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## Engineer's Report Water System Design

483-485 Elizabeth Avenue  
Block 507.14, Lots 61 & 62  
Township of Franklin, Somerset County, New Jersey

October 2020

*Prepared For*  
Elizabeth Realty Partners, LLC  
154 First Ave  
Manasquan, NJ 08736

Prepared By  
Maser Consulting, Inc.  
1000 Waterview Drive, Suite 201  
Hamilton, NJ 08691  
609.587.8200  
N.J. C.O.A. #: 24GA27986500

  
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Julia G. Algeo, PE  
License No. GE34313  
N.J. Licensed Professional Engineer

MC Project No. 19000649A





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## **ENGINEERS REPORT: WATER SYSTEM DESIGN REPORT**

### **Project Summary:**

This report was prepared for the Preliminary and Final Major Site Plan application known as 483-485 Elizabeth Avenue. The preparation and submittal of this report is required as part of the application for the Preliminary and Final Major Site Plan. 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, Elizabeth Realty Partners, LLC, proposes a 76,230 SF warehouse building consisting of 74,730 SF warehouse space and 1,500 SF office space on proposed Lot 61.01, Block 507.14. The proposed site improvements also include a parking lot, access drive and sidewalks. The total proposed lot area is 7.48 acres. The subject property is currently under residential use. The subject property is located in the Suburban State Planning Area (PA-2).

### **Water System Design:**

An existing water main located in Elizabeth Avenue will supply water to the site via a proposed 8" tap.

A new 8" DIP (Ductile Iron Pipe) service will extend to the proposed warehouse building then split into a 2" domestic line and 8" fire suppression line. The 8" fire suppression line will feed the fire suppression system. The new 8" DIP will also service the fire hydrants.

### **Water System Demands:**

The NJDEP calculates water demand for industrial facilities based on the number of employees for an 8-hour shift to be 25 gpd per person (Table 1, Average Daily Water Demand, N.J.A.C. 7:10-12.6).

Given the total warehouse square footage of 74,730 s.f., and the assumption that there is 1 employee per 5,000 s.f., it was calculated that there will be approximately 15 employees in the warehouse in an 8-hour shift. Additionally, there will not be any process water for this facility.



The projected water demand is calculated below:

**Proposed Water Demand Per N.J.A.C. 7:10-12.6 Table 1: Average Daily Water Demand:**

Warehouse:

Total Square Footage = 74,730 s.f.

Total Employees = 15 employees per shift per day

Total Number of Shifts = 2 shifts per day

15 employees x 25 gpd/employee x 2 shifts/day = 750 gpd

Office:

Total Square Footage = 1,500 s.f.

Total Number of Shifts = 1 shift per day

1,500 s.f. x 0.125 gal/ office s.f. x 1 shift/day = 188 gpd

**Proposed Total Average Daily Demand (ADD) = 938 gpd**

*or* 0.0009 MGD

*or* **0.65 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 938 gpd  
= 2,814 gpd  
*or* 0.0028 MGD  
*or* **1.95 gpm**



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## **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:  $F = 18 \times (0.8) \times (76,230)^{0.5}$

$$F = 3,976 \text{ gpm}$$

The fire flow demand can be reduced by 50% since the building will be equipped with an automatic sprinkler system. Thus, the required flow for the building is 3,976 gpm x 50% or 1,988 gpm. This flow is an approximation and the MEP and the Fire Suppression System designer shall perform the necessary flow demand calculations at the time of building permit applications.

# Franklin Township



A Proud Community in Somerset County

November 4, 2019

Jodi Westhead  
Maser Consulting  
1000 Waterview Drive – Suite 201  
Hamilton, NJ 08691

Department of Public Works  
40 Churchill Avenue  
Somerset, NJ 08873-3405

Phone (732) 249-7800  
Fax (732) 249-7810

**Re: Block 507.14, Lots 61&62 – 483, 485 Elizabeth Avenue**

Dear Jodi Westhead:

Per your request, we reviewed the water service availability for the property located at the above referenced location. According to our records, water service is currently available from the existing main located in Elizabeth Avenue along the property frontage.

To request new water service, a service application along with plans should be submitted to Franklin DPW for review and approval. There are capital connection, tap installation and meter charges associated with the proposed service. Once the service application is accepted and all fees paid, Franklin DPW will provide water service. Applications can be found at <http://franklintwpnj.org/government/departments/water-utility/forms>

If you have any questions or need any further assistance, feel free to contact my office at 732-249-7800.

Sincerely,

A handwritten signature in black ink, appearing to read "Carl Hauck".

Carl Hauck, PE, CME, CPWM  
Public Works Manager / Licensed Water Operator  
Franklin Township

## Water Service Availability Verification Request

I would like to verify public water service availability for the following listed property located in Franklin Township, Somerset County, New Jersey:

Block No.: 507.14 Lot No.: 61 & 62

The property is located at:  
483 & 485 Elizabeth Avenue

(Property Address)



10/30/19

Name (Sign)

Date

Jodi A. Westhead, Maser Consulting P.A.

Name (Print)

1000 Waterview Drive, Suite 201, Hamilton, NJ 08691

Mailing Address

jwesthead@maserconsulting.com

Email Address

(609) 587-8200, ext. 4340

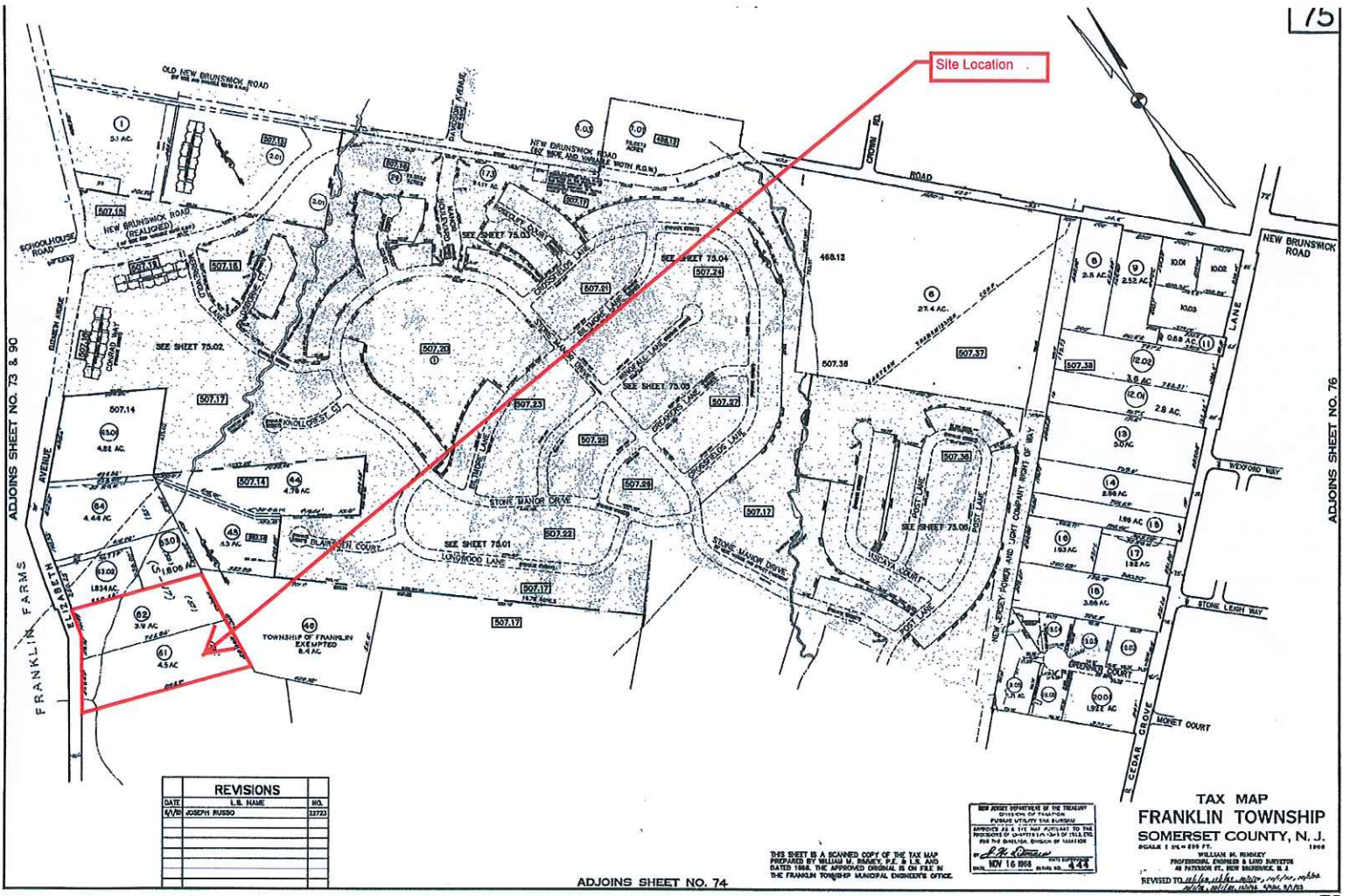
Phone No.

(609) 587-8260

Fax No.

Note: All requests for water service availability or "will serve" letter must be made in writing. Please fill out the form as provided above and send it to: **Franklin Township Water Utility, 40 Churchill Avenue, Somerset, NJ 08873**. You can also email the completed form to: [DPWRequest.Calendar@twp.franklin.nj.us](mailto:DPWRequest.Calendar@twp.franklin.nj.us), or fax it to: **732-249-7810**.

Please allow minimum 3 to 5 working days for processing. Thanks.



ADJOINS SHEET NO. 73 & 90

ADJOINS SHEET NO. 76

REVISIONS		
DATE	I.E. NAME	NO.
4/1/78	JOSEPH RUSSO	22723

ADJOINS SHEET NO. 74

THIS SHEET IS A REPRODUCED COPY OF THE TAX MAP PREPARED BY WILLIAM M. BRUNNEY, P.E. & L.S., AND DATED 1988. THE APPROVED ORIGINAL IS ON FILE IN THE FRANKLIN TOWNSHIP MUNICIPAL ENGINEER'S OFFICE.

NEW JERSEY DEPARTMENT OF THE TREASURY  
 DIVISION OF TAXATION  
 PURSUANT TO THE ENACTED  
 APPROVED AS A SITE MAP PURSUANT TO THE  
 PROVISIONS OF CHAPTER 120, N.J.A.C. 17:27  
 FOR THE OFFICIAL RECORD OF TAXATION  
 NOV 16 1988  
 WILLIAM M. BRUNNEY  
 PROFESSIONAL ENGINEER & LAND SURVEYOR  
 18 PETERSON ST., NEW BRUNSWICK, N.J.  
 REVISED TO REFLECT CHANGES TO THE  
 10/26/88, 11/20/88, 1/26/89, 2/2/89

TAX MAP  
 FRANKLIN TOWNSHIP  
 SOMERSET COUNTY, N. J.  
 1988



**MASER**  
 Civil & Environmental Engineers  
 1000 North Carolina Street  
 Raleigh, NC 27601  
 Phone: (919) 876-1100  
 Fax: (919) 876-1101  
 Website: www.maserinc.com

**LEGEND**

Symbol	Description
...	...
...	...

**ABBREVIATIONS**

Abbreviation	Full Name
...	...
...	...

**BOUNDARY AND TOPOGRAPHIC SURVEY**

FOR  
**AMERICAN REALTY PARTNERS LLC**  
 403 N. 403 ELIZABETH AVENUE  
 BLOCK 403 LOTS 61 & 62  
 TOWNSHIP OF FRANKLIN  
 SOUSSEY COUNTY  
 NEW JERSEY

**BOUNDARY AND TOPOGRAPHIC SURVEY**

1 of 1

*Michael F. Burns*  
**MICHAEL F. BURNS**  
 Surveyor  
 License No. 12345



NOTE: DO NOT SCALE DRAWING FOR CONSTRUCTION.





Engineers  
Planners  
Surveyors  
Landscape Architects  
Environmental Scientists

1000 Waterview Drive, Suite 201  
Hamilton, NJ 08691  
T: 609.587.8200  
F: 609.587.8260  
www.maserconsulting.com

October 30, 2019

VIA EMAIL

Franklin Township Public Works  
Water Division  
40 Churchill Avenue  
Somerset, NJ 08873

Re: Water Service and Utility Map Request  
483 & 485 Elizabeth Avenue  
Block 507.14, Lots 61 & 62  
Franklin Township, Somerset County, NJ  
MC Project No. 19000649A

Dear Sir/Madam:

Maser Consulting P.A. has been retained to provide due diligence services for the above referenced property. We are writing to request a letter of serviceability for this property, as well as water distribution maps which indicate the existing utility facilities. The following are enclosed for your review:

- One (1) Water Service Availability Verification Request;
- One (1) Municipal Tax Map; and
- One (1) Boundary and Topographic Survey, dated July 30, 2019.

Please review this material and forward to our office a "Letter of Serviceability", along with any as-built maps available and/or description of existing utility facilities adjacent to or near the project site. Also, please mark up any utilities or additional information on the enclosed plans and retain one (1) plan for your records and return one (1) marked-up plan to this office. Should you have any questions and/or concerns regarding our request, please do not hesitate to contact this office directly. Thank you for your assistance in this matter.

Very truly yours,

MASER CONSULTING P.A.

Jodi A. Westhead  
Permit Coordinator

JAW  
Enclosures

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