

- 
- Diagram illustrating the cross-section (SECTION A-A) of a flexible boot assembly. The assembly consists of a circular pipe with a flexible boot installed. The boot is secured by a stainless steel band. The annular space between the boot and the pipe is filled with grout. The diagram shows the precast hole, the grout annular space (typical for inlet and outlet), the flexible boot with stainless steel band, and the section line A-A. A dimension of 4'-0" is indicated for the length of the boot assembly.

4' STANDARD MANHOLE  
FOR PIPE 15" OR SMALLER  
(FOR DEPTHS UP TO 15 FEET)

08/01/15

- 
- 3/4" Ø SS THREADED ROD  
(IF ADJUSTMENT RINGS  
ARE REQUIRED)
- ADJUSTMENT RINGS  
IF NECESSARY  
(1"-0" MAX. ADJUSTMENT)  
SEE FRAME & COVER DETAILS
- 2"-0" CONE  
ECCENTRIC  
RISER
- BUTYL MASTIC JOINT SEALER  
OR GASKETS MEETING ASTM C443  
AND ASTM C1244 TESTING STANDARD  
(NO MORTAR)
- 4'-0"
- 7" MIN.
- 12" MIN.
- 5'-0"
- SCH 40
- 1'-4" Max.
- CUT OUT
- THREADED END CAP  
WITH PLUG
- 1" STAINLESS STEEL BAND  
@24" O.C. WITH 5/8" S.S.  
ANCHOR BOLTS
- FLEXIBLE BOOT  
WITH STAINLESS  
STEEL BAND
- SCH 40  
PVC
- 6" MIN. STONE BASE  
#57 OR EQUIVALENT

INSIDE DROP MANHOLE

- 

WATERTIGHT  
MANHOLE FRAME

01/01/14

- 
- SECTION VIEW
- MACHINED SURFACE

WATERTIGHT  
MANHOLE COVER

01/01/14

- 
- PRIVATE PROPERTY
- RIGHT OF WAY OR LIMITS OF EASEMENT
- CLEAN OUT BOX AND LID (SET TO FINISHED GRADE)
- CLEAN-OUT TO EXTEND ABOVE GROUND A MIN. OF 3 FEET DURING INSTALLATION OF MAIN LINE. PLUMBER SHALL CUT STACK TO FINISHED GRADE AS SHOWN WHEN BUILDING SEWER IS CONNECTED TO LATERAL
- 45° WYE (TEE NOT ACCEPTABLE) (SEE NOTE #2)
- 45° MAX
- SEWER MAIN
- 4" MINIMUM GRAVEL BEDDING #57 OR EQUIVALENT
- 11.25° OR 22.5° BEND
- (SEE NOTE #2)
- 2'-0" MIN.
- 2'-0" MIN.
- 45° MAX.
- TEE, WYE, TEE/WYE OR COMBINATION OF WYE & 45° BEND FITTINGS SHALL BE SIZED AS REQUIRED
- 1/4" PER 1'-0" MINIMUM GRADE
- HORIZONTAL SECTION SHALL EXTEND A MINIMUM OF 5' OR AS DIRECTED BY THE PARTICIPATING UTILITY
- 45° OR 22.5° BELL & SPIGOT BEND (IF NEEDED)
- CLEAN-OUT STACK (SEE NOTES #2 & #8)
- PLASTIC BODY CLEAN-OUT & CAP
- ROUGH GRADE
- SOLID GLUE CAP
- FINISHED GRADE
- SAFETY
- SAFE AS ABOVE
- SANITARY SEWER LATERAL FOR DEEP SEWER

## SANITARY SEWER LATERAL

- 
- Diagram illustrating a sewer main configuration with a 45-degree bend. The main sewer line is labeled "SEWER MAIN". A "45° BEND" is shown, connecting a "6\" X 4\" WYE" to a "6\" SEWER". The "6\" SEWER" continues horizontally, passing through a "CLEAN-OUT STACK (6\" MIN.)" and a "COUPLING". A "4\" SEWER" branch connects to the main line via a "6\" X 4\" REDUCER". This branch also includes a "CLEAN-OUT STACK (4\" MIN.)" and is labeled "4\" SEWER LATERALS". The diagram also shows a "RIGHT OF WAY OR LIMIT OF PUBLIC SEWER EASEMENT" and "PRIVATE PROPERTY". A note indicates "TEE, WYE, TEE/WYE OR COMBINATION OF WYE & 45° BEND FITTINGS SHALL BE SIZED AS REQUIRED". A reference to "SEE NOTE #5" is also present.

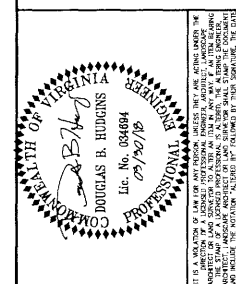
DOUBLE LATERAL  
COMBINED 6" BY TWO 4" LATERALS

- 
- 12" PIPE DIA. 12"
- BACKFILL MATERIAL
- BEDDING MATERIAL
- 4" MIN.
- CONCRETE TO SPRINGLINE OF PIPE
- 3,000 PSI CONCRETE CRADLE-EXTEND 12" BEYOND ENDS OF COUPLING
- TYPE "A" PIPE
- TYPE "B" PIPE
- FERRO FLEXIBLE COUPLING

## JOINING DISSIMILAR PIPE FOR USE WITH EXISTING PIPE



WESTERN VIRGINIA  
WATER AUTHORITY  
ROANOKE, VIRGINIA



WESTERN VIRGINIA WATER AUTHORITY  
WILLIAMSON ROAD SANITARY SEWER REPLACEMENT  
ROANOKE, VIRGINIA

[illegible]

DETAILS - SHEET  
2 OF 4

Designed By: MBH	Drawn By: MBH	Checked By: DBH
Issue Date: 3-30-18	Project No: 33338	Scale: AS SHOWN

Drawing No.:

**C-502**