



TETRA TECH



November 19, 2013

Paul F. Buckley
Chief of Department
Town of Needham
Fire Department Headquarters
88 Chestnut Street
Needham, Massachusetts 02492

**Re: Needham Mews
692 - 744 Greendale Avenue**

Dear Chief Buckley:

In response to your comments that you provided at our meeting on October 10th, please see the specific responses below. The revised plans filed with the Zoning Board of Appeals on November 13, 2013 incorporate the changes discussed below and are referenced where applicable.

Comments

1. *Concerns with the radiuses and access for large trucks at both main entrances entering and exiting.*

Response: The Site Plan has been modified to increase the radii at the two main entrances from Greendale Avenue, from the 20-foot radius we proposed in the previous plan to 30 feet in the current plan. In addition, as discussed in the meeting, we have shifted the curb-line outward by an extra two feet at the lower end of each of the two main site access driveways, providing wider drives and better maneuverability for large trucks to make the turns. See revised Layout Plan Sheet C-2.

2. *Concerns with the radiuses and road width (not listed) at the front right corner of Building B, and the front left corner of Building A.*

Response: At our meeting, we submitted the Fire Truck Turning Plan showing the largest Needham Fire Truck circulating throughout the site. That plan shows that this truck can easily maneuver through the curves at both locations where you had a concern. Since our meeting, we have modified the site plan to increase the driveway width at the front right corner of Building B and make it even easier for the truck to make the curve at that location. We have also added several additional radii and road width labels to the site plan to identify



those dimensions more clearly. See revised Layout Plan Sheet C-2. Please also see an updated Fire Truck Turning Plan Sheet 3 enclosed for your review.

- 3. Concerns with the elevation grades on the roadway (especially the two rear corners of Buildings A & B) We would need their engineer to provide proof that our largest and longest truck could easily maneuver those corners at the proposed grades.*

Response: We have prepared profile views of the portion of the internal site driveways behind Buildings A & B including the largest Needham Fire Truck to demonstrate that the apparatus can easily and safely navigate the slopes of the drives. See Fire Truck Profiles Sheets 1 & 2.

The design grades used for this Project were informed by the Needham Subdivision Regulations, as well as review by the civil and traffic engineers working on the Project to ensure a safe design. Section 5, page 33 of the Needham Subdivision Regulations lists a maximum allowable grade of 8% for “accepted town streets” and for “primary access for private ways”. These design parameters, i.e., an 8% maximum grade, were implemented in the design of these internal driveways, are suitable and provide no unusual public safety risk.

- 4. The Fire Department connections for the sprinklers and standpipes should be on the front side of Buildings A & B. It looks like they might be on the rear.*

Response: The Utility Plan has been modified to delete the fire services previously shown at the rear of Buildings A & B. See Sheet C-4.

- 5. The height of Building A is listed as 72'. Is that the maximum height from all sides? If that is at the front we would have concerns with the additional height based on grade changes at the rear.*

Response: The building height shown on the Site Plan is based on the Town’s definition of building height found in the Zoning By-law: “the vertical distance of the highest point of a structure or the roof of a building above the *average grade* of the ground adjoining the building or surrounding the structure.” As discussed in the meeting, the Fire Department would gain access to the roof, if necessary, from the front sides of Buildings A & B, where the grade is at a relatively higher elevation. The height from the pavement grades at the front side of the buildings to the highest point of the roof ridge line is 64’ for Building A and 58’ for Building B.

As also discussed in the meeting, at the rear side of the buildings, the Fire Department would need to gain access from a height no greater than the roof gutter line. There is a 17-foot height difference between the building roof ridge and the gutter line; therefore the following



information is provided for the building height at the rear sides from pavement grade to gutter line:

Building A: Roof Ridge Elevation = 211.0'
Roof Gutter Line Elevation = 194.0'
Grade at Rear of Building A = 132' to 122' (range from corner to corner)
Height from Pavement Grade to Gutter Line = 62' to 72'

Building B: Roof Ridge Elevation = 200.5'
Roof Gutter Line Elevation = 183.5'
Grade at Rear of Building B = 127' to 117' (range from corner to corner)
Height from Pavement Grade to Gutter Line = 56.5' to 66.5'

- 6. The roadways and paved areas are already tight for maneuvering large trucks and apparatus. This would become more of an issue unless there are strict requirements on snow plowing and snow removal.*

Response: The snow plowing contractor will be required to maintain clear access of site drives and parking areas and properly dispose of plowed snow at either the 5,000 square foot designated snow storage area shown on the site plan or by hauling plowed snow off-site on an as-needed basis.

- 7. All areas and roadways which are not designated as parking areas should be clearly posted "no parking" with both signage and surface markings.*

Response: The Site Plan has been modified to add several "No Parking" signs and painted surface markings along the site drives and areas that are not designated parking areas. See Layout Plan Sheet C-2.

- 8. We do not see any area designated for large vehicles (i.e. moving trucks, parcel delivery trucks, etc.) and our concern would be if those trucks parked in travel areas and/or fire lanes.*

Response: The site plan will be refined during final design to include a designated area for moving trucks and parcel delivery trucks outside of fire lanes.

- 9. After further review and discussions with the Town Engineer, the Fire Department has an additional concern with the proposed site plan for 692 & 744 Greendale Avenue. As mentioned in my first comments we have a concern with the radiuses and access constraints at both main entrances into the complex from Greendale Ave. However, there also appears to be some significant grade changes and slopes at both of those entrances/exits. These grade changes within a short travel distance could totally prevent*



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the ability to access the site with our larger trucks due to the fact that the front or rear extensions of the truck would bottom-out and hit the pavement.

Response: To respond to this concern by the Fire Department and the Town Engineer, the project traffic and transportation engineer, Vanasse Associates, Inc., has re-designed the two main access driveways, utilizing vertical curve lengths and design criteria typically reserved for roadway design, and providing an adequate leveling approach for safe sight distances of traffic along Greendale Avenue. The Driveway Profile Plan is included as Sheet C-13 in the revised set of Site Plans, which plan depicts the town's largest fire apparatus being able to access the site through the site access drives without the front or rear extensions hitting the ground.

If you have any questions, or require additional information, please feel free to contact me directly.

Very Truly Yours

Glenn K. Dougherty, P.E.
Senior Project Manager

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