

# **EXAMPLE SPECIAL SPECIFICATIONS FOR HISTORIC BRIDGES**

Issues to Consider for Historic Bridges Special Specifications .....	2
Special Specification 4161 – Remove, Relocate and Repair Existing Bridge .....	3
Special Specification 4220 – Remove and Relocate Existing Historic Truss Bridge.....	5
Special Specification 4234 – Remove and Relocate Existing Truss Bridge.....	7
Special Specification 4244 – Repair Steel Gussett Connection.....	9

## **ISSUES TO CONSIDER FOR HISTORIC BRIDGE SPECIAL SPECIFICATIONS**

The special specification should address the following where applicable:

- A. All permits, escorts, and utility adjustments shall be the responsibility of the State contractor.
- B. A bracing, lifting, and moving plan shall be submitted by the State contractor.
- C. When the foundations at the relocation site are not ready at the time of delivery, what should the State contractor do? Should the historic bridge be stored on the ROW until the Recipient is ready or move it to the relocation site and place it on the ground?
- D. Will the historic bridge need repair before being moved?
- E. Will the historic bridge be moved in one piece or can it be disassembled? If it is disassembled who will reassemble the bridge? Should the disassembled pieces be match-marked?
- F. Will the existing deck need to be removed?
- G. If lead paint is on the existing bridge, how will this be handled?

## SPECIAL SPECIFICATION

## ITEM 4161

## REMOVE, RELOCATE AND REPAIR EXISTING BRIDGE

1. DESCRIPTION. This specification describes the minimum requirements for the removal, relocation and repair of the existing Pratt Through Truss Bridge located on this project.
2. CONSTRUCTION METHODS. The existing Pratt Through Truss Bridge shall be removed, relocated and repaired as shown on the plans and as directed by the Engineer. The measurements shown on the plans pertaining to the relocation of the existing truss and approaches are to be used as a guide for the Contractor's information only. The relocation, reconstruction and erection of the existing truss at the new site shall be based on field measurements established by the Contractor and as approved by the Engineer. The truss and approaches shall be reconstructed and erected as close to the original design as possible unless otherwise shown on the plans or directed by the Engineer.

Flame cutting of any members will not be allowed unless approved by the Engineer. The Pratt Through Truss Bridge shall be detached from its foundations and moved in one piece to its new location, then placed on new foundations as shown on the plans. All permits, escorts and utility adjustments required to make the move will be the responsibility of the Contractor. The foundations at the site where the existing bridge is removed shall be removed so as not to interfere with the construction and function of the proposed new structure.

To reduce the weight of the bridge, prior to moving the structure, the existing concrete on the deck and approaches shall be removed and disposed of in a manner approved by the Engineer. The existing steel beams (stringers) on the approaches shall be salvaged, without damage, for use in building approaches at the proposed relocation site.

A bracing, lifting and moving plan shall be submitted to the Engineer for review and approval prior to the removal and relocation of this bridge.

Before moving the existing bridge, the new foundations at the relocation site shall be complete and ready to accept the truss bridge. The Contractor's attention is directed to the fact that the column casings used to form the new columns are to be left in place, and will become part of the finished structure.

Extreme care shall be taken when lifting the truss from the existing abutments, transporting the bridge to the new site and placing the bridge on the new foundations. Any damage caused by the Contractor's operations will be repaired as directed by the Engineer at the Contractor's expense.

If both ends of the bridge are lifted at once, all four corners of the bridge shall be lifted simultaneously and symmetrically. If only one end of the bridge is lifted at a time, then both corners shall be lifted simultaneously and symmetrically.

During transmit, supports for the truss should only be placed below the floor beams of the two interior built-up-channel verticals and at the ends of the truss under the end post.

Additional compression bracing may be required between the floor beams under and along the line of the trusses. Shims may be required between the top flange of the floor beams and the channel gusset plates in order to fill the existing gap. Cable bracing may also be required if any sagging occurs.

After the bridge is positioned on the new columns at the new site, existing bridge members shall be repaired, stringers adjusted and reinstalled, and rail members replaced as shown on the plans or as directed by the Engineer. Hangers, plates, beams, bolts and other parts deemed not suitable for reuse shall be replaced. New steel pieces as shown on the plans will be provided by the Contractor. New approaches shall be built as shown on the plans, utilizing steel beams salvaged from the existing bridge approaches, along with new steel beams and hangers as necessary. A new timber deck and approaches will then be installed as shown on the plans or as directed by the Engineer.

3. MEASUREMENT. The work as provided for by this specification shall be measured by the lump sum bid for each item as follows:

Remove and Relocate Existing Bridge  
Bridge Repair

4. PAYMENT. Payment for removing and transporting the Pratt Through Truss Bridge as described herein and as shown on the plans will be at the lump sum bid for the item "Remove and Relocate Existing Bridge", and will be full compensation for all work, labor, tools, equipment, excavation, backfilling, materials, escorts, permits, utility adjustments, foundation removal and incidentals necessary to remove, transport, and relocate this structure.

Payment for removal and replacement of steel beams (stringers) on the existing bridge, removal and replacement of lacing, rivets, steel rails bolts, plates, hangers, etc., fabrication and installation of new steel parts as shown on the plans, construction of new approaches and installation of a new timber deck will be at the lump sum bid for the item "Bridge Repair", and will be full compensation of all work, labor, tools, equipment, materials and incidentals necessary to complete the repair of the bridge. Foundations for the relocated structure will be paid for separately under the pertinent bid items.

SPECIAL SPECIFICATION

ITEM 4220

REMOVE AND RELOCATE EXISTING HISTORIC TRUSS BRIDGE

1. DESCRIPTION. This specification describes the requirements for the removal and relocation of the existing Truss Bridge as shown on the plans.
2. CONSTRUCTION METHODS. The existing Truss Bridge shall be removed and relocated as shown on the plans and as directed by the Engineer. The relocation and erection of the existing truss at the new site shall be based on field measurements established by the Contractor and as approved by the Engineer.

Flame cutting of any members will not be allowed unless approved by the Engineer. The Truss Bridge shall be detached from its foundations and moved in one piece to its new location, then placed on new foundations as shown on the plans. All permits, escorts and utility adjustments required to make the move will be the responsibility of the Contractor.

A bracing, lifting and moving plans shall be submitted to the Engineer for review and approval prior to the removal and relocation of this bridge.

Before moving the existing bridge, the new foundations at the relocation site shall be complete and ready to accept the truss bridge.

Extreme care shall be taken when lifting the truss from the existing abutments, transporting the bridge to the new site and placing the bridge on the new foundations. Any damage caused by the Contractor's operations will be repaired as directed by the Engineer at the Contractor's expense.

If both ends of the bridge are lifted at once, all four corners of the bridge shall be lifted simultaneously and symmetrically. If only one end of the bridge is lifted at a time, then both corners shall be lifted simultaneously and symmetrically.

3. MEASUREMENT. The work as provided for by this specification shall be measured by the lump sum.
4. PAYMENT. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Remove and Relocate Existing Truss Bridge". This price shall be full compensation for all excavation, backfilling, bracing, lifting, moving, escorts, permits, utility adjustments,

constructing new foundation at the relocation site, and for furnishing all equipment, tools, labor and incidentals necessary to complete the work.

**EXAMPLE**

## SPECIAL SPECIFICATION

## ITEM 4234

## REMOVE AND RELOCATE EXISTING TRUSS BRIDGE

1. **DESCRIPTION.** This specification describes the requirements for the disassembly and relocation of an existing Truss Bridge as shown on the plans. The Contractor shall transport and deliver the truss bridge components to Dragon Park, on the campus Paris Junior College, at a site designated by the Engineer. The bridge is to be reassembled by others at the new location.
2. **CONSTRUCTION METHODS.** The existing Truss Bridge shall be disassembled and removed from the original site as shown on the plans and as directed by the Engineer. The dismantled bridge components shall be match-marked with durable tags. In lieu of tags, other match marking may be used when approved by the Engineer provided such marking can endure blast cleaning. Match-marking shall be sufficient to allow each bridge component to be reassembled in the same position and orientation as in the original structure. Bridge components shall be placed on suitable blocking at the new location to keep the steel out of contact with the ground. Components shall be supported so as to avoid damage to the bridge members while in storage at the new location.

A lifting, moving and storage plan shall be submitted to the Engineer for review and approval prior to commencement of any work on the truss bridge. No welding to any bridge member shall be permitted. No drilling through any bridge member shall be permitted. Flame cutting of any members will not be allowed unless approved by the Engineer.

Replacement bolts for the reassembly of the truss bridge by others shall be provided and installed by the Contractor as shown in the plans.

Extreme care shall be taken when disassembling and handling the bridge components. Any damage caused by the Contractor's operations will be repaired as directed by the Engineer at the Contractor's expense. Repairs to damaged steel bridge members shall be in accordance with Item 754, "Steel Bridge Member Repair" and as directed by the Engineer.

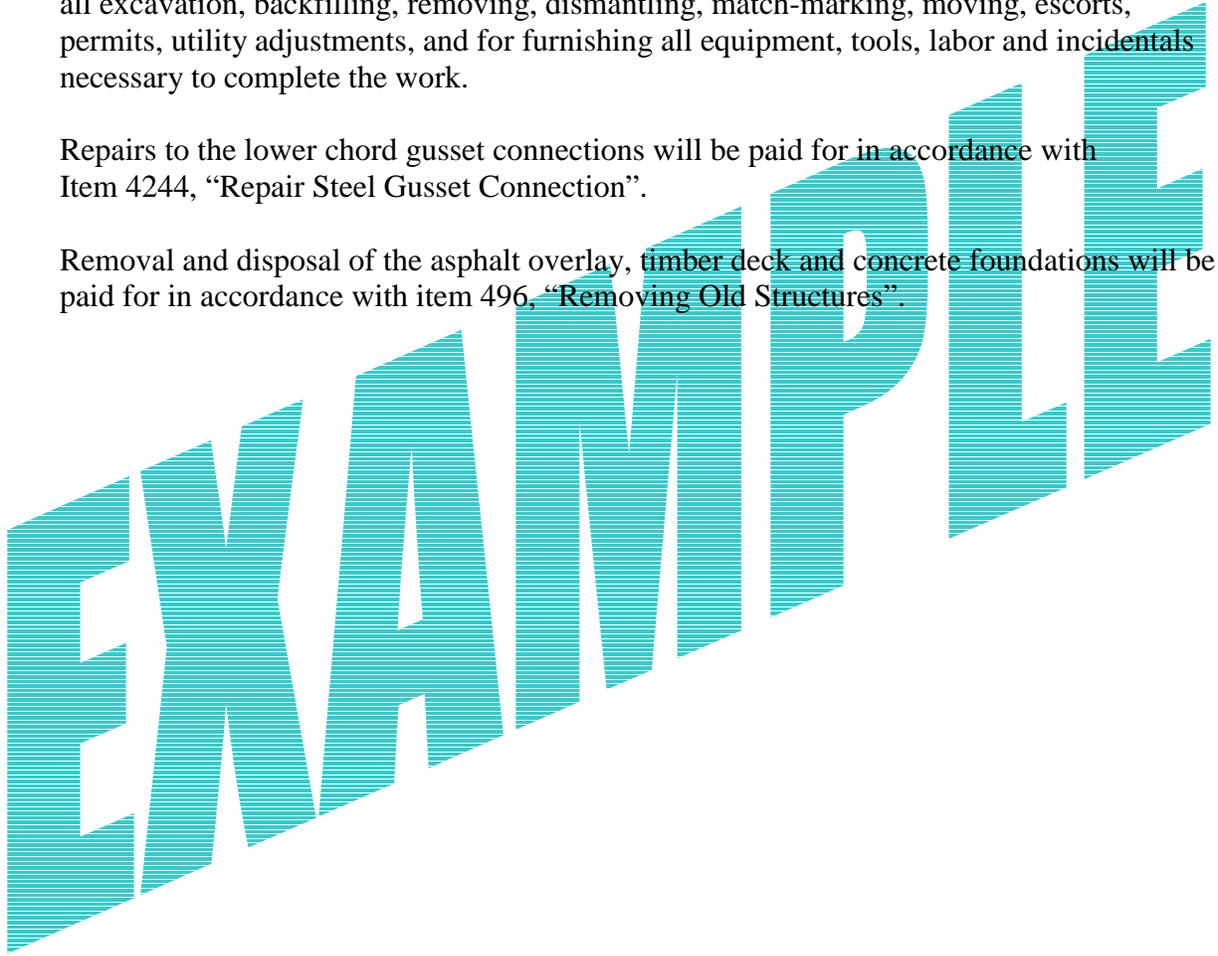
The need for repair of the lower chord gusset connection shall be determined by the Engineer after the truss bridge has been disassembled and the connections cleared of debris. If required, repairs to the lower chord gusset connections shall be in accordance with the Item 4244, "Repair Steel Gusset Connection" and as directed by the Engineer.

All permits, escorts and utility adjustments required to make the move to the new site will be the responsibility of the Contractor.

3. MEASUREMENT. The work as provided for by this specification shall be measured as each individual structure to be removed and relocated.
4. PAYMENT. The work performed and materials furnished in accordance with this Item and measured as provided under “Measurement” will be paid for at the unit price bid for “Remove and Relocate Existing Truss Bridge”. This price shall be full compensation for all excavation, backfilling, removing, dismantling, match-marking, moving, escorts, permits, utility adjustments, and for furnishing all equipment, tools, labor and incidentals necessary to complete the work.

Repairs to the lower chord gusset connections will be paid for in accordance with Item 4244, “Repair Steel Gusset Connection”.

Removal and disposal of the asphalt overlay, timber deck and concrete foundations will be paid for in accordance with item 496, “Removing Old Structures”.



## SPECIAL SPECIFICATION

## ITEM 4244

## REPAIR STEEL GUSSET CONNECTION

1. DESCRIPTION. This specification describes the requirements for the repair of a lower chord gusset connection as shown in the plans. After the existing truss bridge has been dismantled and cleared of debris, the Engineer shall inspect the lower chord gusset connection and determine which (if any) connections are to be repaired. The Contractor shall repair each gusset connection indicated in accordance with the plans and as directed by the Engineer.
2. CONSTRUCTION METHODS. No welding to any bridge member shall be permitted. No drilling through any bridge member shall be permitted. Flame cutting of any members will not be allowed unless approved by the Engineer.

The gusset connection shall be repaired by removing the rivets retaining the splice plate in the lower chord and removing the splice plate, as shown in the plans and as directed by the Engineer.

The splice plate shall be replaced with a new steel plate of the same dimensions as the original. Rivets shall be replaced with ASTM A325 bolts of the same diameter as the original rivets.

Care shall be taken when removing the existing rivet and splice plate. Any damage caused by the Contractor's operations will be repaired as directed by the Engineer at the Contractor's expense. Repairs to damaged steel bridge members shall be in accordance with Item 754, "Steel Bridge Member Repair" and as directed by the Engineer.

3. MEASUREMENT. The work as provided for by this specification shall be measured as each individual gusset connection to be repaired.
4. PAYMENT. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Repair Steel Gusset Connection". This price shall be full compensation for removing rivets, all dismantling, and for furnishing all equipment, cribbing, tools, labor and incidentals necessary to complete the work.