**ITEM 604.310000MO - CATCH BASIN AND SEWER MANHOLE**

**DESCRIPTION**
Work consists of construction, modification or repair of catch basin/field inlet structures; and adjustment or replacement of sewer manhole frame and cover as required in Contract Documents and as directed by Project Manager.

**MATERIALS**

**General**
Bar reinforcement is to be in accordance with NYSDOT Section 709-01 Bar Reinforcement, Grade 60.

Brick is to be precast concrete pavers in accordance with NYSDOT Section 704-13 and ASTM Designation C32 grade SS, culled of all irregular, unsound or damaged brick.

Damp-proofing material for exterior portion of catch basin, field inlet and sewer manhole structures is to be two coats of Hi-Build Bituminous Coating 35-J-10 as manufactured by Mobil Corporation, or Koppers Bitumastic Super Service Black as manufactured by Koppers Company, Inc, or Tnemec Heavy Duty Black 46-449 as manufactured by Tnemec or approved equivalent.

Damp-proofing material for interior portion of catch basin/field inlet structures is to be two coats of Tamms Duralkote 240 as manufactured by Dural International Corporation, DAP Waterproof cement paint as manufactured by DAP Products, Inc., or Eucopoxy Tufcoat VOX as manufactured by The Euclid Chemical Company, or approved equivalent.

Damp-proofing material for interior portion of sewer manhole adjustment courses is to be one coat of Tamms Duralkote 500 as manufactured by Dural International Corporation, DAP Waterproof Cement paint as manufactured by DAP Products, Inc., or Eucopoxy Tufcoat VOX as manufactured by The Euclid Chemical Company or approved equivalent.

Grout is to be non-shrink type grout with minimum compressive strength of 4000 psi at 24 hours in accordance with NYSDOT Section 701-05 Concrete Grouting Material.

Joint compound is to be Mainstay Joint Compound as manufactured by the Madewll Products Corporation, Sikaflex-1A as manufactured by Sika Corp, Sonolastic NPII as manufactured by Sonneborn, or approved equivalent.

Portland cement mortar is to be in accordance with NYSDOT Section 705-21.

Portland cement mortar for plugging abandoned lateral pipe is to be regular cement mortar, type II cement meeting the requirements of NYSDOT Section 705-22.

Material for leveling and backfilling under and around catch basin, field inlet and sewer manhole structures is to be select granular fill in accordance with NYSDOT Section 203-2.06 Select Granular Fill (Item 203.06).
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Catch Basin/Field Inlet - General
Concrete to be used for construction, modification or repair of catch basin/field inlet structures is to be class A concrete in accordance with NYSDOT Section 555 Structural Concrete.

Precast concrete section of catch basin/field inlet structures is to be constructed in accordance with NYSDOT Section 706-04 Precast Concrete Drainage Units.

Catch basin/field inlet unit is to be supplied complete with frame and grate.

Type D Catch Basin
Type D catch basin access frame, as detailed in the contract drawings, is to be welded steel, and access cover 1/4 inch diamond plate, rib reinforced hot rolled steel, hot dipped galvanized, in accordance with ASTM A36, ASTM A48-83 Class 30B, and ASTM 123.

Sewer Manhole Frame and Cover - General
Materials for adjustment, repair or replacement of sewer manhole frame and cover shall conform to NYSDOT Sections 604-2.04 and 604-2.05.

CONSTRUCTION DETAILS
General
Manufacturer's shop drawings are to be submitted to City of Rochester for approval.

Construct all new sewer main and lateral pipes, catch basins/field inlets, sewer manholes, and any other related appurtenances in accordance with requirements of Rochester Pure Waters District (RPWD).

If requested, RPWD personnel will locate and mark existing sewer laterals. RPWD personnel can only mark location of existing wye branches at sewer main, and cannot verify where existing lateral pipe extends from there. Request lateral stakeout by contacting Monroe County Pure Waters (MCPW) Maps and Records, (585) 753-7367 or (585) 753-7651.

Appropriate measures are to be taken to prevent any damage to, or dirt, debris, construction materials, and any other extraneous materials from entering existing sewer system including but not limited to sewer main, lateral and underdrain pipes, catch basins/field inlets, sewer manholes, junction chambers, and any other related appurtenances during construction of Project. Any such invasive materials are to be removed immediately and contaminated appurtenance thoroughly cleaned.

RPWD must be notified immediately in event of any damage to existing sewer main or lateral pipes, by calling (585) 753-7351, or (585) 753-7676 (24/7). All repairs are to be performed in presence of representative of RPWD and are to be made in accordance with requirements of RPWD.
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Excavation is to be performed in accordance with requirements of Section 206 Trench and Culvert Excavation.

Material for leveling and backfilling under and around catch basin, field inlet and sewer manhole structures is to be placed in accordance with requirements of contract drawings. No structure is to be backfilled until all of mortar has completely set.

Sewer manhole frame and cover, catch basin/field inlet frame and grate, and catch basin access frame and cover are to be placed true to line and grade. Suitable measures are to be taken to ensure that cover/grate has continuous, full and uniform bearing contact with corresponding frame. Cover/grate is to be non-rocking when in place and under influence of traffic or other loads. Suitable methods to achieve non-rocking fit between cover/grate and corresponding frame will include, but not be limited to, following:

- ground mating surfaces
- machined and milled mating surfaces (horizontal and vertical)
- match marked elements
- locking elements

If match marked elements are utilized, care is to be taken to retain identity of elements in order to correctly match them and assure proper fit.

Field repairs may include grinding and/or proper welding techniques for material involved. Repairs that involve welding must be performed by a NYSDOT Certified Welder and shall be allowed only on steel castings and only with prior approval of the DCES and Project Manager. Repairs are to result in complete unit whose individual parts have continuous, full and uniform bearing contact with each other, and that cover/grate does not rock or move under influence of traffic or other loads.

Catch basin/field inlet grate and catch basin access cover shall be bolted to welded frame with two bolts and washers. Bolts and washers shall be corrosion resistant (Monel Metal or Type 316 Stainless Steel) and furnished by the frame manufacturer. Bolts and washers must meet the NYSDOT Section 106-11 Buy America provisions. Tighten bolts to within the torque range recommended by the frame manufacturer.

Upon completion of work, sewer manhole and catch basin/field inlet structures are to be thoroughly damp-proofed, cleaned of all extraneous material and kept clean until final acceptance of work.

Catch Basin/Field Inlet
Prior to ordering precast portion of new catch basin/field inlet structure, verify proposed invert elevation, and size and direction of all lateral and underdrain pipes.
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Where existing lateral pipe is to be reconnected to new catch basin/field inlet, existing lateral pipe is to be thoroughly cleaned of all extraneous material before making connection.

Lateral and underdrain pipe connections to catch basin/field inlet structure are to be made flush with inside face of structure and are to project outside of structure sufficient distance to allow for proper connection with adjoining lateral and underdrain pipe sections. Lateral and underdrain pipes are to fit neatly and tightly within structure wall, and connections are to be thoroughly sealed with epoxy grout and mortar.

Apply two coats of appropriate damp-proof material to all exterior and interior surfaces

Abandon Existing Catch Basin/Field Inlet and Lateral Pipe
Existing catch basin/field inlet frame and grate, and if required access frame and cover, is to be removed, cleaned of all extraneous material and returned to MCPW. Existing catch basin/field inlet structure is to be completely removed and disposed of.

Existing lateral pipe is to be abandoned in place and plugged. For existing lateral pipe 6 inch diameter and smaller, insert rubber gasketed mechanical type permanent plug into lateral pipe. For existing lateral pipe over 6 inch diameter, insert brick into lateral pipe until opening is plugged as much as possible. Completely fill and seal remaining void at open end of existing lateral pipe with mortar cement in accordance with NYSDOT Section 701-02 Masonry and Mortar Cement.

METHOD OF MEASUREMENT

Catch Basin/Field Inlet
Quantity to be measured for payment will be number of new catch basin/field inlet structures constructed; or existing catch basin/field inlet structures modified, relocated, cleaned, or abandoned.

For type D catch basin, measurement will be made with frame and grate, including access frame and cover, counted as one complete unit.

Under this pay unit, maximum invert depth for new catch basin/field inlet structure construction will be up to 4 feet 6 inches, as measured between elevation of top of grate and elevation of interior floor of new structure.

Sewer Manhole Frame and Cover
Quantity to be measured for payment will be number of sewer manhole frames and covers adjusted, replaced, or temporarily adjusted.
BASIS OF PAYMENT

Catch Basin/Field Inlet - General

Unit price bid includes cost of: verifying existing and proposed top of grate and invert elevations; furnishing and installing precast structure; constructing cast-in-place structure; concrete; forms; key way; rebar; mortar; epoxy grout; damp-proofing; frames and grates; stone bedding leveling course; field repair of improperly fitting frame and grate; providing openings for connection of lateral and underdrain pipe; connecting and sealing lateral and underdrain pipes to structure; cleaning out structure and lateral pipe; disposing all extraneous material; and furnishing all labor, material and equipment necessary to complete work.

In addition, unit price bid for following individual work items will also include cost of:

Type D Catch Basin

Unit price bid also includes cost of: furnishing and installing access frame and cover; field repair of improperly fitting access frame and cover.

Adjust Existing Catch Basin/Field Inlet Frame and Grate, Access Frame and Cover

Unit price bid also includes cost of: excavation; backfill; removing, cleaning and resetting existing frame and grate; access frame and cover; repairing existing structure walls; scarifying or removal of existing concrete riser section; removal temporary brick riser; furnishing and installing concrete cap; epoxy polysulfide grout; drilling holes.

Abandon Existing Catch Basin/Field Inlet and Lateral Pipe

Unit price bid includes cost of: removing, cleaning and returning existing catch basin/field inlet frame and grate; access frame and cover; removing and disposing existing catch basin/field inlet structure; disconnecting and abandoning existing lateral and underdrain pipes; plugging existing lateral pipe to be abandoned; furnishing and installing permanent mechanical plug; brick; cement mortar; disposing all extraneous material; and furnishing all labor, material and equipment necessary to complete work.

Adjustment or Replacement of Sewer Manhole Frame and Cover

Unit price bid includes cost of: excavation; backfill; removing, cleaning, resetting or returning existing sewer manhole frame and cover; picking up and installing new frame and cover; field repair of improperly fitting frames and covers; preparing existing sewer manhole riser to install sewer manhole frame and cover to finished grade; removal of existing brick courses as necessary; furnishing and installing concrete adjustment ring; bricks/concrete blocks; mortar mix; concrete encasement; damp-proofing; cleaning existing sewer manhole structure; disposing all extraneous material; and furnishing all labor, material and equipment necessary to complete work.
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Temporary Adjustment of Sewer Manhole Frame and Cover
Unit price bid includes cost of: excavation; backfill; removing, cleaning and resetting existing sewer manhole frame and cover; preparing existing sewer manhole riser including removal of portion of existing sewer manhole structure as necessary; furnishing, installing and removing temporary brick and mortar riser section and concrete encasement; damp-proofing; cleaning existing sewer manhole structure; disposing of all removed materials; and furnishing all labor, material and equipment necessary to complete work.

Final adjustment or replacement of sewer manhole frame and cover will be paid for under separate bid item.

Excavation, Backfill and Pavement Restoration
Excavation, furnishing and placing of bedding and select granular backfill (sewer), and pavement restoration will be paid for under separate bid items or included in unit price bid for item as indicated in item description. No separate payment will be made for placement of select backfill material excavated from trench.

Excavation that is included in pay item does not include rock excavation. Rock excavation will be paid for under separate bid item.

Where item includes cost of pavement restoration, pavement section may consist of either concrete base or asphalt base course, as required in contract documents. Unit price bid will be same regardless of which type of pavement section is used, and includes cost of: subbase courses type 1 and type 2; Class C concrete foundation for pavement or asphalt base course; asphalt tack coat; asphalt binder and top courses.

Payment will be made under:

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<thead>
<tr>
<th>ITEM NO.</th>
<th>ITEM</th>
<th>PAY UNIT</th>
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<tbody>
<tr>
<td>604.310000MO</td>
<td>Type B Catch Basin</td>
<td>Each</td>
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<tr>
<td>604.330000MO</td>
<td>Type D Catch Basin</td>
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<tr>
<td>604.560000MO</td>
<td>Abandon Existing Catch Basin and Lateral Pipe</td>
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<tr>
<td>604.610000MO</td>
<td>Replace Existing Sewer Manhole Frame and Cover (Furnished)</td>
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<td>(Including Excavation and Backfill)</td>
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