1415 WASHINGTON AVENUE STUDENT HOUSING PROJECT

City of Albany

Albany County, N.Y.

ENGINEER'S REPORT ON ADEQUACY OF WATER SUPPLY

APPLICANTS:
1415 Washington Property LLC

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September 10, 2020
Revised October 6, 2020
Revised 2/1/21

INTRODUCTION

Hershberg & Hershberg, Consulting Engineers and Land Surveyors, were retained by 1415 Washington Property LLC (hereinafter the "Applicant") as site engineer in conjunction with the demolition of an existing 95 bed hotel (Cresthill Suites) an the construction of a 560 +/- bed student housing facility at No. 1415 Washington Avenue. This report is prepared to address the question of adequate sewer service to the site.

DESCRIPTION OF EXISTING SITE AND USE

No 1415 Washington Avenue is currently occupied by Cresthill Suites, an operating hotel.

DESCRIPTION OF INTENDED SITE DEVELOPMENT AND USE

Applicant proposes to demolish the existing 95 room hotel (Cresthill Suites) and construct a new dormitory. The new building will have 240+/- dwelling units being a mixture of 1, 2 & 4 bedroom units. The total number of beds would be 560 +/- beds. The building will be 5 stories and 4 stories over parking. There will be two partial levels of parking with a total parking for 207+/- cars. In addition to indoor amenity spaces, there will be an 8,000+/- SF Community Courtyard/Amphitheater and an 8,300 SF Plaza. Student housing units will fully furnished bedroom clusters sharing a fully furnished common living room and kitchen.

WATER PRESSURE DATA

The static pressure in the existing 8” water main within the easement over No.1395 Washington Avenue (Extended Stay America) is approximately 50 psi. A new fire flow test is attached as Attachment A. A new fire flow test has been requested. The existing test shows 2,042 GPM available at 20 PSI.

WATER DISTRIBUTION SYSTEM

The existing 8” DIP water main within the easement over No.1395 Washington Avenue is connected to an 8” distribution main constructed in 1997. This 8” main was connected to both the 20” and 24” transmission lines. The recent addition of a Booster Station has increased available pressure. A new tap to support the installation of fire hydrants and potable water will be made along this line.

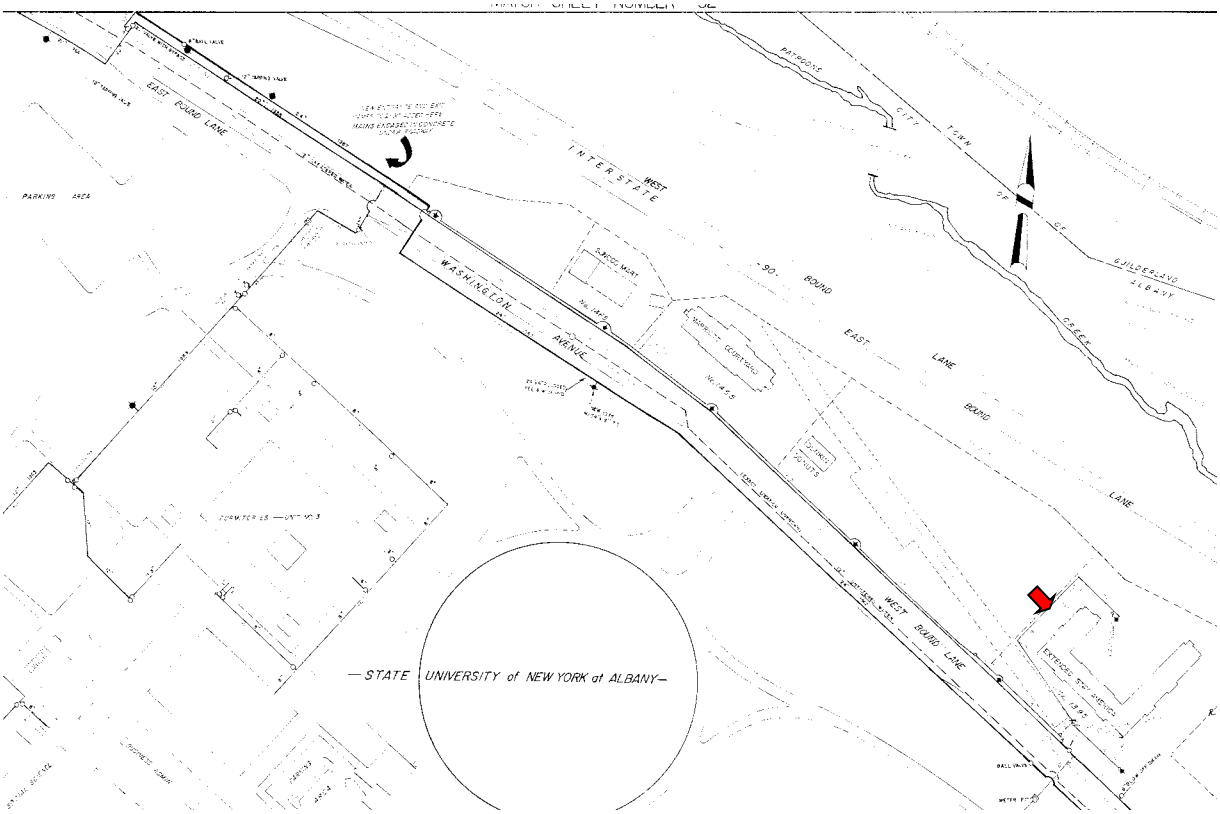

Fig. No. 1 – Portion of Water Atlas No. 34 with location of existing connection to No. 1415 Washington Avenue shown

WATER DEMAND

To compute the required water demand, the average water usage from two similar facilities, 1385 Washington Avenue & 1475 Washington Avenue, was utilized based upon billings provided by the City of Albany Department of Water & Water Supply. The results are shown in Fig. No. 2 below. To determine the increase in demand the existing water usage from the Cresthill Suites hotel was established. See Fig. No. 3 below. This information was used to establish the increase in demand shown in Fig. No. 4.

Computation from Similar Uses on Washington Avenue
1385 Washington Avenue - 314 Beds
100 Cubic Feet

Period	Water Cost	Units	Equivalent Gallons	Days	Usage (GPD)
1/07/19 to 5/03/19	$5,989.44	2,260	1,692,864	118	14,346
5/04/19 to 9/08/19	$5,067.36	1,912	1,432,246	118	12,138
9/08/19 to 1/02/20	$6,933.28	2,616	1,959,633	116	16,893
1/02/20 to 5/04/20	$6,143.58	2,259	1,691,743	124	13,643
			Totals		57,020
	Average Daily Usage				14,255
	Average Daily Usage per bed				45

Computation from Similar Uses on Washington Avenue
1475 Washington Avenue -292 Beds
100 Cubic Feet

Period	Water Cost	Units	Equivalent Gallons	Days	Usage (GPD)
1/09/17 to 5/04/17	$5,364.03	2,024	1,516,098	117	12,958
5/05/17 to 9/8/17	$5,673.75	2,141	1,603,637	125	12,829
9/8/17 to 1/08/18	$6,327.90	2,388	1,788,527	122	14,660
1/08/18 to 5/08/18	$8,001.09	3,019	2,261,440	122	18,536
5/09/18 to 9/04/18	$7,510.71	2,834	2,122,838	121	17,544
9/05/18 to 1/7/19	$7,067.49	2,667	1,997,566	124	16,109
1/07/19 to 5/03/19	$6,318.56	2,384	1,785,887	118	15,135
5/04/19 to 9/03/19	$7,216.16	2,723	2,039,586	121	16,856
9/03/19 to 1/02/20	$8,268.80	3,120	2,337,106	121	19,315
1/02/20 to 5/04/19	$8,121.69	2,986	2,236,451	124	18,036
			Totals		69,342
	Average Daily Usage				17,335
	Average Daily Usage per bed				55
Based on rates:	$2.72 per 100 CF	Eff 1/1/20			
	2.65 per 100 CF	Prior to 1/1/20			

Fig. No. 2 - Average water usage from
1385 Washington Avenue & 1475 Washington Avenue

Computation from Similar Uses on Washington Avenue Extension
1385 Washington Avenue - 314 Beds

Period	Water Cost	100 Cubic Feet Units	Equivalent Gallons	Days	Usage (GPD)
1/07/19 to 5/03/19	$5,989.44	2,260	1,692,864	118	14,346
5/04/19 to 9/08/19	$5,067.36	1,912	1,432,246	118	12,138
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			Totals		69,342
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Based on rates: $2.72 per 100 CF Eff 1/1/20

2.65 per 100 CF Prior to 1/1/20

POTABLE WATER USE
1415 Washington Avenue

Use	Unit	Value	Water Use Per Unit per day(GPD) See Note 1	Daily Water Demand (GPD)
Residential	Beds	560	55	30800
TOTAL ESTIMATED WATER USE				**30800**
LESS EXISTING USE AT 1415 WASHINGTON AVENUE				**-8431**
NET ESTIMATED WATER USE				**22369**
Average Daily Water Demand Increase in GPM		**15.53**		
Peak Sewer Water Demand Increase in GPM		**62.14**		

1) Source: Averages of uses for 1385 and 1475 Washington Avenue

Fig. No. 4 – Increase in Water Demand

IMPACT ON WATER SYSTEM

The total water treated in 2019 at the Feura Bush Water Filtration Plant was 6,473,227,216 gallons. The daily water production averaged 17,734,869 gallons, with maximum daily production of 22,272,288 gallons. The capacity of this treatment plant is 32,000,000 GPD. The increase in

potable water demand is 22,369 GPD represents an insignificant portion of (0.110%) of the average daily water production.

FIRE PROTECTION

The new building will be equipped with automatic sprinkler systems. The 6" water service will be separated within the buildings to provide domestic water and fire protection. Backflow preventors, meters and valves will be provided as required. Fire pumps will be required.

CORROSIVITY

Due to the relatively low pH levels and moisture content in the sub-surface soils, the soil most likely would provide corrosive environment to the proposed ductile iron pipe. Therefore, all pipe will be encased in a polyethelyne sleeve to prevent pipe deterioration. No quantitative tests have been performed to substantiate the corrosivity of the soil.

FINANCING

All water main improvements including tee, connection and service line will be paid for by the Applicants. The Applicant proposes to convey the completed water main and hydrants to the Albany Water Board.

CONCLUSION:

Given the recent addition of a booster station to the system, adequate water quantity and water pressure are available for both potable water and fire protection without any negative impact on the Albany Water Board's system.

Prepared by

Daniel R. Hershberg, P.E. & L.S.

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APPENDIX A

FIRE HYDRANT TEST

ID
361

Location
1395 Washington ave

Date	By	Representing	Witnessed By
10/5/2020	G Jones	AWD	O Powell

Purpose of Test	System Demand MGD
Hershberg & Hershberg	23MGD

Pumps In Operation
NA

Pressure Regulated Zone
☐

Flow Hydrant Location
1395 Washington ave HYD 58649

Nozzle Size	Number of Nozzles	Pitot Pressure	Pitot Flow GPM
2.5	1	35	1000

Total Flow GPM
1000

Residual Hydrant Location
Rear of 1395 Washington HYD 58659

Static Pressure PSI	Residual Pressure PSI	Fire Flow at 20 psi
50	42	2042

Remarks
Hydrants fed off of 8" main