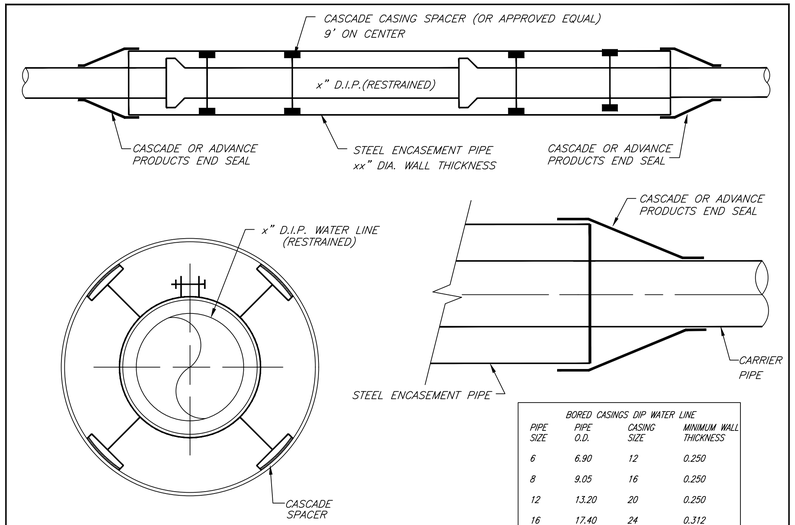


BORING ENCASEMENT DETAIL
(N.T.S.)

BORED CASINGS DIP WATER LINE

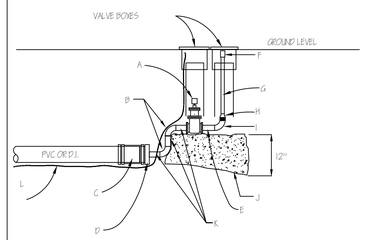
PIPE SIZE	PIPE O.D.	CASING SIZE	MINIMUM WALL THICKNESS
6	6.90	12	0.250
8	9.05	16	0.250
12	13.20	20	0.250
16	17.40	24	0.312
20	21.60	36	0.469
24	25.80	36	0.469

NOTE: BLOW-OFFS SHALL NOT BE DIRECTED TOWARDS ROADS OR SO THAT THE WATER WILL FLOW INTO CREEKS, ETC. AT STREAM CROSSINGS DIRECT AWAY FROM STREAMS, OVER GROUND.

BLOW-OFF ASSEMBLY

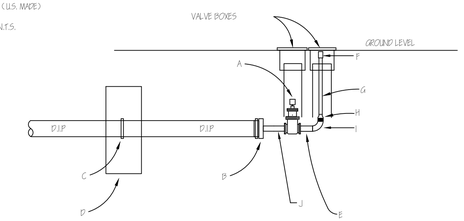
NOTE: ALL FITTINGS & PIPE SHALL BE DOMESTIC. (U.S. MADE)

N.T.S.



LEGEND

A- IRON BODY VALVE W/ 2" OPERATING NUT
B- 90 DEG. THREADED STAINLESS STEEL BEND
C- M.J. DUCTILE IRON LONG SLEEVE
D- M.J. DUCTILE IRON PLUG TAPPED 2" (5" FOR 8" LINE DIAMETER)
E- MINIMUM 12" THREADED GALVANIZED NIPPLE
F- COUPLING
G- GALVANIZED PIPE
H- BUSHING
I- 90 DEG. BEND
J- CONCRETE BACKING
K- THREADED STAINLESS STEEL NIPPLES
L- LOCATE WIRE



LEGEND

A- IRON BODY VALVE W/ 2" OPERATING NUT
B- M.J. CAP WITH MEGA LUG
C- MEGA LUG
D- THRUST COLLAR (SIZED PER S.J.W.D. THRUST BLOCK DETAIL)
E- MINIMUM 12" THREADED GALVANIZED NIPPLE
F- COUPLING
G- GALVANIZED PIPE
H- BUSHING
I- 90 DEG. BEND
J- THREADED STAINLESS STEEL NIPPLES

LINE DIAMETER	A	B	C	D	E	F	G	H	I	K
3"	2"	2"	3"	3"	2" X 12"	1 1/ 4"	1 1/ 4"	2" X 1 1/ 4"	2"	2" X 6"
6"	2"	2"	6"	6"	2" X 12"	2"	2"	NONE	2"	2" X 6"
8"	3"	3"	8"	8"	3" X 12"	3"	3"	NONE	3"	3" X 6"

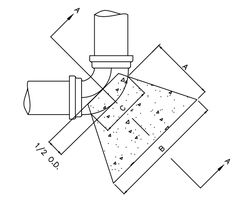
Pipe Diameter,Inches	Min. Flow Required, gpm	Orifice Size,Inches
2 inch (Deal)	12.00 gpm	
3 inch (Pickle)	1 gpm	
4 inch (McCall)	1.25 gpm	
6 inch (Stone)	1.50 gpm	
8 inch (Cobb)	2 gpm	
8 inch (Wilson)	2.50 gpm	
10 inch (Bell)	Not Rated	
12 inch (Bell)	Not Rated	
14 inch (Bell)	Not Rated or 4"	
16 inch (Bell)	Not Rated or 4"	
18 inch (Bell)	Not Rated or 4"	

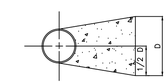
NOTE

SOIL CONDITIONS SHALL BE VERIFIED BY S.J.W.D. WATER DISTRICT INSPECTOR BEFORE DESIGN IS IMPLEMENTED.

DESIGN DATA:

- DIMENSIONS OF THRUST BLOCK IN FEET BASED ON 2000 POUNDS PER SQUARE FOOT SOIL BEARING PRESSURE AND 200 POUNDS PER SQUARE INCH TEST PRESSURE ACTUAL INSIDE DIAMETER OF DUCTILE IRON PIPE. CLASS 51 USED AS STANDARD.
- CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS. HIGH EARLY CONCRETE SHALL BE USED.





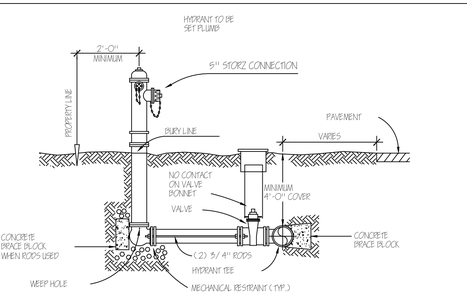
SECTION A–A

MINIMUM DIMENSIONS FOR CONCRETE BLOCKING

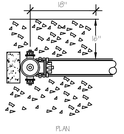
BEND	SIZE	A	B	C	D	VOLUME CY
11 1/4°	6"	1'-0"	2'-0"	4"	1'-0"	0.05
	8"	1'-0"	2'-0"	5"	1'-0"	0.05
	10"	1'-0"	2'-0"	6"	1'-0"	0.05
	12"	1'-0"	2'-0"	7"	1'-0"	0.05
	14"	2'-0"	2'-0"	11"	1'-6"	0.16
	16"	1'-0"	2'-0"	1'-0"	2'-0"	0.22
	20"	2'-0"	3'-0"	1'-3"	2'-0"	0.32
	24"	2'-0"	3'-0"	1'-6"	3'-0"	0.50
22 1/2°	6"	1'-0"	2'-0"	6"	1'-0"	0.05
	8"	1'-0"	2'-0"	7"	1'-0"	0.05
	10"	1'-0"	2'-0"	8"	1'-6"	0.08
	12"	1'-0"	2'-0"	10"	2'-0"	0.11
	14"	2'-0"	3'-0"	1'-1"	2'-0"	0.29
	16"	2'-0"	4'-0"	1'-0"	2'-0"	0.37
	20"	2'-0"	4'-0"	1'-3"	3'-0"	0.58
	24"	3'-0"	4'-6"	1'-6"	4'-0"	1.33
45°	6"	1'-0"	2'-0"	6"	1'-0"	0.05
	8"	1'-0"	2'-0"	7"	2'-0"	0.10
	10"	2'-0"	3'-0"	9"	2'-0"	0.28
	12"	2'-0"	3'-0"	1'-1"	3'-0"	0.44
	14"	2'-0"	4'-0"	1'-1"	3'-0"	0.55
	16"	3'-0"	5'-0"	1'-0"	3'-0"	1.00
	20"	4'-0"	6'-0"	1'-3"	4'-0"	2.15
	24"	4'-0"	7'-0"	1'-6"	5'-0"	3.15
90°	6"	1'-0"	2'-0"	1'-0"	2'-0"	0.11
	8"	2'-0"	3'-0"	1'-3"	2'-6"	0.37
	10"	2'-6"	3'-9"	1'-6"	3'-0"	0.72
	12"	2'-0"	4'-0"	2'-0"	4'-0"	0.84
	14"	3'-0"	5'-0"	2'-0"	4'-6"	1.71
	16"	4'-0"	6'-0"	2'-0"	4'-9"	2.84
	20"	4'-0"	7'-0"	2'-8"	6'-4"	4.51
	24"	5'-0"	8'-0"	3'-4"	8'-0"	8.40
TEES & PLUGS	6"	1'-0"	2'-0"	10"	1'-6"	0.08
	8"	1'-9"	2'-8"	1'-1"	2'-0"	0.23
	10"	2'-0"	4'-0"	1'-1"	2'-0"	0.41
	12"	2'-6"	3'-9"	1'-7"	3'-0"	0.75
	14"	3'-0"	5'-0"	2'-0"	3'-0"	1.17
	16"	3'-0"	5'-0"	2'-0"	4'-0"	1.59
	20"	4'-0"	6'-0"	2'-8"	5'-0"	3.21
	24"	6'-0"	9'-0"	3'-4"	5'-0"	6.85

TYPICAL HORIZONTAL THRUST BLOCK

N.T.S.



PLACE GRAVEL TO 6" ABOVE WEEP HOLES, 18" BELOW WEEP HOLES AND 18" TOWARDS THE MAIN. ALSO 6" LATERALLY ON EACH SIDE.



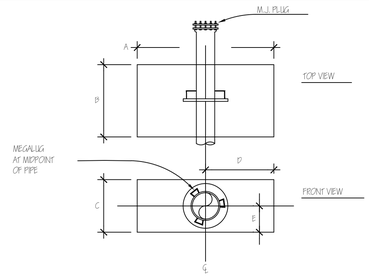
PLAN

NOTES:

1) MEGA LUGS OR RODS ACCEPTABLE FOR RESTRAINT. RODS TO BE MADE OF STEEL HAVING A TENSILE STRENGTH OF 60,000 P.S.I.. RODS TO BE ZINC COATED.
2) AFTER INSTALLATION, ALL STEEL COMPONENTS, INCLUDING STRAPS, NUTS, BOLTS, COUPLINGS AND CLAMPS SHALL BE COVERED WITH 17.5 MILS OF KOPPERS BITMASTIC 300-M OR EQUAL.
3) HYDRANT NOZZLES AS INDICATED ON PLANS.
4) HYDRANT LEAD TO BE DUCTILE IRON.

TYPICAL HYDRANT INSTALLATION DETAIL

N.T.S.



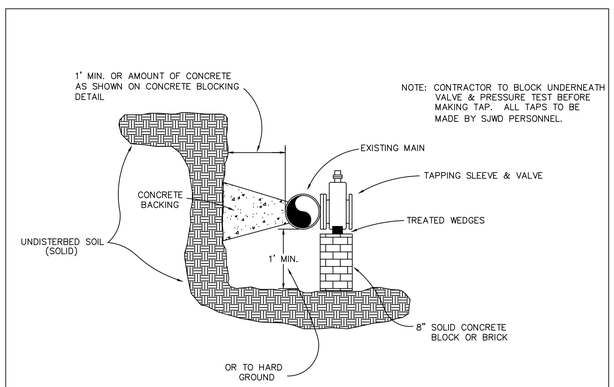
PIPE SIZE	A	B	C	D	E	CY.
4"	5'-0"	2'-0"	1'-6"	1'-6"	0'-8"	0.55
6"	4'-0"	2'-0"	1'-6"	2'-0"	0'-9"	0.44
8"	4'-6"	2'-0"	2'-0"	2'-3"	1'-0"	0.67
12"	6'-0"	2'-0"	2'-0"	3'-0"	1'-6"	1.55
16"	6'-6"	2'-0"	4'-6"	3'-3"	2'-3"	2.17

NOTES:

1) TO BE INSTALLED ON MECHANICAL JOINT DUCTILE IRON PIPE.
2) MEGALUG TO BE ORIENTED WITH FLANGE FACING AWAY FROM PLUG.
3) WRAP MEGALUG IN TAPE TO KEEP CONCRETE OUT OF MECHANISM.
4) CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3,000 P.S.I. AT 28 DAYS. "HIGH EARLY" CONCRETE SHALL BE USED.
5) DIMENSIONS OF CONCRETE COLLARS BASED ON 2000 P.S.I. SOIL BEARING.
6) SOIL CONDITIONS SHALL BE VERIFIED PRIOR TO CONSTRUCTION.
7) FOR 3" PIPE USE 4" DIAMETER DESIGN.

TYPICAL CONCRETE COLLAR DETAIL

N.T.S.

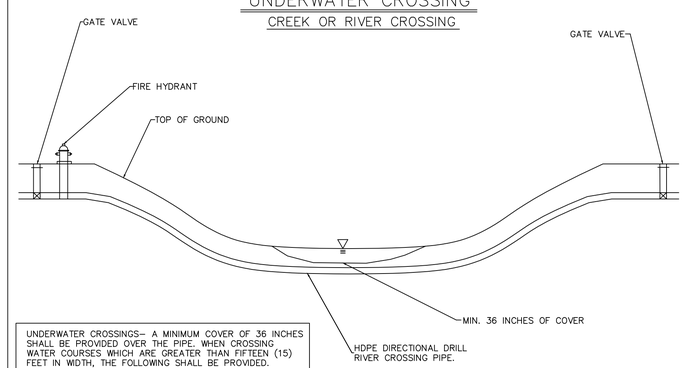


TAPPING SLEEVE & VALVE

N.T.S.

UNDERWATER CROSSING

CREEK OR RIVER CROSSING



UNDERWATER CROSSINGS– A MINIMUM COVER OF 36 INCHES SHALL BE PROVIDED OVER THE PIPE. WHEN CROSSING WATER COURSES WHICH ARE GREATER THAN FIFTEEN (15) FEET IN WIDTH, THE FOLLOWING SHALL BE PROVIDED.

1. THE PIPE MATERIAL AND JOINTS SHALL BE DESIGN APPROPRIATELY.
2. VALVES SHALL BE LOCATED SO THAT THE SECTION CAN BE ISOLATED FOR TESTING OR REPAIR; THE VALVES SHALL BE EASILY ACCESSIBLE, AND NOT SUBJECT TO FLOODING; AND,
3. A BLOW–OFF OR FIRE HYRANT SHALL BE PROVIDED ON THE SIDE OPPOSITE THE SUPPLY SERVICE. IT SHALL BE SIZED IN ACCORDANCE WITH R.61–58.4(D)(7).

DATE	REVISIONS & RECORDS OF ISSUE	BY	CH	AP

DRAWN B. EUBANKS
CHECKED
APPROVED
DATE 1/13/2022

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864-439-4423

SEAL
SOUTH CAROLINA
KIMBERLY R. FORTNER
No. 18374
REGISTERED PROFESSIONAL ENGINEER

STANDARD DETAILS

SHEET NO.
1 OF 1