

TIMBER DECK, RAILROAD BRIDGE

****From New Haven WCRS(18)**

- xx. DESCRIPTION. This work shall consist of constructing a new timber deck on an existing railroad bridge superstructure and installing timber ballast guards on existing concrete abutment backwall(s) at the locations indicated in the Plans and as directed by the Engineer.
- xx. MATERIALS.
- (a) Timber. Bridge ties, tie spacers, tie spacer blocks, and backwall extension timbers shall be solid-sawn Grade No. 1 or better Oak meeting the requirements of Chapter 7, Section 1.14 "Specifications for Timber Bridge Ties" of the AREMA Manual. Bridge ties shall be surfaced two sides (S2S) on the top and bottom sides, and dapped (notched) for stringer flanges on the bottom side as shown in the Plans.
 - (b) Preservative Treatment. All timber shall be treated with creosote preservative in accordance with the requirements of Chapter 30, Section 3.6 "Wood Preserving" and Section 3.7 "Specifications for Treatment" of the AREMA Manual. Minimum creosote preservative retention shall be 8 pounds of creosote per cubic foot of timber for all members. The preservative treatment to be used shall be a Creosote, Creosote Solution, or Creosote-Petroleum blend conforming to AWPAs specifications P1/P13, P2, and P3, respectively.
 - (c) Field-Applied Preservative Treatment. Field-applied preservative treatment shall meet the requirements of Section 726 and shall be approved by the Engineer prior to use.
 - (d) Connection Hardware.
 - (1) General. Any threaded rod, bolts, washers, nuts, or other connection hardware required for installation of new timber shall meet the requirements of Chapter 7 - Timber Structures, Section 1.12 "Specifications of Fasteners for Timber Trestles" of the AREMA Manual. All connection hardware shall be galvanized unless otherwise noted.
 - (2) Bridge Tie to Stringer Top Flange Connectors. Bridge tie to stringer top flange connectors shall be either HCP-15 Bridge Tie Anchors by Rails Company (www.railsco.com, 973-763-4320) with 0.75" diameter ASTM A307 hex-head bolts with nuts and washers, Sealtite Hook Bolts with Sealtite Spring Locks and Washer Nuts by Lewis Bolt & Nut Company (www.lewisbolt.com, 800-328-3480), or approved equal.

- (3) Lag Screws. Washer-head lag screws used for connecting timber tie spacers to bridge ties shall be ungalvanized Camrail timber screws with truss washer heads by Camcar (www.textronfasteningsystems.com/PDFs/catalog/cCamrail11.pdf., 800-544-6117) or approved equal. The Camrail timber screws utilize the Camcar Torx Plus drive system.
- (4) Threaded Rod. Threaded rod for attaching the timber ballast guards to the concrete abutment backwalls shall be ASTM A36 or ASTM F1554 Grade 55 steel, with nuts and ogee washers.

- xx. CONSTRUCTION REQUIREMENTS. Installation of new timber bridge ties, tie spacers, and tie spacer blocks required to complete the work shall be performed in accordance with Chapter 7 - Timber Structures, Part 3 "Construction, Maintenance and Inspection of Timber Structures" of the AREMA Manual.

Holes for bolts connecting bridge ties to stringer top flanges shall be drilled the same diameter as the bolt. Bridge tie to stringer top flange connectors shall be installed in accordance with the manufacturer's instructions.

Holes for all lag screws shall be predrilled with a bit not larger than the body of the screw at the base of the thread.

Tie spacer blocks shall be placed on stringer top flanges between bridge ties.

Tie spacer lengths shall be adjusted as necessary during construction to ensure that joints are located in gaps between the bridge ties.

All field cut ends and connection holes in timber members shall be treated with an approved field-applied preservative treatment.

Holes for threaded anchor rods for attaching timber ballast guards to concrete backwalls shall be drilled to the depth shown in the Plans and shall be a minimum of 1 inch greater in diameter than the rod. Anchor rods shall be grouted with Type IV mortar or other approved material.

- xx. METHOD OF MEASUREMENT. The quantity of Special Provision (Timber Deck, Railroad Bridge) to be measured for payment will be on a lump sum basis in the complete and accepted work.

- xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (Timber Deck, Railroad Bridge) will be paid for at the Contract lump sum price. Payment will be full compensation for furnishing, transporting, handling, and installing the materials specified, including connection hardware and timber preservative treatment; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

<u>Pay Item</u>	<u>Pay Unit</u>
900.645 Special Provision (Timber Deck, Railroad Bridge)	Lump Sum