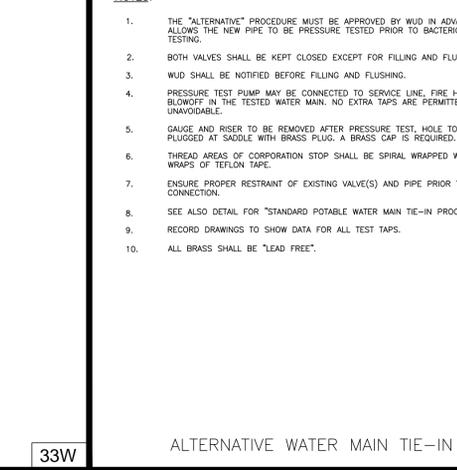
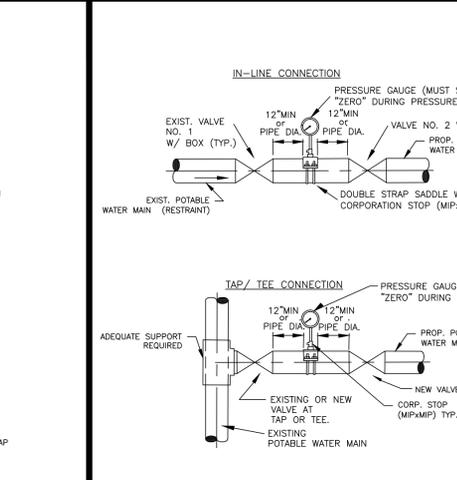


MIN. LENGTH OF PIPE (FEET) TO BE RESTRAINED  
(SOURCES: EBAA IRON RESTRAINT LENGTH CALCULATION PROGRAM FOR PVC PIPE, RELEASE 3.1, AND DIPRA THRUST RESTRAINT FOR DUCTILE IRON PIPE, RELEASE 3.2)

FITTING TYPE	PIPE SIZE															
	4"	6"	8"	10"	12"	16"	20"	24"	30"	36"	42"	48"	4"	6"	8"	10"
90° HORIZ. BEND	14	20	25	30	35	45	54	62	98	112	124	135	14	20	25	30
45° HORIZ. BEND	6	8	11	13	15	19	22	26	41	46	51	56	6	8	11	13
22.5° HORIZ. BEND	3	4	5	6	7	9	11	12	19	22	25	27	3	4	5	6
11.25° HORIZ. BEND	1	2	3	3	4	4	5	6	10	11	12	13	1	2	3	3
90° VERT. OFFSET	29	41	53	64	74	95	115	134	214	246	276	304	29	41	53	64
45° VERT. OFFSET	12	19	24	29	34	39	48	56	89	102	114	126	12	19	24	29
22.5° VERT. OFFSET	6	9	12	14	17	19	23	27	43	49	55	60	6	9	12	14
11.25° VERT. OFFSET	1	1	1	2	2	2	3	3	6	7	8	8	1	1	1	2
PLUG (DEAD END)	32	45	59	70	83	107	129	151	214	246	276	304	32	45	59	70
IN-LINE VALVE	32	45	45	45	45	55	65	80	110	125	140	155	32	45	45	45
4\"/>																



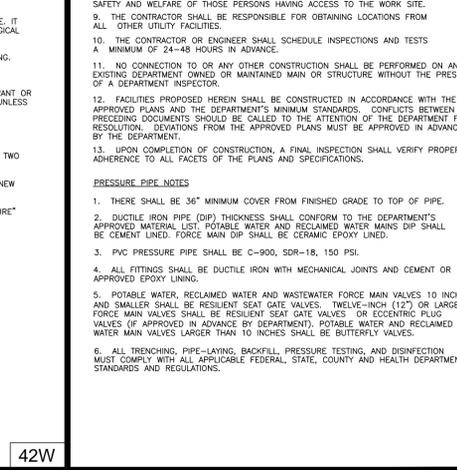
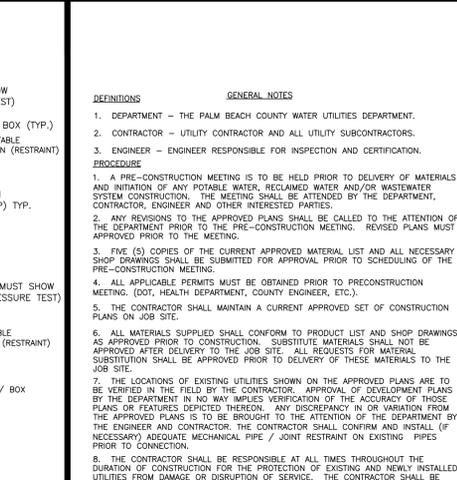
POTABLE WATER MAIN PRESSURE TEST CRITERIA

AVG. TEST PRESSURE-PSI	2	3	4	6	8	10	12	14	16	18	20	24	30	36	42	48
150	0.10	0.14	0.18	0.27	0.37	0.46	0.55	0.64	0.73	0.83	0.92	1.10	1.38	1.65	1.93	2.20
200	0.10	0.15	0.21	0.31	0.42	0.53	0.63	0.74	0.84	0.95	1.06	1.27	1.59	1.91	2.22	2.54

FORMULA BASIS:  $L = \frac{(33 \times Y \times D \times P)^2}{148,000 \times X}$

L = MAXIMUM QUANTITY OF WATER TO BE ADDED (GALLONS PER HOUR)  
Y = LENGTH OF PIPE TESTED (FEET)  
D = DIAMETER OF PIPE (INCHES)  
P = TEST PRESSURE (P.S.I.)  
X = MECHANICAL OR PUSH-ON JOINT, 18 FT. NOMINAL LENGTHS, PER 1000 FT. OF PIPE

NOTES:  
1. TO OBTAIN THE MAXIMUM QUANTITY OF WATER FOR PIPE WITH 20 FT. NOMINAL LENGTHS, MULTIPLY THE QUANTITY CALCULATED FROM THE TABLE BY 0.9.  
2. THE MAXIMUM QUANTITY OF ADDED WATER FOR A PIPELINE IS CALCULATED BY MULTIPLYING THE QUANTITY PER HOUR AS OBTAINED FROM THE ABOVE TABLE, BY THE DURATION OF THE TEST IN HOURS AND BY THE TOTAL LENGTH OF THE LINE BEING TESTED DIVIDED BY 1,000. IF THE LINE UNDER TEST SECTIONS OF VARIOUS DIAMETERS, THE MAXIMUM QUANTITY ADDED WILL BE THE SUM OF THE COMPUTED QUANTITIES FOR EACH SIZE.  
3. MAXIMUM TEST LENGTH = 2,500 FEET PER SECTION.  
4. THIS STANDARD SHALL REFLECT ANY REVISION OF A.W.W.A. C-600, HOWEVER, THE MAXIMUM QUANTITY OF WATER ADDED SHALL NOT EXCEED 50% OF THE RECOMMENDED LIMIT PER APPLICABLE A.W.W.A. C-600 STANDARD.  
5. STANDARD TEST PRESSURE = 150 P.S.I.; 200 P.S.I. FOR MAINS LARGER THAN 24\"/>



CONSULTANT: SIMMONS & WHITE  
IT'S THE LAW! CALL 48 HOURS BEFORE YOU DIG 1-800-432-4770  
SUNSHINE STATE ONE CALL OF FLORIDA, INC. UTILITIES NOTIFICATION CENTER

JOB NO. 14-091  
DRAWING NO. 14091S12

DESIGNED BY: WUD  
DRAWN BY: WUD  
CHECKED BY: A. GALICKI  
APPROVED BY: WUD

Palm Beach County  
Water Utilities Department  
P.O. Box 16097  
West Palm Beach, FL 33416-6097