ALLEN & MAJOR
ASSOCIATES, INC.

Proposal for:
Town of Wareham
RFQ Peer Review Engineering Consulting Services

Prepared For:
Town of Wareham
Attn: Derek Sullivan, Town Administrator
Town Hall, 54 Marion Road
Wareham, MA 02571

Prepared By:
Allen & Major Associates, Inc.
10 Main Street
Lakeville, MA 02347
allenmajor.com

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COVER LETTER

October 18, 2022

Town of Wareham
Attn: Derek Sullivan, Town Administrator
Town Hall
54 Marion Road
Wareham, MA 02571

RE: Town of Wareham
RFQ Peer Review Engineering Consulting Services

Dear Mr. Sullivan,

Allen & Major Associates, Inc. (A&M) is pleased to provide the Town of Wareham with peer review engineering consulting services to assist the Town boards and commissions in their review of applications for Site Plan Reviews, Special Permits, Variance, Notice of Intent, and other entitlements pursuant to the local bylaws and State Laws, and to periodically inspect the progress of construction of the approved projects and to report on same to the relevant board of commission. We believe A&M can provide exemplary professional engineering peer review services to insure the compliance of new development with the Town's Zoning, Subdivision Rules and Regulations, Wetlands and Stormwater Bylaws, the Wetlands Protection Act, Massachusetts DEP Stormwater Guidelines, and sound engineering practice with respect to stormwater management, erosion and sedimentation control, road and sidewalk construction, driveway and parking lot configuration, and protection of public infrastructure, water quality, endangered species, and waterways, as well as reduction of environmentals impacts and control and/or mitigation of flooding.

Established in 1971, A&M is a multi-disciplinary firm specializing in land surveying, civil engineering, environmental consulting, and landscape architecture. A&M has three (3) offices that provide services throughout the Northeast. With over 37 dedicated land surveyors, engineers, and support specialists, our team brings a wide range of expertise that comes from decades of service and experience within the public sector.

A&M is a certified small business and we believe that our professional experience makes us especially well qualified to deliver the requested services on time and within budget. Service to our Clients is our first priority and we rely heavily on the reputation we have achieved in the industry and the referrals obtained by repeat customers for whom we strive to perform, listen, and consult.

We sincerely appreciate the opportunity to provide the Town of Wareham with this proposal and look forward to working with you and your team on this project. We commit to provide the services required, if selected, under the direction of the key personnel proposed in the proposal submission.

If I can answer any questions or provide you with any additional information, please do not hesitate to contact me directly at (781) 305-9448 or twilliams@allenmajor.com.

Very Truly Yours,

Timothy J. Williams, PE
Principal
ALLEN & MAJOR ASSOCIATES, INC.

BACKGROUND SUMMARY

About Us

The team of Allen & Major Associates, Inc. (A&M) is a multi-disciplinary consulting firm dedicated to the practices of civil engineering, environmental consulting, land survey, and landscape architecture. Our work is an integral part of site development and we use our skills to optimize performance, site functionality, and land value. With offices in Woburn MA, Lakeville MA, and Manchester NH, we provide services throughout the Northeast corridor.

Land use planning and development is complicated. It takes experience to be able to master the nuances of the process. It also takes foresight to responsibly develop a site. Our goal with every project is to blend the built environment with the natural environment it surrounds. By utilizing the features that make a site unique, rather than altering them, we produce responsible, appealing designs that meet the needs of the communities we serve. We believe this approach also makes the development process less encumbered.

We work collaboratively with other members of the project design team including, architects, construction management firms, land use attorneys, and local/State/Federal regulators to recognize your vision. Our work informs theirs.

We have a staff of 35+ professionals in conceptual & master planning, site design, environmental permitting, stormwater, and landscape architecture. Our portfolio of projects represents the following markets:

- **Academic & Student Housing**
- **Commercial & Industrial**
- **Healthcare**
- **Hospitality & Entertainment**
- **Master Planning & Landscape Architecture**
- **Multi-Family Residential**
- **Public, Municipal & Government**
- **Retail & Mixed-Use**
- **Senior Housing & Assisted Living**
- **Sports & Recreation**

Civil Engineering

Civil site engineering is a dynamic approach to problem-solving. The A&M civil team is comprised of Professional Engineers (PE), Engineers in Training (EIT), and support staff. They have a broad perspective of project development based on their years of experience and training and can provide insight as to what IS or ISN'T necessary to drive a project to completion. They utilize state-of-the-art means and methods to lower project costs, eliminate schedule delays, and anticipate site opportunities and constraints.

We provide planning, design, preservation, and rehabilitation of the natural and built environments within urban and rural settings for both public and private sector clients.

Our services include:

- **Construction Consultation**
- **Due Diligence & Feasibility Studies**
- **Federal, State & Local Permitting**
- **Grading & Drainage Design**
- **Master Planning**
- **Peer Review Services**
- **Parking & Roadway Design**
- **Septic Design**
- **Site Development & Re-Development**
- **Soil Evaluations**
- **Utility Design Services**
- **Wetland Resources**

We are proud members of the U.S. Green Building Council and support sustainable construction, Best Management Practices, and renovation initiatives.

Environmental Consulting

Environmental permitting approvals are the bottom line to moving a development project forward. A thorough and complete understanding of the ever-changing regulations and requirements is the most valuable tool for a successful project. A&M applies our multi-disciplinary team approach to the design of a project while stressing the avoidance and minimization of adverse impacts on the environment. This approach has allowed us to establish and maintain excellent working relationships with resource and permitting agencies, while also saving our clients critical time and money.

Our Environmental Consulting Services include:

- **Chapter 91 Applications**
- **Massachusetts Endangered Species Act (MESA)**
- **Massachusetts Environmental Policy Act (MEPA)**
- **New Hampshire Natural Heritage & Endangered Species (NHESP) Review**
- **National Pollutant Discharge Elimination Systems (NPDES)**
- **Stormwater Pollution Prevention Plans (SWPPP)**
- **Wetland Replication Design**
- **Wetland Delineation**

Why A&M?

The success of your project is just as important to US as it is to YOU. We take ownership for the work that we do and want the best outcome for every project. There are hundreds of companies to choose from but finding a team that is available, responsive, provides solid work and you can build a long-term relationship with is hard to find.

Here's why we think you should consider A&M.

We Plan for You:

Before an Architect can put pen to paper, before a shovel goes in the ground, critical decisions need to be made that can determine your project's success or failure. We provide you with clear, concise, and relevant information that will determine opportunities and constraints. From existing conditions to zoning, to building and roadway placement, our work can inform your build program, and your budget.

We Design for Your Needs:

Engineering design is a dynamic approach to problem-solving. No two sites are alike, and no one design approach works for every site. We provide options and experienced solutions so you can get your projects permitted and shovels in the ground as quickly and efficiently as possible.

We Innovate for All:

By utilizing new, and re-imagining existing technologies, we can improve sustainability and reduce environmental impacts. We don't just innovate for the sake of innovation, we do it to solve your problems, and honor our commitment to design projects that are purpose-driven, and responsible.

SCOPE OF SERVICES

Technical Approach

Allen & Major Associates Inc. is well versed in completion of all tasks as outlined in the scope of services report. Most projects completed within the public and private sectors require most if not all of the elements listed. A&M will draw on this experience to complete work assignments in a timely, efficient, and thoughtful manner in coordination with the Town of Wareham Planning Board, Conservation Commission, and Zoning Board of Appeals.

We understand the scheduling intricacies involved with each project and the demands placed on public boards by the fast paced needs of development. Upon receipt of each assignment, A&M will review the materials submitted for a completeness review to determine if all necessary materials are present to perform the outlined task. Engaging in an assignment with incomplete information is a poor use of the public agencies' time as well as the use of a consultant. A&M can advise applicable agencies as to the additional information that may be necessary to render informed statements on projects. A&M is familiar with the standard regulatory processes that must be adhered to by the Planning Board, Conservation Commission, and Zoning Board of Appeals. A&M will rely upon the published processes of the bylaw and applicable sections of Massachusetts General Law.

Assuming application completeness, A&M will provide services in a manner outlined by the RFP, that is to provide professional engineering peer review services and to insure the compliance of new development with the Town's Zoning, Subdivision Rules and Regulations, Wetlands and Stormwater Bylaws, the Wetlands Protection Act, Massachusetts DEP Stormwater Guidelines, and sound engineering practice with respect to stormwater management, erosion and sedimentation control, road and sidewalk construction, driveway and parking lot configuration, and protection of public infrastructure, water quality, endangered species, and waterways, as well as reduction of environmental impacts and control and/or mitigation of flooding. Prepare a detailed review of applications before the Planning Board, Conservation Commission, and Zoning Board of Appeals in the form of a letter addressed to the Board members. Coordinate with Town staff, including attending meetings, obtaining input, and meeting deadlines, as requested. Presenting information to Board members, the applicant, and the public at Board meetings and responding to their inquiries. Preparation of reports for one or more Town Boards and Inspection of work.

Technical Approach Cont.

A&M understands that these are minimal standards to allow for Board review, but also to provide the applicant an opportunity to review and comment prior to schedule hearings. While A&M would always strive to meet these timelines, we would also want to consistently communicate with the responsible party of the task. Some projects are more complex than others and may require some extended review time. In these circumstances, A&M will provide a scope and timeline summary to the Town that outlines why a minimal timeline cannot be achieved and set an attainable expectation of completion. Through experience, open communication throughout the process can overcome the perception of delay. It allows Boards to weigh pertinent facts and applicants to plan accordingly on a likely aggressive timeline.

In completing any peer review, A&M approaches the material from three (3) directions: Regulatory review, technical review, and philosophical review.

A regulatory review will outline specific compliance, or non-compliance, with the applicable aspects of the project. Common items include building setbacks, development size, number of parking spaces, use under zoning and the like. These are often black and white, quantifiable aspects. Where compliance is not achieved, A&M shall review any request for waivers or variances, and render professional opinions on those requests for use by the regulatory agency to render a final determination.

A technical review will include site specific items selected by the design engineer and how those selections comply with published standards (Massachusetts Department of Transportation, Massachusetts Department of Environmental Protection, the Wetlands Protection Act, etc.) and standard engineering practice. A&M provides a technical memorandum outlining any identified concerns. Under the same technical purview, A&M shall also outline any calculation deficiencies or typographical errors that could lead to confusion or misunderstanding of the final product. If authorized by the Town, A&M is willing to engage in communication directly with the applicant or their consultant to review these particulars and provide an opportunity for revision so long as it doesn't impact the overall intent of the project.

Finally, A&M will provide a philosophical review to the extent desired by the Town. A&M recognizes the project is not ours, and the decisions made by the applicant's team require justification. However, through experience, in providing suggestions to a project as a proponent for the Town, A&M can work collaboratively should the particular project have unique challenges. Often abutters to projects require unique attention to detail.

Technical Approach Cont.

Through private development, A&M is familiar with applicable codes cited in the RFP to review Notice of Intent and Plans submitted to the Conservation Commission as well as supporting documentation, for completeness and compliance with:

- Massachusetts DEP Wetlands Protection Act and Regulations
- Wareham Local Wetland Bylaw and Regulations
- Massachusetts DEP Stormwater Standards
- Wareham Stormwater Bylaw and Regulations
- Massachusetts Stream Crossing Standards
- Massachusetts Natural Heritage and Endangered Species Program
- Areas of Critical Environmental Concern program
- Wareham Zoning, Subdivision Rules and Regulations
- Other applicable standards and regulations

A&M shall coordinate all aspects of services with the Town of Wareham under the direction of a Massachusetts qualified Environmental Consultant. A&M employs a staff of over 37 professionals that will be utilized and assigned on a request specific basis. Coordination with the Town of Wareham will be staffed from the Lakeville branch office, but can draw additional resources from our Woburn, MA headquarters or Manchester, NH branch as dictated by demand.

WRITING SAMPLES

Included below are peer review letters issued to the respective authorities for projects that A&M was engaged to review. The letters represent different stages of review where some comments may have been addressed while others remained outstanding.

Throughout the process, A&M engaged with both the Town agency, but also the applicant's engineer to identify and discuss the issues raised.

The names of the applicant's engineering firm has been redacted from the writing samples.

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ALLEN & MAJOR ASSOCIATES, INC.

November 12, 2020

To: Claire Yocum, Chairperson
Town of East Bridgewater
Conservation Commission
175 Central Street
East Bridgewater, MA 02333-0386

Copy: File

A&M Project #: 2357-05

Re: EB Stormwater Management
Regulations Peer Review
Site Development Plans
Assessor's Map 81 Lot 32
427 North Bedford Street
East Bridgewater, MA

Dear Claire and Members of the Conservation Commission:

In accordance with our contract to conduct a peer review of the proposed Site Plans for Assessor's Map 81 Lot 32 427 North Bedford Street, East Bridgewater, Allen & Major Associates, Inc. (A&M) is pleased to provide the following comments. The comments presented below are based on the review of the design documents provided to A&M by the Commission Consultant, Mr. John DeLano.

In conducting the peer review, A&M reviewed the following documents:

- Notice of Intent form, East Bridgewater application for Stormwater Management By-Law and supporting documentations;
- "Drainage Analysis" prepared for [redacted] prepared by [redacted] dated May 14, 2020, revised October 22, 2020;
- "Site Development Plan" (7 sheets) prepared for [redacted] prepared by [redacted] dated March 10, 2020, revised 10-22-2020.

Upon review of the revised information, noted above A&M noticed an error in the rainfall data in the drainage calculation (discussed as comment 3 below). A&M reached out directly to the design engineer who made the corrections to the calculations and e-mailed A&M the revised/updated plans and reports:

- "Drainage Analysis" prepared for [redacted] prepared by [redacted] dated May 14, 2020, revised November 10, 2020;
- "Site Development Plan" (7 sheets) prepared for [redacted] prepared by [redacted] dated March 10, 2020, revised 11-10-2020.

A&M reviewed the materials in conjunction with the applicable requirements of:

- The Town of East Bridgewater Comprehensive Stormwater Management Regulations (CSMR);
- Massachusetts Stormwater Handbook, Volumes 1 through 3, as applicable under the Massachusetts Wetlands Protection Act (310 CMR 10.00) with focus on the Stormwater Management Standards.

The following represent A&M's initial review comments. A&M may submit additional comments based on supplemental information provided.

Drainage Calculations & Site Plans

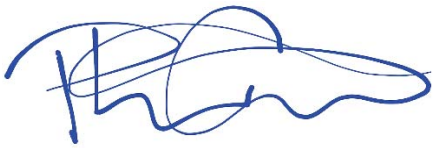
1. A&M was not copied on the color coded plans. The engineer's response is that this was provided to the Conservation Commission, but not verified by A&M. A&M defers to the Conservation Commission on receipt of these plans.
2. Issue resolved, no further comment.
3. The calculations have been revised, but the rainfall data was not correctly calculated. The Engineer appears to have obtained the rainfall data from the Maps within the document, but failed to apply the empirical adjustment factors in Table 1. The rainfall data from the maps need to be multiplied by 1.13 to obtain the correct rainfall values. A&M reached out to the Engineer via e-mail to update the drainage calculations accordingly. The calculations have been updated, therefore issue resolved, no further comment.
4. Issue resolved, no further comment.
5. Issue resolved, no further comment.
6. Issue resolved, no further comment.
7. Issue resolved, no further comment.
8. Issue resolved, no further comment.
9. A&M concurs with the approach of adding a berm curb along the property line. In addition the engineer has provided downspout connections to eliminate roof runoff in this area routing runoff to subsurface infiltration system 2. Issue resolved, no further comment.
10. Issue resolved, no further comment.
11. Issue resolved, no further comment.
12. Issue resolved, no further comment.
13. Issue resolved, no further comment.
14. Issue resolved, no further comment.
15. Issue resolved, no further comment.

Comprehensive Stormwater Management Regulations

1. Issue resolved, no further comment.
2. Issue resolved, no further comment.
3. Issue resolved, no further comment.
4. Issue resolved, no further comment.
5. Issue resolved, no further comment.
6. Issue resolved, no further comment.
7. Issue resolved, no further comment.

A&M has completed the peer review of the drainage calculations and site plans for 427 North Bedford Street and there are no further comments on the peer review that should be brought to the Commission's attention prior to acting if so desired. If you require any additional information on the review, please contact our office.

Very Truly Yours,
ALLEN & MAJOR ASSOCIATES, INC.



Philip Cordeiro, PE
Branch Manager

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ALLEN & MAJOR ASSOCIATES, INC.

August 24, 2020

To: Claire Yocum, Chairperson
Town of East Bridgewater
Conservation Commission
175 Central Street
East Bridgewater, MA 02333-0386

Copy: File

A&M Project #: 2357-06

Re: NOI, EB Stormwater Management Regulations Peer Review, Site Development Plans
Assessor's Map 109 Lot 3
798 North Bedford Street
East Bridgewater, MA

Dear Claire and Members of the Conservation Commission:

In accordance with our contract to conduct a peer review of the proposed Site Plans for Assessor's Map 109 Lot 3 798 North Bedford Street, East Bridgewater, Allen & Major Associates, Inc. (A&M) is pleased to provide the following comments. The comments presented below are based on the review of the design documents provided to A&M by the Commission Consultant, Mr. John DeLano.

In conducting the peer review, A&M reviewed the following documents:

- "Notice of Intent Application in support of the Proposed Contractor Bay Buildings" prepared for [redacted] prepared by [redacted] dated June 29, 2020;
- MassDEP Checklist for Stormwater Report;
- General Stormwater Permit Application in support of the Proposed Contractor Bay Buildings" prepared for [redacted] prepared by [redacted] dated June 29, 2020;
- Drainage Calculations and Stormwater Management Plan in support of Notice of Intent for Proposed Contractor Bay Buildings" prepared for [redacted] prepared by [redacted] dated June 29, 2020;
- "Site Development Plan" (9 sheets) Proposed Contractor Bay Buildings" prepared for [redacted] prepared by [redacted] dated June 29, 2020.

A&M reviewed the materials in conjunction with the applicable requirements of:

- The Town of East Bridgewater Comprehensive Stormwater Management Regulations (CSMR);
- Massachusetts Stormwater Handbook, Volumes 1 through 3, as applicable under the Massachusetts Wetlands Protection Act (310 CMR 10.00) with focus on the Stormwater Management Standards.

The following represent A&M's initial review comments. A&M may submit additional comments based on supplemental information provided.

A 7,470 sf building is currently under construction as reported by the design engineer and was designed and permitted in 2019. The design engineer states that "*these calculations build upon our original calculations from 2019 and include the subcatchment and pond nodes from the original calculations in addition to the new buildings so that we could look at the site as a whole in terms of the drainage model*". A&M did not review the original calculations and was not involved with any peer review of this portion of the site. This review is based on the information as submitted only.

Drainage Calculations & Site Plans

1. The drainage calculations have been done utilizing the TP-40 rainfall data. The Town of East Bridgewater requires the rainfall data to be based on the Northeast Regional Climate Center "Atlas of Precipitation Extremes for Northeastern United States and Southeastern Canada". (See Comprehensive Stormwater Management Regulations (CSMR) Appendix G.3.h). The Engineer should revise the drainage calculations and site design accordingly.
2. Under existing and proposed conditions, the design engineer used a curve number for "fair conditions" in subcatchment EDA-3/PDA-3: to northern PL. MassDEP recommends that all soils be assumed "good" ground cover type unless otherwise proved by the applicant. The Town of East Bridgewater also requires the use of "good" ground cover. (CSMR Appendix G.e). The curve number calculations should be revised accordingly.
3. The design engineer should provide additional information on the existing conditions and drainage patterns to justify discharge of stormwater from the Go-cart track area to the existing stormwater basin. There appear to be several depressions located within the track with no outlet control structures shown on the plans.
4. The existing conditions plan presented as sheet 3 of 9 and used as the base plan for the "Existing Drainage Area Plan" do not coincide with the cover area calculations provided in the HydroCAD modeling. The use of cover type needs to be consistent across the calculations to allow for proper verification of the information that the design meets the appropriate regulations. This comment also refers to the entire drainage calculations of which a portion was previously approved in 2019 and associated with EDA-1. A&M defers to the Commission regarding a more detailed review of EDA-1.
5. No information has been provided on the existing stormwater basin. Since the plan notes that the limits of the existing stormwater basin is taken from the as-built by "this firm in 1998", the basin information should be modeled in HydroCAD to confirm it meets pre vs post at the resource area via the existing outlet control structure. Freeboard should also be confirmed.
6. The design engineer should provide a pipe analysis to confirm/verify that the proposed stormwater will be routed through the pipe network as proposed and discharge to the basin as intended. The engineer is routing 100 year stormwater flows to the basin and the pipe analysis should confirm this.
7. It appears that several proposed contours are missing along the existing ridgeline on the easterly side of the road. The proposed contours should be added to justify/confirm the proposed watershed area.
8. The design engineer makes note that infiltration "basins" will be a minimum of two feet above the seasonal high groundwater table. No test pit information has been provided, A&M is unable to confirm/verify compliance. Please provide test pit data for our review and comment. These pits should also confirm the underlying soil type as a confirmation to the infiltration rates used within the design.
9. Under Standard 3 section of the narrative, the table provided has superscripts associated with "Required Recharge Volume (cf)[1]" and "Provided Recharge Volume (cf)[2]", but A&M is unable to find these references within the report. Please clarify the intended information.
10. The design engineer should provide additional documentation/calculations to confirm/verify how treatment of the water quality volume is being performed solely by the deep sump hooded catch basins.
11. Since an infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm event and separation to seasonal high water table is less than 4-ft, a mounding analysis is required to show compliance with Standard 3.
12. The design engineer has provided a Total Suspended Solids (TSS) removal sheet for the project. The calculations use an 80% removal rate for an infiltration basin assuming pre-treatment is provided. No

information is provided that confirms that the existing basin has a functioning, appropriately sized sediment forebay that would meet the pretreatment requirement to obtain an 80% removal rate as outlined in Stormwater BMPs Volume 2 Chapter 2.

13. Standard 7 of the Stormwater Management Policy reads:
Standard 7: *A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.*
The design engineer has not provided narrative that outlines compliance with this standard that illustrates a clear "improvement over existing conditions" beyond a reduction in peak flows. There is no discussion that the applicant is further mitigating water quality from this past development. Some clarifications that can be made would include:
    a. Has the entire existing drainage system been inspected and maintained in concurrence with an approved operation and maintenance plan?
    b. Are there any proposed improvements to any of the existing structures to remain?
    c. Do all existing catch basins to remain have hoods and sumps (depth?) installed?
    d. Do the existing outfall pipes have a rip rap apron of sufficient size of stone and length tpo mitigate anticipated discharge flows?
    e. Has the existing drainage pond been reviewed for any signs of erosion, lack of water carrying capacity, sediment accumulation, over-vegetation, or other condition that requires maintenance?
    f. The design engineer should provide a breakdown of existing impervious areas and proposed impervious areas.
    g. Since the proposed project appears to increase the overall impervious area of the site, the engineer should revise the Checklist for Stormwater Report, project type to be a mix of new development and redevelopment instead of just redevelopment. The engineer should provide additional documentation to show compliance with the redevelopment checklist in Chapter 3 of the Massachusetts Stormwater Handbook.

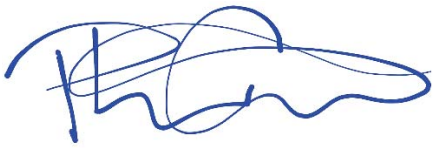
Comprehensive Stormwater Management Regulations

1. A certification should be added to the plan to "certify that the Stormwater Management Plan is in accordance with criteria established in Part Eight – East Bridgewater Construction Phase Stormwater Management and Soil Erosion Control Bylaw and these regulations" (CSMR Appendix D.5).
2. A certification should be added to the plan stating "the Operation and Maintenance Plan will be referenced to the deed of the owner and recorded in the Registry of Deeds" (CSMR Appendix D.14).
3. Areas of soil disturbance and areas that will not be disturbed should be identified on the plan (CSMR Appendix E.2.b).
4. A certification should be added to the plan to "certify that the Stormwater Management Plan is in accordance with criteria established in Part Eight – East Bridgewater Construction Phase Stormwater Management and Soil Erosion Control Bylaw and these regulations" (CSMR Appendix E.3).

5. The Operation and Maintenance Plan should be updated to include the following "Provisions for the Stormwater Authority or its designee to enter the property at reasonable times and in a reasonable manner for the purpose of inspection." (CSMR Appendix F.3.e)
6. The signature(s) of the owner(s) should be added to the Operation and Maintenance Plan. (CSMR Appendix F.3.f)
7. The design engineer should provide additional recharge calculations to confirm/verify compliance with the required 150% recharge volume. (CSMR Appendix G.1.a.ii)

In order to track any changes made to the proposed project, A&M recommends the applicant/engineer provide a written response to the items identified above and/or supplemental information necessary to review the application. If you require any additional information, please feel free to contact me.

Very Truly Yours,
ALLEN & MAJOR ASSOCIATES, INC.



Philip Cordeiro, PE
Branch Manager

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ALLEN & MAJOR ASSOCIATES, INC.

July 20, 2020

To: Claire Yocum, Chairperson
Town of East Bridgewater
Conservation Commission
175 Central Street
East Bridgewater, MA 02333-0386

Copy: File

A&M Project #: 2357-04

Re: EB Stormwater Management
Regulations Peer Review
Site Development Plans
Assessor's Map 104 Lot 1
457 Oak Street
East Bridgewater, MA

Dear Claire and Members of the Conservation Commission:

In accordance with our contract to conduct a peer review of the proposed Site Plans for Assessor's Map 104 Lot 1 457 Oak Street East Bridgewater, Allen & Major Associates, Inc. (A&M) is pleased to provide the following comments. The comments presented below are based on the review of the design documents provided to A&M by the Commission Consultant, Mr. John DeLano.

In conducting the peer review, A&M reviewed the following documents:

- "Drainage Calculations" prepared for [redacted] prepared by [redacted] dated May 26, 2020 revised June 30, 2020;
- "Site Plans" (6 sheets) prepared for [redacted] prepared by [redacted] dated May 26, 2020 revised June 30, 2020.

A&M reviewed the materials in conjunction with the applicable requirements of:

- The Town of East Bridgewater Comprehensive Stormwater Management Regulations (CSMR);
- Massachusetts Stormwater Handbook, Volumes 1 through 3, as applicable under the Massachusetts Wetlands Protection Act (310 CMR 10.00) with focus on the Stormwater Management Standards.

The following represent A&M's initial review comments. A&M may submit additional comments based on supplemental information provided.

Drainage Calculations & Site Plans

1. The drainage calculations appear to have been done utilizing the TP-40 rainfall data. The Town of East Bridgewater requires the rainfall data to be based on the Northeast Regional Climate Center "Atlas of Precipitation Extremes for Northeastern United States and Southeastern Canada". (See Comprehensive Stormwater Management Regulations (CSMR) Appendix G.3.h). The Engineer should revise the drainage calculations accordingly.
2. The drainage calculations for pre-development and post-development conditions have been done to show a composite value for the peak discharge rate and runoff volume for the entire site. The engineer should provide a summary table comparing pre vs post development conditions for each design/study point to confirm/verify that peak discharge rates and runoff volumes have not been exceeded for the various storm events.

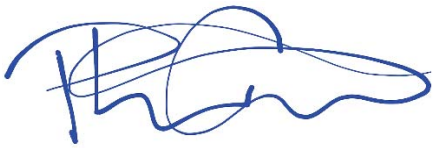
3. The Engineer should review the watershed to the south near Anderson Street, in the vicinity of Map 104 Lots 18-18, 121-131, 159. It appears that a portion of these lots are draining onto the site, therefore the drainage calculations should be updated to include these off-site areas (CSMR) Appendix G.3.f).
4. The drainage basin shown on the plans have a bottom elevation of 84.0, but the HydroCAD model for the basin has a bottom elevation of 83.50. The engineer shall clarify the discrepancy and revise the drainage calculations accordingly or provide spot grades in the basin to justify the bottom elevation of 83.50.
5. The drawdown time for the basin should be recalculated based on comment 4, above. Since the basin has been designed to infiltrate the entire 100-year event (1.3 ac-ft), the engineer should calculate the drawdown time to verify/confirm it complies with the 72-hour drawdown time.
6. The TSS worksheet should be revised to remove credit for the sediment forebay in the overall TSS removal value. An infiltration basin receives 80% TSS removal with a sediment forebay.
7. The pipe collection system has been designed/analyzed for the 25-year event. Since the drainage basin has been designed/sized for the 100-year event, the pipe collection system should be evaluated for the 100-year event to confirm/verify that it will be capable to convey the larger stormwater event to the basin and note any potential flooding/surcharge within the system.
8. Catch basin 4 has been designed to receive stormwater from multiple structures. The standard of practice is to install catch basin offline and not to accept runoff from another structure. A&M recommends that the drainage system be reconfigured to eliminate the multiple connections into catch basin 4 and install a drain manhole.
9. The drain manhole located in front of the building at the end of the parking stall has been mislabeled as "DMH1" and should be corrected to "DMH2".
10. DCB 3 should be labeled on the plan as well as the pipe information associated with DCB 3.
11. A&M recommends that the top and bottom of wall elevations be added to the plans.
12. A&M recommends the engineer add the hatch for the jute matte to the legend.

Comprehensive Stormwater Management Regulations

1. A certification should be added to the plan to "certify that the Stormwater Management Plan is in accordance with criteria established in Part Eight – East Bridgewater Construction Phase Stormwater Management and Soil Erosion Control Bylaw and these regulations" (CSMR Appendix D.5).
2. A certification should be added to the plan stating "the Operation and Maintenance Plan will be referenced to the deed of the owner and recorded in the Registry of Deeds" (CSMR Appendix D.14).
3. Areas of soil disturbance and areas that will not be disturbed should be identified on the plan (CSMR Appendix E.2.b).
4. A certification should be added to the plan to "certify that the Stormwater Management Plan is in accordance with criteria established in Part Eight – East Bridgewater Construction Phase Stormwater Management and Soil Erosion Control Bylaw and these regulations" (CSMR Appendix E.3).
5. The Operation and Maintenance Plan should be updated to include the following "Provisions for the Stormwater Authority or its designee to enter the property at reasonable times and in a reasonable manner for the purpose of inspection." (CSMR Appendix F.3.e)
6. The signature(s) of the owner(s) should be added to the Operation and Maintenance Plan. (CSMR Appendix F.3.f)
7. The design engineer should provide additional recharge calculations to confirm/verify compliance with the required 150% recharge volume. (CSMR Appendix G.1.a.ii)

In order to track any changes made to the proposed project, A&M recommends the applicant/engineer provide a written response to the items identified above and/or supplemental information necessary to review the application. If you require any additional information, please feel free to contact me.

Very Truly Yours,
ALLEN & MAJOR ASSOCIATES, INC.



Philip Cordeiro, PE
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ALLEN & MAJOR ASSOCIATES, INC.

May 28, 2020

To: Claire Yocum, Chairperson
Town of East Bridgewater
Conservation Commission
175 Central Street
East Bridgewater, MA 02333-0386

Copy: File

A&M Project #: 2357-03

Re: Stormwater and EB Stormwater Management Regulations Peer Review
Site Development Plans
Residential Townhouses
0 West Street
East Bridgewater, MA

Dear Claire and Members of the Conservation Commission:

In accordance with our contract to conduct a peer review of the proposed Site Development Plans "Residential Townhouses" 0 West Street (Route 106) East Bridgewater, Allen & Major Associates, Inc. (A&M) is pleased to provide the following comments. The comments presented below are based on the review of the design documents provided to A&M by the Commission Consultant, Mr. John DeLano.

In conducting the peer review, A&M reviewed the following documents:

- "Drainage Calculations and Stormwater Management Plan" prepared for [redacted] prepared by [redacted] dated January 13, 2020 revised May 19, 2020;
- "Notice of Intent (NOI) Application" prepared for [redacted] prepared by [redacted] dated January 13, 2020 revised May 19, 2020;
- "Site Development Plans" (7 sheets) prepared for [redacted] prepared by [redacted] dated January 13, 2020 revised May 19, 2020.

A&M reviewed the materials in conjunction with the applicable requirements of:

- The Town of East Bridgewater Comprehensive Stormwater Management Regulations;
- Massachusetts Stormwater Handbook, Volumes 1 through 3, as applicable under the Massachusetts Wetlands Protection Act (310 CMR 10.00) with focus on the Stormwater Management Standards.

The following represent A&M's initial review comments. A&M may submit additional comments based on supplemental information provided.

Drainage Calculations & Site Plans

1. Based on the topographic information shown on the existing conditions and the existing drainage area plan, Watershed EDA-4 should not be modeled to directly discharge to the design point DP-1 Property Lines. EDA-4 is draining to a depression that should be modeled as a pond and will overflow either to the east or south based on existing topographic information. A&M recommends additional spot grades be added to the plan to help delineate/justify the depression and overflow assumptions.
2. The post-development runoff volume at the design point has been increased during the 2-yr, 10-yr and 25-yr event. The design engineer should review this condition.

3. It appears that off-site stormwater from Watershed PDA-4 will be trapped along the property line, due to the grading associated with Basin P-3. The design engineer should review the area and provide accommodations to avoid the ponding, which does not currently exist.
4. The design engineer should review the southerly boundary of watershed PDA-2A. Based on the information on the site plans, a swale is created along the toe of slope associated with the grading of the leaching field. Please provide additional spot grades to justify the boundary or adjust accordingly. Please note, if the boundary line for watershed PDA-2A is adjusted, it will also have an effect on watershed PDA-2B.
5. The design engineer should review the Manning's coefficient value used for woods in the sheet flow segment for the time of concentration for Watershed PDA-2A. It appears the use of grass is more appropriate for this segment.
6. The design engineer should review the southerly boundary of watershed PDA-2C. Based on the information on the site plans, the roadway drains toward West Street, therefore the southerly boundary should be moved to the edge of the trench drain or provide additional spot grades to justify the boundary. Please note, if the boundary line for watershed PDA-2C is adjusted, it will also have an effect on watershed PDA-2D.
7. The maximum water elevation in the proposed infiltration basin P-3 is 52.02 and the top of berm around the basin is 53.00, which does not provide the minimum 1-ft of freeboard. The design engineer should review and adjust accordingly.
8. The plans and the Post-Construction Operation & Maintenance (O&M) Plan show and identify an isolator row. The isolator row is used and associated with the Stormtech Chambers, but the plans show Cultec Chambers. The design engineer should clarify the isolator row and revise the plans and O&M accordingly.
9. Please note that test pits conducted on the site are not located within the proposed stormwater management systems. Additional test pits are required to confirm/verify the estimated seasonal high water table and infiltration rates used in the design. These test pits should be conducted prior to approval of the application. Test pits should be coordinated with the Conservation Agent.
10. The design engineer should review the downstream invert (48.0) of the 2-12" RCP at the entrance. Based on the existing contours shown on the plans, it appears to be too low.
11. The design engineer may want to consider adding some type of inlet protection to the 3" outlet pipe from the infiltration basin P-3. Since the pipe is located at the bottom of the pond, it will be subject to blockage and/or clogging. Similarly, outlet protection from scour should be provided.
12. The amount of disturbance, 4,840 square feet is noted on the plan. The engineer should confirm that work within this area does not require an Army Corps of Engineers Self-Certification permit. The Conservation Commission may want to add a condition, that the applicant provide a copy of the Self-Certification form for the file if required.

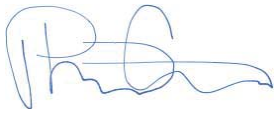
Comprehensive Stormwater Management Regulations

1. A certification should be added to the plan to "certify that the Stormwater Management Plan is in accordance with criteria established in Part Eight – East Bridgewater Construction Phase Stormwater Management and Soil Erosion Control Bylaw and these regulations" (CSMR Appendix D.5).
2. A certification should be added to the plan stating "the Operation and Maintenance Plan will be referenced to the deed of the owner and recorded in the Registry of Deeds" (CSMR Appendix D.14).
3. A certification should be added to the plan to "certify that the Stormwater Management Plan is in accordance with criteria established in Part Eight – East Bridgewater Construction Phase Stormwater Management and Soil Erosion Control Bylaw and these regulations" (CSMR Appendix E.3).

4. The Operation and Maintenance Plan should be updated to include the trench drain (CSMR Appendix F.3.c).
5. The Operation and Maintenance Plan should be updated to include the following "Provisions for the Stormwater Authority or its designee to enter the property at reasonable times and in a reasonable manner for the purpose of inspection." (CSMR Appendix F.3.e)
6. The signature(s) of the owner(s) should be added to the Operation and Maintenance Plan. (CSMR Appendix F.3.f)
7. The design engineer should provide additional recharge calculations to confirm/verify compliance with the required 150% recharge volume. (CSMR Appendix G.1.a.ii)

Upon receipt of the additional information, A&M will continue with the peer review. If you require any additional information, please feel free to contact me.

Very Truly Yours,
ALLEN & MAJOR ASSOCIATES, INC.



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ALLEN & MAJOR ASSOCIATES, INC.

March 16, 2020

To: Timothy Hay, Chairman
Town of West Bridgewater
Conservation Commission
65 North Main Street
West Bridgewater, MA 02379

A&M Project #: 2112-06

Re: Initial Peer Review
Cochesett Estates
Off Scotland & Maple Street
West Bridgewater, MA

Copy:

Dear Mr. Hay and Members of the Conservation Commission:

In accordance with our contract to conduct a peer review of the proposed Cochesett Estates 40B residential subdivision development off Scotland & Maple Street in West Bridgewater, Massachusetts, Allen & Major Associates, Inc. (A&M) is pleased to provide the following comments. The comments presented below are based on the review of the design documents provided to A&M by the Conservation Agent, Mr. John DeLano. A&M did not conduct a field assessment of the project but was present to observe test pits for the establishment of estimated seasonal high groundwater at the request of the Commission's Agent. A&M can perform an additional onsite review if the Commission requires.

In conducting the peer review, A&M reviewed the following documents:

- Notice of Intent (NOI) Application for Cochesett Estates 40B Residential Subdivision Development off Scotland Street & Maple Street West Bridgewater, MA prepared for [redacted] prepared by [redacted] dated December 23, 2019 revised February 26, 2020;
- Wetland Replication Plan for Cochesett Estates West Bridgewater, MA prepared for [redacted] prepared by [redacted] dated February 26, 2020;
- Drainage Calculations and Stormwater Management Plan in support of Notice of Intent for Cochesett Estates 40B Residential Subdivision Development off Scotland Street & Maple Street West Bridgewater, MA prepared for [redacted] prepared by [redacted] dated December 23, 2019 revised February 26, 2020;
- Pipe Sizing Calculations for Cochesett Estates 40B Residential Subdivision Development off Scotland Street & Maple Street West Bridgewater, MA prepared for [redacted] prepared by [redacted] dated February 26, 2020;
- Soil Logs for Cochesett Estates 40B Residential Subdivision Development off Scotland Street & Maple Street West Bridgewater, MA prepared for [redacted] prepared by [redacted] dated February 26, 2020;
- Site Plans 40B Subdivision Cochesett Estates Scotland Street & Maple Street West Bridgewater, MA prepared for [redacted] prepared by [redacted] dated March 11, 2016 revised through February 26, 2020 (6th revision);
- Response letter to design review meeting on January 29, 2020 prepared by [redacted] dated February 26, 2020;
- West Bridgewater Zoning Board of Appeals Comprehensive Permit Findings and Decision Cochesett Estates, West Bridgewater, MA dated October 25, 2016 amended through November 11, 2019.

A&M reviewed the materials in conjunction with the applicable requirements of:

- Massachusetts Stormwater Handbook, Volumes 1 through 3, as applicable under the Massachusetts Wetlands Protection Act (310 CMR 10.00) with focus on the Stormwater Management Standards.

The following represents A&M's initial review comments. A&M may submit additional comments based on supplemental information provided after the initial peer review.

Stormwater Management Report and Site Development Plans

1. The engineer shall justify the use of Hydrologic Soil Group D for the entire recharge calculation under Standard 3. A majority of the site is classified as a dual hydrologic group with the first letter for drained areas and the second for undrained areas. The recharge calculations should be revised accordingly.
2. The engineer shall justify the use of the curve numbers under pre-development and post-development conditions. A majority of the site is classified as a dual hydrologic group with the first letter for drained areas and the second for undrained areas. Flows may have been over estimated under predevelopment conditions, therefore reducing the overall impact of the proposed project. The calculations should be revised accordingly.
3. The engineer shall clarify/justify the watershed area of 0.59 acres for Subcatchment PDA-1A1: to Porous Pavement. A portion of the area will be captured by the deep sump hooded catch basins located just up gradient of the porous pavement section. Stormwater from these catch basins will be directed into the swale and not into the porous pavement section. The watershed area and calculations should be adjusted accordingly.
4. There are discrepancies between the cross-section detail of the porous pavement and HydroCAD model. The HydroCAD model calls for a 2-ft reservoir section, but the detail shows 15-inches. Please clarify and adjust accordingly.
5. Unable to find any test pit data for the porous pavement area within Ponkapoag Way and Maple Street, therefore A&M is unable to confirm/verify separation to the estimated seasonal high water elevation.
6. Unable to find any test pit data for the grass swales. Based on the test pits witnessed by A&M on February 12, 2020 in stormwater basin areas, redoximorphic features were observed anywhere from 19-34 inches below existing grade. Portions of the swale appear to be excavated 3-ft below existing grade, which may put the bottom of the swale in the water table.
7. Wet basin 1B - The maximum estimated seasonal high water elevation is 66.04 per TP D23 and 65.25 per TP D24. The starting elevation for stormwater storage in the HydroCAD should be adjusted accordingly and the basin reanalyzed.
8. A catch basin watershed catchment areas plan was not provided for the proposed sub-catchment areas for pipe sizing plan. Please provide an updated plan.
9. Pipe Sizing Calculations – Appendix B
    a. It appears the pipe sizing calculations were only done for the 100-year event. The engineer should provide pipe sizing calculations or the 25-year events to confirm and verify the system operates without a surcharge.
10. Pipe Sizing Calculations – Appendix D

a. It appears the pipe sizing calculations were only done for the 25-year event. Since the system is designed to carry the 100-yr event to Basin 1B, the pipe network needs to be analyzed for the 100-yr event or otherwise identify any potential ponding at entry points that may surface if a surcharge occurs;
b. The inlet report identifies CB 11 and CB 14 as a combination type, but the plans do not identify them as such. Please identify special catch basins on the plan and provide appropriate details;
c. The 15" pipe from DMH 15 – DMH 16 is undersized for the 25-year event;
d. The 18" pipe from DMH 16 – FES 17 is just under capacity for the 25-year event. The engineer should reevaluate this pipe, once the upgradient pipe is corrected and adjusted accordingly.

11. Pipe Sizing Calculations – Appendix E

a. It appears the pipe sizing calculations were only done for the 25-year event. Since the system is designed to carry the 100-yr event to Basin 1A, the pipe network needs to be analyzed for the 100-yr event or otherwise identify any potential ponding at entry points that may surface if a surcharge occurs;
b. The 12" pipe from CB 29 – DMH 31 is undersized for the 25-year event;
c. The 15" pipe from DMH 31 – DMH 32 is undersized for the 25-year event;
d. The 12" pipe from DMH 20 – DMH 23 is undersized for the 25-year event;
e. The 12" pipe from CB 22 – DMH 23 is undersized for the 25-year event;
f. The inlet report identifies CB 27 as a combination type, but the plans do not identify them as such. Please identify special catch basins on the plan and provide appropriate details.

12. Pipe Sizing Calculations – Appendix F

a. It appears the pipe sizing calculations were only done for the 100-year event. The engineer should provide pipe sizing calculations or the 25-year events to confirm and verify the system operates without a surcharge.

13. Pipe Sizing Calculations – Appendix G

a. It appears the pipe sizing calculations were only done for the 25-year event. Since the system is designed to carry the 100-yr event to Basin 1A, the pipe network needs to be analyzed for the 100-yr event or otherwise identify any potential ponding at entry points that may surface if a surcharge occurs;
b. The 15" pipe from CB 41 – DMH 44 is undersized for the 25-year event;
c. The 12" pipe from CB 42 – DMH 44 is undersized for the 25-year event;
d. The 18" pipe from DMH 44 – DMH 46 is undersized for the 25-year event;
e. The 18" pipe from DMH 46 – FES 47 is undersized for the 25-year event;
f. The inlet report identifies CB 41 and CB 42 as a combination type, but the plans do not identify them as such. Please identify special catch basins on the plan and provide appropriate details.

14. Pipe Sizing Calculations – Appendix H

a. It appears the pipe sizing calculations were only done for the 25-year event. Since the system is designed to carry the 100-yr event to Basin 1A, the pipe network needs to be analyzed for the 100-yr event or otherwise identify any potential ponding at entry points that may surface if a surcharge occurs;
b. The 18" pipe from CB 55 – FES 56 is undersized for the 25-year event;

c. The inlet report identifies CB 55 as a combination type, but the plans do not identify them as such. Please identify special catch basins on the plan and provide appropriate details. The plan symbol indicates the catch basin to be a double catch basin, but no details are provided. The plans should be updated accordingly.

15. Pipe Sizing Calculations – Appendix I
    a. It appears the pipe sizing calculations were only done for the 25-year event. Since the system is designed to carry the 100-yr event to Basin 1A, the pipe network needs to be analyzed for the 100-yr event or otherwise identify any potential ponding at entry points that may surface if a surcharge occurs;
    b. The 12" pipe from CB 48 – DMH 50 is undersized for the 25-year event;
    c. The 12" pipe from CB 49 – DMH 50 is undersized for the 25-year event;
    d. The 12" pipe from DMH 50 – DMH 51 is undersized for the 25-year event;
    e. The 12" pipe from DMH 51 – DMH 52 is undersized for the 25-year event;
    f. The 12" pipe from DMH 52 – DMH 53 is undersized for the 25-year event;
    g. The 12" pipe from DMH 53 – FES 54 is undersized for the 25-year event.
16. Pipe Sizing Calculations – Appendix J
    a. Per the information on the Storm Sewer Tabulation table, the capacity of the grass swale to Basin 1A has been exceeded. The engineer shall reevaluate the swale and revise accordingly.
17. Since the grass swales are a critical component to the stormwater management system the engineer shall annotate all grass swales on the plan. The minimum required information should include the bottom width, height, side slope and longitudinal slopes to carry the anticipated flows. The height should account for the required freeboard per the Stormwater Handbook.
18. The engineer should review the grading of the swale along the back of the existing houses on Scotland Street. It appears that some water may be trapped along the property line or cause stormwater to run onto and across the adjacent lots.
19. Since the grading between the proposed units are critical to allow stormwater to drain into the swale, A&M recommends drainage easements to be created to protect the swales from being altered in the future.
20. A&M recommends additional spot grades be added along the easterly side of Wet Basin #1A to help define the required bench. A drainage easement will also be required in this area as the basin falls outside of the prescribed drainage lot. The engineer shall clarify how access to the basin is achieved and provide the 15-ft wide access road to the basin on the plan for maintenance purposes associated with the forebay, outlet control structure and emergency spillway.
21. The amount of disturbance, either temporary or permanent, to the "I.L.S.F." should be noted on the plan. The engineer should confirm that work within this area does not require an Army Corps of Engineers Self Certification permit.
22. The engineer should clarify whether the use of the haybale check dams in the swale is a temporary or permanent measure. The haybales will eventually deteriorate and not function as intended. A&M recommends the use of stone check dams. The engineer should also evaluate the use of haybales, which may contain invasive seeds, in favor of more environmentally friendly alternatives.
23. A&M recommends additional spot grades be added along the westerly side of Wet Basin #1B to help define the required bench. A drainage easement will also be required in this area as the basin falls

outside of the prescribed drainage lot. The engineer shall clarify how access to the basin is achieved and provide the 15-ft wide access road to the basin on the plan for maintenance purposes associated with the forebay, outlet control structure and emergency spillway.

24. A&M recommends additional spot grades be added along the westerly side of Basin #1F to help define the required bench. A drainage easement will also be required in this area as the basin falls outside of the prescribed drainage lot. The engineer shall clarify how access to the basin is achieved and provide the 15-ft wide access road to the basin on the plan for maintenance purposes associated with the forebay, outlet control structure and emergency spillway.
25. The engineer shall clarify the turquoise shading on the plan on the easterly side of the basin as well as the one in the vicinity of Wetland Flags 25-29. It is unclear if this area is being used for compensatory storage, is so please identify the scope of work and adjust the erosion control barriers accordingly.
26. It appears that grading is occurring outside the right of way near 104 Scotland Street. Please acquire appropriate easements from the Owner or revise the grading accordingly.
27. The engineer may want to consider adding an area drain on the northerly side of Maple Street (Lot 44) to avoid discharging stormwater from the swale into the right of way. Drainage easement will be required in this area.
28. A&M recommends additional spot grades be added along the northerly side of Wet Basin #1D to help define the required bench. A drainage easement will also be required in this area as the basin falls outside of the prescribed drainage lot. The engineer shall clarify how access to the basin is achieved and provide the 15-ft wide access road to the basin on the plan for maintenance purposes associated with the forebay, outlet control structure and emergency spillway.
29. The engineer shall note all wetland disturbances associated with the gravel road and sewer forcemain.
30. To clearly identify the porous pavement section within Maple Street, the area should be cross-hatched in the profile view. The plan view only shows one 6" perforated pipe, but the profile calls for 3, please clarify and revise accordingly.
31. The engineer may want to consider raising the elevation at station 4+50 Maple Street, to keep the stormwater in the roadway and directed towards CB 43 and CB 45.
32. To clearly identify the porous pavement section within Ponkapoag Way, the area should be cross-hatched in the profile view.
33. The engineer should review the following inverts on Sheet 16 and revise accordingly:
    a. Invert on CB 21 / CB 22 is noted as 70.00, but the pipe is drawn at 69.3±;
    b. Invert on DMH 8 is noted as 72.70 (in) and 72.00 (out), but the pipe out is drawn at elevation 67.4±.
34. The engineer should review the following inverts on Sheet 16 and revise accordingly:
    a. Invert on DMH 8 is noted as 72.70 (in) and 72.00 (out), but the pipe out is drawn at elevation 67.4±;
    b. Invert on CB 13 / CB 14 is noted as 71.40, but the pipe is drawn at 70.4±.
35. Since the grass swale varies throughout, the detail should be modified accordingly. Please provide a chart for the various swales, identifying the required minimum bottom width, height, side slope and

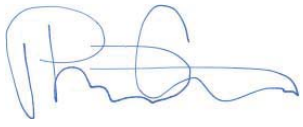
longitudinal slopes to carry the anticipated flows. Also add a note to refer to the site plans for locations and elevations.

36. Sediment Forebay and Wet Basin Section – Basin 1A
    a. The top of the berm elevation should be changed to 67.60 to match the plan view;
    b. Test pit D-18 info on the wet basin portion should be adjusted to be graphically correct.
37. Sediment Forebay and Wet Basin Section – Basin 1B
    a. See comment 7 above as it relates to the estimated seasonal high water elevation. The basin cross-section will need to be modified accordingly.
38. Sediment Forebay and Wet Basin Section – Basin 1D
    a. Test pit D-27 info on the wet basin portion should be adjusted to be graphically correct.
39. Sediment Forebay and Wet Basin Section – Basin 1F
    a. The engineer should clarify the note on the assumed GW elevation for design underneath the test pit data;
    b. There are discrepancies between the cross-section detail and HydroCAD model as it relates to the outlet control structure. The plan calls for a 3-ft wide weir at elevation 65.0, but the HydroCAD model does not. Please clarify and adjust accordingly.
40. The landscape plan should be adjusted and coordinated with the site plans.
    a. Basin 1F is not shown on the plan;
    b. Basin 1A, 1B and 1D are identified as infiltration basins;
    c. A drainage basin is shown at the intersection of Chippewa Way and Maple Street, but not shown on the site plans;
    d. Several notes make reference to Proposed Lot Landscaping, refer to Sheet 22. Should reference Sheet 29;

In order to track any changes made to the proposed project, A&M recommends the applicant/engineer provide a written response to the items identified above and/or supplemental information necessary to review the application.

If you require any additional information on the review, please contact our office.

Very Truly Yours,
ALLEN & MAJOR ASSOCIATES, INC.



Phil Cordeiro, PE
Branch Manager

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ALLEN & MAJOR ASSOCIATES, INC.

March 6, 2020

To: Timothy Hay, Chairman
Town of West Bridgewater
Conservation Commission
65 North Main Street
West Bridgewater, MA 02379

A&M Project #: 2112-07
Re: Initial Peer Review
400 Manley Street
West Bridgewater, MA

Copy:

Dear Mr. Hay and Members of the Conservation Commission:

In accordance with our contract to conduct a peer review of the proposed site development plans for 400 Manley Street in West Bridgewater, Allen & Major Associates, Inc. (A&M) is pleased to provide the following comments. The comments presented below are based on the review of the design documents provided to A&M by the Conservation Agent, Mr. John DeLano. A&M did not conduct a field assessment of the project but can do so if the Commission requires.

In conducting the peer review, A&M reviewed the following documents:

- Stormwater Management Report 400 Manley Street West Bridgewater, MA prepared for [redacted] prepared by [redacted] dated January 9, 2020;
- Site Development Plans for 400 Manley Street West Bridgewater, MA prepared for [redacted] prepared by [redacted] dated January 9, 2020.

A&M was not provided a copy of the WPA Form 3 Notice of Intent inclusive of any narrative material that may have been provided by the applicant. The peer review does not provide comment.

A&M reviewed the materials in conjunction with the applicable requirements of:

- Town of West Bridgewater General By-Laws Revised 2019, Article 44 West Bridgewater Wetland Protection;
- Town of West Bridgewater General By-Laws Revised 2019, Article 54 West Bridgewater Construction Phase Stormwater Management and Soil Erosion Control By-law;
- The Town of West Bridgewater Conservation Commission Wetland Protection By-law effective July 24, 2007 (Fees Amended May 7, 2019);
- Massachusetts Stormwater Handbook, Volumes 1 through 3, as applicable under the Massachusetts Wetlands Protection Act (310 CMR 10.00) with focus on the Stormwater Management Standards.

The following represents A&M's initial review comments. A&M may submit additional comments based on supplemental information provided after the initial peer review.

Stormwater Management Report and Site Development Plans

1. The site is located within the Water Resource Protection District and within a Zone II. The applicant shall inform the Conservation Commission on the status of any Special Permit as issued by the Planning Board.
2. The engineer should review and clarify the intent of the paragraph at the top of page 4 of the Stormwater Management Report. It appears to be a continuation of a sentence and not sure if it is part of or a continuation from page 3.
3. Standard 4 of the Stormwater Policy requires a cumulative 80% TSS removal treatment train. The applicant is meeting this requirement by providing Contech Engineered Solutions water quality devices at removal rates of 80% plus. The engineer should provide validation for use of these values as applicable to meeting the standard.
4. Standard 7 of the Stormwater Management Policy reads:

   Standard 7: *A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.*

   The engineer/applicant should provide more details on Standard 7 – Redevelopment and how the project is in compliance with the Standard and creates an improvement over existing conditions. The proposed system elements are reliant on re-use of the structural stormwater elements of the site and should be confirmed suitable for continued use. For example:

   a. Has the entire existing drainage system been inspected and maintained?
   b. Are there any proposed improvements to any of the existing structures to remain?
   c. Do all existing catch basins to remain have hoods and sumps (depth?) installed?
   d. Do the existing 18" and 36" outfall pipes have a rip rap apron of sufficient size of stone and length?
   e. Have the existing drainage channels and drainage pond been reviewed for any signs of erosion, lack of water carrying capacity, sediment accumulation, over-vegetation, or other condition that requires maintenance?
5. Based on the spot grades shown on the existing conditions plan, it appears that several watershed boundaries would need to be adjusted. Additional spot grades should be added to the existing watershed plans to confirm/verify watershed delineation at the following locations:

   a. Between Drainage Area #1 DMH-1 and Drainage Area CB-1;
   b. Between Drainage Area CB-1 and Drainage Area CB-1, (should be noted as CB-5);
   c. Between Drainage Area CB-1 (should be noted as CB-5) and Drainage Area CB-7;
   d. Between Drainage Area CB-1 (should be noted as CB-5) and Drainage Area CB-6.

6. No test pit data has been provided, A&M is unable to verify or confirm groundwater separation. Please provide test pit information for each infiltration BMP in accordance with the Massachusetts Stormwater Handbook. If groundwater separation to seasonal high water table is less than 4-ft, then mounding analysis is required to show compliance with Standard 3.
7. The design intent of the outlet control structure associated with Pond No. 3 – Subsurface #3 is unclear. The detail indicates a baffle at elevation 88.2 while the stormwater report provides a 100 year elevation at 88.72. This denotes a depth of flow of 0.5 feet over the baffle during 100 year events. Therefore, this baffle should be modeled in the Hydraflow report.
8. The culverts from each outlet control structure should be modeled to confirm they are capable of handling the anticipated design flows.
    a. The outlet control structure associated with Pond No. 3 – Subsurface #3 has been designed with an 8-inch culvert with a slope of 0.50%. The carrying capacity, flowing full for this 8-inch culvert is approximately 0.9 cfs, which is less than the anticipated design flows for the 10-year storm and above;
9. There is an inconsistency between the detail sheets and Pond Report. The outlet control structure associated with Pond No. 2 – Subsurface #2 has been detailed with a 4-inch orifice, but the Pond Report calls for a 12-inch orifice. The engineer should confirm which one is correct and revise accordingly.
10. The design engineer should provide additional calculations to confirm/verify that the existing swale and area drain are capable of receiving additional runoff from Subsurface System #1.
11. The design engineer should verify the Contech water quality calculations are correct. Three (3) of the units are noted as CDS Model 1515-3, but the plans call for CDS Model 2015-4.
12. No pipe sizing calculations have been provided in Attachment E of the Stormwater Management Report. Please provide the appropriate calculations to confirm/verify that the anticipated stormwater flows reach the appropriate recharge systems.
13. The engineer should provide grate analysis to confirm/verify that the grates are capable of handling the anticipated design flows. Based on the Hydrograph return period recap:
    a. CB-1 has flows ranging from 1.58 cfs to 4.89 cfs;
    b. CB-5 has flows ranging from 6.60 cfs to 16.05 cfs;
    c. CB-6 has flows ranging from 1.74 cfs to 4.43 cfs;
    d. CB-7 has flows ranging from 2.12 cfs to 5.34 cfs.
14. The erosion control barriers shall be adjusted to incorporate the work required to install the pipe, flared end section and rip rap apron associated with subsurface #3.
15. Please remove reference to the Town of East Bridgewater from the construction note A2 on Sheet 7.
16. Please correct the title block on Sheets 7, 8 and 9. There appear to be duplicate texts under the scale, drawn by, checked by, approved by and in the revision box.
17. Please remove reference to the Town of Norton from the construction sequencing notes on Sheet 10.

18. The applicant has provided an Operation and Maintenance Plan for the redevelopment portion of the project. A&M recommends the O&M be expanded to include the entirety of the drainage system onsite and not be limited to new construction.
19. The Operation and Maintenance should be revised to include appropriate recommendations for mosquito control in accordance with MassDEP policies.

Erosion Control By-Law Plan Content

1. Trees with a caliper twelve (12) inches or larger, noting specimen trees and forest communities were not identified on the plan. (Article 54 Section 7.C.4.b)
2. Volume and nature of imported soil materials were not noted on the plan. (Article 54 Section 7.C.6)
3. Number of square feet of land area to be disturbed was not noted on the plan. (Article 54 Section 7.C.8)
4. A description of provisions for phasing the project where one acre or greater is to be altered or disturbed was not provided. (Article 54 Section 7.C.16)

Wetland Protection Rules and Regulations

1. The West Bridgewater Wetland Protection By-Law requires certain objects to be colored coded, which include:
    a. Open and flowing water, light blue; (Section 16.3.2.1)
    b. Marsh or swamp, light blue with swamp symbols imposed; (Section 16.3.2.2)
    c. All meadows, flats and other land subject to flooding, outline with a dashed blue line; (Section 16.3.2.3)
    d. Areas to be dredged, outline with red; (Section 16.3.3.1)
    e. Areas to be filled, outline with green; (Section 16.3.3.2).

    None of these items were included in the submission.

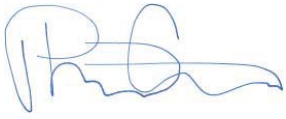
Wetland Buffer Zone

The plan identifies areas of clearing within fifty (50) feet of a vegetated wetland which is not allowed except for activity which is allowed by the Conservation Commission under a variance from these regulations pursuant to Section 13.0. The proposed project would require relief from regulation 9.3.1. in the vicinity of the proposed trailer parking area on the westerly side. The information reviewed by A&M, does not provide justification for the encroachment for this work for the Commission to consider granting relief. The applicant/engineer should provide additional information to justify the proposed work within the fifty (50) feet wetland buffer zone and applicable performance standards are met.

In order to track any changes made to the proposed project, A&M recommends the applicant/engineer provide a written response to the items identified above and/or supplemental information necessary to review the application.

If you require any additional information on the review, please contact our office.

Very Truly Yours,
ALLEN & MAJOR ASSOCIATES, INC.



Philip Cordeiro, PE
Branch Manager

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allenmajor.com

ALLEN & MAJOR ASSOCIATES, INC.

October 12, 2021

To: Ed Derby, Chairman
Town of Tyngsborough
Conservation Commission c/o Michelle Grenier, Conservation Director
25 Bryant Lane
Tyngsborough, MA 01879

A&M Project #: 3026-01

Re: Initial Peer Review
Tyngsborough Wellfield Manganese Treatment Facility
166 Frost Road
Tyngsborough , MA

Copy:

Dear Mr. Derby and Members of the Conservation Commission:

In accordance with our contract to conduct a peer review of the proposed site development plans for Tyngsborough Wellfield Manganese Treatment Facility located at 166 Frost Road, Allen & Major Associates, Inc. (A&M) is pleased to provide the following comments. The comments presented below are based on the review of the design documents provided to A&M by the Conservation Director, Michelle Grenier.

In conducting the peer review, A&M reviewed the following documents:

- Stormwater Management Report Tyngsborough Wellfield Manganese Treatment Facility 166 Frost Road Tyngsborough, MA prepared for [redacted] by [redacted] dated August 2021;
- Sheet C-101 – Existing Conditions Plan prepared by [redacted] dated May 2021;
- Sheet C-102 – Site Layout Plan prepared by [redacted] dated May 2021.

A&M reviewed the materials in conjunction with the applicable requirements of:

- Town of Tyngsborough Stormwater Regulations Revised July 15, 2020;
- Town of Tyngsborough Zoning By-Law Section 3.16.00 Tree Protection;
- Massachusetts Stormwater Handbook, Volumes 1 through 3, as applicable under the Massachusetts Wetlands Protection Act (310 CMR 10.00) with focus on the Stormwater Management Standards.

The following represents A&M's initial review comments. A&M may submit additional comments based on supplemental information provided after the initial peer review.

Site Walk/Inspection

A&M conducted a site walk of the property on September 22, 2021. A&M was accompanied by Michelle Grenier, Tyngsborough Conservation Director, and Scott Goddard, Wetland Scientist from Goddard Consultant, LLC. As part of the preliminary review of the application materials, the applicant asserted that the land owned by the Dracut Water Supply District at 170 Frost Road was not eligible for development due to environmental restrictions. The purpose of the site walk was to evaluate this assumption and determine if there was a better location to the proposed treatment facility then the submitted location which is directly adjacent to a number of abutters and their water supply wells. The back property where the existing public supply wells are located are encompassed by several wetland resource areas as reviewed by Goddard Consulting as well as regulated areas which include the public water supply Zone I and Zone II. A&M has confirmed these

resource areas and regulated areas through MassGIS website. The proposed location seems feasible given the observed site constraints. However, it does appear that there is the possibility to move the building, access road and the drying beds further northerly to minimize the tree clearing and maintain more of the natural buffers to the existing residents.

Stormwater Management Report and Site Plans

1. The design engineer has relied on soil borings to determine the elevation of the water table. The plans provided, do not show the location of the borings, A&M is unable to verify that the borings are done in the location of the proposed stormwater management system. Test pits shall be conducted by a MassDEP certified licensed soil evaluator and the Estimated Seasonal High Water Table (ESHWT) should be determined by redoximorphic features. Based on the boring logs, it appears that a permeability test was conducted at B-5, but no results were provided. The design engineer should conduct the appropriate number of test pits in accordance with the Massachusetts Stormwater Handbook, provide the permeability test results and show the locations of the borings/test pits on the plans.
2. Under existing and proposed conditions, the design engineer used a curve number for "fair conditions". MassDEP recommends that all soils be assumed "good" ground cover type unless otherwise proved by the applicant. The design engineer should provide backup information to justify the use of "fair" or the curve number and drainage calculations should be revised accordingly.
3. Upon review of the Existing Conditions Drainage Area Map, the time of concentration for the existing watershed should be revised to indicate grass/lawn, not woods as indicated within the calculations.
4. Since the Stormwater Management System (SMS) will be located within a Zone II, the design engineer should document compliance with Table CA 3 Standard 6 of the Stormwater Handbook. The SMS should provide the appropriate pretreatment BMP's and Treatment BMP's before discharging into the Infiltration BMP.
5. Since the sediment forebay is being utilized as a pre-treatment, the design engineer should design the bottom of the sediment forebay to eliminate infiltration. The HydroCAD should also be revised to remove the infiltration component from the forebay.
6. The dividing line between Watershed 3S and 5S, should be reviewed. It appears a portion of Watershed 3S will not be directed into the sediment forebay.
7. Pavement from Watershed 5S drains untreated runoff to the existing gravel road and eventually to the design point. The design engineer should reevaluate this area and provide some level of treatment to the runoff. Additionally, the engineer should determine if a u-shape driveway is necessary for the limited amount of traffic anticipated.
8. Catch basin and drain manholes were modeled in HydroCAD, which are reporting flooding conditions on these structures. The design engineer should review the flooded elevation and confirm/verify that flooding will be controlled and maintained within the limits of the property and will not have an adverse impact on abutting neighbors. No rim elevations are provided at any structures to confirm flooding elevations, or lack thereof.

9. The ten (10) inch outlet pipe from the forebay will have little to no cover on top of the pipe. The design engineer should review the constructability of the pipe.

10. The volume of the sediment forebay has been exceeded in the 100-yr event, therefore the model could be producing inaccurate results. The design engineer should review and revise the drainage calculations accordingly.
11. The design engineer should re-evaluate the TSS removal calculations. It appears the overall TSS removal calculations is overstating the overall removal rate. For example, the infiltration basin get 80% TSS removal with the appropriate pre-treatment (sediment forebay). According to the calculations provided, the design engineer is seeking credit for the sediment forebay as a separate item.
12. The infiltration basin should be designed in accordance with the Stormwater Handbook. The current design does not provide the required freeboard, no maintenance/access road, no monitoring wells, etc. The design engineer should confirm/verify that the infiltration basin meets the minimum setback distances as outlined in the Stormwater Handbook.
13. No pipe sizing calculations have been provided. The pipe sizing calculations should be done per the rational method. Since the SMS is being designed for the 100-yr event, the design engineer should confirm/verify that pipe collection system is capable of conveying the 100-yr event to the infiltration basin or otherwise detail gutter flow conditions.
14. The site plans provide very limited information on the site details (spot grades, utility connections, construction details) that make a full review difficult. Additional information should be provided.
15. The report narrative and limited site plans do not provide any information on the design, function and maintenance of the drying beds. Given the interaction of the drying beds and direct precipitation as modeled under HydroCAD ponds 8P and 9P, additional information needs to be provided.
16. The report narrative and the limited site plans do not show the number of trees greater than ten (10) inches nor a tree clearing plan in accordance with the Zoning By-Law.

In order to track any changes made to the proposed project, A&M recommends the applicant/engineer provide a written response to the items identified above and/or supplemental information necessary to review the application.

If you require any additional information on the review, please contact our office.

Very Truly Yours,
ALLEN & MAJOR ASSOCIATES, INC.

Philip Cordeiro, PE Branch
Manager

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allenmajor.com

ALLEN & MAJOR ASSOCIATES, INC.

November 29, 2021

To: Ed Derby, Chairman
Town of Tyngsborough
Conservation Commission
c/o Michèle Grenier, PWS, CWS –
Conservation Director
25 Bryant Lane
Tyngsborough, MA 01879

Copy:

A&M Project #: 3026-01

Re: Second Peer Review
Tyngsborough Wellfield
Manganese Treatment Facility
166 Frost Road
Tyngsborough , MA

Dear Mr. Derby and Members of the Conservation Commission:

In accordance with our contract to conduct a peer review of the proposed site development plans for Tyngsborough Wellfield Manganese Treatment Facility located at 166 Frost Road, Allen & Major Associates, Inc. (A&M) is pleased to provide the following comments. The comments presented below are based on the review of the design documents provided to A&M by the Conservation Director, Michelle Grenier.

In conducting the peer review, A&M reviewed the following documents:

- Stormwater Management Report Tyngsborough Wellfield Manganese Treatment Facility 166 Frost Road Tyngsborough, MA prepared for [redacted] prepared by [redacted] dated August 2021, revised November 2021;
- Permit Drawings entitled "Town of Dracut, MA Manganese Treatment Facility" Dracut Water Supply District prepared by [redacted] dated June 2021, revised November 2021 (11 sheets);
- Peer Review Response Letter prepared by [redacted] dated November 5, 2021.

A&M reviewed the materials in conjunction with the applicable requirements of:

- Town of Tyngsborough Stormwater Regulations Revised July 15, 2020;
- Town of Tyngsborough Zoning By-Law Section 3.16.00 Tree Protection;
- Massachusetts Stormwater Handbook, Volumes 1 through 3, as applicable under the Massachusetts Wetlands Protection Act (310 CMR 10.00) with focus on the Stormwater Management Standards.

The following represents A&M's initial review comments. A&M may submit additional comments based on supplemental information provided after the initial peer review.

Site Walk/Inspection

A&M conducted a site walk of the property on September 22, 2021. A&M was accompanied by Michelle Grenier, Tyngsborough Conservation Director, and Scott Goddard, Wetland Scientist from Goddard Consultant, LLC. As part of the preliminary review of the application materials, the applicant asserted that the land owned by the Dracut Water Supply District at 170 Frost Road was not eligible for development due to environmental restrictions. The purpose of the site walk was to evaluate this assumption and determine if there was a better location to the proposed treatment facility then the submitted location which is directly adjacent to a number of abutters and their water supply wells. The back property where the existing public supply wells

are located are encompassed by several wetland resource areas as reviewed by Goddard Consulting as well as regulated areas which include the public water supply Zone I and Zone II. A&M has confirmed these resource areas and regulated areas through MassGIS website. The proposed location seems feasible given the observed site constraints. However, it does appear that there is the possibility to move the building, access road and the drying beds further northerly to minimize the tree clearing and maintain more of the natural buffers to the existing residents.

Stormwater Management Report and Site Plans

1. A&M has reviewed the applicant's engineer's response regarding the initial soil borings that have been conducted onsite. Based on the boring logs and the surficial geology anticipated, the water table is likely not an issue to the design as proposed. If deemed acceptable to the Commission, A&M suggests the use of a condition that the applicant conduct verification test pits performed at the onset of construction with the results proving consistency of design assumptions prior to general construction of the stormwater systems provided for record. If conditions vary greatly, the applicant should submit any design modifications necessary to conform with the field conditions as an amendment to the stormwater permit.
2. Issue resolved, no further comment.
3. Issue resolved, no further comment.
4. Issue resolved, no further comment.
5. Issue resolved, no further comment.
6. Issue resolved, no further comment.
7. Issue resolved, no further comment.
8. Issue resolved, no further comment.
9. Issue resolved, no further comment.
10. Issue resolved, no further comment.
11. Issue resolved, no further comment.
12. Issue resolved, no further comment.
13. Issue resolved, no further comment.
14. Issue resolved, see additional comments below.
15. A&M has reviewed the applicant's response. The drying beds are designated for future use only if the sewer connection is eliminated. The sewer connection has been approved by the municipality and required the inclusion of the drying beds if required for use by the sewer department. It is A&M's understanding that the beds will receive runoff from the building in the form of precipitated Manganese where water will be allowed to infiltrate through the underlying substrate and the manganese remaining on the surface. The collected solids shall require removal when the infiltrative capacity of the underlying soil is reduced. The cross section provided for the drying bed is consistent with the handling requirements of MassDEP. Issue resolved, no further comment.
16. Issue resolved, no further comment.

Additional Comments

1. The HydroCAD model shows the proposed building (Sub-catchment 1S) being discharged directly into the proposed infiltration basin (Pond 5P). The plans provided do not show any piping directing runoff from the building into the infiltration basin. The design engineer should clarify the intent of the drainage system and update the drainage calculations or plans accordingly.
2. The emergency spillway elevation on the plans does not match the information in the HydroCAD model. The design engineer should confirm the correct elevation and revise the plans or the drainage model accordingly.
3. The utility plan currently shows four (4) 12" tank overflows from the building, which will discharge effluent via two (2) twelve-inch pipes. The discharge point will be located up-gradient of the wetland resource areas but could have the potential of impacting the resource areas. The design engineer should provide documentation on the material being stored in the tanks and what the proposed effluent will be.
4. The utility plan currently shows a six (6) foot diameter drywell with a two (2) inch pipe. The design engineer should provide documentation on the effluent that will be discharged via the two (2) inch pipe into the drywell.
5. The design drawings denote an industrial holding "tight" tank at the southeast corner of the building. Dependent on the stored material, this may require an Industrial Holding Tank permit from MassDEP prior to installation and general use. The Commission may wish to provide a condition to require the applicant to provide a copy of the approved permit to the Commission for record as confirmation that all the necessary design elements (liners, alarms, notification processes, etc.) are in place before general use of the system. The applicant should otherwise provide narrative as to the potential effluent and purpose of the tank for record.

In order to track any changes made to the proposed project, A&M recommends the applicant/engineer provide a written response to the items identified above and/or supplemental information necessary to review the application.

If you require any additional information on the review, please contact our office.

Very Truly Yours,
ALLEN & MAJOR ASSOCIATES, INC.

Philip L Cordeiro
c=US, o=Allen and Major Associates Inc., ou=A01410C00000175798BB4FD00002012, cn=Philip L Cordeiro
2021.11.29 14:19:34 -05'00'

Philip Cordeiro, PE
Branch Manager

PRIMARY CONTACTS AND STAFF QUALIFICATIONS

Key Personnel

Allen & Major Associates, Inc. (A&M) will provide a dedicated team throughout the duration of the project. Our team is an assembled group of professionals knowledgeable in all of the required areas necessary for the successful completion of this project.

Philip L. Cordeiro, PE – Philip Cordeiro serves as a Senior Civil Project Manager at Allen & Major Associates, Inc. He has a wide range of project experience in municipal, residential, corporate, industrial, and retail development. Phil's diverse background in civil engineering includes site engineering, drainage design, hydrology and hydraulic analysis, water resources, stormwater and sewer design. This provides a full range of civil engineering knowledge and expertise within the design process. Phil has indispensable hands on field experience, having managed construction administration tasks for many projects to date and because of this is able to anticipate and work through site challenges.

Paul G. Matos, PE, PLS – Paul Matos serves as a Project Manager within the Civil Engineering Division at Allen & Major Associates, Inc. Paul's extensive experience includes conducting zoning analysis and preparation of site development plans to include layout, erosion control, drainage, grading, and utilities. Paul's sustainable approach to drainage analysis, and the subsequent design of stormwater management systems, makes him a valuable member of the development team. Additionally, Paul provides construction administration services, which includes shop drawing approvals, pay requisitions, and preparation of responses to RFI's. He conducts site inspections to observe and verify conformance with the approved plans and specifications. Paul is responsible for preparing various reports, such as feasibility, drainage, impact statements, and SWPPP, applications, letters, construction documents, specifications, cost estimates, quantity takeoffs, and client proposals.

Joseph Sanda – Joseph Sanda serves as a Project Designer within the Civil Engineering Division at Allen & Major Associates, Inc. With a focus on sustainability, Joe is committed to providing resilient design solutions utilizing renewable resources and innovative designs in order to preserve the natural environment and offer "green" elements within a project. As a Project Designer, Joe works closely with A&M's Project Managers and Project Engineers to prepare design plans, progress reports, and permitting documents for each project that he undertakes.

ALLEN & MAJOR ASSOCIATES, INC.

Philip L. Cordeiro, PE

Lakeville Branch Manager

10 Main Street
Lakeville, MA 02347

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pcordeiro@allenmajor.com

EXPERIENCE

A&M - 21 Years
Overall - 21 Years

EDUCATION

2000, B.S., Civil Engineering, University of Massachusetts, Dartmouth

REGISTRATIONS

Professional Engineer —
- CT (PEN.0026532)
- MA (47083)
- PA (PE083852)
- RI (PE.0008972)

Certifications —
- MA Soil Evaluator (SE2786)
- MA Title 5 System Inspector (SI4419)

Team Role: Branch Manager

Philip Cordeiro serves as a Senior Civil Project Manager at Allen & Major Associates, Inc. He has a wide range of project experience in municipal, residential, corporate, industrial, and retail development. Phil's diverse background in civil engineering includes site engineering, drainage design, hydrology and hydraulic analysis, water resources, stormwater and sewer design. This provides a full range of civil engineering knowledge and expertise within the design process. Phil has indispensable hands on field experience, having managed construction administration tasks for many projects to date and because of this is able to anticipate and work through site challenges.

PROJECT EXPERIENCE

Residential
- Arbella at Ashland – Ashland, MA
- Oasis at Plymouth – Plymouth, MA
- ALTA Nashoba – Bolton, MA
- ALTA Abington Station – Abington, MA
- Rochester Crossroads – Rochester, MA

Commercial/Mixed-Use
- BJ's Regional Distribution Center - Uxbridge, MA
- Amazon Distribution Center - Middleborough, MA
- The Point - Littleton, MA

Senior Living/Healthcare
- Oak Hill Community - Attleboro, MA
- All American Assisted Living - Wareham, MA
- Oak Point - Middleborough, MA

Public/Municipal
- City of Boston Public Facilities - House Doctor Program
- Peer Review Services - East & West Bridgewater, MA
- Peer Review Services - Tyngsborough, MA

Sports & Recreation
- Peterson Pool - Braintree, MA
- Thayer Sports Center -Braintree, MA
- Boston Sports Institute - Wellesley, MA

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ALLEN & MAJOR ASSOCIATES, INC.

Paul G. Matos, PE, PLS

Project Manager

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pmatos@allenmajor.com

EXPERIENCE

A&M - 7 Years
Overall - 26 Years

EDUCATION

1996, B.S., Civil Engineering, University of Massachusetts, Dartmouth

2018, Professional Land Surveying Certificate Program, Wentworth Institute of Technology

REGISTRATIONS

Professional Engineer —
MA (52850)
NH (15103)
RI (PE.0011939)

Professional Land Surveyor
MA (55454)

Certifications —
MA Soil Evaluator (SE1511)
MA Title 5 System Inspector (SI3733)

allenmajor.com

Team Role: Project Manager

Paul Matos serves as a Project Manager within the Civil Engineering Division at Allen & Major Associates, Inc. Paul's extensive experience includes conducting zoning analysis and preparation of site development plans to include layout, erosion control, drainage, grading, and utilities. Paul's sustainable approach to drainage analysis, and the subsequent design of stormwater management systems, makes him a valuable member of the development team. Additionally, Paul provides construction administration services, which includes shop drawing approvals, pay requisitions, and preparation of responses to RFI's. Paul is responsible for preparing various reports, such as feasibility, drainage, impact statements, and SWPPP, applications, letters, construction documents, specifications, cost estimates, quantity takeoffs, and client proposals.

PROJECT EXPERIENCE

Residential

- Alta Union House - Framingham, MA
- Noquochoke Village - Westport, MA
- The Oasis at Plymouth - Plymouth, MA
- The Westerly at Village Forge - Franklin, MA

Commercial/Mixed-Use

- Fairfield Inn - Plymouth, MA
- Homewood Suites - Needham, MA
- Amazon - Middleborough, MA
- Southcoast Market Place - Fall River, MA
- The Chocolate Factory - Mansfield, MA

Senior Living/Healthcare

- All American Assisted Living - Wareham, MA

Public/Municipal

- Herring Cove Beach - Provincetown, MA
- Peer Reviewer - West Bridgewater and Tyngsborough, MA

Specialty

- BASF Facility - Plainville, MA
- Boston Scientific - Conventry, RI
- Thayer Sports Center - Braintree, MA
- Wellesley Sports Center - Wellesley, MA
- Vertex Pharmaceuticals - Providence, RI

ALLEN & MAJOR ASSOCIATES, INC.

Joseph Sanda

Project Designer

10 Main Street
Lakeville, MA 02347

(508) 923-1010 Ext. 9471

jsanda@allenmajor.com

EXPERIENCE

A&M - 3 Years
Overall - 3 Years

EDUCATION

2019, B.S., Civil Engineering, Minor in Sustainability, University of Massachusetts, Dartmouth

REGISTRATIONS

Certifications —

MA Title 5 System Inspector (SI14528)

Team Role: Project Designer

Joseph Sanda serves as a Project Designer within the Civil Engineering Division at Allen & Major Associates, Inc. With a focus on sustainability, Joe is committed to providing resilient design solutions utilizing renewable resources and innovative designs in order to preserve the natural environment and offer "green" elements within a project. As a Project Designer, Joe works closely with A&M's Project Managers and Project Engineers to prepare design plans, progress reports, and permitting documents for each project that he undertakes.

Joe is heavily relied on for providing site inspections to observe and verify conformance with the approved plans and specifications. He has the ability to see possible issues and provide mitigation direction eliminating delays.

PROJECT EXPERIENCE

Residential

- Cranberry Highway - Rochester, MA
- Home Depot Drive - Plymouth, MA
- Ledgeview Way - Wrentham, MA
- Oak Hill - Attleboro, MA
- Oak Point - Middleborough, MA
- The Chocolate Factory - Mansfield, MA

Commercial

- 123 Felton Street - Marlborough, MA
- Mount Royal Office Park - Marlborough, MA
- Chick-Fil-A/Southcoast Marketplace - Fall River, MA

Industrial:

- 1021 Boston Road - Springfield, MA

Specialty

- Senior Living Community - Ashland, MA
- Wellesley Sports Center - Wellesley, MA

allenmajor.com

REFERENCES

5. References

1. Town of West Bridgewater, Massachusetts

Conservation Commission
Katherine Doherty, Secretary
65 North Main Street
West Bridgewater, MA 02379
(508) 894-4073
kdoherty@wbridgewater.com

2. Town of West Bridgewater, Massachusetts

Conservation Commission
John Delano, Conservation Agent
65 North Main Street
West Bridgewater, MA 02379
(508) 894-4073
jdelano@wbridgewater.com

3. Town of East Bridgewater, Massachusetts

Conservation Commission
Kim Eldridge, Commisission Clerk
175 Central Street
East Bridgewater, MA 02333-0386
(508) 3748-1600
jdelano@wbridgewater.com

4. Town of Durham, New Hampshire

Department of Public Works
April Talon, PE, Town Engineer
100 Stone Quarry Drive
Durham, NH 03824
(603) 868-5578

*Additional references for sub-consultants are provided within their respective section

REQUIRED DOCUMENTS

ATTACHMENT A – Required Submission Form

SUBMISSION FOR: Peer Engineering Consulting Services for the Town of Wareham

Company Name: Allen & Major Associates, Inc.

Individual Contact Name: Philip L. Cordeiro, PE

Title: Branch Manager

E-Mail pcordeiro@allenmajor.com

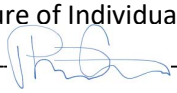
Address: 10 Main Street, Lakeville, MA 02347

Company Address: _____

Phone: (508) 923-1010 Ext.9473

Fax: (508) 923-6309

Signature of Individual Authorized to Submit:



Print Name: Philip L. Cordeiro, PE

ATTACHMENT B CERTIFICATE OF NON-COLLUSION FORM The undersigned certifies under penalties of perjury that this bid has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, entity, or group of individuals.

Timothy J. Williams, PE (Name of person signing)

Allen & Major Associates, Inc. (Name of business)

ATTACHMENT C TAX COMPLIANCE CERTIFICATION Pursuant to M.G.L. Ch. 62C, Sec. 49A, I certify under the penalties of perjury that I, to my best knowledge and belief, I am in compliance with all laws of the Commonwealth relating to taxes, reporting of employees and subconsultants, and withholding and remitting child support. Timothy J. Williams, PE (Name of person signing) Allen & Major Associates, Inc. (Name of business)

ATTACHMENT D – Certificate of Authority Meeting of Board of Directors At a meeting of the Directors of the Allen & Major Associates, Inc. duly (Corporation) called and held at 100 Commerce Way, Woburn, MA on the 5th day of February, in the 2022 year at which a quorum was present and acting, it was voted, That Timothy Williams the Secretary of this (name) (title/position) Corporation is hereby authorized and empowered to submit, make, enter into, sign, seal and deliver, on behalf of this Corporation a Contract for Peer Review Engineering Consulting Services (brief description) with the Town of Wareham, and to issue any response, performance, or payment bonds if required in connection with such Contract. I hereby certify that the above is a true and correct copy of the record, that said vote has not been amended or repealed and is in full force and effect as of this date, and that Timothy Williams is duly elected Secretary of this Corporation. _____ _____ Clerk or Secretary of the Corporation

ATTACHMENT E INSURANCE REQUIREMENTS

1. The selected firm shall purchase and maintain such insurance as will protect the firm from claims set forth below which may arise out of or result from the Firm's operations under the Contract, whether such operation be by itself or by any subconsultant or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.

1.1 Claims under Worker's Compensation, disability benefit and other similar employee benefit acts;

1.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of its employees, and claims insured by usual personal injury liability coverage;

1.3 Claims for damages because of bodily injury, sickness or disease or death of any person other than its employees, and claims insured by usual person injury liability coverage; and

1.4 Claims for damages because of injury to or destruction of tangible property, including loss of use resulting therefrom.

2. The insurance required by the above shall be written for not less than the following minimum limits of liability:

Comprehensive liability, including $1,000,000 per occurrence bodily and personal injury, property damage, and contractual liability $3,000,000 aggregate

Automobile comprehensive liability $1,000,000 per occurrence to include owned, hired, and non-owned vehicles and equipment $3,000,000 aggregate

In addition, during the entire Contract Period, the Consultant, at its own expense, shall maintain for its employees all Workers Compensation coverage required by Massachusetts Law.

3. The above insurance policies shall also be subject to the following requirements:

3.1 Certificates of Insurance acceptable to the Town shall be addressed to and filed with the Town prior to commencement of work. Renewal certificate shall be addressed to and filed with the Town at least ten (10) days prior to the expiration date of required policies.

3.2 No insurance coverage shall be subject to cancellation without at least thirty (30) days prior written notice forwarded by registered or certified mail to the Town. The Town shall also be notified of the attachment of any restrictive amendment to the policies.

3.3 All Certificates of Insurance shall contain true transcripts from the policies, authenticated by the proper officer of the insurer, evidencing in particular those insured, the extent of the coverage, the location and operations to which the insurance applies, the expiration date and the above mentioned notice clauses.

3.4 All premium costs shall be incidental to the cost of the work.

ATTACHMENT F – Evaluation Worksheet
RESPONDENT:_____
EVALUATOR:_____

Rating Key:

• Highly Advantageous (HA) – Response excels on specific criterion (11+Years)

• Advantageous (AD) – Response fully meets the evaluation standard which has been specified (6-10 Years)

• Not Advantageous (NA) – Response does not fully meet the evaluation standard, is incomplete or unclear, or both (1-5 Years)

• Unacceptable (UA) – Response does not meet the specific criterion (0 Years)

Selection Criteria (From RFQ):

a) Experience working with municipalities in similar situations including references HA / AD / NA / UA

Comments:

_____

b) Experience of firm in areas of technical expertise HA / AD / NA / UA

Comments:

_____

c) The number and experience of the proposed staff to projects and tasks assigned by the Town HA / AD / NA / UA

Comments:

_____

d) Quality, clarity and responsiveness of the HA / AD / NA / UA

Comments:

_____

e) Degree to which the information submitted is relevant to the needs of the Town HA / AD / NA / UA

Comments:

_____

ALLEN-1 OP ID: BC

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 09/13/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Poole Professional B&B of MA 107 Audubon Rd, #2, Ste 305 Wakefield, MA 01880 Christopher A. Poole 781-245-5400	CONTACT NAME: Christopher A. Poole PHONE (A/C, No, Ext): 781-245-5400 FAX (A/C, No): 781-245-5463 E-MAIL ADDRESS:
INSURED Allen & Major Associates Inc. 100 Commerce Way Suite 5 Woburn, MA 01801	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A : Sentinel Insurance Co. — 11000 INSURER B : Hartford Accident & Indemnity — 22357 INSURER C : XL Specialty Insurance Company — 37885 INSURER D : INSURER E : INSURER F :

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY							
	CLAIMS-MADE X OCCUR			08SBAAA9849	03/15/2022	03/15/2023	EACH OCCURRENCE	$ 1,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 1,000,000
							MED EXP (Any one person)	$ 10,000
							PERSONAL & ADV INJURY	$ 1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$ 2,000,000
	POLICY X PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$ 2,000,000
	OTHER:							$
B	AUTOMOBILE LIABILITY							
	X ANY AUTO			08UECAY5012	03/15/2022	03/15/2023	COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
	OWNED AUTOS ONLY X SCHEDULED AUTOS						BODILY INJURY (Per person)	$
	X HIRED AUTOS ONLY X NON-OWNED AUTOS ONLY						BODILY INJURY (Per accident)	$
							PROPERTY DAMAGE (Per accident)	$
								$
A	X UMBRELLA LIAB X OCCUR			08SBAAA9849	03/15/2022	03/15/2023	EACH OCCURRENCE	$ 6,000,000
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$ 6,000,000
	DED X RETENTION $ 10,000							$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N						X PER STATUTE OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? N (Mandatory in NH)	N / A		08WECEI3212	03/12/2022	03/12/2023	E.L. EACH ACCIDENT	$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	$ 1,000,000
C	Arch/Eng Prof Liab			DPR9993121	05/30/2022	05/30/2023	Per Claim	2,000,000
	incl Pollution						Aggregate	5,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

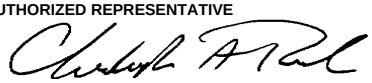
CERTIFICATE HOLDER TOWARE2

Town of Wareham
Town Hall
54 Marion Road
Wareham, MA 02571

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE



Hourly Rates

Principal	$180.00/Hour
Senior Project Manager	$150.00-$170.00/Hour
Project Manager	$135.00-$160.00/Hour
Sr. Project Engineer-in-Training	$125.00-$135.00/Hour
Project Engineer/Landscape Architect-in-Training	$100.00-$130.00/Hour
Survey Crew Chief	$100.00/Hour
Survey Technician/CADD Technician	$85.00-$135.00/Hour
Survey Crew Member	$75.00/$100/Hour
Project Designer	$80.00-$100.00/Hour
Project Coordinator/Administrative Staff	$80.00/Hour
Intern/Co-op	$75.00/Hour
2 Person Survey Crew	$180.00/Hour
3 Person Survey Crew	$275.00/Hour
RTK/GPS Survey Crew	$125.00/Hour
Court Appearance/Expert Testimony	
Preparation of Case and Court Appearance	$250.00/Hour
Miscellaneous Reimbursable Expenses	
Mileage: Automobile	$0.585/Mile
Survey Vehicle	$0.90/Mile
Outside Consultant Services	Cost +10%
Out of Pocket Expenses	Cost +10%
Permit Fees	Cost +3%

RELEVANT PROJECT EXPERIENCE

Relevant Projects

A&M provides design services to a wide array of Clients. A sampling of relevant projects that are municipally based are noted below. Additional examples can be provided upon request.

Town of East Bridgewater Conservation Commission

A&M has been used as an on-call peer review engineer for the Town's Conservation Commission. A&M's role was to provide engineering review of an application made before the Commission and denote compliance with the local regulations, the Wetlands Protection Act, and standard engineering practice. In completing seven (7) individual peer reviews with the Commission, A&M's role included reviewing the submitted materials, identifying completeness of information, providing a written summary of findings on each application that is used by the applicant team, and attendance at the Commission's public hearing, if desired. All peer review projects were completed on a lump sum basis, however, A&M remained flexible to additional tasks as may have been necessary during the review, including site visits and observing stormwater test pits.

Properties reviewed included:

401 West Street

0 West Street

457 Oak Street

427 North Bedford Street

798 North Bedford Street

848 North Bedford Street

906 North Bedford Street

Relevant Projects

Town of West Bridgewater Conservation Commission

A&M's services in West Bridgewater were similar in nature to those provided within the Town of East Bridgewater - acting as an on-call peer review engineer for the Town's Conservation Commission. A&M's role was to provide engineering review of an application made before the Commission and denote compliance with the local regulations, the Wetlands Protection Act, and standard engineering practice. In completing six (6) individual peer reviews with the Commission, A&M's role included reviewing the submitted materials, identifying completeness of information, providing a written summary of findings on each application that is used by the applicant team, and attendance at the Commission's public hearing, if desired. All peer review projects were completed on a lump sum basis, however, A&M remained flexible to additional tasks as may have been necessary during the review, including site visits and observing stormwater test pits.

Properties reviewed included:

0 South Elem & Lincoln Street

0 Brooks Place

5 Manley Street

400 Manley Street

405 West Street

Scotland & Maple Street

ALLEN & MAJOR ASSOCIATES, INC.

STAY CONNECTED

Woburn, MA: (781) 935-6889

Lakeville, MA: (508) 923-1010

Manchester, NH: (603) 627-5500

Or email an inquiry to: info@allenmajor.com

allenmajor.com