SEWER ENGINEER'S REPORT
& SEWER EXTENSION REPORT

Lofts at Pine Hills

237 Western Avenue

CITY OF ALBANY
COUNTY OF ALBANY
STATE OF NEW YORK

Applicant: Lofts at Pine Hills LLC

Prepared by:

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INTRODUCTION:

Hershberg & Hershberg, Consulting Engineers and Land Surveyors, were retained by Lofts at Pine Hills, LLC (hereinafter the "Applicant") with an address of PO Box 16281, Albany, NY 12212 as site engineer for the construction of a development plan to be known as Lofts at Pine Hills, located at 237 Western Avenue. This report is for the consideration of the Department of Water & Water Supply and the City of Albany Planning Board.

DESCRIPTION OF EXISTING SITE:

PARCEL AREA

The existing site consists of 9 properties known as 233 and 237 Western Avenue, (Tax Map Parcels # 65.61-5-41.1,42), 177, 179, 181, 183, 185, and 187 (Tax Map Parcels 65.61-5-26,27,28,29,30,31) and Rear 694 State Street (Tax Map Parcel #65.61-5-14) which the applicant proposes to consolidate to create Proposed 237 Western Avenue with a site area of 70,794 SF or 1.62 Acres.

Fig. No. 1 - Aerial Photo of Site

DESCRIPTION OF INTENDED SITE DEVELOPMENT AND USE

Under the current applications the Applicant is proposing to construct a 4-story mixed use building with 83 residential units for multi-family housing, and approximately 6,240± SF for commercial use. The site will include 80 off street parking spaces, lighting, landscaping, and a stormwater management system.

SEWER GENERATION

In absence of existing water records, the New *York State Design Standards for Intermediate Sized Wastewater Treatment Systems (March 5, 2014)*[1] is used to compute the Average Daily Flow. Currently, there are 8 existing residential dwellings with an assumed total of 46 beds. Based upon 110 GPD per bed (Method 1: Typical Per-Unit Hydraulic Loading Rates), 46 beds generate an estimated 5,060 GPD or an average flow of 3.51 GPM of sanitary waste. Current peak sewage flow generation is estimated at 400% of average flow or 14.04 GPM (0.031 CFS).

After construction, the residential portion of the building will contain 83 units consisting of 135 beds. The commercial portion of the building consists of 6,240± SF for commercial/restaurant use. Of this 2,000± SF is proposed for commercial (non-restaurant or bar use). The 4,240± SF for restaurant use would allow for 120 seats. Based upon 110 GPD per bed, 0.1 G/SF for commercial (non-restaurant or bar use) and 35 GPD per restaurant seat, will generate an estimated 19,050 GPD or 13.22 GPM (0.030 CFS). See Fig. No. 2 below. Peak water use is estimated at 400% of average flow or 52.9 GPM (0.118 CFS). In comparison to existing conditions, the net increase in average water usage is estimated to be 13,990 GPD or 9.72 GPM (0.022 CFS)

Sewage Generation
237 Western Avenue

Floor/Use	Unit	Value	Water Use Per Unit per day(GPD) See Note 1	Water Use (GPD)
Residential	Bedroom	135	110	14850
General retail/Office	SF	2000	0.1	200
Restaurant	Seat	120	35	4200
		TOTAL		19,050

1) Source: New York State Design Standards for Intermediate Sized Wastewater Treatment Works,
2) Sewage Generation is equivalent to potable water use

. No. 2 – Sewage Generation`

The proposed connection is to the 4'6" circular brick combined sewer that runs through the site via two 6" PVC sanitary sewer laterals. The 4'6" circular brick combined sewer has an approximate grade of 0.5% and a full flowing capacity of 138.87 CFS. The 13.22 GPM (0.030 CFS) of sanitary waste generated by the new buildings represents 0.021% of the existing 4'6" circular brick combined sewer sanitary sewer pipe capacity. A portion of Sewer Atlas Sheet 36 is reproduced below.

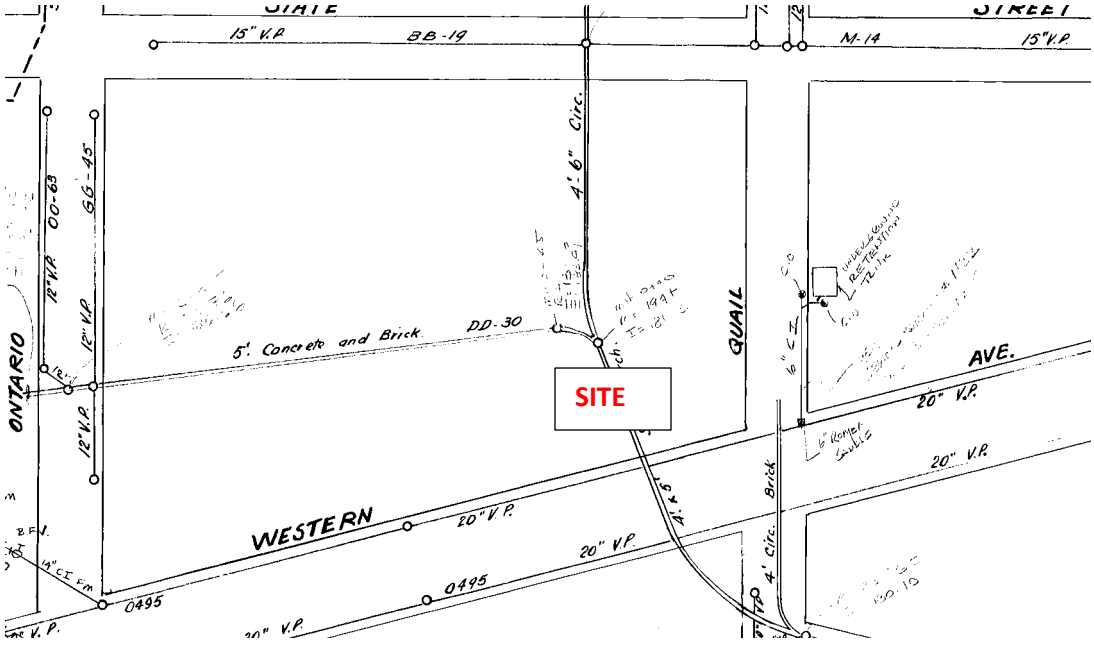

Fig. No. 3 – Portion of Sewer Atlas Sheet 81

The existing site is tributary to the Beaver Creek Sewer District (see map below).

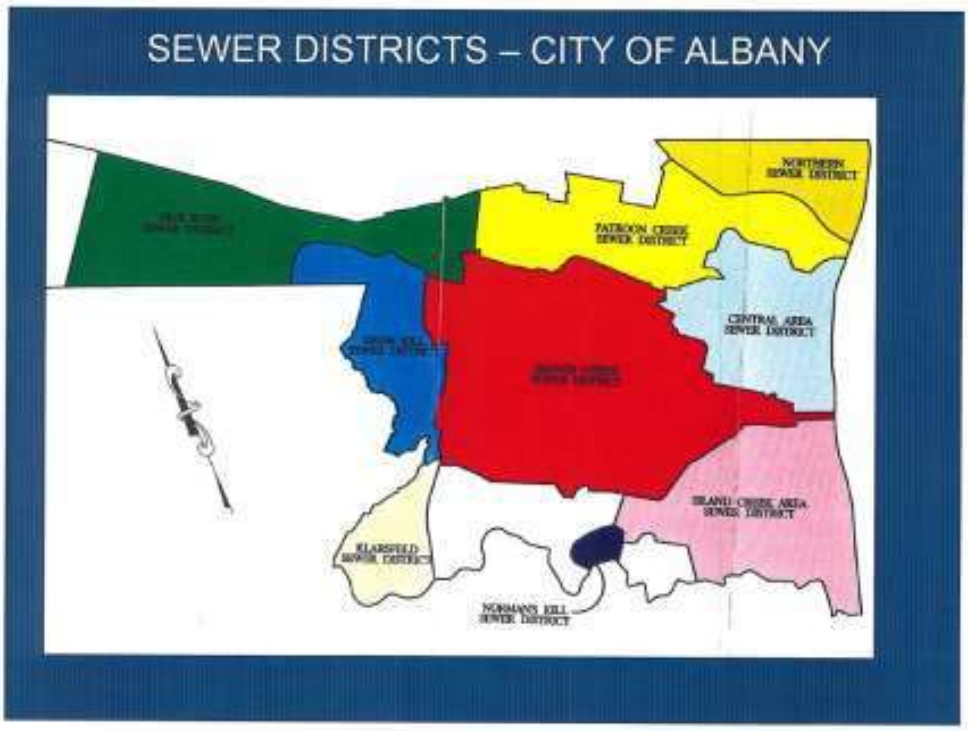

Fig. No. 4- Albany Sewer District Map

COMBINED SEWER OVERFLOW BEST MANAGEMENT PRACTICES

NYSDEC issued a City of Albany Combined Sewer Overflow SPDES Permit, DEC ID#s 4-0101-00012/00001 SPDES #s NY0025747 on November 30, 2018. It included fifteen Best Management Practices which are reviewed below:

1. CSO Operation/Maintenance/Inspection – Not Applicable to this project although maintenance and inspection of Storm Water Management System is covered by maintenance agreement.

2. Maximum Use of Collection System for Storage – Not Applicable

3. Industrial Pretreatment — There are industrial discharges and no toxic substances which will be discharged to the combined sewer.

4. Maximize Flow to POTW -Not applicable.

5. Wet Weather Operating Plan - Not applicable

6. Prohibition of Dry Weather Overflow – Dry weather overflows from the combined sewer system (CSS) are prohibited. Sewer outfalls from the site are separated into storm and sanitary sewer laterals. Dry weather flow can be accommodated from the site as shown by observation of the Big C CSO Smart Cover readings below. On this graph the minimum value of dry weather flow was estimated as 23.5 inches. The high-level advisory is 46.5 inches. The high-level alarm is 48.5 inches. The impact of flow from this site will be negligible.

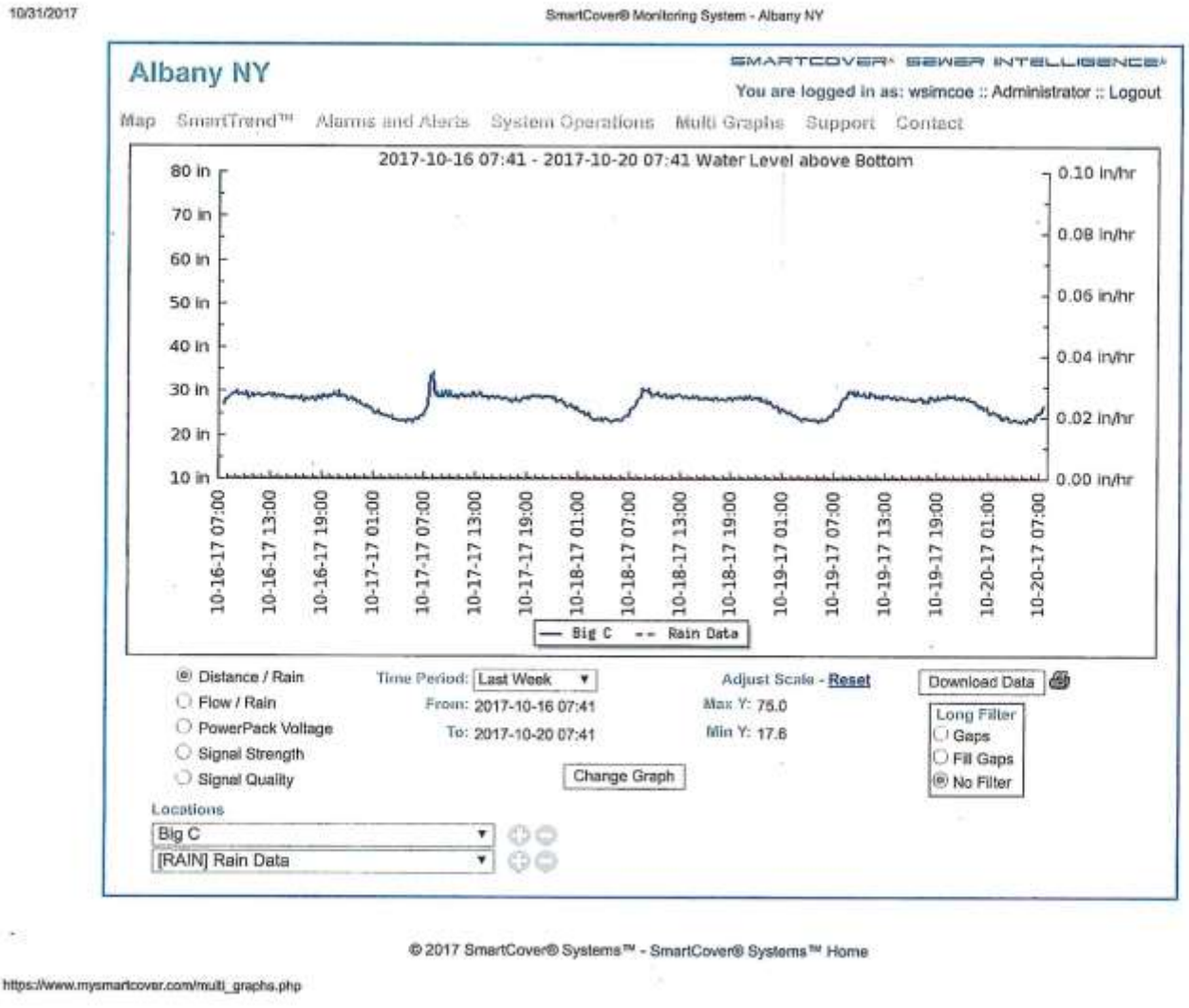

Fig. No. 6- Smart Cover readings from “Big C” CSO

7. Control of Floatable and Settleable Solids – Two grease traps are proposed to accommodate restaurant use. The Applicant will provide a notice with leases that deposition of oil/grease or toilet litter is not allowed.

8. Combined Sewer System Replacement – Not applicable.

9. Sewer/Extension – Sewer/extension, when approved by the Department, should be accomplished using separate sewers. Sewer outfalls from the site are separated into storm and sanitary sewer laterals without interconnections. No new source of storm water shall be connected to any separate sanitary sewer in the collection system. A dry swale is utilized to treat some of the drainage to the west side of the site. Both of the new buildings have blue roofs. Also, a hydrodynamic separator is employed to treat the outfall from the pipe storage gallery beneath the parking lot. The total outflow from the site is controlled as required by USDO. The discharge from the fully developed site during a 100-year frequency storm (7.54 CFS) is less than the discharge from the undeveloped site taken as entirely pervious surface at the 10-year frequency storm (7.55 CFS). The table below is from the SWPPP.

Pre & Post Development Run-off Summary

		1 YEAR STORM		10 YEAR STORM		100 YEAR STORM	
PRE	POST	PRE	POST	PRE	POST	PRE	POST
R2		2.21		7.55		15.28	
	R1		2.06		4.74		7.54

The reductio in flow at the 1-year storm is.0.15 CFS. This is 5 times (500%) the average daily sewage added to the system at 0.03 CFS. Utilizing this method results in excess storage capacity than would have been required by the strict application of Redevelopment Standards as per Chapter 9 of the New York State Stormwater Management Design Manual.

10. Sewage Backups - There have been no documented, recurrent instances of sewage backing up into house(s) or discharges of raw sewage onto the ground surface from surcharging manholes in this area since installation of an improved drainage system on Quail Street, Elberon Place and in Washington Park. Since the flow to the combined sewer is reduced for all storms from the 1 year to the 100-year storm frequencies this project will not make potential surcharging/back-up problems worse.

11. Septage and Hauled Waste - Not Applicable.

12. Control of Run-off - The impacts of run-off from development and re-development in areas served by combined sewers shall be reduced by requiring compliance with the New York Standards for Erosion and Sediment Control and the quantity control requirements included in the New York State Stormwater Management Design Manual. The to the combined sewer is reduced for all storms from the 1 year to the 100-year storm frequencies.

13. Public Notification - Not Applicable.

14. Characterization and Monitoring -Not Applicable

15. Annual report - Not Applicable.

CONCLUSION:

This project generates more than 2,500 GPD and is, therefore, subject to sewer extension provisions. It is the Engineer's opinion that this project can be served by the existing public sewage system with no negative impact on the existing sewage system and in compliance with SPDES Permit# 4-0101-00012/00001, SPDES ID# NY0025747 on November 30, 2018.

Prepared by:

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APPENDIX A

Sheet C4- UTILITY PLAN

APPENDIX 2

PIPE CAPACITY CALCULATIONS