

Amend Section 613 - Centerline and Reference Survey Monuments to read as follows:

**"SECTION 613 - CENTERLINE AND REFERENCE SURVEY MONUMENTS**

**613.01 Description.** This section describes constructing, adjusting, and reconstructing centerline and reference survey monuments.

**613.02 Materials.**

Concrete, Class A	601
Reinforcing Steel	709.01
Adhesives for Pavement Markers	712.41
Structural Steel	713.01

Use brass plug for marking centerline point. Burr or feather plug for anchorage in concrete.

Use 2-inch, gage no. 9 concrete nails for pipe sleeve and plate.

**613.03 Construction Requirements.**

**(A) Initial Installation.** Cut holes in completed medians and shoulders. Cut holes to required depth, or to solid rock, whichever is less. Fill hole with concrete. Place the 4 #4 x 20-inch bars as shown on the plans when curing the concrete. Install brass plug in required position after concrete has sufficiently set. After curing concrete at least 7 days, restore edge of pavement surrounding monument to the original condition.

**(B) First Pavement Resurfacing Adjustment.** Adjust centerline and reference survey monuments before the paving operations.

Cover bottom of plate and sleeve assembly with adhesive and press assembly into place over the existing monument.

Align assembly so that the monument pin is in center of the sleeve. Maintain this alignment and fasten plate to existing concrete by driving concrete nails through predrilled holes. Drive nails until head of each nail is flush with plate. Complete these operations within five minutes of mixing the adhesive.

46 **(C) Second and Third Pavement Resurfacing Adjustments.**  
47 Adjust centerline and reference survey monuments before paving  
48 operations.  
49

50 Epoxy contact surfaces between sleeves and weld entire  
51 circumference. Fill sleeve with newspaper or similar material to prevent  
52 existing monument from being affected by tack coat or paving operations.  
53 After laying pavement but before compaction, remove pavement material  
54 directly above sleeve, and remove newspaper or similar material from  
55 sleeve. After compaction of pavement, clean area enclosed by sleeve  
56 so pin and concrete are clearly visible.  
57

58 **(D) Reconstruction.** Reference existing monument with cross nails  
59 after laying and compacting new pavement. Construct new monument.  
60

61 **(E) Reference Survey Data.** Provide the following reference survey  
62 data to the Engineer for all new monuments by qualified personnel under  
63 the direct supervision of a surveyor licensed in the State of Hawaii with  
64 experience in construction surveying of the work:  
65

66 (1) Stationing and offset  
67

68 (2) Local trig station north-south coordinates.  
69

70 The Engineer may check the Contractor's survey work. The  
71 Engineer will inform the Contractor of the results of these checks. Such  
72 checks shall not relieve the Contractor of its responsibility for the  
73 accuracy of the layout work.  
74

75 Furnish personnel, engineering equipment and supplies,  
76 transportation, and material necessary to complete the survey work.  
77

#### 78 **613.04 Method of Measurement.** 79

80 **(A) New Centerline and Reference Survey Monument.** New  
81 centerline and reference survey monuments will be paid on a lump sum  
82 basis. Measurement for payment will not apply.  
83

84 **(B) Reconstructing Centerline and Reference Survey Monument.**  
85 Reconstructing centerline and reference survey monuments will be paid  
86 on a lump sum basis. Measurement for payment will not apply.  
87

88 **(C) Adjusting Centerline and Reference Survey Monument.** The  
89 Engineer will measure adjusting centerline and reference survey  
90 monument per each.  
91

613.05 Basis of Payment.

(A) New Centerline and Reference Survey Monument. The Engineer will pay for the accepted new centerline and reference survey monument on a contract lump sum basis. Payment will be full compensation for the work prescribed in this section and the contract documents.

(B) Reconstructing Centerline and Reference Survey Monument. The Engineer will pay for the accepted reconstructing centerline and reference survey monument on a contract lump sum basis. Payment will be full compensation for the work prescribed in this section and the contract documents.

(C) Adjusting Centerline and Reference Survey Monument. The Engineer will pay for the accepted adjusting centerline and reference survey monument at the contract unit price per each. Payment will be full compensation for the work prescribed in this section and the contract documents.

The Engineer will pay for the following pay item when included in the proposal schedule:

Pay Item	Pay Unit
Centerline and Reference Survey Monuments	Lump Sum
Reconstructing Centerline and Reference Survey Monuments	Lump Sum
Adjusting Centerline and Reference Survey Monuments	Each

The Engineer will pay for:

(1) 80 percent of the contract bid price upon completion of adjusting the centerline and reference survey monument;

(2) 20 percent of the contract bid price upon completion of providing reference survey data to the Engineer for all new monuments."

END OF SECTION