STRUCTURE NO. 00947

ROUTE 34

over

NAUGATUCK RIVER

DERBY

Indepth & Special Inspection

on

12/1/2011

Inspected by HAKS - 25

for Area 5

TEAM:	Forwarded to TE3	Emmanuel Akosa	Date	2/1/2012
TE3:	Reviewed by TE3	Emmanuel Akosa	Date	2/6/2012
	BMM Required	Yes		
	Town Bridge	No		
	Rating <= 5 (Items 58,59,60 or 62)	Yes		
	Rating Change 2 or More Values	No		
	Forwarded to Supervisor	Sandra Dumas	Date	2/6/2012
	Forwarded to "To Be Copied Drawer"	☐	Date	
	Date BRI-19 Entered	2/6/2012		
SUPERVISOR:	Reviewed by Supervisor	SDumas	Date	3/5/12
SUPPORT:	Date Copies Made	3/5/12	BMM No	12-172
	Scanned By:	LA	Date Scanned	3-10-12
	PDF Box No.			

NBI: Yes

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

MEMORANDUM

subject: **BMM No. 12-172** ✓
Bridge No. 00947
Route 34 over Naugatuck River
Derby

date: March 5, 2012

to: Transportation Maintenance Administrator
Bureau of Highway Operations

from: Sandra A. Dumas
Sandra A. Dumas
Transportation Supervising Engineer
Bridge Safety and Evaluation
Bureau of Engineering and Construction

Attached are two copies of our most recent inspection report for the subject structure. The following deficiencies were found:

1. Span 3, lighting standard on the north parapet has a 5 inch high by 3 inch wide area of impact damage with a ½ inch deep dent. There is a 2¼ inch long crack in the weld at the base. Also 2 (of 4) anchor bolt covers are missing/broken.
2. Southwest metal beam guide rail lower finger shoe at the bridge attachment is torn and bent (snagging hazard).
3. This item supersedes Item No. 5 of BMM No. 10-286. Span 3, Pier 2, Girder G7 end on the south side, bottom of the web has a 5 inch long by 4 inch high perforation with up to 6 inch high by full width by up to 5/16 inch section loss. The bearing stiffeners have full width by 4 inch high by up to 3/8 inch section loss to knife edge remaining. Also the top of the web has a 3 inch wide by 6 inch high perforation along the bearing stiffener. The north side of the web has a 1 inch by up to 3 inch high by 1/8 inch deep to paper thin remaining around the perforation. (Section Loss for Shear is 18% and Section Loss for Bearing is 33.7%).
4. Girder ends at the abutments and piers have areas of minor pitting to 1/8 inch deep with light to moderate rust.

Please direct persons under your jurisdiction to:

1. Replace the lighting standard at the north parapet in Span 3 (1 Location).
2. Repair the southwest metal beam guide rail attachment (1 Location).
3. Repair the Girder G7 end at Pier 2 (±100 Lbs).
4. Clean and paint the girder ends (±9000 SF).

Item Nos. 1 and 2 should be considered Priority C. At this time, Item No. 3 should be considered Priority D and Item No. 4 should be considered Priority E. There may be other deficiencies which are considered routine maintenance and should be corrected. Rehabilitation of the deck is planned under Project No. 36-182 and we have been in discussions with CE Design to have the steel work (Items 3 and 4 above) included if funding can be found to accommodate the additional work. Section loss information obtained during this in-depth inspection have been forwarded to the designer for analysis. Depending on the results of that analysis, maintenance forces may be required to add supports or repair Girder G7.

The attached inspection report also notes that the following items were issued under a previous BMM and have not been addressed.

BMM No.	Item
10-286	1. There is evidence of leakage through the strip seal type deck expansion joints at the piers onto the structural steel below. Also, the median longitudinal strip seal type joint has scale and cracks in the concrete header (Priority C).
10-286	4. There is spall with exposed rebar on the underside of deck in span 3 at bay 2 (Priority E).

Bridge Safety and Evaluation believes that these repairs are important and should be addressed under the aforementioned project. If that project is cancelled for any reason, maintenance forces will be required to make these repairs.

All repairs shall be performed utilizing appropriate, approved materials and tried and proven methods unless otherwise specified.

If you have any questions concerning this matter, please contact me at (860) 594-2072. Please notify this office when the work has been completed.

Attachments

PHH/rv/sad

cc: Scott A. Hill – Louis D. Bacho – Mary E. Baker
Robert P. Zaffetti – Sandra A. Dumas – Emmanuel Akosa
HAKS Engineers, P.C.
Team 7

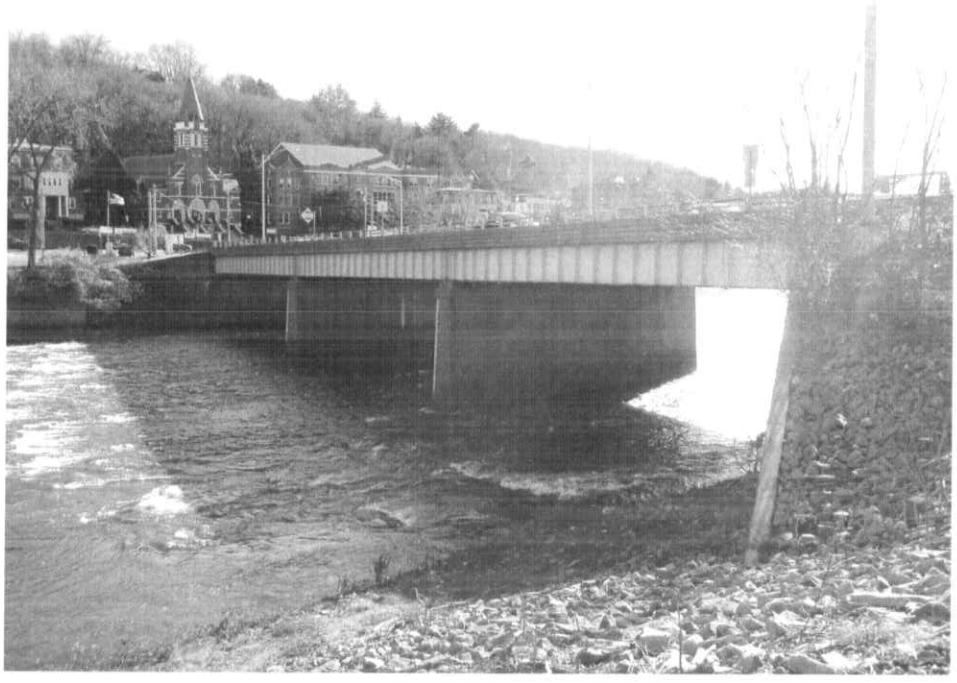
BRIDGE SAFETY INSPECTION
STATE PROJECT NO. 170 - 3013

BRIDGE NO. 00947

ROUTE 34
OVER
NAUGATUCK RIVER

RECEIVED
FEB 01 2012

DERBY, CONNECTICUT



IN-DEPTH INSPECTION

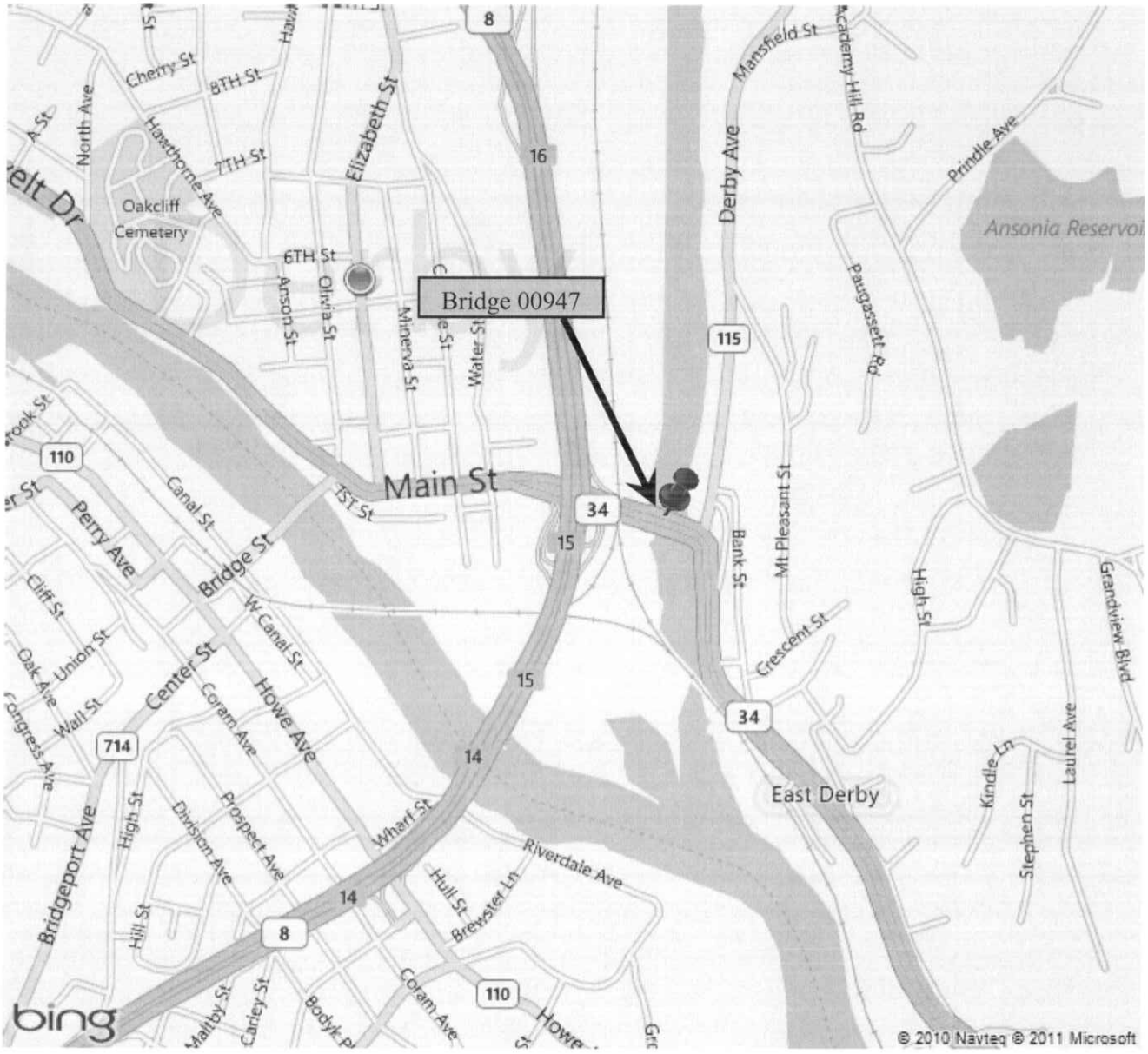
Prepared by

HAKS
Middletown, CT 06457

DECEMBER 1, 2011

STATE OF CONNECTICUT
HAMMOOD ALI MOHAMMED
No. 21463
LICENSED
PROFESSIONAL ENGINEER

LOCATION MAP



Bridge: 00947
Feature Carried: Route 34
Feature Crossed: Naugatuck River
Town: Derby
Milepoint: 14.17
Latitude: 41° 19' 12"
Longitude: 73° 4' 54"

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

INSPECTION REPORT TRANSMITTAL FORM

FORM BRI-27, REV. 9/ 97

STRUCTURE NO. 00947 TOWN DERBY

Inspectors PHH, RV Date 12/1/2011

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BRI - 12, Fracture Critical Inspection Data Sheet	
BRI - 19, HWY Bridge SI&A Form	2
BRI - 25, Under Entry SI&A Form	
BRI - 39, RR Bridge SI&A Form	
BRI - 49, Sign Structure SI&A Form	
PONTIS Element Data Collection Form	2
Plan Sheets Project No. 36-147 (1984) Check here if already on file ☑	

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FEB 0 1 2012

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PROJECT 170-3013 **BRIDGE No. 00947**

EXECUTIVE SUMMARY

Bridge No. 00947 was built in 1959. It carries Route 34 over Naugatuck River in the town of Derby. This three span bridge consists of steel multi-girder composite with a reinforced concrete deck supported by reinforced concrete abutments and piers. The overall length is 329 feet and the curb-to-curb width is 72 feet. As per information in the Connecticut Department of Transportation files, based on the 1997 analysis, the inventory rating for an AASHTO HS-20 loading is 59.8 Tons. Girders have section loss, a re-analysis is warranted. During this In-depth inspection performed in December 2011, the bridge was found to be in fair condition.

Deck

The deck is in poor condition. Bituminous overlay has random transverse cracks open up to 1/2 inch wide with minor raveling. There is minor wheel rutting in the travel lanes. The underside of concrete deck has areas of map cracks with and without efflorescence throughout. There are random hollow areas up to 2 feet diameter, spalls up to 5-1/2 feet by 2 feet by 3 inches deep (Span 3, south fascia at mid-span) with and without exposed rebar. Span 2, bay 1 has a 3 foot by 2-1/2 foot by 2-1/2 inch deep spall with exposed rebar along girder G2 at 1st intermediate diaphragm from pier 2. There is up to 50% section loss on exposed rebar.

Concrete curbs have isolated cracks up to 18 feet long by up to 1/4 inch wide. South concrete curbs and safetywalk along the joint steel plates have hollow areas and spalls up to 18 inch by 1 foot by 3 inch deep with and without exposed rebar. Standard 2-pipe railings with H-posts at both parapets have areas of peeling paint with light to moderate rust. There are isolated perforations in the north railing. Random utility bottom support channels have painted over section loss. Span 3, bay 2 at pier 2 utility support bottom flange has 100% section loss, the insulation around water main pipe at this location has deteriorated and fully torn.

Asphaltic plug joints at the abutments have minor wear with exposed aggregate. Strip seal joint at the piers and median joint have moderate accumulation of sand debris in the gland. The steel headers at the piers have random minor gouges due to plow damage in the travel lanes. There is evidence of past leakage at the underside of joints and on substructure below.

The following items have shown increased deterioration, were deficiencies not previously noted and/or are new deficiencies found during this inspection:

- Spans 1 & 2 have full depth concrete patches in the middle and right travel lanes up to 10 feet by 5 feet.
- Span 2, bituminous overlay has an 18 inch long by 2 inch wide by 2 inch deep pothole along the pier 1 east steel header.
- The underside of the deck has a few random concrete patches up to 23 feet long by full width of bay (Span 1, bay 6).
- Span 3, bay 3 has 4 foot long by full width wooden forms left in place.
- The overall underside of deck deterioration is 20.5% with a maximum of 24.5% in span 1.
- Span 1, bay 13, girder G13 haunch near the west abutment has a 10 foot long crack with efflorescence and rust stains, but is tight.
- The concrete median at pier 1 has 3 spalls along the steel headers up to 1 foot long by 8 inch by 2 inch deep.
- North sidewalk at pier 2, the west steel hold down joint plate has a fully cracked weld along the top edge of the curb plate with light vegetation growth.
- Span 1, north railing 1st bottom pipe from pier 1 is slightly bent out of plane.
- The missing bottom section of the north parapet railing at pier 1 has been replaced since the last inspection.

- Spans 2 and 3, south parapet railings with H-posts have been replaced since the last inspection.
- Span 3, lighting standard on the north parapet has a 5 inch high by 3 inch wide area of impact damage with a 1/2 inch deep dent. There is a 2-1/4 inch long crack in the weld at the base. Also 2 (of 4) anchor bolt covers are missing/broken.
- The 2 inch diameter rigid electrical conduits that run parallel to the bottom flanges of the fascia girders have rusted inside-out with perforations and exposed wires.

Superstructure

The superstructure is in fair condition. Bearings typically have areas of light to moderate rust. The median and fascia girder bearings at the piers have heavy rust. Expansion bearings have evidence of movement at 42 - 47 degrees Fahrenheit. Fixed curved sole bearings have up to 1/2 inch painted over pack rust between the sole and masonry plates.

Girders typically have areas of peeling paint with light ~~rust~~ to moderate rust. There is minor pitting to 1/8 inch deep section loss at random girder ends. Span 1, Girder G1 bottom flange, north side, is bent upward 1 foot long by 1/2 inch at approximately 38 feet from the west abutment.

The following items have shown increased deterioration, were deficiencies not previously noted and/or are new deficiencies found during this inspection:

- Most of the bearings at the west abutment and pier 1 were in contraction mode, while all the bearings at pier 2 were in expansion mode at 42 - 47 degrees Fahrenheit. Girder G3, G8, G11, G13 and G14 bearings at pier 2 were over-expanded. Random bearings have partially exposed sliding plates at the top.
- Girder G14 and G12 bearings at pier 1 and pier 2 respectively have up to 1/16 inch pack rust between the sole and sliding plates.
- The following girder ends have notable section loss:
  - Span 1, pier 1, girder G8 south side, bottom of the web has full width by up to 3 inch high by 1/8 inch deep section loss; north side web has full width by 1 inch high by 1/16 inch deep section loss. The bearing stiffeners on both sides have full width by up to 6 inch high by up to 1/4 inch deep section loss (Section loss for Shear <5% and Section loss for Bearing is 24%).
  - Span 1, pier 1, girder G14 north side, bottom of the web, between the bearing stiffeners has full width by 6 inch high by 1/8 inch section loss and the bearing stiffeners have full width by 6 inch high by 1/4 inch deep section loss (Section Loss for Shear <5% and Section Loss for Bearing is 18.3%). Span 2, pier 2, girder G8 is in similar condition.
  - Span 3, pier 2, girder G7 south side at the bottom of the web has a 5 inch long by 4 inch high perforation with up to 6 inch high by full width by up to 5/16 inch section loss. The bearing stiffeners have full width by 4 inch high by up to 3/8 inch section loss to knife edge remaining. Also the top of the web has a 3 inch wide by 6 inch high perforation along the bearing stiffener. The north side of the web has a 1 inch by up to 3 inch high by 1/8 inch deep to paper thin remaining around the perforation. (Section Loss for Shear is 18% and Section Loss for Bearing is 33.7%). The top flange of the girder on the south side has 1-1/2 foot long by 3 inch wide by ±1/8 inch deep section loss and the bottom flange has heavy laminated rust with negligible section loss.

Substructure

The substructure is in fair condition. Abutments stem, backwalls have water and silt stains. There are isolated cracks up to 1/4 inch wide and spalls up to 2 inch deep. Girder G10 west abutment pedestal, south face, has a 4 inch by 4 inch by 1/2 inch deep spall. Girder G5 east abutment pedestal, north face, has a 8 inch by 4 inch hollow area.

Northwest wingwall has a 15 inch by 3 inch by 1 inch deep spall. The southwest and southeast wingwalls have horizontal and vertical hairline cracks up to 10 foot long.

Solid stem concrete piers with cap have random hairline cracks up to 10 foot long. There are random hollow areas up to 5 foot by 3 foot, a few spalls up to 4 inch deep with and without exposed rebar. Pier 2 in bay 7 has a full height vertical crack open up to 1/8 inch wide on both sides extending across top cap. There are concrete patches, cracks and minor spalls on both vertical faces of the stem. The east elevation has areas of honeycombing up to 10 foot by 2 foot by 1 inch deep.

The following item has changed since the last inspection:

- 2010 Underwater inspection report by McLaren Engineering Group dated 09/27/2010. Pier 1, west elevation has a 2 foot high band of moderate scale above the footing, an area of heavy efflorescence at mid-span, 2 areas of moderate scale up to 3 foot diameter, and a joint spall up to 6 inch long by 3 inch high by 1 inch deep. In addition, the north end has an area of map cracking. The east elevation of the stem has a 1 foot high band of light scale above the footing along with 8 foot long areas of scale up to 1 inch deep at the north end, 3 patched areas, and vertical hairline cracks at the north end.

Channel and Channel Protection

The channel is in fair condition. On 09/27/2010 McLaren Engineering Group performed an underwater inspection. The scour activity in the channel has exposed the footings at the piers up to full length and up to 1.1 foot high (was 1.4 foot high in 2008). The mudline elevations remained relatively unchanged since the 2008 inspection, except for aggradation along the east face of pier 1 up to 2 foot high and scour up to 1.6 foot in the upstream channel between the east abutment and pier 2. Moderate timber debris accumulation was noted at the east face of pier 2. No undermining was observed at the time of inspection. The channel banks are well vegetated.

Approach Condition

The approaches are in satisfactory condition. Metal beam guide rails have minor impact dents and random scrapes throughout. The lower finger shoe at the southwest metal beam guide rail attachment is torn and bent (snagging hazard). Approach pavement has random transverse and longitudinal cracks open up to 1/2 inch wide with minor raveling.

The following items have shown increased deterioration, were deficiencies not previously noted and/or are new deficiencies found during this inspection:

- Southeast metal beam guide rail has 6 foot long collision damage near the attachment.
- West approach pavement in the westbound right and middle travel lanes has a new bituminous patch since the last inspection.
- A new bituminous ramp has been installed at the northwest approach sidewalk.

REPAIR RECOMMENDATIONS

This bridge is one of the "List 18" bridges included under Project No. 0036-182.

Deck

1. Seal the cracks in the overlay (±500 LF).
2. Patch the pothole at the pier 1 joint near the median (<0.25 CY).
3. Deck is in poor condition. There are some areas in serious condition. It is our recommendation to expedite the rehabilitation project.
4. Repair/Patch the deteriorated concrete at the south safety walk and median joints (<0.25 CY).
5. Repair the weld in the north sidewalk plate at pier 2 (1 Location).
6. Replace the lighting standard at north parapet in span 3 (1 Location).
7. Notify the appropriate utility to repair the electrical rigid conduits at the fascias, especially at the abutments.
8. Repair the strip seal joints (±72 LF).

Superstructure

1. Clean and reset all bearings at the abutments and piers (84 EA). Consider replacing the sliding bearings with elastomeric bearings during any future rehabilitation projects.
2. Repair the girder ends with section loss after an analysis has been performed (±500 Lbs).
3. Clean and paint girder ends at the abutments and piers (±9000 SF).

Substructure

1. Repair the deteriorated concrete at the abutments and piers (<1 CY).

Channel and Channel Protection

No repair recommendations at this time.

Approaches

1. Seal the cracks in the approach pavement (±500 LF).
2. Repair the southwest metal beam guide rail attachment (1 Location).

Connecticut Department of Transportation

Bridge Inspection Report BRI-18

Bridge #: 00947 **Inspection Date: 12/01/2011**

Inspection Type:	Indepth	**Previous Inspection Date:**	12/16/2009	**Snooper Required:**	Yes
Inspection Performed By:	HAKS Engineers	**Feature Carried:**	ROUTE 34	**Snooper Used:**	Yes
Town:	DERBY	**Feature Intersected:**	NAUGATUCK RIVER	**Year Built:**	1959
Location:	0.1 MI E OF ROUTE 8	**Main Design:**	Stringer/Multi-beam or Girder	**Year Rebuilt:**	-
Main Material:	Steel				

Visits **Inspectors:**

Visit Date:	Temp:	Start Time:	End Time:	Inspector:	Task:
12/1/2011	48	8:30:00 AM	3:00:00 PM	P. Holmes	Lead Inspector
12/2/2011	50	8:30:00 AM	3:15:00 PM	R. Vuppula	Inspector

DECK: BITUMINOUS OVERLAY W/ WATERPROOFING MEMBRANE REINFORCED CONCRETE DECK **Overall Rating:** 4

	Rating	
OVERLAY:	6	Bituminous overlay has random transverse cracks open up to 1/2" wide with minor raveling. There is minor wheel rutting in the travel lanes. Spans 1 & 2 have full depth concrete patches in the middle and right travel lanes up to 10' x 5'. Span 2, there is an 18" long x 2" wide x 2" deep pothole along the pier 1 east steel joint plate. There is light to moderate accumulation of sand debris along the curb and median lines. See sheets 19 & 20 and photos 9-13.
DECK-STR. CONDITION:	4	The underside of the concrete deck has areas of map cracking with and without efflorescence throughout. There are random hollow areas up to 2' diameter, spalls up to 5-1/2' x 2' x 3" deep (Span 3, south fascia at mid-span) with and without exposed rebar. Span 2, bay 1 has a 3' x 2-1/2' x 2-1/2" deep spall with exposed rebar along girder G2 at the 1st intermediate diaphragm from pier 2. There is up to 50% section loss on the exposed rebar. There are a few random concrete patches up to 23' long x full width of bay (Span 1, bay 6). Span 3, bay 3 has 4' long x full width wooden forms left in place. There are isolated haunch spalls up to 1' long. Span 1, bay 13, has a 10' long longitudinal crack with efflorescence and rust stains in the haunch along girder G13 near the west abutment. The overall underside of deck deterioration is 20.5% with a maximum of 24.5% in span 1. See sheets 26-27, 29-30, 32-33 & 35 and photos 14-19.
CURBS:	6	Concrete curbs have random chipped edges throughout. North and south curbs have isolated cracks up to 18' long x 1/4" wide. Span 3, south curb has a 6" x 6" x 2" deep spall near pier 2 safety walk joint.

		Average curb reveal is 7" along both sides. See sheets 19-21 and photos 21 & 22.
MEDIAN:	6	Raised reinforced concrete median with closed strip seal joint and metal beam guide rail. The concrete headers have areas of scaling and random transverse cracks. There are 3 spalls along the steel headers at pier 1 up to 1' long x 8" x 2" deep. See sheets 19 & 20 and photo 20.
SIDEWALKS:	6	North concrete sidewalk has random transverse hairline cracks and areas of map cracking. The west steel hold down joint plate at the north sidewalk at pier 2 has fully cracked weld along the top edge of the curb plate with light vegetation growth. South concrete safetywalk has random transverse hairline cracks. There is 18" x 1' x 3" deep spall with exposed rebar along the east steel joint hold down plate at pier 1; and a 18" long x 6" wide hollow area along the east steel joint hold down plate at pier 2. See sheets 19 & 20 and photos 21-24.
PARAPET:	6	Reinforced concrete parapets have random vertical hairline cracks, areas of light to moderate scaling. Span 2, south parapet has a 2' x 1' area of heavy scaling on the top edge of the junction box. See sheets 19 & 20 and photos 21 & 22.
RAILING:	6	Standard 2-pipe railings with H-posts at both parapets have areas of peeling paint with light to moderate rust. Span 1, north parapet at the 1st bottom rail section from the west end has perforations at the post connections. Also the 1st bottom pipe of the railing from pier 1 is slightly bent out of plane. A few random anchor bolts have up to 50% section loss. Spans 2 and 3, south parapet railings have been replaced since the last inspection. The new bottom rail pipe section at the north parapet, over pier 1, has been replaced since the last inspection. See sheets 19 & 20 and photos 21, 22 & 25.
PAINT:	5	The paint on the bridge rails and posts is peeling with area of rust throughout.
FENCE:	N	-
DRAINS:	6	All PVC weep pipes do not extend below the girder bottom flanges and do not appear to drain onto the steel. 6" diameter free drain scupper pipes along both curb lines and on both sides of the raised concrete median have no grates and are clear of debris. See sheets 19 & 20 and photos 26 & 27.
LIGHTING STANDARD:	4	Lighting standards on the north parapet in spans 1 and 3 and on the south parapet in spans 2 and 3. Span 3, lighting standard on the north parapet has a 5" high x 3" wide area of impact damage with a 1/2" dent. There is a 2-1/4" long crack in the weld at the base. Also 2 (of 4) anchor bolt covers are missing/broken. See sheets 19 & 20 and photos 28 & 29.
UTILITIES TYPE/SIZE:	4	The following utilities are supported at the underside of the bridge deck: • Bay 2 – (1) 16" diameter water main pipe. • Bay 3 – (20) 4" diameter telephone conduits. • Bay 8 – (1) 12" diameter and (1) 6" diameter gas main pipes. • Bay 12 – (6) 4" diameter electrical conduits. Random utility bottom support channels have painted over section loss. Span 3, bay 2 at pier 2 utility support bottom flange has 100% section loss, the

		insulation around the water main pipe at this location has deteriorated and is fully torn. • A 2" diameter rigid electrical conduit running parallel to the bottom flanges of all the fascia girders at the abutments through the backwall, has perforations with heavy rust inside-out and exposed wires. See sheets 26-27, 29-30 & 32-33 and photos 30, 31 & 46.
CONSTR JOINTS:	N	-
EXPANSION JOINTS:	6	Asphaltic plug joints at the abutments have minor wear with exposed aggregate. Strip seal joint at the piers and median joint have moderate accumulation of sand debris in the gland. The steel headers at the piers have random, minor gouges due to plow damage in the travel lanes. There is evidence of past leakage at the underside of the joints and substructure below. See sheets 19 & 20 and photos 32-36.

59. SUPERSTRUCTURE: Welded Plate Steel Multi-girder

Overall Rating: 5

	Rating	
BEARING DEVICES:	5	Expansion sliding bearings at the West Abutment; Span 2, pier 1; and Span 3, Pier 2. Bearings have evidence of movement at 42°F-47°F. There are areas of light to moderate rust. The median and fascia girder bearings at the piers have heavy rust. Girder G14 bearing at pier 1 and Girder G12 bearing at pier 2 has up to 1/16" pack rust between the sole and sliding plates. Most of the bearings at the west abutment and pier 1 were in contraction mode, while all the bearings at pier 2 were in expansion mode at the time of inspection. Girder G3, G8, G11, G13 and G14 bearings at pier 2 were over-expanded with random bearing sliding plates partially exposed at the top. Fixed curved sole plate bearings at the piers have areas of peeling paint with light to moderate rust. The median and fascia girder bearings have heavy rust. There is pack rust up to 1/2" (painted over) between the sole and masonry plates. See sheets 23-25 and photos 37-40.
STRINGERS:	N	-
GIRDERS:	5	The girders typically have areas of peeling paint with light to moderate rust. There are areas of minor pitting to 1/8" deep on the girder ends. Span 1, girder G1 bottom flange on the north side is bent upward 1' long x 1/2" near the 1st intermediate diaphragm from the west abutment (approximately 38' from the abutment). The following girder ends have notable section loss: 1. Span 1, pier 1, girder G8 south side bottom of the web has full width x up to 3" high x 1/8" deep section loss; north side web has full width x 1" high x 1/16" deep section loss. The bearing stiffeners on both sides have full width x up to 6" high x up to 1/4" deep section loss (Section loss for Shear <5% and Section loss for Bearing is 24%). 2. Span 1, pier 1, girder G14 north side bottom of the web between the bearing stiffeners has full width x 6" high x 1/8" section loss and the bearing stiffeners have full width x 6" high x 1/4" deep section loss (Section Loss for Shear <5% and Section Loss for Bearing is 18.3%). 3. Span 2, pier 2, girder G8 south side bottom of the web has full width x 3" high x 1/8" deep section loss and both bearing stiffeners have full width x 3" high x 3/16" deep section loss (Section loss for Shear <5% and Section loss for Bearing is 14.8%). 4. Span 2, pier 2, girder G14 north side both bearing stiffeners have full width x 6" high x 1/8" deep section with heavy laminated rust (negligible loss) on the web. 5. Span 3, pier 2, girder G7 south side at bottom of the web has a 5" long x 4" high perforation with up to 6" high x full width x up to 5/16" section loss. The bearing stiffeners have full width x 4" high x up to 3/8" section loss to knife edge remaining. Also the top of the web has a 3" wide x 6" high perforation along the bearing stiffener. The north side of the web has a 1" x up to 3" high x 1/8" deep to paper thin remaining around the perforation. (Section Loss for Shear is 18% and Section Loss for Bearing is 33.7%). The top flange of the girder on the south side has 1-1/2' long x 3" wide x ±1/8" deep section loss and the bottom flange has heavy laminated rust with negligible section loss. All the fascia girders at the abutments have ±4" diameter poor quality flame cut holes in the bearing stiffeners to accommodate the 2" diameter rigid electrical conduit running through the abutment backwall.

		Diaphragms have light to moderate rust, mainly at the pier. See sheets 26-34 and photos 41-46.
FLOOR BEAMS:	N	-
TRUSSES-GENERAL:	N	-
TRUSSES-PORTALS:	N	-
TRUSSES-BRACING:	N	-
PAINT:	5	Less than 50% of the painted surfaces have deterioration.
RUST:	5	See above items.
MACHINERY MOV SPAN:	N	-
RIVETS & BOLTS:	N	-
WELDS - CRACKS:	7	All transitions and vertical field web splices have been checked 100% hands-on. No notable deficiencies. Span 1, girder G10 bottom flange transition weld on the north side has a 3/4" x 1/4" deep void. No notable stress in the weld was found at the time of inspection.
TIMBER DECAY:	N	-
CONCRETE CRACKING:	N	-
COLLISION DAMAGE:	7	Span 1, girder G1 bottom flange on the north side is bent upward 1' long x 1/2" near the 1st intermediate diaphragm from the west abutment (approximately 38' from the abutment). See sheet 26 & photo 47.
MEMBER ALIGNMENT:	8	-
DEFLECT. UNDER LOAD:	N	(N) Normal (E) Excessive
VIBRATION UNDER LOAD:	N	(N) Normal (E) Excessive
STAND PIPES:	N	-
BARREL LADDERS:	N	-

ARE BARREL LADDERS OSHA COMPLIANT? NA

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60. SUBSTRUCTURE: REINFORCED CONCRETE ABTUMENTS AND PIERS **Overall Rating:** 5

	Rating	
ABUTMENTS-STEM:	6	Both abutment stems have water and silt stains. West abutment stem has a 16" x 6" x 2" deep spall with exposed rebar along the construction joint. East abutment stem has a 4' long (total) x 1/4" crack along the base of the northeast cheekwall and a 3" diameter shallow spall. As per the underwater inspection report by McLaren Engineering Group dated 09/27/2010, the stem has a 1' high band of light scale above the footing.

		Pedestals: Girder G10 west abutment pedestal, south face, has a 4" x 4" x 1/2" deep spall. Girder G5 east abutment pedestal, north face, has a 8" x 4" hollow area. See sheets 36 & 37 and photos 48 & 49.
ABUTMENTS-BACKWALL:	6	Both abutment backwalls have water and silt stains. Bay 1 west backwall has a 2-1/2' long shallow rebar near south edge of girder G1 pedestal. Bay 2 at both backwalls has up to 3' long diagonal cracks from the utility cut-out extending to the girder pedestals. Bay 3 east backwall has a full height crack with some dampness. East backwall along the northeast cheekwall has a 2' x 6" x 1/2" deep spall. See sheets 36 & 37 and photo 50.
ABUTMENTS-FOOTINGS:	7	As per underwater inspection report dated 09/27/2010, the partially exposed footing at the east abutment has areas of light scaling. West abutment is located out of water and the footing is not visible.
ABUTMENTS-SETTLEMENT:	8	-
ABUTMENTS-WINGWALLS:	7	Northwest wingwall has a 15" x 3" x 1" deep spall. The filler material at the northwest wingwall joint is falling out. The southwest and southeast wingwalls have horizontal and vertical hairline cracks up to 10' long. There is moderate vegetation growth along the southwest wingwall. The cheekwalls have silt stains and areas of light scale. See sheets 38 & 39 and photo 51.
PIERS/BENTS-CAPS:	5	Concrete Solid Stem Piers – See 'Piers/Bents – Columns below.
PIERS/BENTS-PILE BENT:	N	-
PIERS/BENTS-COLUMNS:	5	Solid concrete pier stem have random hairline cracks up to 10' long. Pier 1 east elevation has random hollow areas up to 5' x 3'. There are a few spalls in the stem up to 22" diameter x 2" deep with and with exposed rebar. The concrete cap has isolated hollow areas up to 2' x 2' with adjacent edge spalls up to 18" x 1' x 4" deep with and without exposed rebar along the construction joints. Pier 2 in bay 7 has a full height vertical crack open up to 1/8" wide on both sides extending across top cap. There are concrete patches, cracks and minor spalls on both vertical faces of the stem. The east elevation has areas of honeycombing up to 10' x 2' x 1" deep. There are three spalls up to 2' x 2' x 2" deep. The stem has a 1' x 3' hollow area in bay 1. 2010 Underwater inspection report by McLaren Engineering Group dated 09/27/2010. Pier 1, west elevation has a 2' high band of moderate scale above the footing, an area of heavy efflorescence at mid-span, 2 areas of moderate scale up to 3' diameter, a joint spall up to 6" long x 3" high x 1" deep. In addition, the north end has an area of map cracking. The east elevation of the stem has a 1' high band of light scale above the footing along with 8' long areas of scale up to 1" deep at the north end, 3 patched areas, and vertical hairline cracks at the north end. Pier 2 west elevation has two areas of scale up to 1/2" deep, cracks up to 1/8" wide, and repair areas up to 1.4' high x 10" wide. The east elevation has 2' high band of light scale above the footing, three areas of honeycombing up to 10' long x 2' high x 1" deep, spalls up to 1' high x 1' wide x 2' deep, a 6' long x 1/8" wide vertical crack in bay 7 that continues across the top onto the west face. The west face has 1/8" wide vertical crack through the stem, 3' long x 1'

		high hollow area and minor spalls. Pedestals: No notable deficiencies. There is evidence of past leakage on the pier stems. See sheets 40-43 and photos 52-56.
PIERS/BENTS-FOOTING:	6	As per Underwater inspection dated 09/27/2010, footing of both piers is exposed for full length and have areas of light scale and honeycombing.
PIERS/BENTS-SETTLMT:	8	-
EROSION-SCOUR:	5	Erosion – Rated 8. Scour – Rated 5. 2010 Underwater inspection report by McLaren Engineering Group. The mudline elevations along the east abutment footing remain relatively unchanged since the 2008 inspection. The footing remains partially exposed up to 6" high (was 5" high in 2008). The mudline elevations remain unchanged at the west side of pier 1 since the 2008 inspection, but there is aggradation at the east side up to 2' high. The footing is exposed full length at the west side up to 1.1' high while the east side is partially exposed up to 21' long x 2' high. The mudline elevations at pier 2 remain unchanged since the 2008 inspection. The footing is exposed for full length on both sides.
CONCRETE CRACK-SPALL:	6	See above items.
STEEL CORROSION:	N	-
PAINT:	N	-
TIMBER DECAY:	N	-
COLLISION DAMAGE:	8	-
DEBRIS:	6	Light to moderate sand and concrete debris accumulation on both piers.

---

61. CHANNEL & CHANNEL PROTECTION:	NAUGATUCK RIVER	**Overall Rating:**	5

	Rating	
CHANNEL SCOUR:	5	As per Underwater inspection by McLaren Engineering Group dated 09/27/2010, Scour activity has exposed the footings at the piers up to full length and up to 1.1' high (was 1.4' high in 2008). The mudline elevations remain relatively unchanged since the 2008 inspection except for aggradation up to 2' high along the east face of pier 1 and scour up to 1.6' on the upstream channel between the east abutment and pier 2.
EMBANKMENT EROSION:	8	-
DEBRIS:	7	As per Underwater inspection report by McLaren Engineering Group dated 09/27/2010, moderate timber debris was noted at the east face of pier 2.
VEGETATION:	8	The banks are well vegetated.

CHANNEL CHANGE:	7	As per Underwater inspection report by McLaren Engineering Group dated 09/27/2010, no notable change since the 2008 inspection. See photos 57 & 58.
FENDER SYSTEM:	N	-
SPUR, DIKES & JETTIES:	N	-
RIP RAP:	5	As per Underwater inspection report by McLaren dated 09/27/2010, rip-rap at the west abutment only. Rip-rap is missing at the east abutment and piers.

---

62. CULVERTS & RETAINING WALL:	-	**Overall Rating:**	N

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65. APPROACH CONDITION	BITUMINOUS PAVEMENT	**Overall Rating:**	6

	Rating	
APPROACH SLAB:	6	Not visible. Rating based on the condition of the approach pavement.
RELIEF JOINTS:	N	-
APPROACH GUIDE RAIL:	6	Metal beam guide rails have minor impact dents and random scrapes throughout. Southwest metal beam guide rail attachment lower finger shoe is torn and bent (snagging hazard). Southeast metal beam guide rail has 6' long collision damage near the attachment. See sheets 19 & 20 and photos 59 & 60.
APPROACH PAVEMENT:	6	Approach pavement has random transverse and longitudinal cracks open up to 1/2" wide with minor raveling. West approach pavement in the westbound right and middle travel lanes has new bituminous patches since the last inspection. Approach sidewalk: A new bituminous ramp has been installed at the northwest approach since the last inspection. Also there is a bituminous ramp at the northeast approach sidewalk. See sheets 19 & 20 and photos 61 & 62.
APPROACH EMBANKMENT:	8	-

TRAFFIC SAFETY FEATURES

	Rating	
BRIDGE RAILINGS:	Last Inspection: 0 Current: 0	<42" high solid concrete parapet on NHS.

TRANSITIONS:	Last Inspection: 0 Current: 0	No rub rails.
APPROACH GUARDRAILS:	Last Inspection: 0 Current: 0	Not R-B 350 compliant guiderails.
APPR. GUARDRAIL ENDS:	Last Inspection: 1 Current: 1	-

66. LOAD POSTING

	- Posted Loading -	
SINGLE UNIT (TONS):	Last Inspection: - Current: -	-
SEMI TRAILER (TONS):	Last Inspection: - Current: -	-
4 AXLE (TONS):	Last Inspection: - Current: -	-
3S2 (TONS):	Last Inspection: - Current: -	-
ADVANCE WARNING (Y/N):	N	-
LEGIBILITY:	N	-
VISIBILITY/LOCATION:	N	-

67. MISCELLANEOUS

	Rating	
MIN. VERT. UNDERCLEARANCE:	Last Inspection: 0' 0" Current: -' -"	-
POSTED CLR. UNDER BRIDGE:	Last Inspection: -' -" Current: -' -"	-
POSTED CLR. ON BRIDGE:	Last Inspection: -' -" Current: -' -"	-

ADVANCED WARNING (YES/NO):	No	-
SPEED LIMIT (IF ANY):	Last Inspection: 25 Current: 25	-
CHARACTER OF TRAFIC:		Moderate to heavy – Mixed traffic.

ADDITIONAL NOTES:	1) Bridge I.D. is clear and legible. 2) A 60' snooper was used to inspect the superstructure.
ADDITIONAL COMMENTS:	-

Inspectors' Signatures:	1)	[signature]	Date: 01/30/12
	2)	V. Raghuram Reddy	Date: 01/30/12
	3)		Date: ----/----/-----
	4)		Date: ----/----/-----
P.E. Signature:		[signature]	Date: 01/30/12
P.E. #:		21463	Date: ----/----/-----
Reviewed by:		[signature] conndot	Date: 2/6/12

FEB 01 2012

HAKS

JOB NO. 170-3013

BRIDGE NO. 00947

SUPPLEMENTAL SHEET

DESCRIPTION: TIME LOG

DATE: (SEE BELOW)

DATE:	12/1/2011	Day # 1	DESCRIPTION	TIME AT SITE	
WEATHER:	Clear, 48°F	CREW:	PHH, RV	8:30AM	TO 3:00PM
EQUIP. LIST:	Cube Truck	SNOOPER:	60' McClain	8:30AM	TO 3:00PM
		SHADOW TRUCK:	McClain	8:30AM	TO 3:00PM
		LOCAL POLICE:	Derby PD (David Iacuone #62)	8:30AM	TO 3:00PM
VISITORS:	DOT-Sowatei (12-12:30pm)	R.R. FLAGMAN:			TO

TC & NOTES: Right lane closure on Route 34 Eastbound.

Inspected south half of superstructure and substructure. Inspection on-going.

DATE:	12/2/2011	Day # 2	DESCRIPTION	TIME AT SITE	
WEATHER:	Clear, 50°F	CREW:	PHH, RV	8:30AM	TO 3:15PM
EQUIP. LIST:	Cube Truck	SNOOPER:	60' McClain	8:30AM	TO 2:30PM
		SHADOW TRUCK:	McClain	8:30AM	TO 2:30PM
		TROOPER:	Derby PD (Justin Walker #70)	8:30AM	TO 2:30PM
VISITORS:		R.R. FLAGMAN:			TO

TC & NOTES: Right lane closure on Route 34 Westbound.

In-depth inspection complete.

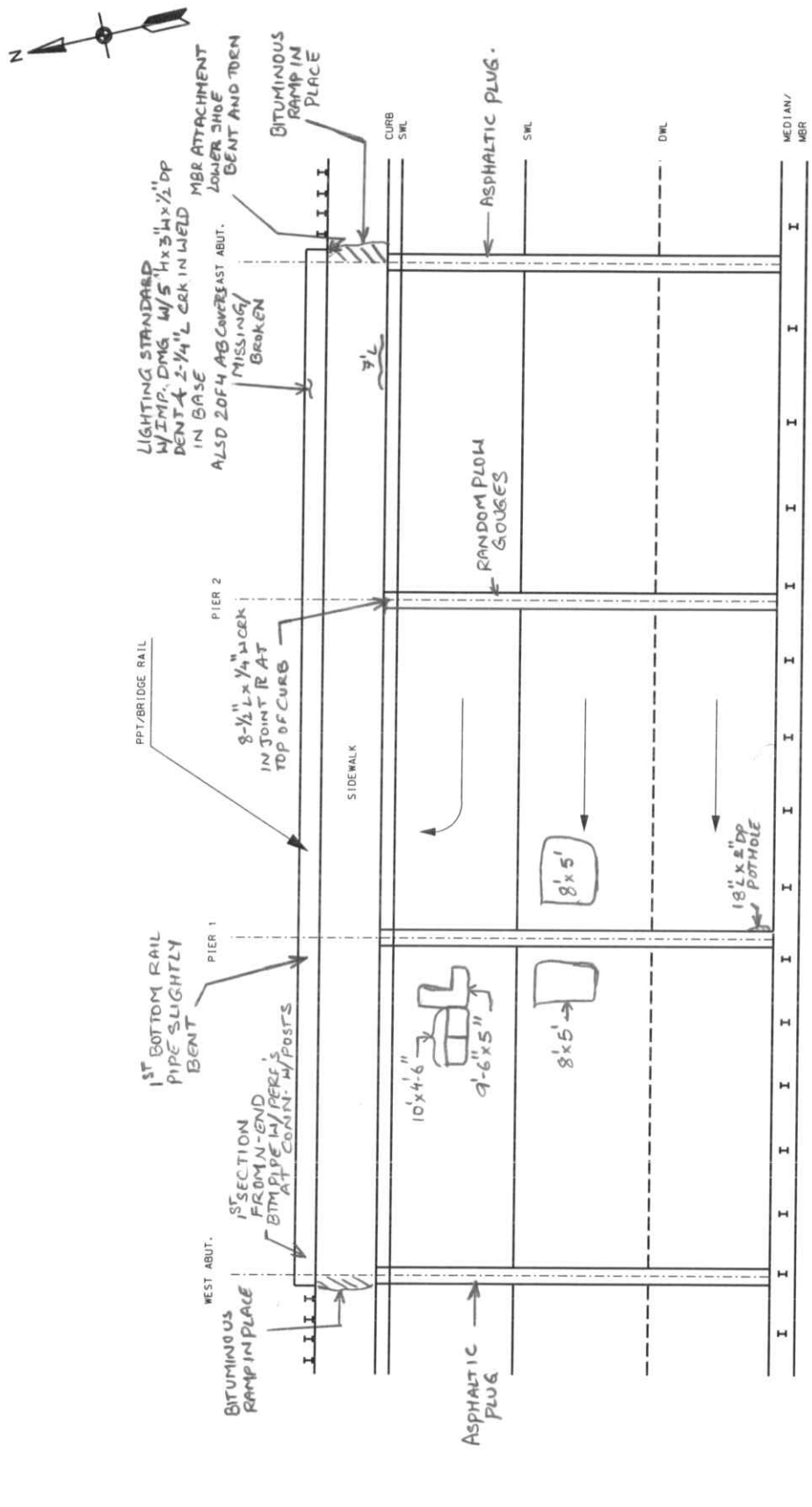
DATE:		Day # 3	DESCRIPTION	TIME AT SITE	
WEATHER:		CREW:			TO
EQUIP. LIST:		SNOOPER:			TO
		SHADOW TRUCK:			TO
		TROOPER:			TO
VISITORS:		R.R. FLAGMAN:			TO

TC & NOTES:

DATE:		Day # 4	DESCRIPTION	TIME AT SITE	
WEATHER:		CREW:			TO
EQUIP. LIST:		SNOOPER:			TO
		SHADOW TRUCK:			TO
		TROOPER:			TO
VISITORS:		R.R. FLAGMAN:			TO

TC & NOTES:

HAKS FIELD NOTES	JOB NO. 170-3013	BRIDGE NO. 00947
	DATE: 12/2/2011	SHEET 19 OF 83
	CREW: PHH, RV	



□ - FULL DEPTH CONCRETE PATCHES

GENERAL NOTES:

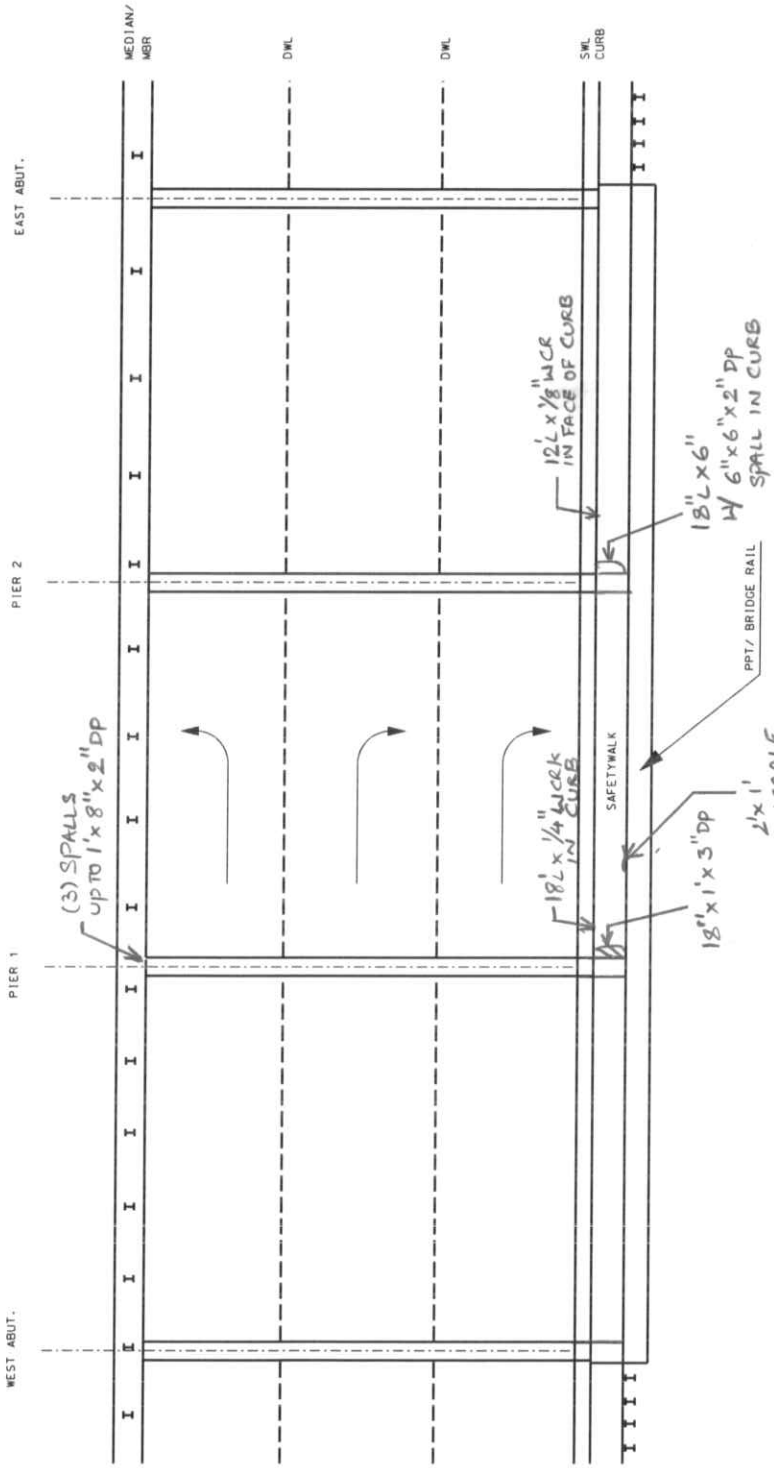
1) BITUMINOUS OVERLAY HAS RANDOM TRANSVERSE CRACKS, UP TO 1/2"W, W/ MINOR RAVELING; MINOR WHEEL RUTTING IN TRAVEL LINES.
2) CONCRETE CURBS, RAISED MEDIAN W/ RANDOM CHIPPED EDGES; STRIP SEAL JOINT AT MEDIAN W/ LT. SAND ACCUMULATION.
3) SIDEWALK W/ RANDOM TRANSVERSE HAIRLINE CRACKS;
4) PARAPET W/ RANDOM VERTICAL HAIRLINE CRACKS & AREAS OF LIGHT TO MODERATE SCALE.
5) ALL SCUPPERS MISSING GRATES.
6) ASPHALTIC PLUG JOINTS W/ MINOR WEAR & EXP. AGGREGATE; STRIP SEAL JTS AT PIERS W/ MODERATE ACCUMULATION OF SAND DEBRIS IN GLAND.

TOP OF DECK (WESTBOUND LANES)

NTS

REVISION 1	DATE	CREW	REVISION 3	DATE	CREW
REVISION 2	DATE	CREW	REVISION 4	DATE	CREW

HAKS FIELD NOTES	JOB NO.170-3013	BRIDGE NO. 00947
	DATE: 12/2/2011	SHEET 20 OF 83
	CREW: PHH, RV	



GENERAL NOTES:

1) SPANS 1/2, SOUTH RAILING REPLACED SINCE THE LAST INSPECTION.

2) SEE TOP OF DECK (WESTBOUND LANES)

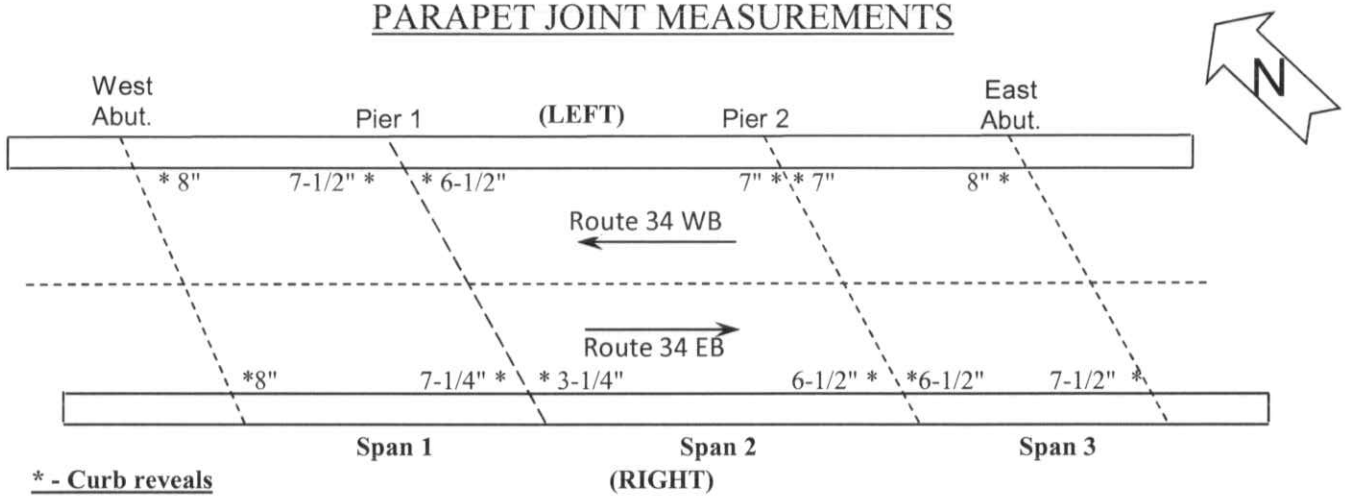
TOP OF DECK (EASTBOUND LANES)

NTS

REVISION 1	DATE	CREW	REVISION 3	DATE	CREW
REVISION 2	DATE	CREW	REVISION 4	DATE	CREW

HAKS	FIELD NOTES	JOB NO. 170-3013	DATE: 12/02/2011
		BRIDGE NO. 00947	SHEET 21 of 83
		CREW : PHH, RV	

PARAPET JOINT MEASUREMENTS



*** - Curb reveals**

LOCATION	WINTER MEASUREMENT <50° F				SUMMER MEASUREMENT > 50°F				JOINT TYPE
	LEFT	RIGHT	TEMP	DATE	LEFT	RIGHT	TEMP	DATE	
West Abut.	8 4/16	8 2/16	35	12/16/2009	8 3/16	8 1/16	50	9/7/2011	Asphaltic Plug
Pier 1	1 2/16	1 5/16	35	12/16/2009	15/16	1 3/16	50	12/2/2011	Strip Seal
Pier 2	1 1/16	1 1/16	35	12/16/2009	15/16	15/16	50	12/2/2011	Strip Seal
East Abut.									Asphaltic Plug

GENERAL NOTES:

-Measurements at the west abutment were taken from backwall to top of bottom flange of facsia girders.

-Measurements were taken 3" from the top of the parapet at the outside face due to joint sealant on inside face at the pier.

REGULAR INSPECTION [√]
Date: 12/02/11

SUMMER / WINTER JOINT MEASUREMENTS [ ]

JOINT MEASUREMENTS

Form BRI-17, Rev. 9/03

Measurements Taken By: RV
Measurements Reviewed By: PHH

Bridge No.: 00947 Route 34 over Naugatuck River **Town:** Derby

Deck Joint Location	Deck Joint Type[1]	Effect Span[2] (ft.)	Winter Measurements Temp °F	Winter Date: 11/16/2001 Left (in.)	Winter Right (in.)	Summer Measurements Temp °F	Summer Date: 9/8/2011 Left (in.)	Summer Right (in.)	Differential Movements Actual Left (in.)	Actual Right (in.)	by Formula	Comments	Difference Between Actual & Calc'd Mov't Left (in.)	Right (in.)
W. Abut.	Plug	107.0	35	1 3/16	1 1/16	50	1 2/16	1 2/16	- 1/16	1/16	- 2/16	Expansion	- 1/16	- 3/16
Pier 1	Strip	108.0	35	1 2/16	1 5/16	50	15/16	1 3/16	- 3/16	- 2/16	- 2/16	Fixed/Expansion	1/16	-0
Pier 2	Strip	107.0	35	1 1/16	1 1/16	50	15/16	15/16	- 2/16	- 2/16	- 2/16	Fixed/Expansion	-0	-0
E. Abut.	Plug	0.0	35						0	0	0	Fixed		0

1. The "Deck Joint Type" should be "plug" for Asphaltic Plug joints, "strip" for Strip Seals, "seg." for Segmental Joints, etc.
2. The "Effective Span" is the length contributing to expansion at the joint. This should be 0 at fixed joints of single span bridges.

Comments: Measurements were taken 3" from the top of the parapet at the inside face.

22/83

Summer / Winter Joint Measurements: (IF ADDING OR REMOVING, SEND A COPY OF THIS FORM TO SUPERVISOR FOR REVIEW/APPROVAL WITH REASONS FOR CHANGE INDICATED)

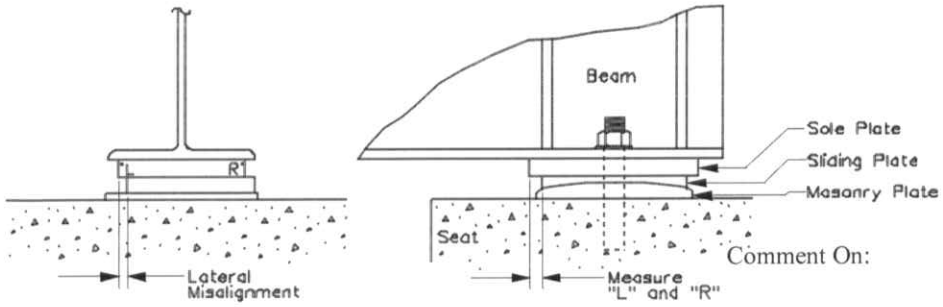
[ ] **ADD** TO SUMMER/WINTER LIST
[ ] **REMOVE** FROM SUMMER/WINTER LIST

SUPERVISOR APPROVAL: _____
MASTER LIST ENTRY: _____

HAKS FIELD NOTES	BRIDGE NO.	00947	DATE :	12/1/2011
	CREW :	PHH, RV	SHEET	23 OF 83

SLIDING BEARING MEASUREMENTS

Form BRI - 14, Rev 9/01



Sole Plate = 12" Sliding Plate = 11" Neutral = 1/2"

FRONT VIEW SIDE VIEW

Span No. = 1

Substructure Unit = W. ABUT.

Temperature = 42°F

Comment On:

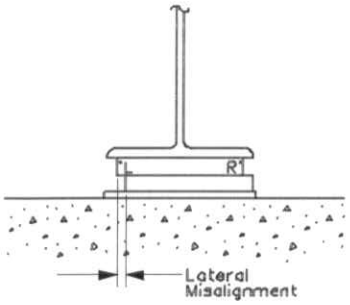
- Presence of keepers or work done on bearings.
- Undermining of bearing. Attach sketch with dimensions.
- Cracking of plates or welds
- Condition of anchor bolts.

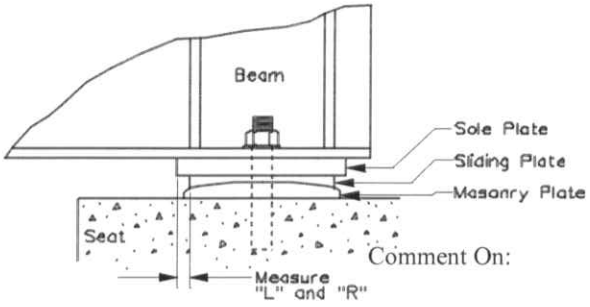
Beam	Movement				Condition			Comments
	" L "	" R "	Mode Exp. or Contr.	Lateral Misalign.	Bearing Frozen?	Normal Mov't	Rust ? H/M/L	
G1	9/16	7/16	C	3/16" N	N	Y	L	
G2	6/16	4/16	E	1/16" N	N	Y	L	
G3	9/16	4/16	E	5/16" N	N	Y	L	
G4	14/16	14/16	C	1/2" N	N	Y	L	
G5	9/16	9/16	C	1/4" N	N	Y	L	
G6	10/16	8/16	C	3/8" N	N	Y	L	
G7	14/16	13/16	C	1/2" N	N	Y	L	Measurments taken on 12/02/11 @ 47°F.
G8	11/16	13/16	C	5/16" S	N	Y	L	Measurments taken on 12/02/11 @ 47°F.
G9	1 4/16	1 9/16	C	3/16" S	N	Y	L	Measurments taken on 12/02/11 @ 47°F.
G10	15/16	12/16	C	5/16" N	N	Y	L	Measurments taken on 12/02/11 @ 47°F.
G11	15/16	10/16	C	5/16" N	N	Y	L	Measurments taken on 12/02/11 @ 47°F.
G12	11/16	12/16	C	1/4" N	N	Y	L	Measurments taken on 12/02/11 @ 47°F.
G13	11/16	4/16	C	3/16" N	N	Y	L	Measurments taken on 12/02/11 @ 47°F.
G14	3/16	0	E	5/16" N	N	Y	M	Measurments taken on 12/02/11 @ 47°F.

HAKS FIELD NOTES	BRIDGE NO.	00947	DATE :	12/1/2011
	CREW :	PHH, RV	SHEET	24 OF 83

SLIDING BEARING MEASUREMENTS

Form BRI - 14, Rev 9/01





Span No. = 2

Substructure Unit = PIER 1

Temperature = 42°F

Comment On:

- Presence of keepers or work done on bearings.
- Undermining of bearing. Attach sketch with dimensions.
- Cracking of plates or welds
- Condition of anchor bolts.

Sole Plate = 12" **Sliding Plate = 11"** **Neutral = 1/2"**

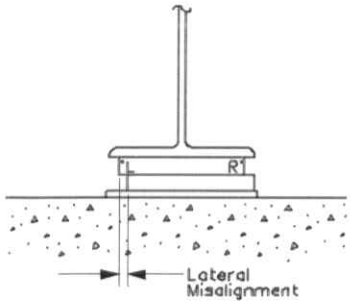
FRONT VIEW SIDE VIEW

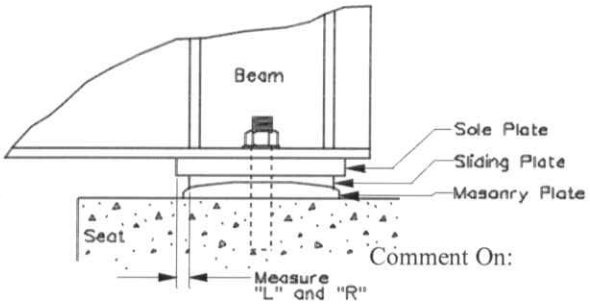
Beam	Movement				Condition			Comments
	" L "	" R "	Mode Exp. or Contr.	Lateral Misalign.	Bearing Frozen?	Normal Mov't	Rust ? H/M/L	
G1	13/16	10/16	C	1/4" S	N	Y	L	
G2	12/16	10/16	C	3/16" N	N	Y	L	
G3	11/16	11/16	C	1/8" S	N	Y	L	
G4	9/16	15/16	C	0"	N	Y	L	
G5	1 1/16	1	C	1/8" S	N	Y	L	
G6	1	14/16	C	1/8" N	N	Y	L	
G7	14/16	15/16	C	0"	N	Y	L	Measurments taken on 12/02/11 @ 47°F.
G8	13/16	12/16	C	1/2" S	N	Y	M	Measurments taken on 12/02/11 @ 47°F.
G9	7/16	6/16	E	1/4" S	N	Y	L	Measurments taken on 12/02/11 @ 47°F.
G10	14/16	15/16	C	5/16" S	N	Y	L	Measurments taken on 12/02/11 @ 47°F.
G11	13/16	1	C	5/16" S	N	Y	L	Measurments taken on 12/02/11 @ 47°F.
G12	9/16	12/16	C	3/16" S	N	Y	L	Measurments taken on 12/02/11 @ 47°F.
G13	8/16	14/16	C	1/4' S	N	Y	L	Measurments taken on 12/02/11 @ 47°F.
G14	12/16	1	C	0"	N	Y	M	1/16" Pack Rust between the Sole and Sliding Plate. Measurements taken on 12/02/11 @ 47°F.

HAKS FIELD NOTES	BRIDGE NO.	00947	DATE :	12/2/2011
	CREW :	PHH, RV	SHEET	25 OF 83

SLIDING BEARING MEASUREMENTS

Form BRI - 14, Rev 9/01





Span No. = 3

Substructure Unit = PIER 2

Temperature = 42°F

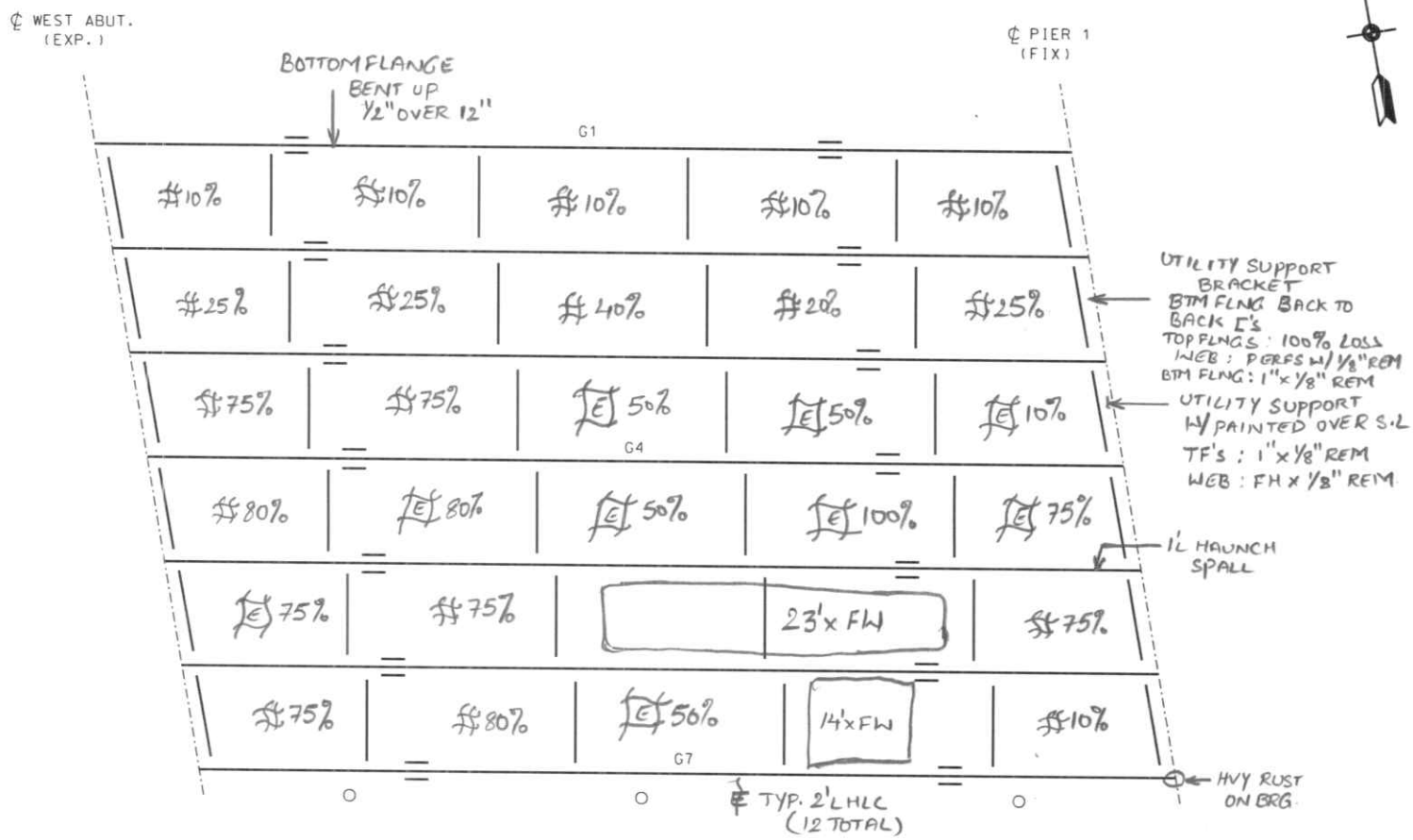
Comment On:

- Presence of keepers or work done on bearings.
- Undermining of bearing. Attach sketch with dimensions.
- Cracking of plates or welds
- Condition of anchor bolts.

Sole Plate = 12" **Sliding Plate = 11"** **Neutral = 1/2"**

FRONT VIEW SIDE VIEW

Beam	Movement				Condition			Comments
	" L "	" R "	Mode Exp. or Contr.	Lateral Misalign.	Bearing Frozen?	Normal Mov't	Rust ? H/M/L	
G1	4/16	- 6/16	E	3/16" N	N	Y	L	
G2	2/16	3/16	E	1/8" N	N	Y	L	
G3	- 3/16	- 7/16	E	3/16" N	N	Y	L	
G4	6/16	7/16	E	0"	N	Y	L	
G5	2/16	0	E	1/4" N	N	Y	L	
G6	0	3/16	E	3/16" N	N	Y	L	
G7	- 2/16	4/16	E	1/4" N	N	Y	L	Measurments taken on 12/02/11 @ 47°F.
G8	- 4/16	- 7/16	E	1/4" S	N	Y	M	Measurments taken on 12/02/11 @ 47°F.
G9	0	6/16	E	3/16" S	N	Y	L	Measurments taken on 12/02/11 @ 47°F.
G10	0	- 1/16	E	1/16" N	N	Y	L	Measurments taken on 12/02/11 @ 47°F.
G11	- 5/16	- 4/16	E	1/16" S	N	Y	L	Measurments taken on 12/02/11 @ 47°F.
G12	0	- 2/16	E	1/8" S	N	Y	L	Up to 1/16" Pack Rust between the Sole and Sliding Plates. Measurments taken on 12/02/11 @ 47°F.
G13	- 8/16	- 8/16	E	1/4" S	N	Y	L	Measurments taken on 12/02/11 @ 47°F.
G14	- 5/16	- 4/16	E	3/16" S	N	Y	M	Measurments taken on 12/02/11 @ 47°F.



LEGEND:

- HOLLOW AREA
- SHALLOW REBAR
- SPALL AREA
- SPALL AREA WITH EXPOSED REBAR
- MAPCRACKS
- MAPCRACKS WITH EFFLORESCENCE
- HAIRLINE CRACKS
- HAIRLINE CRACKS WITH EFFLORESCENCE
- HONEYCOMB AREA
- SCALE AREA
- WEB SPLICE
- FREE DROP SCUPPER

GENERAL NOTES:

1) UNDERSIDE OF DECK W/ MAPCRACKS W/ & W/O EFFLORESCENCE, H.A's & SPALLS AND A FEW RANDOM CONCRETE PATCHES.
2) GIRDERS TYPICALLY HAVE AREAS OF PEELING PAINT W/ LIGHT TO MODERATE RUST, W/ PITTING TO 1/8" DP SECTION LOSS AT GIRDER ENDS.
3) ALL FASCIA GIRDERS AT ABUTMENTS W/ ±4"Φ POOR QUALITY FLAME CUT HOLES IN BEARING STIFF's TO ACCOMODATE A 2"Φ CONDUIT. CONDUITS HAVE PERF's W/ EXP. WIRES.

FRAMING PLAN - SPAN 1 (NORTH HALF)

NTS

REVISION 1 | DATE | CREW
REVISION 2 | DATE | CREW
REVISION 3 | DATE | CREW
REVISION 4 | DATE | CREW

HAKS

FIELD NOTES

JOB NO. 170-3013

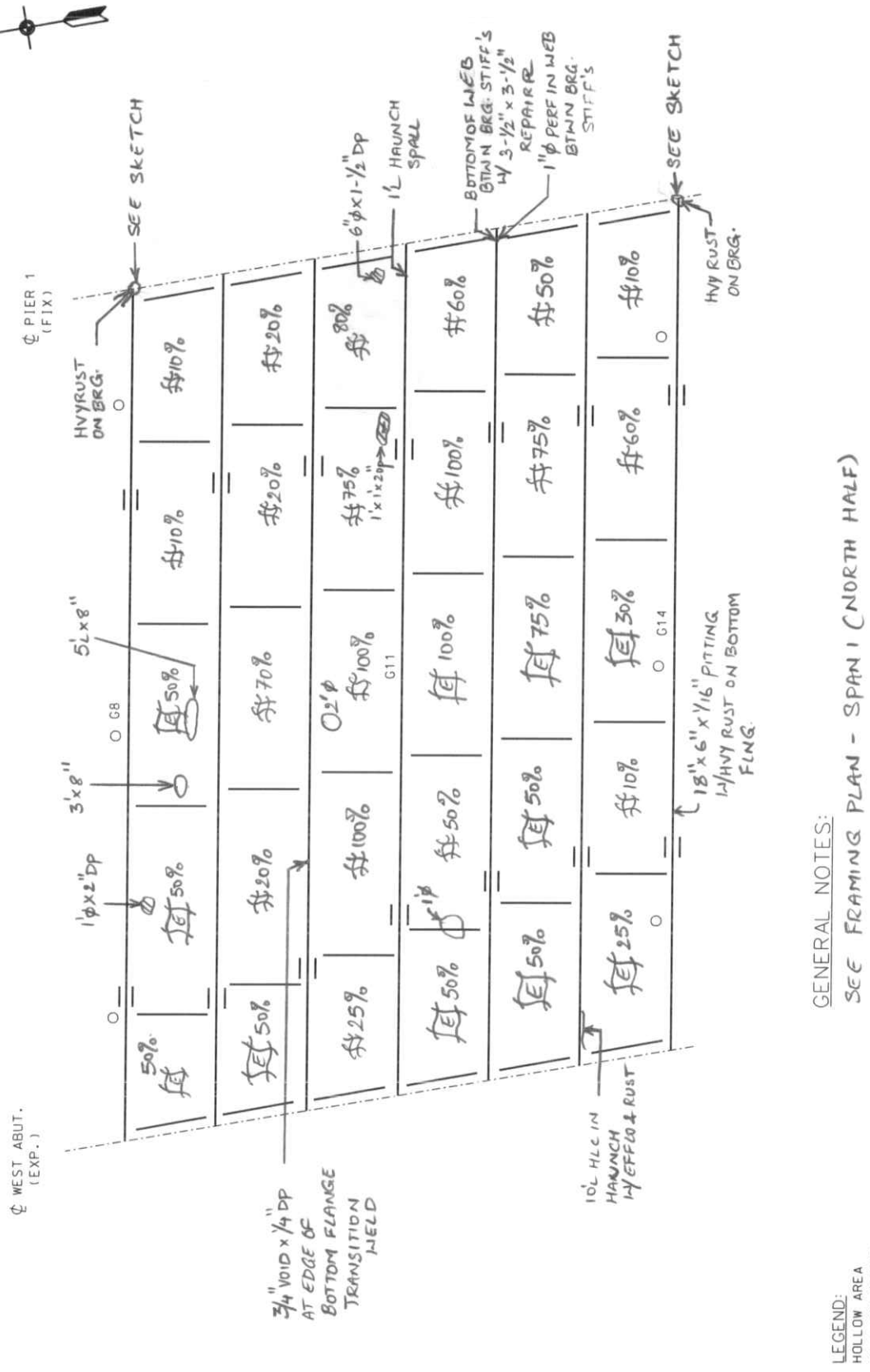
DATE: 12/1/2011

CREW: DHH, RV

BRIDGE NO. 00947

SHEET 26 OF 83

HAKS FIELD NOTES	JOB NO. 170-3013	BRIDGE NO. 00947
	DATE: 12/2/2011	SHEET 27 OF 83
	CREW: PHH, RV	



GENERAL NOTES:

SEE FRAMING PLAN - SPAN 1 (NORTH HALF)

LEGEND:

- HOLLOW AREA
- SHALLOW REBAR
- SPALL AREA
- SPALL AREA WITH EXPOSED REBAR
- MAPCRACKS
- MAPCRACKS WITH EFFLORESCENCE
- HAIRLINE CRACKS
- HAIRLINE CRACKS WITH EFFLORESCENCE
- HONEYCOMB AREA
- SCALE AREA
- WEB SPLICE
- FREE DROP SCUPPER

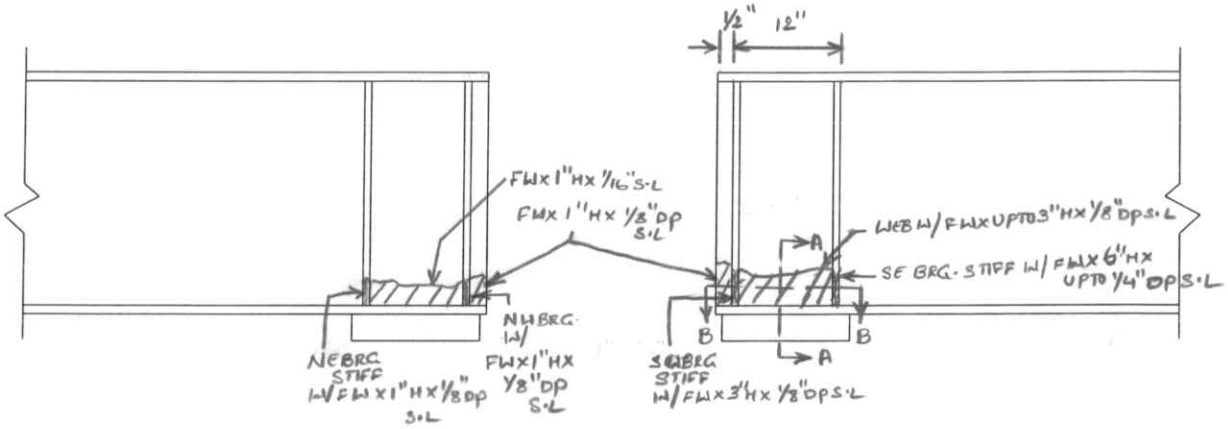
FRAMING PLAN - SPAN 1 (SOUTH HALF)

NTS

REVISION 1	DATE	CREW	REVISION 3	DATE	CREW
REVISION 2	DATE	CREW	REVISION 4	DATE	CREW

HAKS FIELD NOTES	JOB NO. 170-3013	BRIDGE NO. 00947
	DATE: 12/01/2011	SHEET 28 OF 83
	CREW: PHH, RV	

- WEB PL (72" x 7/16")
- (4) BRG. STIFF PL's (9" x 3/4")
- ORIG. WEB AREA = 31.5 IN²



SPAN 1, GIRDER G8 AT PIER 1 (NORTH ELEV.)

SPAN 1, GIRDER G8 AT PIER 1 (SOUTH ELEV.)

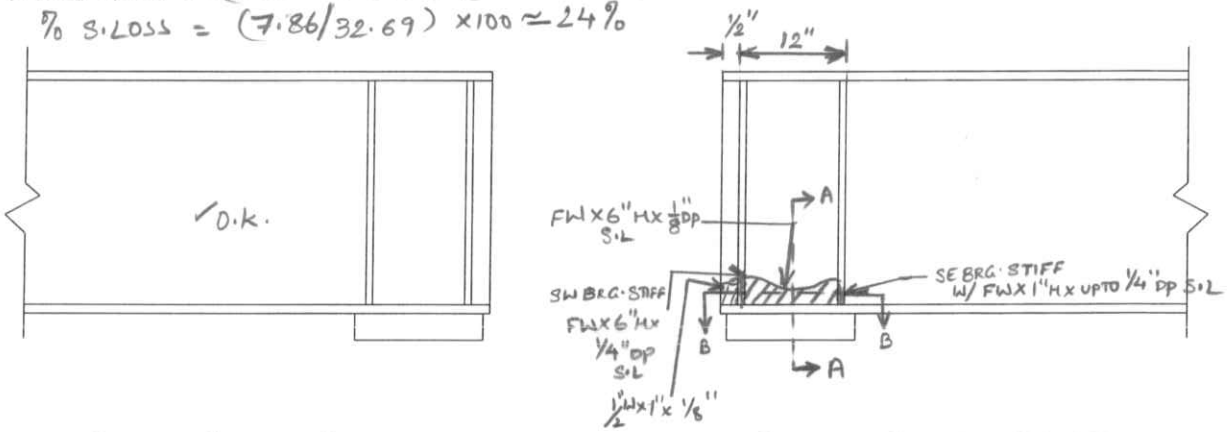
WEB LOSS FOR SHEAR (SECTION A-A):

- S.LOSS AREA = $(1" \times \frac{1}{16}") + (3" \times 1/8") = 0.44 \text{ IN}^2$
- % S.LOSS < 5%

WEB LOSS OF BEARING (SECTION B-B):

- EFFECTIVE WEB LENGTH = 13"
- ORIG. BEARING AREA = $(13" \times 7/16") + 4(9" \times 3/4") = 32.69 \text{ IN}^2$
- S.LOSS AREA = $(11.25" \times 1/16") + (11.25" \times 1/8") + (9" \times 1/8" \times 2) + (2 \times (\frac{1}{2}" \times \frac{1}{8}")) + (9" \times 1/4") = 7.86 \text{ IN}^2$

  % S.LOSS = $(7.86/32.69) \times 100 \simeq 24\%$



SPAN 1, GIRDER G14 AT PIER 1 (NORTH ELEV.)

SPAN 1, GIRDER G14 AT PIER 1 (SOUTH ELEV.)

WEB LOSS FOR SHEAR (SECTION A-A):

- % S.LOSS < 5%

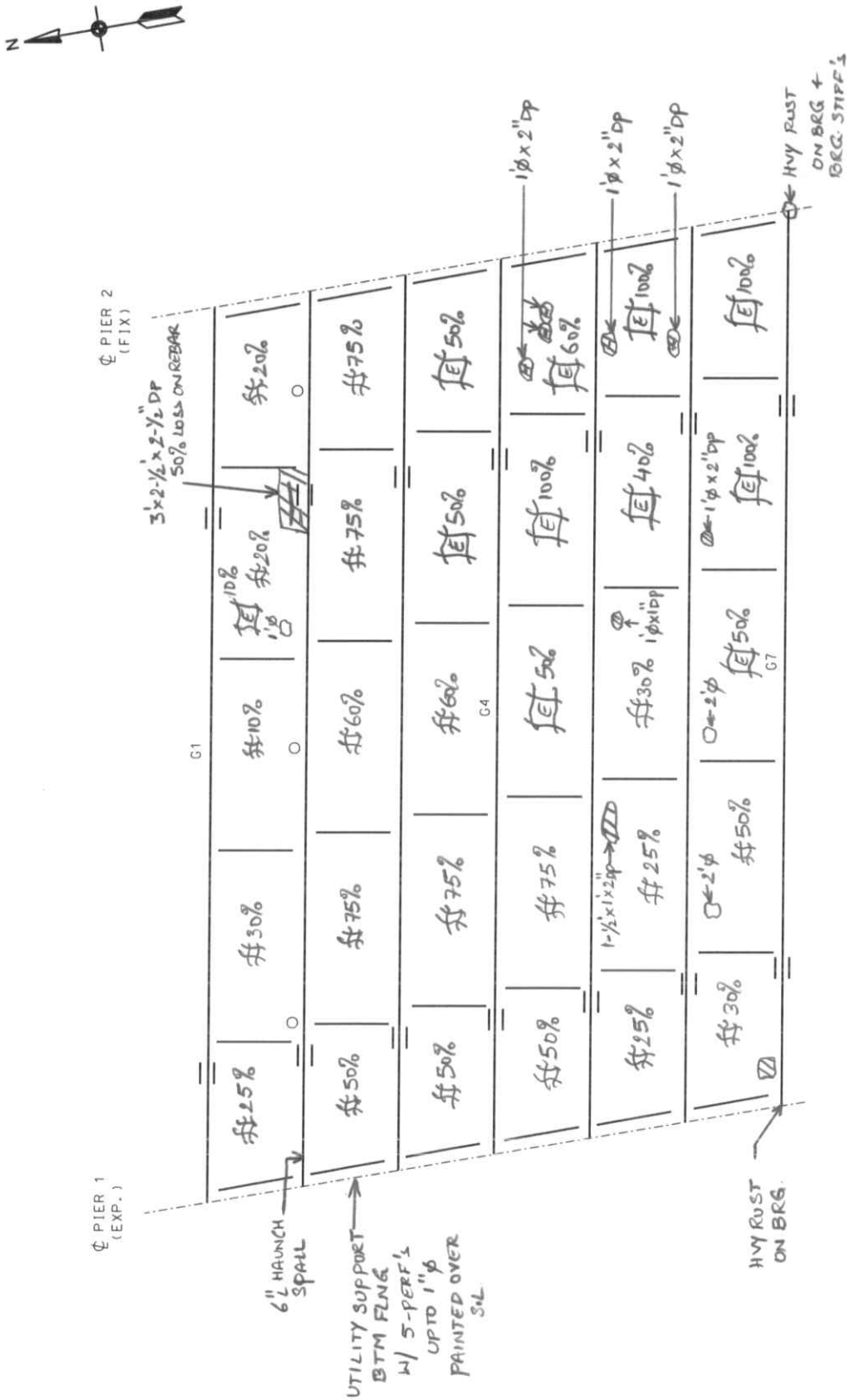
WEB LOSS FOR BEARING (SECTION B-B):

- S.LOSS AREA = $(11.25" \times 1/8") + (9 \times 1/4") \times 2) + (1/2" \times 1/8") = 5.97 \text{ IN}^2$

  % S.LOSS = $(5.97/32.69) \times 100 = 18.3\%$

REVISION 1	DATE	CREW	REVISION 3	DATE	CREW
REVISION 2	DATE	CREW	REVISION 4	DATE	CREW

HAKS FIELD NOTES	JOB NO.170-3013	BRIDGE NO. 00947
	DATE: 12/1/2011	SHEET 29 OF 83
	CREW: PHH, RV	



GENERAL NOTES:

SEE FRAMING PLAN - SPAN 1 (NORTH HALF)

FRAMING PLAN - SPAN 2 (NORTH HALF)

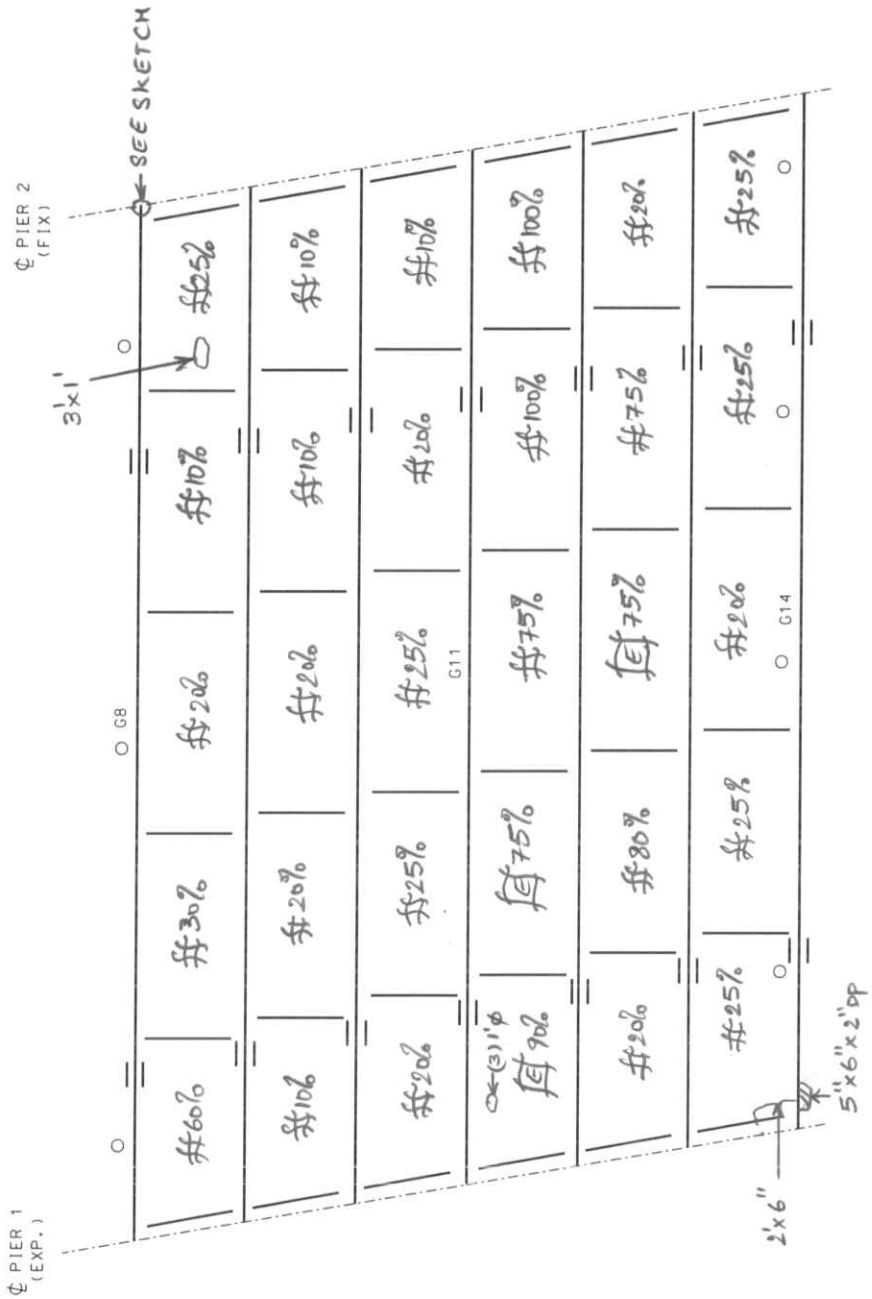
NTS

LEGEND:

- HOLLOW AREA
- SHALLOW REBAR
- SPALL AREA
- SPALL AREA WITH EXPOSED REBAR
- MAPCRACKS
- MAPCRACKS WITH EFFLORESCENCE
- HAIRLINE CRACKS
- HAIRLINE CRACKS WITH EFFLORESCENCE
- HONEYCOMB AREA
- SCALE AREA
- WEB SPLICE
- FREE DROP SCUPPER

REVISION 1	DATE	CREW	REVISION 3	DATE	CREW
REVISION 2	DATE	CREW	REVISION 4	DATE	CREW

HAKS FIELD NOTES	JOB NO. 170-3013	BRIDGE NO. 00947
	DATE: 12/2/2011	SHEET 30 OF 83
	CREW: PHH, RV	



GENERAL NOTES:

SEE FRAMING PLAN - SPAN 1 (NORTH HALF)

FRAMING PLAN - SPAN 2 (SOUTH HALF)

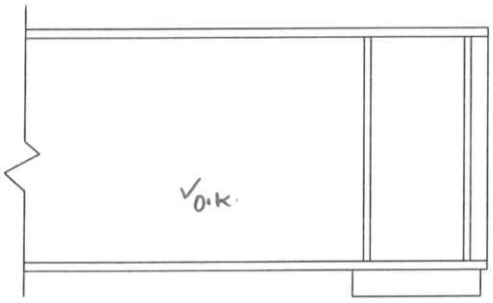
NTS

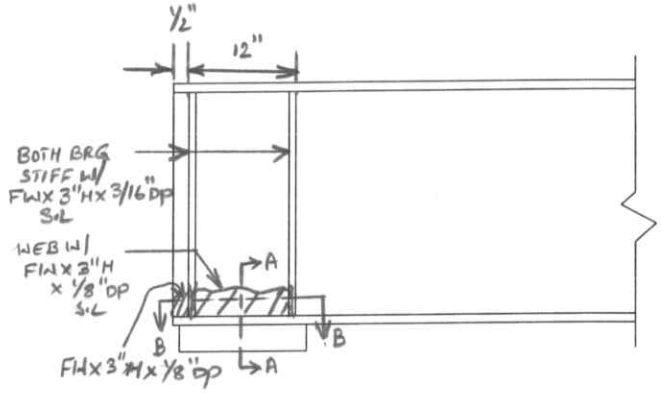
LEGEND:

- HOLLOW AREA
- SHALLOW REBAR
- SPALL AREA
- SPALL AREA WITH EXPOSED REBAR
- MAPCRACKS
- MAPCRACKS WITH EFFLORESCENCE
- HAIRLINE CRACKS
- HAIRLINE CRACKS WITH EFFLORESCENCE
- HONEYCOMB AREA
- SCALE AREA
- WEB SPLICE
- FREE DROP SCUPPER

REVISION 1	DATE	CREW	REVISION 3	DATE	CREW
REVISION 2	DATE	CREW	REVISION 4	DATE	CREW

HAKS FIELD NOTES	JOB NO. 170-3013	BRIDGE NO. 00947
	DATE: 12/01/2011	SHEET 31 OF 83
	CREW: PHH, RV	





SPAN 2, GIRDER G8 AT PIER 2 (NORTH ELEV.)

SPAN 2, GIRDER G8 AT PIER 2 (SOUTH ELEV.)

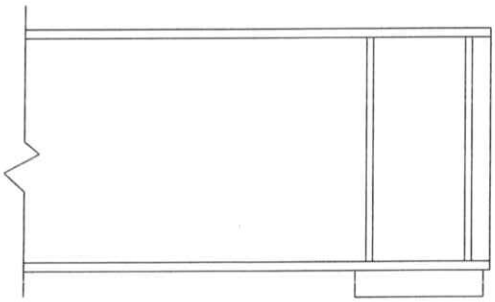
WEB LOSS FOR SHEAR (SECTION A-A):

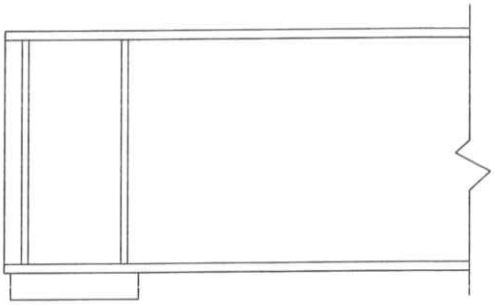
% S.LOSS < 5%

WEB LOSS FOR BEARING (SECTION B-B):

- SECTION LOSS AREA = (11.25" x 1/8") + (1/2" x 1/8") + (9" x 3/16") x 2) = 4.84 IN²
- EFFECTIVE WEB LENGTH = 12" + 1" = 13"
- ORIG. BEARING AREA = (13" x 7/16") + (4 x 9" x 3/4") = 32.69 IN²

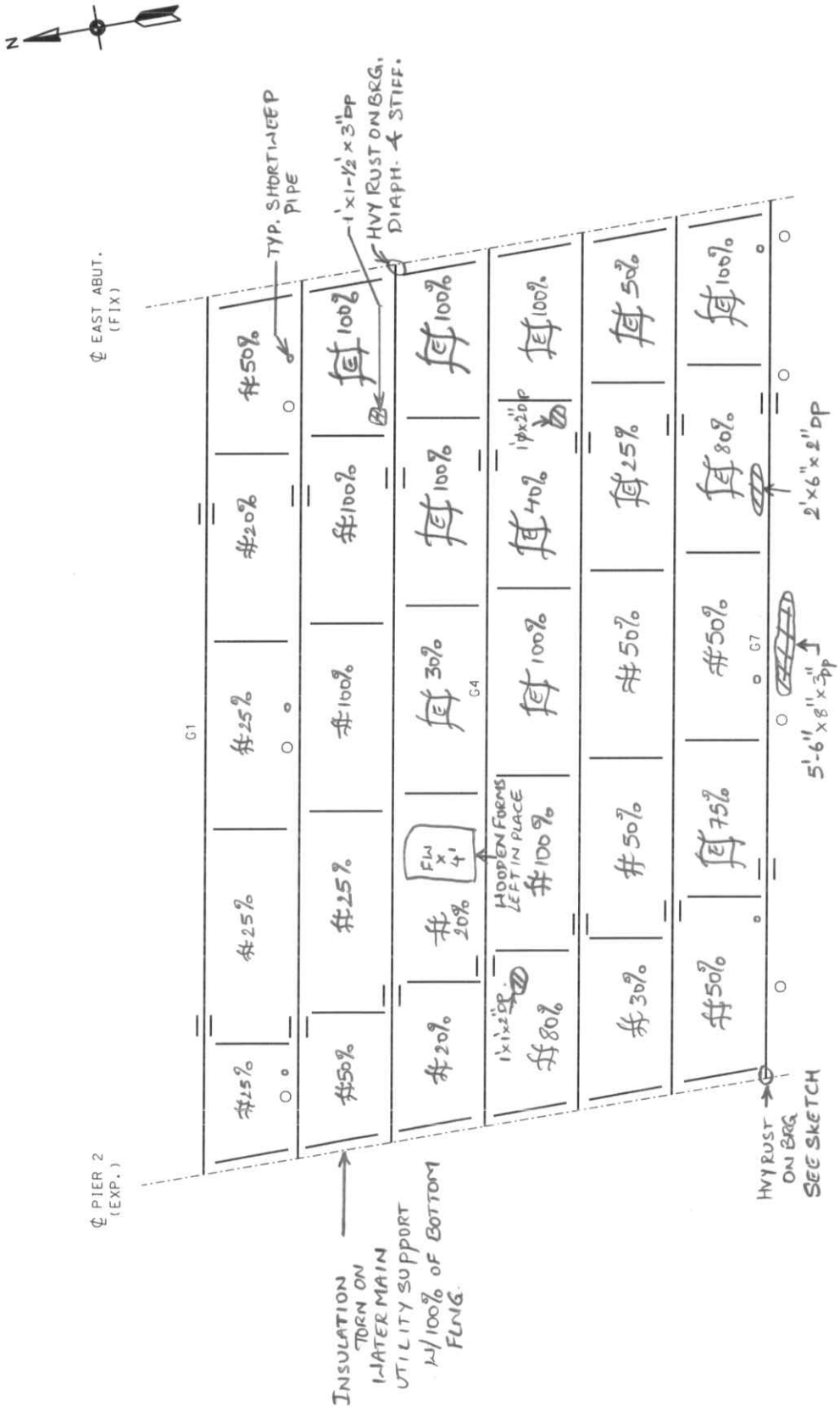
% S.LOSS = (4.84 / 32.69) x 100 = 14.8%





REVISION 1	DATE	CREW	REVISION 3	DATE	CREW
REVISION 2	DATE	CREW	REVISION 4	DATE	CREW

HAKS FIELD NOTES	JOB NO. 170-3013	BRIDGE NO. 00947
	DATE: 12/1/2011	SHEET 32 OF 83
	CREW: PHH, RV	



GENERAL NOTES:

SEE FRAMING PLAN - SPAN 1 (NORTH HALF)

FRAMING PLAN - SPAN 3 (NORTH HALF)

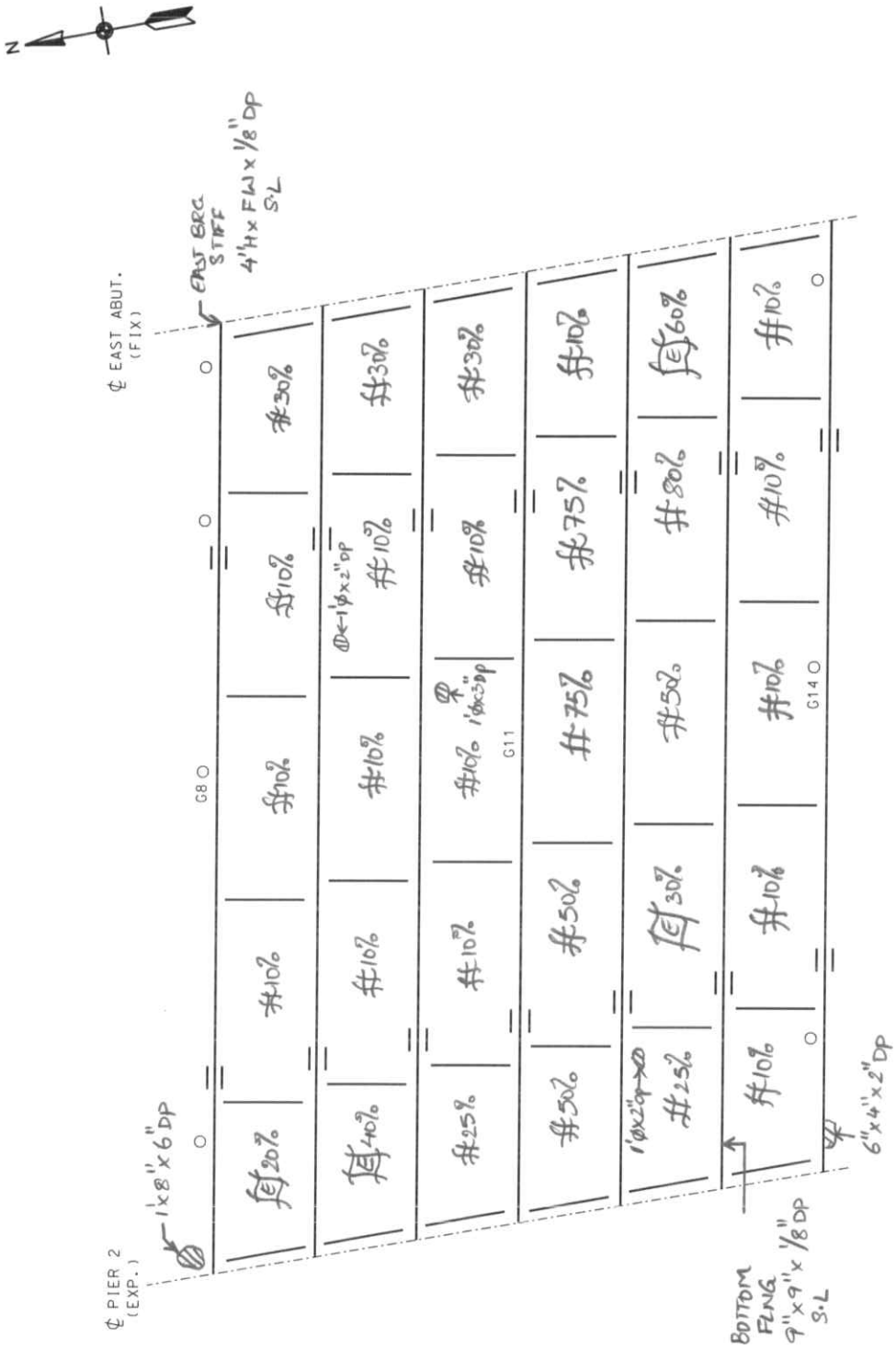
NTS

LEGEND:

- HOLLOW AREA
- SHALLOW REBAR
- SPALL AREA
- SPALL AREA WITH EXPOSED REBAR
- MAPCRACKS
- MAPCRACKS WITH EFFLORESCENCE
- HAIRLINE CRACKS
- HAIRLINE CRACKS WITH EFFLORESCENCE
- HONEYCOMB AREA
- SCALE AREA
- WEB SPLICE
- FREE DROP SCUPPER

REVISION 1	DATE	CREW	REVISION 3	DATE	CREW
REVISION 2	DATE	CREW	REVISION 4	DATE	CREW

HAKS FIELD NOTES	JOB NO. 170-3013	BRIDGE NO. 00947
	DATE: 12/2/2011	SHEET 33 OF 83
	CREW: PHH, RV	



GENERAL NOTES:

SEE FRAMING PLAN - SPAN 1 (NORTH HALF)

FRAMING PLAN - SPAN 3 (SOUTH HALF)

NTS

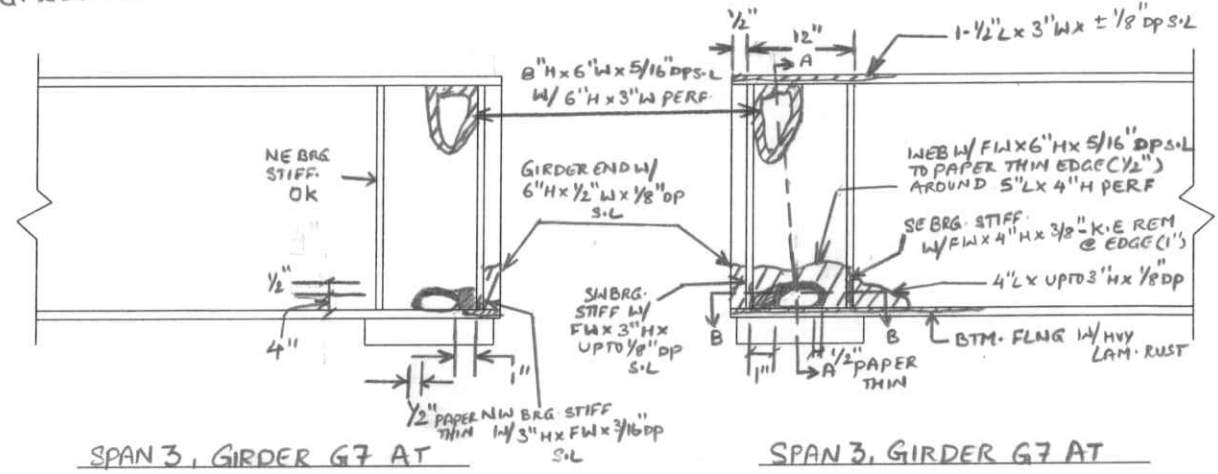
LEGEND:

- HOLLOW AREA
- SHALLOW REBAR
- SPALL AREA
- SPALL AREA WITH EXPOSED REBAR
- MAPCRACKS
- MAPCRACKS WITH EFFLORESCENCE
- HAIRLINE CRACKS
- HAIRLINE CRACKS WITH EFFLORESCENCE
- HONEYCOMB AREA
- SCALE AREA
- WEB SPLICE
- FREE DROP SCUPPER

REVISION 1	DATE	CREW	REVISION 3	DATE	CREW
REVISION 2	DATE	CREW	REVISION 4	DATE	CREW

HAKS FIELD NOTES	JOB NO. 170-3013	BRIDGE NO. 00947
	DATE: 12/01/2011	SHEET 34 OF 83
	CREW: DHH, RV	

- WEB PL (72" x 7/16")
- (4) BRG. STIFF PL's (9" x 3/4")
- ORIG. WEB AREA = 31.5 IN²



SPAN 3, GIRDER G7 AT PIER 2 (NORTH ELEV.)

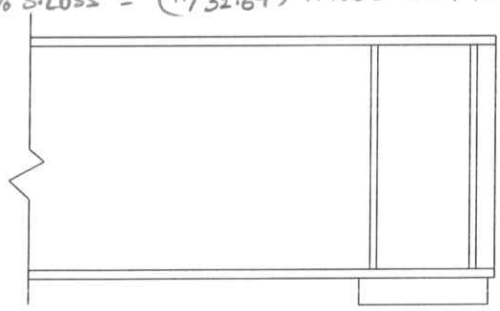
SPAN 3, GIRDER G7 AT PIER 2 (SOUTH ELEV.)

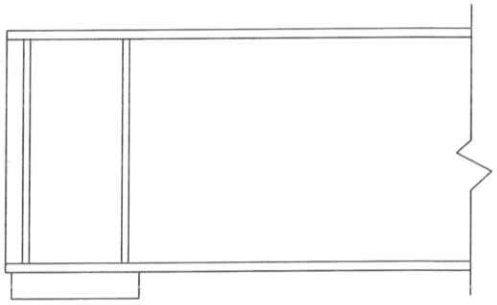
WEBLOSS FOR SHEAR (SECTION A-A):

- S.LOSS AREA = (4" x 7/16") + [1/2" x (7/16" - 1/32")] + (1-1/2" x 5/16") + (6" x 7/16") + (2" x 5/16") = 5.67 IN²
- % S.LOSS = (5.67 / 31.5) x 100 = 18%

WEBLOSS FOR BEARING (SECTION B-B):

- EFFECTIVE WEB LENGTH = 12" + 1" = 13"
- ORIG. BEARING AREA = (13" x 7/16") + 4 x (9" x 3/4") = 32.69 IN²
- S.LOSS AREA = (5" x 7/16") + (4.75" x 5/16") + [1" x (7/16" - 1/32")] + [2 x (1/2" x 1/8")] + [1/2" x (7/16" - 1/32")] + (1/2" x 1/8") + (9" x 1/8") + (8" x 3/8") + [1" x (3/4" - 1/32")] + (9" x 3/16") = 11 IN²
- % S.LOSS = (11 / 32.69) x 100 = 33.7%





REVISION 1	DATE	CREW	REVISION 3	DATE	CREW
REVISION 2	DATE	CREW	REVISION 4	DATE	CREW

Bridge No.: 00947 Date: 12/1/2011 Prepared By: RV Checked By: PHH

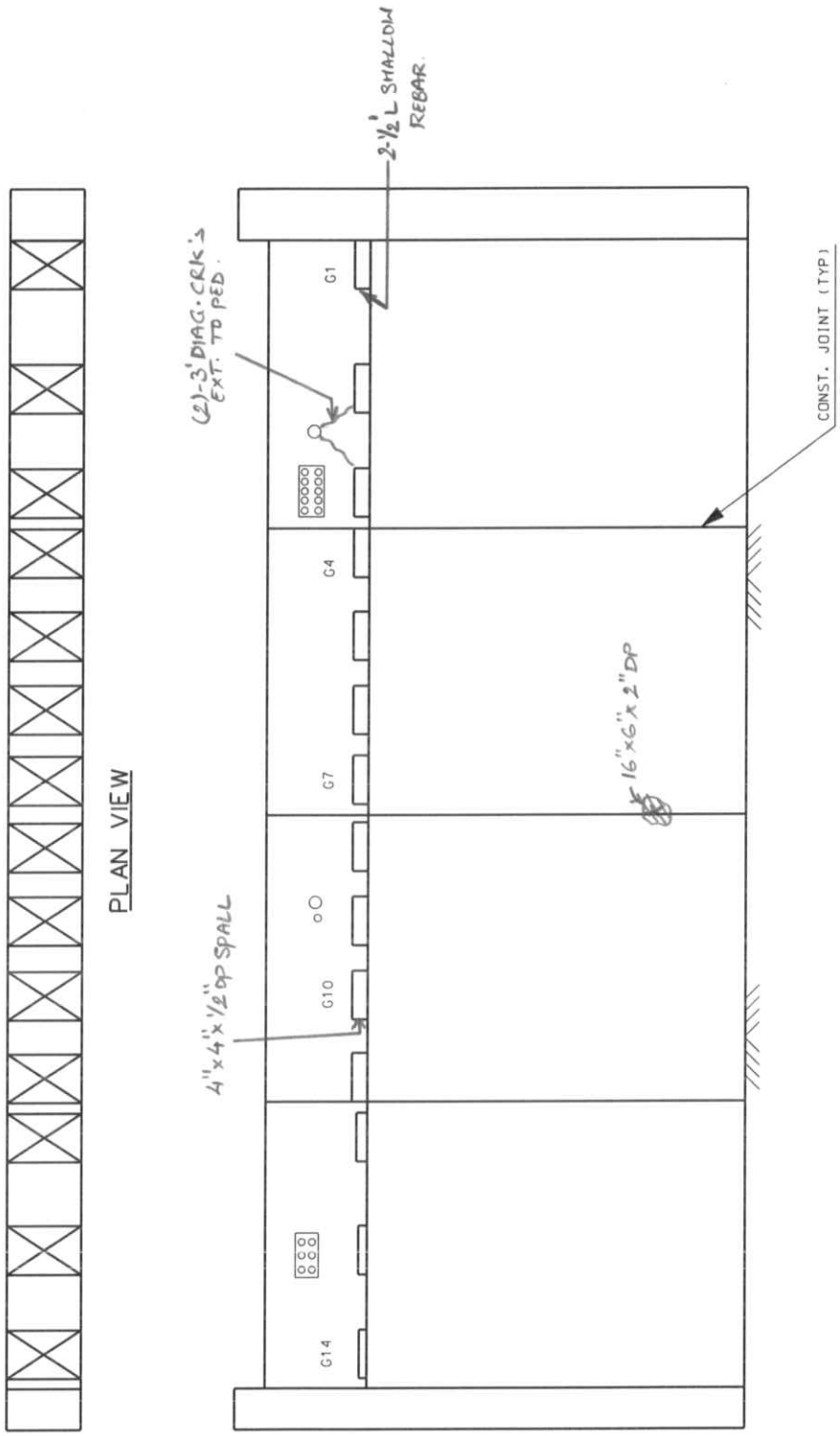
HAKS

CONCRETE DETERIORATION WORKSHEET

Form BRI - 10, 9/01

	Deterioration By Span - In Square Feet										
	Span Number										
Deterioration Type	1	2	3	4	5	6	7	8	9		Total
Spalled and Delaminated Areas	Top: Bot: 17	Top: Bot: 30	Top: Bot: 13	Top: Bot:	Top: Bot:	Top: Bot:	Top: Bot:	Top: Bot:	Top: Bot:	Top: Bot:	Top: Bot: 60
Scale (Moderated to Severe Only)	Top: Bot:	Top: Bot:	Top: Bot:	Top: Bot:	Top: Bot:	Top: Bot:	Top: Bot:	Top: Bot:	Top: Bot:	Top: Bot:	Top: Bot:
Cracks: w/Efflorescence (use 6 in. width x length)	Bot: 12	Bot: 20	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot: 32
w/o Efflo. (use 3 in. width x length)	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:
Map Cracking: w/Efflorescence (use full area)	Bot: 1432	Bot: 660	Bot: 849	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot: 2941
w/o Efflo. (use 50% of area)	Bot: 845	Bot: 932	Bot: 939	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot: 2716
Honeycombed Areas (only areas more than 1 1/2 in deep)	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:	Bot:
Total	2306	1642	1801								5749
Total Span Area (Square Feet)	9397	9223	9397								28017
% Spalled and Delaminated on Top											
% Deterioration on Bottom	24.5%	17.8%	19.2%								20.5%

HAKS FIELD NOTES	JOB NO. 170-3013	BRIDGE NO. 00947
	DATE: 12/1/2011	SHEET 36 OF 83
	CREW: PHH, RV	



GENERAL NOTES:

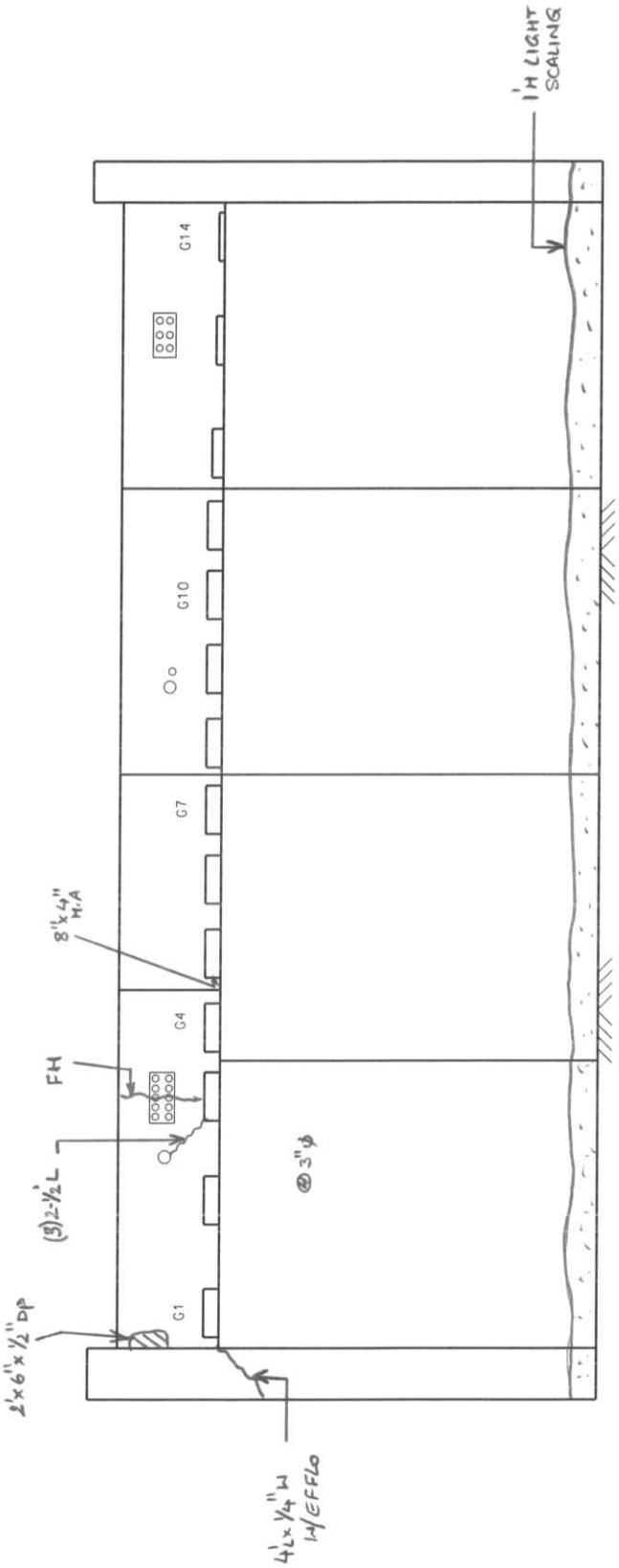
1) LIGHT PIGEON DEBRIS ON SEAT THROUGH-OUT.
2) WATER AND SILT STAINS ON STEM & BACKWALL.

WEST ABUTMENT ELEVATION
NTS

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

REVISION 1	DATE	CREW	REVISION 3	DATE	CREW
REVISION 2	DATE	CREW	REVISION 4	DATE	CREW

HAKS FIELD NOTES	JOB NO. 170-3013	BRIDGE NO. 00776
	DATE: 12/1/2011	SHEET 37 OF 83
	CREW: PHH, RV	



GENERAL NOTES:

1) WATER AND SILT STAINS ON STEM & BACKWALL.

EAST ABUTMENT ELEVATION

NTS

LEGEND:

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

REVISION 1	DATE	CREW	REVISION 3	DATE	CREW
REVISION 2	DATE	CREW	REVISION 4	DATE	CREW

HAKS

FIELD NOTES

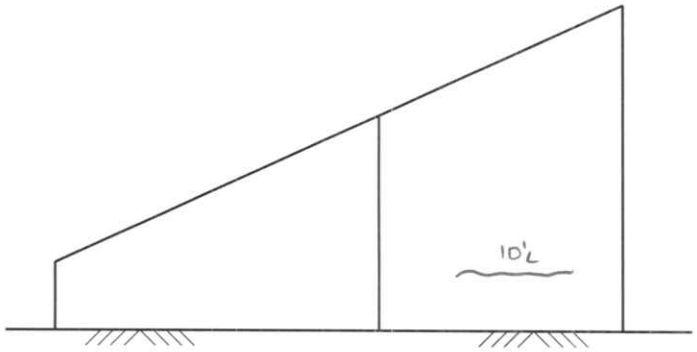
JOB NO. 170-3013

BRIDGE NO. 00947

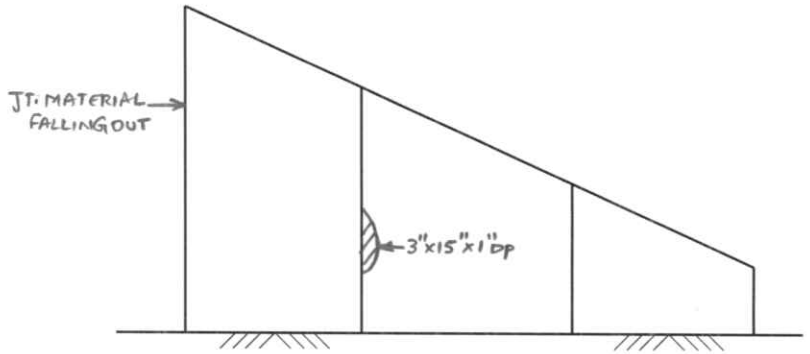
DATE: 12/1/2011

SHEET 38 OF 83

CREW: PHH, RV



SOUTHWEST WINGWALL



NORTHWEST WINGWALL

GENERAL NOTES:

1) MODERATE VEGETATION GROWTH ALONG SOUTHWEST WINGWALL.

LEGEND:

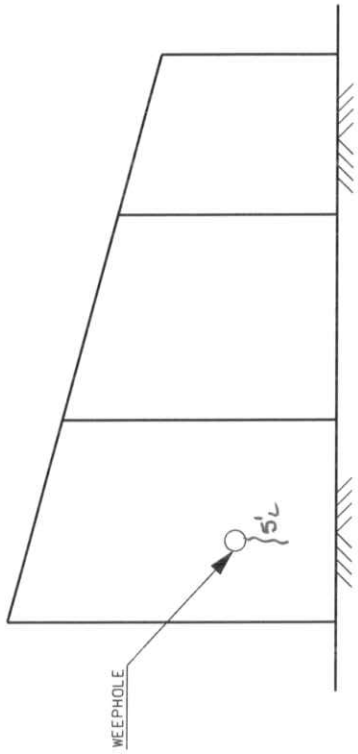
- HOLLOW AREA
- SHALLOW REBAR
- SPALL AREA
- SPALL AREA WITH EXPOSED REBAR
- MAPCRACKS
- MAPCRACKS WITH EFFLORESCENCE
- HAIRLINE CRACKS
- HAIRLINE CRACKS WITH EFFLORESCENCE
- HONEYCOMB AREA
- SCALE AREA

SOUTHWEST & NORTHWEST WINGWALLS

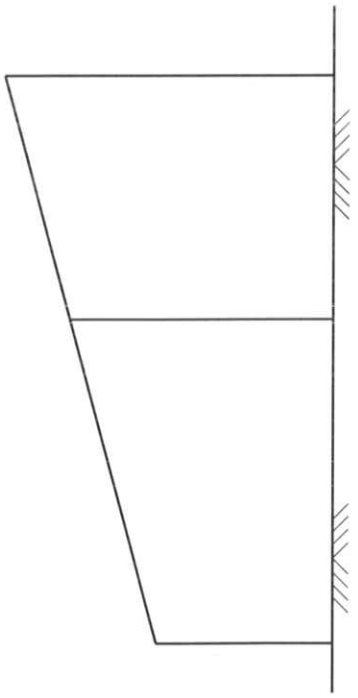
NTS

REVISION	DATE	CREW	REVISION	DATE	CREW
1			3		
2			4		

HAKS FIELD NOTES	JOB NO.170-3013	BRIDGE NO. 00947
	DATE: 12/1/2011	SHEET 39 OF 83
	CREW: PHH, RV	



SOUTHEAST WINGWALL



NORTHEAST WINGWALL

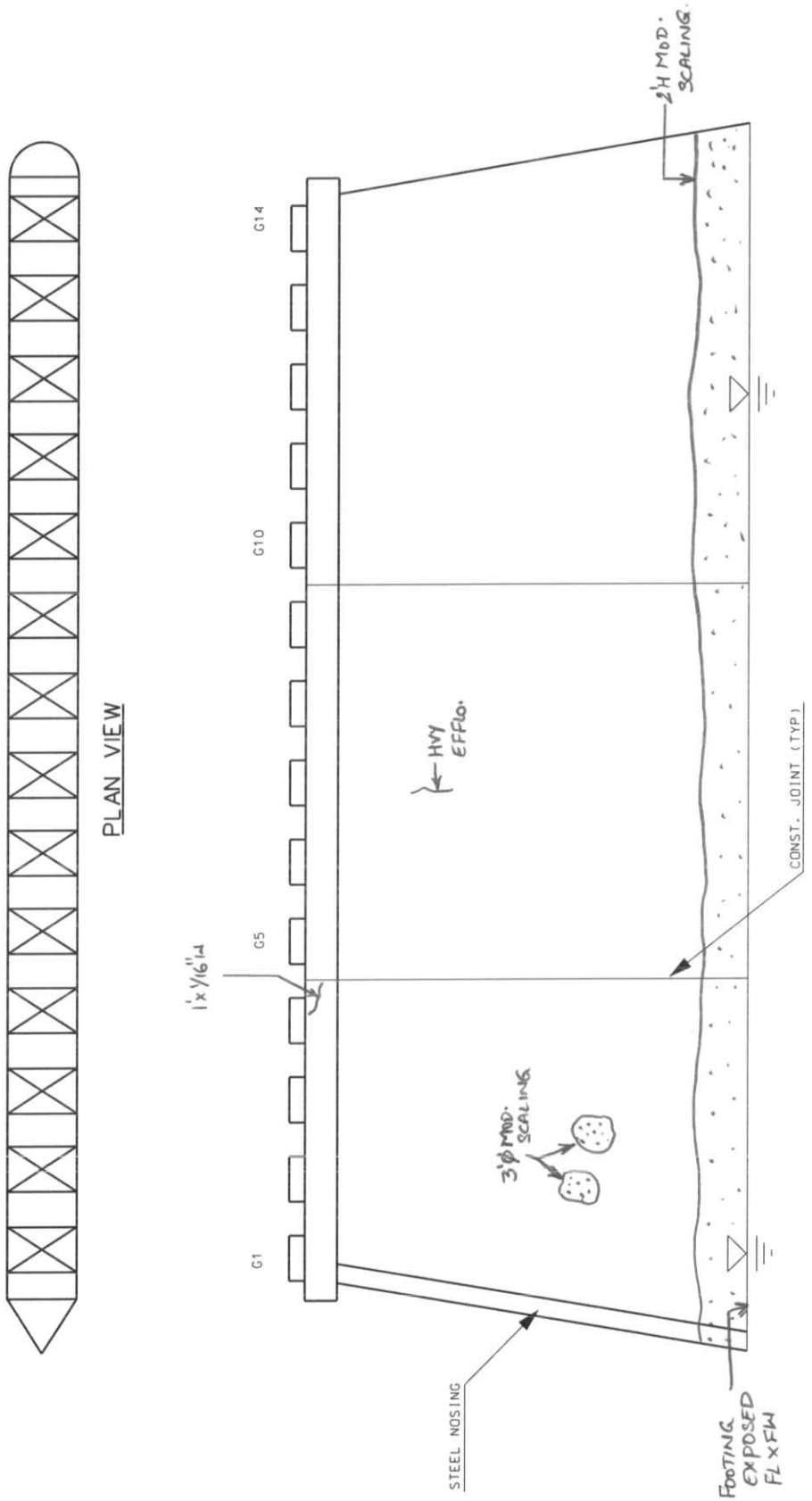
GENERAL NOTES:

NORTHEAST & SOUTHEAST WINGWALLS
NTS

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

REVISION 1	DATE	CREW	REVISION 3	DATE	CREW
REVISION 2	DATE	CREW	REVISION 4	DATE	CREW

HAKS FIELD NOTES	JOB NO.170-3013	BRIDGE NO. 00947
	DATE: 12/1/2011	SHEET 40 OF 83
	CREW: PHH, RV	



GENERAL NOTES:

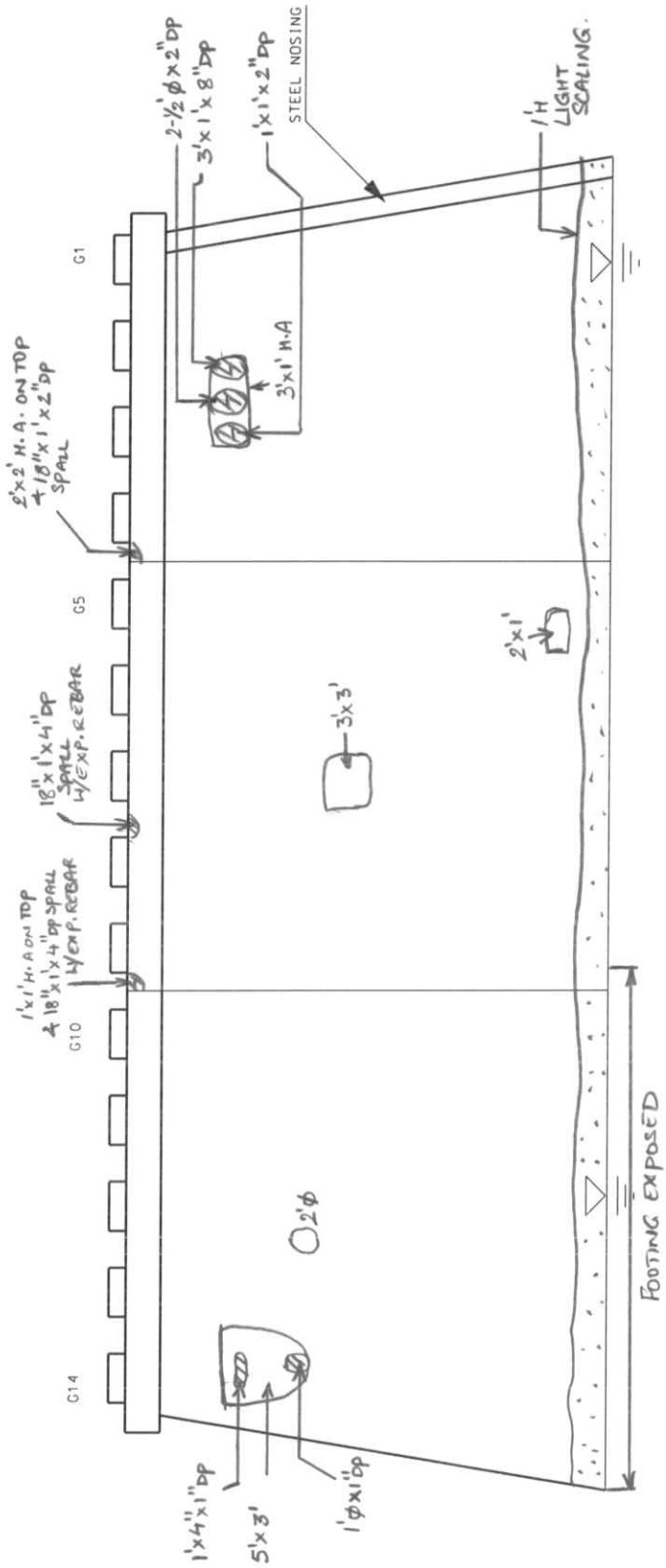
1) EXPOSED FOOTINGS VISIBLE THROUGH WATER.

PIER 1 - WEST ELEVATION
NTS

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

REVISION 1	DATE	CREW	REVISION 3	DATE	CREW
REVISION 2	DATE	CREW	REVISION 4	DATE	CREW

HAKS FIELD NOTES	JOB NO. 170-3013	BRIDGE NO. 00947
	DATE: 12/1/2011	SHEET 41 OF 83
	CREW: PHH, RV	



GENERAL NOTES:

SEE PIER 1 - WEST ELEVATION

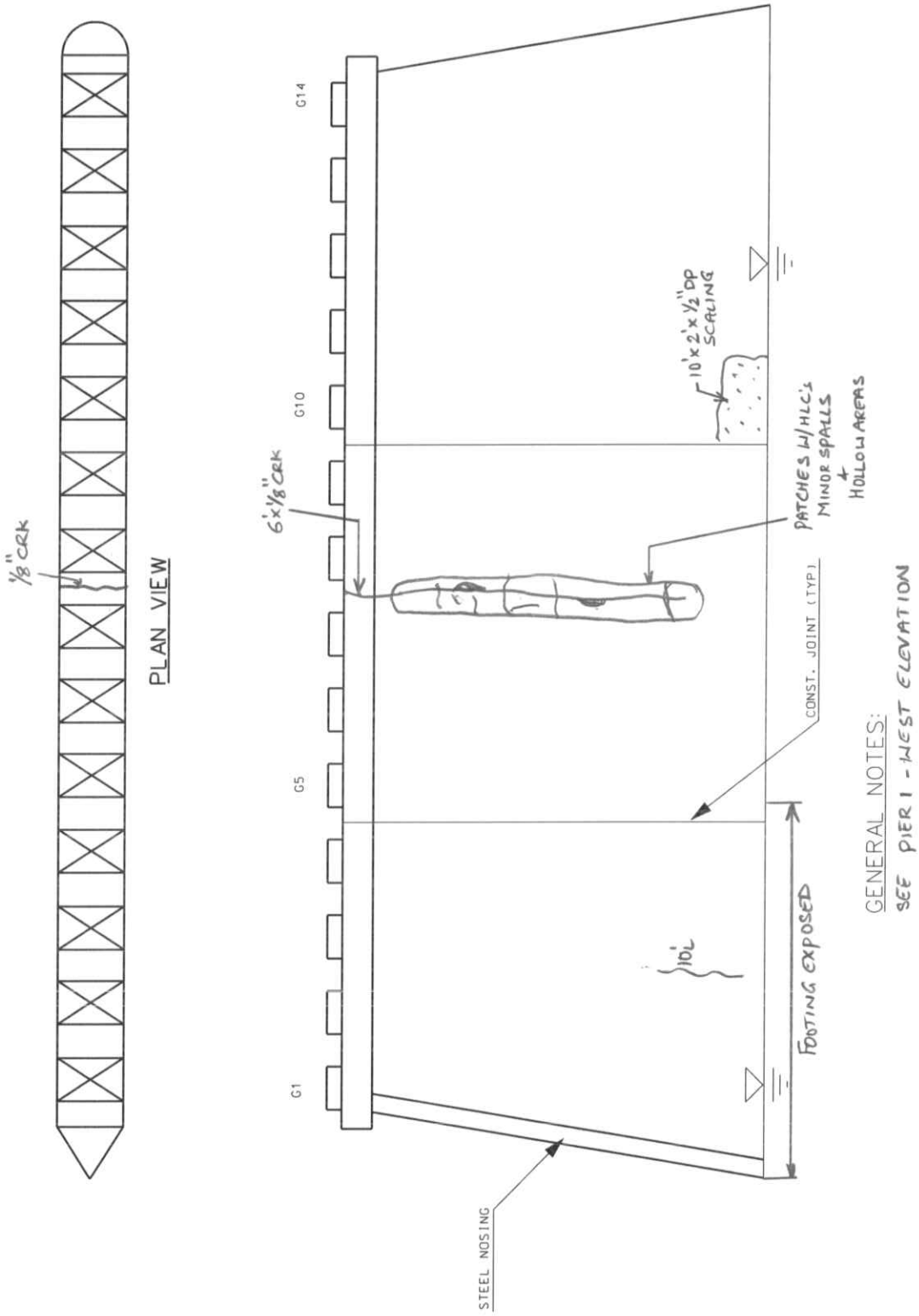
PIER 1 - EAST ELEVATION

NTS

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

REVISION 1	DATE	CREW	REVISION 3	DATE	CREW
REVISION 2	DATE	CREW	REVISION 4	DATE	CREW

HAKS FIELD NOTES	JOB NO.170-3013	BRIDGE NO. 00947
	DATE: 12/1/2011	SHEET 42 OF 83
	CREW: PHH, RV	



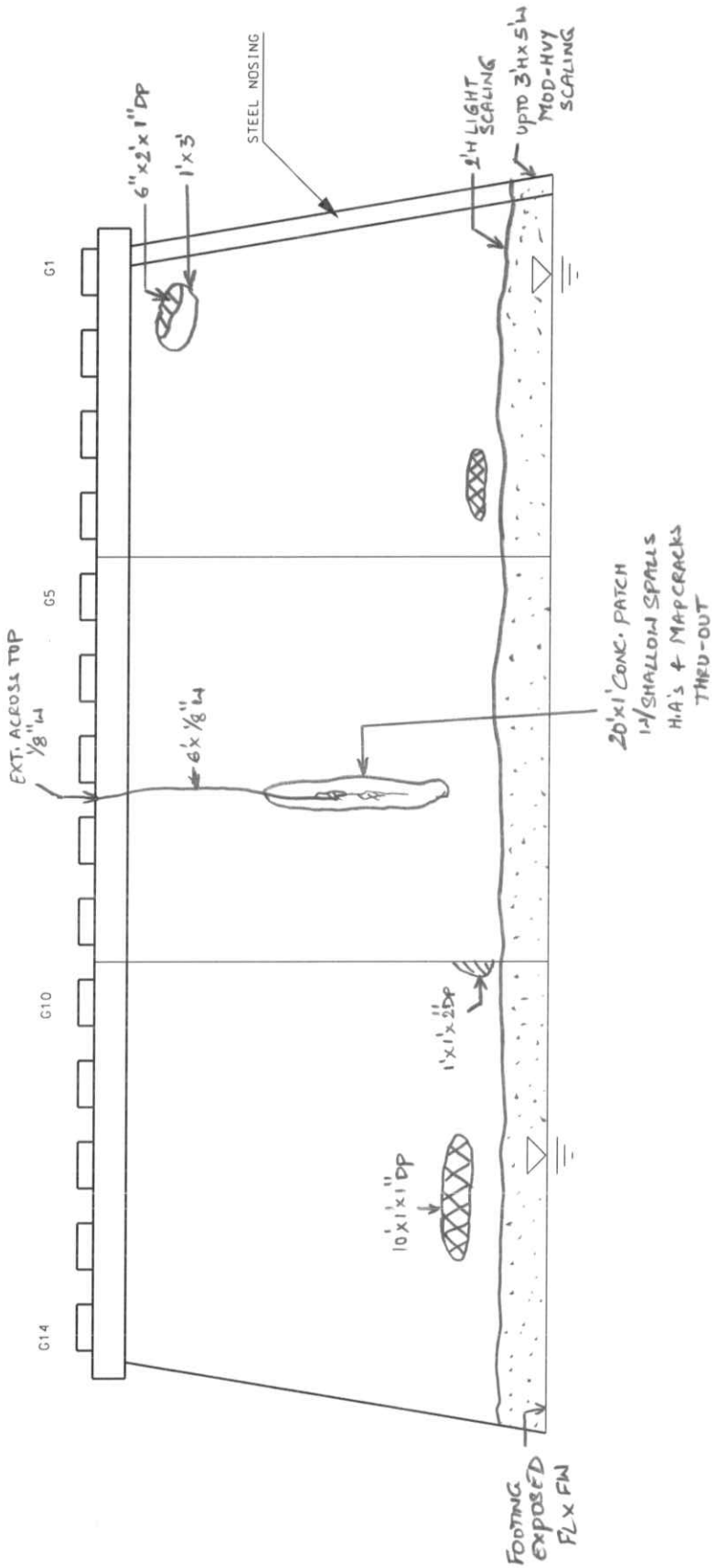
GENERAL NOTES:
SEE PIER 1 - WEST ELEVATION

PIER 2 - WEST ELEVATION
NTS

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

REVISION 1	DATE	CREW	REVISION 3	DATE	CREW
REVISION 2	DATE	CREW	REVISION 4	DATE	CREW

HAKS FIELD NOTES	JOB NO. 170-3013	BRIDGE NO. 00947
	DATE: 12/1/2011	SHEET 43 OF 83
	CREW: JHH, RV	



GENERAL NOTES:

SEE PIER 1 - WEST ELEVATION

PIER 2 - EAST ELEVATION
NTS

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

REVISION 1	DATE	CREW	REVISION 3	DATE	CREW
REVISION 2	DATE	CREW	REVISION 4	DATE	CREW

PHOTO LOG

Form BRI-13, Rev. 9/97

Bridge Information System

Image Inventory

Bridge No. 00947 **Date** 12/1/11

Town: DERBY **Photographer:** PHM

Carried / Crossed: ROUTE 34 / NAUGATUCK RIVER

Film Frame #	Image Description
1.	BRIDGE I.D.
2.	W-ABUT.
3.	SW WINGWALL
4.	U/S OF DECK W/ MAP CRACKING & PATCHES, SPAN 1 SHOWN
5.	SPAN 1 SUPERSTRUCTURE
6.	W-EMBANKMENT DOWNSTREAM W/ TREE LIMBS IN
	CHANNEL.
7.	TYP. TRANSITION WELD - BTM FLNG
8.	" INT. DIAPHRAGM.
9.	W. ELEVATION OF PIER 1
10,11	N. ELEVATION OF BRIDGE
12,13	S. ELEVATION OF BRIDGE
14.	N. ELEVATION OF BRIDGE
15.	SPALL @ W-ABUT STEM.
16.	BAY 12, UTILITIES, SPAN 1 SHOWN.
17.	SPAN 1, G14-SOUTH SIDE, BRG STIFF W/ 4"ø CUTOUT
	HOLES
18.	SAME LOC. AS PHOTO #17, UTILITY PIPE RUSTED OUT
19.	" " ", " W/ 100% RUSTED OUT
	W/ EXP. WIRES @ W-ABUT BACKWALL FOR 8"±
20.	SPAN 1, BAY 8, UTILITIES
21.	DIAPH. CONN PL WELDED TO GIRDER WEB OVER BRG. (TYP)
22.	G10 BRG @ W-ABUT
23,24	G9 " " "

PHOTO LOG

Form BRI-13, Rev. 9/97

Bridge Information System

Image Inventory

Bridge No. 00947 **Date** 12/1/11

Town: DERBY **Photographer:** PHH

Carried / Crossed: ROUTE 34 / NAUGATUCK RIVER

Film Frame #	Image Description
25.	SPAN 1, U/S OF MEDIAN JT.
26.	W-ABUT, BAY 9, BACKWALL W/ EVID. OF LEAKAGE
27.	SPAN-1, G7-SOUTH SIDE, TYP. WEB SR CONDITION
28.	TYPICAL GIRDER COND. SPAN 1, G9. SOUTH SIDE
29.	TYP. INTERSECTING WELDS @ GIRDER WEB SPLICE
30.	SPAN 1, BAY 8, TYP. HA's ON U/S OF DECK.
31.	" G10, AT 1ST BTM FLNG. TRANS. WELD W/ VOID
32.	", G14 BRG @ PIER-1, SOUTH SIDE.
33.	" , G13 " " , " W/ PACK RUST.
34.	" , G14 - NORTH SIDE
35, 36.	" , G12 - NORTH + SOUTH SIDE @ PIER 1
37.	" , PIER 1, G11 BRG W/ PACK RUST (TYP)
38.	PIER 1 - EAST SIDE, TYP. SCALING
39.	" , " , STEM UNDER G14 W/ HA & ADJ. SPALL
40.	PIER 2, WEST ELEVATION
41.	NAUGATUCK RIVER DOWNSTREAM
42.	" UPSTREAM
43.	U/S OF PIER 1 DECK JT, BAY 13 SHOWN
44.	PIER 1 STEM W/ SPALL W/ EXP. REBAR
45.	SPAN 2, BAY 9, TYP. SHORT WEEP PIPE OVER UTILITY.
46.	" BAY 13, " " "
47.	" PIER 2, TYP. FIXED BRG. (G13 SHOWN)
48.	" " , W-SIDE W/ PATCH W/ HA's, SPALL ALONG MEDIAN JT
49.	" " " " " 1/8" CRK ACROSS TOP.

Section loss calc needed

PHOTO LOG

Form BRI-13, Rev. 9/97

Bridge Information System

Image Inventory

Bridge No. 00947 **Date** 12/1/11 + 12/2/11

Town: DERBY **Photographer:** PHH

Carried / Crossed: ROUTE 34 / NAUGATUCK RIVER

Film Frame #	Image Description
50, 51.	SPAN 3, G7 - SOUTH SIDE @ PIER 2 W/ PERF + S.L @ BTM.
52.	" " " " " @ TOP
53.	PIER 2, W/ 1/8" W CRK ACROSS TOP B/W G7 + G8.
54.	SPAN 3, G7, NORTH SIDE @ PIER 2
55.	SP 2 U/S OF DECK IN BAY 6 W/ MPCR W/ EFFLO.
56.	SPAN 2, G14 - SOUTH SIDE W/ RUST ON STEEL
57.	EAST ABUTMENT.
58.	SPAN 3, G14 BRG @ PIER-2
59.	" G13 " "
60.	" G8 " " COVER EXPANDED)
61.	" PIER-2, W/ PATCH W/ CRK'S, SPALL, HA.
62.	" " , BAY 7, U/S OF DECK W/ SPALL
63.	" , G14 - SOUTH SIDE W/ 16"L x 100% LOSS W/ EXP.
	WIRES NEAR E-ABUT.
64.	SAME LOC. AS PHOTO # 63, CUTOUT IN BTM OF BRG. STIFF.
65.	EABUT. & BASE WW W/ SCALING @ BTM.
66.	G13 BRG @ E ABUT.
67	EAST ABUT BACKWALL, BAY 7.
12/2 ↓ 68, 69	SPAN 3, FULL DEPTH PATCHES IN DECK IN W-B LANES.
70.	SPAN 3, DEBRIS IN CHANNEL
71.	" , SPALL W/ EXP. REBAR @ MPCR
72.	" , BAYS 2 & 3, UTILITIES.
73.	NE WW W/ CRK + EFFLO
74.	E ABUT BACKWALL ALONG N CHEEKWALL W/ SPALL

Section loss code needed

PHOTO LOG

Form BRI-13, Rev. 9/97

Bridge Information System

Image Inventory

Bridge No. 00947 **Date** 12/2/4

Town: DERBY **Photographer:** PMM

Carried / Crossed: RT. 34 OVER NAUGATUCK RIVER

Film Frame #	Image Description
75.	SPAN-3, G1-NORTH SIDE, BRG STIFF'S CUTOUT FOR UTILITY
	PIPE.
MEMO * ITEM 76.	SPAN-3, BAY 2, SPALL W/ EXP. REBAR AT U/S OF DECK @
	1ST INT. DIAPH NEAR EAST ABUT
77.	SPAN 3, EAST ABUT, BACKWALL BAY 3 W/ FULL HT CRK @
	UTILITIES
78.	SPAN 3, NORTH HALF, U/S OF DECK ALONG MEDIAN W/ SPALL
	& EXP. REBAR
79.	EAST ABUT.
80.	PIER 2 EAST ELEVATION. MOD. TO HVY SCALING AT N-END
	OF STEM ALONG BASE
81,82	PIER, EAST ELEVATION, FOOTING EXP. FOR F.L.
83.	SPAN 2, LOOKING EAST, ~~U/S~~ BAY 6, U/S OF DECK W/ IMPCR & EFFO
84.	SPAN 2, PIER 1 - EAST SIDE, SPALLS W/ EXP. REBAR AT
	G2 & G3.
85.	SPAN 2, BAY 3, NEAR P-2, TYP. WOODEN FORMS LEFT IN PLACE
	AT U/S OF DECK @ 2ND UTILITY SUPPORT FROM PIER 2
86,87.	SPAN 2, BAY 1, U/S OF DECK W/ SPALL & EXP. REBAR
88.	" , BAY 4, NEAR PIER 1, TYP. PATCHES ON U/S OF DECK
90.	S G2 BRGS AT PIER 1
91.	SPAN 2, G3 EXP. BRG AT PIER 1
92,93.	BAY 6, 5 RESPECTIVELY W/ FULL DEPTH CONC. PATCHES
	IN DECK
94,95.	SPAN 1, G1 - NORTH SIDE BTM FLNG BENT UP 1/2" OVER 1'L
96.	SPAN 2, P-1, BAY 2, UTILITY SUPPORT W/ S.L. & PERF'S

PHOTO LOG

Form BRI-13, Rev. 9/97

Bridge Information System

Image Inventory

Bridge No. 00947 **Date** 12/2/11

Town: DERBY **Photographer:** PMM

Carried / Crossed: RT. 34 OVER NAUGATUCK RIVER

Film Frame #	Image Description
96.	SPAN1, G1 - NORTH SIDE @ W-ABUT W/ CUTOUTS IN BRG. STIFF'S
	FOR UTILITY PIPE.
	↓ TOP OF DECK ↓
97	BRIDGE FROM W. APPR.
98	SPAN1, NORTH HALF DRAIN HOLE AT MEDIAN
99	MEDIAN STRIPSEAL JT
100.	WEST APPR FROM BRIDGE
101.	EAST APPR " "
102.	WEST APPR - WEST BOUND
103.	NW APPR MBR ~~ATTM'T~~
104.	W-ABUT ASPHALTIC PLUG JT
105.	N-SIDEWALK & PPT W/ RAIL
106	TYP. COND OF BRIDGE RAIL W/ SOME END PERFORATIONS
107.	SPAN1 OVERLAY WESTBOUND
108.	DRAIN IN SPAN1 ALONG NORTH CURB
109.	NORTH RAIL OVER P-1 REPLACED SINCE THE LAST INSP.
110.	PIER1 - WEST BOUND JT.
111.	" - NORTH SIDEWALK JT
112.	SPAN-2. WEST BOUND OVERLAY
113.	PIER 2 - WESTBOUND STRIP SEAL JT
114.	" - NORTH SIDEWALK JT
115.	SPAN 1 - WESTBOUND OVERLAY
116.	PIER 2 - JT ~~W/~~ STEEL HDR'S W/ PLOW GOUGES - WB SIDE
117, 118.	SPAN-3, NORTH PPT. LIGHT STD W/ COLLISION DENT W/ CRK'D WELD

PHOTO LOG

Form BRI-13, Rev. 9/97

Bridge Information System

Image Inventory

Bridge No. 00947 **Date** 12/2/11

Town: DERBY **Photographer:** PAM

Carried / Crossed: RT. 34 / NAUGATUCK RIVER

Film Frame #	Image Description
119.	SPAN-3, NORTH SIDEWALK W/ 7'L CRK.
120.	NE APPR MBR W/ MINOR COLLISION DMG.
121.	EAST ABUT PLUG JT - WBSIDE
122.	EAST APPR PVM'T COND "
123,124	BRIDGE FROM EAST APPR.
125.	EAST APPR PVMT - EAST BOUND
126.	SE APPR. GUIDERAIL
127	SPAN 3 OVERLAY - EAST BOUND
128.	EAST ABUT PLUG JT "
129.	SOUTH SAFETY WALK, PPT W/RAIL - TYP CONFIG & COND.
130	SOUTH SIDE SCUPPER DRAIN HOLE AT 3-CORB - SPAN 3
131.	NEWER SECTIONS OF SOUTH BRIDGE RAIL IN SPAN 1/2
132.	PIER 2 - EAST BOUND JT
133.	" " - SOUTH SIDEWALK JT
134.	PIER 1 - EAST BOUND ~~JT~~ SIDEWALK JT
135.	" - " DECK JT
136.	SPAN 1 OVERLAY - EAST BOUND
137.	" 2 " "
138.	TYP. STRIP SEAL MEDIAN JT. @ PIER 1 SHOWN.
139.	SW APPR MBR
140.	W-ABUT DECK JT - EAST BOUND
141.	~~EA~~ W-APPR PVMT. "
142.	BRIDGE I.D
143.	SPAN 2 - WB OVERLAY POTHOLE AT P-1 NEAR MEDIAN IN LT LANE

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
Town:	Derby	**Inspected by:**	Raghu Vuppula
Feature Carried:	Route 34	**Date Inspected:**	12/01/2011
Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

Photo # 1: Bridge Identification Number.

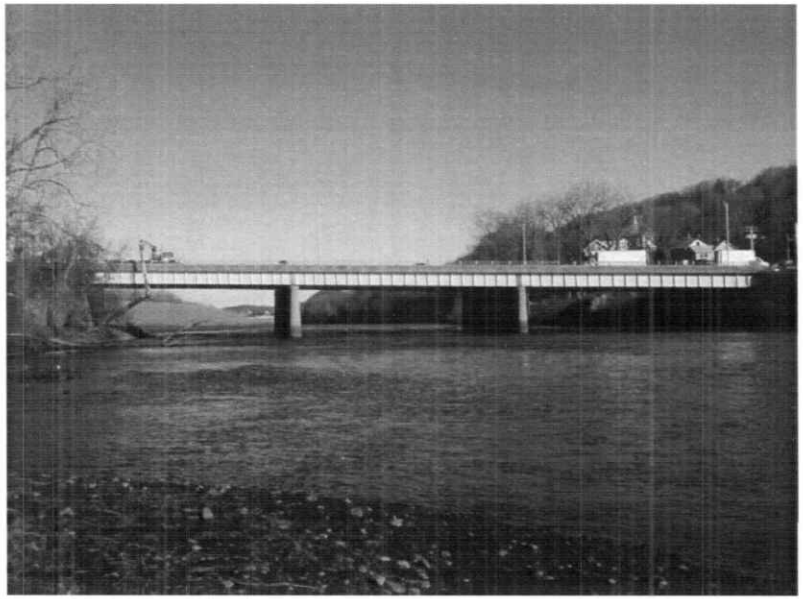


Photo # 2: South elevation of bridge.

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
Town:	Derby	**Inspected by:**	Raghu Vuppula
Feature Carried:	Route 34	**Date Inspected:**	12/01/2011
Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

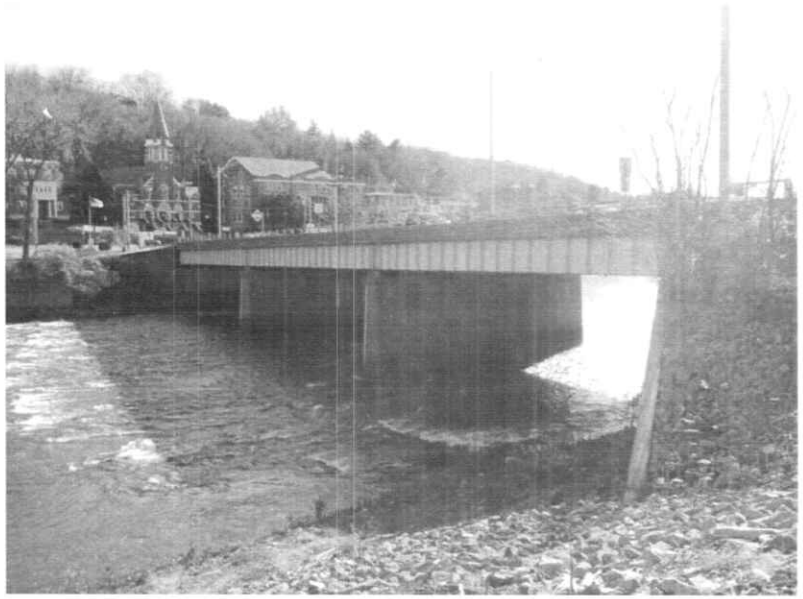


Photo # 3: North elevation of bridge.

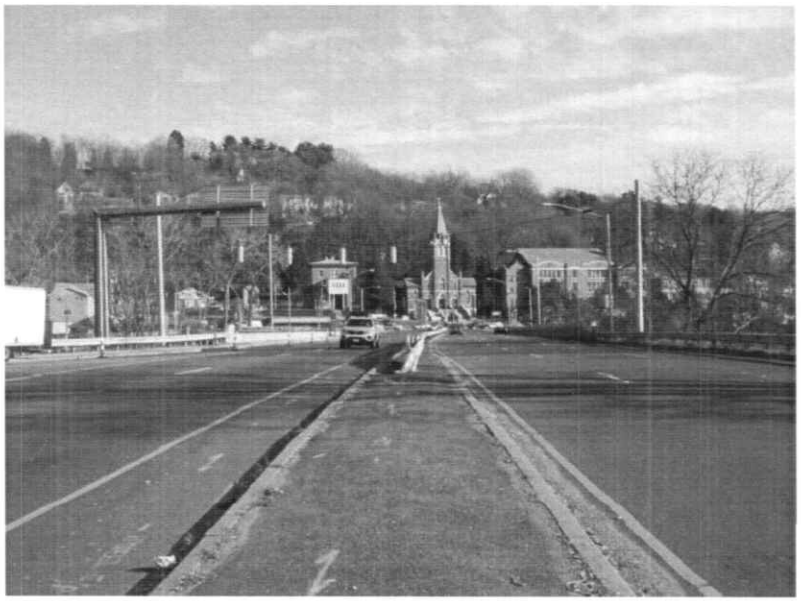


Photo # 4: Bridge from west approach.

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
Town:	Derby	**Inspected by:**	Raghu Vuppula
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Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

Photo # 5: West approach from bridge.

Photo # 6: Bridge from east approach.

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
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Feature Carried:	Route 34	**Date Inspected:**	12/01/2011
Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

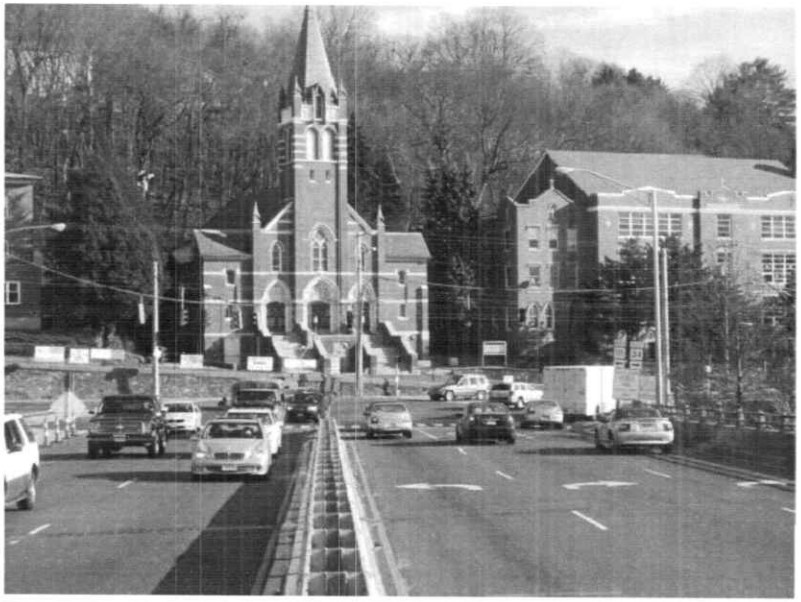

Photo # 7: East approach from bridge.

Photo # 8: Span 1. Typical underside of deck and superstructure configuration and condition.

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
Town:	Derby	**Inspected by:**	Raghu Vuppula
Feature Carried:	Route 34	**Date Inspected:**	12/01/2011
Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

Photo # 9: Span 1, eastbound. Typical condition of bituminous overlay with wheel rutting in the travel lanes.

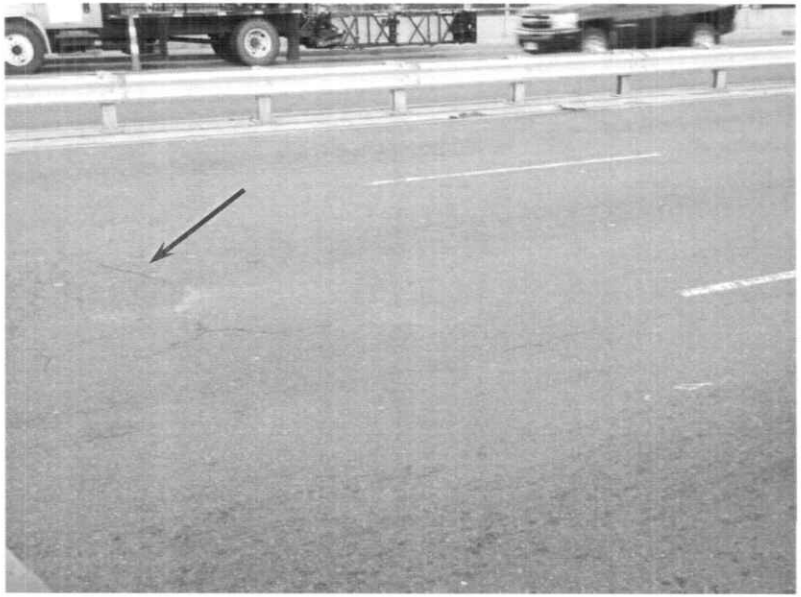

Photo # 10: Span 2, eastbound. Bituminous overlay has random longitudinal, transverse cracks and map cracks.

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
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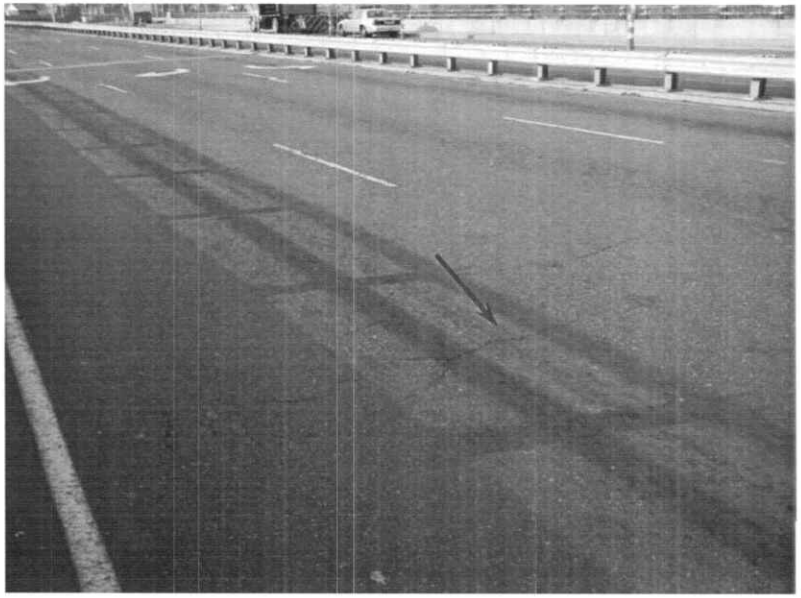

Photo # 11: Span 3, eastbound. Typical condition of overlay with random longitudinal and transverse cracks and wheel rutting in the travel lanes.

Photo # 12: Span 1, right travel lane has full depth concrete patches. Similar condition exists in the middle travel lane.

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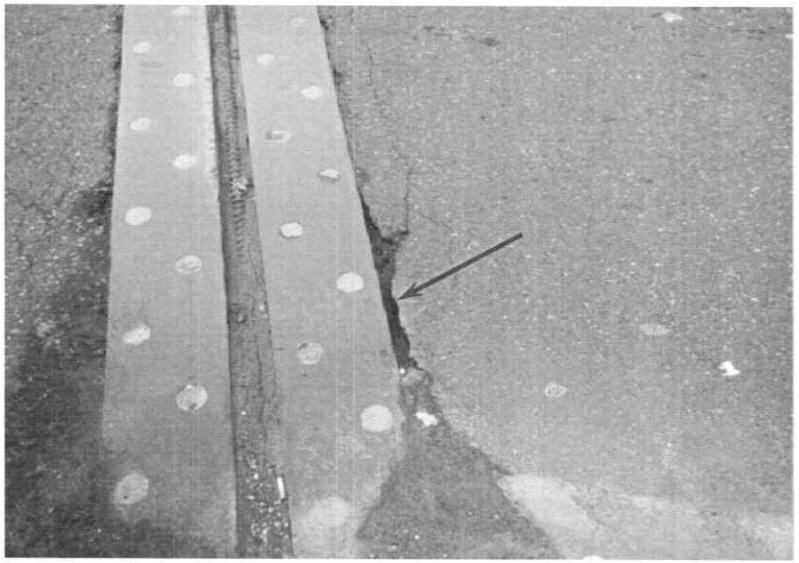

Photo # 13: Span 2, westbound. Pothole in the left travel lane near the median at pier 1.

Photo # 14: Span 3, bay 6. Typical condition of underside of deck with random map cracks and efflorescence.

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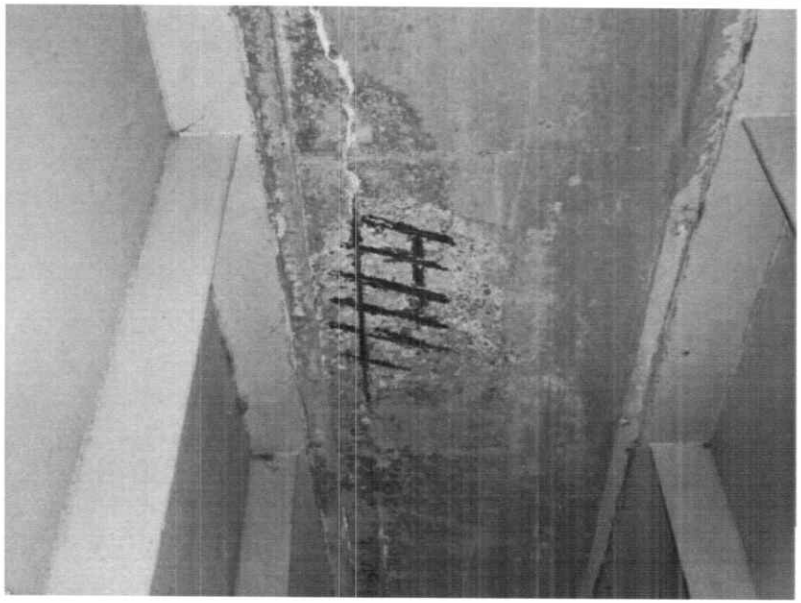

Photo # 15: Span 2, bay 1, underside of deck between the 1st and 2nd intermediate diaphragms from pier 2 has a spall with exposed rebar. Note that the exposed rebar has up to 50 percent section loss.

Photo # 16: Span 3, bay 2, underside of deck at the 1st intermediate diaphragm from east abutment has spall with exposed rebar. There are map cracks with moderate efflorescence.

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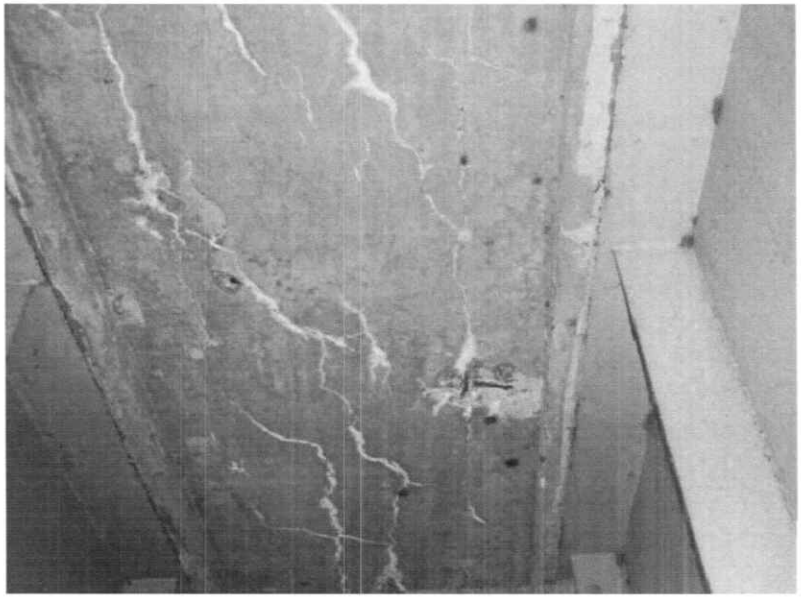

Photo # 17: Span 3, bay 6, typical condition of the underside of the deck with random map cracks with light to moderate efflorescence. There is a spall with exposed rebar near G6 between the 1st and 2nd intermediate diaphragms from pier 2.

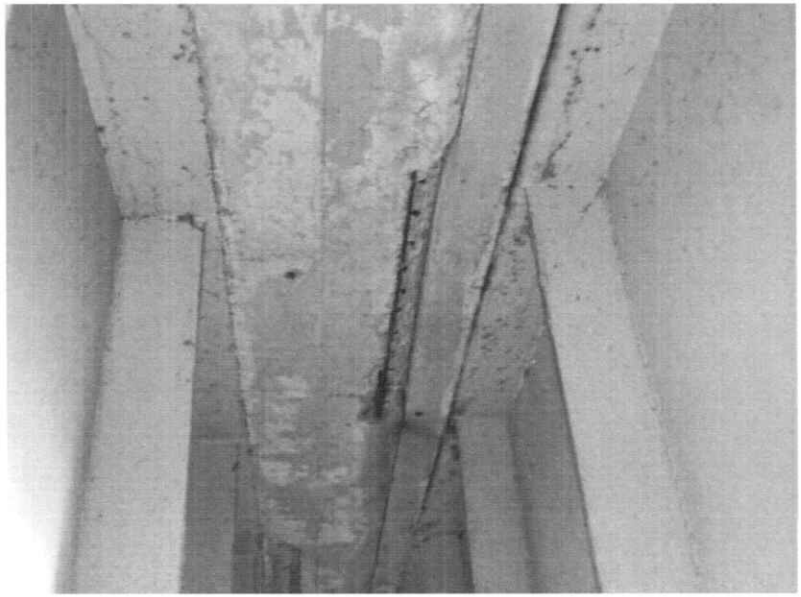

Photo # 18: Typical condition of the underside of deck along the median. There is a spall with exposed rebar along the north half.

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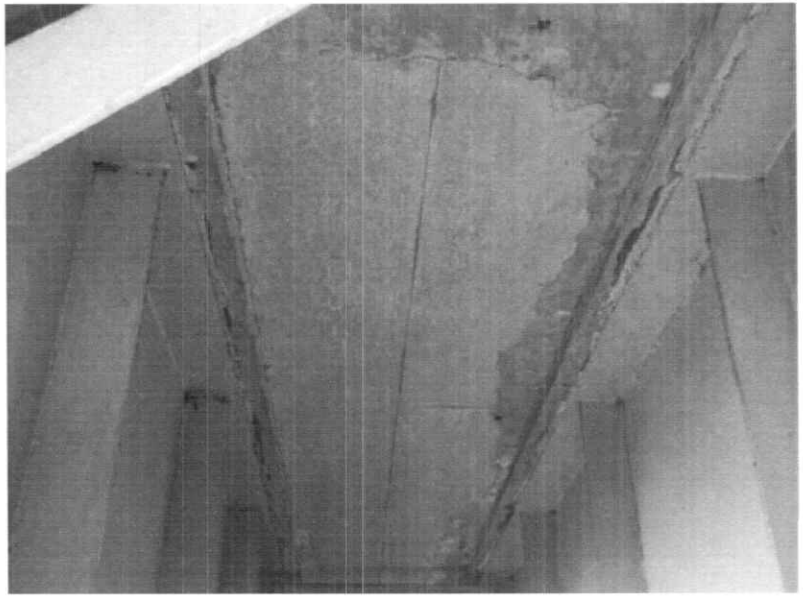

Photo # 19: Span 1, bay 5, underside of deck with a full depth concrete patch. Similar condition exists at random locations.

Photo # 20: Typical configuration and condition of the strip seal joint and metal beam guide rail at the median joint.

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
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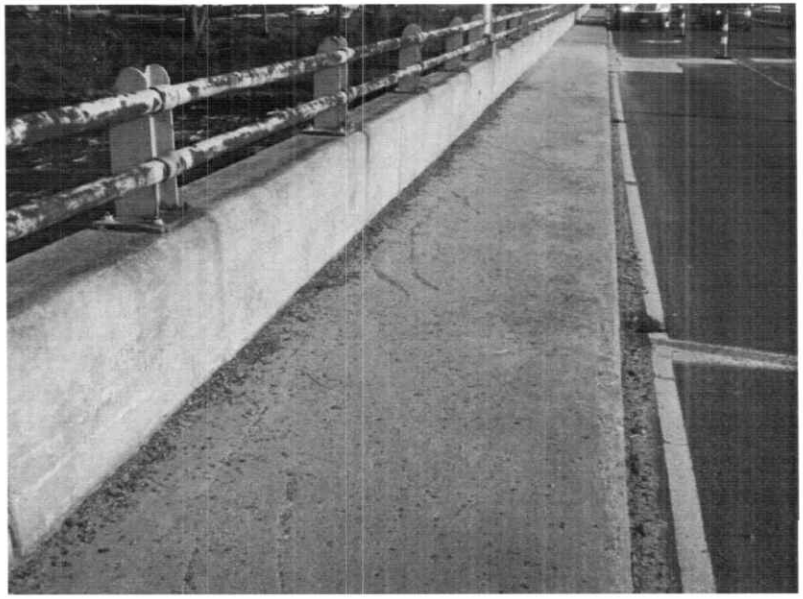

Photo # 21: North side. Typical configuration and condition of curbs, sidewalk and parapet with bridge railing. There are areas of peeling paint with light to moderate rust on the bridge rails.

Photo # 22: South side. Typical configuration and condition of curbs, safetywalk and bridge parapet with railing. Note that bridge railings in spans 2 and 3 have been replaced since the last inspection.

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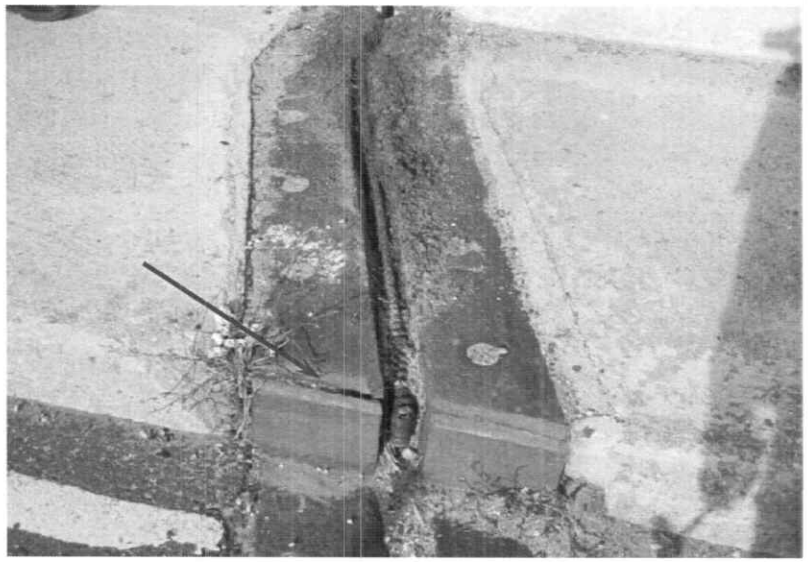

Photo # 23: Pier 2, north sidewalk expansion joint. The west steel hold down joint plate has cracked weld along the top of the curb line. There is light vegetation growth and moderate to heavy sand debris accumulation in the joint.

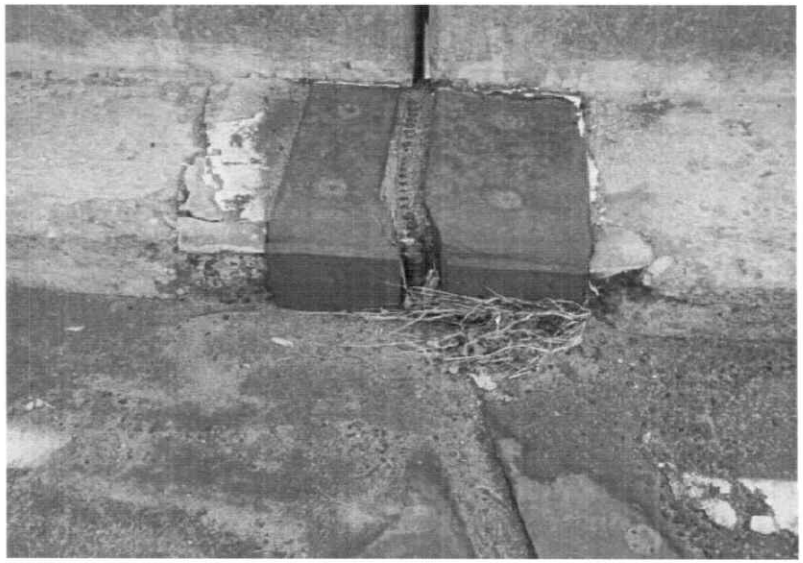

Photo # 24: Pier 2, south safetywalk joint, typical condition. The concrete sidewalk along the joint plates have hollow areas and spalls. Similar condition exists at pier 1, north and south side/safetywalk joints.

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
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Feature Carried:	Route 34	**Date Inspected:**	12/01/2011
Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

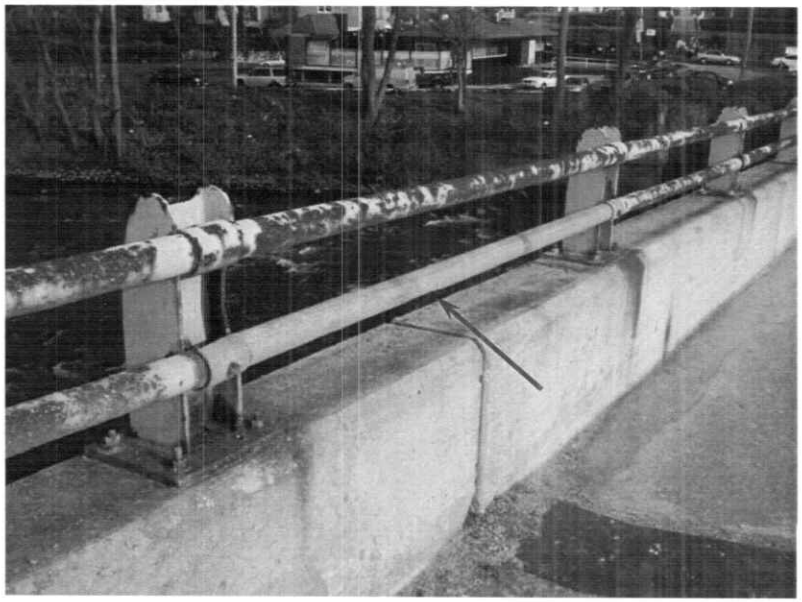

Photo # 25: North railing at pier 1. The previously noted missing bottom pipe has been replaced since the last inspection.

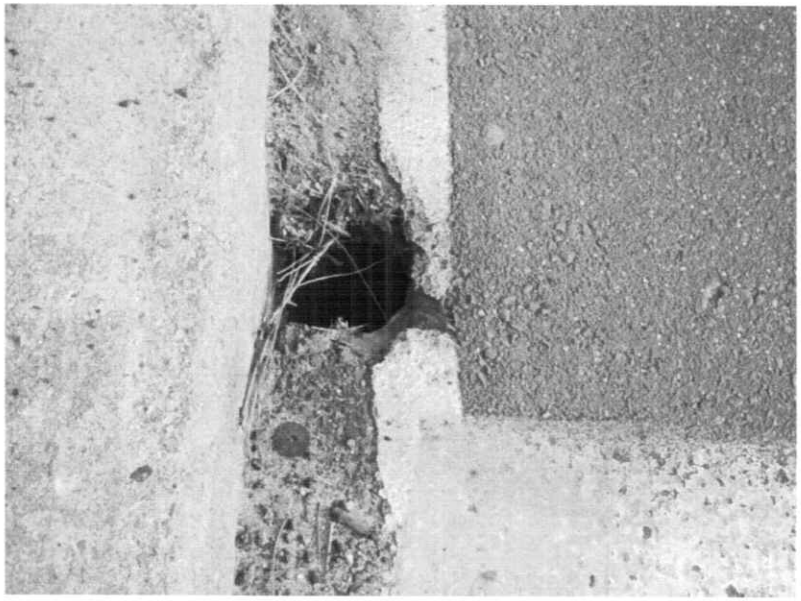

Photo # 26: Span 1, north curb. Typical condition of the scupper drains along the curb with no grates. Similar condition exists along the median and south curb.

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Town:	Derby	**Inspected by:**	Raghu Vuppula
Feature Carried:	Route 34	**Date Inspected:**	12/01/2011
Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

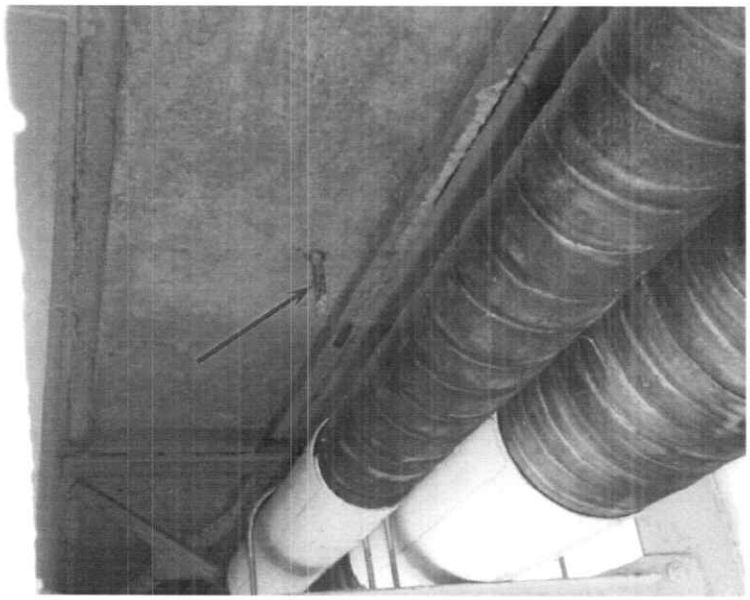

Photo # 27: Span 2, bay 9, typical short PVC weep pipe. All weep pipes are short and do not appear to drain onto the steel.

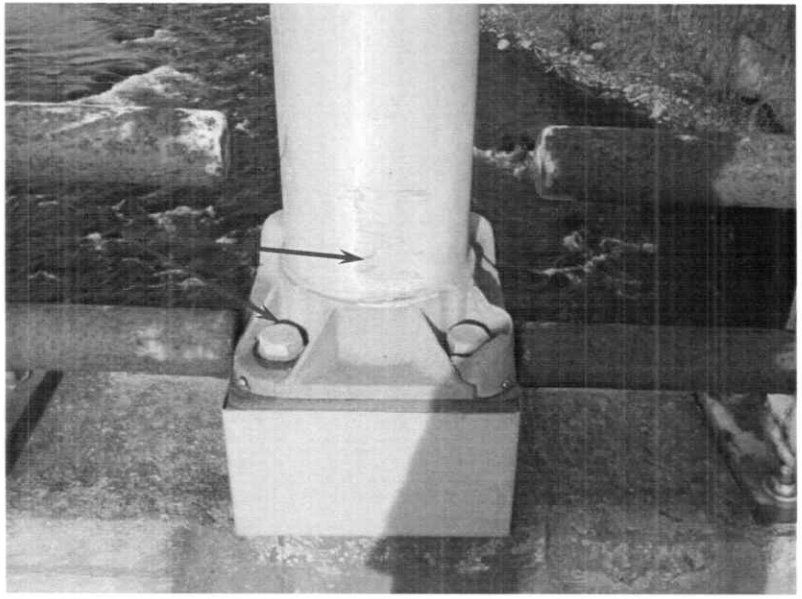

Photo # 28: Span 3, lighting standard on the north parapet has impact damage and 2 (of 4) anchor bolts have missing/broken covers.

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
Town:	Derby	**Inspected by:**	Raghu Vuppula
Feature Carried:	Route 34	**Date Inspected:**	12/01/2011
Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

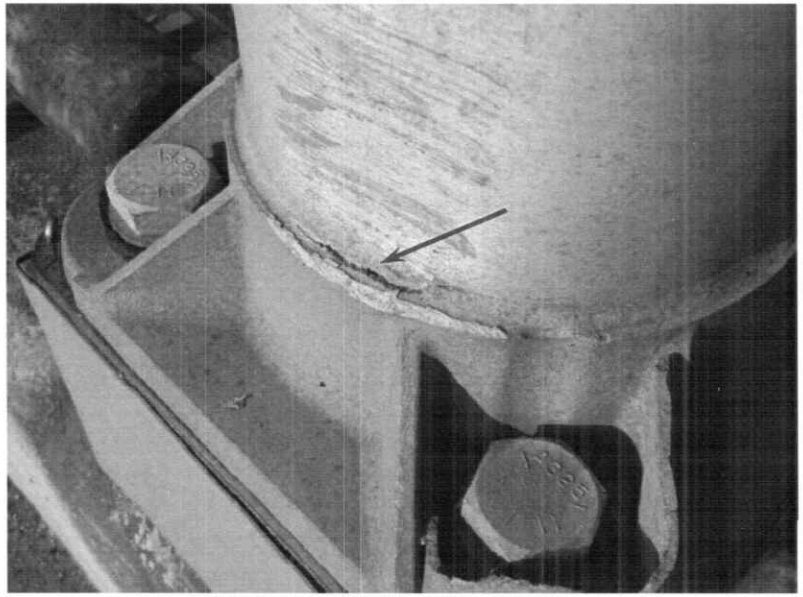

Photo # 29: Close-up of the previous photo showing a tear in the weld at the base due to impact damage.

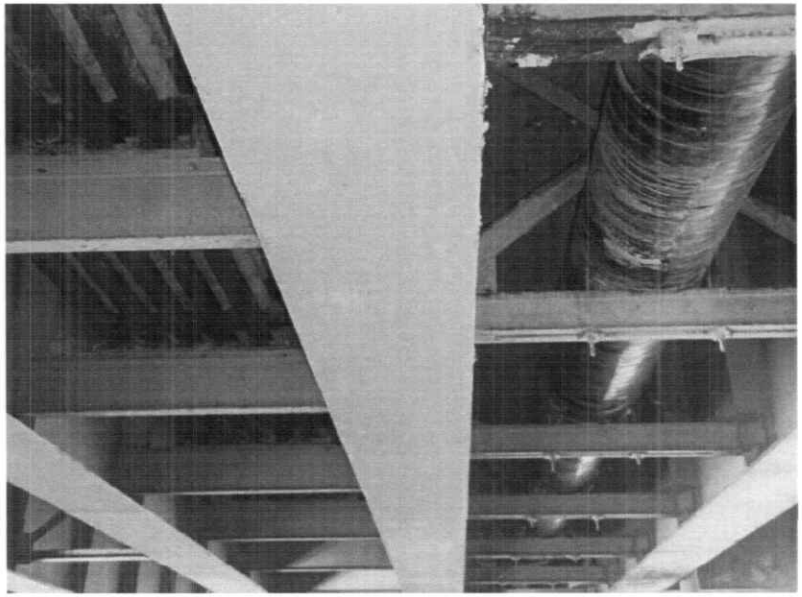

Photo # 30: Typical condition and configuration of utilities in bays 2 and 3. Span 3 shown.

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
Town:	Derby	**Inspected by:**	Raghu Vuppula
Feature Carried:	Route 34	**Date Inspected:**	12/01/2011
Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

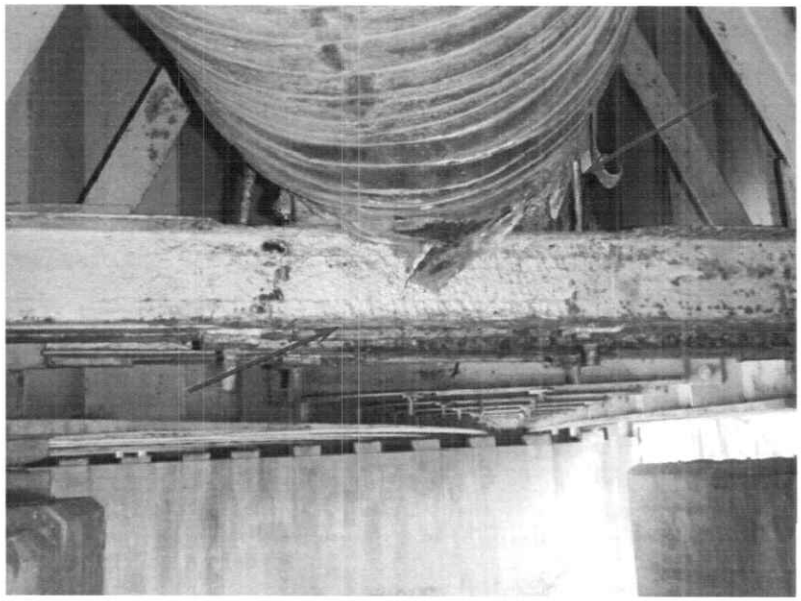

Photo # 31: Pier 1, bay 2. The insulation around the water main pipe has deteriorated and there is severe section loss on the support channel section with U-bolt.

Photo # 32: West abutment asphaltic plug joint. Westbound side shown.

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
Town:	Derby	**Inspected by:**	Raghu Vuppula
Feature Carried:	Route 34	**Date Inspected:**	12/01/2011
Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

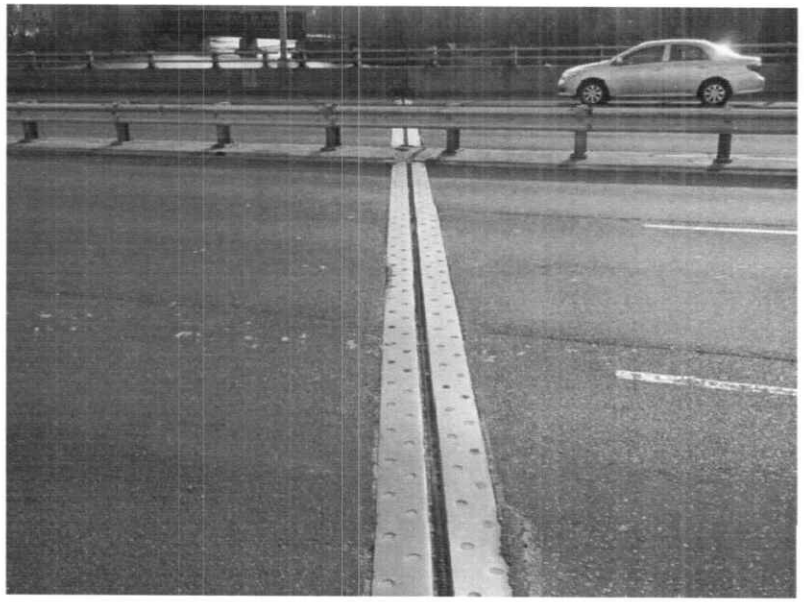

Photo # 33: Pier 1 strip seal joint. Typical condition with accumulation of sand debris in the joint. Westbound side shown.

Photo # 34: Pier 2 strip seal joint. Typical condition with accumulation of sand debris in the joint. Westbound side shown.

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
Town:	Derby	**Inspected by:**	Raghu Vuppula
Feature Carried:	Route 34	**Date Inspected:**	12/01/2011
Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

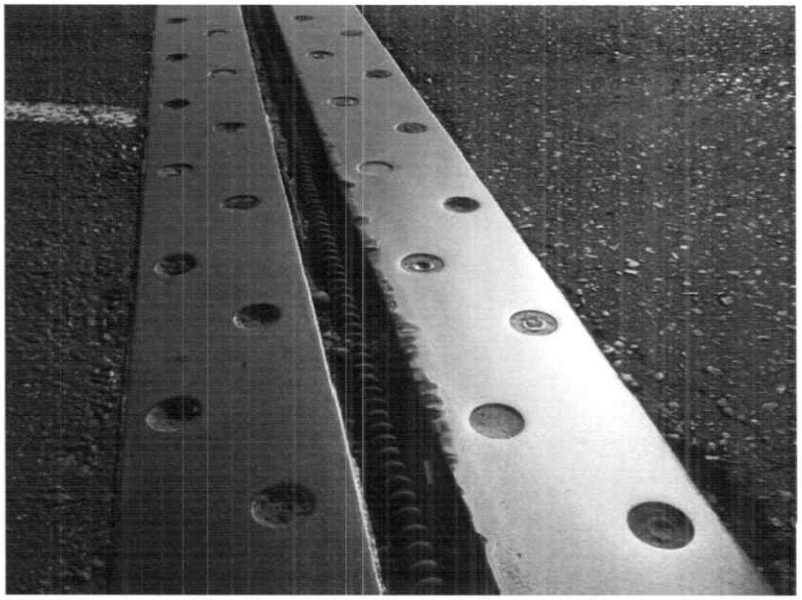

Photo # 35: Close-up of photo #34 in the left travel lane, westbound side. The west steel header has plow gouges along the edge at random locations.

Photo # 36: East abutment asphaltic plug joint. Typical condition. Westbound side shown.

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
Town:	Derby	**Inspected by:**	Raghu Vuppula
Feature Carried:	Route 34	**Date Inspected:**	12/01/2011
Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

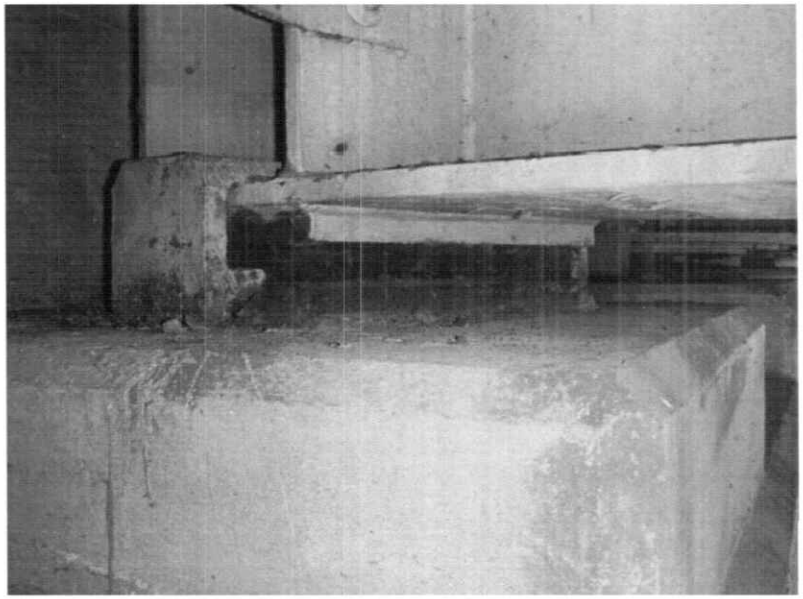

Photo # 37: Typical configuration and condition of expansion sliding bearings. Girder G9 west abutment bearing shown.

Photo # 38: Close-up of the previous photo. The bearing sliding plate is slightly exposed at the backside (contraction mode at 42°F-47°F).

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
Town:	Derby	**Inspected by:**	Raghu Vuppula
Feature Carried:	Route 34	**Date Inspected:**	12/01/2011
Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

Photo # 39: Span 3, girder G8 bearing at pier 2 is over expanded and the top of the sliding plate slightly is exposed at the front. All the bearings at pier 2 were in expansion mode at 42°F-47°F.

Photo # 40: Typical configuration and condition of the curved sole plate fixed bearings. Girder G13 bearing at pier 1 shown. There is pack rust (mostly painted over) with minor section loss on the plates at most bearings.

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
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Feature Carried:	Route 34	**Date Inspected:**	12/01/2011
Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

Photo # 41: Typical configuration and condition of girders with areas of light rust throughout. Span 1, girder G9 south side shown.

Photo # 42: Span 1, girder G14 north side. The bottom of the web, stiffeners and the bottom flange has moderate to heavy rust with section loss. The south side of the girder has light rust.

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
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Feature Carried:	Route 34	**Date Inspected:**	12/01/2011
Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

Photo # 43: Span 3, girder G7 south side at pier 2 has section loss with a perforation at the bottom of the web. Also the bottom of the bearing stiffener has section loss.

Photo # 44: Same location as the previous photo. North side shown.

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
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Feature Carried:	Route 34	**Date Inspected:**	12/01/2011
Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

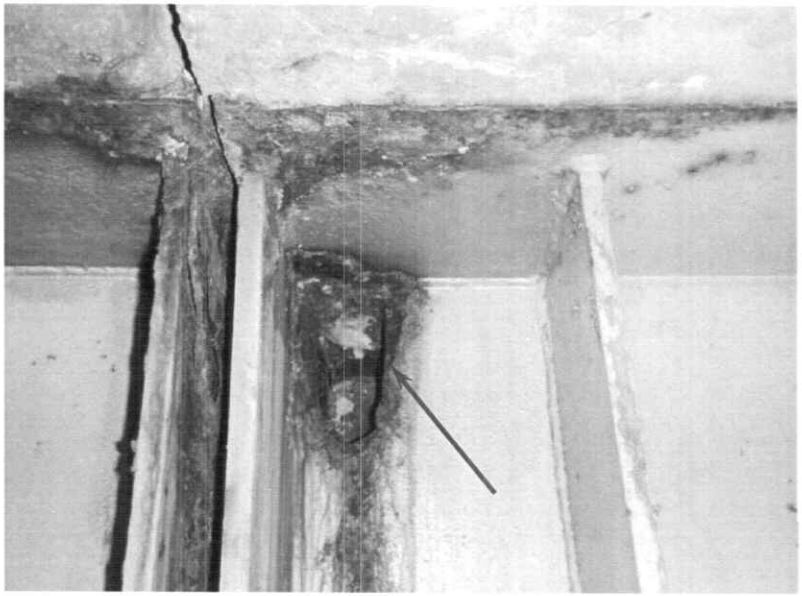

Photo # 45: Span 3, girder G7 south side at pier 2. The top of the web near the top flange has section loss with a perforation. There is also minor section loss on the top flange.

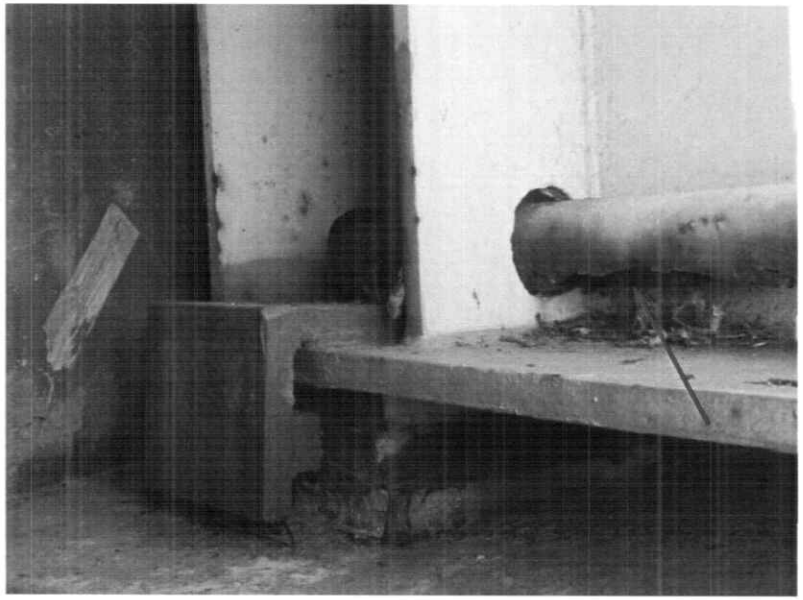

Photo # 46: Typical condition of girders G1 and G14 at the abutments with torch cut holes for the utility conduit at the bottom of the fascia bearing stiffeners. The utility conduit has light to moderate rust with perforations exposing the wires inside. Girder G14 at the west abutment, south side shown.

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
Town:	Derby	**Inspected by:**	Raghu Vuppula
Feature Carried:	Route 34	**Date Inspected:**	12/01/2011
Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

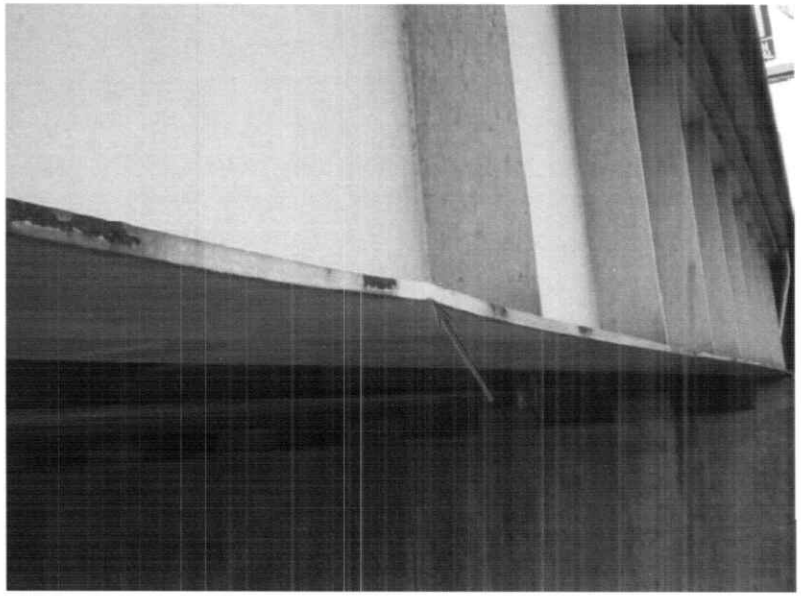

Photo # 47: Span 1, girder G1 bottom flange on the north side near the 1st intermediate diaphragm from the west abutment is slightly bent upward.

Photo # 48: West abutment. Typical configuration and condition. There are water stains at both abutments.

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Photo # 49: East abutment stem has a crack with efflorescence along the base of the cheekwall.

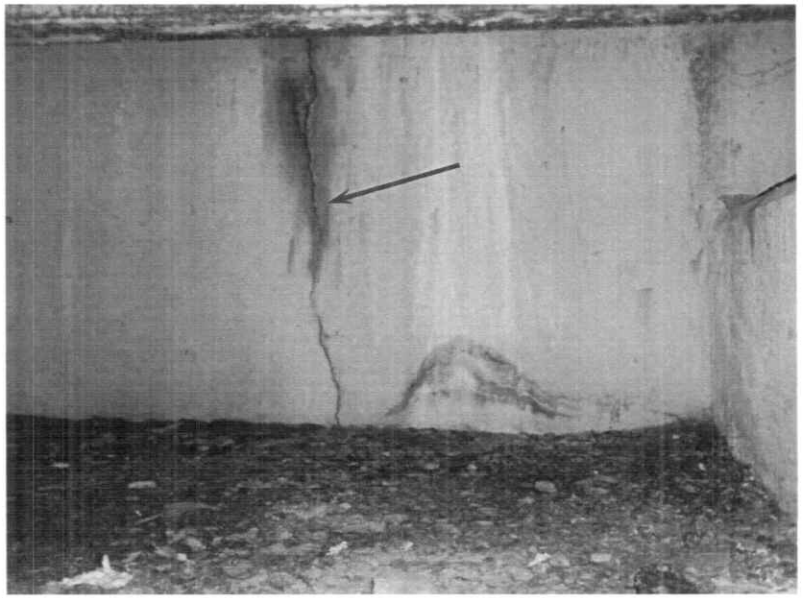

Photo # 50: East abutment backwall in bay 3 has a full height crack at the utilities.

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
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Feature Carried:	Route 34	**Date Inspected:**	12/01/2011
Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

Photo # 51: Southwest wingwall. Typical configuration and condition.

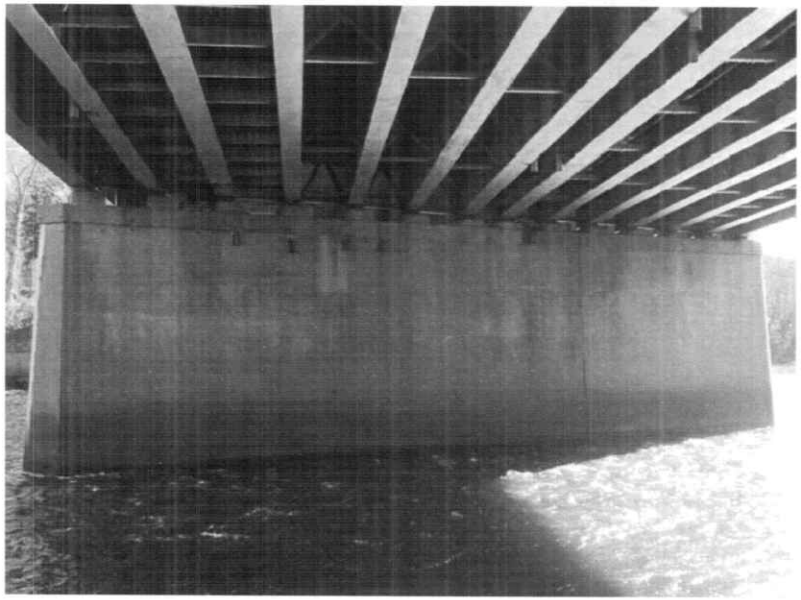

Photo # 52: Pier 1, west elevation. Typical configuration and condition.

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
Town:	Derby	**Inspected by:**	Raghu Vuppula
Feature Carried:	Route 34	**Date Inspected:**	12/01/2011
Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

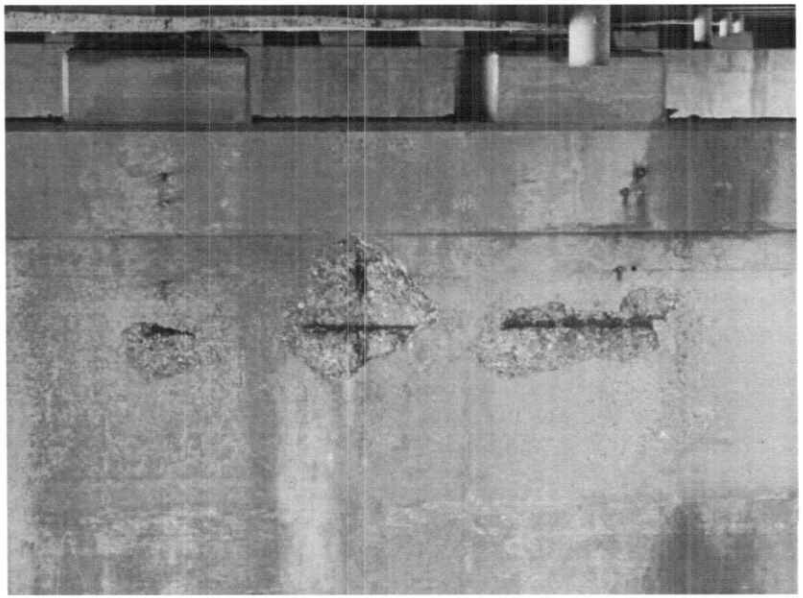

Photo # 53: Span 2, east side of pier 1 below girders G2 and G3, has spalls with exposed rebar. Similar condition exists at random locations.

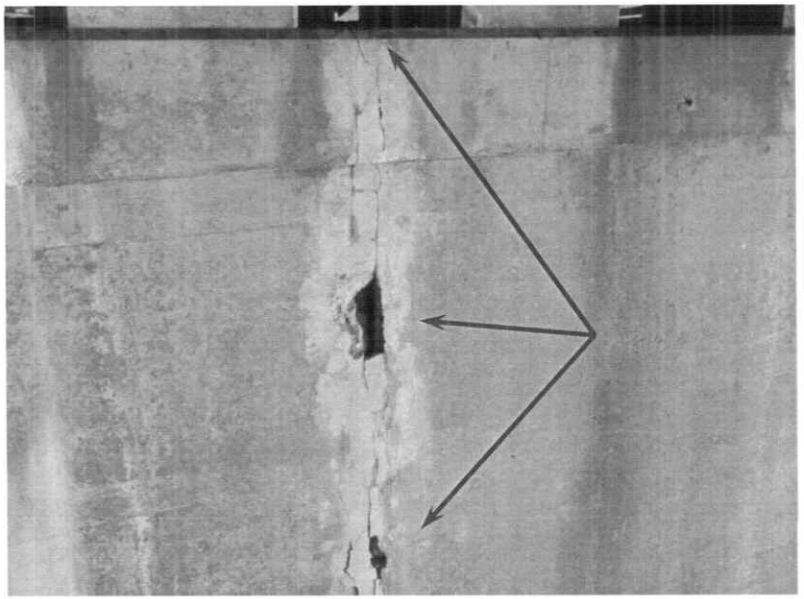

Photo # 54: Span 2, west side of pier 2, below the median, has a full height crack with random spalls and concrete patches. Similar condition exists on the east side.

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
Town:	Derby	**Inspected by:**	Raghu Vuppula
Feature Carried:	Route 34	**Date Inspected:**	12/01/2011
Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

Photo # 55: Same location as photo #54. The crack on the pier stem extends across the top to the east side.

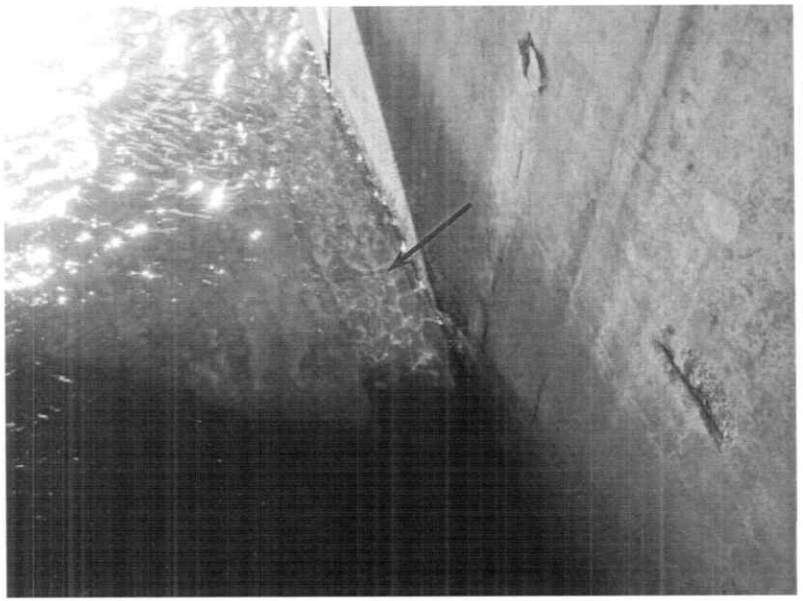

Photo # 56: Pier 2, east side footing has been partially exposed for the full length. Similar condition exists at the west side and at pier 1.

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
Town:	Derby	**Inspected by:**	Raghu Vuppula
Feature Carried:	Route 34	**Date Inspected:**	12/01/2011
Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

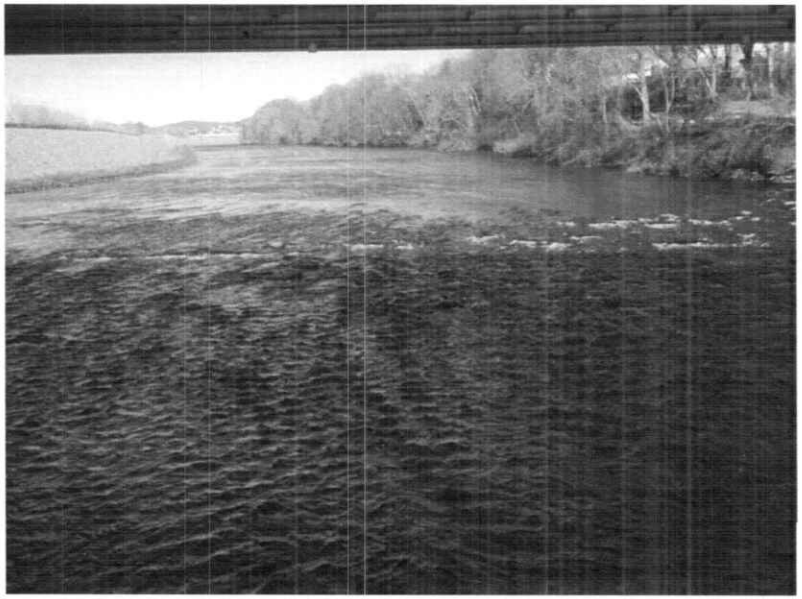

Photo # 57: Naugatuck river, upstream channel.

Photo # 58: Naugatuck river, downstream channel.

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
Town:	Derby	**Inspected by:**	Raghu Vuppula
Feature Carried:	Route 34	**Date Inspected:**	12/01/2011
Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

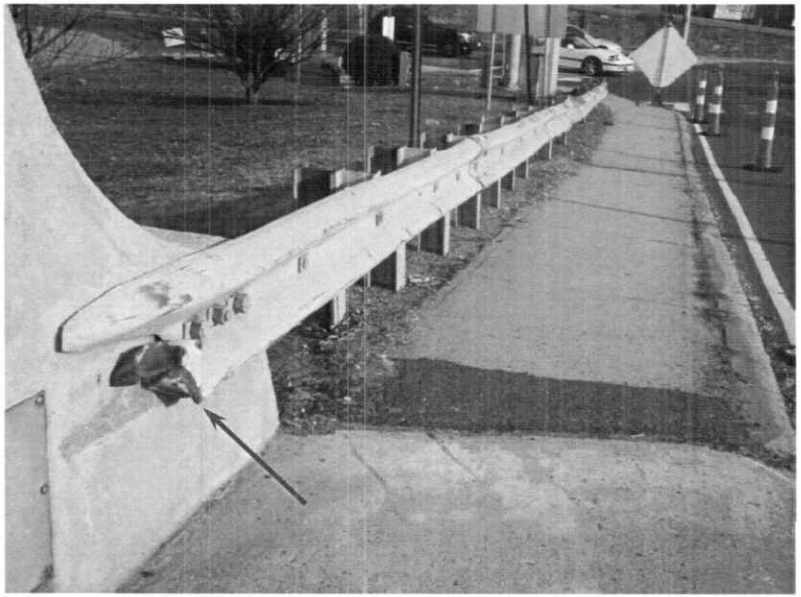

Photo # 59: Northeast approach metal beam guiderail, westbound side (leading end) shown. Typical configuration and condition. The guide rail has random areas of impact damage with scrapes. The lower finger shoe at the attachment is bent and torn (snagging hazard).

Photo # 60: Southeast metal beam guide rail, eastbound (trailing end) shown. There are random areas of impact damage with scrapes.

Bridge No.	00947	**Inspected by:**	Paul H. Holmes
Town:	Derby	**Inspected by:**	Raghu Vuppula
Feature Carried:	Route 34	**Date Inspected:**	12/01/2011
Feature Crossed:	Naugatuck River	**Project No.:**	170-3013

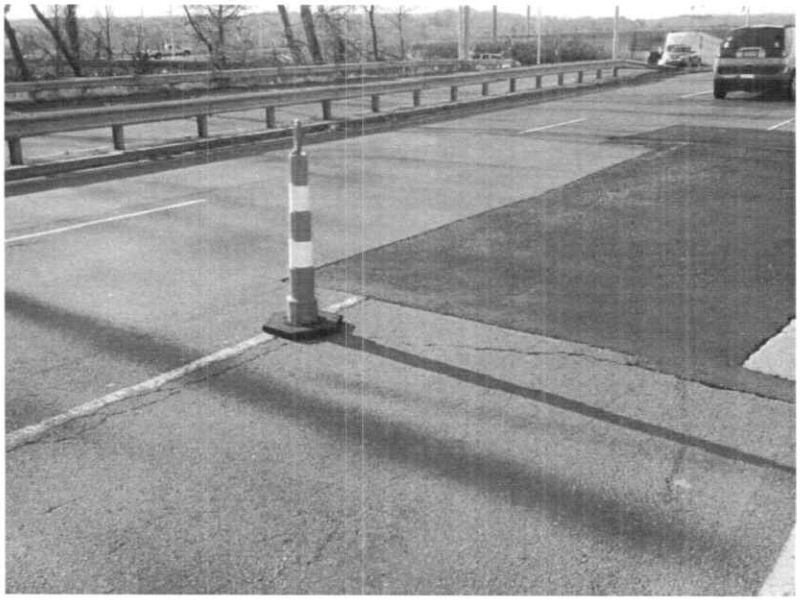

Photo # 61: West approach pavement, westbound has random longitudinal and transverse cracks. There is a bituminous patch in the right and middle travel lanes since the last inspection.

Photo # 62: East approach pavement, eastbound has random longitudinal and transverse cracks. Typical condition.

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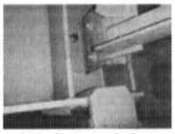
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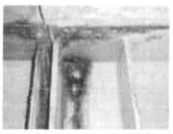
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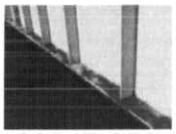
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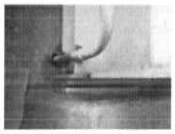
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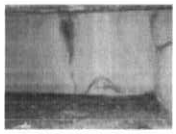
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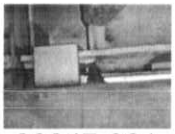
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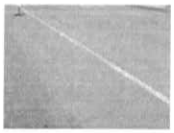
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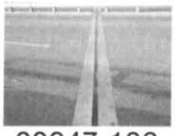
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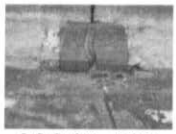
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Bridge Number **00947**

Inspected By: Paul Clark & V. Raghuram Reddy

Sufficiency Rating 71.76

Previous Inspection Date 12/16/2009

BS&E Received ☐ Data Entry By: K

Copies Made ☐ Data Entry Date: 2-6-12

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BRIDGE SAFETY & EVALUATION

STRUCTURE EVALUATION

SHEET 1 OF 2 FORM BRI-19 REV 10/00

SHEET_____ OF_____

90) Inspection Date 12/01/11 Inspection Team 25 25 91) Frequency 24 Class: 03

Indepth Insp 11/29/2001 Deck Survey 12/1/11 1/1/1900 Access 15 Flagman

CRITICAL FEATURE INSPECTIONS

	Type	Frequency	Team	Date	
Fracture:					
Uwater:		24	51	9/27/2010	
Special:	F F	24 24	20 25	12/16/2009	12/01/11

RED FLAG ☐

IDENTIFICATION

Bridge Name JAMES B ATWATER

Town Name DERBY Town Code 19550

5) Inventory Route:

A) Record Type 1 D) Route Number 00034

B) Signing Prefix 3 State Highway E) Directional Suffix 0 NA

C) Level of Service 1 Mainline

6) Feature Intersected NAUGATUCK RIVER

7) Facility Carried: ROUTE 34

9) Location 0.1 MI E OF ROUTE 8

11) Milepoint 14.17 Miles

16) Latitude 41deg 19 min 12.00 sec deg min . sec

17) Longitude 73deg 4 min 54.00 sec deg min . sec

98) Border Bridge:

A) State Code B) Percent Responsibility %

C) Border Town Name

99) Border Bridge Structure No

STRUCTURE TYPE AND MATERIAL

43) Structure Type, Main:

A) Material 3 Steel B) Design Type 2 Stringer/Multi-beam o

44) Structure Type, Approach:

A) Material 0 Other B) Design Type 0 Other

45) Number of Spans, Main Unit 3

46) Number of Approach Spans 0

107) Deck Structure Type 1 Concrete Cast-in-Place

108) Wearing Surface/Protective System:

A) Type of Wearing Surface 6 Bituminous

B) Type of Membrane 2 Preformed Fabric

C) Type of Deck Protection 0 None

AGE AND SERVICE

27) Year Built 1959 106) Year Reconstructed

42) Type of Service:

A) On 5 Highway-pedestrian B) Under 5 WATERWAY

28) Number of Lanes:

A) On 6 B) Under

29) Average Daily Traffic 43300 42700 Half ADT?: No N

109) Percent Truck 6%

30) Year of ADT 2009 2010

19) Bypass, Detour Length 2miles

GEOMETRIC DATA

48) Length of Max Span 107ft

49) Structure Length 329ft

50) Curb or Sidewalk Widths:

A) Left 5.1ft B) Right 1.6ft

51) Brg Rdwy width,curb-curb 72.0ft

52) Deck Width, Out-Out 85.2ft

32) Approach Roadway Width 72ft

33) Bridge Median 2 Closed Median,no barrier

Deck Area 28007 sqft 28031 sqft

34) Skew Angle 20deg

35) Structure Flared 0

10)Inv. Rte. Min. Vert Clearance 99ft 99in

47) Log Inv. Rte. Total Horiz Clr.: 36.0ft

47) RLog Inv. Rte. Total Horiz. Clr.: 36ft

53) Min Vert Clearance Over Bridge 99ft 99in

54) Min Vert Under Clearance N Ref 0ft 0in Ref

55) Min Lat Under Clearance on Right N Ref 99.9ft Ref

56) Min Lat Under Clearance on Left 0.0ft

BRIDGE COMMENTS

STRUCTURE EVALUATION

SHEET 2 OF 2 FORM BRI-19 REV 10/00

SHEET_____ OF_____

Bridge Number	00947	NBIS Length	
Town Name	DERBY	Yes 329	
Facility Carried	ROUTE 34		
Feature Crossed	NAUGATUCK RIVER		

Inspected By: Paul Clark & V. Raghuram Reddy

CLASSIFICATION

112) NBIS Bridge Length	Yes	
104) Highway System	1	On System
26) Functional Class	14	Urban Other Principal Arterial
100) Defense Highway	0	Route is not a STRAHNET Route
101) Parallel Structure	N	No parallel structure exists
102) Direction of Traffic	2	2-way traffic
103) Temporary Structure		
110) Designated National Network	1	On national network
20) Toll	3	On Free Road
21) Maintain	1	State Highway Agency
22) Owner	1	State Highway Agency
Report Class	S	STATE
37) Historical Significance	5	Bridge is not eligible for National Register

WATERWAY

DrainageBasinCode	6900	
38) Navigation Control	0	No navigation control on waterway
39) Navigation Vert Clr.	0	40) Navigation Horiz Clr. 0
116) Vert-Lift Brg Nav Min		
111) Pier Abutment Protection		

PROPOSED IMPROVEMENTS

75A) Type of Work Proposed		
75B) Work Done By		
76) Length of Struct. Improvement		ft
94) Bridge Improvement Cost	$	
95) Roadway Improvement Cost	$	
96) Total Project Cost	$	
97) Year of Improvement Cost Est.		
114) Future ADT		115) Year Future ADT

List No. 18 Project No. 0036-0182 O Advertised 1/1/2030 1

POSTED SIGNS & UTILITIES

Other Posted Signs 1	0	Blank			
Other Posted Signs 2	0	Blank			
Actual P.L. Single Unit Truck		tons	Actual P.L. 4Axle Truck		tons
Rec. P.L. Single Unit Truck		tons	Rec. P.L. 4Axle Truck		tons
Actual P.L. Semi-TrailerTruck		tons	Actual P.L. 3S2 Truck		tons
Rec. P.L. Semi-TrailerTruck		tons	Rec. P.L. 3S2 Truck		tons
Rec. P.L. All Vehicles		tons	Actual P.L. All Vehicles		tons
Posted Vert Clearance On Bridge		ft in			ft in
Posted Vert UnderClearance		ft in			ft in
Posted Speed Limit	25	mph			mph
Utility					
Utility	1	Gas			
Utility	2	Water			
Utility	3	Electric			
Utility	4	Telephone			

LOAD RATING AND POSTING

31) Design Load	5	Evaluation Code	L	
63) Operating Rating Type	1	Year of Evaluation	1997	
64) Operating Rating	99.0	70) Bridge Posting	5	
65) Inventory Rating Type	1	41) Structure Status	A	A
66) Inventory Rating	59.0			

CONDITION

		Rating	By
58) Deck	4	4	PHH
59) Superstructure	5	5	PHH
60) Substructure	5	5	PHH
61) Channel & Chan. Protection	5	5	PHH
62) Culverts	N	N	PHH

APPRAISALS

		Rating	By
67) Structure Evaluation	5	5	MAM
68) Deck Geometry	2	3	PHH
69) Under Clear Vert & Horiz	N	N	PHH
71) Waterway Adequacy	8	8	PHH
72) Approach Rdwy Alignment	6	6	PHH
113) Scour Critical	5		

Items 58 Thru 72 Checked By: KAA

36) Traffic Safety Features:

A) Bridge Railings	0	0
B) Transitions	0	0
C) Approach Guardrail	0	0
D) Approach Guardrail End	1	1

OTHER FEATURES

Fence Required	No	MAM ~~N~~	Barrel Ladder	No	
Fence Present	No	N	Stand Pipes	No	
Fence Height	0.0 ft	ft	Cat Walks	No	
Fence Type			Movable Inspection System	No	
Fence Material			Loose Concrete Checked?	Yes	Y
Fence Top Type					

INSPECTION COMMENTS

Proposed Next Indepth Insp Year	2011	2021
Senior	John Daigle	
Supervisor	Theodore Lapierre	

REVIEWED BY: Theodore Lapierre Date 2/1/12

2-6-2012

Your Agency Name

Your Office Name
Your Department Name

Structure Inventory and Appraisal Sheet (English Units)

Bridge Key: 00947 Agency ID: 00947 SR: 72.4 SD/FO: SD

IDENTIFICATION

State 1:	09 Connecticut	Struc Num 8:	00947
Facility Carried 7:	ROUTE 34	Location 9:	0.1 MI E OF ROUTE 8
Rte.(On/Under) 5A:	Route On Structure	Rte. Signing Prefix 5B:	3 State Hwy
Level of Service 5C:	1 Mainline	Route Number 5D:	00034
Directional Suffix 5E:	0 N/A (NBI)	% Responsibility:	0.00
SHD District 2:	04	County Code 3:	New Haven
Place Code 4:	DERBY	Mile Post 11:	14.167 mi
Feature Intersected 6:	NAUGATUCK RIVER		
Latitude 16:	41° 11' 12"	Longitude 17	073° 04' 54"
Border Bridge Code 98	Unknown (P)		
Border Bridge Number 99	NA		

STRUCTURE TYPE AND MATERIALS

Number of Approach Spans 46: 0 Number of Spans Main Unit 45: 3

3 Steel

Deck Type 107:	1 Concrete-Cast-in-Place
Wearing Surface 108A:	6 Bituminous
Membrane 108B:	2 Preformed Fabric
Deck protection 108C	None

AGE AND SERVICE

Year Built 27:	1959	Year Reconstructed 106:	-1
Type of Service on 42A	5 Highway-pedestrian		
Type of Service under 42B	5 Waterway		
Lanes on 28A: 6	Lanes under 28B: 0	Detour Length 19:	1.9 mi
ADT 29: 42,700	Truck ADT 109: 6%	Year of ADT 30:	2010

GEOMETRIC DATA

Length Max Span 48:	107.00 ft	Structure Length 49:	329.00 ft
Curb/Sdwlk Width L 50A	5.10 ft	Curb/Sidewalk Width R 50B	1.60 ft
Width Curb to Curb 51:	71.85 ft	Width Out to Out 52:	85.20 ft
Approach Roadway width 32: (w/ shoulders)	71.85 ft	Median 33:	2 Closed Med w/o
Deck Area: 28,031.00 sq. ft			
Skew 34: 20.00°		Structure Flared 35:	0 No flare
Vertical Clearance 10:	328.05 ft	Horizontal Clearance 47:	36.09 ft

Minimum Vertical Clearance Over Bridge 53:	328.05 ft
Minimum Vertical Underclearance Reference 54A	N Feature not hwy or RR
Minimum Vertical Underclearance 54B:	0.00 ft
Minimum Lateral Underclearance Reference R 55A:	N Feature not hwy or RR
Minimum Lateral Underclearance R 55:	327.76 ft
Minimum Lateral Underclearance L 56:	0.00 ft

INSPECTION

Frequency 91:	24 months	Inspection Date 90:	12/1/2011	Next Inspection:	12/1/2013
FC Frequency 92A:	NA	FC Inspection Date 93A:	NA	Next FC Inspection:	NA
UW Frequency 92B:	NA	UW Inspection Date 93B:	NA	Next UW Inspection	NA
SI Frequency 92C:	NA	SI Date 93C:	NA	Next SI:	NA
Element Frequency:	24 months	Element Insp. Date:	12/16/2009	Next Elem. Insp.:	12/1/2013

CLASSIFICATION

Defense Highway 100:	0 Not a STRAHNET hwy	Parallel Structure 101:	No || bridge exists
Direction of Traffic 102:	2 2-way traffic	Temporary Structure 103:	Unknown (NBI)
Highway System 104:	1 On the NHS	NBIS Length 112:	Long Enough
Toll Facility 20:	3 On free road	Functional Class 26:	14 Urban Other Princ
Defense Hwy 110:	0 Not a STRAHNET hwy	Historical Significance 37:	5 Not eligible for NRHP
Owner 22:	01 State Highway Agency		
Custodian 21:	01 State Highway Agency		

CONDITION

Deck 58:	4 Poor	Super 59:	5 Fair	Sub 60:	5 Fair
Culvert 62:	N N/A (NBI)	Channel/Channel Protection 61:	5 Bank Prot Eroded		

LOAD RATING AND POSTING

Inventory Rating Method 65:	1 LF Load Factor	Operating Rating Method 63:	1 LF Load Factor
Inventory Rating 66:	HS32.7	Operating Rating 64:	HS55.0
Design Load 31:	5 MS 18 (HS 20)	Posting 70:	5 At/Above Legal Loads
Posting Status 41:	A Open, no restriction		

APPRAISAL

Bridge Rail 36A:	0 Substandard	Approach Rail 36C:	0 Substandard
Transition 36B:	0 Substandard	Approach Rail Ends 36D:	1 Meets Standards
Str Evaluation 67:	5 Above Min Tolerable	Deck Geometry 68:	3 Intolerable - Correct
Underclearance, Vertical and Horizontal 69:		N Not applicable (NBI)	
Waterway Adequacy 71:	8 Equal Desirable	Approach Alignment 72:	6 Equal Min Criteria
Scour Critical 113:	5 Stable w/in footing		

PROPOSED IMPROVEMENTS

Bridge Cost 94:	$1,000	Type of Work 75:	38 Other Structural
Roadway Cost 95:	$1,000	Length of Improvement 76:	0.3 ft
Total Cost 96:	$2,000	Future ADT 114:	21,650
Year of Cost Estimate 97:	2000	Year of Future ADT 115:	2029

NAVIGATION DATA

Navigation Control 38:	Permit Not Required		
Vertical Clearance 39:	0.0 ft	Horizontal Clearance 40:	0.0 ft
Pier Protection 111:	Unknown (NBI)	Lift Bridge Vertical Clearance 116:	0.0 ft

Structure Inventory and Appraisal Sheet (English Units)

ELEMENT CONDITION STATE DATA

Str Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
0	14/3	P Conc Deck/AC Ovly	(SF)	23,688	0%	0	100%	23,688	0%	0	0%	0	0%	0
0	56/3	Concrete sidewalk	sq.ft	1,679	100%	1,679	0%	0	0%	0	0%	0	0%	0
0	107/3	Paint Stl Opn Girder	(LF)	4,544	88%	3,985	10%	454	2%	100	0%	5	0%	0
0	210/3	R/Conc Pier Wall	(LF)	190	70%	132	25%	48	5%	10	0%	0	0%	0
0	215/3	R/Conc Abutment	(LF)	190	97%	184	3%	6	0%	0	0%	0	0%	0
0	300/3	Strip Seal Exp Joint	(LF)	154	1%	1	86%	132	14%	21	0%	0	0%	0
0	305/3	Asphaltic Plug Joint	(LF)	154	100%	154	0%	0	0%	0	0%	0	0%	0
0	311/3	Moveable Bearing	(EA)	42	86%	36	14%	6	0%	0	0%	0	0%	0
0	313/3	Fixed Bearing	(EA)	42	95%	40	5%	2	0%	0	0%	0	0%	0
0	330/3	Metal Rail Uncoated	(LF)	0	0%	0	100%	0	0%	0	0%	0	0%	0
0	331/3	Conc Bridge Railing	(LF)	650	100%	650	0%	0	0%	0	0%	0	0%	0
0	359/3	Soffit Smart Flag	(EA)	1	0%	0	0%	0	100%	1	0%	0	0%	0
0	360/3	Settlement SmFlag	(EA)	1	100%	1	0%	0	0%	0	0%	0	0%	0
0	361/3	Scour Smart Flag	(EA)	2	0%	0	100%	2	0%	0	0%	0	0%	0
0	371/3	Free Fall Pipes, Scu	(EA)	40	100%	40	0%	0	0%	0	0%	0	0%	0