May 20, 2022

Ms. Sue Brown, Town Planner
Zoning Board of Appeals
Manchester-by-the-Sea Town Hall
10 Central Street
Manchester-by-the-Sea, MA 01944

Via: Email to Sue Brown, Town Planner (*browns@manchester.ma.us*); smellish11@comcast.net; eglenn@mit.edu; gpucci@k-plaw.com; and federspielg@manchester.ma.us

Reference: Second Supplemental Civil, Landscape/Site Design,
& Geotechnical Peer Review Letter
Chapter 40B Comprehensive Permit Application
0 School Street
Manchester-by-the-Sea, Massachusetts
B+T Project No. 3344.01

Dear Ms. Brown:

Beals and Thomas, Inc. (B+T) is pleased to assist the Town of Manchester-by-the Sea Zoning Board of Appeals (the Board) with the second supplemental Civil, Landscape/Site Design, & Geotechnical Peer Review of the Chapter 40B Comprehensive Permit Application Filing for the "*Sanctuary at Manchester-by-the-Sea*" at 0 School Street in Manchester-by-the-Sea, Massachusetts. We understand that SLV School Street, LLC (the Applicant), proposes to develop a Chapter 40B housing project consisting of 136 apartment units, 34 of which are designated to be affordable, with associated site improvements (the Project).

General Comments

1. B+T has reviewed the Waiver Request document as referenced herein. B+T does not necessarily take exception to the waivers being requested. They address existing non-conforming conditions, setback relief, parking relief, and other administrative issues not outside of typical engineering practice or outside of the Chapter 40B design process.

   Applicant's Current Response: An updated waiver request, dated March 23, 2022, has been provided.

   Current B+T Response: We acknowledge the revised waiver list provided by the Applicant. B+T continues to not take specific exception to the waivers being requested; however,

discussion on waivers as applicable is contained in our response to comments as noted herein.

Applicant's Response (5/25/22): No response required.

2. In accordance with section 4.9.5.1 of the By-Law, the Project is within the Water Resource Overlay District, Zone 3. We note the following:
   a. Section (k) - The waste water treatment facility will need to be designed in accordance with 314 CMR 5.00. Details of this infrastructure have not been submitted.

      Applicant's Previous Response: The wastewater treatment facility (WWTF) has been removed from the project scope.

      Previous B+T Response: The removal of the WWTF from the Project results in an additional waiver request. In lieu of the WWTF, the Applicant now proposes a sewer pumping station that will require a waiver for a subsurface tank within the Zone 3 Water Resource Overlay District. Specific details of the proposed pump station have not been provided and the pump station itself is denoted as "by others". It is unclear how impactful this will be relative to the new waiver request. We request that the Applicant, to the satisfaction of the Board, clarify the design intent of the pump station (depth, size, etc.) so the Board can consider the waiver request accordingly.

      Current Applicant's Response: The applicant will provide further detail under separate cover.

      Current B+T Response: We acknowledge the sample sewer pump station design provided. It remains non-specific to the Project; however, it appears to be consistent with typical engineering practice. B+T takes no specific exception to the waiver being requested. As a potential condition of approval, the Board may consider requiring that the final design of the pump station be subject to DPW review during the Building Permit process.

      Applicant's Response (5/25/22): No response required.

   b. Section (o) – Excavation cannot occur within 4-ft of the groundwater elevation. As noted herein, the estimated seasonal high groundwater elevation has not been established for the Project.

      Applicant's Previous Response: A waiver for this bylaw has been added to the waiver requests, dated March 23, 2022.

Previous B+T Response: B+T acknowledges the supplemental test pit information provided by the Applicant. Though a specific groundwater elevation has not been determined for the Project based on its varied topography, it appears that excavations relative to the installation of the subsurface infiltration system will not be within 4-ft of the groundwater elevation, and thus the waiver request may not be necessary. Specific test pit information relative to the Bioretention Areas proposed remains to be provided as a potential condition of approval. The installation of building foundations appears to be exempt from the By-Law. We recommend that the Applicant continue to pursue the waiver until the groundwater elevations at the proposed Bioretention Areas can be confirmed.

Current Applicant's Response: Test Pit data for Bioretention #1 has been provided. There is no test pit info required for Bioretention #2 because it does not infiltrate, it is used for water quality only.

Current B+T Response: We acknowledge that test pit information for Bioretention #2 will not be required as this infrastructure is proposed to be lined with an impermeable barrier and will not infiltrate. Overall, the test pits were conducted outside of periods of high groundwater; however, were witnessed by MassDEP and executed to depths well below the proposed infrastructure without evidence of groundwater being present. The Applicant has committed to completing more testing during final design. At this point in the permitting process, B+T takes no exception to the waiver being requested.

Applicant's Response (5/25/22): No response required.

c. Section (p) – The Project cannot be more than 15% imperious within this zoning overlay district. As proposed, the Project is 16.5% impervious and the Applicant is requesting a waiver from this requirement.

Applicant's Previous Response: A waiver for this bylaw has been added to the wavier requests, dated March 23, 2022.

Previous B+T Response: The impervious area of the Project has been reduced to 14.6% and the Project provides for recharge of stormwater runoff. Considering the reduction in the current imperious area it does not appear that a waiver to Section 4.9.5.1.p is required. However, if the addition of a sidewalk adjacent to the Project driveway is proposed, and the impervious areas increase to over 15%, the waiver would then be applicable.

Current Applicant's Response: The project does propose a sidewalk adjacent to the access driveway. It is the assumption that the sidewalk will be required by the ZBA,

should the Town construct a sidewalk in School Street. Thus, the final waiver list will include this waiver for impervious area.

Current B+T Response: A proposed sidewalk does not appear on the current layout or grading plans. B+T previously reviewed a conceptual ADA ramp plan dated March 7, 2022. As noted, the inclusion of the sidewalk at the Board's request would appear to require a waiver from the impervious cover percentage limit requirements. B+T takes no specific exception to the waiver being requested if required.

We request that the Applicant document compliance with the noted section of the By-law as applicable. [See above discussion]

Applicant's Response (5/25/22): The proposed sidewalk to the right of way would add approximately 7,939 square feet of impervious surface. This will increase the impervious area of the project to 15.4%. The applicant continues request this waiver and is agreeable to the waiver being conditioned as applicable only for the addition of a sidewalk to the right of way, if required.

3. The water system design appears to need further clarification. An extension from the outer reaches of the existing municipal water system of approximately 3,700 linear feet will be required to serve the Project. Additionally, there is a 75-ft vertical grade change between the elevation of School Street and the finished floor elevation of the proposed building. It is unclear if these factors, which will affect the pressure differentials within the water system, both for domestic and fire flows, have been considered. We request that the Applicant document that adequate water pressure will be available to serve the Project as proposed.

   Applicant's Current Response: The revised plan set includes a footprint for a site booster pump in the updated site plan. The booster pump would address any issues the project could have with water pressure; the design of the pump would be covered under the jurisdiction of the MassDEP Bureau of Water Resource Protection in coordination with Manchester-by-the-Sea Department of Public Works outside the Comprehensive Permit review process.

   Due to schematic nature of the building and absence of required water/fire demands it is not possible to complete the design of the booster pump currently. The applicant is agreeable to a comprehensive permit condition which would require that adequate water pressures could be produced as a condition to receipt of a building permit.

   Current B+T Response: We acknowledge the response provided by the Applicant and B+T does not take exception to this approach. However, we note that inclusion of the booster pump station as an accessary structure appears to require a waiver from Section 5.6 of the

By-Law, relating to accessory structures within the front setback. B+T does not take exception to this waiver.

Applicant's Response (5/25/22): No response required.

- The Project appears to require extensive earthwork and ledge removal based on site observations. For the benefit of the Board, we request that the Applicant provide a Construction Management Plan to document the intended on-site activities including rock removal (blasting) and processing (crushing), trucking routes, etc.

  Applicant's Previous Response: As this process is still going through peer review, it would be very premature to provide a CMP. Moreover, the Applicant has not had any dialogue with any general contractors about construction means and methods for this project. And the General Contractor will be primarily responsible for developing the CMP. The Applicant would expect the ZBA to provide a condition in the Comprehensive Permit requiring that the Applicant submit a draft CMP to the Building Department for review and approval prior to receipt of a building permit.

  Previous B+T Response: We acknowledge the response provided by the Applicant and B+T does not take exception to this approach.

  Current Applicant's Response: The applicant takes no exception to this comment.

  Current B+T Response: B+T is in receipt of the cut and fill documentation provided by the Applicant. As noted, approximately 100,000 cubic yards of export material is expected resulting in approximately 3,850 truck trips. Though we acknowledge a specific Project CMP is likely premature, we continue to have concerns relative to the amount and nature of earthwork required relative to the protection of the adjacent vernal pools. As acknowledged by the Applicant, the Project will need to appear before the Conservation Commission to obtain an Order of Conditions. As a potential condition of approval, we recommend that mitigation measures be implemented, to the satisfaction of the Conservation Commission, to protect the surrounding vernal pools and associated resource areas.

  Applicant's Response (5/25/22): The applicant is agreeable to providing a project specific CMP prior to the issuance of a building permit as a condition of approval.

4. A portion of the wastewater treatment facility is being proposed in the southern portion of the Site and will require a wetland crossing. However, this infrastructure is shown outside the limit of work currently proposed. We request that the Applicant clarify the design intent for this infrastructure and document if it is being designated for a future phase of construction.

Applicant's Current Response: The WWTF has been removed from the project scope

Current B+T Response: No further action required. B+T's original comment is no longer applicable as a result of the design revisions.

Applicant's Response (5/25/22): No response required.

5. The grading as proposed will require retaining walls on the order of 25 vertical feet. Structural details or calculations associated with design of these walls have not been provided. As a potential condition of approval, we recommend that proper documentation and design review of the noted infrastructure be deferred to the Building Permit review process if the Project moves forward.

   Applicant's Current Response: The applicant is agreeable to this recommended condition of approval.

   Current B+T Response: We reiterate the intent of our previous comment relative to conditioning final structural designs of retaining walls to the Building Permit review process.

   Applicant's Response (5/25/22): No response required.

6. The number of parking spaces being provided is unclear. It appears the intent is to provide 236 total parking spaces (220 garage/16 surface). However, other submitted documentation reference other values, including the reference to 242 spaces within the parking summary chart on Sheet C-102.1. With 236 parking spaces proposed and 136 units (ratio of 1.73 parking spaces/unit) a waiver is being requested by the Applicant. Relative to the waiver being requested, we request that the Applicant clarify the number of parking spaces being proposed and the resulting ratio of parking spaces per unit for consideration by the Board.

   Applicant's Current Response: There are 236 parking spaces proposed resulting in a parking ratio of 1.73 spaces/unit.

   Current B+T Response: We acknowledge the clarifying response provided by the Applicant. B+T takes no exception to the parking waivers being requested (quantity reduction of 383 required vs. 236 provided, and 9'x18' proposed vs. 9'x20' required for parking spaces).

   Applicant's Response (5/25/22): No response required.

7. Though outside the scope of our review services, B+T made a cursory review of the traffic impact documentation provided. We note the following:

a. The initial traffic counts were based on a 157-unit proposal, which currently has been reduced to 136 units.
b. The initial findings recommended a 6-ft boulevard style median associated with the access drive intersection at School Street; however, a 4-ft median has been provided in the current submission.
c. It does not appear that accommodations for E-car parking and charging stations have been provided.
d. Despite the grade and geometry of the access driveway, correspondence from Chief Cleary indicates that the Fire Department is comfortable with the single means of access provided for emergency response.

We note these items for the benefit of the Board and defer to the ongoing independent traffic peer review process.

Applicant's Current Response: No response, the applicant defers to the third-party peer review of traffic impacts.

Current B+T Response: We reiterate the intent of our previous comment and continue to defer to the independent traffic peer review process.

Applicant's Response (5/25/22): No response required.

8. We acknowledge the snow storage plan provided by the Applicant. We note the following:
   a. Snow is proposed to be stored on steep 2:1 slopes above the elevation of the roadway, approximately 75-ft away from the edge of the driveway, and over Underground Infiltration System-1. It is unclear how this will be achieved.
   b. Snow is proposed to be stored within the drainage swale on the south side of the access driveway.
   c. Snow storage locations appear to conflict with proposed landscaped areas.

   We request that the Applicant reevaluate the snow storage plans and confirm the viability of the snow storage locations proposed.

   Applicant's Current Response: An updated snow storage plan has been provided addressing these items.

   Current B+T Response: This comment has been adequately addressed by the Applicant. No further action is required.

   Applicant's Response (5/25/22): No response required.

9. Trash collection protocols for the Project are not clear. It appears the trash room within the garage is located in the interior of the building, so it is unclear how that location will be accessed by a larger vehicle if required. Additionally, the plans include a detail for an external dumpster pad; however, a corresponding location for this pad is not provided on the plans. We request that the Applicant clarify the trash collection practices for the Project.

   Applicant's Current Response: A trash room will be provided interior to the building and wheeled out for collection as needed, likely twice per week. All trash and recycling will be handled privately.

   Current B+T Response: This comment has been adequately addressed by the Applicant. No further action is required.

   Applicant's Response (5/25/22): No response required.

10. Section 6.4 of the By-law provide signage requirements. The Applicant is requesting a waiver for a larger sign than is permitted by the By-law. However, a location of the sign does not appear to have been incorporated into the plan set. We request that the Applicant clarify the design location for the signage proposed.

    Applicant's Current Response: The location of the monument sign has been added to the Layout and Materials Plan.

    Current B+T Response: We acknowledge the incorporation of the monument sign into the site plans, and do not take exception with the proposed larger sign (6'x6' proposed vs. 3'x3' allowed).

    Applicant's Response (5/25/22): No response required.

11. The electric/telephone/data design includes a portion of that infrastructure being above ground and pole mounted. It is now typical for this infrastructure be placed underground in a duct bank system. We request that the Applicant clarify the design intent and provide alternatives for the system to be installed completely below grade.

    Applicant's Current Response: Final design of utility routing will be approved by utility provider. The applicant has no objection to underground duct banks but requests the flexibility to provide overhead, if allowed by utility provider.

    Current B+T Response: We acknowledge the response provided by the Applicant and take no exception to deferring to the private utility provider requirements to the Building Permit Review process.

Applicant's Response (5/25/22): No response required.

12. We acknowledge the photometric plan provided by the Applicant. We note de minimis light trespass onto School Street to the northeast over the property line. Considering the underlying commercial zoning, the limited light trespass over the property line is not as concerning as if it were within residential zoning. We defer to the Board on the adequacy of the noted condition.

    Applicant's Current Response: The light trespass noted on School Street is located within the paved footprint of the project's driveway. It is the applicant's belief that driveway curb cut should illuminated for traffic safety and should be allowed.

    Current B+T Response: We concur with the Applicant's assertion that the de minimis light trespass onto School Street likely improves safety at the intersection.

    Applicant's Response (5/25/22): No response required.

13. It does not appear that all details to depict Project components have been provided by the Applicant. The layout plans include wood guardrails, concrete curb, grass pavers, etc., that do not appear to be detailed. We request that the Applicant provide a comprehensive inventory of all components proposed for the Project.

    Applicant's Previous Response: Additional details have been provided on the updated site plan materials.

    Previous B+T Response: We acknowledge the incorporation of the concrete curb detail; however, details for the grass pavers and guardrail have not been provided. Accordingly, we reiterate the intent of our previous comment.

    Current Applicant's Response: A guardrail and grass paver detail were added to the detail sheets.

    Current B+T Response: This comment has been adequately addressed by the Applicant. No further action is required.

    Applicant's Response (5/25/22): No response required.

14. General Note 15 on Sheet C-001 references a community other than Manchester-by-the-Sea. We request that the Applicant clarify the note inconsistency and confirm that all the provided notes are specific to the Project as proposed.

Applicant's Current Response: General Note 15 has been revised.

Current B+T Response: This comment has been adequately addressed by the Applicant. No further action is required.

Applicant's Response (5/25/22): No response required.

Stormwater Management Comments

1. Standards 3 and 4 of the MassDEP Regulations require the calculation of the recharge and water quality volumes required and provided for the Project. These regulations further require calculations relative to the drawdown of infiltrative Best Management Practices (BMPs) and Total Suspended Solids (TSS) removal rates. We acknowledge the calculation package provided by the Applicant; however, we note the following inconsistencies:
   a. The areas used for P-9 and P-15 are inconsistent with the modeling.
   b. The volumes and bottom areas used in the drawdown calculations for UIS-2, UIS-3, RG-1 and RG-2 are inconsistent with the modeling provided.
   c. CB-5 is not included in any of the treatment trains and does not include pre-treatment prior to infiltration.

   We request that the Applicant clarify the calculations and address the inconsistencies noted above.

   Applicant's Previous Response: A revised drainage report has been provided and clarifies these items.

   Previous B+T Response: Comment 1a has been addressed. Comment 1c is no longer applicable due to design modifications. Relative to Comment 1b, inconsistencies in the recharge and drawdown calculations appear to remain. The inconsistencies appear de minimis relative to the overall intended performance of the stormwater management system as proposed. Accordingly, we reiterate the intent of our previous comment for clarity of the Administrative Record.

   Current Applicant's Response: The Drainage Report was reviewed and revised to remove de minimis inconsistencies between the recharge and drawdown calculations.

   Current B+T Response: The drawdown calculations remain inconsistent between the BMPs depicted on the plans and modeling for Bioretention Area #1. A calculation for Bioretention Area #2 is provided and not applicable. A calculation for UIS-2 has not been provided. As designed, UIS-1 is fractionally over the 72-hour regulation requirement. We request that the Applicant address the noted inconsistencies.

Applicant's Response (5/25/22): See attached revised HydroCAD, and DEP calculations.

2. Standard 6 of the MassDEP Regulations restricts stormwater discharges to critical areas including cold-water fisheries. Within the watershed is a network of certified vernal pools on-site and the watercourse bounding the Project is a cold-water fishery. We request that the Applicant document compliance with the noted regulation.

   Applicant's Current Response: A revised drainage report has been provided and addresses Standard #6.

   Current B+T Response: This comment has been adequately addressed by the Applicant. No further action is required.

   Applicant's Response (5/25/22): No response required.

3. Standard 8 of the MassDEP Regulations requires construction period erosion and sedimentation controls. A Stormwater Pollution Prevention Plan (SWPPP) will be required as part of the EPA NPDES program. The Applicant has not submitted a SWPPP but has indicated one will be provided prior to construction. As a potential condition of approval, we recommend that submission of a fully compliant SWPPP prior to construction be required.

   Applicant's Current Response: The applicant is agreeable to this recommended condition of approval.

   Current B+T Response: No further action required.

   Applicant's Response (5/25/22): No response required.

4. Standard 10 the MassDEP Regulations requires an illicit discharge statement be provided by the Applicant. We acknowledge the statement provided by the Applicant; however, it is not endorsed by the Applicant. We request that the Applicant provide an executed illicit discharge statement.

   Applicant's Current Response: A revised drainage report has been provided and includes and executed illicit discharge statement.

   Current B+T Response: This comment has been adequately addressed by the Applicant. No further action is required.

   Applicant's Response (5/25/22): No response required.

5. Test pit information, specifically in the areas of the proposed stormwater management system components, has not been provided. This information is critical to determine the in-situ soil characteristics in the location of each system considering the amount of visible ledge throughout the Site and to establish the seasonal high groundwater elevation. The Handbook requires a 2-ft vertical separation between the seasonal high groundwater elevation and the bottom of infiltrative Best Management Practices (BMPs). Those systems designed to attenuate the 10-year design storm and above also need to demonstrate a 4-ft vertical separation to groundwater or a mounding analysis is required. We request that the Applicant document and establish the seasonal high groundwater elevation for each of the infiltrative BMPs.

   Applicant's Previous Response: Test pit data has been provided under separate cover and submitted to the Town on February 28th. A final iteration of the design plans will provide test pits in the majority of the infiltrative BMPs. It is likely that some smaller areas of infiltrative BMPs will need to have stormwater test pits conditioned as there are areas of the site that are not accessible for excavating equipment at this time.

   Previous B+T Response: We acknowledge the test pit information provided by the Applicant. In the area of proposed stormwater infiltration system, groundwater was not detected In test pit excavation 10-ft deep. This infiltration system is proposed to be in an area of fill where the existing grade will be raised, creating a larger separation to groundwater. As the Applicant indicates, test pit information specific to Bioretention Area #2 remains to be provided. We recommend that the Applicant providing this information be made a potential condition of approval.

   Current Applicant's Response: Bioretention #2 will not infiltrate so no test pit information is required.

   Current B+T Response: See response to General Comment 2b. contained herein.

   Applicant's Response (5/25/22): No response required.

6. The modeling of the proposed stormwater management system components is inconsistent with their respective depictions on the plans. We note the following inconsistencies:
   a. Subcatchment P3: The modeled groundwater type areas versus those shown on the watershed map
   b. Pond RG-1: The pipe length and inverts of the outlet pipe
   c. Pond SDP-1: The pipe length, slope, diameter and inverts of the outlet pipe
   d. Pond UDS-1: The system inverts and configuration of the Outlet Control Structure (OCS) OCS-1

e. Pond UIS-1: The system inverts and configuration of OCS (DMH-1A)
f. Pond UIS-2: The pipe length, slopes and inverts of the outlet pipe and configuration of OCS-4
g. Pond UIS-3: The pipe length, slopes and inverts of the outlet pipe and configuration of OCS-5
h. The Pipe Listing table of nodes is inconsistent with the plans

We request that the Applicant clarify the design intent and address the noted inconsistencies for the referenced infrastructure.

Applicant's Previous Response: A revised drainage report has been provided and address these comments.

Previous B+T Response: Due to the redesign of the stormwater system, many of the previous comments are no longer applicable. Relative to the current design, we note the following:

a. The inverts, pipe lengths, etc., associated with Bioretention Area #1 and DMH-23 are not consistent between the modeling and their respective depiction on the plans.
b. The elevation associated with Bioretention Area #2 is not consistent between the modeling and the system's respective depiction on the plans.
c. The inverts, pipe lengths, etc., associated with Underground Infiltration System-1 are not consistent between the modeling and the system's respective depiction on the plans.
d. The Applicant assumes hydrologic soil group (HSG) D soils for the existing analysis. In the post analysis, relative to the proposed infiltrative best management practices (BMPs), the Applicant is assuming HSG A & C soils.
e. A sizing analysis for the grate associated CB-5 has not been provided relative to its ability to accommodate the discharge from the adjacent swale during larger storm events.
f. For the existing analysis, the 25-yr storm data has not been provided.
g. With the peak flow rates table, the value noted for Study Point #1 in the 100-yr storm event is inconsistent with the modeling.

Current Applicant's Response: A revised drainage report has been provided and addresses these comments.

Current B+T Response: Responses to each item noted below. We request that the Applicant address outstanding items as applicable.

a. Due to design changes, this comment is no longer applicable.

Applicant's Response (5/25/22): No response required.

b. This item has been addressed. No further action required.

Applicant's Response (5/25/22): No response required.

c. Inconsistencies in the design of this BMP remain.

Applicant's Response (5/25/22): The attached revised HydroCAD calculations and Drainage Plan have been updated.

d. This item has been addressed. No further action required.

Applicant's Response (5/25/22): No response required.

e. The calculation provided does not utilize a rainfall data consistent with the modeling.

Applicant's Response (5/25/22): The rational method used for the sizing of the sites grates and pipes is based off rainfall intensities rather than storm events, which is used in the HydroCAD computer model. See attached Intensity-Duration-Frequency Curve for Boston, MA from the MassHighway 2006 Project Development and Design Guide noting the rainfall intensities used in grate and pipe calculations. The inconsistency noted is due to different methods of runoff calculations, which are both acceptable deign practices.

f. This item has been addressed. No further action required.

Applicant's Response (5/25/22): No response required.

7. Stormwater management systems USD-1, UIS-2and UIS-3 were designed with only 1-ft of cover within paved surfaces. The proposed pavement profile for the access driveway and auxiliary paved areas calls for a 1.25-ft section. We request that the Applicant clarify the design intent of the referenced infrastructure and revise the design accordingly.

Applicant's Current Response: A revised drainage report has been provided and address these comments.

Current B+T Response: No further action required. B+T's original comment is no longer applicable as a result of recent design revisions.

Applicant's Response (5/25/22): No response required.

8. Pond RG-1 appears to overtop onto School Street in the 2-year storm event which potentially presents a hazard to motorists in the area. We request that the Applicant clarify the design intent of this infrastructure and revise the design accordingly.

   Applicant's Current Response: A revised drainage report has been provided and addresses these comments.

   Current B+T Response: No further action required. B+T's original comment is no longer applicable as a result of recent design revisions.

   Applicant's Response (5/25/22): No response required.

9. Ponds RG-2 and SDP-1 do not provide the necessary 1-ft of freeboard during the 100-year storm event as prescribed by the Handbook. We request that the Applicant clarify the design intent of this infrastructure and revise the design accordingly.

   Applicant's Previous Response: A revised drainage report has been provided and addresses these comments.

   Previous B+T Response: Bioretention Areas #1 and #2 do not appear to provide the necessary freeboard as part of the revised stormwater management design. We reiterate the intent of our previous comment.

   Current Applicant's Response: The design was revised to provide the required amount of freeboard.

   Current B+T Response: Both BMPs continue to demonstrate less than the 1-ft of freeboard required by the Handbook. Accordingly, we reiterate the intent of our previous comment.

   Applicant's Response (5/25/22): The attached grading plan has been revised to provide at least one foot of freeboard for Bioretention areas. As noted in the attached HydroCAD calculations the peak elevation of Bioretention Area #1 is 62.59' and the top of the berm is 63.60'. The peak elevation of Bioretention Area #2 is 51.56' and the top of the berm is 51.60'.

10. Details for the composition or soil profile of the rain gardens, surface stormwater basins and drainage swale have not been provided. Additionally, specific details for each of the OCSs have not been provided. We request that the Applicant provide a comprehensive inventory of all details required to construct the stormwater management system as proposed.

Applicant's Current Response: A revised drainage report has been provided and addresses these comments.

Current B+T Response: This comment has been adequately addressed by the Applicant. No further action is required.

Applicant's Response (5/25/22): No response required.

11. We acknowledge the Pipe sizing table provided. The diameter of all pipes is assumed to be 12-inch, which is inconsistent with the design plans. We request that the Applicant revise the calculations as applicable.

Applicant's Previous Response: A revised drainage report has been provided and addresses these comments.

Previous B+T Response: De minimis inconstancies remain in the Pipe Sizing Table. We request that the Applicant confirm consistency between the table and plans for clarity of the Administrative Record.

Current Applicant's Response: The Drainage Report was reviewed and revised to remove de minimis inconsistencies between the recharge and drawdown calculations.

Current B+T Response: The calculation provided does not utilize a rainfall data consistent

Applicant's Response (5/25/22): The rational method used for the sizing of the sites grates and pipes is based off rainfall intensities rather than storm events, which is used in the HydroCAD computer model. See attached Intensity-Duration-Frequency Curve for Boston, MA from the MassHighway 2006 Project Development and Design Guide noting the rainfall intensities used in grate and pipe calculations. The inconsistency noted is due to different methods of runoff calculations, which are both acceptable deign practices.

Landscape Comments

1. The Applicant has included a Schematic Landscape Plan that includes a robust list of planting materials, incorporating a variety of trees, shrubs, groundcovers and perennials. The plant materials included in the list are commonly accepted species and sizes for the proposed Project. However, the plant list is not correlated with the planting plan to indicate which symbols on the site plan represent the plants in the list.
We request that the Applicant update the Landscape Plan to indicate which symbols represent the plants listed and update the quantities of each plant listed.

Applicant's Current Response: A revised Schematic Landscape Plan will be provided under separate cover.

Current B+T Response: The Applicant has provided an updated Landscape Plan that addresses the information requested and as such, this comment has been adequately addressed by the Applicant. No further action is required.

Applicant's Response (5/25/22): No response required.

Geotechnical Comments

B+T engaged Northeast Geotechnical, Inc. to complete a review of the geotechnical information provided by the Applicant. Northeast Geotechnical, Inc. findings dated February 17, 2022 were previously provided to the Board. The Applicant does not appear to have directly responded to the finding of that correspondence in the supplemental documentation listed herein.

Current Applicant's Response: The Applicant does not intend to provide additional geotechnical information at this time. The Applicant feels comfortable, based on all the work conducted by the entire technical team, that the overall program is buildable as represented. Additional soil/site analysis will be conducted when the Applicant prepares it construction documents and the Applicant will accept a condition that references this requirement.

Were an issue to arise or a material change to the program be required due to a geotechnical condition, it would be at the Applicant's risk and a modification to the Comprehensive Permit could be required.

Current B+T Response: As noted above, we recommend that a condition of approval requiring additional geotechnical investigation and soil testing be required as the Project design continues to develop.

Applicant's Response (5/25/22): No response required.

Abutters Consultant Comments

B+T is in receipt of the comments provided by Scott Horsley and Chessia Consulting Services LLC, both dated April 13, 2002, and the associated responses provided by the Applicant dated May 11, 2022. As of the time of this submission, B+T did not have the opportunity to thoroughly vet the responses provided by the Applicant; however, a cursory review of the material shows that the Applicant has made an effort to address the comments raised. B+T will review the available material prior to the May 25, 2022 public hearing and will endeavor to respond to concerns that may remain at that time.