



Illinois Department of Transportation

Memorandum

To: John A. Fortmann, District 1 Attn: Christopher J. Holt
From: D. Carl Puzey By: Timothy A. Armbrrecht
Subject: ~~PRELIMINARY BRIDGE DESIGN APPROVAL~~
 BRIDGE CONDITION REPORT APPROVAL
Date: February 8, 2013

Timothy A. Armbrrecht

Will County
Section 11-10108-01-BR

SN 099-4300

T.R. 246 A (Ferrell Road) over Spring Creek

The bridge condition report for the above-designated bridge replacement project is hereby approved.

Approval of the project is contingent on approval by others of the proposed geometry, obtaining environmental signoffs, and any required historic structure coordination and other approvals required by statutes or the policies of the Department.

Four copies of the approved report are being returned and we will retain one copy for our files. If you have any questions, contact Matt Humke at 217/782-5929 or matt.humke@illinois.gov.

MDH/kkt0994300-20130208

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ROADS & STREETS

**BRIDGE CONDITION REPORT
WILL COUNTY SECTION 11-10108-01-BR
FARRELL RD. (T.R. 246A) OVER SPRING CREEK
STRUCTURE NUMBER 099-4300**

This single span structure consists of 21" PPC Deck Beams, supported on closed concrete abutments. The bridge, having been constructed in 1976, is 36 years old. The sufficiency rating for the structure is 27.6. The inventory rating of this structure is 10.2. The bridge is 51'-0" back to back of abutment, 36'-0" out to out deck and not skewed. The structure is structurally deficient, and is therefore posted for the following loads: Single vehicle 22 tons, 3 or 4 axles 29 tons, 5 or more 32 tons.

The structure is hydraulically adequate. The structure allows for required freeboard during the design storm event and creates backwater within the allowable limits for the 100 year storm event.

Overall, the bridge is in poor condition. The superstructure is in critical condition, while the substructure is in satisfactory condition. The deck beams have deteriorated into a state of disrepair. There were exposed stirrups on one of the deck beams. Most joints are leaking, leading the formation of stalactites on the beams. Work has already been completed to patch holes in the deck beams. The abutment walls show cracking with significant leaching & efflorescence present in some locations.

Rehabilitation of this structure is considered impractical and uneconomical due to the condition of the super structure and substructure type. Current ADTs require the widening of the roadway an additional 7'. The combination of these factors leads to the recommendation of total replacement.

Prepared by:
Nathan P. Holmer, E.I.
Hutchison Engineering, Inc.



Center of Structure Looking North



Center of Structure Looking South



North of Structure Looking South



South of Structure Looking North



Upstream of Structure Looking Downstream (West)



Downstream of Structure Looking Upstream (East)



Upstream Looking at South Abutment



Upstream Looking at North Abutment

**Illinois Department of Transportation
Structures Information Management System
Structure Summary Report**

Date: 08/31/2012

Page: 1

Structure Number: 099-4300

District: 1

Inventory Data

Facility Carried: FARRELL RD	Bridge Name:	Sufficiency Rating: 27.6	Structure Length: 50.0
Feature Crossed: SPRING CR	Location: 0.2 MI N OF US56	HBP Eligible: Yes	AASHTO Bridge Length: 46.3
Bridge Remarks:		Replaced By: -	Length of Long Span: 49.0
Bridge Status: 2 OPEN - LOAD POSTED	Status Date: 12/2011	Replaces: -	Bridge Roadway Width: 33.9
Status Remarks: STATUS CHANGED AS PER THE EMAIL FROM JACK ELSTON FROM BBS.		Last Update Date: 07/05/2012	Appr Roadway Width: 34.0
Maint County: 099 WILL	Maint Township: 10 JOLIET	Parallel Structure: None	Deck Width: 35.9
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: N	Sidewalk Width Left: 0.0
Reporting Agency: 3 COUNTY		Skew Angle: 0 D 0 M 0 S	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: 1	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: 5N	Culvert Cell Width: 0.00
Median Width/Type: 0 Ft. / 0 None		Rated By: 2 IDOT	Rate Method: 1 LOAD FACTOR
Guardrail Type L/R: 9Other / 9 Other		Inventory Rating: 10.2(218)	Load Rating Date: 03/11/2011
Toll Facility Indicator: 0 No Toll		Operating Rating: 17.1(230)	Railroad Crossing Info
Latitude: 41 D 32 M 57.87 S	Longitude: 88 D 01 M 29.25 S	Design Load: 02 HS20	Crossing 1 Nbr:
Deck Structure Type: E PCAST PRES CN DK BM	Deck Structure Thickness: 21	SD: Y FO: N	Crossing 1 Nbr:
Sidewalks Under Structure: 0 None		RR Vertical Underclear: 0	Ft 0 In

Key Route On Data

Key Route Nbr: TOWNSHIP OR ROAD DISTRICT 0246	Station: 1.3400
Appurtenances Main Route 00000	Segment:
Inventory County: 099 WILL	Linked: Y
Township/Road Dist 14 NEW LENOX	Natl. Hwy System: Not on NHS
Municipality 0000	Inventory Direction:
Urban Area: 1051 1051	Curr AADT Yr/Count: 2008 / 3050
Functional Class: 7	Est Truck Percentage: 0
** CLEARANCES ** South/East North/West	Number Of Lanes: 2
Max Rdwy Width: 33.9	One Or Two Way: 2 Two-Way
Horizontal: 33.9 .0	Bypass Length: 6
	Future AADT Yr/Cnt: 2032 / 4090
	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:
Number Of Lanes:
One Or Two Way:
Bypass Length:
Future AADT Yr/Cnt: /
Designated Truck Rte:
Special Systems:

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

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

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

Designation	Kind	Number
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**Illinois Department of Transportation
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Page: 2

Structure Number: 099-4300

District: 1

Data Related to Inspection Information

*** Inspection Intervals ***

*** Maximum Allowable Posting Limits ***

Bridge Posting Level:

Routine NBIS:	24 MOS	Underwater:	0 MOS	One Truck At A Time:	0	Combination Type 3S-1:	29 Tons	4	< 10% Below Legal Loads
		Special:	Y	Single Unit Vehicles:	22 Tons	Combination Type 3S-2:	32 Tons		

Inspection/Appraisal Information

** Actual Posted Limits **

Inspection Date:	04/25/2011	Inspection Temperature:	50Deg. F						
Deck:	2	CRITICAL CONDITION - MAY REQUIRE CLOSURE				Single Unit Vehicles:	22	Tons	
Superstructure:	2	CRITICAL CONDITION - MAY REQUIRE CLOSURE				Combination Type 3S-1:	29	Tons	
Substructure:	6	SATISFACTORY CONDITION - MINOR DETERIORATION				Combination Type 3S-2:	32	Tons	
Culvert:	N	NOT APPLICABLE				One Truck At A Time:	0		
Channel and Protection:	7	GOOD CONDITION - SOME MINOR PROBLEMS	Deck Wearing Surf:	G	BITUMINOUS OVERLAY	Last Paint Type:			
Structural Evaluation:	2	INTOLERABLE - HIGH PRIORITY FOR REPLACEMENT	Deck Membrane:	F	NONE				
Deck Geometry:	4	MINIMUM ADEQUACY TO BE LEFT IN PLACE	Deck Protection:	J	NONE				
Underclearance-Vert/Lat.:	N	NOT APPLICABLE	Total Deck Thick:	23.0					
Waterway Adequacy:	8	EQUAL TO PRESENT DESIRABLE CRITERIA	Last Paint Date:						
Approach Roadway Align:	8	EQUAL TO PRESENT DESIRABLE CRITERIA							
Bridge Railing Appraisal:	2	Doesn't Meet Standards							
Approach Guardrail:	332	Acceptable Acceptable Not Acceptable							
Pier Navig Protection:	N	N/A							

Underwater Inspection/Appraisal Information

Inspection Date:	Inspection Category:
Temperature:	Inspection Method:
	Appraisal Rating:

Scour Critical Information

Miscellaneous

Rating:	5	CALCULATED SCOUR ACCEPTABLE	Evaluation Method:	B	Rational Analysis		
Analysis Date:	12/16/1997					Microfilm Data Recorded:	No

Construction Information

Waterway Information

Year:	1976	Original	Reconstructed	Flood Design Frequency:	YRS	Drainage Area:	Acre
Route:		Sta: 117+65.00	Sta:	Flood Design Q (CFS):			
Section Nbr:	75-00106-00-BR			Flood Design Nat H W E:		Flood Base Q (CFS):	
Contract Nbr:				Flood Des Open Prop:	SF	Flood Base Nat H W E:	
Fed Aid Pr#:	00000000000000						
Built By:	8	COMBINATION					