

SECTION 02260

MANHOLES AND DROP INLETS

PART 1 - GENERAL

1.01 SCOPE

This specification covers the replacement, repair or adjustment of manholes, handholes and drainage units in the right-of-way.

1.02 REFERENCES

The requirements stated in the NYSDOT Standard Specifications Section 604 "Drainage Structures" and Section 655 "Frames, Grates, and Covers" shall be part of these specifications and incorporated below. Where a conflict occurs between the NYSDOT Specifications and the City's Specifications, the City's Specifications shall govern.

1.03 ADJUSTMENT RINGS AND FRAMES

The Utility shall furnish the prefabricated adjustment rings and frames for drainage units and manholes. The extensions shall elevate and support the manhole covers and drainage grates without the necessity of removing the original manhole casting or drainage unit frame, when the street is resurfaced or reconstructed.

PART 2 - MATERIALS

2.01 PREFABRICATED UNITS

All gratings, manhole covers, frames and adjustment rings shall meet the material requirements of NYSDOT Section 715. They shall be in new condition with no defects and approved by the Engineer prior to placement.

2.02 MORTAR

The material requirements for mortar used in laying block for manholes, drop inlets or other masonry products shall conform to NYSDOT Section 705-21 "Masonry Mortar". The mix ratio shall be one part Portland cement to three parts sand (1:3, Portland: sand).

2.03 ALTERING MANHOLES AND DROP INLETS

Unless otherwise directed by the Engineer, alterations shall be made with the same type of material used in the original construction. The Contractor may use Common Brick, Concrete Brick or Precast Concrete Pavers.

PART 3 - EXECUTION

3.01 MANHOLE CHAMBER REPAIR

- A. A manhole chamber or drainage structure shall be repaired prior to any frame work if the chamber is badly deteriorated or structural unstable. The area or extent of the repair shall be determined by the Engineer.
- B. Bricks - All bricks shall be laid in full mortar beds. Brick rows shall be set at a slight offset from the preceding brick row.
- C. Joints - All joints in masonry units shall be full mortar joints not greater than a half inch (0.5") wide on the inside and outside. The outside of each structure shall be plastered with a half inch (0.5") thick mortar coat.
- D. Backfill - No structure shall be backfilled until all the mortar has completely set. A low strength mortar backfill shall be used to backfill around the manhole chamber or drainage structures. The mixture for the back fill shall be 24 sand to 3 water to 1 Portland Cement (ratio in lbs).

3.02 FRAMES

- A. Frames, covers and grates shall be placed true to line and grade. Suitable measures shall be taken to ensure that the grates and covers shall have continuous, full and uniform bearing contact with their corresponding frames and shall be non-rocking when in place and under the influence of traffic or other loads. Frames shall not be leveled by use of any material object such as wooden wedges or stones.
- B. The frame shall be set on a mortar bedding between a half to two inches (0.5"-2") thick. The mortar shall adjoin the entire bottom surface of the frame flange. An additional one inch of mortar shall then be placed on top of the frame flange and connected with the mortar bedding. Excess mortar shall be pared and trolled, inside and outside the chamber, to create a water-tight seal. Pavement material shall not be placed until all the mortar has completely set.
- C. The frame mortar shall be placed on a stable, solid surface of equal or greater area than the frame flange. If the chamber surface is unsuitable for frame placement, the Contractor shall perform any repairs to the chamber, including removing and replacing a portion of the chamber wall, as determined by the Engineer.

3.03 ADJUSTMENT RINGS AND FRAMES

- A. Prior to the placement of the surface course and after the binder course, the Contractor shall install adjustment rings and frames for manholes and drainage units. The adjustment ring or frame shall be placed so the cover or 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 finish grade of the pavement.

- B. 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 casting or frame and the locking devices shall be tightened evenly.
- C. All rings or grates shall be protected from displacement caused by traffic maintained on the roadway or equipment used in the paving operation.

END OF SECTION