

9-12 MASONRY UNITS**9-12.1 Concrete Blocks**

Concrete blocks for manholes and catch basins shall conform to the requirements of ASTM C 139.

Concrete blocks for building construction shall conform to the requirements of ASTM C 90.

9-12.2 Concrete Brick

Concrete brick shall conform to the requirements of ASTM C 55.

9-12.3 Vacant**9-12.4 Precast Concrete Manholes**

Precast concrete manholes shall meet the requirements of AASHTO M 199.

The joints may be the tongue and groove type or the shiplap type, sufficiently deep to prevent lateral displacement.

Manufacturers may reinforce the concrete mix with synthetic fibers as an alternate to conventional secondary reinforcement in 48-inch diameter by 3-foot high eccentric or concentric cone sections. The synthetic fiber, either nylon multifilament fibers or polypropylene fibrillated fibers, shall meet the requirements of ASTM C 1116 , Section 4.1.3 and Note 3 and ICC ES AC 32, Sections 4.1.1 and 4.1.2. Synthetic fibers shall be added at a rate of 1.0 pound of Nylon Multifilament fibers per cubic yard of concrete or 1.5 pounds of Polypropylene Fibrillated fibers per cubic yard of concrete and shall be thoroughly mixed with the concrete before placement in the forms. The synthetic fibers shall be a minimum of 0.75-inches and a maximum of 2-inches in length. A minimum of two hoops of W2 wire shall be placed in the 48-inch end of each cone. No steel is required in the remainder of the cone. Precast concrete units shall be furnished with knockouts or cutouts.

9-12.5 Precast Concrete Catch Basins

Precast concrete catch basins shall conform to the requirements of Section 9-12.4, except that the dimensions shall be as set forth in the Standard Plan.

As an alternate, Type 1, Type 1L and Type 1P, Catch Basins may be fabricated using synthetic fiber reinforcement, either nylon multifilament fibers or polypropylene fibrillated fibers, meeting the requirements of ASTM C 1116 Section 4.1.3 and Note 3 and ICC ES AC 32, Sections 4.1.1 and 4.1.2. Synthetic fibers shall be added at the rate of 1.0 pound of Nylon Multifilament fibers per cubic yard of concrete or 1.5 pounds of Polypropylene Fibrillated fibers per cubic yard of concrete, and shall be thoroughly mixed with the concrete before placement. A minimum amount of steel reinforcement shall be used to reinforce the area around the knockouts. Steel reinforcing shall consist of a No. 3 horizontal hoop reinforcing bar located above the knockouts, and a No. 3 vertical reinforcing bar in each corner, extending a minimum of 18-inches below the top surface of the catch basin.

Knockouts or cutouts may be placed on all four sides and may be round or D shaped.

9-12.6 Precast Concrete Inlets

Precast concrete inlets shall conform to the requirements of Section 9-12.4 except that the dimensions shall be as set forth in the Standard Plan.

9-12.7 Precast Concrete Drywells

Precast concrete drywells shall meet the requirements of Section 9-12.4. Seepage port size and shape may vary per manufacturer. Each seepage port shall provide a minimum of 1 square inch and a maximum of 7 square inches for round openings and 15 square inches for rectangular openings. The ports shall be uniformly spaced with at least one port per 8-inches of drywell height and 15-inches of drywell circumference.