SP-150161
(NEW)

SPECIAL PROVISIONS
FOR
TEMPORARY DETOUR BRIDGE

Lucas County
BRFN-034-6(79)--39-59

Effective Date
December 20, 2016

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

150161.01 DESCRIPTION.
Work under this item consists of designing, furnishing, installing, inspecting, maintaining, and removing a two lane bi-directional temporary detour bridge carrying US 34 Detour over White Breast Creek, Design No. 217. Traffic on US 34 over White Breast Creek shall be maintained at all times during construction of the permanent bridge, Design No. 117.

150161.02 DESIGN AND MATERIALS.

A. Design.
The temporary detour bridge is to be designed in accordance with the AASHTO LRFD Bridge Design Specification, 7th Edition by a Professional Engineer licensed in the State of Iowa. Fatigue does not need to be considered. The design vehicular live load shall be HL-93 and the bridge shall only be used for legal loads.

Refer to the bridge plans and notes for the detour bridge layout requirements.

1. Superstructure.
- **a.** The work for the superstructure includes rent, delivery and return, assembly, erection, disassembly and furnishing of any associated hardware.
- **b.** The superstructure shall be a prefabricated modular bridging system manufactured by one of the companies listed below.
- **c.** The bridge rail shall be required to pass TL-4 rating.
- **d.** The Contractor shall provide protection for the ends of the bridge and for the creek as a secondary hazard. The protection system shall meet TL-3 rating and shall be of the Contractor's choosing and design. Protection for the creek on the SW corner of the bridge shall cover from Sta. 4+84 to the bridge and on the NE corner of the bridge shall cover from the bridge to Sta. 9+08. Costs for the bridge end protection system and any additional quantities and costs required to accommodate the system shall be included in the lump sum price for Temporary Detour Bridge Superstructure.
- **e.** The low chord of the temporary detour bridge shall be designed to clear the Q10 flood stage as shown on the Situation Plan.

2. Substructure.

a. The substructure shall be of the Contractors choosing and design.

b. The substructure shall be designed to accommodate the selected bridge manufacturer's bridging system and shall include any necessary earth retention systems required at the bridge corners.

c. The work shall include design, furnishing, installing and removing of abutment and pier foundations as required to sufficiently support the superstructure and retain the approaches as required.

d. The Contractor shall retain a Professional Engineer licensed in the State of Iowa to determine the bearing capacity. Pile bent piers and abutments are allowed. Shallow foundations, such as spread footings, are not allowed.

e. Eight subsurface soil borings (Borings B-101 through B-108) are included in the bridge plans. This boring data can be used to design the foundation system. All available laboratory data sheets for Shelby tube samples taken from Borings B-101, B-104, B-105 and B-108 are accessible to the Contractor electronically for aid in designing the substructure. If additional borings are required by the, the cost of furnishing the additional borings shall be included in the lump sum price for Temporary Detour Bridge Substructure.

f. Downdrag forces due to the settlement of compressible soils below fill shall be considered in the pile design.

3. Submittals.

The submittals requiring written approval from the Engineer are as follows:

a. Temporary detour bridge plans containing the following:

1) General notes sheet including all materials and design criteria.

2) Site specific proposed bridge elevation and cross section depicting the proposed low chord elevation in relation to the design stage elevation.

3) Bridge width. A minimum of 30 feet 0 inches is required from curb to curb.

4) Plan sheets showing span lengths, stationing, alignment and grades.

5) Foundation layout sheet including pier stationing and pile spacing.

6) Pile data table showing pile type, size, capacity and estimated lengths.

7) Substructure details including all reinforcing and elevations of the abutment and pier footings and caps.

8) Bearing details as necessary.

9) Bridge end protection details.

10) A parts list as required.

b. Complete assembly and erection plans including installation procedures. This shall include procedures and methods to be used including crane capacity and location, equipment, tools, devices, etc. Steel erection shall be in accordance with the Standard Specifications.

c. Complete set of design calculations for the superstructure and substructure.

Submittals shall be made electronically via DocExpress in accordance with Article 1105.03 of the Standard Specification. The Engineer's review time is 30 calendar days.

B. Materials.

1. General.

The Contractor may use timber, steel, concrete or any other material or combination of materials that are in sound condition, capable of safely carrying the specified loads, and meet the approval of the Engineer. All materials not specifically listed shall be in accordance with the requirements of the Standard Specifications.

2. Prefabricated Modular Bridging System.

a. The bridging system shall meet the design loads and size criteria stated above and in the plans.

b. The bridging system shall consist of one of the following or an approved equivalent:

1) Acrow 700XS Panel Bridge System
Acrow Corporation of America
181 New Road
Parsippany, NJ 07054-5645
973-244-0080

2) Mabey Universal Bridging System
Mabey
6770 Dorsey Road
Elkridge, MD 21075
800-956-2239

3) The Bailey Bridge System
Bailey Bridges, Inc.
Fort Payne, AL 35967
800-477-7320

150161.03 CONSTRUCTION.

A. General.

1. Do not commence construction until the submittals as described above are approved by the Engineer.

2. The Contractor shall ensure the stability of the temporary detour bridge during erection, removal and at all times.

3. Excavation required for construction of the temporary detour bridge is to be considered incidental to other work.

B. Inspection and Maintenance.

1. Work under this item includes the furnishing of skilled personnel; tools and equipment required to inspect, repair and maintain the temporary detour bridge.

2. This work will be considered incidental to the lump sum price for Temporary Detour Bridge Superstructure.

3. Prior to putting the temporary detour bridge into service, the Contractor shall inspect the bridge with a representative from the selected bridge manufacturer to ensure correct assembly and erection. While the temporary detour bridge is in service, the Contractor shall perform regular inspections as required to ensure the bridge and components are in safe operating condition.

4. Repair, replace or otherwise maintain all components of the temporary detour bridge as required to keep the bridge in safe operating condition.

5. Tighten or replace all loose and missing fasteners as required.

6. The Contractor shall be on call at all times during the temporary detour bridge's service to make emergency repairs that may be required as a result of accidents or storms.

7. Repairs shall be made within 24 hours of inspection or discovery of defect.

8. The Contractor shall notify the Engineer one week prior to inspection in order for the Engineer or representative to accompany the Contractor during their inspection.

9. The Contractor shall prepare reports of inspection, maintenance and repair activities and submit to the Engineer. The reports shall itemize the following:
   a. The date and time of the inspection.
   b. General condition of the trusses, deck, floor beam system, connections, etc.
   c. Repair and maintenance work performed.
   d. Materials used.

10. Any damage caused by the Contractor, shall be repaired by the Contractor at no additional cost to the State. Other damages caused by traffic or conditions beyond the Contractor's control shall be repaired by the Contractor, as directed by the Engineer, and will be paid for according to Article 1109.03, B of the Standard Specifications.

C. Bridge Removal.
Remove the temporary detour bridge in accordance with Section 2401 of the Standard Specifications when it is no longer required for traffic. The Contractor shall re-grade and restore the site to its original condition, as directed by the Engineer. The Contractor is responsible for returning the temporary detour bridge to the supplier.

150161.05 METHOD OF MEASUREMENT.
Temporary Detour Bridge Superstructure is Lump Sum. Temporary Detour Bridge Substructure is Lump Sum.

150161.06 BASIS OF PAYMENT.

A. Payment for Temporary Detour Bridge Superstructure will be the Lump Sum contract price. Payment will be full compensation for rent, delivery, assembling, erecting, disassembling, inspecting, maintaining and returning the Temporary Detour Bridge Superstructure. All costs for equipment, labor and materials needed to complete, make use of and remove the Temporary Detour Bridge Superstructure shall be included in the contract price.

B. Payment for Temporary Detour Bridge Substructure will be the Lump Sum contract price. Payment will be full compensation for designing, furnishing, installing, inspecting, maintaining, and removing the Temporary Detour Bridge Substructure. All the cost for equipment, labor and materials needed to complete, make use of and remove the Temporary Detour Bridge Substructure shall be included in the contract price.

C. For estimating partial payments, the Contractor will be paid 50% of the lump sum price for Temporary Detour Bridge Superstructure and Temporary Detour Bridge Substructure when the temporary detour bridge is installed and open to traffic. The remaining 50% of the lump sum price for these items will be considered for payment upon the restoration of the site as described above.