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April 30, 2021

Mr. Jeffrey Eiseman, Chair
Pelham Zoning Board of Appeals
351 Amherst Road
Pelham, MA 01002

**RE: Amethyst Brook Apartments, Amherst Rd, Pelham, MA
Review of Comprehensive Permit Application (40B)**

Dear Members of the Pelham Zoning Board of Appeals:

As requested by the Pelham Zoning Board of Appeals (ZBA), Comprehensive Environmental Inc. (CEI) has provided an initial technical review of the Amethyst Brook Apartments Comprehensive Permit (MGL Ch. 40B) application. This letter details our findings for the civil design components for the site.

This report includes a review of water, wastewater, stormwater, and general civil management design for the site; as well preliminary traffic and parking findings. CEI's review is based on the following materials and information:

1. A Comprehensive Permit Submission entitled "Site Plan for 20-22 Amherst Road, Pelham, Massachusetts", dated January 14, 2020, prepared by Berkshire Design Group (BDG)
2. "Amethyst Brook Apartments Notice of Intent", dated December 15, 2020, prepared by BDG.
3. "Amethyst Brook Apartments, NOI Plans", dated April 15, 2021, prepared by BDG
4. Stormwater Management Report, revised March 26, 2021, prepared by BDG
5. Letter from Amherst, MA Office of Superintendent of Public Works, dated April 28, 2021
6. "Amethyst Brook Conservation Commission Peer Review Response to Comments Letter", dated April 6, 2021, prepared by CEI and BDG.
7. Amethyst Brook Apartments Proposed Conditions – Conservation Commission, dated April 26, 2021, prepared by CEI

8. Town of Amherst Fire Department Access memo, revised January 2021, prepared by Fire Chief W. Tim Nelson.

CEI offers the following design findings and comments for the proposed Amethyst Brook Apartments:

A. Water Management Design

A review letter from the Town of Amherst Office of Superintendent of Public Works (reference #5) was provided to the Applicant to confirm the proposed development's conformance with the Town's water supply system requirements. No additional estimated usage/demand rates were provided.

1. Pipe Sizing and Connections

- a. CEI notes that the two (2) proposed hydrants were not mentioned in the reference letter listed above and recommends that hydraulic modeling or field testing confirm each hydrant will be able to receive a minimum of 500 gpm at peak demand hours or Fire Department standard.
- b. CEI recommends that the Applicant confirm that the 6" service pipe tee connection off of the water main for building #22 has adequate pressure to supply the 6" fire services and 3" domestic pipe at peak demand hours (see above note regarding testing).

2. Estimated Demand

Based on the number of dwellings, CEI has estimated the minimum average daily water demand as follows (note: 65 gal/day is MassDEP Water Conservation Standard for calculating Average Daily Demand per capita):

$$\begin{aligned} \text{ADD} &= 34 \text{ units} * 2.5 \text{ people per unit} * 65 \text{ gallons per day} \\ &= 5,525 \text{ gallons/day} \end{aligned}$$

Please note that this estimate does not account for irrigation or firefighting demands and does not consider peak demands.

B. Wastewater Design

A review letter from the Amherst Office of Superintendent of Public Works (reference #5) was provided to the Applicant to confirm the proposed development's conformance with the Town's wastewater system requirements. No additional estimated usage/effluent rates were provided.

1. Estimated Effluent Rates

Based on estimated average daily water demand, CEI has estimated that the average rate of effluent for the site is expected to be between 5,500 and 8,000 gallons per day (depending on the number of residents per dwelling).

C. Stormwater Management Design

Please note that reference material #6, listed above, is a previous review letter written by CEI for the Pelham Conservation Commission, in which the Stormwater Standards and other design concerns were addressed. The items below detail the findings and conditions recommended for stormwater design.

1. Massachusetts Stormwater Standards

- a. Based on the provided review letter and revised plan sets, the Applicant has met the ten Massachusetts Stormwater Standards as required by MassDEP.

2. Draft Conditions

The following draft conditions of approval were prepared by CEI for the ongoing Conservation Commission public hearing for the proposed Amethyst Brook Apartments (reference material #7). This hearing has remains open.

1. The project Limit of Disturbance and the wetland boundary in the vicinity of the stormwater outfall pipe from Amherst Road shall be clearly marked with flagging or stakes prior to the start of construction to ensure that the contractor is aware of these boundaries and to prevent any unintended construction-phase impacts. The Conservation Commission shall be notified when these areas have been marked to allow for inspection prior to the start of construction.
2. For the woody species that will be planted in the 100-foot buffer zone (as specified on plan sheet LC-600, Planting and Restoration Plan), inspections shall be conducted during the first and second growing seasons after construction has been completed to ensure survival of the specified plantings. Any specimens that have

- not survived during this 2-year monitoring period will be replaced with the same species or an alternate species as approved by the Conservation Commission.
3. The use and storage of pesticides and/or herbicides on the property shall be restricted to areas outside of the 100-foot Buffer Zone.
 4. The project is required to prepare a Stormwater Pollution Prevention Plan (SWPPP) and obtain coverage under the NPDES Construction General Permit (CGP). The location of temporary construction-phase soil stockpiles, erosion/sediment control measures, and snow storage areas must be included in the SWPPP.
 5. The Operations and Maintenance (O&M) Plan for the site should include details specifying the long-term maintenance of on-site green spaces that will be the responsibility of the property owner. The O&M shall include green space management details such as trash removal, trail maintenance, vegetation maintenance (i.e., invasive species control, etc.). The O&M Plan shall be submitted to the Conservation Commission for review and approval prior to the start of construction.
 6. The Applicant shall provide the Conservation Commission with a narrative or plan describing measures that will be used to prevent demolition debris from entering Amethyst Brook. Conservation Commission review and approval of this narrative or plan is required prior to the start of construction.

D. General Civil Design

1. Zoning Bylaw

- a. The Dimensional and Density regulations for Village Center districts (both Mixed-Use and Neighborhood are applicable to this site) dictated by Table 2B in Chapter 125 of the Town Bylaws are met for:
 - i. Minimum lot size (Mixed-Use:10,000 sq ft/Neighborhood:30,000 sq ft)
 - ii. Minimum frontage (MU:80 ft/N:125 ft)
 - iii. Minimum rear setback (MU:15 ft)
 - iv. Maximum impervious surface coverage (MU:80%/30%)

- b. It appears that the minimum front setback for the Village Center Neighborhood District requirement of 30 ft is not being met.
- c. Dimensional requirements for Village Center districts state that the maximum height for buildings is 35 feet. Based on the proposed 3-story building at #22, CEI notes that this may be prohibitive for some architectural designs.
- d. It appears that the trash enclosure and main access drive are not compliant with the required 15-foot minimum side setback required in Village Center districts.
- c. Based on the renderings provided on sheet LC-301, it appears that some of the building and fencing characteristics are not compliant with Sections 125—8.2 (F) and 125-9.2 for Village Center districts design guidance.

2. Slope Stability

- a. For the steeply sloped areas on the northern edge of the main driveway that abuts the 100-foot wetland buffer zone, CEI recommends that additional, long-term erosion control measures be taken to prevent loss of materials; this includes native, woody plantings with deep root structures that may serve to better prevent erosion than seeding with a restoration mix.

E. Traffic and Parking Design

1. Emergency Vehicle Access

- a. There are a number of restrictive turning points throughout the site that may prohibit fire trucks from properly navigating the site. The National Fire Protection Association (NFPA) 1141 requires a minimum inside turn radius of 25 feet and outside turn radius of 50 feet for fire truck access. The Town of Amherst Fire Department, which serves the area, provided additional dimensional requirements for fire apparatus access in reference material #8. A table summarizing those requirements can be referenced at the end of this comment section. The following areas were identified as noncompliant or requiring additional information:
 - i. The main entryway turning point inner radius is 19 feet.
 - ii. The first curve of the main drive has a 45-foot outer radius.
 - iii. The parking lot for building #22 appears to provide minimal clearance for emergency vehicle turnaround, especially when full.

- iv. No turning radius was provided for the main drive curve between the two proposed buildings.
- v. No turning radius was provided for the turn into the parking lot for building #20.
- vi. The proposed roadway width of 18 feet is not compliant with the Town of Amherst Fire Department’s roadway requirements.

Point of Interest	Dimensional Requirement for Fire Apparatus Access
Roadway width	≥ 20 feet
Curb height	≤ 4 inches; square granite curbs prohibited
Fire vehicle access area	≥ 60 feet by 20 feet to accommodate the aerial ladder
Maximum turning radius for largest vehicle in fleet	49’ 9”
Maximum bumper swing clearance	51’ 9”
Heaviest fire apparatus	69,000 lbs

Note: additional requirements and specifications of fire apparatuses can be found in more detail in the memo provided.

2. Safety Signage

- a. CEI recommends that the Applicant provide standard “Stop”, “Slow”, and “Caution” signs at critical points throughout the site. (Pending Select Board approval of usage)
 - i. A “Stop” sign at the exit point of the parking area for building #20 for traffic entering the main driveway.
 - ii. “Slow” and/or “Caution” signs, with a proposed speed limit for the development along the main driveway.
 - iii. Pedestrian indicators at the proposed parking area crosswalk and adjacent to the proposed playground.

3. Pedestrian Areas

- a. Sidewalk and walkway widths must be a minimum of 5.0 feet to meet Americans with Disabilities Act (ADA) and MA Housing Regulation requirements.
- b. CEI recommends that the Applicant provide an additional crosswalk area at the proposed trailhead and curb cut along the main access drive.

4. Parking and Driveways

- a. The parking area design is compliant with Section 125-18, B (3) - Standards, with the exception of item (i); see comment 4.d. below.
- b. Section 125-18, B (1) of Pelham Zoning Bylaws states that parking lots in excess of five spaces shall be placed behind their adjacent structure from the view of the roadway. Additionally, section 125-8.2 (I) 4(b-c) requires this project to comply with the parking screening and shading requirements described therein.
- c. The Applicant proposes 28 dwellings in building #22 with only 26 parking spaces in the adjacent lot. Table 5 in Section 125-18 requires at least one space per dwelling unit.
- d. Section 125-18 B (3) (i) of the Zoning Bylaw prohibits a driveway from being placed within 5 feet of the side lot line.
- e. The driveway design appears to meet grading requirements set forth by Pelham Zoning Bylaws.

- f. No fire lanes or emergency access points were designated in this design.

5. Volume and Capacity

It is CEI's understanding that no traffic data from Amherst Road, no proposed traffic data, and no level of service data has been provided by the Applicant. As such, although the site vehicle trip generation is likely low compared to the Amherst Road ADTs, CEI is unable to confirm that traffic volume and capacity increases will have no negative impacts.

6. Stopping and Turning Site Distances

- a. CEI recommends that the Applicant provide stopping and turning site distance data from egress and access at the proposed intersection with Amherst Road.

If you have any questions or comments regarding this preliminary traffic and parking review, please contact either Matt Lundsted or Bob Hartzel at 508-281-5160.

Sincerely,
COMPREHENSIVE ENVIRONMENTAL, INC.



Matthew Lundsted, P.E.
Principal



Robert Hartzel, CLM, CPESC
Principal