

Designer Note: Permanent markers shall be included in all project plans based on the following guidelines. Include CADD drawing 667101-D4. Do NOT include Highway Standard 667101.

1. Permanent survey markers shall be placed to perpetuate the survey lines of divided highways and the centerline of all others where these lines have been established by Survey (see CADD drawing 667101-D4 for locations).
2. Permanent survey markers shall be placed at all land section corners within the State Right-of-Way where monuments have been found or relocated by Survey (see CADD drawing 667101-D4 for placement of permanent survey ties).
3. A permanent survey marker shall be placed in all new or reconstructed bridges. The marker shall be cast in the wingwall or abutment nearest the bridge name plate for a permanent bench mark.

Any questions on placement should be directed to the District Chief of Surveys.

#### **PERMANENT SURVEY MARKER, TYPE 1, BRIDGE PLACEMENT**

Effective July 1, 1990

Revised March 11, 2011

This work shall consist of furnishing and installing a Permanent Survey Marker as shown on the plans and as specified herein. The survey marker shall be placed in either the abutment seat or in the top of the wingwall. The survey marker shall be located in the same corner as the Bridge Name Plate as shown on the current Standard for Name Plate for Bridges. If the survey marker is to be located on the abutment seat of the structure, it shall be placed in a location with at least 8'-0" (2.4 m) vertical clearance directly above the survey marker, if possible.

After installation, a professional Land Surveyor shall perform a closed loop level circuit to determine the new survey marker elevation and shall stamp the elevation in the face from the temporary bench marker of the survey marker. All level loops used to set the bench mark shall be kept in a field book and shall contain a description and location of the original bench mark used, the temporary bench mark, the proposed bench marker on the survey marker, and the name and license number of the professional land surveyor. Copies of the field book shall be submitted to the District Chief of Surveys or Plats and Plans.

This work will be paid for at the contract unit price Each for PERMANENT SURVEY MARKER, TYPE I.