks:	
Movable Inspection System:	
Barrel Ladders: N	
Are	e Barrel Ladders OSHA Compliant? NA
60. SUBSTRUCTURE:	
Reinforced concrete	e abutments and wingwalls (Element # 215)  Overall Rating: 5
<u>Rating</u>	
Abutments - Stem: 5	Reinforced concrete: -Horizontal, vertical and diagonal cracks open from hairline to .070 inch with and without efflorescenceGap between bottom of deck and top of abutments, up to 3/8 in. in random areas (appears to be an as built condition).
	-Light to medium scale at and below the waterline up to 24 inches high.
	-Large hollow areas.
	-See attached sketch.
Abutments - Backwall: N	
Abutments - Footings: N	Not visible.
Abutments - Settlement: 8	
Abutments - Wingwalls: 5	Reinforced concrete: -Light to medium scale at and below the waterline up to 24 inches highMap hairline cracks open up to .050 inch with and without efflorescence on all wingwalls.
	-Overburden (earth build up) on top of all wingwalls.
	Wingwall 1B: -Hollow area, 8 square feetSevere scale area and heavy efflorescence at the top, 4 ft. long x 4 in. deep x full width.
	Wingwall 2A: -Free end has an area of severe scale / spall 2 square feet X 2 in. deepHollow area at top, 12 square feet.
	Wingwall 2B: -Hollow area adjacent to abutment, 20 square feet.
Piers/Bents - Caps: N	
Piers/Bents - Pile Bent: N	
Piers/Bents - Columns: N	
Piers/Bents - Footings: N	
Piers/Bents - Settlement: N	
Erosion - Scour: 8	
Concrete Crack - Spall: 5	See above items.

Form: BRI-18, Rev. 1/14
Inspection type: Routine
Inspection Date: 8/05/2020

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Inspected by: Team 4	Inventory Route: Non-NHS
Steel Corrosion: N	
Paint: N	
Timber Decay: N	
Collision Damage: 8	
Debris: N	
61. CHANNEL AND CHANNE	I PROTECTION:
	Overall Rating: 6
Rating	
Channel - Scour: 8	
Embankment - Erosion: 7	-Minor embankment undercutting upstream and downstream.
Debris: 6	-Encroachment at upstream end along wingwall 1B that slightly impacts flow.
Vegetation: 7	-Moderate to heavy vegetation upstream and downstream.
r ogetalletti 1	woderate to fleavy vegetation aposteam and downstream.
	-Trees and limbs overhang channel.
Channel Change: 6	-Encroachment at upstream end along wingwall 1B that slightly impacts flow.
Fender - System: N	
Spur Dikes and Jetties: N	
Rip Rap: N	
62. CULVERTS AND RETAIN	ING WALLS:
	Overall Rating: N
Rating	
Barrel: N	
Concrete: N	
Steel: N	
Timber: N	
Headwall: N	
Cutoff Wall: N	
Debris: N	
Retaining Wall System: N	
Footing: N	
LOAD POSTING:	
Rating Single Unit (Tons):	
Semi Trailer (Tons):	
` ′	
4 Axle (Tons):	
3S2 (Tons):	
All Vechicles:	
Advanced Warning: N	
Warning At Bridge:	
Legibility: N	
Visibility: N	

:Bridge No 04805

VERTICAL (	CLEARANCE	E POSTIN	<u>vg</u>	
Min. Vert Under (	Clearance:	Ft	Ir	
Posted Clearence Und	der Bridge:	Ft	Ir	
Posted Clearence	On Bridge:	Ft	Ir	
Advanced Warning:	False			
Warning At Bridge:				
Legibility:				
Visibility:				
NOTES / COMMENTS:				
Character of Traffic:	Light volume	e, mixed v	weights.	
	Inventory / lo	og direction	on south t	o north.
Additional Notes:				
Bridge ID in Place				
Additional Comments:				
Town Letter Submitted - bord No Pending Project	derline poor b	oridge due	e to slab c	leterioration

National Bridge Elements Inspection type: Routine Inspection Date: 8/05/2020

Inspected by: Team 4

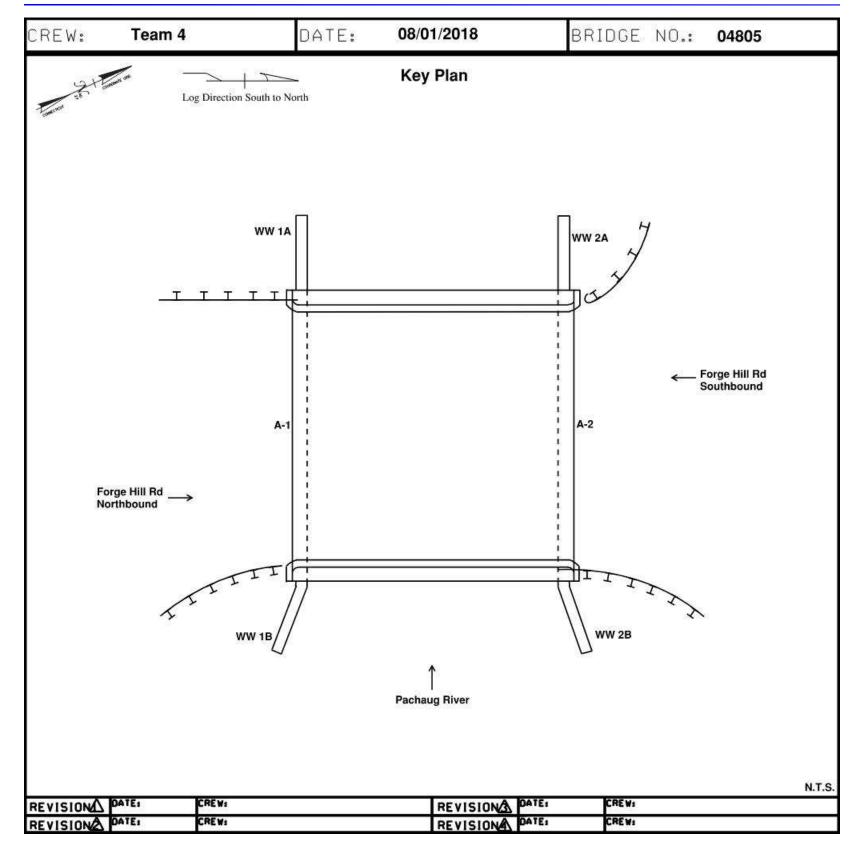
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	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
38 - Reinforced Concrete Slab	Mod.	517	sq. ft.	250	77	190	0
1080 - Delamination/Spall/Patched Area		74		0	74	0	0
1090 - Exposed Rebar		3		0	3	0	0
1120 - Efflorescence/Rust Staining		110		0	0	110	0
1130 - Cracking (RC and Other)		80		0	0	80	0
510 - Wearing Surfaces		444	sq. ft.	32	350	62	0
3210 - Delamination/Spall/Patched Area/Pothole (Wearing Surfaces)		352		0	350	2	0
3220 - Crack (Wearing Surface)		60		0	0	60	0
215 - Reinforced Concrete Abutment	Mod.	47	ft.	0	0	47	0
1080 - Delamination/Spall/Patched Area		10		0	0	10	0
1130 - Cracking (RC and Other)		37		0	0	37	0
330 - Metal Bridge Railing	Mod.	44	ft.	0	44	0	0
1000 - Corrosion		44		0	44	0	0
515 - Steel Protective Coating		64	sq. ft.	20	44	0	0

Inspection type: Routine Inspection Date: 8/05/2020 Inspected by: Team 4

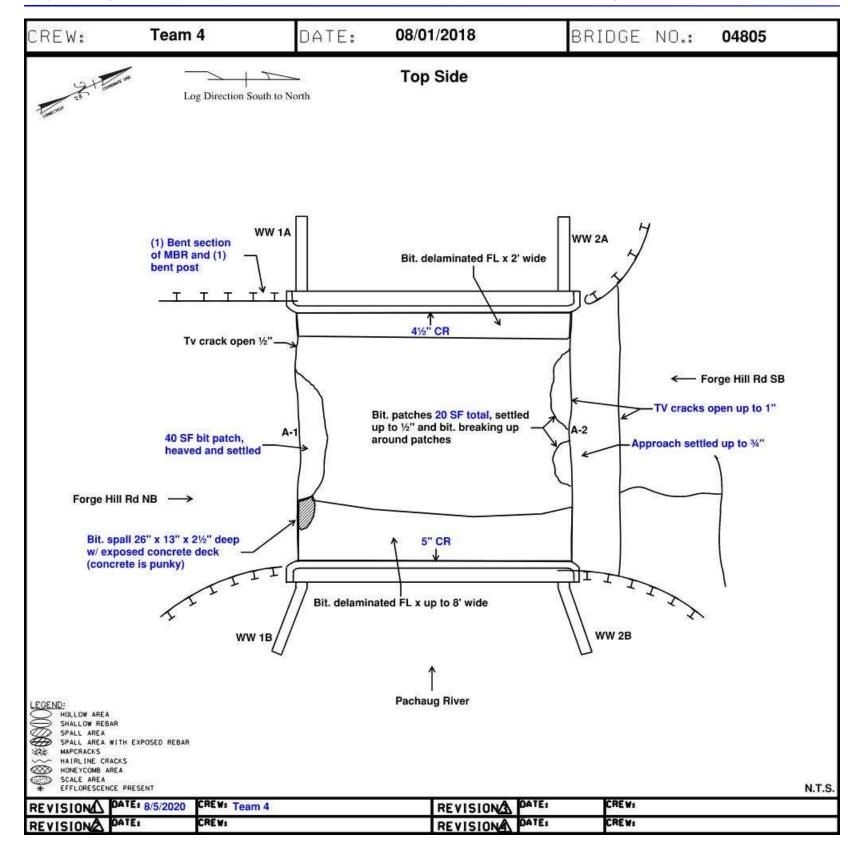
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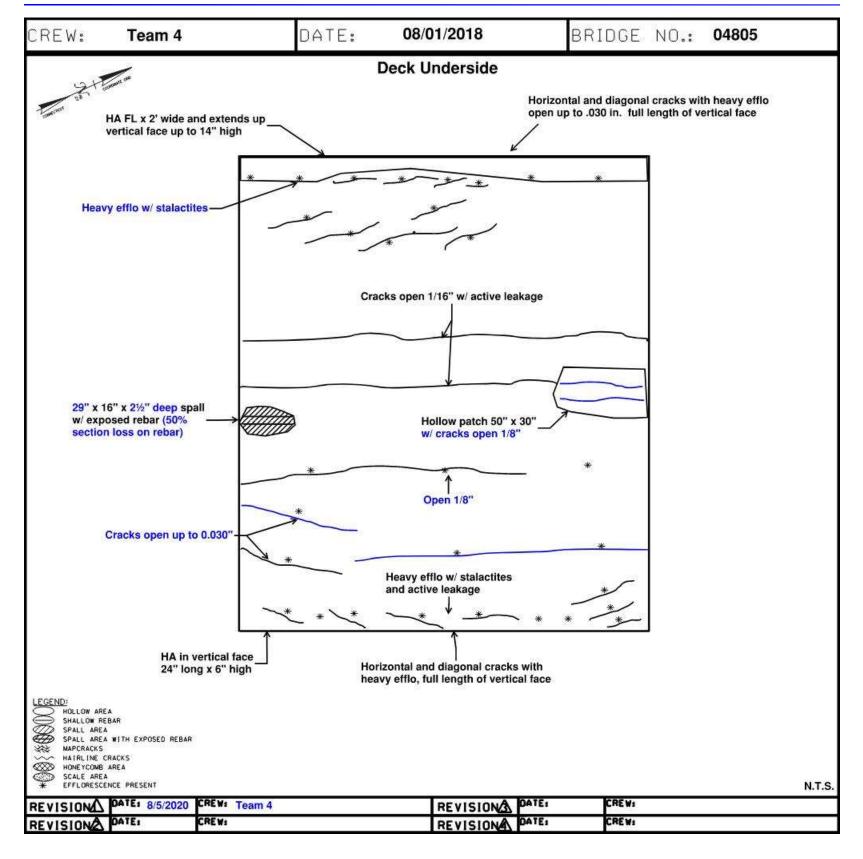
Town: VOLUNTOWN



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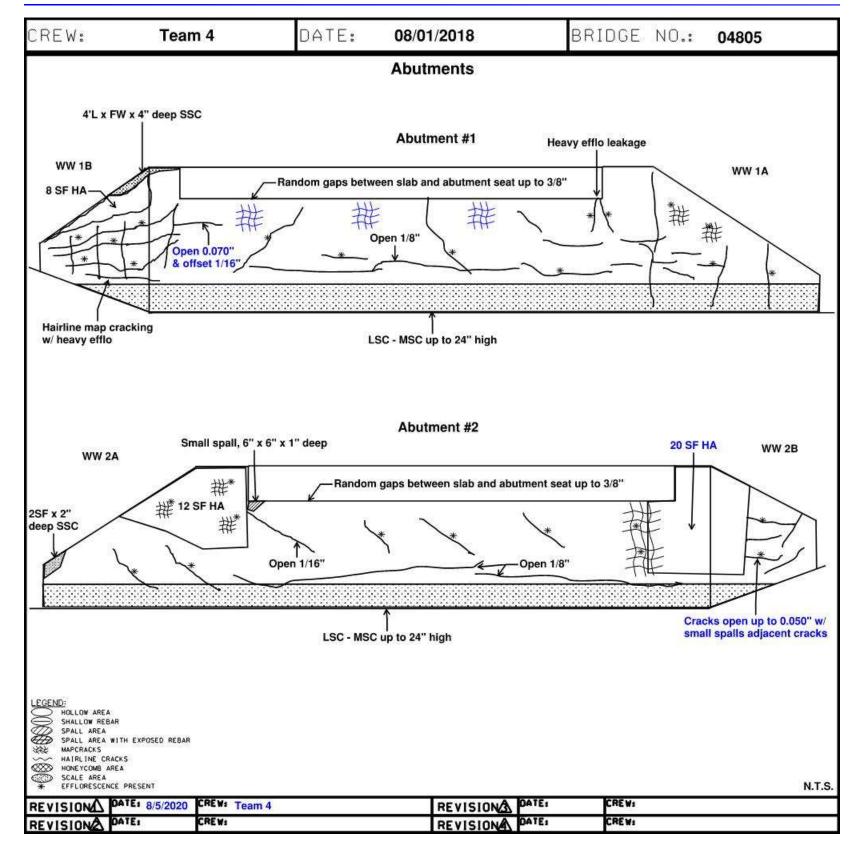
Town: VOLUNTOWN



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:Bridge No 04805

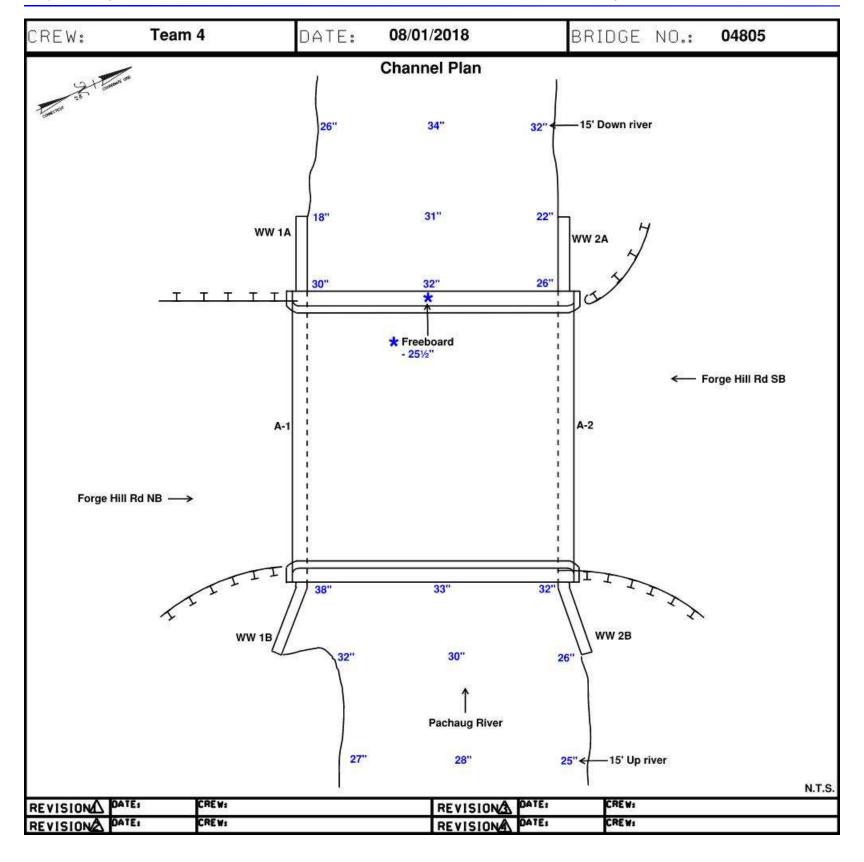
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Photo Number: 1 Photo Taken: 08/05/2020



Photo Number: 2 Photo Taken: 08/05/2020 View southbound.

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Photo Number: 3 Photo Taken: 08/05/2020



Photo Number: 4 Photo Taken: 08/05/2020 Southbound railbase and rail.

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Photo Number: 5 Photo Taken: 08/05/2020

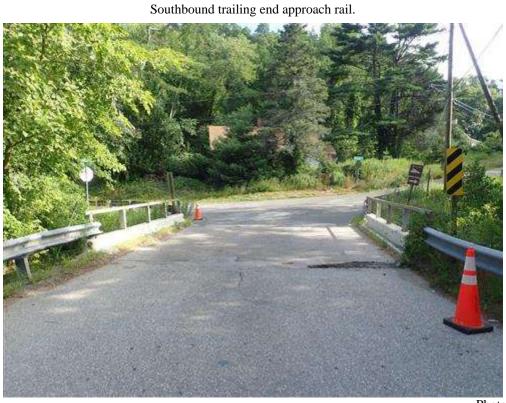


Photo Number: 6 Photo Taken: 08/05/2020 View northbound,.

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Photo Number: 7 Photo Taken: 08/05/2020



Photo Number: 8 Photo Taken: 08/05/2020 Southbound railbase and rail.

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Photo Number: 9 Photo Taken: 08/05/2020



Photo Number: 10 Photo Taken: 08/05/2020 South deck end.

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Photo Number: 11 Photo Taken: 08/05/2020



Photo Number: 12 Photo Taken: 08/05/2020 North deck end.

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Photo Number: 13 Photo Taken: 08/05/2020

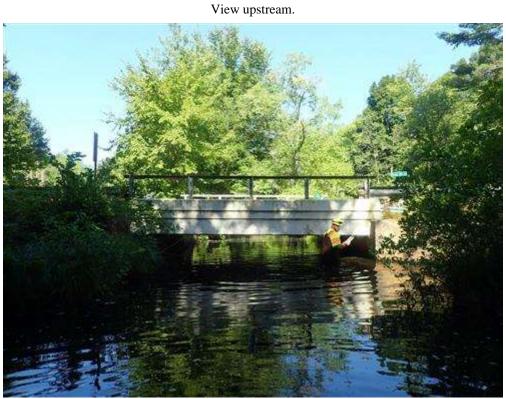


Photo Number: 14 Photo Taken: 08/05/2020 Inlet elevation.

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Town: VOLUNTOWN

Carried: FORGE HILL ROAD
Crossed: PACHAUG RIVER
Inventory Route: Non-NHS



Photo Number: 15 Photo Taken: 08/05/2020





Photo Number: 16 Photo Taken: 08/05/2020

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Photo Number: 17 Photo Taken: 08/05/2020

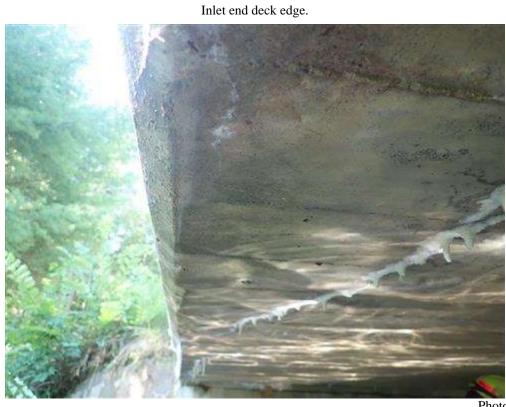


Photo Number: 18 Photo Taken: 08/05/2020

View of cracking on deck underside at the inlet end.

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Photo Number: 19 Photo Taken: 08/05/2020

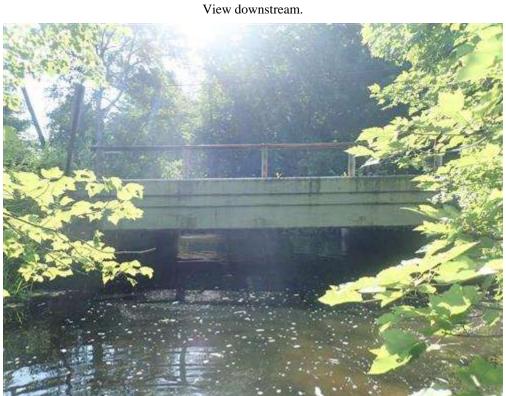


Photo Number: 20 Photo Taken: 08/05/2020 Outlet elevation.

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Photo Number: 21 Photo Taken: 08/05/2020



Photo Number: 22 Photo Taken: 08/05/2020 Wingwall 2A.

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Photo Number: 23 Photo Taken: 08/05/2020

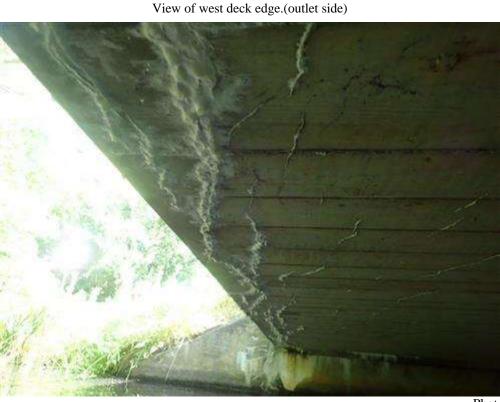


Photo Number: 24 Photo Taken: 08/05/2020 View of cracking on deck underside at the outlet end.

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Photo Number: 25 Photo Taken: 08/05/2020



Typical longitudinal cracks with efflorescence at random locations.

Photo Number: 26 Photo Taken: 08/05/2020 Large surface spall with exposed rebar midspan at A-1.

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Photo Number: 27 Photo Taken: 08/05/2020 Longitudinal crack open up to 1/8 inch with efflorescence near midspan.



Photo Number: 28

Photo Taken: 08/05/2020

Close up view of longitudinal crack open up to 1/8 inch with efflorescence near midspan.

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Photo Number: 29 Photo Taken: 08/05/2020 Large patch midspan near A-2 with hollow areas and longitudinal cracks.



Photo Number: 30 Photo Taken: 08/05/2020 Abutment # 1.

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Photo Number: 31 Photo Taken: 08/05/2020



Photo Number: 32 Photo Taken: 08/05/2020 Abutment # 2.