



BRIDGE NO.01218

52980 - NEWTOWN
INTERSTATE 84 EASTBOUND
over
HOUSATONIC RIVER

Fracture Critical and Routine Inspection

9/10/2018

Inspected by: Infrastructure



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Report Title Page

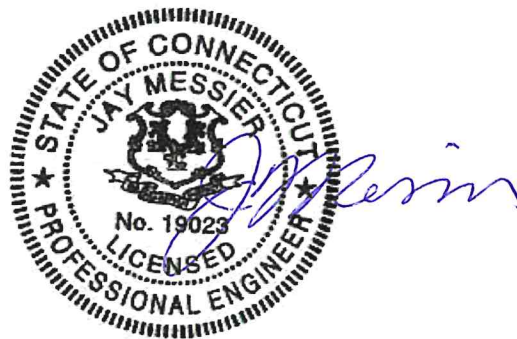
Project No.: 170-3413 (Routine Inspections – NHS)

Structure: 01218, Interstate 84 Eastbound over Housatonic River, Newtown

Inspected By: Infrastructure Engineers, Inc. **Inspection Date:** 9/10/2018

Professional Certification:

I hereby certify that this report, including all of its contents, has been approved by me, and that I am a duly licensed professional engineer under the laws of the State of Connecticut.



Jay Messier, PE (Infrastructure Engineers, Inc.)

PM / QAQC: Jay Messier, PE

CT License No.: 19023

Date: 10/2/2018

Form: Location

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Location Map # 1

Form: BRI-19, Rev. 2/15
Inspection type: Fracture Critical,Routine
Inspection Date: 9/10/2018
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Bridge No: 01218

Town: NEWTOWN
Carried: INTERSTATE 84 EASTBOUND
Crossed: HOUSATONIC RIVER
Inventory Route: NHS

STRUCTURE INVENTORY & APPRAISAL

INSPECTION

Structurally Deficient Functionally Obsolete

Sufficiency Rating

(90) Inspection Date (91) Frequency

Indepth Insp Proposed next Indepth Year

Deck Survey Date Class

Access Flagman

	Frequency	Date	Type
Fracture	<input type="text" value="24"/>	<input type="text" value="09/10/2018"/>	<input type="text" value="D Two Girder System, riveted / bolted plate girders"/>
Underwater	<input type="text" value="24"/>	<input type="text"/>	<input type="text" value="B Underwater Only"/>
Special	<input type="text"/>	<input type="text"/>	<input type="text"/>

IDENTIFICATION

Bridge Name

Town Code - Name

(5) Inventory Route

(A) Record Type

(B) Signing Prefix

(C) Level of Service

(D) Route Number.

(E) Dir Suffix

(6A) Featured Intersected

(6B) Critical Facility Indicator

(7) Facility Carried

(9) Location

(11) Mile Post Miles

(16) Latitude Deg. Min. Sec.

(17) Longitude Deg. Min. Sec.

(98) Border Bridge

(A) State Code (B) Percent Responsibility %

(C) Border Town Name

(99) Border Bridge Structure No.

STRUCTURE TYPE & MATERIALS

(43) Structure Type, Main

A) Material

B) Design Type

(44) Structure Type, Approach

A) Material

B) Design Type

(45) Number of Spans, Main Unit

(46) Number of Approach Spans

(107) Deck Structure Type

(108) Wearing Surface/Protection Systems

A) Type of Wearing Surface

B) Type of Membrane

C) Type of Deck Protection

Substructure

A) Material

B) Design Type

Paint

Type

Year

Comment

GEOMETRIC DATA

(48) Length of Maximum Span ft.

(49) Structure Length ft.

(50) Curb or Sidewalk Widths

A) Left ft. in. B) Right ft. in.

(51) Bridge Roadway Width Curb to Curb ft. in.

(52) Deck Width, Out to Out ft. in.

(32) Approach Roadway Width ft.

(33) Bridge Median

Deck Area sq. ft.

(34) Skew Angle deg.

(35) Structure Flared

(10) Inv. Rte. Min. Vert. Clearance ft. in.

(47) Inv. Rte. Total Horiz. Clr. ft. in.

Log Inv. Rte. Total Horiz. Clr. ft. in.

RLog Inv. Rte. Total Horiz. Clr. ft. in.

(53) Min. Vert. Clearance Over Bridge ft. in.

(54) Log-Min. Vert. Underclearance ref. ft. in.

(55) Min. Lat Underclearance on Right ref. ft. in.

(56) Min. Lat Underclearance on Left ft. in.

CONDITION

(58) Deck

(59) Superstructure

(60) Substructure

(61) Channel & Channel Protections

(62) Culverts

(36) Traffic Safety Features

A) Bridge Railings

B) Transitions

C) Approach Guardrail

D) Approach Guardrail Ends

WATERWAY

Drainage Basin Waterway

(38) Navigation Control

(39) Navigation Vertical Clearance ft.

(40) Navigation Horiz. Clr. ft.

(111) Pier/Abutment Navigation

(116) Vert-Lift Brg Nav Min ft. in.

AGE AND SERVICE

Year Built (106) Year Reconstructed

(42) Type of Service

A) On

B) Under

(28) Number of Lanes

A) On B) Under

(29) Average Daily Traffic

Is Above Half ADT?

(109) Percent Truck %

(30) Years of ADT

(19) Bypass, Detour Length Miles

APPRAISALS

(67) Structural Evaluation

(68) Deck Geometry

(69) Underclearances, Vert. & Horiz.

(71) Waterway Adequacy

(72) Approach Roadway Alignment

(113) Scour Critical

COMMENTS

• 07/12/2010; Item 60 (Substructure) rating changed from "5" to "6". Refer to 2010 Underwater Inspection. RKD.
 • 07/28/2010; New Section Loss information submitted by Baker and forwarded to Load Evaluation Group. RAP.

CLASSIFICATION

(112) NBIS Bridge Length

(104) Highway System

(26) Functional Class

(100) Defense Highway

(101) Parallel Structure

(102) Direction of Traffic

Form: BRI-19, Rev. 2/15

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

(103) Temporary Structure

(110) Designated National Network

(20) Toll

(21) Maintain

(22) Owner

Report Class

(37) Historical Significance

POSTED SIGNS

Other Posted Sign 1

Other Posted Sign 2

	Actual	Recomended	
Posted Load Single Unit Truck	<input type="text"/>	<input type="text"/>	tons
Posted Load Semi-Trailer Truck	<input type="text"/>	<input type="text"/>	tons
Posted Load 4 Axle Truck	<input type="text"/>	<input type="text"/>	tons
Posted Load 3S2 Truck	<input type="text"/>	<input type="text"/>	tons
All Vehicles	<input type="text"/>	<input type="text"/>	tons
Posted Vert. Clearance on Bridge	<input type="text"/> ft.	<input type="text"/> in.	
Posted Vert. Underclearance	<input type="text"/> ft.	<input type="text"/> in.	
Posted Speed Limit on Bridge	<input type="text"/> m.p.h.		

OTHER FEATURES

Fence Required

Fence Present

Fence Type

Fence Height

Fence Material

Fence Top Type

Barrel Ladders

Stand Pipes

Catwalks

Moveable Inspection System

Haunches Present over Roadway

Utilities

PROPOSED IMPROVEMENTS

(75A) Type of Work Proposed

(75B) Work Done By

(76) Length of Structure Improvement ft.

(94) Bridge Improvement Cost \$

(95) Roadway Improvement Cost \$

(96) Total Project Cost \$

(97) Year of Improvement Estimate

(114) Future ADT

(115) Year of Future ADT

DOT Bridge Program List No

Project No

Advertised Date

LOAD RATING & POSTING

(31) Design Load

(63) Operating Rating Type

(64) Operating Rating

(65) Inventory Rating Type

(66) Inventory Rating

Evaluation Code

Year of Evaluation

(70) Bridge Posting

(41) Structure Status

Form: BRI-19, Rev. 2/15

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

INSPECTOR'S SIGNATURES:

1) _____ Date: 09/26/2018

Michael O'Hara

2) _____ Date: 10/01/2018

Matthew Ruscio

3) _____ Date: 10/01/2018

Matthew Guora

4) _____ Date: _____

P.E. SIGNATURE:

J. Messin

Date: 10/02/2018

P.E. # _____

Reviewed By:

Amy Estab

Date: 10/22/2018

Form: BRI-18, Rev. 1/14

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

FIELD INSPECTION REPORT

Location: OVER HOUSATONIC RIVER
 Main Material: 4 - Steel continuous
 Main Design: 03 - Girder and Floorbeam

Year Built: 1953
 Year Rebuilt: 1978

Snooper Required:
 Snooper Used:

Inspectors:

Lead Inspector:	Matt Riesenberg
Inspector:	Task:
Area, 12	BSE - Manager
Liguore, Matt	BSE - Inspector
O'hara, Mike	BSE - Inspector
Riesenberg, Matt	BSE - Inspector

Visits:

Visit Date:	Temp:	Start Time:	End Time:
09/10/2018	65	08:00 AM	04:00 PM
09/11/2018	71	09:00 AM	02:45 PM

58. DECK:

Reinforced Concrete Deck with Bituminous Concrete Overlay

Overall Rating: 5

Rating

Overlay: 7

The bituminous concrete overlay has the following deficiencies:

- Paving seams are open slightly.
- Spans 1 and 2 have random longitudinal cracks up to 25' long x up to 1/8" wide in the left shoulder.
- Span 4 in the Left Lane near Abutment 2 has an area of map cracking 5' long x 3' wide with a pothole 6" long x 4" wide x 1-1/2" deep with exposed deck (See Photo 7).

(See Sketches 2 - 6 and Photos 6 & 7)

Deck - Str. Condition: 5

The underside of the reinforced concrete deck has the following deficiencies:

- Areas of scale up to 1/4" deep.
- Random hairline transverse cracks with and without efflorescence, moisture and rust stains.
- Areas of minor honeycomb.
- Girder deck haunches have vertical hairline cracks.
- Hollow areas up to 3' long x 3-1/2' wide.
- Random areas of map cracks up to 100% of the bay area with and without efflorescence, moisture and rust stains.
- Span 3 at north side of Floor Beam 19 between Stringer 3 and Stringer 4 has a 3' diameter damp area with efflorescence stalactites.
- Span 4 Girder 2 Deck Haunch north of Floor Beam 23 has a 20" long x 3" high x 1" deep haunch with exposed rebar.

The rating was increased from a 4 to a 5, with no major deficiencies found throughout. The 2016 Inspection Report rating was "based on construction survey (BS&E - 1/7/15)".

(See Sketches 7 - 25 and Photos 8 - 10)

Curbs: 7

Sloped granite curbs have the following deficiencies:

- Scrapes with rust stains.
- Chipped edges up to 1' long x 6" wide.

Average Curb Reveals:

Left (West): 2-1/2"

Right (East): 2-1/2"

(See Sketches 2 - 6 and Photo 14)

Median: N

Sidewalks: 5

There is a sidewalk along the Right (East) side that has the following deficiencies:

- Random areas of moderate scale up to 1/2" deep.
- Random transverse hairline cracks.
- Ponding water due to clogged scupper grates and scale areas.
- Debris accumulation up to 2" high.
- Span 2 Sidewalk near Pier 2 - 15' long x 3' wide hollow area with a 5' long x 2' wide x up to 2" deep area of severe scale with exposed rebar.
- Span 4 Sidewalk near Mid-Span - 76" long x 43" wide hollow area with a 20" long x 12" wide x up to 1-1/2" deep area of scaling with exposed rebar (See Photo 12)

(See Sketches 2 - 6 and Photos 11 - 13)

Parapet: 6

Reinforced concrete parapets and Right (East) fence base have the following deficiencies:

- Areas of light to moderate scale.
- Impact scrapes.
- Random horizontal and vertical cracks up to 1/8" wide with and without efflorescence.
- Spalls up to 18" long x 12" high x 3" deep with some undermining fence / railing post bases and exposed anchor bolts. Some spalls have adjacent hollow areas (See Photos 15 - 17).
- Right Parapet in Span 1 has a 4' long patch on the top face.
- Left Parapet in Span 4 has a spall with wood form left in place.
- Approach Parapets and Bridge Parapets are misaligned up to 1-3/4" (See Photos 18 & 19).

There is a sign mounted on the Left Parapet in Span 2 with the following deficiencies:

- Missing washers at the base plate.
- Northwest connection bolt is loose.
- Sign panel has collision damage.

(See Sketches 2 - 6 and Photos 14 - 19)

Railing: 6

Single aluminum railing mounted on top of the parapets have the following deficiencies:

- Random collision scrapes.
- Left Rail in Span 2 has a 3" long x 1" wide tear (See Photo 20).
- Right Rail Post in Span 2 near Pier 2 is undermined due to a spall exposing two anchor bolts.
- Span 4 Left and Right Rail Posts have isolated locations of loose and missing anchor bolt nuts (See Photo 21).

(See Sketches 2 - 6 and Photos 20 & 21)

Paint: N

Fence: 7

There is a 6'-3" high anodized aluminum fence at the Right (East) Fascia mounted on a 1' high concrete base. The fence has the following deficiencies:

- The fence is bent at Abutment 2.

Refer to 'Parapet' item above.

(See Sketches 2 - 6 and Photos 11 & 22)

Drains: 5

Scuppers and sidewalk drains have the following deficiencies:

- Roadway scuppers have debris in the grates and basins, but all pipes were clear.
- Span 2, right shoulder scupper grate is 50% clogged with debris and has light vegetation growth.
- All four sidewalk drains were clogged at the time of inspection.

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Inventory Route: NHS

- There are a total of five broken / missing / disconnected scupper pipe support U-bolts at the west and east fascias in Spans 2-4.
- One of two nuts is missing at a scupper U-bolt at the northwest corner of Span 4.

PVC Weep pipes have the following deficiencies:

- Span 1 at the southeast corner of interior Panel 1 in Span 1 has a weep that drains onto a lateral bracing gusset plate.
- Span 3, west overhang near Floor Beam 20 has a partially broken weep that does not leak onto superstructure elements.
- Weep pipe at east overhang drains onto Pier 3.

(See Sketches 2 - 25 and Photos 23 & 24)

Lighting Standard: N

- Span 1, Left (West) Parapet junction box has (1) screw that is not fully tightened.
- Span 1, Right (East) Parapet junction box cover has is missing (6) of (10) screws.
- Span 2, Left (West) Parapet junction box is missing (2) of (10) screws.
- Left (West) Parapet in the North Approach has a junction box cover that is cracked with (2) of (10) screws missing (See Photo 25).

(See Sketches 3 - 6 and Photo 25)

Overall Utility Condition Rating N - Not Applicable

Utility Type/Size

N | No Utilities present

Construction Joints: 8

Expansion Joint: 7

The strip seal joints with concrete headers have the following deficiencies:

- Moderate to heavy accumulation of sand and debris in the joint.
- Concrete headers have random transverse hairline cracks.

(See Sketches 2, 3 & 6 and Photos 26 & 27)

Haunches Present over travelway? NO

APPROACH CONDITION:

Bituminous Approach Pavement

Overall Rating: 8

Rating

Approach Slab: 8

Rating is based on the condition of the approach pavement.

Refer to 'Approach Pavement' item below.

Relief Joints: N

Approach Guide Rail: 6

Approach guide rails at all four corners have the following deficiencies:

- Northwest approach metal beam guide rail has (1) of (3) backed off anchor bolt nut at the parapet end anchorage (See Photo 29).
- Southeast approach concrete barrier has a 10" x 10" x 1-1/2" deep spall (See Photo 30).

(See Sketches 2, 3 & 6 and Photos 28 - 30)

Approach Pavement: 8

The bituminous approach pavement has the following deficiencies:

- Paving seams are slightly open.
- North Approach in the Left Shoulder near bridge has several longitudinal cracks.

(See Sketches 2, 3 & 6 and Photo 30)

Approach Embankment: 7

- Well vegetated.
- Southeast Approach Embankment has minor erosion.

(See Sketches 2, 3 & 6)

Traffic Safety Features

Bridge Railings: 0 Less than 42" high solid concrete parapet on NHS.

Transitions: 0 Not R-B 350 compliant (Concrete parapet is 3" higher above approach rail).

Approach Guardrails: 0 Not R-B 350 compliant.

Approach Guardrail Ends: 1 Continuous with highway rail.

59. SUPERSTRUCTURE:

Steel Girders, Stringers and Floor Beams

Overall Rating: 4

Rating

Bearing Devices: 6

Rocker Bearings at the Abutments, Pier 1 and Pier 3. Abutment 1 and Pier 1 Bearings were in expansion mode at 65 degrees Fahrenheit. Abutment 2 and Pier 3 Bearings were in contraction mode at 65 degrees Fahrenheit. The following deficiencies were noted:

- Random areas of peeling paint and light rust.
- Light to moderate laminar rust below rockers.
- Abrasion rust at the pins.
- Abutment 1 Anchor Bolt Nuts have up to +/-90% section loss (See Photo 32).
- Abutment 2, Girder 1 Anchor Bolt nuts have up to 50% section loss.
- Girder 1 Bearing at Abutment 1 has up to 5/16" pack rust between rocker and masonry plate.
- Abutment 2 Bearings have heavy debris on the masonry plate from joint repair.

Fixed rocker bearings at Pier 2 have no significant deficiencies.

Stringer plate / block bearings have the following deficiencies:

- Random bearings have up to 3/16" high gaps and / or pack rust (typically 1/8") between the edges of the bearing plates and stringer bottom flanges and / or floorbeam top flanges.
- Isolated anchor bolts are not snug at the interior stringer bearings.
- Random bearings have light abrasion rust.

Refer to 'Welds-Cracks' item below for tack welds between the stringer bearing plates and floor beam top flanges.

(See BRI-15, Sketch 7, 9, 12 & 14 - 25 and Photos 32 - 37)

Stringers: 5

Stringers have the following deficiencies:

- Stringer bottom flanges have minor waviness.
- Up to 1/4" vertical misalignment and / or 1/4" pack rust at the bolted splices (See Photo 39).
- Fascia stringer bottom flanges have up to 3/16" x full width section loss (3/4" original thickness) over the floorbeam cantilevers resulting in up to 25% flange loss.
- Span 3, Stringer 8 Bottom flange has 1' long x 4" wide section loss to 1/2" remaining between Floor Beam 21 and Floor Beam 22 resulting in 11% flange loss (No change since 2016 Inspection).
- Span 3, Stringer 8 east side of web at Floor Beam 22 east cantilever has a 10" long x up to 2" high x 1/4" deep loss at the base of the web resulting in less than 5% section loss for shear and less than 10% loss in bearing.

(See Sketches 7, 9, 12 & 14 - 25 and Photos 38 & 39)

Girders: 5

Girders have the following deficiencies:

- Areas of peeling paint and light to moderate rust (See Photo 43).
- Webs have random welded repair plates at locations where steel coupons were removed. Welds are poor at these locations.
- Splices have light to moderate rust (See Photo 41).
- Web stiffeners and girder bottom flanges have random minor bends, scrapes, and gouges from construction.
- Girder ends at abutments have laminar rust.
- Girder ends have section loss in the bottom flange angles and end angle outstanding legs to 1/8" minimum remaining; non-critical locations.
- Girder bottom flange angle horizontal legs have random section loss up to 1' long x 7" wide x 3/16" deep (Span 1, Girder 1 near Floor Beam 5) and spotty areas of deeper loss up to 3" wide x 2" long x 5/16" deep (Span 4, Girder 2 near Floor Beam 27).
- Vertical legs of the bottom flange angles have isolated areas of up to full height x 1/4" deep section loss (Span 4, Girder 2 near Floor Beam 27).
- Bottom flange cover plates have areas of up to 3/8" deep section loss, typically not more than 3-1/2" wide, except at isolated locations where losses are up to full width x 1/4" deep (Span 4, Girder 2 near Floor Beam 26).
- Areas of up to 2" pack rust between the bottom flange cover plates and / or short bottom flange construction-fabrication plates. (See Photos 42, 44 & 47).
- Random web stiffeners have 3/16" deep losses at their bases.
- Girder 1 at Floor Beam 18 underside of bottom flange cover plate has a 3" long x 2" wide rusted through hole due to pack rust with a rust induced crack 1" long. The 1" long crack was not noted in the 2016 Inspection.
- Girder 1 and Girder 2 bottom flange construction / tab plates near Floor Beam 26 have pack rust, knife edging and perforations up to 1" wide.

Flange and web losses are estimated to be < 5% in all critical zones.

(See Sketches 7, 9, 12 & 14 - 25 and Photos 40 - 49)

Floor Beams: 4

Floor Beams and Floor Beam Cantilevers have the following deficiencies:

- Areas of peeling paint with exposed primer and/or light to moderate rust.
- Stiffeners and flanges have random mis-drilled holes and bends and / or gouges throughout.
- Random top flange tie plates are in contact with the girder webs at the tie plate pass-throughs.

Interior Floor Beams:

- Webs have random welded repair plates at locations where steel coupons were previously removed. Welds are poor at these locations with areas of surface rust (Refer to 'Welds-Cracks' item below) (See Photo 60).
- Flanges and stiffeners have minor bends from construction.
- Webs and flanges have areas of heavy rust with random heavy rust at center line of bridge.
- Hatches in the first intermediate floor beams from the abutments have been welded shut.
- The end floor beams at the abutments have areas of heavy to laminar rust with section loss along the top and bottom flanges.
- The 3/4" original flanges have areas with as little as 3/8" remaining on the horizontal legs, with losses extending into the vertical legs.
- Bottom flange losses in the end floor beams are estimated to be up to 13% (Floor Beam 1) near mid-span with slightly greater losses near the supports at isolated locations.
- End floor beam top flange losses do not exceed 14% (Floor Beam 1).
- The bases of the web stiffeners of the end floor beams have laminar rust, knife edging, and perforations up to 2" long x 1" high.
- Interior floor beam flanges have areas of laminar rust near midspan of the floor beams with section losses up to 3/16" deep, resulting in up to 6% top flange loss (worst at Floor Beams 6,14 & 18) and 10% bottom flange loss (worst at Floor Beam 4).
- Webs near mid-span of the floor beams have areas laminar rust with up to 3/16" deep section loss.

Cantilever Floor Beams:

- Knee braces have up to 3/4" thick pack rust between plates at the girder bottom flanges.
- Web stiffeners with up to full width x 4" high x 3/16" deep section loss.
- Cantilever bottom flange angle horizontal legs with up to 5-1/2" wide x 3" long x 3/16" deep section loss adjacent to stiffener bases.
- Cantilever bottom flange angle horizontal legs between Stringer 7 & Stringer 8 have areas if up to 1' long x 4" wide x 1/8" deep section loss and the vertical legs have up to full height x 2" long x 1/8" deep section loss.
- Cantilever ends with up to 5/8" thick pack rust between clip angles and gusset plates.
- Random areas of moderate accumulation of bird debris on top flanges.
- Rivet end plates (outside faces) have pack rust 1" thick and heavy rust.
- Bottom flange angles have losses up to 3/16" deep at isolated areas, resulting in up to 15% flange loss (Floor Beam 18, Left (West) Cantilever).
- Top flange angles have losses that are up to 3/16" deep at isolated areas, resulting in up to 11% section loss.
- Web bases have up to 3/16" deep section loss (Floor Beam 3, Right (East) Cantilever) and isolated 2" diameter x 1/4" deep section loss with pinholes at the Floor Beam 1, Right (East) Cantilever web.
- Isolated full width x 1" high rusted through holes at Floor Beam 1 Web Stiffeners under Stringer 1.

Lateral Bracing and Gusset Plates:

- Up to 3/4" pack rust at the connections to the gusset plates.
- Random areas of up to 1/8" section loss on bracing members, typically along the center line of the bridge.
- Bracing members are bowed, sag, or bent upwards up to 4".
- Gusset plate at Girder 2 and Floor Beam 1 has up to 1/4" section loss at the gusset plate due to leakage from a weep above.

(See Sketches 7 - 29 and Photos 50 - 64)

Trusses - General: N

Trusses - Portals: N

Trusses - Bracing: N

Paint: 7

- Less than 10% of painted surfaces have deterioration.

Rust: 4

Refer to items above.

Machinery Movable Span: N

Rivets & Bolts: 6

- Random missing rivets along the superstructure, including girder web splices near Floor Beam 12 and Floor Beam 18 that have up to four (4) missing rivets.
- Random rivets are loose, not properly seated, and/or have abrasion rust.
- Random rivet heads have up to 50% section loss.
- There are also random loose catwalk bolts (Refer to 'Catwalks' item below).

Welds - Cracks: 6

Main girders and floor beams are considered to be fracture critical. Rivets in tension zones are fatigue category - D'.

Welds throughout the structure had the following deficiencies:

- There are random tack welds along the superstructure, including tack welds along the floor beam tie plates.
- Girder and floor beam webs have random areas where steel coupons were removed in the past and steel plates were welded in place. These coupon welds are typically of poor quality and have random painted over slag. Previously noted cracks in the coupon welds at Floor Beam 15 in Span 3 and Girder 2 near Floor Beam 27 were not found during this inspection (See Photo 60).

Timber Decay: N

Concrete Cracking: N

Collision Damage: 6

- Isolated stringer bottom flanges, floor beam flanges, random web stiffeners, lateral bracing members / plates and girder bottom flanges have random minor bends, dents, scrapes, and gouges from construction.

Member Alignment:	6	<ul style="list-style-type: none"> • Random Floor Beam top flange tie plates are in contact with the girder webs at the tie plate pass-throughs. • Random bolt holes are misaligned. • There are random gaps at the stringer bearing plates (Refer to 'Bearings' item above). • Up to 1/8" vertical misalignment and / or 1/8" pack rust at the bolted splices (Refer to 'Stringers' item above). • Lateral bracing members have random bowed, sagging, and/or twisted members (Refer to 'Floor Beams' item above).
Deflection Under Load:	N	(N) - Normal; (E) - Excessive
Vibration Under Load:	N	(N) - Normal; (E) - Excessive
		<ul style="list-style-type: none"> • Primary member vibration was normal. Catwalks and isolated lateral bracing members had moderate vibration.
Stand Pipes:	N	
Catwalks:	6	<p>The catwalk was secure during the inspection. The following deficiencies were noted:</p> <ul style="list-style-type: none"> • Areas of peeling paint and light to moderate rust. • Up to 3/4" pack rust between the catwalk tread plates and support channels. • Catwalk tread plates have up to 3/16" deep section loss and areas of heavy rust. • Handrails have random bends up to 1". • There are isolated gaps between the clip angles and sidewalk support channels; as-built condition. • Catwalk tread plate near Floor Beam 14 has a large area of heavy rust with a 1.5" diameter thin area with small rusted throughout holes. • Three (3) loose bolts at a handrail connection between Floor Beam 22 & Floor Beam 23. <p>(See Sketches 7, 9, 12 & 14 - 25 and Photos 66 & 67)</p>
Movable Inspection System:	N	
Barrel Ladders:	N	
Are Barrel Ladders OSHA Compliant?		<input type="text" value="NA"/>

60. SUBSTRUCTURE:

Reinforced concrete abutments, wingwalls and piers.

Overall Rating:

Rating

Abutments - Stem:	7	<p>The abutment stems are significantly covered with fill material. The following deficiencies were noted.</p> <ul style="list-style-type: none"> • Abutment 1 West Cheekwall has a 2' long x 6" high x 1" deep spall on the step-out and a 6" diameter shallow rebar. • Abutment 2 West Cheekwall has a 1' long x 7" wide x 3" deep spall with exposed rebar on the inside face. <p>(See Sketches 30 & 31 and Photos 68 - 69)</p>
Abutments - Backwall:	5	<p>Abutment backwalls have the following deficiencies:</p> <ul style="list-style-type: none"> • Areas of heavy graffiti. • Both backwalls have an uneven pour at the cold joint with concrete overpour and edge spalls throughout. <p>Abutment 1:</p> <ul style="list-style-type: none"> • Random spalls up to 4-1/2' long x 8" high x 2" deep. • Isolated scale up to 1/4" deep. • Isolated 1/16" wide vertical crack. <p>Abutment 2:</p> <ul style="list-style-type: none"> • Random spalls up to 18" long x 5" high x 1" deep with exposed rebar along the cold joint.

	<ul style="list-style-type: none"> • Backwall near Girder 2 at the top has a 5' x 15" hollow concrete patch area and an adjacent spall up to 3' long x 1' high x 3" deep. <p>(See Sketches 30 & 31 and Photos 68 - 71)</p>
Abutments - Footings: N	Not visible.
Abutments - Settlement: 8	None noted.
Abutments - Wingwalls: 6	<p>Wingwalls have the following deficiencies:</p> <ul style="list-style-type: none"> • Random hairline cracks. • Isolated hairline map cracks. • Random hollow areas up to 2' diameter. • Isolated small spalls and pop-outs up to 6" diameter x 2" deep. • Random joint fill material is deteriorated and / or missing. <p>The following wingwalls have lateral / vertical misalignment along construction joint as noted below, no change since the last inspection:</p> <ul style="list-style-type: none"> • Wingwall 1B is laterally misaligned 13/16" at the base and 1-3/4" at the top. • Wingwall 2A parapet has vertical misalignment up to 1-3/4" at the top. • Wingwall 2B has lateral misalignment up to 1/2" and is vertically misaligned by up to 1-1/8" at the top. <p>(See Sketches 6, 32 & 33 and Photos 72 - 74)</p>
Piers/Bents - Caps: N	
Piers/Bents - Pile Bent: N	
Piers/Bents - Columns: 6	<p>Solid concrete pier walls have the following deficiencies:</p> <ul style="list-style-type: none"> • Random pop-outs • Graffiti. • Scale up to 1/2" deep. • Spalls up to 1' high x 2' wide x 1" deep with exposed rebar. • Horizontal and vertical hairline cracks up to 18' long with and without efflorescence. • A few vertical cracks extend into the top surface of the piers. • Pier 1, South Elevation and Pier 3, North Elevation have isolated hollow areas up to 1' diameter <p>(See Sketches 34 -36 and Photo 75)</p>
Piers/Bents - Footings: 7	Refer to 'Erosion-Scour' item below.
Piers/Bents - Settlement: 8	None noted.
Erosion - Scour: 6	<p>Erosion - Rating = 6</p> <p>Scour - Rating = 6</p> <p>Per Underwater Inspection report by Infrastructure dated 07/18/2018:</p> <ul style="list-style-type: none"> • Pier 1 step footing exposed up to 32' long x up to full-height (5.9' high) along both faces of the pier. • Pier 1 footing exposed up to 6.8' vertically (previously 5' high) over a length of 30' on the South face and 8' on the North face near the Upstream (West) end of the pier with no undermining. • Pier 1 has exposed surfaces of the step footing and footing have abrasion up to 1/8" deep. • Pier 2 step footing is exposed up to 26' long x 2.1' high (previously 2' high) on the South face of the pier and along the Upstream (West) Nose. • Pier 2 footing has exposed surfaces of the step footings footing exhibit scaling up to 1/8" deep. • Pier 2 footing has random chamfer spalls up to 6" long x 3" wide x 1" deep. • Pier 3 has no exposure of the step footing or footing. Channel at the upstream nose has a minor localized scour. <p>There are no significant changes to the exposed footing since the 2016 Inspection.</p> <ul style="list-style-type: none"> • The channel bottom along Pier 1 primarily at the nose and North face has had scour up to 4.1' high

Form: BRI-18, Rev. 1/14

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

since the 2016 Underwater Inspection.

- The channel bottom along Pier 2 North face has had scour up to 5.6' high since the 2016 Underwater Inspection.
- The channel bottom along Pier 3 has remained relatively unchanged (less than 1.1' variations) since the 2016 Underwater Inspection.
- The channel bottom along the up and downstream fascias have had random areas of mostly aggradation up to 6.5' high since the 2016 Underwater Inspection.

(Refer to 2018 Underwater Report)

Concrete Crack - Spall:	5	See items above.
Steel Corrosion:	N	
Paint:	N	
Timber Decay:	N	
Collision Damage:	8	
Debris:	6	• Light to heavy accumulation debris at the abutments / pedestals and pier seats.

61. CHANNEL AND CHANNEL PROTECTION:

Housatonic River Overall Rating: 5

Rating

Channel - Scour:	6	Refer to 'Erosion-Scour' item above.
Embankment - Erosion:	7	• There is no significant erosion along the channel embankments.
Debris:	6	Per Underwater Inspection report by Infrastructure dated 07/18/2018: <ul style="list-style-type: none"> • There are three 30' long x 1' diameter fallen trees in the channel South of Pier 3. • There is a 30' long x 12' high x 2' diameter area of timber debris on the Upstream (West) nose of Pier 1. (See 2018 Underwater Inspection Report)
Vegetation:	7	The channel embankments are well vegetated. (See 2018 Underwater Inspection Report)
Channel Change:	6	Per Underwater Inspection report by Infrastructure dated 07/18/2018: <ul style="list-style-type: none"> • There is no apparent change to the channel orientation. • Bridge No. 04180 is located approximately 40' Upstream (West) of the bridge. • There is approximately a 150' long x 20' wide x 3' high sandbar/area of aggradation located northwest of Pier 3 near Bridge No. 04180. (See 2018 Underwater Inspection Report)
Fender - System:	N	
Spur Dikes and Jetties:	N	
Rip Rap:	N	

62. CULVERTS AND RETAINING WALLS:

Overall Rating: N

Rating

Barrel:	N	
Concrete:	N	
Steel:	N	
Timber:	N	

Form: BRI-18, Rev. 1/14

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

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 Vehicles:		
Advanced Warning:		
Warning At Bridge:		
Legibility:		
Visibility:		

VERTICAL CLEARANCE POSTING

Min. Vert Under Clearance:		Ft		In	
Posted Clearence Under Bridge:		Ft		In	
Posted Clearence On Bridge:		Ft		In	
Advanced Warning:					
Warning At Bridge:					
Legibility:					
Visibility:					

NOTES / COMMENTS:

Character of Traffic: Heavy volume of mixed weight traffic.

Additional Notes:

- Bridge Identification Number is clear and legible.
- Bridge is logged from west to east, but items are labeled south to north with Girder 1 and Stringer 1 at the Left (West) fascia which is consistent with previous reports and bridge plans.
- Bridge was inspected using catwalk, 60' snooper, rope access, safety boat, trooper and shoulder closures on I-84 Eastbound.

Additional Comments:

National Bridge Elements

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
12 - Reinforced Concrete Deck	Mod.	55519	sq. ft.	49634	5881	4	0
1080 - Delamination/Spall/Patched Area		77		0	73	4	0
1120 - Efflorescence/Rust Staining		800		0	800	0	0
1130 - Cracking (RC and Other)		5008		0	5008	0	0
510 - Wearing Surfaces		47520	sq. ft.	47419	100	1	0
3210 - Delamination/Spall/Patched Area/Pothole (Wearing Surfaces)		1		0	0	1	0
3220 - Crack (Wearing Surface)		100		0	100	0	0
107 - Steel Open Girder/Beam	Mod.	1575	ft.	1531	2	42	0
1000 - Corrosion		42		0	0	42	0
1900 - Distortion		2		0	2	0	0
515 - Steel Protective Coating		61600	sq. ft.	61600	0	0	0
113 - Steel Stringer	Mod.	6273	ft.	6188	80	5	0
1000 - Corrosion		80		0	75	5	0
1900 - Distortion		5		0	5	0	0
515 - Steel Protective Coating		44352	sq. ft.	44352	0	0	0
152 - Steel Floor Beam	Mod.	1942	ft.	1837	3	102	0
1000 - Corrosion		102		0	0	102	0
1900 - Distortion		3		0	3	0	0
515 - Steel Protective Coating		32175	sq. ft.	29924	1608	643	0
210 - Reinforced Concrete Pier Wall	Mod.	167	ft.	152	15	0	0
1080 - Delamination/Spall/Patched Area		2		0	2	0	0
1090 - Exposed Rebar		4		0	4	0	0
1190 - Abrasion/Wear (PSC/RC)		9		0	9	0	0
215 - Reinforced Concrete Abutment	Mod.	141	ft.	136	5	0	0
1080 - Delamination/Spall/Patched Area		3		0	3	0	0
1090 - Exposed Rebar		2		0	2	0	0
300 - Strip Seal Expansion Joint	Mod.	120	ft.	120	0	0	0
2350 - Debris Impaction		0		0	0	0	0
2360 - Adjacent Deck or Header		0		0	0	0	0
311 - Movable Bearing	Mod.	8	each	0	8	0	0
1000 - Corrosion		8		0	8	0	0
515 - Steel Protective Coating		96	sq. ft.	96	0	0	0
313 - Fixed Bearing	Mod.	2	each	0	2	0	0
1000 - Corrosion		2		0	2	0	0
515 - Steel Protective Coating		24	sq. ft.	24	0	0	0
330 - Metal Bridge Railing	Mod.	1584	ft.	1579	4	1	0
1020 - Connection		4		0	4	0	0
7000 - Damage		1		0	0	1	0
331 - Reinforced Concrete Bridge Railing	Mod.	1584	ft.	1491	90	3	0
1080 - Delamination/Spall/Patched Area		10		0	7	3	0

National Bridge Elements

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

1090 - Exposed Rebar		3		0	3	0	0
1130 - Cracking (RC and Other)		80		0	80	0	0

CREW: NPR, JS (HAKS)

DATE: 11/14/2016

BRIDGE No. 01218

ROCKER BEARING MEASUREMENTS

Form BRI - 15, Rev 9/97

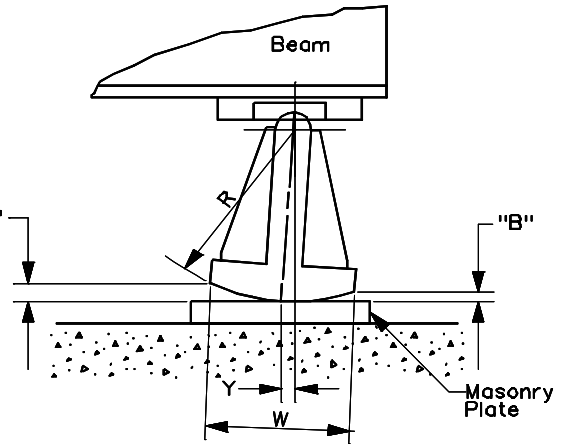
Span No. = 1

Substructure Unit = ABUTMENT 1

Temperature = 65
~~53~~°F

$\theta = \sin^{-1} (F-B)/W$
 $Y = R \tan \theta$

The "Front" of the bearing is the side facing the fixed bearing.



R = 24 inch
W = 18 inch

NOTE:

"F" & "B" should be measured at the left side corners of the rocker or on the side closest to the front face of the substructure on skewed bridges.

Beam	" F "	" B "	Y	Cont or Exp.	Comments
G1	1 14/16	1 10/16	5/16	E	5/16" PACK RUST UNDER ROCKER. 50% S.L. ON AB BOLT NUTS
G2	1 12/16	1 8/16	5/16	E	AB NUTS W/ ±90% S.L. HVY LAMINATED RUST AT SOLE PLATE

2018 MEASUREMENTS - INFRASTRUCTURE

G1	2"	1-5/8"	1/2"	E	5/16" PACK RUST UNDER ROCKER. 50% SL ON AB BOLT NUTS
G2	1-7/8"	1-3/8"	2/3"	E	AB NUTS WITH UP TO 90% SL

General Notes:

- Random areas of peeling paint and light rust.

CREW: NPR, JS (HAKS)

DATE: 11/14/2016

BRIDGE No. 01218

ROCKER BEARING MEASUREMENTS

Form BRI - 15, Rev 9/97

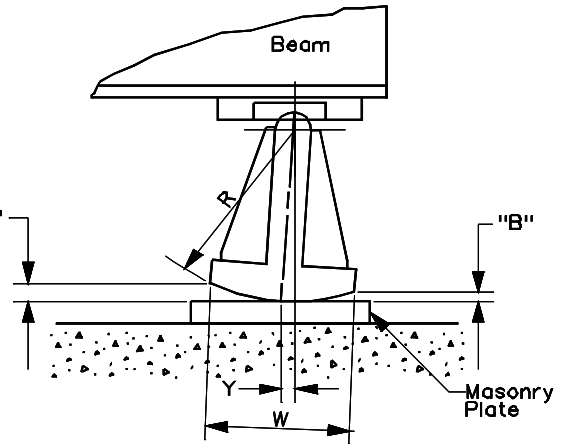
Span No. = 4

Substructure Unit = ABUTMENT 2

Temperature = 65 / ~~-53~~ °F

$\theta = \sin^{-1} (F-B)/W$
 $Y = R \tan \theta$

The "Front" of the bearing is the side facing the fixed bearing.



R = 24 inch
 W = 18 inch

NOTE:

"F" & "B" should be measured at the left side corners of the rocker or on the side closest to the front face of the substructure on skewed bridges.

Beam	" F "	" B "	Y	Cont or Exp.	Comments
G1	1 2/16	2 4/16	-1 8/16	C	AB NUTS W/ 50% S.L.
G2	1	2 1/16	-1 7/16	C	

2018 MEASUREMENTS - INFRASTRUCTURE

G1	1-3/8"	2"	- 13/16"	C	AB NUTS W/ 50% SL
G2	1-1/4"	2"	- 1/2"	C	

General Notes:

- Random areas of peeling paint and light rust.
- Heavy debris on masonry plate from joint repair.

ROCKER BEARING MEASUREMENTS

Form BRI - 15, Rev 9/97

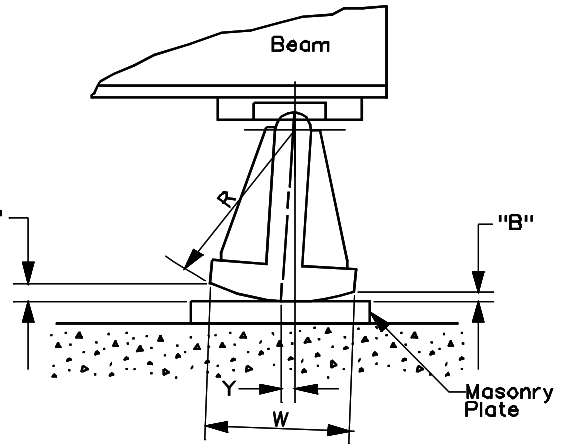
Span No. = 1/2

Substructure
Unit = PIER 1

Temperature = 65
~~-50~~ °F

$\theta = \sin^{-1} (F-B)/W$
 $Y = R \tan \theta$

The "Front" of the bearing is the side facing the fixed bearing.



R = 36 inch
W = 30-1/4 inch

NOTE:

"F" & "B" should be measured at the left side corners of the rocker or on the side closest to the front face of the substructure on skewed bridges.

Beam	" F "	" B "	Y	Cont or Exp.	Comments
G1	4 1/16	3 11/16	7/16	E	
G2	4	3 8/16	10/16	E	

2018 MEASUREMENTS - INFRASTRUCTURE

G1	4-1/16"	3-11/16"	7/16"	E	
G2	4"	3-1/2"	10/16"	E	

General Notes:

- Random areas of peeling paint and light rust.
- Moderate abrasion rust at pin.
- Laminar rust between rocker and masonry plate.

ROCKER BEARING MEASUREMENTS

Form BRI - 15, Rev 9/97

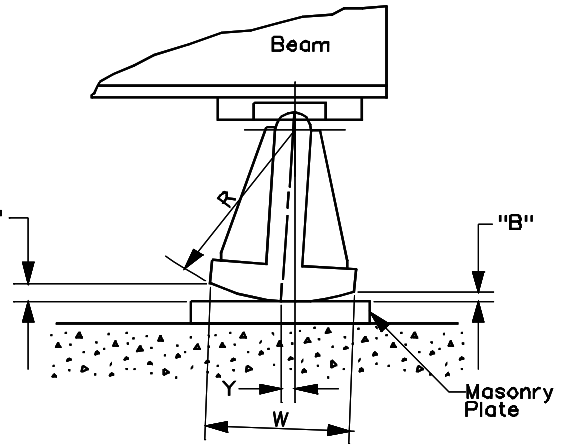
Span No. = 3/4

Substructure Unit = PIER 3

Temperature = 65 / ~~50~~ °F

$\theta = \sin^{-1} (F-B)/W$
 $Y = R \tan \theta$

The "Front" of the bearing is the side facing the fixed bearing.



R = 36 inch
 W = 30-1/4 inch

NOTE:

"F" & "B" should be measured at the left side corners of the rocker or on the side closest to the front face of the substructure on skewed bridges.

Beam	" F "	" B "	Y	Cont or Exp.	Comments
G1	3 3/16	4 1/16	-1 1/16	C	LT. RUST UNDER ROCKER
G2	3 3/16	3 15/16	- 14/16	C	LT. RUST UNDER ROCKER

2018 MEASUREMENTS - INFRASTRUCTURE

G1	4"	3-3/8"	3/4"	E	LT. RUST UNDER ROCKER
G2	3-7/8"	3-1/4"	3/4"	E	LT. RUST UNDER ROCKER

General Notes:

- Random areas of peeling paint and light rust.

Form: BRI-12, Rev. 1/14
Inspection type: Fracture Critical,Routine
Inspection Date: 9/10/2018
Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN
Carried: INTERSTATE 84 EASTBOUND
Crossed: HOUSATONIC RIVER
Inventory Route: NHS

FRACTURE CRITICAL MEMBERS / FRACTURE PRONE DETAILS

Inspectors:

Lead Inspector:	Matt Riesenber
Inspector:	Task:
Area, 12	BSE - Manager
Liguore, Matt	BSE - Inspector
O'hara, Mike	BSE - Inspector
Riesenber, Matt	BSE - Inspector

Visits:

Visit Date:	Temp:	Start Time:	End Time:
09/10/2018	65	08:00 AM	04:00 PM
09/11/2018	71	09:00 AM	02:45 PM

Fracture Critical Inspection Frequency: 24 Months

Fracture Critical Type Code: D Two Girder System, riveted / bolted plate girders

Structure Type: Highway Bridges **Year Built:** 1953 **ADT:** 39795 **Year of ADT:** 2018 **% Truck:** 9

Access Equipment Needed: 60' Snooper & Catwalk

Traffic Control Required: Shoulder closure on I-84 EB

Reference to Plans: Project No. 96-49 (1950) & 96-115 (1975)

MEMBER/DETAIL TYPE # 1

Member/Details Type: A One or two steel girder systems **Fracture Critical:** Yes

Fatigue Category: D **Steel Type:** A-588 **Fatigue Prone:** Yes

Description: Riveted girders & floorbeams are fracture critical. Rivets in tension zones.

Inspection Procedure: 100% hands-on.

Condition Comments: See BRI-18.

Procedure Followed This Inspection? Yes **If No please explain:**

Sketches

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

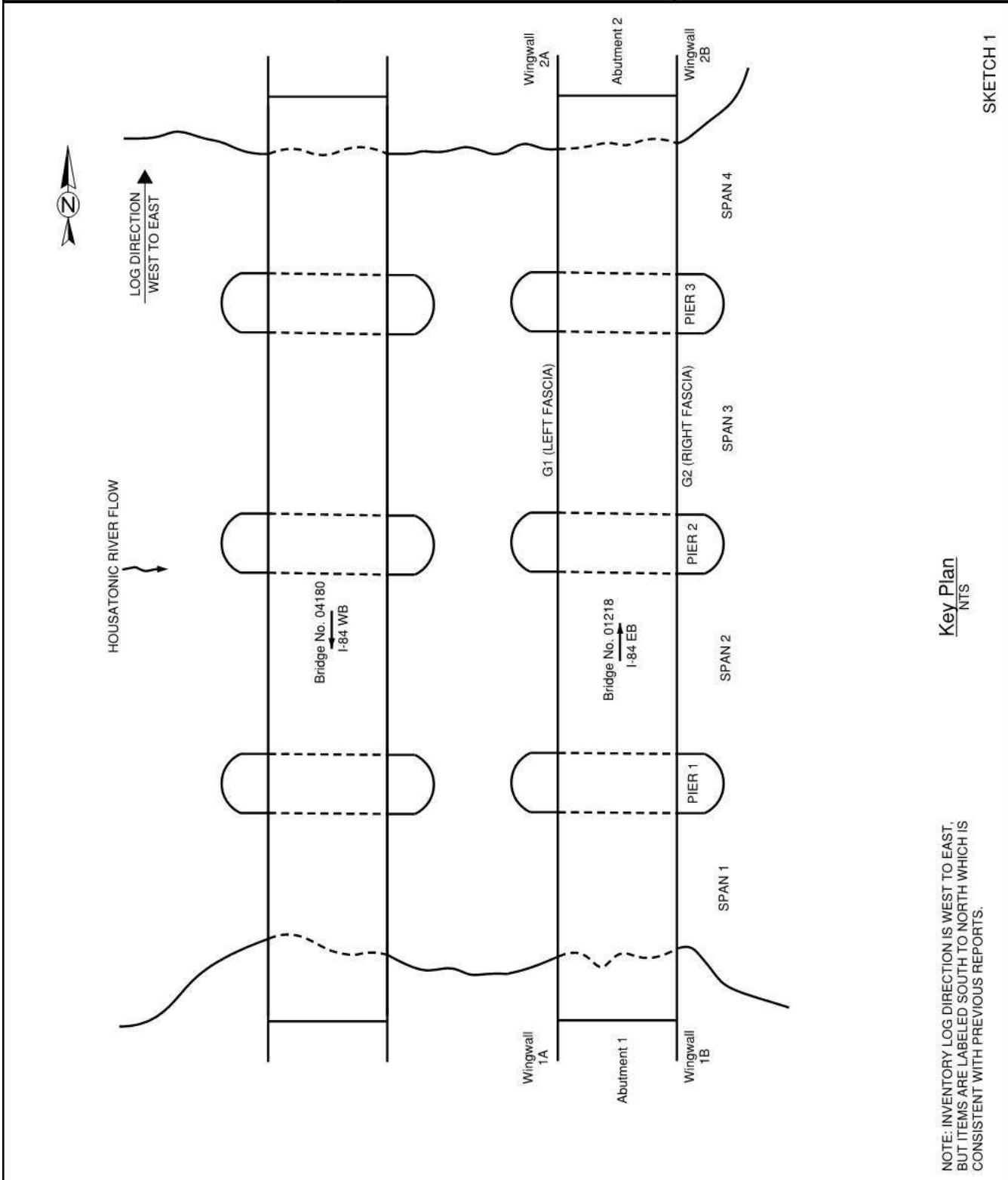
Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM	DATE: 11/9/2016	BRIDGE NO.: 01218
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Key Plan
NTS

NOTE: INVENTORY LOG DIRECTION IS WEST TO EAST, BUT ITEMS ARE LABELED SOUTH TO NORTH WHICH IS CONSISTENT WITH PREVIOUS REPORTS.

REVISION Δ 1	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION Δ 3	DATE:	CREW:
REVISION Δ 2	DATE:	CREW:	REVISION Δ 4	DATE:	CREW:

Sketches

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM	DATE: 11/9/2016	BRIDGE NO.: 01218
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TOP OF DECK - GENERAL NOTES

OVERLAY

- PAVING SEAMS ARE OPEN SLIGHTLY.

CURBS:

- SCRAPES WITH RUST STAINS.
- CHIPPED EDGES UP TO 1'LONG x 6"WIDE.
AVERAGE CURB REVEAL
LEFT (WEST): 2-1/2"
RIGHT (EAST): 2-1/2"

SIDEWALKS:

- RANDOM AREAS OF MODERATE SCALE UP TO 1/2" DEEP UNLESS OTHERWISE NOTED.
- RANDOM TRANSVERSE HAIRLINE CRACKS.
- PONDING WATER DUE TO CLOGGED SCUPPER GRATES AND SCALE AREAS.
- DEBRIS ACCUMULATION UP TO 2"D.

PARAPETS:

- AREAS OF LIGHT TO MODERATE SCALE.
- IMPACT SCRAPES.
- RANDOM HORIZONTAL AND VERTICAL CRACKS OPEN UP TO 1/8"WIDE W/ & W/O EFFLORESCENCE.
- PARAPETS & FENCE BASE W/ RANDOM SPALLS UP TO 18" L x 12" H x 3" DP.

SINGLE PIPE ALUMINUM RAILING:

- RANDOM COLLISION SCRAPES

DRAINS:

- ROADWAY SCUPPERS HAVE DEBRIS IN GRATES & BASINS, BUT ALL PIPES WERE CLEAR. *

EXPANSION JOINTS (STRIP SEAL WITH CONCRETE HEADERS):

- MODERATE TO HEAVY ACCUMULATION OF SAND & DEBRIS IN THE JOINT.
- CONCRETE HEADERS W/ RANDOM TRANSVERSE HAIRLINE CRACKS.

APPROACH GUIDE RAILS:

- METAL BEAM GUIDE RAILS AT SOUTHWEST & NORTHWEST APPROACH CORNERS.
- NORTHEAST APPROACH CONCRETE BARRIER HAS NO NOTABLE DEFICIENCIES.





APPROACH PAVEMENT:

- PAVING SEAMS ARE OPEN SLIGHTLY.

APPROACH EMBANKMENT:

- WELL VEGETATED

SKETCH 2

REVISION 	DATE : 9/10/2018	CREW : MAR, MSO, MJL	REVISION 	DATE :	CREW :
REVISION 	DATE :	CREW :	REVISION 	DATE :	CREW :

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

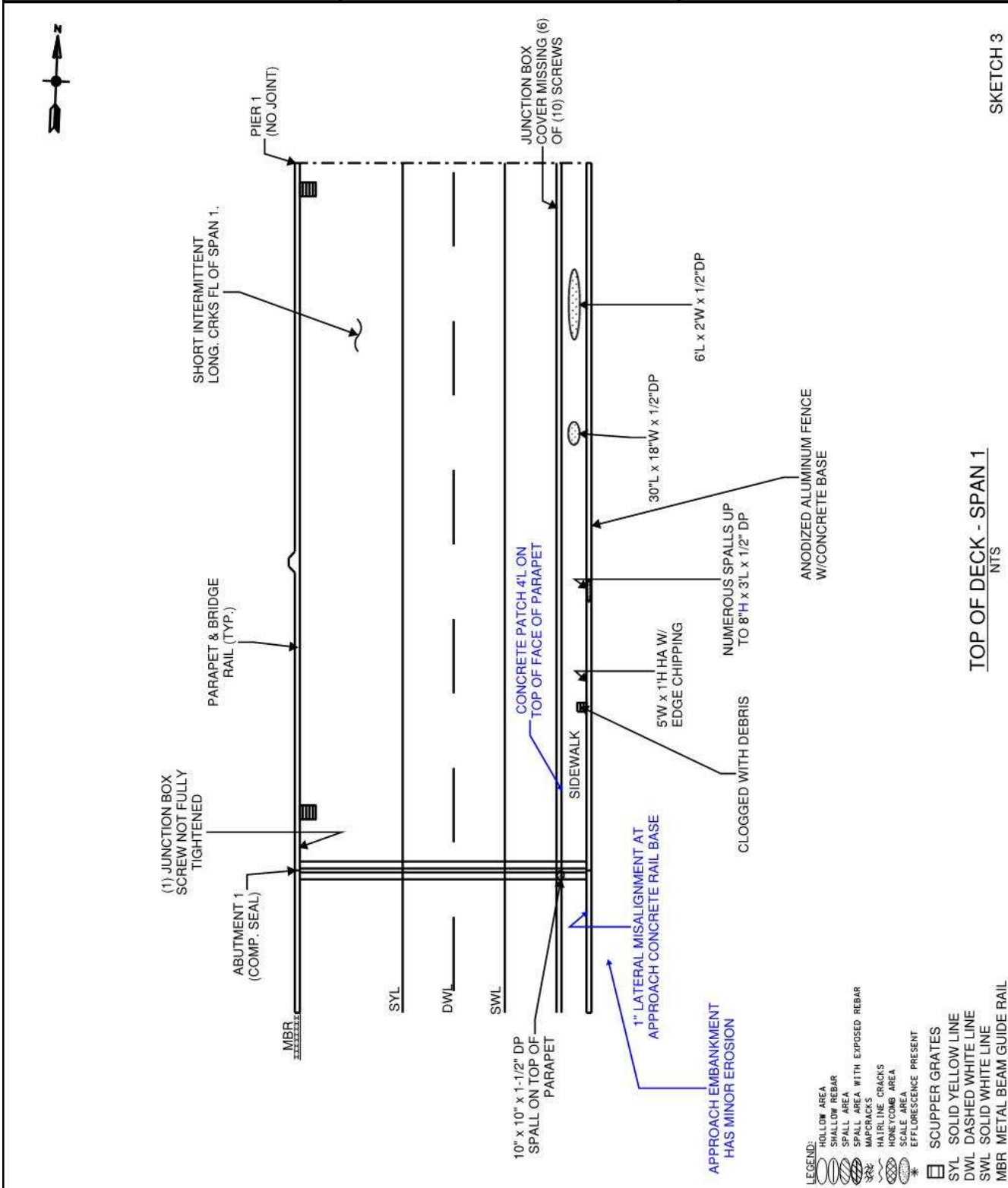
Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM DATE: 11/9/2016 BRIDGE NO.: 01218



SKETCH 3

TOP OF DECK - SPAN 1
NTS

- LEGEND:**
- HOLLOW AREA
 - SHALLOW REBAR
 - SPALL AREA
 - SPALL AREA WITH EXPOSED REBAR
 - MAPCRACKS
 - HAIRLINE CRACKS
 - HONEYCOMB AREA
 - SCALE AREA
 - EFFLUORESCENCE PRESENT
 - SCUPPER GRATES
 - SYL SOLID YELLOW LINE
 - DWL DASHED WHITE LINE
 - SWL SOLID WHITE LINE
 - MBR METAL BEAM GUIDE RAIL

REVISION	DATE: 9/10/2018	CREW: M A R M S O . M J L	REVISION	DATE:	CREW:
REVISION	DATE:	CREW:	REVISION	DATE:	CREW:
REVISION	DATE:	CREW:	REVISION	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

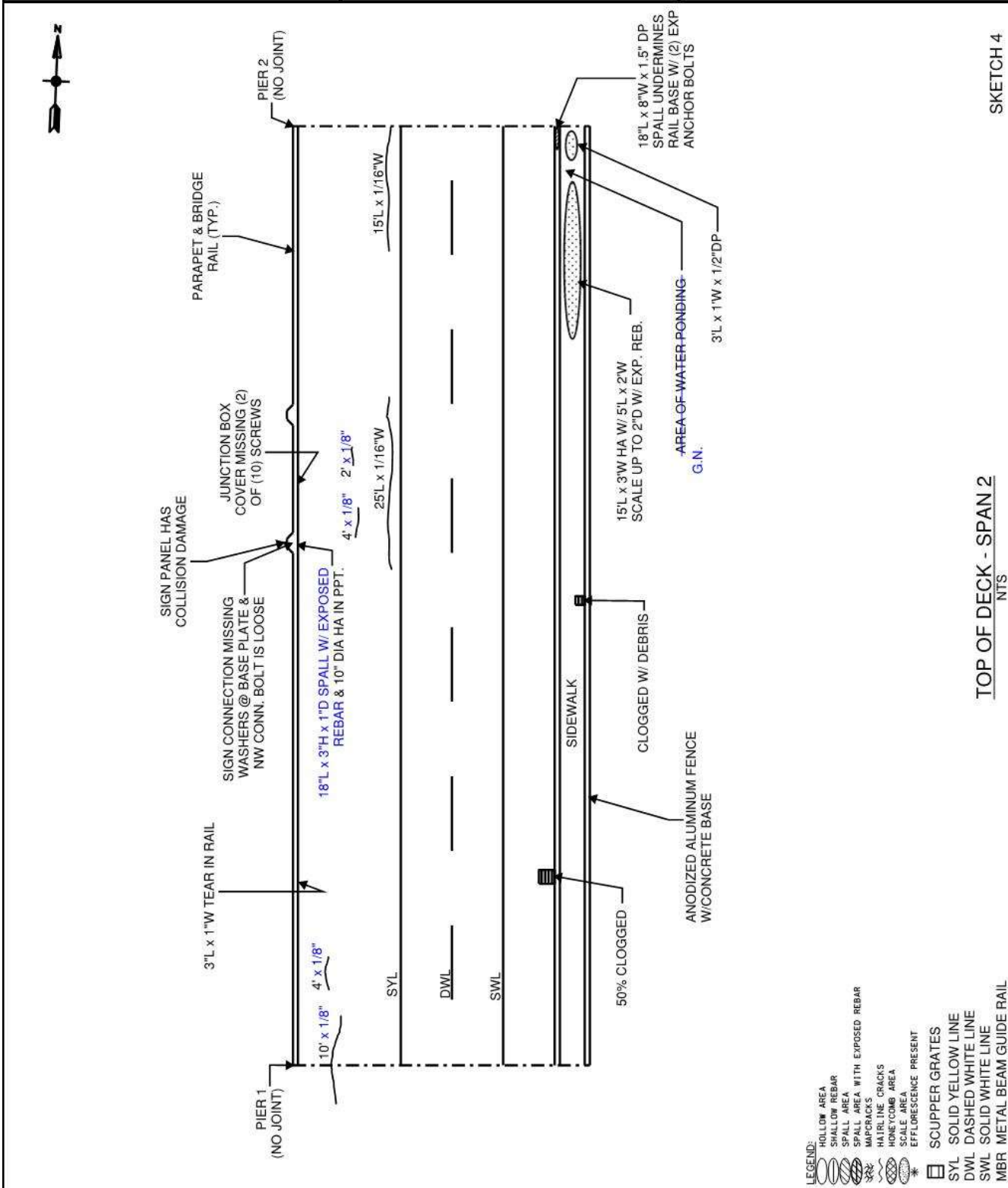
Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM DATE: 11/9/2016 BRIDGE NO.: 01218



SKETCH 4

TOP OF DECK - SPAN 2
NTS

- LEGEND:**
- HOLLOW AREA
 - SHALLOW REBAR
 - SPALL AREA
 - SPALL AREA WITH EXPOSED REBAR
 - MAPCRACKS
 - HAIRLINE CRACKS
 - HONEYCOMB AREA
 - SCALE AREA
 - EFFLUORESCENCE PRESENT
 - SCUPPER GRATES
 - SYL SOLID YELLOW LINE
 - DWL DASHED WHITE LINE
 - SWL SOLID WHITE LINE
 - MBR METAL BEAM GUIDE RAIL

REVISION	DATE: 9/10/2018	MA R, M S O . M J L	REVISION	DATE:	CREW:
REVISION	DATE:	CREW:	REVISION	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

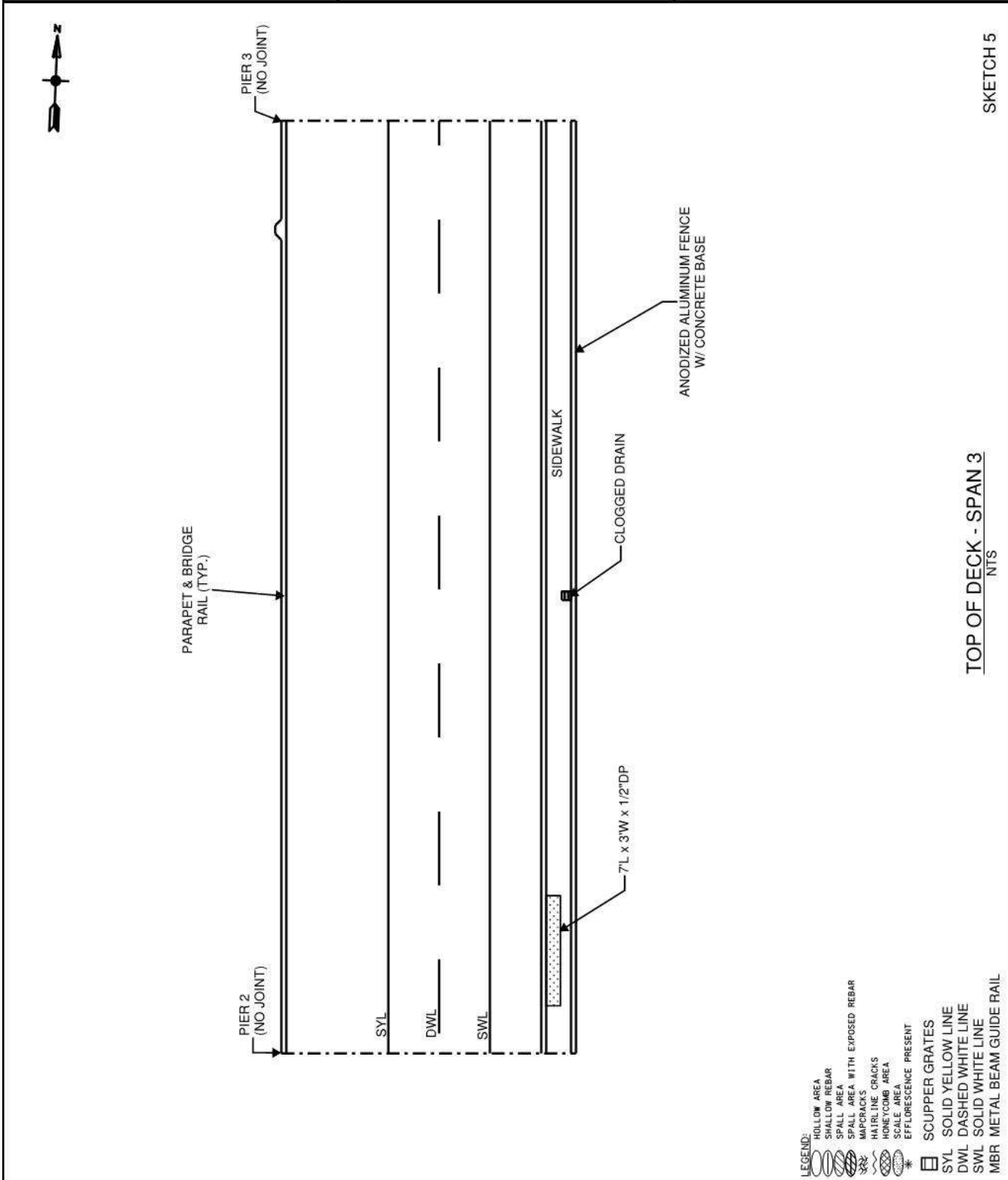
Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM DATE: 11/9/2016 BRIDGE NO.: 01218



SKETCH 5

TOP OF DECK - SPAN 3
NTS

- LEGEND:
- HOLLOW AREA
 - SHALLOW REBAR
 - SPALL AREA
 - SPALL AREA WITH EXPOSED REBAR
 - MAPCRACKS
 - HAIRLINE CRACKS
 - HONEYCOMB AREA
 - SCALE AREA
 - EFFLUORESCENCE PRESENT
 - SCUPPER GRATES
 - SYL SOLID YELLOW LINE
 - DWL DASHED WHITE LINE
 - SWL SOLID WHITE LINE
 - MBR METAL BEAM GUIDE RAIL

REVISION	DATE: 9-10-2018	CREW: M A R M S O . M J L	REVISION	DATE:	CREW:
REVISION	DATE:	CREW:	REVISION	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

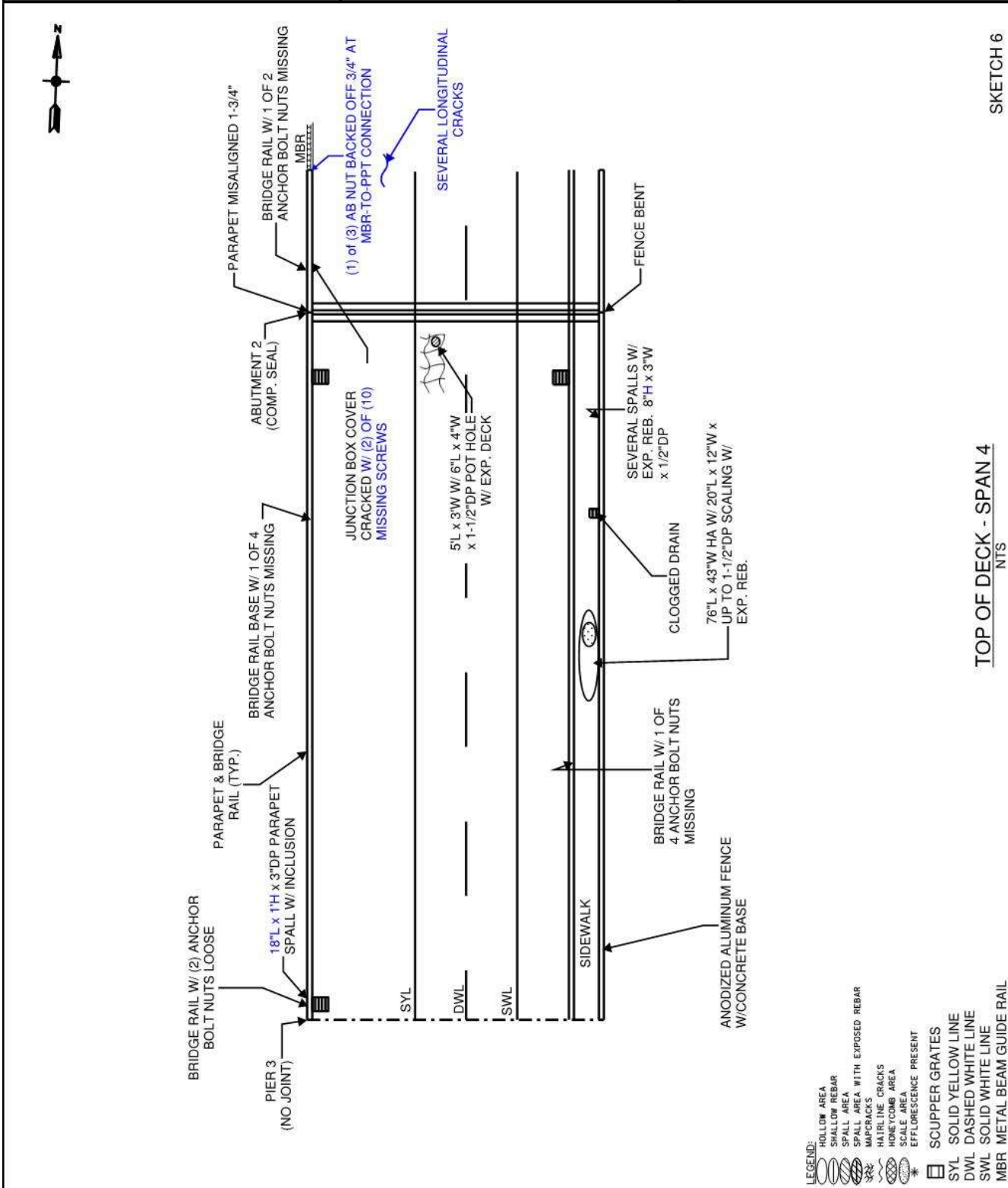
Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM DATE: 11/9/2016 BRIDGE NO.: 01218



SKETCH 6

TOP OF DECK - SPAN 4
NTS

REVISION	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION	DATE:	CREW:
REVISION	DATE:	CREW:	REVISION	DATE:	CREW:

Sketches**Inspection type:** Fracture Critical,Routine**Inspection Date:** 9/10/2018**Inspected by:** Infrastructure Engineers**Bridge No:** 01218**Town:** NEWTOWN**Carried:** INTERSTATE 84 EASTBOUND**Crossed:** HOUSATONIC RIVER**Inventory Route:** NHS

CREW: RV, ARM

DATE: 11/9/2016

BRIDGE NO.: 01218

GENERAL NOTES FOR DECK & FRAMING PLANGENERAL:

- RANDOM AREAS OF PEELING PAINT W/ MODERATE TO HEAVY RUST.
- ~~SECTION LOSSES IN NON-CRITICAL ZONES ARE NOT SHOWN.~~
- ~~MINOR DEFECTS THAT DO NOT AFFECT THE FUNCTIONALITY OR SERVICE OF THE BRIDGE OR CATWALKS WERE NOT CARRIED OVER FROM THE PREVIOUS REPORT OR INCLUDED IN THIS REPORT (MIS-DRILLED HOLES, SHIM PLATES IN PLACE, ETC.).~~
- PVC WEEP PIPES EXTEND Laterally AWAY FROM FLANGES, BUT DO NOT EXTEND BELOW BOTTOM FLANGES AT SOME LOCATIONS. SOME WEEP PIPES HAVE BEEN EXTENDED. ONLY WEEP PIPES THAT DRAIN ONTO BRIDGE ELEMENTS ARE SHOWN IN THE SKETCHES.

UNDERSIDE OF DECK:

- AREAS OF SCALE UP TO 1/4"D.
- RANDOM HAIRLINE TRANSVERSE CRACKS W/ & W/O EFFLORESCENCE
- AREAS OF MINOR HONEYCOMB.
- GIRDER DECK HAUNCHES HAVE VERTICAL HAIRLINE CRACKS.

BEARING DEVICES:

- ROCKER BEARINGS AT ABUTMENTS AND PIERS 1 & 2 W/ AREAS OF PEELING PAINT AND LIGHT RUST.
- FIXED TYPE ROCKER BEARINGS AT PIER 3 HAVE NO NOTABLE DEFICIENCIES.

STRINGERS & STRINGER BEARINGS:

- STRINGER BOTTOM FLANGES HAVE RANDOM MINOR WAVINESS.
- RANDOM MINOR GAPS AND/OR PACK RUST ALONG EDGES OF STRINGER BEARINGS.
- RANDOM TACK WELDS BETWEEN EDGES OF STRINGER BEARING PLATES AND FLOORBEAM TOP FLANGES. RANDOM PREVIOUSLY CRACKED/BROKEN TACK WELDS ARE SHOWN ON SKETCHES
- FASCIA STRINGERS BOTTOM FLANGES HAVE AREAS OF MODERATE TO HEAVY LAMINAR RUST W/ UP TO 3/16" DP x FULL WIDTH SECTION LOSS OVER THE FLOOR BEAM CANTILEVERS / BEARINGS AT ISOLATED LOCATIONS.
- RANDOM AREAS OF MINOR ABRASION RUST AT THE STRINGER BEARINGS.
- UP TO 1/4" PACK RUST AND/OR VERTICAL MISALIGNMENT AT SPLICES.





RIVETED BUILT-UP GIRDERS:

- GIRDER BOTTOM FLANGES W/ UP TO 3/4" PACK RUST BETWEEN COVER PLATES.
- WEBS HAVE RANDOM WELDED REPAIR PLATES AT LOCATIONS WHERE STEEL COUPONS WERE REMOVED. WELDS ARE POOR AT THESE LOCATIONS.
- SPLICES W/ LIGHT TO MODERATE RUST.
- WEB STIFFENERS AND GIRDER BOTOM FLANGE ANGLES HAVE RANDOM MINOR BENDS, SCRAPES AND GOUGES FROM CONSTRUCTION.
- ISOLATED GIRDER ENDS AT ABUTMENTS W/ LAMINAR RUST.
- SECTION LOSSES AT BOTTOM FLANGE AND END ANGLE OUTSTANDING LEGS (1/8" MIN. REMAINING), NON-CRITICAL LOCATIONS.

CANTILEVER FLOOR BEAMS:

- CANTILEVER KNEE BRACES HAVE UP TO 3/4" PACK RUST BETWEEN PLATES AT THE GIRDER BOTTOM FLANGES.
- WEB STIFFENERS W/ UP TO FULL WIDTH x 4" HIGH x 3/16" DEEP SECTION LOSS.
- CANTILEVER BOTTOM FLANGE ANGLE HORIZONTAL LEGS W/ UP TO 5.5" WIDE x 3" LONG x 3/16" DEEP SECTION LOSS ADJACENT TO STIFFENER BASES.
- CANTILEVER BOTTOM FLANGE ANGLE HORIZONTAL LEGS BETWEEN STRINGER 7 & STRINGER 8 HAVE AREAS OF UP TO 1' LONG x 4" WIDE x 1/8" DEEP SECTION LOSS AND THE VERTICAL LEGS HAVE UP TO FULL HEIGHT x 2" LONG x 1/8" DEEP LOSS.
- CANTILEVER ENDS W/ UP TO 5/8" PACK RUST BETWEEN CLIP ANGLES AND GUSSET PLATES.
- RANDOM AREAS OF MODERATE ACCUMULATION OF BIRD DEBRIS ON TOP FLANGES.
- RIVET END PLATES (OUTSIDE FACES) HAVE PACK RUST 1" T AND HEAVY RUST.

SKETCH 7

REVISION 	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION 	DATE:	CREW:
REVISION 	DATE:	CREW:	REVISION 	DATE:	CREW:

Sketches**Inspection type:** Fracture Critical,Routine**Inspection Date:** 9/10/2018**Inspected by:** Infrastructure Engineers**Bridge No:** 01218**Town:** NEWTOWN**Carried:** INTERSTATE 84 EASTBOUND**Crossed:** HOUSATONIC RIVER**Inventory Route:** NHS

CREW: RV, ARM

DATE: 11/9/2016

BRIDGE NO.: 01218

GENERAL NOTES FOR DECK & FRAMING PLAN (CONT.)INTERIOR FLOOR BEAMS:

- WEBS HAVE RANDOM WELDED REPAIR PLATES AT LOCATIONS WHERE STEEL COUPONS WERE PREVIOUSLY REMOVED. WELDS ARE POOR AT THESE LOCATIONS WITH AREAS OF SURFACE RUST.
- FLANGES AND STIFFENERS HAVE MINOR BENDS FROM CONSTRUCTION.
- WEBS AND FLANGES HAVE AREAS OF HEAVY RUST W/ RANDOM HEAVY RUST AT CENTERLINE OF BRIDGE.
- HORIZONTAL LEGS OF FLOOR BEAM FLANGES HAVE +/-11/16" REMAINING (ORIGINAL THICKNESS = 3/4") AT NUMEROUS LOCATIONS. AREAS W/ GREATER FLANGE LOSSES WERE NOTED.
- RANDOM TOP FLANGE TIE PLATES APPEAR TO BE IN CONTACT WITH GIRDER WEBS AT THE TIE PLATE PASS-THROUGHS.
- HATCHES IN THE FIRST INTERMEDIATE FLOOR BEAMS FROM THE ABUTMENTS HAVE BEEN WELDED SHUT.





LATERAL BRACING MEMBERS:

- LATERAL BRACING MEMBERS ARE BENT VERTICALLY AND/OR Laterally UP TO 3" AT RANDOM LOCATIONS. SOME MEMBERS HAVE MINOR TWISTING.
- RANDOM BRACING MEMBERS WERE VIBRATING AT THE TIME OF INSPECTION, BUT NOT EXCESSIVELY.
- LATERAL BRACING GUSSET PLATES AND MEMBER ENDS AT THE CENTERLINE OF BRIDGE AND AT CORNERS OF SOME PANELS HAVE LAMINATED RUST W/ NEGLIGIBLE TO 1/16" DEEP SECTION LOSS. RIVET HEADS W/ UP TO 40% SECTION LOSS AT SOME OF THESE LOCATIONS.
- GUSSET PLATES HAVE RANDOM BENDS, TYPICALLY LESS THAN 1". MORE SEVERE BENDS WRE SHOWN IN SKETCHES.

CATWALKS:

- AREAS OF PEELING PAINT WITH LIGHT TO MODERATE RUST.
- UP TO 3/4" PACK RUST BETWEEN TREAD PLATES AND CATWALK SUPPORT CHANNELS AT SOME LOCATIONS.
- CATWALK TREAD PLATES HAVE RANDOM HEAVY RUST, HEAVY SURFACE RUST AND/OR UP TO 3/16" DEEP SECTION LOSS AT SOME LOCATIONS.
- RANDOM HAND RAILS HAVE UP TO 1" BENDS.

SKETCH 8

REVISION 	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION 	DATE:	CREW:
REVISION 	DATE:	CREW:	REVISION 	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

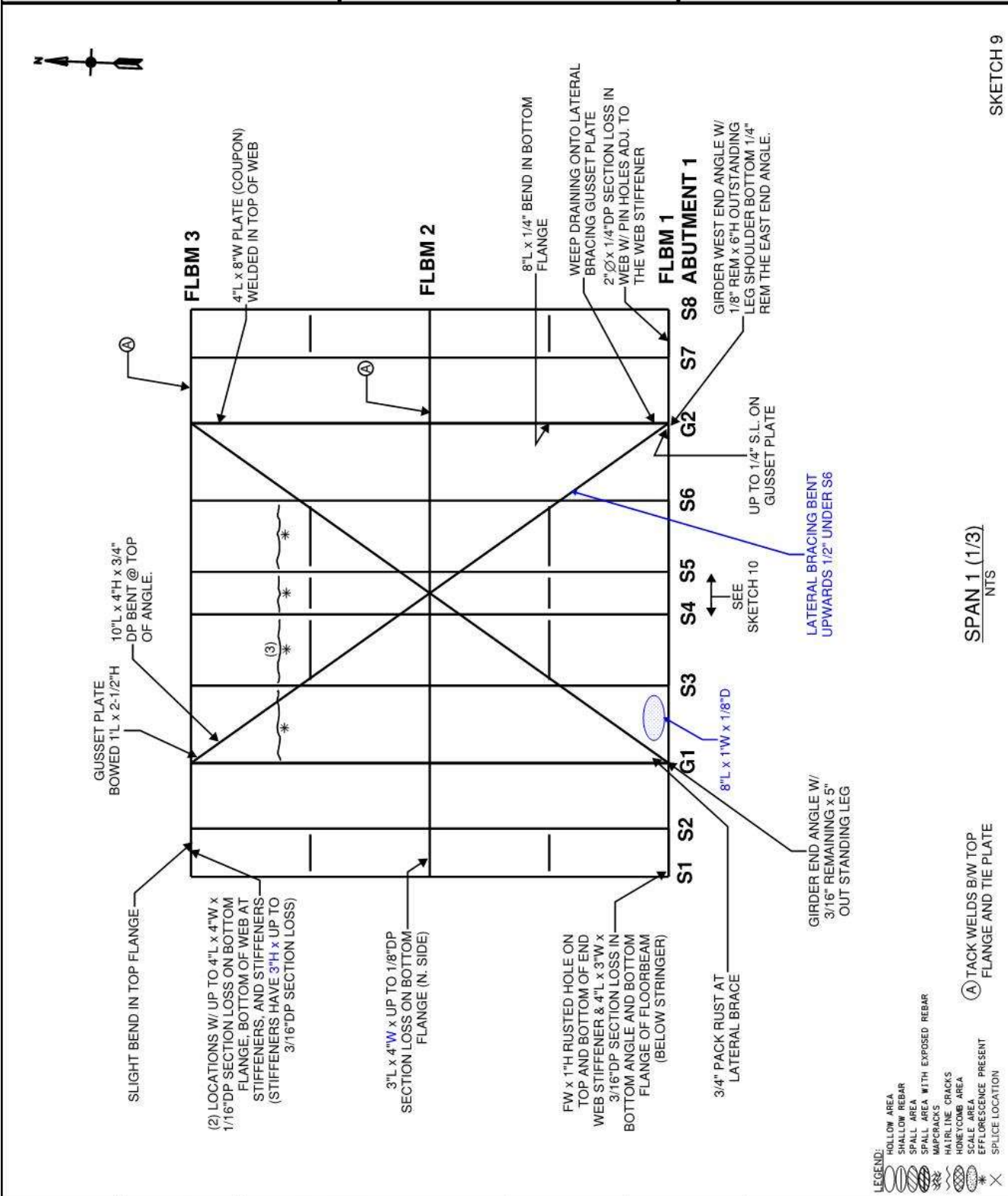
Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM

DATE: 11/9/2016

BRIDGE NO.: 01218



SKETCH 9

SPAN 1 (1/3)
NTS

Ⓐ TACK WELDS B/W TOP FLANGE AND TIE PLATE

REVISION 1	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION 3	DATE:	CREW:
REVISION 2	DATE:	CREW:	REVISION 4	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

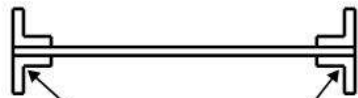
Inventory Route: NHS

CREW: RV, ARM

DATE: 11/9/2016

BRIDGE NO.: 01218

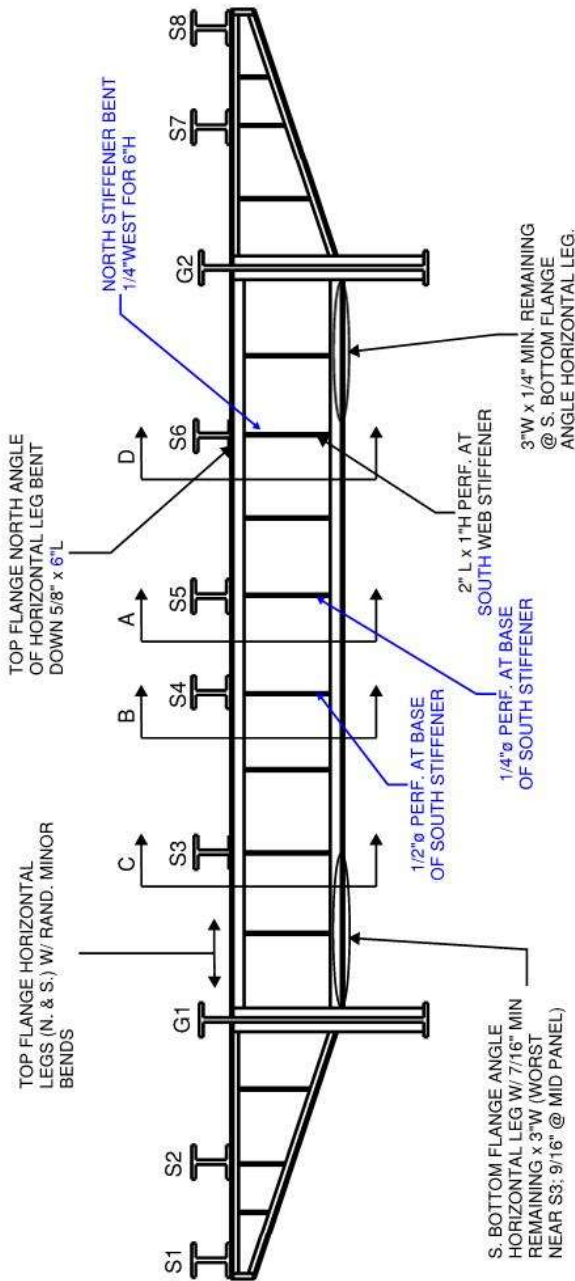
TYPICAL FLOOR BEAM CROSS SECTION



ORIGINAL ANGLE:
6" x 6" x 3/4" =
8.46 in² CROSS SECTIONAL AREA

INTERIOR PORTIONS OF FLBMS

- WEBS = 66" x 3/8" (NO LOSSES IN CRITICAL ZONES @ INTERIOR)
- FLANGE ANGLE AREA = 6" x 6" x 3/4" ANGLE = 8.44 in² x (2) = 16.88 in²
- ASSUME FW / FH LOSSES = 5-1/4" WIDE / HIGH @ FLANGES
- FLANGE LOSS ONLY SHOWN IF GREATER THAN OR EQUAL TO 5% (5% x 16.88 in² = 0.84 in²)



GENERAL NOTES:

- TOP FLANGE & BOTTOM FLANGE ANGLES W/ LAM. RUST & SECTION LOSS. SEE CROSS SECTIONS ON FOLLOWING SHEET (LAM. RUST & SECTION LOSS IS WORST @ THE JOINT SIDE OF THE FLOORBEAMS)
- RANDOM 1/16" SECTION LOSS THROUGH-OUT @ FLANGE.
- BOTTOM 3" OF STIFFENERS & S. ELEVATION W/ HEAVY SECTION LOSS @ OUTSTANDING LEGS, UP TO KNIFE EDGE W/ PERFS UP TO 1".

SKETCH 10

SPAN 1, FLBM 1
NTS

REVISION	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION	DATE:	CREW:
REVISION	DATE:	CREW:	REVISION	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

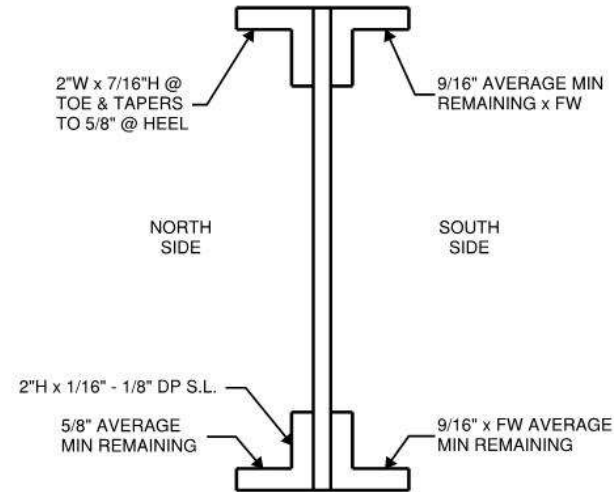
Inventory Route: NHS

CREW: RV, ARM

DATE: 11/9/2016

BRIDGE NO.: 01218

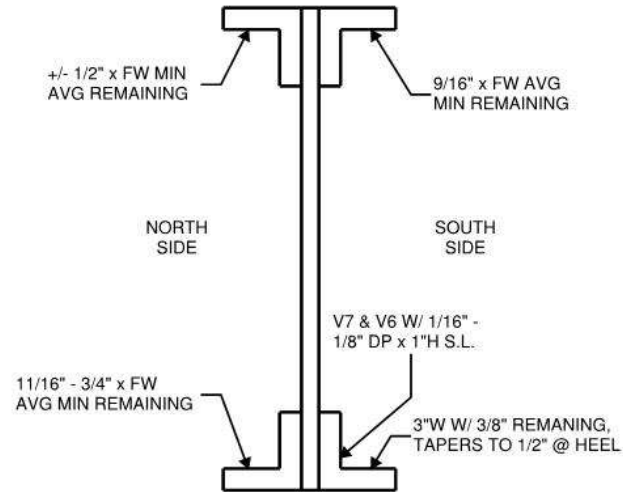
SPAN 1, FLBM 1 - SECTION A-A
NTS



BF LOSS = $2 \times (3/32) + 5 - 1/4 \times (1/8) + 5 - 1/4 \times (3/16) = 1.83 \text{ in}^2$
 $1.83 \text{ in}^2 / 16.88 \text{ in}^2 = 11\% \text{ S.L.}$

TF LOSS = $2 \times (5/16) + 3.25 \times (0.75 - (7/16 + 5/8)/2) + 5 - 1/4 \times (3/16) = 2.32 \text{ in}^2$
 $2.32 \text{ in}^2 / 16.88 \text{ in}^2 = 14\% \text{ S.L.}$

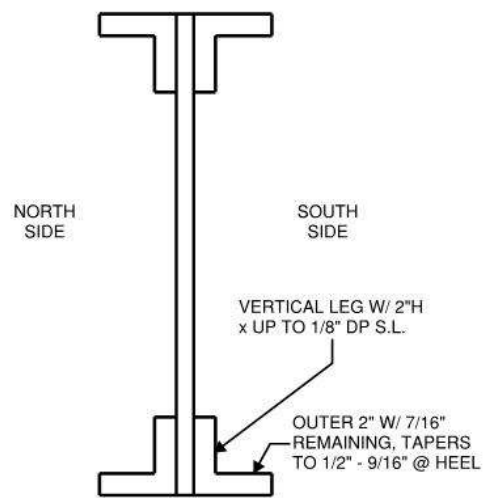
SPAN 1, FLBM 1 - SECTION B-B
NTS



BF LOSS = $5 - 1/4 \times (1/32) + 1 \times (3/32) + 3 \times (3/8) + 2 - 1/4 \times (3/4 - 7/16) = 2.16 \text{ in}^2$
 $2.16 \text{ in}^2 / 16.88 \text{ in}^2 = 13\% \text{ S.L.}$

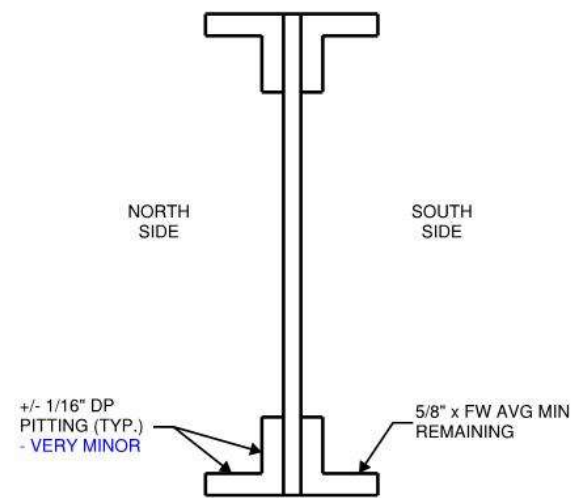
TF LOSS = $5 - 1/4 \times (1/4) + 3/16 = 2.29 \text{ in}^2$
 $2.29 \text{ in}^2 / 16.88 \text{ in}^2 = 14\% \text{ S.L.}$

SPAN 1, FLBM 1 - SECTION C-C
NTS



BF LOSS = $2 \times (1/8) + 2 \times (5/16) + 3 - 1/4 \times (3/4 - (17/32 + 7/16)/2) = 1.74 \text{ in}^2$
 $1.74 \text{ in}^2 / 16.88 \text{ in}^2 = 10\% \text{ S.L.}$

SPAN 1, FLBM 1 - SECTION D-D
NTS



BF LOSS = $5 - 1/4 \times (1/16 + 1/2) \times 2 + 5 - 1/4 \times (1/8) = 0.98 \text{ in}^2$
 $0.98 \text{ in}^2 / 16.88 \text{ in}^2 = 6\% \text{ S.L.}$

SKETCH 11

REVISION	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION	DATE:	CREW:
REVISION	DATE:	CREW:	REVISION	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

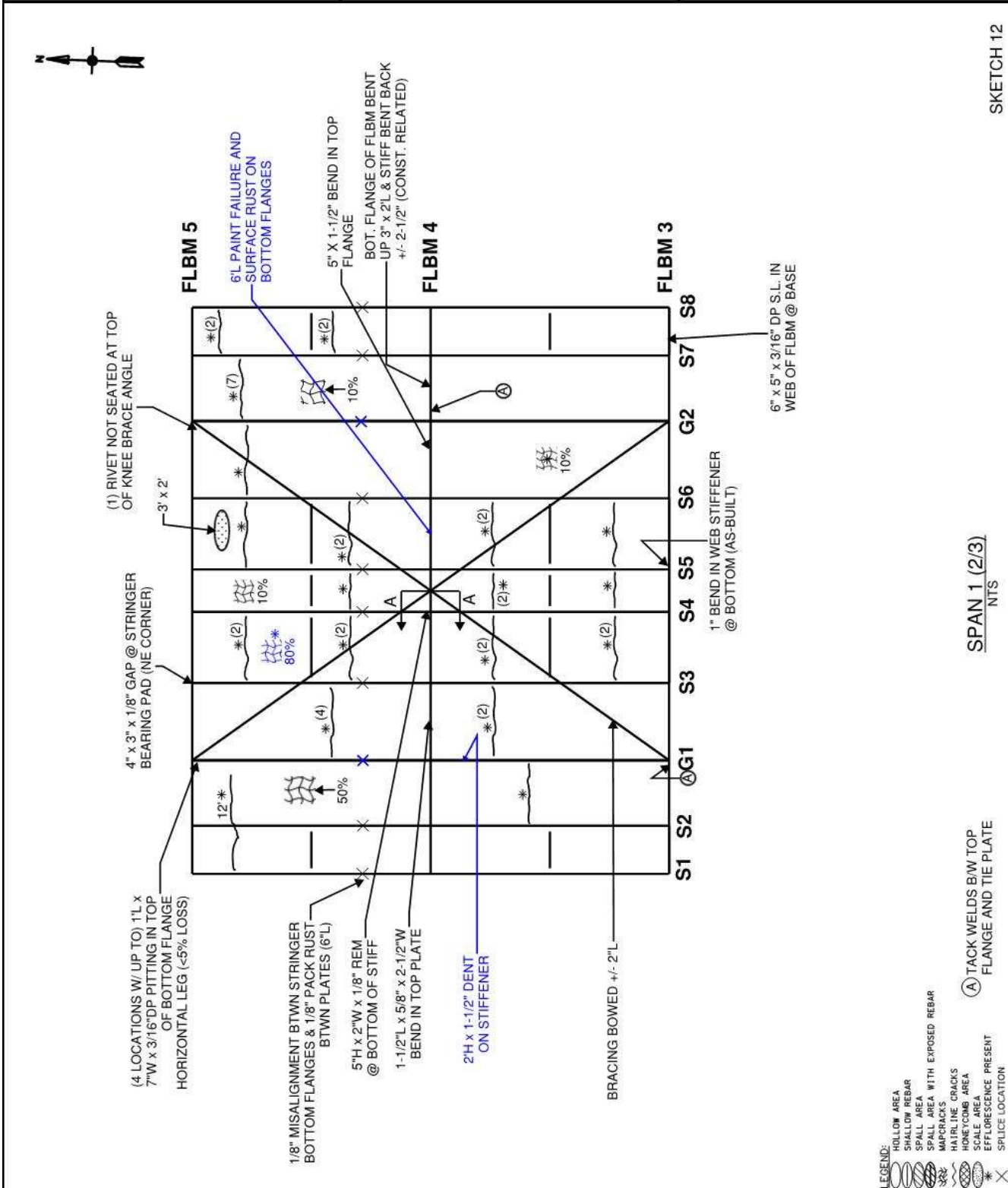
Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM DATE: 11/9/2016 BRIDGE NO.: 01218



REVISION A	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION B	DATE:	CREW:
REVISION B	DATE:	CREW:	REVISION C	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

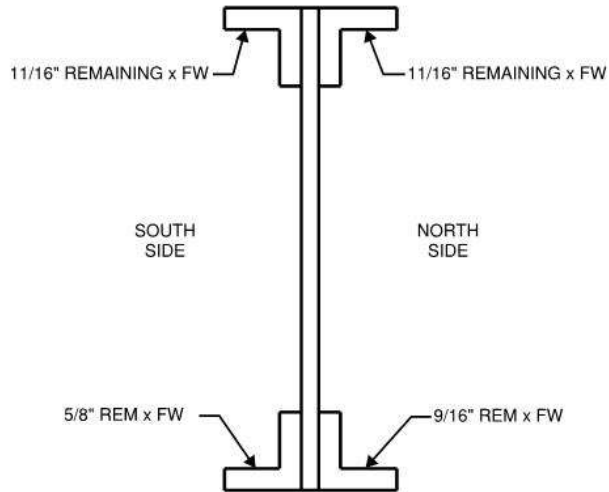
Inventory Route: NHS

CREW: RV, ARM

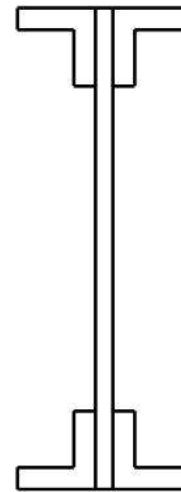
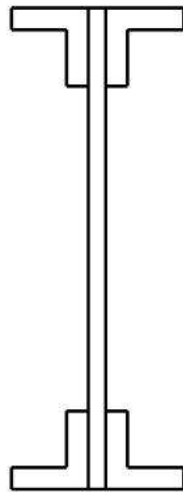
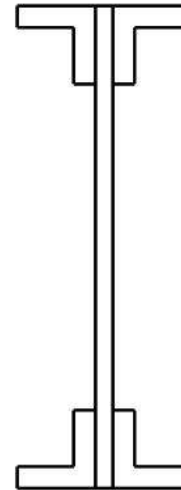
DATE: 11/9/2016

BRIDGE NO.: 01218

SPAN 1, FLBM 4 - SECTION A-A (MID-SPAN)
NTS



BF LOSS = $5 - 1/4(1/8" + 3/16") = 1.64 \text{ in}^2$
 $1.64 \text{ in}^2 / 16.88 \text{ in}^2 = 10\% \text{ S.L.}$



SKETCH 13

REVISION DATE: 9/10/2018 CREW: MAR, MSO, MJL

REVISION DATE: CREW:

REVISION DATE: CREW:

REVISION DATE: CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

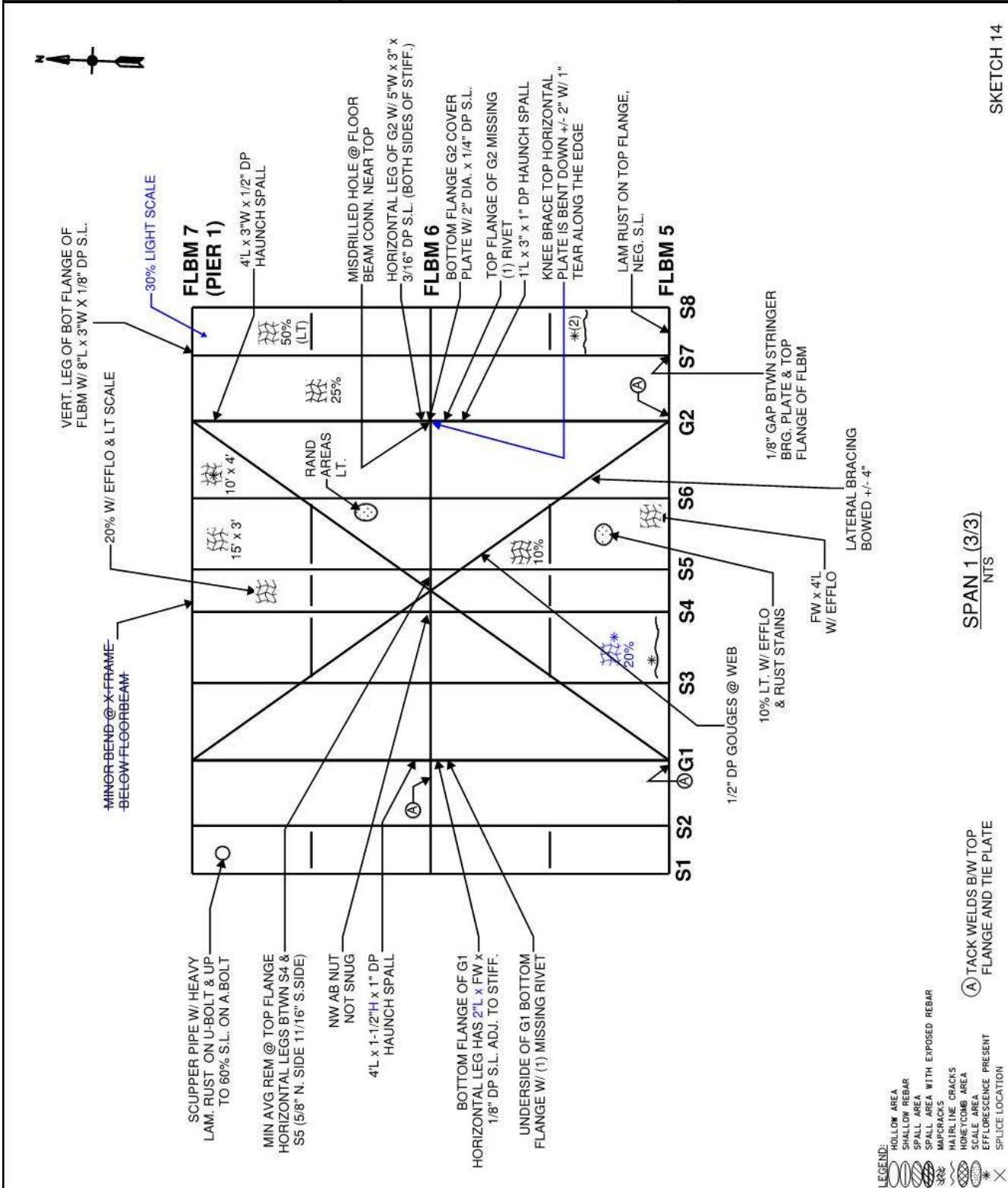
Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM DATE: 11/9/2016 BRIDGE NO.: 01218



SKETCH 14

SPAN 1 (3/3)
 NTS

Ⓐ TACK WELDS B/W TOP FLANGE AND TIE PLATE

- LEGEND:
- HOLLOW AREA
 - SHALLOW REBAR
 - SPALL AREA
 - SPALL AREA WITH EXPOSED REBAR
 - MAPCRACKS
 - HAIRLINE CRACKS
 - HONEYCOMB AREA
 - SCALE AREA
 - EFFLORESCENCE PRESENT
 - SPLICE LOCATION

REVISION 1	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION 3	DATE:	CREW:
REVISION 2	DATE:	CREW:	REVISION 4	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

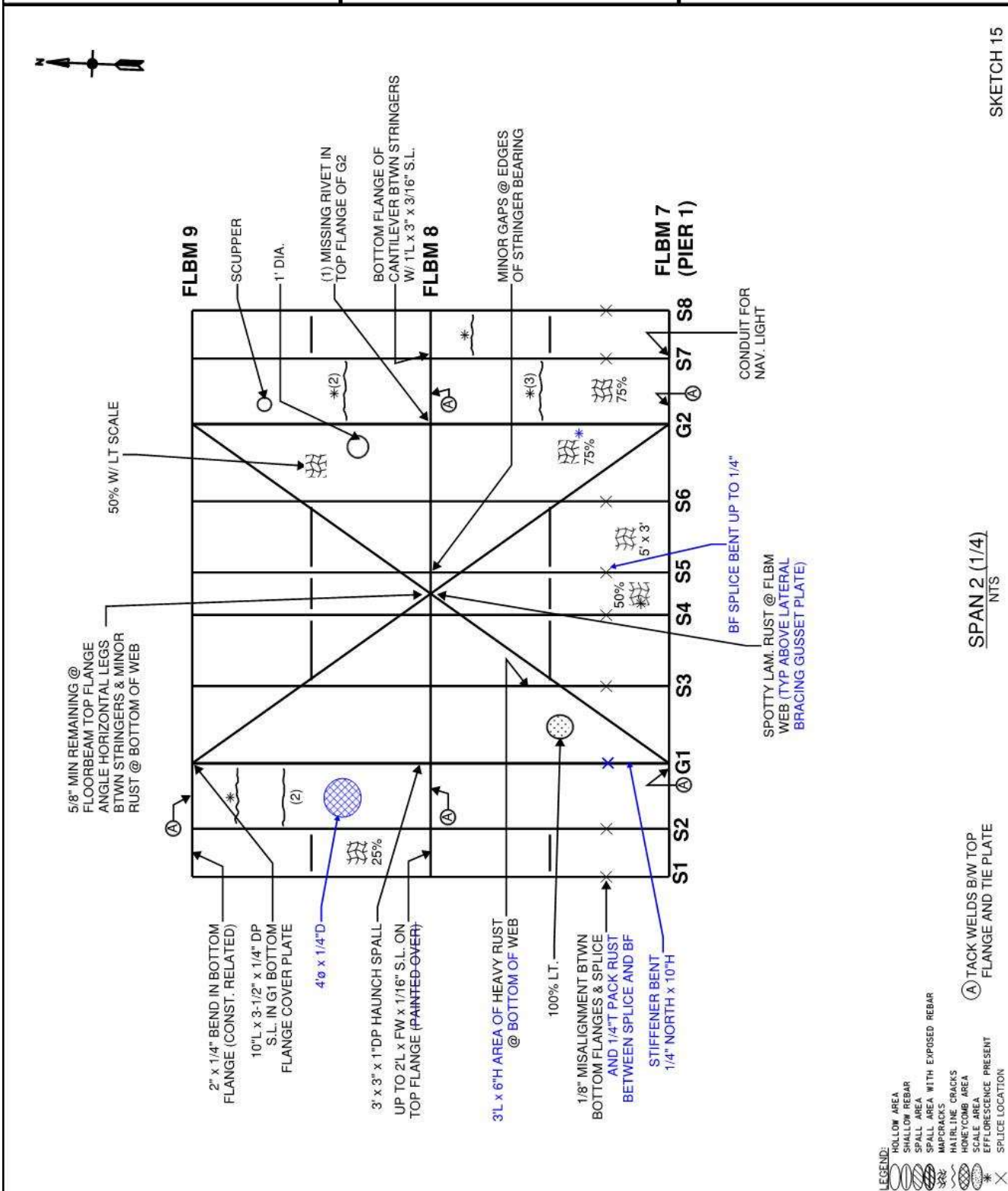
Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM

DATE: 11/9/2016

BRIDGE NO.: 01218



SKETCH 15

SPAN 2 (1/4) NTS

(A) TACK WELDS B/W TOP FLANGE AND TIE PLATE

- LEGEND:
- HOLLOW AREA
 - SHALLOW REBAR
 - SPALL AREA
 - SPALL AREA WITH EXPOSED REBAR
 - MAPCRACKS
 - HAIRLINE CRACKS
 - HONEYCOMB AREA
 - SCALE AREA
 - EFFLUORESCENCE PRESENT
 - SPICE LOCATION

REVISION 1	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION 3	DATE:	CREW:
REVISION 2	DATE:	CREW:	REVISION 4	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

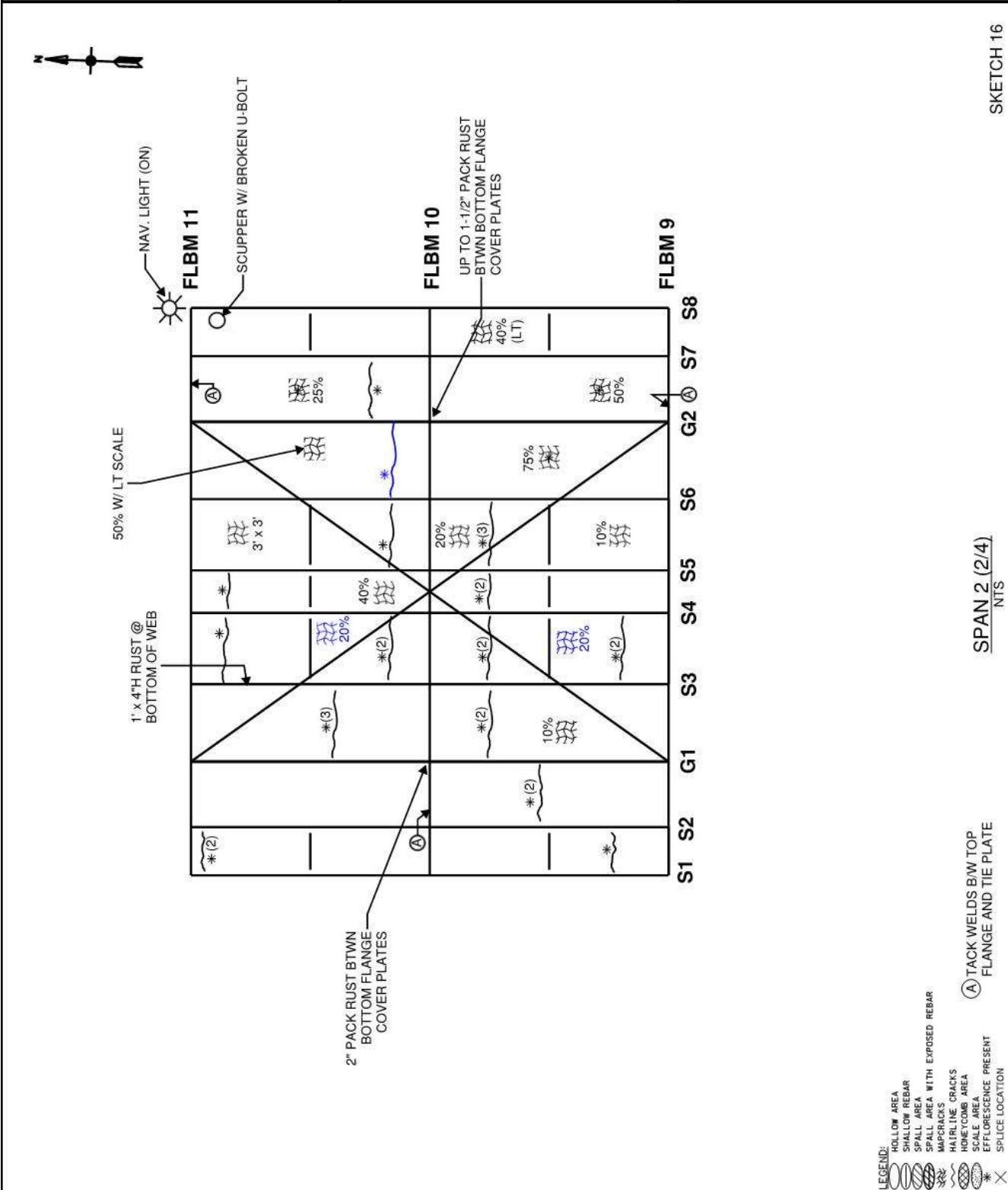
Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM	DATE: 11/9/2016	BRIDGE NO.: 01218
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SKETCH 16

SPAN 2 (2/4)
NTS

(A) TACK WELDS B/W TOP
FLANGE AND TIE PLATE

- LEGEND:
- HOLLOW AREA
 - SHALLOW REBAR
 - SPALL AREA
 - SPALL AREA WITH EXPOSED REBAR
 - MAP CRACKS
 - HAIRLINE CRACKS
 - HONEYCOMB AREA
 - SCALE AREA
 - EFFLUORESCENCE PRESENT
 - SPLICE LOCATION

REVISION	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION	DATE:	CREW:
REVISION	DATE:	CREW:	REVISION	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

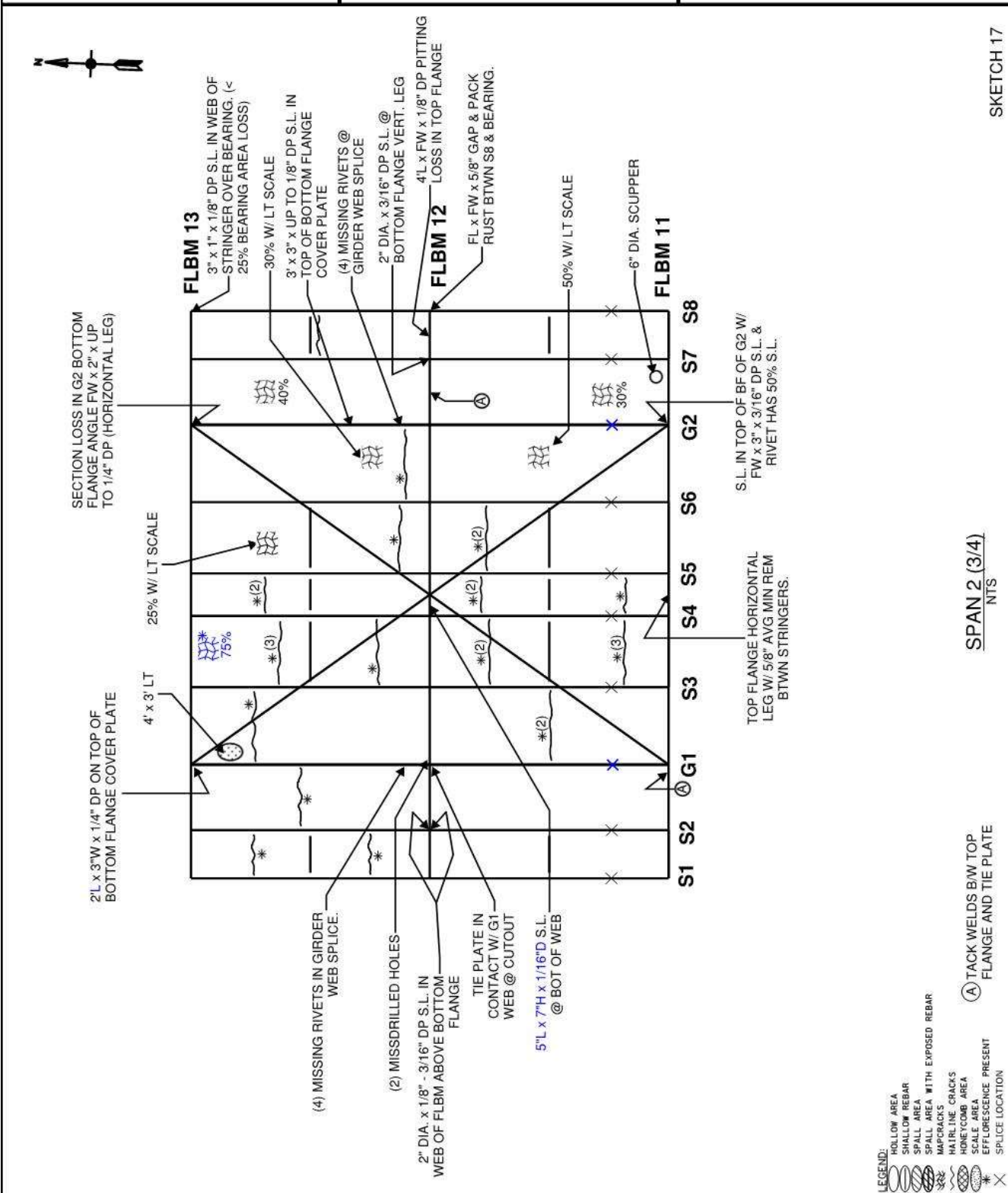
Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM

DATE: 11/9/2016

BRIDGE NO.: 01218



SKETCH 17

SPAN 2 (3/4)
NTS

REVISION 1	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION 3	DATE:	CREW:
REVISION 2	DATE:	CREW:	REVISION 4	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

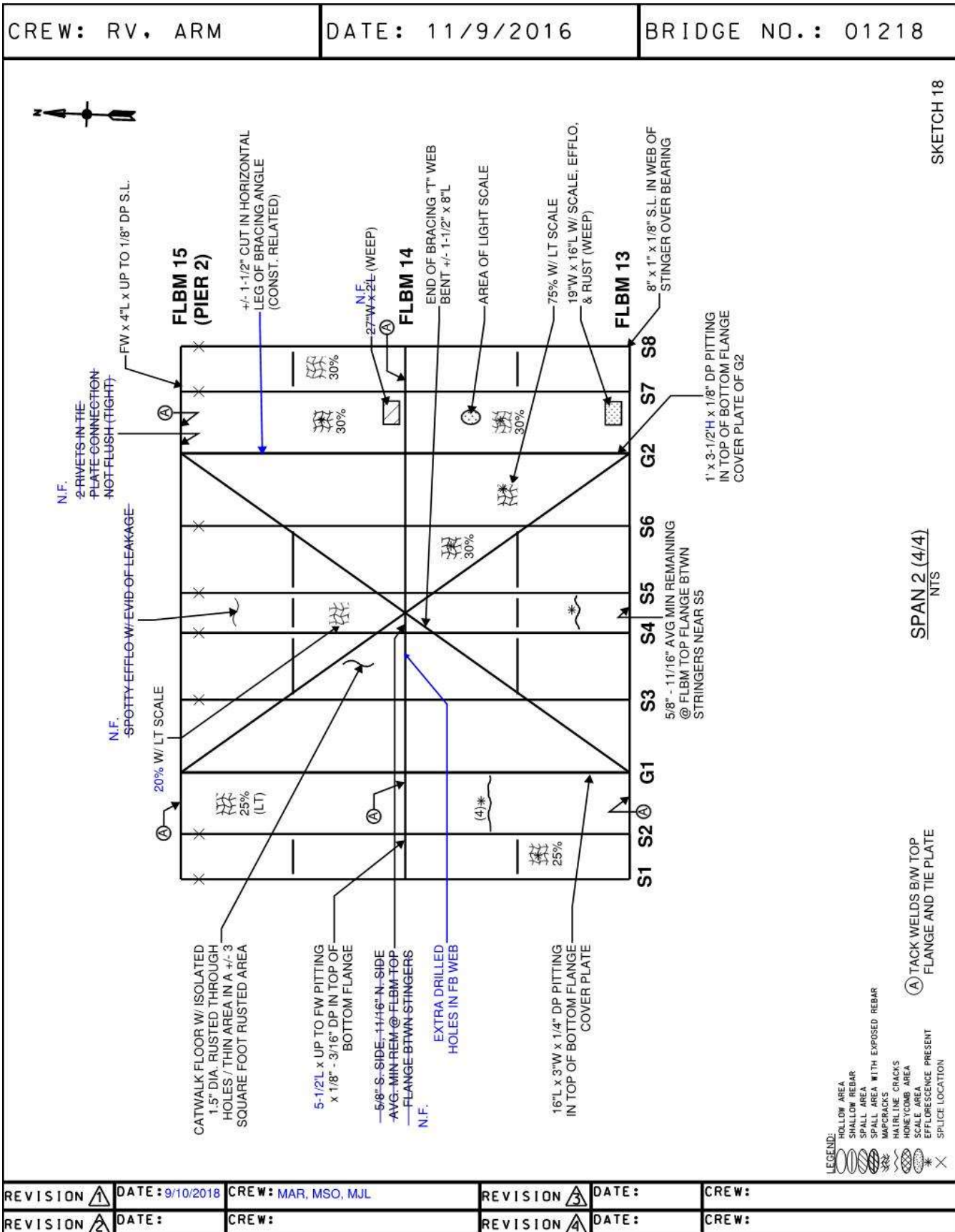
Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



REVISION 1	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION 3	DATE:	CREW:
REVISION 2	DATE:	CREW:	REVISION 4	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

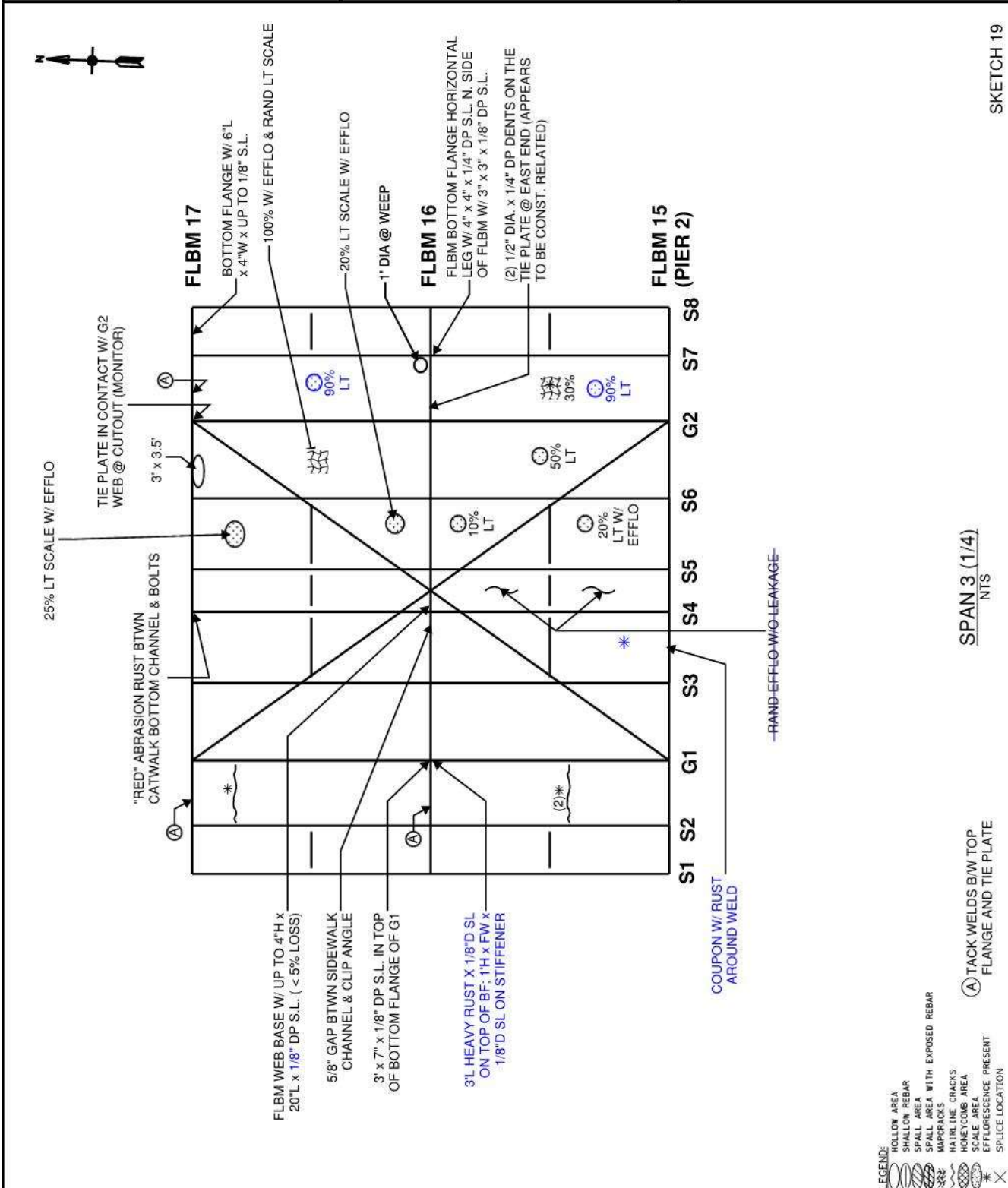
Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM DATE: 11/9/2016 BRIDGE NO.: 01218



SKETCH 19

SPAN 3 (1/4)
 NTS

REVISION A	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION B	DATE:	CREW:
REVISION B	DATE:	CREW:	REVISION C	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

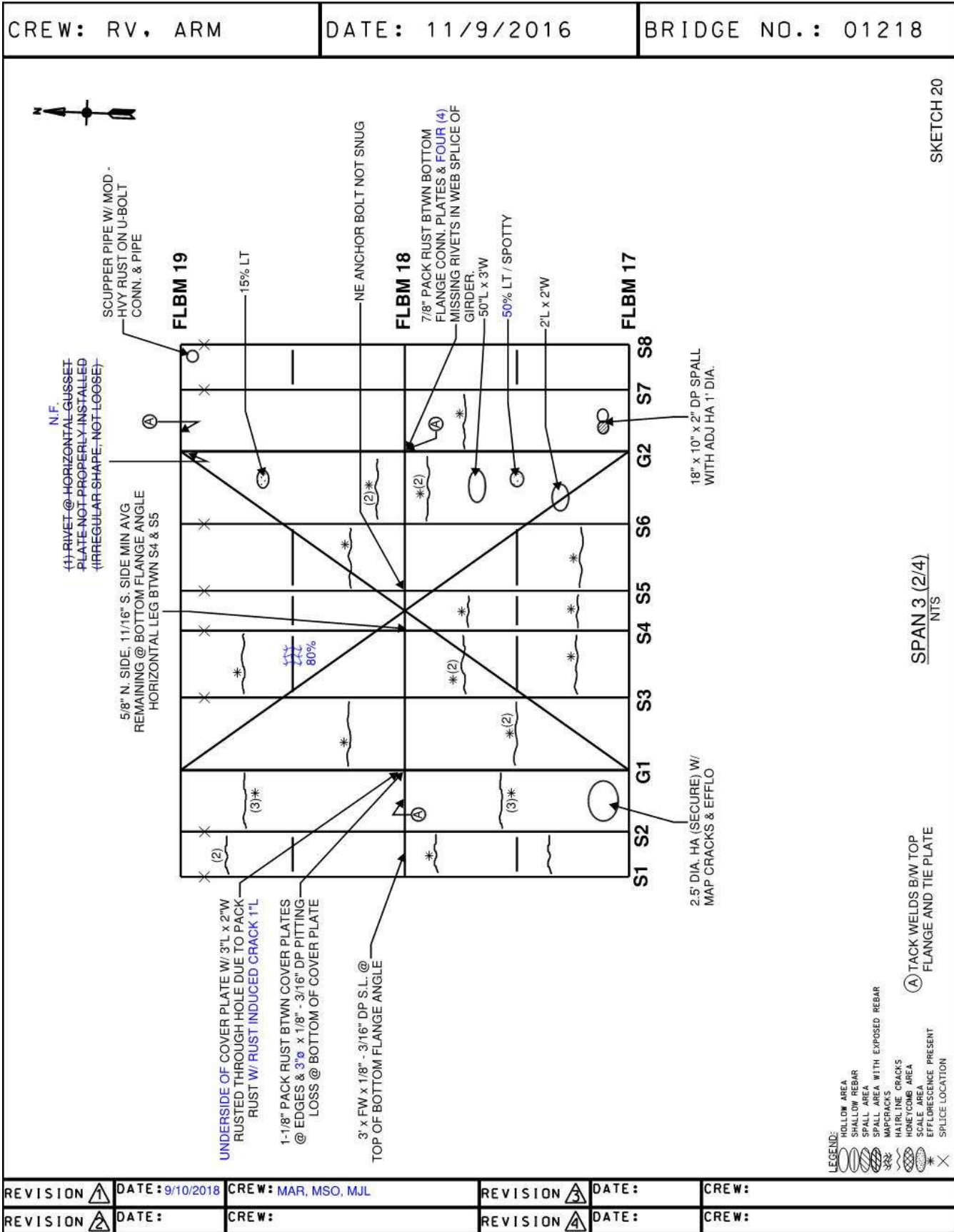
Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



REVISION A	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION B	DATE:	CREW:
REVISION B	DATE:	CREW:	REVISION A	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

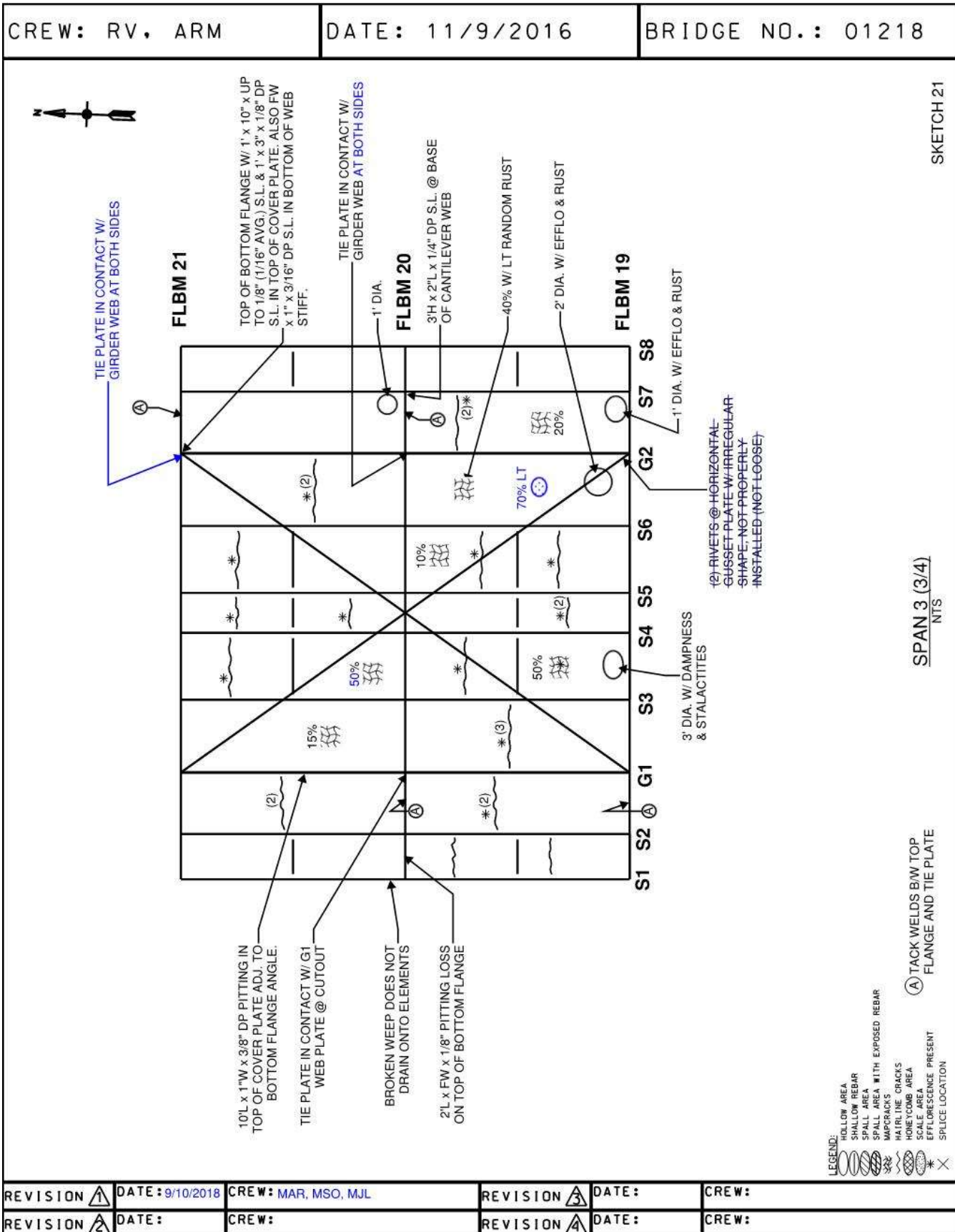
Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



REVISION	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION	DATE:	CREW:
REVISION	DATE:	CREW:	REVISION	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

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Bridge No: 01218

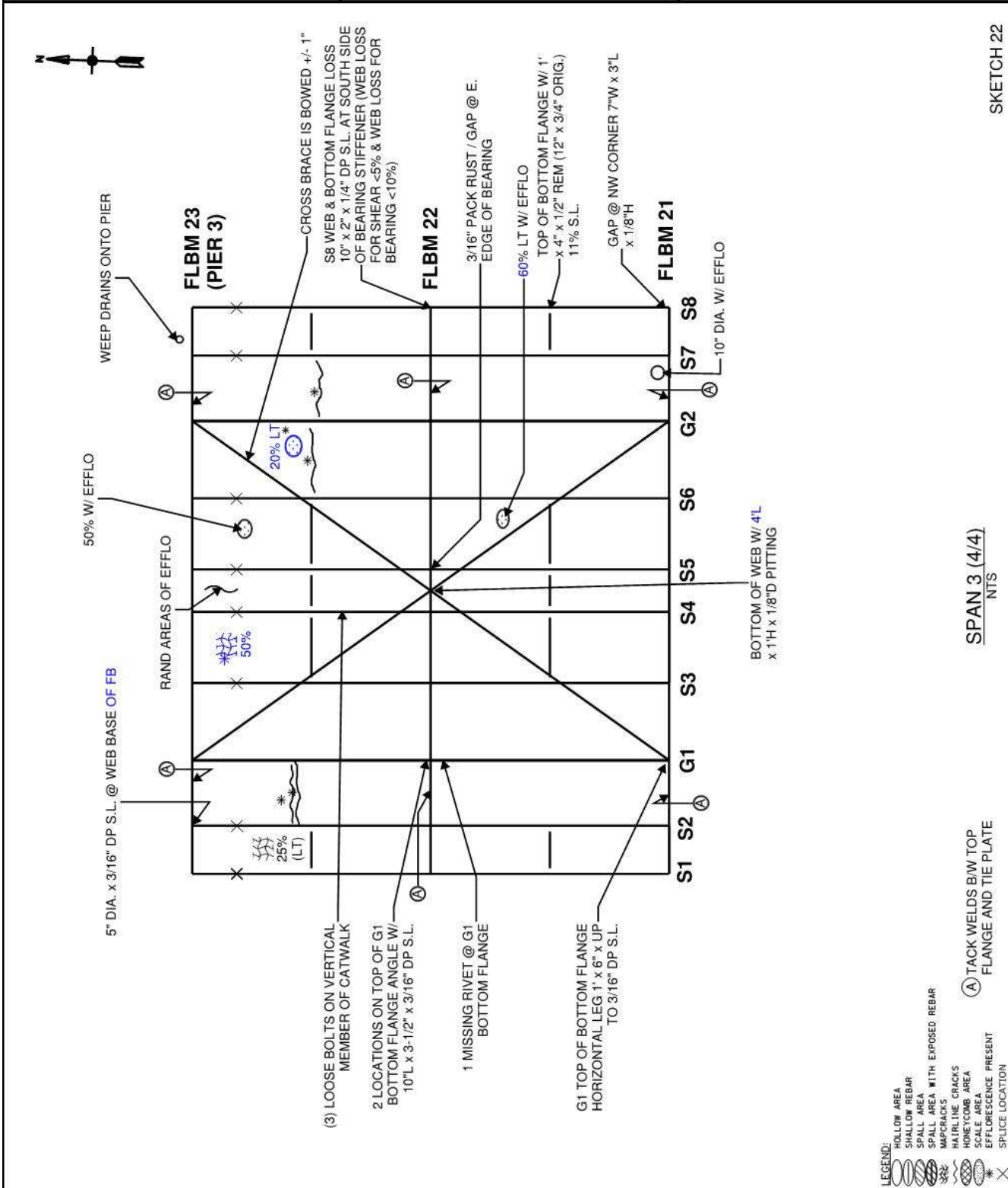
Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM DATE: 11/9/2016 BRIDGE NO.: 01218



SKETCH 22

SPAN 3 (4/4)
NTS

(A) TACK WELDS B/W TOP
FLANGE AND TIE PLATE

- LEGEND:
- HOLLOW AREA
 - SHALLOW REBAR
 - SPALL AREA
 - SPALL AREA WITH EXPOSED REBAR
 - MAP/CRACKS
 - HAIRLINE CRACKS
 - HONEYCOMB AREA
 - SCALE AREA
 - EFFLUESCENCE PRESENT
 - SPLICE LOCATION

REVISION	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION	DATE:	CREW:
REVISION	DATE:	CREW:	REVISION	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

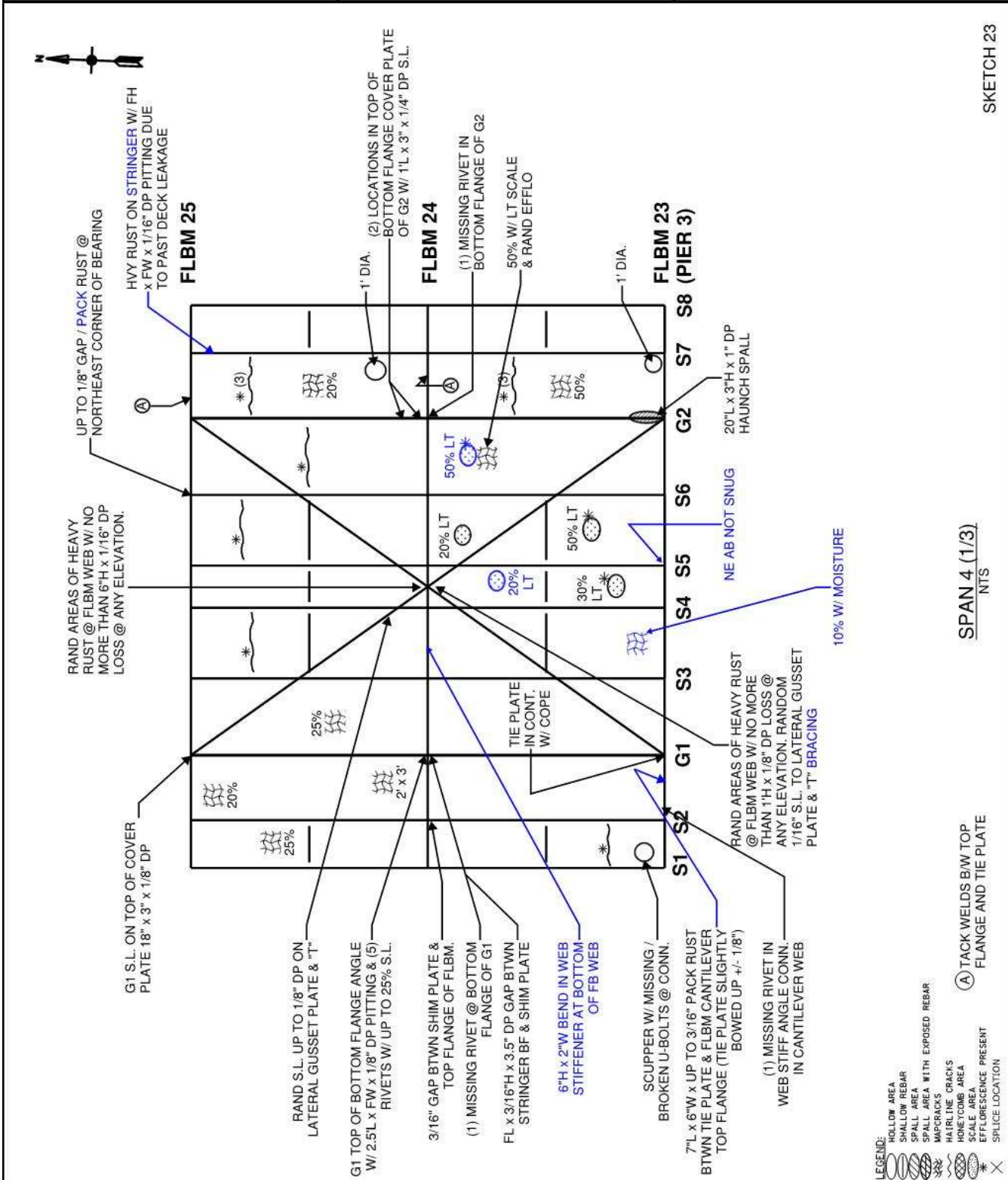
Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM	DATE: 11/9/2016	BRIDGE NO.: 01218
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SKETCH 23

SPAN 4 (1/3)
NTS

Ⓐ TACK WELDS B/W TOP FLANGE AND TIE PLATE

- LEGEND:
- HOLLOW AREA
 - SHALLOW REBAR
 - SPALL AREA
 - SPALL AREA WITH EXPOSED REBAR
 - MAPCRACKS
 - HAIRLINE CRACKS
 - HONEYCOMB AREA
 - SCALE AREA
 - EFFLUESCENCE PRESENT
 - SPLICE LOCATION

REVISION 1	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION 3	DATE:	CREW:
REVISION 2	DATE:	CREW:	REVISION 4	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

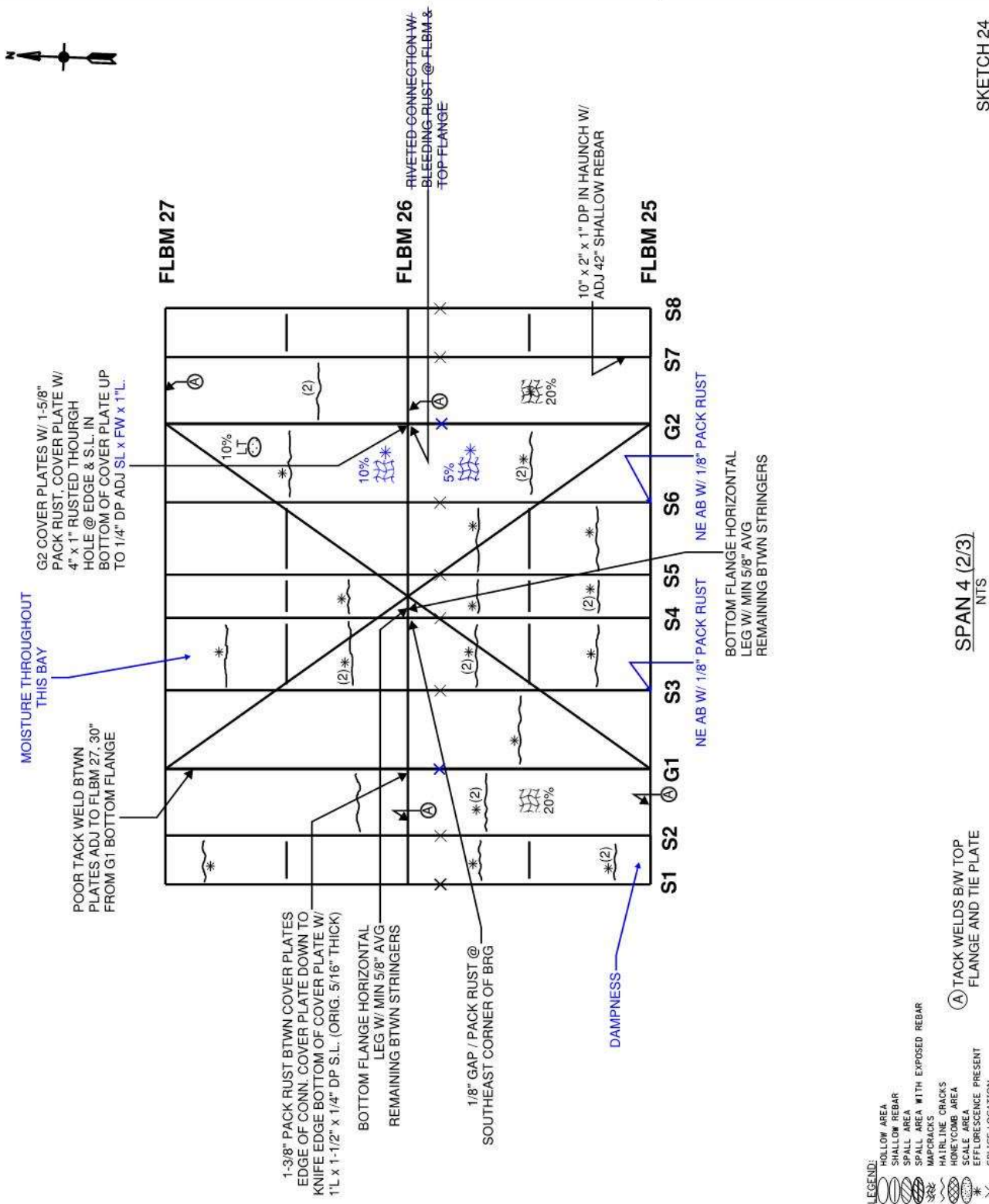
Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM	DATE: 11/9/2016	BRIDGE NO.: 01218
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SKETCH 24

SPAN 4 (2/3)
NTS

A TACK WELDS B/W TOP FLANGE AND TIE PLATE

REVISION 1	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION 3	DATE:	CREW:
REVISION 2	DATE:	CREW:	REVISION 4	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

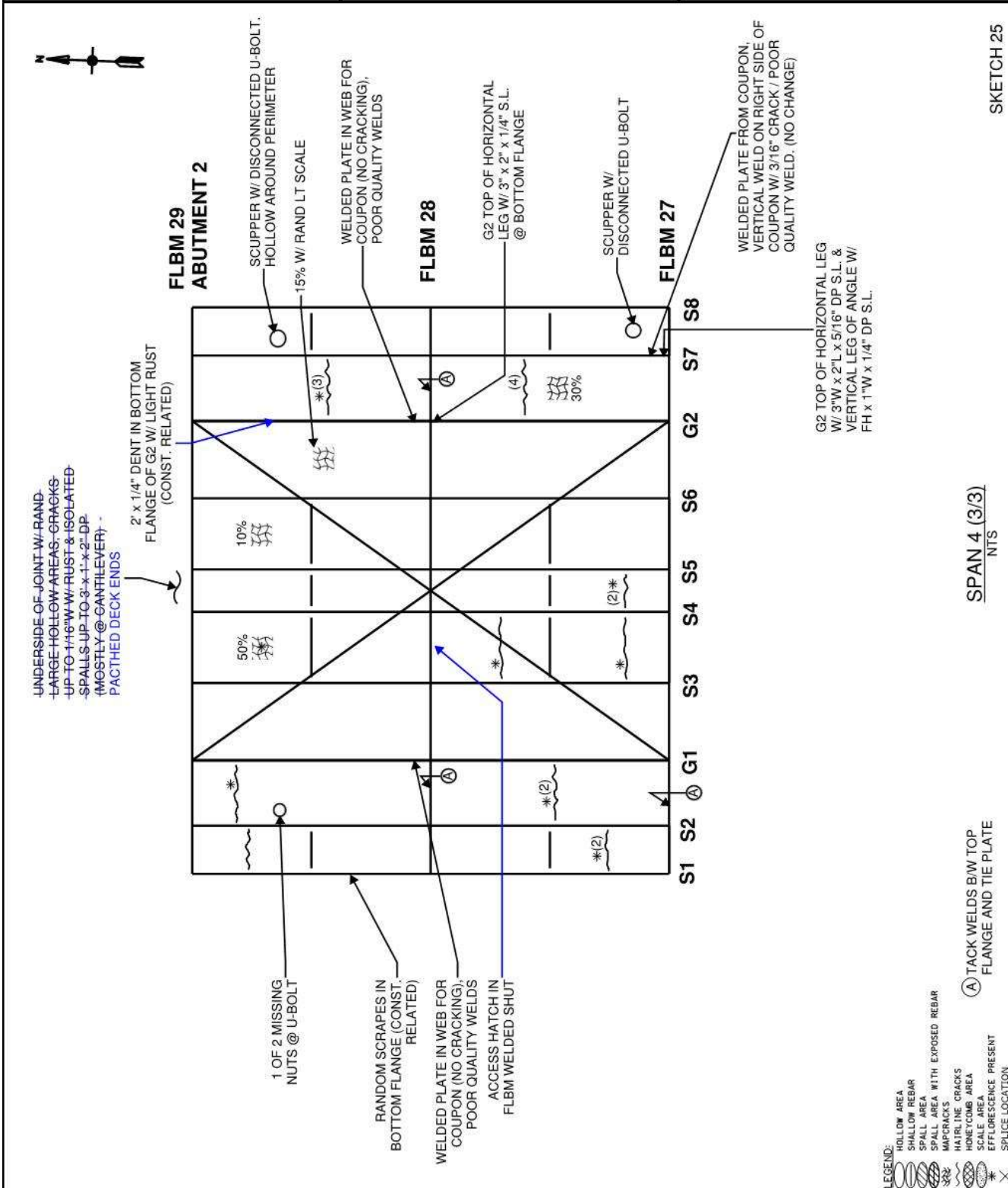
Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM DATE: 11/9/2016 BRIDGE NO.: 01218



SKETCH 25

SPAN 4 (3/3)
NTS

(A) TACK WELDS B/W TOP FLANGE AND TIE PLATE

- LEGEND:**
- HOLLOW AREA
 - SHALLOW REBAR
 - SPALL AREA
 - SPALL AREA WITH EXPOSED REBAR
 - MAP CRACKS
 - HAIRLINE CRACKS
 - HONEYCOMB AREA
 - SCALE AREA
 - EFFLUORESCENCE PRESENT
 - SPLICE LOCATION

REVISION 1	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION 3	DATE:	CREW:
REVISION 2	DATE:	CREW:	REVISION 4	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

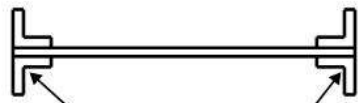
Inventory Route: NHS

CREW: RV, ARM

DATE: 11/9/2016

BRIDGE NO.: 01218

TYPICAL FLOOR BEAM CROSS SECTION



ORIGINAL ANGLE:
6" x 6" x 3/4" =
8.46 in² CROSS SECTIONAL AREA

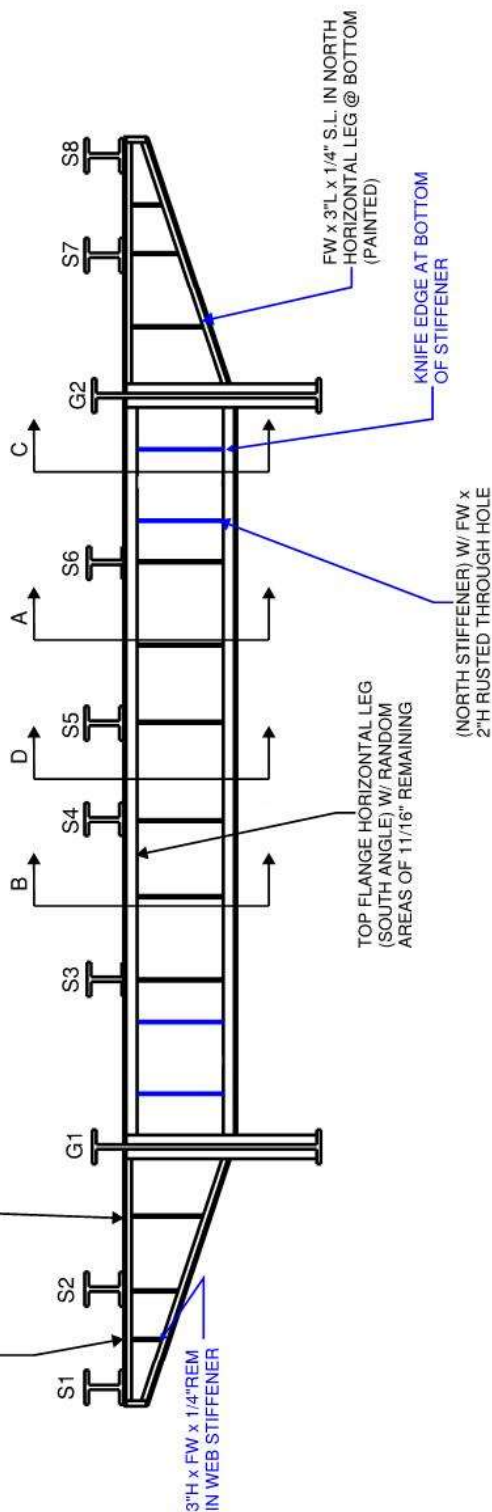
INTERIOR PORTIONS OF FLBMS

- WEBS = 66" x 3/8" (NO LOSSES IN CRITICAL ZONES @ INTERIOR)
- FLANGE ANGLE AREA = 6" x 6" x 3/4" ANGLE = 8.44 in² x (2) = 16.88 in²
- ASSUME FW / FH LOSSES = 5-1/4" WIDE / HIGH @ FLANGES
- FLANGE LOSS ONLY SHOWN IF GREATER THAN OR EQUAL TO 5% (5% x 16.88 in² = 0.84 in²)

N.F.
3"L x FW x UP TO 1/4" @
NORTH HORIZONTAL LEG

FW x 1/16" DP PITTING
LOSS IN TOP FLANGE
ANGLES BTWN S1 & S2

3"H x FW x 1/4" REM
IN WEB STIFFENER



SKETCH 26

SPAN 4, FLBM 29
NTS

REVISION	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION	DATE:	CREW:
REVISION	DATE:	CREW:	REVISION	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

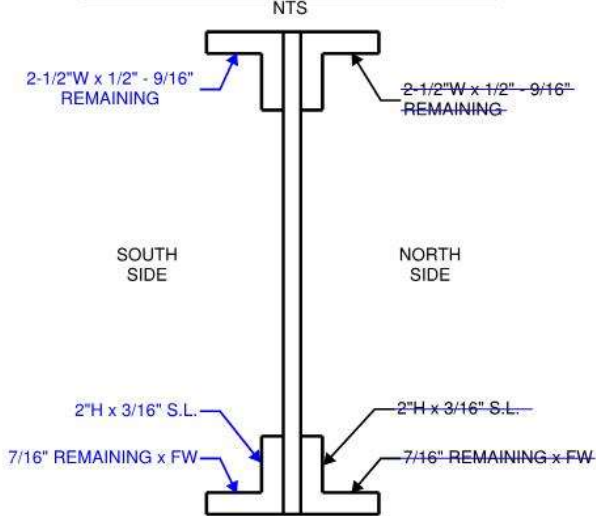
Inventory Route: NHS

CREW: RV, ARM

DATE: 11/9/2016

BRIDGE NO.: 01218

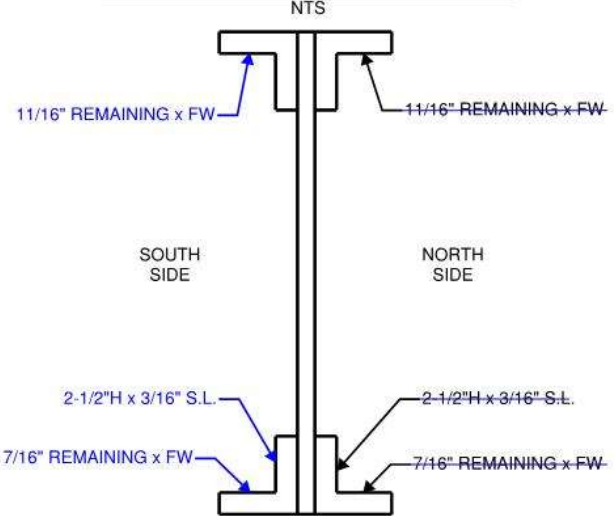
SPAN 4, FLBM 29 - SECTION A-A



BF LOSS = $2 \times (3/16) + 5 \cdot 1/4 \times (5/16) = 2.02 \text{ in}^2$
 $2.02 \text{ in}^2 / 16.88 \text{ in}^2 = 12\% \text{ S.L.}$

TF LOSS = $2.5 \times ((1/4 + 3/16) / 2) = 0.55 \text{ in}^2$
 $0.55 \text{ in}^2 / 16.88 \text{ in}^2 = 3\% \text{ S.L.}$

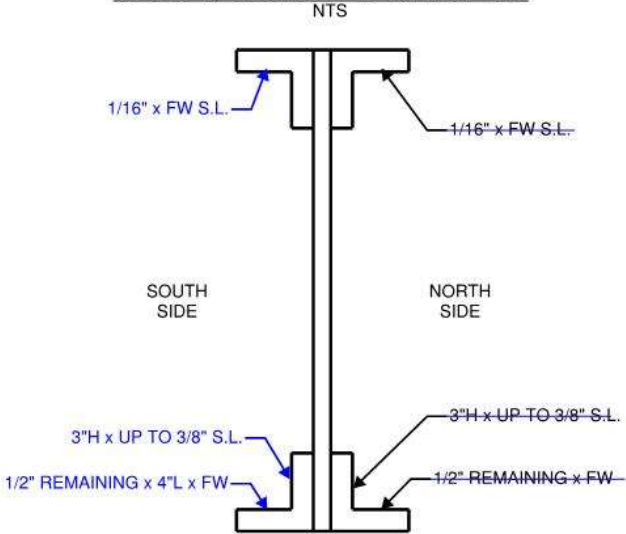
SPAN 4, FLBM 29 - SECTION B-B



BF LOSS = $2.5 \times (3/16) + 5 \cdot 1/4 \times (5/16) = 2.11 \text{ in}^2$
 $2.11 \text{ in}^2 / 16.88 \text{ in}^2 = 13\% \text{ S.L.}$

TF LOSS = $5 \cdot 1/4 \times (1/16) = 0.33 \text{ in}^2$
 $0.33 \text{ in}^2 / 16.88 \text{ in}^2 = 2\% \text{ S.L.}$

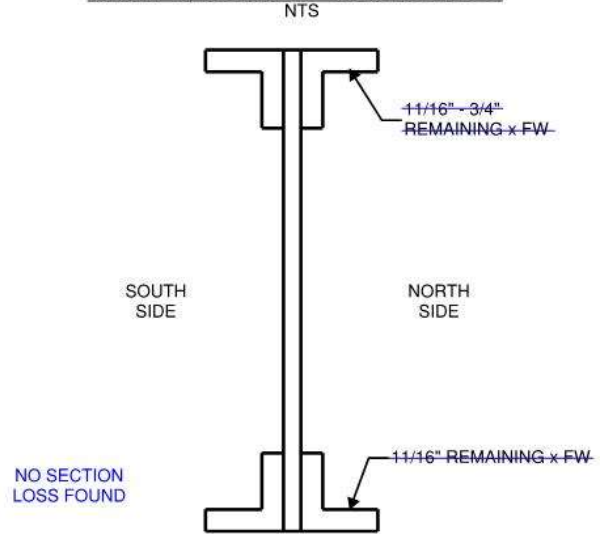
SPAN 4, FLBM 29 - SECTION C-C



BF LOSS = $3 \times (3/8) + 5 \cdot 1/4 \times (1/4) = 2.44 \text{ in}^2$
 $2.44 \text{ in}^2 / 16.88 \text{ in}^2 = 14\% \text{ S.L.}$

TF LOSS = $5 \cdot 1/4 \times (1/16) = 0.33 \text{ in}^2$
 $0.33 \text{ in}^2 / 16.88 \text{ in}^2 = 2\% \text{ S.L.}$

SPAN 4, FLBM 29 - SECTION D-D



NO SECTION LOSS FOUND

BF LOSS = $5 \cdot 1/4 \times (1/16) = 0.33 \text{ in}^2$
 $0.33 \text{ in}^2 / 16.88 \text{ in}^2 = 2\% \text{ S.L.}$

TF LOSS = $5 \cdot 1/4 \times (1/16) = 0.33 \text{ in}^2$
 $0.33 \text{ in}^2 / 16.88 \text{ in}^2 = 2\% \text{ S.L.}$

SKETCH 27

REVISION DATE: 9/10/2018 CREW: MAR, MSO, MJL

REVISION DATE: CREW:

REVISION DATE: CREW:

REVISION DATE: CREW:

Sketches

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM	DATE: 11/9/2016	BRIDGE NO.: 01218
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OTHER FLBMS (INTERIOR PORTIONS)

WEBS = 66" x 3/8" (NO LOSSES IN CRITICAL ZONES @ INTERIOR)

FLANGE ANGLE AREA = 6" x 6" x 3/4" ANGLE = 8.44 in² x (2) = 16.88 in²

- ASSUME FW / FH LOSSES = 5-1/4" WIDE / HIGH @ FLANGES

- FLANGE LOSS ONLY SHOWN IF GREATER THAN OR EQUAL TO 5% (5% x 16.88 in² = 0.84 in²)

FLBM 4 @ MIDSPAN OF FLBM

- BF LOSSES = 5-1/4" (1/2" + 3/16") = 1.64 in² / 16.88 in² = 10% BF LOSS (TF < 5% LOSS)

FLBM 6 @ MIDSPAN OF FLBM

- TF LOSSES = 5-1/4" (1/8" + 1/16") = 0.98 in² / 16.88 in² = 6% TF LOSS (BF < 5% LOSS)

FLBM 14 @ MIDSPAN OF FLBM

- TF LOSSES = 5-1/4" (1/8" + 1/16") = 0.98 in² / 16.88 in² = 6% TF LOSS (BF < 5% LOSS)





FLBM 18 @ MIDSPAN OF FLBM

- BF LOSSES = 5-1/4" (1/8" + 1/16") = 0.98 in² / 16.88 in² = 6% BF LOSS (TF < 5% LOSS)

FLBM 26 @ MIDSPAN OF FLBM

- BF LOSSES = 5-1/4" (1/8" + 1/16") = 0.98 in² / 16.88 in² = 6% BF LOSS (TF < 5% LOSS)

SKETCH 28

REVISION 	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION 	DATE:	CREW:
REVISION 	DATE:	CREW:	REVISION 	DATE:	CREW:

Sketches

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM	DATE: 11/9/2016	BRIDGE NO.: 01218
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CANTILEVER PORTIONS OF FLBMS

WEBS = 3/8" (NO LOSSES IN CRITICAL ZONES @ INTERIOR)

FLANGE ANGLE AREA = (2) 6" x 4" x 1/2" ANGLES = 4.75 in² x (2) = 9.5 in²

- FLANGE LOSS ONLY SHOWN IF GREATER THAN 5% (5% x 9.5 in² = 0.48 in²) & IN CRITICAL ZONES ; HORIZONTAL LEG IS 6"

- ALSO WEB LOSSES ONLY ARE SHOWN IF GREATER THAN OR EQUAL TO 15%

~~FLBM 4 WEST CANTILEVER~~

N.F.

~~LOSS AT BTM FLANGE: FW x 1/8" S.L. = 5.5" x 1/8" = 0.69 in²~~

~~% S.L. = (0.69/9.5) x 100 = 7%~~

FLBM 8 EAST CANTILEVER

LOSS AT BTM FLANGE: 3" x 3/16" S.L. = 0.56 in²

% S.L. = (0.56/9.5) x 100 = 6%

FLBM 14 WEST CANTILEVER

LOSS AT BTM FLANGE: FW x 5/32" S.L. = 5.5" x 5/32" = 0.86 in²

% S.L. = (0.86/9.5) x 100 = 9%

FLBM 16 EAST CANTILEVER

LOSS AT BTM FLANGE: 4"(1/4") + 3"(1/8") = 1.38 in²

% S.L. = (1.38/9.5) x 100 = 15%

FLBM 18 WEST CANTILEVER

LOSS AT BTM FLANGE: FW x 5/32" = 5.5" x 5/32" = 0.86 in²

% S.L. = (0.86/9.5) x 100 = 9%

FLBM 29 WEST CANTILEVER

~~TOP FLANGE - 5.5" x 3/16" S.L. = 1.03 in²~~

~~% S.L. = (1.03/9.5) = 11%~~

~~BOTTOM FLANGE - 5.5" x 1/4" S.L. = 1.38 in²~~

~~% S.L. = (1.38/9.5) = 14%~~

DEEPEST SECTION LOSS
FOUND TO BE 1/16" D AT
THIS LOCATION

FROM GENERAL NOTES (SNOOPER):





BOTTOM FLNG. LOSSES ADJ. TO STIFF'S: 5.5" x 3/16" = 1.03 in²

% S.L. = (1.03/9.5) = 11%

BOTTOM FLNG. BTWN STRINGERS S7 & S8: (4" x 1/8") + (3.5" x 1/8") = 0.94 in²

% S.L. = (0.94/9.5) = 10%

SKETCH 29

REVISION 	DATE : 9/10/2018	CREW : MAR, MSO, MJL	REVISION 	DATE :	CREW :
REVISION 	DATE :	CREW :	REVISION 	DATE :	CREW :

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

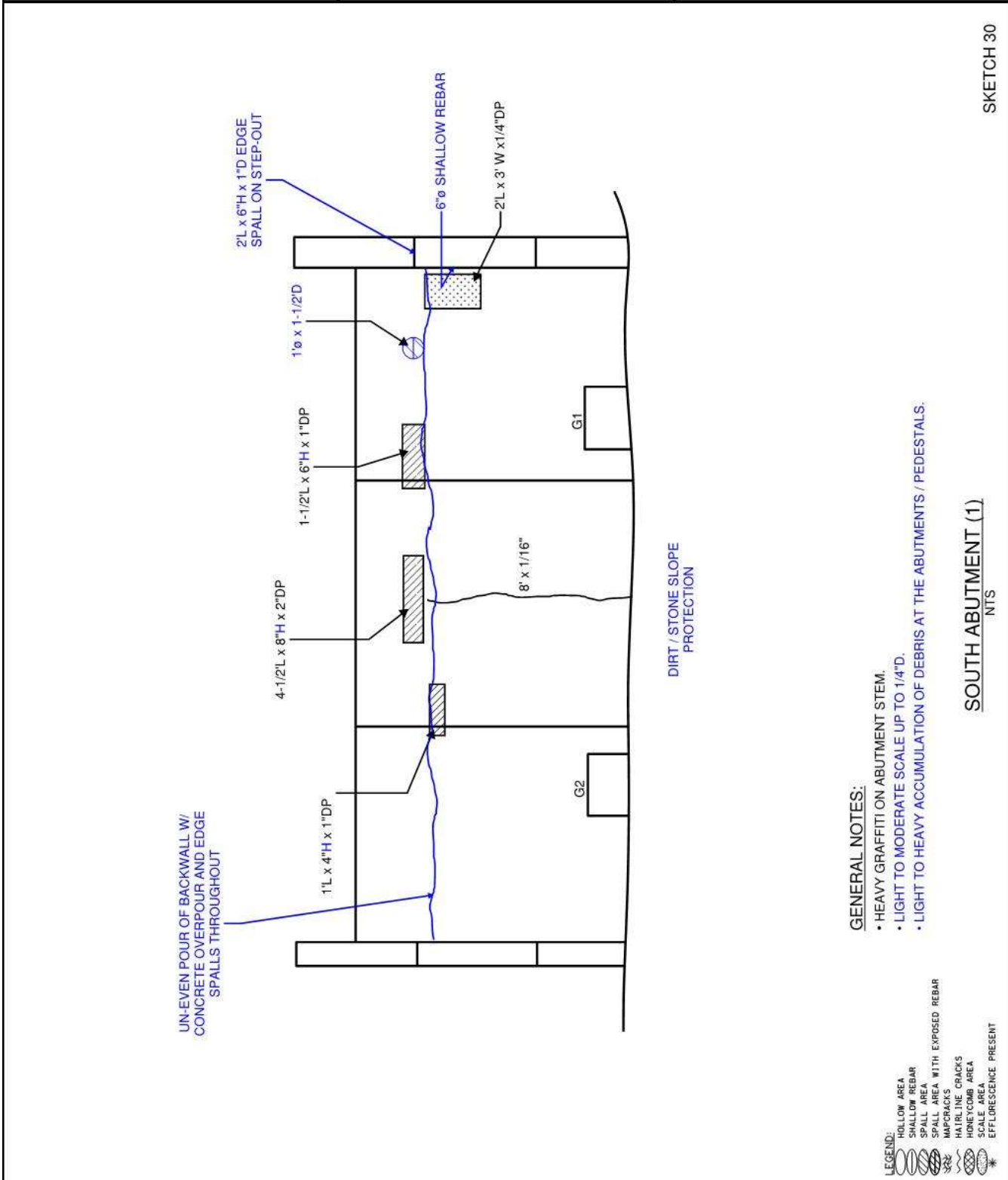
Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM	DATE: 11/9/2016	BRIDGE NO.: 01218
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- GENERAL NOTES:**
- HEAVY GRAFFITI ON ABUTMENT STEM.
 - LIGHT TO MODERATE SCALE UP TO 1/4"D.
 - LIGHT TO HEAVY ACCUMULATION OF DEBRIS AT THE ABUTMENTS / PEDESTALS.

REVISION	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION	DATE:	CREW:
REVISION	DATE:	CREW:	REVISION	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

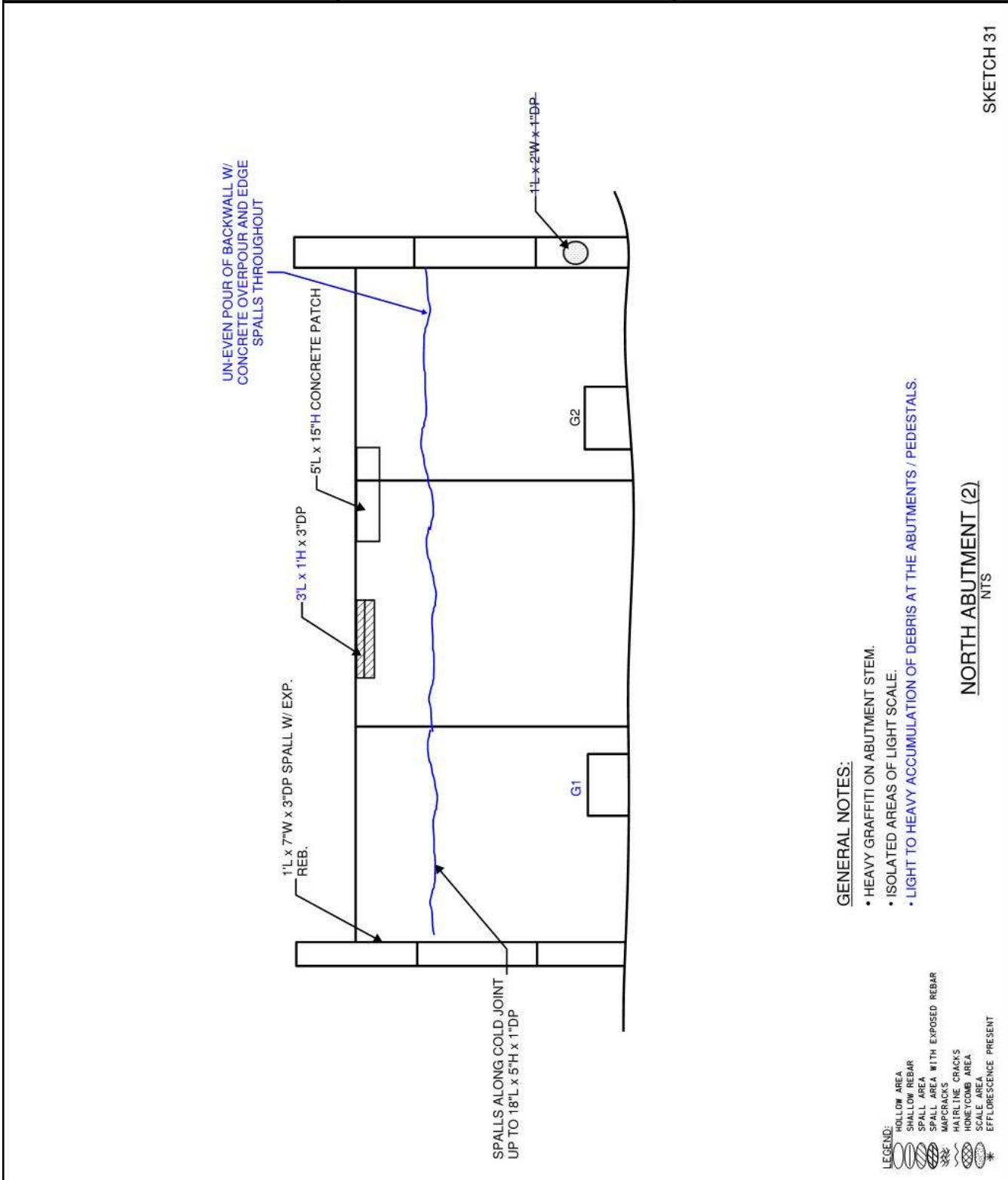
Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM DATE: 11/9/2016 BRIDGE NO.: 01218



REVISION 	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION 	DATE:	CREW:
REVISION 	DATE:	CREW:	REVISION 	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

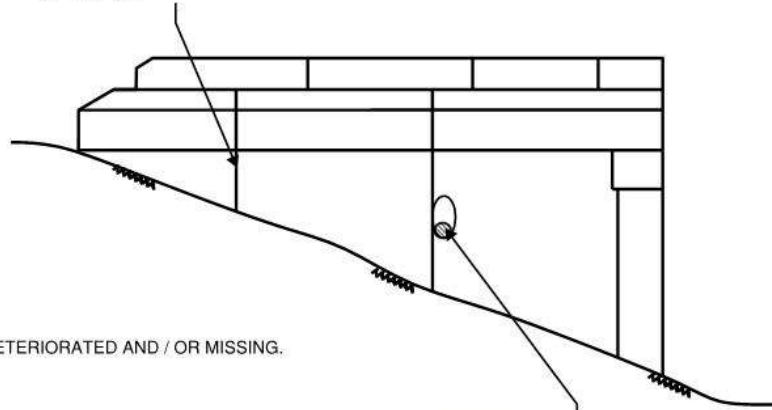
Inventory Route: NHS

CREW: RV, ARM

DATE: 11/9/2016

BRIDGE NO.: 01218

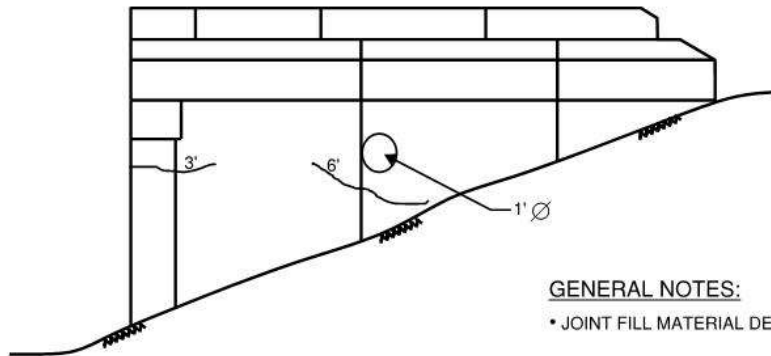
JOINT OPEN 3/4"; WING IS MISALIGNED 13/16" AT THE BASE OF THE JOINT AND 1-3/4" AT THE TOP



GENERAL NOTES:

- JOINT FILL MATERIAL DETERIORATED AND / OR MISSING.

WINGWALL 1B
NTS



GENERAL NOTES:

- JOINT FILL MATERIAL DETERIORATED AND / OR MISSING.

WINGWALL 1A
NTS

LEGEND:

- HOLLOW AREA
- SHALLOW REBAR
- SPALL AREA
- SPALL AREA WITH EXPOSED REBAR
- MAPCRACKS
- HAIRLINE CRACKS
- HONEYCOMB AREA
- SCALE AREA
- EFFLORESCENCE PRESENT

SKETCH 32

REVISION	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION	DATE:	CREW:
REVISION	DATE:	CREW:	REVISION	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

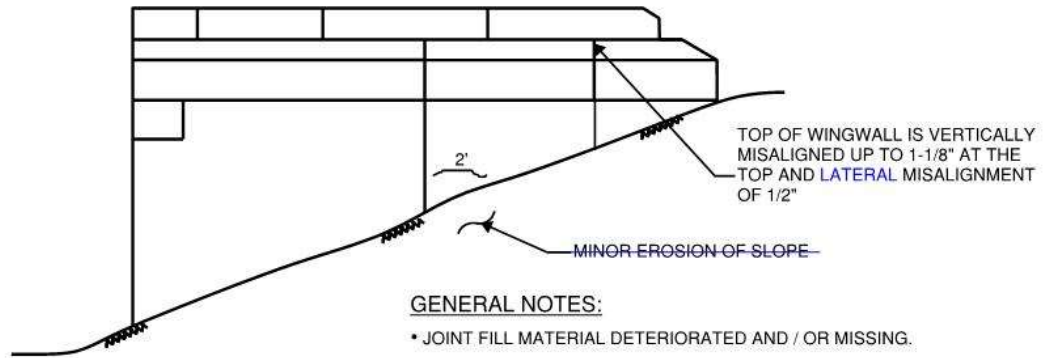
Crossed: HOUSATONIC RIVER

Inventory Route: NHS

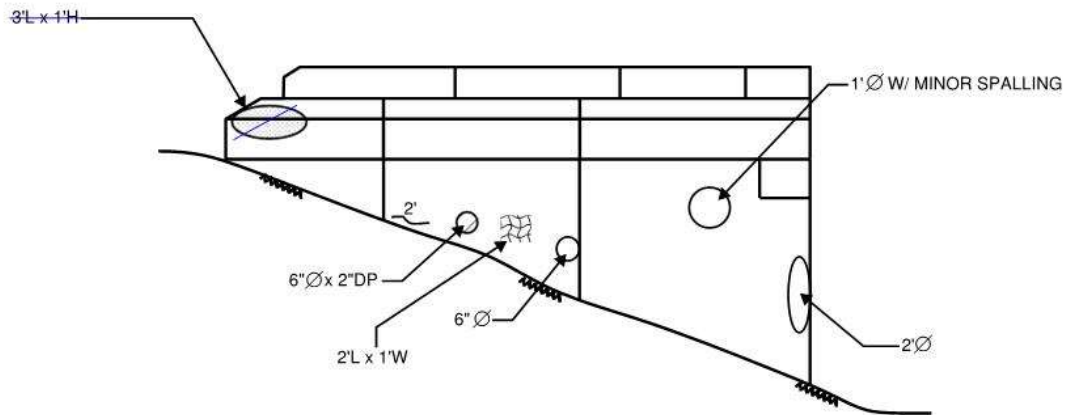
CREW: RV, ARM

DATE: 11/9/2016

BRIDGE NO.: 01218



WINGWALL 2B
NTS



WINGWALL 2A
NTS

- LEGEND:**
- HOLLOW AREA
 - SHALLOW REBAR
 - SPALL AREA
 - SPALL AREA WITH EXPOSED REBAR
 - MAPCRACKS
 - HAIRLINE CRACKS
 - HONEYCOMB AREA
 - SCALE AREA
 - EFFLORESCENCE PRESENT

GENERAL NOTES:
 * JOINT FILL MATERIAL DETERIORATED AND / OR MISSING.
 * RANDOM MINOR SPALLS / POPOUTS.

SKETCH 33

REVISION	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION	DATE:	CREW:
REVISION	DATE:	CREW:	REVISION	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

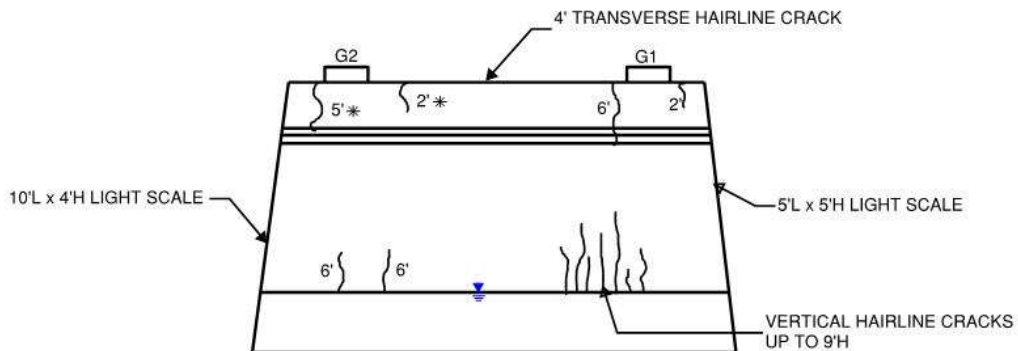
Crossed: HOUSATONIC RIVER

Inventory Route: NHS

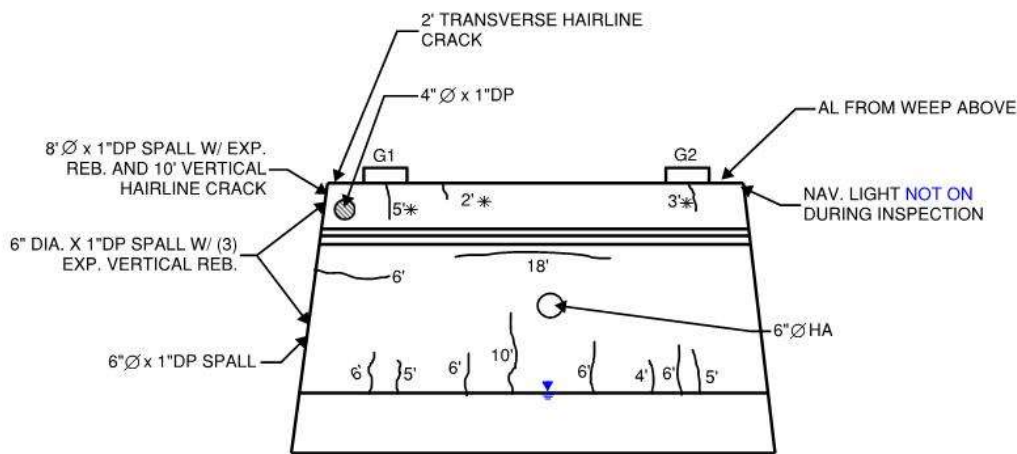
CREW: RV, ARM

DATE: 11/9/2016

BRIDGE NO.: 01218



PIER 1: NORTH ELEVATION
NTS



PIER 1: SOUTH ELEVATION
NTS

- LEGEND:**
- HOLLOW AREA
 - SHALLOW REBAR
 - SPALL AREA
 - SPALL AREA WITH EXPOSED REBAR
 - MAPCRACKS
 - HAIRLINE CRACKS
 - HONEYCOMB AREA
 - SCALE AREA
 - EFFLORESCE PRESENT

GENERAL NOTES:

- RANDOM SPALLS / POPOUTS AND EXPOSED SHALLOW STEEL.
- HAIRLINE CRACKS NEAR TOP OF ABUTMENT EXTEND TRANSVERSELY UP TO 2' ON SEAT.
- LIGHT TO HEAVY ACCUMULATION OF DEBRIS AT THE PIER SEATS.

SKETCH 34

REVISION	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION	DATE:	CREW:
REVISION	DATE:	CREW:	REVISION	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

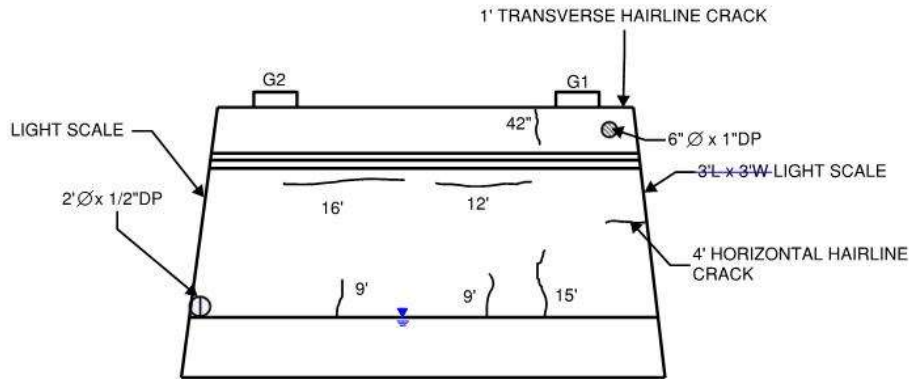
Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

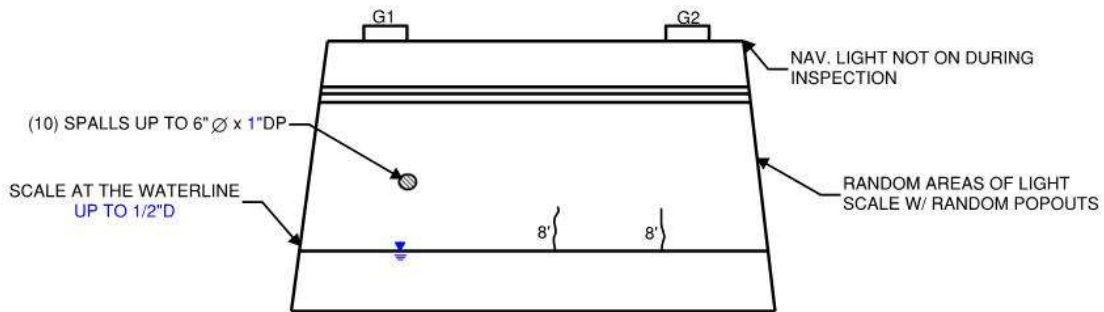
Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM	DATE: 11/9/2016	BRIDGE NO.: 01218
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PIER 2: NORTH ELEVATION
NTS



PIER 2: SOUTH ELEVATION
NTS

- LEGEND:**
- HOLLOW AREA
 - SHALLOW REBAR
 - SPALL AREA
 - SPALL AREA WITH EXPOSED REBAR
 - MAPCRACKS
 - HAIRLINE CRACKS
 - HONEYCOMB AREA
 - SCALE AREA
 - EFFLORESCENCE PRESENT

GENERAL NOTES:

- RANDOM SMALL POPOUTS/SHALLOW EXPOSED REBAR.
- RANDOM AREAS OF LIGHT SCALE.
- LIGHT TO HEAVY ACCUMULATION OF DEBRIS AT THE PIER SEATS.

SKETCH 35

REVISION	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION	DATE:	CREW:
REVISION	DATE:	CREW:	REVISION	DATE:	CREW:

Sketches

Inspection type: Fracture Critical, Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

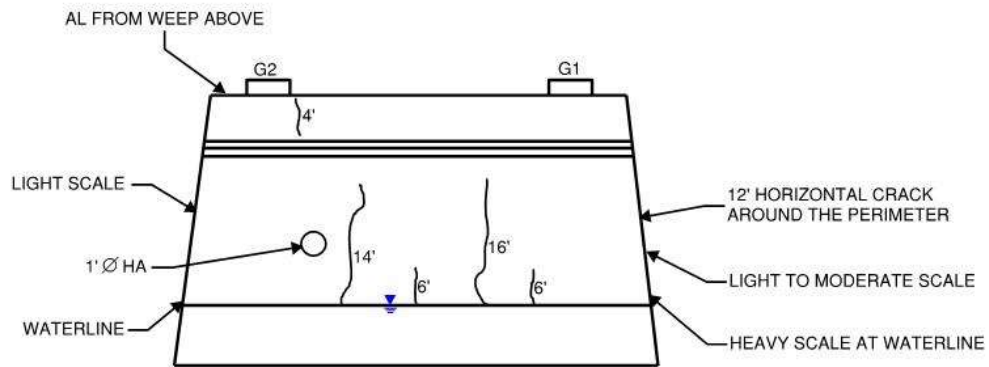
Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

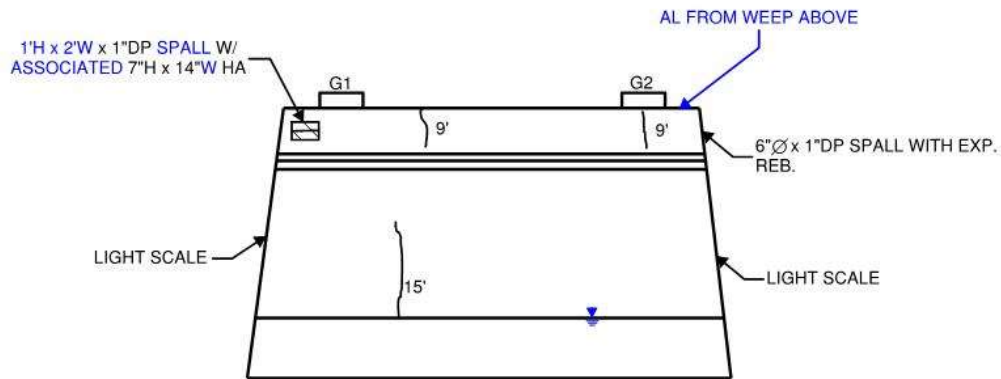
Crossed: HOUSATONIC RIVER

Inventory Route: NHS

CREW: RV, ARM	DATE: 11/9/2016	BRIDGE NO.: 01218
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PIER 3: NORTH ELEVATION
NTS



PIER 3: SOUTH ELEVATION
NTS

LEGEND:

	HOLLOW AREA
	SHALLOW REBAR
	SPALL AREA
	SPALL AREA WITH EXPOSED REBAR
	MAPCRACKS
	HAIRLINE CRACKS
	HONEYCOMB AREA
	SCALE AREA
	EFFLORESCE PRESENT

GENERAL NOTES:

- RANDOM SMALL POPOUTS/SHALLOW EXPOSED REBAR.
- CRACKS AT THE TOP OF ABUTMENT EXTEND TRANSVERSELY UP TO 2' ONTO SEAT.
- AREAS OF GRAFFITI ON THE NORTH FASCIA.
- LIGHT TO HEAVY ACCUMULATION OF DEBRIS AT THE PIER SEATS.

SKETCH 36

REVISION	DATE: 9/10/2018	CREW: MAR, MSO, MJL	REVISION	DATE:	CREW:
REVISION	DATE:	CREW:	REVISION	DATE:	CREW:

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 1

Bridge Identification Number

Photo Taken: 09/10/2018



Photo Number: 2

Left (West) Elevation

Photo Taken: 09/11/2018

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 3

Photo Taken: 09/11/2018

Right (East) Elevation



Photo Number: 4

Photo Taken: 09/10/2018

West Approach From Bridge

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 5

Photo Taken: 09/10/2018

Bridge From East Approach



Photo Number: 6

Photo Taken: 09/10/2018

Span 1 Bituminous Concrete Overlay, Looking Southwest

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 7

Photo Taken: 09/11/2018

Span 4 Bituminous Concrete Overlay

Note: 5' long x 3' wide map cracks.



Photo Number: 8

Photo Taken: 09/11/2018

Span 2, Underside of Deck, Looking North

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 9

Photo Taken: 09/11/2018

Underside of Deck (Typical Scale)



Photo Number: 10

Photo Taken: 09/11/2018

Span 1, Deck Underside, West Overhang at Floor Beam 6

Note: Haunch spall.

Form: Asset Photos

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Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

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Inventory Route: NHS



Photo Number: 11

Photo Taken: 09/10/2018

Right Sidewalk / Fence, Looking North



Photo Number: 12

Photo Taken: 09/10/2018

Right Sidewalk, Span 4

Note: Hollow area 76" long x 43" wide with scale 20" long x 12" wide x 1-1/2" diameter.

Form: Asset Photos

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Bridge No: 01218

Town: NEWTOWN

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Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 13

Photo Taken: 09/10/2018

Sidewalk Scupper Grate in Span 4

Note: Clogged.



Photo Number: 14

Photo Taken: 09/10/2018

Left Parapet / Railing, Looking Southwest

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 15

Photo Taken: 09/10/2018

Left Parapet, Span 4 at Pier 3

Note: Spall 18" long x 1' high x 3" deep.



Photo Number: 16

Photo Taken: 09/10/2018

Left Parapet, Span 2 at Midspan

Note: Spall 18" long x 3" high x 1" deep and hollow area 10" diameter at sign connection.

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 17

Photo Taken: 09/10/2018

Right Fence Base, Span 1

Note: Several spalls up to 8" high x 3' long x 1-1/2" diameter.



Photo Number: 18

Photo Taken: 09/10/2018

Right Rail Base at West Approach

Note: Adjacent sections with 1" lateral misalignment.

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 19

Wingwall 2B

Photo Taken: 09/10/2018

Note: Vertical/lateral misalignment.

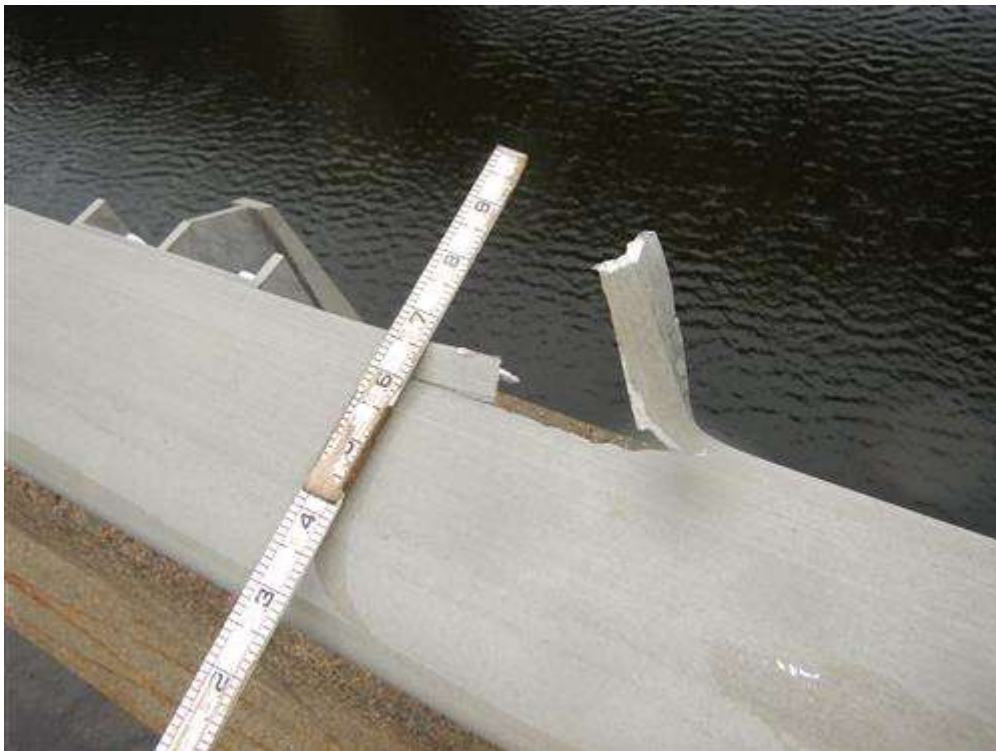


Photo Number: 20

Left Railing, Span 2 Near Pier 1

Photo Taken: 09/10/2018

Note: Tear 3" long x 1" wide.

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 21

Photo Taken: 09/10/2018

Left Railing at Abutment 2

Note: 1 of 2 anchor bolts missing at end.



Photo Number: 22

Photo Taken: 09/10/2018

Right Fence at Abutment 2

Note: Bent

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 23

Photo Taken: 09/11/2018

Scupper Adjacent to Stringer 1 Between Floor Beam 23 and 24

Note: Broken u-bolts at connection.



Photo Number: 24

Photo Taken: 09/10/2018

Scupper Drain, Span 4, Right Overhang

Note: Disconnected U-bolt.

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 25

Photo Taken: 09/10/2018

Junction Box Cover at Northwest Approach Pavement

Note: Cracked/dented with 2 missing screws.



Photo Number: 26

Photo Taken: 09/10/2018

Abutment 1 Compression Joint Seal with Concrete Headers, Looking West

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 27

Photo Taken: 09/10/2018

Abutment 2 Compression Joint Seal with Concrete Headers, Looking West



Photo Number: 28

Photo Taken: 09/10/2018

Northwest Approach Guide Rail

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 29

Photo Taken: 09/10/2018

Northwest Guide Rail

Note: 1 anchor bolt nut backed off 3/4" at parapet connection.



Photo Number: 30

Photo Taken: 09/10/2018

Right Parapet at Abutment 1

Note: Spall 10" long x 10" wide x 1-1/2" deep on top face.

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 31

Photo Taken: 09/10/2018

East Approach Pavement, Looking Northwest



Photo Number: 32

Photo Taken: 09/10/2018

Girder 1 Rocker Bearing at Abutment 1

Note: Anchor bolt nuts with section loss.

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 33

Photo Taken: 09/10/2018

Girder 1 Rocker Bearing at Pier 1



Photo Number: 34

Photo Taken: 09/10/2018

Girder 1 Fixed Bearing at Pier 2

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 35

Photo Taken: 09/10/2018

Brackets Torch Cut Off Bearings



Photo Number: 36

Photo Taken: 09/10/2018

Girder 2 Expansion Bearing at Abutment 2

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 37

Photo Taken: 09/10/2018

Span 2, Typical Stringer "Bearing" on Floor Beam



Photo Number: 38

Photo Taken: 09/11/2018

Stringer (Typical)

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 39

Photo Taken: 09/10/2018

Stringer 5 Field Splice Between Floor Beam 7 and Floor Beam 8

Note: Bent up to 1/4".



Photo Number: 40

Photo Taken: 09/11/2018

Inside Face of Girder (Typical)

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS

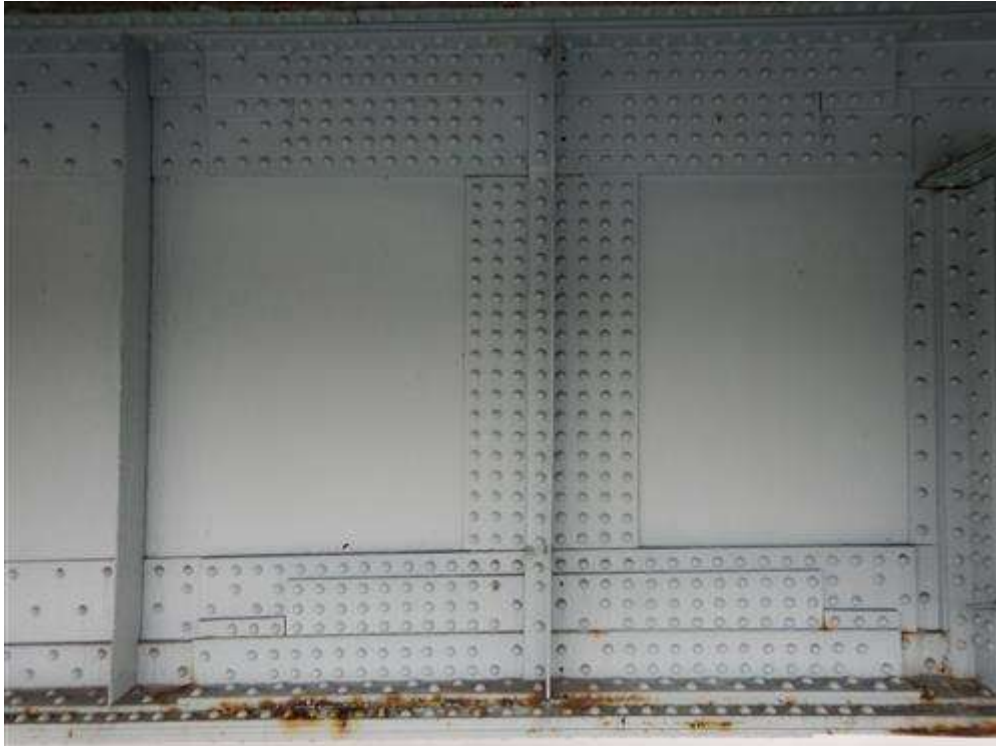


Photo Number: 41

Photo Taken: 09/11/2018

Girder 1 West Face at Floor Beam 12

Note: 4 missing rivets at splice.



Photo Number: 42

Photo Taken: 09/11/2018

Girder 1 West Face at Floor Beam 6

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 43

Photo Taken: 09/11/2018

Girder 1 Floor Beam 6



Photo Number: 44

Photo Taken: 09/11/2018

Girder 1 West Face at Floor Beam 10

Note: Pack rust between cover plates 2" thick.

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 45

Photo Taken: 09/11/2018

Girder 1 West Face at Floor Beam 13

Note: Bottom flange cover plate section loss.



Photo Number: 46

Photo Taken: 09/11/2018

Girder 2, East Face at Floor Beam 21

Note: Tie plate touching web.

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 47

Photo Taken: 09/11/2018

Girder 1 Splice Plate Near Floor Beam 18

Note: 1-1/8" pack rust between cover plates at edges with up to 3/16" deep pitting loss at bottom of cover plate.



Photo Number: 48

Photo Taken: 09/11/2018

Girder 1 Splice Plate North of Floor Beam 18

Note: Underside has a 3" long x 2" wide rusted through hole due to pack rust.

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 49

Photo Taken: 09/11/2018

Girder 2 East Face at Floor Beam 21

Note: Bottom flange section loss.



Photo Number: 50

Photo Taken: 09/11/2018

Floor Beam (Typical)

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 51

Photo Taken: 09/11/2018

Left Cantilever at Floor Beam 29 (Typical)



Photo Number: 52

Photo Taken: 09/10/2018

Floor Beam 1, South Face, Under Stringer 4

Note: Section loss.

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 53

Photo Taken: 09/10/2018

Floor Beam 1, North Face, Under Stringer 7

Note: Web section loss 2" diameter x 1/4" diameter with pinhole at base.



Photo Number: 54

Photo Taken: 09/10/2018

Floor Beam 1, North Face under Stringer 1

Note: Stiff with rust holes full width x 1" high at top and bottom.

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 55

Photo Taken: 09/10/2018

Floor Beam 1, South Face, Between Girder 2 and Stringer 6.

Note: Top flange and stiffener bent.



Photo Number: 56

Photo Taken: 09/11/2018

Floor Beam 3 South Side at West Cantilever Web

Note: Heavy laminar rust with pitting adjacent to stiffeners.

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 57

Photo Taken: 09/11/2018

Floor Beam 3, South Riveted End Plate

Note: Pack rust.



Photo Number: 58

Photo Taken: 09/10/2018

Floor Beam 4, Top Flange Between Girder 1 and Stringer 3

Note: Bent.

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 59

Photo Taken: 09/10/2018

Floor Beam 6 Connection to Girder 2

Note: Knee brace bent and has a 1" long tear.



Photo Number: 60

Photo Taken: 09/10/2018

Floor Beam 15 Between Stringer 3 and Stringer 4

Note: No crack found in web coupon.

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 61

Photo Taken: 09/10/2018

Floor Beam 22 South Face Between Stringer 4 and Stringer 5

Note: Up to 1/8" deep section loss.



Photo Number: 62

Photo Taken: 09/10/2018

Floor Beam 29, North Face Between Girder 2 and Stringer 6

Note: Stiffener rust hole.

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 63

Photo Taken: 09/10/2018

Floor Beam 29, North Face Between Stringer 1 and Stringer 2

Note: Top flange section loss.



Photo Number: 64

Photo Taken: 09/11/2018

Floor Beam 29 North Face of Bottom Flange

Note: Up to 3/16" deep section loss.

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 65

Photo Taken: 09/10/2018

Lateral Bracing at Floor Beam 3 at Girder 1

Note: Bowed 1' long x 2-1/2" high.



Photo Number: 66

Photo Taken: 09/11/2018

View of Catwalk (Typical)

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 67

Photo Taken: 09/10/2018

Catwalk Connection to Floor Beam 16 North Side

Note: 5/8" gap.



Photo Number: 68

Photo Taken: 09/10/2018

Abutment 1 Elevation

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

Carried: INTERSTATE 84 EASTBOUND

Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 69

Photo Taken: 09/10/2018

Abutment 2 Elevation



Photo Number: 70

Photo Taken: 09/10/2018

Abutment 1

Note: Spalls along cold joint up to 2" deep.

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

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Town: NEWTOWN

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Crossed: HOUSATONIC RIVER

Inventory Route: NHS



Photo Number: 71

Photo Taken: 09/10/2018

Abutment 2, West Cheekwall

Note: Spall.



Photo Number: 72

Photo Taken: 09/10/2018

Wingwall 1A Elevation

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

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Inventory Route: NHS



Photo Number: 73

Photo Taken: 09/10/2018

Wingwall 2A

Note: Lateral misalignment.



Photo Number: 74

Photo Taken: 09/10/2018

Wingwall 1B Elevation

Note: Spall/hollow area.

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

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Inventory Route: NHS



Photo Number: 75

Pier 1, South Elevation

Photo Taken: 09/11/2018



Photo Number: 76

Channel Looking Downstream (East)

Photo Taken: 09/11/2018

Form: Asset Photos

Inspection type: Fracture Critical,Routine

Inspection Date: 9/10/2018

Inspected by: Infrastructure Engineers

Bridge No: 01218

Town: NEWTOWN

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Inventory Route: NHS



Photo Number: 77

Channel Looking Upstream (West)

Photo Taken: 09/11/2018