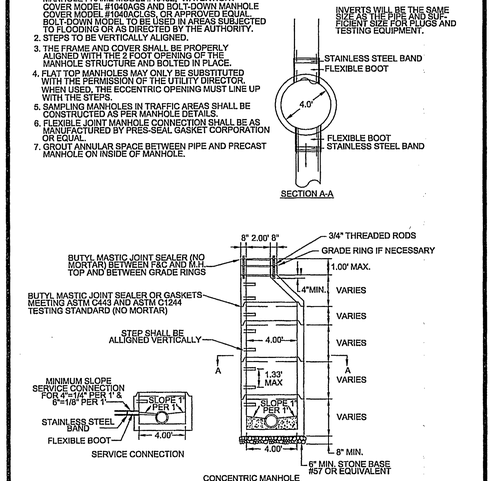
NOTES:

1. ALL MANHOLE FRAMES AND COVERS SHALL BE EAST JORDAN IRON WORKS, INC. WATERTIGHT MANHOLE FRAME MODEL #1045Z, WATERTIGHT COVER MODEL #1040AGS AND BOLT-DOWN MANHOLE COVER MODEL #1040ACLGS, OR APPROVED EQUAL. BOLT-DOWN MODEL TO BE USED IN AREAS SUBJECTED TO FLOODING OR AS DIRECTED BY THE AUTHORITY.
2. STEPS TO BE VERTICALLY ALIGNED.
3. THE FRAME AND COVER SHALL BE PROPERLY ALIGNED WITH THE 2 FOOT OPENING OF THE MANHOLE STRUCTURE AND BOLTED 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. FLEXIBLE JOINT MANHOLE CONNECTION SHALL BE AS MANUFACTURED BY PRES-SEAL GASKET CORPORATION OR EQUAL.
7. GROUT ANNULAR SPACE BETWEEN PIPE AND PRECAST MANHOLE ON INSIDE OF MANHOLE.

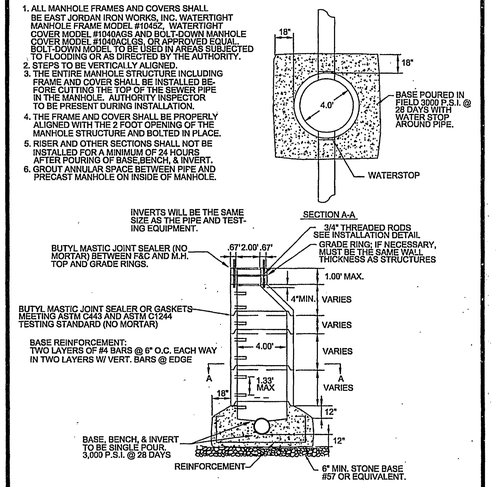


WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS

REVISION	DATE		4' STANDARD MANHOLE FOR PIPE 15" OR SMALLER	S-01
07/01/04				
03/01/06				

NOTES:

1. ALL MANHOLE FRAMES AND COVERS SHALL BE EAST JORDAN IRON WORKS, INC. WATERTIGHT MANHOLE FRAME MODEL #1045Z, WATERTIGHT COVER MODEL #1040AGS AND BOLT-DOWN MANHOLE COVER MODEL #1040ACLGS, OR APPROVED EQUAL. BOLT-DOWN MODEL TO BE USED IN AREAS SUBJECTED TO FLOODING OR AS DIRECTED BY THE AUTHORITY.
2. STEPS TO BE VERTICALLY ALIGNED.
3. THE ENTIRE MANHOLE STRUCTURE INCLUDING FRAME AND COVER SHALL BE INSTALLED BEFORE CUTTING THE TOP OF THE SEWER PIPE IN THE MANHOLE. AUTHORITY INSPECTOR TO BE PRESENT DURING INSTALLATION.
4. THE FRAME AND COVER SHALL BE PROPERLY ALIGNED WITH THE 2 FOOT OPENING OF THE MANHOLE STRUCTURE AND BOLTED IN PLACE.
5. RISER AND OTHER SECTIONS SHALL NOT BE INSTALLED FOR A MINIMUM OF 24 HOURS AFTER POURING OF BASE,BENCH, & INVERT.
6. GROUT ANNULAR SPACE BETWEEN PIPE AND PRECAST MANHOLE ON INSIDE OF MANHOLE.

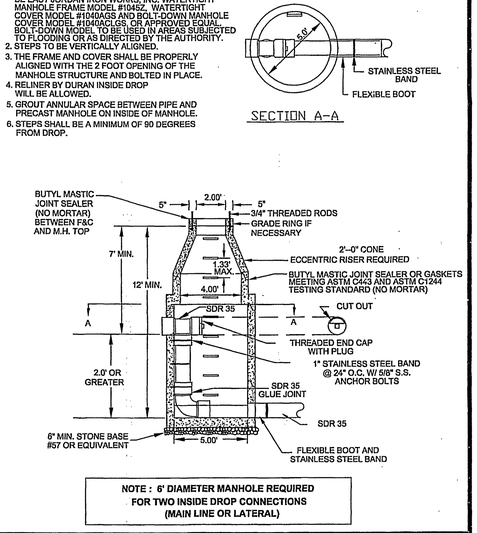


WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS

REVISION	DATE		STRADDLE MANHOLE FOR PIPE 15" OR SMALLER	S-02
07/01/04				
03/01/06				

NOTES:

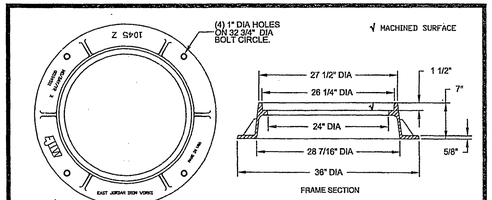
1. ALL MANHOLE FRAMES AND COVERS SHALL BE EAST JORDAN IRON WORKS, INC. WATERTIGHT MANHOLE FRAME MODEL #1045Z, WATERTIGHT COVER MODEL #1040AGS AND BOLT-DOWN MANHOLE COVER MODEL #1040ACLGS, OR APPROVED EQUAL. BOLT-DOWN MODEL TO BE USED IN AREAS SUBJECTED TO FLOODING OR AS DIRECTED BY THE AUTHORITY.
2. STEPS TO BE VERTICALLY ALIGNED.
3. THE FRAME AND COVER SHALL BE PROPERLY ALIGNED WITH THE 2 FOOT OPENING OF THE MANHOLE STRUCTURE AND BOLTED IN PLACE.
4. RELINER BY DURAN INSIDE DROP WILL BE ALLOWED.
5. GROUT ANNULAR SPACE BETWEEN PIPE AND PRECAST MANHOLE ON INSIDE OF MANHOLE.
6. STEPS SHALL BE A MINIMUM OF 90 DEGREES FROM DROP.

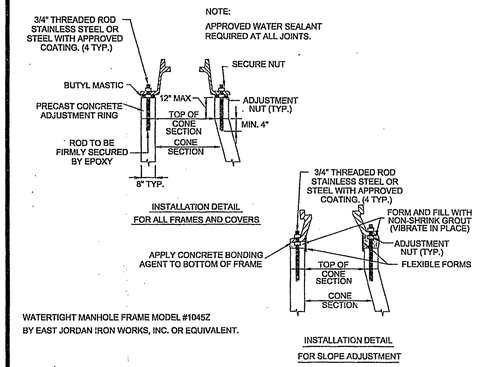


NOTE : 6' DIAMETER MANHOLE REQUIRED FOR TWO INSIDE DROP CONNECTIONS (MAIN LINE OR LATERAL)

WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS

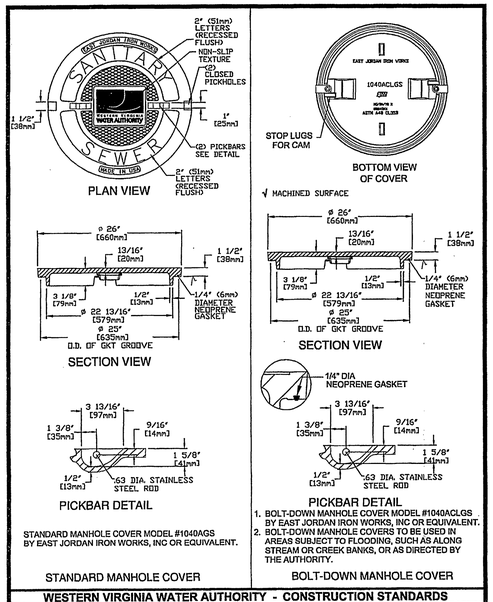
REVISION	DATE		MAINLINE OR LATERAL INSIDE DROP MANHOLE (FOR USE WITH PVC PIPE)	S-04
07/01/04				
03/01/06				





WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS

REVISION	DATE		WATERTIGHT MANHOLE FRAME	S-05
07/01/04				



STANDARD MANHOLE COVER MODEL #1040AGS BY EAST JORDAN IRON WORKS, INC OR EQUIVALENT.

STANDARD MANHOLE COVER

BOLT-DOWN MANHOLE COVER

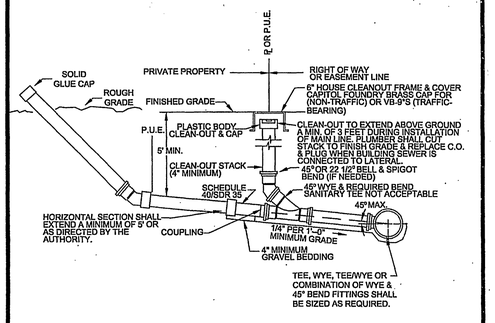
1. BOLT-DOWN MANHOLE COVER MODEL #1040ACLGS BY EAST JORDAN IRON WORKS, INC OR EQUIVALENT.
2. BOLT-DOWN MANHOLE COVERS TO BE USED IN AREAS SUBJECT TO FLOODING, SUCH AS ALONG STREAM OR CREEK BANKS, OR AS DIRECTED BY THE AUTHORITY.

WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS

REVISION	DATE		WATERTIGHT MANHOLE COVER	S-06
07/01/04				
03/01/06				

GENERAL NOTES:

1. TRAFFIC BEARING BOX REQUIRED IN TRAFFIC AREAS.
2. ALL PIPE AND FITTINGS SHALL BE OF SIMILAR MATERIAL.
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 AS NOTED)
5. ALL MAIN LINE TAPS ON ACTIVE MAINS WILL BE PERFORMED BY WESTERN VIRGINIA WATER AUTHORITY.
6. PIPING BEHIND CLEANOUT TO BE INSTALLED PER BOCA CODE.
7. MINIMUM LATERAL SIZE:
   4" FOR RESIDENTIAL SERVICE
   6" FOR NON-RESIDENTIAL SERVICE
8. MINIMUM COVER FOR ALL SEWER LATERALS SHALL BE THREE(3') FEET.
9. PROPERTY OWNER RESPONSIBLE FOR INSTALLING CLEANOUT ON PROPERTY LINE WHEN MAINTENANCE OCCURS, IN ACCORDANCE WITH THIS STANDARD.
10. FLOWLINE AT CLEANOUT WYE SHALL BE A MINIMUM OF THREE FEET (3') BELOW LOWEST SERVED FINISHED FLOOR.

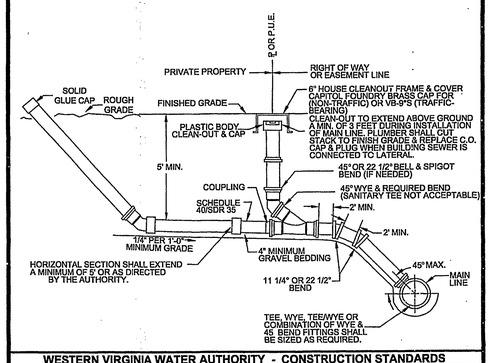


WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS

REVISION	DATE		SANITARY SEWER LATERAL	S-08
07/01/04				
03/01/06				

GENERAL NOTES:

1. TRAFFIC BEARING BOX REQUIRED IN TRAFFIC AREA.
2. ALL PIPE AND FITTINGS SHALL BE OF SIMILAR MATERIAL.
3. ALL PIPE SHALL BE OF SAME SIZE.
4. NO BENDS ARE ALLOWED IN THE LATERAL FROM THE MAIN TO THE CLEAN-OUT STACK WYE (EXCEPT AS NOTED.)
5. ALL MAIN LINE TAPS ON ACTIVE MAINS WILL BE PERFORMED BY THE WESTERN VIRGINIA WATER AUTHORITY.
6. PIPING BEHIND CLEANOUT TO BE INSTALLED PER BOCA CODE.
7. MINIMUM LATERAL SIZE:
   4" FOR RESIDENTIAL SERVICE
   6" FOR NON-RESIDENTIAL SERVICE
8. PROPERTY OWNER RESPONSIBLE FOR INSTALLING CLEANOUT ON PROPERTY LINE WHEN MAINTENANCE OCCURS, IN ACCORDANCE WITH THIS STANDARD.
9. FLOWLINE AT CLEANOUT WYE SHALL BE A MINIMUM OF THREE FEET (3') BELOW LOWEST SERVED FINISHED FLOOR.

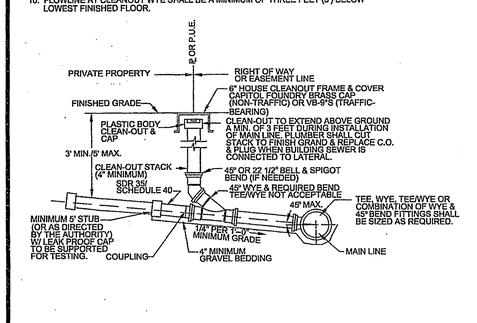


WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS

REVISION	DATE		SANITARY SEWER LATERAL FOR DEEP SEWER	S-09
07/01/04				
03/01/06				

GENERAL NOTES:

1. THIS CONFIGURATION MAY ONLY BE USED IN SPECIAL CASES WHEN SPECIFICALLY DESIGNED BY THE PROJECT ENGINEER AND INDICATED ON SITE PLANS.
2. ALL PIPE AND FITTINGS SHALL BE OF SAME MATERIAL.
3. ALL PIPE SHALL BE OF SAME SIZE.
4. NO BENDS ARE ALLOWED IN THE LATERAL FROM THE MAIN TO THE CLEAN OUT STACK WYE (EXCEPT AS NOTED)
5. ALL MAIN LINE TAPS ON ACTIVE MAINS SHALL BE PERFORMED BY WESTERN VIRGINIA WATER AUTHORITY.
6. PIPING BEHIND CLEANOUT TO BE INSTALLED PER BOCA CODE.
7. MINIMUM LATERAL SIZE:
   4" FOR RESIDENTIAL SERVICE
   6" FOR NON-RESIDENTIAL SERVICE
8. MINIMUM COVER FOR ALL SEWER LATERALS SHALL BE THREE (3') FEET.
9. PROPERTY OWNER RESPONSIBLE FOR INSTALLING CLEANOUT ON PROPERTY LINE WHEN MAINTENANCE OCCURS, IN ACCORDANCE WITH THIS STANDARD.
10. FLOWLINE AT CLEANOUT WYE SHALL BE A MINIMUM OF THREE FEET (3') BELOW LOWEST FINISHED FLOOR.



WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS

REVISION	DATE		SANITARY SEWER LATERAL (FOR SPECIAL CASES)	S-10
07/01/04				
03/01/06				

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COMMONWEALTH OF VIRGINIA
WAYNE R. MASSIE
Lic. No. 36495
3/10/10
PROFESSIONAL ENGINEER

CORBIESHAW ROAD
SEWER IMPROVEMENTS
WESTERN VIRGINIA
WATER AUTHORITY
ROANOKE, VIRGINIA

MRK	DATE	REVISION DESCRIPTION

COMM NO: 209049
DATE: MARCH 2010
DRAWN: LDB DESIGN: WRM
CHECK: TRW
CAD FILE: 09049-C-503.dwg
SHEET TITLE
SITE IMPROVEMENT DETAILS
SHT. NO. C-503
REV. NO. 0