

## DOMESTIC WATER AND SANITARY SEWER DEMAND CALCULATIONS

Project: American Real Estate Opportunity Fund, LLC  
Location: Shrewsbury Ave & Drs James Parker Blvd.  
Block: 77; Lots 1, 2, 2.01, 3, & 25.01

April 8, 2020  
DIAM-00011

### WATER DEMAND CALCULATION

Residential use: Ten (10) 2-bedroom apartments  
Non-residential use: 1,410 ft<sup>2</sup> Retail

In accordance with N.J.A.C. 7:10 Safe Drinking Water Act Rules the domestic water demand was calculated for the above referenced project from the following sections.

N.J.A.C. 7:10-11.5(f) Anticipated peak daily water demand shall be estimated as follows:

1. For residential development, determine the average daily water demand in accordance with the Department of Community Affairs' Residential Site Improvement Standards (RSIS) at N.J.A.C. 5:21-5.2, Table 5.1 "Water Demand/Generation by Type/Size of Housing";
2. For non-residential developments, determine the average daily water demand in accordance with N.J.A.C. 7:10-12.6(b)2, Table 1; and
3. Multiply the sum of the average daily water demand determined above by a peaking factor of three.

#### **1. Residential Water Demand**

From RSIS N.J.A.C. 5:21-5.2, Table 1  
2-bedroom garden apartment = 175 gal/day  
(10 apartments) X 175 gal/day = 1,750 gal/day

#### **2. Commercial Water Demand**

From 7:10-12.6(b)2, Table 1;  
Average daily water demand rate: Store, office building 0.125 gal/ft<sup>2</sup>  
Average daily water demand = 1,410 ft<sup>2</sup> X 0.125 gal/ft<sup>2</sup> = 176.25 gals  
Total yield = Average daily water demand X 3(peaking factor)  
Total yield = 176.25 X (3)  
Total yield = 528.75 gal/day

#### **3. Total Site Water Demand**

Total water demand = residential + Commercial  
Total water demand = 1,750 gal/day + 528.75 gal/day  
Total water demand = 2,278.75 gal/day

## SANITARY SEWER DEMAND CALCULATION

Residential use: Ten (10) 2-bedroom apartments

Non-residential use: 1,410 ft<sup>2</sup> Retail

In accordance with N.J.A.C. 7:14A-23 the Projected sanitary sewer demand was calculated for the above referenced project from the following section.

N.J.A.C. 7:14A-23.3(a)-Projected Flow Criteria

### **1. Residential sanitary sewer demand**

From N.J.A.C 7:14A-23.3(a);

2-bedroom unit = 225 gal/day

(10 apartment units) X 225 gal/day = 2,250 gal/day

### **2. Commercial sanitary sewer demand**

From N.J.A.C 7:14A-23.3(a);

Stores and shopping centers = 0.100 gal/ ft<sup>2</sup>

1,410 ft<sup>2</sup> X 0.100 = 141 gal/day

### **3. Total site sanitary sewer demand**

Total sanitary sewer demand = residential + Commercial

Total Sanitary sewer demand = 2,250 gal/day + 141 gal/day

Total sanitary sewer demand = 2,391 gal/day

*Sources: N.J.A.C. 7:10 Safe Drinking Water Act Rules*

*N.J.A.C. 5:21 RSIS Residential Site Improvement Standards*

*N.J.A.C. 7:14A-23 Technical Requirements for Treatment Works Approval Applications*