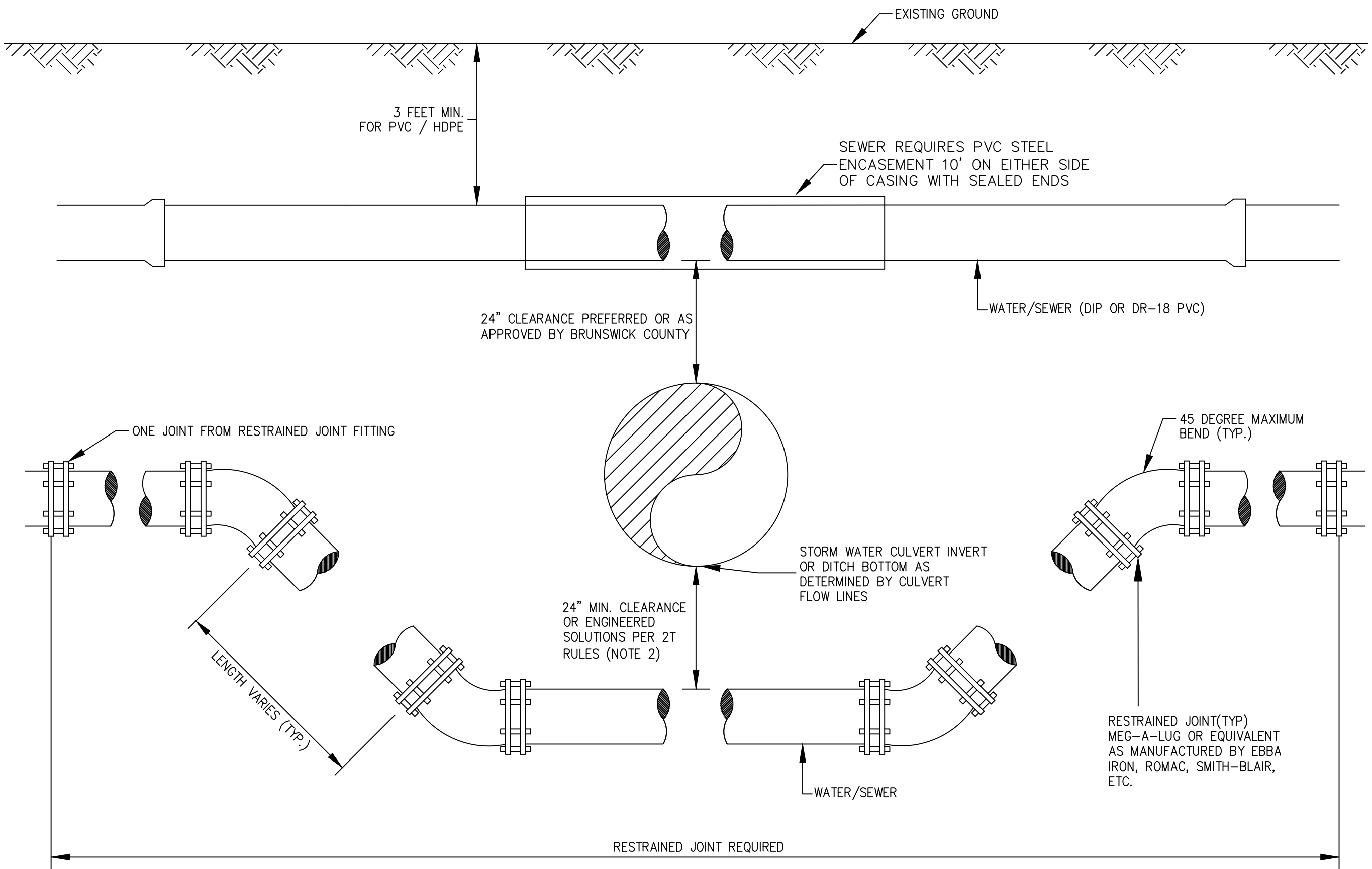
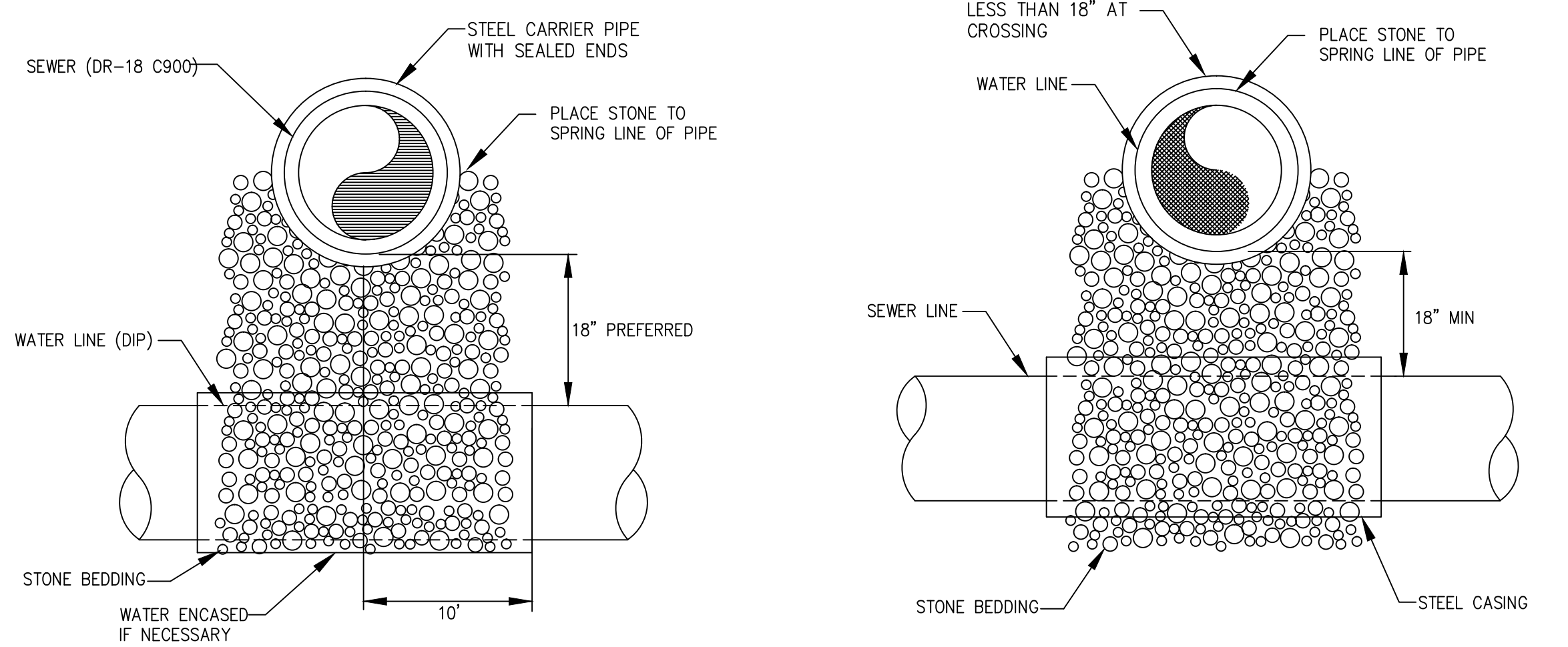


| Revisions | |
|-----------------------|--|
| 1.1 - DATED 7/12/2013 | Mod Note 1c |
| 1.2 - DATED 1/16/2014 | Add WS - 20, 21, 22 and renumbered WS-23 |
| 1.3 - DATED 1/23/2019 | Mod WS-20, WS-21 and WS-22 |
| 1.4 - DATED 7/16/2019 | Add detail WS-22A |
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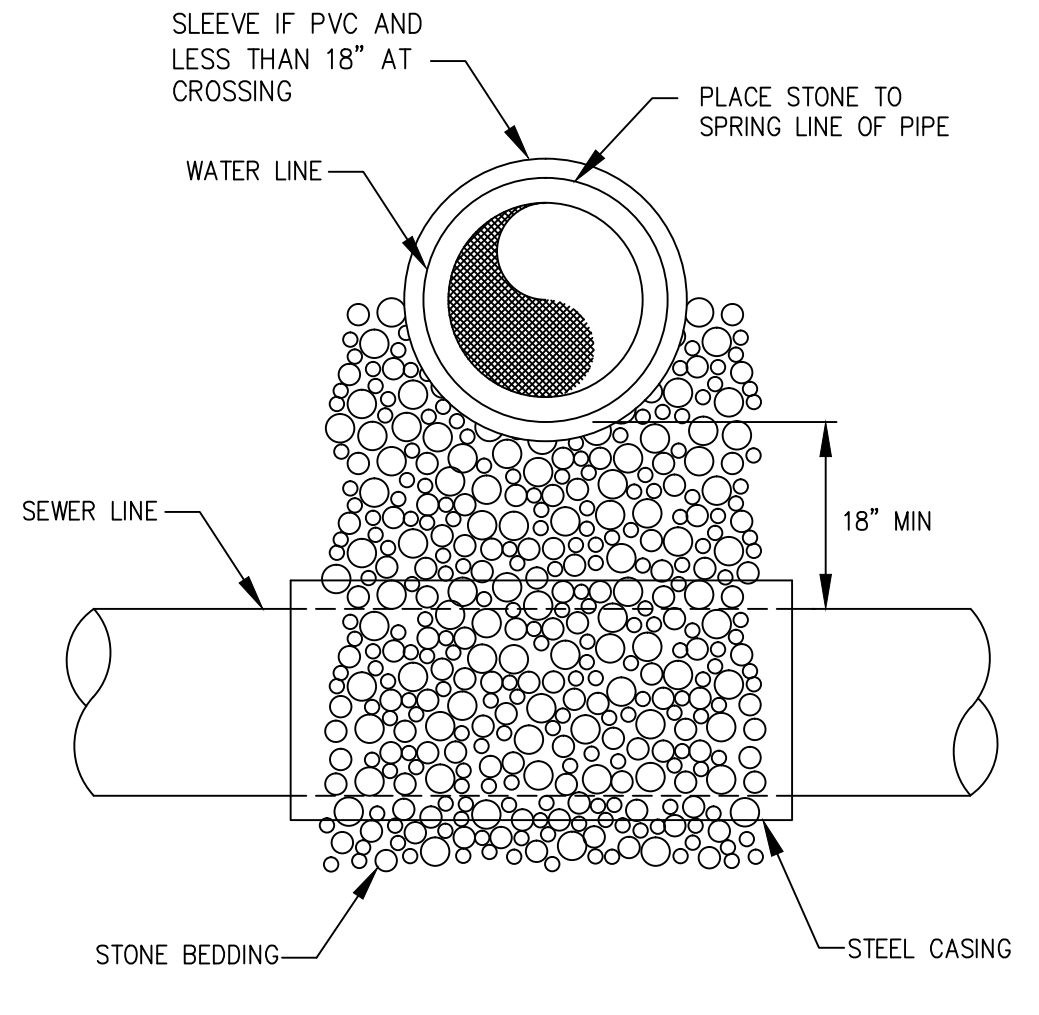
- NOTES:**
1. USE STAINLESS STEEL THREADED RODS, MEGA-LUG OR APPROVED EQUAL FOR JOINT RESTRAINT.
 2. SEWER REQUIRES DR-18 C900 WITH STEEL ENCASUREMENT PIPE 10' ON EITHER SIDE OF CROSSING WITH SEALED ENDS. ONLY IF 24" CLEARANCE CANNOT BE MAINTAINED.
 3. WATER MAY BE DIP OR DR-18 C900 PIPE.

DITCH AND/OR STORM DRAIN CROSSING OFFSETS BETWEEN WATER/SEWER PRESSURE MAIN AND STORM DRAIN
DETAIL WS-20



- NOTES:**
1. BOTH THE WATER MAIN AND THE SEWER MAIN SHALL BE FERROUS MATERIALS WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A MINIMUM DISTANCE OF 10 FEET ON EACH SIDE OF THE CROSSING.
 2. ALTERNATIVELY, PIPES MAY BE SLEEVED WITH FERROUS MATERIALS FOR A MINIMUM DISTANCE OF 10 FEET ON EACH SIDE OF THE CROSSING AS APPROVED BY BRUNSWICK COUNTY ENGINEERING.

SEWER CROSSING ABOVE WATER LINE

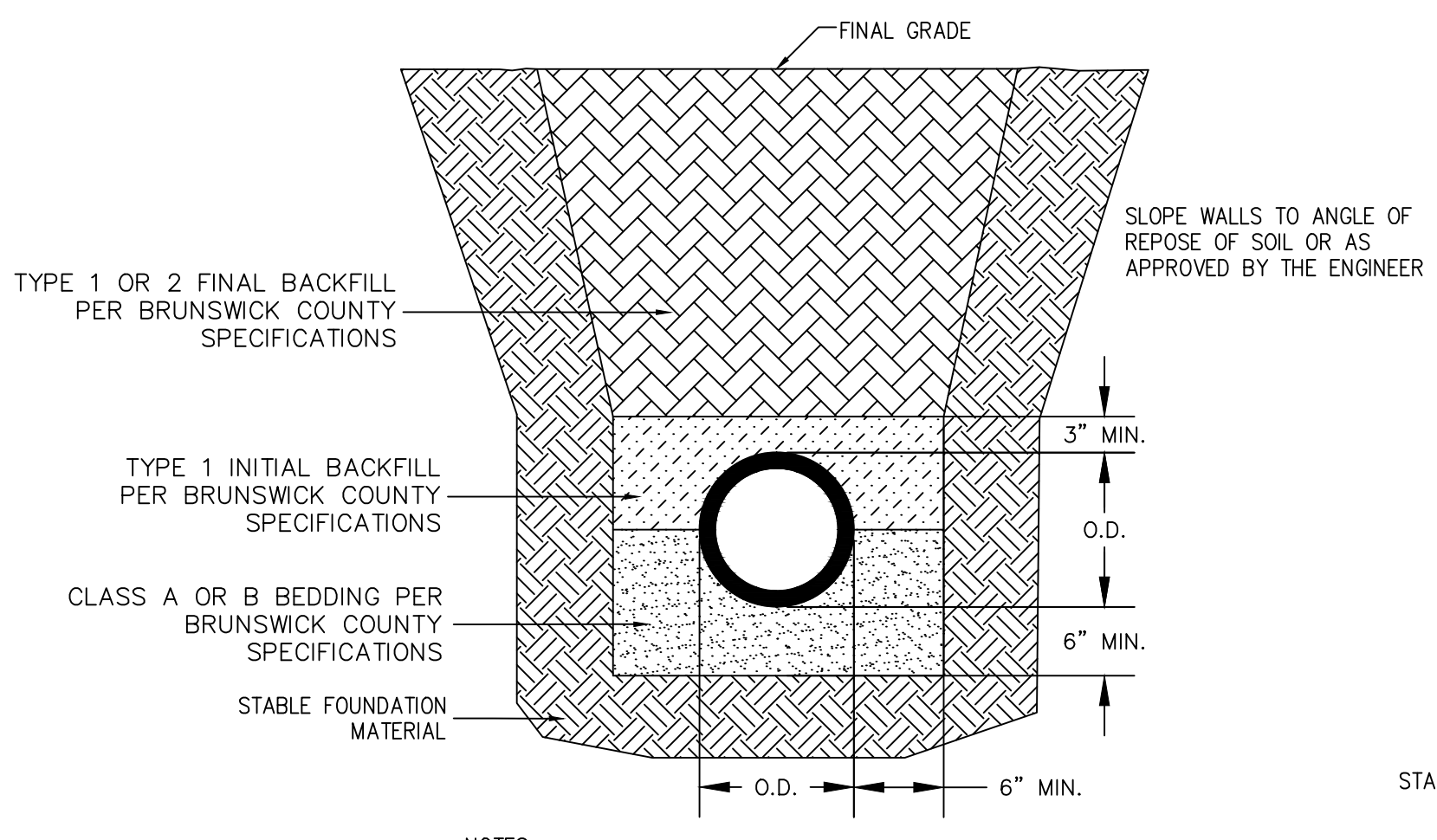


- NOTES:**
1. SOIL REPLACED UNDER THE WATER MAIN SHALL BE COMPACTED.
 2. IF THE WATER MAIN CROSSES AT LESS THAN 18" ABOVE THE SEWER MAIN BOTH THE WATER MAIN AND THE SEWER MAIN SHALL BE FERROUS MATERIALS WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A MINIMUM DISTANCE OF 10 FEET ON EACH SIDE OF THE CROSSING, OR THEY MAY HAVE FERROUS SLEEVES PUT AROUND THEM AS APPROVED BY BRUNSWICK COUNTY ENGINEERING.

SEWER CROSSING BELOW WATER LINE

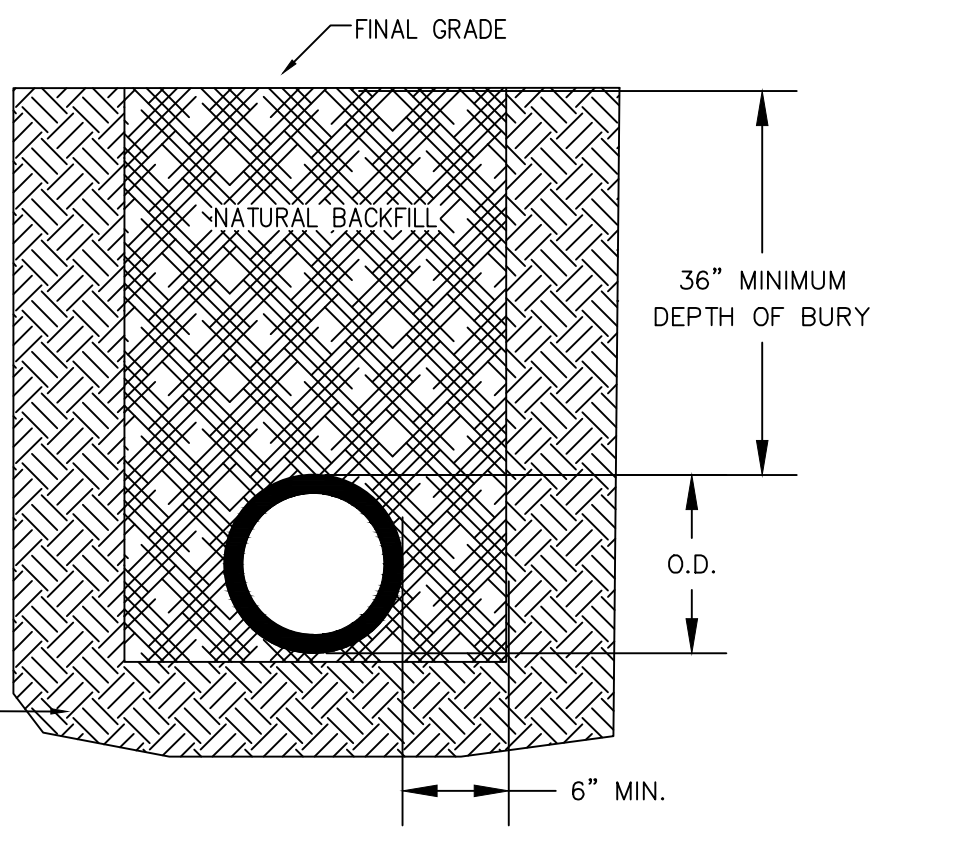
SEWER OFFSETS ABOVE AND BELOW WATER MAINS
DETAIL WS-21

- DEPTH < 20 FEET - CLASS "A" BEDDING**
- UNDERCUT TRENCH BOTTOM 6 INCHES MINIMUM BELOW PIPE
 - FILL PIPE TO SPRING LINE WITH NO. 57 STONE
- DEPTH > 20 FEET - CLASS "B" BEDDING**
- UNDERCUT TRENCH BOTTOM 6 INCHES MINIMUM BELOW PIPE
 - FILL TO 6 INCHES ABOVE PIPE WITH NO. 57 STONE
- INSTALLATIONS THAT EXCEED 20 FEET DEPTH SHALL BE DR-18 C900 MINIMUM OR PER MANUFACTURERS RECOMMENDATIONS

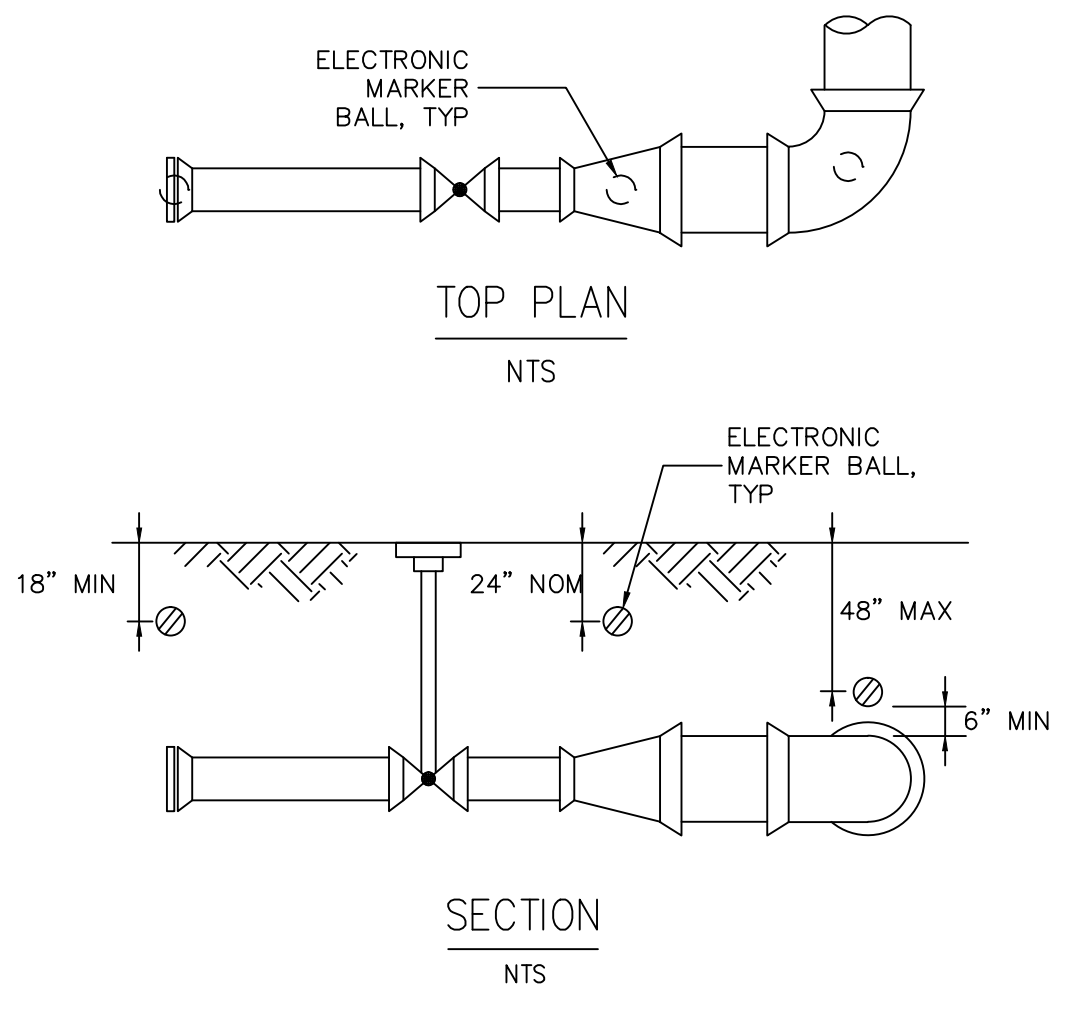


- NOTES:**
1. REFER TO THE BRUNSWICK COUNTY TECHNICAL SPECIFICATIONS FOR BACKFILL AND TRENCHING REQUIREMENTS
 2. PIPE SIZE AS INDICATED ON PLANS

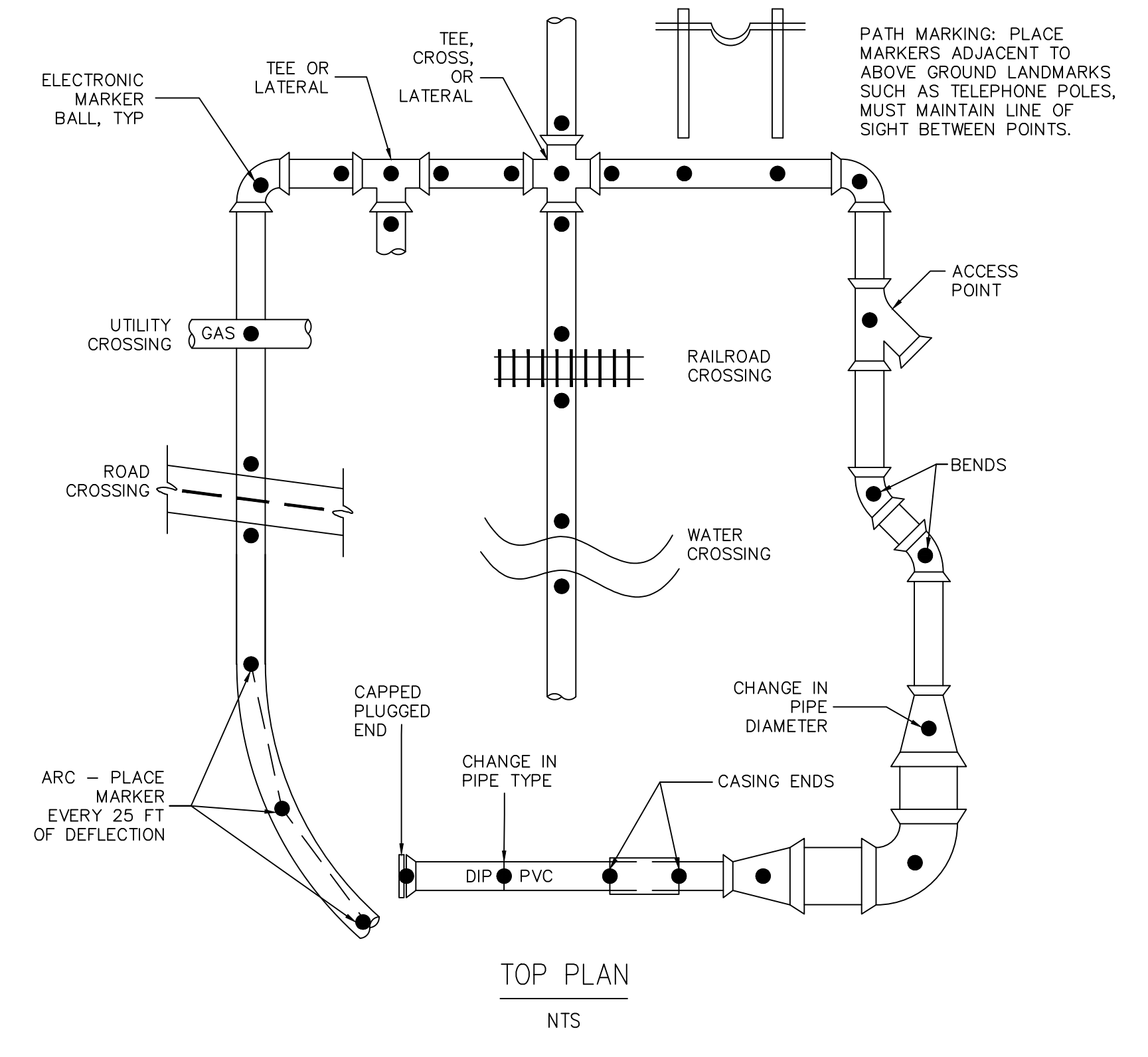
GRAVITY SEWER PIPE TRENCH/BEDDING DETAIL
DETAIL WS-22



WATERMAIN AND/OR SEWER FORCEMAIN (PRESSURE PIPE) PIPE TRENCH/BEDDING DETAIL
DETAIL WS-22A



- NOTES:**
1. ELECTRONIC MARKER BALL MATERIALS SHALL BE AS FOLLOWS:
 - a. WATER - 3M SCOTCHMARK ELECTRONIC MARKER, MODEL # 1403-XR, 4-INCH DIAMETER, BLUE
 - b. SEWER - 3M SCOTCHMARK ELECTRONIC MARKER, MODEL # 1404-XR, 4-INCH DIAMETER, GREEN
 - c. RECLAIMED WATER - 3M SCOTCHMARK ELECTRONIC MARKER, MODEL # 1408-XR, 4-INCH DIAMETER, PURPLE
 2. PLACEMENT SHALL CONFORM TO DETAILS ABOVE. FOR FURTHER GUIDANCE, REFER TO BRUNSWICK COUNTY TECHNICAL SPECIFICATIONS SECTION TITLED "ELECTRONIC MARKER BALLS FOR WATER AND SEWER FORCE MAINS".



ELECTRONIC MARKER BALL PLACEMENT DETAIL
DETAIL WS-23

COUNTY OF BRUNSWICK

GENERAL WATER & SEWER DETAILS
FOR
BRUNSWICK COUNTY
NORTH CAROLINA

Date: 07-11-12
Scale: NTS
Drawn By: JDM
Checked By: WLP