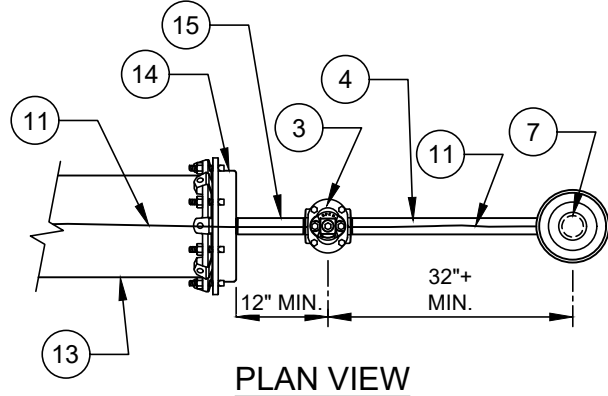
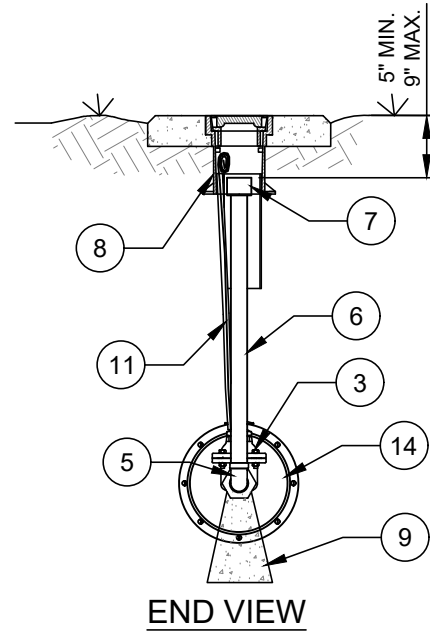
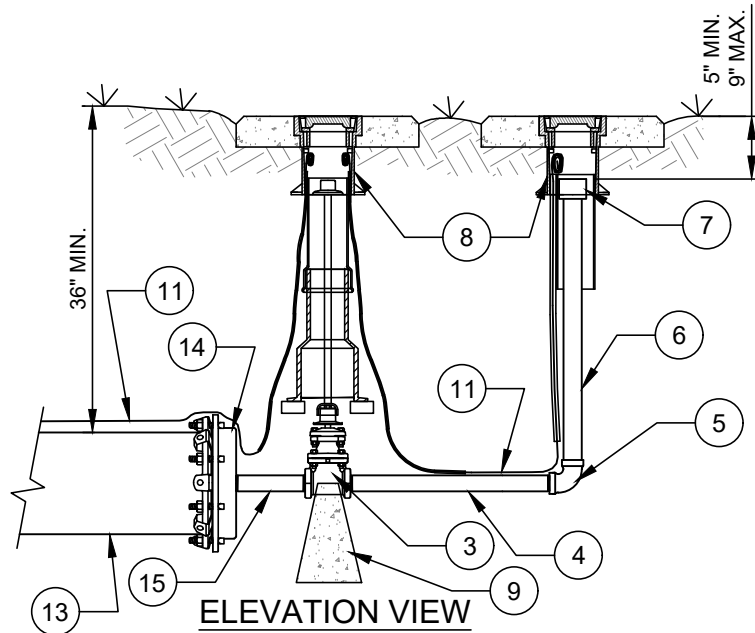


## 6" THROUGH 12" WATER MAINS

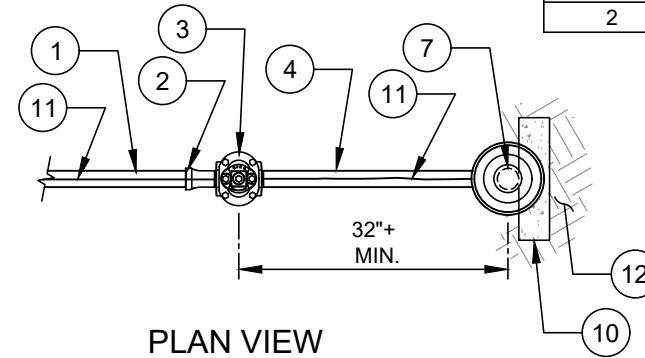


PIPE DIAMETER (INCHES)	REQUIRED RESTRAINED LENGTH:	
	BARE DIP (FEET)	POLYWRAPPED DIP (FEET)
6	169	242
8	219	312
10	264	377
12	309	441

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

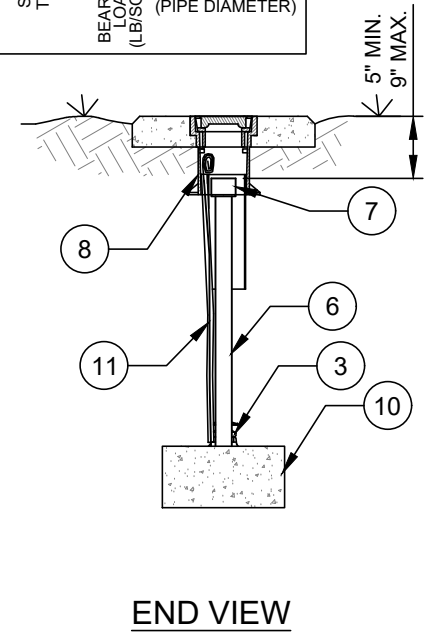
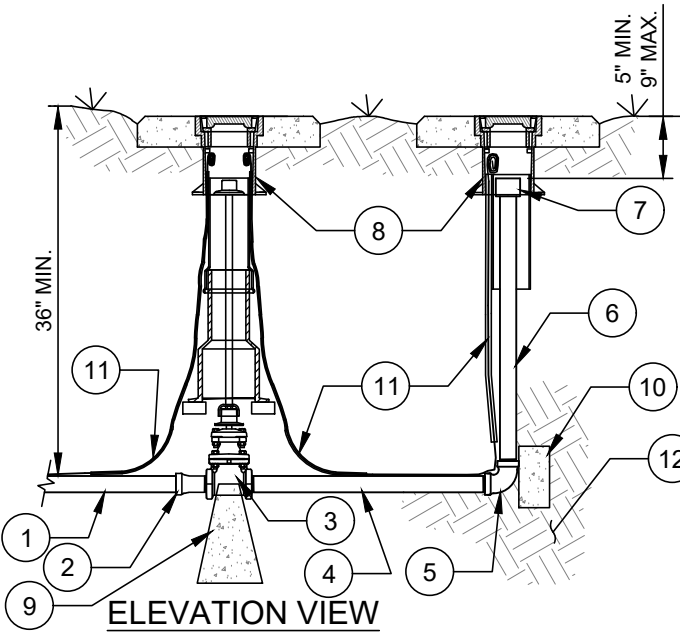


## 2" WATER MAINS



APPROX. DEAD END THRUST (DIPRA) AT 200 PSI WATER PRESSURE		UNDISTURBED SOIL BEARING AREA	APPROX. SOIL PRESSURE
PIPE DIAMETER (INCHES)	TOTAL THRUST (POUNDS)	SQUARE FEET	BEARING LOAD (LBS/SQ FT)
2	724	0.89	813

APPROXIMATE SOIL BEARING CAPACITY (DIPRA)	
HARD CLAY	9,000
SANDY CLAY	6,000
SAND	4,000
SANDY SILT	3,000
SILT	2,000
SOFT CLAY	1,500
MUCK	1,250
BEARING LOAD (LBS/SQ FT)	750
	500
	250
	0
SOIL TYPE	DESIGN POINT @ (PIPE DIAMETER)



### NO. DESCRIPTION:

- 2" SDR 9 HDPE PIPE OR PVC (IPS)
- 2" BUTT FUSED HDPE X S.S. THREADED ADAPTOR OR FOR PVC USE 2" HARCO MALE ADAPTER (BELL X MALE NPT)
- 2" GATE VALVE (FNPT X FNPT).
- 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).
- 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.
- CAST-IN-PLACE CONCRETE SUPPORT PAD.
- 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.).
- UNDISTURBED OR COMPACTED SOIL - 100% STANDARD PROCTOR.
- DUCTILE IRON PIPE - RESTRAINED - LENGTH AS REQUIRED - SEE CLTW STD. DETAILS.
- MJ CAP WITH WEDGE ACTION RESTRAINT GLAND, TAP 2" THREADED OUTLET (FNPT).
- 2" RED BRASS OR S.S. NIPPLE - SCH 40 (MNPT X MNPT), L = 12" (MIN).