

November 19, 2020

Zoning Board of Adjustment
Township of North Brunswick
710 Hermann Road
North Brunswick, NJ 08902

Re: Engineers Report
828 Livingston Avenue, N.B., LLC
Block 127, Lot 5 – 828 Livingston Avenue
North Brunswick, Middlesex County, New Jersey

Dear Board Members:

The above referenced application consists of a 5,000 sf (0.1148 acre) property located at the southeastern side of the intersection of Livingston Avenue and Beverly Avenue. The zoning is C-1 Neighborhood Commercial Zone District. Presently, the property is occupied by an existing four (4) bedroom Sober Living Residence, which is proposed to remain.

This design report has been prepared to describe the impacts of the sanitary sewer and water supply system

Sanitary Sewer

The site currently is currently served by an existing 4" sanitary sewer service connected to the existing sanitary sewer main in Livingston Avenue.

Total Proposed Design Flows

The anticipated flows from the proposed office building are based on the waste water flow data provided in the NJDEP Table shown in section N.J.A.C.7:14A-23.3. The anticipated waste water flows have been calculated as follows:

A. Waste Water Flows

Existing

Average Daily Flow (ADF)

Residential Sewer Discharge

3 Bedroom Residential Unit or greater = 300 GPD or (0.21 GPM) – Per Unit

1 Proposed Unit = 300 GPD x 1 Unit = 300 GPD or (0.21 GPM) – Total

Residential Sewer Discharge

Peak Daily Flow (PDF) = (4 x ADF)

PDF = (4 x 0.21 GPM) = 0.84 GPM – Per Unit

PDF = (4 x 0.21 GPM) = 0.84 GPM – Total

B. Total Design Flow

Existing

Residential Sewer Discharge

Design Flow = (2.5 x ADF)

Design Flow = (2.5 x 0.21 GPM) = 0.53 GPM – Total

Total Proposed Design Capacity

A. For 4" PVC; Minimum Design Slopes = 2.0%

N = .013; A = .087 SF

Q = 1.49/n x AR^{2/3} S^{1/2}

Q = 0.27 cfs = 120 GPM

The waste water system as designed at the minimum 2% slope will carry 120 GPM in the existing 4" sanitary lateral at full flow. The total design flow for the proposed Sober Living Residence is 0.21 GPM. Therefore, the waste water system as designed will carry 60 GPM in the existing 4" pipe flowing half full. Accordingly, the pipes will flow at less than half full at two and a half times the ADF resulting in the designed system meeting NJDEP criteria.

Conclusion

All sanitary sewer and appurtenances have been designed in accordance with the New Jersey Department of Environmental Protection Regulations with regard to minimum slopes, velocity, type of pipe, etc., and will flow less than half full at two and a half times the average daily flow.

The aforementioned components of the existing sewer system for the site are in accordance with applicable requirements of North Brunswick Township and the New Jersey Department of Environmental Protection Agency and will adequately serve the proposed site.

Water Supply Report

The site currently is currently served by an existing 3/4" water service connected to the existing water main in Livingston Avenue.

Anticipated Water Demands

Existing

The existing flows for the existing Veterinary Facility and 2 bedroom Residence Discharge two single family, residential (3-4 BR) dwellings are based on the information provided in Tables 5.1 and 5.2 of the Residential Site Improvement Standards (RSIS) and table 1 from NJDEP section N.J.A.C 7:10-12.6.

Existing

4 Bedroom Residential Unit = 395 GPD – Total

The Total Maximum Daily Water Demand is estimated at 3 times average daily flow or 1,185 gpd.

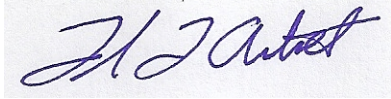
Conclusion

Although actual flow tests have not been performed by the applicant, the aforementioned components of the proposed water supply system are designed in accordance with applicable requirements of North Brunswick Township and NJDEP regulations and are anticipated to adequately serve the proposed project with domestic service demands.

Should you have any questions, or require additional information, please do not hesitate to contact me at the number above.

Very truly yours,

Accurate Engineering, PC

A handwritten signature in blue ink, appearing to read "F. Antisell", is placed over a light gray rectangular background.

Frank T. Antisell, P.E., P.P.