

**SECTION 33 4230
STORMWATER DRAINS**

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Precast concrete catch basins.
- B. Frames and grates.

1.02 RELATED REQUIREMENTS

- A. Section 03 3000 - Cast-in-Place Concrete.
- B. Section 31 2316 - Excavation.
- C. Section 31 2323 - Fill and Backfill.
- D. Section 33 4211 - Stormwater Gravity Piping.

1.03 REFERENCE STANDARDS

- A. ACI CODE-318 - Building Code Requirements for Structural Concrete and Commentary; 2019 (Reapproved 2022).
- B. ACI PRC-211.1 - Selecting Proportions for Normal-Density and High Density-Concrete - Guide; 2022.
- C. ACI PRC-304 - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000 (Reapproved 2009).
- D. ACI PRC-305 - Guide to Hot Weather Concreting; 2020. Enclosure #52
- E. ACI SPEC-301 - Specifications for Concrete Construction; 2020. Fire Station #227
- F. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2018. 11/17/25
- G. ASTM C478/C478M - Standard Specification for Circular Precast Reinforced Concrete Manhole Sections; 2020.
- H. ASTM C990 - Standard Specification for Joints for Concrete Pipe, Manholes and Precast Box Sections Using Preformed Flexible Joint Sealants; 2009 (Reapproved 2014).

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Installation of stormwater drains with piping and other structures.
 - 1. See Section 33 4211 for stormwater gravity piping.
- B. Sequencing: Ensure that utility connections are achieved in an orderly and expeditious manner.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Weight rating for catch basins, drop inlets, trench drains, and frame and grates.
- C. Manufacturer's qualification statement.
- D. Installer's qualification statement.
- E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with at least three years of documented experience.
- B. Installer Qualifications: Company specializing in installing work of the type specified in this section, and with at least three years of documented experience and approved by manufacturer.
- C. Perform work of this section in accordance with ACI SPEC-301 and ACI CODE-318.
- D. Follow recommendations of ACI PRC-305 when concreting during hot weather.

PART 2 PRODUCTS**2.01 MANUFACTURERS**

- A. Drop Inlets:
 - 1. Pre-cast concrete Drop Inlet Catch Basins, sizes as shown on the construction plans. Products must be approved equal and meet or exceed H-20 load rating, ASTM C478/C478M compliance, wall and base thickness, and joint sealant requirements (ASTM C990).
 - 2. Substitutions: See Section 01 6000 - PRODUCT REQUIREMENTS. Products must be approved equal and meet or exceed the performance, material, load, and dimensional requirements indicated on the drawings and in these specifications.

2.02 CATCH BASINS

- A. Weight Rating: H-20 according to AASHTO HB.
- B. Precast Concrete Catch Basins: Comply with ASTM C478/C478M.
 - 1. Wall Thickness: According to manufacturer's specifications.
 - 2. Base Thickness: According to manufacturer's specifications.
 - 3. Joint Sealant: Comply with ASTM C990.
- C. Frames and Grates: Steel or cast iron grate, ADA compliant, H-20 rated.

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PART 3 EXECUTION**3.01 EXCAVATION AND FILL**

- A. Hand trim excavation for accurate placement to indicated elevations.
- B. Backfill with cover fill, tamp in place and compact, then complete backfilling.

3.02 INSTALLATION

- A. Establish elevations and pipe inverts for inlets and outlets as indicated in drawings.
- B. Precast Concrete Catch Basins:
 - 1. Install joint sealant uniformly around section lip.
 - 2. Install according to manufacturer's instructions and in accordance with ASTM C478/C478M and ASTM C990, ensuring plumb, alignment, and elevation per drawings.
- C. Grade Adjustments:
 - 1. Grade adjustments may use precast risers or masonry units, per manufacturer's recommendations, to achieve final elevation.
 - 2. Place adjacent materials tight and smooth following design grades.
- D. Frames and Grates:
 - 1. Place frame plumb and level.
 - 2. Mount frame on prefabricated drop inlets or trench drains according to manufacturer's instructions.
 - 3. Place grate in frame securely.

END OF SECTION