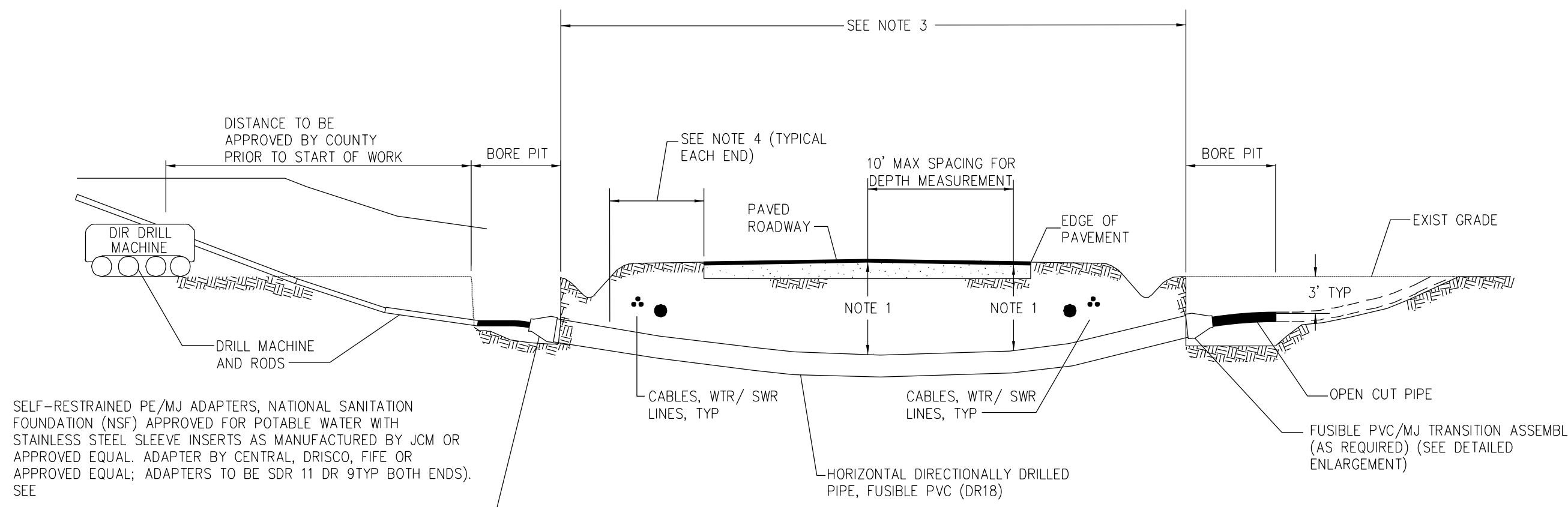


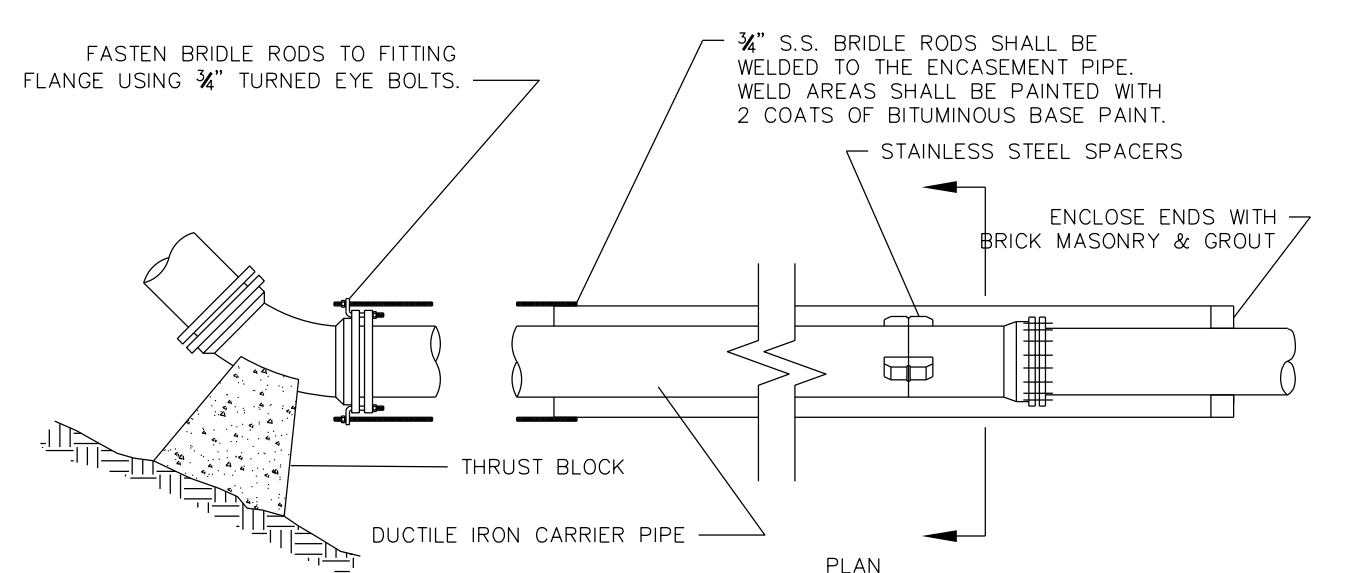
# PROJECT TYPICAL DETAILS



SELF-RESTRAINED PE/MJ ADAPTERS, NATIONAL SANITATION FOUNDATION (NSF) APPROVED FOR POTABLE WATER WITH STAINLESS STEEL SLEEVE INSERTS AS MANUFACTURED BY JCM OR APPROVED EQUAL. ADAPTER BY CENTRAL, DRISCO, FIFE OR APPROVED EQUAL; ADAPTERS TO BE SDR 11 DR 9 TYP BOTH ENDS. SEE

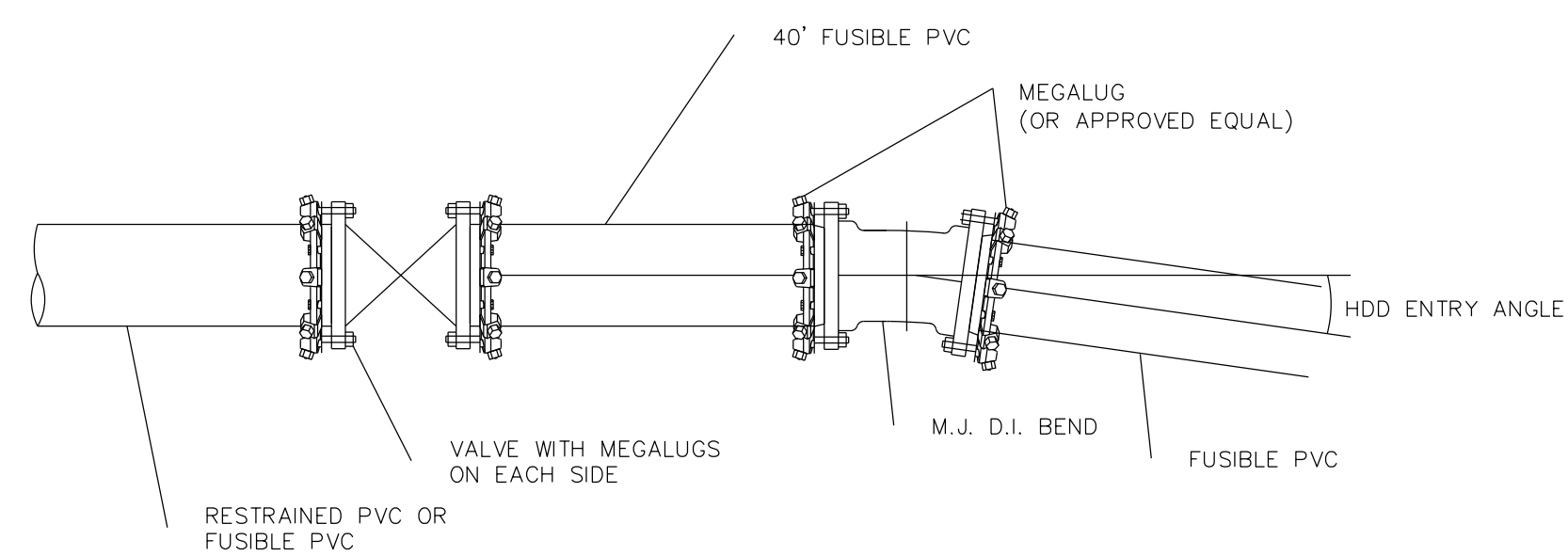
FUSIBLE PVC/MJ TRANSITION ASSEMBLY (AS REQUIRED) (SEE DETAILED ENLARGEMENT)

## FUSIBLE PVC/MJ TRANSITION ASSEMBLY



- NOTES:**
1. STAINLESS STEEL SPACERS SHALL BE USED. NO TIMBER SKIDS ARE ALLOWED.
  2. TWO SPACERS PER JOINT SHALL BE USED FOR D.I.P. CARRIER PIPE.
  3. ENCASED BORES ALONG GRAVITY COLLECTION SYSTEMS SHALL NOT REQUIRE BRIDLE RODS.
  4. 2 EA. 3/4" S.S. BRIDLE RODS SHALL BE REQUIRED ON ALL LINES 8"Ø AND SMALLER. 4 EA. 3/4" S.S. BRIDLE RODS SHALL BE REQUIRED ON ALL LINES 10"Ø AND LARGER.
  5. CARRIER PIPE SHALL BE INSTALLED USING 'FIELD LOK' GASKETS OR APPROVED EQUAL.

## STANDARD BORE ENCASEMENT



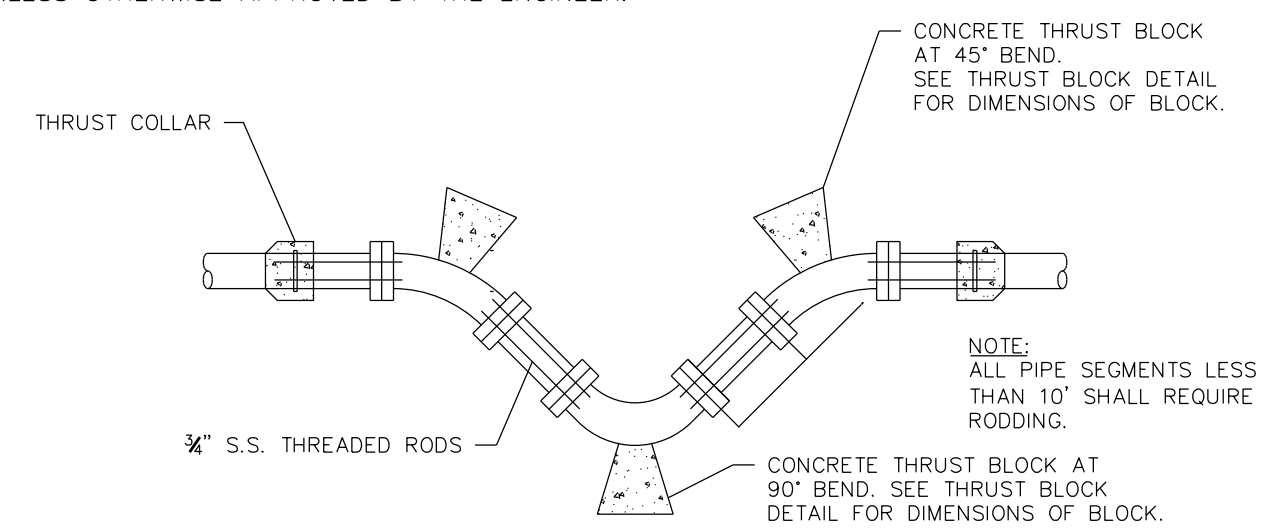
- NOTES:**
1. RESTRAINT SYSTEM TYPICAL ON BOTH SIDES OF DIRECTIONAL BORE.
  2. ALL FITTINGS AND MEGALUGS SHALL BE INCLUDED IN THE UNIT PRICE (DEPENDS ON BID FORM) FOR HDD ITEMS.

## SUGGESTED CONNECTION FOR FUSIBLE PVC TO DIRECT BURY PVC WITH GATE VALVE AND RESTRAINT

- NOTE:**
1. AN AS-BUILT PLAN AND PROFILE SHALL BE PROVIDED FROM ENTRY TO EXIT FOR EACH DIRECTIONAL BORE SECTION BY THE DIRECTIONAL BORE CONTRACTOR. THIS SHALL INCLUDE ACCURATE HORIZONTAL AND VERTICAL DIMENSIONS AND SHALL MEET OR EXCEED NCDOT VERTICAL REQUIREMENTS FROM HDD PIPE TO EDGE OF PAVEMENT.
  2. ALL BORE SECTIONS SHALL BE HYDROSTATICALLY TESTED PER SPECIFICATIONS AFTER INSTALLATION, AND PRIOR TO CONNECTION TO THE OPEN CUT WATER/SEWER LINE. A FINAL TEST WILL BE A PART OF THE TOTAL MAIN LINE SYSTEM TEST.
  3. LENGTH OF CROSSING, LOCATION OF INSPECTION/OBSERVATION EXCAVATION, NUMBER OF HDD PIPE JOINTS, LOCATION OF DRILL MACHINE, AUGER ENTRANCE LOCATION AND TIE-IN POINTS ARE TO BE APPROVED BY THE ENGINEER PRIOR TO ANY START OF WORK.
  4. THE BORE DEVELOPED FOR THE DIRECTIONALLY DRILLED PIPE SHALL BE KEPT AT A MINIMUM DIAMETER FOR THE PIPE INSTALLATION. THE AUGER HEAD SIZE SHALL BE APPROVED BY THE ENGINEER PRIOR TO THE START OF ANY WORK.
  5. THE CONTRACTOR SHALL ALLOW SUFFICIENT LENGTHS OF PIPE TO EXTEND PAST THE TERMINATION POINT TO ALLOW FOR CONTRACTION. PULLED HDD PIPE SHALL BE ALLOWED TO RELAX FOR 7 DAYS OR THE AMOUNT OF TIME RECOMMENDED BY THE MANUFACTURER PRIOR TO MAKING ANY CONNECTIONS.
  6. FUSIBLE PVC HAS BEEN APPROVED FOR USE WITHIN NCDOT RIGHT-OF-WAYS.
  7. MINIMUM OF THREE(3) RESTRAINED JOINTS ARE REQUIRED UPSTREAM AND DOWNSTREAM OF FUSIBLE PVC MJ ADAPTER ON EACH END OF THE HORIZONTAL DIRECTIONALLY DRILLED PIPE UNLESS OTHERWISE APPROVED BY THE ENGINEER.

PROJECT REFERENCE NO. <b>R-2603</b>	SHEET NO. <b>UC-3D</b>
DESIGNED BY: <b>B. DIXON</b>	
DRAWN BY: <b>R. MOSS</b>	
CHECKED BY: <b>B. DIXON</b>	
APPROVED BY:	
REVISED:	MUNICIPAL ENGINEERING SERVICES COMPANY, PA. 04/13/2015 P.O. BOX 97 GARNER, NC 27529 (919) 772-5393
<b>UTILITY CONSTRUCTION PLANS ONLY</b>	

## UTILITY CONSTRUCTION

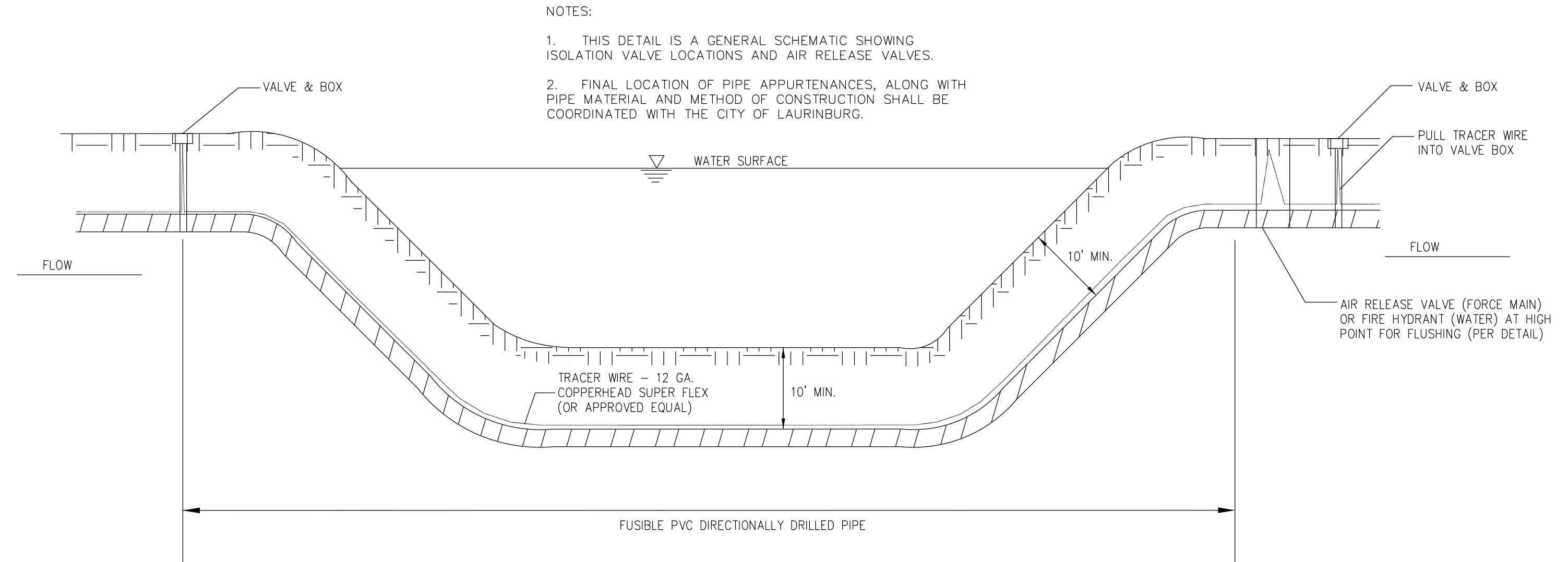


**ROD REQUIREMENTS**

SIZE OF 45° BEND	STATIC THRUST IN POUNDS	NUMBER OF RODS REQUIRED
6"	4,328	2
8"	7,694	2
12"	17,312	4
16"	30,779	6
20"	48,091	8
24"	69,252	10

- GENERAL NOTES**
1. RODS AND NUTS SHALL BE OF TYPE 304 OR TYPE 316 STAINLESS STEEL.
  2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT BENDS.

## VERTICAL BEND RODDING AND BLOCKING DETAIL



- NOTES:**
1. THIS DETAIL IS A GENERAL SCHEMATIC SHOWING ISOLATION VALVE LOCATIONS AND AIR RELEASE VALVES.
  2. FINAL LOCATION OF PIPE APPURTENANCES, ALONG WITH PIPE MATERIAL AND METHOD OF CONSTRUCTION SHALL BE COORDINATED WITH THE CITY OF LAURINBURG.

## VALVE LOCATIONS FOR DIRECTIONAL DRILL OF PIPE UNDER WETLANDS/WATER BODY