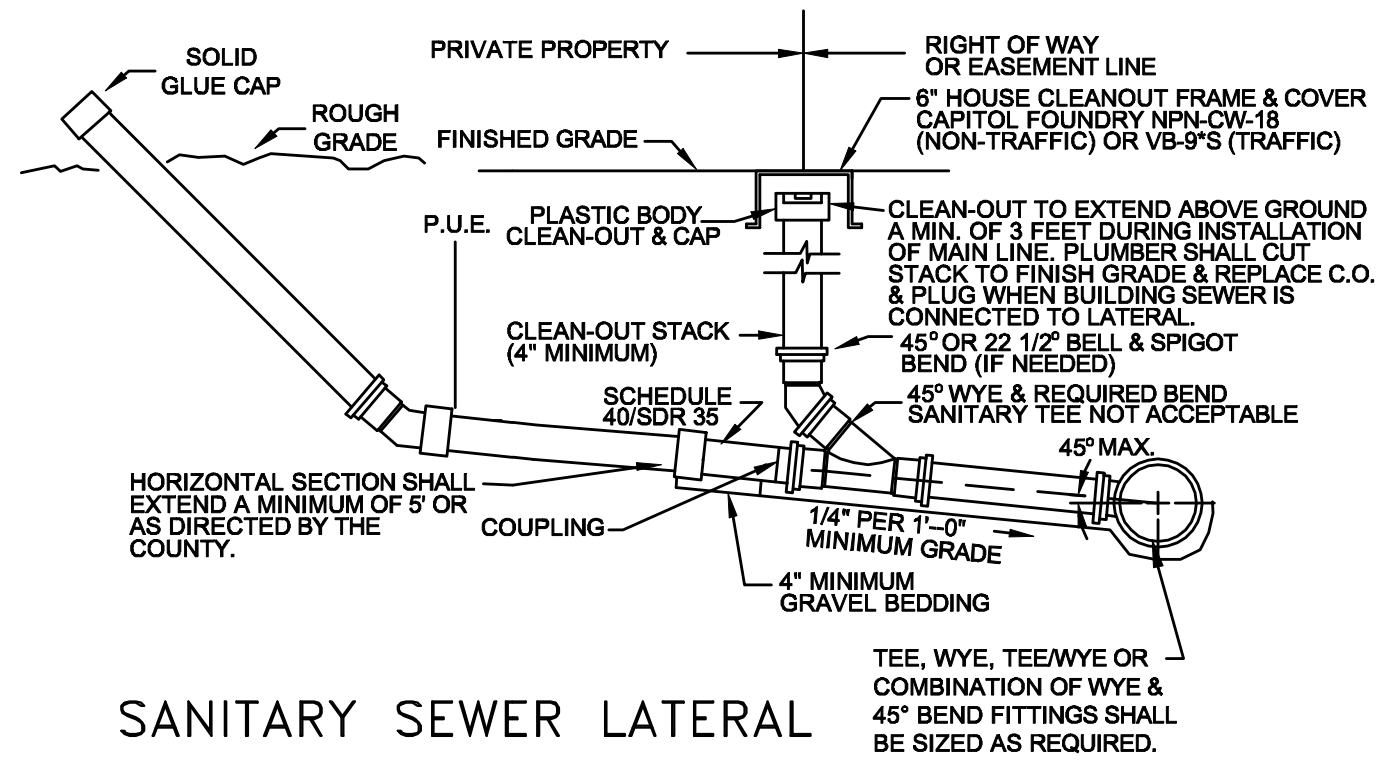
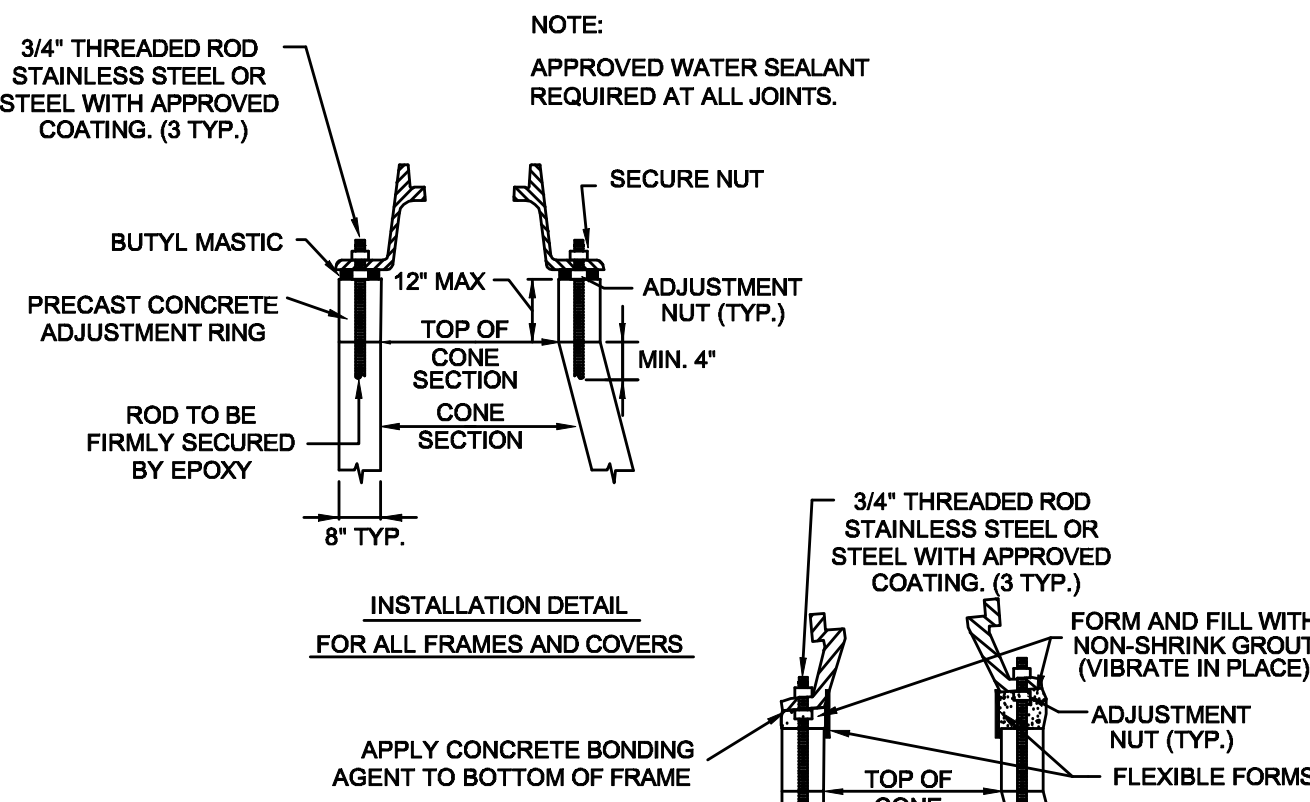
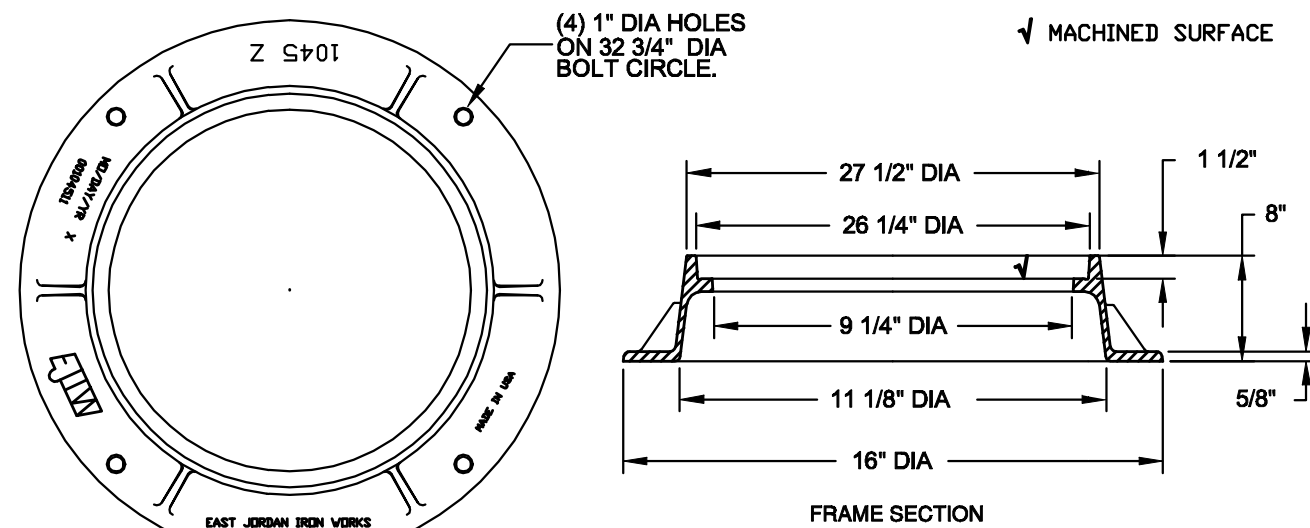


- GENERAL NOTES:
1. TRAFFIC BEARING BOX REQUIRED IN TRAFFIC AREAS.
 2. ALL PIPE AND FITTINGS SHALL BE OF SIMILAR MATERIAL.
 3. ALL PIPE SHALL BE OF SAME SIZE.
 4. NO BENDS ARE ALLOWED IN THE LATERAL FROM THE MAIN TO THE CLEANOUT STACK WYE. (EXCEPT AS NOTED)
 5. ALL MAIN LINE TAPS ON ACTIVE MAINS WILL BE PERFORMED BY CONTRACTOR AND INSPECTED BY BOTTETOURT COUNTY.
 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.



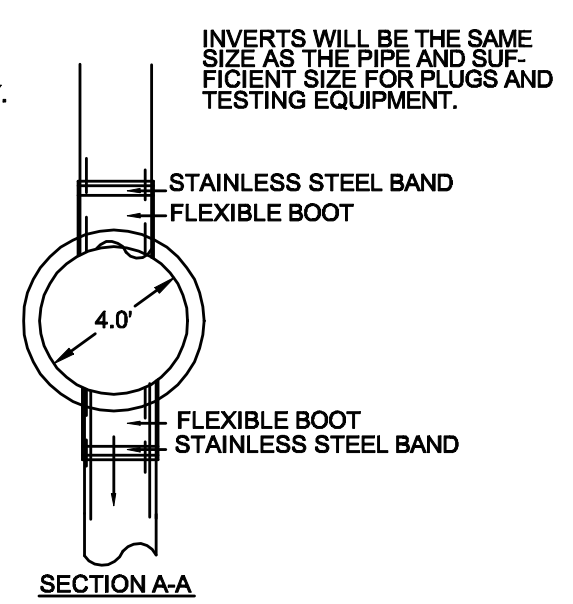
SANITARY SEWER LATERAL



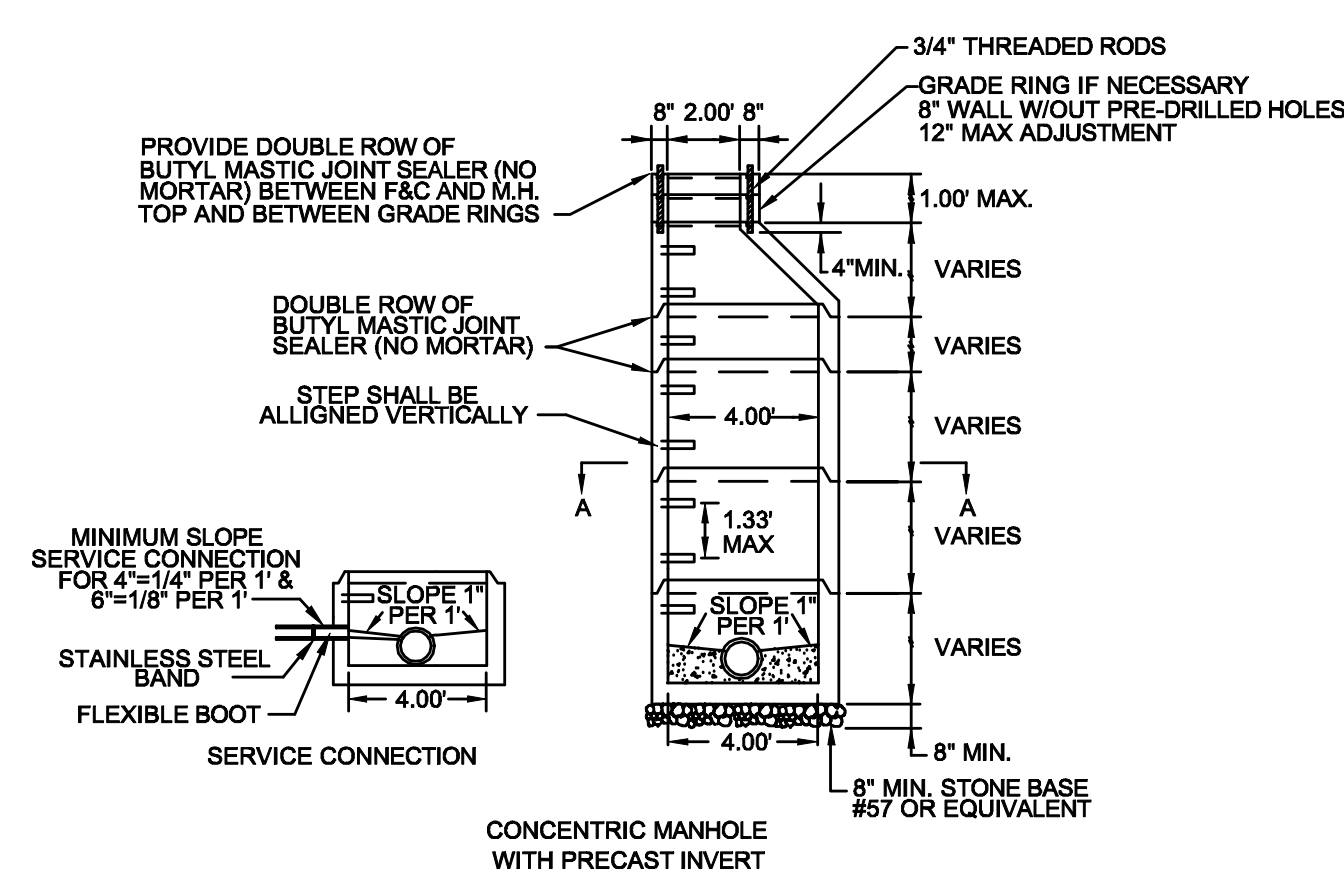
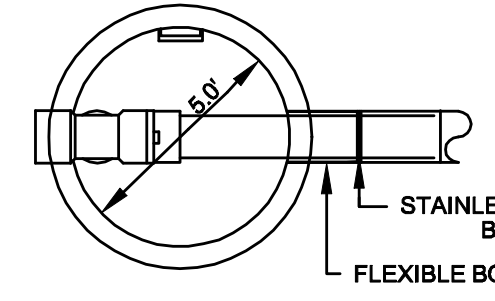
WATERTIGHT MANHOLE FRAME

WATERTIGHT MANHOLE FRAME MODEL #1045Z
BY EAST JORDAN IRON WORKS, INC.

- 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 #1040AGS.
 2. BOLT-DOWN MODEL TO BE USED IN AREAS SUBJECT TO FLOODING OR AS DIRECTED BY BOTTETOURT COUNTY.
 3. STEPS TO BE VERTICALLY ALIGNED.
 4. THE 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 UTILITY DIRECTOR. WHEN USED, THE ECCENTRIC OPENING MUST LINE UP WITH THE STEPS.
 6. SAMPLING MANHOLES IN TRAFFIC AREAS SHALL BE CONSTRUCTED AS PER MANHOLE DETAILS.
 7. FLEXIBLE JOINT MANHOLE CONNECTION SHALL BE AS MANUFACTURED BY PRES-SEAL GASKET CORPORATION OR EQUAL.

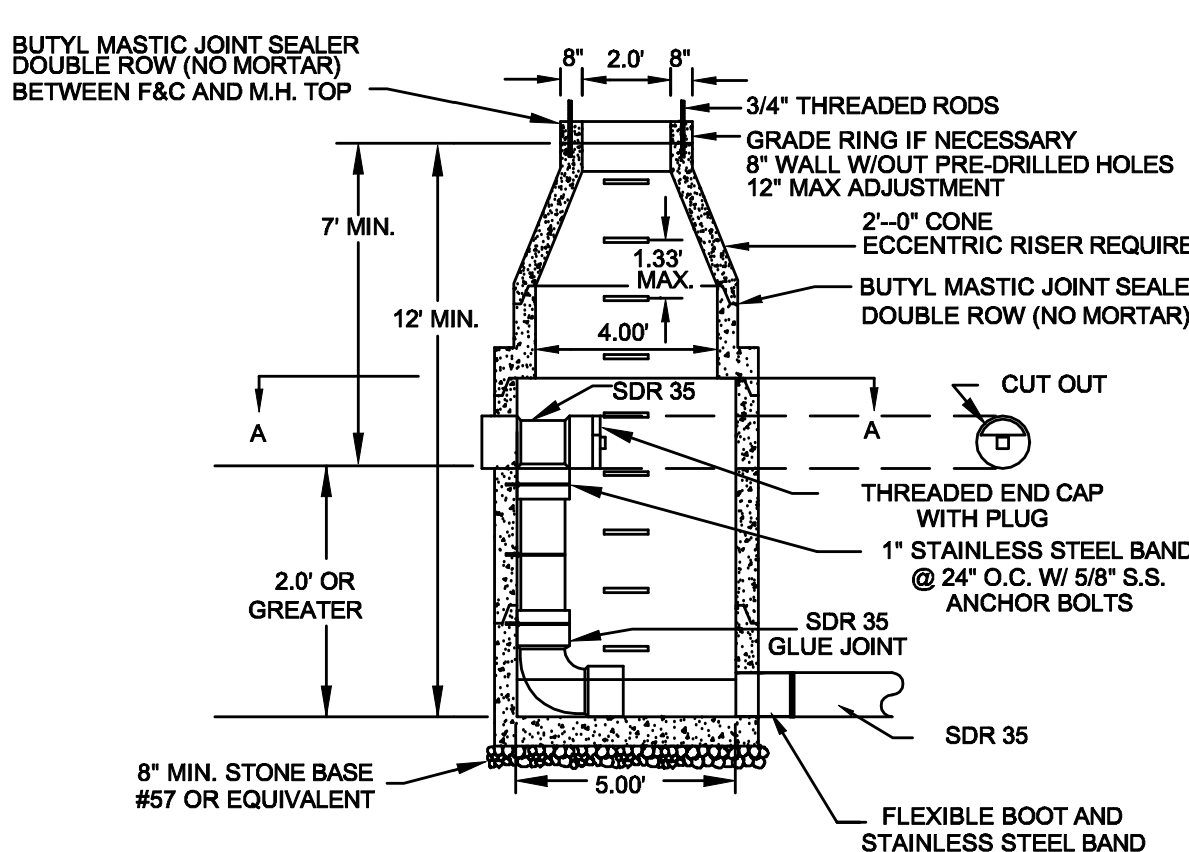


- NOTES:
1. ALL MANHOLE FRAMES AND COVERS SHALL BE EAST JORDAN IRON WORKS, INC. WATERTIGHT MANHOLE FRAME MODEL #1045Z, WATERTIGHT COVER MODEL #1040AGS AND BOLT-DOWN MANHOLE COVER MODEL #1040AGS.
 2. BOLT-DOWN MODEL TO BE USED IN AREAS SUBJECT TO FLOODING OR AS DIRECTED BY BOTTETOURT COUNTY.
 3. STEPS TO BE VERTICALLY ALIGNED.
 4. THE FRAME AND COVER SHALL BE PROPERLY ALIGNED WITH THE 2 FOOT OPENING OF THE MANHOLE STRUCTURE AND BOLTED IN PLACE.
 5. PRECAST MANHOLES SHALL BE FROM MANUFACTURER WITH A VDOT APPROVED QUALITY ASSURANCE PROGRAM.



4ft STANDARD MANHOLE FOR PIPES 15" AND SMALLER

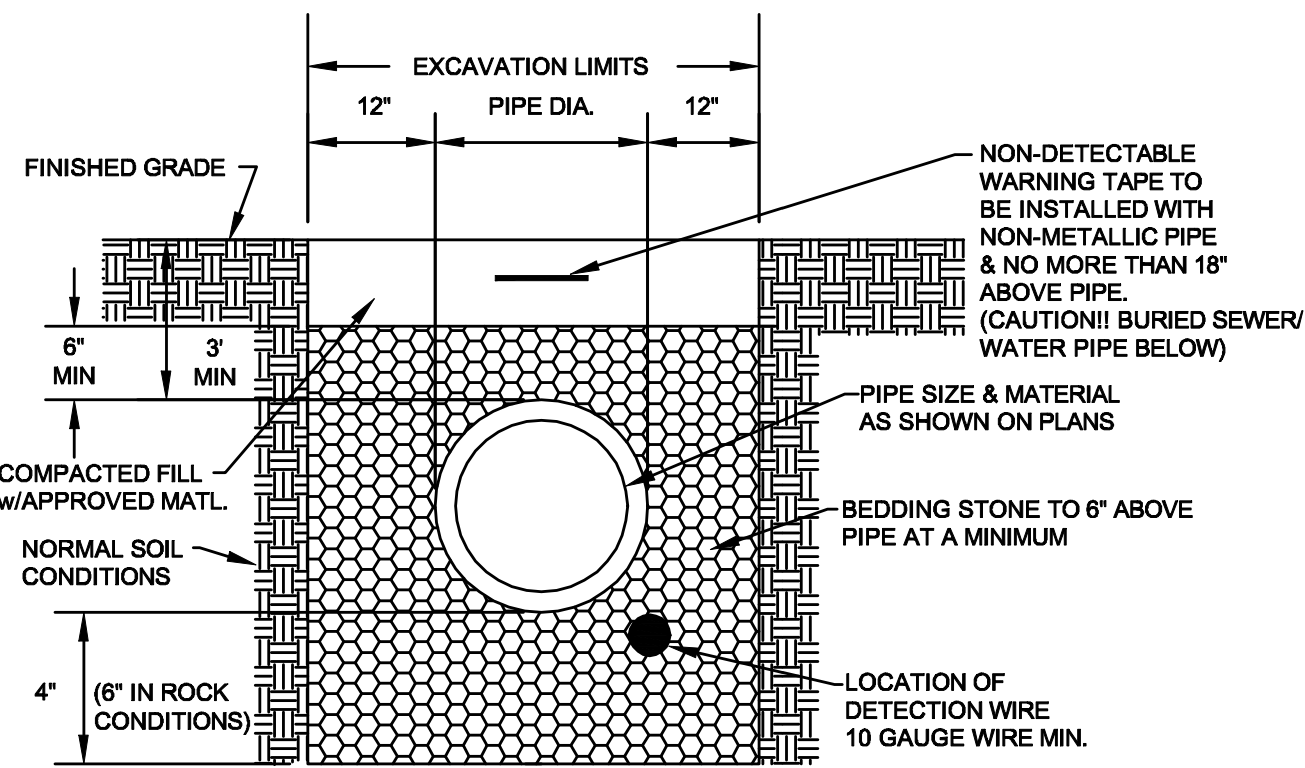
DISTANCE FROM THE TOP OF THE MANHOLE FRAME TO THE FIRST STEP SHALL NOT EXCEED 18" WITH OR WITHOUT GRADE RINGS.



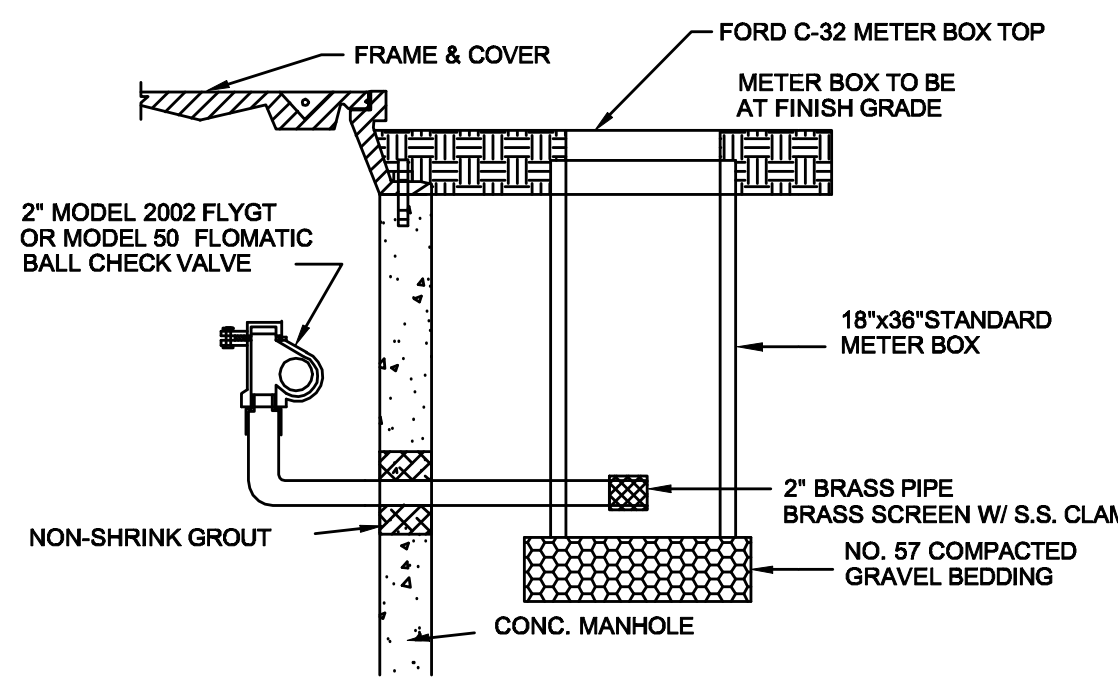
NOTE : 6" DIAMETER MANHOLE REQUIRED FOR TWO INSIDE DROP CONNECTIONS (MAIN LINE OR LATERAL)

MANHOLE OR LATERAL INSIDE DROP DROP

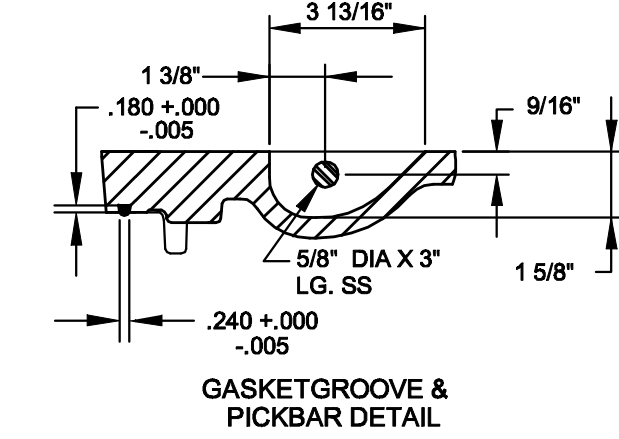
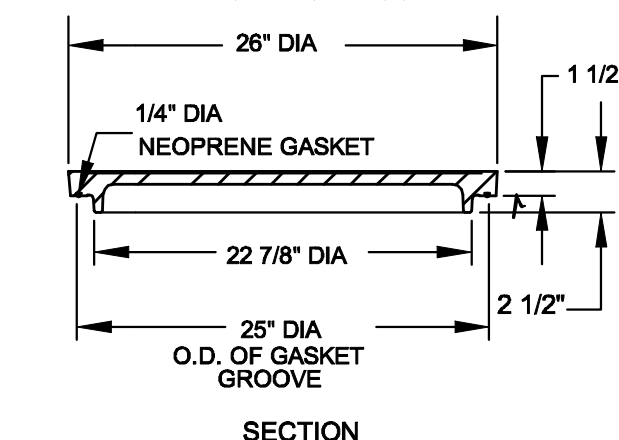
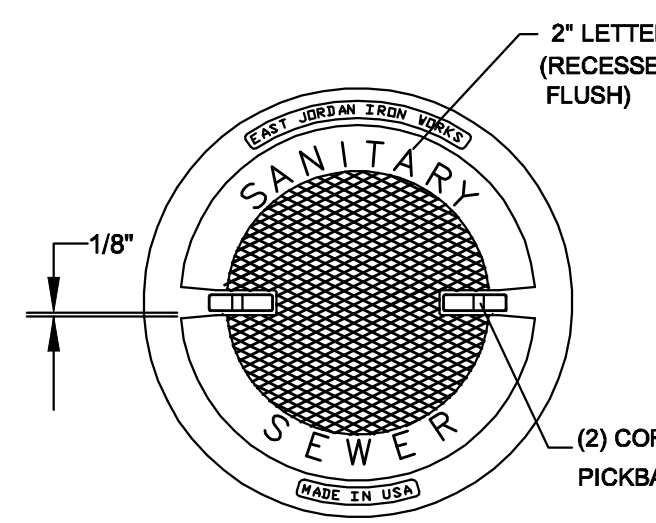
- NOTES:
1. BEDDING, HAUNCHING AND INITIAL BACKFILL CONSTRUCTION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.
 2. NON-DETECTABLE WARNING TAPE SHALL BE BURIED AT A MINIMUM 6" BELOW GRADE AND APPROXIMATELY 12" TO 18" ABOVE NON-METALLIC PIPE. IT SHALL BE 3 TO 5 MILS IN THICKNESS AND INSTALLED CONTINUOUS FROM VALVE BOX TO VALVE BOX OR MANHOLE TO MANHOLE.
 3. ALL PVC PIPE SHALL BE BEDDED IN COMPACTED GRANULAR MATERIAL WHICH SHALL BE CRUSHED STONE MEETING VDOT STANDARDS FOR GRADUATION BY OR 68 STONE.
 4. IN AREAS NOT SUBJECT TO VEHICULAR TRAFFIC, BEDDING STONE AND FILL SHALL BE PLACED IN 10" LIFTS AND SHALL BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D 698.
 5. ALL SEWER LINE PIPE SHALL BE BEDDED IN COMPACTED GRANULAR MATERIAL. BEDDING REQUIREMENTS FOR DUCTILE WATER LINE ARE DEPENDENT ON MANUFACTURER'S BEDDING CRITERIA.



STONE BEDDING FOR SANITARY SEWER

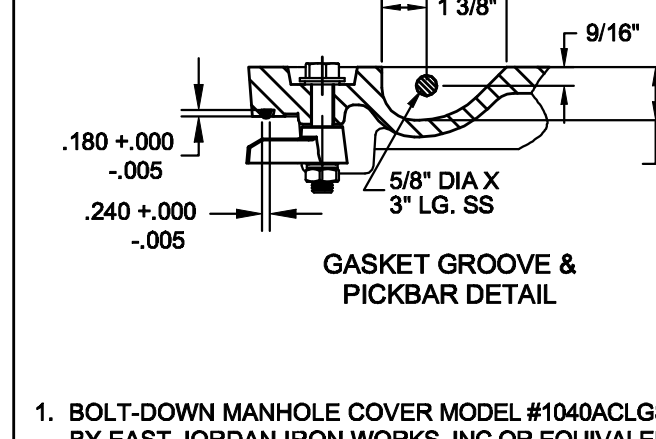
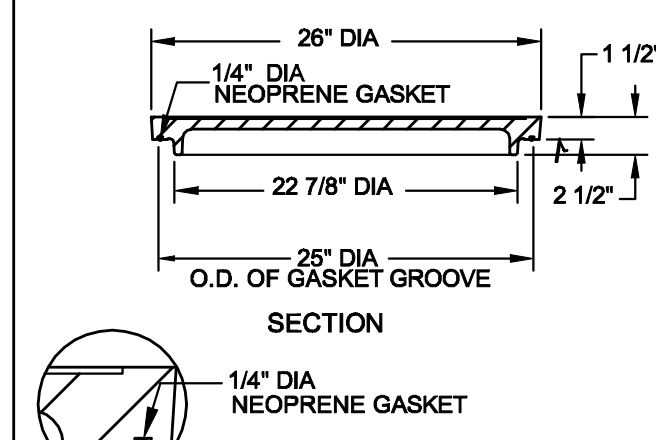
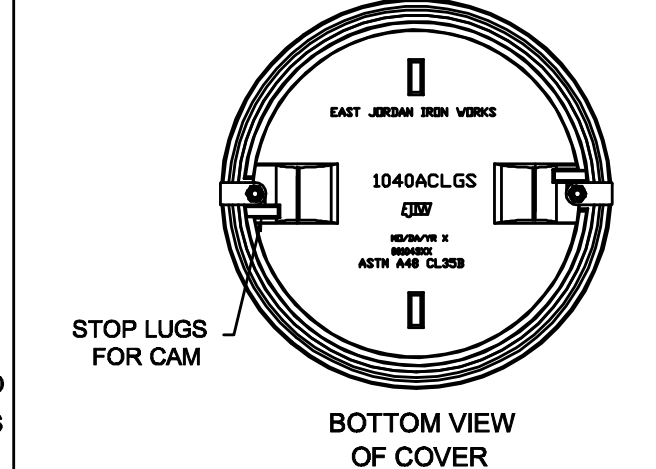


TYPE 2 MANHOLE VENT



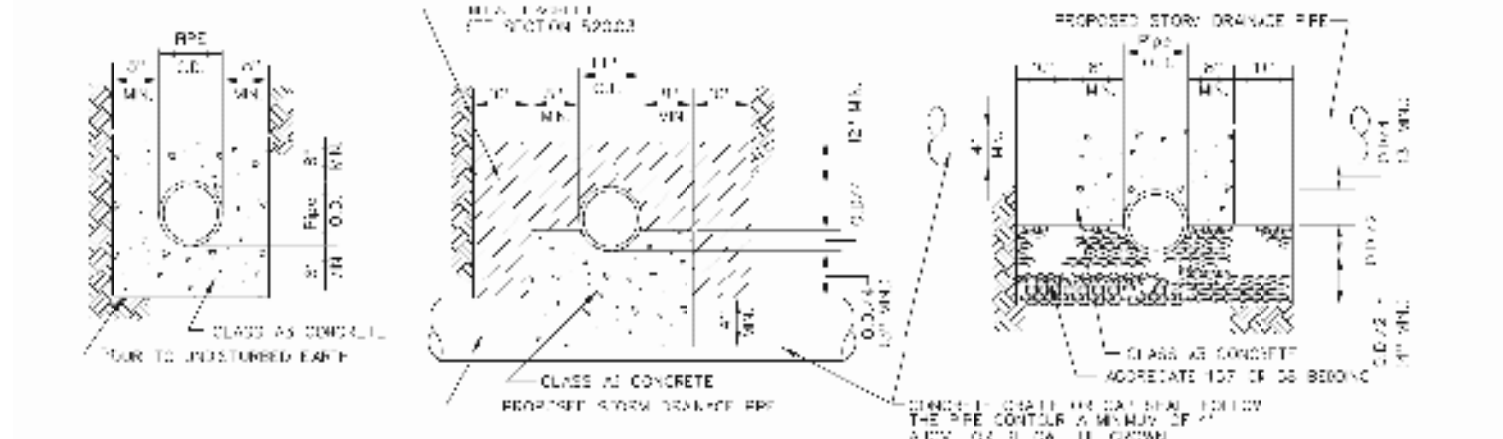
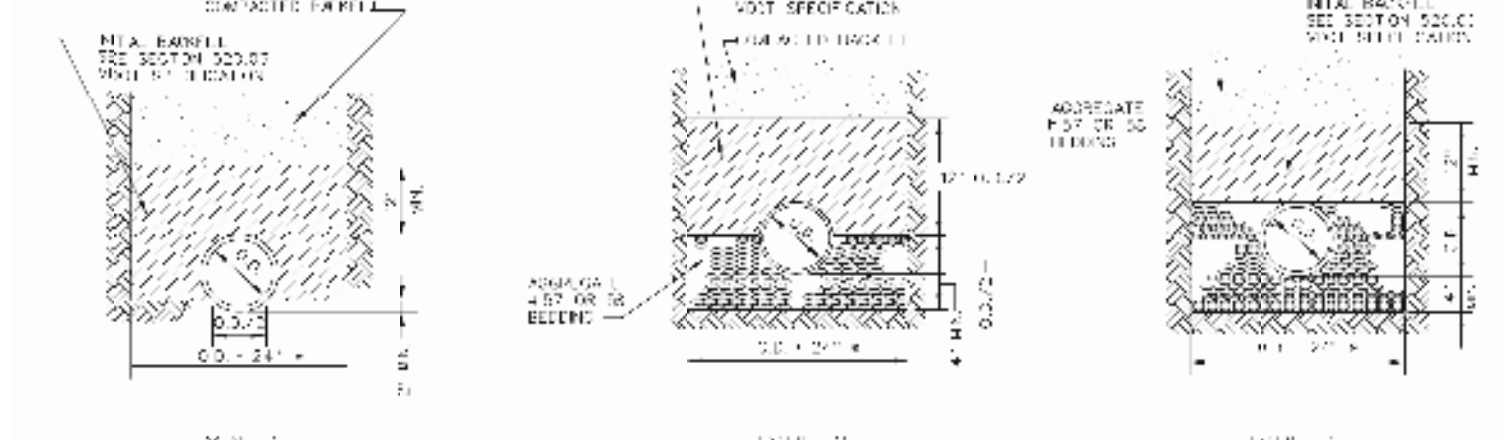
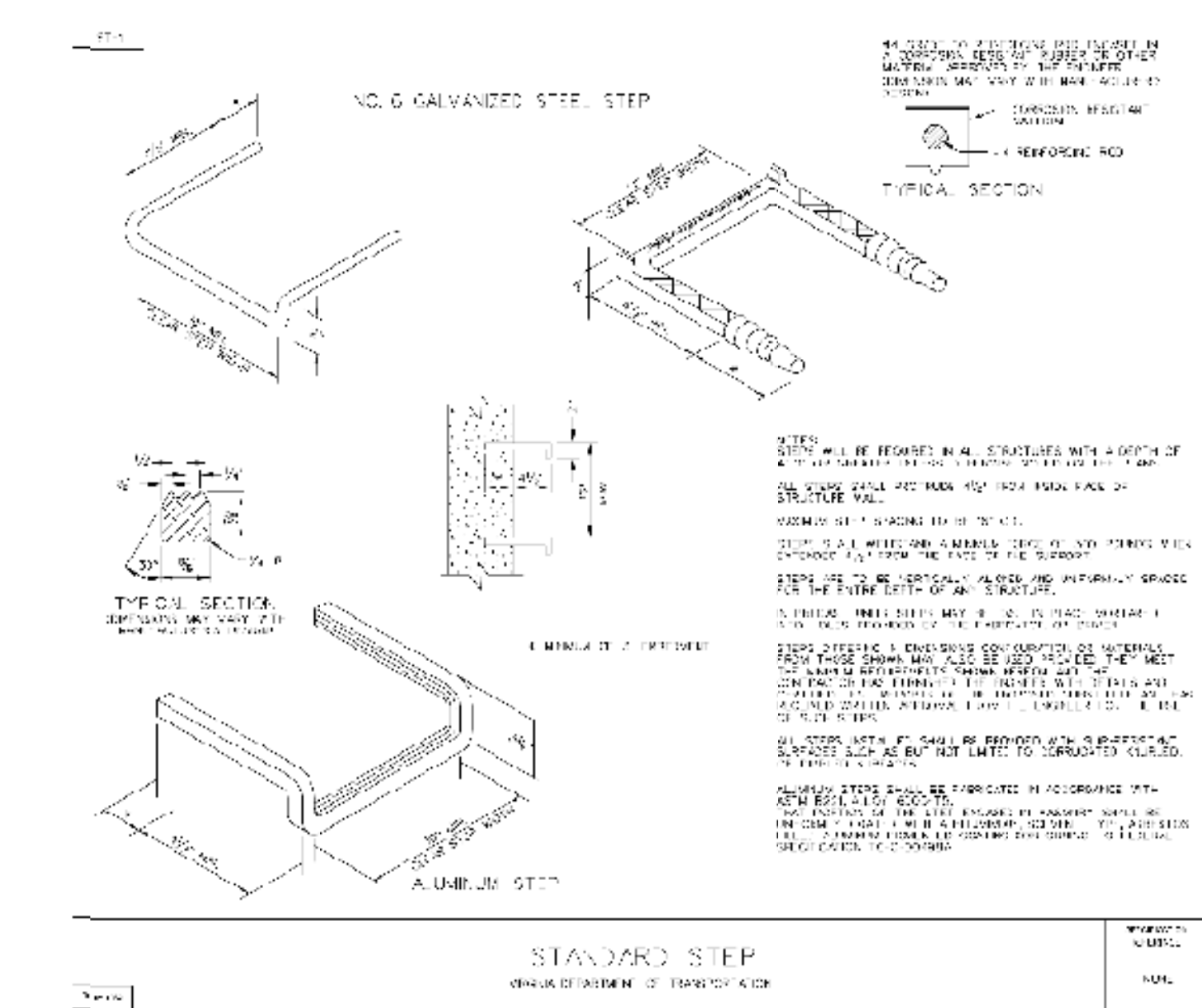
STANDARD MANHOLE COVER

WATERTIGHT/STANDARD MANHOLE COVER



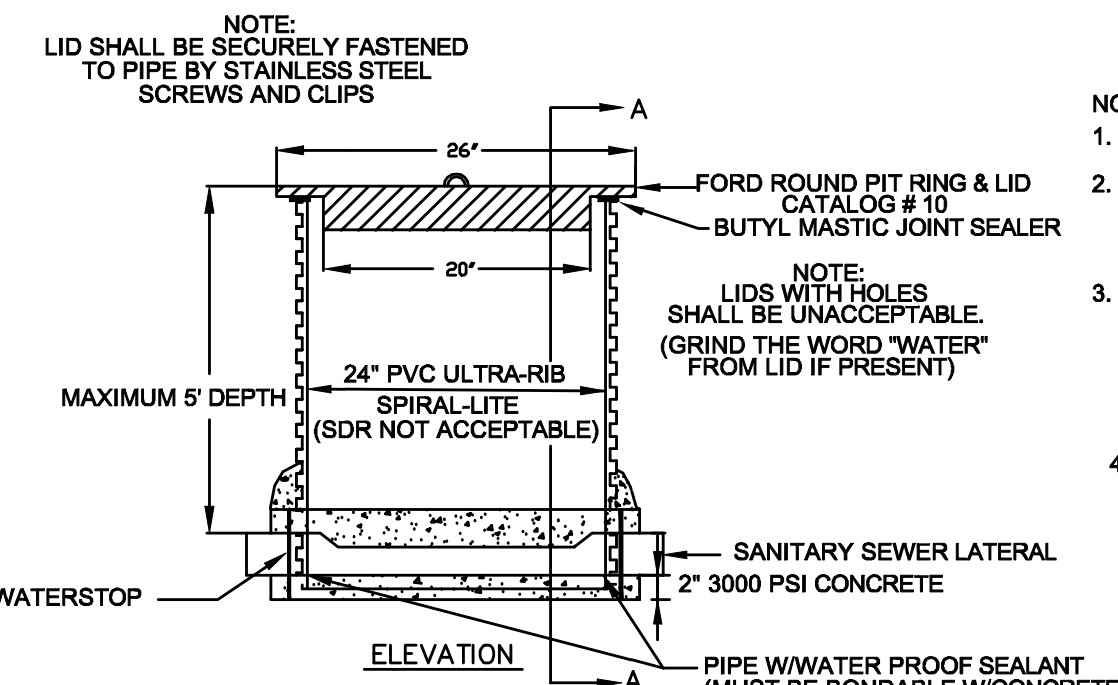
BOLT-DOWN MANHOLE COVER

1. BOLT-DOWN MANHOLE COVER MODEL #1040AGS 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 BOTTETOURT COUNTY.



STANDARD STEP

WATER AND SANITARY SEWER FACILITIES



SAMPLING STRUCTURE DETAIL

PLAN OF SANITARY AND WATER LAYOUT

NTS

VARIOUS COUNTY REVIEW COMMENTS

DATE 5/8/08 PROJECT 03083 DESIGNED RHW DRAWN MSMJ CHECKED RHW

ENGINEERING CONCEPTS, INC. "Creating Success"

COMMONWEALTH OF VIRGINIA

PROFESSIONAL ENGINEER

NO. 34713

PROJECT FRANK AND WALDRON DALEVILLE TOWN CENTER

DRAWING SANITARY SEWER DETAILS

SHEET C-37