

May 3, 2023

FedEx/Email (rgendreau@sturbridge.gov)

Sturbridge Conservation Commission
301 Main Street
Sturbridge, MA 01566

**Re: DEP File #CE300-1156
Blueberry Hill Estates
Lot 3 Berry Farms Road
Sturbridge, Massachusetts**

[LEC File #: MCEI\20-002.04]

Dear Members of the Commission:

On behalf of the Applicant, Justin Stelmok, LEC Environmental Consultants, Inc., (LEC) is submitting revised plans, entitled: *Special Permit and Site Plan*, prepared by McClure Engineering, Inc., last revised April 28, 2023, for the proposed 67-unit Blueberry Hill Estates. As previously reviewed, project updates include:

- Elimination of Lot 56 and reconfiguration of Unit 57, associated grading, and stormwater management at the Road B cul-de-sac to remove the permanent disturbance within the 200-foot Buffer Zone to the northerly A-series Vernal Pool.
- Reconfiguration of Lots 20 and 21 at the Road D cul-de-sac to reduce the permanent and temporary disturbance within the 200-foot Buffer Zone to the E-series Vernal Pool.
- Relocation of the rain garden outfall behind Unit 65 to maximize setback to southerly A-series Vernal Pool.
- Adding one (1) additional tree per lot for a total of one hundred and thirty-four (134) trees to be planted.

Based on Commission feedback received during the April 20, 2023 Public Hearing, additional plan revisions were made to avoid and minimize proposed Units within the 100-foot BVW Buffer Zone and 200-foot Vernal Pool Buffer Zone. Specifically, Units 53, 55, 64, and 65 were reconfigured to avoid the 100-foot BVW Buffer Zone. Unit 70 was reconfigured to avoid the 200-foot Vernal Pool Buffer Zone.

As currently proposed:

- One (1) Unit occurs within the 100-foot Buffer Zone—Unit 54 (2,420± square feet).
- Five (5) Units occur or partially occur within the 200-foot Vernal Pool Buffer Zone—Units 20, 21, 65, and 66 (all partial) and Unit 69, cumulatively totaling 5,140± square feet.

LEC Environmental Consultants, Inc.

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WAKEFIELD, MA

WORCESTER, MA

RINDGE, NH

EAST PROVIDENCE, RI



In summary, the Applicant has worked diligently to provide significant revisions to address Commission feedback. The project has been comprehensively modified to eliminate or significantly reduce the proposed disturbances within the 100-foot BVW Buffer Zone and 200-foot Vernal Pool Buffer Zone. To reiterate, the Applicant is proposing the following mitigation measures to ensure the protection of the on-site Resource Areas and associated wildlife habitat during and post-construction:

- Sedimentation & Erosion Control Plan w/Environmental Monitoring
- Stormwater Management Operations & Maintenance (O&M) Plan
- Habitat Corridor/Crossing Structure O&M Plan
- Reduced Salt Application Plan
- Vernal Pool Monitoring Plan
- Open Space totaling over 80 acres

While the project proposes 67 Units, only one (1) Unit is located within the 100-foot BVW Buffer Zone, and five (5) Units occur within the outer 200-foot Vernal Pool Buffer Zone.

The Applicant has proposed project revisions and mitigation measures that go above and beyond typical requirements. As such, the project has set an extremely high bar to ensure the protection of wetland interests and avoid any significant adverse impacts on the downgradient Resource Areas. Blueberry Hill Estates would serve to set a new precedent for project review and Resource Area protection. The Commission has permitted larger subdivisions in the past (e.g., Draper Woods-45 lots, The Preserve-71 lots, The Sanctuary-24 lots, and The Highlands-26 lots), but when compared to the more recently approved commercial and hotel development at 21 New Boston Road (plan attached depicting 11,600± square feet of impervious surface within 200-foot Vernal Pool Buffer Zone), Blueberry Hill Estates will protect a significantly greater percentage of the 200-foot Vernal Pool Buffer Zone.

The Stormwater Management Report has been updated by McClure Engineering, Inc., last revised on April 28, 2023, including expanded soil test pit information, as depicted on the site plans. Pare Corporation has also completed their third-party stormwater peer review (refer to attached May 2, 2023 Memorandum). As discussed during past meetings, the Applicant had reached out to the University of New Hampshire (UNH) Stormwater Center to review low impact development (LID) stormwater measures (rain gardens, etc.) or green stormwater infrastructure (GSI). The former Director of the UNH Stormwater Center has also provided a review of proposed stormwater management (refer to attached May 2, 2023 Streamworks Memorandum).

Thank you for consideration of this supplemental information. Please do not hesitate to contact me if you have any questions in advance of the May 11, 2023 Public Hearing.

Sincerely,

LEC Environmental Consultants, Inc.

Brian T. Madden

Senior Wildlife/Wetland Scientist

Attachment A

Special Permit and Site Plan, Prepared by McClure Engineering, Inc.,

Last Revised April 28, 2023

(Under Separate Cover)

Attachment B

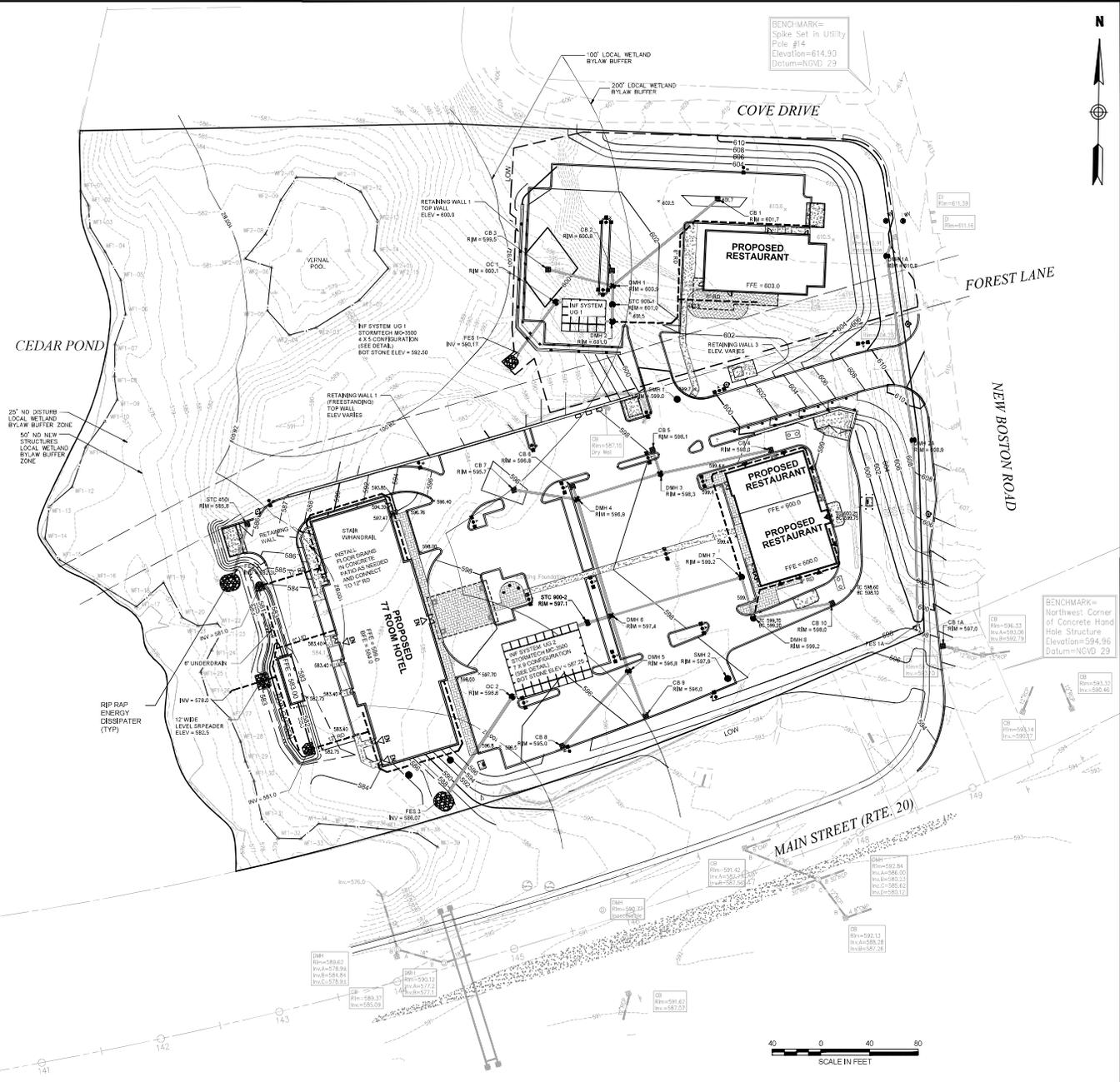
21 New Boston Road *Grading & Drainage Plan*, Last Revised 10/1/21

GRADING NOTES

- CONTRACTOR SHALL NOTIFY "DIG-SAFE" (1-888-344-7233) AT LEAST 72 HOURS BEFORE EXCAVATING.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REGULATIONS.
- ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS AND WALKWAYS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE FEDERAL AMERICANS WITH DISABILITIES ACT AND WITH STATE AND LOCAL LAWS AND REGULATIONS (WHICHEVER ARE MORE STRINGENT).
- AREAS DISTURBED DURING CONSTRUCTION AND NOT RESTORED WITH IMPERVIOUS SURFACES (BUILDINGS, PAVEMENTS, WALKS, ETC.) SHALL RECEIVE 4 INCHES LOAM AND SEED.
- WITHIN THE LIMITS OF THE BUILDING FOOTPRINT, THE SITE CONTRACTOR SHALL PERFORM EARTHWORK OPERATIONS REQUIRED UP TO PAD ELEVATION WHICH SHALL BE 10" BELOW FFE.
- WORK WITHIN THE LOCAL RIGHTS-OF-WAY SHALL CONFORM TO THE LATEST EDITION OF THE STATE HIGHWAY DEPARTMENTS STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
- UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS, AND IN THE CONTRACT DOCUMENTS. DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, AND FIRE HYDRANTS, WITHOUT APPROPRIATE PERMITS.
- AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
- IN THE EVENT THAT SUSPECTED CONTAMINATED SOIL, GROUNDWATER, AND OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL OBTAINMENT, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP WORK IN THE VICINITY OF THE SUSPECT MATERIAL TO AVOID FURTHER SPREADING OF THE MATERIAL, AND SHALL NOTIFY THE OWNER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN.
- CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS.
- DAMAGE RESULTING FROM CONSTRUCTION LOADS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
- CONTRACTOR SHALL CONTROL STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO OFF SITE AREAS, AND SHALL BE RESPONSIBLE TO REPAIR RESULTING DAMAGES, IF ANY, AT NO COST TO OWNER.
- THIS PROJECT DISTURBS MORE THAN ONE ACRE OF LAND AND FALLS WITHIN THE NPDES CONSTRUCTION GENERAL PERMIT (CGP) PROGRAM AND EPA JURISDICTION. PRIOR TO THE START OF CONSTRUCTION CONTRACTOR IS TO FILE A CGP NOTICE OF INTENT WITH THE EPA AND PREPARE A STORMWATER POLLUTION PREVENTION PLAN IN ACCORDANCE WITH THE NPDES REGULATIONS. CONTRACTOR SHALL CONFIRM THE OWNER HAS ALSO FILED A NOTICE OF INTENT WITH THE EPA.
- SET CATCH BASIN RIMS, AND INVERTS OF SEWERS, DRAINS, AND DITCHES IN ACCORDANCE WITH ELEVATIONS ON THE GRADING AND UTILITY PLANS.
 - PAVEMENTS AND CONCRETE SURFACES: FLUSH
 - ALL SURFACES ALONG ACCESSIBLE ROUTES: FLUSH
 - LANDSCAPE, LOAM AND SEED, AND OTHER EARTH SURFACE AREAS: ONE INCH ABOVE SURROUNDING AREA AND TAPER EARTH TO THE RIM ELEVATION.
- UTILITY PIPE MATERIALS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE PLAN:
 - STORM DRAINAGE PIPES SHALL BE SMOOTH LINED HDPE PIPE WITH RUBBER GASKET JOINTS UNLESS OTHERWISE INDICATED ON THE PLANS. ROOF DRAIN PIPES OUTSIDE THE JURISDICTION OF THE PLUMBING INSPECTOR SHALL BE PVC SDR 35.
 - ROOF DRAIN PIPE INSTALLATION AND MATERIALS SHALL COMPLY WITH THE STATE PLUMBING CODE WHERE APPLICABLE OR TOWN OF STURBRIDGE DPW STANDARDS. CONTRACTOR SHALL COORDINATE WITH LOCAL PLUMBING INSPECTOR/DPW DIRECTOR PRIOR TO BEGINNING WORK. ROOF DRAIN PIPE
 - ALL DRAINAGE AND SANITARY STRUCTURE INTERIOR DIAMETERS (4" MIN) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS AND LOCAL MUNICIPAL STANDARDS. FOR MANHOLES THAT ARE 20 FEET IN DEPTH AND GREATER, THE MINIMUM DIAMETER SHALL BE 5 FEET.
 - NEW CATCH BASINS SHALL BE "DEEP SUMP" CATCH BASIN WITH HOOD AND MINIMUM SUMP DEPTH OF 4 FEET.
- SUBSURFACE STORMWATER INFILTRATION NOTES:
 - FILL MATERIAL USED TO PREPARE SUBGRADE SHALL BE GRANULAR STRUCTURAL FILL MEETING MA DOT STANDARD FOR DENSE GRADED CRUSHED STONE (MHD M2.01.07). PLACE OF SUBGRADE FILL SHALL EXTEND OF MINIMUM 5 FEET IN ALL DIRECTIONS OF THE SYSTEM.
 - THE DESIGN ENGINEER INSPECT CONSTRUCTION OF THE SYSTEM. AT A MINIMUM THE DESIGN ENGINEER SHALL INSPECT: BOTTOM PREPARATION; PLACEMENT OF SUBGRADE FILL MATERIALS; AND INSTALLATION OF STONE BEDDING. ADDITIONAL INSPECTIONS SHALL BE PERFORMED AS NOTED ON SHEET C-8.
 - SEE DETAILS SHEETS FOR ADDITIONAL REQUIREMENTS.
- RETAINING WALLS 1-3

RETAINING WALL 2 SHALL BE PRECAST CONCRETE PRESTRESSING GUARDRAIL WALL MANUFACTURED BY RECON OR APPROVED EQUAL. STYLE AND DESIGN SHALL BE "NORTH SHORE GRANITE". STAMPED ENGINEER DRAWINGS OF THE WALL SYSTEM SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT PRIOR TO CONSTRUCTION.

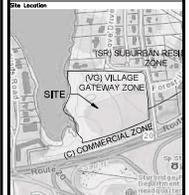
RETAINING WALL 1 & 3 SHALL BE PRECAST CONCRETE GRAVITY RETAINING WALL MANUFACTURED BY RECON OR APPROVED EQUAL. STYLE SHALL BE "NORTH SHORE GRANITE". STAMPED ENGINEER DRAWINGS OF THE WALL SYSTEM SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT PRIOR TO CONSTRUCTION.



BENCHMARK= Spike Set in Utility Pole #14
Elevation=614.90
Datum=NGVD 29



Prepared By
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Prepared For
Owner/Applicant:
Om Shri Ambika, LLC
Jayesh Patel
208 Main Street
Sturbridge, MA 01518
Phone 774 221-0038

DATE: Feb 27, 2014 SCALE: 1" = 40'

No.	Revision	Date
10	RESTAURANT PAD	10/1/12
11	TOWN COMMENTS	8/7/18
12	PLAN REVIEW COMMENTS	1/27/18
13	PLAN REVIEW MODIFICATIONS	9/22/17
14	RESTAURANT WATERCANT	8/6/17
15	EV CHARGING STATIONS	4/25/17
16	SITE PLAN REV.	12/15/14

Project Title
Hotel Redevelopment Plan

21 New Boston Road
Sturbridge, MA

Permit

Not for Construction

Project Name
GRADING & DRAINAGE PLAN

Sheet No.
C-2

Attachment C

Revision 2 Submittal Memo (5/1/23) and Stormwater Management Report,

Prepared by McClure Engineering, Inc., Last Revised April 28, 2023

(Under Separate Cover)

Attachment D

Pare Memorandum, Dated May 2, 2023



MEMORANDUM

DATE: May 2, 2023

TO: Jean Bubon, AICP, Town Planner
Rebecca Gendreau, Conservation Agent

CC: file

FROM: John P. Shevlin, P.E.

**Re: Engineering Review Services
Blueberry Hill Estates-Site Plan & Special Permit
30 Main Street/20 Fiske Hill Road
4th Review
Sturbridge, Massachusetts
(Pare Project No.: 22088.00)**

Pare Corporation had completed our review of the latest documents provided by McClure Engineering which include the following:

- *Special Permit and Site Plans- Blueberry Hill Estates-55+ Manufactured Housing Community-Lot 3 Berry Farms Road*, dated April 28, 2023, prepared by McClure Engineering, Inc.
- *Stormwater Management Report – “55+ Manufactured Housing Community” – Lot 3 Berry Farms Road*, dated April 28, 2023, prepared by McClure Engineering, Inc.
- *Revision 2 Submittal Memo-55+ Manufactured Housing Community – Justin Stelmok – Blueberry Hill Estates – Lot 3 Berry Farms Road*, dated May 1, 2023, prepared by Peter C. Engle, P.E.

The revisions included within this submittal were based on comments received from the Conservation Commission meeting held on March 30, 2023. The significant revisions stated to be included in the submission are the following:

- Revisions of Units 20 and 21 to reduce impacts within the 200' buffer
- Revisions to Units 53 and 55 to remove structures from the 100' wetland buffer
- Removal of Unit 56 and revisions to the grading, drainage, limit of disturbance and the removal of proposed retaining walls that was performed to reduce the impact within the 200 foot vernal pool buffer
- Revision to Unit 57 to reduce the impact to the 200 foot vernal pool buffer
- Revisions to Units 64 and 65 to remove the structures from the 100' wetland buffer
- Revision to Unit 70 to remove the structure from the 200' vernal pool buffer
- Additional test pits were performed
- Revisions to watershed areas based on the site revisions, and
- The addition of a minimum of one tree planting per proposed unit/lot has been added.

Based on our review, Pare offers the following comments:

PLANS

1. The applicant has added an Open Space Plan (Sheet C-32).
2. Existing Conditions Plans C-2 thru C-5- McClure Engineering performed an additional 38 test pits throughout the site. For the most part, the depth to groundwater was relatively consistent with the test pits performed in 2020. In most cases where they varied there was some additional depth to the groundwater elevation. A couple test pits did indicate less depth to 24". All of these test pits were performed by a registered professional engineer and stamped to be accurate.
3. Applicant states that Unit 53 and have been revised to remove structures from the 100' wetland buffer. Unit 53 was already out of the buffer. Please verify.

STORMWATER MANAGEMENT REPORT

1. The applicant has revised the stormwater report to account for the revised site layout design. Watershed areas and the models for the stormwater design have been revised accordingly. The applicant has maintained a conservative permeability (k) variable for soils for the the design. Based on the results of the analysis, revisions to some of the raingardens have been modified by being widened to account for the reduced infiltration capacity. Pare is in agreement with the revised grading and drainage plans, the corresponding details and the related stormwater analyses.

CONSERVATION DETAILED COMMENTS AGENDA

The following responses are to the comments raised at the March 30, 2023 Conservation Hearing:

1. *Was the Stormwater Report revised? Revision date does not reflect revision.*

The previous submission was revised but the revision date was not added. The latest submission has been revised and correctly noted (4/28/23).

2. *LEC narrative notes that mounding analysis have been added. Was this previously included?*

It is Pare's understanding that the mounding analyses were previously performed but the data was not included with previous submissions.

3. *It was noted that monitoring wells are required. Are these shown on the plans or required to be shown on the plans?*

The details do now indicate monitoring wells.

4. *Document notes NOAA data was used for storm events. This is noted in report for selection of storm events. Stormwater report notes SCS TR-20 and TR-55 for methodology and the subcatchments were modeled using these. TR-55 was used for analysis of peak flow and infiltration basin sizing. Would this sizing be based on the NOAA data? Residents have expressed concern with he potential for downstream flooding.*

The method used for the analyses is in accordance with the latest methodology for stormwater design.

5. *DEP previously commented that “Soil testing confirming the depth to seasonal high groundwater and bedrock should be provided in all areas where infiltration is proposed.” Staff reviewed the plans for test pit locations and it does not appear that each specific location of a rain garden that provides infiltration would have its own test pit. Was each test pit log recorded on a DEP Form 11 or equivalent which can be provided or has been reviewed by the peer reviewer and verified? Is there at least one test pit or boring for every 5,00 square feet of basin area with a minimum of three subsurface investigations per basin within the footprint.*

Additional test pits were recently performed at the rain garden areas and within the basin area. The information provided is in general conformance with previous data provided. The test pits were not observed by Pare. They were however confirmed and stamped by a Registered Professional Engineer and Soil Evaluator.

6. *8 house and multiple drainage structures and outlets are proposed within the 200-foot vernal pool buffer. The board can restrict development in this area. As noted in SWB Regs 365-1.4, Sturbridge has a Vernal pool buffer which states that “the first 100 feet is to be considered the minimum “no disturb buffer”. This buffer may be extended to 200 feet based on site conditions and impacts to critical wildlife habitat needed to keep the pool viable.*

Oxbow recommended that the board do so and staff support this also. Some of the drainage structures are proposed in areas of steep slopes and overflow will pick up velocity and eventually could create channels towards the wetlands. Some of these structures and outlets are located within tin 100 feet of the wetlands in which the vernal polls are located within. Impacts to water quality and hydrology of the vernal pools from stormwater runoff is a concern. Creating more distance is recommended.

The design does include means to help reduce velocity of stormwater and for dispersion of the flow. The shorter paths do also contribute to less channelization of flow which will help limit the amount of erosion.

In summary, Pare is satisfied with the revised design changes and the stormwater revisions. We are available to discuss our comments andy any other outstanding items at the next Board/Conservation Commission meeting. In the meantime, if you have any questions, please feel free to contact me.

Attachment E

Streamworks Memorandum, Dated May 2, 2023



2 May 2023

Justin Stelmok
557 Southwest Cutoff
Worcester, MA 01607

RE: Stormwater management plans and designs for Blueberry Hill Estates

Dr. Mr. Stelmok

At your request, I have reviewed the design plans (11.10.22 set and 4.28.23 set), and the Stormwater Report (4.28.23) for your referenced project. I understand that my comments may be used during conservation commission and planning board processes.

As background, I created and then served as the Director of the University of New Hampshire Stormwater Center since its inception (2002) to 2021. I am still involved with the Center; however I turned over the Directorship to a colleague. The Center developed performance characteristics for green stormwater infrastructure (GSI) and design specifications for GSI. Our performance data has been built into the latest EPA Region 1 guidance documents for stormwater management and permitting. I might also add that in addition to designing stormwater systems myself, I review stormwater management plans for many communities.

Because the University prefers that consulting requests be performed outside of the University structure, I am forwarding my comments to you via my own PLLC called Streamworks.

My review of the 11.10.22 plan set generated a number of mostly housekeeping items that I transmitted to you previously and that you have addressed. Overall, both the previous (11.10.22) plan set and the most recent plan set (4.28.23) demonstrate adherence to the concepts of Low Impact Development and specifically to the adoption of GSI. By this I mean that runoff from impervious surfaces is directed to sitewide-distributed GSI (treat the impervious surface runoff soon after it is generated and not collected into one large system). The distributed GSI not only improves runoff water quality, but is designed to infiltrate the majority of runoff, rendering the post-developed site hydrologically very similar to the pre-development site. This hydrologic similarity is further evidence in controlling the post-development peak rates of runoff to at or below pre-development peak flow rates.

I recognize that the pre-development site is relatively steep terrain, however both housing sites and stormwater management systems take advantage of the cut/fill modifications to the site, thereby locating such infrastructure itself on mild slopes. If the fill is comprised of site soils, as long as it is homogenized, and compacted in soil lifts, it should provide for primarily vertical infiltration and not break-out of downgradient slopes. In a homogeneous soil, the energy



(gradient) driving vertical infiltration is orders of magnitude higher than that driving horizontal flow. As such, unless there is a restrictive layer in the fill, infiltrated water will preferentially move vertically downward into the native soil below, rather than horizontally in the fill. Also, because of the very numerous GSI systems, the water infiltrated at each system minimizes groundwater mounding and more closely recreates the natural, undeveloped site infiltration hydrology.

I also reviewed the stormwater maintenance plan for the site and find it to be one of the more thorough I have come across. It presents both short-term and longer-term maintenance practices as well as the rationale for many of the practices.

In summary, I find the stormwater management strategy and designs for your proposed site to be well-suited to the site and more than adequate in the framework of modern stormwater management. I am confident that the proposed stormwater management plan will successfully perform long into the future.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Tom Ballestero', is written over the printed name and title.

Thomas P. Ballestero, PhD, PE, PH, PG, CGWP
Principal