

**SECTION 46 - SURVEY MONUMENTS  
TABLE OF CONTENTS**

<u>Section</u>	<u>Page</u>
46-1 GENERAL .....	46.1
46-2 MATERIALS .....	46.1
46-3 CONSTRUCTION.....	46.1
46-4 MEASUREMENT AND PAYMENT .....	46.1

## **SECTION 46 SURVEY MONUMENTS**

### **46-1 GENERAL**

This work consists of constructing cast-in-place portland cement concrete survey monuments at the locations shown on the Plans or directed by the County Surveyor. Survey monuments must conform to the requirements in the State Specifications, these Specifications, and the Special Provisions.

The Agency will show the location and character of all existing survey monuments within the construction area on the Plans.

Whenever a survey monument not shown on the Plans is discovered, the Contractor must immediately bring it to the attention of the Agency and must protect it.

When set forth in the Special Provisions that the Contractor is to provide all surveys, the Contractor is responsible for referencing, re-setting, and filing of corner records for all survey monuments disturbed or destroyed by construction activities in accordance with Section 8771 of the Land Surveyors Act.

All survey monuments and references must be set or re-set by or under the direction of a California Licensed Land Surveyor or a California Registered Civil Engineer authorized to practice Land Surveying.

### **46-2 MATERIALS**

Unless otherwise specified in the Contract, survey monuments must be Type D, Alternative 1, as detailed in the current State Standard Plans., except for those to be installed in new bridge deck construction. Survey monuments placed in new bridge deck construction must be modified Type A, as detailed in the current State Standard Plans, and must consist of a marker disc placed on the surface of the concrete bridge deck without specific concrete depth, reinforcing or chamfer.

Concrete must be Class "B-2" concrete as specified in Section 50-5, "Portland Cement Concrete", of these Specifications.

Unless otherwise specified in the Special Provisions, survey marker discs must be furnished by the Contractor and must be leaded red or semi-red brass conforming to ASTM Designation: B 584, Copper Alloy UNS No. C84400. The disc must be 2-1/2 inches in diameter and at least 2-1/2 inches long.

Mortar must be as specified in the State Specifications.

### **46-3 CONSTRUCTION**

The brass disc must be imbedded in fresh concrete and centered within the cross ties of the survey point.

Finished monument cases must be flush with the surrounding area and must be secured by a concrete or mortar collar as detailed on the State Plan A74. Survey monuments on new deck construction do not have monument cases.

It is essential that the survey monuments be placed in the correct locations. Survey monuments placed in locations unacceptable to the County's Surveyor must be removed and replaced at the Contractor's expense.

### **46-4 MEASUREMENT AND PAYMENT**

The quantities of each type of survey monument will be paid for as survey monuments by units, in place, determined from actual count. The unit prices paid for survey monuments

include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing the survey monuments, complete in place, including monument cases, granular material, excavating and backfilling holes, and disposing of surplus excavated material, as shown or specified in the Contract, specified in these Specifications, and directed by the Agency.