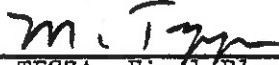


<b>TO:</b>  <b>SUPERSEDED</b> <b>BY EI 86-001</b> <b>EFFECTIVE 5/15/86</b>	<b>ENGINEERING INSTRUCTION</b> NEW YORK STATE DEPARTMENT OF TRANSPORTATION
<b>Distribution:</b> 31 Main Office    33 Regions    34 Special	<b>Code:</b> <u>85-45</u> <b>Date:</b> <u>10-1-85</u>
<b>APPROVED:</b>  <hr/> M. TEGZA, Final Plan Review Bureau	<b>Supersedes:</b>

This Engineering Instruction establishes Item 604.11 Prefabricated Adjustment Frames for Drainage Units and modifies the specifications for Item 604.10 Prefabricated Adjustment Rings for Manholes.

Item 604.11 Prefabricated Adjustment Frames for Drainage Units is being added to the estimate handling system as a Pay Item.

The Final Plan Review Bureau will insert the attached shelf note modifying the Standard Specifications of January 2, 1985 into projects calling for Items 604.10 and 604.11 starting with the letting of January 30, 1986.

## ADJUSTMENT RINGS AND FRAMES

Page 6-7

Under §604-1.02 delete the title and replace with "Adjustment Rings and Frames for Drainage Units and Manholes".

Also, delete the first and second sentences and replace with "When required, the Contractor shall furnish and install prefabricated adjustment rings and frames for drainage units and manholes. The extensions shall elevate and support the manhole covers and drainage unit grates without the necessity of removing the original manhole casting or drainage unit frame, when the street is resurfaced.

Under §604-2.05 in the title of the subsection delete "for Manholes" and replace with "and Frames for Drainage Units and Manholes".

Also, in the first sentence delete "adjustable extensions to manhole castings" and replace with "prefabricated adjustment rings and frames for drainage units and manholes".

Page 6-8

Delete §604-3.07 in its entirety and replace with the following:

"604-3.07 Prefabricated Adjustment Rings and Frames for Drainage Units and Manholes. Prior to the placement of the surface course and after the placement of the binder course, when required, the Contractor shall install adjustment rings and frames for manholes and drainage units. The adjustment ring or frame shall be placed so the manhole cover or drainage unit grate will not protrude above the finished surface of the pavement. When adjustment rings or frames having incremental height adjustments are installed and the increment cannot produce a height which will result in the cover being flush with the pavement surface they shall be installed so the cover or grate is no more than one increment below the finished grade of the pavement.

To assure a firm and secure fit with the adjustment ring or frame, the seat of the existing manhole casting or drainage unit frame shall be free of all foreign material at the time of installation. The entire assembly shall be set on the seat of the existing manhole casting or drainage unit frame and the locking devices shall be tightened evenly. The manhole cover or drainage unit grate shall then be set upon the seat of the adjustment ring or grate.

All rings or grates shall be protected from displacement caused by traffic maintained on the roadway or equipment used in the paving operation.

The Contractor shall have the option of removing and resetting the existing manhole casting or drainage unit frames to the required grade where shown on the plans or approved by the Engineer".

ADJUSTMENT RINGS AND FRAMES

Delete §604-4.05 in its entirety and replace with the following:

"604-4.05 Prefabricated Adjustment Rings and Frames for Drainage Units and Manholes. This work shall be measured by the number of prefabricated adjustment rings and frames furnished and installed."

Page 6-9

Delete §604-5.03 in its entirety and replace with the following:

"604-5.03 Prefabricated Adjustment Rings and Frames for Drainage Units and Manholes. The unit price bid for each adjustment ring or frame shall include the cost of all material, labor and equipment necessary to satisfactorily install the adjustment rings and frames. If the Contractor elects to reset the existing casting or frames, the costs of this work involved in the removal and replacement of existing disturbed pavement shall be included in the price bid for the adjustment rings and frames."

Under the list of Pay Items add the following:

<u>Item No.</u>	<u>Item</u>	<u>Pay Unit</u>
"604.11	Prefabricated Adjustment Frames for Drainage Units	Each"

Page 7-119

Delete §715-13 Prefabricated Adjustment Rings for Manholes in its entirety and substitute the following:

"715-13 PREFABRICATED ADJUSTMENT RINGS AND FRAMES  
FOR DRAINAGE UNITS AND MANHOLES

SCOPE: This specification covers the material requirements and fabrication of adjustment rings and frames for drainage units.

MATERIAL REQUIREMENTS AND FABRICATION: The adjustment rings and frames shall consist of one of the following types unless otherwise approved by the Director, Materials Bureau. Units that have vertical elevating bolts will not be acceptable.

Rings

- Type I - Adjustment height incremented segmented unit
- Type II - Single height segmented unit
- Type III - Single height - one cut unit
- Type IV - Single height - solid unit

## ADJUSTMENT RINGS AND FRAMES

Type I Unit - Adjustment height incremented segmented unit. The segments of the adjustable height segmented unit may consist of cast iron or a combination of cast iron and steel. The cast iron unit shall be iron castings meeting the requirements of subsection 715-05, Iron Castings, except that Class 20 will also be permitted. The combination cast iron and steel unit shall consist of iron castings for the channel and elevating parts meeting the above requirements with steel meeting the requirements of ASTM A242 for the back up ring segments. The steel back up ring shall be welded to the cast iron elevating part.

The adjustable extensions shall consist of four segments. Each segment shall consist of a base channel and elevating part. The base channel shall be U-shaped with grooves in the interior surface so arranged as to permit adjustments by increments of a maximum of  $3/8$ " , with a total height adjustment from a minimum of  $1-1/2$ " to a maximum of  $4-1/8$ " . The base channel shall be so cast to fit into the original manhole casting, resting on the seat area that originally supported the manhole cover. The elevating parts shall fit securely into the grooves of the base channel and shall be designed to hold the manhole cover.

Type II Units - Single height segmented unit. This type ring shall consist of four segments made up either entirely of iron castings meeting the requirements above or a combination of iron castings and steel where the back up ring is ASTM A242 steel welded to the cast iron segment. This type is for a fixed height. The ring shall fit such that the segments are fully seated on the seat area that originally supported the manhole cover.

The following requirements apply for both types I and II:

The four segments that fit on the original seat shall be fitted and held together by four stud bolts so threaded that the segments are expanded and contracted to fit the original manhole casting. Each model shall be adjustable and capable of expanding 1" greater and contracting 1" smaller than the diameter.

The stud bolts shall have a rust inhibiting finish.

The adjustment rings shall be supplied with a  $1/2$ " diameter stainless steel cone pointed socket head set screw in each segment of the base channel or lower ring so arranged as to lock into the existing manhole ring. Other types of mechanical locking devices may be submitted to the Materials Bureau for approval. A gasket shall be fitted to the seat area (supporting the cover) to insure a good cover fit and eliminate noise.

## ADJUSTMENT RINGS AND FRAMES

Type III Units - Single height - one cut unit. The rings shall be fabricated from AISI-C1020 steel or equivalent with the upper and lower sections continuously welded. There shall be one cut in the ring to allow for variation in manhole diameters. The adjusting device shall consist of a 3/4" stainless steel threaded rod with threaded clips welded to the interior of the ring. The opening in the ring shall have a 3/4" adjustment range.

Except for the stainless steel rod, the unit shall be coated with a butyl rubber based paint.

The adjustment ring shall be supplied with at least three 1/2" diameter stainless steel cone pointed socket head set screws. These screws shall be equally spaced in the lower ring so arranged as to lock into the existing manhole ring.

Type IV Units - Single height - solid unit. The rings shall be fabricated from cast iron meeting the requirements of subsection 715-05, Iron Castings, except that Class 20 will also be permitted. The rings may also be fabricated from AISI-C1020 steel or equivalent with the upper and lower sections continuously welded. The steel units shall be coated with a butyl rubber based paint.

The adjustment ring shall be supplied with at least three 1/2" diameter stainless steel cone pointed socket head set screws. These screws shall be equally spaced in the lower ring so arranged as to lock into the existing manhole ring.

### Frames

The frames shall be fabricated from ASTM-A36 steel or equivalent. The frames shall be a minimum 3/4" thick with height as required for specified overlay. The frames shall be galvanized in accordance with 9719-01 - Galvanized Coatings and Repair Methods, Type 1.

Stainless steel bolts of the required length to accommodate the height of overlay shall be supplied. Other types of fastening devices may be submitted for approval by the Materials Bureau.

### Materials Details

In addition to the requirements above, detailed drawings shall be submitted to the Director, Materials Bureau for approval. Drawings shall include type and grade of steel, plan and elevation views and other requirements in accordance with Department procedural directives.

**BASIS OF ACCEPTANCE.** Application for approval of prefabricated adjustment rings and frames shall be submitted to the Materials Bureau by the manufacturer. Application for approval shall be accompanied by the following:  
1) manufacturer's certification that his product conforms to all of the above

## ADJUSTMENT RINGS AND FRAMES

detailed specifications; 2) description of the product and 3) detailed drawings as required under Material details.

Upon approval by the Materials Bureau the adjustment rings and frames will be placed on an "Approved List" of Prefabricated Adjustment Rings and Frames for Drainage Units (715-13). These rings and frames will be accepted on the basis of the name of the manufacturer and drawing number as it appears on the Approved List."