

WATER SYSTEM ENGINEERS REPORT

Block 11.06, Lot 11.01 – 11 Bunker Hill Road
Block 20.01, Lot 16.01 – 3523 Route 27
Township of Franklin, Somerset County, New Jersey
July 21, 2021

A. A. Site Location

This design report has been prepared to describe the impacts of the proposed sanitary sewer system for the proposed construction of eight (8) single family dwellings Block 11.06, Lot 11.01 (11 Bunker Hill Road) and Block 20.01, Lot 16.01 (3523 Route 27) in Franklin Township, Somerset County, New Jersey. The report is intended to be reviewed in conjunction with the Preliminary and Final Major Subdivision Plans prepared by Accurate Engineering, PC. The subject properties encompass 4.03+ acres and currently consist of two (2) tax lots located in the R10B, Single – Family Residential District. The site is located on the west side of Bunker Hill Road and the north side of Route 27.

B. Anticipated Water Demand

The required flows for the proposed eight (8) single family, residential dwellings (3-4 BR) subdivision 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 7:10-12.6. Per NJDEP, the anticipated water demand for the project is based on the proposed number of residents per dwelling. Applying the NJDEP Average Daily Water Demand (NJDEP Code 7:10-12.6) for a Single Family Dwelling use rate of 100 gallons per day per person yields 400 gpd (4 residents x 100 gpd = 400 gpd). Applying the RSIS Average Daily Water Demand (Table 5.1) for a Single Family, four bedroom use rate yields 395 gpd (use 400 gpd per NJDEP) as an average daily water use for each proposed single family house.

ESTIMATED AVERAGE DAILY WATER DEMAND (Q)

$$Q = 400 \text{ GPD/UNIT} \times 8 \text{ UNITS} = 3,200 \text{ GPD}$$

ESTIMATED PEAK DAILY WATER DEMAND (Qp)

$$Q_p = 3 \times \text{ESTIMATED AVERAGE DAILY WATER DEMAND}$$

$$Q_p = 3 \times 3,200 \text{ GPD} = 9,600 \text{ GPD}$$

C. Anticipated Fire Flow Demands

Fire flow requirements may be determined by referring to the current National Fire Protection Association Fire Code. The required fire flows for the proposed three (3) lot, single family, residential subdivision provided herein are based on the information provided in accordance with the Insurance Services Office standard (Table 1-5) and the Residential Site Improvement Standards. Per Table 1-5, the Needed Fire Flow is 1,000 gpm for two story residential dwellings with a distance between buildings of 11-30 feet. Per RSIS, this fire flow demand is to be supplied in addition to the domestic peak demand of three times the average flow.

D. Proposed Water Facilities

The project proposes to extend a new 8 inch cement lined, ductile iron water main extension westerly up on the proposed roadway in front of the proposed dwellings and provide a blow off hydrant at the terminus of the water main in accordance with RSIS. Further information regarding the proposed connection and construction is shown on the accompanying plans and details. The proposed water system components shall be constructed to comply with all applicable rules and regulations of Franklin Township.

E. 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 Franklin Township, RSIS and NJDEP regulations and are anticipated to adequately serve the proposed development with both domestic service and projected fire demands.



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