

SUDAS Revision Submittal Form

Status Date: As of 5/17/2019 **Topic:** Internal manhole drop
Manual: Specifications **Manual Location:** 6010, 1.08, 2.15-2.17, 3.06
Figure 6010.308

Requested Revision:

1.08 MEASUREMENT AND PAYMENT

C. Drop Connection:

1. Internal Drop Connection:

- a. **Measurement:** Each internal drop connection will be counted.
- b. **Payment:** Payment will be at the unit price for each internal drop connection.
- c. **Includes:** Unit price includes, but is not limited to, cutting the hole and installing a flexible watertight connector, providing and installing the receiving bowl, flexible coupler between the bowl and the drop pipe, the PVC drop pipe, pipe brackets and bolts, the bottom elbow, repair of fillet if required, and a splash guard if required.

2. External Drop Connection:

- 1a. **Measurement:** Each external drop connection will be counted.
- 2b. **Payment:** Payment will be at the unit price for each external drop connection.
- 3c. **Includes:** Unit price includes, but is not limited to, the connection to the manhole and all pipe; fittings; concrete encasement; and furnishing, placing, and compacting bedding and backfill material.

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2.15 CASTING ANCHOR BOLTS AND WASHERS

- A. **Material:** Stainless steel or hot-dipped galvanized.
- B. **Diameter:** Provide bolts and washers 1/8 inch smaller than hole or slot in the casting frame, but no less than 1/2 inch diameter.
- C. **Bolt Length:** As required to pass through adjustment rings and into manhole or intake structure to embedment depth recommended by anchor manufacturer.

2.16 DROP CONNECTION

A. Internal

1. **Receiving bowl:** Marine grade fiberglass meeting ASTM D 790, ASTM D 638, and ASTM D 2583 with non-magnetic stainless steel anchor bolts meeting the manufacturer's recommendation.
2. **Flexible coupler:** Provide flexible couple matching the size of the receiving bowl and the drop pipe.
3. **Drop pipe and bottom elbow:** Provide drop pipe an equivalent diameter of the influent pipe. Limit pipe size to maintain space available for maintenance activities. Provide solid wall SDR 35 PVC pipe and elbow complying with Section 4020, 2.01, A or Schedule 40 PVC pipe and elbow complying with ASTM D 1785
4. **Pipe brackets:** ASTM A 240, Type 304 or Type 316 stainless steel with stainless steel nuts and bolts.

B. External

- 1. Pipe and fittings:** Comply with Section 5010, 2.01, B for ductile iron pipe and Section 5010, 2.03 for fittings.
- 2. Concrete encasement:** Comply with Section 7010, 2.02.
- 3. Embedment material:** Comply with Section 3010, 2.02, A or 2.06 for backfill material from the top of the elbow to the bottom of the sewer main.

2.167 EXCAVATION AND BACKFILL MATERIAL

Comply with Section 3010 for bedding and backfill materials.

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3.06 DROP CONNECTION TO SANITARY SEWER MANHOLE

A. INTERNAL

1. Core opening in existing manhole wall and install flexible watertight connector.
2. Cut incoming pipe so a maximum of 2 inches extends into the manhole.
3. Allow 1 inch clearance between bottom of incoming pipe and top of the receiving bowl. Connect receiving bowl to manhole with stainless steel anchor bolts as recommended by the manufacturer.
4. Install flexible coupler connecting the receiving bowl and the drop pipe.
5. Mount drop pipe on the side of the manhole with stainless steel brackets spaced a maximum of 4 feet apart. Provide a minimum of two brackets per pipe segment.
6. Remove existing concrete fillet as required to accommodate bottom elbow.
7. Install elbow at bottom of drop pipe to match concrete fillet and create a smooth flow transition. Align elbow so discharge is directed at outlet pipe or at 45 degrees to manhole flow.
8. Repair fillet according to 6010, 3.01, G.
9. Comply with Figure 6010.308.

B. EXTERNAL:

1. Core opening in existing manhole wall and install flexible watertight connector, if required.
2. Install ductile iron pipe and fittings according to Section 5010, 3.01 and 3.02.
3. Place concrete from the base of the manhole to the top of the elbow.
4. Comply with Section 3010, 3.05 for bedding and backfill of the external drop piping.
5. Comply with Figure 6010.307.

Reason for Revision: Developed new figure and spec language to allow for an internal manhole drop.

Comments: Iowa DOT will make the same changes.

District: 1 2 3 4 5 6

Comments: Add repair fillet to “includes” item. Remove steps from the figure. *Note - done.*

Action: Deferred Not Approved Approved

District: 1 2 3 4 5 6

Comments: None.

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District: 1 2 3 4 5 6

Comments: None.

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District: 1 2 3 4 5 6

Comments: None.

Action: Deferred Not Approved Approved

District: 1 2 3 4 5 6

Comments: None.

Action: Deferred Not Approved Approved

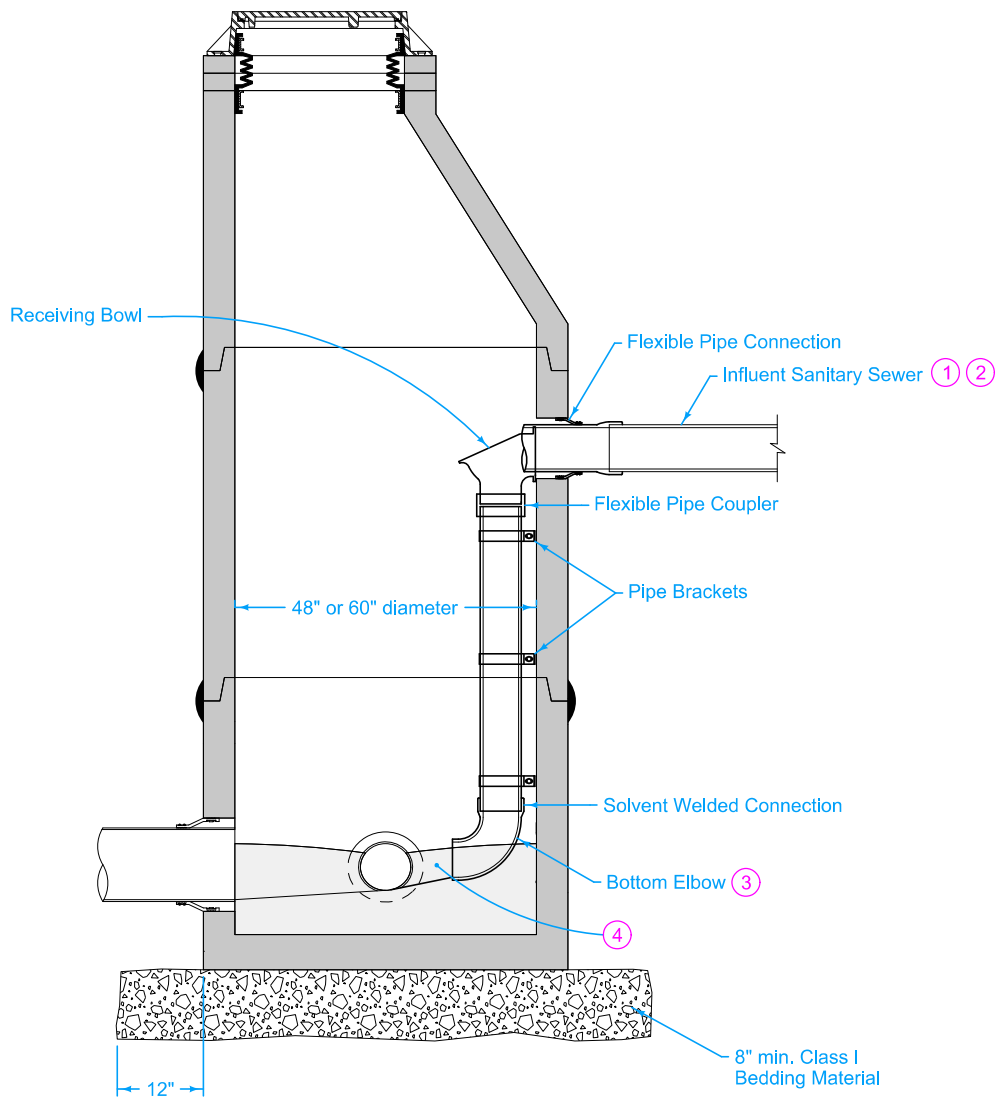
District: 1 2 3 4 5 6

Comments: Add ASTM reference. Do not install directly under casting opening. Maximum pipe size intended for a drop. Influent not effluent. *Note - all of these items have been addressed.*

Action: Deferred Not Approved Approved

Final District Action Summary: All 6 districts approved.

Board of Directors Action: Approved.



- ① Core drill openings at least 12 inches from existing manhole joints.
- ② Install flexible pipe coupler or pipe joint on new sanitary sewer 18 to 24 inches from outside of manhole wall.
- ③ Align elbow so discharge is directed at outlet pipe or at 45 degrees to manhole flow.
- ④ Reshape fillet to provide a smooth transition and to direct flow to outlet.

		REVISION
		New
FIGURE 6010.308 STANDARD ROAD PLAN		SW-308
DRAFT		SHEET 1 of 1
<i>Paul D. Weigand</i> PROJECT ENGINEER		<i>Scott Nide</i> METHODS ENGINEER
INTERNAL DROP CONNECTION FOR SANITARY SEWER MANHOLE		