



# ***REGIONAL CONSTRUCTION STANDARDS***

**FOURTH EDITION**

**Publication Update #4**

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As Publication Update #4)

April 28, 2009

**URS**

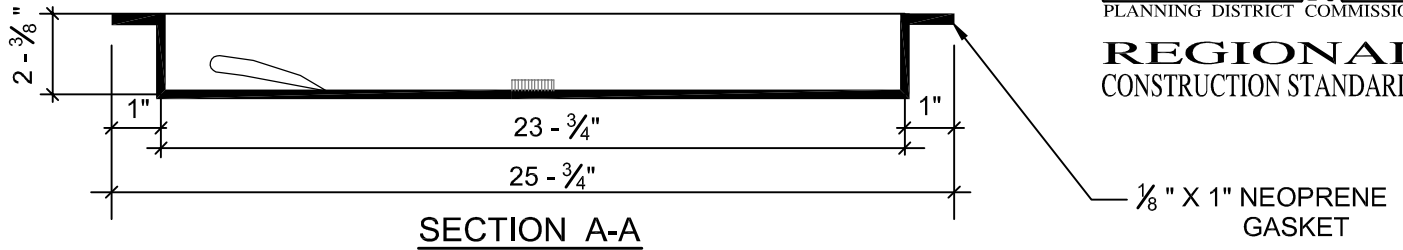
stainless steel band shall be totally non-magnetic Series 304 Stainless. Other flexible connectors must be approved by the Owner.

7. Manhole inverts shall be built up of brickwork and cement mortar to match the inside diameters of the connecting sewers (bricks shall be surfaced with cement mortar, ½-inch thick and shall be trowel finished). Invert channels and manhole bottoms shall be shaped and smoothed with sand-cement grout or as otherwise approved by the Owner. Inverts shall have a positive slope as indicated on the Standard Details. When benching and channel shaping is performed prior to manhole field installation, adequate clear space must be provided to allow adjacent piping to be properly inserted in the manhole and “brought home” at the pipe joint.
8. To enhance the bonding capacity between the manhole or structure and a coating system, a Concrete Surface Profile (CSP), as defined by the International Concrete Repair Institute's (ICRI) Guideline No. 03732 dated January 1997, and as specified by the coating Manufacturer's requirements, shall be provided on all interior surfaces of manholes or structures designated to receive protective coatings.
9. Sections are to be assembled so as to provide a plumb structure with uniform bearing at all joints, and at the base slab.
10. **Stainless Steel Manhole Inserts (If specified)**

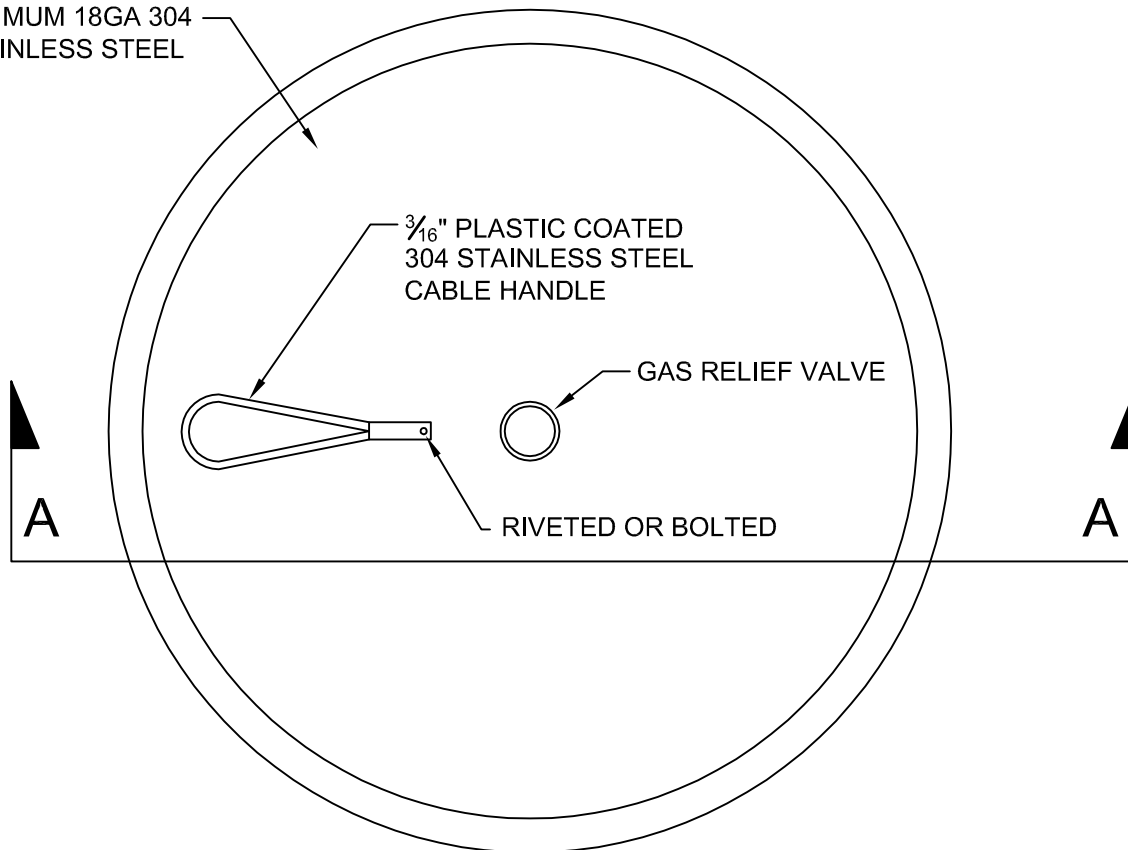
**The manhole insert body shall be manufactured of 304 stainless steel with a minimum thickness of 18 gauge. The insert shall have a straight side design to allow a loose fit into the ring for easy removal. The insert manufacturer shall submit a load test verification showing a load test failure in excess of 3,000 pounds. Inserts shall have a closed cell neoprene gasket with pressure sensitive adhesive backing installed by the manufacturer on one side. Gaskets shall have a minimum thickness of 1/8 inch. The insert shall have one handle made of 3/16 inch plastic coated 304 stainless steel cable. The handle shall be attached with a # 6 high grade stainless steel rivet or with bolts, flat washers and locking nuts, all made of 304 stainless steel. The handle shall be capable of withstanding a pull force of at least 500 pounds before it fails or separates from the insert. The gas relief valve shall be designed using one valve capable of releasing gas at a pressure of 0.5 to 1.5 psi and have a water leak down rate no greater than 5 gallons per 24 hours. The valve shall be installed by means of a hole tapped in the insert by the manufacturer. The valve shall be made of nitrile or similar material for the prevention of corrosion from the contact with hydrogen sulfide, dilute sulfuric acid and other gases associated with wastewater collection systems. The insert shall be custom made to fit the manhole frame, outside diameter (cover), and inside diameter.**

E. Manhole /Structure Coatings

*Sanitary sewer manholes are often exposed to environments with various degrees of aggressiveness thereby degrading the concrete and reinforcing, and shortening the useful life of the structures. A number of measures have been used to maintain manhole structural integrity and component life, including epoxy coatings, concrete additives, embedded liners, etc. Choosing the appropriate protective measure should be determined during the design of the project. Any protective system must be applied in strict accordance with the protective system Manufacturer's recommendations. The manhole coating specifications presented in this*



MINIMUM 18GA 304 STAINLESS STEEL



NOTES:

1. ACTUAL DIMENSIONS MUST BE COMPATIBLE WITH MANHOLE CASTING DIMENSIONS.
2. DUST COVER NOT REQUIRED WHEN USING MANHOLE INSERT.
3. GAS RELIEF VALVE SHALL BE CAPABLE OF RELEASING GAS AT A PRESSURE OF 0.5 TO 1.5 PSI AND HAVE A WATER LEAK DOWN RATE NO GREATER THAN 5 GALLONS / 24 HOURS.
4. LOAD TEST STRENGTH MUST EXCEED 3,000 POUNDS.
5. HANDLE MUST BE CAPABLE OF WITHSTANDING A MINIMUM 500 POUND PULL FORCE.

**MANHOLE INSERT**

NOT TO SCALE

REFERENCE  
200

CATEGORY  
SANITARY SYSTEMS

DATE  
1/09

SHEET No.  
1 OF 1

DETAIL No.  
SS\_19