

**GENERAL NOTE(S)**

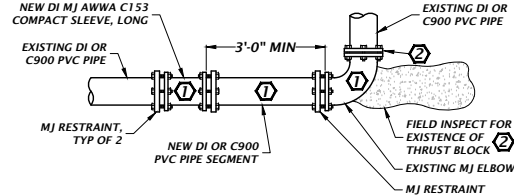
- A. REFER TO 266H
- B. MAINTAIN TRACER WIRE CONTINUITY, REFER TO 266H

**KEYED NOTE(S)**

- ① FOR ALTERNATE TIE ROD RESTRAINT, REFER TO 266E AND 266F

**266A**

**WATER/WASTEWATER PIPE REPAIR STRAIGHT RUN**  
NTS



**GENERAL NOTE(S)**

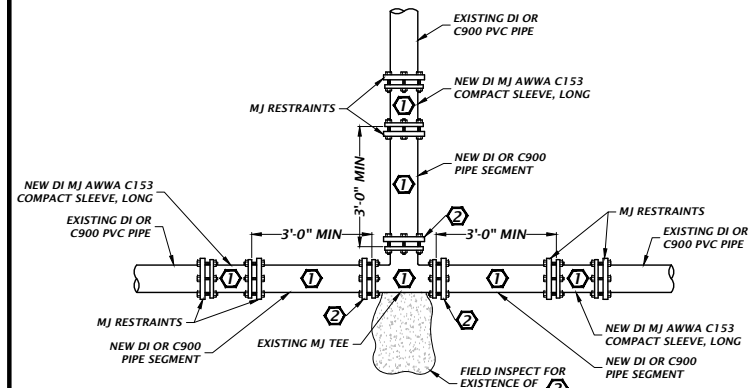
- A. REFER TO 266H
- B. MAINTAIN TRACER WIRE CONTINUITY, REFER TO 266H

**KEYED NOTE(S)**

- ① FOR ALTERNATE TIE ROD RESTRAINT, REFER TO 266E AND 266F
- ② IF THERE IS NEITHER AN EXISTING THRUST BLOCK NOR EXISTING MJ RESTRAINT FOR FITTING, PROVIDE MJ RESTRAINT.

**266B**

**WATER/WASTEWATER PIPE REPAIR NEAR EXISTING ELBOW**  
NTS



**GENERAL NOTE(S)**

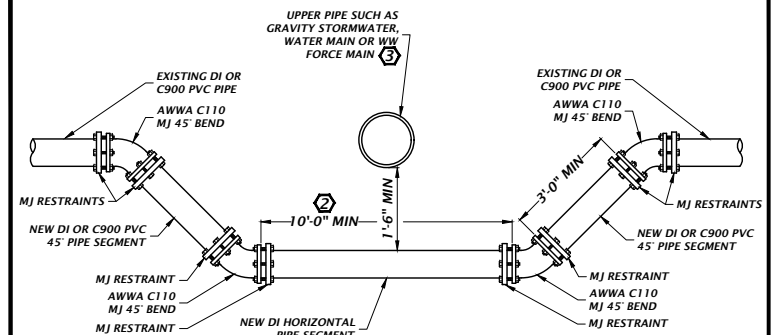
- A. REFER TO 266H
- B. MAINTAIN TRACER WIRE CONTINUITY, REFER TO 266H

**KEYED NOTE(S)**

- ① FOR ALTERNATE TIE ROD RESTRAINT, REFER TO 266E AND 266F
- ② PROVIDE MJ RESTRAINT AT BRANCH AND END OF EACH RUN EVEN THOUGH THERE MAY BE AN EXISTING THRUST BLOCK.

**266C**

**WATER/WASTEWATER PIPE REPAIR AT TEE BRANCH AND RUN**  
NTS



**GENERAL NOTE(S)**

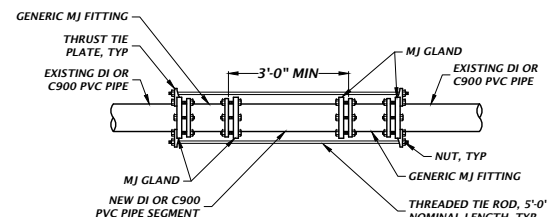
- A. USE THIS DETAIL TO RESOLVE CONFLICT BETWEEN UPPER AND LOWER PIPES
- B. REFER TO 266H
- C. MAINTAIN TRACER WIRE CONTINUITY, REFER TO 266H
- D. IF THIS DETAIL IS NOT TECHNICALLY FEASIBLE AND IF APPROVED BY COA, SEPARATE PIPES AS PER RULE 62-555.314, F.A.C.

**KEYED NOTE(S)**

- ① FOR ALTERNATE TIE ROD RESTRAINT, REFER TO 266E
- ② CENTER HORIZONTAL PIPE SEGMENT ON CENTER OF EXISTING GRAVITY PIPE
- ③ INSTALLING WATER MAIN UNDER WW FORCE MAIN IS NOT COA PREFERENCE. CONTACT COA STAFF AND REFER TO DESIGN AND CONSTRUCTION MANUAL.

**266D**

**RESOLVING UPPER AND LOWER PIPE CROSSING CONFLICTS**  
NTS

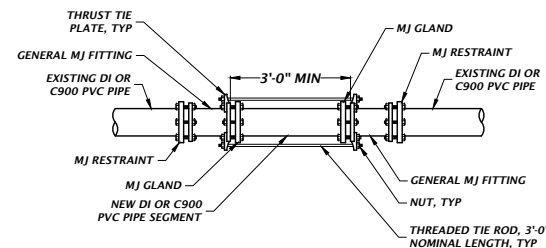


**GENERAL NOTE(S)**

- A. THIS DETAIL IS FOR ALL TIE ROD RESTRAINTS AS AN ALTERNATE TO ALL MJ RESTRAINTS.
- B. REFER TO 266H
- C. FOR TIE ROD / TIE PLATE DETAILS, REFER TO 266G

**266E**

**TIE ROD RESTRAINT, AN ALTERNATE FOR MJ RESTRAINT**  
NTS



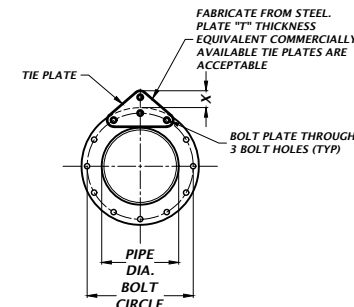
**GENERAL NOTE(S)**

- A. THIS DETAIL IS FOR TIE ROD / MJ RESTRAINT AS AN ALTERNATE TO ALL MJ RESTRAINTS.
- B. REFER TO 266H
- C. FOR TIE ROD / TIE PLATE DETAILS, REFER TO 266G

**266F**

**TIE ROD AND MJ RESTRAINT, AN ALTERNATE FOR MJ RESTRAINT**  
NTS

TIE ROD SCHEDULE			
PIPE DIAM. (IN.)	MIN. PIPE WALL THICKNESS (IN.)	TIE RODS	
		DIA. (IN.)	NO. REQ'D
4	3/16	5/8	2
6	3/16	5/8	2
8	3/16	5/8	2
10	3/16	5/8	4
12	3/16	5/8	4
14	3/16	5/8	6
16	3/16	5/8	6



TIE PLATE SCHEDULE		
PIPE SIZE	X	T @ TEST PRESS <150 PSI
4"	2 3/4"	5/8"
6"	2 3/4"	5/8"
8"	2 3/4"	5/8"
10"	2 3/4"	5/8"
12"	3"	3/4"
14"	3 1/4"	3/4"
16"	3 1/4"	1"

**NOTES:**

1. TIE RODS AND NUTS SHALL CONFORM TO AWWA/ANSI C111/A21.11
2. TIE RODS AND NUTS SHALL PROVIDE MIN YIELD AND TENSILE STRENGTHS OF 45,000 PSI AND 60,000 PSI RESPECTIVELY.
3. PLATE SHALL CONFORM TO ASTM A 283 GRADE D.
4. TIE ROD NUTS SHALL BE TIGHTENED GRADUALLY AND EQUALLY IN STAGES TO PREVENT UNEVEN ALIGNMENT AND TO ALLOW EQUAL STRESS ON ALL TIE RODS UNDER PRESSURE. TIGHTEN UNTIL SNUG. THREADS SHALL PROTRUDE FROM NUTS. PEEN THREADS AFTER TIGHTENING NUTS.
5. CONTRACTOR SHALL FURNISH TIE RODS AND TIE PLATES SUITABLE FOR 150 PSI, EVEN THOUGH PROJECT TEST PRESSURES MIGHT BE LESS.
6. OTHER RESTRAINT PARAMETERS:
  - TEST FITTING = 90 DEG ELBOW
  - SAFETY FACTOR = 1.5

**266G**

**THRUST TIE ROD / TIE PLATE**  
NTS

**GENERAL NOTE(S)**

- A. SUITABLE FOR 4" - 16" PIPE SIZES.
- B. REMOVE DEFECTIVE PIPE SEGMENT. REPLACE WITH NEW PIPE SEGMENT WITH MINIMUM LENGTH OF 3' 0".
- C. RESTRAIN ALL JOINTS, UNLESS OTHERWISE SHOWN.
- D. INSTALL MJ FITTINGS AS PER AWWA C600, WHICH INCLUDES:
  - CLEANING SOCKET AND PLAIN END.
  - LUBRICATING GASKET AND PLAIN END.
  - FURNISHING AND INSTALLING USING T-BOLT AND NUT FASTENERS.
  - FOR PIPE SIZES 4" - 16", BOLT SIZE SHALL BE 3/4-INCH.
  - TIGHTENING TO SPECIFIED TORQUE RANGE.
- E. DEPENDING ON PIPE MATERIALS AND WHETHER PIPE IS NEW OR EXISTING, ACCEPTABLE MJ RESTRAINT PRODUCTS INCLUDE:
  - EBAA MEGALUG SERIES 1100.
  - EBAA MEGALUG SERIES 1100SD.
  - EBAA MEGALUG SERIES 2000PV.
  - EBAA MEGALUG SERIES 2000SVD.
- F. ACCEPTABLE ALTERNATIVE TO MJ RESTRAINT IS TIE-ROD RESTRAINT. SEE DETAILS 266E AND 266F.
- G. FOR MJ RESTRAINT AND MJ GLANDS (NON-RESTRAINED), PROVIDE GASKET.
- H. FIELD INSPECT FOR PRESENCE OF TRACER WIRE. IF PRESENT, MAINTAIN TRACER WIRE CONTINUITY. PROVIDE NEW TRACER WIRE AS REQUIRED. CONNECT TRACER WIRE USING PRO-LINE TRACER-LOCK CONNECTORS, PART # TL-LUG-SS.
- I. ABBREVIATIONS:
  - MJ = MECHANICAL JOINT
  - DI = DUCTILE IRON
  - PVC = POLYVINYL CHLORIDE

**266H**

**WATER/WASTEWATER PIPE REPAIR GENERAL NOTES**  
NTS