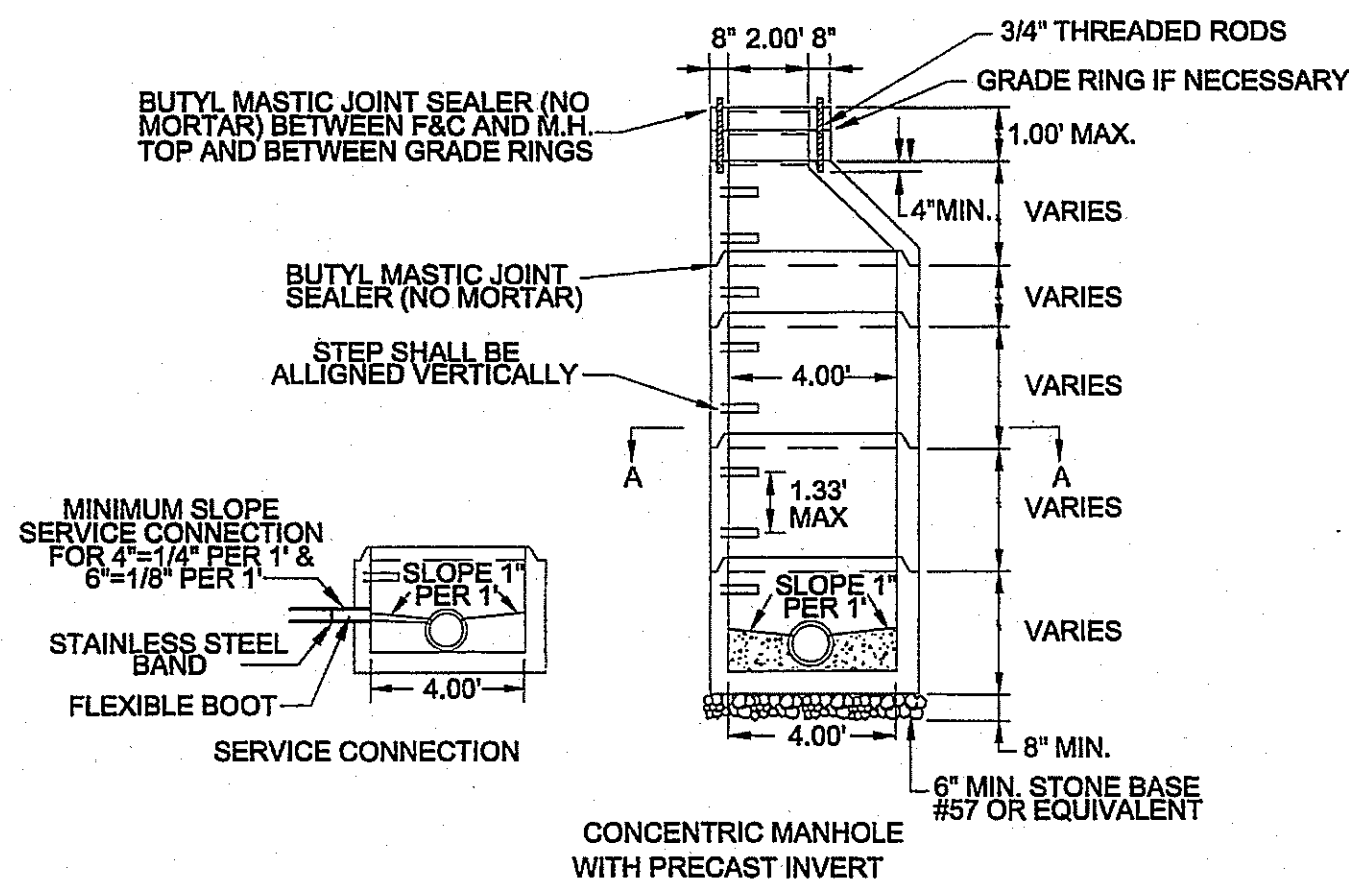
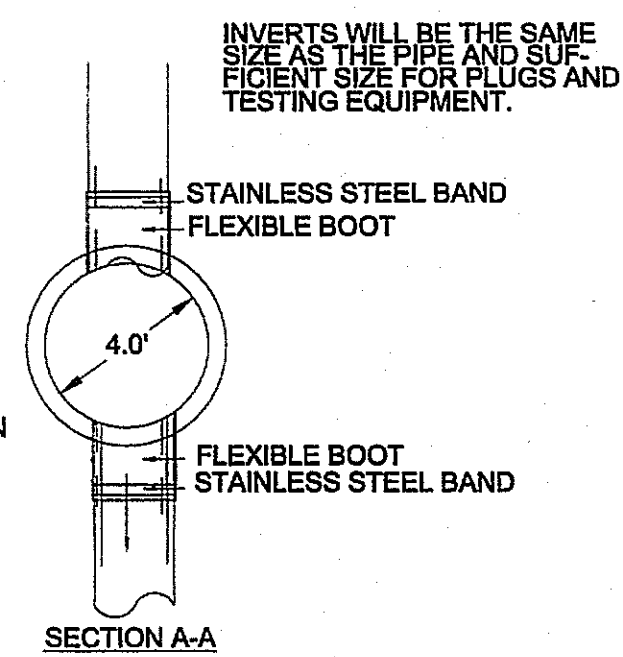


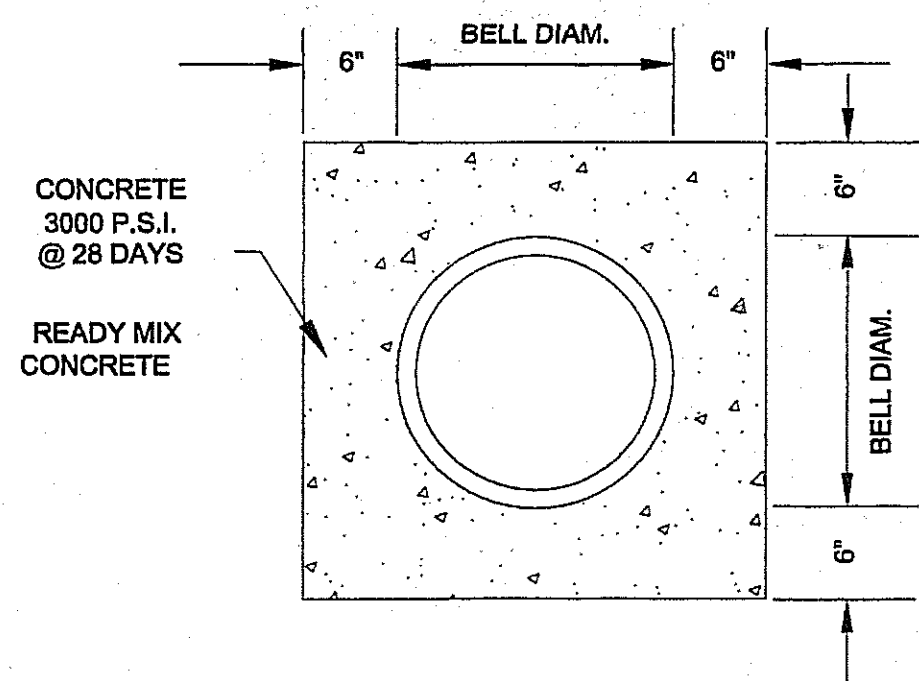
1. ALL MANHOLE FRAMES AND COVERS SHALL BE EAST JORDAN IRON WORKS, INC. WATERTIGHT COVER MANHOLE FRAME MODEL #1046Z, WATERTIGHT COVER MODEL #1040Z OR AN EQUAL MANHOLE COVER MODEL #1040ACLOS, OR APPROVED EQUAL, BOLT DOWN MODEL TO BE USED IN AREAS SUBJECT TO THE AUTHORITY OF THE CITY ENGINEER.
2. STEPS TO BE VERTICALLY ALIGNED.
3. THE FRAME AND COVER SHALL BE PROPERLY ALIGNED WITH THE 2 FOOT OPENING OF THE EXISTING STRUCTURE TO BE IN PLACE.
4. FLAT TOP MANHOLES MAY ONLY BE SUBSTITUTED WITH THE PERMISSION OF THE UTILITY DIRECTOR. WHEN USED, THE ECCENTRIC OPENING MUST LINE UP WITH THE STEPS.
5. SAMPLING MANHOLES IN TRAFFIC AREAS SHALL BE CONSTRUCTED AS PER MANHOLE DETAILS.
6. FLANGES OR JOINTS SHALL BE AS MANUFACTURED BY PRES-SLIP GASKET CORPORATION OR EQUAL.
7. PROVIDE AN ANNUAL SPACE BETWEEN PIPE AND PRECAST MANHOLE ON INSIDE OF MANHOLE.



WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS

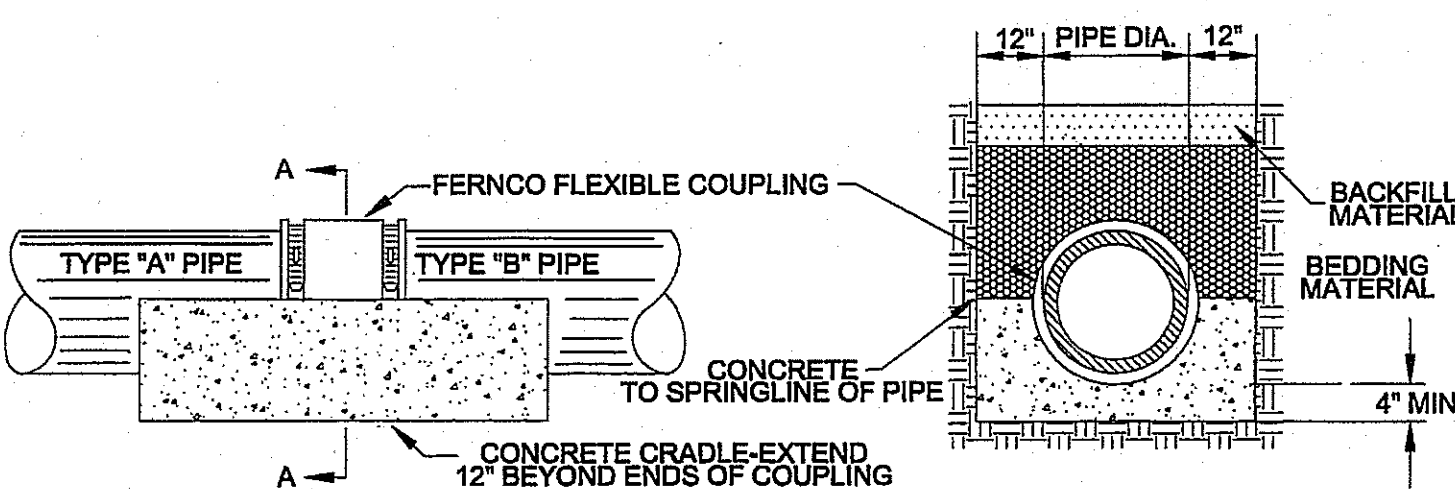
|               |                                                   |      |
|---------------|---------------------------------------------------|------|
| REVISION DATE | 4' STANDARD MANHOLE<br>FOR PIPE 15"<br>OR SMALLER | S-01 |
| 07/01/04      |                                                   |      |
|               |                                                   |      |
|               |                                                   |      |
|               |                                                   |      |

1. When water line is located below a sewer line, the sewer line to be encased along its length where it is within 10' of water line.
2. Sewer lines crossing streams must be concrete encased.



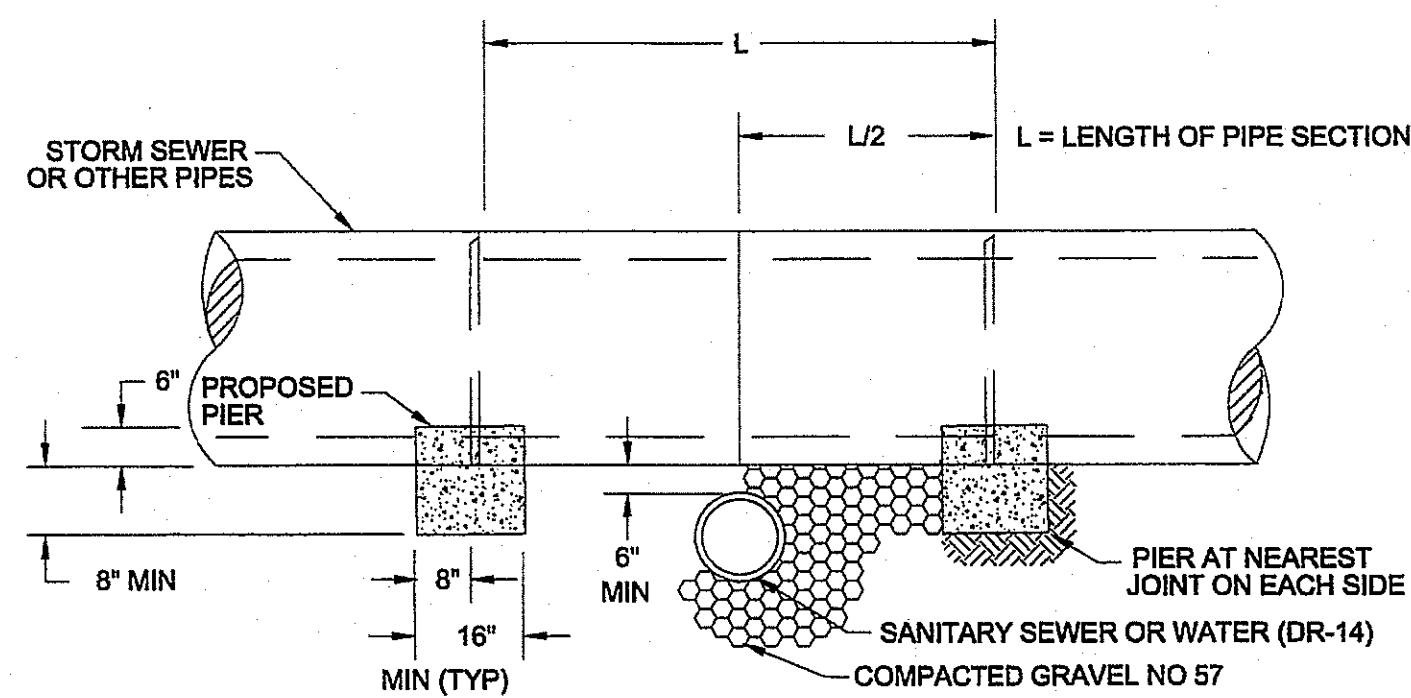
WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS

|               |                          |      |
|---------------|--------------------------|------|
| REVISION DATE | CONCRETE ENCASED<br>PIPE | S-15 |
| 07/01/04      |                          |      |
|               |                          |      |
|               |                          |      |
|               |                          |      |



WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS

|               |                                                          |      |
|---------------|----------------------------------------------------------|------|
| REVISION DATE |                                                          |      |
| 07/01/04      | JOINING DISSIMILAR PIPE<br>FOR USE WITH<br>EXISTING PIPE | S-16 |
|               |                                                          |      |
|               |                                                          |      |
|               |                                                          |      |
|               |                                                          |      |



1. PIER REQUIRED WHEN STORM DRAIN OR OTHER PIPES CROSSES OVER THE OTHER UTILITY WITH A VERTICAL CLEARANCE OF LESS THAN 18".
2. PIER TO BE BUILT ON UNDISTURBED EARTH.
3. CONCRETE TO BE READY MIX, CLASS A3.

WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS

[illegible]

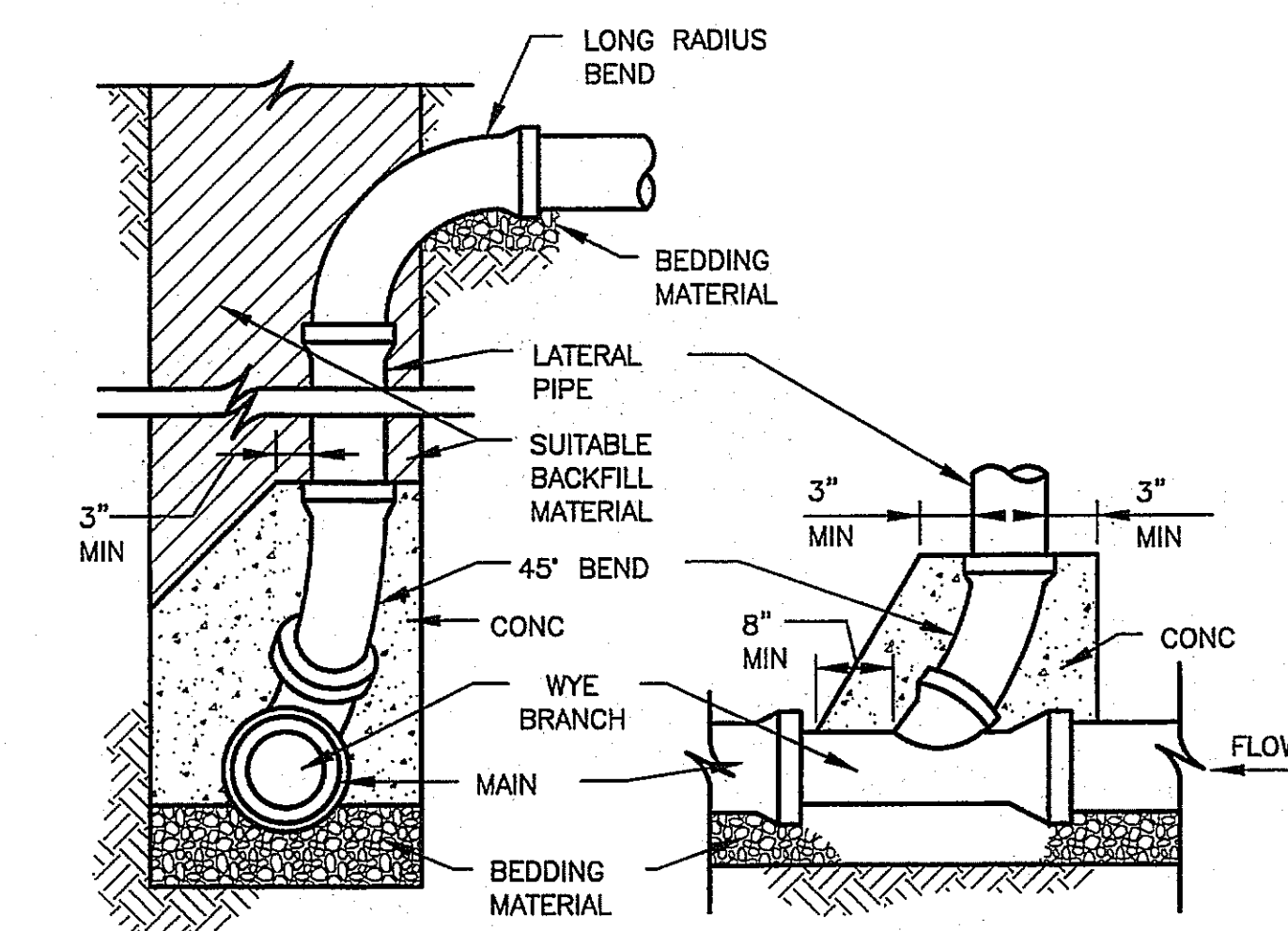
| EQUIVALENT PSI | HEIGHT OF GROUND<br>WATER ABOVE PIPE<br>INV. (Ft.) |
|----------------|----------------------------------------------------|
| 0.43           | 1                                                  |
| 0.87           | 2                                                  |
| 1.30           | 3                                                  |
| 1.73           | 4                                                  |
| 2.17           | 5                                                  |
| 2.60           | 6                                                  |
| 3.03           | 7                                                  |
| 3.47           | 8                                                  |
| 3.90           | 9                                                  |
| 4.34           | 10                                                 |
| 4.77           | 11                                                 |
| 4.98           | 11.5                                               |

For anything above 11.5 VF, allow maximum 5.0 PSI.

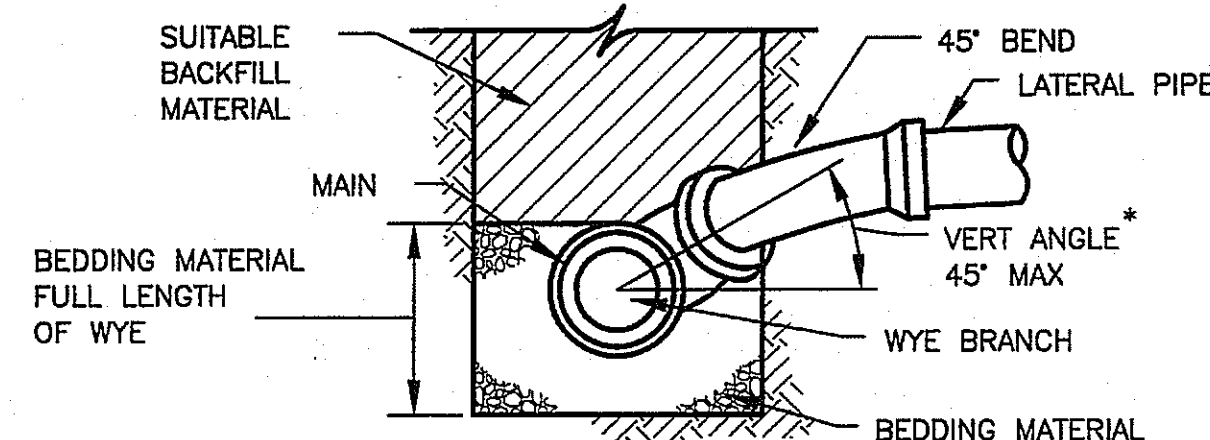
1. Table based on 1.0 v.f. of water = 0.4335 PSI.
2. The appropriate PSI allowance for average vertical foot of ground water shall be added to the base starting pressure of 4.0 PSI, but in no CASE shall the resulting pressure be more than 9.0 PSI.
3. Interpolate for fractions of a foot of water.

**WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS**

|               |                                                      |      |
|---------------|------------------------------------------------------|------|
| REVISION DATE | AIR TESTING<br>BACK PRESSURE<br>EQUIVALENCY<br>TABLE | S-26 |
| 07/01/04      |                                                      |      |
|               |                                                      |      |
|               |                                                      |      |
|               |                                                      |      |
|               |                                                      |      |



## VERTICAL CONNECTION



**STANDARD CONNECTION  
VERTICAL ANGLE 45° MAX.**

NOTE:  
SUITABLE BACKFILL MATERIAL AND BEDDING MATERIAL  
SHALL BE AS SPECIFIED IN SECTION 02317.

### GRAVITY WYE CONNECTION

NO SCALE