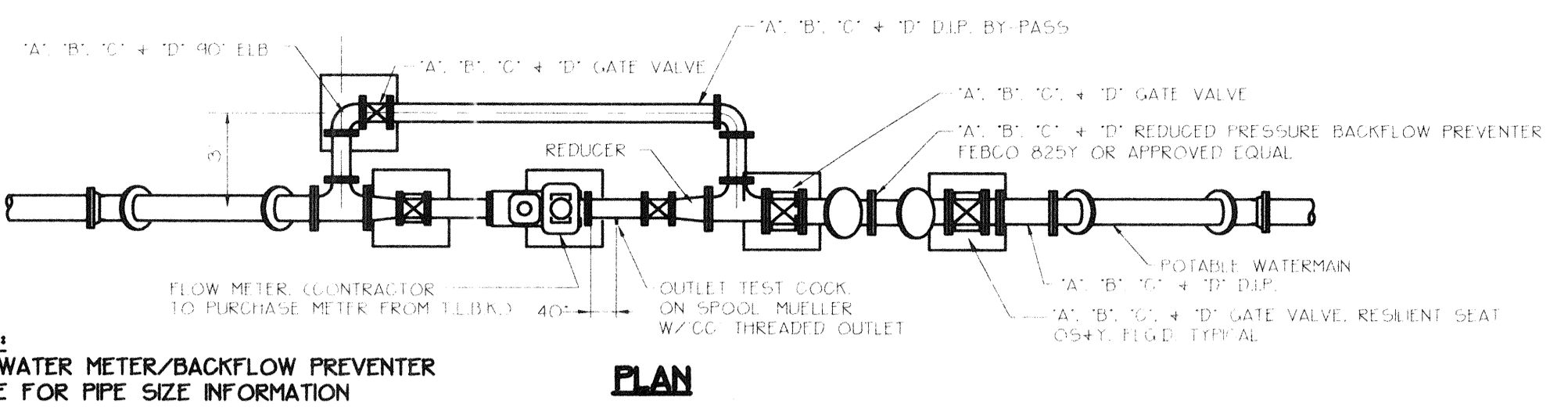


SECTION

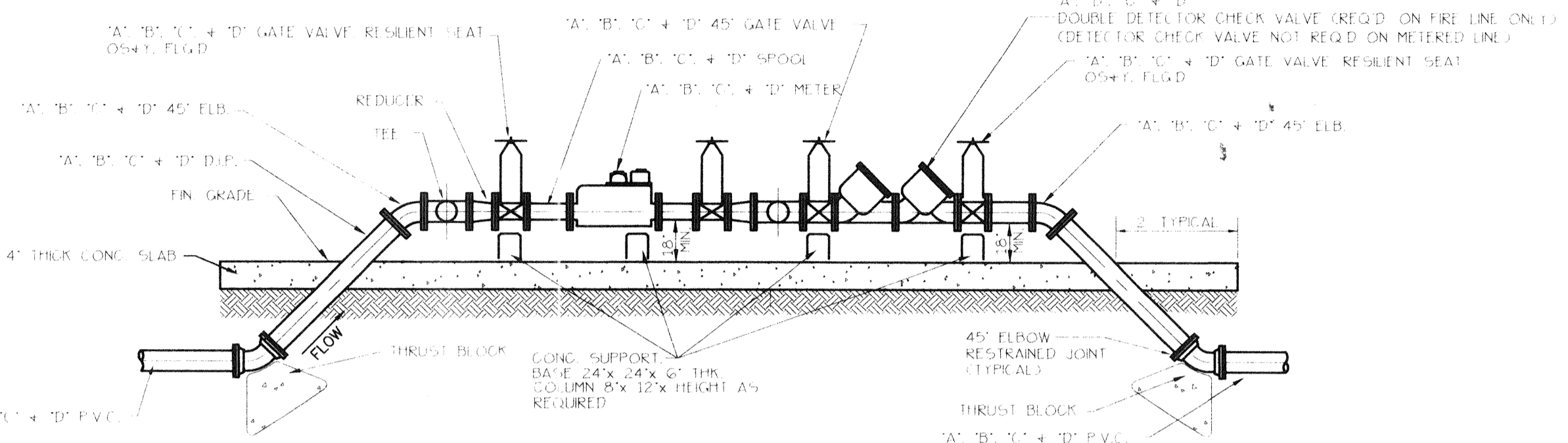
CARRIER PIPE NOMINAL SIZE	CASING PIPE SIZE ROAD MIN. O.D. MIN. WALL THK.	CASING PIPE SIZE RAILROAD MIN. O.D. MIN. WALL THK.
4"	12"	12"
6"	16"	16"
8"	20"	20"
10"	24"	24"
12"	28"	28"
14"	32"	32"
16"	36"	36"
18"	40"	40"
20"	44"	44"
24"	48"	48"
30"	54"	54"
36"	60"	60"
42"	66"	66"
48"	72"	72"

CASING/CARRIER PIPE JACK AND BORE DETAIL
N.T.S.

NOTES:
 1. 12" AND LARGER CARRIER PIPES REQUIRE 4" x 4" WOOD SGRDS. PER SET, SPACED AS SHOWN ABOVE.
 2. 12" AND SMALLER CARRIER PIPES REQUIRE ONLY 2" x 4" WOOD SGRDS. PER SET, SPACED 30" AWAY FROM THE BOTTOM OF THE CARRIER.
 3. PIPE SIZES MAY VARY WITH LARGER SIZE CARRIER PIPES.
 4. MINIMUM CASING PIPE BASED ON STANDARD FITTING JOINT. PIPE CONTRACTOR SHALL VERIFY MINIMUM CLEARANCE REQUIREMENTS FOR THE TYPE OF CARRIER PIPE SPECIFIED AND INSTALL LARGER THAN MINIMUM CASING SIZE FOR REQUIRED CLEARANCE, AT NO ADDITIONAL COST.

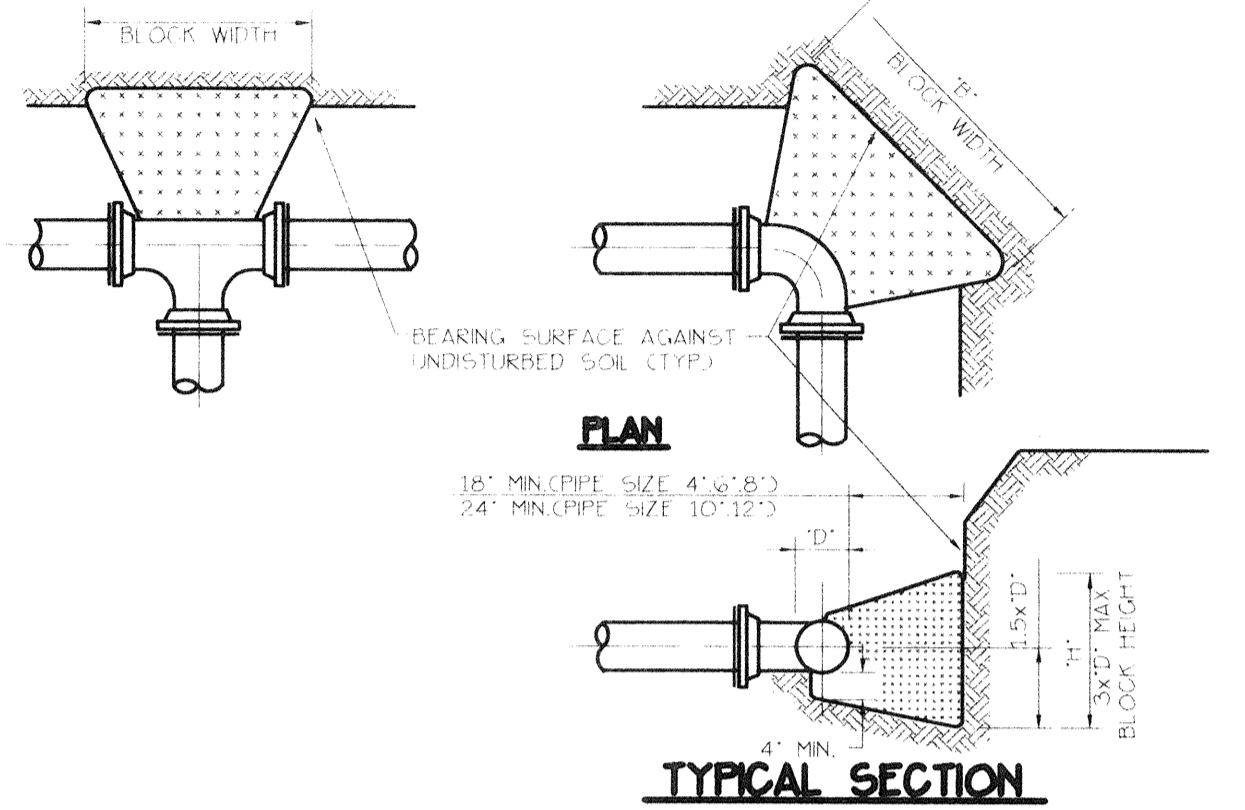


PLAN
N.T.S.



WATER METER AND BACKFLOW PREVENTER DETAIL
N.T.S.

NOTES:
 1. ALL P.V.C. WATERMAIN SHALL BE COLOR CODED BLUE W/ GLASS OR 18 CALWA C-9003 W/ 3/4" OVER AND DETECTABLE TAPE.
 2. CONTRACTOR TO CONTACT TOWN OF LONGBOAT REY UTILITIES DIRECTOR FOR CHANGE OF MATERIALS.
 3. CONTRACTOR SHALL USE 2" P.V.C. SCH 40 FOR WATER SERVICE METER AND RESPECTIVE FITTINGS TO UNITS IN ACCORDANCE W/ CONTRACT DOCUMENTS AND TOWN OF LONGBOAT REY REGULATIONS.



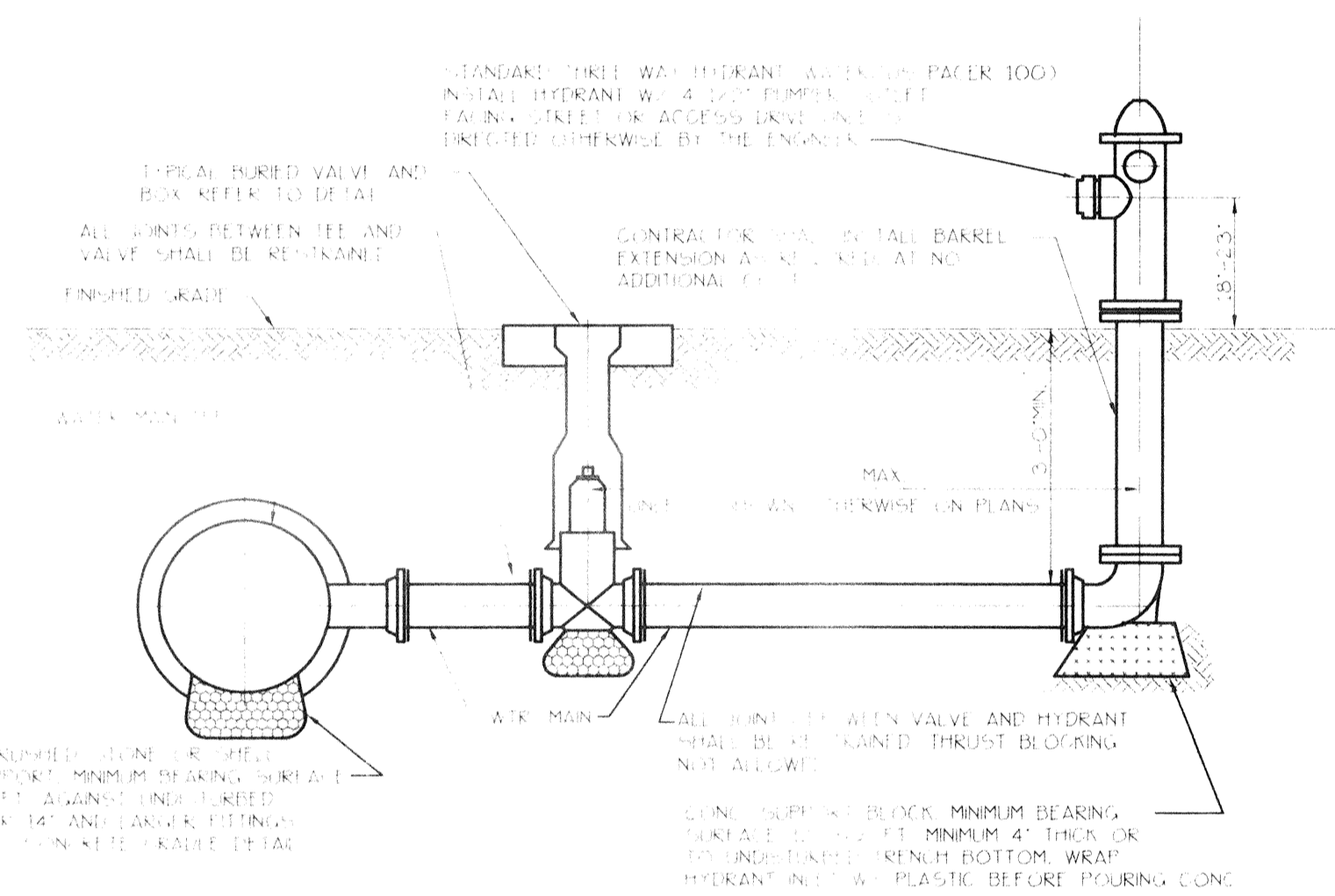
TYPICAL SECTION

PIPE SIZE	45° ELB.	90° ELB.	TEE OR PLUG
4"	2.0	1.1	1.4
6"	4.5	2.4	3.2
8"	8.0	4.3	5.7
10"	12.5	6.8	8.8
12"	18.0	9.7	12.7

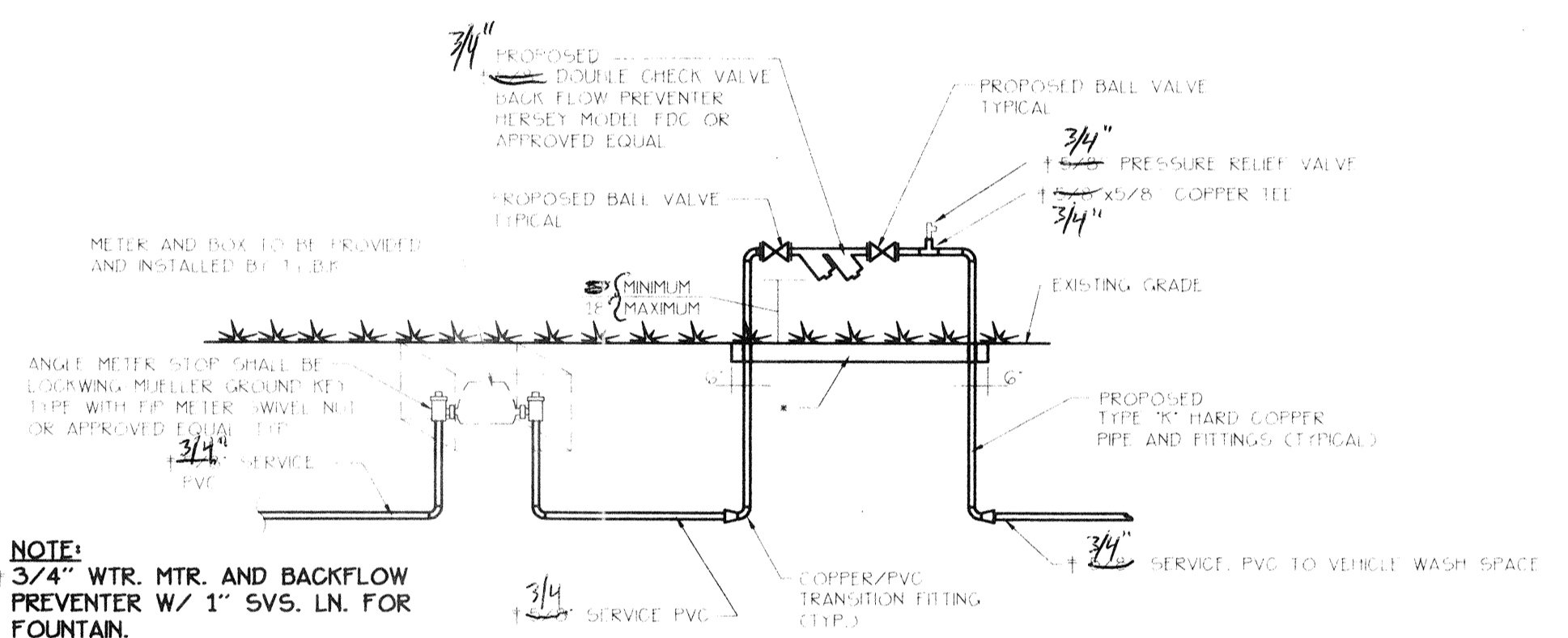
BEARING SURFACE AREA - 1 SQ. FT. ±
 DESIGN PRESSURE = 150 PSF

NOTES:
 1. THRUST BLOCK BEARING AREA BASED ON 2000 PSF SAFE SOIL BEARING. IF ACTUAL SOIL BEARING IS LESS THAN 2000 PSF, CONTRACTOR SHALL BE REQUIRED TO PLACE ADDITIONAL THRUST BEARING AS DETERMINED BY THE ENGINEER, AT NO ADDITIONAL COST.
 2. THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED SOIL.
 3. CONCRETE SHALL BE KEPT CLEAR OF FITTINGS AND PLACED BENEATH FITTINGS AS SHOWN OR SURFACED. WRAP ALL FITTINGS WITH PLASTIC BEFORE POURING THRUST BLOCK CONCRETE.
 4. BEFORE POURING CONCRETE, PLUGS SHALL BE WRAP WITH PLASTIC, AND A PRESSURE TREATED BOARD PLACED BETWEEN IT AND THE CONCRETE.
 5. "B" SHALL NOT EXCEED 2' x 70".
 6. ALL IRON PIPE AND FITTINGS SHALL BE WRAPPED IN 8 MIL BLACK PLASTIC FOR CORROSION PROTECTION.

THRUST BLOCK DETAIL
N.T.S.



TYPICAL FIRE HYDRANT ASSEMBLY DETAIL
N.T.S.



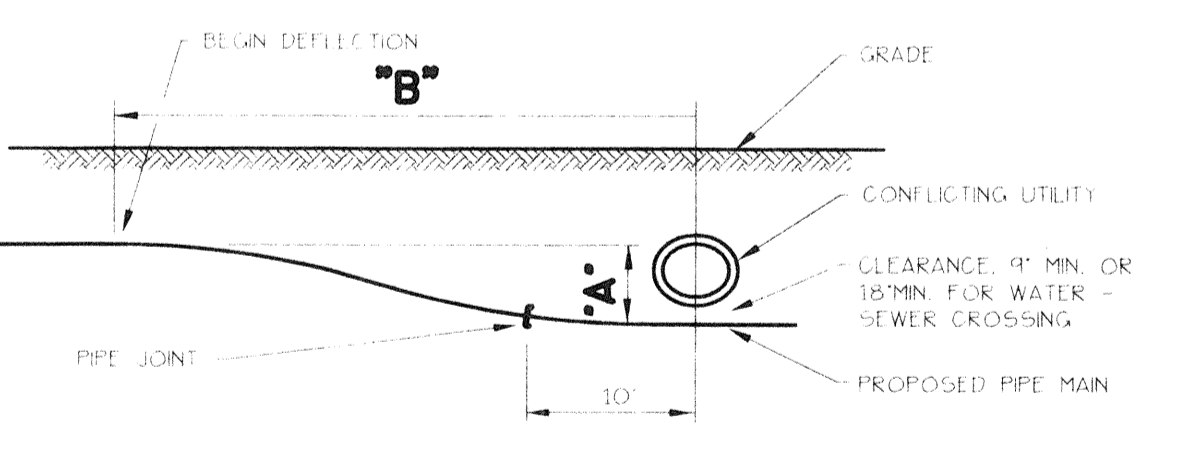
WATER SERVICE FOR VEHICLE WASH SPACE AND WATER FOUNTAIN
N.T.S.

NOTE:
 3/4" WTR. MTR. AND BACKFLOW PREVENTER W/ 1" SVS. LN. FOR FOUNTAIN.
 CONCRETE 4" THICK X 12" WIDE CONCRETE PAD UNDER THE DOUBLE CHECK VALVE BACK FLOW PREVENTER. RIBER PIPE SHALL BE SLEEVED TO PROTECT FROM THE CONCRETE SLAB.

BACKFLOW PREVENTER DETAIL
N.T.S.

WATER METER / BACKFLOW PREVENTER DIMENSION TABLE

DETAIL DESIGNATION	PIPE SIZE (DIAMETER)
"A"	3"
"B"	2"
"C"	1-1/2"
"D"	1"



MINIMUM DISTANCE TO START DEFLECTION "B"

BENDING RADIUS OF PIPE	70	80	100	120	150	200	250	300	350	400	500	550
TOTAL DEFLECTION (FT.)	0.5	2.0	2.0	2.0	2.0	2.0	2.2	2.5	2.6	2.8	3.2	3.4
"A"	1.0	2.0	2.0	2.2	2.2	2.8	3.2	3.5	3.7	4.0	4.6	4.9
	1.5	2.0	2.2	2.4	2.7	3.0	3.5	3.9	4.2	4.6	4.9	5.0
	2.0	2.4	2.5	2.8	3.1	3.5	4.0	4.5	4.9	5.3	5.7	6.0
	3.0	3.0	3.1	3.5	3.8	4.2	4.8	5.5	6.0	6.5	6.9	7.0

ALLOWABLE BENDING RADIUS DETERMINED FOR ASTM D2241 SDR 18 AND C-900

PIPE DIAMETER	1 1/2"	2"	2 1/2"	3"	4"	6"	8"	10"	
ALLOWABLE BENDING RADIUS (FT. ±)	SDR 21	70	80	100	120	150	220	290	360
	C-900	---	---	---	---	200	300	400	475

UTILITY CROSSING DETAIL
N.T.S.

NOTE:
 ALL BURIED DUCTILE IRON PIPE AND FITTINGS SHALL RECEIVE 8 MIL POLYWRAP.

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 PHONE (813) 746-7446 • FAX (813) 746-7809

NO.	DATE	D.C.	DATE	DESCRIPTION	BY	DATE	D.C.	DATE	DESCRIPTION	TASK	INITIALS	DATE
RPA	12-07-94	MMH	12-07-94	NOTE G, 2 WATER METER NOTES (CLBK)						DESIGN	M.M.H.	9/30/94
RPA	2-20-95	MMH	2-20-95	SPECIFIED LOCKING - MULLER ANGLE METER STOP (CLBK)						DRAWN	R.P.A.	9/30/94
RPA	8-1-95	MMH	8-1-95	WATER METER / BACKFLOW PREVENTER SIZE MODIFICATIONS						CHECKED		
RPA	10-20-95	MMH	10-20-95	ELIMINATED DETECTOR CHECK VALVE ON METERED LINE (CLBK)						QUALITY CHK.		
										WORK SCALE		
										VERT. SCALE		

DATE: AUG 15 1996
 SEAL: ENGINEER OR SURVEYOR OF RECORD
 PROJECT NO: ECG-01
 SHEET NO: 7

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 SHEET NO: 7
 VIZCAYA at LONGBOAT KEY
 ECOVENTURE LBK, LTD.
 SITE AND DEVELOPMENT WATER SYSTEM DETAILS