



Jamie Gagné Design

Jamie Gagné Design
Providing Drafting and Consulting Services
363 Ruggles Rd, Wilton, NY 12831
(518) 350-4065
me@jgg.io

October 12th, 2023

RE: Tax ID: 251.18-4-25
Commercial Mixed Use Zone
75 Dieskau St
Proposed New Construction
Water & Sewer Service Narrative

To Whom It May Concern,

This narrative delineates the water and sewer supply and usage systems for the aforementioned project. The project proposes to demolish deteriorating structures—namely a shed, motel, office, and tavern—to construct nine single-room bungalows and three two-room bungalows. Additionally, we propose renovations for three pre-existing structures. For the water and sewer systems, our aim is to ensure that the proposed construction and renovations are compliant with all relevant codes and regulations, specifically those set forth by the Village of Lake George and the State of NY. The site is divided into two zones—south and north—with distinct characteristics:

Southern Zone

The southern part of the property will feature 13 new structures, replacing an existing motel that is slated for demolition due to its deteriorated condition. It is our intention to assess the existing municipal service lines for suitability in terms of size and condition. If deemed adequate, these lines will be retained for the new construction.

Northern Zone

The northern section comprises eight rooms, six of which are located in two existing structures set to undergo renovation. These existing utilities will be retained, provided they meet current code requirements. Additionally, new construction in this zone will aim to integrate into these existing service lines, subject to suitability and compliance.

Both zones have independent water and sewer connections and will be treated as such for the purpose of calculations and compliance checks.

Fixture Load Schedule

Per Residential Unit:

- Kitchen Sink & Faucet: 1.5 Fixture Units
- Bathroom Vanity Sink & Faucet: 1 Fixture Unit
- Toilet (WC): 3 Fixture Units
- Shower: 2 Fixture Units

Total per Room: 7.5 Fixture Units

Utility Building (Northern Zone):

- Washing Machine: 3 Fixture Units per machine (x2)

Total for Utility Building: 6 Fixture Units

Water Supply

Estimated Usage

The estimated usage rates are based on typical occupancy patterns for short-term residential units and factor in conservative estimates for additional water usage, such as cleaning and maintenance

- Southern Zone: 315 gpd
- Northern Zone: 240 gpd + Utility Building: 20 gpd (approx.)
- Total: 575 gpd

Piping Material & Size

Given the demand, a main service line of at least 1" diameter is recommended, in compliance with the New York State Plumbing Code.

Connection and Routing

For the Southern Zone, our strategy involves leveraging the existing municipal connections that we anticipate already offer a 1" water service. Similarly, in the Northern Zone, we plan to make use of the connections previously serving the old tavern, where a 1" water service is also expected to be in place. Both these assumptions will be rigorously validated in the project's

initial phases through comprehensive pressure tests and system inspections to confirm the suitability and performance of the existing 1" lines for the new development.

Separation

In alignment with Section 603.2 of the NYS Plumbing Code, a minimum separation distance of 5 feet of undisturbed or compacted earth will generally be maintained between water service pipes and building sewers. Exceptions to this rule are as follows:

1. The required separation will not apply where the water service pipe's bottom within 5 feet of the sewer maintains a vertical separation of at least 12 inches above the sewer pipe's highest point. Both water and sewer pipes will conform to materials listed in Tables 702.2 and 702.3 of the NYS Plumbing Code, which include PVC and PP.
2. The building sewer and water service pipe may share the same trench, given the sewer pipe's material conforms to the standards in Table 702.2.
3. In cases where a water service pipe crosses a sewer pipe, the water service pipe will be sleeved to extend at least 5 feet horizontally from the sewer pipe centerline on both sides, in accordance with pipe materials listed in Tables 605.3, 702.2, or 702.3.

By adhering to these guidelines and exceptions, we aim to maintain a high level of safety and to comply fully with the relevant codes and regulations.

Sewer System

Fixture Load Summary

The Southern and Northern Zones are designed as independent systems, each with their own separate water and sewer connections, which provides an additional safety margin in system design.

- For the Southern Zone, each room has a total of 7.5 Fixture Units. With 13 rooms, this sums up to 97.5 Fixture Units.
- For the Northern Zone, each room has a total of 7.5 Fixture Units. With 8 rooms, this gives us 60 Fixture Units. The utility building adds an additional 6 Fixture Units, bringing the total for the Northern Zone to 66 Fixture Units.

By NYS Plumbing Code Table 710.1(1), a 4-inch pipe with a slope of 1/8" per foot is rated for up to 180 DFUs. Given that each zone has its own connection, both the 97.5 and 66 Fixture

Units for the Southern and Northern Zones, respectively, fall well below the maximum allowable DFUs, offering an ample safety margin.

Material and Construction

All sewer lines will be constructed from SDR 35 PVC 4" pipe. A bedding of at least 3" of crushed rock will be used under areas expected to experience only pedestrian traffic, and a 6" bed will be used in areas expected to bear light vehicle traffic. An additional 6" layer of crushed rock will cover the sewer pipe.

Whenever possible, sewer lines will be installed below the frost line. Where a depth of 4 feet cannot be guaranteed, a 2-foot-wide strip of 2" rigid insulation will be buried above the pipe to mitigate freezing risks.

Code Compliance

The total Drainage Fixture Units (DFU) for the development have been calculated to be compliant with NYS Plumbing Code, specifically per Table 710.1(1), which allows for up to 180 DFUs in a 4" pipe with a 1/8" per foot slope.

Slope

Due to the long length of the main sewer branch, a minimum slope of 1/8" per foot will be maintained to accommodate the overall site gradient. Branch lines serving each unit will feature a steeper 1/4" per foot slope. These branch lines will connect to the main line via a 45-degree bend, followed by at least 6 feet of pipe, then a wye into the main branch at an angle exceeding the horizontal due to the existing slope.

Routing & Clean-Outs

In the Southern Zone, a straight run will connect to the municipal line, branching off to each unit along the route. Clean-outs will be placed at minimum intervals of 80 feet, capped with threaded caps for protection.

In conclusion, this narrative serves to articulate our proposed water and sewer supply and usage systems for the development in Lake George, NY. The plan meticulously integrates existing structures and lays the groundwork for new additions, all while ensuring complete compliance with the Village of Lake George and State of NY regulations. The designs are intended to be both sustainable and efficient, incorporating code-compliant materials and practices throughout. Upon implementation, we will perform all necessary tests, including pressure tests, to validate that the systems meet or exceed the requirements and expectations set forth.