MICHIGAN

DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

FOR

**WORK PLATFORM AND CONTAINMENT, TEMPORARY**

BRG:CAW 1 of 4 APPR:SCK:JAB:02-14-24

**a. Description.** This work consists of designing, furnishing, installing, and removing temporary work platforms and painting containment under the bridge deck and main arch to perform steel cleaning and coating. The work on this project also includes overlay replacement on the bridge. Ensure all work is coordinated with the overlay replacement when developing the bridge loading.

**b. Materials.** Furnish materials that meet the requirements of sections 906, 908 and 912 of the Standard Specifications for Construction and the following loading requirements.

**c. Design Requirements.** Design the temporary work platforms in accordance with the AASHTO:

*AASHTO, Manual for Bridge Evaluation, 3rd Edition*

*AASHTO, Guide Design Specification for Bridge Temporary Works, 2nd Edition;* and

*OSHA 3150, A Guide to Scaffold Use in the Construction Industry*.

The factored resistance in the bridge members, member connections, and proposed scaffolding resulting from the application of proposed scaffolding and equipment loads must not exceed the total factored force effects at the Operating Level for these members, member connections, and proposed scaffolding.

1. The total dead load of the platform in the unloaded condition must not exceed 10 psf.

2. The total load on the bridge due to platform and live load must not exceed:

Lanes Closed Total Allowable Construction Load

Single Lane 850 pounds/lane foot

Double Lane 1700 pounds/lane foot

No lane closures will be allowed on the bridge during seasonal shutdown.

3. Develop an emergency demobilization plan in the event of forecasted inclement weather whereby sustained winds are to be encountered. Ensure the emergency demobilization plan is put into effect when sustained winds of 50 mph or greater are anticipated. This emergency plan is to be submitted to the Blue Water Bridge for their review and comment as part of the containment drawings and prior to the erection of the scaffolding.

Ensure all the containment is lowered when wind speeds are expected to reach 50 mph as determined by the Engineer. In order to accommodate lowering the containment, this operation should commence when the sustained wind speeds are less than 25 mph and expected to reach or exceed 50 mph as measured at the bridge within a 12-hour period.

4. The weight of the proposed temporary containment enclosure is to be included in the total temporary dead load on the structure.

5. The following are design requirements for the platform and containment for the tub girders on spans 17-19:

A. The tub girders are fracture critical therefore, no welding is allowed.

B. Drilling into the steel tub girders at any location along the girder is not allowed.

C. No bolts can be removed from any part of the tub girders.

D. Anchoring the containment or the platforms to the bridge railing is not allowed.

E. Drilling holes into or through the concrete deck for support anchors is not allowed.

The allowable Construction Load shown above includes the dead load of the proposed platform. All equipment used for the cleaning and coating operation located on the bridge and expended grit are included in the live load requirements. The live load requirement applies to all people and equipment located on the bridge or under the bridge on the platform.

Ensure scaffolds are designed and sealed by a Professional Engineer licensed in the State of Michigan. Ensure the licensed Professional Engineer is retained and paid at no additional cost to the Blue Water Bridge. Ensure all the design computations are signed by, and the design drawings bear the raised seal of, the licensed Professional Engineer. Purchase of scaffold materials and fabrication or erection of scaffolds must not begin until demonstrated compatibility with the existing structure is shown to the satisfaction of the Blue Water Bridge.

Wind loads on the bridge members, live loads, and proposed scaffolding must also be considered. Wind load on the containment is to be based on a wind speed of 50 mph and applied to all containment surface area. The factored resistance in the bridge members, member connections, and scaffolding must exceed the total factored force effects including the wind load forces combined with other.

**d. Shop Drawings.** Submit complete shop drawings and design calculations, sealed by a Professional Engineer licensed in the State of Michigan, for the temporary work platforms and containment in accordance with subsection 104.02 of the Standard Specifications for Construction. The drawings must demonstrate how the traffic will be protected while work is being performed overhead. Demonstrate that the proposed scaffold platforms and required construction equipment will not result in an overstress of any of the bridge members. Submit these drawings and computations to the Blue Water Bridge for their review.

The detailed drawings must show the materials and size of all scaffold members along with means of scaffold attachment to the bridge. Also furnish drawings showing the erection, maintenance, relocation, and dismantling information for the scaffolds. The detailed drawings must show the proposed schedule for the progression of the work and scaffolds from start to finish including seasonal shutdown. The detailed scaffold drawings must also show the proposed gross weight, axle configurations, axle weights, and locations of all equipment, including but not limited to, the compressors and abrasive blasting plants, air piping, means for recovery of spent blasting media and the removal of paint debris, and dust collectors. The Blue Water Bridge will review and provide comments on the design submitted as to its compatibility with the existing structure.

Since the project location will be at the transition span/expansion joint between the main span and the cantilever span, the drawings must clearly show how the movement at this joint will be maintained while the scaffolding is in place.

Certify that the completed scaffold was designed and reviewed in accordance with both OSHA and MIOSHA regulations applicable to the scaffolding standard(s), at no additional cost to the Blue Water Bridge.

Include details of fabrication, erection, attachment to the existing structure, locations, and staging on the shop drawings. Do not submit partial shop drawings unless approved by the Engineer.

Allow a minimum of 14-calendar days for Engineer review of the first shop drawing submittal and each subsequent resubmittal. No extensions of contract time or additional compensation will be granted for delays in preparing the final shop drawings or securing approval from the Engineer unless the Engineer’s review of a submittal exceeds the 14-calendar day allowance and such a delay impacts the final project completion date.

Prepare shop drawings as outlined herein and include all technical data and details pertinent to the design, fabrication, and installation of the temporary work platform and painting containment area.

**e. Construction.** Ensure scaffolds are generally self-supporting. Connection of the scaffolding to the bridge superstructure will be allowed, if shown to be necessary by the engineering calculations and for compliance with OSHA and MIOSHA standards. Do not drill, weld, cut or modify existing bridge structural members to accommodate scaffolds. Ensure scaffold connections to the bridge structure are handled with suitable attachments which will not damage the bridge coating or leave nicks, gouges, or depressions in any bridge member. Ensure any damage to the bridge coating or bridge members because of scaffolding attachments is repaired by the Contractor at no additional cost to the Blue Water Bridge. Construct scaffolds of materials and in such a manner so as not to become a fire hazard during the progress of work. Verify and demonstrate compatibility with the existing structural components where attachments are to be made. Verify and demonstrate compatibility of the containment structure “globally” with the entire structure.

Protect coatings against damage from any attachments. Repair any damaged coating in accordance with section 715 of the Standard Specifications for Construction and to the satisfaction of the Engineer.

Secure and safely maintain the scaffolding platforms during the period of the contract. Protect the vehicular and marine traffic at all times. Ensure all work is in accordance with all applicable local, state, and federal requirements.

**f. Measurement and Payment.** The completed work, as described, will be measured as a lump sum and paid for at the contract price using the following pay item:

**Pay Item Pay Unit**

Work Platform and Containment, Temp (B04-3 of 77111) Lump Sum

**Work Platform and Containment, Temp (B04-3 of 77111)** includes shop drawing preparation, design, furnishing, installing, maintaining, and removing the temporary work platform and containment used to complete the work.

The anticipated schedule is for two construction seasons. Measurement for this item is for the entire project regardless of how many times the work platform and containment are activated during construction.

This pay item will be paid using the following payment schedule:

Completion and approval of all shop drawings and calculations 40 percent

Completion of all cleaning and coating for the project 30 percent

Removal of all work platforms and containments and all areas

restored to original or better condition 30 percent

Payment also includes any work to repair damaged coatings.