BOHLER
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April 6, 2021

Christian Klein, Chairperson
Arlington Zoning Board of Appeals
51 Grove Street
Arlington, MA 02476

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

Dear Chairperson Klein:

Bohler Engineering on behalf of 1165R Mass MA Property LLC, the applicant for the Comprehensive Permit for the property at 1165R Massachusetts Avenue, Arlington, MA, submits the following response to the comments and recommendations provided by BETA Group, Inc. in its letter dated March 19, 2021 (hereinafter respectively referred to as the "Applicant", the "Property" and "BETA"). For ease of reference, this response tracks the comments and recommendations in BETA's March 19, 2021 letter to the Arlington Zoning Board of Appeals (hereinafter referred to as the "Board").

2. 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.

   RESPONSE: The Applicant previously met with the Fire Department during a meeting in September 2020 and confirmed that emergency vehicle access was sufficient. The applicant will continue working with the Fire Department as the project moves forward.

3. 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.

   RESPONSE: The proposed grading replicates existing drainage patterns. The applicant has added a perimeter pea stone gravel strip as described in the MassDEP Stormwater Handbook at the edge of pavement within the project site boundaries. This is shown on the revised plans.

4. Recommendation: The Applicant should provide a detail of the pervious pavement section for review to evaluate its functionality.

   RESPONSE: The applicant has further evaluated the options for walkway materials along Mill Brook and currently proposes an asphalt subbase and chip and seal surface. The decision to not use pervious pavement was based on the following:
   - The impact to stormwater runoff would be negligible
   - This path was the only pervious pavement on the project and would require mobilization of large-scale equipment (not scaled for this walkway) for maintenance
   - Concerns of clogging of the pervious pavement over time with sediment thus eliminating the benefit

5. 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.

   RESPONSE: Trash storage will be maintained within the building. Small trash containers will periodically be brought outside from a storage area within the garage for pickup as needed. Additionally, snow storage areas are shown on the revised plans and are limited to the immediate curb lines where possible, but the majority of snow will need to be removed from the site when it impedes facility operations. A note has been added to the plans indicating this.

6. Recommendation: An erosion control limits should be shown on the site plans for review and erosion control details should be provided.

   RESPONSE: A Sediment & Erosion control plan, including appropriate details, is provided with the revised plans.

7. Standard details including catch basins (CB), manholes, tree filter boxes, utility trench, etc. should be added to the site plans.

   RESPONSE: Standard details are provided on the revised 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.

   RESPONSE: The driveway grade of 6.6% cannot be changed due to existing conditions and because of this, the adjacent sidewalk will need to be at the same grade. The note referring to maintaining a maximum sidewalk slope of 5% has been removed from that area of the revised plans.

9. Recommendation: This area could be vegetated with native shade tolerant plants that will provide cover and/or perch habitat for bird species.

   RESPONSE: Plantings have been added between Building 2 and Mill Brook that are native and shade tolerant as shown on the revised plans.

10. 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.

    RESPONSE: The proposed bridge will be built upon the existing channel walls. The proposed bridge structure will be above the FEMA 100-year floodplain elevation and therefore there will be no impact to nor filling of the 100-year floodplain. Design plans for the new bridge are attached for reference.

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.

    RESPONSE: No response required.

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.

    RESPONSE: No response required.

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

    RESPONSE: With routine maintenance, the long-term owner of the property is not aware of any flooding that periodically occurs within Ryder Brook. The existing Ryder Brook channel is approximately 1.5 feet deep with a narrow bottom and drains to a headwall where it is conveyed to Mill Brook through a 24-inch concrete pipe. The proposed relocated channel will have a bottom width of 2-3 feet and a minimum depth of four feet, resulting in more than a doubling of capacity. The relocated channel will lead to a headwall where it will discharge through a 30" pipe that provides twice the capacity of the existing 24" pipe. Given this, the likelihood of any potential flooding will be greatly reduced. An Operation & Maintenance Plan is also included within the enclosed Drainage Report and provides recommended maintenance procedures for the Ryder Brook drainage swale. In addition, a low point is provided at the southeast corner of proposed Building #4, which would provide relief from flooding in the event that water in the relocated swale becomes backed up.

14. 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 effects at the discharge to Mill Brook should be considered.

    RESPONSE: The capacity of the existing 24-inch pipe is 26 cubic feet per second (CFS) and this flow was used as the 100-year base flow for the proposed relocated swale and headwall. When adding flows from areas on the site that drain to the proposed 30-inch pipe to this base flow, the total flow is 34 CFS. The minimum capacity of the proposed 30-inch pipe is 56 CFS and is therefore adequate to convey the 100-year flow. Additionally, the 100-year flow hydraulic grade analysis using the FEMA 100-year flood elevation of 94.5 feet as the tailwater elevation is included in Appendix F of the revised drainage report.

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

    RESPONSE: The enclosed drainage calculations are revised to utilize NOAA 14+ rainfall data.

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

    RESPONSE: The drainage analysis is revised to include the roof areas.

17. 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.

    RESPONSE: The drainage analysis is revised to include flows from the inlets to the 30" pipe.

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

    RESPONSE: The location of the water quality unit and connections to the unit is shown on the revised plans.

19. Recommendation: Show garage floor drain connections.

    RESPONSE: Garage floor drains will be connected to the sanitary sewer system. Connections will be shown on the architectural plans to be included with the building permit.

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

    RESPONSE: It is not feasible to provide a structural water quality unit between the pavement and Mill Brook channel wall so the applicant has added a perimeter peastone gravel strip as described in the MassDEP Stormwater Handbook, to provide water quality treatment at the edge of pavement within the project site boundaries. A low point is proposed downstream of the perimeter gravel strip for further collection of sediment. A detail of the perimeter peastone gravel trench has been added to the plans.

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?

    RESPONSE: A bio-swale is not being proposed for the relocated Ryder Brook. A bio-swale relies on vegetative growth on the bottom of the swale and is most effective when the water within the swale is traveling slowly or can be detained in small pools. These types of swales are generally used for small, lightly developed drainage areas and also include planting media within the bottom of the swale. The proposed relocated swale for the subject project will provide a small amount of sediment removal within the voids of the proposed stone channel bottom, however it is designed to convey water through and out of the site as quickly as possible. Native vegetation will be planted on the side slopes for habitat enhancement, and although it may provide very limited water quality treatment, it is not intended to function as a bio-swale. Details of the alignment, grading and proposed plantings of the relocated Ryder Brook have been provided within the revised plans.

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

    RESPONSE: Details of the drainage structures and trash rack are provided within the revised plans.

23. Recommendation: Provide details for the proposed trench drains.

    RESPONSE: Details of the trench drains are provided within the revised plans.

24. 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.

    RESPONSE: The applicant will coordinate all utility connections with Arlington Public Works as necessary to ensure they comply with their standards.

25. 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.

    RESPONSE: The sewer pipe belongs to the MRWA and is not being relocated. The applicant will work with the MRWA for permitting of proposed connections to the sewer main.

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

    RESPONSE: The existing 24" pipe will remain in place until the drainage swale relocation and 30" pipe have been constructed. The 30" pipe will use the same discharge point as the 24" pipe at the Mill Brook channel wall, and the transition from 24" to 30" at that point will be scheduled during a forecasted period of dry weather. After the 30" pipe is operational, the 24" pipe will be removed. The demolition plan has been revised to note this.

27. 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.

    RESPONSE: A Construction Management Plan will be provided to the Board for review.

The Project, as proposed, will satisfy the Mass DEP Stormwater Management Regulations and Standards. The project design results in an overall and substantial reduction in impervious area on the site and the treatment of what is now untreated water onsite by a proprietary water quality system.

In the event you require additional information, please contact us at any time. We thank BETA for its comments and the Board for its time and efforts.

Very truly yours,

Randy Miron
Project Manager
Bohler

cc: Marta J. Nover, Vice President (via email)
William P. McGrath, PE (via email)
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