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June 7, 2018

Mr. David R. Consigli
Milford Zoning Board of Appeals
52 Main St
Milford, MA 01757

**Re: Birch Street Place, Milford, MA
Review of Comprehensive Permit Application (40B)**

Dear Members of the Milford Zoning Board of Appeals:

As requested by the Milford Zoning Board of Appeals (ZBA), Comprehensive Environmental Inc. (CEI) has provided a technical review of the Birch Street Place Comprehensive Permit (MGL Ch. 40B) application. This letter provides a summary of our initial comments regarding documents furnished by both the Town of Milford and Applicant to CEI for our review.

Please note that CEI's review focuses on environmental (including drainage) and traffic aspects of the project. The traffic component of our review is being conducted under sub-contract to BSC Group. Milford Town staff, other consultants, and the Milford Water Company are conducting reviews of the other aspects of the project, such as water supply capacity and services, and land-use planning considerations.

CEI has based the review on the following information found on the Town of Milford's webpage dedicated to the Birch Street Place project:

1. A Comprehensive Permit Application entitled "Birch Street Place, Milford, MA", dated April 6, 2018 and prepared by 88 Corp.
2. Civil design drawings entitled "Birch Street Place, in Milford Massachusetts", dated March 29, 2018 and prepared by Allen Engineering & Associates, Inc. The drawing set consists of 14 sheets.
3. A technical report entitled "Drainage Analysis for Birch Street Place Apartment Complex in Milford, Massachusetts", dated June 3, 2018, prepared by Allen Engineering & Associates, Inc, provided by the Applicant.

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4. Birch Street Place project feedback letters from Milford's Town departments, Milford Water Company, and a letter from Tata & Howard sent to the ZBA in November and January 22, 2018.
5. Notice of Intent 223-1127 for the land clearing, filed July 1, 2017, provided by the Applicant.
6. Order of Conditions (NOI 223-1127) for land clearing at the project site, signed August 22, 2017, provided by the Applicant.

CEI staff participated in a site visit to view existing conditions on May 24, 2018. We offer the following comments from our review of the referenced materials:

A. Related Environmental Permitting Required for the Project

Please note that in addition to the Comprehensive Permit 40B, the project must comply with regulatory requirements under a number of state and federal environmental programs. The Applicant will be required to pursue the following state and federal permits:

1. Review under the Massachusetts Environmental Policy Act (MEPA) is required when one or more of the review thresholds have been exceeded, per 301 CMR 11.00. Based on the current design, the following review thresholds have been exceeded and will require filing of an Environmental Notification Form (ENF) and "other MEPA review if the Secretary so requires."
 - a. The design proposes the construction of 324 new parking spaces. The review threshold for the construction of new parking is 300 spaces in a single area.
 - b. The design proposes the development of over 7 acres (300,000 sq. ft.) of impervious area. The review threshold is 5 acres (217,800 sq. ft.) of new impervious area.
2. The proposed project includes permanent impacts to Wetland Resource Areas and Buffer Zone as defined under the Massachusetts Wetlands Protection Act (WPA), and will therefore require WPA permitting under jurisdiction of the Milford Conservation Commission. This review will require submittal of more detailed information with regard to (1) the final design location and area of wetland impacts, (2) how these impacts have been avoided, minimized, and mitigated, and (3) design specifications for

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all proposed wetland mitigation areas (e.g., grading, soils, planting plan, connectivity to existing wetlands, etc.). As part of this documentation, the Applicant will need to show compliance with the Massachusetts Stormwater Management Standards.

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3. Under Section 404 of the federal Clean Water Act, a permit is required to discharge dredged or fill material to navigable waters. The Applicant proposes to construct crossings over wetlands and an intermittent stream that will include fill material. In general, new permanent stream crossings are eligible for Self-Verification if designed in compliance with the "Permanent Crossings in Non-Tidal Streams" section of "Stream Crossing Best Management Practices (BMPs)" prepared by the U.S. Army Corps of Engineers-New England District. The document can be located at the following address:

<http://www.nae.usace.army.mil/Portals/74/docs/regulatory/StateGeneralPermits/NEGP/BMPStreamCrossings21Jan2015.pdf>

4. A National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) is required from USEPA for construction activities that disturb over one acre of land.

B. Environmental Resource Areas

The project will require review by the Milford Conservation Commission under the WPA regulations and will need to address impacts to all regulated resource areas.

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1. The site includes six potential vernal pools and vegetated wetlands (isolated and bordering). Following the site visit, CEI received information confirming that the potential vernal pools are active breeding areas for obligate (OBL) and facultative (FAC) vernal pool species, including spotted salamander (OBL), wood frogs (OBL), and spring peepers (FAC), as documented in a page enclosed within the Notice of Intent (NOI) entitled, "Vernal pool species search April 13, 2017, Milford Birch St Site". This page and the associated drawing indicate that the potential vernal pools (2, 3, 4, and 5) on the site meet the biological criteria of "vernal pool habitat" in the WPA regulations and associated criteria for certification through the Massachusetts Natural Heritage and Endangered Species Program (NHESP). CEI notes that no photographic evidence (or other evidence such as video or audio recording of chorusing) of the species



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listed above was provided within the NOI, as is typically required for NHESP vernal pool certification when breeding evidence is submitted as documentation of biological criteria.

Under the Massachusetts Stormwater Handbook and 314 CMR 4.00, vernal pools are considered Outstanding Resource Waters, which are categorized as critical areas. Based on the reported presence of adult obligate species (spotted salamander) at vernal pool 7 and breeding evidence of obligate species at vernal pools 2, 3, 4, 5, 6, and 7, CEI recommends that the ZBA require that these potential vernal pools be considered as critical areas although they areas have not yet been formally certified by the NHESP. As such, we recommend that Stormwater Standard 6 should apply, and that NHESP certification of the vernal pools should be obtained as soon as is feasible. Drainage to critical areas triggers specific requirements in the design of stormwater BMPs; please refer to E.1 for additional information.

2. During the site visit, CEI observed a hydrologic connection between the northeast potential vernal pool and the bordering vegetated wetland at the location of the wetland fill for the proposed access road. The hydrologic connection was observed as a stream running along the property line with Bircheler's Automotive. This connection is not shown on the drawings. A culvert and stream crossing should be provided at the access road. Additionally, CEI observed that the apparent wetland limits may extend into this stream, beyond the current shown wetland delineation as shown on the existing plan set, based on observation of hydrologic features and bordering hydrophytic vegetation.

Stream crossings must be designed to meet the Massachusetts River and Stream Crossing Standards. Width must be 1.2 times the bankfull width of the stream.

3. It appears that the plans propose to fill bordering vegetated wetlands in at least two locations and part of a stream. The plans should clearly identify the extent of the wetland fills with the use of hatch marks. The total area of wetland fill and any associated temporary (construction phase) impacts to wetlands that are anticipated should be documented in the technical report.



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4. In the NOI 223-1127 (for land clearing activities), 180 linear feet of bank and 1211 square feet of bordering vegetated wetlands are shown as a temporary alteration. However, the current plans show permanent wetland impacts without any plans for wetland mitigation as required per the WPA. The future NOI for the final design should clearly indicate that these wetland impacts are permanent, and should provide a detailed wetland mitigation plan including details and specifications for grading, soils, plantings, construction sequencing, erosion controls, etc.

Regarding proposed impacts to bank, the WPA threshold for assumed impact to wildlife habitat is 50 linear feet, per CMR 10.54(4)(a)5. The proposed development appears to exceed this threshold and as such will require a wildlife habitat evaluation as part of the NOI.

5. The application does not discuss the disturbance impacts for the space required to install retaining walls.

C. General Comments

1. During the site visit, CEI observed that the site was nearly completely cleared of vegetation and that temporary stormwater basins were constructed. Typically, construction should not occur until final design drawings are issued for construction stamped and sealed by a registered professional engineer in the State of Massachusetts, a site review has been completed, and a building permit is issued.
2. The technical report does not discuss the applicability and compliance with each of the ten stormwater standards.
3. The current drawings, dated 3/29/2018, precede the issuance of the technical report, dated 6/3/2018. Therefore, the drawings should be revised based on the conclusions determined in said report.
4. In the technical report, page i, please revise the following sentence: "In general, the site's topography flows from a high point in the west to a low point to the *east*."

D. Stormwater Management Design

1. The following comments are in regards to the subsurface investigations:



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- a. Large rocks were consistently found within the test holes that caused refusal of the test hole. It is unclear if these large rocks are bedrock. There must be a 2ft separation between the bottom of the infiltration structure to the infiltration basin.
- b. The western infiltration basin (Pond 2P) has a bottom elevation of 306.5ft, while the adjacent wetland has a bottom elevation of 306ft. Additionally, there must be at least a 2ft separation between the bottom of the infiltration structure to the seasonal high groundwater and/or bedrock. Review of the subsurface investigations and grading, summarized below, show that these requirements are not met.

Test holes at west (open-air) infiltration basin			
	DTH-2	DTH-3	DTH-4
Approx. Starting Elevation (ft)	310	312	308
Estimated Seasonal high groundwater	54in deep or EL. 305.5ft (apparent top of bedrock 305.5ft).	56in deep or EL. 307.3ft (apparent top of bedrock at 307.3ft).	40in deep or EL. 304.7ft (found standing water at 40in)

- c. Based on email correspondence with the design engineer, test hole 7 and 8 incorrectly show that rock was encountered at the bottom of the hole. It appears that no bedrock was encountered during the investigation. Please revise these test hole logs accordingly.
- d. The bottom elevation of the east infiltration basin (EL. 252ft) does not have adequate separation to groundwater as shown in the material reviewed and summarized below. There should be 2ft of separation between the bottom of the basin and groundwater table.

Test holes at east (open air) infiltration basin (along access road)		
	DTH-7	DTH-8
Approx. Starting Elevation (ft)	255	255
Estimated Seasonal high groundwater	38in deep or EL. 251.8ft	40in deep or EL. 251.7ft

Based on the depth to seasonal high groundwater at the location of the east infiltration basin, the use of a constructed stormwater basin



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may be a more appropriate BMP if it is able to meet all of the design criteria presented in the MA Stormwater Handbook.

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2. As previously recommended in comment B.1, CEI believes the site should be considered a critical area and that Stormwater Standard 6 should apply. Per table CA 2 of the MA Stormwater Handbook, "Stormwater BMPs must be set back 100' from a certified vernal pool and comply with 310 CMR 10.6031. Proponents must perform a habitat evaluation and demonstrate that the stormwater BMPs meet the performance standard of having no adverse impact on the habitat functions of a certified vernal pool." Currently, as designed, the stormwater BMPs (4P and 2P) are shown within 100ft of adjacent vernal pools.
3. The dog park elevation is set at EL. 310ft, which is apparently the same elevation as the banks of the nearby vernal pool.
4. It appears possible that stormwater drainage from the dog park could adversely impact the vernal pools. CEI recommends the use of a stormwater BMP to intercept drainage containing animal waste in order to protect vernal pool habitat.
5. The infiltration basins do not show the location of emergency spillways. In general, any emergency spillway should be constructed in existing ground (not in fill). If this is not feasible, design of an appropriate emergency outlet structure should be provided. The design should also address potential erosion impacts down-gradient of the spillway.
6. CEI recommends that the spillway capacity should be designed by hydrologically routing the 100-year storm through the basin with the principal spillway in failure (zero flow through principal spillway and zero infiltration). Top of embankment elevation should be 1 foot higher (at least) than the water elevation in the basin during this event, plus the required allowance for post construction settlement.
7. CEI recommends that the ZBA require the design of BMP embankments (top widths, side slopes, materials, allowance for settlement, etc.) and emergency spillways (in original ground, side slopes, etc.) to comply with the standards found on pages 140-144 of the following reference: <https://www.mass.gov/files/documents/2016/08/qz/esfull.pdf>.



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8. The spillway detail on the details drawing should show the concrete sill extending well into the embankment beyond the limits of the spillway. Otherwise, impounded water may short-circuit around the ends of the sill.
9. The Applicant has requested waivers of provisions of the Town of Milford's Stormwater Management By-law. We recommend that the ZBA deny the requested waivers, other than those providing for the ZBA to act as issuing authority for construction approvals required under the bylaw.
 - a. The design requirements under this bylaw are consistent with the Massachusetts Stormwater Management Standards under the Wetlands Protection Act Regulations, with which the Applicant must comply, so the bylaw does not impose a greater burden on the design than otherwise applies.
 - b. In addition, this bylaw enables the Town of Milford to comply with its obligations to the USEPA under the NPDES Stormwater Program, General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s). That permit requires Milford to regulate stormwater discharges, including enforcement of ongoing maintenance of systems extending beyond the initial development and construction of the project stormwater facilities. Waiver of this bylaw may hamper the Town's ability to manage stormwater discharges in compliance with its federal permit over the long term.
 - c. A properly designed stormwater management system is critical to the protection of property and water resource areas for a project of this scale. Given this, CEI recommends the ZBA, as issuing authority relative to the local stormwater bylaw, require the Applicant to document compliance with the Massachusetts Stormwater Management Standards and Massachusetts Stormwater Handbook as a part of the Comprehensive Permit review.
10. The plans do not show the proposed location of snow storage.
11. On the "Grading, Drainage, & Erosion Control Plan", there is an incorrect leader for the retaining wall at contour EL. 270ft and Bircheler's Automotive.



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E. Stormwater Management Calculations

1. As stated in comment B.1, vernal pools 2, 3, 4, 5, 6, and 7 appear to meet the biological criteria for NHESP vernal pool certification and the associated categorization as an Outstanding Resource Waters and critical area. Therefore, CEI recommends the ZBA require that Standard 6 applies and that the water quality volume used in the calculations is 1-inch times the impervious area, not 0.5-inch.
2. Based on the number of vehicle trips found in the traffic report, CEI agrees that the site should be considered a Land Use with Higher Potential Pollutant Load (LUHPPL), and that at least 44% of the TSS must be removed prior to discharge to infiltration.
3. The calculation model uses a single analysis point that may not be completely accurate or provide enough information to fully understand the proposed changes to this site. Based on the topography, it appears that the calculation should use more than one analysis point. In the existing condition, some of the stormwater will drain over land in a sheet flow east toward the fire station and vernal pool, west to the vernal pool, and south to the BVW. In the proposed conditions, the BMP outfalls are directed to the same aforementioned resource areas. CEI believes each of these resource areas should be separate analysis points and that the calculation should be resubmitted for review after implementing this modeling approach before the ZBA's approval of the technical report.
4. Based on site topography it appears that some stormwater might drain from north of the property line (from Birch Hill Condominiums) onto the proposed site but was apparently not included in the calculation. This additional stormwater may affect the sizing of the BMPs. The drawings should show grading north of the site.
5. A mounding analysis is required for the attempt to infiltrate in areas with less than 2ft of separation between groundwater table and the bottom of an infiltration basin structure (Basins 2P and 6P).
6. CEI recommends that the ZBA They require the Applicant to provide calculations showing the stormwater structure outlets are non-erosive.

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F. Construction-Related Issues

1. From observations during our site visit, the property appears to be very stony, with very large boulders and outcrops evident. Site construction will likely require rock removal operations, including potential blasting and crushing activities. We recommend the ZBA require the applicant to address how rock removal will be accomplished during construction, including documentation of how blasting, crushing, processing, and transport of the rock material will be accomplished. Issues such as blasting management and noise management should be addressed. If excess rock must be removed from the site, the applicant should describe how the material will be disposed, and what the construction traffic impacts will be and how they will be managed.
2. It appears that there will be more than 30ft of fill in some areas of the proposed plans. The Applicant should provide information on how these fills will be installed, not only to provide proper foundations for buildings, utilities, and pavements, but also to manage stormwater, since infiltration structures are proposed within the fill material.
3. During the site visit, erosion control seemed at least partially implemented for the extent of land clearing. But, not all areas of the site have been cleared and not all erosion control installed. Additionally, the locations of erosion control appear to be missing from the "Grading, Drainage, & Erosion Control Plan", though the line type is shown on the legend.

G. Operation and Maintenance Plan

1. As discussed in Section D.5, CEI recommends that the waiver request of the Stormwater Bylaw, Article 36, should be denied, and that an Operation and Maintenance Plan (OMP) is required for this site.
2. Proprietary operation and maintenance information should be attached to the OMP regarding the Cultec Stormceptor subsurface infiltration chambers, and any other proprietary devices installed.
3. As recommended in D.1, the project is subject to Standard 6; therefore, the OMP should address shutdown and containment of the drainage system in the event of a spill.

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4. Source control and pollution prevention measures must be identified in a long-term pollution prevention plan.
5. The plans should show access points to maintain the subsurface infiltration chambers.

H. Traffic & Pedestrian Safety

CEI's subcontractor, BSC Group, has provided a technical peer review of the Traffic Impact and Access Study, including pedestrian safety on May 30, 2018.

If you have any questions or comments regarding this report, please contact either Matt Doyon or Bob Hartzel at 508-281-5160.

Sincerely,
COMPREHENSIVE ENVIRONMENTAL, INC.

Matthew P. Doyon, P.E.
Project Engineer

Robert Hartzel, CLM, CPESC
Project Manager

cc: Gerry Moody, Milford Town Council (via email)
Sam Offei-Addo, BSC Group (via email)
Kevin Lobisser, 88 Corp (via email)
Mark E. Allen, P.E., Allen Engineering & Associates, Inc. (via email)
Thomas Rebula, Goddard Consulting, LLC (via email)