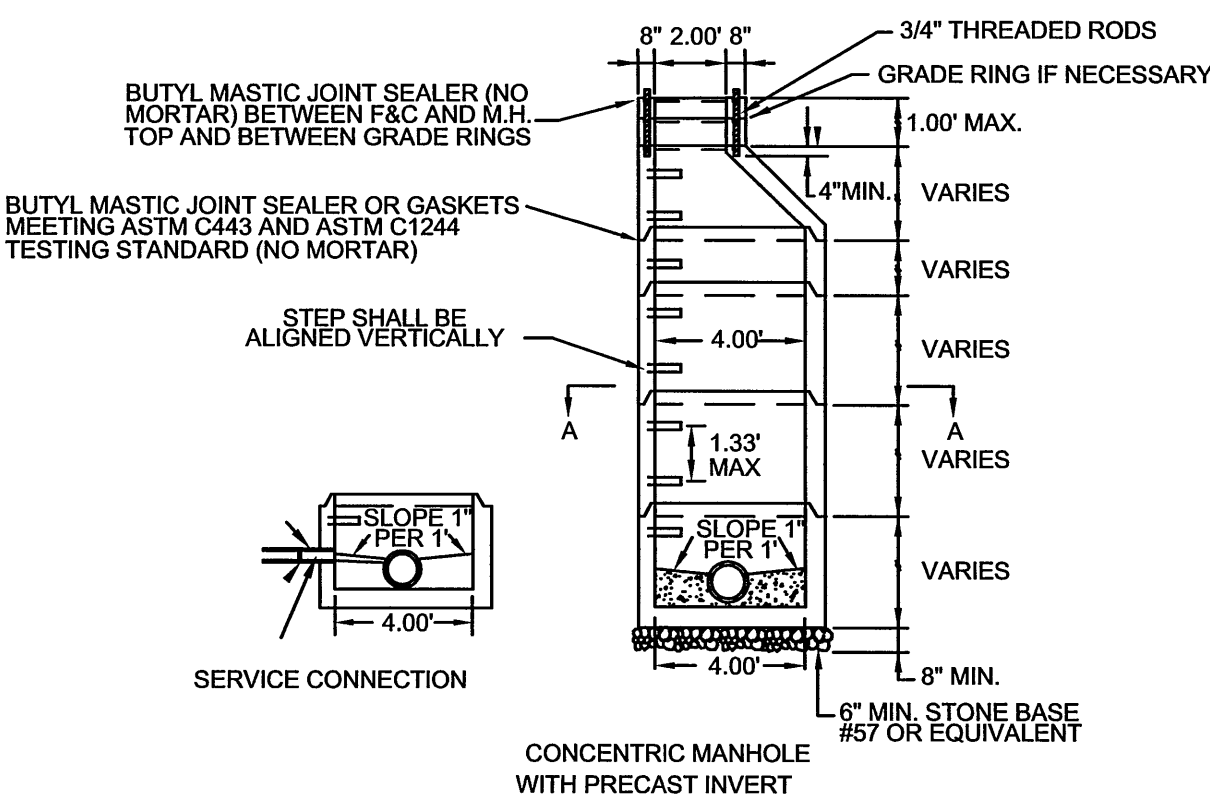
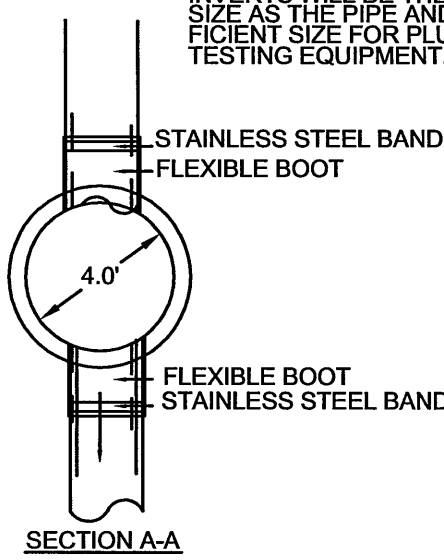
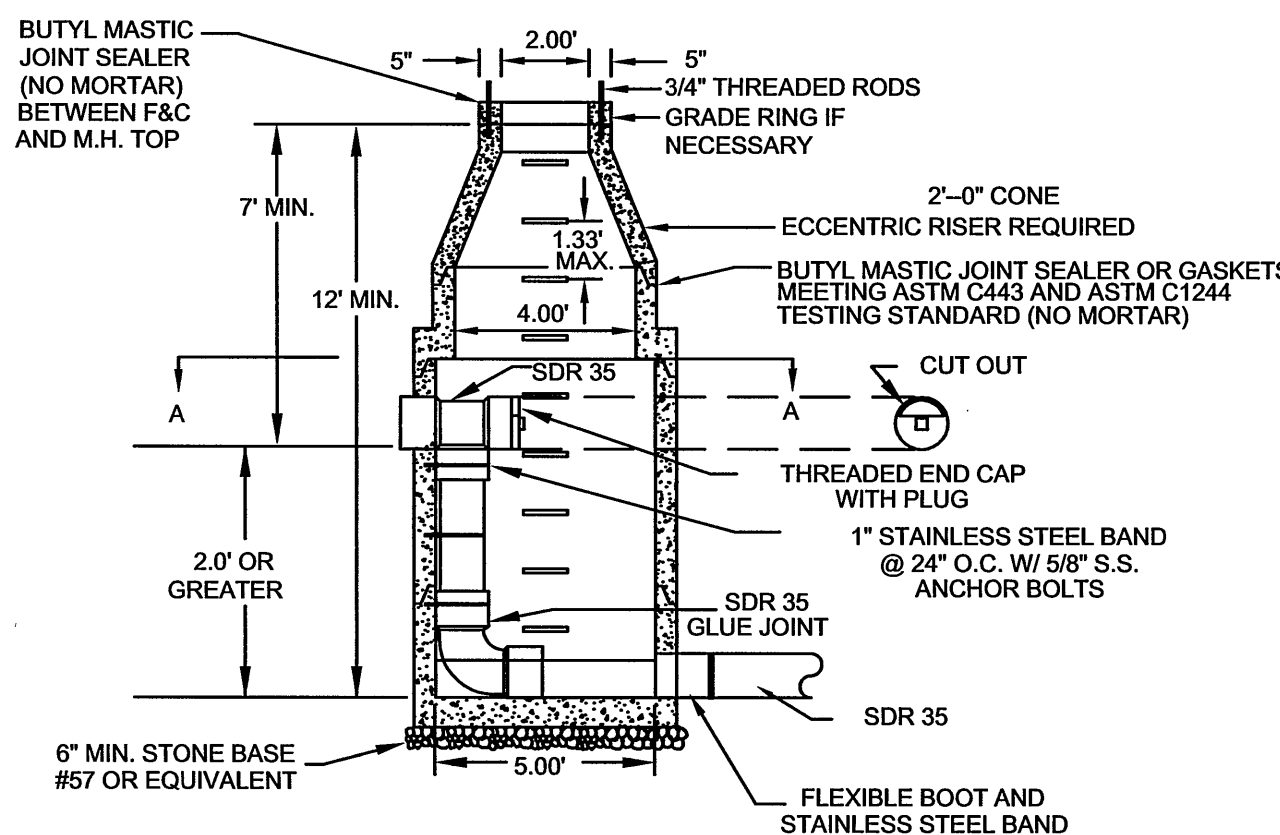
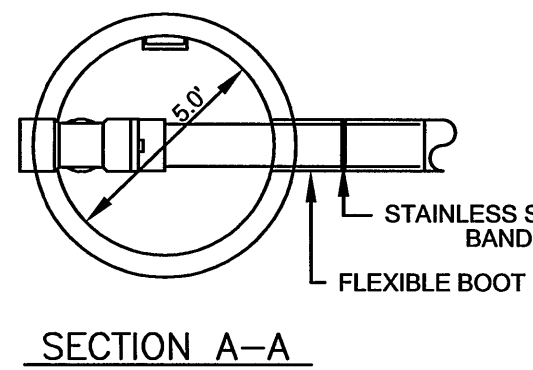


- ALL MANHOLE FRAMES AND COVERS SHALL BE EAST JORDAN IRON WORKS, INC. WATER TIGHT MANHOLE FRAME MODEL #1045Z, WATER TIGHT COVER MODEL #1040AGS, OR APPROVED EQUAL BOLT-DOWN MODEL TO BE USED IN AREAS SUBJECT TO FLOODING OR AS DIRECTED BY THE AUTHORITY.
- STEPS TO BE VERTICALLY ALIGNED.
- THE FRAME AND COVER SHALL BE PROPERLY ALIGNED WITH THE 2 FOOT OPENING OF THE MANHOLE STRUCTURE AND BOLTED IN PLACE.
- FLAT TOP MANHOLES MAY ONLY BE SUBSTITUTED WITH THE PERMISSION OF THE UTILITY DIRECTOR. WHEN USED, THE ECCENTRIC OPENING MUST LINE UP.
- SAMPLING MANHOLES IN TRAFFIC AREAS SHALL BE CONSTRUCTED AS PER MANHOLE DETAILS.
- FLEXIBLE JOINT MANHOLE CONNECTION SHALL BE AS MANUFACTURED BY PRES-SEAL GASKET CORPORATION.
- GROUT ANNUAL SPACE BETWEEN PIPE AND PRECAST MANHOLE ON INSIDE OF MANHOLE.

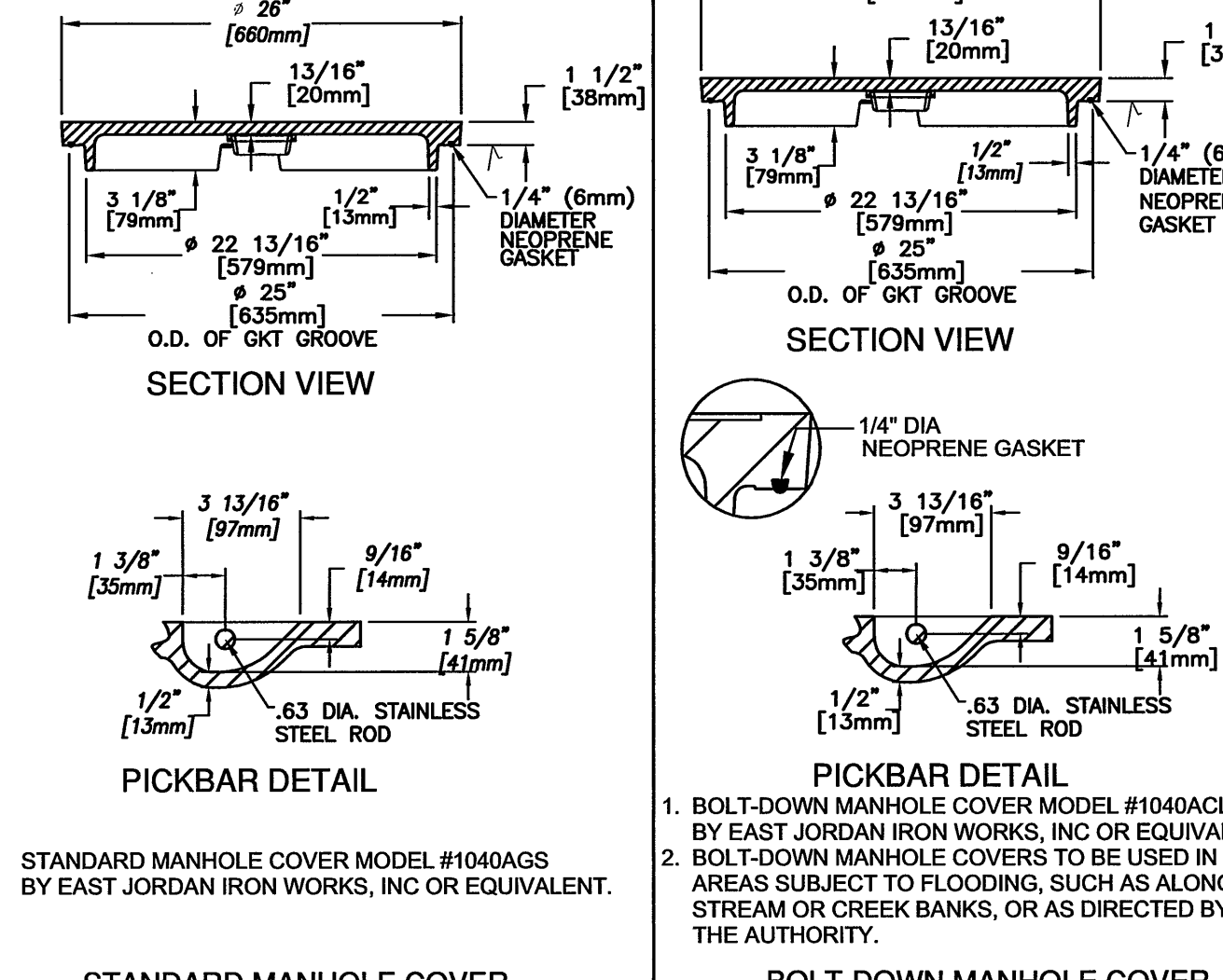
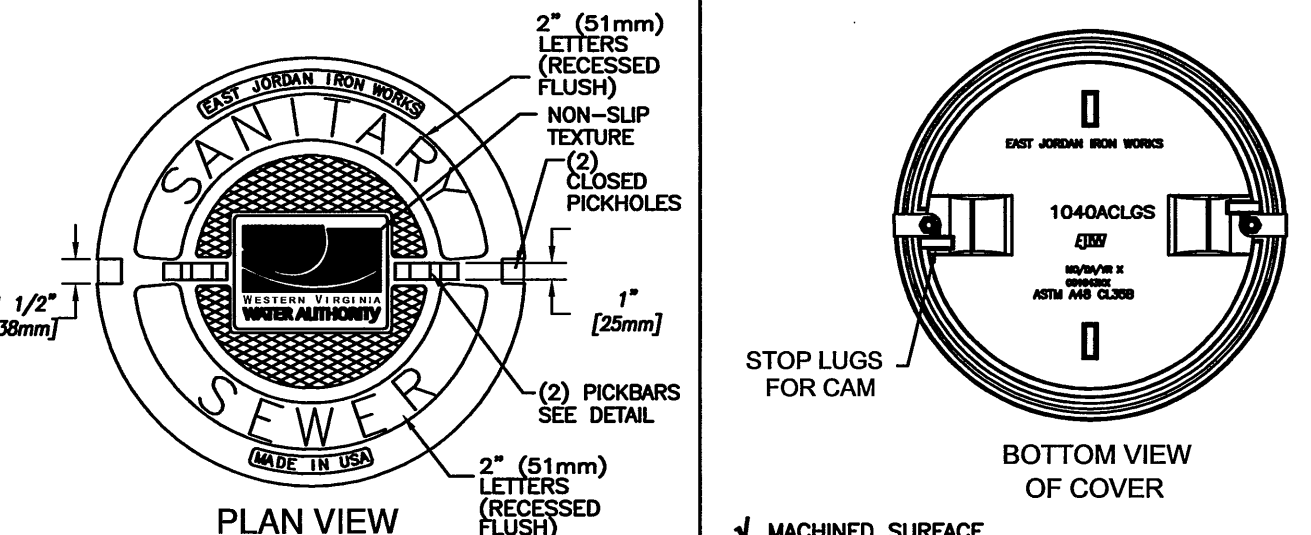
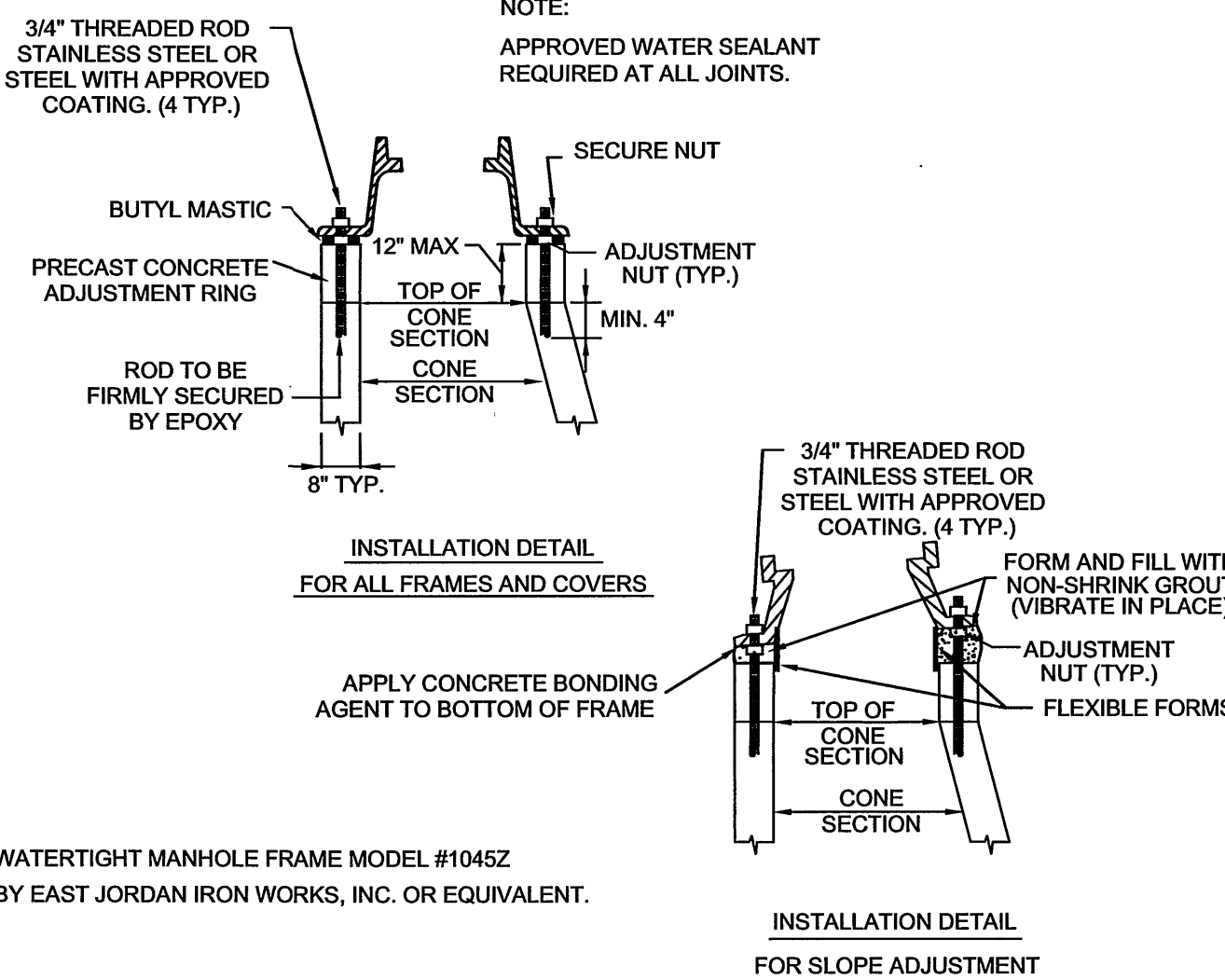
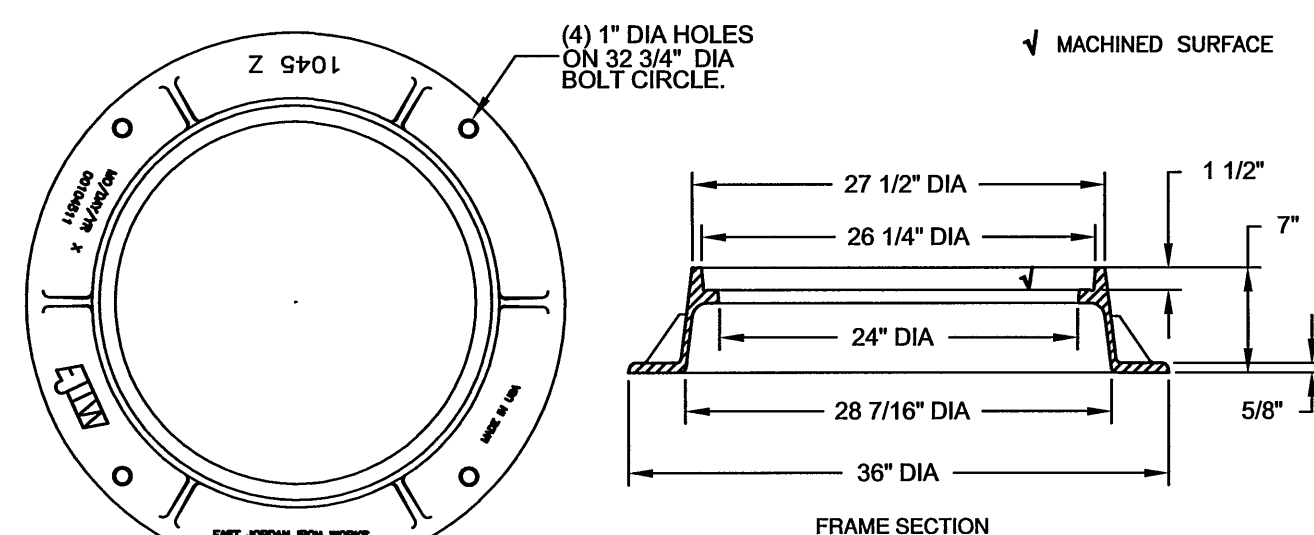


NOTES:

- ALL MANHOLE FRAMES AND COVERS SHALL BE EAST JORDAN IRON WORKS, INC. WATER TIGHT MANHOLE FRAME MODEL #1045Z, WATER TIGHT COVER MODEL #1040AGS, OR APPROVED EQUAL BOLT-DOWN MODEL TO BE USED IN AREAS SUBJECT TO FLOODING OR AS DIRECTED BY THE AUTHORITY.
- STEPS TO BE VERTICALLY ALIGNED.
- THE FRAME AND COVER SHALL BE PROPERLY ALIGNED WITH THE 2 FOOT OPENING OF THE MANHOLE STRUCTURE AND BOLTED IN PLACE.
- RELINER BY DURAN INSIDE DROP WILL BE ALLOWED.
- GROUT ANNUAL SPACE BETWEEN PIPE AND PRECAST MANHOLE ON INSIDE OF MANHOLE.
- 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

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07/01/04	
03/01/06	

4' STANDARD MANHOLE FOR PIPE 15" OR SMALLER S-01

WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS

REVISION DATE	
07/01/04	
03/01/06	

MAINLINE OR LATERAL INSIDE DROP MANHOLE (FOR USE WITH PVC PIPE) S-04

WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS

REVISION DATE	
07/01/04	
03/01/06	

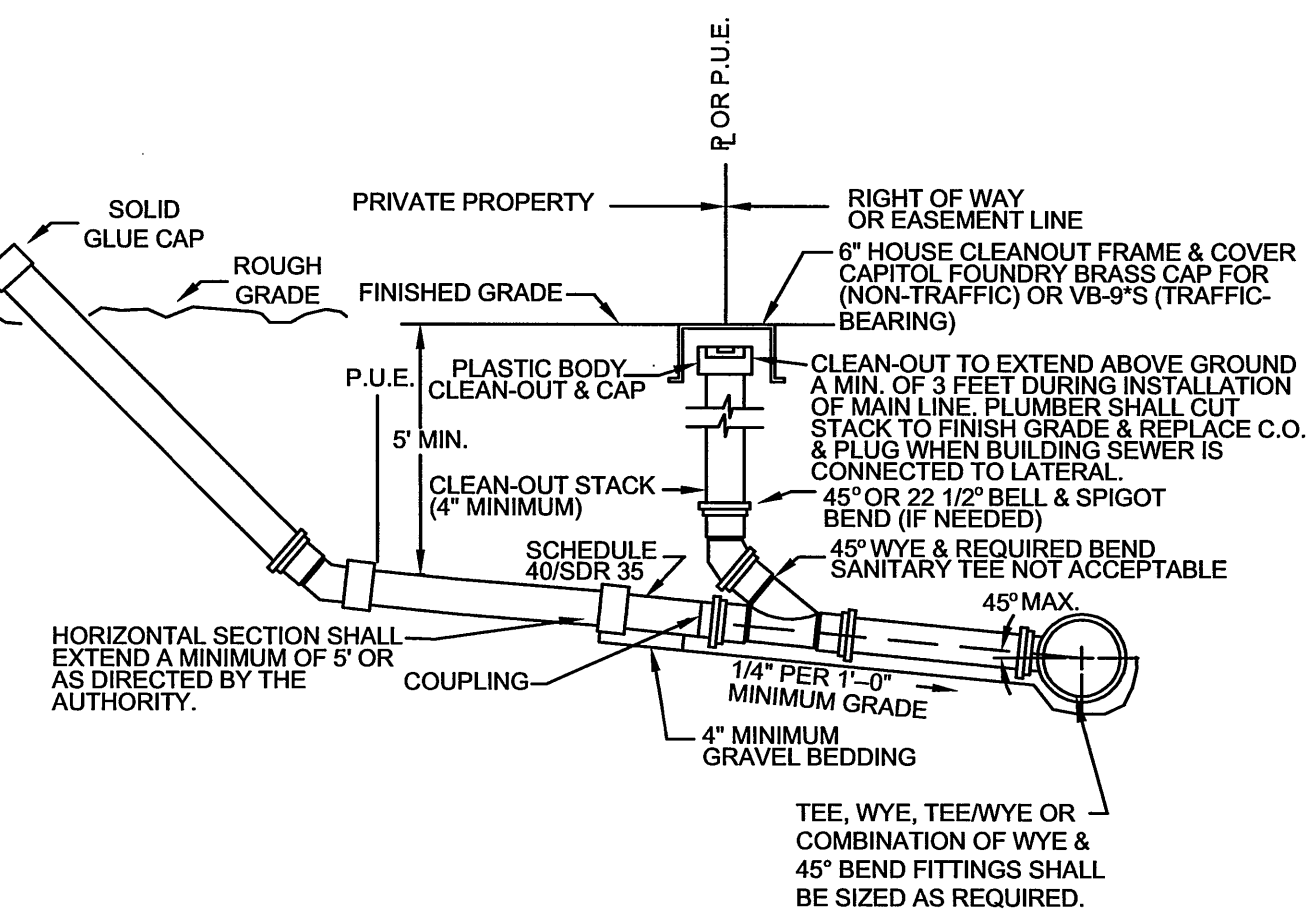
WATERTIGHT MANHOLE FRAME S-05

WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS

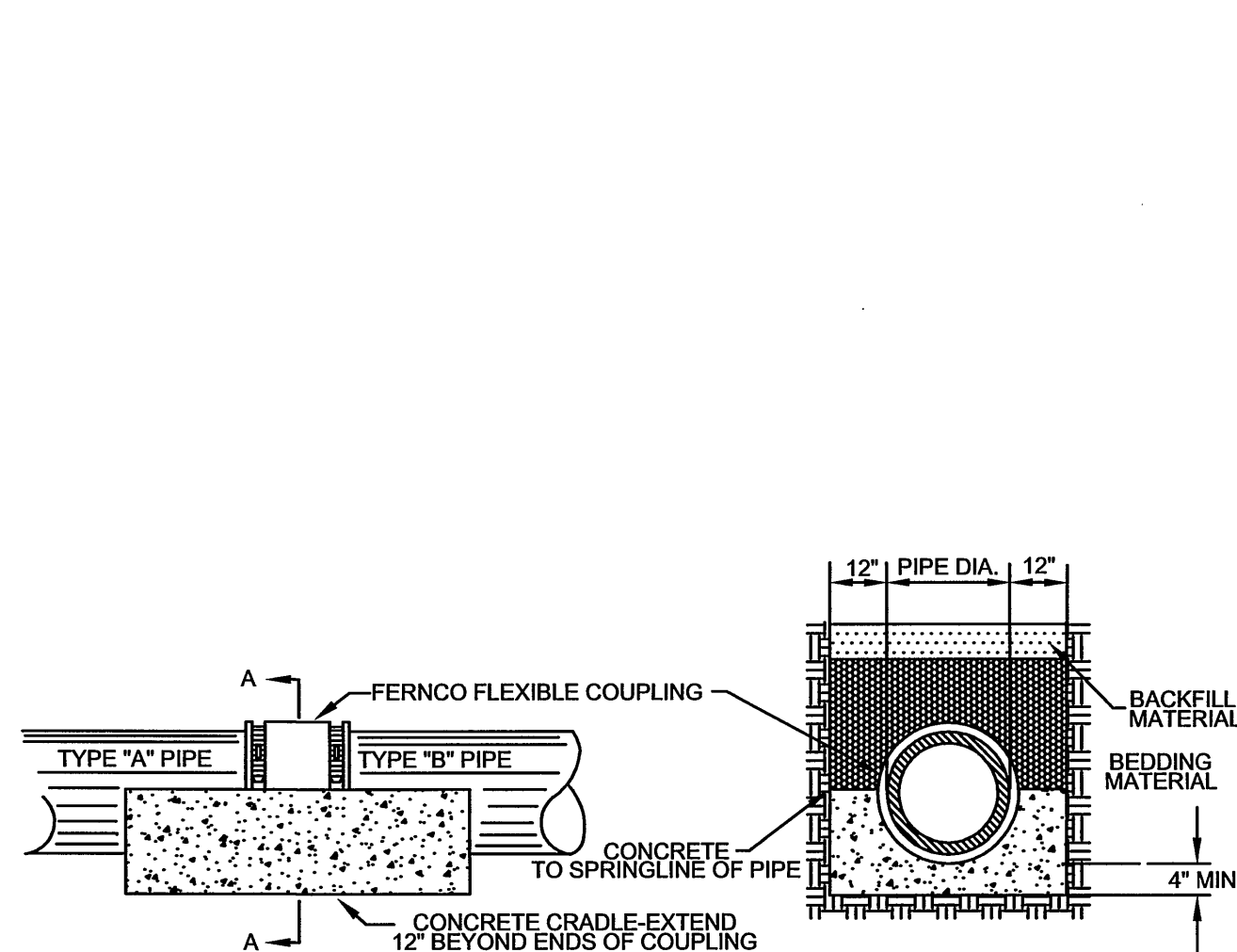
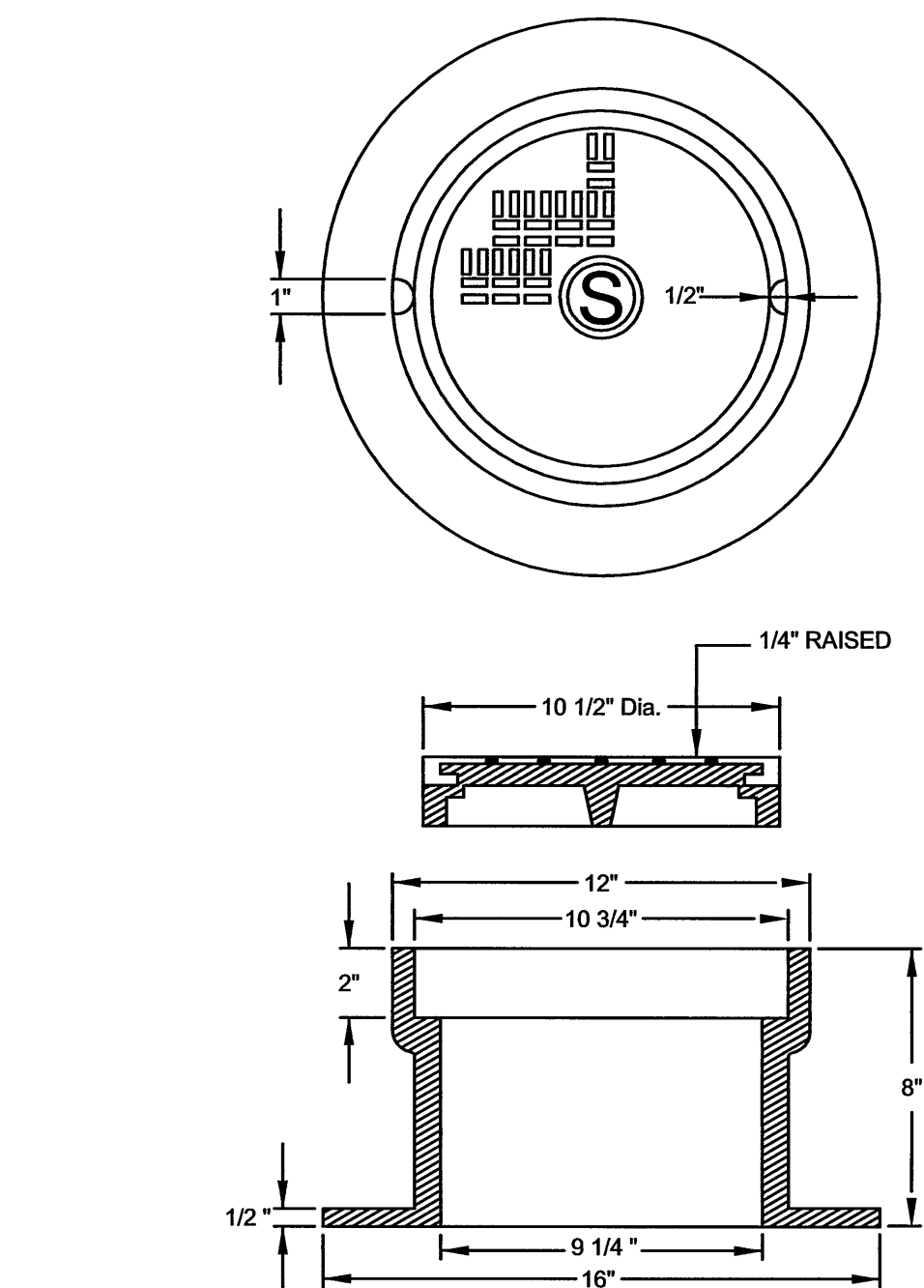
REVISION DATE	
07/01/04	
03/01/06	

WATERTIGHT MANHOLE COVER S-06

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



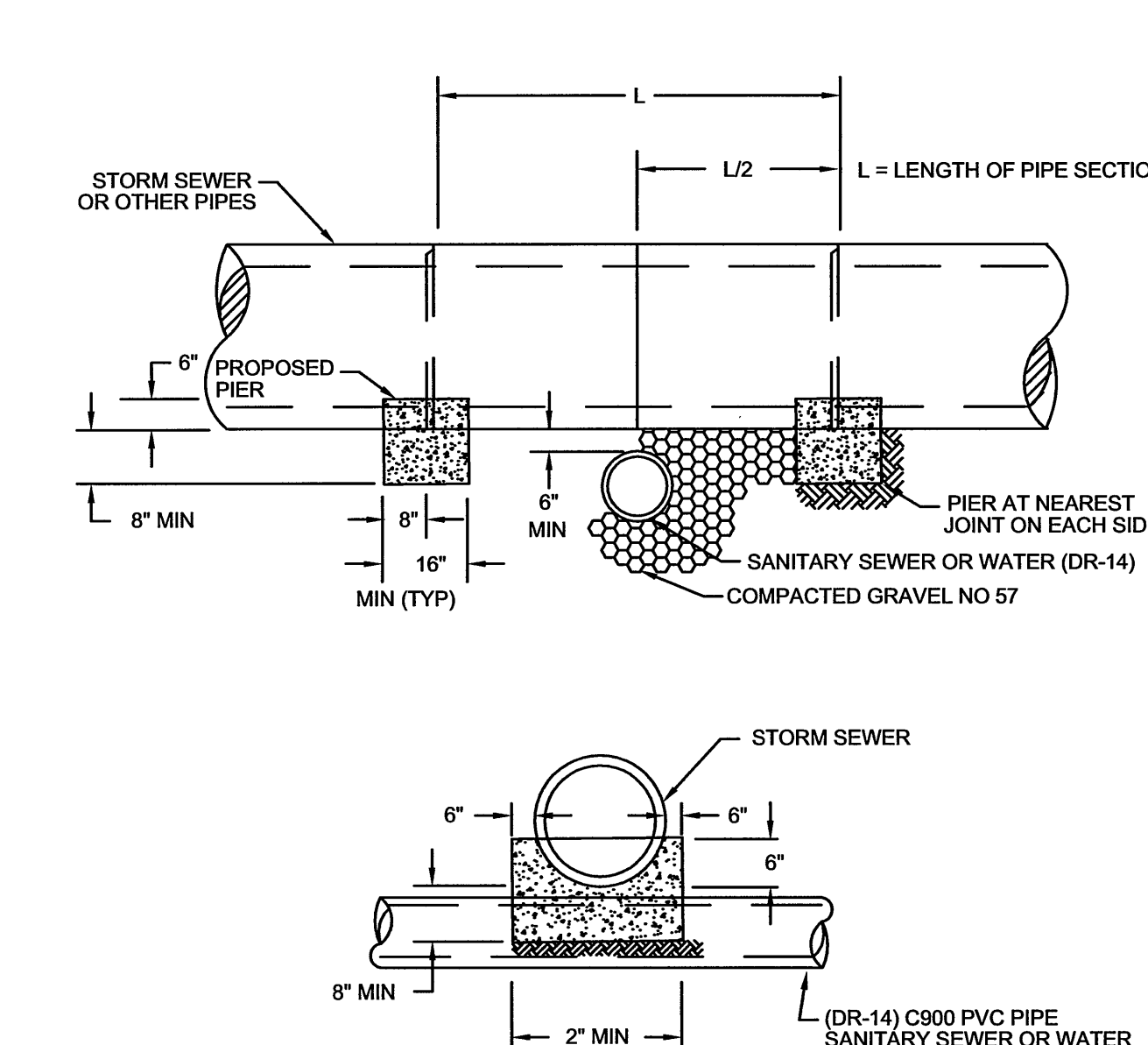
- NOTES:
- A MINIMUM CLEARANCE OF 4 INCHES IS REQUIRED BETWEEN CLEANOUT CAP AND TOP OF COVER.
  - CAPITOL FOUNDRY FRAME AND COVER ITEM #VB-9'S



WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS

REVISION DATE	
07/01/04	
03/01/06	

JOINING DISSIMILAR PIPE FOR USE WITH EXISTING PIPE S-15



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

WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS

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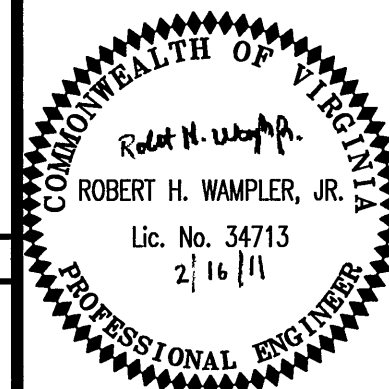
CONCRETE PIER S-16

**ENGINEERING CONCEPTS, INC.**  
20 S. ROANOKE ST., PO BOX 619  
FINCASLE, VIRGINIA 24090  
540.473.1253 FAX: 540.473.1254

**WESTERN VIRGINIA WATER AUTHORITY**

**WESTERN VIRGINIA WATER AUTHORITY**

**WESTERN VA. WATER AUTHORITY**  
**SANITARY SEWER PROJECT**  
**CRYSTAL CREEK - PHASE II**  
**SANITARY SEWER DETAILS**



NA
DATE: MARCH, 2011
PROJECT: 09001
4