



April 19th, 2019

Mr. Rich Williams, Jr., PE
Principal Engineer
Insite Engineering, Surveying & Landscape Architecture, P.C.
3 Garrett Place
Carmel, NY 10512

RE: Water demand
Artis Senior Living of Tarrytown
Tarrytown, NY
LK Job Number: 16358.00

Dear Mr. Williams,

We have worked with the plumbing design engineer to prepare the approximate total water demand calculations below. The actual sprinkler demand is to be calculated by the fire protection engineer contracted by the general contractor.

The irrigation and hydrant demand calculations shown herein represent our professional opinion and shall be considered approximate, subject to change via performance of appropriate design pressure and flow calculations by others.

Domestic Demand [per 2015 IPC, Appendix E, Table E103.3(3)]:

- 349.4 WSFUs = 95 gpm

Irrigation Demand:

- System remains to be designed by irrigation contractor. We anticipate a demand of approximately 30 gpm, subject to change via appropriate design of the system.

Standpipe Demand:

- Not required per 2015 IBC 905

Sprinkler Demand (per 2016 NFPA 13, 11.2 Figure 11.2.3.1.1 & Table 11.2.3.1.2):

- Light hazard = 1,500 sq. ft. x .10 gpm/sq. ft. = 150 gpm
- Inside/outside hose demand + 100 gpm
- Total sprinkler demand = 250 gpm (approximation per code derived allowances)

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Hydrant Demand (per 2015 NFPA 1, 18.4.5.3, Table 18.4.5.2.1, 18.5.4, & 2015 NFPA 220 Annex B, Table A4.1.1):

- Per 2015 NFPA 220, Annex B, Table A.4.1.1: IBC Construction type IIA = NFPA 500 Construction type II(111)
- Per 2015 NFPA 1, Table 18.4.5.2.1: II(111) between 33,201-39,700 sq. ft. = 2,750 gpm Fire Flow for 2 hours.
- Per 2015 NFPA 1 18.4.5.3: 75% reduction in fully sprinklered building with quick response heads (min. 600 gpm)
- 2,750 gpm x 0.25 (code allowed reduction) = 688 gpm Fire Flow for 2 hour duration.

Total water demand = 95 + 30 + 250 + 688 = 1,063 gpm (approximation per Code derived allowances)

Sincerely,

Dennis D Smith, AIA

Paul Folger
Project Manager

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Cc: Mr. Max Ferentinos, Artis
Mr. Mike Terwilliger, Artis