Sizing for Water Meters & Backflows

Domestic Demand

Fixture	Fixture Value	# of Fixtures	Total
Bathtub	8	x _____	=_____
Bedpan Washers	10	x _____	=_____
Combo Sink & Tray	3	x _____	=_____
Dental Unit	1	x _____	=_____
Dental Lavatory	2	x _____	=_____
Drinking Fountain			
Cooler	1	x _____	=_____
Public	2	x _____	=_____
Kitchen Sink			
½" Conn.	3	x _____	=_____
¾" Conn.	7	x _____	=_____
Lavatory			
⅜" Conn.	2	x _____	=_____
½" Conn.	4	x _____	=_____
Shower Head (shower only)	4	x _____	=_____
Service Sink			
½" Conn.	3	x _____	=_____
¾" Conn.	7	x _____	=_____
Urinal			
Pedal Flush Valve	35	x _____	=_____
Wall Flush Valve	12	x _____	=_____
Trough (2ft. length)	2	x _____	=_____
Wash Sink (per set)	4	x _____	=_____
Water Closet			
Flush Valve	35	x _____	=_____
Tank Type	3	x _____	=_____
Dishwasher			
½" Conn.	5	x _____	=_____
¾" Conn.	10	x _____	=_____
Washing Machine			
½" Conn.	5	x _____	=_____
¾" Conn.	12	x _____	=_____
1" Conn.	25	x _____	=_____
Hose Conn. (wash down)			
½" Conn.	3	x _____	=_____
¾" Conn.	7	x _____	=_____
Hose (50 ft. wash down)			
½" Conn.	6	x _____	=_____
⅝" Conn.	9	x _____	=_____
¾" Conn.	12	x _____	=_____
Other			
_____		x _____	=_____
_____		x _____	=_____
_____		x _____	=_____
Combined Fixture Value Total			=_____

Discharge vs Fixture Value Total

FIX-TURE UNITS	PEAK FLOW WITH TANK	(GMP) WITH FLUSH	FIX-TURE UNITS	PEAK FLOW WITH TANK	(GMP) WITH FLUSH
1	1.0	0.0	120	25.9	75.7
2	3.0	0.0	125	26.5	76.5
3	5.0	0.0	130	27.1	77.3
4	6.0	0.0	135	27.7	78.1
5	7.0	27.2	140	28.3	78.8
6	8.0	29.1	145	29.0	79.6
7	9.0	30.8	150	29.6	80.3
8	10.0	32.3	160	30.8	81.6
9	11.0	33.7	170	32.0	82.9
10	12.2	35.0	180	33.3	84.2
12	12.4	37.3	190	34.5	85.3
14	12.7	39.3	200	35.7	86.5
16	12.9	41.2	220	38.1	88.6
18	13.2	42.8	240	40.5	90.5
20	13.4	44.3	260	43.0	92.3
22	13.7	45.8	280	45.4	94.0
24	13.9	47.1	300	47.7	95.6
26	14.2	48.3	400	59.6	102.0
28	14.4	49.4	500	71.2	107.0
30	14.7	50.5	600	82.6	113.0
35	15.3	53.0	700	93.7	117.0
40	15.9	55.2	800	105.0	120.0
45	16.6	57.2	900	115.0	123.0
50	17.2	59.1	1,000	126.0	126.0
55	17.8	60.8	1,500	175.0	175.0
60	18.4	62.3	2,000	220.0	220.0
65	19.0	63.8	2,500	259.0	259.0
70	19.7	65.2	3,000	294.0	294.0
75	20.3	66.4	3,500	325.0	325.0
80	20.9	67.7	4,000	352.0	352.0
85	21.5	68.8	4,500	375.0	375.0
90	22.2	69.9	5,000	395.0	395.0
95	22.8	71.0	6,000	425.0	425.0
100	23.4	72.0	7,000	445.0	445.0
105	24.0	73.0	8,000	456.0	456.0
110	24.6	73.9	9,000	461.0	461.0
115	25.3	74.8	10,000	462.0	462.0

Engineering & Technical Data R-20

Sizing for Water Meters & Backflows

PRESSURE @ METER OUTLET (PSIG)	PRESSURE FACTOR
20	0.74
30	0.92
35	1.00
40	1.07
50	1.22
60	1.34
70	1.46
80	1.57
90	1.68
100	1.78

Length of service: _____ft. Size of Service: _____ in.
Type of service piping: ❑ Copper ❑ Galv.Iron ❑ Steel ❑ Other
Elevation difference between main & meter: _____ft.
Which is higher? ❑ Meter ❑ Water Main
Pressure @ water main during period of peak demand = _____psig
Source: _____ Date ___ / __ / ___
Head loss due to service line, fittings, meter and Backflow Prev. = _____psig
(Calculate head loss on separate sheet. Document assumptions & calculations)

Pressure @ meter outlet @ period of peak demand = _____ psig
Peak demand (@ 35 psig) _____GPM
Pressure factor × _____= Peak Domestic Demand = _____ GPM

Irrigation Demand

Type of lawn irrigation used

❑ None

❑ Portable Sprinklers

Number of sprinklers in operation @ once: _____
Length of hose: _____ ft. Diameter of hose: _____ in.
Type/Manufacturer of sprinkler head: _____

Chart to right was developed for ⅝" diameter hose 50 feet long with a hose and ring sprinkler. Flow rates are based on the simultaneous operation of 4 sprinklers.

Discharge/sprinkler head: _____GPM
Total discharge from Portable Sprinklers: _____ GPM

Pressure @ Meter (psig)	Discharge (gpm)
35	6.5
40	7.0
50	7.9
60	8.7
70	9.5
80	10.2
90	10.9
100	11.6

❑ Spray Heads

Area of lawn irrigated:_____ sq. ft.
Precipitation rate:_____ in./hr. (@1 in./hr., precipitation efficiency is 0.9)
Operating schedule: _____
Discharge/sq. ft.: _____GPM (Average is 1.04 GPM/100 sq. ft.)
Total discharge for Spray Head system: _____GPM

❑ Rotary Systems

Area of lawn irrigated:_____ sq. ft.
Precipitation rate:_____ in./hr (@ ¼ in./hr., precipitation efficiency is 0.65)
Operating schedule: _____
Discharge/sq. ft.: _____GPM (Average is 0.26 GPM/100 sq. ft..)
Total discharge for Rotary System: _____GPM

Total Irrigation Demand _____GPM

Omni T² Meter Specifications

Operating Characteristics:

Meter Size	Low Flow 95% Min.	Operating Range 98.5 - 101.5%	Intermittent Flows 98.5 - 101.5%	Pressure Loss (Not To Exceed)
1½"	.75 gpm	1.25 to 160 gpm	200 gpm	6.9 psi @ 160 gpm
2"	1.0 gpm	1.5 to 200 gpm	250 gpm	7.0 psi @ 200 gpm
3"	1.5 gpm	2.5 to 500 gpm	650 gpm	5.1 psi @ 500 gpm
4"	2.0 gpm	3.0 to 1000 gpm	1250 gpm	8.7 psi @ 1000 gpm