**Illinois Department of Transportation**

**DATE:** 4-1-06

**APPROVED:**
- ENGINEER OF DESIGN AND ENVIRONMENT
- ENGINEER OF POLICY AND PROCEDURES

**8' (2.44 m) DIAMETER**

**PRECAST MANHOLE TYPE A**

**STANDARD 602416-09**

**FLAT SLAB TOP JOINT CONFIGURATIONS**

- (Shown at access hole)

**BASE SLAB JOINT CONFIGURATIONS**

- Center of slab
- Shear key at
- Single-element

**SECTION PARALLEL TO PIPE**

**SECTION PERPENDICULAR TO PIPE**

**GEOMETRIC LIMITS FOR PIPE PENETRATION HOLES**

- A minimum of 12 (300) of monolithic reinforced concrete shall be maintained above pipe penetration holes > 3'-4" (1.02 m).
- A minimum 12 (300) inside arc length of reinforced concrete shall be maintained between pipe penetration holes > 15 (380).
- A maximum of 60 percent of the inside perimeter of the reinforced concrete manhole walls may be removed.
- Horizontal joints that intersect pipe penetration holes > 15 (380) shall have one joint splice 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.
- The recommended pipe penetration hole is equal to the O.D. of the pipe plus 4 (100).
- Only pipe penetration holes ≥ 15 (380) are allowed in riser sections.

**GENERAL NOTES**

- Pipe holes shall be formed to facilitate proper placement of hoop reinforcement.
- The manufacturer shall ensure that all precast manhole sections are additionally reinforced where required to resist damage from handling, shipping and installation stresses.
- Lifting holes shall be located in the sections as per the manufacturer's recommendations.
- See Standard 602701 for details of manhole steps.
- All dimensions are in inches (millimeters) unless otherwise noted.

**DATE**
- 3-1-19

**REVISIONS**
- Revised Note 1 and lifting hole
- Moved wall reinforcement from inside face to middle

**STANDARD 602416-09**
PLAN - FLAT SLAB TOP
(Showing layout of bottom reinforcement bars and c bars)

Bar c #5 (#16), 12'-6" (3.81 m) length, 4'-2" (1.27 m) radius top and bottom

PLAN - FLAT SLAB TOP
(Showing layout of Welded Wire Reinforcement and c bars)

Bar c #5 (#16), 9'-2" (2.79 m) length, 4'-2" (1.27 m) radius top and bottom

BAR c #5 (#16), 9'-2" (2.79 m) length, 4'-2" (1.27 m) radius top and bottom

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

* #6 (#19) bars bottom. Bundle first bar with closest WWR to the opening and place second bar #3 (#7) away.