SECTION 609
CATCH BASINS, MANHOLES, AND INLETS

DESCRIPTION

609.01.01 GENERAL
A. This work shall consist of constructing or reconstructing catch basins, manholes, inlets, and similar structures, consisting of Portland cement concrete with necessary reinforcement, metal frames, grates, and lids, including required excavation and backfilling.

MATERIALS

609.02.01 GENERAL
A. Materials shall conform to the following sections and subsections:

<table>
<thead>
<tr>
<th>Materials</th>
<th>Section/Subsection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portland Cement Concrete</td>
<td>501</td>
</tr>
<tr>
<td>Reinforcing Steel</td>
<td>505</td>
</tr>
<tr>
<td>Miscellaneous Metal</td>
<td>712</td>
</tr>
<tr>
<td>Gray Iron Castings</td>
<td>712.03.02</td>
</tr>
</tbody>
</table>

B. Casting shall be true to pattern in form and dimensions, free from pouring faults, sponginess, cracks, blow holes, and other defects in positions affecting strength and value for the service intended.

1. Casting shall be boldly filleted at angles and the arises shall be sharp and perfect.

2. Casting shall be sand blasted or otherwise effectively cleaned of scale and sand so as to present a smooth, clean, and uniform surface.

C. The Contractor shall obtain from the fabricator of the structural steel grates, frames, and gray iron castings a Certificate of Compliance stating that the fabrications meet these specifications, and giving certified shop weights for the fabrications.

D. Mortar for setting grates shall be mixed in the proportions of 1 part cement to 3 parts of fine aggregate.

E. Pipe crossbars for drop inlets shall be unpainted standard weight black pipe conforming to ASTM A53. Straps shall be unpainted ASTM A36 steel.

CONSTRUCTION

609.03.01 GENERAL
A. Catch basins, inlets, and manholes shall be constructed in accordance with Section 501, "Portland Cement Concrete."

B. Inlet and outlet pipes shall be placed prior to pouring concrete.

C. Grates shall be set in full mortar beds or otherwise secured as shown on the plans. Grates shall be set accurately to the final elevations so that no subsequent adjustments will be necessary.
D. Concrete covers, when indicated on the plans, shall be constructed to fit snugly and be readily removable.

E. Structural steel grates shall be painted as specified in Section 614, "Painting."

F. Pipe or tile placed in masonry for inlet or outlet connections shall extend through the walls and beyond the outside surfaces of the walls a sufficient distance to allow for connections with conduit, and the masonry shall be carefully constructed around the pipe or tile to prevent leakage around their outer surfaces.

G. Commercially prefabricated frames and grates of equal or greater capacity and strength may be substituted for the design shown on the plans for drop inlets provided prior approval is obtained in writing from the Engineer.

H. Frames and grates shall be matchmarked in pairs before delivery to the work and grates shall fit into the frames without rocking.

609.03.02 ADJUSTING CATCH BASIN, MANHOLE, AND INLET COVERS

A. Unless otherwise provided on the plans or by the contract, existing covers including frames, grates, lining, and lids shall be adjusted to the required elevation.

B. Remove the existing covers and adjust the top of the existing structures by removing or adding concrete, brick masonry, concrete block masonry, high density polyethylene adaptor rings, or steel or cast iron adaptor rings, as applicable.

C. Reinstall the fixtures by supporting them on a satisfactory collar of concrete constructed to hold the fixtures firmly in place.

C. D. Concrete collars for manholes shall be constructed in accordance with Uniform Standard Drawing No. 408.1 "Concrete Collar Around Manholes, 30 Inch Ring and Cover."

609.03.03 CLEAN OUT

A. All catch basins, manholes, inlets, and similar structures shall be thoroughly cleaned of any accumulations of silt, debris, or foreign matter of any kind, and shall be clean of accumulations at the time of final inspection.

609.03.04 EARTHWORK

A. Structure excavation and structure backfill shall conform to Section 206, "Structure Excavation" and Section 207, "Structure Backfill."

04METHOD OF MEASUREMENT

609.04.01 MEASUREMENT

A. The quantities of castings and structural steel grates measured for payment will be the number of pounds complete and in place.

1. The weight of castings shall be computed from the dimensions shown on the approved shop drawings, assuming the cast iron to weigh 450 pounds per cubic foot with an allowance of 10 percent for fillets and overrun.

2. The weight of structural steel grates shall be computed from the dimensions shown on the approved shop drawings and in accordance with Section 506, "Steel Structures."

3. Certified shop weights will be acceptable in lieu of computed weights.
B. Adjusting covers for catch basins, manholes, and inlets will be measured per each complete and in place.

C. All measurements will be made in accordance with Subsection 109.01, "Measurement of Quantities."

D. Pipe crossbars and straps for drop inlets shall be included in the measurement for payment by the contract bid price per pound for Structural Steel Grates.

05 BASIS OF PAYMENT

609.05.01 PAYMENT

A. The accepted quantities of grates measured as provided in Subsection 609.04.01, "Measurement," will be paid for at the contract unit price bid per pound for types and sizes specified.

B. The work for adjusting covers measured as specified in Subsection 609.04.01, "Measurement," will be paid for at the contract unit price bid per each for adjusting covers for catch basins, manholes, and inlets, which shall be full compensation for furnishing all materials, tools, incidentals, and labor required to adjust the covers.

C. Portland cement concrete used in new structures of catch basins and inlets will be paid for as specified in Section 502, "Concrete Structures."

D. Reinforcing steel in catch basins and inlets will be paid for as specified in Section 505, "Reinforcing Steel."

E. The accepted quantity of precast manholes measured as provided in Subsection 609.04.01, "Measurement," will be paid for at the contract unit price bid per each for types and sizes specified. This price shall be full compensation for furnishing all materials including structure excavation and structure backfill, Portland cement concrete, steel, castings, and incidentals necessary to complete the work.

F. Structure excavation and structure backfill for catch basins and inlets will be paid for as specified in Section 206, "Structure Excavation," and Section 207, "Structure Backfill."

G. All payments will be made in accordance with Subsection 109.02, "Scope of Payment."

H. Payment will be made under:

<table>
<thead>
<tr>
<th>PAY ITEM</th>
<th>PAY UNIT</th>
</tr>
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<tbody>
<tr>
<td>Castings</td>
<td>Pound</td>
</tr>
<tr>
<td>Structural Steel Grates</td>
<td>Pound</td>
</tr>
<tr>
<td>(Size) Precast Reinforced Concrete Manhole (type)</td>
<td>Each</td>
</tr>
<tr>
<td>Adjusting Covers</td>
<td>Each</td>
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Effective 1/1/14