

# WATER DISTRIBUTION REPORT

## LOCATION

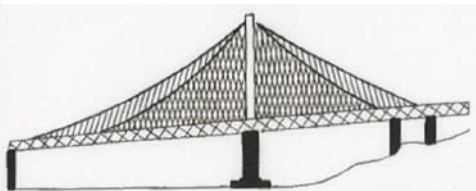
HERITAGE HILLS  
TOWN OF EAST GREENBUSH  
ALBANY COUNTY  
STATE OF NEW YORK

## PREPARED FOR

AMEDORE LAND DEVELOPMENT, LLC  
1900 WESTERN AVENUE  
ALBANY, NY 12203

## DATE PREPARED

OCTOBER 10, 2018  
REVISED JULY 4, 2019



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CIVIL ♦ ENVIRONMENTAL ♦ STRUCTURAL ENGINEERING

## **I. PROJECT DESCRIPTION**

### Project Location

The subject site is located along NYS Route 151 (Luther Road) and Newkirk Road the Town of East Greenbush. The parcel is 17.64 Acres in size.

### Parcel Description

The subject parcel is a mostly wooded. Slopes vary from moderate to steep throughout the site. The entire site drains east to a USACOE wetland and ultimately into a tributary to Mill Creek . The wetland area is 2.81 Acres in size.

According to the Rensselaer County Soil Survey, soils present on the site primarily consist of gravelly Silt Loams. The predominant (60%) hydrologic soil group is classification D with the balance of the site being hydrologic soil group C.

### Proposed Lots/Zoning

The current zoning of the subject site is R-2. It is proposed to develop the parcel as a senior housing meeting the criteria outline in the R-2 District regulations. It is proposed to develop 96 housing units in three buildings. The buildings will have three residential floors with a parking garage below. All levels will be serviced by a single elevator.

### Existing Utilities

An existing 16" DIP (survey) or 14" (record maps) water main exists on Luther Road. According to the Town of East Greenbush record maps provided a 2" water main services the residences and hydrant along Glaz Road.

A flow test was conducted on October 17, 2017 at the intersection of Luther Road and Michael Road. The test resulted in a flow of 1,350 GPM with a static pressure of 70psi and residual pressure of 65 psi. This data has been utilized to model the proposed water system through the site.

### Proposed Utilities

It is proposed to connect to the existing 16" main via a 16"x8" tapping sleeve and valve near the intersection of Newkirk Road. A new 8" ductile Iron water main will be looped through the parcel. Five new hydrants will be installed along the new water main. The hydrant locations have been reviewed and approved by the local fire department.

## II. POPULATION AND WATER USE

### Design Standards

The following is the anticipated water usage for the proposed development:

Population = 96 Apartments (48 1-br & 48 2-br) = 144 bedrooms  
Average daily flow = 144 br x 110 gpd/br = 15,840 gallons per day  
Peak Daily Flow = 4.00 x Average daily flow = 63,360 gpd = 44 gpm

As presented above, the total average daily effluent produced is estimated at 15,840 gpd while the peak effluent produced is estimated at 44 gpm.

## III. WATER PRESSURES AND FLOW

The proposed system was analyzed using the EPANET2 software to verify that there is adequate pressure and flow to service the third floor apartments in the highest building during fire flow conditions.

Based upon our calculations and the information provided by the Town of East Greenbush, the following has been calculated:

The elevation of the third floor of the highest structure is approximately 350' above msl with sprinkler heads at approximately 360'. The elevation of the water tank is 461' with an average water elevation at 45' above the base elevation thus the water elevation is 506 +/-, yielding approximately 146 ft or 63 psi. Therefore taking into account head losses in the system, there will be adequate pressure and head for firefighting purposes.

**Minimum operating pressure at second floor of highest residence = 32psi  
At 1,500 gpm fire flow.**

Based upon these conclusions, the system will provide the necessary pressure and flow to meet both ISO flow requirements and Ten State Standard Requirements without improvements to the existing system.

### Financing

The cost of the water distribution system will be borne entirely by the developer. Once constructed, tested and certified the facilities within the ROW will be turned over to the Town of East Greenbush for operation and maintenance. The remainder of the new infrastructure will remain private.

### User and Permit Fees

The proposed development will be charged annual operation and maintenance fees by the Town of East Greenbush for the purpose of operating and maintaining the water system.

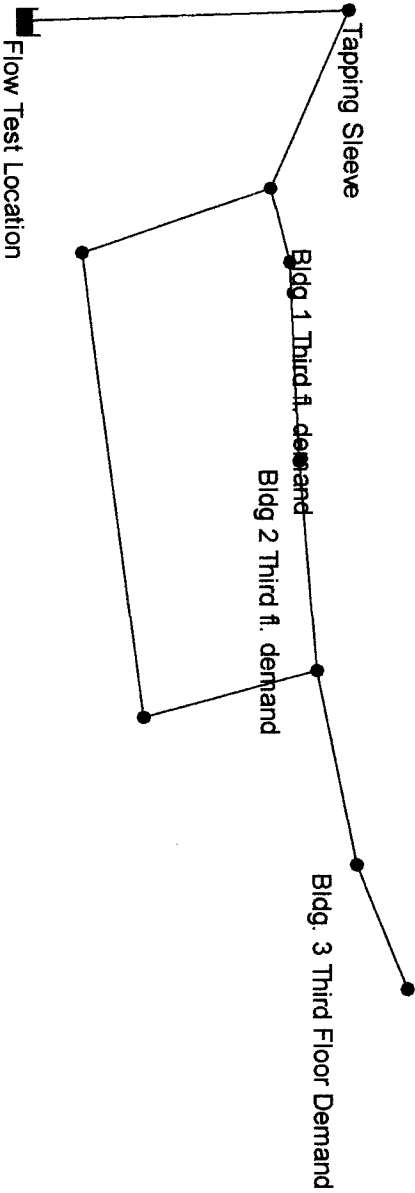
Required Permits

The proposed water improvements will require review and permitting from the Rensselaer County Department of Health prior to activation.

## APPENDIX A

# WATER DISTRIBUTION CALCULATIONS

Day 1, 1



Network Table - Nodes

Node ID	Elevation ft	Base Demand GPM	Demand GPM	Head ft	Pressure psi	Quality
Junc TappingSleeve	316	0	0.00	445.32	56.04	0.00
Junc 8x8x8tee	310	0	0.00	433.42	53.48	0.00
Junc Bldg1thirdfloor	340	0	0.00	432.58	40.11	0.00
Junc Bldg2thirdfloor	345	0	0.00	430.23	36.93	0.00
Junc tee	326	0	0.00	428.96	44.61	0.00
Junc bldg3thirdfloor	355	20	20.00	428.95	32.04	0.00
Junc Upperterminalhydrant	331	0	0.00	428.95	42.44	0.00
Junc Lowerhydrant1	302	750	750.00	424.67	53.15	0.00
Junc Lowerhydrant2	316	750	750.00	424.61	47.06	0.00
Resvr FlowTestMichellLuther	445.9	#N/A	-1520.00	445.90	0.00	0.00