

SECTION 613 - CENTERLINE AND REFERENCE SURVEY MONUMENTS

613.01 Description. This work includes installing, reconstructing and/or adjusting centerline and reference survey monuments according to the contract. *|

613.02 Materials.

(A) **Concrete.** Concrete shall be Class A and shall conform to Section 601 - Structural Concrete. The Contractor may hand mix the concrete. *|

(B) **Plug.** The metal plug for marking the centerline point shall be of brass. The Contractor shall burr or feather the metal plug for anchorage in the concrete. *|

(C) **Other Materials.** Other materials shall conform to the following: |

Zinc-coated Pipe and Fittings	707.10	
-------------------------------	--------	--

Adhesives for Pavement Markers	712.41	
--------------------------------	--------	--

Structural Steel	713.01	
------------------	--------	--

The plate shall have the shape and dimensions shown in the contract. |

The sleeve encircling the centerline or reference survey monument shall have the shape and dimensions shown in the contract. The Contractor shall fillet weld the sleeve around its entire outer circumference. *|

The nail fastening the plate to the pavement shall be two (2) inches long by nine (9) concrete nail. *|

613.03 Construction Requirements. After the Contractor completes the median and shoulders fully, the Contractor shall cut the holes through the median and unpaved shoulders into the subgrade for the required depth. If the Contractor reaches solid rock before reaching the required depth, the Contractor may build the monument on this instead of being built to its full depth. The Contractor shall fill the hole with concrete. When the concrete has set sufficiently, the Contractor shall install the brass plug in the exact position required. When the concrete in the monument has cured for at least seven (7) days, the Contractor shall restore the edge of pavement surrounding the monument to the original condition. *|

The Contractor shall complete the adjustment of centerline and reference survey monuments before the paving operations. *|

The Contractor shall adjust the centerline and reference survey monuments for the first resurfacing by *|

613.03

- (1) covering the bottom of the plate and sleeve assembly with adhesive and
- (2) pressing the assembly into place over the existing centerline or reference survey monument.

The Contractor shall then align the assembly so that the monument pin is in the center of the sleeve. While the Contractor maintains this alignment, the Contractor shall fasten the plate to the existing pavement by driving the concrete nails through the predrilled holes in the plate. The Contractor shall drive the nails until the head of each nail is flush with the plate. The Contractor shall complete these operations within five (5) minutes of mixing the adhesive.

When adjusting centerline and reference survey monuments for the second and third resurfacing, the Contractor shall epoxy and weld the sleeve shown in the contract to the existing sleeve. The Contractor shall place the epoxy on contact surfaces between sleeves. The fillet welds shall be completely around the entire circumference of the sleeve.

The Contractor shall fill the sleeve with newspaper or other material to prevent the concrete of the existing monument from being affected by the application of tack coat or by subsequent paving operations.

After the Contractor has laid the pavement but before compaction, the Contractor shall remove the pavement directly above the sleeve and the newspaper or other material from the sleeve.

After the Contractor has completed the compaction of the pavement, the Contractor shall clean the area enclosed by the sleeve so that the pin and concrete are clearly visible.

When reconstructing the centerline and reference survey monuments, the Contractor shall reference the existing monument with cross nails after the Contractor has laid and compacted the new pavement. The Contractor shall then excavate the reconstructed monument in its entirety. The Contractor shall construct a new monument according to the contract.

613.04 Method of Measurement. If not specified in the proposal, the Engineer will not measure for installing, reconstructing and/or adjusting centerline and reference survey monuments.

If specified in the proposal, the Engineer will measure the installing, reconstructing and/or adjusting centerline and reference survey monuments per each complete in place.

613.05 Basis of Payment. If not specified in the proposal, the Engineer will not pay for installing, reconstructing and/or adjusting centerline and reference survey monuments separately. The Engineer will consider them incidental to the various contract items.

If specified in the proposal, the Engineer will pay for the accepted quantities of installing, reconstructing and/or adjusting centerline and reference survey monuments at the contract unit price per each complete in place. *|

The price shall be full compensation for excavating, restoring to original condition, cutting and filling the holes, installing the brass plugs, aligning the assembly, driving the concrete nail, epoxing and welding the sleeve, cleaning the area, furnishing labors, materials, equipment, tools, and other incidentals necessary to complete the work. *|

The Engineer will make payment under: *|

Pay Item	Pay Unit
Centerline and Reference Survey Monuments	Each
Installing Centerline and Reference Survey Monument	Each
Reconstructing Centerline and Reference Survey Monument	Each
Adjusting Centerline and Reference Survey Monument	Each