



# REHABILITATION STRUCTURE SURVEY REPORT

Wisconsin Department of Transportation  
DT1696 4/2017

RECEIVED  
4/9/2019  
BUREAU OF STRUCTURES

- ☐ Grade Separation    ☒ Stream Crossing    ☐ Culvert  
☐ Railroad    ☐ Retaining Wall    ☐ Noise Barrier  
☐ Sign Structure    ☐ Other: \_\_\_\_\_

For guidance see: <http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/strct/survey.aspx>

Design Project ID 1590-18-32	Construction Project ID 1590-18-62	Highway (Project Name) USH 8 over Peshtigo River			
Final Plan Due Date 9/1/2019	Preliminary Plan Due Date 5/1/2019	<input checked="" type="checkbox"/> Town <input type="checkbox"/> Village <input type="checkbox"/> City Caswell			
PS&E Date 11/1/2019	Letting Date 8/10/2021	County Forest			
Structure Number B-21-010		Section 29	Town 37N	Range 15E	
Station 26+50.00	Latitude: 45°39'19.80"N Longitude: 88°38'53.42"W	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO    Structure Located on National Highway System			
For Survey and CADD Files Horizontal Coordinate System: WISCRS (Forest Co.) NAD 83 Vertical Datum: NAVD 88		<b>Traffic Forecast Data</b>			
		Design Year	Average Daily Traffic (ADT)	Roadway Design Speed	Functional Class
Feature On USH 8		Feature On 2042	2240	60 mph	Minor Arterial
Feature Under Peshtigo River		Feature Under			
Region Contact: Jim Volkmann (Area Code) Telephone Number(s): (715) 365-5773 Email: jim.volkman@dot.wi.gov		Consultant Contact: Elizabeth Nemec (Area Code) Telephone Number(s): (715) 342-3069 Email: elizabeth.nemec@aecom.com			

## Work To Be Performed

## Field Information Required Item Number (see Pages 2-4)

- ☐ A. Structural Repair ..... 1-3, 22
- ☒ B. Overlay ..... 1-3, 10-22, 26-28, 32, 34
- ☒ Concrete Overlay                      ☐ Asphalt Overlay
- ☐ Polymer Modified Asphalt Overlay    ☒ Thin Bonded Polymer Overlay
- ☐ Other: \_\_\_\_\_
- ☐ C. New Bearings ..... 3, 8, 9, 22
- ☐ D. New Railings ..... 15-17, 20-23
- ☐ E. Curb and Sidewalk Repair ..... 2, 3, 16, 22, 23
- ☐ F. Abutment Repair ..... 2, 3, 12, 16
- ☐ G. Pier Repair ..... 2, 3, 12, 16
- ☐ H. New Deck ..... 1-6, 9, 10, 13-28, 32-34
- ☐ I. Widening ..... 1-28, 30, 32-35
- ☐ J. Joint Repair ..... 2, 3, 8, 16, 19, 22
- ☒ K. Surface Repair ..... 2, 3, 22
- ☐ L. Raising Bridge ..... 3, 6, 9, 16, 20-24
- ☐ M. Slope Stabilization ..... 1-3, 30
- ☐ N. Scour Repair ..... 1, 2 or 3, 16, 19, 21, 27, 29, 31-35
- ☐ O. Painting ..... 16, 22, 24
- ☒ P. Other: Replace wing in SE corner and wing stabilization

### Field Information Required

If no structure number exists provide the following: Small County Map on which the location of proposed structure is shown in red and any highway relocation in green. In addition, provide Location Map of scale not less than 1" = 2000' showing the structure location and number.

- ☒ 1. Most recent inspection report, brief history of bridge construction date, and description of repairs with dates.
- ☒ 2. Outline deficient areas on existing structure plan or drawing.
- ☒ 3. Photographs of details requiring repairs or modifications, such as: bearings, x-frames, joints, etc. Photograph all deficient areas. Clearly label all photographs.
- ☐ 4. Provide proposed typical section for roadway and structure showing dimensions and cross slopes.
- ☐ 5. Survey beam seat or girder elevations at both sides of bridge at all substructure units.
- ☐ 6. Provide cross-section elevations at 10 foot intervals extending across the structure and a minimum of 100 feet beyond each end. Sections should be normal to centerline and show elevations at centerline roadway and gutter line. Take elevations along joints and at floor drains.
- ☐ 7. Show and identify starting stationing on bridge.
- ☐ 8. Record measurement, temperature of the structure, and date taken for each of the following:
  - (a) Joint opening measured normal to joint at centerline of roadway and both curb lines.
  - (b) Clearance between girder ends at piers.
  - (c) Distance from front face of abutment backwall to closest point of girder end measured parallel to girder.
  - (d) Temperature of structure determined by averaging top and under deck (if accessible) readings.
- ☐ 9. Fixed and expansion bearings - condition and orientation.
- ☒ 10. Number and width of proposed pours including construction staging sequence.
- ☒ 11. Location of existing construction joints in the deck.
- ☒ 12. Estimated Quantities:
 

Preparation, Decks, Type 1	Sq. Yd. <u>30</u>	
Preparation, Decks, Type 2	Sq. Yd. <u>15</u>	
Full Depth Deck Repair	Sq. Yd. <u>N/A</u>	Galvanic Anodes? _____
Concrete Surface Repair Superstructure	Sq. Ft. <u>5</u>	Galvanic Anodes? _____
Concrete Surface Repair Substructure	Sq. Ft. <u>15</u>	Galvanic Anodes? _____
Curb Repair	LF. <u>N/A</u>	Galvanic Anodes? _____

☒ 13. Sufficiency number: 82.7 (obtain from HSI Bridge Inventory System)

☒ 14. Appraisal and Condition Rating

	Deck Condition	Superstructure Condition	Substructure Condition	Load Capacity Appraisal	Structural EVAL Appraisal
Current	6	6	7	5	6

☒ 15. Load Ratings

	Inventory	Operational
Current Calculated Date: 7/1/2013	HS 23	HS 45.7
After Completed by Bridge Designer		

- ☒ 16. Utilities on/near Structure. (WisDOT policy is to avoid placing utilities on the structure.)

☐ Yes ☒ No

Type	Owner and Contact Information	Size	Opening at Abutment	Weight	Pressure

- ☒ 17. Is existing bridge railing deficient?

☐ Yes ☒ No If Yes – Replacement Rail Type:

- ☐ 18. Drains to be:

☐ Raised ☐ Closed ☐ Downspouted ☐ New

- ☒ 19. Traffic maintained on bridge during work?

☒ Yes ☐ No If Yes – Include sketches

- ☒ 20. Will guard rail be attached?

☒ Yes ☐ No If Yes – Which corners? Existing guardrail will be replaced and attached in all four corners.

- ☒ 21. Will work to be performed eliminate all deficiencies?

☒ Yes ☐ No If No – Explain:

- ☒ 22. Hazardous waste (asbestos) to be removed?

☐ Yes ☒ No If Yes – Explain:

- ☒ 23. Wing location(s) for surface drain anchors: Surface drains in NW and SW corners to be replaced along with guardrail.

- ☐ 24. Painting?

☐ Yes ☐ No If Yes – Explain on Page 4  
(all, part, railing, color system, containment, bid items)

- ☐ 25. Desired roadway width: (new deck / widening) \_\_\_\_\_ Ft.

Desired sidewalk clear width: Left: \_\_\_\_\_ Ft. Right: \_\_\_\_\_ Ft.

- ☒ 26. Maximum increase in grade line elevation 0.75 In.

- ☒ 27. Benchmark description to be shown

- ☒ 28. Desired final cross slopes on bridge 0.02 Ft./Ft.

- ☐ 29. Underwater Inspection Report including:

- Streambed Cross Section With Pier, Footing and Seal Elevations
- Pier Elevation Drawings
- Pier Layout
- Hydrographic Survey

- ☐ 30. Slope stabilization, provide:

Type: \_\_\_\_\_ Quantity: \_\_\_\_\_ CY.

Slope: \_\_\_\_\_ Ft./Ft. Fill: \_\_\_\_\_ CY.

- ☐ 31. Preliminary layout of grout bags or proposed scour repair.

C.I.P. Articulated Mats (for Scour) \_\_\_\_\_ CY.

Grout Bags (for Scour) \_\_\_\_\_ CY.

Heavy Riprap \_\_\_\_\_ CY.

Extra Heavy Riprap \_\_\_\_\_ CY.

- ☒ 32. Report submitted with Preliminary Plan requires **no** CADD file submittal (*See ESubmittal instructions*).
- ☐ 33. Report submitted for development of Preliminary Plan to structure design engineer requires CADD file (if available) submittal and Report submittal to Soils Engineer if project involves foundation modifications.
- ☒ 34. Coordinate with structure design engineer **before** going into the field if existing structure has no available plans, if staged construction is planned, or if there are adjoining/adjacent structures that will remain in place.
- ☐ 35. If project involves substructure widening coordinate with structure and/or hydraulic design engineer to determine if information on the separation and/or stream crossing SSR will be required.

### **Additional Information**

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Elaborate on other concerns such as: DNR, Local, Utility Conflicts, Aesthetics, Railing Type and Staged Construction.

*Please be as detailed and specific as possible.*

Wing Stabilization: The wings in the SW, NW, and NE corners need to be stabilized as the wings are tipping and further movement needs to be prevented. The top of the wing is tipping away from the CL of USH 8 in all locations. The root cause appears to be a combination of poor soils under the abutment/wings and possibly loss of material as water seeps through the diaphragm and wing joints. The roadway behind the abutment appears to be sinking due to the conditions. An asphalt overlay is placed on the roadway to level the roadway and pressure is added to the wings pushing them away from the CL. Trucks travel over the bridge during the saturated spring months also displacing the poor soil and pushing the wings outward. We propose excavating to expose the diaphragm/abutment joint and placing RMW to seal the joint and installing pipe underdrain at the diaphragm/abutment interface to remove the excess water behind the abutment. In addition, we propose using tie bars to connect wings as depicted in the hand sketch in "B-21-0010\_oth". This should prevent further outward movement of the wings.

Item No. 10 and 19: Construction will be staged at the centerline using temporary signals and completing half the overlay at a time. See structure plans for details.

Item No. 11: No construction joints are known at this time.

Item No. 12: Preparation decks type 1 and type 2 full depth and surface repair quantities were estimated based on the latest inspection report. Inspection is to be performed in 2019. Region to provide quantities after inspection.

Item No. 18: No drains are present on the structure. There are surface drains at Northwest and Southwest corners of the structure.

Item No. 22: No asbestos was found during the inspection. Report is included in the submittal

Item No. 26: The existing deck will be removed a minimum of 1" to get to sound concrete. The proposed overlay will be 1 1/2" thick. A 1/4" polymer overlay will be applied to the structure after the concrete overlay has cured. Therefore a 3/4" overall grade raise will be required.

Item No. 28: The existing plan shows a 2% cross slope on the bridge. The proposed cross slope on the structure is also 2%. No slope correction will be necessary.