



March 19, 2021

Christian Klein, Chairman
Zoning Board of Appeals

Town of Arlington
50 Pleasant Street
Arlington, MA 02476

Re: 1165R Massachusetts Avenue - Arlington, MA
Comprehensive Permit Civil / Site Peer Review

Dear Chairman Klein:

BETA Group, Inc. (BETA) has completed its initial Civil and Stormwater peer review of the proposed Chapter 40B residential development located at 1165R Massachusetts Avenue in Arlington, Massachusetts. Our analysis of the civil and stormwater elements of the site plans and supporting documents for the above-referenced project are based on selected materials from the following available documents:

- Pertinent Documents/Sections of the Chapter 40B submission to the Arlington ZBA, including:
 - Section 3.2.6 – Report on Existing Condition
 - Section 3.2.10 – Recreation and Open Space Amenities
 - Section 3.2.11 – List of Requested Waivers
 - Section 3.2.13 – Impact Analysis of the Natural and Built Environment
 - Section 3.2.16 – Compliance with Master Plan
- Preliminary Site Development Plans (6 Sheets) including:
 - *ALTA/NSPS Land Title Survey, 1165R Massachusetts Avenue, Map 57, Block 2, Lot 10B and Part of Lot 15, Town of Arlington* stamped plan set, 4 sheets, dated July 16, 2020, prepared by Control Point Associates, Inc.;
 - *Proposed Site Plan Documents – Proposed Residential Development* plan set (2 Sheets – C-301 and C-401, Site Layout and Grading and Drainage), June 15, 2020, prepared by Bohler Engineering (Development Plans);
- *Proposed Site Plan Documents – Proposed Residential Development* plan (C-501 – Utility Plan), July 15, 2020, prepared by Bohler Engineering;
- *Proposed Site Plan Documents – Proposed Residential Development* plan (PH1-2 and PH3-4 – Phasing Plans), August 21, 2020, prepared by Bohler Engineering;
- *Proposed Site Plan Documents – Proposed Residential Development* plan (EC-2 – Pre-1946 Mill Complex Footprint Exhibit), September 21, 2020, prepared by Bohler Engineering;
- *Drainage Report for 1165R Mass MA Property, LLC*, March 4, 2021, prepared by Bohler Engineering,
- Architectural Drawings (16 Sheets), dated June 16, 2020 prepared by Bargmann Hendrie + Archetype, Inc. (bh+a) of Boston, MA
- *1165R Mass Ave, Arlington, MA, Project Eligibility / Site Approval*, prepared by MassHousing, dated November 17, 2020;

- Comment letter, 1165R Massachusetts Avenue, Arlington, MA, prepared by Arlington Select Board, dated August 31, 2020;
- FEMA Flood Insurance Study, Middlesex County, Revised June 6, 2016;
- Town of Arlington Zoning Bylaw with amendments through April 2016;
- Town of Arlington Wetland Protection Bylaw, Article 8 and Regulations for Wetland Protection, June 4, 2015;
- MassDEP Stormwater Management Standards (SMS);
- Massachusetts GIS mapping tool OLIVER (http://maps.massgis.state.ma.us/map_ol/oliver.php), website visited February 4, 2021;
- USFWS Information for Planning and Consultation (IPaC), online tool (<https://ecos.fws.gov/ipac/>), website visited February 15, 2020.

The following are our comments on the plans and supporting documents.

General

BETA's comments presented here relate to existing site conditions and the current conceptual project plans and figures available with respect to the civil / site / stormwater design associated with the Comprehensive Permit application for the proposed 1165R Massachusetts Avenue 40B housing project. Part of this review includes an overall analysis of the existing site to confirm its suitability for the proposed project. At this preliminary phase, it is understood that the proposed site utilities such as the stormwater management system have not been fully designed and are shown preliminarily. A preliminary drainage analysis has been provided including supporting calculations.

Proposed Project

The proposed project includes construction of 130 residential units in four (4) apartment buildings along with associated access driveways, parking areas (total of 11 surface spaces) and garages, utilities, infrastructure, a Riverwalk, and stormwater management system improvements (the Project). The Project also proposes a new vehicular bridge over Mill Brook and proposes to re-route Ryder Brook. A Comprehensive Permit Application was filed with the Arlington ZBA under the M.G.L Chapter 40B provisions in June 2020.

Vehicular traffic into the Site will be from Massachusetts Avenue only, while vehicles exiting the Site can leave via Massachusetts Avenue or Ryder Street. The driveway connecting the Site to Ryder Street will only allow for one-way traffic.

Existing Conditions

The proposed Chapter 40B Residential Development is located at 1165R Massachusetts Avenue and includes two parcels that total approximately 2.3-acres of land, located between Ryder Street, Massachusetts Avenue, Quinn Road, and the historic Boston and Main Railroad (now the Minuteman Commuter Bikeway) in Arlington, Massachusetts (the Site). The Project Site is generally within an industrial/commercial area in Arlington and is bounded to the north, east, and South by Mirak Automotive Dealers and an Automotive Detailing business; and to the east by Construction/Contractor facilities and a condominium. Both Ryder Street and Forest Street (located to the west of the Project) are primarily residential neighborhoods.

The Project Site was originally developed in the 1800s as a mill and is almost entirely degraded. It is improved by former mill buildings, parking areas, and a single-lane vehicular bridge over Mill Brook. The onsite buildings are interconnected via breezeways and have undergone additions since the original development of the property. The primary structures consist of a 4-story brick building located northeast of Mill Brook (with single-story additions to the east and south) and a 3-story frame building located southwest of Mill Brook, which is connected to the 4-story building over Mill Brook by a breezeway.

A review of the current FEMA Flood Insurance Study for Middlesex County and the existing conditions topography presented on current Project plans indicate that the 100-year floodplain Base Flood Elevation associated with Mill Brook changes significantly, dropping from Elevation 103 feet north of Ryder Street to Elevation 90 feet at the southern limit of the Project. Based on the elevations of the top of the retaining walls that contain Mill Brook, the 100-year FEMA flood is contained within those walls. The existing northern driveway, however, is located within the 500-year flood plain Zone X. FEMA Floodway is also mapped along Mill Brook.

Civil / Site / Stormwater Review Summary:

Major elements of the preliminary site design include installation of a new site drainage system and relocation of Ryder Brook. The project also proposes a reduction in overall impervious area through provision of new landscaping. The project is presented as a redevelopment project under the MassDEP Stormwater Management Standards.

Based on BETA's review of the available Project plans, documents, and publicly available information, we respectfully provide the following comments and recommendations.

SITE PLANS

2. There is no emergency access drive shown around the rear of the Buildings 1, 3, and 4.
Recommendation: The Applicant must coordinate with the Arlington Fire Department to determine if an emergency access drive is required around the rear of the main site building.
3. The northeastern portion of access driveway to the Building 2 parking garage (to the south of the proposed building) extends into existing pervious/vegetated area. The proposed edge of pavement does not tie into the existing edge of pavement. In addition, the proposed grading in this area will direct stormwater to the southeast, toward Map 57, Block 2, Lot 16A.
Recommendation: The Applicant should provide the proposed grading and edge of pavement around Building 2 to demonstrate that surface runoff from this area will not be directed onto the property at #1155R Mass Ave or directly into Mill Brook without treatment.
4. According to the Architect's plans, areas of porous flexible pavement are proposed for the Riverwalk
Recommendation: The Applicant should provide a detail of the pervious pavement section for review to evaluate its functionality.
5. Areas for trash collection and snow storage are not identified on the site plan.
Recommendation: The Applicant should identify potential areas for trash collection and snow storage on the site plan to confirm that these will not conflict with other site elements.

6. No erosion controls or sediment controls are shown on the site plans and no details have been provided.
Recommendation: An erosion control limits should be shown on the site plans for review and erosion control details should be provided.
7. Standard details including catch basins (CB), manholes, tree filter boxes, utility trench, etc. should be added to the site plans.
8. The sidewalk and driveway grading adjacent to the west side of Building 2 should be reviewed. The plans show the road grade at 6.6% and the sidewalk grade at maximum of 5%. This could result in significant elevation difference between the road and sidewalk.
9. The Plans depict Building 2 being set farther back from the Bank of Mill Brook (as compared to the existing building location). The plans do not specify how the area between the Brook and the building will be stabilized following construction.
Recommendation: This area could be vegetated with native shade tolerant plants that will provide cover and/or perch habitat for bird species.

FLOOD PLAIN

10. Based on the proposed Project layout, it is unknown if construction requires filling within the 100-year floodplain. Sufficient details have not been provided to determine if the work associated with construction of the new vehicular bridge over Mill Brook requires filling below the Base Flood elevation (94 feet). Compensatory storage is required on a 1:1 (per foot) basis by the Mass Wetlands Protection Act (310 CMR 10.57) and on a 2:1 basis by the Arlington Wetlands Bylaw if fill is proposed below the floodplain elevation.
Recommendation: The Applicant should provide preliminary bridge elevation plans that depict the proposed bridge structure in relation to the floodplain elevation to confirm the Project will not result in fill of the 100-year floodplain.

STORMWATER MANAGEMENT

11. The Applicant submitted a drainage report for the project prepared by Bohler in March 2021. The report includes a project narrative, an evaluation of Stormwater Management Standards and supporting calculations and documentation. A revised Drainage and Grading Plan dated March 10, 2021 was submitted on March 18, 2021.
12. The proposed design results in a net decrease in impervious area as compared to predevelopment conditions. Based on the reduction in impervious area there is a reduction in overall peak flow and volume from the Site.
13. The project proposes to relocate Ryder Brook into a 30" diameter pipe. The Brook currently discharges to Mill Brook through a 24" diameter pipe. Due to the complexities of the watershed draining to the existing 24" pipe, the analysis uses the maximum capacity of the 24" pipe as the design flow for the relocated Brook. This is a reasonable approach, provided that there is no history of flooding on the Site.

Recommendation: The Applicant should confirm that there is no history of flooding on the Site associated with Ryder Brook.

14. Only a qualitative analysis of the relocated Ryder Brook conduit has been provided. Calculations are required to demonstrate that the pipe for the relocated brook is adequately sized to prevent surcharging.

Recommendation: Provide calculations for routing the 100-year storm through the proposed 30" pipe and open channel. The calculations should include the capacity of the proposed channel at the proposed headwall, evaluation of inlet control at the headwall and evaluation of the hydraulic grade line through the 30" pipe system. Potential tailwater affects at the discharge to Mill Brook should be considered.

15. The analysis in the drainage report uses NOAA 14 rainfall data. As required by Arlington Wetland Protection Bylaw (Article 8) and Regulations for Wetland Protection (June 4, 2015), NOAA 14+ rainfall data should be utilized.

Recommendation: Revise the drainage analysis utilizing NOAA 14+ rainfall data.

16. The drainage report includes an analysis of the proposed pipe conveyance system but does not appear to account for roof runoff from the proposed buildings.

Recommendation: Revise the drainage analysis to include the roof areas of the proposed buildings and show proposed discharge points from the roofs.

17. No analysis is provided for the proposed 30" pipe within the driveway that will discharge to Mill Brook. This pipe collects runoff from several proposed drainage areas as well as the flow from the relocated Ryder Brook.

Recommendation: Provide analysis of the proposed 30" pipe in the driveway including flow from CB-1, CB-2, YD-1, TD-1 and TD-2.

18. The drainage report notes that a water quality unit will be provided to address removal of TSS. The plans do not show the location of the water quality unit.

Recommendation: Show the location of the water quality unit and the connections to the proposed drainage system.

19. The proposed development includes parking in garages within the buildings. No information is provided on floor drains within the garages. It is assumed that the floor drains will connect to the sanitary sewer system.

Recommendation: Show garage floor drain connections.

20. No drainage control is shown at southeast corner of Building 2 or along the driveway to the west of Building 2. The pavement appears to drain directly to the Bank of the River.

Recommendation: Consider incorporating a water quality structure to treat runoff from this area.

21. Sheet L101 of the Architectural plan set shows "Bio-swale plantings" in the proposed swale for relocated Ryder Brook north of Building 4. Is a bio-swale proposed for this area?

22. Three area/yard drains proposed, and one CB are proposed within the vegetated area north of Building 4, and two CBs are proposed within the Road/parking area. Also, a trash rack is proposed at

the entrance to the 30" pipe for the relocated Ryder Brook. No details are proposed on CBs or yard/area drains.

Recommendation: Provide details for the proposed drainage structures and trash rack.

23. Three trench drains are proposed:

- a. At entrance of garage for Building 4.
- b. At toe of the driveway slope, just downgradient of the Proposed Bridge over Mill Brook.
- c. Within bicycle parking/site entrance area between Buildings 1 and 4.

No details are provided on the proposed trench drains.

Recommendation: Provide details for the proposed trench drains.

UTILITIES

24. The Utility Plan (Sheet C-501) and Grading and Drainage Plan (Sheet C-401) show the proposed sewer/water/drainage utilities schematically with no materials specified. In addition, no size for the utilities are depicted except the sewer and only select elevations are specified.

Recommendation: We recommend the Applicant coordinate with the Arlington Public Works Department regarding all proposed site utility connections to the public utilities in Ryder Street and Massachusetts Avenue to confirm that the connections are appropriate and comply with Town of Arlington construction standards.

25. The Existing Conditions Plan shows an existing onsite sewer line and easement located immediately east of Mill Brook. The proposed Project appears to require relocation of a segment of the sewer line near the proposed bridge.

Recommendation: Details of the sewer relocation including pipe material, manholes, pipe lengths and slopes should be provided to confirm that the proposed relocation will function appropriately.

26. The Existing Conditions Plan shows the 24-inch culvert that carries Ryder Brook to its confluence with Mill Brook. The Plans do not describe whether this culvert will be abandoned or removed.

Recommendation: The Applicant should describe how this culvert will be handled during construction of the proposed Project.

CONSTRUCTION

27. The proposed Project as currently shown appears to require import of a significant amount of material during construction. The adjacent neighborhoods are thickly settled with narrow streets and on-street parking which may present challenges for large construction vehicles traveling to/from the project site.

Recommendation: We recommend the Applicant provide a preliminary/draft Construction Management Plan that would identify anticipated number of truck trips, potential truck routes, onsite staging and material laydown areas, hours of operation, etc.

Conclusion:

The proposed stormwater management approach relies on the Project's classification as a redevelopment Project under MassDEP Stormwater Management Regulations. This requires that the stormwater

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standards be satisfied to the maximum extent practicable. The design relies on an overall reduction in impervious area on the site and minimal stormwater BMPs. The primary drainage infrastructure includes a series of area drains, trench drains, and catch basins. Water quality treatment is proposed through a proprietary water quality unit. In addition, it does not appear that any stormwater BMPs are proposed within the access driveway to the Building 2 garage. In accordance with our comments, additional information, including revised drainage analysis, should be provided to confirm that the project will meet Stormwater Management Standards.

The proposed site grading plans appear to demonstrate that the proposed surface grading of the site will allow it to drain properly; however, additional design and analysis is required to demonstrate that the surface stormwater runoff will be effectively managed.

The proposed utility layouts for electric/telecon, gas, sewer, water and drainage are shown schematically and appear feasible. A portion of the town-owned sewer line will be relocated as part of the Project's construction. Additional information including pipe sizes, materials, and invert elevations would need to be provided to verify compliance with Town construction standards and confirm that no conflicts exist between the various utilities.

If you have questions about any of these comments, please feel free to contact us at any time. Thank you.

Very truly yours,
BETA Group, Inc.



William McGrath, P.E.
Senior Associate



Marta Nover
Vice President

cc:

Patrick Hanlon, Zoning Board of Appeals
Jenny Raitt, Director of Planning and Economic Development
Kelly Lynema, Senior Planner, Department of Planning and Economic Development
Douglas W. Heim, Arlington Town Counsel
Rick Valleralli, Town of Arlington
Mary O'Conner, Krattenmaker, OConner & Ingber, P.C.
Paul Haverty, BBH Law
Marta Nover, BETA
Laura Krause, BETA