

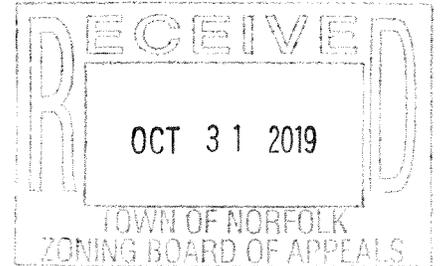


3 Main Street Lakeville, MA 02347
(508) 947-4208 - www.zcellc.com

- Civil Engineering
- Septic Design (Title 5)
- Septic Inspections (Title 5)
- Commercial and Industrial Site Plans
- Chapter 91 Permitting

October 23, 2019

Town of Norfolk Zoning Board of Appeals
One Liberty Lane
Norfolk, MA 02056



RE: The Residences at Norfolk Station, 194 Main Street, Norfolk, MA

Dear Board Members:

This letter is written to respond to comments on the subject project which were included in a letter dated October 15, 2019, issued by the Board's review engineer, BETA Group, Inc. (BETA). The responses below correspond to the numbered comments pertaining to each remaining issue.

General

1. The project proposes a 60-unit, non-age restricted housing development under Chapter 40B on a single parcel. A single 24-ft access driveway provides site access from Main Street. 46 parking stalls 9-ft x 18-ft and 2 handicapped stalls 10-ft x 18-ft with a 10-ft wide unloading zone have been provided outside of the building. 56 parking stalls and 4 handicapped parking stalls (similar dimensions) have been provided within the garage under the building.

Response: No response necessary.

2. The Applicant is requesting numerous waivers from local zoning and subdivision regulations, as well as other Town by-laws. These waiver requests will be evaluated as the peer review process advances.

Response: No Response necessary.

3. The plans state that there are no wetlands on site. Please confirm that there are no wetland resources, including off site, within 100 feet of any proposed work (i.e. the 30" outfall northeast of the property).

Response: The 30" outfall northeast of the property discharges to an existing detention basin that is typically dry and does not contain hydric soils or wetlands vegetation. There are no wetlands within 100 feet of the property.

Stormwater Management

1. The Applicant has requested a waiver from all applicable Subdivision Rules and Regulations of the Town of Norfolk, including Section 4.19 Stormwater Management Systems. Section 4.19 establishes certain requirements for the design of onsite stormwater management systems that are more stringent than the SMS.

Response: No response necessary.

2. The HydroCAD report indicates that the proposed stormwater management system provides sufficient mitigation for peak runoff rates and volumes for the 2, 10, 25, 50 and 100 yr design storms under Post Development conditions.

Response: No response necessary.

3. The Applicant proposes two surface stormwater infiltration basins (Basins 1P and 2P) and one subsurface infiltration chamber system (Pond 3P). Only one test pit has been conducted within Basin 1P (TP D-1) while no test pits appear to have been done in either of the other two stormwater basins. The SMS requires one test pit per 5,000 SF of area for Infiltration Best Management Practices (BMPs).

Recommendation: The applicant should conduct at least one test pit in Basins 2P and 3P and at least one additional test pit in Basin 1P to verify the existing soils/groundwater conditions and confirm the basins will function as modeled in the stormwater report.

Response: The site is currently an active commercial property with associated parking facilities around the building. As such, the applicant requests to conduct the test pits prior to construction of the new facility to prevent destruction of an active parking lot. The infiltration rates utilized in the design of the infiltration systems are derived from the soil texture classification in the Norfolk County soil survey. The Soil Survey categorizes the C Horizon as sand. The calculations utilize the more conservative infiltration rate of 2.41 in/hr which typically coincides with loamy sand.

4. Basin 1P is proposed on the east end of the project site at an existing low-lying depression which appears to function as a collection point for site generated surface runoff. The existing survey contours indicate the bottom of this depression is at elevation 208, while the HydroCAD model for the Pre-Development site lists the bottom of this depression at elevation 207. Either way, the bottom elevation of the proposed Basin 1P is 209.5, which indicates that a portion of Basin 1P is to be constructed in fill. The SMS and good engineering practice recommend against constructing stormwater BMPs in fill.

Also, the proposed top of berm appears to be the 213 contour. The 213 contour is shown connecting to the existing 212 contour at the east property line. This grading should be adjusted. Confirm that

all proposed grading can be accomplished without encroaching on the adjacent town of Norfolk parcel.

Lastly, the overflow stone spillway is set at elevation 211.60. Per the HydroCAD report, design storms greater than the 2-yr event fill the basin and activate the spillway. Elevation 211.6 is located within 6-feet to the building foundation at several locations along the easterly side of the building. The SMS recommends a 10-ft minimum offset for infiltration basins to building foundations.

Recommendation: *The applicant should redesign Basin 1P to rectify these issues.*

Response: A small portion of the basin bottom is designed to be constructed in fill due to the Stormwater Management Standards which recommend that the basin bottom be constructed 4 feet above the estimated seasonal high groundwater elevation. The removal of topsoil and subsoil and replacement with sandy material to proposed grades will result in a basin bottom that will perform in excess of the the 2.41 in/hr infiltration rate that was used in the calculations.

The top edges of the basin have been re-designed as suggested to allow for construction within the property limits.

The peak elevation in the basin resulting from the 100 year storm event is calculated to be 4 feet below the lowest elevation in the proposed garage. Water in the basin will have no impact on the building regardless of their proximity.

5. The existing survey shows a catch basin located adjacent to the 208 contour of the depression. The rim and invert elevations are listed as 208.0± and 205.1±, respectively. Are these rim/invert elevations approximate or were they field verified? If the rim elevation is in fact higher than elevation 208, then more stormwater would be retained which would reduce the calculated peak rate and volume of stormwater discharging from the site under existing conditions.

Recommendation: *The applicant should confirm the rim elevation of the existing CB at the east end of the site and revise the existing HydroCAD model if necessary.*

Response: The rim and invert elevations were taken from plans of record provided by the town. The catch basin rim was surveyed and it was determined to be at an elevation of 207.52 with an invert of 205.10. The plans have been revised accordingly.

6. The Applicant proposes to install an Inlet model Stormceptor 450i water quality treatment chamber to service Basin 1P. The Stormceptor is intended to capture and pre-treat stormwater from the proposed paved parking/access drive area prior to discharge into the basin. The contributing catchment area to the Stormceptor (labeled STC-2) is 1.08 acres, with 0.6 acres of impervious area. The Inlet model Stormceptor 450i is designed for treatment of small catchment areas only, generally 0.25 acres or less of impervious area. The Stormceptor sizing software does state a TSS removal rate in excess of 80% for the 450i model, however, a larger Stormceptor (model 900) is recommended.

In addition, the Catch Basins in Depressions calculations included in the Stormwater Report list a contributing peak flow of 4.5 CFS to STC-2. The calculations list an inlet capacity of 8.85 CFS with a double grate, however, STC-2 is shown on the plans with a single grate. Is a double grate configuration proposed for STC-2, and is a double grate configuration available for a Stormceptor 450I?

Recommendation: *The applicant should utilize a larger manhole style Stormceptor model for pretreatment at Basin 1P. A manhole style Stormceptor would require a separate CB for stormwater collection, likely a 5-ft diameter structure with double grate.*

Response: The inlet structure has been replaced with a double grate 5 ft diameter catch basin which then discharges to a Stormceptor 900 unit as suggested.

7. Infiltration Basin 2P is located adjacent to the southwest end of the proposed building. The elevation of the garage floor at this location is 220.0, which is lower than the bottom elevation of Basin 2P at 222.0.

Recommendation: *The applicant should confirm that waterproofing will be applied to the exterior foundation wall for the length of Basin 2P.*

Response: We agree with this comment and the Building code requires that the exterior foundation wall in this location is waterproofed.

8. Stormwater Management Report – Section 3.4 Removal of 80% TSS: The applicant has proposed two Stormceptor 450I Inlet model treatment chambers to provide all of the 80% TSS removal for site generated stormwater runoff while taking no credit for TSS removal via the infiltration BMPs.

Recommendation: *Refer to Item #5. The proposed Stormceptors in conjunction with the Infiltration BMPs will likely provide in excess of 80% TSS removal from the site.*

Response: Agreed.

9. Stormwater Management Systems Long Term O & M Plan: The applicant has provided the name and address for the party responsible for the stormwater management system.

Recommendation: *The applicant should provide a contact telephone # for the party responsible for the stormwater management system.*

Response: A telephone number for the responsible party has been added to the O&M Plan.

10. Drainage Summary – The Drainage Summary page of the Stormwater Report lists the Pre and Post Development peak runoff rates and volumes discharging from the project site. After reviewing the results of the HydroCAD models, it appears the Pre/Post peak rates and volumes listed are those going to the “existing depression with catch basin” node, not the Pre/Post peak rates and volumes actually discharging from the project site.

Recommendation: *The applicant should revise the Pre/Post drainage summary page to list the correct peak rates and volumes discharging from the project site.*

Response: Both the pre-development and post-development discharge locations are the same and therefore, that is the design point that was evaluated. The post-development condition does, however, decrease the size of the depression. As such, the peak discharge to the area was evaluated as well as the associated ponding elevation in the depression. Both are less than pre-development conditions for all storm events.

Plans

1. The Existing Conditions Plan shows an existing drainage easement running along the south/easterly side of the parcel. An existing drain line along with several drainage structures are shown within the easement. The size or material of the drain line is not listed. At least one of the drain manholes appears to be shown as approximate, while the rim/invert elevations for one of the catch basins is labeled "plus/minus". The existing drainage structures are shown using several different symbols which are not included in the Legend, the reason for the different symbols is unknown.

Recommendation: The drainage easement and most of the existing structures and drainpipe are to remain as part of the project. The pipe size and material should be identified, the rim/invert elevations for any existing structures to remain should be provided to confirm whether any utility conflicts may exist. If different symbols are to be used for the drainage structures, they should all be included in the Legend.

Response: The structures in the easement that could be found have been located and are shown on the plan in their surveyed location. There is one structure, however, which could not be located by the owner or the Town of Norfolk Public Works Department. This structure is noted on the plans and it is recommended that the structure be located by the contractor prior to construction of the building foundation.

2. The Grading and Utilities Plan does not show any drainage system for the building garage floors. Building garage floors typically feature floor drains to collect vehicle drippage connected to oil/grit chambers which then connect to the building sewer system.

Recommendation: The applicant should discuss how vehicle drippage within the building garage will be managed.

Response: From discussions with the mechanical engineer, it is likely that the building garage will be equipped with floor drains that will discharge to an industrial tight tank.

3. The limits for the proposed subsurface sewage disposal system are only shown on the Landscaping Plan as dashed squares. No actual septic field or septic system components are shown.

Recommendation: The applicant should consider adding the septic system component locations to the Grading and Utilities Plan to confirm that no conflicts exist with other site utilities. Appropriate setback dimensions should also be considered to confirm that the system components will fit within their designated area(s).

Response: The plans have been modified as suggested to include these items.

4. Infiltration Chamber System 3P is located approximately 6-ft off the west property line. The south end of the system requires a 6-ft cut below existing grade, given the close proximity to the property line will a temporary construction easement be required?

Response: The plans have been modified such that the system has been moved away from the property line.

5. STC-1 almost touches the west property line. Graphically it is shown as a 4-ft diameter structure; however, it is in fact a 6-ft diameter structure including the anti-floatation concrete shelf at the base. Given the close proximity to the property line will a temporary construction easement be required?

Recommendation: *The applicant should confirm if a temporary construction easement from the adjacent property will be required to construct Infiltration Chamber System 3P or to install Stormceptor STC-1.*

Response: The plans have been modified and the structure moved away from the property line.

6. The Grading and Utilities Plan shows the proposed Water and Fire services connecting to the southwest corner of the building from the existing water main in Main Street. This appears to be the only water services currently shown. In the Sept 26, 2018 Memo from Fire Chief Bushnell , Comment C specifically requests a fire hydrant be located "at the driveway to the Maintenance Building".

Recommendation: *The applicant should add a fire hydrant and all other associated water/fire services to the plan as requested by the Norfolk Fire Dept. In addition, water connection features including tapping sleeves, gate valves, bends, etc. should be added to the plan.*

Response: The plans have been revised as suggested.

7. The Applicant is required to submit a site design checklist to the Norfolk Fire Department for review. The checklist includes relevant design information such as vehicle turning radii and general site accessibility for emergency vehicles.

Recommendation: *We would request that emergency vehicle access and turning radii design information be provided for review as the proposed site has only a single access driveway.*

Response: On October 30, 2019, we met with the acting Fire Chief to review the project. We anticipate that the chief's office will issue a letter to the ZBA.

8. The Layout Plan depicts a 24-foot access driveway entrance on the west side of the site; the proposed edge treatment is depicted as 12" Cape Cod bituminous berm. The hatch pattern used for proposed bituminous concrete extends all the way to the interface with Main Street, which appears to indicate that the existing cement concrete sidewalk across the driveway is to be replaced with bituminous concrete. Therefore, the proposed driveway modifications as depicted will not mesh with the existing conditions at that location.

Recommendation: *The applicant should revise the proposed work at the western driveway to conform to the actual existing conditions, and clearly identify the nature and extent of the work that will be performed on the Main Street roadway, the existing granite curbing, and the cement concrete sidewalk.*

Response: The plans have been revised as suggested.

9. The Layout Plan does not show any designated snow storage area(s).

Recommendation: *Designated snow storage area(s) should be added to the plan.*

Response: Snow storage areas have been added to the site plans.

10. The Layout Plan does not show any dimensions for parking and drive aisles within the parking garage.

Recommendation: *Dimensions for parking and drive aisles should be added for the parking garage.*

Response: The requested dimensions have been added to the garage plans.

11. The proposed site grading indicates the site will require importing fill.

Recommendation: *The applicant should provide earthwork calculations for review.*

Response: The project requires approximately 6,600 cubic yards of fill.

12. The Site Lighting Plan indicates that most of the pedestrian walk along the north side of the building will not be properly illuminated by the proposed site lighting.

Recommendation: *The proposed site lighting should be modified to properly illuminate the pedestrian walkway along the north side of the building.*

Response: A revised site lighting plan is included in the plan set.

13. The plans do not show any pedestrian walks to the site amenities (Pickleball / Bocce courts and dog play area).

Recommendation: *The applicant should consider providing ADA accessible pedestrian walkways to the proposed site amenities (Pickleball / Bocce courts and dog play area)*

Response: The plans have been revised to include modified site amenities due to the change removing the proposed age restriction. Walkways have been provided.

Revised design plans reflecting the items detailed in this letter are attached. Should you have any questions, please do not hesitate to contact our office at 508-947-4208.

Sincerely,
Zenith Consulting Engineers, LLC

Jamie Bissonnette, P.E.
Manager