

TYPICAL DETAILS FOR HORIZONTAL CONCRETE BLOCKING

AIR VACUUM RELIEF VALVES & WATER METER CURB STOP

PARALLEL HYDRANT TEE

SWIVEL HYDRANT TEE

DIMENSIONS FOR CONCRETE ANCHORAGES																			
PIPE DIA.	TRENCH WIDTH	90 DEG. BEND		45 DEG. BEND			22 1/2 DEG. BEND			11 1/4 DEG. BEND			TEE OR PLUG						
		C.Y. CONC.	C.Y. CONC.	A	B	C	C.Y. CONC.	A	B	C	C.Y. CONC.	A	B	C	C.Y. Conc. Tee	C.Y. Conc. Plug			
ROCK, SHALE OR TIGHT CLAY																			
48	64			7'-0"	4'-0"	2'-8"	2.61	3'-6"	4'-0"	1'-2"	.71	2'-3"	3'-0"	10"	.27	6'-6"	5'-6"	2.40	1.68
42	58			5'-9"	3'-6"	2'-4"	1.55	3'-3"	3'-6"	1'-2"	.58	2'-0"	2'-6"	10"	.29	5'-6"	5'-0"	1.81	1.30
36	52	.72		4'-9"	3'-0"	2'-1"	.98	3'-0"	2'-6"	1'-1"	.33	1'-9"	2'-0"	10"	.09	4'-3"	4'-6"	1.25	.92
30	46	.39		3'-9"	2'-6"	1'-9"	.59	2'-6"	2'-0"	1'-1"	.21	1'-6"	1'-9"	10"	.08	3'-0"	4'-0"	.78	.60
24	40	.21		2'-6"	2'-0"	1'-6"	.24	2'-6"	1'-6"	1'-0"	.13	1'-6"	1'-6"	10"	.07	2'-3"	3'-0"	.48	.35
20	36	.15		2'-0"	1'-6"	1'-4"	.13	2'-0"	1'-0"	11"	.07	1'-6"	1'-4"	9"	.06	2'-0"	2'-0"	.25	.22
18	34	.12		1'-6"	1'-6"	1'-2"	.09	2'-0"	1'-0"	11"	.06	1'-6"	1'-4"	9"	.06	1'-6"	2'-0"	.19	.17
16	32	.10		2'-0"	1'-0"	1'-4"	.07	2'-0"	1'-0"	11"	.06	1'-6"	1'-4"	9"	.06	1'-0"	2'-0"	.18	.13
12	28	.07		2'-0"	1'-0"	1'-3"	.06	2'-0"	1'-0"	11"	.06	1'-6"	1'-4"	9"	.06	1'-0"	2'-0"	.12	.11
SAND OR LOAM																			
48	72	1.48		10'-3"	4'-0"	3'-8"	4.62	5'-0"	4'-0"	1'-9"	1.54	3'-6"	3'-0"	1'-4"	.62	7'-3"	7'-3"	3.33	2.31
42	66	1.10		8'-6"	3'-6"	3'-3"	3.01	4'-6"	3'-6"	1'-8"	1.14	3'-0"	2'-6"	1'-3"	.37	6'-9"	6'-0"	2.57	1.77
36	58	.87		7'-0"	3'-0"	2'-9"	1.78	3'-9"	3'-0"	1'-5"	.71	2'-6"	2'-0"	1'-1"	.24	6'-3"	4'-6"	1.75	1.26
30	51	.54		5'-6"	2'-6"	2'-4"	.96	2'-9"	2'-6"	1'-3"	.37	2'-0"	1'-9"	1'-1"	.16	4'-6"	4'-0"	1.11	.82
24	44	.25		3'-9"	2'-0"	1'-10"	.41	2'-0"	2'-0"	1'-1"	.18	2'-0"	1'-0"	1'-0"	.08	3'-3"	3'-0"	.60	.46
20	39	.17		2'-9"	1'-8"	1'-8"	.20	2'-0"	1'-3"	1'-1"	.11	2'-0"	1'-0"	11"	.07	3'-0"	2'-0"	.36	.30
18	37	.14		2'-3"	1'-6"	1'-6"	.13	2'-0"	1'-0"	1'-11"	.09	2'-0"	1'-0"	11"	.07	2'-3"	2'-0"	.27	.23
16	35	.12		2'-0"	1'-4"	1'-5"	.12	2'-0"	1'-0"	1'-11"	.07	2'-0"	1'-0"	11"	.07	1'-6"	2'-0"	.19	.16
12	30	.06		2'-0"	1'-0"	1'-4"	.07	2'-0"	1'-0"	1'-0"	.07	2'-0"	1'-0"	11"	.07	1'-0"	2'-0"	.12	.11

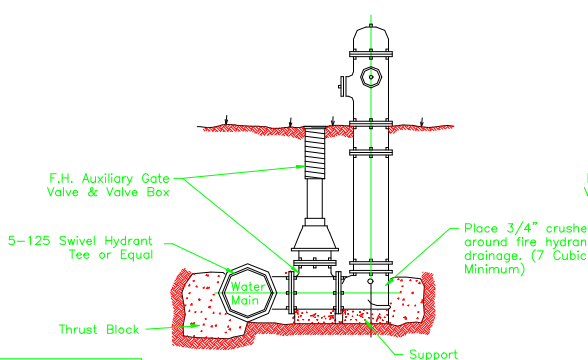
NOTE: On all connecting lines smaller than 12" use a minimum area of Blocking of 10 sq. ft. & 0.05 C.Y. P.C. Conc.

CASING SIZE TABLE

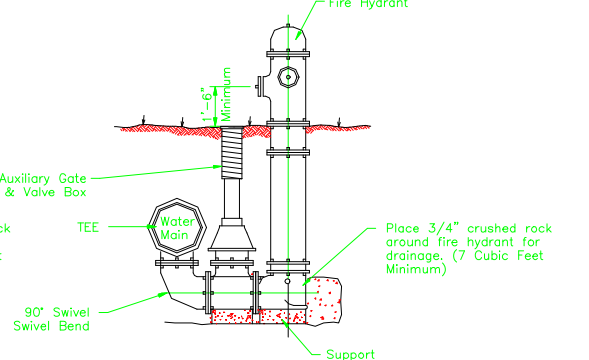
NOMINAL INSIDE PIPE DIA.	CASING SIZE INSIDE DIA.	NOMINAL INSIDE PIPE DIA.	CASING SIZE INSIDE DIA.
4"	8" TO 10"	12"	18" TO 20"
6"	10" TO 12"	15"	20" TO 22"
8"	14" TO 16"	18"	24" TO 26"
10"	16" TO 18"	24"	31" TO 33"

DUCTILE IRON PIPE RESTRAIN LENGTH (FT.)

Pipe Size	Horizontal Bend				Vertical Bend				Tee	Plug	Reducer					
	11.25"	22.5"	45"	90"	11.25"	22.5"	45"	90"			x6"	x8"	x12"	x18"	x24"	
6"	20	20	20	20	20	20	20	20	20	40	N	20	40	60	80	
8"	20	20	20	20	20	20	20	20	20	40	N	40	20	40	60	80
12"	20	20	20	40	20	20	20	20	20	20	40	40	40	40	N	40
18"	20	20	20	40	20	20	20	20	20	40	60	60	60	40	N	40
24"	20	20	20	60	20	20	20	20	20	60	80	80	80	60	40	N



TYPICAL HYDRANT INSTALLATION



TYPICAL BLOW OFF HYDRANT INSTALLATION

**MIDWEST CITY ENGINEERING DEPARTMENT**

DATE: July 1, 1984	DRAWN: D.C.B.	<b>STANDARD WATER LINE DETAILS</b>
CHECKED: D.D.D.	APPROVED:	
SCALE: NO SCALE		
ENGR: J.T.B.	PROJECT NO. _____	SHEET NO. _____