



ENGINEER'S REPORT

for

Daemen Hall Addition
4380 Main Street
Town of Amherst, Erie County, New York

Prepared for

Daemen University
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Section 1 - Location & Description

This project is the development of a 2-story addition to the existing Daemen Hall (formerly Musical Fare Theater) building located within the Daemen University Campus in the Town of Amherst. Construction will consist of 5,896 GSF 2-story addition containing classrooms, laboratories, and office space. Site improvements include grading, utility and storm improvements. The site is currently developed and the disturbed area for this project is approximately 0.12 acres when construction is completed.

Section 2 - Water Service

Water service on the site is existing and serves the current Daemen Hall building. The existing service is tapped near the northwest corner of the property off Getzville Road and proceeds east to the existing hotbox containing the backflow device and meter. As the domestic water currently serves Daemen Hall, the intention is to modify the routing within the building maintaining service to the existing portion of the building and provide service the proposed addition. Routing and design of the relocated service will be provided by others.

The building is currently sprinklered, with modifications to the interior fire protection system as required and designed by others. The existing fire service contains a backflow device within the building, with relocation of the device to the mechanical space as designed by others.

Repairs to all devices will be made during off hours. The site is not located in a 100-year flood plain. Disinfection of the water service following installation will be continuous feed, according to AWWA C-651, latest revision.

Section 3 - Sanitary Sewer Service

The existing building is currently served by sanitary service connected to the Town of Amherst sanitary sewer. Currently, sanitary flows to a lift station at the southwest side of the building, at the location of the proposed addition and proceeds southeast to an existing sanitary manhole within the parking lot to the south of the building. The lift station will be relocated within the proposed addition, inside the mechanical space. Routing the sanitary plumbing, and sizing of the lift station and pump system will be designed by others. Flow from the relocated lift station will proceed to the same manhole via a 4" Schedule 40 sanitary forcemain. The existing manhole bench will be reworked as required or a drop pipe will be installed should the difference in invert elevation exceed 1.5-ft. Wastewater flow continues west within the site's existing sanitary piping network before proceeding into the Town of Amherst sanitary sewer. Please note that the calculations below are conservative as they include both the additional sanitary loading determined by the addition as well as the alterations to the existing portion of the building.

Design Parameters

Students:	10 gal/day/student x 93 additional students = 930 gpd
Staff:	10 gal/day/staff x 14 additional staff = 140 gpd
Assembly Hall:	5 gal/day/staff x 123 seat = 615 gpd
EXISTING Bistro	5 gal/day/staff x 130 seat = 650 gpd

$$2,335 \text{ gpd} \times 4.37 = 10,207 \text{ gpd}$$

*use peaking factor of 4.37

Comparing existing to proposed conditions, there is an **increase of 395 gpd**. For detailed calculations with comparison to the existing and proposed sanitary flow conditions, refer to the Sanitary Sewer calculations included in Appendix A of this report.

The hydraulic loading rate is per "Design Standards for Intermediate Sized Wastewater Treatment Systems" 2014, NYSDEC.

Section 4 - Storm Sewer Service

The existing site is currently served by a stormwater system consisting of stormwater detention and quality systems as well as a network of catch basins, yard drains and smooth interior HDPE stormwater pipes. The existing stormwater management systems provide ample storage and transport for the proposed addition. The existing perimeter drain at the building will be removed and replaced with 8" HDPE storm pipe connected by yard drains around the proposed addition. The new storm line will be connected to the existing at the west side of the building before proceeding north through the existing storm network.

As the proposed development is less than 1 acre of disturbance (disturbance of 0.12 acres proposed), NYSDEC or Town of Amherst requirements for additional stormwater detention or quality are not required.

Appendix A

Sanitary Sewer Demand Calculations

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Project No.: 26-4086 Date: 7/27/2026
Project Name: Daemen Hall Addition
Project Address: 4380 Main Street, (T) Amherst
Subject: Sanitary Sewer Demand Calcs
Sheet: 1 of 1

Sanitary Sewage Demand Calculations:

EXISTING Daemen Hall

10 gal/d/unit	x	60 students	=	600	gpd	*use 10 gallons per day per student
10 gal/d/unit	x	5 staff	=	50	gpd	*use 10 gallons per day per staff
5 gal/d/unit	x	128 seats	=	640	gpd	*use 5 gallons per day per theater seat
5 gal/d/unit	x	130 seats	=	650	gpd	*use 5 gallons per day per bistro seat

Total Existing Site Sanitary Demand: = 1,940 gpd

PROPOSED Daemen Hall Renovations (includes existng and renovated spaces)

10 gal/d/unit	x	93 students	=	930	gpd	*use 10 gallons per day per student
10 gal/d/unit	x	14 staff	=	140	gpd	*use 10 gallons per day per staff
5 gal/d/unit	x	123 seats	=	615	gpd	*use 5 gallons per day per assembly hall seat
5 gal/d/unit	x	130 seats	=	650	gpd	*use 5 gallons per day per ex. bistro seat

**Population calcs determined by average use of the proposed addition and alterations

Total Proposed Site Sanitary Demand: = 2,335 gpd

Increase in sanitary demand = 395 gpd

Find Peak Sanitary Demand:

Peaking Factor based on Population:

Total demand: 2,335 gpd / 100 gpcd = 23 per capita

Population (P) = 23 people

Peaking Factor : $(18 + \sqrt{P}) / (4 + \sqrt{P})$ where P is in thousands

Peaking Factor = 4.37

Peak Sanitary Demand = $2,335 \times 4.37 = 10,207$ gpd
= 0.010 MGD
= 0.016 cfs