



Engineering
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Engineer's Report Water System Design Report

September 27, 2021

1100 Randolph Road

Block 517.04, Lot 1.01

Franklin Township, Somerset County, New Jersey

Prepared for:

JWH Real Estate Holding Corp.
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Engineers Report: Water System Design Report

Introduction

This report was prepared in accordance with the Township of Franklin Site Plan Submission Checklist for the Preliminary and Final Major Site Plan application for the project known as 1100 Randolph Road. This report has been prepared in accordance with accepted engineering standards, including those of the Township of Franklin and the New Jersey Department of Environmental Protection.

The applicant, JWH Real Estate Holding Corp., proposes a 100,265 SF, 1-story warehouse addition with 4,000 SF office space, ancillary site improvements and a new stormwater management system on Lot 1.01, Block 517.04. The total proposed lot area is 20.9± acres and is currently developed with a 202,165 GFA, 2-story structure, containing office, light manufacturing and warehouse space, and an approximate 28,000 SF outdoor storage area within the existing paved areas for material storage related to the light manufacturing use. The subject property is located in the Suburban State Planning Area (PA-2).

Water System Design

The subject property is currently serviced by the Franklin Township Water Utility. A new meter pit will be constructed to service the new warehouse addition if required by the water utility.

Average Daily Water Demand

The proposed average daily water demand associated with this development has been computed based on N.J.A.C. 7:10-12.6(b)2. The NJDEP calculates water demand for a warehouse building based on the number of employees per shift and the area of office space in the building. The project includes a 100,265 SF warehouse building addition consisting of 96,265 SF of warehouse space and 4,000 SF office space. The number of warehouse employees was computed based on 1 employee per 5,000 SF of warehouse space.

Type of Establishment	Measurement Unit	Units	GPD Per Unit	Total GPD
Warehouse Facility 1 employee/5,000 s.f. for (1) 8-hour shift	Employees	20	25	500 gpd
Office	Sq. Ft.	4,000	0.125	500 gpd
Total Proposed Water Demand				1,000 gpd

Proposed Total Average Daily Demand (ADD) = 1,000 gpd

or 0.001 MGD
or **0.694 gpm**

Proposed Peak Daily Demand

The peak daily demand is determined by applying a peaking factor of 3x the average daily demand as outlined in *Safe Water Drinking Act Rules* at NJAC 7:10-11.5(f), as follows:

PDD = 3 x ADD
= 3 x 1,000 gpd
= 3,000 gpd
or 0.003 MGD
or **2.082 gpm**

FIRE FLOW DEMANDS

The calculations have been prepared in accordance with the “Guide for Determination of Required Flow,” published by the Insurance Services Office. The following formula was used in design:

$$F = 18C(A)^{0.5}$$

F = required fire flow in gpm

C = coefficient related to type of construction

C = 0.8 for noncombustible material

A = total floor area (including all stories, but excluding basements)

Building: $F = 18 \times (0.8) \times (100,265)^{0.5}$
F = 4,560 gpm

This report and site plan were prepared following currently accepted engineering standards, including those of the Franklin Township and the New Jersey Department of Environmental Protection.



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