

**ITEM 10565.20nn M - INSTALLATION OF PRE-PURCHASED TYPE
E.B. BRIDGE BEARINGS**

DESCRIPTION. The work shall consist of placing and setting bridge bearings and anchor bolts at the locations indicated on the plans. The Contractor will be required to pick-up the bearings from the designated NYSDOT storage site on Long Island and deliver to the work site for installation. This is to be coordinated with the NYSDOT EIC.

Bearing Type. The specific type required is as indicated below:

Type E.B. – Elastomeric Bearings with External Load Plates. These accommodate rotation by the deformation of a plain or steel laminated elastomeric pad. Elastomeric bearings with external load plates are fabricated in fixed and expansion versions. The fixed version will accommodate rotational movements. The expansion bearings will accommodate longitudinal, transverse, and rotational movements.

MATERIALS

General. Materials shall meet the following requirements:

Concrete Grouting Material	701-05
Anchor Bolts	723-60

Steel anchor dowels shall meet the requirements of 709-01- Bar Reinforcement

CONSTRUCTION DETAILS

Concrete Bearing Surface Elevations

General. The elevation of the concrete bearing surface is as indicated on the contract plans.

Concrete Bearing Surface Preparation. No bearing shall be placed upon a concrete bearing surface which is deformed, irregular, or poorly finished. The entire bearing surface area shall be floated and troweled.

Setting Anchor Bolts. Anchor bolts shall be set as shown on the plans unless changes are permitted by the D.C.E.S. If anchor bolts are cast in substructure concrete, templates, or other suitable means, shall be used to keep the bolts vertical at the required embedment and in the correct horizontal position during concrete placement. If the Contractor elects to drill the finished, cured concrete in order to set the anchor bolts, the reinforcing steel shall be positioned prior to casting the concrete so that it will not be damaged during drilling. If anchor bolts are drilled and grouted, material and construction details shall be in conformance with subsections §586-2 and §586-3.

Bearing Pad Installation. Bearing pads placed between concrete, or other masonry, and steel masonry plates shall be located to correct alignment and elevation, and placed at the time of masonry plate installation. Bearing pads shall conform to §728-01, §728-02, or §728-03 at the Contractor's

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option. Each bearing pad shall be the same size in plan as the masonry plate it supports. Holes to accommodate anchor bolts shall be cleanly and accurately cut prior to bearing pad placement.

Bearing Installation and Alignment

Type E.B. Bearings

1. General.

- a. The centerline of sole plate or other fixed portions of bearing assemblies, attached to steel stringers, shall not be offset from the centerline of bearing stiffeners of diaphragm connection plates by more than one-half the thickness of the flange at that location, or the thickness of the bearing stiffener or connection plate, whichever is the lesser distance.
- b. These bearings are designed to function properly provided that minimal distortion occurs along the beam axis under full dead load at an ambient temperature of 20° C. Elastomeric bearings shall be installed when the ambient temperature is between 5° and 26° C inclusive. The Contractor may elect to install the bearings when the ambient temperature is outside of the allowable range, provided the Contractor submits, and receives D.C.E.S. approval, of an installation procedure that either resets the bearings when the temperature is in the allowable range or deforms the bearings so that they perform as if they were installed at 20° C.

2. Fixed. No additional requirements shall apply.

3. Expansion.

- a. These may vary from perfect alignment. The maximum variation from perfect alignment under full dead load shall not exceed the value shown on the plans. This variation shall be measured as the horizontal distance between the centerline of the highest elastomer surface and the centerline of the lowest elastomer surface.
- b. No bearing adjustments shall be made until the completed structural slab has been in place for at least seven curing days. Any adjustments needed to meet the above requirements may require jacking the superstructure. All adjustments shall be accomplished according to a written procedure submitted by the Contractor for D.C.E.S. approval. All adjustments shall be made at no additional cost to the State.

Welding

Type E.B. Bearings. The requirements of §565-3.06A and §565-3.06C shall apply.

Grouting Anchor Bolt Holes. All slotted anchor bolt holes in masonry plates shall be filled with concrete grouting material to the top edge of the hole. All excess grout material shall be cleaned from the bearing surfaces in a manner satisfactory to the Engineer. Slotted anchor bolt holes in fixed

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bearings may be filled any time subsequent to stringer placement. Slotted holes in expansion bearings shall be filled only after all necessary bearing adjustments have been made.

Final Verification. Prior to final acceptance of the bridge, the Engineer will verify that all necessary adjustments have been made; that all steel bearings, or external load plates, are permanently welded or attached with cap screws to the superstructure steel as shown on the contract plans; that all slotted holes are completely filled with grout; that all anchor bolts are firmly tightened; and that all other work required to make the bearings completely functional has been completed.

METHOD OF MEASUREMENT. Measurement will be taken as the number of bearings installed in accordance with the Contract Documents.

BASIS OF PAYMENT. The unit price bid for each bearing installed shall include the cost of all labor, materials, equipment and adjustment necessary to complete the work. All anchor bolts and masonry plates shall be included in the price bid for this item.