

**2018 QBS  
Request for Statement of Interest (SOI)  
Kane County Division of Transportation (KDOT)  
2019 Structure Inspections  
Section Number 18-00501-00-EG**

The Kane County Division of Transportation is in need of professional services from a qualified engineering firm to provide engineering services as detailed in the following preliminary Scope of Services.

At this time the County anticipates starting this work in early 2019 with approximately 12 months to complete the work. At the County's discretion, the County may pursue a 2020 inspection contract and a 2021 inspection contract, without again advertising the work.

The Statement of Interest document shall be limited to 2 pages, and shall be submitted electronically via **KDOT QBS** no later than 4:30 pm on September 6, 2018 and should be addressed to Nils Jordahl, Project Manager.

If you plan to enter into a joint venture with another firm for this project please note this on your Statement of Interest, including the name of the firm you are entering into a joint venture with for this project.

The short-listed firms will be posted on our Consultant Selection Summary Table website at:  
<http://www.co.kane.il.us/dot/SOISummary.aspx>.

Any new firm interested in doing work with the Kane County in regards to this or any other future professional service, must first submit their Prequalification Document to Kane County by following the instructions found at <http://kdot.countyofkane.org/Shared%20Documents/QBS.pdf>. The prequalification document will be reviewed and approved in a short period of time if the appropriate documentation was provided. Each firm must first be prequalified in order to electronically submit their Statement of Interest via KDOT QBS no later than the deadline described above. More information regarding the Qualifications Based Selection process may be found at <http://www.co.kane.il.us/dot/consultant.aspx>.

Firms interested in providing services to Kane County are hereby notified of the Kane County's Ethics Ordinance No. 10-206, in particular, Section 10, page 15. Only the firm that is ultimately selected for these professional services will be required to provide the Ethics Ordinance information directly to the Kane County Division of Transportation as part of the consultant services agreement. The complete Ethics Ordinance No. 10-206 document is available online at the following link [Kane County Ethics Ordinance](#).

**A Statement of Interest (SOI) received after the above noted deadline will not be used as part of our consultant selection process.**

# SCOPE OF SERVICES

## 2019 STRUCTURE SAFETY INSPECTIONS

### **A. History**

The Surface Transportation Assistance Act of 1978 required that all public bridges over 20 feet in length be inspected and inventoried in accordance with the National Bridge Inspection Standards by December 31, 1980. In October 1988, NBIS was modified to require special inspections of fracture critical details and underwater features of bridges. Since then, changes have been made to address increased focus on scour inspections, timely reporting, inspector qualification, and other issues. Qualified personnel must typically inspect bridges every two years and have their findings submitted to IDOT for inclusion in the state and national databases.

### **B. Qualifications**

The Consultant shall provide personnel qualified to perform the bridge inspections. An IDOT approved Team Leader shall supervise, in the field, all inspection activities.

The Consultant shall also supply an IDOT approved staff member to act as Program Manager for all inspections.

The Consultant shall also provide, on an as needed basis, a structural engineer registered in the State of Illinois to review any bridges that are determined to be structurally deficient.

The Consultant shall provide the specific qualifications for all members on the inspection team, and for all related work.

### **C. Scope of Work**

The Consultant shall inspect all structures necessary, in accordance with the National Bridge Inspection Standards and the Illinois Department of Transportation Structure Information and Procedure Manual.

The Consultant shall submit the following to the County for each major structure inspected:

- 1) IDOT Bridge Inspection Report, BBS-BIR
- 2) Bridge Inspection Report Narrative (in a format similar to the attached).

In addition, the consultant will provide a detailed cost estimate for each structure that includes the costs of all repairs mentioned in the report's recommendations.

The Consultant shall also provide a plan of access for inspection of the bridges. It is anticipated that specialized equipment such as snooper trucks or rigging may be required to allow the inspector to closely

examine the bridge elements. Generally, the inspector must be within arm's reach to adequately inspect a bridge element. Safety of the inspector is of extreme importance to the County and is the responsibility of the Consultant. The Consultant is solely responsible for the safety practices and methods used to perform any and all inspections.

The consultant shall coordinate all inspections over railroads with the appropriate railroad. Any costs for licenses and permits shall be included in this work.

The consultant will provide on-call design services, review services, and inspection services to be billed against the on-call item in the contract.

The consultant will assist in any other needs as defined by the county to comply with the requirements of NBIS.

#### **D. Schedule**

The notice to proceed will be issued on approximately January 1, 2019.

The project shall be complete by December 31, 2019.

# Bridge Inspection Report



## STRUCTURE NO. 045-3166

Stearns Road / FAP 361 over Fox River

Prepared For

**Kane County Division of Transportation**

**INSPECTION TYPE:** In-Depth NBI  
**DATE:** May 11, 2016



**Hampton, Lenzini and Renwick, Inc.**  
Civil Engineering • Structural Engineering • Environmental Services • Land Surveying  
[www.hlrengineering.com](http://www.hlrengineering.com)

**ADMINISTRATIVE DATA:**

**Region / District:** 1 / 1  
**County:** Kane  
**Township:** Virgil  
**Feature Carried:** Stearns Road / F.A.P. 361  
**Feature Crossed:** Fox River  
  
**Weather:** 70° F; Cloudy

**I. ROADWAY/STRUCTURE DATA:**

**ADT (current):** 6750 (2014 – IDOT Master Structure Report)  
**ADTT (current):** 743 – 11% (2014 – IDOT Master Structure Report)  
**Inventory Rating HS:** 1.00 (36) (IDOT Master Structure Report); 0.89 (HLR-2011)  
**Operating Rating HS:** 1.36 (48) (IDOT Master Structure Report); 1.32 (HLR-2011)  
**Existing Clear Width:** 60' – 0"  
**Width to Remain in Place:** 56' – 0"  
**Improvement Width:** 56' – 0"

**CONSTRUCTION / RECONSTRUCTION / REPAIR HISTORY:**

**Year Constructed:** 2010 (HL - 93 Loading)  
**Year/s Reconstructed:** NA

**STRUCTURE DESCRIPTION:**

**Type:** Continuous, Composite Cast-in-Place Concrete Deck on 55"  
(Span 1) & 76" (Spans 2 – 5) Steel Plate Girders  
**Span Arrangement:** Five Spans (180' – 0", 3 @ 210' – 0", 163' – 5")  
**Length & Width:** 908' – 5" back-to-back of abutments; 63' - 0" out-out deck; 56'  
- 0" face-to-face curbs  
**Abutments:** Pile Supported Stub Abutments  
**Piers:** Reinforced Concrete Cap & Columns on HP Pile Supported  
Footings (Piers 1 & 4) & and Drilled Shafts (Piers 2 & 3)  
**Skew:** 0°

**II. INSPECTION HISTORY (NBIS RATINGS):**

<u>Year:</u>	<u>Deck:</u>	<u>Super:</u>	<u>Sub:</u>
2010	8	9	9
2012	8	8	8
2016	7	8	8

### **III. STRUCTURE CONDITION FINDINGS:**

**Approach Roadway:** (See Photo Nos. 50 - 51 & 62 – 63).

The concrete approach roadway is in **good condition**.

- Diagonal cracking up to 1/8" with dispersed transverse and longitudinal cracking throughout in the approach slabs

**Bridge Rail / Curb:** (See Photo Nos. 55 & 56).

The curb mounted steel bridge rails are in **good condition**.

- Localized areas of paint coating failure with light surface corrosion over the full length of the railing.
- Vertical hairline cracks along the concrete curbs at  $\pm 3'$  intervals.
- There is a 2' x 1' impending spall on the southeast approach slab curb.

#### **DECK**

The concrete bridge deck is **good condition**.

**Joints:** (See Photo Nos. 52 – 53 & 64 – 65).

The modular expansion joints at the east and west abutments are in **good condition**.

- There is a light buildup of debris at both expansion joints.
- The east and west abutment joints measured 8.5" and 5", respectively, at 70°F.

**Top of Deck:** (See Photo Nos. 57 - 61).

- There are full depth transverse cracks  $< 0.06''$  at 5' intervals over the majority of the deck.
- There are hairline vertical cracks on both side of the concrete median.
- Several of the deck drains have accumulated a minor amount of debris but seem to still be operational.

**Bottom of Deck:** (See Photo Nos. 2, 8, 17 – 19, 26, 35, & 39).

- The full depth transverse cracks at 5' intervals are leaching underside of the deck.

#### **SUPERSTRUCTURE**

Overall the welded plate girders and diaphragms are in **very good condition**.

**Beams / Diaphragms:** (See Photo Nos. 3, 5, 7, 13 – 14, 31 – 32, 36, 38, 40, 44, & 68).

- There are a few small localized areas of paint coating flaking on the interior girders with no surface corrosion of note.
- The deck drainage system collects in two 12" diameter pipes suspended in the north and south superstructure bays.
- The south drain is leaking approximately 10 feet from the east abutment. (See Photo No. 72).

**Bearings:**

All bearings are in **good condition**.

- Type II elastomeric expansion bearings at the west abutment. (See Photo Nos. 45 & 46).
- Type III elastomeric expansion bearings at the east abutment. (See Photo No. 69).
- Fixed bearings at Pier 2. (See Photo No. 2).
- Guided expansion bearings at Piers 1, 3, & 4. (See Photo Nos. 6, 12, 34,

#### **SUBSTRUCTURE**

Overall the substructure is in **very good condition**.

**Abutments / Wingwalls:** (See Photo Nos. 1, 41 – 42, 44, 47, & 71).

- The concrete abutments / wingwalls are smooth with no noticeable defects.

**Piers:** (See Photo Nos. 4, 10, 22, & 27).

- The concrete piers with a decorative form liner have no noticeable defects.

**SLOPE / CHANNEL** (See Photo Nos. 11 & 15).

The channel is in **very good condition**.

**Protection:** (See Photo Nos. 1 & 41 – 42).

- Riprap is in place at both abutment embankment slopes and is in stable condition.
- The channel is stable with no noticeable scour.

**TRAFFIC SAFETY:**

Pavement lane markings are present and mostly visible

**Guardrail:** (See Photo Nos. 49 & 66).

Overall the structure's guardrail is **in good condition**.

- The steel plate approach guardrail, transition sections and terminal sections meet current IDOT policy.
- The steel plate bridge rail exhibits localized paint coating failure with light surface corrosion.

**Signage:**

- Chevron warning signs mark all guardrail ends.

**UTILITIES:** (See Photo Nos. 2 & 8).

- The 1<sup>st</sup> and 2<sup>nd</sup> bays from each fascia carry conduits for the full length of the structure.
- Electrical utility lines parallel the railroad track beneath span 1. (See Photo No. 28).
- Decorative light standards are mounted north and south of the bridge on the parapet fascia above each pier location.

**STRUCTURE RATING:**

The structure rating is INV - 089, OPR - 1.32.

#### **IV. CONCLUSIONS AND RECOMMENDATIONS:**

**CONCLUSIONS:**

- The transverse cracking in the deck should be sealed to limit the infiltration of water and de-icing salts through the bridge deck.

**RECOMMENDATIONS:**

Short Term (1 to 3 years):

- Clean out the debris in deck drains for proper drainage.
- Clean debris from expansion joints.
- Fix drain pipe connection in Bay 6 to stop leakage

Long Term (4 to 12 years):

- Seal cracks in the bridge deck.

**ATTACHMENTS:**

<b>Attachment A.</b>	<b>Routine Inspection Report</b>
<b>Attachment B.</b>	<b>IDOT Master Structure Report</b>
<b>Attachment C.</b>	<b>Structure Sketches</b>
<b>Attachment D.</b>	<b>Structure Photos</b>
<b>Attachment E.</b>	<b>Cost Estimate</b>
<b>Attachment F.</b>	<b>Structure Rating</b>





SN: 045-3166	District: 1	Spans: 5	Appr. Spans: 0	Skew: 0	ADT: 6750	Truck Pct: 11
ADT Un:	Maint. Co: KANE	Twsp: ST CHARLES		Status: OPEN - NO RESTRICT		
Facility Carried: STEARNS RD			Feature Crossed: FOX RIVER			
Location: 0.6 MI W OF IL25	Municipality:		Team/Sub: /	Insp/Rte:		
Bridge Name:		Material & Type: STEEL CONTINUOUS/STRINGER/MULTI-BEAM/GIRDER				
Insp. Intervals Routine: 24	Fracture Critical: 0	Underwater: 0	Special: N/A	Element Level: 24		
90 - Inspection Date: 5/11/2016	90C - Temp. (°F): 70	90B1 - In-Depth		<input checked="" type="checkbox"/>		
Is Delinquent: <input type="checkbox"/>	Reason:					
90A - Agency Program Manager:			90A3 - Consultant Program Manager:		HLR - M. CIMA	
90A1 - Team Leader: HLR - A. CHARLESWORTH		90A2 - Inspector: HLR - M. BRINK				

90B - Inspection Remarks:

Previous Inspection	
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**Resources**

Time to Inspect (H:M): 8:0	6 : 0	Traffic Control: 2	2	Boat: N	Waders: N	Snooper: S	S
Ladder: N	Manlift: N	Bucket Truck: N	Other:				

**Inspector's Appraisals**

	Prev	New	Comments
58 - Deck Condition:	8	7	
59 - Superstructure Cond:	8	8	
60 - Substructure Cond:	8	8	
62 - Culvert Condition:	N	N	
61 - Channel Condition:	9	9	
71 - Waterway Adequacy:	9	9	
72 - Approach Rdw Align:	8	8	
111 - Pier Navig Protection:	N	N	

**90B - Inspector Remarks:**

DECK - TRANSVERSE CRACKS < 0.06" @ 5' INTERVALS OVER THE MAJORITY OF THE DECK - FULL DEPTH WITH LEACHING UNDERSIDE OF THE DECK.

Routine Inspection Report

Structure Number: 0453166

Additional Inspection Data

36A – Bridge Railing Adequacy:	Prev	New	Rail Types: CURB MOUNTED STEEL RAIL					
	3	3						
Approach Guardrail Adequacy: 36B – Transitions:			Prev	New	New	New		
			3	3	36C – Guardrail: 3	3	36D – Ends: 3	3

108A – Wearing Surface Type:	A	A	If "L-Other" Describe:	_____
108B – Type of Membrane:	F	F	If "E-Other" Describe:	_____
108C – Deck Protection:	A	A	If "I-Other" Describe:	_____
108D – Total Deck Thickness (in):	8.0	8.0		

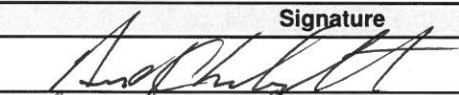
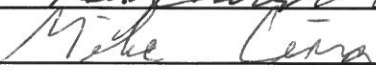
59A – Paint Date (Mo/Yr):	Prev	New	Color: Fascia - _____ Inter. - _____ Railing - _____	
	09/2009	09/2009		
59B – Paint Type:	S	S		

59C – Utilities Attached: 59N 59N If "B-Other" Describe: \_\_\_\_\_

Weight Limit Posting:	70A2 – Single Unit Vehicles:	Prev	New	Tons
	70B2 – Combination Type 3S-1 (3 or 4 axles):			Tons
	70C2 – Combination Type 3S-2 (5 or more axles):			Tons
	70D2 – One Truck at a Time:	0		

Joint Openings (In.) W ABUT. - 5" , E ABUT. - 8.5"

90B – Inspector Remarks Continued:

	Signature	Date
Inspection Team Leader:		5/31/2016
Consultant Program Manager:		5/31/2016
Agency Program Manager:		/ /

**Illinois Department of Transportation  
Structures Information Management System  
Master Structure Report (S-107)**

Structure Number: 045-3166 District: 1

**Inventory Data**

Facility Carried:	STEARNRS RD	Bridge Name:		Sufficiency Rating:	100.0	Structure Length:	980.4
Feature Crossed:	FOX RIVER	Location:	0.6 MI W OF IL25	HBP Eligible:	No	AASHTO Bridge Length:	99.9
Bridge Remarks:		Status Date:	01/2011	Replaced By:		Length of Long Span:	210.0
Bridge Status:	1 OPEN - NO RESTRICT			Replaces:		Bridge Roadway Width:	56.0
Status Remarks:				Last Update Date:	07/05/2012	Appr Roadway Width:	56.0
Maint County:	045 KANE	Maint Township:	14 ST CHARLES	Parallel Structure:	None	Deck Width:	63.0
Maint Responsibility:	03 COUNTY			Multi-Level Structure Nbr:		Sidewalk Width Right:	0.0
Service On/Under:	1 HIGHWAY			Skew Direction:	0 D	Sidewalk Width Left:	0.0
Reporting Agency:	3 COUNTY			Skew Angle:	0 D	Navigation Control:	0 No
Main Span Matl/Type:	4 STEEL CONTINUOUS		02 STRINGER/MULTI-BEAM/GIRDER	Structure Flared:	No	Navigation Horiz Clear:	0
Nbr Of Main Spans:	5	Nbr Of Approach Spans:	0	Border Bridge State:	No	Navigation Vert Clear:	0

**\*\*\* Approaches \*\*\***

Near #1 Matl/Type:		Bdr. State SN:		Number Culvert Cells:	0
Near #2 Matl/Type:		Bdr. State % Responsibility:	0	Culvert Opening Area:	0.0
Far #1 Matl/Type:		Structural Steel Wt:	2,662.000	Culvert Cell Height:	0.00
Far #2 Matl/Type:		Substructure Material:		Culvert Cell Width:	0.00
Median Width/Type:	4 Ft. / 3 Curb	Rate Method:	D ASSIGNED RATING BAS		
Guardrail Type L/R:	0 None / 0 None	Inventory Rating:	1.000 (36)	Crossing 1 Nbr:	
Toll Facility Indicator:	0 No Toll	Load Rating Date:	01/19/2011	Crossing 1 Nbr:	
Latitude:	41.97779431	Design Load:	93 HL93	RR Lateral Underclear:	35.1
Deck Structure Type:	A CIP CON NRMLLY FORM	Rated By:	2 IDOT	RR Vertical Underclear:	20 Ft 00 In
Sidewalks Under Structure:	4 Both Sides Separate	Load Rating:	1.360 (48)		

**Key Route On Data**

Key Route Nbr:	FEDERAL-AID PRIMARY	Station:	0361	2.1700
Apurtenances	Main Route	Segment:		
Inventory County:	045 KANE	Linked:	Y	
Township/Road Dist	14 ST CHARLES	Natl. Hwy System:		
Municipality:	0000	Inventory Direction:		Not on NHS
Urban Area:	1051	Inventory AADT Yr/Count:	2014 / 6750	
Functional Class:	3	Est Truck Percentage:	11 %	
** CLEARANCES **	South/East	Number Of Lanes:	2	
Max Rdwy Width:	40.0	One Or Two Way:	2 Two-Way	
Horizontal:	40.0	Bypass Length:	0	
Min Vertical:	99 Ft 11 In	Future AADT Yr/Cnt:	2032 / 638	
10 Ft Vertical:	99 Ft 11 In	Designated Truck Rte:	NONE	
Lateral:		Special Systems:	No	

**Key Route Under Data**

Key Route Nbr:		Station:		
Apurtenances		Segment:		
Inventory County:		Linked:		
Township/Road Dist		Natl. Hwy System:		
Municipality:		Inventory Direction:		
Urban Area:		Inventory AADT Yr/Count:		
Functional Class:		Est Truck Percentage:		
** CLEARANCES **	South/East	Number Of Lanes:		
Max Rdwy Width:		One Or Two Way:		
Horizontal:		Bypass Length:		
Min Vertical:		Future AADT Yr/Cnt:		
10 Ft Vertical:		Designated Truck Rte:		
Lateral:		Special Systems:		

**\*\*\* Marked Route On Data \*\*\***

Route #:	Designation	Kind	Number
1	Mainline	8	Other
1	Mainline		
1	Mainline		

**\*\*\* Marked Route Under Data \*\*\***

Route #:	Designation	Kind	Number

Structure Number: 045-3166 District: 1

**Data Related to Inspection Information**

\*\*\* Inspection Intervals \*\*\*  
 Routine NBIS:  24 MOS Underwater:  0 MOS One Truck At A Time:  0 Tons  
 Fracture Critical:  0 MOS Special:  N Single Unit Vehicles:  0 Tons  
 \*\*\* Maximum Allowable Posting Limits \*\*\*  
 Combination Type 3S-1:  Tons  
 Combination Type 3S-2:  Tons  
 Bridge Posting Level:  5 No Posting Required

**Inspection/Appraisal Information**

Inspection Date: 05/11/2016 Inspection Temperature: 70 Deg. F  
 Deck: 7 GOOD CONDITION - SOME MINOR PROBLEMS  
 Superstructure: 8 VERY GOOD CONDITION - NO PROBLEMS NOTED  
 Substructure: 8 VERY GOOD CONDITION - NO PROBLEMS NOTED  
 Culvert: N NOT APPLICABLE  
 Channel and Protection: 9 EXCELLENT CONDITION (NEW)  
 Structural Evaluation: 8 EQUAL TO PRESENT DESIRABLE CRITERIA  
 Deck Geometry: 9 SUPERIOR TO PRESENT DESIRABLE CRITERIA  
 Underclearance-Vert/Lat.: N NOT APPLICABLE  
 Waterway Adequacy: 9 SUPERIOR TO PRESENT DESIRABLE CRITERIA  
 Approach Roadway Align: 8 EQUAL TO PRESENT DESIRABLE CRITERIA  
 Bridge Railing Appraisal: 3 Meets Standards  
 Approach Guardrail: 333 Acceptable  
 Pier Navig Protection: N N/A

Inspection Date:  Inspection Method:   
 Temperature:  Inspection By:   
 Inspected By:  Appraisal Rating:   
 Inspection Remarks:

Insps by (Name): CharlesworthAM  
 Insp by (Name): HLR - M. BRINK  
 Utilities Attached: 5 STORM WATER  
 9 ELECTRIC  
 N N/A  
 Deck Wearing Surf: A BARE DECK NO OVRLAY  
 Deck Membrane: F NONE  
 Deck Protection: A EPOXY COATED REINF  
 Total Deck Thick: 8.0  
 Last Paint Date: 09/2009  
 Last Paint Type: S SHP ZINC&FLD ACRYL

Inspection Remarks:  
 Joint Openings: 'W ABUT. -5", 'E ABUT. -8.5" DECK - TRANSVERSE CRACKS <0.06" @ 5' INTERVALS OVER THE MAJORITY OF THE DECK-FULL DEPTH WITH LEACHING UNDERSIDE OF THE DECK.

**Underwater Inspection/Appraisal Information**

Inspection Date:  Inspection Method:   
 Temperature:  Inspection By:   
 Inspected By:  Appraisal Rating:   
 Inspection Remarks:

**Scour Critical Information**

Rating: 8 CALCULATED SCOUR ABOVE FOOTING Evaluation Method: A Computer Calculation  
 Analysis Date: 01/09/2008 Analysis By: JOC/CBBEL  
 Fracture Critical Members: No  
 Microfilm Data Recorded: No

**Miscellaneous**

**Construction Information**

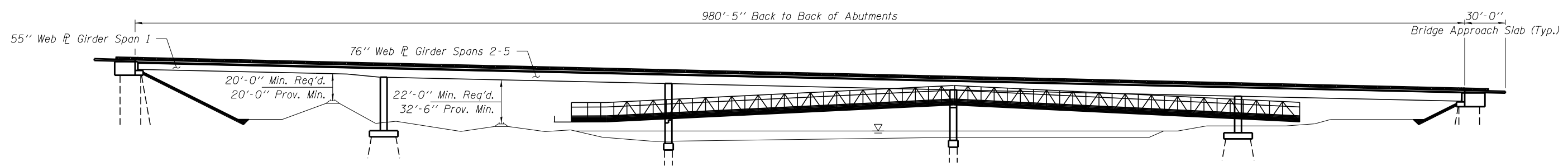
Year: 2010 Original Reconstructed  
 Route: FAP0361 Sta: 571+42.96  
 Section Nbr: 06-00214-20-BR  
 Contract Nbr: 63075  
 Fed Aid Pr #: HPP 152701500  
 Built By: 3 COUNTY AGENCY

**Proposed Improvement**

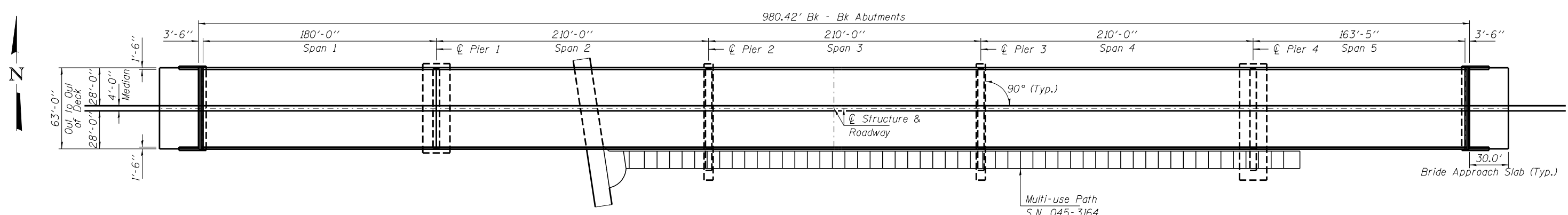
Cost Estimate Year:  Length:   
 Type of Work:   
 Done By:   
 Remarks:

\*\*\* Costs in Dollars \*\*\*  
 Bridge Cost:   
 Roadway Cost:   
 Total Project Cost:

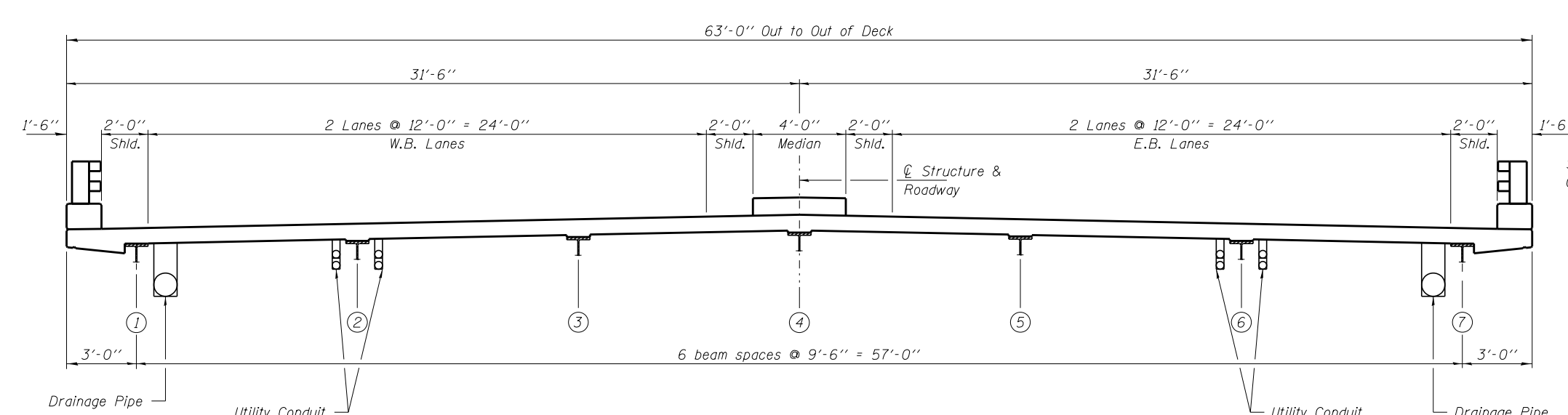
Attachment B



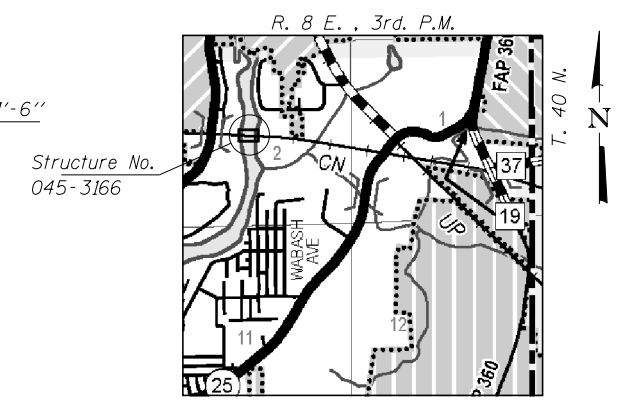
**ELEVATION**  
(Looking North)



**PLAN**



**TYPICAL DECK CROSS SECTION**  
(Looking East)



**LOCATION SKETCH**  
Attachment C

**LEGEND**

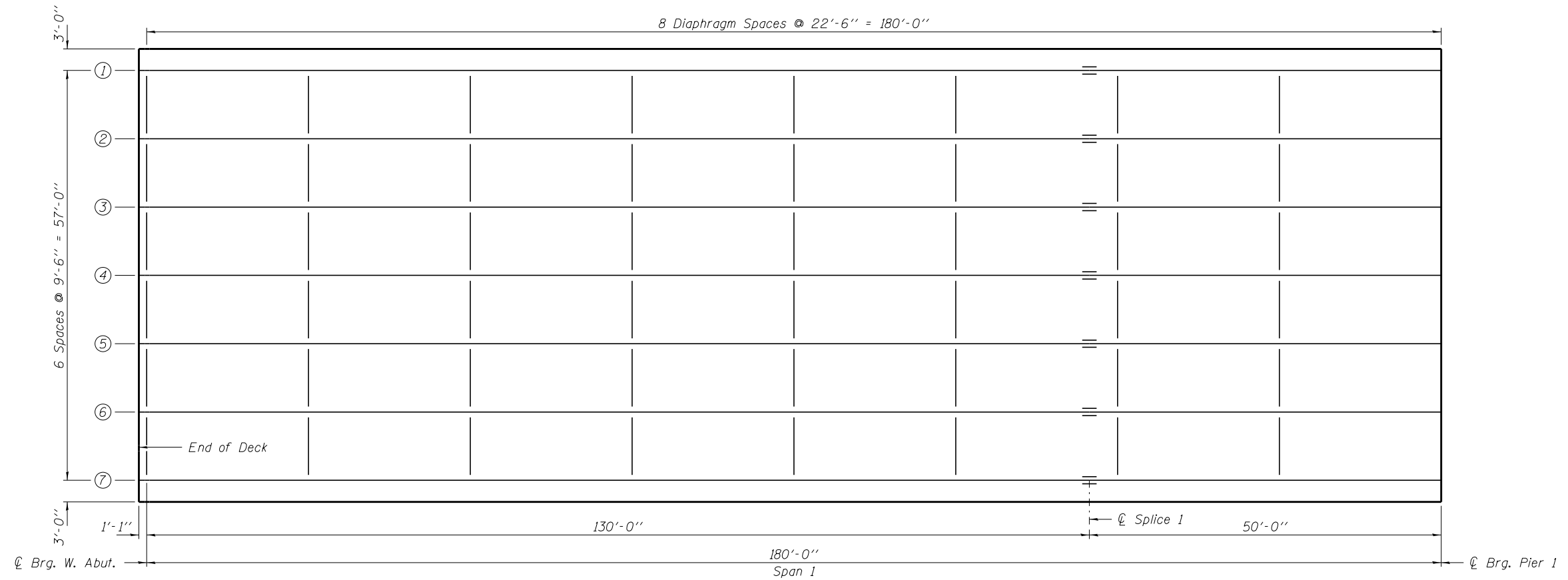
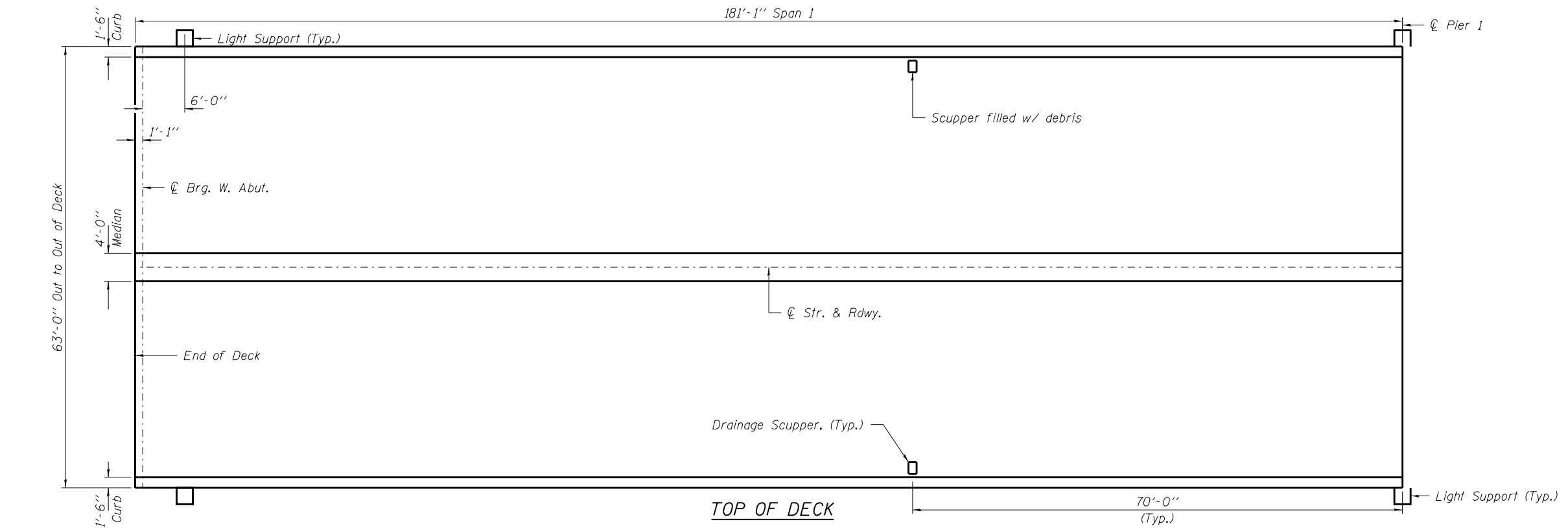
CO = Crack - Open	SS = Shear Stirrup
CC = Crack - Closed	EF = Efflorescence
CO = Corrosion	WL = Water Leakage
DL = Delamination	
LE = Leaching	Delamination
PD = Plugged Drain Hole	Spalls
PS = Prestressed Strand	Repairs
RF = Reinforcement	Crack
RP = Repair	
RS = Rust Staining	
SP = Spall	

**KANE COUNTY DIVISION OF TRANSPORTATION**

STEARNS ROAD / F.A.P. 361 OVER  
FOX RIVER  
KANE COUNTY  
STRUCTURE NUMBER: 045-3166  
**GENERAL PLAN AND ELEVATION**

DRAWN BY: RDH		DATE: MAY 11, 2016
CHECKED BY: AMC		SHEET 1 OF 11
PROJECT NO. 16.0118		

HAMPTON, LENZI AND RENWICK, INC.  
3083 STEVENSON DRIVE, SUITE 207  
SPRINGFIELD, ILLINOIS 62703  
ILLINOIS PROFESSIONAL DESIGN FIRM  
L.S. / P.E. / S.E. CORP. 184-000989



**UNDERSIDE OF DECK**

Attachment C

**LEGEND**

- |                         |                    |
|-------------------------|--------------------|
| CO = Crack - Open       | SS = Shear Stirrup |
| CC = Crack - Closed     | EF = Efflorescence |
| CO = Corrosion          | WL = Water Leakage |
| DL = Delamination       | Delamination       |
| LE = Leaching           | Spalls             |
| PD = Plugged Drain Hole | Repairs            |
| PS = Prestressed Strand | Crack              |
| RF = Reinforcement      |                    |
| RP = Repair             |                    |
| RS = Rust Staining      |                    |
| SP = Spall              |                    |

Note:  
Damage area dimensions are shown as length along beam x width across beam.

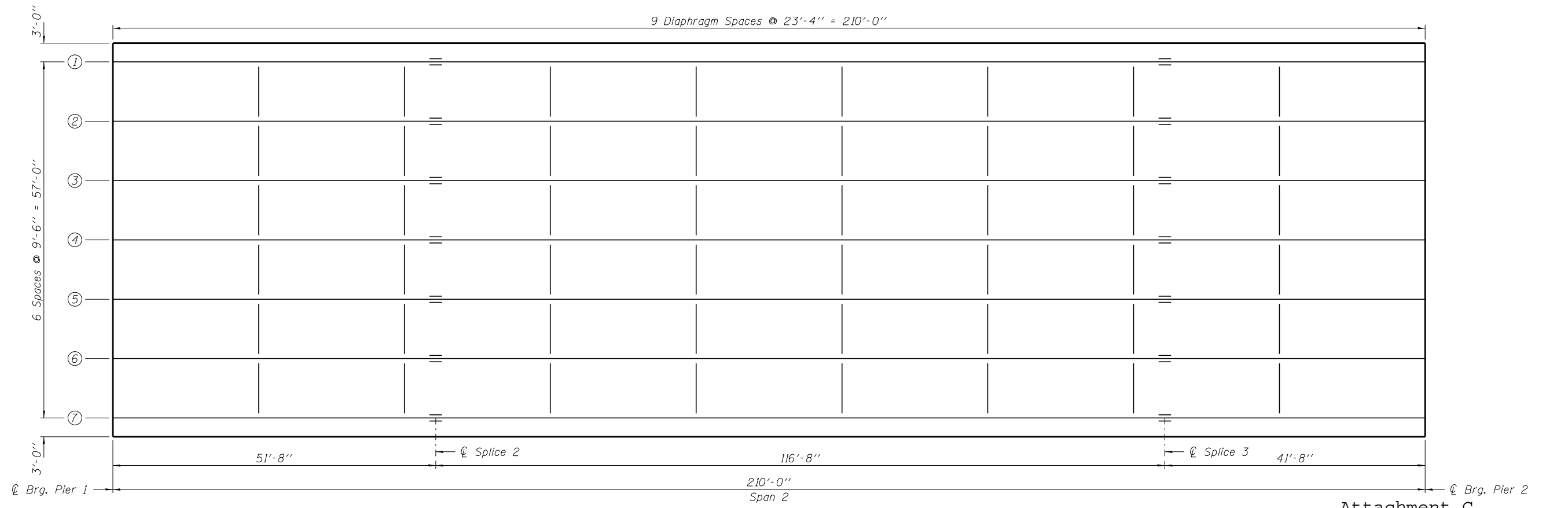
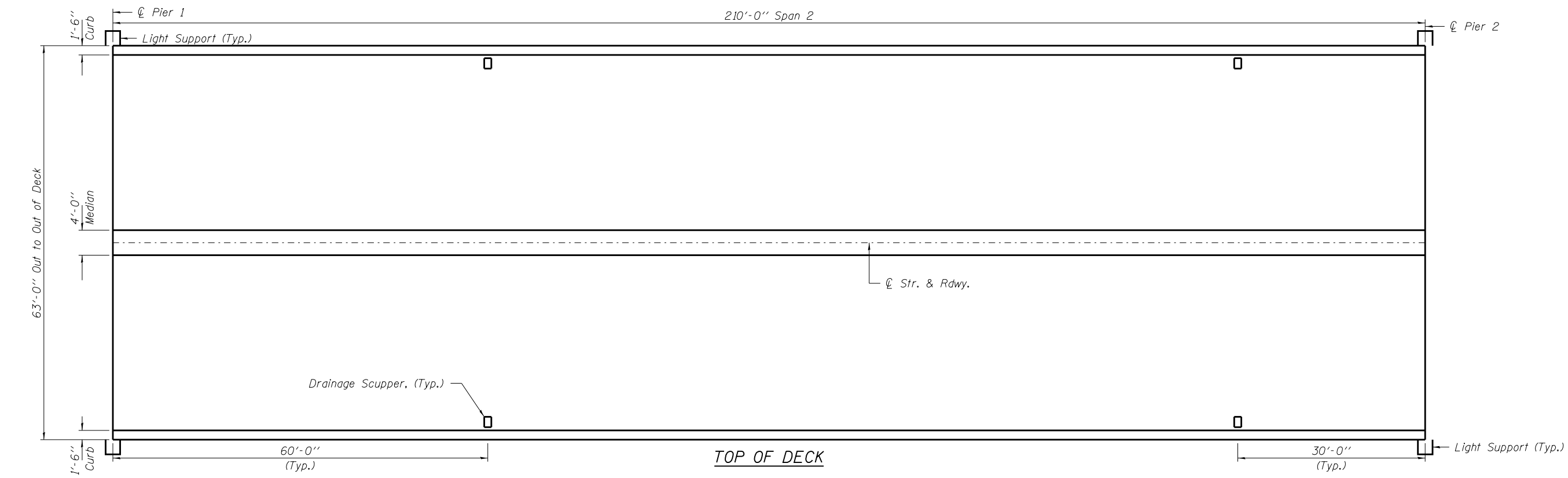
Notes: Transverse HL cracks in top of deck, typ. at 5' spacing.

Transverse HL cracks with efflorescence along bottom of deck, typ. at 5' spacing.

**KANE COUNTY DIVISION OF TRANSPORTATION**

STEARNS ROAD / F.A.P. 361 OVER  
FOX RIVER  
KANE COUNTY  
STRUCTURE NUMBER: 045-3166  
**SPAN I**

DRAWN BY: RDH	<b>HAMPTON, LENZINI AND RENWICK, INC.</b> 3083 STEVENSON DRIVE, SUITE 207 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184-000989	DATE: MAY 11, 2016
CHECKED BY: AMC		SHEET 2 OF 11
PROJECT NO. 16.018		



Attachment C

**LEGEND**

CO = Crack - Open	SS = Shear Stirrup
CC = Crack - Closed	EF = Efflorescence
CO = Corrosion	WL = Water Leakage
DL = Delamination	
LE = Leaching	Delamination
PD = Plugged Drain Hole	Spalls
PS = Prestressed Strand	Repairs
RF = Reinforcement	Crack
RP = Repair	
RS = Rust Staining	
SP = Spall	

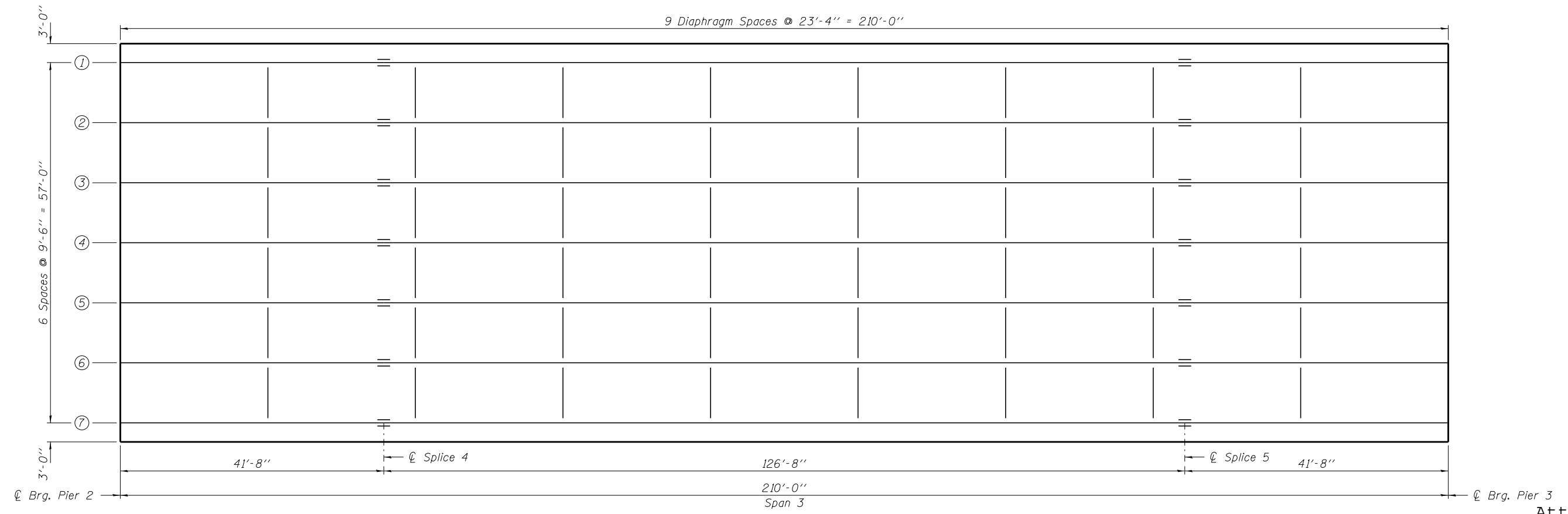
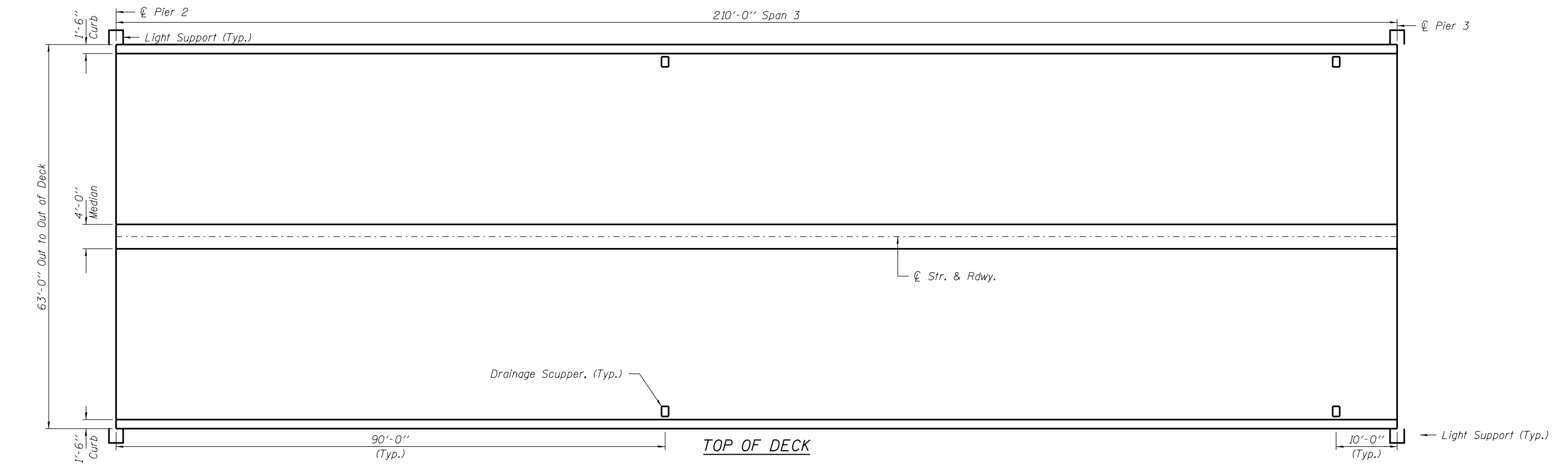
Note:  
Damage area dimensions are shown as length along beam x width across beam.

Notes: Transverse HL cracks in top of deck, typ. at 5' spacing.  
Transverse HL cracks with efflorescence along bottom of deck, typ. at 5' spacing.

**KANE COUNTY DIVISION OF TRANSPORTATION**

STEARNS ROAD / F.A.P. 361 OVER  
FOX RIVER  
KANE COUNTY  
STRUCTURE NUMBER: 045-3166  
**SPAN 2**

DRAWN BY: RDH	<b>HAMPTON, LENZINI AND RENWICK, INC.</b> 3083 STEVENSON DRIVE, SUITE 207 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L.S./P.E./S.E. CORP. 184-000989	DATE: MAY 11, 2016
CHECKED BY: AMC		SHEET 3 OF 11
PROJECT NO. 16.0118		



Attachment C

UNDERSIDE OF DECK

**LEGEND**

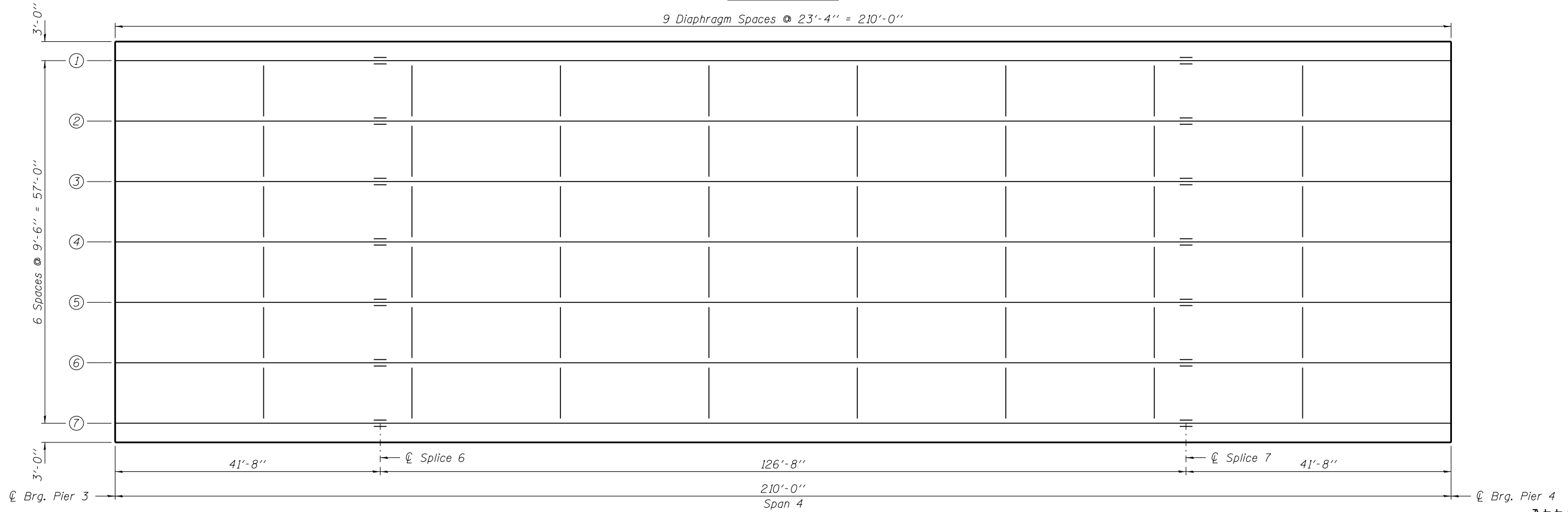
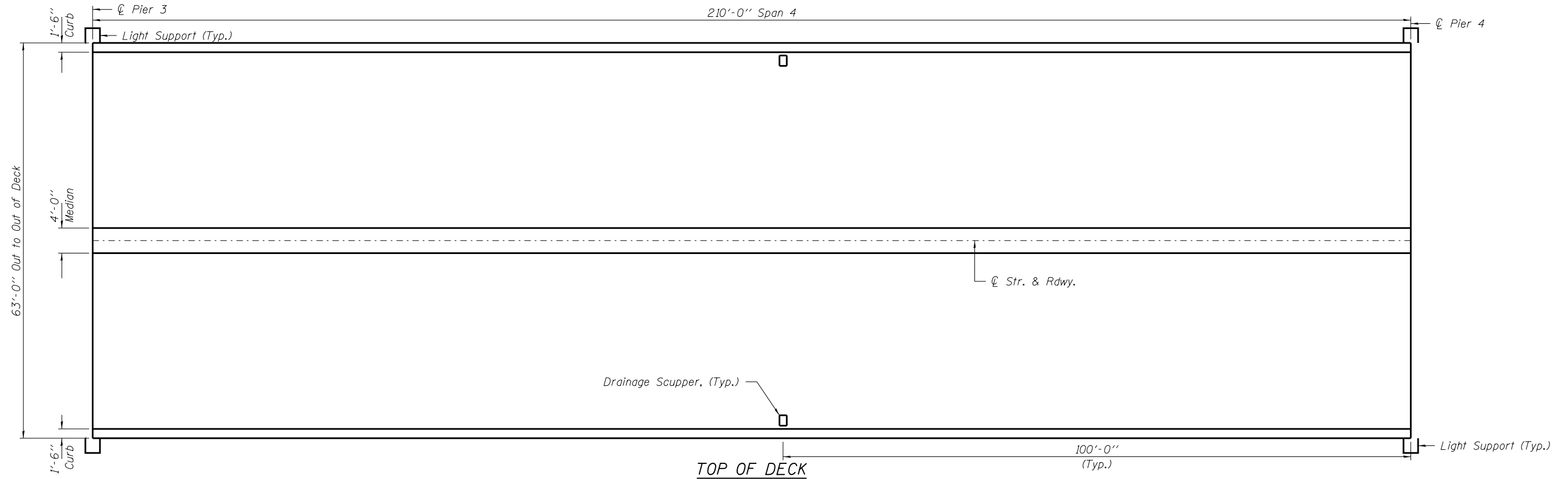
CO = Crack - Open	SS = Shear Stirrup
CC = Crack - Closed	EF = Efflorescence
CO = Corrosion	WL = Water Leakage
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PD = Plugged Drain Hole	Spalls
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RF = Reinforcement	Crack
RP = Repair	
RS = Rust Staining	
SP = Spall	

Note:  
Damage area dimensions are shown as length along beam x width across beam.

Notes: Transverse HL cracks in top of deck, typ. at 5' spacing.  
Transverse HL cracks with efflorescence along bottom of deck, typ. at 5' spacing.

<b>KANE COUNTY DIVISION OF TRANSPORTATION</b>		
STEARNS ROAD / F.A.P. 361 OVER FOX RIVER KANE COUNTY STRUCTURE NUMBER: 045-3166 <b>SPAN 3</b>		
DRAWN BY: RDH	 <b>HAMPTON, LENZI AND RENWICK, INC.</b> 3083 STEVENSON DRIVE, SUITE 207 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L.S./P.E./S.E. CORP. 184-000988	DATE: MAY 11, 2016
CHECKED BY: AMC		SHEET 4 OF 11
PROJECT NO. 16.0118		





UNDERSIDE OF DECK

Attachment C

LEGEND

- |                         |                    |
|-------------------------|--------------------|
| CO = Crack - Open       | SS = Shear Stirrup |
| CC = Crack - Closed     | EF = Efflorescence |
| CO = Corrosion          | WL = Water Leakage |
| DL = Delamination       |                    |
| LE = Leaching           | Delamination       |
| PD = Plugged Drain Hole | Spalls             |
| PS = Prestressed Strand | Repairs            |
| RF = Reinforcement      | Crack              |
| RP = Repair             |                    |
| RS = Rust Staining      |                    |
| SP = Spall              |                    |

Note:  
Damage area dimensions are shown as length along beam x width across beam.

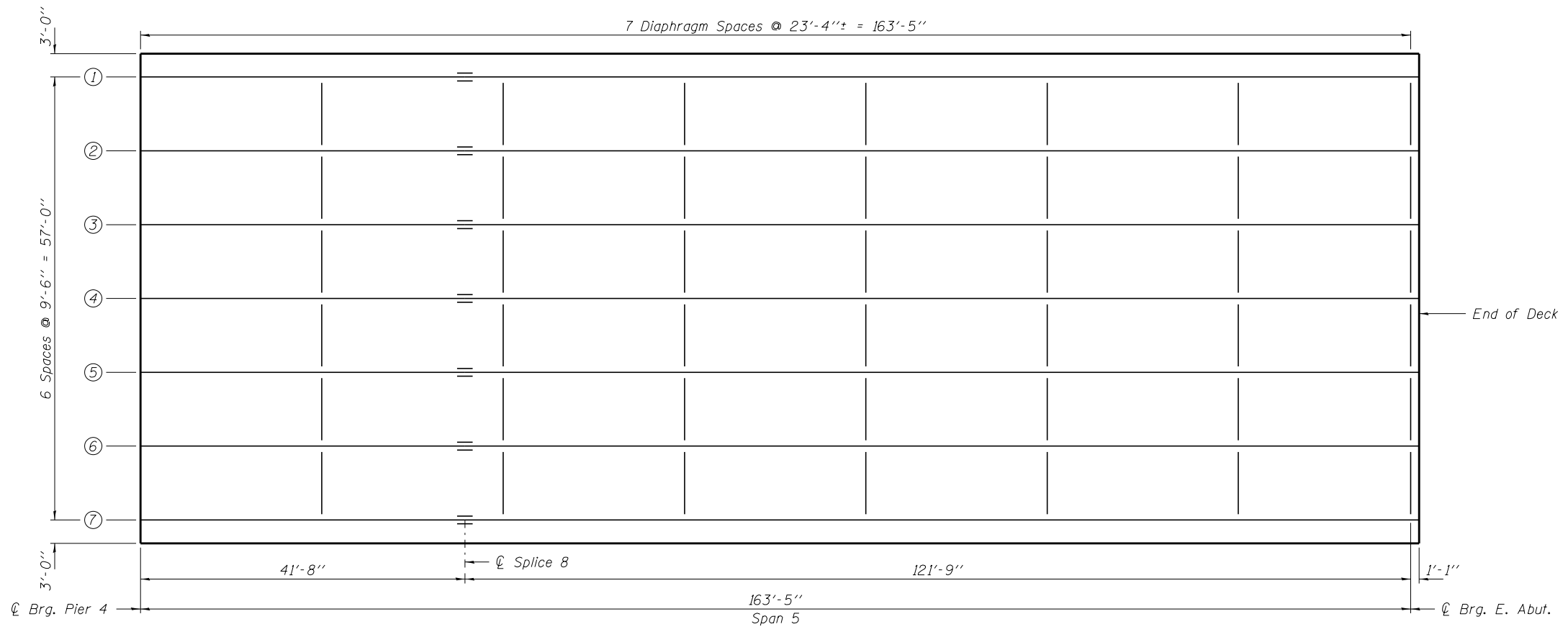
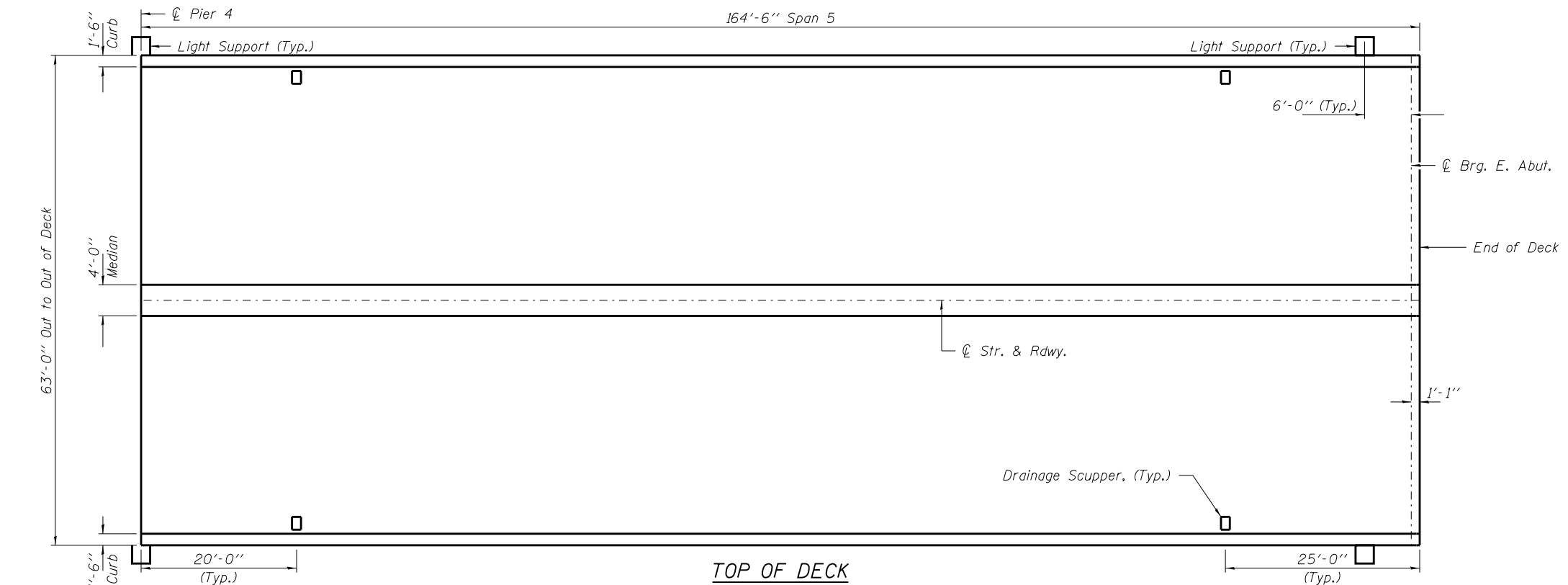
Notes: Transverse HL cracks in top of deck, typ. at 5' spacing.

Transverse HL cracks with efflorescence along bottom of deck, typ. at 5' spacing.

**KANE COUNTY DIVISION OF TRANSPORTATION**

STEARNS ROAD / F.A.P. 361 OVER  
FOX RIVER  
KANE COUNTY  
STRUCTURE NUMBER: 045-3166  
**SPAN 4**

DRAWN BY: RDH		DATE:
CHECKED BY: AMC		MAY 11, 2016
PROJECT NO. 16.0118		SHEET 5 OF 11



Attachment C

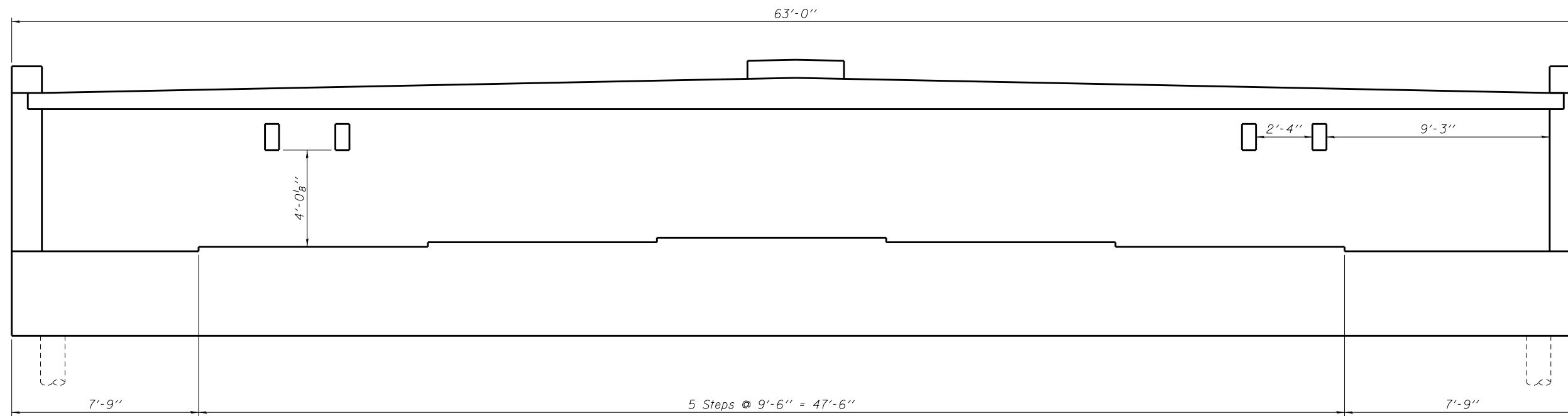
**LEGEND**

CO = Crack - Open	SS = Shear Stirrup
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LE = Leaching	Delamination
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RF = Reinforcement	Crack
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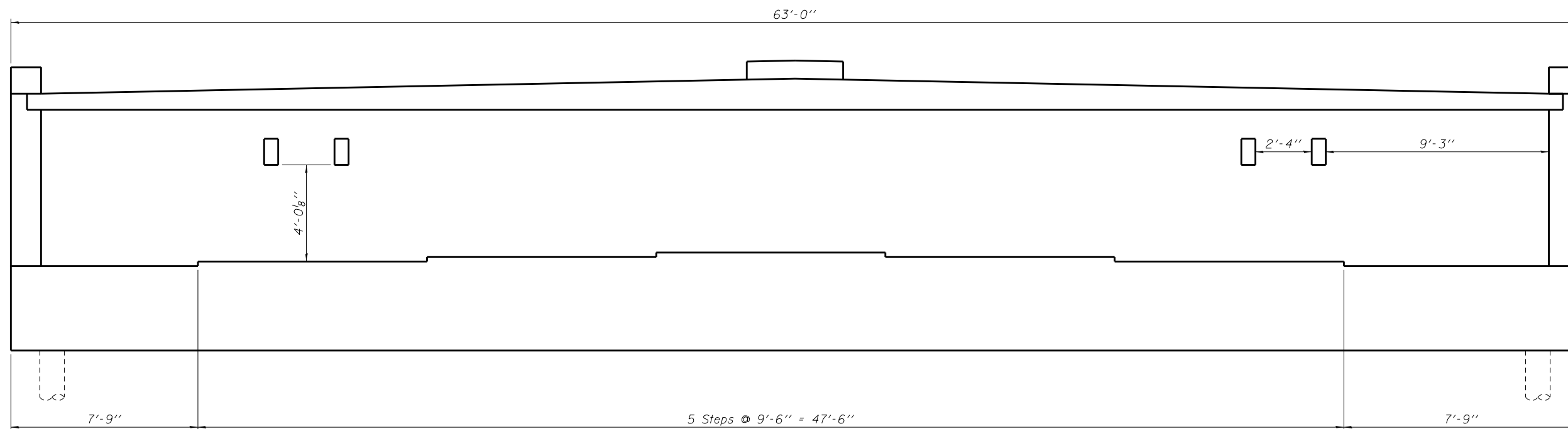
Note:  
Damage area dimensions are shown as length along beam x width across beam.

Notes: Transverse HL cracks in top of deck, typ. at 5' spacing.  
Transverse HL cracks with efflorescence along bottom of deck, typ. at 5' spacing.

<b>KANE COUNTY DIVISION OF TRANSPORTATION</b>		
STEARNS ROAD / F.A.P. 361 OVER FOX RIVER KANE COUNTY STRUCTURE NUMBER: 045-3166 <b>SPAN 5</b>		
DRAWN BY: RDH	 3083 STEVENSON DRIVE, SUITE 207 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L.S./P.E. SE CORP. 184-000989	DATE: MAY 11, 2016
CHECKED BY: AMC		SHEET 6 OF 11
PROJECT NO. 16.0118		







WEST ABUTMENT ELEVATION



EAST ABUTMENT ELEVATION

Attachment C

**LEGEND**

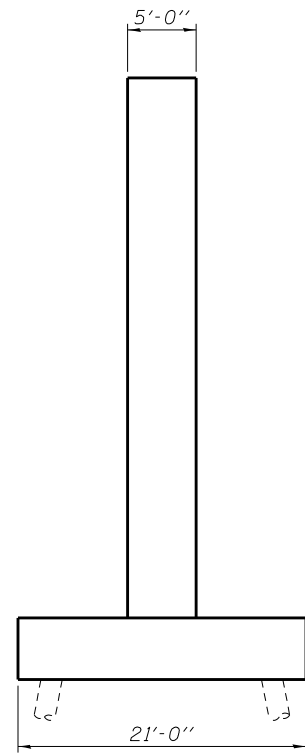
- |                         |  |
|-------------------------|--|
| CO = Crack - Open       | SS = Shear Stirrup   |
| CC = Crack - Closed     | EF = Efflorescence   |
| CO = Corrosion          | WL = Water Leakage   |
| DL = Delamination       |  Delamination |
| LE = Leaching           |  Spalls       |
| PD = Plugged Drain Hole |  Repairs      |
| PS = Prestressed Strand |  Crack        |
| RF = Reinforcement      |  |
| RP = Repair             |  |
| RS = Rust Staining      |  |
| SP = Spall              |  |

Note:  
Damage area dimensions are shown as length along beam x width across beam.

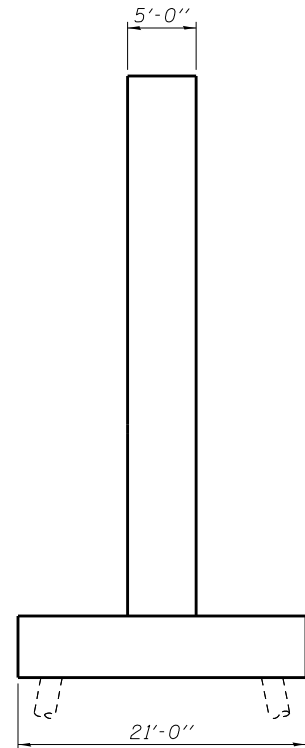
**KANE COUNTY DIVISION OF TRANSPORTATION**

STEARNS ROAD / F.A.P. 361 OVER  
FOX RIVER  
KANE COUNTY  
STRUCTURE NUMBER: 045-3166  
**ABUTMENTS**

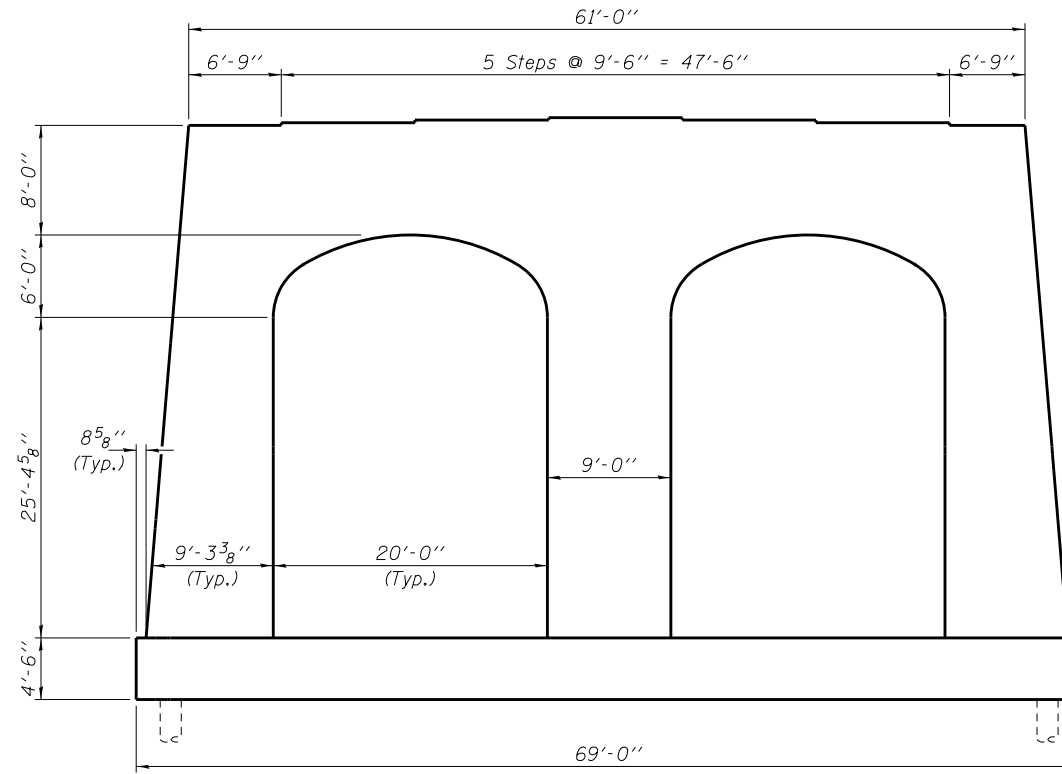
DRAWN BY: RDH		DATE:
CHECKED BY: AMC		MAY 11, 2016
PROJECT NO. 16.018		SHEET 7 OF 11



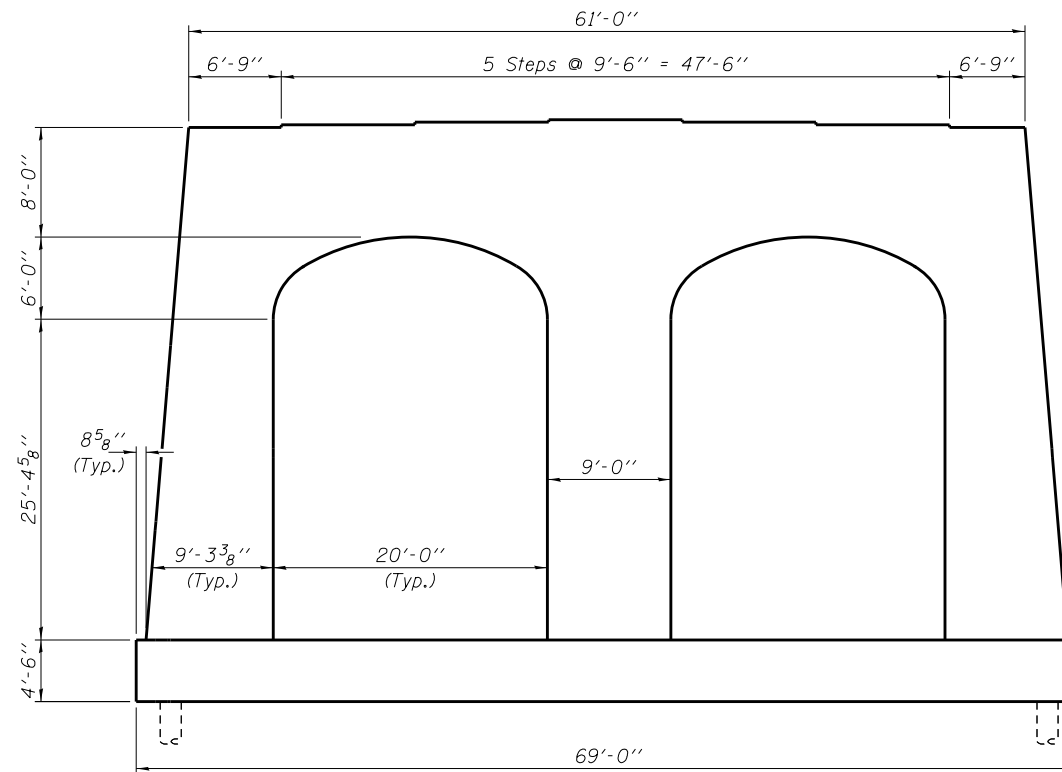
**END VIEW**  
(North Nose)



**END VIEW**  
(South Nose)



**PIER ELEVATION**  
(West Side)



**PIER ELEVATION**  
(East Side)

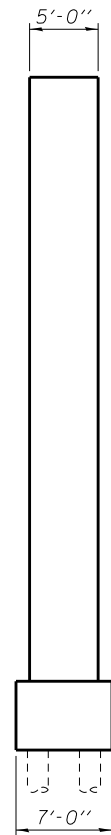
Attachment C

LEGEND	
CO = Crack - Open	SS = Shear Stirrup
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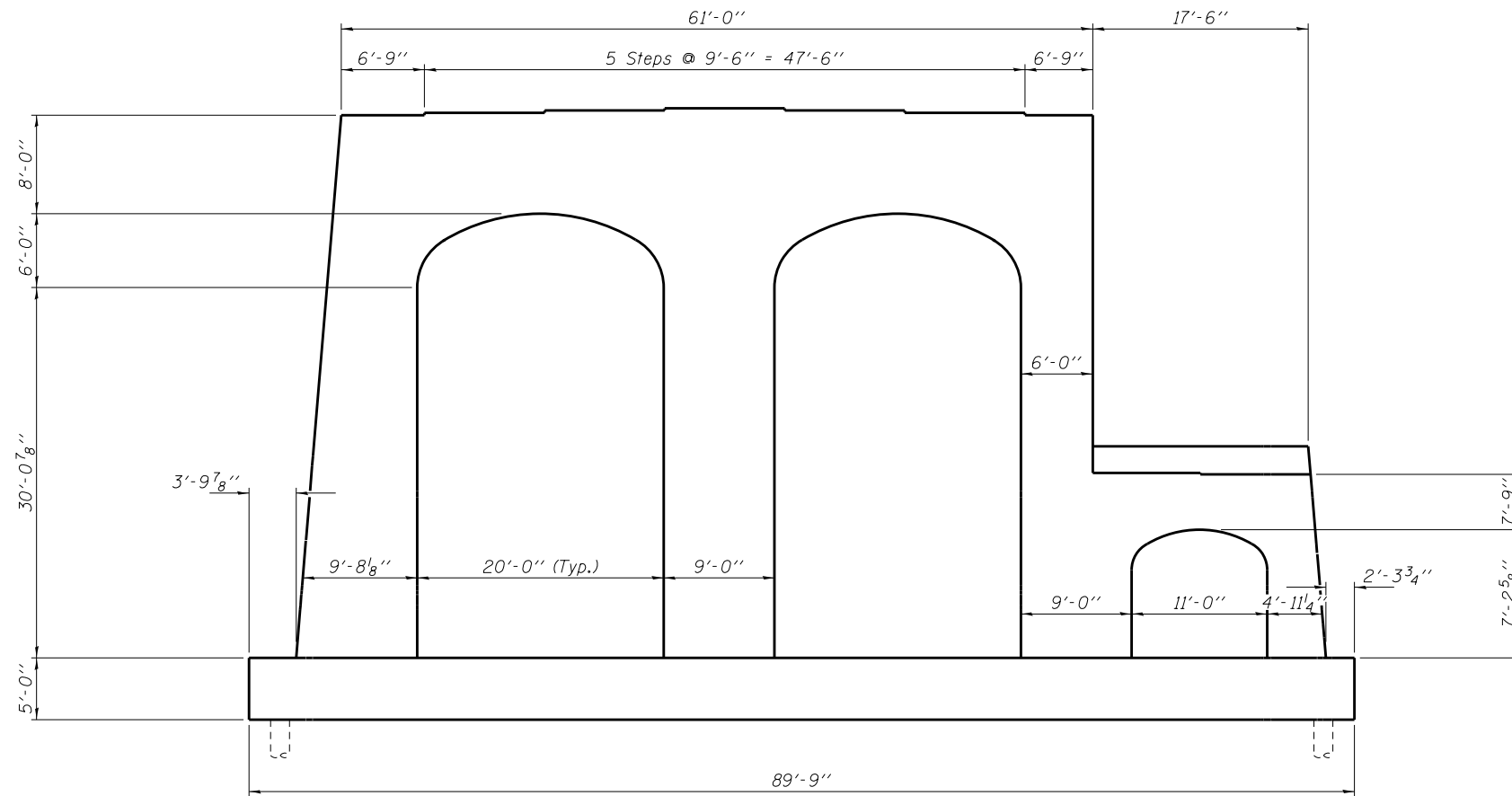
**KANE COUNTY DIVISION OF TRANSPORTATION**

STEARNS ROAD / F.A.P. 361 OVER  
FOX RIVER  
KANE COUNTY  
STRUCTURE NUMBER: 045-3166  
PIER I

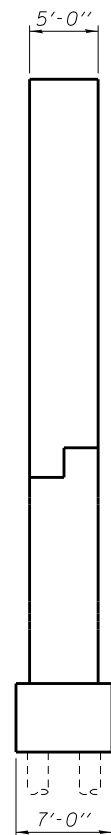
DRAWN BY: RDH	HAMPTON, LENZI AND RENWICK, INC. <small>3083 STEVENSON DRIVE, SUITE 207 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L.S./P.E./S.E. CORP. 184-000989</small>	DATE:
CHECKED BY: AMC		MAY 11, 2016
PROJECT NO. 16.018		SHEET 8 OF 11



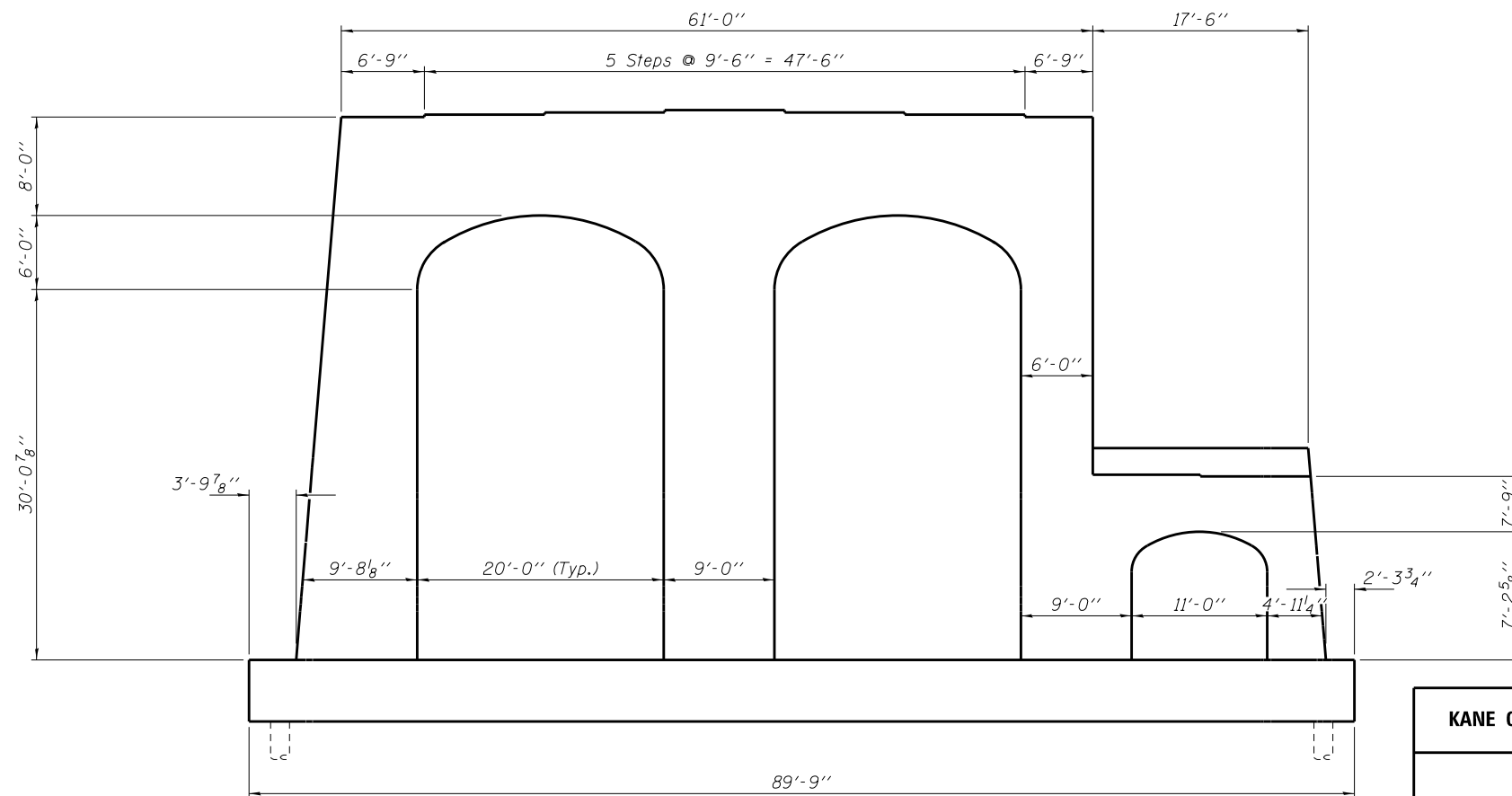
**END VIEW**  
(North Nose)



**PIER ELEVATION**  
(West Side)



**END VIEW**  
(South Nose)



**PIER ELEVATION**  
(East Side)

Attachment C

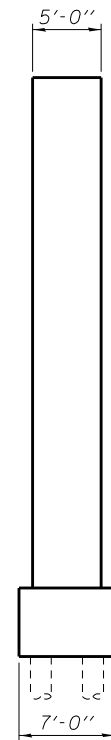
**LEGEND**

- |                         |                    |
|-------------------------|--------------------|
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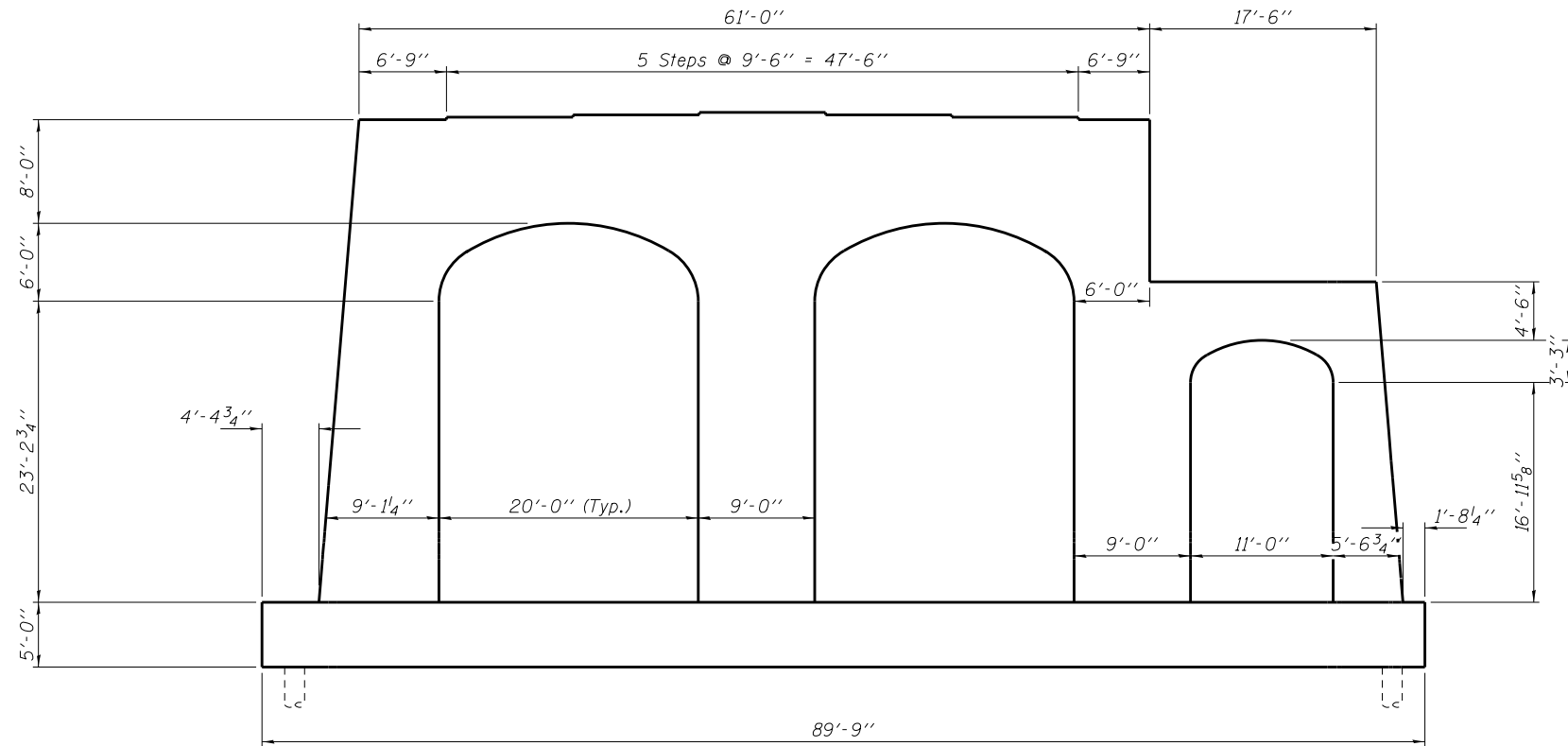
**KANE COUNTY DIVISION OF TRANSPORTATION**

STEARNS ROAD / F.A.P. 361 OVER  
FOX RIVER  
KANE COUNTY  
STRUCTURE NUMBER: 045-3166  
**PIER 2**

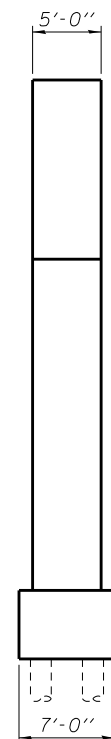
DRAWN BY: RDH	<b>HAMPTON, LENZINI AND RENWICK, INC.</b> 3083 STEVENSON DRIVE, SUITE 207 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L.S./P.E./S.E. CORP. 184.000989	DATE: MAY 11, 2016
CHECKED BY: AMC		SHEET 9 OF 11
PROJECT NO. 16.0118		



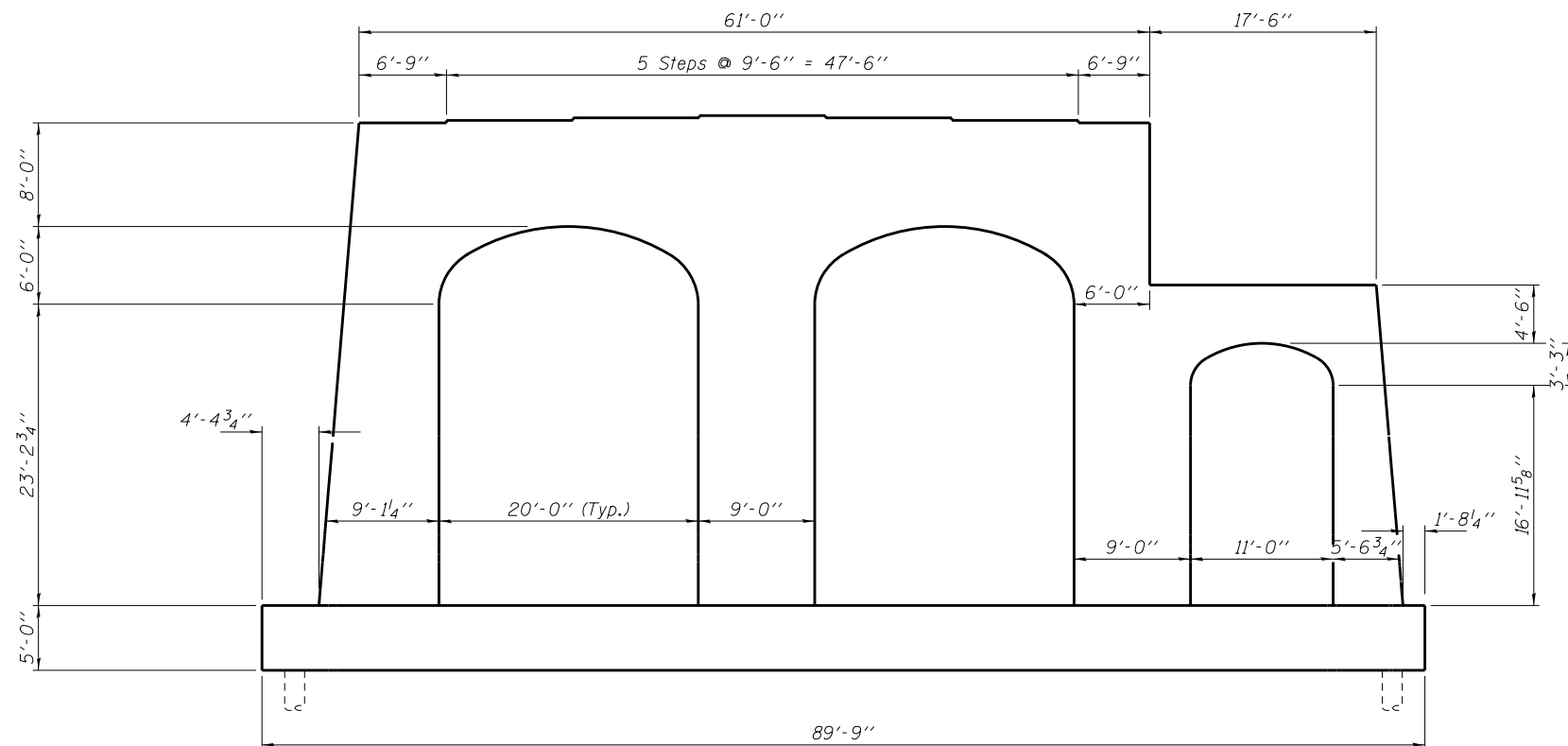
**END VIEW**  
(North Nose)



**PIER ELEVATION**  
(West Side)



**END VIEW**  
(South Nose)



**PIER ELEVATION**  
(East Side)

Attachment C

**KANE COUNTY DIVISION OF TRANSPORTATION**

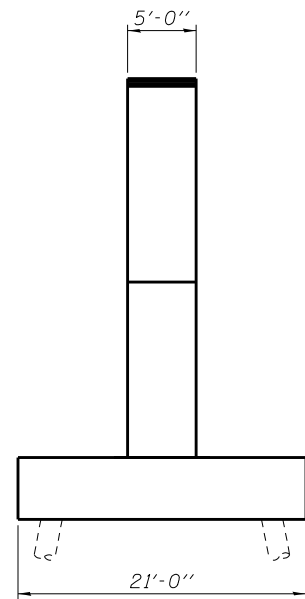
STEARNS ROAD / F.A.P. 361 OVER  
FOX RIVER  
KANE COUNTY  
STRUCTURE NUMBER: 045-3166  
**PIER 3**

DRAWN BY: RDH  
CHECKED BY: AMC  
PROJECT NO. 16.018B

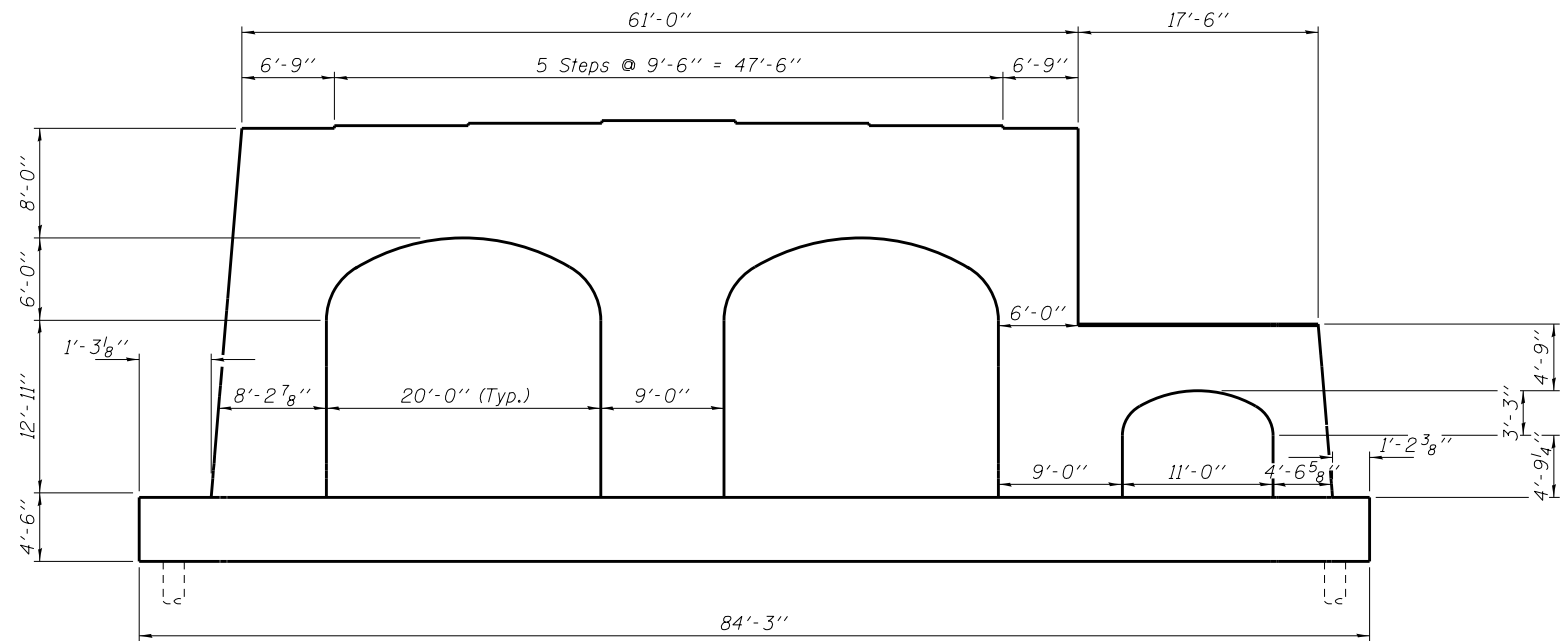
**HAMPTON, LENZINI AND RENWICK, INC.**  
3083 STEVENSON DRIVE, SUITE 207  
SPRINGFIELD, ILLINOIS 62703  
ILLINOIS PROFESSIONAL DESIGN FIRM  
L.S./P.E./S.E. CORP. 184.000988

DATE:  
MAY 11, 2016  
SHEET 10 OF 11

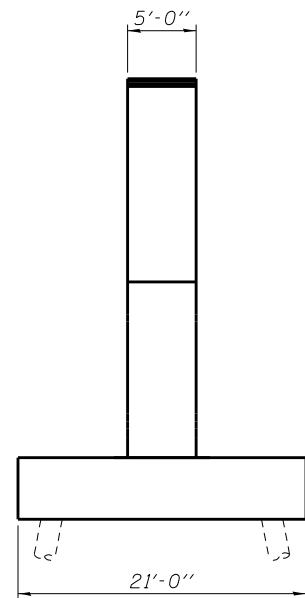
LEGEND	
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SP = Spall	



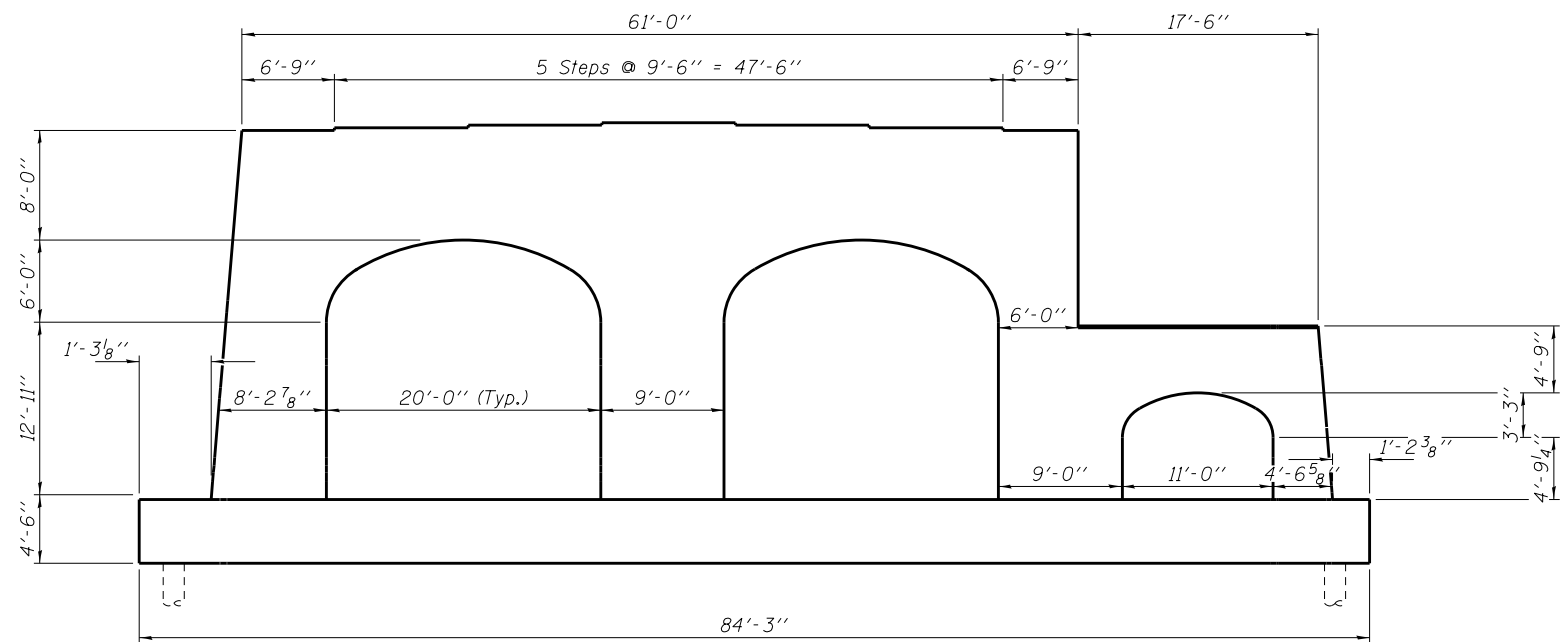
**END VIEW**  
(North Side)



**PIER ELEVATION**  
(West Side)



**END VIEW**  
(South Side)



**PIER ELEVATION**  
(East Side)

Attachment C

**KANE COUNTY DIVISION OF TRANSPORTATION**

STEARNS ROAD / F.A.P. 361 OVER  
FOX RIVER  
KANE COUNTY  
STRUCTURE NUMBER: 045-3166  
**PIER 4**

DRAWN BY: RDH  
CHECKED BY: AMC  
PROJECT NO. 16.0118

**HAMPTON, LENZINI AND RENWICK, INC.**  
3083 STEVENSON DRIVE, SUITE 207  
SPRINGFIELD, ILLINOIS 62703  
ILLINOIS PROFESSIONAL DESIGN FIRM  
LS / PE / SE CORP. 184.000989

DATE:  
MAY 11, 2016  
SHEET 11 OF 11

**LEGEND**

- |                         |                    |
|-------------------------|--------------------|
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| RF = Reinforcement      | Crack              |
| RP = Repair             |                    |
| RS = Rust Staining      |                    |
| SP = Spall              |                    |



Photo 1 - East Abutment



Photo 2 - Underside of Deck - North Bay of Span 5





Photo 3 - Span 5 - Typical Diaphragm



Photo 4 - East Face of Pier 4



Photo 5 - Span 5 - Splice



Photo 6 - Typical Bearing at Pier 4



Photo 7 - North Fascia Looking Southwest



Photo 8 - Underside of Deck in Span 4



Photo 9 - Pedestrian Bridge Looking Southwest



Photo 10 - East Face of Pier 3



Photo 11 - Looking South Downstream from Bridge



Photo 12 - Bearings at Pier 3



Photo 13 - Typical Beam Span 4



Photo 14 - Span 4 - Paint Failure on Splice Plate



Photo 15 - Looking North Upstream from Bridge



Photo 16 - Outside of North Parapet and Lightpole Looking Southeast



Photo 17 - Underside of Deck in Span 3 Looking West



Photo 18 - Underside of Deck in Span 3





Photo 19 - Underside of Deck - Span 3 Bay 3 Rust Staining



Photo 20 - Bearing at Pier 2 Beam 4



Photo 21 - Pedestrian Bridge Looking East From Pier 2



Photo 22 - Pier 2 Column at the Waterline



Photo 23 - Span 2 Looking West



Photo 24 - Pedestrian Bridge Looking East From Pier 2



Photo 25 - Looking Southeast Across Bridge



Photo 26 - Underside of Deck in Span 2



Photo 27 - East Face of Pier 1



Photo 28 - Track and Power Lines in Span 2



Photo 29 - Looking North along West Shoreline



Photo 30 - Looking South Along West Shoreline



Photo 31 - Span 1 - Change in Beam Section



Photo 32 - Span 2 - Change in Flange near Pier 1



Photo 33 - Span 2 From Pier 1



Photo 34 - Bearing at Pier 1





Photo 35 - Underside Deck in Span 2 from Pier 1



Photo 36 - North Fascia - Span 1



Photo 37 - Railroad Construction in Progress Under Span 1 Looking Southwest



Photo 38 - Span 1 - Beam 4 at Change of Section



Photo 39 - Underside of Span 1 from Pier 1



Photo 40 - Splice Plate of Beam 4



Photo 41 - Slopewall and Retaining Wall of the West Abutment



Photo 42 - Slopewall and Retaining Wall of the West Abutment



Photo 43 - Drain Detail Underside Bay 1 - Span 1



Photo 44 - Diaphragm and West Abutment Backwall - Bay 1



Photo 45 - Bearing at the West Abutment



Photo 46 - Bearing at the West Abutment



Photo 47 - West Abutment



Photo 48 - Underside Joint at West Abutment Looking South



Photo 49 - Looking East Across Bridge



Photo 50 - West Approach - Westbound Lanes





Photo 51 - West Approach - Eastbound Lanes

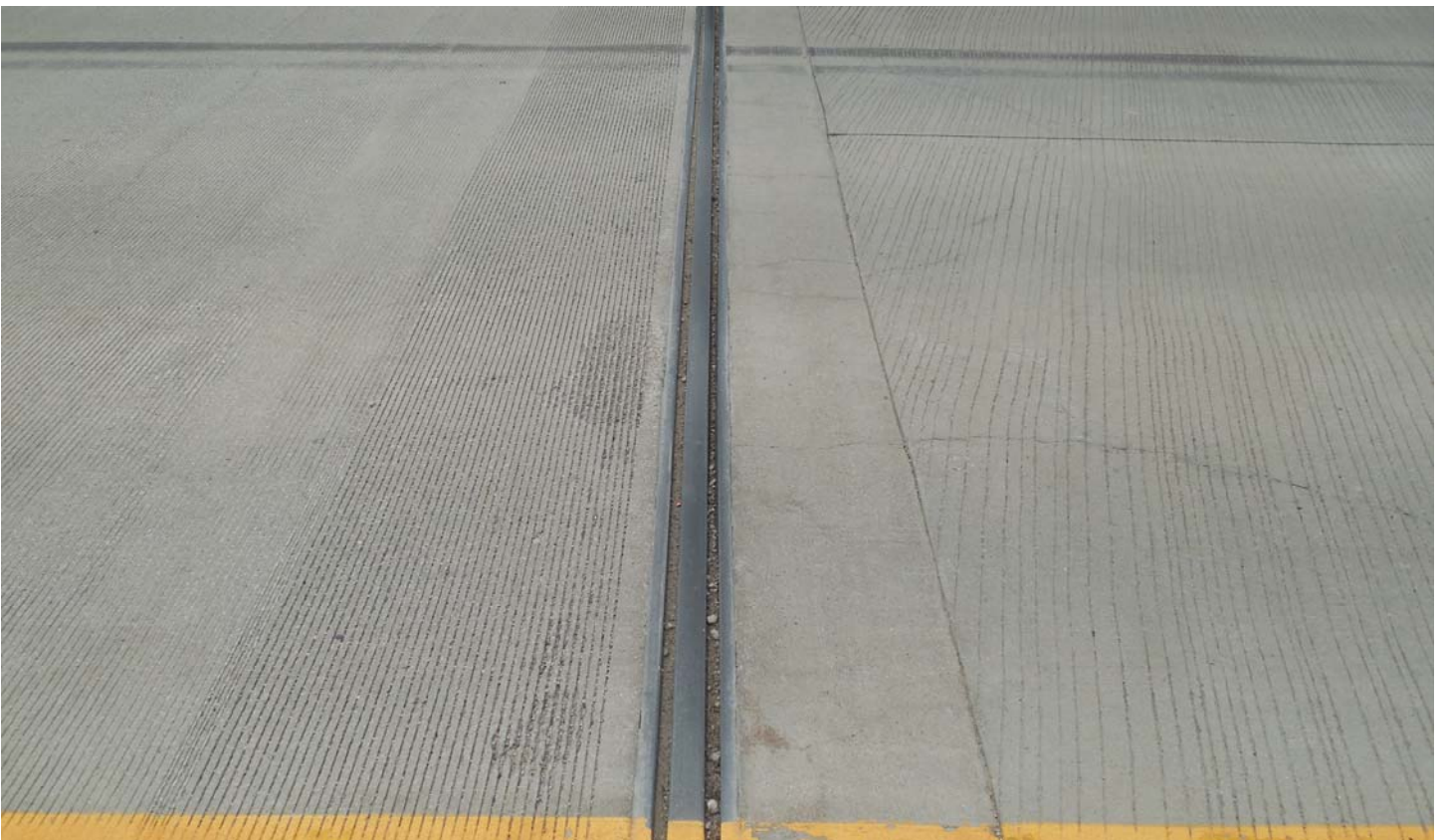


Photo 52 - Deck Joint at West Abutment in the Eastbound Lane Looking South

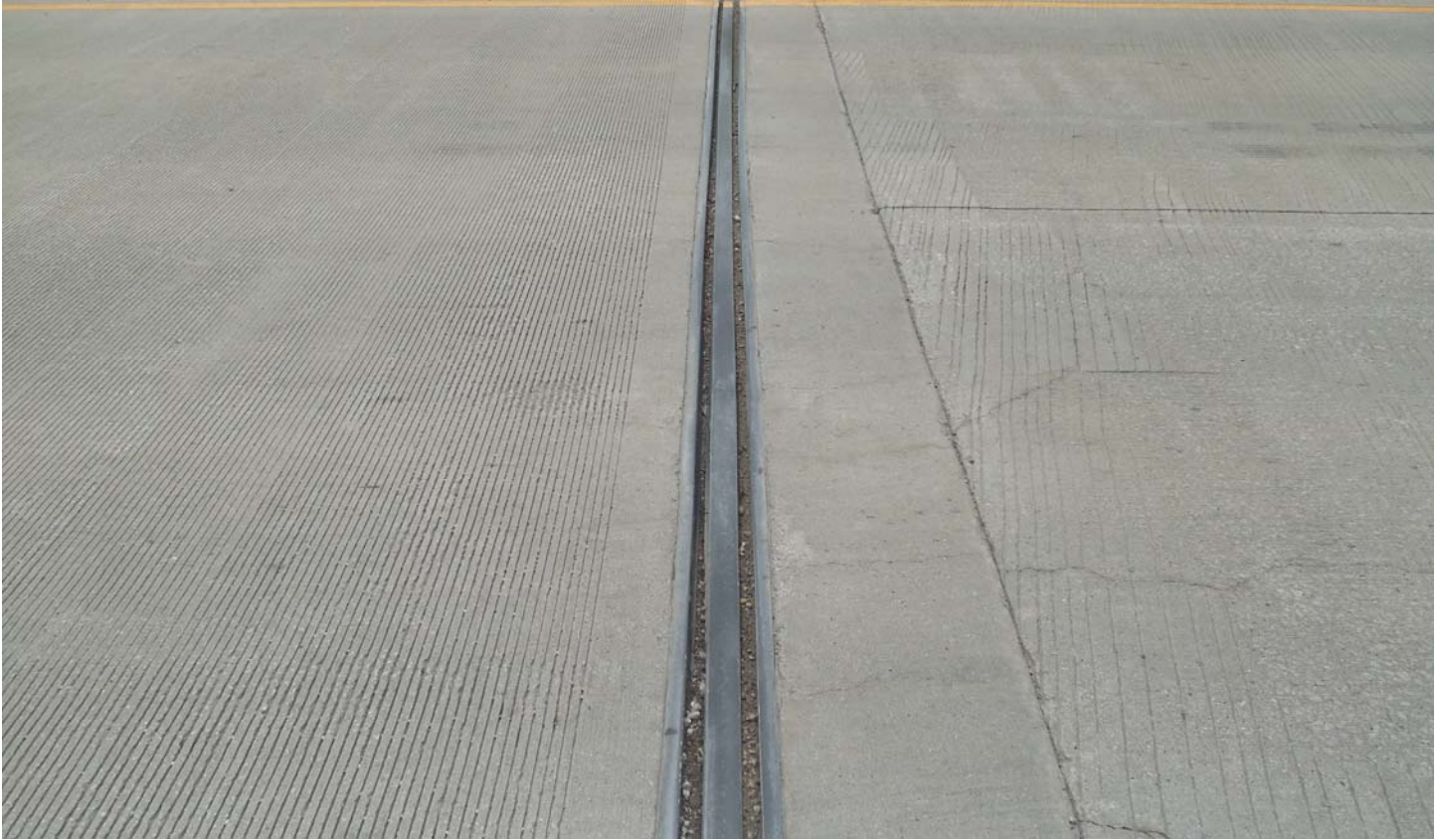


Photo 53 - Deck Joint at West Abutment in the Westbound Lane Looking South



Photo 54 - Name Plate



Photo 55 - Light Pole - North Rail near West Abutment Looking Northeast



Photo 56 - Light Pole - North Rail near West Abutment Looking North



Photo 57 - Top of Deck Drain - Span 1

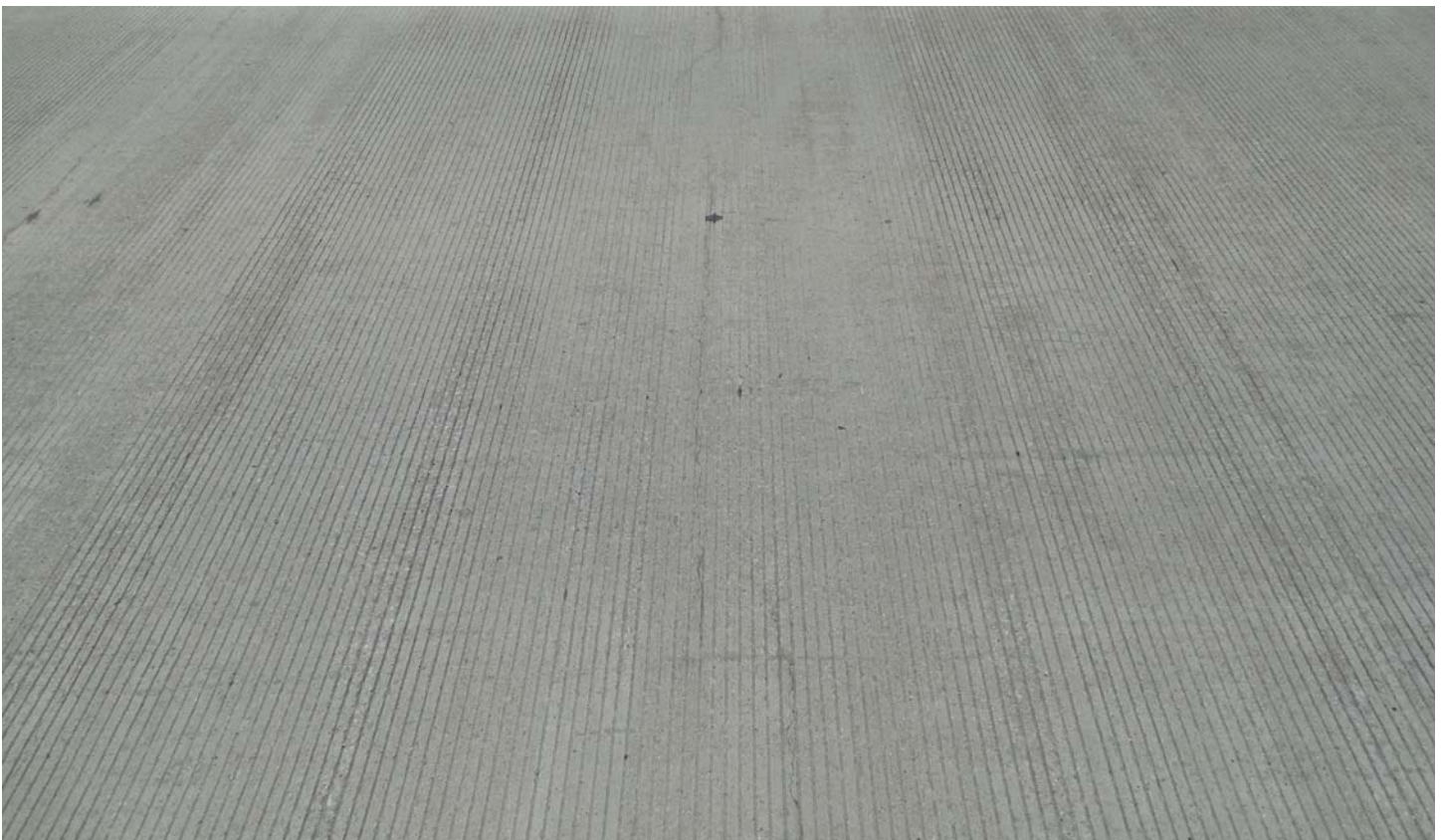


Photo 58 - Top of Deck - Typical Cracking in Span 1



Photo 59 - Top of Deck - Typical Cracking in Span 2



Photo 60 - Top of Deck - Typical Cracking in Span 3



Photo 61 - Top of Deck in Span 4 - Cold Joint



Photo 62 - East Approach - Westbound Lanes



Photo 63 - East Approach - Eastbound Lanes



Photo 64 - Deck Joint at East Abutment in the Eastbound Lane Looking South



Photo 65 - Deck Joint at East Abutment in the Westbound Lane Looking South



Photo 66 - Looking West Across Bridge From East Approach





Photo 67 - North Elevation Looking Southwest



Photo 68 - 3rd Bay Diagram at the East Abutment



Photo 69 - Bearing at East Abutment



Photo 70 - Underside Joint at East Abutment



Photo 71 - East Abutment Cap and Backwall



Photo 72 - Drainage Pipe in Bay 6 near the East Abutment



Photo 73 - South Elevation Looking Northwest

KANE COUNTY DIVISION OF  
TRANSPORTATION

ST CHARLESTOWNSHIP  
STRUCTURE 045-3166  
STEARNS ROAD OVER  
FOX RIVER

ESTIMATE OF COST - SHORT TERM RECOMENDATIONS

55'-5" bk-bk abutments; 27'-0" face-to-face rails

ITEM NO.	ITEMS	UNIT	QUANTITY	UNIT PRICE	TOTAL
1.	Concrete Sealer	Sq Ft	61803	\$ 2.00	\$ 123,606
2.	Traffic Control and Protection	L Sum	1	\$ 20,000.00	\$ 20,000
3.	Mobilization	L Sum	1	\$ 10,000.00	<u>\$ 10,000</u>
	SUBTOTAL				\$143,606
	10% CONTINGENCY				<u>\$14,361</u>
	TOTAL ESTIMATE OF COST				\$157,967

Made by: AMC 6/14/2016  
Checked by: SWM 9/15/2016

**Rating Summary - SN: 045-3166**

DWT 01/05/2011

	+S1	+S2	+S3	+S4	+S5	-P1	-P2	-P3	-P4	Shear	Controlling	
HS 20 - INV	<b>0.890</b>	1.575	1.488	1.592	1.505	1.467	1.324	1.274	1.487	1.467	<b>0.890</b>	RF
HS 20 - OPR	1.486	2.630	2.484	2.657	2.512	2.448	2.210	2.127	2.483	<b>1.324</b>	<b>1.324</b>	RF
KC1 - OPR	0.855	1.430	1.402	1.442	1.451	2.108	2.410	2.400	2.342	<b>0.000</b>	<b>0.000</b>	RF
	145,200	243,000	238,200	245,100	246,500	358,200	409,700	407,900	398,100	<b>0</b>	<b>0</b>	Pounds
KC2 - OPR	0.862	1.444	1.415	1.456	1.463	2.157	2.470	2.459	2.399	<b>0.000</b>	<b>0.000</b>	RF
	142,300	238,200	233,400	240,100	241,400	355,900	407,500	405,700	395,800	<b>0</b>	<b>0</b>	Pounds
KC3 - OPR	0.946	1.592	1.558	1.602	1.599	2.481	2.851	2.834	2.765	<b>0.000</b>	<b>0.000</b>	RF
	132,300	222,900	218,100	224,200	223,800	347,300	399,100	396,700	387,100	<b>0</b>	<b>0</b>	Pounds
KC4 - OPR	1.130	1.902	1.860	1.912	1.913	3.009	3.459	3.439	3.356	<b>0.000</b>	<b>0.000</b>	RF
	129,900	218,700	213,900	219,900	219,900	346,000	397,700	395,400	385,800	<b>0</b>	<b>0</b>	Pounds
Single Unit	2.612	4.419	4.305	4.421	4.406	7.685	8.857	8.797	8.583	<b>0.000</b>	<b>0.000</b>	RF
	57.4	97.2	94.7	97.2	96.9	169.0	194.8	193.5	188.8	<b>0.0</b>	<b>0.0</b>	Tons
Combinations	2.046	3.449	3.364	3.456	3.461	5.816	6.699	6.654	6.492	<b>0.000</b>	<b>0.000</b>	RF
3 or 4 Axles	59.8	100.8	98.3	101.0	101.2	170.1	195.9	194.6	189.8	<b>0.0</b>	<b>0.0</b>	Tons
Combinations	1.690	2.851	2.783	2.859	2.855	4.415	5.058	5.031	4.909	<b>0.000</b>	<b>0.000</b>	RF
5 or More Axles	60.8	102.6	100.1	102.9	102.7	158.9	182.0	181.1	176.7	<b>0.0</b>	<b>0.0</b>	Tons
80k Legal Load	1.720	2.886	2.825	2.906	2.913	4.415	5.058	5.031	4.909	<b>0.000</b>	<b>0.000</b>	RF
	68.8	115.4	113.0	116.2	116.5	158.9	182.1	181.1	176.7	<b>0.0</b>	<b>0.0</b>	Tons

**Rating Sheet - LFR**

**POSITIVE MOMENT - SPAN 1**

Job Number	16.0118
County	Kane
Structure No.	045-3166
By	DWT
Date	01/05/2011

Loads:

D = Dead Load	3067.28	k-ft
D = Dead Load (shear)	95.83	k

Capacity:

C = Capacity	9048.85	k-ft	
C = Capacity (shear)	579.28	k	@ W Abut

Live Load Factors:

Impact	1.164	
DF	0.864	Per Lane or Axle

$$RF = \frac{(C - A1 \cdot D)}{(A2 \cdot L \cdot (1 + I))}$$

A1 =	1.3	
A2 =	2.17	Inventory
A2 =	1.3	Operating

Rating Factor

HS 20 Loading	2606.33	k-ft	Per Lane or Axle
HS 20 Loading (shear)	76.21	k	Per Lane or Axle

	C	D	L	RF	Tons
M Inventory	9048.85	3067.28	2619.92	0.890	17.81
M Operating	9048.85	3067.28	2619.92	1.486	29.72
V Inventory	579.28	95.83	76.61	2.735	54.70
V Operating	579.28	95.83	76.61	4.565	91.31

Rating Factor HS 20:

	RF	HS
<b>Inventory</b>	<b>0.890</b>	<b>17.81</b>
<b>Operating</b>	<b>1.486</b>	<b>29.72</b>

\*\* If Operating RF is below 0.75 (HS 15) then the structure should be posted.

Serviceability Check:

Comp or Non-Comp	C	C or NC
Fy	50.00	ksi
Mdl	2748.17	k-ft
MsdL	319.11	k-ft
Sdl	1950.4	in3
SsdL	2236.0	in3
Sll	2416.9	in3

	C	D	L	RF	Tons
Serviceability - Inventory	9566.93	3750.50	2619.92	1.332	26.64

## Illinois Posting Vehicles:

## POSITIVE MOMENT - SPAN 1

TYPE 2 Loading	1054.27	k-ft	Per Lane or Axle
TYPE 2 Loading (shear)	30.22	k	Per Lane or Axle

*Type 2 - 15.75 Tons	C	D	L	RF	Tons
M Inventory	9048.848	3067.28	1059.77	2.201	34.66
M Operating	9048.848	3067.28	1059.77	3.674	57.86
V Inventory	579.280	95.83	30.38	6.897	108.63
V Operating	579.280	95.83	30.38	11.513	181.33

TYPE 3 Loading	1482.61	k-ft	Per Lane or Axle
TYPE 3 Loading (shear)	42.11	k	Per Lane or Axle

*Type 3 - 22 Tons	C	D	L	RF	Tons
M Inventory	9048.848	3067.28	1490.34	1.565	34.43
M Operating	9048.848	3067.28	1490.34	2.612	57.47
V Inventory	579.280	95.83	42.33	4.951	108.91
V Operating	579.280	95.83	42.33	8.264	181.80

TYPE 3-S1 Loading	1892.68	k-ft	Per Lane or Axle
TYPE 3-S1 Loading (shear)	53.05	k	Per Lane or Axle

*Type 3-S1 - 29.25 Tons	C	D	L	RF	Tons
M Inventory	9048.848	3067.28	1902.56	1.226	35.86
M Operating	9048.848	3067.28	1902.56	2.046	59.86
V Inventory	579.280	95.83	53.33	3.929	114.93
V Operating	579.280	95.83	53.33	6.559	191.84

TYPE 3-S2 Loading	2292.44	k-ft	Per Lane or Axle
TYPE 3-S2 Loading (shear)	65.61	k	Per Lane or Axle

*Type 3-S2 - 36 Tons	C	D	L	RF	Tons
M Inventory	9048.848	3067.28	2304.40	1.012	36.44
M Operating	9048.848	3067.28	2304.40	1.690	60.82
V Inventory	579.280	95.83	65.95	3.177	114.38
V Operating	579.280	95.83	65.95	5.304	190.93

80k IDOT Legal Loading	2252.49	k-ft	Per Lane or Axle
80k IDOT Legal Loading (shear)	66.21	k	Per Lane or Axle

*80k IDOT Legal - 40 Tons	C	D	L	RF	Tons
M Inventory	9048.848	3067.28	2264.24	1.030	41.20
M Operating	9048.848	3067.28	2264.24	1.720	68.78
V Inventory	579.280	95.83	66.56	3.148	125.93
V Operating	579.280	95.83	66.56	5.255	210.21

\* Data obtained from CONSYS

## Postings: (Operating Level)

	RF	Tons	Req.
Single Unit	2.612	57.4	NO
3 or 4 Axles	2.046	59.8	NO
5 or More Axles	1.690	60.8	NO

\*\* Structures less than a rating of 3 Tons should be closed to traffic.

Inventory = May be utilized for an indefinite period of time

Operating = Absolute maximum permissible load level



## Kane County Posting Vehicles:

## POSITIVE MOMENT - SPAN 1

## ConSYS Data

KC-1 Moment	4531.64	k-ft
KC-1 Shear	135.28	k
KC-2 Moment	4490.93	k-ft
KC-2 Shear	134.05	k
KC-3 Moment	4095.71	k-ft
KC-3 Shear	121.47	k
KC-4 Moment	3427.06	k-ft
KC-4 Shear	99.76	k

## Gross WT

KC-1	85.00	Tons
KC-2	82.50	Tons
KC-3	70.00	Tons
KC-4	57.50	Tons

*KC-1	C	D	L	RF	Tons
M Inventory	9048.85	3067.28	4555.27	0.512	43.52
M Operating	9048.85	3067.28	4555.27	0.855	72.65
V Inventory	579.28	95.83	135.98	1.541	130.98
V Operating	579.28	95.83	135.98	2.572	218.63

*KC-2	C	D	L	RF	Tons
M Inventory	9048.85	3067.28	4514.36	0.517	42.63
M Operating	9048.85	3067.28	4514.36	0.862	71.15
V Inventory	579.28	95.83	134.75	1.555	128.29
V Operating	579.28	95.83	134.75	2.596	214.14

*KC-3	C	D	L	RF	Tons
M Inventory	9048.85	3067.28	4117.08	0.567	39.66
M Operating	9048.85	3067.28	4117.08	0.946	66.20
V Inventory	579.28	95.83	122.10	1.716	120.13
V Operating	579.28	95.83	122.10	2.865	200.52

*KC-4	C	D	L	RF	Tons
M Inventory	9048.85	3067.28	3444.94	0.677	38.93
M Operating	9048.85	3067.28	3444.94	1.130	64.98
V Inventory	579.28	95.83	100.28	2.090	120.15
V Operating	579.28	95.83	100.28	3.488	200.55

\* Data obtained from ConSYS computer program

## Postings: (Operating Level)

	RF	Tons	Pounds
<b>KC-1</b>	<b>0.855</b>	<b>72.6</b>	<b>145,200</b>
<b>KC-2</b>	<b>0.862</b>	<b>71.2</b>	<b>142,300</b>
<b>KC-3</b>	<b>0.946</b>	<b>66.2</b>	<b>132,300</b>
<b>KC-4</b>	<b>1.130</b>	<b>65.0</b>	<b>129,900</b>