

# STRUCTURE NO. 04746

SUNNYSIDE STREET

over

YANTIC RIVER

NORWICH

*Indepth Inspection*

*on*

*9/23/2008*

*Inspected by Baker - 23*

*for Area 4*

<b>TEAM:</b>	Forwarded to TE3	Sandra Dumas	Date	5/8/2009
<b>TE3:</b>	Reviewed by TE3	Sandra Dumas	Date	5/12/2009
	BMM Required		No	
	Town Bridge		Yes	
	Rating <= 5 (items 58,59,60 or 62)		No	
	Forwarded to Supervisor	Sandra Dumas	Date	5/12/2009
	Forwarded to "To Be Copied Drawer"	<input type="checkbox"/>	Date	
	Date BRI-19 Entered		5/15/2009	
<b>SUPERVISOR:</b>	Reviewed by Supervisor	Sandra Dumas	Date	5/26/2009
<b>SUPPORT:</b>	Date Copies Made	5/29/09	BMM No	town
	Scanned By:	80	Date Scanned	5/29/09
			PDF Box No	

**NBI: Yes**

Bridge Number **04746**

STATE OF CONNECTICUT

DEPARTMENT OF TRANSPORTATION

BRIDGE SAFETY & EVALUATION

# STRUCTURE EVALUATION

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

Inspected By: M. Orłowski & T. Kyras

Sufficiency Rating **63.92**

Previous Inspection Date **7/26/2006**

BS&E Received

Data Entry By: bad

Copies Made

Data Entry Date: 5/15/09

SHEET \_\_\_\_\_ OF \_\_\_\_\_

90) Inspection Date **09/24/08** Inspection Team **23** Frequency Class: **02**  
 Indepth Insp **7/11/2000** Deck Survey **23** Access **24** Flagman **02**  
 Date **9/24/08**

**CRITICAL FEATURE INSPECTIONS**

Type	Frequency	Team	Date
Fracture:			
Uwater:			
Special:			

## IDENTIFICATION

Bridge Name **NORWICH** Town Code **56270**

5) Inventory Route: **1** Record Type **5** City Street **0** Directional Suffix **NA**

6) Feature Intersected **YANTIC RIVER**

7) Facility Carried: **SUNNYSIDE STREET**

9) Location **40 FT EAST OF FRANKLIN RD**

11) Milepoint **1.59** Miles

16) Latitude **41deg 33 min 00 sec**

17) Longitude **72deg 7 min 24.00 sec**

98) Border Bridge: **A) State Code** **B) Percent Responsibility** **%**

99) Border Bridge Structure No

## STRUCTURE TYPE AND MATERIAL

43) Structure Type, Main: **A) Material** **8** Masonry **B) Design Type** **11** Arch - Deck

44) Structure Type, Approach: **A) Material** **0** Other **B) Design Type** **0** Other

45) Number of Spans, Main Unit **2**

46) Number of Approach Spans **0**

107) Deck Structure Type **N** Not Applicable

108) Wearing Surface/Protective System: **A) Type of Wearing Surface** **6** Bituminous

**B) Type of Membrane** **8** Unknown

**C) Type of Deck Protection** **N** Not Applicable

## AGE AND SERVICE

27) Year Built **1908** 106) Year Reconstructed **0000**

42) Type of Service: **A) On** **5** Highway-pedestrian **B) Under** **5** WATERWAY

28) Number of Lanes: **A) On** **1** **B) Under** **0**

29) Average Daily Traffic **410** Half ADT?: **No**

109) Percent Truck **2%**

30) Year of ADT **2007**

19) Bypass, Detour Length **99** miles

## GEOMETRIC DATA

48) Length of Max Span **74** ft

49) Structure Length **166** ft

50) Curb or Sidewalk Widths: **A) Left** **0.0** ft **B) Right** **3.4** ft

51) Brg Rdwy width, curb-curb **13.4** ft

52) Deck Width, Out-Out **20.4** ft

32) Approach Roadway Width **19** ft

33) Bridge Median **0** No Median **3386** sqft

34) Skew Angle **0** deg

35) Structure Flared **0**

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

47) Log Inv. Rte. Total Horiz. Clr.: **13.4** ft

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

53) Min Vert Clearance Over Bridge **99** ft

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

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

56) Min Lat Under Clearance on Left **N** Ref **0.0** ft

## BRIDGE COMMENTS

April 23 2007 - BRI -8 submitted to increase inspection interval to 48 months (JCK)

\* ADT based on 1% increase per year.

RED FLAG

# STRUCTURE EVALUATION

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

SHEET \_\_\_\_\_ OF \_\_\_\_\_

Bridge Number	04746	NBIS Length	
Town Name	NORWICH	Yes	166
Facility Carried	SUNNYSIDE STREET		
Feature Crossed	YANTIC RIVER		

Inspected By: M. Orlovsky & T. Kurasz

## LOAD RATING AND POSTING

31) Design Load	0	Rating	N	By	N
63) Operating Rating Type	5	63) Operating Rating	6	64) Operating Rating	6
64) Operating Rating	58.0	65) Inventory Rating Type	5	66) Inventory Rating	34.0
65) Inventory Rating Type	5	67) Structure Evaluation	6	68) Deck Geometry	2
66) Inventory Rating	34.0	69) Under Clear Vert & Horiz	N	70) Bridge Posting	5
		71) Waterway Adequacy	3	41) Structure Status	A
		72) Approach Rdwy Alignment	5		
		113) Scour Critical	4		

## CONDITION

58) Deck	N	Rating	N	By	N
59) Superstructure	6	67) Structure Evaluation	6	68) Deck Geometry	2
60) Substructure	6	69) Under Clear Vert & Horiz	N	70) Bridge Posting	5
61) Channel & Chan. Protection	7	71) Waterway Adequacy	3	41) Structure Status	A
62) Culverts	N	72) Approach Rdwy Alignment	5		
		113) Scour Critical	4		

## APPRAISALS

67) Structure Evaluation	6	Rating	6	By	PA
68) Deck Geometry	2	69) Under Clear Vert & Horiz	N	70) Bridge Posting	5
69) Under Clear Vert & Horiz	N	71) Waterway Adequacy	3	41) Structure Status	A
70) Bridge Posting	5	72) Approach Rdwy Alignment	5		
41) Structure Status	A	113) Scour Critical	4		

Items 58 Thru 72 Checked By: S. Dumas

## TRAFFIC SAFETY FEATURES

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

## OTHER FEATURES

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

## INSPECTION COMMENTS

Proposed Next Indepth Insp Year: 2008  
 Senior Supervisor: Don Carlson  
 Joseph Kozlowski  
 Reviewed By: S. Dumas Date: 5/12/09

## CLASSIFICATION

112) NBIS Bridge Length	Yes	
104) Highway System	0	Off System
26) Functional Class	19	Urban Local
100) Defense Highway	0	Not Defense Highway
101) Parallel Structure	N	No parallel structure exists
102) Direction of Traffic	3	One lane bridge for 2-way traffic
103) Temporary Structure	0	Not on national network
110) Designated National Network	3	On Free Road
20) Toll	4	City or Municipal Highway Agency
21) Maintain	4	City or Municipal Highway Agency
22) Owner	L	LOCAL
Report Class	1	On National Register
37) Historical Significance	3900	

## WATERWAY

Drainage Basin Code	0	No navigation control on waterway
38) Navigation Control	0	Navigation Horiz Cir.
39) Navigation Vert Cir.	0	
116) Vert-Lift Big Nav Min	Blank	
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					
114) Future ADT					
115) Year Future ADT					

## POSTED SIGNS & UTILITIES

Other Posted Signs 1	0	Blank
Other Posted Signs 2	0	Blank
Actual P.L. Single Unit Truck		tons
Rec. P.L. Single Unit Truck		tons
Actual P.L. Semi-Trailer Truck		tons
Rec. P.L. Semi-Trailer Truck		tons
Actual P.L. All Vehicles		ft
Rec. P.L. All Vehicles		ft
Posted Vert Clearance On Bridge		mph
Posted Vert Under Clearance		mph
Posted Speed Limit		mph
Utility		

# Structure Inventory and Appraisal Sheet (English Units)

Bridge Key: 04746

Agency ID: 04746

Sufficiency Rating: 64.5

### IDENTIFICATION

State 1: 09 Connecticut      Struc Num 8: 04746  
 Facility Carried 7: SUNNYSIDE STREET      Location 9: 40 FT EAST OF FRANKLIN RD  
 Rte.(On/Under)5A: Route On Structure      Rte. Signing Prefix 5B: 5 City Street  
 Level of Service 5C: 0 None of the below      Rte. Number 5D: 00000  
 Directional Suffix 5E: 0 N/A (NBI)      % Responsibility : 0  
 SHD District 2: 02      County Code 3: New London  
 Place Code 4: NORWICH      Mile Post 11: 0.020 mi  
 Feature intersected 6: YANTIC RIVER  
 Latitude 16: 41d 33' 36"      Longitude 17: 072d 07' 24"  
 Border Bridge Code 98: Unknown (P)  
 Border Bridge Number 99: NA

### INSPECTION

Frequency 91: 24 months      Inspection Date 90: 9/24/2008      Next Inspection: 09/24/2010  
 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 Inspection Date: 09/24/2008      Next Elem. Insp. Due: 09/24/2010

### CLASSIFICATION

Defense Highway 100: 0 Not a STRAHNET hwy      Parallel Structure 101: No || bridge exists  
 Direction of Traffic 102: 3 1-lane Br for 2-way      Temporary Structure 103: Unknown (NBI)  
 Highway System 104: 0 Not on NHS      NBIS Length 112: Long Enough  
 Toll Facility 20: 3 On free road      Functional Class 26: 19 Urban Local  
 Historical Significance 37: 1 Br on Natl Reg Hist Pl  
 Owner 22: 4 City/Municipal Hwy Agenc  
 Custodian 21: 4 City/Municipal Hwy Agenc

### STRUCTURE TYPE AND MATERIALS

Number of Approach Spans 46: 0      Number of Spans Main Unit 45: 2  
 Main Span Material/Design 43A/B:  
 8 Masonry      11 Arch-Deck  
 Deck Type 107: N N/A (NBI)  
 Wearing Surface 108A: 6 Bituminous  
 Membrane 108B: 8 Unknown  
 Deck Protection 108C: N N/A (no deck (NBI))

### CONDITION

Deck 58: N N/A (NBI)      Super 59: 6 Satisfactory      Sub 60: 6 Satisfactory  
 Culvert 62: N N/A (NBI)      Channel/Channel Protection 61: 5 Bank Prot Eroded

### LOAD RATING AND POSTING

Inventory Rating Method 65: 2 AS Allowable Stres: Operating Rating Method 63: 2 AS Allowable Stress  
 Inventory Rating 66: HS19.8      Operating Rating 64: HS22.0  
 Design Load 31: Unknown (NBI)      Posting 70: 5 At/Above Legal Loads  
 Posting status 41: A Open, no restriction

### AGE AND SERVICE

Year Built 27: 1908      Year Reconstructed 106: Unknown  
 Type of Service on 42A: 5 Highway-pedestrian  
 Type of Service under 42B: 5 Waterway  
 Lanes on 28A: 1      Lanes Under 28B: 0      Detour Length 19: 98.8 mi  
 ADT 29: 418      Truck ADT 109: 2 %      Year of ADT 30: 2009

### APPRAISAL

Bridge Rail 36A: 1 Meets Standards      Approach Rail 36C: 0 Substandard  
 Transition 36B: 0 Substandard      Approach Rail Ends 36D: 0 Substandard  
 Str. Evaluation 67: 6      Deck Geometry 68: 2 Intolerable - Replace  
 Underclearance, Vertical and Horizontal 69: N Not applicable (NBI)  
 Waterway Adequacy 71: 3 Intolerable - Correct      Approach Alignment 72: 5 Above Tolerable  
 Scour Critical 113: 4 Stable, needs action

### GEOMETRIC DATA

Length Max Span 48: 74.0 ft      Structure Length 49: 166.0 ft  
 Curb/Sdwk Wth L 50A: 0.0 ft      Curb/Sidewalk Width R 50B: 3.3 ft  
 Width Curb to Curb 51: 13.5 ft      Width Out to Out 52: 20.3 ft  
 Approach Roadway Width 32: 19.0 ft      Median 33: 0 No median (w/ shoulders)  
 Deck Area: 3,386. sq. ft  
 Skew 34: 0.00 °      Structure Flared 35: 0 No flare  
 Minimum Vertical Clearance Over Bridge 53: 320.1 ft  
 Minimum Vertical Underclearance Reference 54A: N Feature not hwy or RR  
 Minimum Vertical Underclearance 54B: 0.0 ft  
 Minimum Lateral Underclearance Reference R 55A: N Feature not hwy or RR  
 Minimum Lateral Underclearance R 55: 327.8 ft  
 Minimum Lateral Underclearance L 56: 0.0 ft

### 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: 175  
 Year of Cost Estimate 97: 2000      Year of Future ADT 115: 2019

### NAVIGATION DATA

Navigation Control 38: 0 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:

### 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
UNIT0	58/3	Other Sidewalk	sq.ft	560	100 %	560	0 %	0	0 %	0	0 %	0	0 %	0
UNIT0	145/3	Other Arch	(LF)	108	59 %	64	37 %	40	4 %	4	0 %	0	0 %	0
UNIT0	217/3	Other Mtl Abutment	(LF)	82	85 %	70	15 %	12	0 %	0	0 %	0	0 %	0
UNIT0	301/3	Pourable Joint Seal	(LF)	39	31 %	12	0 %	0	69 %	27	0 %	0	0 %	0
UNIT0	333/3	Other Bridge Railing	(LF)	332	94 %	312	6 %	20	0 %	0	0 %	0	0 %	0



# BRIDGE SAFETY INSPECTION

STATE PROJECT NO. 170-2729

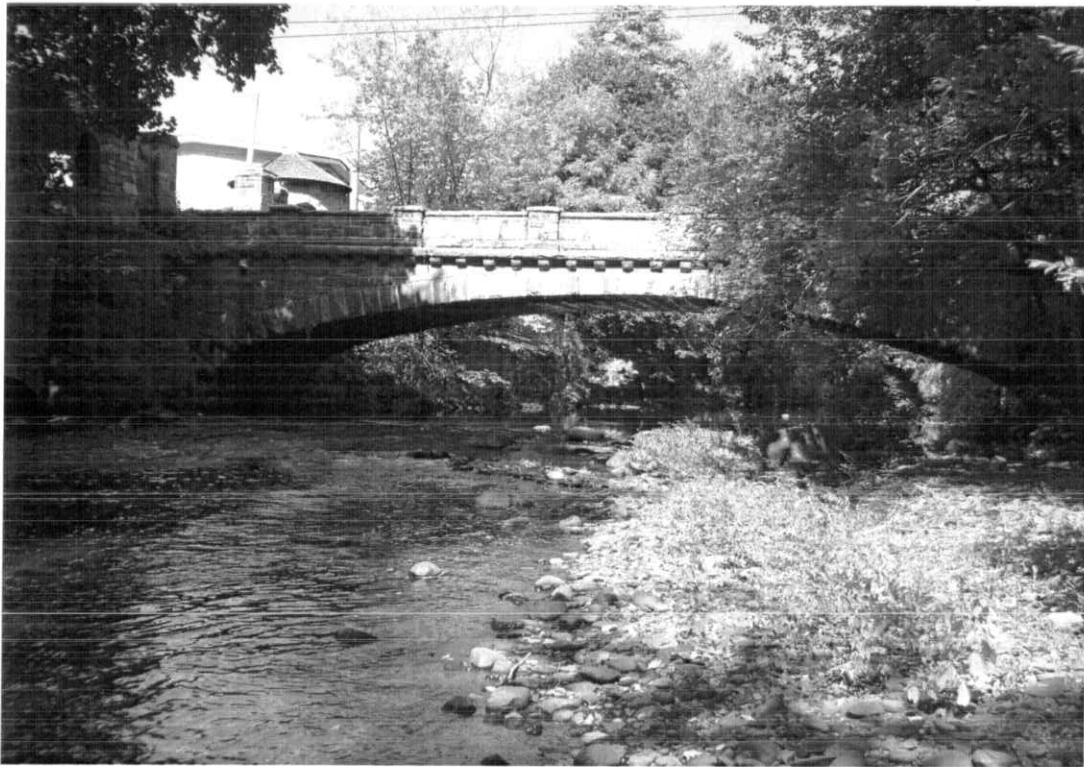


**BRIDGE NO. 04746**

SUNNYSIDE STREET OVER YANTIC RIVER  
NORWICH, CONNECTICUT

SEPTEMBER 24, 2008

(LAST DAY OF INSPECTION APRIL 7, 2009)

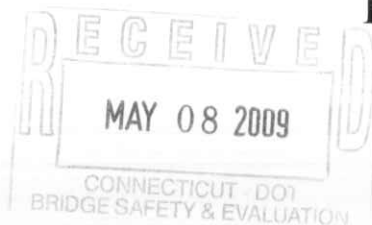


## IN-DEPTH INSPECTION

Prepared by:

**Baker**

500 Enterprise Drive, Suite 2B  
Rocky Hill, CT 06067



Structure No. 04746 Town Norwich

Inspectors Michael Baker Engineering, Inc. (MJO/TK)/McLaren (DK, JD, SM) Date 09/24/2008

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Plan Sheets 1987 Rehab, LPAI Proj. 86101.01	Check here if already on file: <input checked="" type="checkbox"/>

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### Executive Summary

Bridge No. 04746 carries Sunnyside Street over the Yantic River in Norwich. The bridge is a two span stone masonry arch that was built in 1908. It has an overall length of 166 feet and a curb-to-curb measurement 13.4 feet. There is no load rating information for this bridge on file at ConnDOT, but the bridge has a "Judgment Rating" of 34 tons. Consideration should be given to performing a load rating analysis of this structure. The bridge was found to be in satisfactory condition during an in-depth inspection completed in April, 2009.

The bituminous overlay has cracking up to 3/4" wide, transverse sawcuts up to 2" wide without sealant, and the overlay near the north curb ramps up 3" over a width of 8". The south curb has random corner spalls at the edges of granite stones. Stone masonry parapets have cracks up to 3/16" wide in the mortar joints, one capstone is shifted 1", and there are areas of missing mortar up to 4.5" deep, worst in span 1. The parapets are tilted outward approximately 1.25" over a height of 1.5' and the north parapet in span 2 is bowed outward 2" – 3" over a length of 20'. The stone masonry guard turrets at the west approach have isolated missing roof sheathing, random deteriorated wood roof shakes, and large sloppy mortar repairs.

The superstructure was found to be in satisfactory condition. The intrados of both spans have heavy efflorescence leakage and areas of water leakage, worst at the ends of the spans. Random mortar joints are cracked up to 1/8" wide and there are random areas of missing mortar up to 2" deep, including at the span 2 crown. The spandrels have isolated cracked stones, random cracked mortar joints up to 1/8" wide, and random areas of missing mortar up to 4" deep. The mortar joints between the spandrels and the arch rings are deteriorated up to 4" deep in span 1 and cracked up to 1/8" wide in span 2 with random hollow and deteriorated mortar up to 2" deep.

The substructure was found to be in satisfactory condition. Abutments have heavy efflorescence leakage and areas of water leakage through the mortar joints. A void/undermined area was noted at the base of the west abutment up to 8' long x 0.5' high x 0.5' deep per McLaren inspection. Previously exposed footing at the east end of span 1 was covered with channel material this inspection. Stone masonry wingwall mortar joints have random cracks up to 1/8" wide, random deteriorated mortar up to 5" deep, and random vegetation/vine growth. The northeast wingwall has stones that are settled and laterally displaced up to 4.5", creating voids up to 2" wide x 15" deep. The southeast wingwall has a 1' x 6" x 7" deep void. Retaining wall at the north elevation is tipping outward, approximately 1.5" over a height of 2.5'.

The channel was found to be in fair condition. The channel is in span 1 only. Channel bed is comprised mainly of large stones and random areas of silt/muck at areas of deeper water. There is scour along the west abutment, where water depths are up to 3.3' (average water depth is 1.6' below the bridge) and a void/undermining is noted at the base of the abutment up to 8' long x 0.5' high x 0.5' deep per McLaren underwater inspection. There is a scour pocket below the bridge at the northeast corner of span 1 where water depths are up to 4.1' deep (typically ±1.5' elsewhere), but the scour pocket does not extend fully to the east abutment.

The approaches were found to be in fair condition. The southwest approach has random uneven patches, heavy map cracking, and areas of potholes/breaking up bituminous, up to 5' x 3' x

2" deep (this area is used for parking). The east approach pavement has heavy map cracking up to 5/8" wide, random areas of up to 1.5" settlement in the shoulders, and isolated potholes/breaking up bituminous up to 8" x 9" x 1" deep. There is minor erosion at the northeast approach. There is no approach guide rail; none is installed at the west approach due to guard turrets.

Repair recommendations are as follows:

Deck:

1. Seal the cracks and the sawcuts in the overlay ( $\pm 600$  linear feet).
2. Repair corner spalls in the granite curbs ( $< 1/4$  cubic yard).
3. Repair deteriorated mortar joints along the parapets ( $\pm 250$  linear feet).
4. Continue to monitor the tipping of the parapets.
5. Repair deteriorated roof shakes (as required) and missing section of roof sheathing ( $\pm 2$  square feet) at the guard turrets. ✓

Superstructure:

1. Repair the areas of mortar loss along the intrados and spandrels ( $\pm 150$  linear feet).
2. Consider removing heavy efflorescence from the ends of the spans to inspect mortar at the intrados.

Substructure:

1. Repair deteriorated mortar joints ( $\pm 50$  linear feet).
2. Fill in undermined area along the west abutment with suitable material ( $< 1/4$  cubic yard). ✓
3. Continue to monitor tipping of the retaining wall at the north elevation.

Channel:

1. Continue to monitor channel mudline elevations.

Approaches:

1. Repair deteriorated bituminous at the southwest approach ( $< 1$  ton).
2. Consider installing approved guide railing at the east approaches ( $\pm 50$  linear feet).

# Connecticut Department of Transportation

## Bridge Inspection Report BRI-18

5/41

**BRIDGE #:** 04746

**INSPECTION DATE:** 9/24/2008

**INSPECTION TYPE:** Indepth      **PREVIOUS INSPECTION DATE:** 7/26/2006      **SNOOPER REQUIRED:** No

**INSPECTION PERFORMED BY:** Baker Engineering      **SNOOPER USED:** No

**TOWN:** NORWICH      **FEATURE CARRIED:** SUNNYSIDE STREET      **YEAR BUILT:** 1908

**LOCATION:** 40 FT EAST OF FRANKLIN R      **FEATURE INTERSECTED:** YANTIC RIVER      **YEAR REBUILT:** 0

**MAIN MATERIAL:** Masonry      **MAIN DESIGN:** Arch - Deck

**INSPECTION VISITS:**

**Inspection Date:** 9/24/2008      **Start Time:** 8:30 AM  
**Temperature:** 70 °F      **End Time:** 4:15 PM

**INSPECTORS:**

**Inspector:** M. Orlowsky      **Task:** Team Leader  
**Inspector:** T. Kurasz      **Task:** Asst. Team Leader

**58. DECK**      Stone arch with bituminous roadway over ballast.      **OVERALL RATING** P

**RATING**

<b>OVERLAY</b>	<b>6</b>	The bituminous overlay has random transverse, longitudinal, and map cracks up to 3/8" wide. Isolated cracks are up to 3/4" wide. The bituminous adjacent to the base of the north parapet is approximately 3" higher than the roadway surface approximately 8" away. There are random sawcuts in the overlay up to 2" wide that are filled with dirt and/or vegetation. No sealant was seen along these sawcuts. See sheets 11-12 and photos 9 - 11.
<b>DECK STR. CONDITION</b>	<b>N</b>	Stone arch with bituminous roadway over ballast.
<b>CURBS</b>	<b>6</b>	South side only: There are random spalls at the edges of the granite stones, up to 7" long x 4" wide x 5" high. Some spalled areas are filled in with bituminous. Random mortar joints are cracked or deteriorated. Average curb reveal was found to be 4.75". See sheets 11 & 12 and photo 9.
<b>MEDIAN</b>	<b>N</b>	
<b>SIDEWALKS</b>	<b>7</b>	South side only: Bituminous sidewalk has random minor uneven areas. See sheets 11-12 and photo 9.
<b>PARAPET</b>	<b>5</b>	Stone masonry parapets: Stone masonry parapets have random cracked mortar joints, up to 3/16" wide, and areas of missing mortar, up to 4.5" deep. Mortar deterioration is worst at the outside faces of the span 1 parapets, where approximately 60% of the mortar joints are deteriorated. A capstone at the south parapet in span 1 is shifted south 1". The previously reported 3/8" gap between the parapet and the pillar at the southwest corner of the bridge is open up to a maximum of 5/8". The parapets are tilted outward, up to 1.25" over 1.5'. Additionally, the north parapet at the east end in span 2 appears to be bowed/distorted outward 2" - 3" over a length of 20'. See sheets 11-12 and photo 12.  Stone benches integral with the parapets between spans 1 & 2: One bench stone has a 13" x 4" fracture. Fractured portion did not move when struck with a hammer (wedged in place). See sheets 11-12.
<b>RAILING</b>	<b>N</b>	
<b>PAINT</b>	<b>N</b>	
<b>FENCE</b>	<b>N</b>	
<b>DRAINS</b>	<b>7</b>	Span 1 only: There is minor debris in and around the scupper grates. Debris is present in the basins, but scuppers do not appear to be clogged. See sheets 11-12.
<b>LIGHTING STANDARD</b>	<b>8</b>	There is utility pole in span 1 with a light standard attached. Light exhibited no deficiencies (light was not on during the daytime inspection).
<b>UTILITIES TYPE/SIZE</b>	<b>N</b>	Stone masonry guard turrets at west approach: The north turret has a 2' x 1' missing section of roof. There are random deteriorated shakes along the roofs. There are sloppy mortar repairs at each turret, up to 5' high x 1' wide x 9" deep. There is random graffiti inside of the turrets. See sheets 11-12 and photos 5 & 13.
<b>CONSTRUCTION JOINTS</b>	<b>N</b>	
<b>EXPANSION JOINTS</b>	<b>N</b>	

# Connecticut Department of Transportation

## Bridge Inspection Report BRI-18

6/4

**BRIDGE #:** 04746

**INSPECTION DATE:** 9/24/2008

**59. SUPERSTRUCTURE** Two span stone masonry arch. **OVERALL RATING** **6**

	RATING	
BEARING DEVICES	<span style="border: 1px solid black; padding: 2px;">N</span>	<div style="border: 1px solid black; height: 15px;"></div>
STRINGERS	<span style="border: 1px solid black; padding: 2px;">6</span>	<p>Intrados:            There are areas of heavy efflorescence along the mortar joints throughout in each span. There are also areas of water leakage at random areas, mostly at the lower sections of the arch (as opposed to the crown area). Random mortar joints are cracked up to 1/16" wide. There are isolated areas of missing mortar in span 1 up to 2" deep. The transverse mortar joint along the crown in span 2 has missing cracked mortar (±1/8" wide) along the north half of this joint and deteriorated/missing mortar up to 1" deep along the south half of this joint. Random areas of previously noted missing mortar may have been hidden by heavy efflorescence accumulations. Also, there are random repairs to the mortar joints, some of which appear recent. See sheets 13-18 and photos 4, 14, &amp; 15.</p> <p>Spandrels:            Stone masonry spandrel walls have random cracks along the mortar joints, up to 1/8" wide, and random areas of missing mortar up to 4" deep. The span 1 south spandrel has an isolated cracked stone and small stone spall. The mortar joints between the arch ring and the span 1 spandrel bases are deteriorated throughout. These mortar joints have cracks, punky areas, missing mortar up to 4" deep, and areas of loose/pushing out mortar throughout. These same mortar joints in span 2 have cracks up to 1/8" wide, random light efflorescence, and random hollow and deteriorated mortar up to 2" deep. See sheets 13-18 and photos 16 &amp; 17.</p>
GIRDERS	<span style="border: 1px solid black; padding: 2px;">N</span>	<div style="border: 1px solid black; height: 15px;"></div>
FLOOR BEAMS	<span style="border: 1px solid black; padding: 2px;">N</span>	<div style="border: 1px solid black; height: 15px;"></div>
TRUSSES-GENERAL	<span style="border: 1px solid black; padding: 2px;">N</span>	<div style="border: 1px solid black; height: 15px;"></div>
TRUSSES-PORTALS	<span style="border: 1px solid black; padding: 2px;">N</span>	<div style="border: 1px solid black; height: 15px;"></div>
TRUSSES-BRACING	<span style="border: 1px solid black; padding: 2px;">N</span>	<div style="border: 1px solid black; height: 15px;"></div>
PAIN	<span style="border: 1px solid black; padding: 2px;">N</span>	<div style="border: 1px solid black; height: 15px;"></div>
RUST	<span style="border: 1px solid black; padding: 2px;">N</span>	<div style="border: 1px solid black; height: 15px;"></div>
MACHINERY MOV SPAN	<span style="border: 1px solid black; padding: 2px;">N</span>	<div style="border: 1px solid black; height: 15px;"></div>
RIVETS & BOLTS	<span style="border: 1px solid black; padding: 2px;">N</span>	<div style="border: 1px solid black; height: 15px;"></div>
WELDS & CRACKS	<span style="border: 1px solid black; padding: 2px;">N</span>	<div style="border: 1px solid black; height: 15px;"></div>
TIMBER DECAY	<span style="border: 1px solid black; padding: 2px;">N</span>	<div style="border: 1px solid black; height: 15px;"></div>
CONCRETE CRACKING	<span style="border: 1px solid black; padding: 2px;">N</span>	<div style="border: 1px solid black; height: 15px;"></div>
COLLISION DAMAGE	<span style="border: 1px solid black; padding: 2px;">8</span>	<div style="border: 1px solid black; height: 15px;"></div>
MEMBER ALIGNMENT	<span style="border: 1px solid black; padding: 2px;">8</span>	<div style="border: 1px solid black; height: 15px;"></div>
DEFLECT. UNDER LOAD	<span style="border: 1px solid black; padding: 2px;">N</span>	None.
VIBR. UNDER LOAD	<span style="border: 1px solid black; padding: 2px;">N</span>	None.
STAND PIPES	<span style="border: 1px solid black; padding: 2px;">N</span>	<div style="border: 1px solid black; height: 15px;"></div>
BARREL LADDERS	<span style="border: 1px solid black; padding: 2px;">N</span>	<div style="border: 1px solid black; height: 15px;"></div>
		ARE BARREL LADDERS OSHA COMPLIANT? <span style="border: 1px solid black; padding: 2px; margin-left: 10px;">NA</span>

**60. SUBSTRUCTURE**  **OVERALL RATING** **6**

	RATING	
ABUTMENTS-STEM	<span style="border: 1px solid black; padding: 2px;">6</span>	<p>Abutments are considered to be those areas below the spring lines at the ends of each span. Abutments have heavy efflorescence leakage and areas of water leakage through the mortar joints. A void/undermined area was noted at the base of the west abutment up to 8' long x 0.5'</p>



**Connecticut Department of Transportation**  
**Bridge Inspection Report BRI-18**

7/41

**BRIDGE #:** 04746

**INSPECTION DATE:** 9/24/2008

**60. SUBSTRUCTURE** **OVERALL RATING** 6

high x 0.5' deep per McLaren inspection. See sheets 13-18 and photos 14 & 15.

ABUTMENTS-BACKWALL N

ABUTMENTS-FOOTINGS N

A void/undermined area was noted at the west abutment, approximately 8' long x .5' high x 0.5' deep per McLaren underwater inspection. No well-defined footing was noted at this location. Previously exposed footing at the east end of span 1 was covered with channel material this inspection; footing not seen. See sheets 24,25.

ABUT.-SETTLEMENT 5

No evidence of abutment settlement was noted.

Note: For this inspection wingwalls are only considered to be those walls at the four corners of the bridge, perpendicular to the spandrels. Retaining walls perpendicular to the bridge at the east end of span 1 and/or west end of span 2 are for embankment retention, past the limits of this bridge and are not considered for this report.

Wingwall settlement:  
 North retaining wall between spans 1 & 2 is tipped outward, approximately 1.5" over a height of 2.5'. Additionally the northeast wingwall has stones that are settled and laterally displaced up to 4.5". Previous 8" settlement noted at this location actually appears to be uplift of a concrete pour on top of the wall due to tree root growth just under this concrete pour. See "Embankment Erosion" item under Item 61 for the condition of the retaining walls along the channel. See sheets 19-22 and photo 19.

ABUTMENTS-WINGWALLS 5

Stone masonry wingwall mortar joints have random cracks up to 1/8" wide, random deteriorated mortar up to 5" deep, and random vegetation/vine growth. The northwest wingwall has one missing cap stone. The southwest wingwall has a stone arch for a raceway/stream. The northeast wingwall has two cracked stones, one up to 1/4" wide. In addition, the northeast wingwall has stones that are settled and laterally displaced up to 4.5", creating voids up to 2" wide x 15" deep. The southeast wingwall has one stone that is pushed out 1/2", an area of mortar pushing out, and a 1' x 6" x 7" deep void. See sheets 19-22 and photos 19-21.

Retaining walls between spans 1 & 2 at bridge fascias, below the parapets:  
 Wall at the north elevation is tipping outward, approximately 1.5" over a height of 2.5'. There are two full height x 1/8" wide cracks along the mortar and isolated missing mortar up to 6" long x 3" deep. The wall at the south elevation was almost completely covered and/or inaccessible due to heavy vegetation at the time of inspection. Accessible areas of this wall have random cracked and deteriorated mortar. See sheets 19-22 and photo 22.

Architectural treatments at the corners of span 1:  
 There are areas of missing mortar up to 6" deep and water leakage. The treatment at the northeast corner of span 1 has up to 50% deteriorated, mortar and one stone is loose due to deteriorated mortar. See sheets 19-22 and photo 18.

PIERS/BENTS-CAPS N

PIERS/BENTS-PILE BENT N

PIERS/BENTS-COLUMN N

PIERS/BENTS-FOOTINGS N

PIERS/BENTS-SETTLEMENT N

EROSION-SCOUR 5

There is scour along the west abutment, where water depths are up to 3.3' (average water depth is 1.6' below the bridge) and a void/undermining is noted at the base of the abutment up to 8' long x 0.5' high x 0.5' deep per McLaren underwater inspection. There is a scour pocket below the bridge at the northeast corner of span 1 where water depths are up to 4.1' deep (typically ±1.5' elsewhere), but the scour pocket does not extend fully to the east abutment. Minor erosion is noted along the east abutment embankments in span 2.

CONCRETE CRACK-SPALL N

STEEL CORROSION N

PAINT N

TIMBER DECAY N

**Connecticut Department of Transportation**  
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8/41

**BRIDGE #:** 04746

**INSPECTION DATE:** 9/24/2008

**60. SUBSTRUCTURE**  **OVERALL RATING** 6

**COLLISION DAMAGE** 8

**DEBRIS** N

**61. CHANNEL & CHANNEL PROTECTIO**  **OVERALL RATING** 5

**RATING**

**CHANNEL SCOUR** 5 The channel is in span 1 only. Channel bed is comprised mainly of large stones and random areas of silt/muck at areas of deeper water. There is scour along the west abutment, where water depths are up to 3.3' (average water depth is 1.6' below the bridge) and a void/undermining is noted at the base of the abutment up to 8' long x 0.5' high x 0.5' deep per McLaren underwater inspection. There is a scour pocket below the bridge at the northeast corner of span 1 where water depths are up to 4.1' deep (typically ±1.5' elsewhere), but the scour pocket does not extend fully to the east abutment.

Just downstream of the bridge, there is a large area of aggradation that forces flow to the west half of the channel. Within this area, there is a 15' x 6' x 1' deep scour area.

See sheets 23-25 and photos 23-25. ✓

**EMBANKMENT EROSION** 6 Stone retaining walls along the channels have shifted stones, voids, and up to 6" bulging. There are random trees growing in these walls. There are areas of light to moderate erosion along areas with dirt channel banks. There are trees with exposed roots at the southeast channel embankment. See sheet 24 and photo 21.

**DEBRIS** 6 There is a large roll of fencing below the northwest corner of span 1. There is random minor flood debris along the embankments and random debris in the channel.

**VEGETATION** 7 Moderate to heavy brush growth along the channel embankments and tops of the retaining walls.

**CHANNEL CHANGE** 6 See "Channel Scour" item above.

**FENDER SYSTEM** N

**SPUR DIKES & JETTIES** N

**RIP RAP** N There are large boulders at the southeast embankment, but not organized rip-rap.

**62. CULVERTS & RETAINING WALL**  **OVERALL RATING** N

**APPROACH CONDITION**  **OVERALL RATING** 5

**RATING**

**APPROACH SLAB** N

**RELIEF JOINTS** N

**APPROACH GUIDE RAIL** N None.

**APPROACH PAVEMENT** 5 West approach: Bituminous approach pavement has random cracks up to 1/2" wide. The south shoulder has random uneven patches, heavy map cracking, and areas of potholes/breaking up bituminous up to 5' x 3' x 2" deep (this area used for parking). See sheets 11-12 and photo 27.

East approach: The east approach pavement has heavy map cracking up to 5/8" wide, random areas of up to 1.5" settlement in the shoulders, and isolated potholes/breaking up bituminous up to 8" x 9" x 1" deep. There are also random patches. See sheets 11-12 and photo 26.

**APPROACH EMBANKMENT** 7 There is an area of erosion up to 4' x 3' x 5" deep at the northeast approach.

**TRAFFIC SAFETY FEATURES:**

**BRIDGE RAILINGS** 1

**TRANSITIONS** 0

**APPROACH GUARDRAILS** 0

**Connecticut Department of Transportation**  
**Bridge Inspection Report BRI-18**

9/41

**BRIDGE #:** 04746

**INSPECTION DATE:** 9/24/2008

**APPROACH CONDITION**  **OVERALL RATING** 5

**APPR. GUARDRAIL ENDS** 0

**LOAD POSTING**

SINGLE UNIT (TONS)

HS (TONS)

4 AXLE (TONS)

3S2 (TONS)

ADVANCE WARNING Y/N

LEGIBILITY

VISIBILITY/LOCATION

**MISC.**

MIN VERT. UNDERCLR.  '  "

POSTED CLR. UNDER BRIDGE  '  "

POSTED CLR. ON BRIDGE  '  "

ADVANCE WARNING (Y/N)  No

SPEED LIMIT (IF ANY)  MPH

CHARACTER OF TRAFFIC Light volume, mostly passenger cars.

**ADDITIONAL NOTES**

- No bridge ID.  
 - Bridge is logged from west to east.  
 - This bridge is considered to have two sets of abutments (no pier).  
 - Bridge inspected with ladders, including 10' step ladder.  
 - Chest waders required.  
 - Underwater inspection performed this inspection along the west abutment due to water depth and voids/undermining at this location.

MAY 08 2009

**ADDITIONAL COMMENTS:**

Inspectors' Signatures: 1) Date: 5/17/09

2) Date: 05/07/09

3) \_\_\_\_\_ Date: \_\_/\_\_/\_\_

4) \_\_\_\_\_ Date: \_\_/\_\_/\_\_

P.E. Signature: Paul McDunniss Date: 5/17/09

P.E.#: 17040

Reviewed by: Andia A. Sumas CDOT Date: 5/12/09

Divers needed to inspect 1 suspect area - hence the late end date.  
 Bad

# SUPPLEMENTAL SHEET

BRIDGE NO. 4746

DATE: SEE BELOW

FIELD ORIGINAL

TRANSCRIBED BY: \_\_\_\_\_

CREW: SEE BELOW

SHEET 10/41

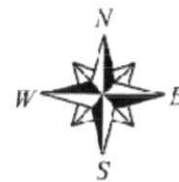
## DESCRIPTION: TIME LOG

DATE:	<u>9/24/08</u>	DESCRIPTION:	TIME AT SITE:
WEATHER:	<u>Supply Co's + 70's</u>	CREW:	<u>9:30</u> TO <u>4:15</u>
EQUIP. LIST:	_____	SNOOPER:	_____ TO _____
	_____	LIFT:	_____ TO _____
	_____	CRASH TRUCK:	_____ TO _____
ARROW HRS.	_____ TO _____	TROOPER:	_____ TO _____
VISITORS:	_____	_____:	_____ TO _____
TC & NOTES:	<u>INSP COMPLETE with ladders</u>		

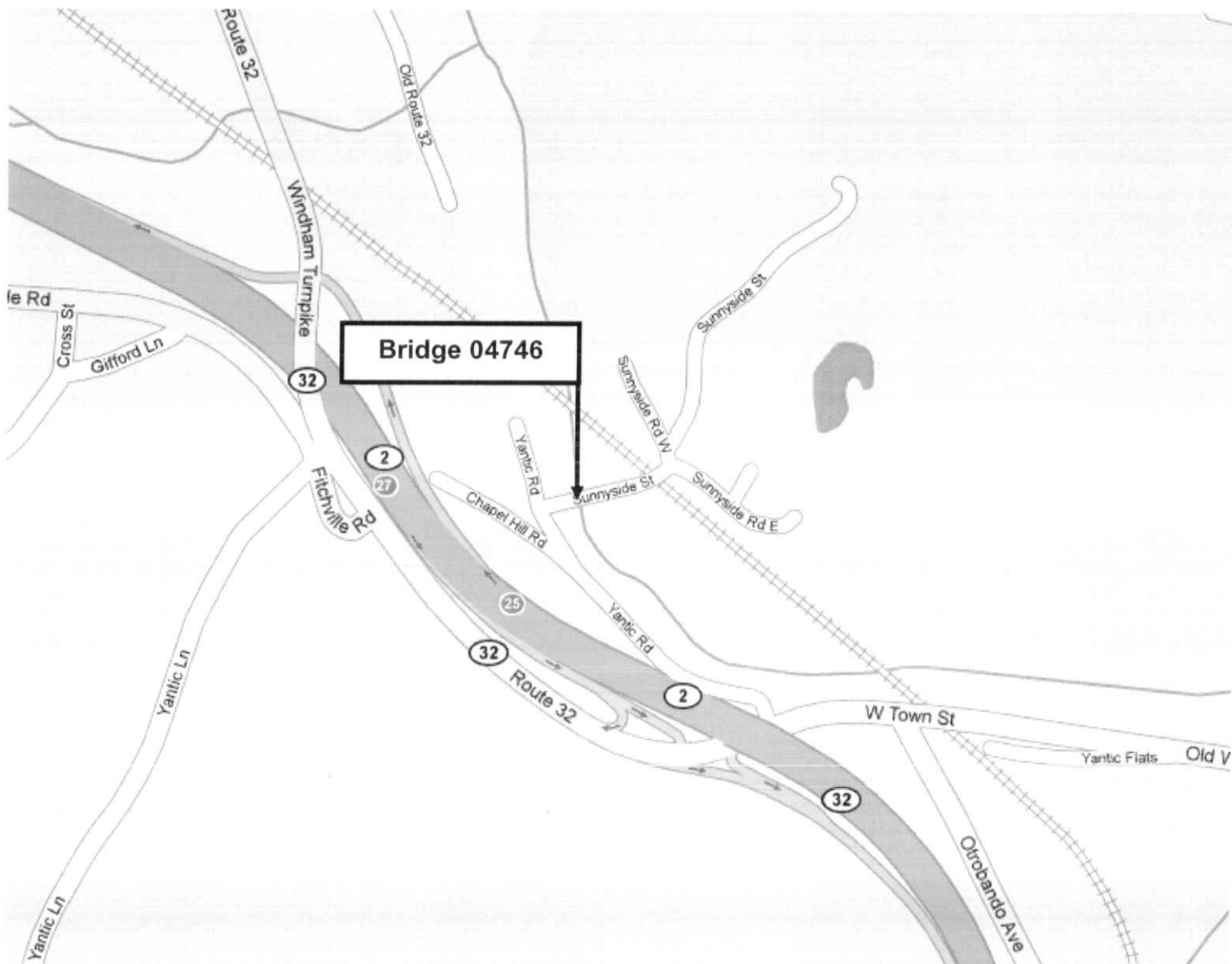
DATE:	_____	DESCRIPTION:	TIME AT SITE:
WEATHER:	_____	CREW:	_____ TO _____
EQUIP. LIST:	_____	SNOOPER:	_____ TO _____
	_____	LIFT:	_____ TO _____
	_____	CRASH TRUCK:	_____ TO _____
ARROW HRS.	_____ TO _____	TROOPER:	_____ TO _____
VISITORS:	_____	_____:	_____ TO _____
TC & NOTES:	_____		

DATE:	_____	DESCRIPTION:	TIME AT SITE:
WEATHER:	_____	CREW:	_____ TO _____
EQUIP. LIST:	_____	SNOOPER:	_____ TO _____
	_____	LIFT:	_____ TO _____
	_____	CRASH TRUCK:	_____ TO _____
ARROW HRS.	_____ TO _____	TROOPER:	_____ TO _____
VISITORS:	_____	_____:	_____ TO _____
TC & NOTES:	_____		

DATE:	_____	DESCRIPTION:	TIME AT SITE:
WEATHER:	_____	CREW:	_____ TO _____
EQUIP. LIST:	_____	SNOOPER:	_____ TO _____
	_____	LIFT:	_____ TO _____
	_____	CRASH TRUCK:	_____ TO _____
ARROW HRS.	_____ TO _____	TROOPER:	_____ TO _____
VISITORS:	_____	_____:	_____ TO _____
TC & NOTES:	_____		



DESCRIPTION: SUNNYSIDE STREET OVER YANTIC RIVER  
RIVER  
LOCATION MAP



# SUPPLEMENTAL SHEET

FIELD ORIGINAL       TRANSCRIBED BY: \_\_\_\_\_

JOB NO. 170-<sup>2729</sup>~~1965~~

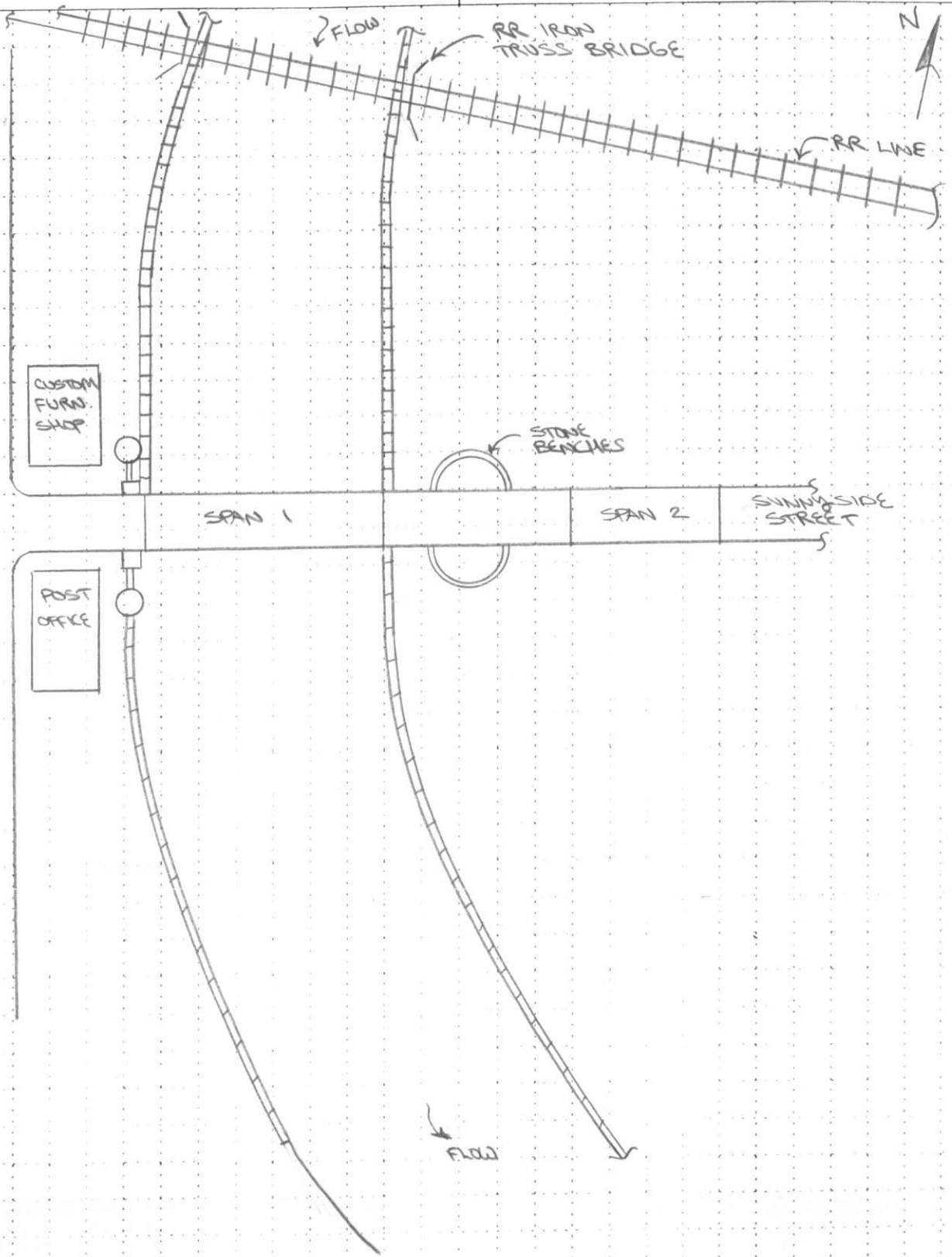
BRIDGE NO. 04746

DATE: 9/24/08

SHEET 10 OF 41

DESCRIPTION: Key Plan - 11 x 17

CREW: MJO, TK





# SUPPLEMENTAL SHEET

BRIDGE NO. 04746

DATE: 9/24/08

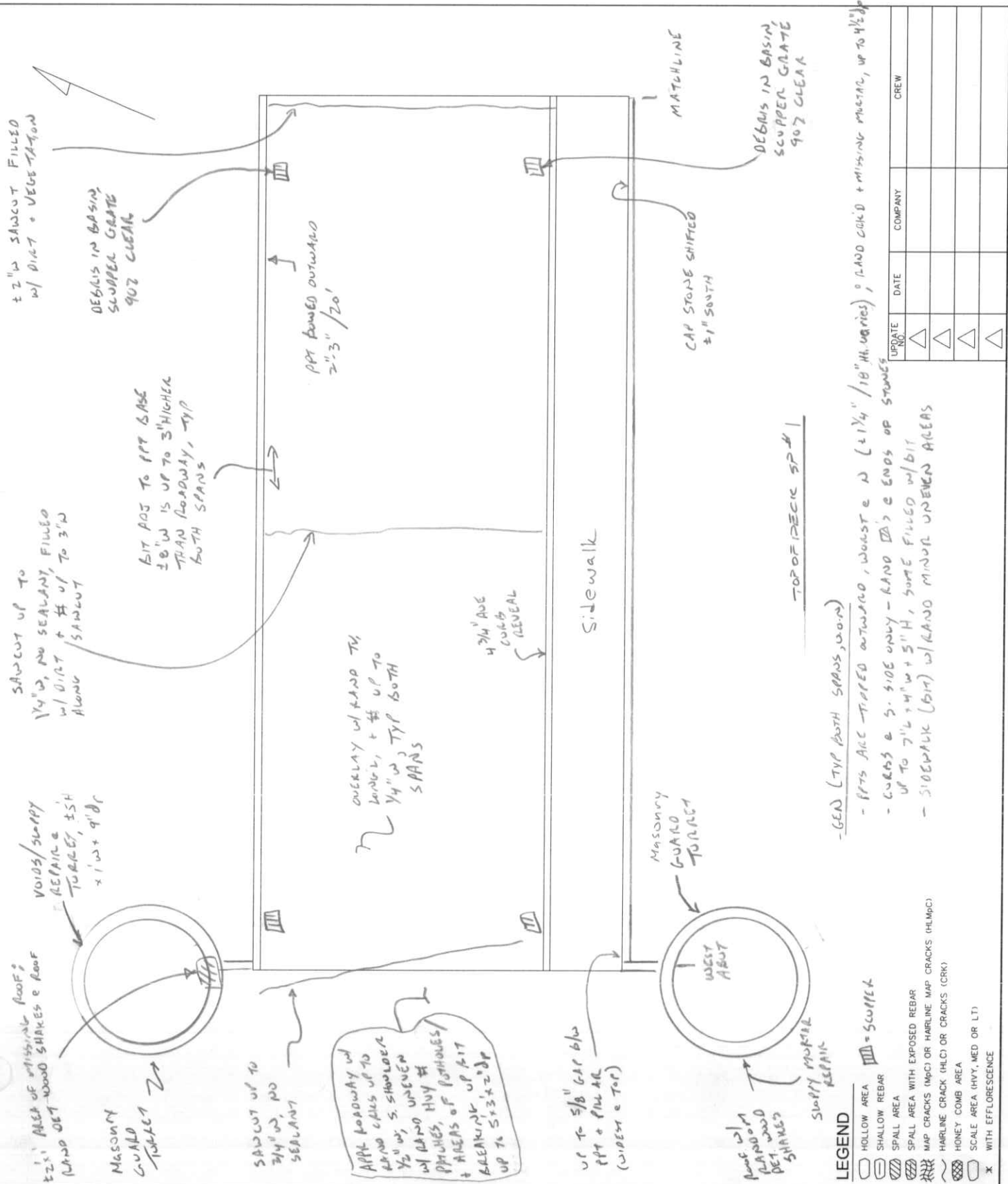
FIELD ORIGINAL

TRANSCRIBED BY: \_\_\_\_\_

CREW: ADP, TK

SHEET 11/41

DESCRIPTION: Top of Deck



UPDATE NO.	DATE	COMPANY	CREW
△			
△			
△			
△			

- GEN (TYP BOTH SPANS, W.O.M.)  
 - PPT'S ARE ARMED OUTWARD, WEST & N (1 1/4" / 18" H. UNIFORM), HAND CURED + MISSING REPAIR, UP TO 1/2"  
 - CURBS & S. SIDE ONLY - HAND DET'S & ENDS OF STONES UP TO 7/8" x 1/4" x 5" H, SOME FILLED W/ BIT  
 - SIDEWALK (BIT) W/ HAND MINOR UNEVEN AREAS

- LEGEND**
- HOLLOW AREA
  - SHALLOW REBAR
  - ▨ SPALL AREA
  - ▩ SPALL AREA WITH EXPOSED REBAR
  - ▧ MAP CRACKS (MPC) OR HARLINE MAP CRACKS (HLMPC)
  - ▦ HARLINE CRACK (HLC) OR CRACKS (CRK)
  - ▨ HONEY COMB AREA
  - SCALE AREA (HY, MED OR LT)
  - ✕ WITH EFFLORESCENCE

# SUPPLEMENTAL SHEET

BRIDGE NO. 4746

DATE: 9/24/08

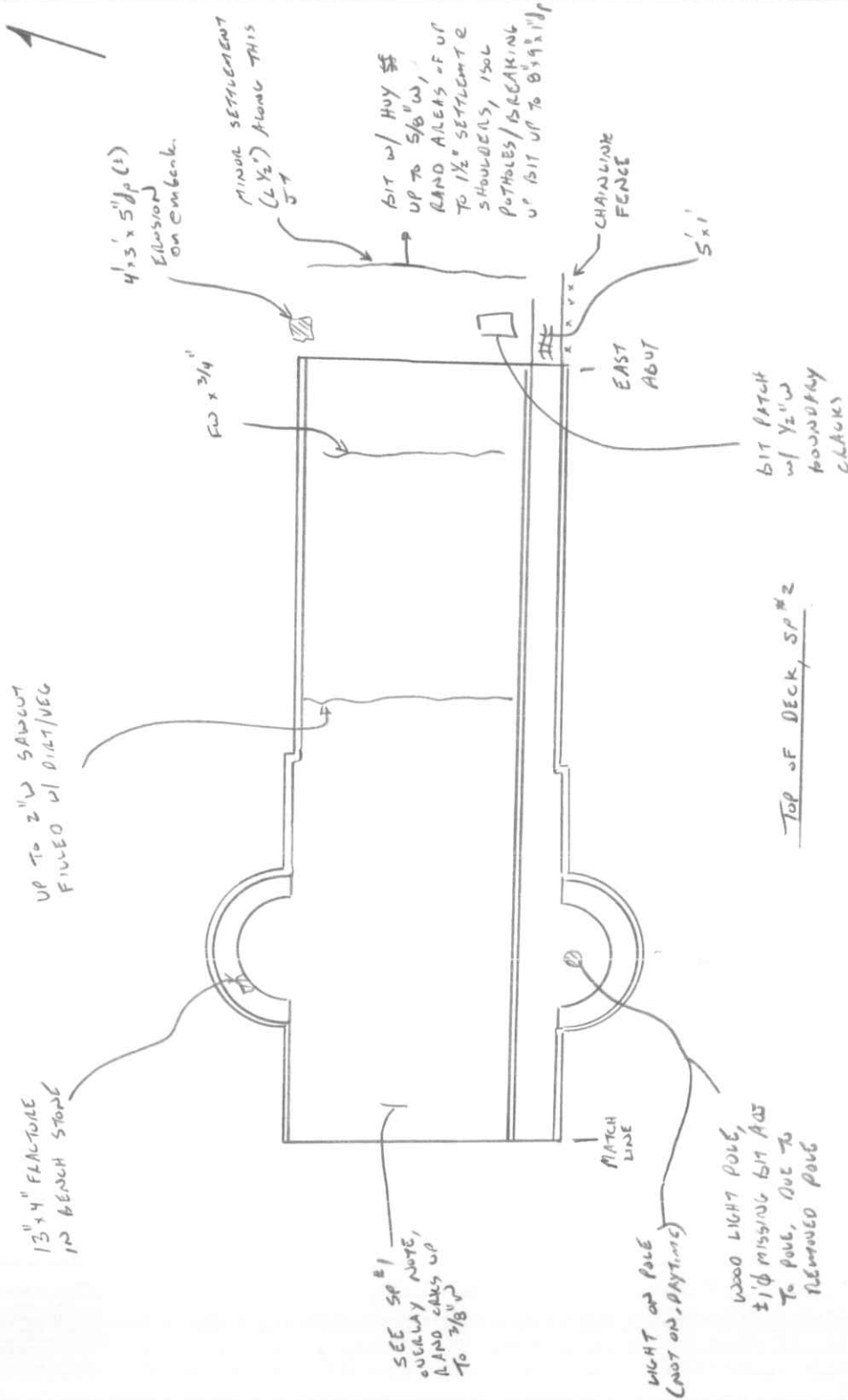
FIELD ORIGINAL

TRANSCRIBED BY: \_\_\_\_\_

CREW: MJD, TR

SHEET 12 OF 41

## DESCRIPTION:



BIT PATCH w/ 1/2\"/>

TOP OF DECK, SP#2

GENERAL NOTES  
- SEE SPAN #1

### LEGEND

- HOLLOW AREA
- SHALLOW REBAR
- SPALL AREA
- SPALL AREA WITH EXPOSED REBAR
- MAP CRACKS (MPC) OR HAIRLINE MAP CRACKS (HLMC)
- HAIRLINE CRACK (HLC) OR CRACKS (CR)
- HONEY COMB AREA
- SCALE AREA (HWY, MED OR LT)

UPDATE NO.	DATE	COMPANY	CREW
△			
△			
△			
△			

# SUPPLEMENTAL SHEET

BRIDGE NO. 04746

DATE: 9/24/08

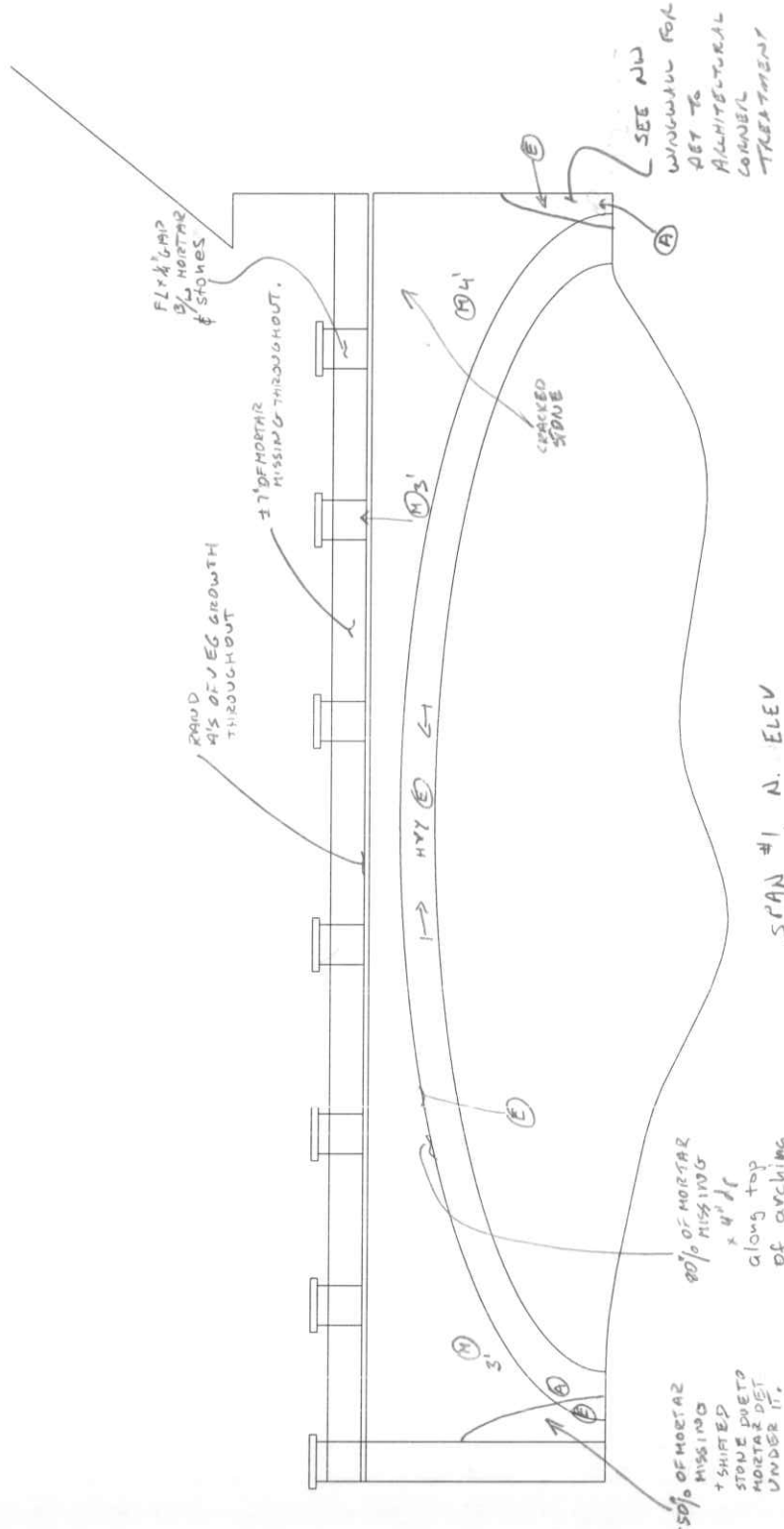
FIELD ORIGINAL

TRANSCRIBED BY: \_\_\_\_\_

CREW: TK, MJO

SHEET 13/41

DESCRIPTION: Substructure



SPAN #1, N. ELEV

SEE NW WINDOW FOR DET TO ARCHITECTURAL CONSULT TREATMENT

GEN. NOTE  
-RANDOM M/S OF DET MORTAR w/ GAPS B/W MORTAR & STONES & VEG. GROWTH @ JTS.

- LEGEND**
- HOLLOW AREA
  - SHALLOW REBAR
  - SPALL AREA
  - SPALL AREA WITH EXPOSED REBAR
  - MAP CRACKS (MPC) OR HARLINE MAP CRACKS (HLMPC)
  - HAIRLINE CRACK (HLC) OR CRACKS (CRK)
  - HONEY COMB AREA
  - SCALE AREA (HYV, MED OR LT)
  - X WITH EFFLORESCENCE

UPDATE	DATE	COMPANY	CREW
△			
△			
△			
△			

# SUPPLEMENTAL SHEET

BRIDGE NO. 04746

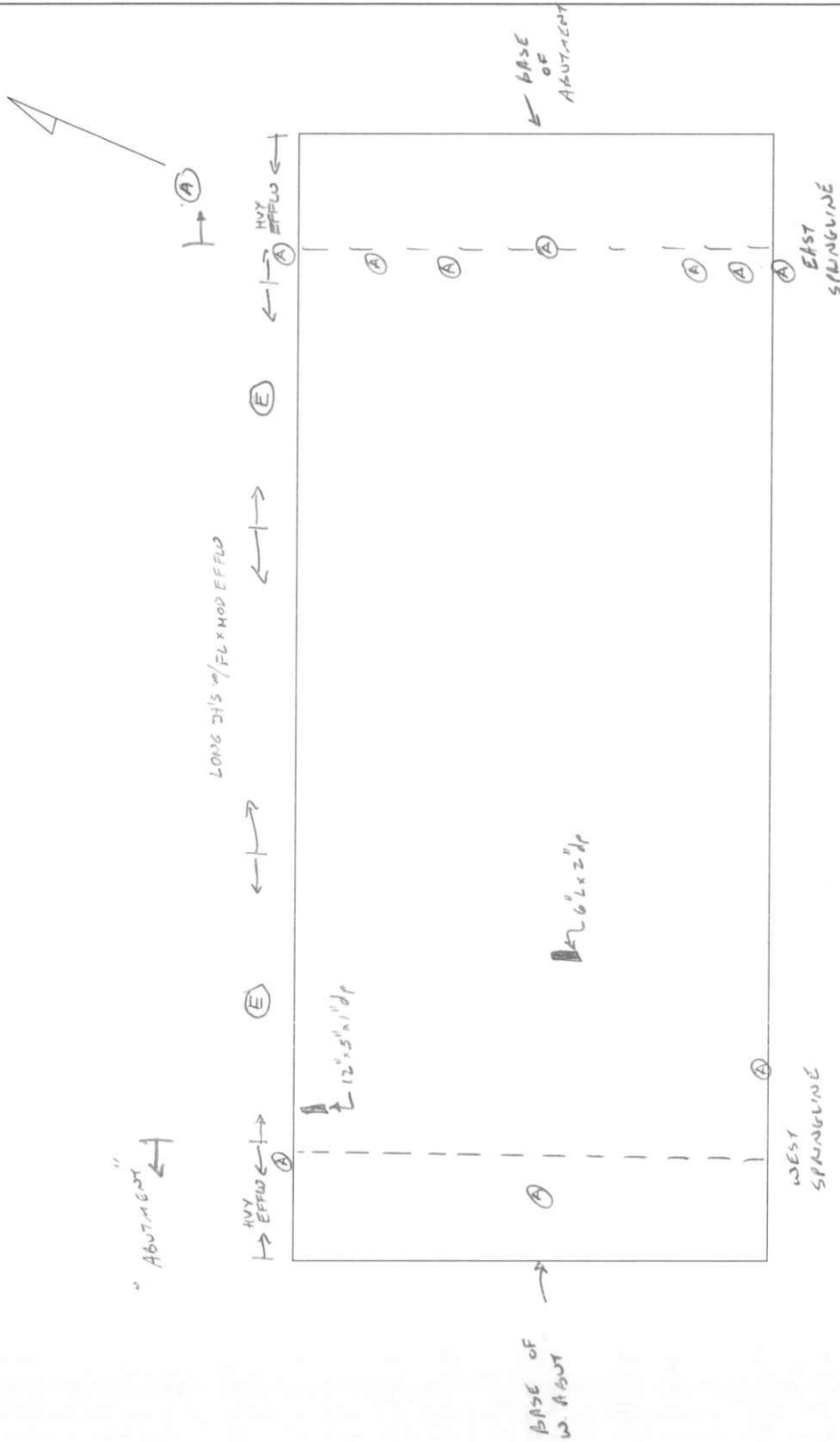
DATE: 9/24/08

FIELD ORIGINAL       TRANSCRIBED BY: \_\_\_\_\_

CREW: *Tr. MJO*

SHEET 14/41

DESCRIPTION: Underside of Deck



SPAN #1, UNDERSIDE

(A) - ACTIVE LEAKAGE  
 (E) - RAND #1'S W/MOD EFFLO & COND & TV. DTS

UPDATE	DATE	COMPANY	CREW
△			
△			
△			
△			

- LEGEND**
- HOLLOW AREA
  - SHALLOW REBAR
  - ▨ SPALL AREA
  - ▩ SPALL AREA WITH EXPOSED REBAR
  - ▧ MAP CRACKS (MPC) OR HAIRLINE MAP CRACKS (HLMpC)
  - ▦ HAIRLINE CRACK (HLC) OR CRACKS (CRK)
  - ⊞ HONEY COMB AREA
  - ⊞ SCALE AREA (HVY, MED OR LT)
  - x WITH EFFLORESCENCE
  - MISSILE PENETRAL

# SUPPLEMENTAL SHEET

BRIDGE NO. 4746

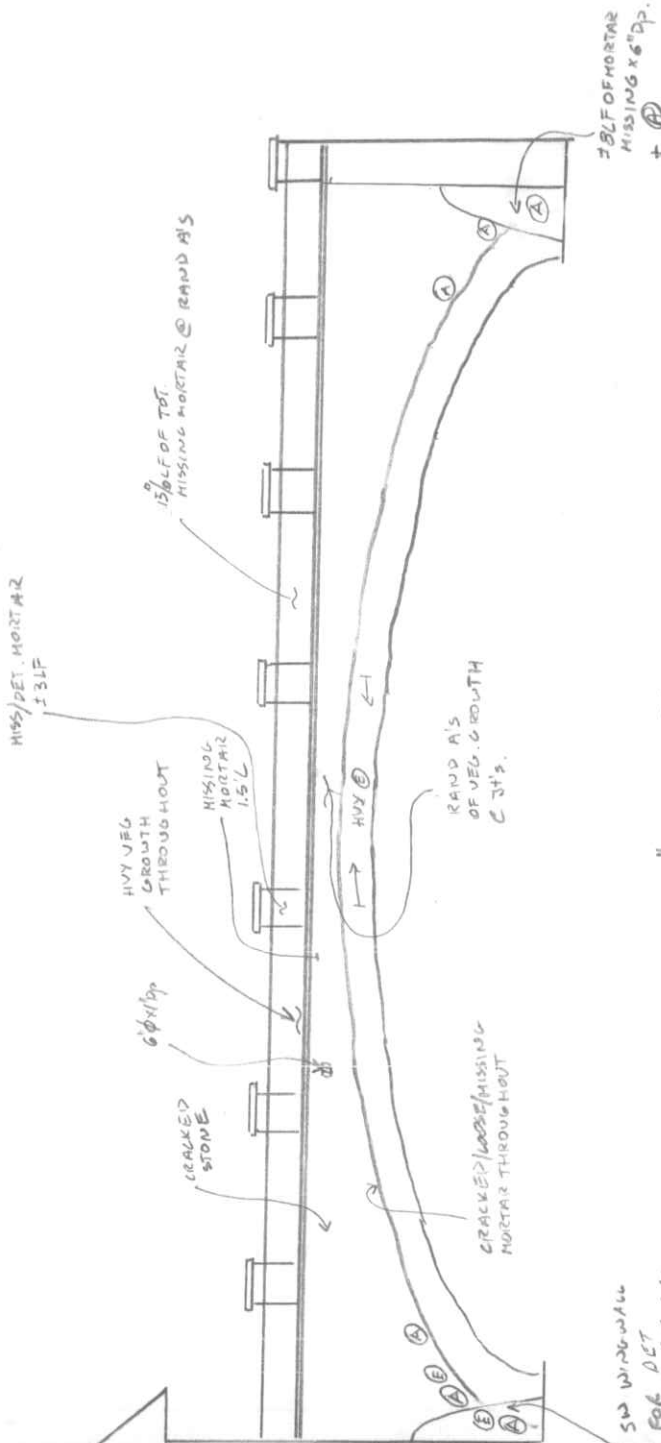
DATE: 9/24/08

FIELD ORIGINAL     TRANSCRIBED BY: \_\_\_\_\_

CREW: TK, MT

SHEET 15 OF 41

## DESCRIPTION:



SPAN # 1, S. ELEV

SEE SW WINDWALL SHY FOR DET TO ARCHITECTURAL CONSULT TREATMENT

CON. AREAS OF MISSING MORTAR TYP ≤ 4" dp

(A) - ACTIVE LEAKAGE  
(E) - EFFLO

### LEGEND

- HOLLOW AREA
- SHALLOW REBAR
- SPALL AREA
- SPALL AREA WITH EXPOSED REBAR
- MAP CRACKS (MPC) OR HARLINE MAP CRACKS (HLMPC)
- HARLINE CRACK (HLC) OR CRACKS (CRK)
- HONEY COMB AREA
- SCALE AREA (WVY, MED OR LT)

UPDTE	DATE	COMPANY	CREW
△			
△			
△			
△			

# SUPPLEMENTAL SHEET

BRIDGE NO. 04746

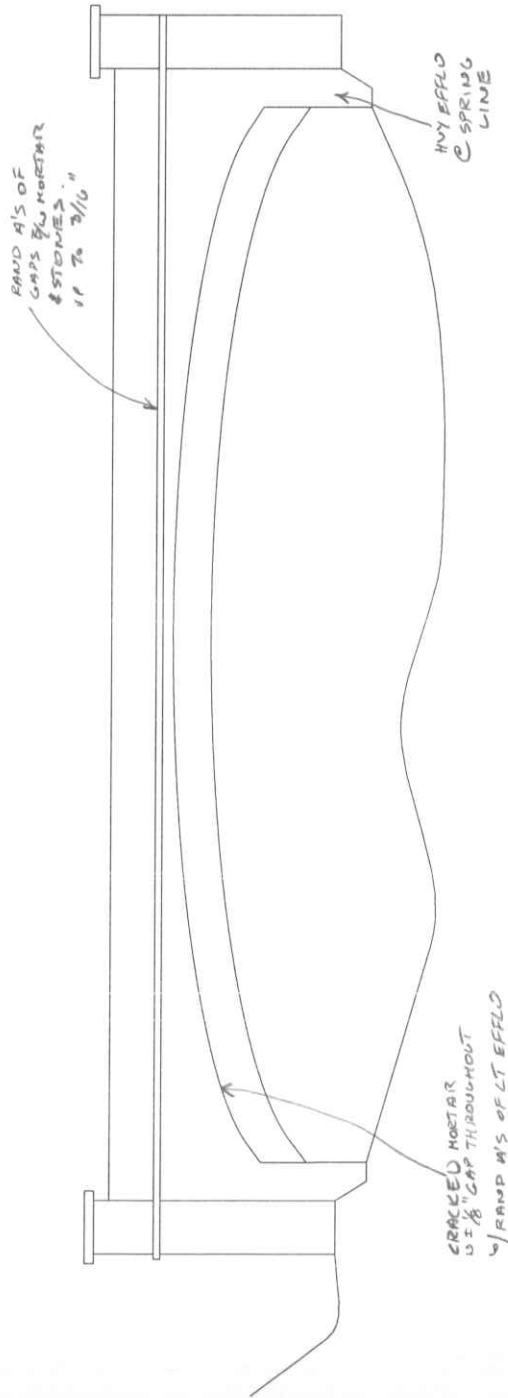
DATE: 9/24/08

FIELD ORIGINAL       TRANSCRIBED BY: \_\_\_\_\_

CREW: MJO/TK

SHEET 16/41

DESCRIPTION: Substructure



SPAN #2, N. ELEV

GEN. NOTES

- RAND LT-VEGETATION GROWTH BY STONES.
- RAND A'S OF LT EFFLO & RING STONES AT JOINTS.

**LEGEND**

- HOLLOW AREA
- SHALLOW REBAR
- SPALL AREA
- SPALL AREA WITH EXPOSED REBAR
- MAP CRACKS (MPC) OR HAIRLINE MAP CRACKS (HLMPC)
- HAIRLINE CRACK (HLC) OR CRACKS (CRK)
- HONEY COMB AREA
- SCALE AREA (Hvy, Med or Lt)
- X WITH EFFLORESCE

UPDATE NO.	DATE	COMPANY	CREW
△			
△			
△			
△			



# SUPPLEMENTAL SHEET

FIELD ORIGINAL

TRANSCRIBED BY: \_\_\_\_\_

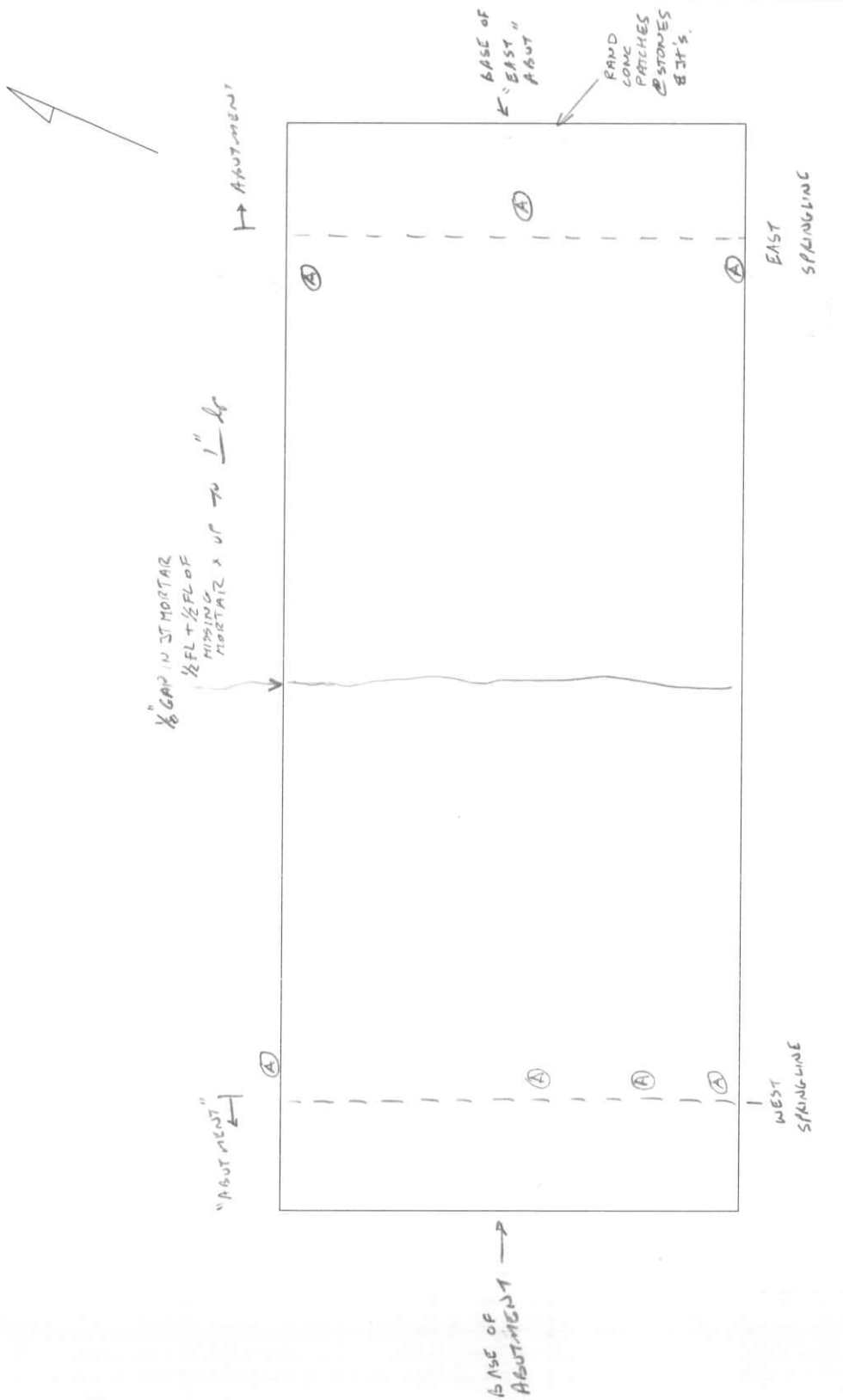
BRIDGE NO. 04746

DATE: 9/24/08

CREW: TK/M70

SHEET 17/41

DESCRIPTION: Underside of Deck



Ⓐ - ACTIVE LEAKAGE

SPAN # 2 UNDERSIDE

**GEN. NOTES**  
 - NO EFFLO @ JOINTS  
 - HVY EFFLOE spring lines & BASES

- LEGEND**
- HOLLOW AREA
  - SHALLOW REBAR
  - ▨ SPALL AREA
  - ▩ SPALL AREA WITH EXPOSED REBAR
  - ▧ MAP CRACKS (MPC) OR HARLINE MAP CRACKS (HLMPC)
  - ▦ HAIRLINE CRACK (HLC) OR CRACKS (CRK)
  - ▨ HONEY COMB AREA
  - SCALE AREA (HVY, MED OR LT)
  - x WITH EFFLORESCENCE

UPDATE NO.	DATE	COMPANY	CREW
△			
△			
△			
△			

# SUPPLEMENTAL SHEET

FIELD ORIGINAL     TRANSCRIBED BY: \_\_\_\_\_

BRIDGE NO. 4746

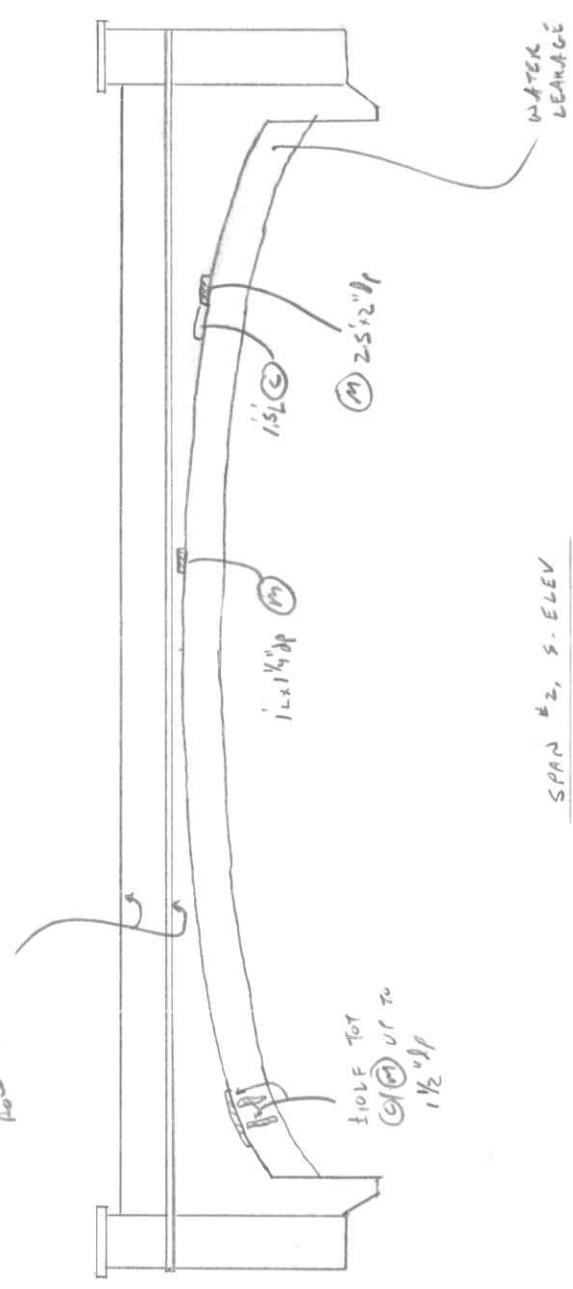
DATE: 9/24/08

CREW: MJD, TK

SHEET 18 OF 41

## DESCRIPTION:

LAND CRACK MORTAR BELOW THIS  
FLOW OF STONES, 7/16" x 1/8" W.



SPAN # 2, S. ELEV

LEGEND  
 (M) = MISSING MORTAR  
 (C) = CRACK Hollow MORTAR

GEN  
 • LAND AREAS OF EFFLORESCENCE ALONG RING STONE UT JTS  
 • LAND HICKS & MORTAR JOINTS  
 • LAND VINE GROWTH

### LEGEND

- ( ) HOLLOW AREA
- ( ) SHALLOW REBAR
- ( ) SPALL AREA
- ( ) SPALL AREA WITH EXPOSED REBAR
- ( ) MAP CRACKS (MPC) OR HARBINE MAP CRACKS (H.MPC)
- ( ) HARBINE CRACK (H.C) OR CRACKS (CR)
- ( ) HONEY COMB AREA
- ( ) SCALE AREA (HVT, MED OR LT)

UPDATE NO.	DATE	COMPANY	CREW
△			
△			
△			
△			

# SUPPLEMENTAL SHEET

BRIDGE NO. 4740

DATE: 4/24/08

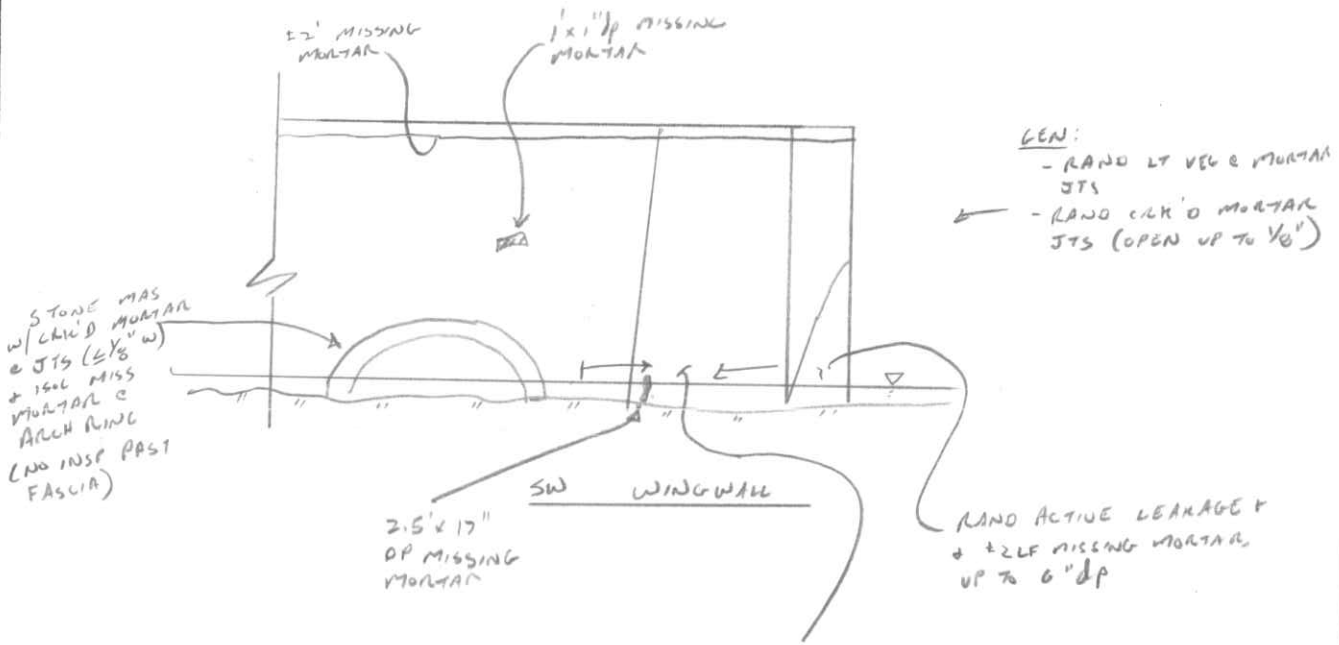
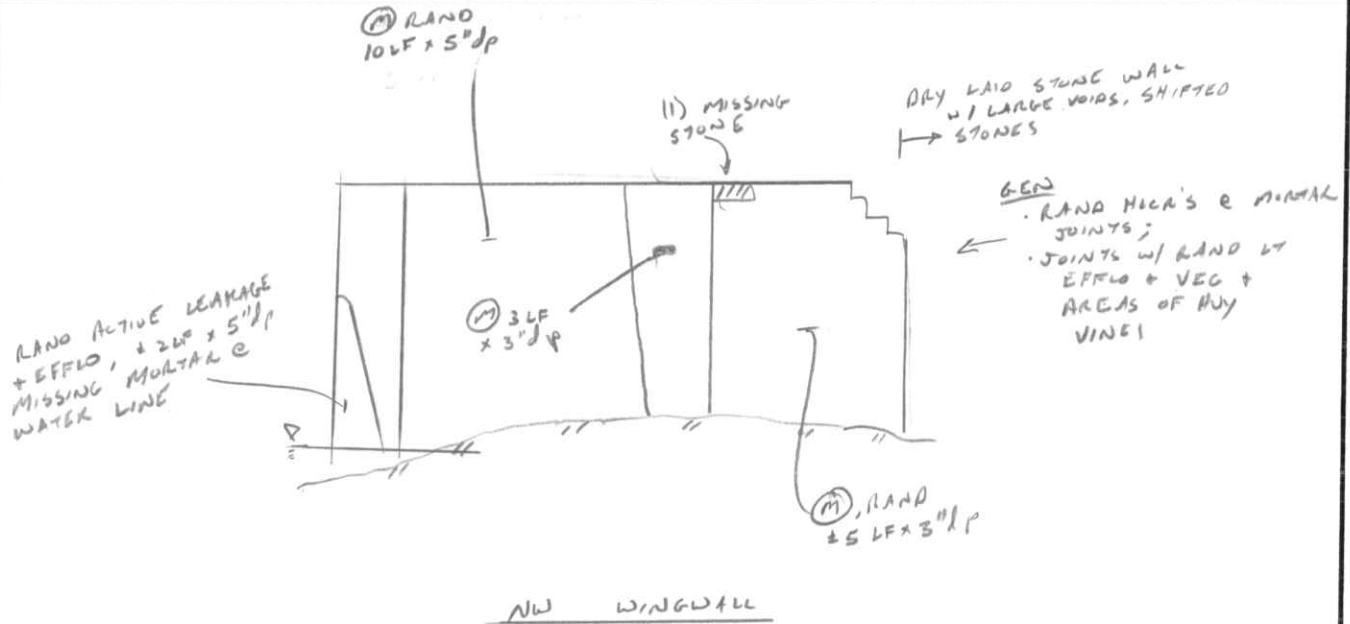
FIELD ORIGINAL

TRANSCRIBED BY: \_\_\_\_\_

CREW: MJD, TK

SHEET 19 OF 41

## DESCRIPTION:



### LEGEND

- HOLLOW AREA
- SHALLOW REBAR
- SPALL AREA
- SPALL AREA WITH EXPOSED REBAR
- MAP CRACKS (MPC) OR HARLINE MAP CRACKS (HLMPC)
- HARLINE CRACK (HLC) OR CRACKS (CRK)
- HONEY COMB AREA
- SCALE AREA (HVY, MED OR LT)

### LEGEND

(M) = MISSING MORTAR

UPDATE NO.	DATE	COMPANY	CREW
△			
△			
△			
△			

# SUPPLEMENTAL SHEET

BRIDGE NO. 4746

DATE: 9/24/08

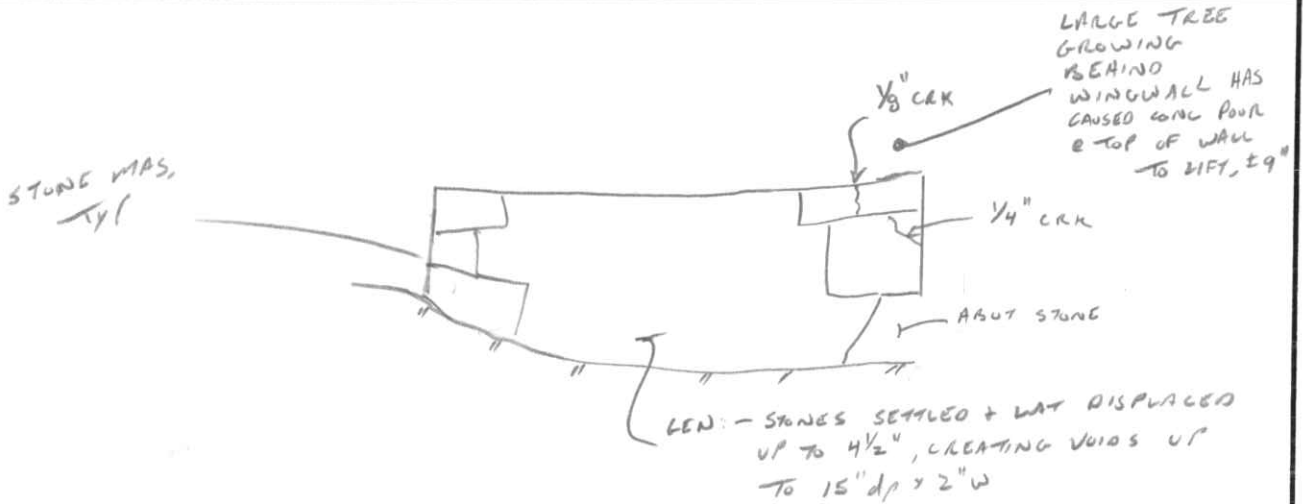
FIELD ORIGINAL

TRANSCRIBED BY: \_\_\_\_\_

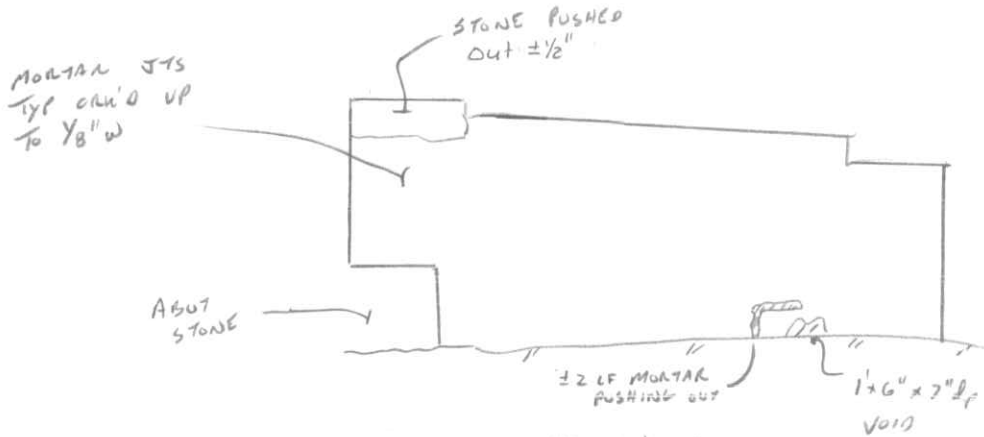
CREW: MTD, TR

SHEET 20 OF 41

## DESCRIPTION:



NE WINGWALL



SE WINGWALL

### LEGEND

- HOLLOW AREA
- SHALLOW REBAR
- SPALL AREA
- SPALL AREA WITH EXPOSED REBAR
- MAP CRACKS (MpC) OR HAIRLINE MAP CRACKS (HLMpC)
- HAIRLINE CRACK (HLc) OR CRACKS (CRK)
- HONEY COMB AREA
- SCALE AREA (HVY, MED OR LT)

UPDATE NO.	DATE	COMPANY	CREW
△			
△			
△			
△			

# SUPPLEMENTAL SHEET

BRIDGE NO. 04746

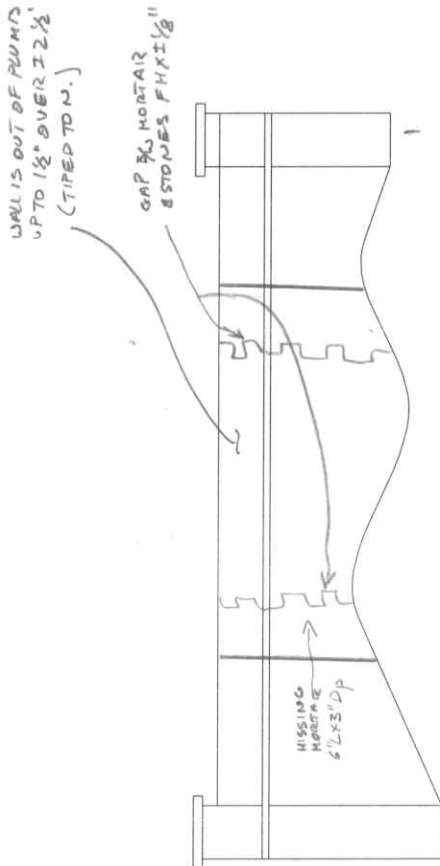
DATE: 9/24/00

FIELD ORIGINAL       TRANSCRIBED BY: \_\_\_\_\_

CREW: *TR. MJU*

SHEET 21/41

DESCRIPTION: Substructure



DET. WALL b/w SP 61 + 2  
N. ELEV

**GEN. NOTES**

- MOD TO HVY NEG GROWTH
- MIS OF DET. MORTAR w/GAPS  $\frac{3}{8}$ " MORTAR & STONES  $\pm \frac{1}{8}$ " w THROUGHOUT.

**LEGEND**

- HOLLOW AREA
- SHALLOW REBAR
- SPALL AREA
- SPALL AREA WITH EXPOSED REBAR
- MAP CRACKS (MPC) OR HAIRLINE MAP CRACKS (HLMPC)
- HAIRLINE CRACK (HLC) OR CRACKS (CRK)
- HONEY COMB AREA
- SCALE AREA (HVY, MED OR LT)
- X WITH EFFLORESCENCE

UPDATE NO.	DATE	COMPANY	CREW
△			
△			
△			
△			

5 x 8

# SUPPLEMENTAL SHEET

BRIDGE NO. 4746

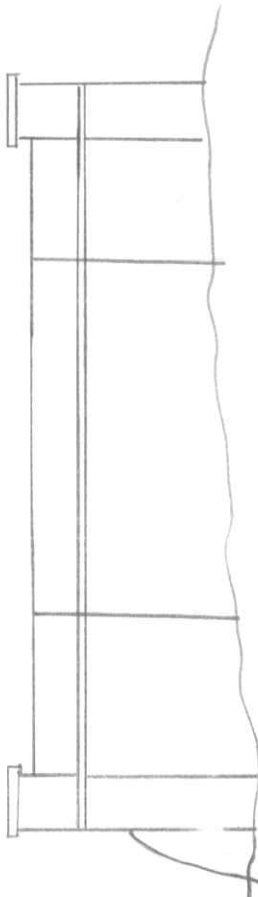
DATE: 9/24/08

FIELD ORIGINAL     TRANSCRIBED BY: \_\_\_\_\_

CREW: TR, MTD

SHEET 22 OF 41

DESCRIPTION:



RET. WALL B/W SP<sup>1</sup>+2  
SOUTH ELEV

GEN NOTES.

- NOY NEG GROWTH SIGN. AFFECTS VISIBILITY OF THE STRUCTURE.
- RAND A'S w/CRACKED/DET MORTAR.

LEGEND

- HOLLOW AREA
- SHALLOW REBAR
- SPALL AREA
- SPALL AREA WITH EXPOSED REBAR
- MAP CRACKS (MPC) OR HARLINE MAP CRACKS (HLMPC)
- HARLINE CRACK (HLC) OR CRACKS (CR)
- HONEY COMB AREA
- SCALE AREA (HVT, MED OR LT)

UPDATE BY	DATE	COMPANY	CREW
△			
△			
△			
△			



# SUPPLEMENTAL SHEET

FIELD ORIGINAL     TRANSCRIBED BY: \_\_\_\_\_

BRIDGE NO. 4746

DATE: 9/24/08

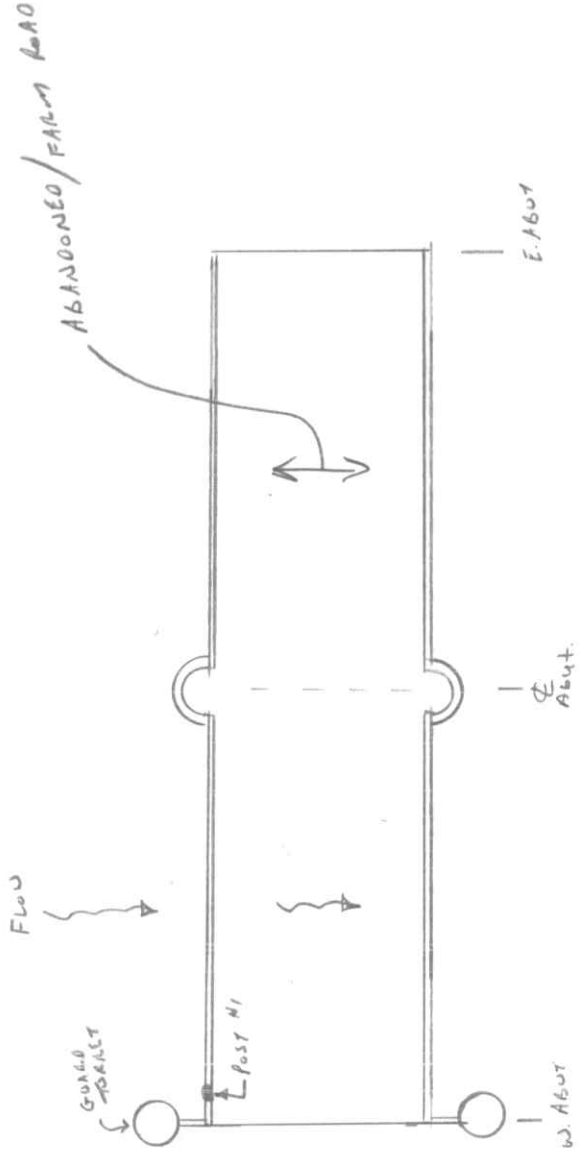
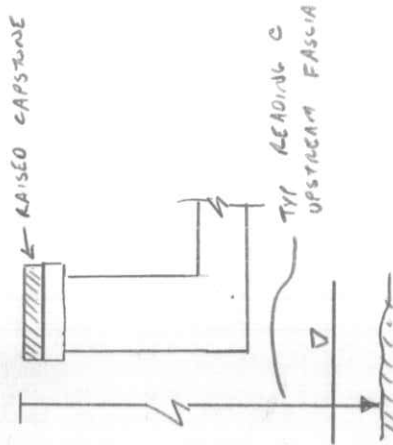
CREW: MJO, TM

SHEET 23 OF 41

DESCRIPTION: DROP LINE READINGS

DROP LINE READINGS

- W. Abut - 18.5'
- Post #1 - 20.0'
- Post #2 - 19.9'
- Post #3 - 19.8'
- Post #4 - 20.4' (1.7' DEPTH)
- Post #5 - 21.9'
- Post #6 - 22.4'
- Post #7 - 7.0'
- ⊕ Abut / - 7.5' SITTING AREA
- 18.7' TO WL



DROP LINE READINGS  
PLAN VIEW

GEN  
 • DROP LINE READINGS TAKEN AS SHOWN ABOVE  
 • NO READINGS TAKEN IN SPAN 2 → ABANDONED/FARM ROAD

DATE	COMPANY	CREW
△		
△		
△		
△		

# SUPPLEMENTAL SHEET

BRIDGE NO. 4746

DATE: 9/24/08

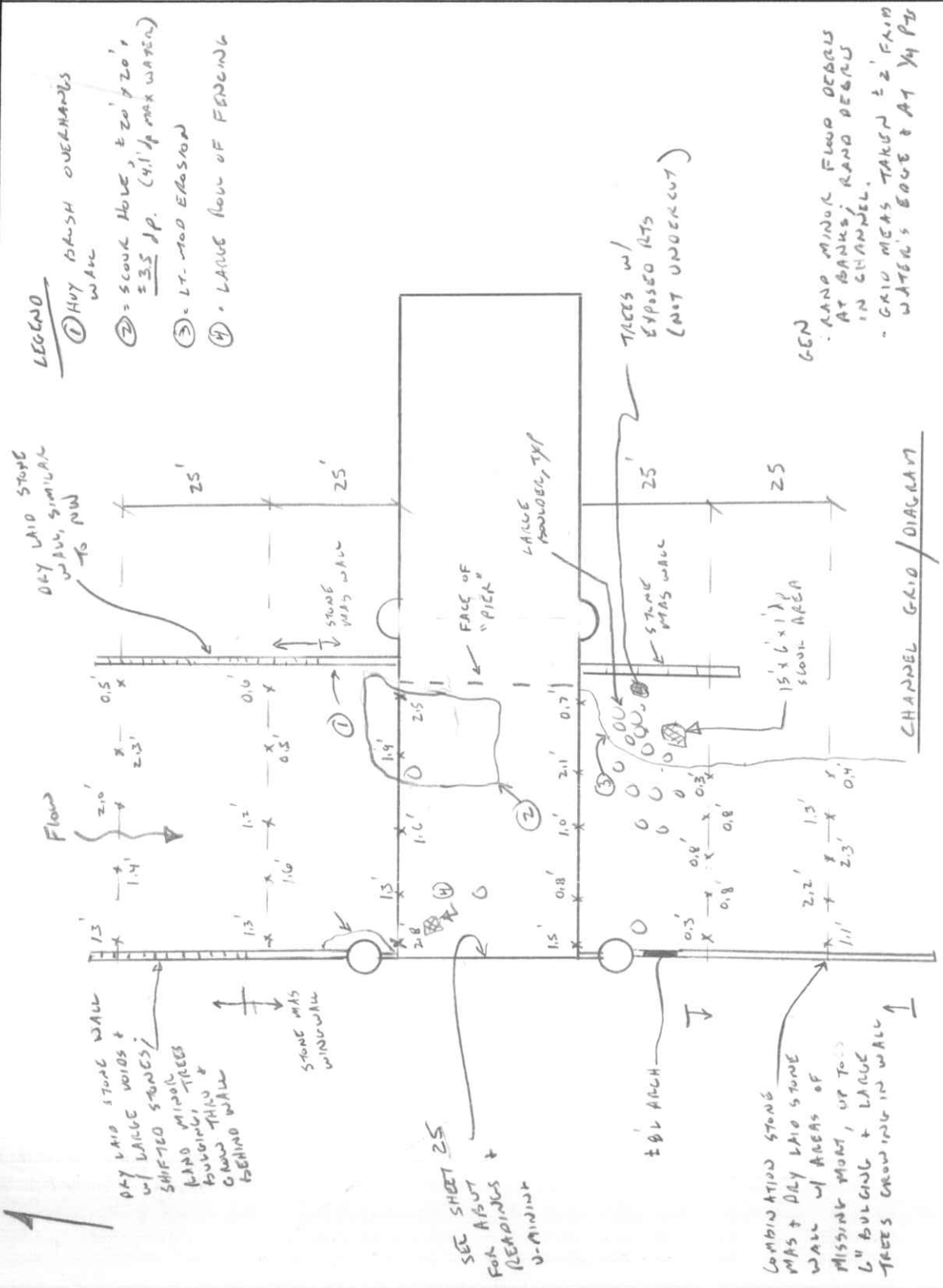
FIELD ORIGINAL

TRANSCRIBED BY: \_\_\_\_\_

CREW: MR. TR

SHEET 24 OF 41

DESCRIPTION: CHANNEL GRID/DIAGRAM



UPDATE	DATE	COMPANY	CREW
△			
△			
△			
△			

# SUPPLEMENTAL SHEET

FIELD ORIGINAL       TRANSCRIBED BY: \_\_\_\_\_

BRIDGE NO. 4746

DATE: 9/24/08

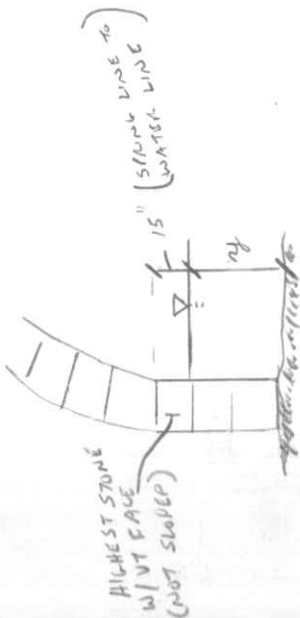
CREW: MTL, TK

SHEET 25 OF 41

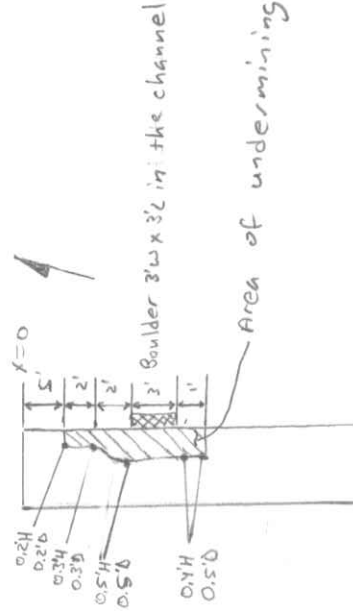
DESCRIPTION: READINGS e W. ABUT

CHANNEL READINGS ALONG ABUT

X <sub>0</sub>	Y <sub>0</sub>
0	2'-9"
3	2'-9"
5	2'-10"
8.2	3'-4"
11.0	2'-9"
14.0	2'-6"
17.0	2'-0"
SEND OF STEM	1'-7"



X-SECTION W. ABUT  
LOOKING N.



NOTE:  
AVE CHANNEL DEPTH BELOW  
BRIDGE = ± 1.6'

Plan view - W. Abut.  
Per McLaren  
Inspection  
(April 7, 2009)

UPDATE NO.	DATE	COMPANY	CREW
△			
△			
△			
△			

<b>Bridge No.</b>	04746	<b>Inspected by:</b>	M. Orłowski
<b>Town:</b>	Norwich	<b>Inspected by:</b>	T. Kurasz
<b>Feature Carried:</b>	Sunnyside Street	<b>Date Inspected:</b>	September 24, 2008
<b>Feature Crossed:</b>	Yantic River	<b>Project No.:</b>	170-2729

**04746**



**Photo # 1: Bridge ID.**

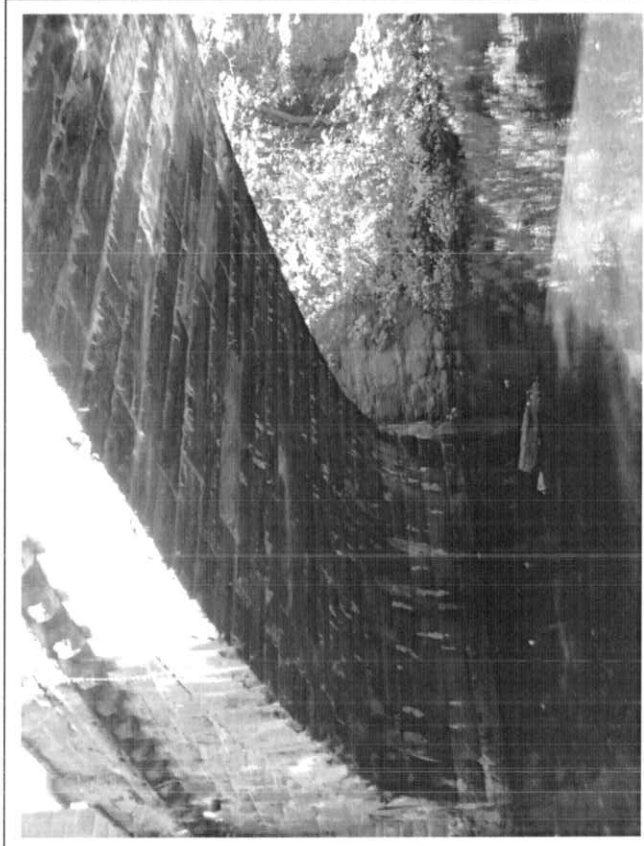
**There is no Bridge ID on the structure.**

**Photo # 2: Span 1, south elevation.**

<b>Bridge No.</b>	04746	<b>Inspected by:</b>	M. Orlowsky
<b>Town:</b>	Norwich	<b>Inspected by:</b>	T. Kurasz
<b>Feature Carried:</b>	Sunnyside Street	<b>Date Inspected:</b>	September 24, 2008
<b>Feature Crossed:</b>	Yantic River	<b>Project No.:</b>	170-2729



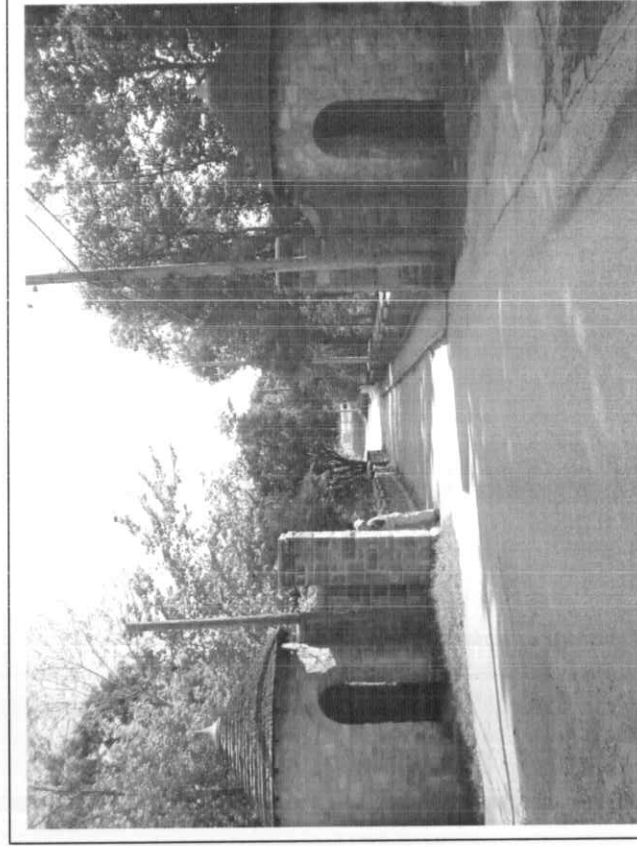
**Photo # 3: Span 2, north elevation.**



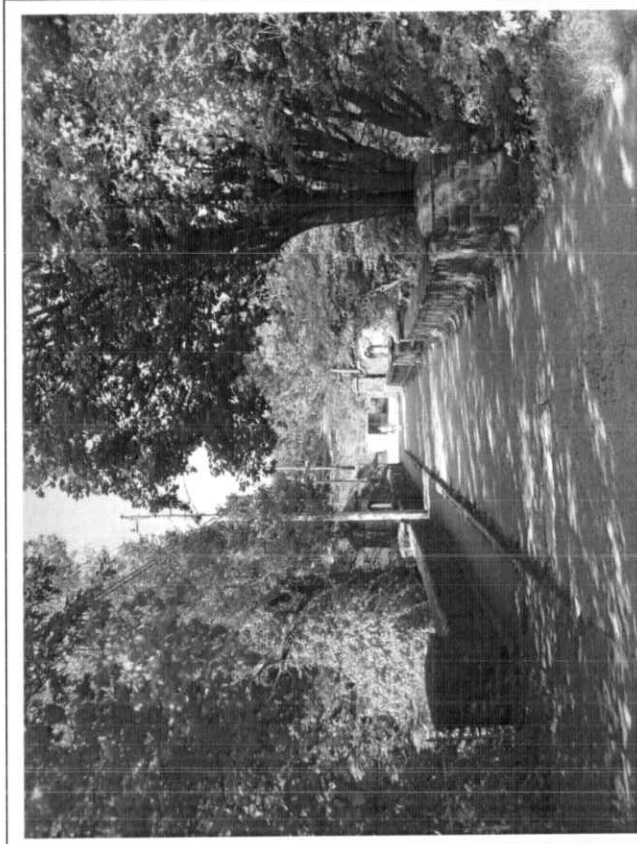
**Photo # 4: Typical underside, span 1 (looking west).**

**Note the efflorescence leakage at the mortar joints.**

<b>Bridge No.</b>	04746	<b>Inspected by:</b>	M. Orłowski
<b>Town:</b>	Norwich	<b>Inspected by:</b>	T. Kurasz
<b>Feature Carried:</b>	Sunnyside Street	<b>Date Inspected:</b>	September 24, 2008
<b>Feature Crossed:</b>	Yantic River	<b>Project No.:</b>	170-2729

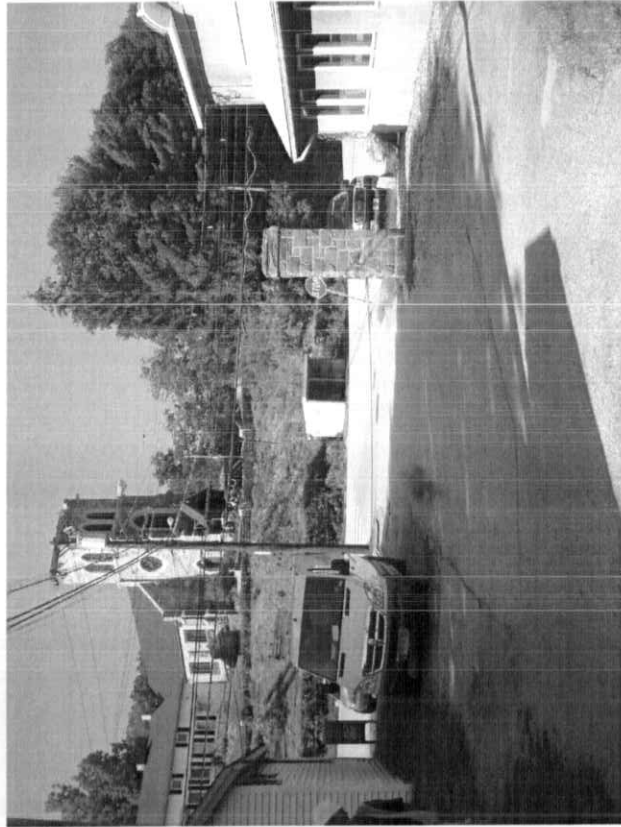


**Photo # 5: Bridge from the west approach.**



**Photo # 6: Bridge from the east approach.**

<b>Bridge No.</b>	04746	<b>Inspected by:</b>	M. Orlowsky
<b>Town:</b>	Norwich	<b>Inspected by:</b>	T. Kurasz
<b>Feature Carried:</b>	Sunnyside Street	<b>Date Inspected:</b>	September 24, 2008
<b>Feature Crossed:</b>	Yantic River	<b>Project No.:</b>	170-2729



**Photo # 7: West approach from the bridge.**



**Photo # 8: East approach from the bridge.**



<b>Bridge No.</b>	04746	<b>Inspected by:</b>	M. Orłowski
<b>Town:</b>	Norwich	<b>Inspected by:</b>	T. Kurasz
<b>Feature Carried:</b>	Sunnyside Street	<b>Date Inspected:</b>	September 24, 2008
<b>Feature Crossed:</b>	Yantic River	<b>Project No.:</b>	170-2729



**Photo # 9: Typical top of deck.**



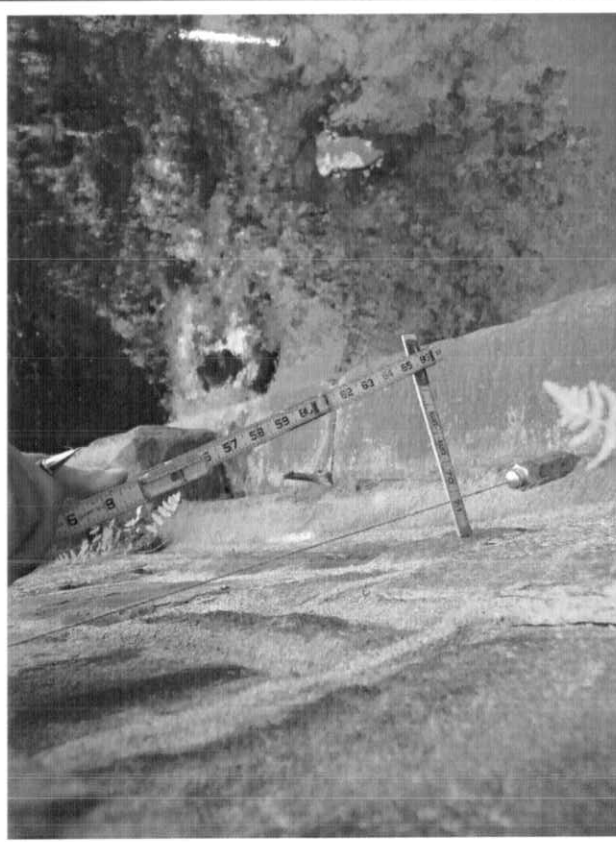
**Photo # 10: Bridge overlay ramps up approximately 3" near the base of the north parapet.**



<b>Bridge No.</b>	04746	<b>Inspected by:</b>	M. Orlowsky
<b>Town:</b>	Norwich	<b>Inspected by:</b>	T. Kurasz
<b>Feature Carried:</b>	Sunnyside Street	<b>Date Inspected:</b>	September 24, 2008
<b>Feature Crossed:</b>	Yantic River	<b>Project No.:</b>	170-2729

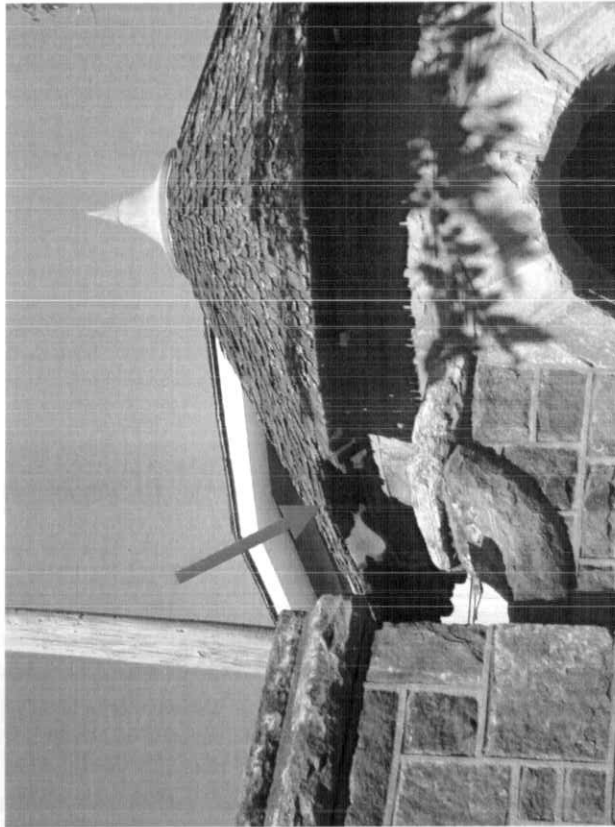


**Photo # 11: Typical sawcut in the bridge overlay. Note that there is no sealant. Sawcuts are filled with dirt and have random vegetation.**



**Photo # 12: Tipping of the north parapet.**

<b>Bridge No.</b>	04746	<b>Inspected by:</b>	M. Orłowski
<b>Town:</b>	Norwich	<b>Inspected by:</b>	T. Kurasz
<b>Feature Carried:</b>	Sunnyside Street	<b>Date Inspected:</b>	September 24, 2008
<b>Feature Crossed:</b>	Yantic River	<b>Project No.:</b>	170-2729

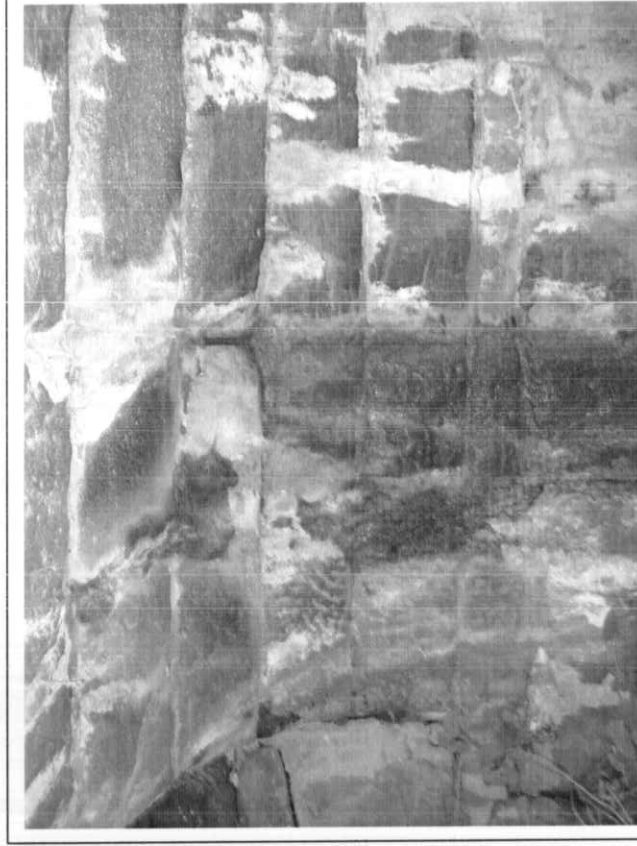


**Photo # 13: North guard turret: Missing section of roof at the south side of the turret.**



**Photo # 14: East end of span 1: Areas of heavy efflorescence and areas of water leakage through the arch intrados.**

<b>Bridge No.</b>	04746	<b>Inspected by:</b>	M. Orlowsky
<b>Town:</b>	Norwich	<b>Inspected by:</b>	T. Kurasz
<b>Feature Carried:</b>	Sunnyside Street	<b>Date Inspected:</b>	September 24, 2008
<b>Feature Crossed:</b>	Yantic River	<b>Project No.:</b>	170-2729



**Photo # 15: East end of span 2: Heavy efflorescence and water leakage through the arch intrados.**



**Photo # 16: Span 1, south elevation, east end: Deteriorated mortar between the arch ring stones and the spandrel wall.**

<b>Bridge No.</b>	04746	<b>Inspected by:</b>	M. Orlowsky
<b>Town:</b>	Norwich	<b>Inspected by:</b>	T. Kurasz
<b>Feature Carried:</b>	Sunnyside Street	<b>Date Inspected:</b>	September 24, 2008
<b>Feature Crossed:</b>	Yantic River	<b>Project No.:</b>	170-2729



**Photo # 17: Span 2, south spandrel and railing, typical.**

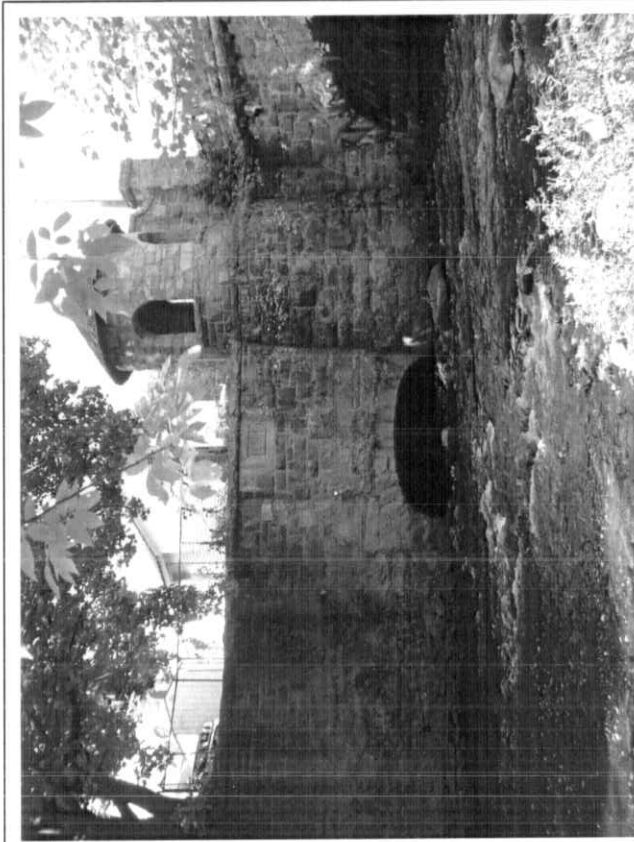


**Photo # 18: Span 1, southeast corner: Architectural stone treatment at the corner of the span has deteriorated mortar/voids between the stones. Also note the leakage through the arch ring.**

<b>Bridge No.</b>	04746	<b>Inspected by:</b>	M. Orłowski
<b>Town:</b>	Norwich	<b>Inspected by:</b>	T. Kurasz
<b>Feature Carried:</b>	Sunnyside Street	<b>Date Inspected:</b>	September 24, 2008
<b>Feature Crossed:</b>	Yantic River	<b>Project No.:</b>	170-2729



**Photo # 19: Northeast wingwall: Stones shifted out at the base.**



**Photo # 20: Southwest wingwall. Note the stone arch in the wingwall.**



<b>Bridge No.</b>	04746	<b>Inspected by:</b>	M. Orłowski
<b>Town:</b>	Norwich	<b>Inspected by:</b>	T. Kurasz
<b>Feature Carried:</b>	Sunnyside Street	<b>Date Inspected:</b>	September 24, 2008
<b>Feature Crossed:</b>	Yantic River	<b>Project No.:</b>	170-2729



**Photo # 21: Southwest retaining wall: Shifted stones and tree growing out of the wall.**



**Photo # 22: Stone masonry wall between spans 1 & span 2, north elevation.**

<b>Bridge No.</b>	04746	<b>Inspected by:</b>	M. Orłowski
<b>Town:</b>	Norwich	<b>Inspected by:</b>	T. Kurasz
<b>Feature Carried:</b>	Sunnyside Street	<b>Date Inspected:</b>	September 24, 2008
<b>Feature Crossed:</b>	Yantic River	<b>Project No.:</b>	170-2729

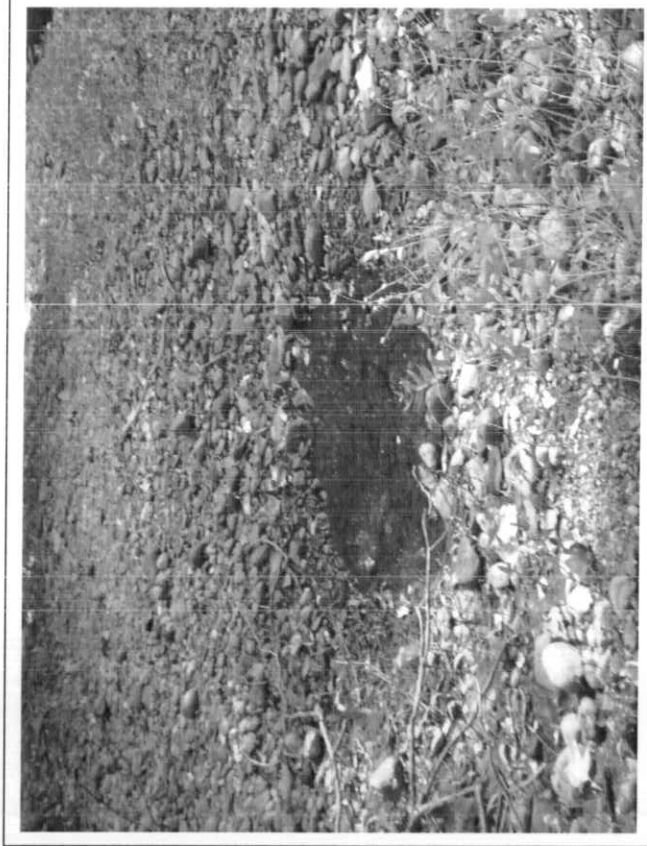


**Photo # 23: Channel, looking upstream.**

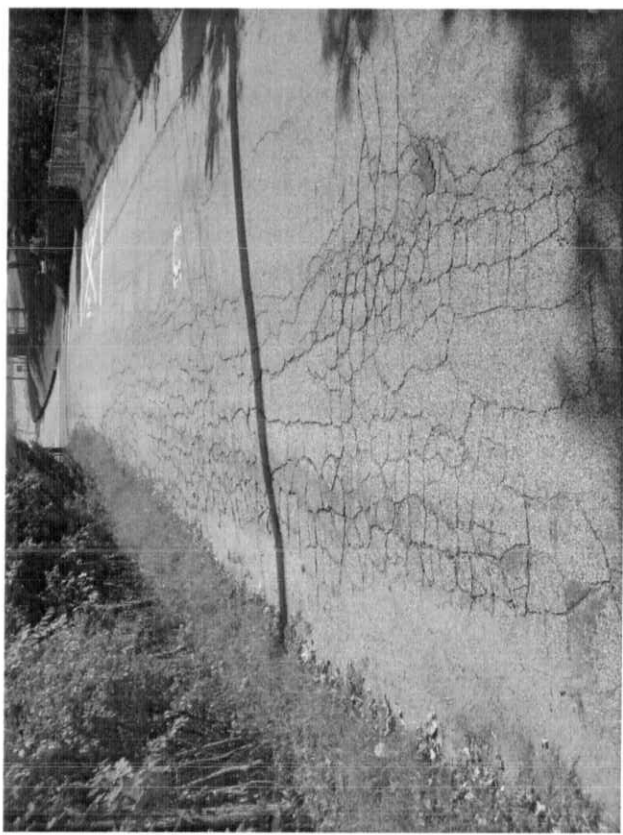


**Photo # 24: Channel, looking downstream.**

<b>Bridge No.</b>	04746	<b>Inspected by:</b>	M. Orłowski
<b>Town:</b>	Norwich	<b>Inspected by:</b>	T. Kurasz
<b>Feature Carried:</b>	Sunnyside Street	<b>Date Inspected:</b>	September 24, 2008
<b>Feature Crossed:</b>	Yantic River	<b>Project No.:</b>	170-2729




**Photo # 25: Scour hole at the southeast channel embankment.**



**Photo # 26: East approach pavement with heavy cracking.**



<b>Bridge No.</b>	04746	<b>Inspected by:</b>	M. Orłowski
<b>Town:</b>	Norwich	<b>Inspected by:</b>	T. Kurasz
<b>Feature Carried:</b>	Sunnyside Street	<b>Date Inspected:</b>	September 24, 2008
<b>Feature Crossed:</b>	Yantic River	<b>Project No.:</b>	170-2729

	<p style="text-align: center;"><u><i>Intentionally left blank.</i></u></p>
<p><b>Photo # 27: Deteriorated bituminous at the west approach, south shoulder.</b></p>	

N. TOWER- PATH



DSC01589

SW CORNER- GAP



DSC01590

SAME



DSC01591

IO



DSC03902

BR FROM W.



DSC03903

TOP F.O.P.



DSC03904

W. APRIL



DSC03905

U/S



DSC03906

O/S



DSC03907

E. APRIL



DSC03908

BR FROM E



DSC03909

OVERLAY & CURB



DSC03910

S. PPT SP#1, TYP



DSC03911

SP#1, S. PPT



DSC03912

N. TOWER



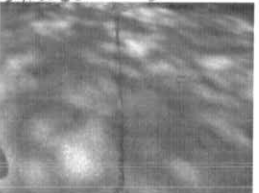
DSC03913

TYP SW APRIL



DSC03914

SAWCUT & SP#2



DSC03915

TIPPING OF 2 PPT



DSC03916

TIPPING N. PPT NEAR PIER



DSC03917

N. SAWCUT & PIER



DSC03918

E. APRIL PPT



DSC03919

W. APRIL PPT



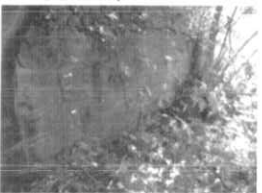
DSC03920

NE WING



DSC03921

SE WING



DSC03922

SP#2, S



DSC03923

SP#2 N



DSC03924

SP#2 N. SPANDREL



DSC03925

SP#2 S. SPANDREL



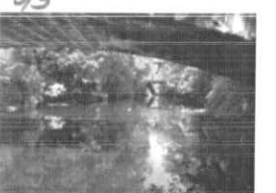
DSC03926

S. OVER, SP#1



DSC03927

U/S



DSC03928

O/S



DSC03929

SW WING



DSC03930

TYP U/S SP#1



DSC03931

SAME



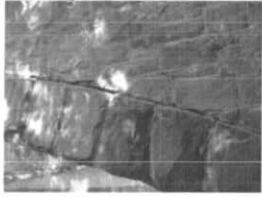
DSC03932

SO#1 SE CORNER MUR 7



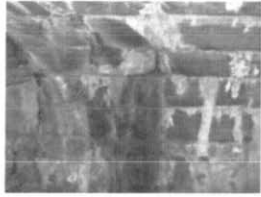
DSC03933

SP #1, S. SPAND



DSC03934

SP #2 NE



DSC03935

SP #2 S. END



DSC03936

NE WING  
CONCRETE



DSC03937

PIER "N" 4/1/11



DSC03938

PIER "S"



DSC03939

MTD



DSC03940

SE SP #1



DSC03943

SW LET



DSC03944

NW LET



DSC03945

SE BANK



DSC03946

MTD



DSC03947

MTD



DSC03948

MTD



DSC03949

**MICHAEL BAKER ENGINEERING, INC.**

**BRIDGE # 04746**

**ADDITIONAL FIELD NOTES**

**(BACK-UP MATERIAL)**

**DATE: SEPTEMBER 24, 2008**

**From:** William Kristoff  
**To:** P.E. George Assis; Sam S. Fares  
**CC:** Michael Orlowsky; Paul McGuinness  
**Date:** 9/26/2008 5:01 PM  
**Subject:** Fwd: FW: Bridge No. 04746 (Sunnyside Street over Yantic River, Norwich)

Hey Guys,

See email notes below from the team leader (Mike Orlowsky) and Sandy of CDOT. We basically need you guys to inspect the portion of the west abutment below the water for the above bridge, and check the undermining. You could probably do this when doing the other u/w for the other Norwich town bridges on your list. As Sandy said, no CADD needed, just send us some hand written notes to incorporate into the report.

Call or email with any questions and/or concerns with this.

Thanks.

Bill

>>> Michael Orlowsky 9/26/2008 10:32 AM >>>  
Paul/Bill,

Please forward to McLaren. Also, have them check for deficiencies in the west abutment face from the waterline to the channel bottom. There were some voids noted in the WMK/MDD inspection below the waterline, which we did not see through the water.

Thanks,  
MJO

>>> "Dumas, Sandra A." <[Sandra.Dumas@po.state.ct.us](mailto:Sandra.Dumas@po.state.ct.us)> 9/26/2008 10:20 AM >>>  
Bill/Mike,

To answer question 1 - We did move the in-depth date up 1 cycle. We have been doing this when we assign a town to a consultant - we know you guys are basically doing an in-depth anyway and since we have to pay for a CE inspection, we might as well pay for a CE in-depth. (P.S. Thanks for asking though - we do make mistakes and we appreciate it when brought to our attention.)

To answer question 2 - Please have McLaren do this inspection under your project. Have them inspect the abutment in question (west) and if you need anything in the channel. They do not have to submit cadd sketches, but can just send in hand drawn sketches to you. Mike - you should incorporate what they find into your report (one submittal). Try and have McLaren do this sooner rather than later so that the report and letter are not held up.

Thanks again for your hard work!

Sandra A. Dumas  
Bridge Safety & Evaluation  
(860) 594-2072

>>> Michael Orlowsky 9/25/2008 3:17 PM >>>  
Paul/Bill,

A few issues regarding the inspection of the above noted structure:

1. Per the BRI-19, the next inspection of this bridge is supposed to be 2010, but the bridge list calls for an in-depth inspection (per MRJ). Note that Baker did an in-depth in 2000, which would make this inspection a routine. I called MRJ yesterday. Please let me know how you want this report classified. It doesn't really matter too much to me, the report won't vary if we call it an in-depth or a routine.

2. The water depths along west abutment were up to 40" deep. We were able to wade in front of the entire west abutment, and found an area of undermining approximately 3.2' long x 12" deep x 6" high. Water depths of up to 40" made accurate measurement of this undermining difficult. I believe that water depth of 30" trigger an underwater inspection, so you may want to ask BS&E if they want divers to go out there. Additionally, water depths were up to 4.1' deep in the channel at the east end of the span, but the channel was could be waded along the substructure at that end of the span.

MJO



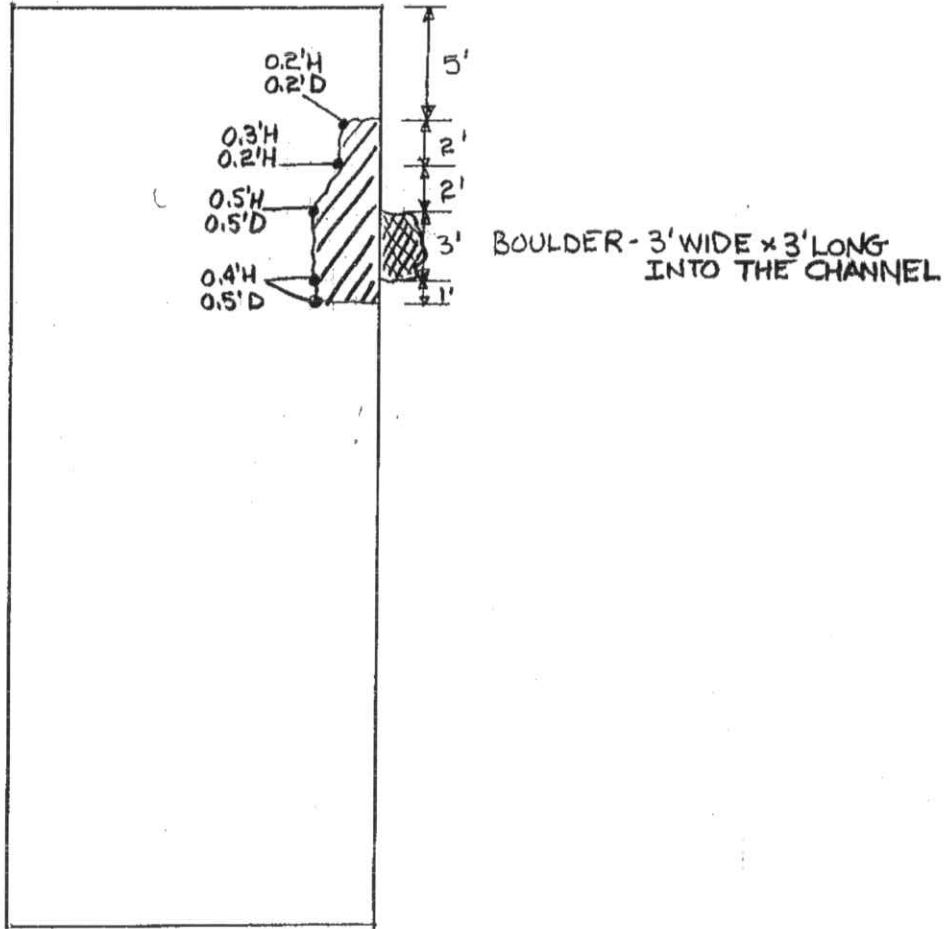






**McLaren**  
ENGINEERING  
GROUP

PROJECT 04746  
SHEET NO. \_\_\_\_\_ OF \_\_\_\_\_  
CALCULATED BY \_\_\_\_\_ DATE 4/7/09  
CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_  
REVISIONS \_\_\_\_\_  
SCALE \_\_\_\_\_



PLAN VIEW - WEST ABUTMENT  
N.T.S.