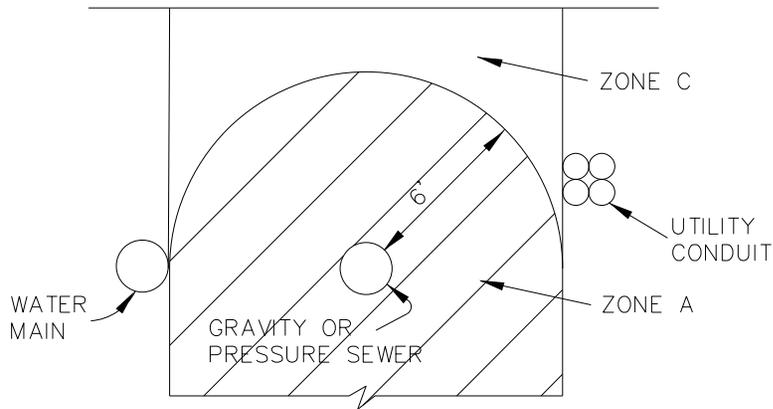
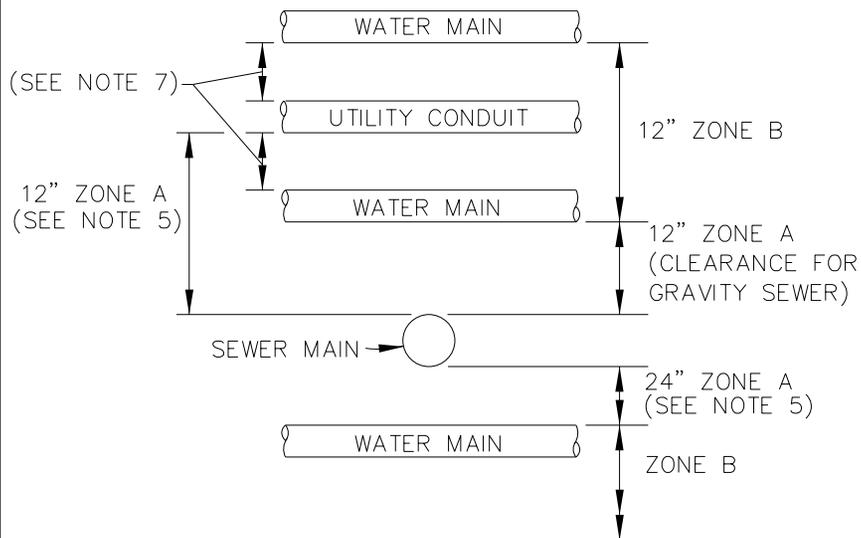


REVISED 5/27/15



**PARALLEL INSTALLATION GRAVITY OR PRESSURE SEWER**



**CROSSING INSTALLATION**

**NOTES:**

1. SEPARATION DISTANCES AND/OR EXTRA PROTECTION SHALL BE REQUIRED TO PROTECT WATER MAINS FROM CONTAMINATION BY SANITARY SEWER MAINS.
2. SEE CROSS INSTALLATION DETAIL ON THIS SHEET FOR LIMITS OF SEPARATION/EXTRA PROTECTION. ALL DISTANCES ARE MEASURED PERPENDICULARLY FROM THE OUTSIDE OF THE PIPES.
  - A. NO WATER MAINS OR UTILITY CONDUITS SHALL FALL WITHIN ZONE A.
  - B. EXTRA PROTECTION WILL BE REQUIRED WHEN THE WATER MAIN FALLS WITHIN ZONE B. EXTRA PROTECTION SHALL CONSIST OF CONSTRUCTING SANITARY SEWER MAINS WITH MECHANICAL JOINT OR RESTRAINED JOINT DUCTILE IRON PIPE. DUCTILE IRON PIPE SHALL COMPLY WITH THE REQUIREMENTS FOR SEWER INSTALLATION. IN A CROSSING, THE NUMBER OF JOINTS SHALL BE HELD TO A MINIMUM WITH ONE FULL JOINT OF PIPE CENTERED OVER/UNDER THE OTHER. AN ALTERNATIVE PROTECTION MAY CONSIST OF ENCASING SEWER MAINS IN REINFORCED CONCRETE PER MAG STD. DETAIL 404-3.
  - C. NO ADDITIONAL PROTECTION WILL BE REQUIRED OUTSIDE OF ZONES A AND B.
  - D. WATER MAINS PERMITTED IN ZONE C ONLY WITH WRITTEN PERMISSION FROM THE WATER RESOURCES DEPARTMENT.
3. SEPARATION REQUIREMENTS FOR 4" OR 6" INDIVIDUAL HOUSE SERVICE CONNECTIONS SHALL COMPLY WITH THE PLUMBING CODES ADOPTED BY THE CITY.
4. RECLAIMED WATER SHALL BE CONSIDERED AS POTABLE WATER WHEN PLACED NEXT TO A SANITARY SEWER AND CONSIDERED A PRESSURE OR FORCED SANITARY SEWER MAIN, WHEN PLACED NEXT TO A POTABLE WATER MAIN.
5. ZONE A IS 24" WHERE WATER MAINS AND UTILITY CONDUITS CROSS PRESSURE SEWER MAINS.
6. THIS DRAWING REVISES MAG STD. DETAIL 404-1 ONLY. MAG STD. DETAILS 404-2 & 404-3 REMAIN INTACT.
7. REFERENCE COS STANDARD DETAIL 2370 AND 2372.

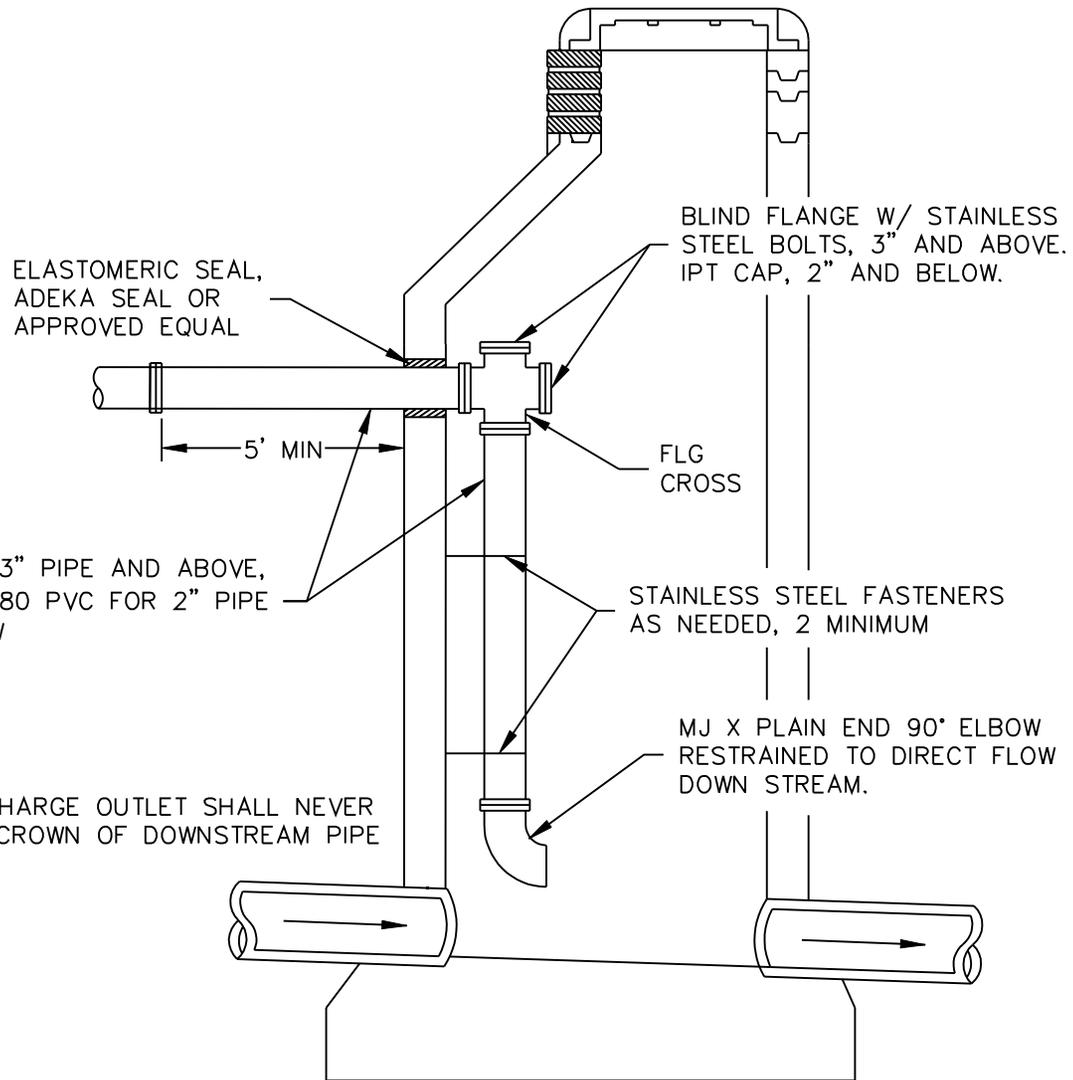
DETAIL NO.  
**2401**

**City of Scottsdale  
Standard Details**

APPROVED BY:  
**Scottsdale Standards &  
Specifications Committee**

**SANITARY SEWER SEPARATION / PROTECTION  
FROM WATER & UTILITIES**

DETAIL NO.  
**2401**



D.I.P. FOR 3" PIPE AND ABOVE,  
SCHEDULE 80 PVC FOR 2" PIPE  
AND BELOW

NOTE: DISCHARGE OUTLET SHALL NEVER  
BE BELOW CROWN OF DOWNSTREAM PIPE

DETAIL NO.  
**2402**

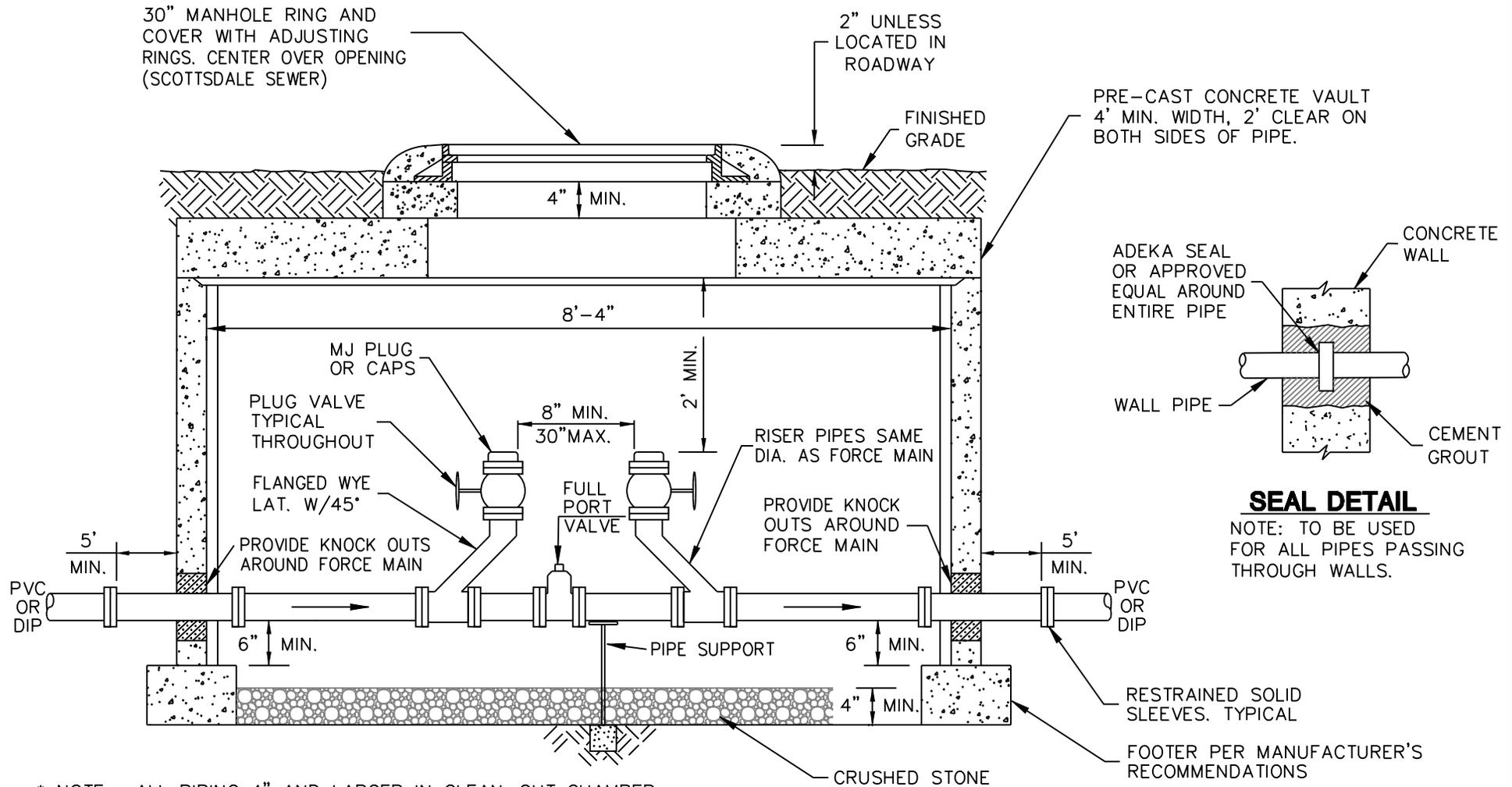
**City of Scottsdale  
Standard Details**

APPROVED BY:  
**Scottsdale Standards &  
Specifications Committee**

**FORCE MAIN DISCHARGE MANHOLE**

DETAIL NO.  
**2402**

REVISED 4/06/09



\* NOTE: ALL PIPING 4" AND LARGER IN CLEAN-OUT CHAMBER, EXCEPT AS NOTED, TO BE DUCTILE IRON CONNECTED WITH FLANGED JOINTS AND STAINLESS STEEL BOLTS.

DETAIL NO.  
**2403**

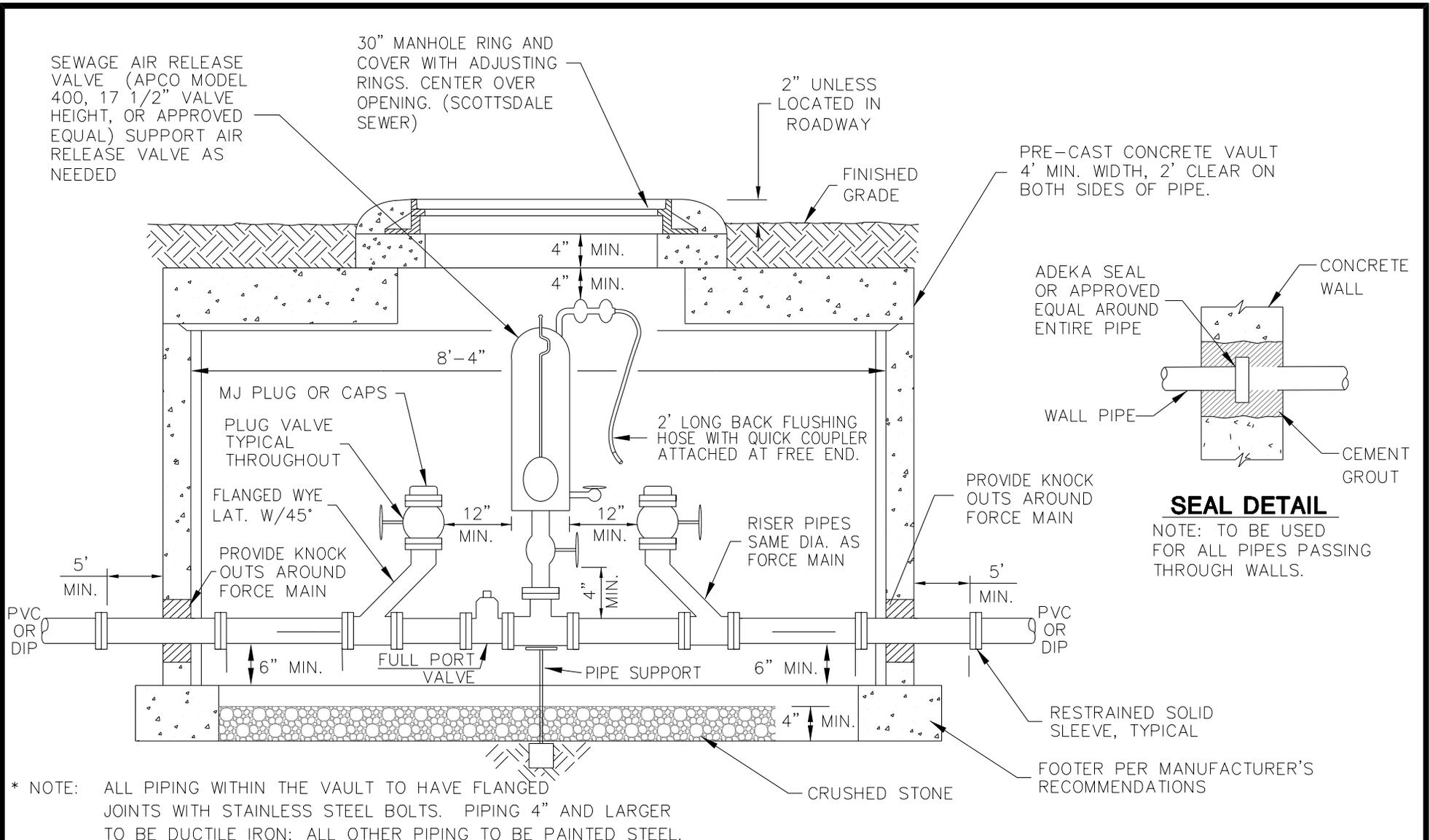
**City of Scottsdale**  
**Standard Details**

APPROVED BY:  
**Scottsdale Standards & Specifications Committee**

**TWO-WAY FORCE MAIN CLEAN-OUT**

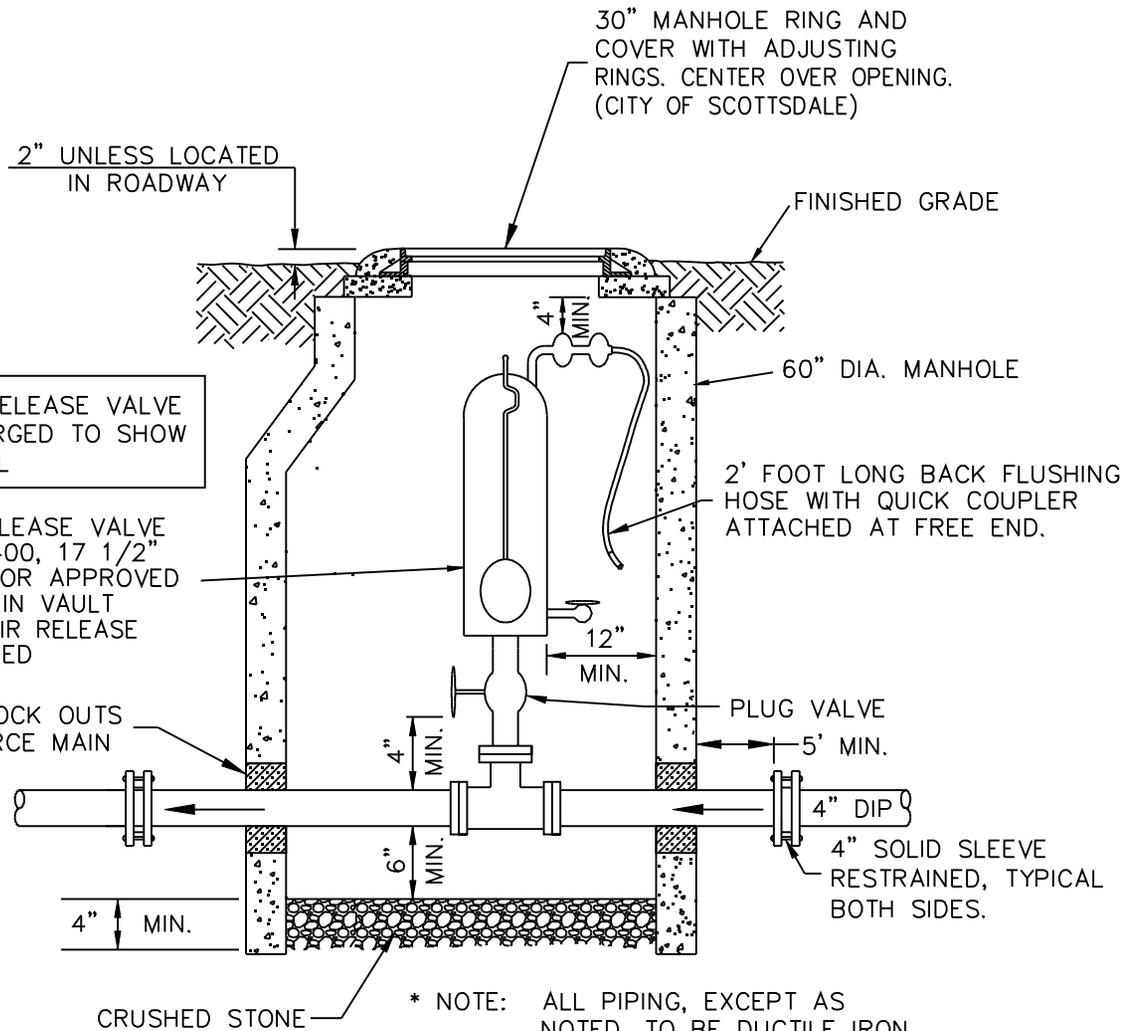
DETAIL NO.  
**2403**

REVISED 5/19/15



\* NOTE: ALL PIPING WITHIN THE VAULT TO HAVE FLANGED JOINTS WITH STAINLESS STEEL BOLTS. PIPING 4" AND LARGER TO BE DUCTILE IRON; ALL OTHER PIPING TO BE PAINTED STEEL.

DETAIL NO. <b>2404</b>	<b>City of Scottsdale</b> Standard Details	APPROVED BY: <b>Scottsdale Standards &amp; Specifications Committee</b>	<b>FORCE MAIN CLEANOUT WITH SEWAGE AIR RELEASE VALVE</b>	DETAIL NO. <b>2404</b>
---------------------------	---	--	--	---------------------------



AIR RELEASE VALVE ENLARGED TO SHOW DETAIL

SEWAGE AIR RELEASE VALVE (APCO MODEL 400, 17 1/2" VALVE HEIGHT, OR APPROVED EQUAL) CENTER IN VAULT AND SUPPORT AIR RELEASE VALVE AS NEEDED

PROVIDE KNOCK OUTS AROUND FORCE MAIN

30" MANHOLE RING AND COVER WITH ADJUSTING RINGS. CENTER OVER OPENING. (CITY OF SCOTTSDALE)

FINISHED GRADE

60" DIA. MANHOLE

2' FOOT LONG BACK FLUSHING HOSE WITH QUICK COUPLER ATTACHED AT FREE END.

PLUG VALVE

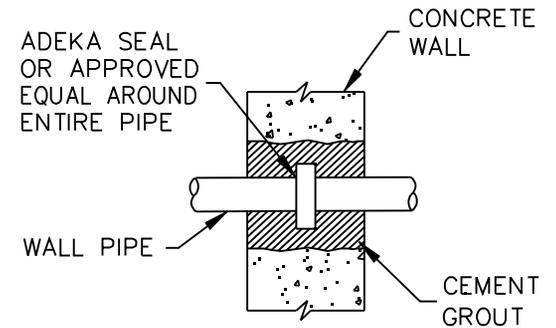
5' MIN.

4" DIP

4" SOLID SLEEVE RESTRAINED, TYPICAL BOTH SIDES.

CRUSHED STONE

\* NOTE: ALL PIPING, EXCEPT AS NOTED, TO BE DUCTILE IRON WITH FLANGE JOINTS AND STAINLESS STEEL BOLTS.



**SEAL DETAIL**

NOTE: TO BE USED FOR ALL PIPES PASSING THROUGH WALLS.

DETAIL NO. 2405

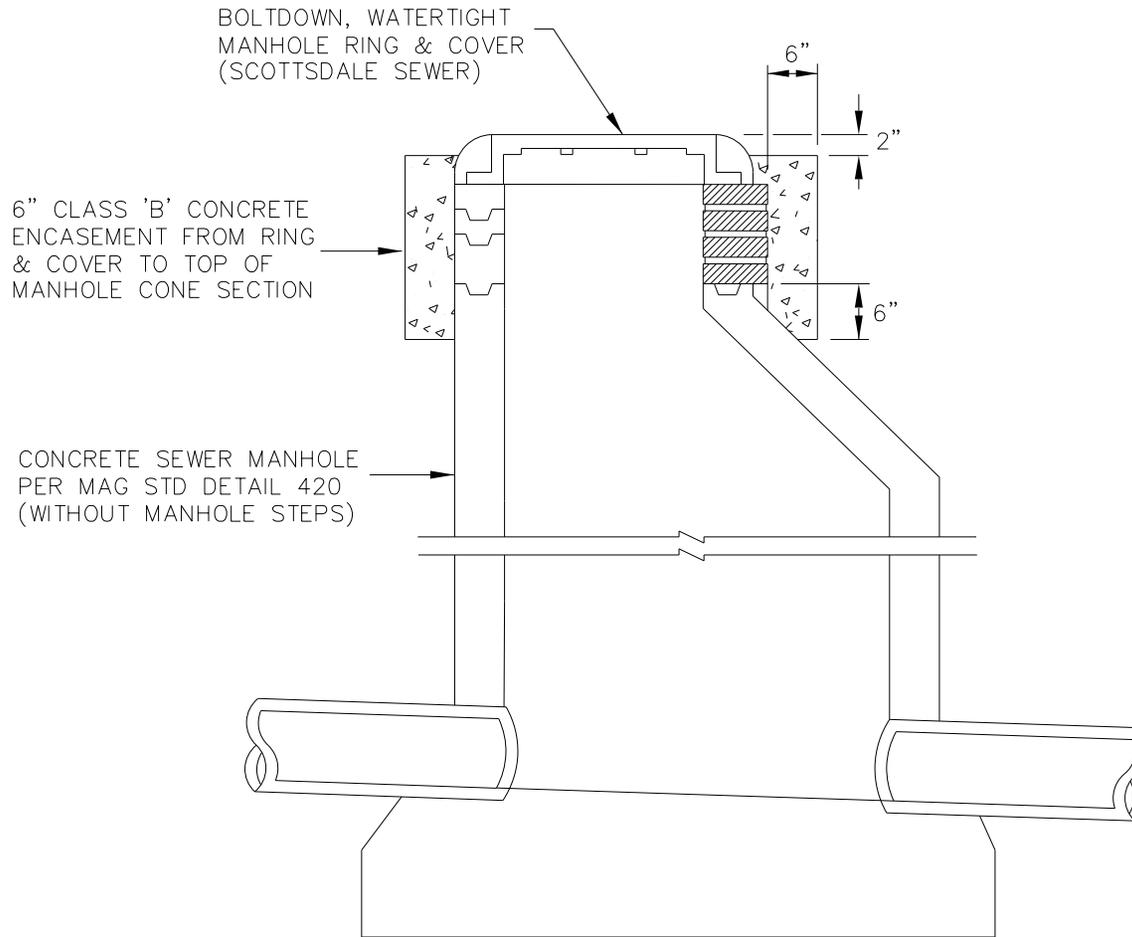
City of Scottsdale Standard Details

APPROVED BY: Scottsdale Standards & Specifications Committee

**SEWER AIR RELEASE VALVE**

DETAIL NO. 2405

REVISED 5/19/15



DETAIL NO.  
**2420**

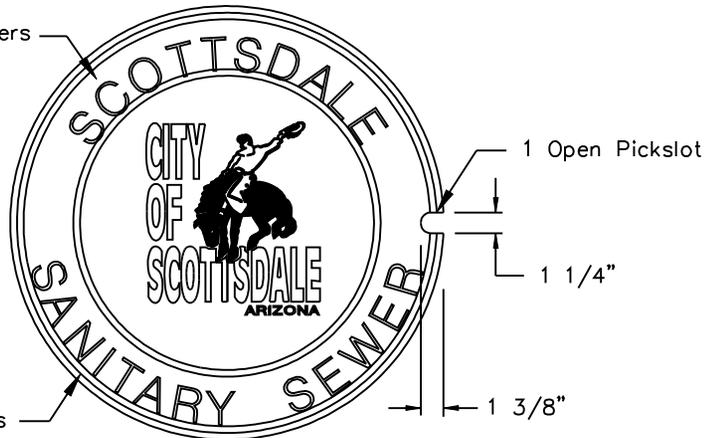
**City of Scottsdale**  
Standard Details

APPROVED BY:  
**Scottsdale Standards &  
Specifications Committee**

**WATER TIGHT CONCRETE SEWER MANHOLE**

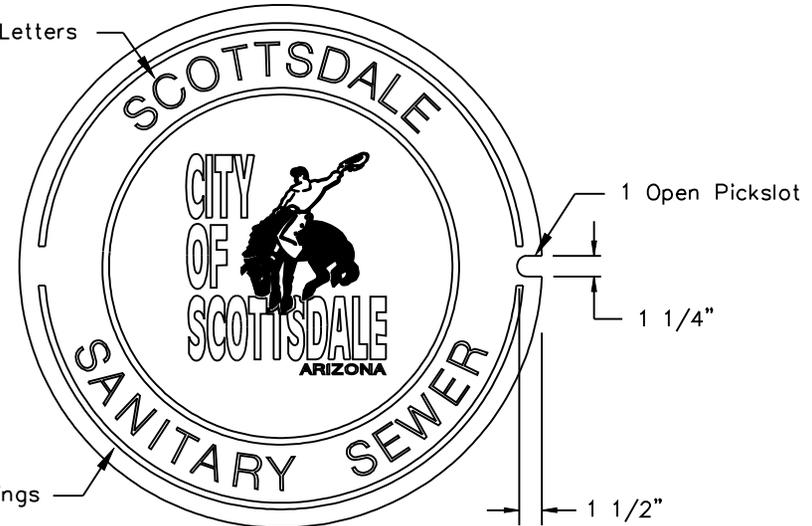
DETAIL NO.  
**2420**

2" High Raised Letters

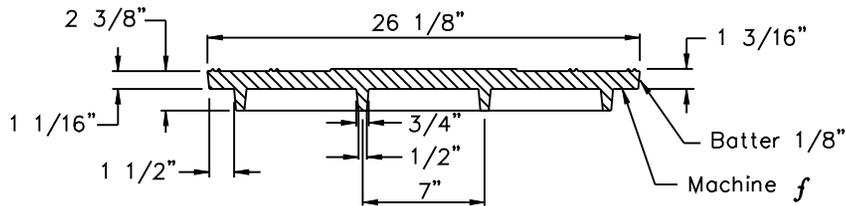


**TOP VIEW**

2" High Raised Letters

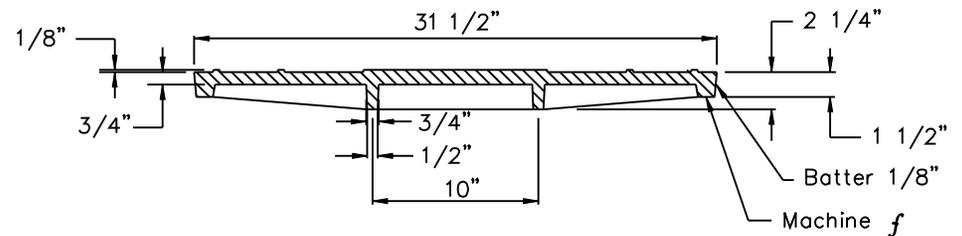


**TOP VIEW**



**SECTION OF COVER**

**24" MANHOLE COVER**



**SECTION OF COVER**

**30" MANHOLE COVER**

**NOTES**

1. Material: Cast Gray Iron ASTM A-48, Class 35B, Unpainted
2. The Total Width Of Individual Letters To Be Such That Letters And Words Are Equally Spaced And Balanced.
3. Letters To Be 2" In Height And Raised 1/8" Above Level Of Cover. Type Of Letters To Be Submitted For Approval.
4. Weight Of Castings Shall Be No More Than 2% Less Than Weight Specified. Castings Shall Conform To M.A.G. Section 787.

DETAIL NO.

**2421**

**City of Scottsdale  
Standard Details**

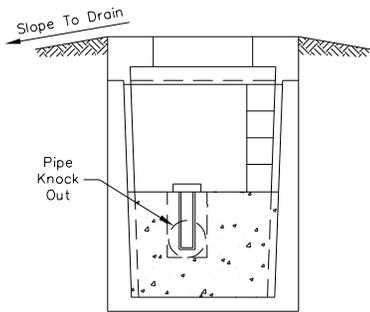
APPROVED BY:

**Scottsdale Standards &  
Specifications Committee**

**SANITARY SEWER MANHOLE COVER**

DETAIL NO.

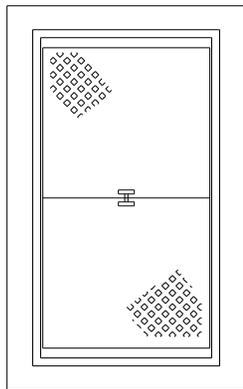
**2421**



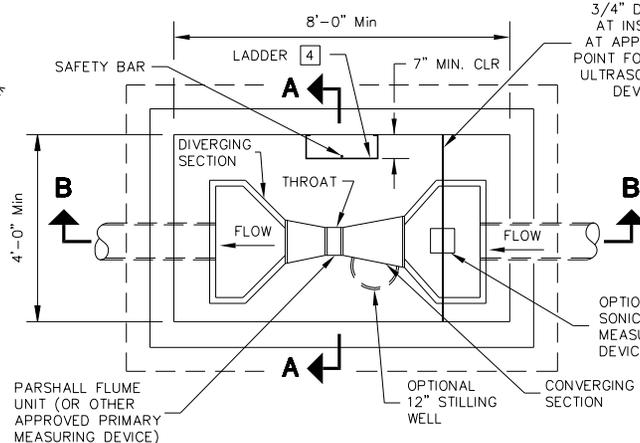
SECTION A-A

**PRE-CAST VAULT**

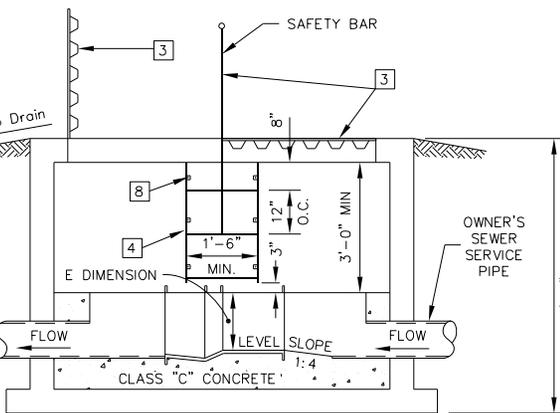
UTILITY VAULT CO.  
VAULT NO. 575-BL,  
NO. 577-BL OR  
APPROVED EQUAL



COVER WITH LID



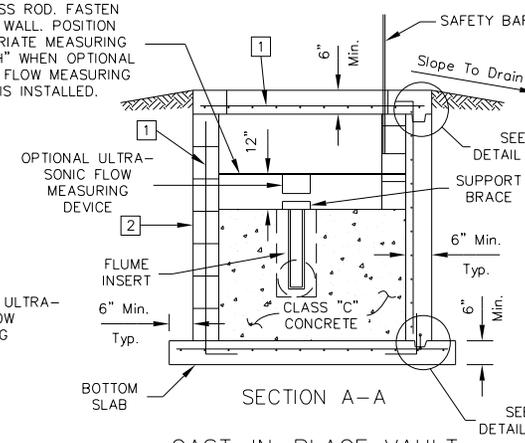
PLAN VIEW (TYP.)



SECTION B-B

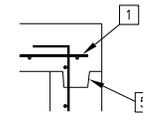
**EQUIPMENT DESCRIPTION**

A Fisher and Porter type 10F1940, Hinde Engineering Company, PS-1001, or approved equal molded fiberglass reinforced polyester Parshall Flume shall be installed. The flume shall be molded in one piece with ample wall thickness and reinforcing ribs to prevent distortion during shipment, installation and operation. The flume shall be self-supporting and require no external supporting structure. Interior dimensions shall conform to those in the latest revision of Water Measurement Manual published by the U.S. Department of the Interior, Water and Power Resources Services. The throat width and flume height (\*E dimension) shall be per plan.

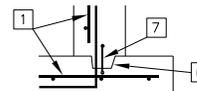


SECTION A-A

**CAST-IN-PLACE VAULT**



TOP KEY  
DETAIL "A"



BOTTOM KEY  
DETAIL "B"

**NOTES:**

- 1 Reinforced steel and clearance as approved by the engineer.
- 2 Block masonry may be used in lieu of CIP walls. 8" block masonry, grout each cell to full height (grout per MAG Section 776).
- 3 2 Torsion spring assisted galvanized diamond plate access doors (design loading AASHO-H20) locking with type 304SS hardware and safety bar (Bilco Model LU-3, or approved equal).
- 4 Ladder shall be furnished and installed in accordance with the detail and shall meet the requirements of OSHA for Type IA (300 lbs) fixed ladders, single section. Details of ladder construction, along with a certification that the ladder meets or exceeds OSHA requirements for Type IA (300 lbs) service shall be submitted for review prior to furnishing and installing. Mill finished aluminum ladder or approved corrosion resistant material.
- 5 2" x 4" key, center on wall. (Install rope caulk continuously).
- 6 1-5/8" x 2-1/2" x 3" key.
- 7 4" PVC dumbbell type continuous waterstop 3/8" min. thickness. (Wash thoroughly prior to installation).
- 8 Anchor straps (3 each side) with 5/8" x 3-1/2" 316SS anchor bolts with lock washer and nut.

**GENERAL NOTES**

1. All construction shall conform to MAG Specifications and Details and City of Scottsdale Supplement to MAG Specifications and Details, unless modified on the plans.
2. All concrete floors, walls and top slab of the structure shall conform to MAG section 725, Class A, minimum compressive strength at 28 days = 3,000 psi.
3. All concrete for the grout fillet inside the structure shall conform to MAG Section 725, Class C, minimum compressive strength at 28 days = 2,000 psi.
4. All steel reinforcing shall be deformed bars, Grade 60, billet steel conforming to ASTM Specification No. A-615, latest edition.
5. The Monitoring/Sampling Vault shall be installed on the owner's property as close to the customer tap to the City sewer as feasible, and approved by the City of Scottsdale.
6. Flume size should be based upon the minimum and maximum flow rates and velocities to insure free-flow conditions.
  - Maximum Flow = 70%-100f maximum capacity of selected flume size.
  - 0.5 inches of flow should exist at the minimum actual flow.
7. Flume floor elevation should be high enough, relative to downstream conditions, to prevent submerged flow (50% submergence is acceptable at maximum flow), install the flume level (longitudinally and transversely) in the converging section.
8. Upstream flow should be wave free, non-turbulent, and symmetrical having a uniform velocity (1fps minimum to 3 fps maximum) at least 10 times the diameter of the upstream sewer pipe in length in the approach channel. Bends upstream in the flume will NOT be allowed for a distance of 25 pipe diameters unless conditions in the approach section of the flume will not be adversely affected.
9. The flume shall be installed off-center and away from the ladder to allow the maximum working space for City personnel.
10. It shall be the owner's responsibility to properly maintain the flume in accordance with the manufacturers recommendations to ensure the accuracy of the measurement.

DETAIL NO.  
**2460**

**City of Scottsdale**  
Standard Details

APPROVED BY:  
**Scottsdale Standards & Specifications Committee**

**MONITORING/SAMPLING VAULT**

DETAIL NO.  
**2460**