



11/21/2024

November 11, 2024

Scott Barnett, P.E.
 District Engineer
 Cottonwood Water & Sanitation district

Dear Scott,

We are providing the following information regarding the sizing of the water tap and meter for the Land of Sushi Project at 18704 Cottonwood Dr. Parker, CO 80138.

The Land of Sushi project is a core and shell design for a dine-in restaurant and an adjacent quick service restaurant. The plumbing fixture counts are based on pre-liminary architectural drawings of the dine-in restaurant, and we assumed the same counts for the quick service restaurant.

The dine-in restaurant is anticipated to include (3) flush tank water closets, (5) lavatories, (1) kitchen sink, (1) Dish Washer, (6) service sinks, and (1) 3-comp Sink. These counts were doubled to account for the adjacent quick service restaurant. We are providing water tap sizing information in accordance with the AWWA Manual M22 method.

Below is a summary of the plumbing fixtures planned for the entire building.

Fixture Description	Table 4-2 Fixture Value (GPM) 80 psi	No. of Fixtures	Total Fixture Value at 80 psi	
Bathtub	8	0	0	
Bedpan Washers	10	0	0	
Bidet	2	0	0	
Dental Unit	2	0	0	
Dishwasher	1.3	2	2.6	
Drinking Fountain - Public	2	0	0	
Kitchen Sink	1.8	2	3.6	
Lavatory	1.5	10	15	
Showerhead (Shower Only)	2.5	0	0	
Service Sink	4	12	48	
Toilet - Flush Valve	24	0	0	
Toilet - Tank Type	6	6	36	
Urinal - Pedestal Flush Valve	35	0	0	
Urinal - Wall Flush Valve	10	0	0	
Wash Sink (each set of faucets)	4	2	8	
Washing Machine	7.7	0	0	
Combined Fixture Unit Total			113.2	
Customer Peak Demand from Fig 4-2			50	gpm
Pressure Factor			1	
Subtotal			50	gpm
Total Combined Load			50	gpm

Based on figure 4-2 from AWWA Manual M22, 113.2 water supply fixtures is roughly equivalent to 50 gpm for a restaurant building.

Based on table 6-1 from AWWA Manual M22, a 1-1/2" tap and meter is required for this project.



Table 6-1 AWWA meter standards

Meter	Minimum Flow Rate, <i>gpm</i>	Low-Normal Flow Rate, <i>gpm</i>	Change-over Range (Compound Meters)	High-Normal Flow Rate, <i>gpm</i>	Maximum Flow Rate <i>gpm</i>	Head Loss at Maximum Flow, <i>psi</i>
Positive displacement						
½ in.	0.25	1	N/A	7.5	15	15
⅝ in.	0.25	1		10	20	15
¾ in.	0.50	2		15	30	15
1 in.	0.75	3		25	50	15
1½ in.	1.50	5		50	100	15
2 in.	2.00	8		80	160	15

Sincerely,
GALLOWAY

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