SANITARY SEWER ENGINEER'S REPORT

for

PAVONIA AVENUE MULTI-FAMILY RESIDENTIAL

located at

549 & 551 PAVONIA AVENUE
BLOCK 9606, LOTS 41 & 42

in

CITY OF JERSEY CITY
HUDSON COUNTY, NJ

has been prepared for

Journal Square Improvement, LLC

34 South Dean Street, Suite 200
Englewood, NJ 07631

on

April 14, 2023
InSite Project No. 23-2088-01

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APPENDIX

1.0 INTRODUCTION

On behalf of the applicant, Journal Square Improvement, LLC, this report was prepared for the proposed project titled "Pavonia Avenue Multi-Family Residential" located in the City of Jersey City in Hudson County, NJ. The applicant is proposing to redevelop the existing property to construct a 5-story residential building with 30 dwelling units, utility service laterals, and landscaping.

This report analyzes the proposed building service connection. The analysis presented herein is intended to support applications for approval of the service connections by the Jersey City MUA as the collection entity and the Passaic Valley Sewerage Commission (PVSC) as the treatment entity.

2.0 PROJECT SUMMARY

The property consists of two parcels designated as Block 9606, Lots 41 and 42 which will be consolidated into one lot with a combined area of 0.16 acres. The property has frontage to Pavonia Avenue to the north and is bound by a surface parking lot to the west, residential properties to the south, and a multi-story residential building to the east. There are currently two residential buildings on site that will be demolished in order to construct a 5-story multi-family residential building with a rooftop common area, outdoor patio in the rear, utility infrastructure and landscaping.

The project includes the construction of a single 6-inch gravity PVC sanitary sewer service connection from the proposed building to convey wastewater flows to an existing 24-inch combined sewer main along Pavonia Avenue. Flow rate calculations as well as conveyance system details and specifications are in accordance with the requirements of the New Jersey Pollutant Discharge Elimination System (NJPDES) Rules, NJAC 7:14A-23.3. The project flow is ultimately conveyed to the Passaic Valley Sewerage Commission (PVSC) Treatment Plant located at 600 Wilson Avenue in Newark, NJ. Once the wastewater is treated, it is then discharged to the Upper New York Bay via PVSC outfall pipe.

3.0 SANITARY SEWER DESIGN

1.1 Proposed Average Daily Flow (NJAC 7:14A-23.3)

Type of Establishment	Gallons per Day (NJAC 7:14A-23.3)	Quantity	Average Daily Flow
Studio	150 GPD per dwelling unit	9 units	1,350 GPD
1 Bedroom Unit	150 GPD per dwelling unit	18 units	2,700 GPD
2 Bedroom Unit	225 GPD per dwelling unit	3 units	675 GPD
Total Average Daily Flow, Q_{avg}			**4,725 GPD (0.005 MGD)**

1.2 Proposed Lateral Connection Capacity Analysis

The proposed building contains a single 6-inch PVC sanitary sewer lateral that has been sized to sufficiently convey the double the calculated flow from the building based on the pipe flowing half full. This is demonstrated using Manning's Equation as shown below:

$Q_d = 1.486/n \times A \times R^{2/3} \times S^{1/2}$

where,
Q_d = Pipe capacity, cfs
N = Manning's Roughness Coefficient (PVC = 0.010)
A = Flow Area = 0.196 SF
R = Hydraulic Radius = A/WP = 0.125 FT
S = Pipe Slope, ft/ft = 0.010

$Q_d = 1.486/(0.010) \times (0.196) \times (0.125)^{2/3} \times (0.010)^{1/2} = 0.73$ cfs

Pipe Capacity Flowing Half Full = $Q_d \times ½ = 0.73 \times ½ =$ **0.36 cfs (0.233 MGD)**

Double Average Daily Flow = $Q_{avg} \times 2 = 0.005$ MGD $\times 2 =$ **0.010 MGD**

Pipe Capacity Flowing Half Full > Double Average Daily Flow

0.233 MGD > 0.010 MGD

As shown above, a 6-inch PVC sanitary sewer lateral with a minimum slope of 1% flowing half full has more than double the capacity of the total average daily flow for the project.

4.0 CONCLUSION

The analysis herein demonstrates that the proposed building service connection will adequately convey wastewater flows from the proposed project.

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APPENDIX A

USGS Map

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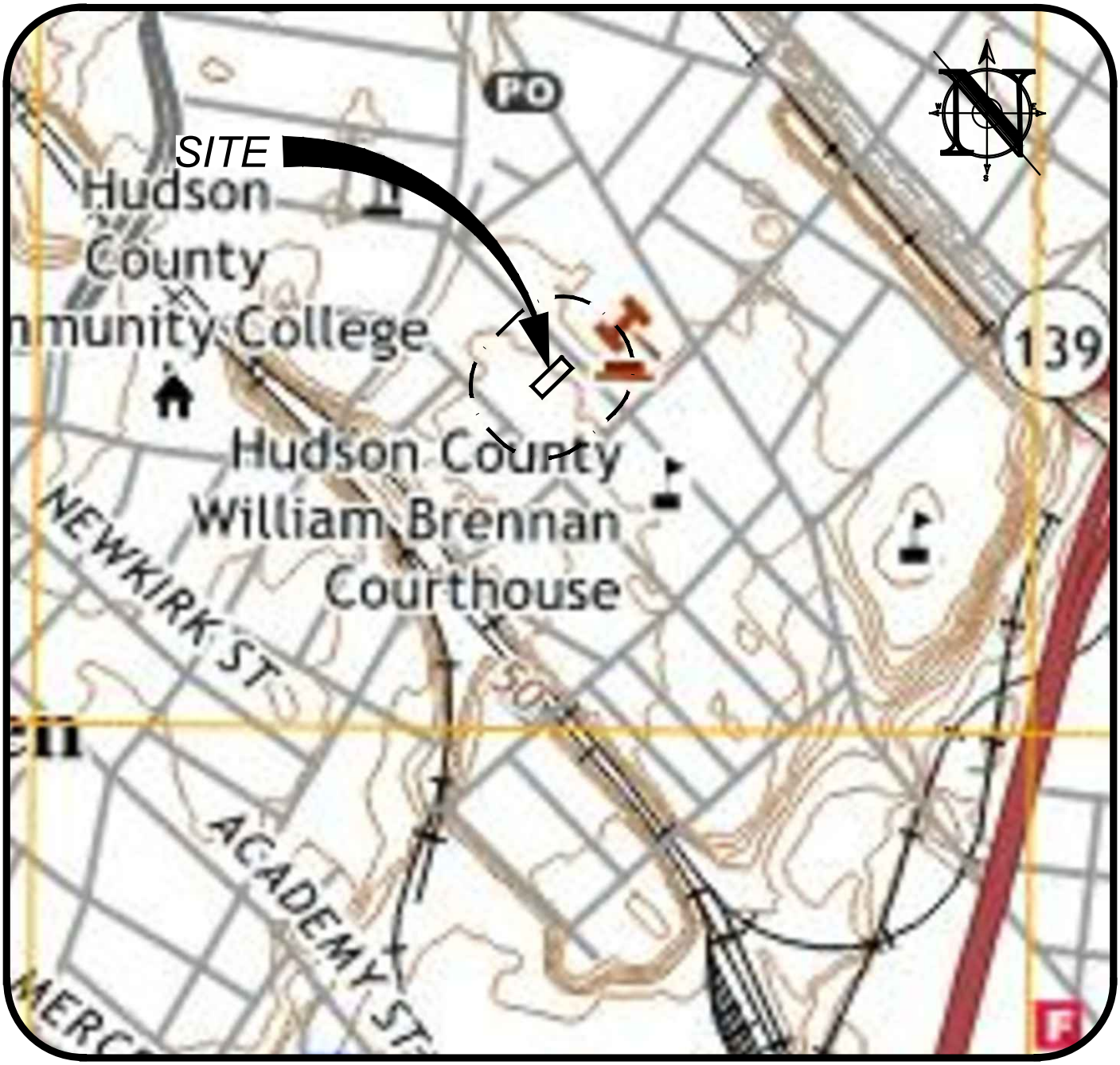

PLAN

500 0 500 1000

SCALE : 1" = 500'

U.S. GEOLOGICAL SURVEY EXHIBIT

INSITE Engineering • Surveying • Planning

INSITE ENGINEERING, LLC
CERTIFICATE OF AUTHORIZATION:
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SITE LOCATION:
BLOCK 9606, LOT 41 & 42
549 & 551 PAVONIA AVENUE
JERSEY CITY, HUDSON COUNTY, NJ

REFERENCE:
SOURCE OF MAP: UNITED STATES GEOLOGICAL SURVEY

INSITE PROJECT NO.
08-2088-01
DRAWING NO.
08-2088-01
DATE
MARCH 31, 2023

REVISIONS