**SHEAR KEY GEOMETRY**

**DATE**

**REVISIONS**

1-1-21 Revised Note 3 and lifting hole

general note

3-1-19 Moved wall reinforcement from inside face to middle

**STANDARD 602411-09**

**Note 1:** A minimum of 12 (300) of monolithic reinforced concrete shall be maintained above pipe penetration holes > 15 (380).

**Note 2:** A minimum 12 (300) inside arc length of reinforced concrete shall be maintained between pipe penetration holes > 15 (380).

**Note 3:** A maximum of 60 percent of the inside perimeter of the reinforced concrete manhole walls may be removed.

**Note 4:** Horizontal joints that intersect pipe penetration holes > 15 (380) shall have one joint space for every location around the perimeter of the joint where the inside arc length between pipe penetration holes is < 24 (600). See joint splice detail.

**Note 5:** The recommended pipe penetration hole is equal to the O.D. of the pipe plus 4 (100).

**Note 6:** Only pipe penetration holes ≤ 15 (380) are allowed in riser sections.
ILLINOIS DEPARTMENT OF TRANSPORTATION

2021 APPROVED

2021 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 4-1-06

PASSED ENGINEER OF POLICY AND PROCEDURES

DIAM. 4'-0" (1.22 m) DIAMETER

PRECAST MANHOLE TYPE A

STANDARD 602411-09

PLAN - FLAT SLAB TOP

(Showing layout of bottom reinforcement bars and c bars)

PLAN - FLAT SLAB TOP

(Showing layout of Welded Wire Reinforcement and c bars)

WWR not permitted for riser heights > 10' (3.05 m).

BAR C #5 (#16),
radius top and bottom
length, 3'-8" (1.12 m)
BAR C #5 (#16),
radius top and bottom
length, 3'-8" (1.12 m)
BAR C #5 (#16),
radius top and bottom
length, 3'-8" (1.12 m)
BAR C #5 (#16),
radius top and bottom
length, 3'-8" (1.12 m)

* #5 (#16) bars bottom. Bundle first bar with closest WWR
bar to the opening and place second bar ±3 (75) away.

PRECAST MANHOLE TYPE A

7' (2.13 m) DIAMETER

(Sheet 2 of 3)

STANDARD 602411-09