

ITEM 675.7000023 - FURNISH AND INSTALL BRIDGE DECK TIMBERS

DESCRIPTION:

The work shall consist of removing and disposing of existing bridge deck timbers and furnishing and installing new bridge deck timbers at the locations indicated in the contract documents. New bridge deck timbers shall be dapped if called. Work shall also include furnishing and installing new timber tie spacers or bars, and deck tie hook bolts, track spikes, lag bolts, and hardware. In welded rail territory, it shall include furnishing and installing timber spacing blocks between bridge decks ties if called for in the Contract Plans or by the Engineer.

MATERIALS:

Bridge deck timbers shall be new and conform to the requirements of subsection 712-17, Wood Cross Ties, New York State Standard Specifications except that the size of timbers shall be in the accordance with the contract documents.

Hook bolts, lag screws, nuts, bolts, and steel tie spacers shall be new and conform to Section 7-1.12 Specifications of Fasteners for Timber Trestles, AREMA Manual - Current Edition for rolled steel. All steel hardware shall be galvanized in accordance with Section 719-01 of the standard Specifications. The size of hardware shall be as shown in the contract documents.

Timber tie spacers, spacing blocks and timber shims shall meet the requirements of Section 712-13 Timber and Lumber and the preservative treatment of Section 712-17 Wood Cross Ties of the Standard Specifications. Timber tie spacers and spacing blocks shall be as shown in the contract documents.

CONSTRUCTION DETAILS:

Ties to be removed shall be performed in a manner so as not to damage the bridge structure or adjacent ties and rails.

New ties shall be placed with either a mechanical tie insertion device or tie tongs. The use of picks will not be permitted.

All tie removal, handling, and placing equipment is subject to the approval of the Engineer prior to use.

Tie plates shall be carefully removed to allow for reinstallation. Equipment for this work is subject to the approval of the Engineer prior to use.

Existing tie plates shall be reinstalled unless the Engineer determines that the tie plate is inappropriate for reuse. If an existing tie plate is missing or inappropriate for reuse, a tie plate of the size and type indicated in the contract documents shall be installed. The cost of furnishing tie plates will be paid for under a separate item.

Any tie plates, or rail anchors designated to be reinstalled, which are lost shall be replaced by the Contractor at no additional expense to the State.

Rail holding spikes shall be driven vertically and square with the rail. They shall be driven so as to allow a 1/8 in. space between the underside of the spike head and the top of the base of the rail. The spike shall not be overdriven. Spikes shall not be bent against the rail.

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Plate holding spikes shall be driven vertically and square with the tie. The spikes shall be driven tight to the tie plate.

No spike shall be straightened while being driven.

No spike shall be driven against the ends of joint bars.

Once driven, no spike shall be removed without the express permission of the Engineer.

No spike shall be driven in a slot in a rail joint.

If a spike is allowed to be removed, the resulting hole shall be plugged with a treated tie plug of a size sufficient to completely and tightly fill the hole. Tie plugs, if used, shall meet the requirements of the Specifications entitled Specification for Tie Plugs, AREMA Manual, current edition. Spikes may be driven through a tie plug. If, in the opinion of the engineer, the tie plug is not completely and tightly filling the spike hole, or if the tie plug is not properly holding a driven spike, the timber shall be removed and replaced at no expense to the State.

Running rails shall be spiked to provide a track gage of 4'-8 1/2". Any transitioning of track gage to meet existing track conditions will occur off the bridge at the approaches and be paid for under a separate gaging item.

If the tie to be installed is a joint tie, then spiking shall be deferred until either of the following conditions is satisfied:

1. If the rail joint requires a new rail joint assembly, the assembly shall be fully installed.
2. If the rail joint assembly requires bolt replacement, the bolts shall be replaced and fully tightened.

Bridge timber sizes, spacing, drilling and dapping dimensions shall be as shown in the contract documents. All holes and dapped areas shall be treated with an approved wood preservative.

Timbers shall be placed on steel beams with maximum of every fourth tie, but not to exceed 4'-8" centers attached with two hook bolts. The tops of timbers shall not deviate from a uniform profile by more than 1/8 in. Hook bolts are to be tightened to the extent that the washer is embedded approximately 1/16 in. into the top surface of the timber and shall also include a method to prevent bolt loosening such as double nuts, threaded fastener adhesive, locking clips, locking nuts, as well as combination thereof.

Timber ties shall be dapped to fit the girder or stringer flanges and shall not be less than 1/2" deep or more than 1/2" wider than the girder or stringer flanges.

Timber spacer blocks, when called for, are to be attached to the timbers in the manner and locations called for in the contract documents.

Timber tie spacers or steel tie spacers are to be placed outside each rail at the locations indicated in the contract documents. Each spacer shall be lagged to each timber with lag bolts or drive spikes as called for in the contract documents.

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Existing running rails may either remain while being maintained and protected in place or be temporarily removed and replaced during the removal and installation of bridge deck ties. The Contractor will be responsible for the maintenance and protection of running rails and for providing all OTM, welding or hardware necessary to either maintain or restore the running rails during and upon completion of their construction operations.

Timber shims to locally level bridge deck ties if used should preferably be placed top of the tie between the tie and the tie plate. Shims may not be less than ¼" in thickness and shall be secured to the tie. The use of multiple shims is not permitted.

METHOD OF MEASUREMENT:

The quantity to be measured shall be the number of bridge timbers furnished and installed in accordance with the plans and specifications.

BASIS OF PAYMENT:

The unit price bid shall include the cost of all labor, materials, tools, equipment, transportation and other materials necessary to satisfactorily complete the work for the removal and disposal of existing bridge deck ties, maintenance and protection of running rails, furnishing and installing new bridge deck ties including tie dapping, hook bolts, track spikes, bolts, hardware, tie spacers, spacing blocks, and shimming.