

## SECTION 722 MANHOLES, CATCH BASINS, AND INLETS

### 722.01 DESCRIPTION.

This work consists of constructing and adjusting manholes, catch basins, and inlets, including the furnishing or resetting of necessary metal frames, covers or gratings, valve boxes, or other accessories to new lines and grades where such accessories are public property.

Any damaged parts resulting from construction operations shall be replaced at the Contractor's expense.

### 722.02 MATERIALS.

Materials shall meet the following:

Item	Section
Concrete Class AE	802
Brick	848
Reinforcing Steel	836.02 A
Concrete Masonry Units	848
Precast Reinforced Concrete Pipe Manholes	830.01 B or C
Frames, Tops, Covers, Fittings, and Gratings	834.02 C or D

Mortar shall be a compound of one part Portland Cement to 2 parts of sand by volume, to which lime may be added not to exceed 10% of the cement by weight. All materials used are subject to approval.

### 722.03 CONSTRUCTION REQUIREMENTS.

- A. **Excavation.** Excavation for catch basins, manholes, and inlets shall provide adequate room for construction of the item according to details shown.
- B. **Brick Masonry Construction.** Brick walls shall be 8 inches thick. The brick shall be thoroughly wetted before placement and shall be laid with full mortar joints.
- Brick masonry shall be cured for 48 hours by covering exposed surfaces with wet burlap held in place vertically and horizontally by lattice work or some similar method.
- C. **Precast Concrete Masonry Units.** Concrete masonry units shall be placed as specified in 722.03 B.

D. **Precast Reinforced Concrete Pipe Manholes, Inlets, and Catch Basins.** Reinforced concrete sewer pipe shall be used for this purpose. When this type of construction is used, the joints shall be made by one of the following methods:

1. Portland Cement Mortar
2. Rubber Gaskets
3. Cold Applied Preformed Plastic Gaskets

E. **Concrete Construction (Cast-in-Place).** The composition, consistency, placement, form work, curing, and protection of the concrete shall meet Section 602.

The finished concrete surface shall present a neat and smooth appearance. Honeycomb shall be filled with cement mortar mixed in the same proportions used in the concrete for the work.

F. **Concrete Base (Pre-Cast or Cast-in-Place).** The thickness and other dimensions of the base shall be as specified. The invert channel shall be the true shape of the lower half of the pipe or sewer. The bottom edge of the barrel for manholes, catch basins, and inlets shall be cut or precast flat to fit the base. The joint between the base and the wall shall be grouted with cement mortar.

G. **Pipe Connections.** Pipe or tile placed in the concrete base for inlet or outlet connections shall extend through the walls a sufficient distance to allow for connections. The concrete shall be constructed around the pipe or tile to prevent leakage along their outer surface. The inside ends shall be flush with or protrude through the inside walls, and the pipe shall be the same size and kind as those they connect with on the outside.

H. **Reinforcement.** The method of reinforcement shall meet Section 612.

I. **Placing Castings.** Castings shall be set in full mortar beds or otherwise secured as specified. Castings shall be set accurately to the correct elevation so no subsequent adjustment is necessary.

Catch basins, manholes, or inlets shall be constructed no more than 6 inches below Plan grade, and the casting brought to grade by use of precast concrete adjusting rings.

J. **Backfill.** Backfill shall be deposited and compacted in horizontal layers not to exceed 6 inches loose depth until the elevation of the finished grade is reached. Compaction shall be secured in 2 steps: 1) by watering each layer if dry (the water content of the material used shall not exceed the optimum moisture content); and 2) by tamping with approved mechanical rammers or by hand tamping with heavy iron tampers. Hand tampers shall not have a tamping face exceeding 25 square inches. The backfill shall be compacted to a density equal to at least 85% of AASHTO T-180.

K. **Cleaning.** All catch basins, manholes, and inlets shall be cleaned of accumulations of silt, debris, or foreign matter, and be free from such accumulations at the time of final inspection.

- L. **Adjustments to Existing Units.** Existing manholes, catch basins, inlets, and utility appurtenances shall be adjusted to the elevation, grade, or dimensions as specified. Castings shall be carefully removed and reinstalled as indicated. Adjustments to the structure walls may be made by the use of brick, solid concrete blocks, precast ring, or Class AE concrete so that a seat of proper dimensions may be reconstructed to receive the casting, grating, or cover. If the top of the existing structure is weak and faulty, it shall be replaced as directed, and the extension completed.

Upon completion of the adjustment, all surplus material shall be removed and the structure and work site shall be left in a neat and clean condition.

#### **722.04 METHOD OF MEASUREMENT.**

- A. **Catch Basins and Inlet.** These items will be measured by the Unit. The unit consists of the base, the casting, cover, and grate. Casting lengths are specified in the Plans.
- B. **Manholes and Manhole Risers.** Manholes will be measured as a Unit consisting of the base, the castings, and the cover. Manhole Risers will be measured by the Linear Foot of riser as measured from the base to the precast cover or the casting.
- C. **Adjustment of Manholes, Catch Basins, Inlets, Pipe Junctions, and Utility Appurtenances.** These items will be measured by the Unit complete and in place.

Excavation, embankment, and disposal of unsuitable material will not be measured but will be incidental to the other pay items.

#### **722.05 BASIS OF PAYMENT.**

Payment will be made at Contract Unit Prices for the following:

<b>Pay Item</b>	<b>Pay Unit</b>
Manholes (Size)	Each
Manhole Riser (Size)	Linear Foot
Catch Basins	Each
Inlets	Each
Adjust Manhole	Each
Adjust Catch Basin	Each
Adjust Inlet	Each
Adjust Utility Appurtenance	Each

This payment will be full compensation for all labor, equipment, and materials necessary to complete the work.

## **SECTION 724 WATER MAINS, WATER LINES, AND SEWER LINES**

#### **724.01 DESCRIPTION.**

This work consists of furnishing and installing water and sewer lines and appurtenances of the types and sizes required, in full compliance with the requirements of the