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ALLEN & MAJOR ASSOCIATES, INC.

February 7, 2020

To: Denise M. Gaffey
Director and City Planner
562 Main Street, 2nd Floor
Melrose, MA 02176

A&M Project #: 2674-01A
Re: Oak Grove Mill, LLC
99 Washington Street
Utility Plan Narrative
Revision 1

Copy: Oak Grove Mill, LLC, files

Dear Ms. Gaffey

On behalf of our client, Oak Grove Mill, LLC, Allen & Major Associates, Inc. (A&M) has prepared this letter to describe the provisions for water supply, sewage, and electricity for the proposed residential redevelopment of 99 Washington Street. As you are aware, the existing building is actively used and has connections to the City's water supply, sewer system, natural gas, and overhead electric and tele/data lines. As part of the redevelopment of the building for residential use, the utility connections will be improved or replaced to meet the needs of the building. We have provided a narrative summary below for the various utility connections.

SANITARY SEWER:

Using the guidelines established in 310 CMR 15.203 (Title 5) and the existing gross floor areas taken from the Assessor's data the existing sanitary sewer flows can be estimated based on the current building uses. The gross floor area includes the Mill Building area of 100,952 s.f. and the Gate House area of 3,024 s.f. for a total building area of 103,976. There is also a detached single story building behind the Mill Building, which has not been included in the Assessor's data, but has an additional 1,461 square feet of area used as warehouse.

Title 5 "Office Use" generates seventy-five gallons per day (75 GPD) per 1,000 square feet. Title 5 "Retail Use" generates fifty gallons per day (50 GPD) per 1,000 square feet. Title 5 "Warehouse Use" generates twenty gallons per day (20 GPD) per person. We have assumed two employees for the warehouse space. Based on an even breakdown of the retail and office uses, the existing site sanitary sewer flows are as follows:

Existing sanitary sewer flow calculation:

Office Use: (103,976 square feet)/2 * (75 GPD)/(1000 square feet)	= 3,899 GPD
Retail Use: (103,976 square feet)/2 * (50 GPD)/(1000 square feet)	= 2,599 GPD
Warehouse Use: (1,461 square feet) * (20 GPD) * (2 employees)	= 40 GPD
Total existing sanitary sewer flow	= 6,538 GPD

The proposed sanitary sewer flows are based on the number of bedrooms within the renovated Mill building and Gate House. The existing detached single story warehouse will be removed. Title 5 "Residential Family Dwelling" generates one hundred and ten gallons per day (110 GPD) per bedroom. The proposed building sanitary sewer flows are as follows:

Proposed sanitary sewer flow calculation:

Residential Family Dwelling: (192 bedrooms) * (110 GPD/bedroom)	= 21,120 GPD
Total proposed sanitary sewer flow	= 21,120 GPD

Based on the Title 5 values, there will be an increase in sanitary sewer flow of approximately 14,582 gallons per day compared to the existing uses. The existing building has an eight-inch (8") diameter clay pipe sewer connection to the sewer main within Washington Street. The sewer service connects to an existing sewer manhole in front of the gate house building. The proposed utility plan would maintain this connection and rehabilitate that portion of the existing 8" diameter clay pipe within Washington Street using a PCV slip liner.

WATER:

Using the guidelines established in 310 CMR 15.203 (Title 5), the project will use approximately 23,232 gallons per day of water. This quantity represents the projected sewer demand increased by 10 percent to account for external uses such as irrigation and exterior hoses. The existing building has multiple water connections at the front and rear of the building. The proposed utility plan would remove the water services at the front of the building and install new services at the rear of the building adjacent to the proposed mechanical room. The proposed water services at the rear of the building would connect to the existing ten-inch (10") diameter water main, which was installed as part of the Stone Place (a.k.a. Jack Flats) residential development.

NATURAL GAS:

The utility plan currently shows the existing natural gas service to the building to remain. The project MEP engineer will verify the adequacy of the existing service once the building loads are determined. If necessary, a new gas service will be installed connecting to the gas main within Washington Street.

ELECTRIC AND TELE/DATA:

The existing building is currently serviced by overhead electric and tele/data lines. As part of the redevelopment of the property, the transformer will be re-located and the electric and tele/data lines will be installed below ground as required by the City's Ordinance. The location of the new transformer and underground duct bank is shown on the Utility Plan.

Very Truly Yours,
ALLEN & MAJOR ASSOCIATES, INC.

Brian D. Jones, PE
Senior Project Manager