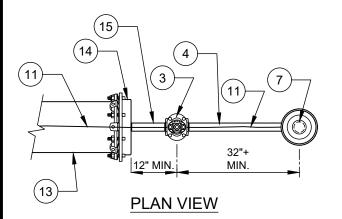
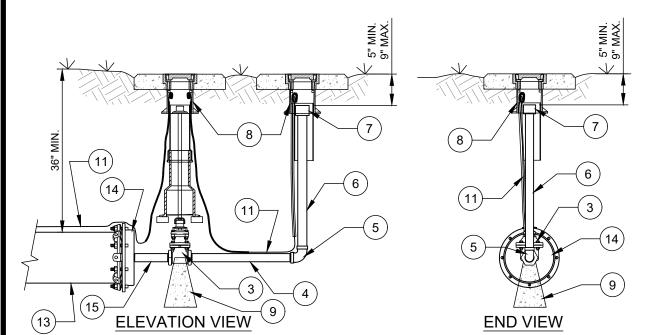
6" THROUGH 12" WATER MAINS



RESTRAINED PIPE LENGTH REQUIREMENTS		
PIPE DIAMETER (INCHES)	REQUIRED RESTRAINED LENGTH:	
	BARE DIP (FEET)	POLYWRAPPED DIP (FEET)
6	169	242
8	219	312
10	264	377
12	309	441

DESIGN BASIS:

DIPRA "THRUST RESTRAINT DESIGN FOR DIP"
VERSION 3.3 DATED 05/09/2003
LAYING CONDITION: TYPE 2
SOIL DESIGNATION: SILT 1
DEPTH OF COVER: 3' MINIMUM
DESIGN PRESSURE: 200 PSI
SAFETY FACTOR: 2.0



APPROX. DEAD END **UNDISTURBED** APPROX. SOIL BEARING THRUST (DIPRA) AT 200 PSI SOIL 2" WATER MAINS PRESSURE WATER PRESSURE **AREA** PIPE **BEARING** TOTAL DIAMETER **THRUST** LOAD SQUARE FEET (INCHES) (POUNDS) (LBS/SQ FT) 724 0.89 813 APPROXIMATE SOIL BEARING CAPACITY (DIPRA) 2 11 HARD CLAY 9,000 SANDY CLAY 6,000 SAND 4.000 -SANDY SILT 3,000 2.000 32"+ SILT 1.500 -MIN. 1,250 -SOFT CLAY 1.000 -10 **PLAN VIEW** DESIGN POINT @ (PIPE DIAMETER) 5" MIN. 9" MAX. 5" MIN. 9" MAX. 36" MIN. 11 3 **ELEVATION VIEW END VIEW**

NO. DESCRIPTION:

- 2" SDR 9 HDPE PIPE (IPS).
- 2" BUTT FUSED HDPE X S.S. THREADED ADAPTOR.
- 3. 2" GATE VALVE (FNPT X FNPT).
- 4. 2" RED BRASS OR S.S. NIPPLE SCH 40 (MNPT X MNPT), L = 36" (MIN).
- 2" RED BRASS OR S.S. 90° BEND (FNPT X FNPT).
- 6. 2" RED BRASS OR S.S. NIPPLE SCH 40 (MNPT X MNPT) LENGTH AS REQUIRED.
- 2" THREADED COUPLING (FNPT X FNPT) RED BRASS OR S.S. OR DUCTILE IRON (F.B.E.).

- STANDARD VALVE BOX ASSEMBLY SEE CLTW STD. DETAIL.
- 9. CAST-IN-PLACE CONCRETE SUPPORT PAD
- 10. PRECAST CONCRETE SOLID BLOCK (16" X 8" X 4").
- AWG #12 GAUGE SOLID COPPER TRACER WIRE WITH BLUE INSULATION (30MIL HDPE) -TERMINATE WITH 24" EXCESS WIRE (COILED) IN VALVE BOX (TYP.).
- 12. UNDISTURBED OR COMPACTED SOIL 100% STANDARD PROCTOR
- 13. DUCTILE IRON PIPE RESTRAINED LENGTH AS REQUIRED SEE CLTW STD. DETAILS.
- MJ CAP WITH WEDGE ACTION RESTRAINT GLAND, TAP 2" THREADED OUTLET (FNPT).
- 15. 2" RED BRASS OR S.S. NIPPLE SCH 40 (MNPT X MNPT), L = 12" (MIN).

NO SCALE

2-INCH BLOW OFF ASSEMBLY (DEAD END MAIN) WITH 2-INCH GATE VALVE 2-INCH THROUGH 12-INCH MAINS

W&TER

CHARLOTTE WATER
A CITY OF CHARLOTTE DEPARTMENT
STANDARD DETAILS
WATER

P

VERSION 1.0

DATE **04/2024**

DETAIL 10.5.4