

# Bridge Inspection Report

NBI Structure Number: 012500420004400

Hinsdale 042/044

Date of Inspection: 06/29/2018

NH119

Date Report Sent: 12/31/2018

over

Owner: NHDOT

CONNECTICUT RIVER

Bridge Inspection Group: B-Team

Charles Dana Bridge

Bridge Maintenance Crew: 07

### Recommended Postings:

Weight: **E-2**

Weight Sign OK

Width: **Not Required**

Width Sign OK

*NARROW BRIDGE SIGNS IN PLACE*

Primary Height Sign Recommendation: *11'-10"*

**Clearances:** Over: 12.14  
(Feet) Under: 0.00  
Route: 15.09

Height Sign OK

Optional Centerline Height Sign Rec: *14'-10"*

### Condition:

Red List Status: State Redlist

Deck: 7 Good

Superstructure: 4 Poor

Substructure: 5 Fair

Culvert: N N/A (NBI)

Sufficiency Rating: 37 %

Bridge Rail: Meets Standards

Rail Transition: Substandard

Bridge Approach Rail: Meets Standards

Approach Rail Ends: Substandard

### Structure Type and Materials:

Number of Main Spans: 1

Number of Approach Spans: 2

#### Main Span Material and Design Type

Steel/Truss-Thru

#### Approach Span Material and Design Type

Steel/Girder-Floorbeam

NH Bridge Type: HT (High Truss)

Deck Type: Concrete Precast Panel

Wearing Surface: None

Membrane: None

Deck Protection: Unknown

Curb Reveal: Not Measured

Plan Location: 1-3-3-3

Total Bridge Length: 297.0 ft

Right Curb/Sidewalk Width: 0.0 ft

Total Bridge Width: 21.0 ft

Median: No median

Bridge Skew: 0.00 °

Year Built/Rebuilt: 1920/1988

### Bridge Dimensions:

Length Maximum Span: 200.0 ft

Left Curb/Sidewalk Width: 7.2 ft

Width Curb to Curb: 20.3 ft

Approach Roadway Width: 34.0 ft  
(W/Shoulders)

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## Bridge Service:

Type of Service on Bridge: Highway

Type of Service Under: Waterway

Lanes on Bridge: 2

Lanes Under: 0

AADT: 8,492

Percent Trucks: 4%

Year of AADT: 2017

Future AADT: 12,568

Year of Future AADT: 2039

Federal or State Definition Bridge: Fed-Definition Bridge

National Highway System: Bridge does not carry NHS

Roadway Functional Class: Urban, Collector

New Hampshire Bridge Tier: 3

Eligibility for the National Register of Historic Places: Possibly eligible for

Traffic Direction: 2-way traffic

## National Bridge Inventory (NBI) Appraisal Ratings:

Deck Geometry: 2 Intolerable - Replace

Underclearances: N Not applicable (NBI)

Approach Alignment: 6 Equal Min Criteria

Structural Evaluation: 4 Minimum Tolerable

Channel/Channel Protection: 6 Bank Slumping

Waterway Adequacy: 8 Equal Desirable

Bridge Scour Critical Status: 7 Countermeasures

Riprap Condition: Good Condition

Debris Present: No Debris Present

Channel Notes: TIMBER CRIB EXPOSED UNDER P#2. PART OF P#1 CONCRETE FOOTING EXPOSED ALSO. SAND & COBBLE BOTTOM.

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**Element Details (see disclaimer below)**

No.	Description	Material Notes and Condition Notes:
31	Timber Deck	SIDEWALK, TIMBER PLANKS.  SIDEWALK- FEW SCREWS LIFTED, FEW LOOSE PLANKS.
38	Reinforced Concrete Slab	PRECAST CONCRETE SLABS WITH NON-SHRINK GROUTED JOINTS - SEVERAL FINE CRACKS, FEW GASKETS PROTRUDING. WEARING SURFACE POTHOLED AT EAST END OF EASTBOUND LANE.
L 520	Concrete Reinforcing Steel Protective System	
107	Steel Open Girder/Beam	EXTERIOR BEAM TOP AND BOTTOM FLANGES HAVE HEAVY RUST, LIGHT SECTION LOSS IN AREAS. PAINT PEELING IN AREAS.
L 515	Steel Protective Coating	
120	Steel Truss	HEAVY PACK RUST IN LOWER INTERIOR CHORD PLATES. LIGHT SECTION LOSS OVERALL. HEAVY SECTION LOSS ON BATTEN PLATES IN MIDDLE TWO THIRDS OF BRIDGE. LIGHT SECTION LOSS ON SEVERAL RIVET HEADS. SPLICE COVER PLATE HAS HOLED AT FLOORBEAM # 6. FEW WITH HEAVY LOSS. SMALL HOLE IN GUSSET PLATE AT BEARING # 1, PIER #2 AND BEARING # 2 PIER # 1.
L 515	Steel Protective Coating	
152	Steel Floor Beam	RUSTED AT ENDS WITH AREAS OF MODERATE SCALE AND LIGHT SECTION LOSS UNDER LEAKAGE. MINOR RUST AND SCALE AT TOP AND BOTTOM FLANGES. PAINT PEELING IN AREAS. HEAVY RUST AND SECTION LOSS AT SEVERAL CROSS BRACING CONNECTION PLATES MOUNTED AT FLOORBEAMS.
L 515	Steel Protective Coating	
210	Reinforced Concrete Pier Wall	TWO CONCRETE PIERS.  THE SUBMERGED PORTIONS OF THE PIERS ARE IN POOR CONDITION WITH SPALLS, EXPOSED REBAR, AND EROSION OF THE CONCRETE. TIMBER CRIBBING UNDER PIER # 2 EXPOSED. MINOR SPALL AT EAST SIDE PIER # 2. LARGE SPALL WITH REBAR EXPOSED, WEST SIDE OF COLUMN #1, PIER #2. SPALL AT WATERLINE OF PIER # 1, WEST SIDE. SPALLS UNDER BEARING #1, PIER #1.
215	Reinforced Concrete Abutment	LIGHT SPALL AT SOUTHWEST BRIDGE SEAT AT BEARING. LIGHT CRACKS, MINOR SPALLS OVERALL.
303	Assembly Joint With Seal	DEBRIS FILLED, SEAL FAILING AT JOINT # 3. SEAL HOLED AT JOINT # 4 AT SOUTH.
311	Movable Bearing	HEAVY RUST BUILD-UP AT PIER BEARINGS. SMALL HOLE IN GUSSET PLATE AT BEARING # 2, PIER # 1 AND BEARING # 1, PIER # 2. BEARING SPACING PLATE HOLED AT BEARING # 1, PIER # 2. BEARING BOLTS EXPOSED AND RUSTED WITH SECTION LOSS AT BEARING #1, PIER #1.
L 515	Steel Protective Coating	
313	Fixed Bearing	RUSTED UNDER LEAKAGE.
L 515	Steel Protective Coating	
330	Metal Bridge Railing	** W-Beam **  MINOR DAMAGE, LIGHT SURFACE RUST IN AREAS.
7357	Pack Rust	PACK RUST IN LOWER CHORD HAS CAUSED MINOR DISTORTION OF THE BUILT-UP COMPONENTS.
7363	Steel Section Loss	AREAS OF MINOR TO MODERATE LOSS, UP TO 1/8 in., AT STRINGERS, FLOORBEAMS AND LOWER CHORDS. 5/8 in. REMAINING AT BOTTOM FLANGES OF SEVERAL FLOORBEAMS. SMALL HOLE IN GUSSET PLATE AND BEARING SPACER PLATE AT BEARING # 1, PIER # 2. AREAS OF MODERATE, 1/8 in., LOSS IN LOWER LATERAL BRACING AND CONNECTOR PLATES. CONNECTOR PLATE AND LOWER LATERAL BRACE AT SOUTH END OF FLOORBEAM # 5 HOLED.

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**Element States (see disclaimer below)**

No.	Description	Quantity	Units	State 1	State 2	State 3	State 4
31	Timber Deck	2,142	sq.ft	100%	0%	0%	0%
38	Reinforced Concrete Slab	6,232	sq.ft	95%	5%	0%	0%
└ 520	Concrete Reinforcing Steel Protective System	---	---	95%	5%	0%	0%
107	Steel Open Girder/Beam	1,066	ft	0%	73%	27%	0%
└ 515	Steel Protective Coating	---	---	100%	0%	0%	0%
120	Steel Truss	299	ft	0%	70%	30%	0%
└ 515	Steel Protective Coating	---	---	100%	0%	0%	0%
152	Steel Floor Beam	230	ft	0%	85%	15%	0%
└ 515	Steel Protective Coating	---	---	100%	0%	0%	0%
210	Reinforced Concrete Pier Wall	171	ft	0%	80%	20%	0%
215	Reinforced Concrete Abutment	69	ft	0%	100%	0%	0%
303	Assembly Joint With Seal	43	ft	40%	60%	0%	0%
311	Movable Bearing	24	each	75%	25%	0%	0%
└ 515	Steel Protective Coating	---	---	100%	0%	0%	0%
313	Fixed Bearing	24	each	38%	42%	0%	21%
└ 515	Steel Protective Coating	---	---	100%	0%	0%	0%
330	Metal Bridge Railing	594	ft	77%	23%	0%	0%
7357	Pack Rust	1	(EA)	0%	100%	0%	0%
7363	Steel Section Loss	1	(EA)	0%	100%	0%	0%

Element Disclaimer: NHDOT is transitioning from CoRe elements to AASHTO elements. The AASHTO element data shown above is the product of the automated element migration routine from the AASHTOWare BrM software. This migrated data has undergone limited field verification. Adequate quality control of this element data is not expected to be achieved until the conclusion of the 2020 inspection season. Please utilize element data with caution.

**Bridge Notes:**

STATE OF NEW HAMPSHIRE

Charles Dana Bridge

In the Year of Our Lord Two Thousand Ten

AN ACT naming a bridge across the Connecticut River from Hinsdale, New Hampshire to Brattleboro, Vermont the Charles Dana Bridge and correcting the naming of a bridge across the Connecticut River in the town of Chesterfield, New Hampshire from the Judge Harlan Fiske Stone Bridge to the Justice Harlan Fiske Stone Bridge.

Be it Enacted by the Senate and House of Representatives in General Court convened:

280:1 Town of Hinsdale; Bridge Named. Pursuant to RSA 4:43, the smaller or eastern Parker truss bridge that spans the Connecticut River from Hinsdale, New Hampshire to Brattleboro, Vermont on Route 119, bridge number 042/044, shall be named the Charles Dana Bridge.

280:2 Town of Chesterfield; Bridge Named. Amend 2009, 108:1 to read as follows:

108:1 Town of Chesterfield; [Judge] Justice Harlan Fiske Stone Bridge. Pursuant to RSA 4:43, the old 1937 arch bridge over the Connecticut River, in the town of Chesterfield, New Hampshire, is hereby named the [Judge] Justice Harlan Stone Bridge.

280:3 Signage. The cost of design, construction, maintenance, and installation of any signage, replacement signage, or other markers required under sections 1 and 2 of this act shall not be a charge to the state. However, the design, construction, and installation of any signage or other markers required under this act shall be approved by the department of transportation.

280:4 Effective Date. This act shall take effect upon its passage.

Approved: July 8, 2010

Effective Date: July 8, 2010

SPIDER STAGING INSPECTION 4/17, 18 /08; 4/30/2013; 8/18/2014, 9/27/2016 MONTH LATE BECAUSE OF EQUIPMENT AVAILABILITY.

UNDERWATER INSPECTION 7/19/2010, 7/29/2015.

**Inspection Notes:** 06/29/2018

NBG office comments -

IN-DEPTH INSPECTION PERFORMED BY HTA. SEE SEPARATE INSPECTION REPORT FOR DETAILS.

SUMMARY: Continued corrosion-related deterioration concentrated along the portions of the bridge trusses and floor system at and below the roadway deck. This advancing deterioration, which is typical for through-truss bridges of this vintage, warrants a downgrade to the condition rating of the superstructures of both bridges from "5 - fair" to "4 - poor".

ACCESS: Access to the bridge was accomplished through the use of a barge-mounted aerial inspection unit and a telescoping man-lift on the bridge deck.

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**Previous Inspection Notes:** 09/27/2016

MHC - inspection comments -

BRIDGE RAIL: AREAS OF DAMAGE AND LIGHT RUST.

DECK: WEARING SURFACE POTHOLED IN AREAS. JOINT SEALS DEBRIS FILLED AND DAMAGED. FINE CRACKS AT SOFFIT, FEW GASKETS PROTRUDING. TIMBER SIDEWALK HAS FEW LOOSE PLANKS.

SUPERSTRUCTURE: PAINT PEELING AT ALL STEEL COMPONENTS. RUST, PACK RUST, AND MINOR SECTION LOSS AT BOTTOM CHORDS. LIGHT TO MODERATE RUST WITH LIGHT SCALE AND AREAS OF MINOR SECTION LOSS AT FLOORBEAMS, STRINGERS, AND SECONDARY MEMBERS. PAINT PEELING AND LIGHT SURFACE RUST AT UPPER TRUSS MEMBERS. LATTICE WORK RUSTED OFF AT NORTHWEST AND SOUTHEAST. OLD OVERHEAD IMPACT DAMAGE. BEARINGS RUSTED, MODERATE TO HEAVY AT EXTERIORS WITH MINOR SECTION LOSS. SMALL HOLES IN GUSSET PLATES.

SUBSTRUCTURE: LIGHT CRACKS, MINOR SPALLS IN ABUTMENTS. SPALL UNDER BEARING AT PIER #1. LARGE SPALL WITH REBAR EXPOSED AT PIER #2.

PICTURES: B568

52. BOTTOM EDGE OF GUSSET PLATE AT FLOORBEAM # 2, SOUTH, RUSTED AND HOLED.

53. LATERAL BRACING CONNECTION PLATE HOLED AT SOUTH END OF FLOORBEAM # 5.

54. COVER PLATE HOLED AT LOWER CORD SPLICE, SOUTH END OF FLOORBEAM # 6.

55. GUSSET PLATE AND BEARING SPACER PLATE HOLED, BEARING # 1, PIER # 2.

56. PAINT PEELING, LIGHT SURFACE RUST AT UPPER CORD.

57. WEARING SURFACE POTHOLED AT EAST END OF EASTBOUND LANE.

**Approach and Roadway Notes:**

ASPHALT- FEW CRACKS.

MINOR DAMAGE TO RAIL, FEW POST DAMAGED AND BROKEN.

**Inspection History**

Inspection Date	Inspector Initials	Inspection Type(s) Performed				Major Element Ratings				Red list	Posting
		NBI	Elem	FCM	U/W	Deck	Super	Sub	Culvert		
06/29/2018	NBG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7	4	5	N	<input checked="" type="checkbox"/>	E-2
09/27/2016	MHC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7	5	5	N	<input type="checkbox"/>	E-2
07/29/2015	NBG	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	7	5	5	N	<input type="checkbox"/>	E-2
08/18/2014	MTC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7	5	6	N	<input type="checkbox"/>	E-2
04/30/2013	MHC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7	5	6	N	<input type="checkbox"/>	E-2
03/25/2013	MTC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7	5	6	N	<input type="checkbox"/>	E-2
06/19/2012	MHC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7	5	6	N	<input type="checkbox"/>	E-2
12/01/2010	DEP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7	5	6	N	<input type="checkbox"/>	E-2
07/19/2010	DMB	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	7	5	6	N	<input type="checkbox"/>	E-2
06/30/2010	JEL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7	5	6	N	<input type="checkbox"/>	E-2
04/18/2008	FNM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7	5	6	N	<input type="checkbox"/>	E-2
10/16/2006	JEL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8	6	6	N	<input type="checkbox"/>	E-2
11/23/2004	FNM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8	6	6	N	<input type="checkbox"/>	E-2
11/26/2003	JEL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8	6	6	N	<input type="checkbox"/>	E-2
11/26/2001	JEL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5	6	6	N	<input type="checkbox"/>	E-2
04/20/1999	JEL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5	6	6	N	<input type="checkbox"/>	E-2
07/01/1997		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	6	6	6	N	<input type="checkbox"/>	E-2
06/01/1995		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	6	7	6	N	<input type="checkbox"/>	E-2
11/01/1993		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	6	7	6	N	<input type="checkbox"/>	E-2
07/01/1992		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	6	7	6	N	<input type="checkbox"/>	E-2

Inspection Frequency (mo.)			
NBI	Elem	FCM	U/W
8	8	24	60