



MECHANICAL THRUST RESTRAINT MINIMUM PIPE LENGTHS

34W

FITTING TYPE	MIN. LENGTH OF PIPE (FEET) TO BE RESTRAINED											
	4"	6"	8"	10"	12"	16"	20"	24"	30"	36"	42"	48"
90° HORIZ. BEND	14	20	25	30	35	45	54	62	98	112	124	135
45° HORIZ. BEND	6	8	11	13	15	19	22	26	41	46	51	56
22.5° HORIZ. BEND	3	4	5	6	7	9	11	12	19	22	25	27
11.25° HORIZ. BEND	1	2	3	4	4	5	6	6	10	11	12	13
90° VERT. OFFSET	29	41	53	64	76	95	115	134	214	246	276	304
45° VERT. OFFSET	7	10	13	16	19	25	30	35	57	66	74	83
22.5° VERT. OFFSET	3	4	6	7	8	10	12	15	23	27	31	34
11.25° VERT. OFFSET	1	2	4	4	4	5	6	7	11	13	15	16
PLUG (DEAD END)	32	45	59	70	83	107	129	151	214	246	276	304
IN-LINE VALVE	32	45	45	45	45	65	80	110	125	140	155	
TEE (BRANCH RESTRAINT)	47x	23	-	-	-	-	-	-	-	-	-	-
12x	7	28	41	55	67	90	-	-	-	-	-	-
20x	1	21	38	52	65	88	109	-	-	-	-	-
24x	1	18	34	49	62	86	108	129	-	-	-	-
30x	1	8	28	44	58	83	106	127	208	-	-	-
36x	1	1	22	39	54	80	103	124	208	240	-	-
42x	1	1	15	33	49	77	100	122	205	239	270	-
48x	1	1	7	27	44	73	97	120	203	238	268	298
6x	23	-	-	-	-	-	-	-	-	-	-	-
8x	38	25	-	-	-	-	-	-	-	-	-	-
10x	57	43	24	-	-	-	-	-	-	-	-	-
12x	72	60	44	41	-	-	-	-	-	-	-	-
16x	99	90	78	75	45	-	-	-	-	-	-	-
20x	123	116	107	105	81	45	-	-	-	-	-	-
24x	146	140	132	131	111	82	45	-	-	-	-	-
30x	209	204	197	188	177	153	116	75	-	-	-	-
36x	243	236	233	226	217	196	168	135	74	-	-	-
42x	273	270	265	259	252	234	211	183	133	72	-	-
48x	301	298	294	289	283	268	249	226	183	131	71	-

GENERAL NOTES

- DEPARTMENT - THE PALM BEACH COUNTY WATER UTILITIES DEPARTMENT.
- CONTRACTOR - UTILITY CONTRACTOR AND ALL UTILITY SUBCONTRACTORS.
- ENGINEER - ENGINEER RESPONSIBLE FOR INSPECTION AND CERTIFICATION.
- A PRE-CONSTRUCTION MEETING IS TO BE HELD PRIOR TO DELIVERY OF MATERIALS AND INITIATION OF ANY POTABLE WATER, RECLAIMED WATER AND/OR WASTEWATER SYSTEM CONSTRUCTION. THE MEETING SHALL BE ATTENDED BY THE DEPARTMENT, CONTRACTOR, ENGINEER AND OTHER INTERESTED PARTIES.
- ANY REVISIONS TO THE APPROVED PLANS SHALL BE CALLED TO THE ATTENTION OF THE DEPARTMENT PRIOR TO THE PRE-CONSTRUCTION MEETING. REVISED PLANS MUST BE APPROVED PRIOR TO THE MEETING.
- FIVE (5) COPIES OF THE CURRENT APPROVED MATERIAL LIST AND ALL NECESSARY SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO SCHEDULING OF THE PRE-CONSTRUCTION MEETING.
- ALL APPLICABLE PERMITS MUST BE OBTAINED PRIOR TO PRECONSTRUCTION MEETING. (GOV. HEALTH DEPARTMENT, COUNTY ENGINEER, ETC.).
- THE CONTRACTOR SHALL MAINTAIN A CURRENT APPROVED SET OF CONSTRUCTION PLANS ON JOB SITE.
- ALL MATERIALS SUPPLIED SHALL CONFORM TO PRODUCT LIST AND SHOP DRAWINGS AS APPROVED PRIOR TO CONSTRUCTION. SUBSTITUTE MATERIALS SHALL NOT BE APPROVED AFTER DELIVERY TO THE JOB SITE. ALL REQUESTS FOR MATERIAL SUBSTITUTION SHALL BE APPROVED PRIOR TO DELIVERY OF THESE MATERIALS TO THE JOB SITE.
- THE LOCATIONS OF EXISTING UTILITIES SHOWN ON THE APPROVED PLANS ARE TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR. APPROVAL OF DEVELOPMENT PLANS BY THE DEPARTMENT IN NO WAY IMPLIES VERIFICATION OF THE ACCURACY OF THOSE PLANS OR FEATURES SPECIFIED THEREON. ANY DISCREPANCY IN OR VARIATION FROM THE APPROVED PLANS IS TO BE BROUGHT TO THE ATTENTION OF THE DEPARTMENT BY THE ENGINEER AND CONTRACTOR. THE CONTRACTOR SHALL CONFIRM AND INSTALL (IF NECESSARY) ADEQUATE MECHANICAL PIPE / JOINT RESTRAINT ON EXISTING PIPES PRIOR TO CONNECTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES THROUGHOUT THE DURATION OF CONSTRUCTION FOR THE PROTECTION OF EXISTING AND NEWLY INSTALLED UTILITIES FROM DAMAGE OR DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING SUCH MEASURES AS NECESSARY TO PROTECT THE HEALTH, SAFETY AND WELFARE OF THOSE PERSONS HAVING ACCESS TO THE WORK SITE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING LOCATIONS FROM ALL OTHER UTILITY FACILITIES.
- THE CONTRACTOR OR ENGINEER SHALL SCHEDULE INSPECTIONS AND TESTS A MINIMUM OF 24-48 HOURS IN ADVANCE.
- NO CONNECTION TO OR ANY OTHER CONSTRUCTION SHALL BE PERFORMED ON AN EXISTING DEPARTMENT OWNED OR MAINTAINED MAIN OR STRUCTURE WITHOUT THE PRESENCE OF A DEPARTMENT INSPECTOR.
- FACILITIES PROPOSED HEREIN SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS AND THE DEPARTMENT'S MINIMUM STANDARDS. JOINTS BETWEEN THE PRECEDING DOCUMENTS SHOULD BE CALLED TO THE ATTENTION OF THE DEPARTMENT FOR VALUES (IF APPROVED IN ADVANCE BY DEPARTMENT). POTABLE WATER AND RECLAIMED WATER MAIN VALVES LARGER THAN 10 INCHES SHALL BE BUTTERFLY VALVES.
- UPON COMPLETION OF CONSTRUCTION, A FINAL INSPECTION SHALL VERIFY PROPER ADEQUACY TO ALL FACETS OF THE PLANS AND SPECIFICATIONS.

PRESSURE PIPE NOTES

- THERE SHALL BE 36" MINIMUM COVER FROM FINISHED GRADE TO TOP OF PIPE.
- DUCTILE IRON PIPE (DIP) THICKNESS SHALL CONFORM TO THE DEPARTMENT'S APPROVED MATERIAL LIST. POTABLE WATER AND RECLAIMED WATER MAIN DIP SHALL BE CEMENT LINED. FORCE MAIN DIP SHALL BE CERAMIC EPOXY LINED.
- PVC PRESSURE PIPE SHALL BE C-900, SDR-18, 150 PSI.
- ALL FITTINGS SHALL BE DUCTILE IRON WITH MECHANICAL JOINTS AND CEMENT OR APPROVED EPOXY LINED.
- POTABLE WATER, RECLAIMED WATER AND WASTEWATER FORCE MAIN VALVES 10 INCHES AND SMALLER SHALL BE RESILIENT SEAT GATE VALVES. TWELVE-INCH (12") OR LARGER FORCE MAIN VALVES SHALL BE RESILIENT SEAT GATE VALVES OR ECCENTRIC PLUG VALVES (IF APPROVED IN ADVANCE BY DEPARTMENT). POTABLE WATER AND RECLAIMED WATER MAIN VALVES LARGER THAN 10 INCHES SHALL BE BUTTERFLY VALVES.
- ALL TRENCHING, PIPE-LAYING, BACKFILL, PRESSURE TESTING, AND DISINFECTION MUST COMPLY WITH ALL APPLICABLE FEDERAL, STATE, COUNTY AND HEALTH DEPARTMENT STANDARDS AND REGULATIONS.

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POTABLE WATER #4 STANDARD DETAILS

CONSULTANT:

IT'S THE LAW!
CALL 48 HOURS BEFORE YOU DIG
1-800-432-4770
SUNSHINE STATE ONE-CALL CENTER
UTILITIES NOTIFICATION CENTER

DESIGNED BY: WUD

DRAWN BY: M. BUCKNER
CHECKED BY: J. LAMMERT
APPROVED BY: WUD

Palm Beach County
Water Utilities Department
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West Palm Beach, FL 33416-6097

SHEET NUMBER 0 OF 0

SEAL

DATE: JUNE 2019, JAN 2023

REVISION / REMARKS

BY: J.L., J.L.

DATE: JUNE 2019, JAN 2023

REVISION / REMARKS

GENERAL REVISION, GENERAL REVISION

STANDARD DETAILS

DATE: MAR 01, 2023