Section 345

ADJUSTING FRAMES, COVERS, VALVE BOXES, METER BOXES AND PULL 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

The Contractor may elect to remove old frames, covers, and valve boxes and then to install new frames and/or boxes in accordance with standard detail drawings at no additional cost to the Contracting Agency.

The Contractor shall be responsible for maintaining an accurate description and location of all items to be adjusted. The locations shall be referenced with map documentation by the use of swing ties or GPS locations. This information shall be supplied to the Engineer and utility owner(s) prior to taking any action that would hide or restrict access to the items to be adjusted.

Any missing or defective frames, covers, valve box or and related hardware shall be reported to the Engineer in writing during the initial location process to allow for timely replacement. The Engineer shall be responsible for providing replacement items to the contractor. The contractor is responsible for providing items required to accomplish the required adjustments such as additional adjusting rings, valve box extensions, meter box extensions, and pull box extensions.

345.2 LOWERING PROCEDURE:

If required, manholes, valve boxes, or survey monuments located within the paved areas to be milled or reconstructed shall be lowered to an elevation that will allow required work to be accomplished without damaging the facilities. Care shall be taken to prevent entrance of any material into the lowered facilities. Lowering shall be to a depth that will prevent damage to the utility during the construction activities.

All manhole frames, valves boxes, survey hand hole frames and related items removed by the contractor during the lowering process shall be maintained in a secure area, and the contractor shall bear full responsibility for the material. Any hardware items lost or damaged by the contractor shall be replaced in kind, at no additional cost to the Contracting Agency.

Preparation for Milling: Temporary asphalt concrete shall be placed over the steel plate filling the excavated area. The temporary pavement shall be maintained until removed during the adjustment to final grade. For manholes located on major streets that are to be kept opened to vehicular traffic hot mix asphalt shall be used to backfill the excavated areas and compacted flush with the existing pavement prior to opening up to traffic. In residential or low volume streets with minimal traffic, cold mix or other approved product may be used for temporary pavement. No measurement or payment for temporary pavement placement, or removal.

345.3 ADJUSTING FRAMES:

The Contractor shall loosen frames in such a manner that existing monuments, cleanouts, manholes, and valve boxes will not be disturbed or damaged. Debris shields shall be used to prevent debris from entering sanitary or storm sewers. All loose material and debris shall be removed from the excavation and the interiors of structures prior to resetting frames. If dirt or debris enters the sewer system the contractor shall be responsible for cleaning the sewer system for a minimum of one reach (the next downstream structure from the contamination point.)

Frames shall be set to match finished grade or the elevations and slopes established by the Engineer. Manhole frames shall be firmly blocked in place with masonry or metal supports. Spaces between the frame and the facility shall be sealed on the inside to prevent any concrete from entering the hand hole or manhole. A Class AA concrete collar 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 utilities, if located within the asphalt pavement, shall be made after placing the 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 or as directed by the Engineer.

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 be rolled with a self-propelled steel wheel roller if requested by the Engineer,

345.4 ADJUSTING VALVE BOXES:

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

Adjustable valve 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 inch 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.

345.5 ADJUSTING MANHOLE AND VALVE COVERS WITH ADJUSTMENT RINGS:

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 concrete, 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 Class AA on all paved streets. All concrete shall be obtained from plants approved by the Engineer.

If required by the Contracting Agencies specifications or details, 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 concrete 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 contractor shall use "high-early" in the concrete mix, approved by the Engineer, to minimize delay in reopening the street(s) to traffic.

345.6 MEASUREMENT:

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

345.7 PAYMENT:

Accepted quantities, will be paid for at the contract unit price Payment shall be compensation in full for all materials, labor, equipment and incidentals necessary to complete the work.

-End of Section-

Section 345

ADJUSTING FRAMES, COVERS, VALVE BOXES, ~~AND WATER~~ METER BOXES AND PULL 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.

The Contractor may elect to remove old frames, covers, and valve boxes and then~~to~~ install new frames and/or boxes ~~-~~in accordance with standard detail drawings ~~without any~~at no additional cost to the Contracting Agency.

The Contractor shall be responsible for maintaining an accurate description and location of all ~~utility~~ items to be~~requiring~~ adjusted~~ment~~. The~~se~~ locations ~~items~~ shall be referenced by the use of map documentation for swing ties or GPS locations. This information shall be supplied to the Engineer and utility owner(s) prior to taking any action that would hide or restrict access to the items to be adjusted.

Any missing or defective ~~items such as~~ frame~~s~~, cover~~s~~, valve box~~es and~~ or related hardware shall be reported to the Engineer in writing during the initial location process to allow for timely replacement. The Engineer shall be responsible for providing replacement items to the contractor. The contractor is responsible for providing items required to accomplish the required adjustments such as additional ~~adjustment~~ adjusting rings, valve box extensions, meter box extensions, and pull box extensions.

345.2 LOWERING PROCEDURE:

The Contractor shall loosen frames in such a manner that existing monuments, cleanouts, manholes, and valve boxes will not be disturbed or damaged. ~~If required,~~The lowering of manholes, cleanouts, water valve boxes, or survey hand hole frames~~monuments within the milled area~~ shall be ~~lowered~~ to an elevation that will allow the required work to be accomplished without damaging the facilities during subsequent construction activities. ~~below the existing asphalt surface, prior to the milling operations.~~ Steel plates ~~of a size appropriate for the object to be lowered~~ shall be ~~used~~placed over ~~the~~ facility openings ~~prior to placing temporary asphalt~~. Care shall be taken to prevent entrance of any material into the lowered ~~utility~~ facilities~~y~~. Debris shields shall be used to prevent debris from entering sanitary or storm sewers. ~~Lowering shall be to a depth that will prevent damage to the utility during the milling or paving operations.~~

All ~~manhole~~ frames, valves boxes, ~~and survey hand hole frames~~ and related items removed by the contractor during the lowering process shall be maintained in a secure area, and the contractor shall bear full responsibility for protection of the material. Any ~~hardware~~ items lost or damaged by the contractor shall be replaced in kind, at no additional cost to the Contracting Agency.

Preparation for Milling: If required manholes, cleanouts, water valve boxes, or survey hand hole frames located within paved areas to be milled shall be lowered. ~~The t~~Temporary asphalt concrete ~~placed~~ shall be placed over the steel plate filling the excavated area. The temporary pavement shall be maintained until removed during the adjustment to final grade~~the overlay has been completed~~. Hot mix asphalt shall be used as temporary pavement ~~If~~ for manholes ~~are~~ located on major ~~or arterial~~ streets that are to be kept opened to vehicular traffic; ~~you shall~~ backfill with hot mix asphalt ~~mix~~ the excavated areas and ~~roller~~ compacted flush with the existing pavement prior to opening up to traffic. ~~If lowering i~~In residential or low volume streets with minimal traffic~~, you may backfill with~~ cold mix or other ~~alternative~~ approved product ~~if approved by the Engineer~~may be used for temporary pavement. ~~There is no separate~~No measurement or payment shall be made for ~~this~~ temporary pavement placement~~,~~ or removal.

~~All manhole frames, valves boxes and survey hand hole frames and related items removed by the contractor during the lowering process shall be maintained in a secure area, and the contractor shall bear full responsibility for the material. Any hardware items lost or damaged by the contractor shall be replaced in kind, at no additional cost to the Contracting Agency.~~

345.~~2~~ 3 ADJUSTING FRAMES:

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

frames. If dirt or debris enters the sewer system the contractor shall be responsible for cleaning the sewer system for a minimum of one reach (the distance between structures)~~of sewer~~ downstream from the contamination point.

Frames shall be set to match finished grade or the elevations and slopes established by the Engineer. Manhole frames ~~-~~shall be firmly blocked in place with masonry or metal supports. Spaces between the frame and the facility shall be sealed on the inside to prevent any concrete from entering the hand hole or manhole. Final frame adjustment shall comply with the referenced standard detail. ~~A Class AA concrete collar 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 utilities, if located within the asphalt pavement, shall be made after placing the 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 or as directed by the Engineer.~~

~~After removal of the temporary asphalt pavement in the area of adjustment, and p~~Prior to placement of the final concrete collar ring as required in asphalt pavement, ~~(as shown on Detail 270 and 422)~~ the asphalt pavement in proximity of the adjustment shall be~~ be~~ rolled with a self-propelled steel wheel roller if requested by the Engineer.~~,~~ Traffic shall not be allowed on the concrete collar~~s~~ until the concrete ~~had~~ reache~~d~~s a minimum compressive strength of 2,500 psi on residential and 3,000 psi on collector and ~~major~~arterial streets. ~~On major streets t~~The contractor shall use ~~"high early" in the~~a concrete mix, approved by the Engineer, to minimize delay in reopening the street~~(s)~~ to traffic.

345.~~3~~ 4 ADJUSTING VALVE BOXES:

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

Adjustable valve 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~~ 345.3 above. This adjustment shall be known as Type A.

345.~~4~~ 5 ADJUSTING MANHOLE AND VALVE COVERS ~~WITH ADJUSTMENT RINGS~~:

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~~ concrete,~~ 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 Class AA on all paved streets. All concrete shall be obtained from plants approved by the Engineer.~~

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~~If required by the Contracting Agencies specifications or details, 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 concrete 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 contractor shall use "high early" in the concrete mix, approved by the Engineer, to minimize delay in reopening the street(s) to traffic.~~

345.~~5~~ 6 MEASUREMENT:

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

345.~~6~~ 7 PAYMENT:

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

-End of Section-