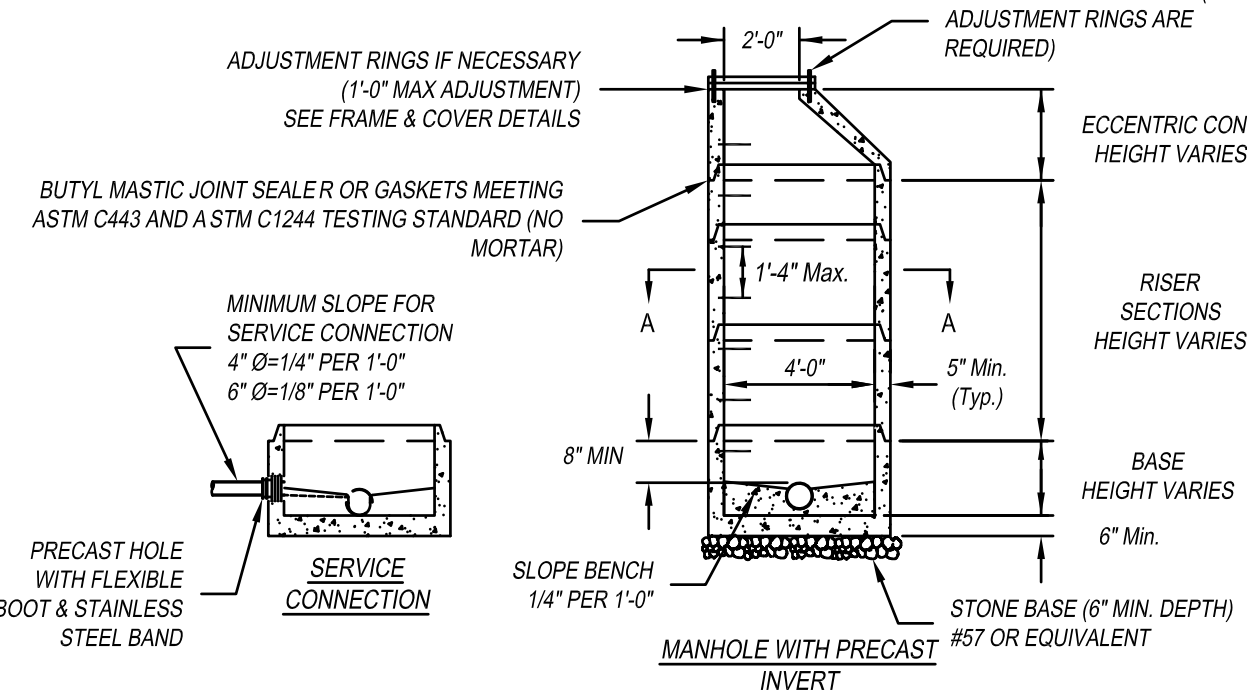
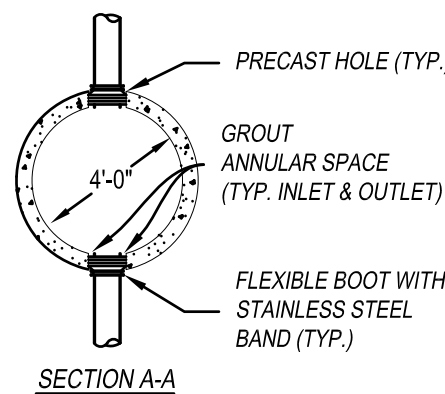


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1. MATERIALS AND FABRICATION IN ACCORDANCE WITH ASTM C478-09.
  2. WHEN USED AS SAMPLING MANHOLE FLOW SHALL PASS STRAIGHT THROUGH, I.E., 180°.
  3. STEPS SHALL BE VERTICALLY ALIGNED. FIRST STEP SHALL BE WITHIN 12" OF COVER. BOTTOM STEP SHALL BE WITHIN 24" OF BOTTOM OF MANHOLE.
  4. FRAME AND COVER SHALL BE PROPERLY ALIGNED WITH THE 2 FOOT OPENING OF THE MANHOLE STRUCTURE AND BOLTED IN PLACE.
  5. FLAT TOP MANHOLES MAY ONLY BE SUBSTITUTED WITH THE PERMISSION OF THE PARTICIPATING UTILITY.
  6. FLEXIBLE JOINT MANHOLE CONNECTION SHALL AS MANUFACTURED BY PRE-SEAL GASKET CORPORATION OR EQUAL.
  7. GROUT SHALL BE USED TO PRECAST MANHOLE AND PRECAST MANHOLE ON INSIDE OF MANHOLE.
  8. WHEN REPLACING AN EXISTING MANHOLE OR INSTALLING A NEW PRECAST MANHOLE ON AN EXISTING SEWER, A MINIMUM OF SIX FEET (6') OF EXISTING PIPE SHALL BE REMOVED AND REPLACED WITH NEW MATERIAL ON INLET AND OUTLET OF MANHOLE.
  9. MANHOLES WHERE THE INVERT IS LOWER THAN THE NORMAL GROUNDWATER ELEVATION (I.E., ALONG CREEKS, RIVERS, LOW-LYING AREAS, ETC.) SHALL HAVE A FULL EXTERIOR COATING AND JOINT WRAP APPLIED IN ADDITION TO JOINT SEALANT. SEE DETAIL 18-1.5.
  10. IF REQUIRED EXTERIOR VERTICAL WALL SURFACES SHALL BE FACTORY COATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. COATING SHALL BE HIGH BUILD COAT, TAR EPOXY MEETING ASTM D1227. COATING SHALL BE APPLIED IN TWO COATS TO A MINIMUM TOTAL THICKNESS OF 16 MILS.
  11. IF REQUIRED ALL MANHOLES SHALL UTILIZE AN EXTERNAL FRAME AND SEAL JOINT AT ALL JOINTS AND AT THE FRAME/CHIMNEY INTERFACE.
  12. SEAL SHALL BE MADE OF EPDM RUBBER IN ACCORDANCE WITH ASTM D412 OR POLYOLEFIN BACKED EXTERIOR JOINT WRAP IN ACCORDANCE WITH ASTM E-1745, E-877, AND E-980.
  13. EDJ SEAL SHALL HAVE A MINIMUM THICKNESS OF 60 MILS.
  14. POLYOLEFIN BACKED EXTERIOR JOINT WRAP SHALL HAVE A BACKING BAND ELEMENT WITH MINIMUM THICKNESS OF 4 MILS. AND BUTYL ROLLER ADHESIVE WITH MINIMUM THICKNESS OF 80 MILS. SEAL SHALL AGGRESSIVELY BOND TO CONCRETE AND METAL STRUCTURES.
  15. FOR PIPE LARGER THAN 15 INCHES IN DIAMETER, THE MINIMUM INSIDE DIAMETER OF THE MANHOLE SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS BASED ON PIPE SIZE AND ANGLE BETWEEN INLET AND OUTLET PIPING.
  16. 8" MINIMUM DIAMETER MANHOLE SHALL BE REQUIRED WHEN DEPTH EXCEEDS 15' UNLESS OTHERWISE APPROVED BY PARTICIPATING UTILITY.
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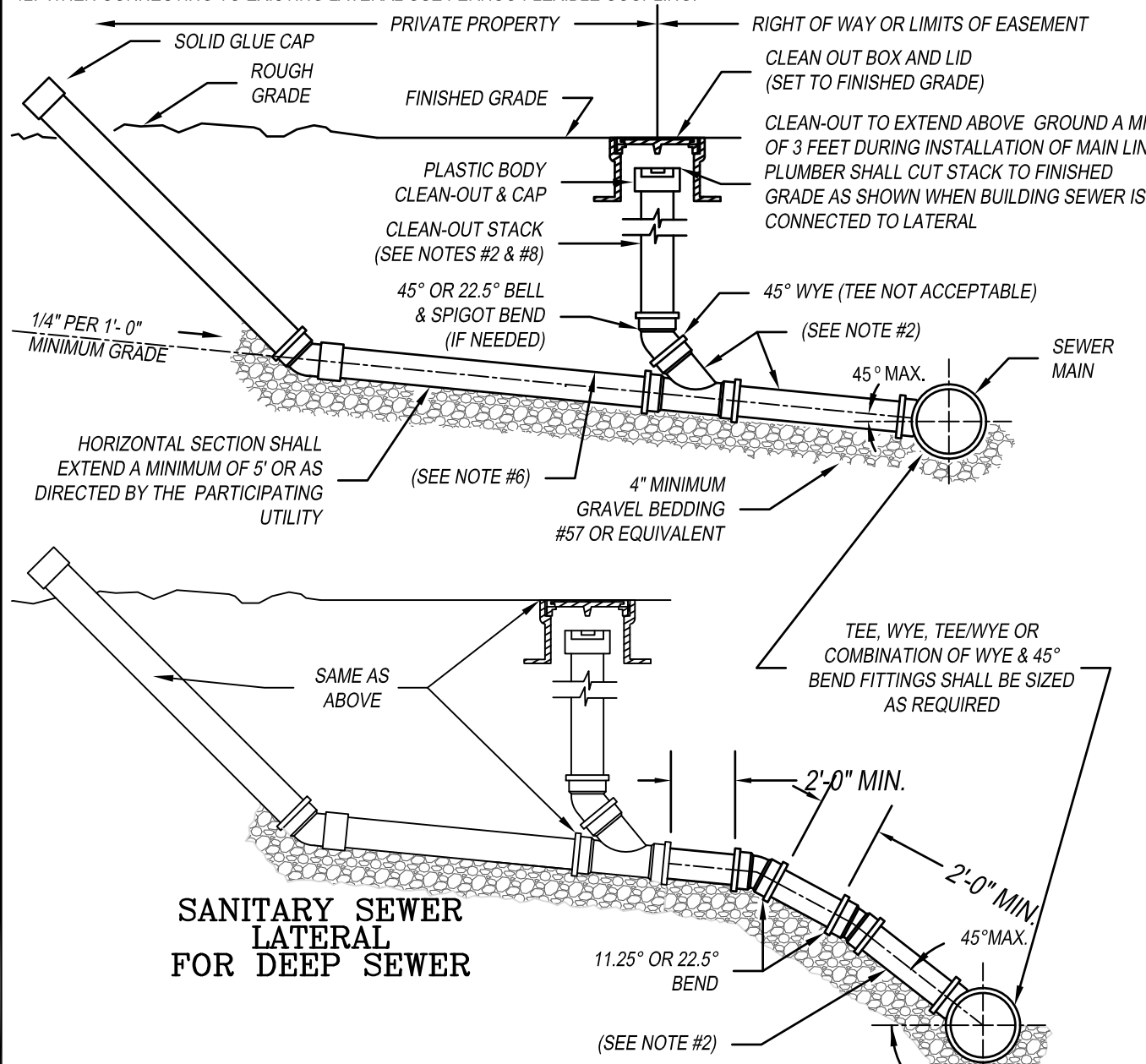


WESTERN VIRGINIA REGIONAL – CONSTRUCTION DETAIL

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

08/01/15

1. TRAFFIC BEARING BOX AND UD REQUIRED IN TRAFFIC AREAS (CAPTOL FLOORING VIB-9'S).
2. SEWER LATERAL AND CLEANOUT PIPING SHALL BE ASTM D3034 SDR 26. SEWER LATERAL FITTINGS SHALL BE OF SAME SDR RATING AS THE SEWER MAIN. SCHEDULE 40 SOLVENT WELD PIPE AND FITTINGS MAY BE USED FOR THE SEWER LATERAL AND CLEANOUT ASSEMBLY WITH APPROVAL FROM THE PARTICIPATING UTILITY.
3. ALL PIPE SHALL BE OF SAME SIZE.
4. NO BENDS ARE ALLOWED IN THE LATERAL FROM THE MAIN TO THE CLEANOUT STACK WYE. (EXCEPT FOR DEEP SEWER, AS SHOWN BELOW).
5. ALL MAIN LINE TAPS ON ACTIVE MAINS SHALL BE PERFORMED BY PARTICIPATING UTILITY.
6. PIPING ON PRIVATE SIDE OF CLEANOUT TO BE INSTALLED PER GOVERNING JURISDICTION REQUIREMENTS.
7. MINIMUM LATERAL SIZE: 4" FOR RESIDENTIAL SERVICE; 8" FOR NON-RESIDENTIAL SERVICE.
8. SEWER CLEANOUTS SHALL BE SAME SIZE AS SEWER LATERAL.
9. MINIMUM COVER FOR ALL SEWER LATERALS SHALL BE THREE (3) FEET.
10. PROPERTY OWNER RESPONSIBLE FOR INSTALLING CLEANOUT ON PROPERTY LINE (IN ACCORDANCE WITH THIS DETAIL) WHEN MAINTENANCE OCCURS.
11. LOWER EXPOSED FINISH FLOOR ELEVATION SHALL BE A MINIMUM OF THREE FEET (3') ABOVE THE TOP OF THE MAIN AT THE POINT WHERE THE SERVICE LATERAL CONNECTS TO THE MAIN.
12. WHEN CONNECTING TO EXISTING LATERAL USE FERNCO FLEXIBLE COUPLING.

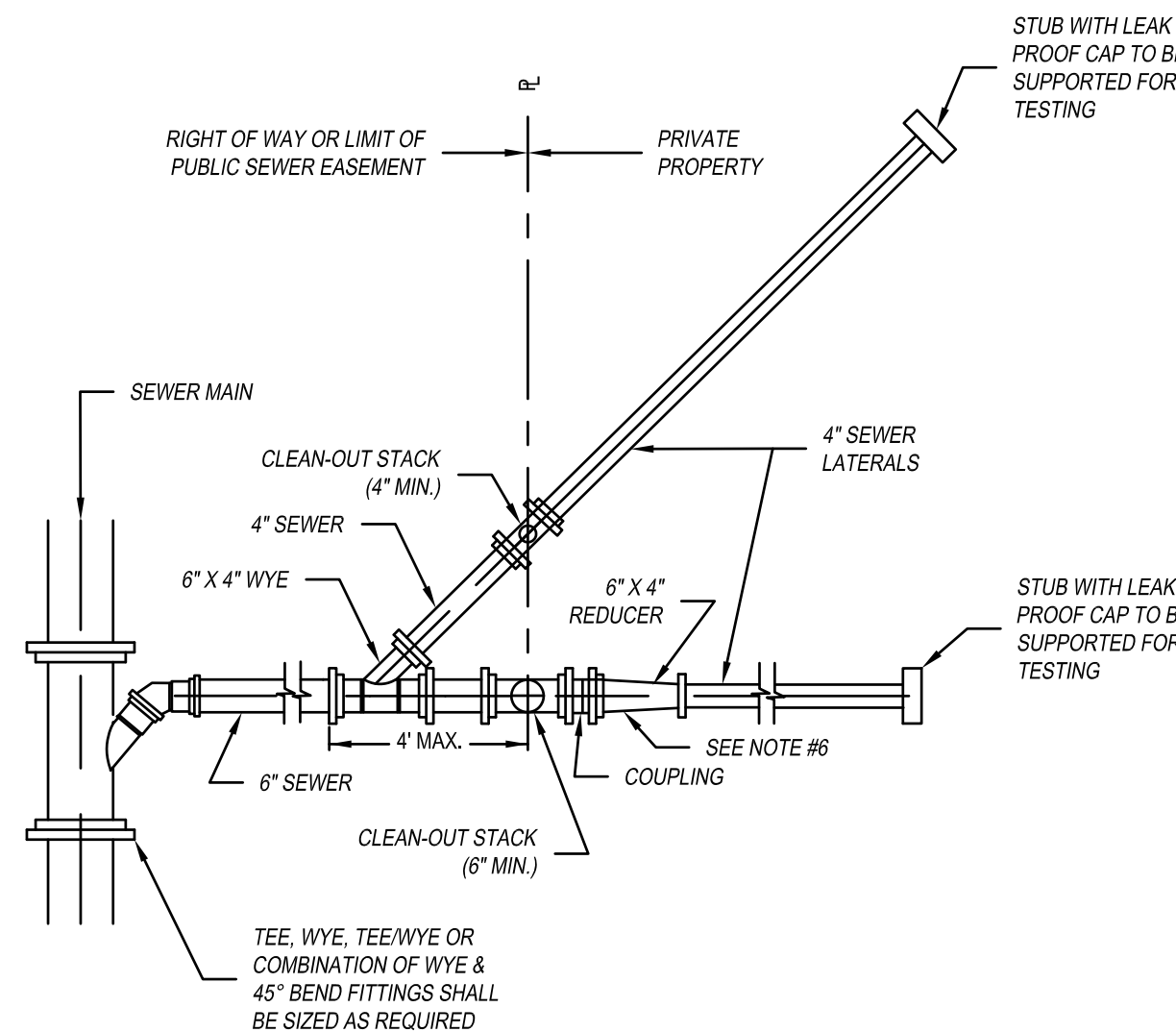


WESTERN VIRGINIA REGIONAL – CONSTRUCTION DETAIL

SANITARY SEWER LATERAL

01/01/14

1. TRAFFIC BEARING BOX REQUIRED IN TRAFFIC AREAS.
2. SEWER LATERAL AND CLEANOUT PIPING SHALL BE ASTM D3034 SDR 26. SEWER LATERAL FITTINGS SHALL BE OF SAME SDR RATING AS THE SEWER MAIN. SCHEDULE 40 SOLVENT WELD PIPE AND FITTINGS MAY BE USED FOR THE SEWER LATERAL AND CLEANOUT ASSEMBLY WITH APPROVAL FROM THE PARTICIPATING UTILITY.
3. ALL PIPE SHALL BE OF SIZE SHOWN.
4. NO REVS ARE ALLOWED IN THE LATERAL FROM THE MAIN TO THE CLEAN-OUT STACK WYE. (EXCEPT AS NOTED.)
5. ALL MAIN LINE TAPS ON ACTION MAIN SHALL BE PERFORMED BY PARTICIPATING UTILITY.
6. PIPING ON PRIVATE SIDE OF CLEANOUT TO BE INSTALLED PER GOVERNING JURISDICTION REQUIREMENTS.
7. MINIMUM COVER FOR ALL SEWER LATERALS SHALL BE THREE (3) FEET.
8. PROPERTY OWNER RESPONSIBLE FOR INSTALLING CLEANOUT ON PROPERTY LINE WHEN MAINTENANCE OCCURS, IN ACCORDANCE WITH THIS DETAIL.
9. COVER SEWER ELEVATION SHALL BE A MINIMUM OF THREE FEET (3') ABOVE THE TOP OF THE MAIN AT THE POINT WHERE THE SERVICE LATERAL CONNECTS TO THE MAIN.
10. WHEN CONNECTING TO EXISTING LATERAL USE FERRO FLEXIBLE COUPLING.

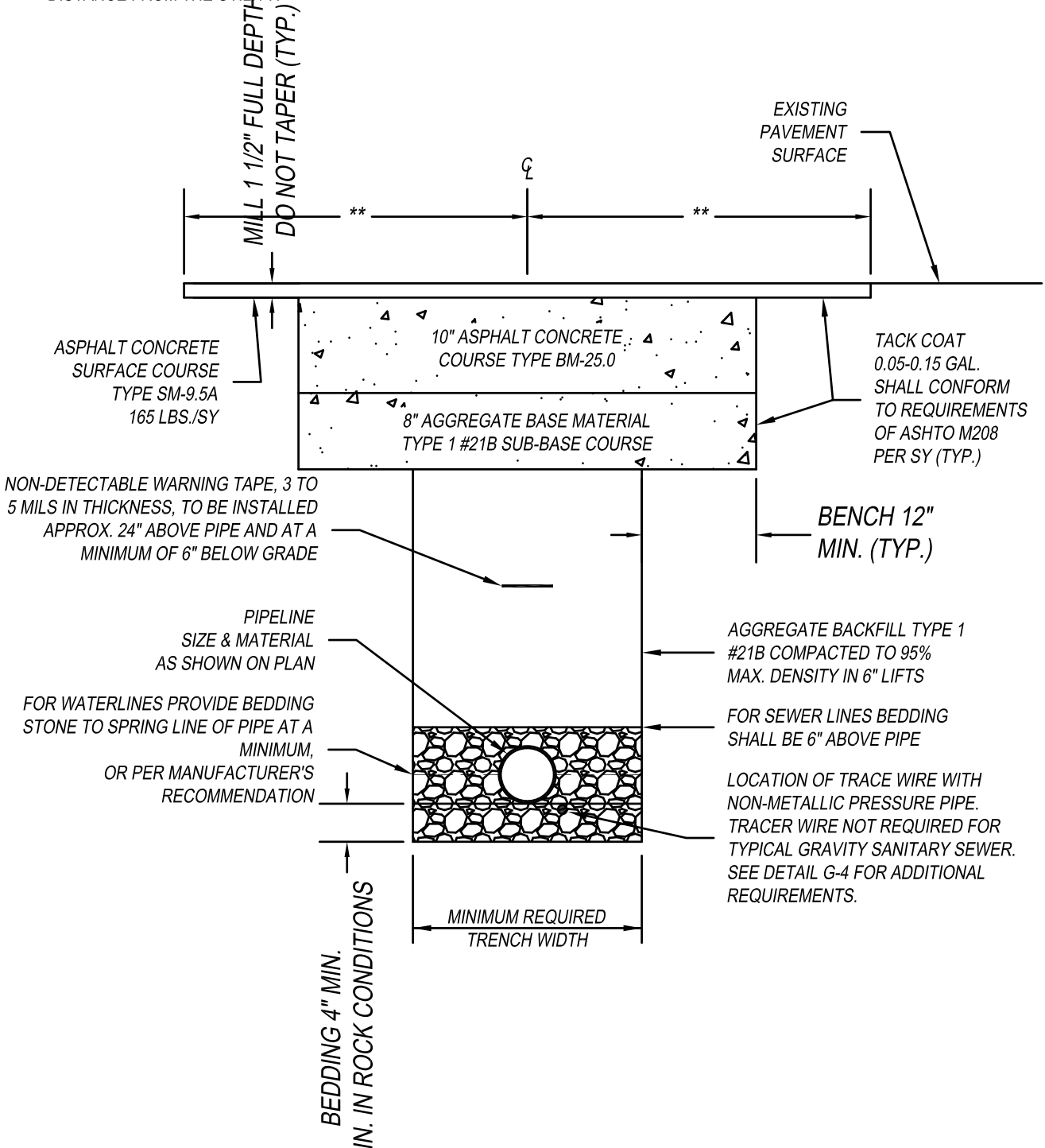


WESTERN VIRGINIA REGIONAL – CONSTRUCTION DETAIL

DOUBLE LATERAL  
COMBINED 6" BY TWO 4" LATERALS

01/01/14

- ALL PAVEMENT MARKINGS DAMAGED OR DESTROYED BY TRENCH EXCAVATION ACTIVITY SHALL BE REPLACED BY THE PERMIT PER VDOT SPECIFICATIONS.
- ALL PVC PIPE SHALL BE BEDDED IN COMPACTED VDOT #57 OR R08 STONE.
- FOR DETAIL FOR EXCAVATION OF EXISTING ASPHALT CONCRETE PAVEMENT SECTIONS.
- THE EXTENT OF PAVEMENT RESTORATION FOR ALL OTHER PAVEMENT TYPES SHALL BE DETERMINED BY THE DISTRICT ADMINISTRATORS DESIGNEE.
- THE TRAVEL SURFACE MINIMUM FULL PAVEMENT WIDTH FOR OPEN CUT TRENCHING ALONG ROAD CENTERLINE OR 25' (MINIMUM) FOR PERPENDICULAR CROSSINGS.
- THE TRACER WIRE SHALL BE PLACED ALONG THE LOWER QUADRANT OF THE PIPE. THE WIRE SHALL NOT TOUCH THE PIPE. THE WIRE SHALL BE PLACED AT A MINIMUM OF 6" FROM THE PIPE. NON-METALLIC SPACERS MAY BE USED TO MAINTAIN A SET DISTANCE FROM THE UTILITY.



WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL

VDOT LAND USE PERMIT  
OPEN CUT PAVEMENT RESTORATION

01/01/14



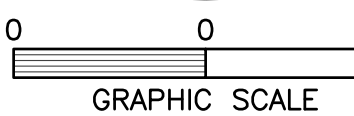
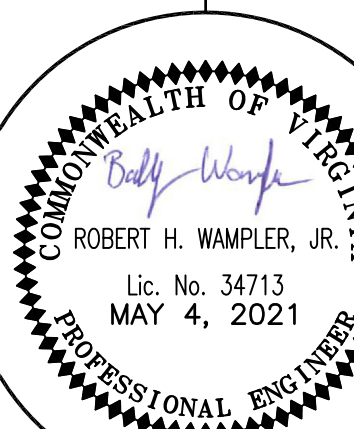
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**PRESERVE AT ASHLEY  
BOTETOURT COUNTY**

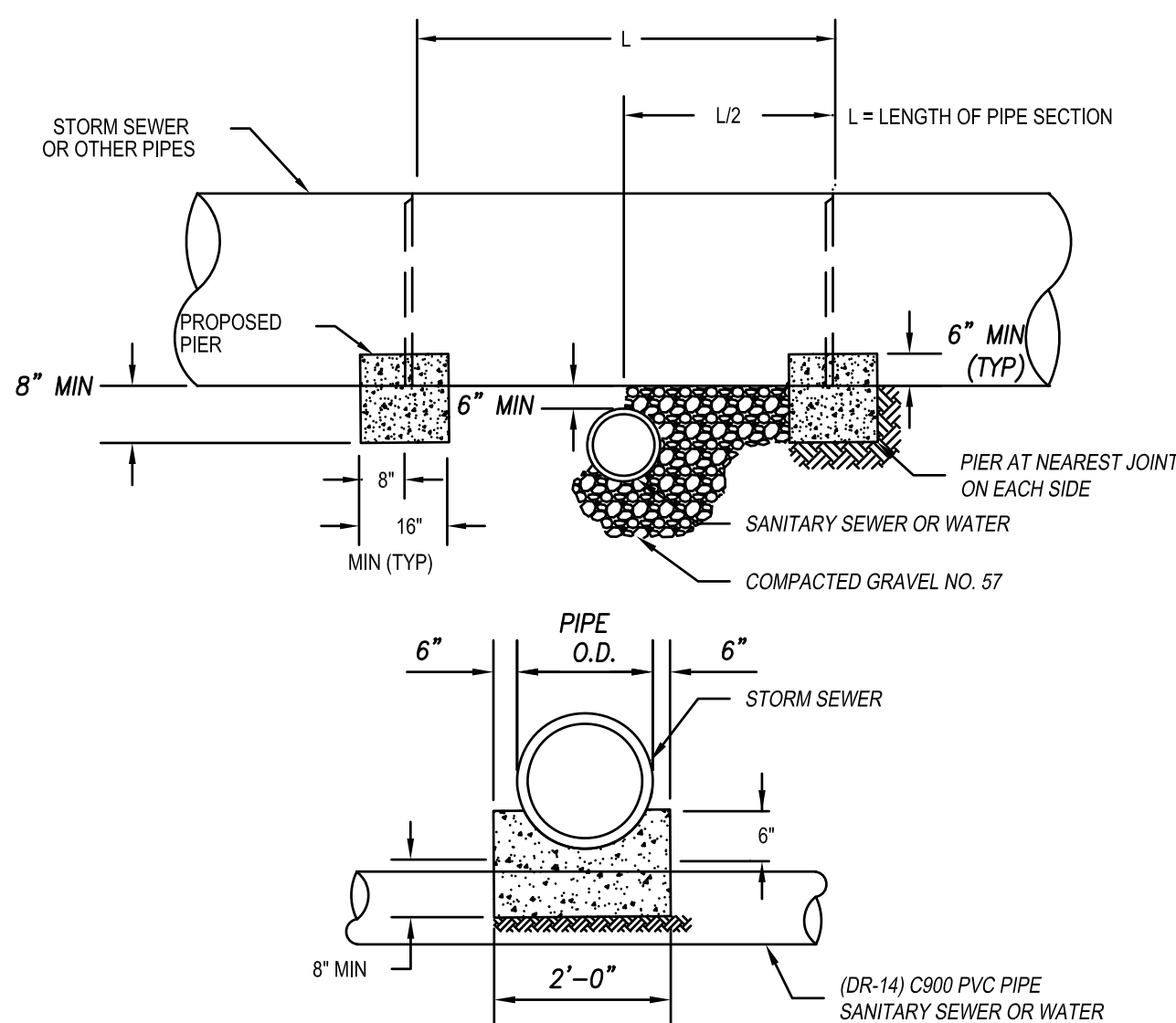
## FRONT LOTS DEVELOPMENT SANITARY DETAILS



PROJECT:	20004
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## C20

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 REGIONAL – CONSTRUCTION DETAIL

CONCRETE PIER

01/01/14