WB&A Wozny/Barbar & Associates, Inc.
CONSULTING ENGINEERS

February 24, 2020

Mr. Dan Chen
Principal
bh+a
BARGMANN HENDRIE + ARCHETYPE
9 Channel Center Street, Suite 300
Boston, MA 02210
617 350 0450 main
617 456 2239 direct

Reference: WBA # 20040 140-8 Weston Rd Wellesley, MA Electrical loads

Dear Dan,

The building will be a multi-family with basement parking garage and 26 condominium units. Cooking and laundry will be electric. The secondary will be at 120/208V, 3 phase, 4 wire service and will extend underground to the main electric room.

The building electric service will consist one 1,200amps, 120/208V, 3 phase, 4 wire switchboard to be located in the main electrical room and distribute power throughout the entire building riser run through each level. The riser will consist of combination of conduits and wires.

The project will consist of 26-unit condominiums. The residential portion of the building will be approximately 43,130 SF. The units will be 2000SF average. The garage space will be approximately 16,670SF. The common space will account for 14,000SF.

Based on the calculations the project demand load will be 745kVA and will require approximately 2,000amps at 120/208V, 3phase, 4 wire service.

All apartments will be separately metered. There will be a separate house meter to feed the common area loads.

Loads are calculated as follows:

House Loads:

Lighting……. 31kVA
Small Appliances Load……..25kVA
Garage …….……..35kVA
A/C/Heat……25kVA
Misc. Load…… 25 kVA
Site Lighting…….. 5 kVA

Elevators: 2@30hp..... 25 kVA
Car Charging: 3@8 kw each……..24 kVA

Sub Total…….195 kVA

26 Apartments……..…….645kVA

Total Connected…….840 kVA

The diversified/demand load is anticipated to be 381kVA. There will be one 1,200amps switchboard rated at 120/208volt, 3phase, 4 wire to feed the building.

Should you have any question, please feel free to contact me at 781-826-4144

Sincerely,

Salim Afsar

Salim Afsar, P.E.
Electrical Director

J:\20040 140-8 Weston Road Wellesley- Elec Load Calcs\Electrical\Calcs\140-8 Weston Rd Load Letter 02-24-2020.doc

WB&A Wozny/Barbar & Associates, Inc.
CONSULTING ENGINEERS

FIRE PROTECTION SYSTEM NARRATIVE

February 26, 2020

Mr. Dan Chen
Principal
Bergmann Hendrie + Archetype, Inc.
9 Channel Center Street, Suite 300
Boston, MA 02210

Reference: Residential Building
148 Weston Road
Wellesley, MA

Dear Mr. Chen;

The following notes describe the Fire Protection systems the design team is proposing for the 148 Weston Road Building.

PROJECT DESCRIPTION

4-STORY APARTMENT BUILDING	TYPE OF SPACES
Underground Garage	Enclosed parking garage, fitness center, trash room, 2-bedroom unit
First Floor	Vestibule, corridor, 12 apartments.
Second Floor	Corridor, 10 apartments.
Third Floor	Corridor, 7 apartments.

FIRE PROTECTION

Type of Fire Protection Systems

The building will be fully protected with a sprinklers system designed to meet NFPA 13-2013 requirements and standpipe system, designed to meet NFPA 14-2013 requirements.

Fire Protection systems will include wet pipe sprinkler system on floors 1, 2 and 3.

Parking garage will be protected with a dry pipe sprinkler system.

Fire Service

Fire service shall be supplied to the building from a 6-inch cement lined ductile iron line originating 10'-0" outside the building. Upon entering the building, the piping shall transition to schedule-40 black steel with Victaulic couplings and extend through a double check valve assembly. Flow and pressure switches shall be provided and installed on the piping and valves.

Fire Pump

Hydrant flow test will be required, to evaluate if a fire pump will be required. This narrative is based on an assumption that a fire pump will not be required.

Fire Department Inlet Connection

6" fire department inlet connection meeting local fire department requirements shall be located on the address side of the building within 100 feet from a fire hydrant. The connection shall be unobstructed and visible.

Sprinkler / Standpipe Risers

From the documents available to WBA it appears that the distance from the lowest level of vehicle access to the floor of the highest residential level is more than 30 feet, therefore standpipe system will be required.

The building will be provided with two (2) 6" combination sprinkler / standpipe risers located inside stair enclosure.

Sprinkler / Standpipe Drain

Each standpipe will be provided with a dedicated 2" drain discharging to the outside.

Fire Protection Piping Distribution

6" fire protection distribution schedule 40 piping will extend from the fire service room to the stair enclosures and rise up through the building thru 6" combination standpipe / sprinkler risers. Distribution piping will be located at the ceiling of the 1st floor.

The building will be provided with one (1) six-inch (6") riser check valve.

Each level will be a dedicated sprinkler zone. Sprinkler system will be cross-connected between each combination sprinkler / standpipe riser on every level.

Sprinkler floor control valve assembly will be located in each stair containing combination standpipe / sprinkler riser.

All exposed sprinkler piping will be schedule 10 or 40, black steel. All concealed piping on the residential floors will be either black steel or CPVC.

Sprinkler Heads

Sprinkler heads located within each residential unit will be concealed, residential type.

Sprinkler heads located outside residential units will be a combination of upright, sidewall and concealed quick response type.

Dry type sprinklers will protect balconies.

Additional sprinklers may be required in the garage, under bulk of gas piping.

Listed sprinklers above ceiling on floors 1, 2 and 3 will be required, these floors use will be constructed using combustible material.

The barrel of dry sprinkler shall extend minimum 6" into conditioned space.

Sprinkler System Design criteria

Design wet sprinkler system in common areas by the following Light Hazard criteria:

1.	Density:	0.1 gpm / sq. ft.
2.	Sprinkler spacing:	225 sq. ft.
3.	Hose allowance:	100 gpm

Design wet sprinkler system in apartments by the following Light Hazard criteria:

1.	Density:	0.1 gpm/sq. ft.
2.	Sprinkler spacing:	16 ft. x 16 ft.
3.	Flow and pressure whichever is greater.	per listing or as required by density,
4.	Hose allowance:	100 gpm

Design wet sprinkler system in combustible spaces located on floors 1, 2 and 3above ceiling using listed sprinklers by the following Light Hazard criteria:

1.	Density:	0.1 gpm/sq. ft.
2.	Sprinkler spacing:	12 ft. x 12 ft. maximum
3.	Hose allowance:	100 gpm

Design wet sprinkler system in storages and mechanical rooms by the following Ordinary Hazard I criteria:

1.	Density:	0.15 gpm / sq. ft.
2.	Sprinkler spacing:	130 sq. ft.
3.	Hose allowance:	250 gpm

Design dry sprinkler system in parking garage by the following Ordinary Hazard I criteria:

1.	Density:	0.15 gpm / sq. ft.
2.	Sprinkler spacing:	130 sq. ft.
3.	Hose allowance:	250 gpm

Add 10 psi safety factor to hydraulic calculations for a cushion against future pipe main deterioration for all steel piping. Pipe velocity in sprinkler piping shall not exceed 20 FPS.

Provide test connections at highest point of main portion of each sprinkler system with 1" pipe and valve. Test pipe shall be connected to sprinkler pipe at least 1 – ¼" in size and shall discharge outside building through ½" smooth bore brass outlet, where it can be easily seen.

Fire Alarm

Fire alarm system will be design and installed in accordance with NFPA 72-2013 requirements.

The fire alarm system will consist of an addressable system and will be located in the main lobby. Detectors will be installed in all electric, telephone, elevator pit, and code required areas. Smoke detectors will be installed at top of each stairwell. The roof top units will contain duct smoke detectors. The system will include manual pull stations along with horn/lights along corridors and at egress exits. The system will be connected to the Fire Department via municipal loop or radio master as required by the AHJ.

The residential units will be equipped with audible units including 520Hz low frequency devices in bedrooms/sleeping areas and mini horns in the living areas. Combination 120V local carbon monoxide and smoke detectors will be utilized in the units.

A Bi-Directional Antennae system with dual frequency dual channel will be determined if required through signal testing for the building for fire department communication.

Two-way communication area of rescue for the building will be provided in the elevator lobbies.

Very truly yours,

WOZNY/BARBAR & ASSOCIATES, INC.

Casey Archacki, P.E,

WB&A Wozny/Barbar & Associates, Inc.
CONSULTING ENGINEERS

February 24, 2020

Mr. Richard McLaren
nationalgrid
Gas Sales Support
775 Dutton St
Lowell, MA 01854
617-719-4308

Reference: 8 Weston Road
Wellesley, MA. 02481

Wozny/Barbar & Associates, Inc. has been retained by the architectural firm of Bargmann Hendrie + Archetype to provide Fire Protection, Plumbing, HVAC (Mechanical) and Electrical engineering services.

The project consists of twenty-six condominium units with lower level parking garage.

The following is a list of proposed gas-fired equipment to be used:

Proposed Gas Meter Requirements:

Condominium Owner Meters–		
- (26) Heating/Hot Water	199 CFH EA.	5,174 CFH
House Meter –		
- (2) Gas Grills	65 CFH EA.	130 CFH
- (2) Gas Firepits	100 CFH EA.	200 CFH
- Gas Fireplace	40 CFH	40 CFH
- (2)Roof Top Units	100 CFH EA.	200 CFH
Proposed Total Connected Load:		***5,744 CFH***

Please let us know once you have a chance to review if adequate gas volume exists to accommodate the loads noted above and available gas pressure in the area.

We will provide plans with preferred gas meter locations as the drawings are developed.

If you have any comments or questions, please do not hesitate to call Wozny/Barbar & Associates.

Very truly yours,

John J. Del Tufo

John J. Del Tufo, LEED AP
Senior Associate
Director of Plumbing / Fire Protection