

FURNISH AND INSTALL BOLT SETS

****From Rutland - Leicester FRT11(024)
Rutland-Burlington VTRY(5)**

- xx. DESCRIPTION. This work shall consist of furnishing and installing new nuts, bolts, and spring washers in railroad track connections at the locations indicated in the Contract Documents, or as required when performing out-of-face bolt tightening, or as directed by the Engineer.
- xx. MATERIALS. All materials furnished under this Section shall be new and sized to properly fit the existing bolt holes.
- (a) Joint bar bolts and nuts shall meet the material requirements of the Specification entitled: Chapter 4, Section 3.5 Specifications for Heat Treated Carbon-Steel Track Bolts and Carbon Steel Nuts, AREMA Manual - current edition.
- (b) Spring washers shall meet the material requirements of the Specification entitled: Chapter 4, Section 3.6 Specifications for Spring Washers, AREMA Manual - current edition.
- (c) Dimensions of track bolts and nuts shall meet the requirements of the Specification entitled: Chapter 4, Section 3.5 Design for Track Bolts and Nuts, AREMA Manual - current edition. Length and diameter of bolts shall be the same as the existing bolts in the track connection.
- xx. CONSTRUCTION REQUIREMENTS. A new bolt, nut, and washer will be installed in a joint bar whenever an existing one is missing or defective and where there are fewer than two (2) properly tensioned bolts for each rail in the joint, or where indicated in the Contract Documents or as directed by the Engineer.

Existing defective bolts may be removed by flame cutting providing no damage is done to the joint bar or the rail. Bolt holes may not be made, enlarged, or cleaned by cutting with a torch. If this work is required it shall be done with a drill. Defective bolts shall become the property of the Contractor.

If bolt holes are drilled in the rail with joint bars in place, then after the holes have been drilled, the joint bar must be removed and the area cleaned of drilling chips.

After installation, a new bolt shall be tightened to a minimum tension of 90 kN (20,000 lbs), but no more than 133 kN (30,000 lbs.). Tighten all bolts working from center of joint bar outward. Bolts shall be tightened by means of a mechanical bolt tightening machine with power activated impact equipment. Bolts have been found either under tightened or over tightened due to improper torquing procedures. Contactor is to submit type of machine to be used for bolt tightening to the Engineer for approval.

Power and impact wrenches must be used according to manufacturer's instructions and the torque settings properly adjusted for the fastener being applied.

If a new bolt, washer, or nut breaks, or cannot be tightened to the minimum tension required, the Contractor shall replace the defective components as necessary until the minimum tension is achieved. This work shall be done at no additional expense to the State.

xx. METHOD OF MEASUREMENT. The quantity of Special Provision (Furnish and Install Bolt Sets) to be measured for payment will be the actual number of new bolt sets (bolt, spring washer, and nut) properly installed in the complete and accepted work.

xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (Furnish and Install Bolt Sets) will be paid for at the Contract unit price per each. Payment will be full compensation for furnishing and installing bolt sets and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.620 Special Provision (Furnish and Install Bolt Sets)	xxEach