SECTION 500 - STRUCTURES

507.00 Bearing Pads and Plates.

General. Bearing units transfer the loads uniformly from the superstructure to the substructure, allow for movement of the superstructure due to thermal expansion or contraction, and allow for deflections due to live loads on the structure.

The bearing units are generally one of the following two types:

- TFE Bearings: A top plate made of steel with Teflon sliding on polished stainless steel. (An elastomeric pad is attached underneath the top plate.)
- Elastomeric Bearings: Solid or laminated neoprene pads.

The type of bearing specified for any individual structure depends upon the load and movement that is expected to occur. Elastomeric bearing pads are required to conform to Subsection 711.02 of the Standard Specifications, Teflon and the stainless steel mating surface shall conform to the latest AASHTO Specifications for Highway Bridges.

The importance of providing proper bearings cannot be overemphasized. Unless bearing surfaces are produced that will come in contact completely with the bearing supports, the structure may develop serious structural weaknesses. The centerline of the bearing must be laid out by precise methods and the elevation checked to ensure it is correct. Bearing surfaces are to be free of debris and organics.

The bearing area for a member bearing on elastomeric bearing pads must be finished to a true plane. This bearing area must be constructed so as to give uniform bearing on the entire area. These bearing areas must be formed with unyielding supports when the members are cast. Concrete beams that have voids or honeycomb on the bottom bearing areas need to be rejected.

A manufacturer's certificate is required and should be on file with the Department prior to installation. Ensure the certification is for the material received. A visual inspection of the pads should also be made by the Inspector prior to installation.

Steel plates must meet the requirements of Section 504 Structural Metals. The shop drawings will be approved by the Engineer prior to fabrication of the units.

Documentation for Pay Quantity. Use the diary to verify the activity, date, location of the work, and all dimensional checks. The cost is usually included in other pay items unless otherwise specified.

Reports. None.