

## **Section 345**

### **Adjusting Frames, Covers, Valve Boxes, and Water Meter Boxes**

Changes to this section are as follows:

- Able to identify with GPS and provide location of devices to owner.
- Process of lowering utilities prior to milling
- Adjustment of utilities in single lift paving and multiple lift paving
- Prior to placement of concrete collar, asphalt shall be rolled
- Concrete collars shall have a rebar hoop installed
- Traffic not allowed until 2500 PSI on residential streets and 3000 PSI on collector/major streets

This section was reviewed and changed by Materials Working Group. Reviewed and modified on April 29, 2013.

## SECTION 345 (4/26/13) DRAFT

### ADJUSTING FRAMES, COVERS, VALVE BOXES AND WATER METER BOXES

#### 345.1 DESCRIPTION:

The Contractor shall furnish all labor, materials, and equipment necessary to adjust all frames, covers and valve boxes as indicated on the plans or as designated by the Engineer. The frames shall be set to grades established by the Engineer, in a manner hereinafter specified.

The Contractor may elect to remove old frames, covers and valve boxes and to install new frames and/or boxes without any additional cost to the Contracting Agency, in accordance with standard detail drawings.

The Contractor shall be responsible for the careful identification and location of all utility devices requiring adjustment within the new pavement section, including manholes, water valves, sewer clean-outs, vaults, etc. These devices shall be referenced by the use of swing ties or GPS with the appropriate supplemental survey data supplied to the owner prior to paving.

Any missing frames, covers, water valves, survey monuments, or box hardware (such as lids, for example) shall be reported in writing to the engineer during the initial location process to allow arrangements to be made to obtain replacement hardware. Missing hardware that is properly reported to the engineer shall be supplied to the contractor by the owner or the appropriate utility company.

If required, prior to the milling operation, manholes, water valves, or survey monuments within the milled area shall be lowered below the existing asphalt surface. Steel plates of a size appropriate for the object to be lowered shall be used over the opening prior to placing temporary asphalt. A sufficient thickness of temporary asphalt concrete pavement shall be placed and compacted within the void created by the item removal or pre-lowering so no damage to the utility device from equipment used during the milling and paving operations occurs. If manholes are on major or arterial streets that are opened to vehicular traffic you shall backfill with hot asphalt mix and roller compacted flush with the existing pavement prior to opening up to traffic. If lowering in residential or low volume street with minimal traffic, you may backfill with cold mix or other alternative product if approved by the engineer. There is no separate measurement or payment for this temporary placement, or removal.

In addition, all manhole frames and covers, water valves boxes and survey monuments and all related hardware removed by the contractor during the lowering process shall be maintained in a secure area, and the contractor shall bear full responsibility for this hardware material. Any hardware lost by the contractor shall be replaced in kind, at no additional cost to the owner.

#### 345.2 ADJUSTING FRAMES:

The Contractor shall loosen frames in such a manner that existing monuments, clean outs or valve boxes will not be disturbed or manholes damaged. Debris shields shall be used so that no shall enter sanitary or storm sewer. All loose material and debris shall be removed from the excavation and the interiors of structures prior to resetting frames.

Frames shall be set to the elevations and slopes established by the Engineer and shall be firmly blocked in place with masonry or metal supports. Spaces between the frame and the old seat shall be sealed on the inside to prevent any concrete from entering the hand hole or manhole. Class AA concrete shall be placed around and under the frames to provide a seal and properly seat the frame at the required elevation and slope. Concrete shall be struck off flush with the top of the existing pavement.

Adjustments of the manhole frames, covers, cleanouts, valve boxes, survey mounted boxes, and water boxes, if located within the pavement, shall be made AFTER placing final surface course when there is only a single lift of pavement required. When there are multiple lifts of pavement required adjustments may be made BEFORE the final surfacing.

After removal of the temporary asphalt pavement in the area of adjustment, and prior to placement of the final concrete collar ring (as shown on Detail 270 and 422) the asphalt pavement in proximity of the adjustment shall be, at the request of the Engineer, rolled with a self-propelled, steel wheel roller.

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**345.3 ADJUSTING VALVE BOXES:**

Valve boxes shall be adjusted to the new elevations indicated on the plans, or as established by the Engineer.

Adjustable cast iron boxes shall, if possible, be brought to grade by adjustment of the upper movable section. Any excavated area shall be filled with Class AA concrete to the level of the existing pavement, or as directed by the Engineer.

Concrete pipe valve boxes in areas not subject to vehicular traffic shall be adjusted to grades by installing a suitable length of metal or concrete pipe, of the same inside diameter as the present valve box, and reinforcing the outside with a concrete collar extending from at least 2 inches below the joint up to and flush with the top of the valve box extension. This collar shall be of Class AA concrete. The dimension from the outside of the box to the outside of the collar shall not be less than 2 inches. This adjustment will be known as Type B.

In areas subject to vehicular traffic and where the existing valve box is a Type B, the adjustment to the new elevation shall be made using the old cover and installing a new 8 inches frame in accordance with the standard detail for installation of valve boxes in vehicular traffic areas. This adjustment shall be known as Type BA.

Adjustment of existing Type A valve boxes to the new elevations shall be as described in Subsection [345.2](#) above. This adjustment shall be known as Type A.

**345.4 ADJUSTING MANHOLE AND VALVE COVERS:**

Adjusting rings may be used to raise manhole covers in asphalt pavements when deemed acceptable by the Engineer. The amount of adjustment, thickness of seal or overlay, and cross slope will be considered when using adjusting rings. Each location where an adjusting ring is used must have a sufficient depth of asphalt to assure the proper installation and operation of the ring. The rings shall be made of a non-metallic, polypropylene or fiberglass material and installed per the manufacturer's specifications. The rings shall be approved by the Engineer.

The concrete collar ring around the frame or valve box shall be circular, and shall be a minimum of eight (8) inches thick, placed flush with the adjacent new pavement surface. Concrete shall be a minimum of MAG Type AA on all paved streets. All concrete shall be obtained from plants approved by the Engineer.

A single No. 4 rebar hoop will be placed in each adjustment collar. The hoop diameter shall be such that its placement is centered between the edge of the manhole frame or valve box, and the outer edge of the concrete collar, the depth of the hoop shall be centered in the thickness of the collar. Each concrete ring shall be scored radially at quarter-circle points. Score lines shall be ¼ -inch wide by ½ - inch deep. The concrete collar surface shall be rough broom finished. (see Detail 270 and 422)

Traffic shall not be allowed on the collars until the concrete had reached a minimum compressive strength of 2500 psi on residential and 3000 psi on collector and major streets. On major streets the contract shall use "high-early" cement in the concrete mix, approved by the Engineer, to minimize delay in reopening the street(s) to traffic.

**345.5 MEASUREMENT:**

The quantities measured will be the actual number of frames, covers and value boxes of each type, adjusted and accepted.

**345.6 PAYMENT:**

The quantities, as determined above will be paid for at the contract price per unit of measurement respectively, for each of the particular items listed in the proposal. The payment shall be compensation in full for all materials, labor, equipment and incidentals necessary to complete the work.

- *End of Section* -