REPORT INDEX

(S.N. 056-3142)

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WILLETT HOFMANN & ASSOCIATES INC

BRIDGE INSPECTION
DOCUMENTATION & MAINTENANCE

STRUCTURE NUMBER: 056-3142

INSPECTION TYPE: 6-Month Special

DATE: 11/9/2018

INSPECTORS PRESENT:
Mike Queckboerner

TIME REQUIRED: (Approx. # of hours to complete the field inspection)

1:30 **hours**

ACCESS EQUIPMENT: (List any equipment used to inspect the bridge)

- ☒ **Hip Waders**
- ☐ **Tall Ladder**
- ☒ **Traffic Control**
- ☐ **Snooper**
- ☐ **Other:**

MAINTENANCE ITEMS:	PHOTO REF. NO.
ALL TRAFFIC CONTROL IN PLACE	1 & 2
MONITOR ALL DECK BEAM DETERIORATION	3 - 11

Illinois Department of Transportation

Special Inspection Report

SN:	056-3142	**District:**	1	**Spans:**	3	**Appr. Spans:**	0	**Skew:**	0	**ADT:**	700	**Truck Pct:**	10
ADT Un:		**Maint. Co:**	MCHENRY	**Twsp:**	RICHMOND					**Status:**	OPEN-TEMP STRUCT.		
Facility Carried:	FAU-165 (W Solon Rd)					**Feature Crossed:**	N Br Nippersink Cr						
Location	0.5M E IL-31			**Municipality:**				**Team/Sub:**	/			**Insp/Rte:**	
Bridge Name:						**Material & Type:**	PRESTRESS CONCRETE/BOX BEAM OR GIRDER-MULTIP						
Insp. Intervals Routine:	24	**Fracture Critical:**	0	**Underwater:**	0	**Special:**	6 Mo.					**Element Level:**	24

93C – Inspection Date: 11 / 9 / 18 93C3 – Temp. (°F): 32°

Is Delinquent: ☑ Reason: Misunderstanding of date due from the bridge ratin

90A – Agency Program Manager: BRIAN CONVERSE 90A3 – Consultant Program Manager: BRIAN CONVERSE

93C2A – Team Leader: MIKE QUECKBOERNER 93C2B – Inspector: MIKE QUECKBOERNER

93C4 – Special Inspection Remarks:

Previous Inspection

Resources

Time to Inspect (H:M):	1:0	1	:30	Traffic Control:		Y	Boat:		N	Waders:	W	Y	Snooper:		N		
Ladder:		N	Manlift:		N	Bucket Truck:		N	Other:								

Special Inspection Inventory

92C – Inspection Interval: 6 Mo. 92C4 – Initiated By: 1 If "4-Other Agency" Describe:

92C2 – Start Date: 2/23/2017 92C6 – Determination Date: 4/10/2018 92C7 – Inspect By Date: 4/30/2018

92C1 – Type Code:

- ☐ A – Structural Damage/Steel Superstructure
- ☑ B – Structural Damage/Concrete Superstructure
- ☐ C – Structural Damage/Timber Superstructure
- ☐ D – Structural Damage/Steel Substructure
- ☐ E – Structural Damage/Concrete Substructure
- ☐ F – Structural Damage/Timber Substructure
- ☐ G – Underwater/Debris and/or Erodible Soil
- ☐ H – Underwater/Flow Restriction or Velocity
- ☐ I – Underwater/Spread footings not adequately keyed into rock or protected from the effects of streambed scour
- ☐ J – Reserved
- ☐ K – Underwater/Scour Critical Evaluation Monitoring
- ☐ L – Existing Streambed Scour/Spread Footing
- ☐ M – Existing Streambed Scour/Pile Supported Footing
- ☐ N – Existing Streambed Scour/Pile Bent Substructure Unit
- ☐ P – Embankment Movement or Settlement
- ☐ Q – Substructure Movement or Settlement
- ☐ R – Pin & Link in Multi-Girder (Redundant) Bridge (If checked must add BBS Form(s) 2760 and 2780 if needed)
- ☐ S – Specifically Identified Problematic Structural Details
- ☐ T – Deck
- ☐ X – Critical Finding
- ☐ Z – Other (Describe:/

92C5 – Special Type Remarks:

Special Inspection

93C1 – Special Inspection Condition Status:

Prev	New	
☐ 0	☐ 0	- Worsening Condition Indicative of Imminent Structural Failure - Immediate closure required pending follow-up by BBS
☐ 1	☒ 1	- Progression of Deterioration or Worsening of Condition - Contact BBS, Program Manager, and SI Initiator
☑ 2	☐ 2	- No Change in Condition Noted
☐ 3	☐ 3	- Corrected Condition Noted - Special inspections no longer required after verification by BBS personnel
☐ 4	☐ 4	- Feature Determined to be in Adequate Condition - Primarily for monitoring problematic structural details

93C4 – Special Inspection Remarks:

	Signature	Date
Inspection Team Leader:	Mike Queckboerner	11 / 9 / 18
Consultant Program Manager:	Brian K. Converse	12 / 5 / 18
Agency Program Manager:	Brian K. Converse	12 / 5 / 18

93C4 – Special Inspection Remarks Continued:

- (11-9-18) ALL KEYWAYS WITH SEVERE LEAKAGE AND EFFLORESCENCE IN ALL SPANS.
- SEVERAL BEAMS IN ALL SPANS WITH SPALLING AND EXPOSED STIRRUPS
- SPALLING AND CONCRETE SECTION LOSS HAS INCREASED WITH EXPOSED STRAND AND SEVERAL STIRRUPS IN SOUTH FASCIA BEAMS OVER EAST PIER
- SEVERE LEACHING ON EAST AND WEST PIER CAPS.
- TRAFFIC CONTROL IN PLACE DIVERTING TRAFFIC TO NORTH SIDE OF STRUCTURE ONLY.

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

Structure Number: 056-3142 District: 1

Inventory Data

Facility Carried:	FAU-165 (W Solon Rd)	Bridge Name:		Sufficiency Rating:	30.7	Structure Length:	85.5
Feature Crossed:	N Br Nippersink Cr	Location:	0.5M E IL-31	HBP Eligible:	Yes	AASHTO Bridge Length:	80.5
Bridge Remarks:				Replaced By:		Length of Long Span:	26.8
Bridge Status:	6 OPEN-TEMP STRUCT.	StatusDate:	04/2018	Replaces:		Bridge Roadway Width:	27.0
Status Remarks:	Per request from the bridge office.			Last Update Date:	04/03/2018	Appr Roadway Width:	28.0
Maint County:	056 MCHENRY	Maint Township:	15 RICHMOND	Parallel Structure:	None	Deck Width:	27.0
Maint Responsibility:	09 TOWNSHIP OR ROAD DISTRICT			Multi-Level Structure Nbr:		Sidewalk Width Right:	0.0
Service On/Under:	1 HIGHWAY / 5 WATERWAY			Skew Direction:	None	Sidewalk Width Left:	0.0
Reporting Agency:	3 COUNTY			Skew Angle:	0 D	Navigation Control:	0 No
Main Span Matl/Type:	5 PRESTRESS CONCRETE / 05 BOX BEAM OR GIRDER-MULTIPLE			Structure Flared:	No	Navigation Horiz Clear:	0
Nbr Of Main Spans:	3	Nbr Of Approach Spans:	0	Historical Significance:	No	Navigation Vert Clear:	0
Approaches				Border Bridge State:		Culvert Fill Depth:	0.0
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:	0	Culvert Cell Height:	0.00
Far #2 Matl/Type:	/			Substructure Material:	57	Culvert Cell Width:	0.00

Median Width/Type:	0 Ft. / 0 None			Rated By:	2 IDOT	Rate Method:	6 LOAD FACTOR (LF) REP
Guardrail Type L/R:	0 None / 0 None	Inventory Rating:	0.200 (7)	Load Rating Date:	04/10/2018	***Railroad Crossing Info***	
Toll Facility Indicator:	0 No Toll	Operating Rating:	0.330 (11)			Crossing 1 Nbr:	
Latitude:	42.44007000	Longitude:	88.29600632	Design Load:	02 HS20	Crossing 1 Nbr:	
Deck Structure Type:	E PCAST PRES CN DK BM	Deck Structure Thickness:	17.0	SD: Y	FO: N	RR Lateral Underclear:	0.0
Sidewalks Under Structure:	0 None					RR Vertical Underclear:	0 Ft 0 In

Key Route On Data

Key Route Nbr:	FEDERAL-AID URBAN 0165	Station:	0.4800
Appurtenances	Main Route 00000	Segment:	
Inventory County:	056 MCHENRY	Linked:	Y
Township/Road Dist	15 RICHMOND	Natl. Hwy System:	Not on NHS
Municipality	0000	Inventory Direction:	
Urban Area:	1051	Curr AADT Yr/Count:	2017 / 700
Functional Class:	6 MINOR COLLECTOR	Est Truck Percentage:	10 %
** CLEARANCES **	South/East North/West	Number Of Lanes:	2
Max Rdwy Width:	27.0	One Or Two Way:	2 Two-Way
Horizontal:	27.0 0.0	Bypass Length:	5
Min Vertical:	99 Ft 11 In 00 Ft 00 In	Future AADT Yr/Cnt:	2032 / 893
10 Ft Vertical:	99 Ft 11 In 00 Ft 00 In	Designated Truck Rte:	NONE
Lateral:		Special Systems:	No

Key Route Under Data

		Station:	
		Segment:	
		Linked:	
		Natl. Hwy System:	
		Inventory Direction:	
		Curr AADT Yr/Count:	/
		Est Truck Percentage:	%
	South/East North/West	Number Of Lanes:	
		One Or Two Way:	
		Bypass Length:	
	Ft In Ft In	Future AADT Yr/Cnt:	/
	Ft In Ft In	Designated Truck Rte:	
	Ft Ft	Special Systems:	

*** Marked Route On Data ***

	Designation	Kind	Number
Route #1:	1 Mainline	8 Other	
Route #2:	1 Mainline		
Route #3:	1 Mainline		

*** Marked Route Under Data ***

	Designation	Kind	Number

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

Structure Number: 056-3142 District: 1

Data Related to Inspection Information

***Inspection Intervals ***

Routine NBIS:	24 MOS	Underwater:	0 MOS		
Fracture Critical:	0 MOS	Special:	Y		

*** Maximum Allowable Posting Limits ***

One Truck At A Time:	0	Combination Type 3S-1:	25 Tons
Single Unit Vehicles:	18 Tons	Combination Type 3S-2:	25 Tons

Bridge Posting Level: 0 >= 40% Below Legal Loads

Inspection/Appraisal Information

Inspection Date: 05/11/2018 Inspection Temperature: 42 Deg. F

Deck:	2	CRITICAL CONDITION - MAY REQUIRE CLOSURE
Superstructure:	2	CRITICAL CONDITION - MAY REQUIRE CLOSURE
Substructure:	6	SATISFACTORY CONDITION - MINOR DETERIORATION
Culvert:	N	NOT APPLICABLE
Channel and Protection:	8	VERY GOOD CONDITION - NO PROBLEMS NOTED
Structural Evaluation:	2	INTOLERABLE - HIGH PRIORITY FOR REPLACEMENT
Deck Geometry:	5	BETTER THAN ADEQUATE TO BE LEFT IN PLACE
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:	2	Doesn't Meet Standards
Approach Guardrail:	222	Not Acceptable / Not Acceptable / Not Acceptable
Pier Navig Protection:	N	N/A

Insp by (Name):	WagnerMC	
Insp by (Name):	Wagner, M.C.	
Utilities Attached:	N	N/A
	N	N/A
	N	N/A
Deck Wearing Surf:	G	BITUMINOUS OVERLAY
Deck Membrane:	F	NONE
Deck Protection:	J	NONE
Total Deck Thick:	20.5	
Last Paint Date:		

** Actual Posted Limits **

Single Unit Vehicles:	18	Tons
Combination Type 3S-1:	25	Tons
Combination Type 3S-2:	25	Tons
One Truck At A Time:	0	

Last Paint Type:

Inspection Remarks:

Item #58 & 59: - Ratings lowered at the request of the bridge office to properl y represent the current conditions.Several areas of heavy leakage with efflor escence throughout all keyways. Several spalls with exposed stirrups througho

Underwater Inspection/Appraisal Information

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

Scour Critical Information

Rating: 8 CALCULATED SCOUR ABOVE FOOTING
Evaluation Method: B Rational Analysis
Analysis Date: 05/12/1992
Analysis By: S. MEGGINSON

Miscellaneous

Fracture Critical Members: No
Microfilm Data Recorded: No

Construction Information

Year:	1983 Original		Reconstructed	
Route:	TR 45	Sta: 10+03		Sta:
Section Nbr:				
Contract Nbr:				
Fed Aid Pr #:	00000000000000			
Built By:	9 TOWNSHIP OR ROAD DISTRICT			

Proposed Improvement

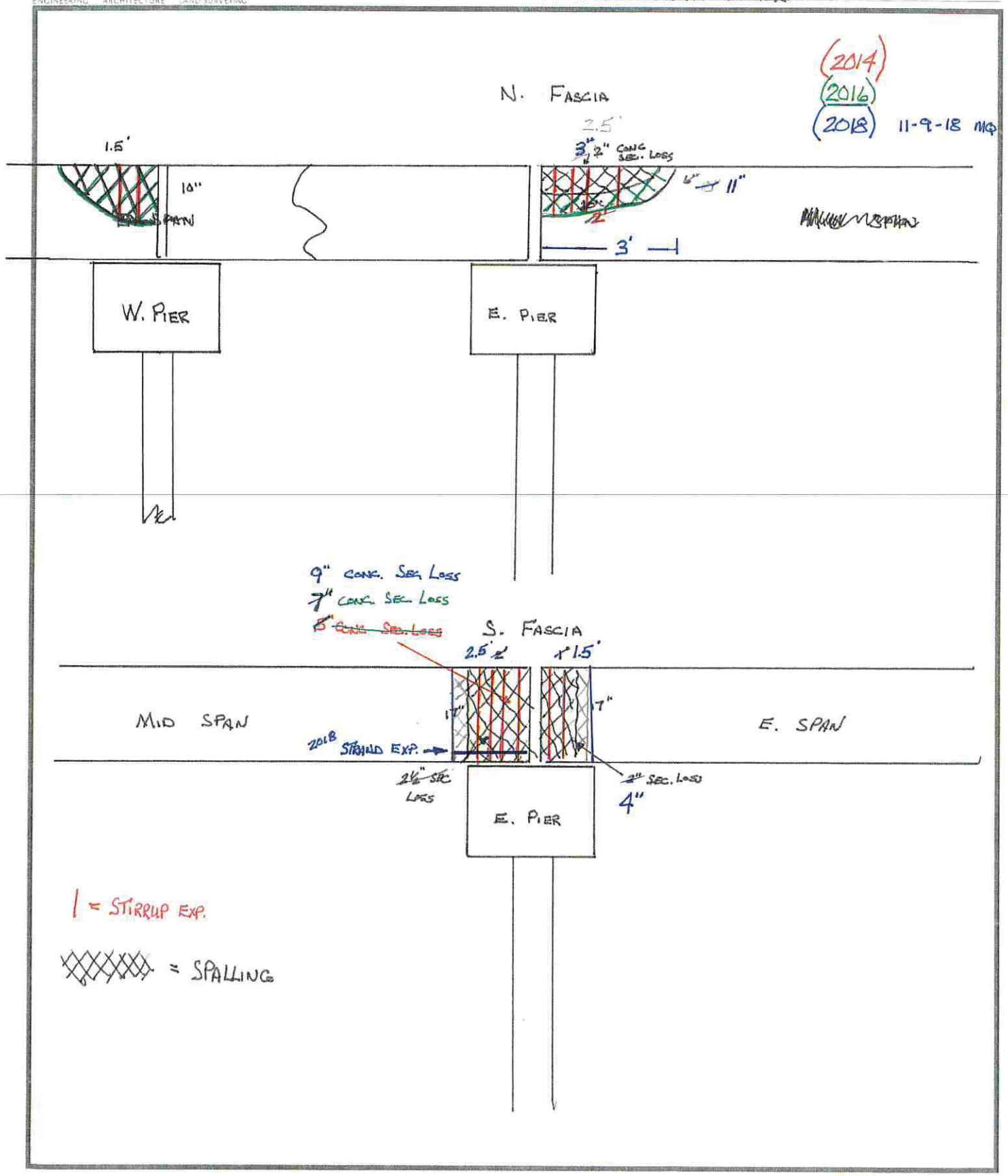
Cost Estimate Year: Length:
Type of Work:
Done By:
Remarks:

*** Costs in Dollars ***

Bridge Cost:
Roadway Cost:
Total Project Cost:

WILLETT HOFMANN & ASSOCIATES INC
ENGINEERING ARCHITECTURE LAND SURVEYING

JOB Richmond Twp JOB # 056-3142
SHEET NO. OF
CALCULATED BY MQ DATE 11/6/12
CHECKED BY DATE
SCALE BM Fascia Deter.



2018 MCHENRY COUNTY
COUNTY & TOWNSHIP
BRIDGE INSPECTION PROGRAM

REPORT SUMMARY

STRUCTURE NUMBER:	*056-3142*
ROAD NAME:	*FAU-165 (W Solon Rd)*
FEATURE CROSSED:	*N Br Nippersink Creek*
TOWNSHIP:	*Richmond*

COMMENTS:	• *Special inspection only.* • *Status Condition: Progression of deterioration or worsening condition.* • *All traffic control in place.*

PHOTOS

Photo 1	
Looking east through structure.	

2018 MCHENRY COUNTY
COUNTY & TOWNSHIP
BRIDGE INSPECTION PROGRAM

STRUCTURE NUMBER:	*056-3142*

Photo 2	
Looking west through structure.	

Photo 3	
Viewing spall in south beams over east pier.	

2018 MCHENRY COUNTY
COUNTY & TOWNSHIP
BRIDGE INSPECTION PROGRAM

STRUCTURE NUMBER:	*056-3142*

Photo 4	
Viewing spall in south beams over east pier.	

Photo 5	
Viewing spall in south beams over east pier.	

2018 MCHENRY COUNTY
COUNTY & TOWNSHIP
BRIDGE INSPECTION PROGRAM

STRUCTURE NUMBER:	*056-3142*

Photo 6	
Viewing spall in north beam over east pier.	

Photo 7	
Viewing spall in north beam over east pier.	

2018 MCHENRY COUNTY
COUNTY & TOWNSHIP
BRIDGE INSPECTION PROGRAM

STRUCTURE NUMBER:	*056-3142*

Photo 8	
Viewing spall in north beam over west pier.	

Photo 9	
Viewing all keyways leaking with efflorescence.	

2018 MCHENRY COUNTY
COUNTY & TOWNSHIP
BRIDGE INSPECTION PROGRAM

STRUCTURE NUMBER:	*056-3142*

Photo 10	
Viewing all keyways leaking with efflorescence.	

Photo 11	
Viewing all keyways leaking.	