

The Summit at Forts Ferry

33 & 45 Forts Ferry Rd, Colonie, NY 12110

PREPARED FOR

Nigro Group, LLC
18 Computer Drive East, Suite 107
Albany, NY 12205

PREPARED BY



100 Great Oaks Boulevard
Suite 118
Albany, NY 12203
518.389.3600

September 21, 2018

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Project Information

Purpose of the Report

This Engineers Report has been prepared for the extension of the Latham Water District to include portions of the lands of the Summit at Forts Ferry Mixed Use Project and portions of adjacent lands that are currently surrounded by other Latham Water District Extensions. All of the properties within the proposed extension area are already partially within an existing Latham Water District. This report outlines the proposed district extension area, estimates the proposed water demands and sewer generation for the Summit at Forts Ferry Project and, together with the Site Plans, identifies the proposed infrastructure needs required to serve the facility. A Map of the Proposed Water District Extension is included in Appendix A of this report.

Existing Site Description

The area to be added to the Latham Water District consists of portions of several parcels located on the east side of Forts Ferry Road, north of Wade Road Extension and south of Omega Terrace, in the Town of Colonie, Albany County, New York. The terrain is rolling with elevations ranging from approximately 344' down to 309'. Soils are mainly Hudson Silt Loam, Rhinebeck Silt Clay, Unadill Silt Loam and Riverhead Fine Sand, mostly D soils on the lower elevations with A & B soils in the higher areas. The extension consists of portions of the following parcels of land, totaling approximately 15.0 acres:

- 19.1-1-25
- 19.1-1-26
- 19.1-1-27.2
- 19.1-1-28.1
- 19.1-1-29

The project coordinates obtained from the NYSDEC Environmental Resource Mapper are:

Longitude and Latitude: W -73.775 N 42.761

The area is currently partially developed and consists of several single family homes and forested lands and is located within the Office Residential (OR) Zoning District. The general area surrounding the property is a mixture of residential and commercial properties. The project site is located partially within the existing Latham Water District Extensions #3 & #84, and within the Pure Waters Sewer District, discharging to the Mohawk View Water Pollution Control Plant on Onderdonk Avenue.

Proposed Project Description

The proposed Summit at Forts Ferry Project will consist of a 62-unit senior apartment building and a 30,000 square foot office building, accessed via Forts Ferry Road. The project will be served with municipal water from the Latham Water District and sewer from the Pure Waters sewer district.

Existing Water and Sewer Infrastructure

Sanitary Sewer System

There is currently public sewer available in Forts Ferry Road and in Catalina Drive in the vicinity of the project site. There are two proposed connection points to the Town of Colonie Pure Waters sanitary sewer, one connection would be for the office building to an existing sanitary manhole in Forts Ferry Road, and the second connection would be to an existing sanitary manhole in Catalina Drive, each discharge point being to an 8" main. The project area is located within the Pure Waters Sewer District, discharging to the Mohawk View Water Pollution Control Plant on Onderdonk Avenue. Based on initial feedback from Pure Waters, it was decided that the sanitary sewer from the project will discharge to each of these systems as described above and as shown on the Site Plans.

Water Distribution System

There is currently public water available in Forts Ferry Road (16" main) and in Catalina Drive (8" main) directly adjacent to the project site with the Latham Water

District Extensions #3, #84, #138, #139, and #153. The existing Latham Water District has three raw water resources, 31.5 MGD from the Mohawk River, 6 MGD from the Stony Creek Reservoir and 7 MGD from the Mohawk View Well Complex. The existing Latham Water District currently has a water treatment capacity of 30 MGD at the Mohawk View Water Treatment Plant, with an average daily demand of 9.0 MGD and a maximum demand of 15.1 MGD (2017). This project proposes to connect to an 8-inch main in Catalina Drive (#138) and to the 16-inch main in Forts Ferry Road (#3 & #84) to provide redundancy in the system. Based on discussions with the Latham Water, it was determined that the project would connect to each of these mains as described above and shown on the Site Plans, and that a new water district extension would be created.

2

Proposed Sewer and Water Systems

Summary

Public water and sewer is available directly adjacent to the project site. A new public 8" water main will be installed on the project site to connect two existing Latham Water District Extensions. A Water District Extension will be required to cover the entire project boundary and some adjacent lands. A map of the proposed water district extension is provided in Appendix A. The new water line will be connected to a 16-inch water main located in Forts Ferry Road and to an 8-inch water main in Catalina Drive, just north of the project site. Two sewer connections are also proposed, one being in Forts Ferry Road and one in Catalina Drive. The apartment building and maintenance building would connect a new private service to an existing sanitary sewer manhole in Catalina Drive, while the office building would connect a new private service to an existing sanitary manhole in Forts Ferry Road. The new water main would be dedicated to the Town of Colonie after construction while the sanitary sewer services will remain private.

Reduced-sized copies of the Utility Plans are included as Appendix A to this report.

Water District Extension

The proposed water district extension is described as follows:

Beginning at the southwest corner of Water District Extension 138, where it intersects with Water District Extension 84, near the intersection of Forts Ferry Road and Omega Terrace; thence running easterly along the southerly boundary of Water District Extension 138 for approximately 129' to a point; and thence northerly along the southerly boundary of Water District Extension 138 for approximately 160' to a point; and thence easterly along the southerly boundary of Water District Extension 138 for approximately 312' to a point; and thence southeasterly along the southerly boundary of Water District Extension 138 for approximately 160' to a point; and thence easterly along the southerly boundary of Water District Extension 138 for approximately 590' to the westerly bounds of Water District Extension 139; thence running southerly along the westerly boundary of Water District Extension 139 for approximately 600' to the northerly bounds of Water District Extension 153; thence running westerly along the northerly boundary of Water District Extension 153 for approximately 377' to the easterly bounds of Water District Extension 3; thence running north westerly along the easterly boundary of Water District Extension 3 for approximately 353' to the easterly bounds of Water District Extension 84; thence running northerly along the easterly boundary of Water District Extension 84 for approximately 580' to the point of beginning, containing approximately 15.0 acres.

Design Flows

The proposed development consists of a 62-unit senior apartment building and a 30,000 square foot office building. Using an average daily demand of 51.5 gallons per day per unit (based on an identically developed applicant project records), the average daily demand for the apartments is 3,193 gallons per day (2.2 gpm) and for the Office 150 employees at 15 gpd or 2,250 gpd, totaling 5,443 gpd. At a 2.0 multiplier, the maximum daily demand will be 10,886 gpd.

Fire flows have been provided by RBM-Guardian Fire Protection, Inc. and are calculated as approximately 320 GPM at 60 psi plus 100 GPM hose stream allowance, totaling **420 GPM at 60 psi**. Based on a flow test provided by Latham Water for 5 Forts Ferry Road static pressure was measured at 82 psi with a residual pressure of 80 psi during a 1,275 GPM hydrant test. Fire protection demand shall meet the current Insurance Services Office Fire Flow Requirements.

Sanitary Sewer System

The project proposes to connect the office building to the sanitary main in Forts Ferry Road. The office building will require a small interior ejector pump to discharge to a

new manhole on the project site prior to flowing by gravity to the Town system. The apartment building and maintenance building will connect by a 6-inch on-site gravity sewer to the existing town sanitary manhole in Catalina Drive. The maintenance building will require a small interior ejector pump to discharge to a new manhole on the project site prior to flowing by gravity to the Town system.

Water Distribution System

The project will connect a new 8" ductile iron (Class 52) pipe to the existing 8-inch waterline which currently dead ends in the Catalina Drive right of way and be "looped" to connect to the 16" cast iron pipe in Forts Ferry Road. Approximately 1,880 linear feet of water main will be constructed. Three new hydrants will be installed and four new valves. The existing termination of the public main in Catalina will be reconfigured to place a new hydrant on a tee and a new valve in the main. The existing hydrant and valve shall be returned to the Latham Water District. Detailed design plans are provided in the Site Plan application documents for this project which accompany this report.

Hydrants will be installed on site to provide fire protection for the proposed development. The water distribution lines on site will be within a 30-foot wide easement granted to the Town of Colonie.

Hydrant flow tests provided by Latham Water District are included in Appendix B.

Project Costs

The cost of the water and sewer infrastructure will be covered by the developer, including all of the materials and labor associated with the installation. All materials provided will meet the standard specifications of the Town, and will be turned over to the Town of Colonie upon completion of construction and acceptance. The Town of Colonie will be inspecting the construction of all infrastructure that will be turned over to them.

The estimated cost of construction provided is \$99,690.00, including the finance costs according to the Latham Water formula. The cost estimate breakdown is provided in Appendix C.

Summary

This water and sewer report, submitted for the Summit at Forts Ferry project, outlines and summarizes the proposed water and sewer facilities associated with the project and the anticipated water demand and sewer flow rates. All of the facilities have been designed and sized in accordance with applicable regulations, and will provide sustainable water and sewer service for the proposed project.

Appendix A

Maps

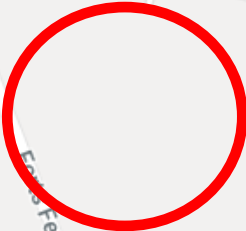


Berry Oxford
Townhouse Apartments

Cotler Architecture, D

Crossroads Cent

Troy Schenectady Rd



Target

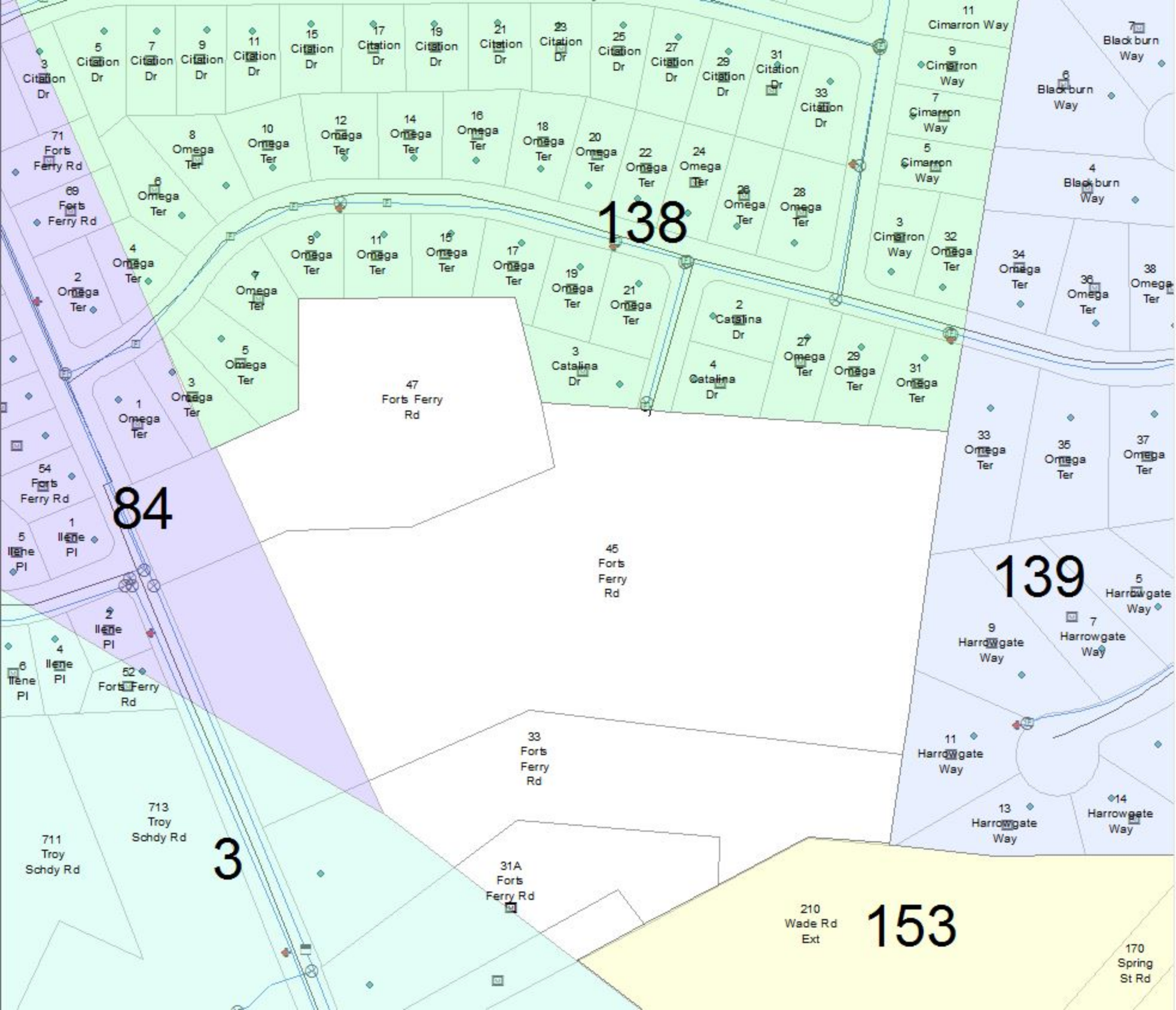
Sam's Club

Mohawk Army Navy

Latham Crossing

Latham Farms

Market Bistro



138

84

3

139

153

47 Forts Ferry Rd

45 Forts Ferry Rd

33 Forts Ferry Rd

31A Forts Ferry Rd

210 Wade Rd Ext

170 Spring St Rd

3 Citation Dr
5 Citation Dr
7 Citation Dr
9 Citation Dr
11 Citation Dr
15 Citation Dr
17 Citation Dr
19 Citation Dr
21 Citation Dr
23 Citation Dr
25 Citation Dr
27 Citation Dr
29 Citation Dr
31 Citation Dr
33 Citation Dr

71 Forts Ferry Rd
69 Forts Ferry Rd
88 Forts Ferry Rd
2 Omega Ter
4 Omega Ter
6 Omega Ter
8 Omega Ter
10 Omega Ter
12 Omega Ter
14 Omega Ter
16 Omega Ter
18 Omega Ter
20 Omega Ter
22 Omega Ter
24 Omega Ter
26 Omega Ter
28 Omega Ter

9 Omega Ter
11 Omega Ter
15 Omega Ter
17 Omega Ter
19 Omega Ter
21 Omega Ter
3 Catalina Dr
2 Catalina Dr
4 Catalina Dr

1 Omega Ter
3 Omega Ter
5 Omega Ter

54 Forts Ferry Rd
1 Ilene Pl
5 Ilene Pl
2 Ilene Pl
4 Ilene Pl
6 Ilene Pl
52 Forts Ferry Rd

713 Troy Schdy Rd
711 Troy Schdy Rd

11 Cimarron Way
9 Cimarron Way
7 Cimarron Way
5 Cimarron Way
3 Cimarron Way
32 Omega Ter

6 Black burn Way
4 Black burn Way

34 Omega Ter
36 Omega Ter
38 Omega Ter

33 Omega Ter
35 Omega Ter
37 Omega Ter

5 Harrowgate Way
7 Harrowgate Way
9 Harrowgate Way

11 Harrowgate Way
13 Harrowgate Way
14 Harrowgate Way

HYDRANT FLOW TEST REPORT

Location 5 Fortes Ferry Rd. Date 10/23/07

Test made by Ed Cehowski Bill Luke Mike Choppa

Time 9:00 A.M.

State purpose of test Determine Available Fire Flow at 5 Forts. Ferry Rd.

System flow rate during test 11 MGD

of River Road pumps on during test 1 # of MVWTP pumps on during test 1

A_1

Flow hydrants: _____

Static B 82 psi Residual B 80 psi

Size nozzle 2 1/2"

Projected results @ 20 psi Residual 8144 gpm

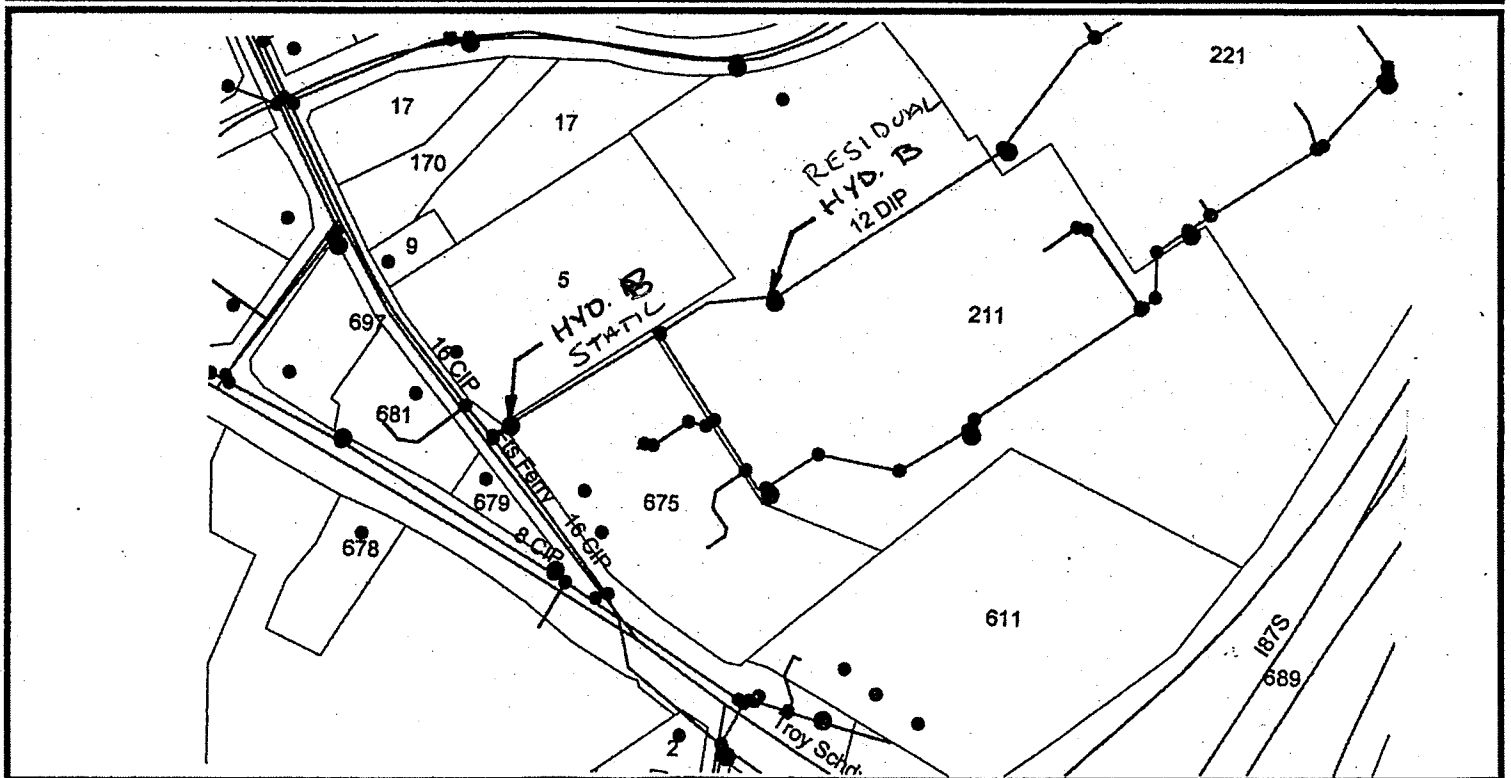
Pitot reading (flow/psi) 57

Discharge coefficient 0.9

GPM _____

Total GPM 1275

Remarks: _____



Appendix B

Calculations

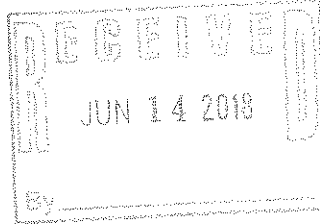
| Data from the Existing Glenwyck Project | | | | |
|---|---------|----------|-------------------|-------------------|
| YEAR | VOLUME | DURATION | UNITS | GPD/UNIT |
| 2018 | 2000115 | 365 | 110 | 49.8 |
| 2017 | 1767342 | 365 | 110 | 44.0 |
| 2016 | 1775735 | 425 | 110 | 38.0 |
| AVERAGE GPD/UNIT | | | | 43.9 |
| USING A SAFETY FACTOR OF 1.15 | | | | 51.5 GPD/UNIT |
| Applying above data to the Forts Ferry Project | | | | |
| | UNITS | GPD/UNIT | AVG. DAILY DEMAND | MAX. DAILY DEMAND |
| SENIOR APT | 62 | 51.5 | 3193 | 6386 |
| OFFICE | 150 | 15 | 2250 | 4500 |
| TOTAL | | | 5443 | 10886 |

| USE | UNITS | RATE (GPD) | TOTAL GPD | peak | peak gpm | gpm |
|--------------------------|-------|------------|-------------|-------|----------|------|
| Sr. Residential | | | | | | |
| Per Unit | 62 | 51.5 | 3193 | 15965 | 11.09 | 2.22 |
| | | | | | | |
| | | | | | | |
| Office | | | | | | |
| Per employee | 150 | 15 | 2250 | 11250 | 7.81 | 1.56 |
| | | | | | | |
| Daily Flow | | | 3.78 | 27215 | 18.90 | 3.78 |
| | | | | | | |
| | | | | | | |
| SUBTOTAL | | | 5443 | | | |
| | | | | | | |
| | | | | | | |
| Total water usage | | | 5443 | | | |
| | | | | | | |
| Peaking Factor | | | 5 | | | |
| Peak Flow | | | 27215 | | | |
| | | | | | | |
| Daily peak Flow | | | 18.90 | | | |

Pat Aragosa
688-1250

Town of Glenville Water Dept.
18 Glenridge Rd -
Glenville, NY 12302
(518) 688-1217

| | |
|---------------------------|-------------------|
| Account Number | AMOUNT DUE |
| 47-0447103550-001 | \$10,670.12 |
| After Due Date Pay | Due Date |
| \$11,203.63 | 7/2/2018 |
| Service Address | |
| 150 Dutch Meadows Lane | |



Glenwyck Development
18 Computer Dr. East, Ste 107
Albany, NY 12205

| Name | | Service Address | | Account Number | |
|----------------------|---------------|------------------------|-----------|-------------------|----------|
| Glenwyck Development | | 150 Dutch Meadows Lane | | 47-0447103550-001 | |
| Status | Service Dates | | Bill Date | Penalty Date | Due Date |
| | From | To | | | |
| Active | 6/1/2017 | 5/31/2018 | 6/1/2018 | 7/3/2018 | 7/2/2018 |

NEW METER

| | | |
|--------------------------|-----------------|------------------|
| Current Reading | 5/31/2018 | 5,308,792 |
| <u>Beginning Reading</u> | <u>6/1/2017</u> | <u>3,308,677</u> |
| Usage | | 2,000,115 |
| TOTAL USAGE | | 2,000,115 |

CURRENT BILL

| | |
|----------------------------|--------------------|
| WATER | \$4,669.77 |
| SEWER | \$6,000.35 |
| Current Amount Due | \$10,670.12 |
| Make Payment By | 7/2/2018 |
| Late Charge after 7/2/2018 | \$533.51 |
| Amount Due after 7/2/2018 | \$11,203.63 |

Water Rate: \$40.00 for 0-30,000 gallons, \$2.35 per 1,000 gallons thereafter
Sewer Rate: \$90.00 for 0-30,000 gallons, \$3.00 per 1,000 gallons thereafter

PENALTY FREE COLLECTION PERIOD: June 1 - July 2, 2018
PENALTY Collection Period: July 3 - July 31, 2018

Account: 0447103550-00
 Billing Dates: 6/1/2016 to 5/31/2017
 Bill ID: 17-6-1
 Date Due: 6/30/2017
 Service Address: 150 Dutch Meadow Lane

Town of Glenville Water Dept.
 18 Glenridge Road
 Glenville, NY 12302
 (518) 688-1217

Summit Senior Living, Inc.
 Attn: Andrea Contelyou, Controller
 18 Computer Dr. East, Ste 107
 Albany NY 12205



07/29/16 Last Payment: \$11,034.03
 Outstanding Balance: \$0.00

| | Read Date | Previous | Current | Consumption Code | Amount |
|--|-----------|-----------|-----------|------------------|-----------------------|
| Sewer | 5/31/2017 | 1,775,735 | 3,308,677 | 1,767,342 A | \$5,302.03 |
| Water | 5/31/2017 | 1,775,735 | 3,308,677 | 1,767,342 A | \$4,122.75 |
| Total Current Charges | | | | | \$9,424.78 |
| Total Amount Due | | | | | \$9,424.78 |
| Late Charge After 6/30/2017 | | | | | \$471.24 |
| Total Due After 6/30/2017 | | | | | \$9,896.02 |

COLLECTIONS:

June 1 - June 30, 2017 (Penalty Free), July 1 - July 31, 2017 (Penalty Period)
LAST DAY OF COLLECTIONS:
MONDAY, July 31 2017

Sewer \$90.00 = 0 - 30,000 gallons, \$3.00 per thousand gallons of water thereafter
 Water \$40.00 = 0 - 30,000 gallons, \$2.35 per thousand gallons thereafter
 2017 - 2018 Rates will remain the
 same as the 2016 - 2017 Rates

Please make checks payable to: TOWN OF GLENVILLE RECEIVER OF TAXES.

Account: 0447103550-00
Billing Dates: 6/1/2015 to 7/26/2016
Bill ID: 16-7-260
Date Due: 8/25/2016

14 mos

Town of Glenville Water Dept.
18 Glenridge Road
Glenville, NY 12302
(518) 688-1217

Service Address: 150 Dutch Meadow Lane

Glenwyck Development
150 Dutch Meadow Lane
Glenville NY 12302

Last Payment: \$0.00
Outstanding Balance: \$0.00

| | Read Date | Previous | Current | Consumption Code | Amount |
|-----------------------|-----------|----------|-----------|------------------|-------------|
| Sewer | 7/26/2016 | | 1,775,735 | 2,068,135 A | \$6,204.41 |
| Water | 7/26/2016 | | 1,775,735 | 2,068,135 A | \$4,829.62 |
| Total Current Charges | | | | | \$11,034.03 |

COMPOUND METER
5/8" meter reading 1775735.50
3" meter reading 00292400.1

Total Amount Due \$11,034.03
8/01/2016

COLLECTIONS:

June 1 - June 30, 2016 (Penalty Free), July 1 - August 1, 2016 (Penalty Period)
LAST DAY OF COLLECTIONS: MONDAY, AUGUST 1, 2016

Sewer \$90.00 = 0 - 30,000 gallons, \$3.00 per thousand gallons of water thereafter
Water \$40.00 = 0 - 30,000 gallons, \$2.35 per thousand gallons thereafter
2016 - 2017 Rates will remain the same as the 2015 - 2016 Rates

Please make checks payable to: TOWN OF GLENVILLE RECEIVER OF TAXES.

Detach here and return with Payment

Account # 0447103550-00
Name Glenwyck Development
Service Address: 150 Dutch Meadow Lane



Bill Id: 16-7-260 Date Due: 08/01/16

Balance Forward \$ 0.00
Current Charges \$ 11,034.03
Total Amount Due \$ 11,034.03

Mail Payment To:
Town of Glenville Water Dept.
18 Glenridge Road
Glenville, NY 12302

Appendix C

Cost Estimate

| Item | quantity | unit price | cost |
|--|----------|-------------|--------------------|
| 8" water main (l.f.) | 2000 | \$26.00 | \$52,000.00 |
| excavation backfill (bedding) (ton) | 225 | \$14.00 | \$3,150.00 |
| Excavation backfill (native material x 3' wide) (c.y.) | 355 | \$8.00 | \$2,840.00 |
| Installation (hour) | 160 | \$250.00 | \$40,000.00 |
| | | | |
| Sub-Total | | | \$97,990.00 |
| | | | |
| | % | \$ | cost |
| Financing | 3.00% | \$6,500.00 | \$195.00 |
| | 1.00% | \$8,500.00 | \$85.00 |
| | 0.50% | \$82,990.00 | \$414.95 |
| Legal | | | \$1,000.00 |
| | | | |
| Sub-Total | | | \$1,694.95 |
| | | | |
| Total | | | \$99,684.95 |