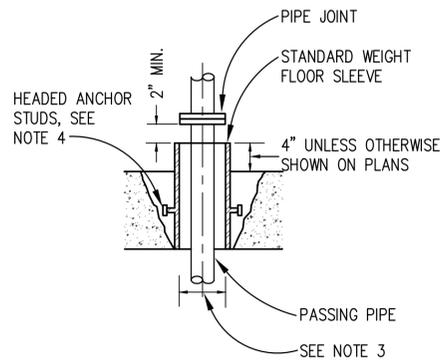


**EXTERIOR WALL PENETRATION DETAIL**

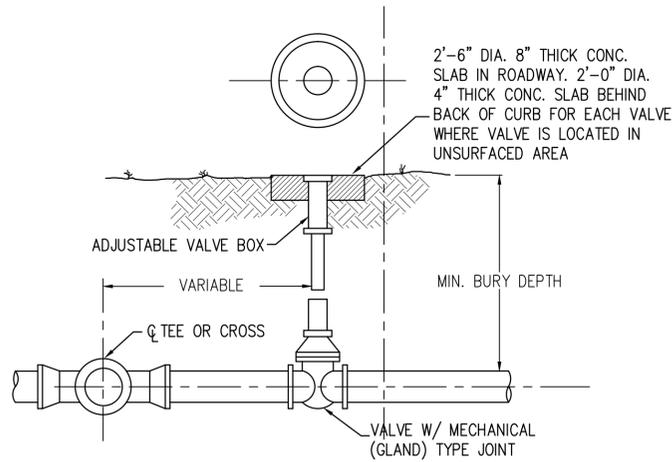


**SLAB PENETRATION DETAIL**  
3" AND LESS DIA. PIPES

**PENETRATION DETAILS**  
NO SCALE

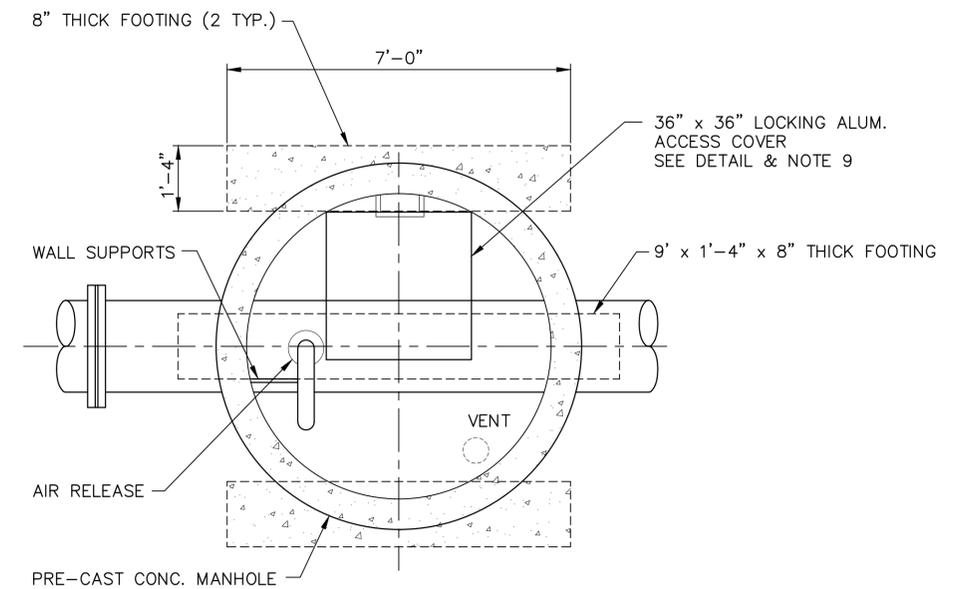
**NOTES:**

- PENETRATIONS SHALL CONFORM TO THE PENETRATION CONDITIONS INDICATED UNLESS OTHERWISE NOTED ON THE DRAWINGS
- INSIDE DIAMETER OF PIPE SLEEVE SHALL BE AS REQD BY THE MODULAR MECHANICAL SEAL ASSEMBLY MFR FOR THE PASSING PIPE SEAL.
- INSIDE DIAMETER OF SLEEVE SHALL BE A MINIMUM OF THE DIAMETER REQUIRED TO REMOVE THE PASSING PIPE PLUS 1/2". INSIDE DIAMETER SHALL BE LARGE ENOUGH TO INSTALL THE INDICATED ANNULAR PIPE SEAL.
- PROVIDE A MINIMUM OF THREE HEADED ANCHOR STUDS PER SLEEVE, EQUALLY SPACED.
- COAT EMBEDDED WALL AND FLOOR PIPES AND SLEEVES WITH SPECIFIED PAINT SYSTEM PRIOR TO CONCRETE PLACEMENT.

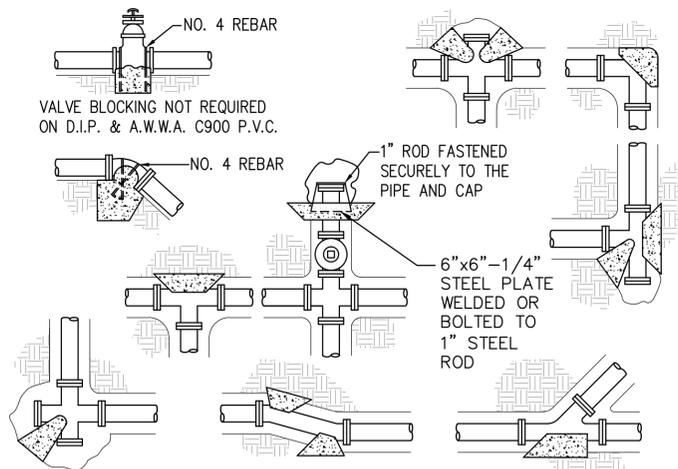


**VALVE & BOX DETAIL**  
NO SCALE

AIR RELEASE MANHOLE ELEVATIONS						
STATION	TOP OF MANHOLE	GRADE NEXT TO MANHOLE	FL PIPE	MANHOLE FLOOR	TOTAL DEPTH	AIR RELEASE SIZE
29+25	3465.0	3464.5	3459.0	3457.5	7.5'	3"



**PLAN VIEW**



BEARING AREA OF BLOCK IN SQ. FT.						
FITTING SIZES	VALVES & DEAD ENDS	90° BEND	45° BEND	22-1/2" BEND	11-1/4" BEND	
3" & SMALLER	0.7	1.0	0.5	0.3	0.2	
4"	1.9	2.7	1.4	0.7	0.4	
6"	4.2	6.0	3.2	1.7	0.8	
8"	7.5	10.7	5.8	2.9	1.5	
10"	11.8	16.7	9.0	4.6	2.3	
12"	17.0	24.0	13.0	6.6	3.3	
14"	23.1	32.7	17.7	9.0	4.5	
16"	30.2	42.7	23.1	11.8	5.9	
18"	38.2	54.0	29.2	14.9	7.5	
20"	47.1	66.6	36.1	18.4	9.2	
24"	67.9	96.0	51.9	26.5	13.3	

**NOTES:**  
CARE SHALL BE EXERCISED TO ASSURE JOINT, INCLUDING BOLTS, WILL BE ACCESSIBLE

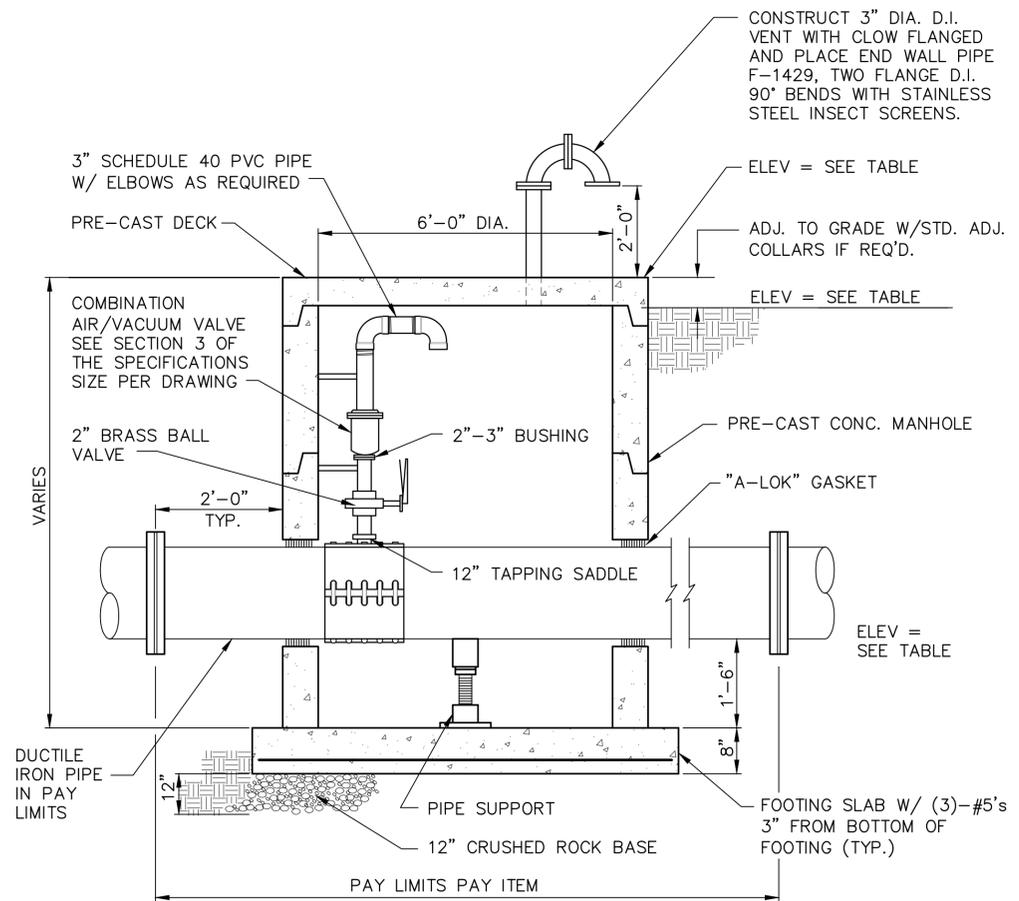
UNLESS OTHERWISE SPECIFIED CONC. MIX COMPRESSIVE STRENGTH SHALL BE 3,000 PSI AT 28 DAYS.

THIS DETAIL FOR BOTH VERT. AND HORIZ. PIPE

**STANDARD BLOCKING DETAILS**  
NO SCALE

**AIR RELEASE MANHOLE NOTES:**

- MANHOLE SECTIONS SHALL BE PRECAST WITH A LOK OR BOOT TYPE GASKET. MH SHALL CONFORM TO C443 OR APPROVED EQUAL.
- PIPES ENTERING MANHOLE SHALL BE FULLY SUPPORTED BY CONCRETE OR UNDISTURBED EARTH.
- TOTAL DEPTH OF MANHOLE SHALL BE AS SPECIFIED ON CONSTRUCTION DRAWINGS TO ACCOMMODATE PIPE DEPTHS.
- PROVIDE 2 BOLLARDS AT AIR RELEASE MANHOLES, INCIDENTAL TO BID ITEM.
- STEPS SHALL BE DEETER 1607, NEENAH R-1982-W OR APPROVED EQUAL, 16" C-C.
- ALL HORIZONTAL MATING SURFACES BETWEEN CONCRETE AND CONCRETE OR CONCRETE AND METAL SHALL BE SEALED WITH RAM-NEK OR EQUAL, PREMOLDED MASTIC COMPOUND.
- ALL VERTICAL EXTERIOR WALL SURFACES SHALL RECEIVE A FIBERED ASPHALT COMPOUND TO A FINAL WET THICKNESS OF 1/8 INCH. PROVIDE COATING MEETING ASTM D449 EQUAL TO SONNEBORN HYDROCID 700 B SEMI-MASTIC.
- AIR RELEASE ASSEMBLY SHALL INCLUDE TAP, SHUT OFF VALVE, AND DISCHARGE PIPING AS REQUIRED. PIPING SHALL BE SUPPORTED OFF MANHOLE WALL SECTION WITH SS OR FIBERGLASS SUPPORTS EVERY 2'.
- THE VERTICAL DISCHARGE MAY HAVE TO BE PLUMBED TO AVOID CONFLICT WITH MANHOLE ACCESS.
- AIR RELEASE SHALL HAVE A SS OR DUCTILE IRON TAPPING SADDLE WITH FLANGE PLATE AND PLATE OPENING. CONTRACTOR TO COORDINATE CONNECTION WITH VALVE.



**TYPICAL AIR RELEASE MANHOLE**  
NO SCALE

REVISIONS	BY
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McCook, NE (308) 345-3710

**URNRD - AUGMENTATION - WATER SUPPLY WELLS & PIPING**  
**DETAILS**  
**DUNDY COUNTY, NEBRASKA**

**"AS RECORDED"**  
FROM INFORMATION PROVIDED BY THE CONTRACTOR.  
DATE: 07-2013 BY: JLZ  
THIS DOCUMENT WAS ORIGINALLY ISSUED AND SEALED BY CHRIS A. MILLER (E-8775) ON 12/10/2012.  
THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT.

**VERIFY SCALES**

BAR IS ONE INCH ON ORIGINAL DRAWING  
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

SCALE:	AS SHOWN
PROJECT NO.	159-P5-001
DATE:	DECEMBER, 2012
FIELD BOOK	M&A DWG NO. 25298
DRAWN BY:	BSF
APRVD BY:	
SHEET	22