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November 17, 2016

Mr. Joseph W. Freeman, Chairman
Hingham Zoning Board of Appeals
210 Central Street
Hingham, MA 02043

Subject: **Broadstone Bare Cove – Comprehensive Permit**

Dear Mr. Freeman:

This is to advise that we have reviewed the following documents related to the subject Comprehensive Permit Application:

- Comprehensive Permit Application, dated February 12, 2016, prepared by Broadstone Bare Cove Alliance, LLC
- Drainage Report, revised October 25, 2016, prepared by Allen & Major Associates, Inc.
- Comprehensive Permit Application Plans, Broadstone Bare Cove (54 sheets), revised November 2, 2016, prepared by Allen & Major Associates, Inc., Shadley Associates, and Cube 3 Studio

The purpose of our review has been to evaluate conformance with the Hingham Zoning By-law (ZBL), Massachusetts Department of Housing and Community Development Comprehensive Permit Regulations (760 CMR 56.00), Hingham Board of Appeals Rules and Regulations, Section II, E, Comprehensive Permit Submittal Requirements and good engineering practice. We understand that traffic and sewer service matters are being reviewed by other consultants for the Board.

Background

The 12.06± acre site, located at 230 Beal Street, is currently occupied by a 24,600± square foot (s.f.) single-story commercial building with associated paved driveway and parking areas. The parcel is off the south side of Beal Street, approximately 500 feet southeast of the intersection of Beal Street and Lincoln Street (State Route 3A). It is within the Office Park zoning district.

The proposal calls for demolition of the existing building and construction of two, four story, residential apartment buildings containing 220 units. Building 1 would contain 83 units, have a footprint of about 32,000 s.f. and a 50-space parking garage underneath. Building 2 would contain 137 units, have a footprint of about 53,500 s.f. and a 156-space parking garage underneath. Another 132 open-air parking spaces would be provided in areas adjacent to the buildings.

Water for both domestic and fire service would be provided by connections to a proposed 8-inch ductile iron watermain that would be connected to an existing 12-inch watermain in Beal Street. The proposed 8-inch watermain would run from Beal Street, along the west side of Building 1 and loop around Building 2. Sewer service would be provided by a proposed onsite collection system consisting of manholes and PVC pipe which would connect to a private sewer system through an existing 8-inch PVC sewer line servicing the site. The private sewer system discharges to the Hingham Pump Station. Gas service would be provided by proposed on site gas lines connected to the existing gas distribution system in Beal Street. Electric, telephone and CATV service would be provided underground from an existing utility pole in the northeast corner of the site. The stormwater management system would consist of catch basins, area drains, manholes, piping, proprietary hydrodynamic treatment units and four subsurface infiltration systems consisting of plastic chambers surrounded by crushed stone. Overflow from three of the infiltration systems would discharge to an existing drainage easement on Town property at the west of the site. Overflow from the other infiltration system would discharge to a low area at the southeast portion of the site.

Comments

General comments

1. We believe the Application complies with the Massachusetts Department of Housing and Community Development Comprehensive Permit Regulations, 760 CMR 56.05 (2) – Elements of Submission and Hingham Board of Appeals Rules and Regulations, Section II, E, Comprehensive Permit Submittal Requirements.

2. We note that the Applicant is requesting six waivers, five from Zoning By-laws and one from the Hingham General By-laws. With respect to the waiver requests we offer the following:

    a. ZBL Section IV-A: request to allow a building 72± feet in height. It appears that the height of the proposed buildings would be between 54 and 58 feet. The waiver request should be modified to reflect the actual proposed height of the buildings.

    b. ZBL Section V-A.2: request to allow for less than 2 parking spaces per unit (1.54). As proposed, the project would also need relief from V-A.3 which requires a 24-ft. wide aisle width for 90-degree parking spaces and parking spaces to be 9-ft. wide by 20-ft. long where there is no overhang and allows an 18-ft. length where there is an overhang. Both parking garages have 24-ft. aisles but 9-ft. by 18-ft. spaces with no overhang. Also, the drop-off area at Building 2 has 90-degree spaces with only a 20-ft. wide aisle. It appears that where outside parking spaces abut walks, the walks are 6.5-ft. wide (6-ft. sidewalk with a 6-inch concrete curb), therefore with a 2-ft. overhang, the walks would effectively be 4.5-ft. wide which complies with ADA requirements.

3. We note that the "Off-Street Parking Summary" on Sheet C-2A is incorrect. The number of 'standard' parking spaces in the garages is 196, not 207. Therefore, total spaces in the garages is 206 and the total on site would be 338.

4. There are proposed retaining walls shown on the plan which will be greater than four feet in height. Walls over four feet in height require a building permit and design by a registered structural engineer. Details of retaining wall design should be shown on the plans. A railing or an alternative protective barrier should be included on the top of the walls.

5. The Standard Duty Bituminous Roadway detail on Sheet D-2 should show the asphalt binder course to be at least two-inches thick.

6. The width of crosswalks should be clarified. They are specified to be 8-feet wide (typical) on Sheet C-2A and 6-feet wide (typical) on Sheet C-2B.

7. We note that there is an "existing stump burial area" shown on the plans with a note directing the contractor to "review the record plan entitled "Building Demolition and Debris Disposal Area Plan" of 1988 and verify, in the field, the elevation and location of the debris and stump burial area. Special precautions shall be taken to ensure this area is not disturbed during construction." The plans show a driveway and parking spaces to be constructed on top of this area. We question if this 'disposal area' has been evaluated to verify that it will adequately support the proposed infrastructure.

8. Documentation should be submitted to demonstrate that adequate fire flow will be provided. Although the watermain is proposed to loop around Building 2 it is essentially a dead end main. Consideration should be given to looping back to Beal Street by use of the existing watermain on site.

9. We assume that the Applicant is working with the Fire Department regarding the number, spacing and locations of fire hydrants and building connections.

10. The emergency fire lane behind Building 2, extending to Sheltry Path is specified to be a durable surface with materials to be determined on Sheet C-2B and porous asphalt on the Landscape Plan, Sheet L-100. If it is to be porous asphalt, it should be labeled as such on Sheet C-2B and a detail should be added to the plans.

11. ZBL Section I-I.4.i requires a "Site Lighting Plan showing the location, height, photometrics, orientation, and specifications for all outdoor site lighting, including information on the intensity and range of illumination for each source of light proposed." A photometric plan and light fixture detail should be submitted.

Stormwater Management comments

1. The soils information provided for the site include the soil survey mapping of the area and test borings completed around the site. None of the test borings are within the foot prints of the proposed infiltration systems. In accordance with standard engineering practice, test pits should be excavated at each infiltration system to verify soil textural analysis and depth to seasonal high groundwater.

2. The HydroCAD calculations submitted in the Drainage Report demonstrate that the peak rate of runoff under post-development conditions will not exceed existing conditions. However, the calculations do not include an infiltration component in the post-development model. Because of this, the calculations indicate that volume of stormwater runoff will be increased to Study Point #1 (the existing drainage easement on Town property at the west of the site) under post-development conditions. Calculations, incorporating infiltration in the model, should be submitted to verify that post-development volume of runoff does not exceed existing conditions.

3. We note the following issues with consistency between the plans and the HydroCAD calculations:

    a. The time of concentration (Tc) flow path for subcatchment area E-2 does not appear to reflect the longest time of concentration. It should begin just east of the beginning of the Tc flow path for subcatchment E-1, then initially flow northeasterly and then around the eastern edge of the parcel to Study Point 2.

    b. Subcatchment P-3 should be routed through underground infiltration system (UIS) #2, rather than UIS #1.

    c. Subcatchment P-15 should be routed directly to Study Point 2 rather than through UIS #4.

    d. A portion of subcatchment P-18 should be routed through UIS #4. The remainder would be combined with subcatchment P-17.

    e. To match the calculations, Outlet Control Structure (OCS) #1 detail on Sheet D-5 should be revised to show the orifice at El. 14.75 to be 7-inch diameter and another orifice at El. 16.5 with a diameter of 6-inches. Also, the outlet pipe from OCS #4 should be 18-inch diameter on the detail.

4. The water quality volume calculations in Section 6.15 of the Drainage Report need to be revised. The impervious areas listed for Watersheds P-10, P-17 and P-18 should be 10,820 s.f., 11,323 s.f. and 4,069 s.f., respectively.

5. There are a number of discrepancies between the plans and the Stormwater Pipe Sizing Table in Section 6.17 of the Drainage Report. See attached spreadsheet.

6. There is a pump system proposed to convey runoff from the ramp to the garage under Building 1 to UIS #2. This pump system should be connected to the emergency generator to ensure stormwater does not flood the parking garage during power outages. Details of the pump system should be included on the plans.

7. Section 2 of the Drainage Report includes stormwater system Post Construction Maintenance Plan with an Operation and Maintenance Plan Schedule checklist. The Schedule column includes the phrase "See also note #1 below" for Drainage Channel and Subsurface Infiltration Systems. However, 'Note #1' is missing.

8. The "Area Drains (AD) & Cleanouts (CO)" detail on Sheet D-4 shows a "Snout" oil & debris hood in the area drains. The diameter of the area drains appears to be 12-inches. We understand that "Snouts" are not manufactured for 12-inch diameter structures, the smallest round-structure application is 18-inch diameter.

Please give us a call should you have any question.

Very truly yours,

AMORY ENGINEERS, P.C.

By:

Patrick G. Brennan, P.E.

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