UPDATE:
The application was opened at the 7/14/20 P&Z Commission meeting. The Commission requested that the applicant reconsider saving the Beech tree and to revise the landscaping plan to include a vegetative buffer along the seawall. The applicant submitted a letter from consulting arborist Allan F. Fenner who indicated that the Beech tree would not be able to withstand the impacts of construction, even if a house was built within the existing footprint. A revised landscape plan was also submitted with a proposed vegetative strip on each side of the seawall.

APPLICATION SUMMARY:
The applicant is requesting approval for a final coastal site plan to demolish the existing dwelling and construct a new single family dwelling with deck and pool on a 12,916 sq. ft. property at 11 Eggleston Lane in the R-12, AE-13 and VE-16 Flood Zones and COZ zone.

ISSUES/RECOMMENDATIONS:
1. ZEO – Issued comments dated 5/14/20 indicating endorsement for zoning permit sign off notes that the whole staircase needs to be counted at the attic level and the applicant should note the
size of the flood vents in the basement and the area size of which they drain. The applicant has noted the size of the flood vents and the area of 1,898 SF on the architectural plans and appears to have addressed this comment.

2. **PZBA** – The applicant received a variance (Appeal No. PLZE201900693) of front and street side yard setback to permit the construction of a new dwelling, pool, deck, and patio on a lot located in the R-12 zone on 2/3/20. The decision was granted due to hardship of the lot being bordered on 3 sides by a right of way, two of which are deficient in width and one is located in Long Island Sound, combined with the reduction of nonconforming setbacks.

3. **DPW Engineering** – Issued comments dated 6/24/20 indicating several comments to address prior to zoning permit sign off.

4. **SEWER** – Issued comments dated 4/28/20 indicating no comments to be addressed during the P&Z phase. The applicant should address Sewer Division comments prior to Building permit.


6. **Conservation** - Issued comments dated 5/12/20 indicating that the applicant should consider relocating the pool to the opposite side of the residence and/or push the house further away from the seawall to create a vegetative buffer. Conservation also notes that Japanese knotweed should be eradicated and the 40” dbh beech tree should be preserved or at least three native trees should be planted to mitigate the loss.

7. **DEEP** – Issued comments dated 6/17/20 indicating that the applicant addressed concerns noted in previous comments.

8. The property is existing non-conforming with deficient side yard, street side yard and front yard setbacks and a first floor elevation 7.8 feet. The proposed house would reduce the non-conformity but would still not meet the minimum setback requirements for front and street side yards.

9. The lot is bordered by streets on three sides, two of which are deficient in right of way. One is Greenwich Cove Road, an undeveloped paper road along Greenwich Cove.

10. **Beech Tree** – The applicant submitted a letter from consulting arborist Allan F. Fenner who indicated the tree would not be able to sustain its physiological and structural integrity even if a structure was built using the same footprint as the existing structure. This has been sent to the TOG Tree Warden and Conservation for review. No comments have been received as of the date of this staff report.

11. **Landscaping** – The landscaping plan was revised to include a vegetative strip along the seawall. Staff is awaiting comments from Conservation.

**DEPARTMENT COMMENTS:**

- **Zoning Enforcement** – Dated 5/14/20 – See Attached
- **Sewer** – Dated 4/28/20 – See Attached
- **Conservation** – Dated 5/12/20 - See Attached
- **DPW Engineering** – Dated 6/24/20 – See Attached
- **DEEP** – Dated 6/17/20 - See Attached

**Original Staff Report Follows:**

**APPLICATION DETAILS:**

Proposal:
The applicant is proposing to demolish the existing dwelling and construct a new single family dwelling with deck and pool on a 12,91 sq. ft. property at 11 Eggleston Lane in the R-12 zone. The property is located in the AE-13 and VE-16 Flood Zones and Coastal Overlay zone. The applicant is proposing to construct a 4,051 SF house with a first floor elevation of 14.5 feet. The existing dwelling, pool and retaining walls are proposed to be demolished. The new house would have garage and storage on grade level and flood vents.

**Existing Conditions:**
The subject parcel is currently developed with a single-family dwelling. The property is a 12,916 SF (13,666 SF to Mean High Water) lot located on the southern side of Eggleston Lane with Middle Marsh Lane being its closest cross street approximately 350 ft away. The majority of the property consists of lawn and slopes gently toward Eggleston Lane.

The property is bordered on three sides by streets, two of which are deficient in right of way, the second of which is out into Greenwich Cove. Greenwich Cove Road is an undeveloped paper road and Eggleston Lane is a private road. There is a residential property to the west.

**Zoning:**
The 12,916 SF lot is located in the R-12 and appears to be conforming with respect to lot size and shape. The property is in the AE-13 and VE-16 flood zones. The existing house is non-conforming with a first floor elevation of 7.8 feet, where a minimum first floor elevation of 14 feet would be required in the AE-13 flood zone. The house is also non-conforming with deficient side yard, street side yard and front yard setbacks. The proposed house would be located in the AE-13 flood zone with a first floor elevation of 14.5 feet. It would also be conforming with respect to the side yard setback. The applicant was granted variances for street side yard and front yard setbacks by the PZBA on 2/3/20. The proposed construction appears to meet height, floor area and greenspace requirements.

**Drainage:**
The existing home, associated surficial and underground features would be demolished and removed. There is no existing storm water collection or management system located on site. A new driveway, utilities and landscaping would be part of the re-development. Existing stormwater runoff flows from a high point located near the western end of the lot toward Eggleston Lane. No existing storm water from this lot contributes to any town storm drainage system. Development of the lot would disturb approximately half of the site.

**Conservation:**
Conservation noted concerns about the encroachment to the tidal wetland buffer by the pool, patio and lawn as well as the ecological services that would benefit the coastal habitat by restoring a vegetative buffer between the seawall and the dwelling. Conservation recommends relocating the pool to the other side of the residence and/or pushing the house further away from the seawall to create a vegetative buffer which should be planted with native shrubs and herbaceous ground cover. The Japanese knotweed should also be eradicated from the area and the 40” dbh beech tree should be preserved or at least three native trees should be planted to mitigate the loss.
APPLICABLE ZONING REGULATIONS:
§6-5. Definitions
§6-13. Site Plan approval required.
§6-14. Site Plan procedure
§6-15. Site Plan Standards.
§6-93. Residential Zones
§6-111. Coastal Overlay Zone
§6-139.1. Flood Hazard Overlay Zones
§6-205. Schedule of required open spaces, limiting height and bulk of buildings.
July 30, 2020

Ms. Bianca Dygert, Planner II
Town of Greenwich
101 Field Point Road
Greenwich, CT 06830

RE: Weitzman - PLPZ 2020 00089
    11 Eggleston Lane, Old Greenwich, CT 06870

Dear Bianca:

    At the July 14th Planning and Zoning Commission meeting the Commission asked us to retain the services of a Connecticut licensed arborist to review the condition of the existing beech tree on the property at 11 Eggleston Lane and make recommendations.

    Attached is the report from licensed arborist Allan F. Fenner who until very recently was with SavATree. Attached to Mr. Fenner’s report is his CV. Included with his report are two maps. One shows the existing house footprint with the area needed to construct a building within that footprint outlined in red. This footprint is shown in relation to the likely root radius from the beech tree which is referred to in Mr. Fenner’s report. The second map shows a comparison with the proposed footprint.

    Based on Mr. Fenner’s report it is not possible to retain the beech tree on the property even if a new house we’re built in the location of the existing dwelling. As has been presented earlier the existing dwelling is partially located in the VE 16 zone and has a first for elevation of 7.9. To be conforming in the VE 16 flood zone requirements the first floor of the dwelling would have to be at least 10 feet higher than the existing house. Even with the minimum critical root zone referred to in Mr. Fenner’s report the tree’s roots take up more than half of the 12,000 square-foot lot. When the mature tree radius of 90 feet is applied, almost the entire lot is consumed by tree roots.

    Also enclosed is a revised landscape plan which provides for a vegetative buffer along the seawall. The plan also increases the size of the shade trees from 2 to 2 1/2-inch caliper to 5 to 6-inch caliper and adds a flowering Dogwood 10 to 12 feet high.

    Please let me know if any further information is needed as part of the commissions review of this application. Thank you for your assistance in this matter.

Very truly yours,

Thomas J. Heagney

TJH/em

Attachments
Allan F. Fenner
CONSULTING ARBORIST SERVICES

For

WILLIAM KENNY ASSOCIATES, LLC
195 TUNXIS HILL CUTOFF SOUTH, FAIRFIELD, CT 06825

For Service At

11 EGGLESTON LANE, OLD GREENWICH, CT

July 27, 2020
CONTENTS

Why was a Tree Condition assessment and plan evaluation of a 60 inch diameter European Beech at 11 Eggleston lane, Old Greenwich performed? ................................................................. 3

How was the evaluation performed? ........................................................................... 3

What were the findings? ................................................................................................. 3

Discussion ..................................................................................................................... 3

Recommendations ......................................................................................................... 4
Why was a Tree Condition Assessment and Plan Evaluation of a 60 inch Diameter European Beech at 11 Eggleston Lane, Old Greenwich performed?

Your client is in the process of preparing to build a new home on 11 Eggleston Lane in Old Greenwich. A large European Beech, (*Fagus sylvatica*), is currently in question in terms of suitability for preservation regarding potential construction impacts. Your firm engaged Allan Fenner to perform a visual assessment of the tree and opine on the suitability for preservation considering the trees location, current health condition and existing site condition in relation to future development of the property.

How was the evaluation performed?

On Tuesday, 7/21/20, ISA & Connecticut Licensed Consulting Arborist Allan Fenner visited the site and evaluated the tree. The diameter was measured at standard height using a diameter tape at 4.5’ above grade. The height was measured using a Nikon Forestry Pro Laser Rangefinder. The condition was assessed using methodology found in the Tree Risk Assessment Manual, 2nd Edition.¹

What were the findings?

One 60-inch diameter standard height, (DSH), European Beech, (*Fagus sylvatica*), is located approximately ten feet from the edge of roadway to the root flare and approximately 50 feet from the existing northeast corner of the present structure. The height of the tree measures 85 feet with an 80-foot crown spread. The current live crown ratio is 90%. Crown ratio is the ratio of live crown, (Foliage), to total tree height; expressed as a percentage and is used to determine vigor. The crown density is approximately 45% with moderate observable deadwood in excess of 3” in diameter and moderate tip dieback. The tree health condition is good at the time of inspection. The roots expanding from the root flare are close to surface with other surface roots evident toward the dripline extending in all directions. Utility pruning has taken place in the past and reduced the crown over the roadway shifting the mechanical loading of the crown to the south and west, toward the existing structure. A portion of the roadway, (Eggleston), has been recently excavated as evidenced by a linear patching of asphalt running parallel to the property boundary indicating that any root extension into the roadway has likely been limited in the easterly direction.

DISCUSSION

European Beech is a nonnative tree that, when attaining a large size, requires a large area to sustain health and structural integrity. It is intolerant to salts, poor soil conditions such as compaction, drainage and root damage. An increase of 3 to 5 inches in grade will severely limit air exchange from feeder roots. Any stress on the beech tree increases susceptibility to insect pests or fungal diseases that further weaken and threaten it. Using International Society of Arboriculture, (ISA), methodology, a critical root zone refers to the area occupied by the root system of a tree and considered a zone of high sensitivity to disturbance such that damage from excavation, soil compaction or other means will likely lead to declining health and/or stability of the tree. Depending upon existing conditions, it can be estimated using a range of 1:1 to 1:1.5 ratios to determine potential impacts. This means that the current diameter of 60 inches would equate to a minimum critical root zone radius of 75 feet when using the formula of 1.25 feet for every inch of diameter. For mature trees, the recommendation is 1.5 feet for every inch of diameter equating to a radius of 90 feet. The current structure is located 50 feet from the trunk. This would indicate that even if the structure of the new building were built upon the foot print of the old, impacts to the existing root zone would be imminent and essentially unavoidable. The necessary limits and additional requirements needed would further impact the root and crown area. The European Beech tree is extremely sensitive to stress.

In my professional opinion, this Beech tree would not be able to sustain its physiological and structural integrity even if a structure was built using the same foot print as the existing structure. Additional requirements for construction regarding its proximity to the coastal zone would accentuate the impacts to the tree.

Allan F. Fenner

allan.fenner@yahoo.com
860-738-1288
Licensed CT Arborist S-4894
ISA NE-6503-A
Tree Risk Assessment Qualified, ISA (TRAQ)
American Society of Consulting Arborists ASCA Member
Allan F. Fenner, M.S.

Curriculum Vitae

EDUCATION:


American Society of Consulting Arborist's Academy, (ASCA) 2016, Napa Valley, CA

MEMBERSHIPS AND CERTIFICATIONS:

Certified Arborist, International Society of Arboriculture (ISA) # NE-6503-A
Qualified Tree Risk Assessor TRAQ, (ISA)
Connecticut Licensed Arborist # S-4894
Member, American Society of Consulting Arborists (ASCA)
Member, Connecticut Tree Protective Association (CTPA)
Member, International Society of Arboriculture: Professional & New England Chapter (ISA)
Member, Arboricultural Research and Education Academy (AREA)
Member, Connecticut Association of Landscape Architects (CTASLA)
Member, Society of College & University Planners (SCUP)
Member, U.S. Green Build Council, Connecticut Chapter (USGBC)
Member, Connecticut Agricultural Experiment Station (CTAES)
Member, Connecticut Urban Forest Council (CTUFC)
Member, Massachusetts Tree Warden & Foresters Association
Member, Connecticut Association of Civil Engineers (CTACE)
WORK EXPERIENCE:

**Consulting Arborist: SavATree Consulting Group: ISA, Qualified Tree Risk Assessor, ASCA, CT.**
550 Bedford Road, Bedford Hills, New York 10507
January 2015 – Present

**Responsibilities:** Consulting on a wide diversity of arboricultural matters to provide clients with actionable tree intelligence including the following areas: Tree Inventory; Tree Management Planning; Tree Risk Assessment; Master Planning; Project Management; Tree Protection Planning for Construction; Tree Valuation & Appraisal; Integrated Pest Management; Permitting; Tree Planting/Transplanting; Training and Education; Pruning; Removal; Fertilization; Design Analysis; Grant Writing; Ordinance Development, and Expert Witness testimony.

**Senior Urban Forester and Arborist Consultant: Davey Resource Group, a division of the Davey Tree Expert Company**
1500 N Mantua, Kent, Ohio
January 2009 – January 2015

Performed a diversity of arboricultural consulting that included urban forest inventories; tree preservation planning; specification and ordinance writing; state, private, institutional and municipal on call consulting; consulting related to tree inventories; I-Tree assessments; urban tree canopy analysis; permitting; management plan development; arborist reports; tree risk assessment; tree appraisal; storm damage assessment; design analysis; expert witness testimony and construction oversight. Managed multiple projects throughout the northeast; mid-Atlantic and midwest that involved on site arborist assessment; forensic investigation, and report development; implementation of work plans, invoicing, staff coordination, supervision and labor tracking. Developed procedures for and implemented the use of Ground Penetrating Radar to provide qualitative root assessment below ground in an urban setting for the development of tree preservation construction specifications. Received two “ACE” awards for achievement in civil engineering from the Connecticut Association of Civil Engineers for construction and environment in water resources and environmental planning.

**Business Manager, Tree Preservation & Land Restoration Division,**
**The Care of Trees**
250 Sherman Avenue, Hamden CT 06514
2009 – 2011

Provided real world sustainable site solutions to clients in the development industry. From feasibility studies, through design, to construction, I managed a team of professionals that worked to integrate trees and environmental assets into the client's development plans. Working beside architects, planners, landscape architects, engineers, municipalities and general contractors our teams identified conflicts, provided realistic solutions, and helped clients to make sustainability and green part of their plan.

Allan F. Fenner
Consulting Arborist, Curriculum Vitae;
860-966-4433
Director, Connecticut Tree Protective Association
P.O. Box 1946 60 Church Street, (Rte. 68), Suite 3A Wallingford, CT 06492.
2007 – Present (Currently serving as President, 2019-2021)

Elected to the Board of Directors and serving on the Education; Allied Membership; Scholarship; and Public Relations Committees. The CTPA is a non-profit, non-partisan, organization of over 850 members established in 1922 to advance the care of Connecticut’s trees by providing education and professional development opportunities for their membership.

Instructor, Connecticut Tree Protective Association (CTPA)
January 2007 - present

Provide Pest Management classes for Arboriculture 101 (offered by the CTPA) to students pursuing the Connecticut arborist certification. (2 semesters per year)

Volunteer Evaluator: Connecticut Tree Examining Board
January 2007 - present

Serve on panel (Oral Board of Review) for evaluation of candidates being considered for the Connecticut Arborist License.

Arborist Representative, SavATree, Old Saybrook & Windsor offices,

Provided clients with complete landscape evaluations, site monitoring & diagnosis of landscape conditions on multiple properties. Designed treatment & maintenance plans for plant health care, turf management; tree pruning, fertilization, property management, hazard assessment, and tree preservation.

Sales Arborist, Almstead Tree & Shrub Care, Stamford, CT
2002 – 2005

Developed plant health care and landscape management options for clients, including diagnosis of plant and tree health; pruning and fertilization treatments and implemented crew coordination for performance of recommendations.
PRESENTATIONS:


Connecticut Tree Wardens Association: “Tree Risk Assessment, Standards and Applications”, May, 2018


Fall River, Massachusetts, “Urban Trees: Preserving the Growing Investment in Fall River and Beyond”, March 2014


Town of Greenburg New York, Environmental Planning Board; “Successful Elements of Planning for the Urban Forest”, 2012

Northwestern Regional High School, “Careers in Urban Forestry & Arboriculture”, 2012


Connecticut Tree Protective Association; “Tree Preservation Planning for Construction, Making Trees Part of the Plan”, 2010, University of Hartford

ADDITIONAL WORK EXPERIENCE: (Expert Witness Testimony, partial listing)

Civil filings:

Insurance incidents:

- Consulting expert (tree appraisal) for insurer for proof of loss and valuation of plant material damaged or destroyed by tornado. Springfield, MA June – July 2011. HMI Advantage.

- Consulting expert and review of forensic evidence for insurer regarding a loss claim made by their insured. Claim # HSN7827 Avondale, PA 19311 2013. HMI Advantage.

- Consulting expert (tree appraisal) for insured regarding valuation of plant material damaged or destroyed by weather event. Suburban Golf Club, Union, NJ 07083 January 2013.

- Consulting expert for insurer regarding their insured’s claim of salt damaged trees (tree appraisal, forensic analysis & diagnostic evaluation) to determine cause of tree condition in spring season following significant weather event in fall of previous year. Willow Ridge CC, Harrison, NY 10528 March – April 2013. HMI Advantage

- Consulting expert (tree appraisal) for insurer for proof of loss and valuation of plant material damaged or destroyed by weather event. North Shore CC, Glen Head, NY 11545 September – November, 2013. HMI Advantage.

- Consulting expert (tree appraisal) for insurer for proof of loss and valuation of plant material damaged or destroyed by weather event. The Creek CC, Locust Valley, NY 11560 September – November, 2013. HMI Advantage.

- Consulting expert (tree appraisal) for insurer for proof of loss and valuation of plant material damaged or destroyed by weather event. Fresh Meadows CC, Lake Success, NY 11020 September – November, 2013. HMI Advantage.

- Consulting expert (tree appraisal) for insurer for proof of loss and valuation of plant material damaged or destroyed by weather event. Noyac Golf Club, Sag Harbor, NY 11963 September – November, 2013. HMI Advantage.

- Consulting expert (tree appraisal) for insurer of 5 Golf Course properties located in South and North Carolina for proof of loss and valuation of plant material damaged or destroyed by weather event. February – March 2014. HMI Advantage.

- Consulting expert for DuPont Chemical; tasked with evaluation of multiple properties throughout the United States to analyze trees and plant material allegedly damaged through application of Impehls herbicide. June 2011 – November 2014.

- Consulting expert for property owner (tree appraisal, diagnostic assessment and forensic analysis) to determine extent of damage to trees by motor vehicle collision. July 2013.

- Consulting expert for property owner (tree appraisal, diagnostic assessment, architectural plan analysis) to determine potential landscape value impact as a result of proposed construction on abutting property. 2014
Insurance incidents continued:

- Consulting expert (tree appraisal, diagnostic assessment and forensic analysis) for cause of injury to plant material regarding an alleged trespass and tree poisoning on client’s property. Shelter Island, NY 11694 September 2013.

- Consulting expert for property owner (tree appraisal, diagnostic assessment and forensic analysis) to determine cause of injury and death to plant material located in close proximity to steam infrastructure, Manhattan, NY


- Consulting expert retained by Landscape Architecture firm Conte & Conte, Greenwich, CT for diagnostic and forensic analysis of tree condition on client’s property. September 2014.

- Consulting expert retained by major Connecticut University for diagnostic impact assessment and design analysis to determine feasibility for proposed large scale construction projects. 2009 – 2014.

- Consulting expert retained by Property Owners Association in New Haven, CT (tree appraisal, condition assessment, & urban tree canopy & risk analysis) to determine condition, monetary value, canopy value and amortized cost of maintenance over a 25-year period. 2014.

- Consulting expert retained by HMI Advantage, (tree appraisal, condition assessment, for insurer for proof of loss and valuation of plant material damaged or destroyed by weather event on multiple properties throughout Florida following Hurricane Irma. September – November, 2017.

- Consulting expert retained by Liberty Mutual Insurance for insured claim involving alleged trespass and landscape construction on abutting Land Trust Property, Granby, CT, 2018.
Ok for Zoning Permit Sign-off with the following revisions:
The whole staircase needs to count at the attic level
The applicant should note the size of the flood vents in the basement and the area size or which they drain.

Resubmit the following prior to Site Plan/Subdivision approval:

The subject site plan/subdivision meets the requirements of the Building Zone Regulations, excluding sections 6-15 and 6-17, and is Ok for Zoning Permit Sign-off.

*The applicant received variances of front and street side yard setback at the 1/22/20 PZBA meeting.
February 3, 2020

Adam & Rachel Weitzman
458 Dudley Road
Westport, NY 12993

Dear Mr. & Mrs. Weitzman:

This will notify you that effective February 3, 2020 the Planning and Zoning Board of Appeals of the Town of Greenwich (Patricia Kirkpatrick, Chairman, Arthur Delmhorst, Secretary, Ken Rogozinski, John Vecchiella and Wayne Sullivan) rendered the following decision.

APPEAL No. PLZE201900693

Appeal of Thomas S. Pastore et al, Owner. Kevin Adam and Rachel Weitzman, appellant, 11 Eggleston Lane, Old Greenwich for variances of front and street side yard setback to permit the construction of a new dwelling, pool, deck and patio on a lot located in the R-12 zone.

It was unanimously RESOLVED that said appeal be granted on the following grounds:

After due consideration, the Board finds there is hardship due to the lot being bordered on 3 sides by a right of way, two of which are deficient in width and one is located in Long Island Sound, combined with the reduction of nonconforming setbacks. Therefore, the requested variances of front and street side yard setbacks are granted from sections 6-121, 6-203 and 6-205.

The Board further finds that this relief can be granted without detriment to the public welfare or impairment to the integrity of the regulations.

[Signature]
Arthur Delmhorst, Secretary
We have prepared the following comments and questions regarding the proposed application.

Project Summary:
- Demolish existing dwelling and construct a new single-family home with pool.

Sewer Division Comments:

Comments to be addressed during P&Z phase:
- None.

Comments to be addressed during Sewer and Building Permit phase:
- The applicant/owner will be required to obtain all necessary Sewer Permits. Please coordinate directly with the Sewer Division for permitting.
- In accordance with the Sewer Disconnect Permit and associated CCTV inspection findings, the applicant/owner is required to do the following:
  - Replace the lateral to the main.
  - Reconnect to the main using a 6" x 8" saddle fitting and install six-inch (6") pipe to the proposed dwelling. Install a cleanout outside of the foundation.
- The above needs to be shown on any plans submitted for Sewer Permitting, Building Permits, Highway Permits, etc.
- Since the proposed development is in a flood zone and includes flood vents, there shall be NO plumbing fixtures installed below the AE and VE elevations. Please provide written confirmation during the Sewer Permitting process that there will not be any proposed plumbing fixtures in the flood (AE or VE) zone elevations for the proposed residence. This will be required as part of the Sewer Permitting process.
- Please provide information on the pool backwash system. Due to the pool being in the flood zone, the pool backwash system must be a closed loop system and NO connection to sanitary sewer is permitted. Written confirmation/certification of this will be required as part of the Sewer Permitting.
- Please note, sanitary sewers are designed for first floor elevations. Therefore, any plumbing fixtures in lower levels (basements) could be subject to sanitary sewer backups/overflows. The property owner is strongly recommended to consider and review this and plan accordingly to protect themselves in those situations. The Town is not responsible for damages as a result of these connections/installations. Please consider this and revise accordingly.
• Please note, in accordance with Town regulations and standard practice, all clear water sources cannot discharge to sanitary sewer. This includes air conditioning and high efficiency heating system condensate lines. Please confirm that the new development will not discharge any clear water sources to sanitary sewer.

• Please note, any portion of sanitary sewer lateral that crosses under drainage areas, permeable paver or pervious pavement areas, or within 10-feet of storm drainage systems (such as cultecs) are required to be encased in concrete to the nearest upstream and downstream joints to inhibit infiltration. Please coordinate with the Sewer Division for details.

**Please NOTE:** These comments are intended for P&Z review only. These comments do not take the place of Sewer Permit(s). Any Sewer Permit Applications receive thorough reviews and may result in additional comments/requirements at that time. In addition, please be reminded that in order to receive Building Permits, the applicant must have secured all other necessary permits, including, but not limited to, Sewer Permits **PRIOR** to obtaining their Building Permits.
DEPARTMENT OF PUBLIC WORKS – ENGINEERING DIVISION
SITE DEVELOPMENT REVIEW

Engineering Project No. 20-5(13)  Department Project No.  Submittal Received Date: 6/16/2020
PLPZ202000089

Submittal Reviewed For:  Traffic Review Requested: No  Review Type: Final Site Plan
Planning and Zoning

PLAN SET INFORMATION

Plan Title: RPM Home, Inc.  Project Address: 11 Eggleston Lane

DRAINAGE SUMMARY REPORT INFORMATION


Reviews provided by the Engineering Division are for compliance with the Town’s “Roadway Design Manual and
Standard Construction Details” and “Drainage Manual” as amended. Reviews are based upon the information
and plans provided. Comments pertaining to the Town’s manuals are not all encompassing. Other reviewing
entities may provide additional comments regarding consistency with these manuals in accordance with their
jurisdictions. Review of sanitary sewer and septic systems are not reviewed by the Engineering Division.

All New Submittals for Commission Meetings must be received by the Engineering Division four weeks before
scheduled Commission Meeting.

All Revised Submittals for Commission Meetings must be received by the Engineering Division three weeks before
scheduled Commission Meeting.

Reviewed and Approved by: ___________________________ Date: 6/24/20
Scott Marucci - Senior Civil Engineer

COMMENTS AND CONDITIONS OF APPROVAL:  Resubmit Prior to Zoning/Building Permit Approval

1. A revised Form SC-100 needs to be submitted.
2. A revised Form SC-107 needs to be submitted.
3. The Drainage Summary Report is acceptable in concept. The following revisions and additional information must
   be submitted:
   a. The revision date of the report needs to be on the cover page.
   b. The Summary Table has incorrect values and must be revised to match the Hydraflow results.
   c. The existing and proposed watershed maps must callout each of the watershed names used in Hydraflow
      (1, 2, 3, etc.).
   d. Based on the Hydraflow results the design has an increase in peak flow for the 5, 10, and 25-years storms
      and must have a zero increase in runoff. Because of the site’s location with Greenwich Cove another option
      is to obtain a letter from the private association allowing the increase in runoff to Eggleston Lane.
   e. NRCS Web Soil Survey can provide the required table that lists the Hydrologic Soil Group rating (A, B, C,
      D). Please provide the required table. The Engineering Division knows this information can be found under
      each soil classification provided but requires it in the table generated by using NRCS Web Soil Survey.
   f. The WQV computations are required for each watershed area going to a stormwater BMP. This is required
      to verify the necessary WQV has been provided in each stormwater BMP.
   g. The RRV computations need to be revised. Do not use an additional hydrograph for the entire site to
      calculate the RRV for proposed conditions. The RRV without BMPs needs to be calculated by adding up
the runoff volume generated during the 1-year storm for watershed 2 (408 CF) and 3 (881 CF) for a total of 1,289 CF. Therefore, 1,289 CF – 983 CF = 306 CF must be provided by the stormwater BMPs during the 1-year storm. The proposed stormwater BMP will provide 547 CF and not the listed 1,094.6 CF.

h. The 72-Hr Drawdown computation needs to be revised using the maximum volume provided to the overflow and the stormwater BMP surface area. The maximum volume is 547 CF and not 810 CF and the surface area is 1,026 SF and not 1,299 SF.

i. The conveyance computations and outlet protection computations must be submitted prior to building permit.

j. Review and revise all other computations as needed.

4. The construction plan set needs to be revised as follows:
   a. The digital pdf files need to be created with the correct scales so measurements can be taken if needed.
   b. Existing Conditions Survey Sheet was not included with the submittal
      i. Show a note certifying the survey T-2.
      ii. Additional spot elevations throughout the property and along the western property line need to be added.
      iii. Show one (1) permanent benchmark on the site within one hundred feet of the proposed construction.
      iv. The existing storm drainage with the right-of-way of Eggleston Lane must be added (include grate elevations, pipe inverts, pipe size, etc.)
   c. Site Plan Sheets
      i. The porous pavement callout needs to have the surface area corrected to 1,026 SF.
      ii. Show width of driveway at property line.
      iii. Show width of driveway at edge of road.
   d. Construction Details Sheets
      i. The Porous Asphalt Detail needs to add an impermeable liner along the porous pavement overflow between the porous pavement and the apron. The liner shall go down to the bottom of stone and be wrapped under for a maximum of 2-feet.

5. The draft Operations and Maintenance Plan Report shall be revised as follows:
   a. Exhibit A needs to have the address added to paragraph one.

**Standard Conditions for Each Submittal**

1. The Engineering Division will no longer keep any records for the submittals. All records for the submittal shall be obtained from the Town of Greenwich Department/Division that has taken in applications and/or submittals. These documents are maintained within each office (e.g. P&Z, IWWA, and DPW Building and Highway Divisions).

2. All revisions to the reports and plans must follow the requirements in the Town of Greenwich Drainage Manual February 2014 as amended.

3. All revisions must be accompanied by a point-by-point written response to the Engineering Division’s comments.

**Standard Conditions of Approval**

1. The Operations and Maintenance Plan Report must include the following for the Certificate of Occupancy:
   b. The final completed Exhibit A, and B
   c. The Maintenance Declaration needs to be filed on the Town of Greenwich Land Records prior to a Certificate of Occupancy. A review of the documents above must be completed before filing on the Town of Greenwich Land Records.

2. The Town of Greenwich – Standard Construction Notes for Site and Subdivision Plans are conditions that must be met.

3. All requests for a Temporary Certificate of Occupancy (T.C.O.) or a Certificate of Occupancy (C.O.) shall be submitted one month before the T.C.O. or C.O. is required.

4. The submittal for a Temporary or Final Certificate of Occupancy must include the following:
c. Field Inspection Record (All required photos) – Form SC-106 – Sealed and Signed by a Connecticut Licensed Professional Engineer.
d. Bioretention Soil Testing Certification Sign-Off (as applicable with the bioretention soil gradation test and the phosphorous test for the mixed soil) – Form SC-104 – Sealed and Signed by a Connecticut Licensed Professional Engineer.
h. A Letter discussing all the work that remains to be completed (Only for a Temporary Certificate of Occupancy Submittal).
MEMORANDUM

TO: Bianca Dygert, Planner II
FROM: Aleksandra Moch, Environmental Analyst
DATE: May 12, 2020
RE: Adam and Rachel Weltzman, 11 Eggleston Lane, PLPZ 2020 00089
    Site plan by B&B Engineering, dated March 17, 2020 and landscape plan by William Kenny, Associates, dated March 18, 2020

I have reviewed the above-referenced plans and visited the site. The following comments are offered for your consideration:

1. The proposed site redevelopment provides very little sensitivity to the natural environment and fragile coastal habitat. The tidal wetland buffer, instead of being enhanced and restored, will be encroached upon with a swimming pool, a patio, and manicured lawn. In addition, the pool will be situated within the flood prone area. The lost opportunity to restore the vegetative buffer will take away all the important ecological services these areas provide such as:
   - Filtration of the excess nutrients and chemicals used to maintain the manicured lawn. Without this filtration, fertilizer and pesticides become pollution.
   - Support for coastal habitat, including resting, nesting, breeding, and food sources to coastal birds, pollinators, and other species migrating along the water’s edge
   - Protection and improvement of soil structure
   - Prevention of erosion and additional protection against storms and wave action
   - Deterring geese from utilizing the site, which decreases number of droppings and improves the storm water quality. Each goose excretes a pound of poop each day. The waste is responsible for excessive nitrogen reaching the Sound, which in exacerbates algal blooms and hypoxia. Goose feces is also a source of bacteria.
   - Responsibly planning for for sea level rise and tidal marsh migration

To address the above concern, the applicant should consider relocating the pool to the opposite side of the residence and/or push the house further away from the sewall to create more space. The newly created buffer should be planted with native shrubs and herbaceous ground cover supportive to the coastal habitat. The area should allow access to the sewall in several locations and not obstruct the view, while providing a meaningful support for the tidal marsh and the coastal habitat.
2. The site is impacted by the growth of Japanese knotweed, which is considered one of the most aggressive invasive species. The plant spreads by rhizomes and seeds. It is important none of the soil be moved and taken off-site to cause damage elsewhere. The plant should be eradicated from the area. A monitoring and maintenance plan should be provided.

3. On the eastern side of the existing residence is a 40” dbh beech. This specimen tree is not only the most remarkable tree in the neighborhood, but important for coastal habitat, storm water management, wind breaking, soil protection, and shade. The applicant should put in substantial effort to preserve this tree. If not possible, at least three native trees should be planted to mitigate the loss.

4. Kudos to the applicant for maintaining a section of the driveway as permeable and giving the area additional function of the storm water infiltration and storage. In addition, the planting plan has a good number of native species.

cc: Conservation Commission
RE: ROUTING - 11 Eggleston Lane - PLPZ 2020 00089 - Revisions

Gaucher, John <John.Gaucher@ct.gov>
Wed 6/17/2020 9:53 AM
To: Dygert, Bianca <bianca.dygert@greenwichct.org>

Bianca,

The applicant has addressed the NFIP consistency concerns that we had raised. We have no further comments for the Planning & Zoning Commission’s consideration. Please let me know if you have any questions or if you need any additional information.

John Gaucher
Environmental Analyst III
Land & Water Resources Division
Bureau of Water Protection and Land Reuse
79 Elm Street
Hartford, CT 06106

Phone 860.424.3660
fax 860.424.4054

From: Dygert, Bianca <bianca.dygert@greenwichct.org>
Sent: Tuesday, June 16, 2020 10:49 AM
To: Gaucher, John <John.Gaucher@ct.gov>
Subject: ROUTING - 11 Eggleston Lane - PLPZ 2020 00089 - Revisions

Hello John,

Please find attached routing sheet and revised documents at the link below. The applicant has moved the house out of the VE zone.

[11 Eggleston Lane - PLPZ 2020 00089]

This will be tentatively on the 6/30 agenda. Please let me know if you have revised comments.

Thank you,
Bianca Dygert
Planner II

Town of Greenwich
Land Use - Planning & Zoning
101 Field Point Road
Greenwich, CT 06830-6463
Ph. (203) 622-7894
Office Fax. (203) 622-3795
Direct Fax. (203) 861-6113
Bianca.Dygert@greenwichct.org

**CAUTION:** This email originated from outside the Town email system. Do not click links or open attachments unless you have verified the sender and know the content is safe.
SITE PLAN APPLICATION

☐ PRELIMINARY
☐ FINAL

Project Name: 11 Eggleston Lane
Project Address: 11 Eggleston Lane, Old Greenwich, CT 06870
Property Owner(s): Adam and Rachel Weitzman
Tax Account Number(s): 06-2594/S Zone(s): R-12 Lot Area: 12,910 sf

Please select all relevant items below:
☐ Special Permit – Complete special permit application form
☐ Coastal Overlay Zone
☐ Property is within 500 feet of a Municipal Boundary of ____________ (for notification)
☐ Amendment to Building Zone Regulations – Section(s) ____________
☐ Amendment to Building Zone Map – Zone(s) affected ____________
☐ Health Department review needed
☐ Sewer Department review needed
☐ Architectural Review Committee Application attached or Review needed
☐ Planning & Zoning Board of Appeals review needed
☐ Inland Wetlands and Watercourses Agency Review / Approval Required

AUTHORIZED AGENT

Name: Thomas J. Heagney
Street Address: 248 Greenwich Avenue
Phone: (203) 661-8400
Signature:  
Firm name: Heagney, Lennon & Slane, LLP
City: Greenwich St: CT Zip: 06830
Email: THheagney@HLS248.com
Date: 3/26/2020

PROPERTY OWNER(S) AUTHORIZATION

Name: Adam and Rachel Weitzman
Street Address: 11 Eggleston Lane
City: Old Greenwich ST: CT Zip: 06870
Phone:
Email:
Signature: *See Authorization Letter
Date:

To be completed by P&Z staff only:
Check # Check Amount: $
Application # PZ Site Plan App 2018
## SITE PLAN ZONING STATISTICS

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This Site Plan Involves:

- [ ] ADDITIONS
- [ ] ALTERATIONS
- [x] DEMOLITION
- [ ] RE-CONSTRUCTION

PZSitePlan App 2018
PROJECT NARRATIVE

Applicant proposes to demolish the existing non-conforming structure on the property and construct a new single-family home with deck and pool. The existing house is located in the AE-13 and VE-16 flood zones and has a first-floor elevation of 7.8. It is also non-conforming as to the side yard, street side yard and front yard setbacks.

The proposed house will be located only in the AE-13 flood zone and will have a first-floor elevation of 14.5. It will be conforming as to the side yard setback and more conforming than the existing house as to the street side and front yard setbacks. The applicants filed for variances of street side and front yard setbacks with the Planning and Zoning Board of Appeals in February of this year were granted variances for both.

The property is bordered on three sides by streets two of which are deficient in right of way, the second of which is out into Greenwich Cove. The new house will have garage and storage on grade level and flood vents as required in the AE flood zone. The proposal meets height, floor area and green space requirements. Stormwater retention is proposed to increase water quality. No stormwater treatment currently exists on the site. No impacts to coastal resources will occur as a result of construction of the new home.

Coastal site plan approval is requested.

Respectfully submitted,

Thomas J. Heagney
March 26, 2020
RESIDENTIAL

VALUATION RECORD

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LAND DATA AND CALCULATIONS

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Supplemental Cards

TRUE TAX VALUE

2854100

Supplemental Cards

TOTAL LAND VALUE

2854100
Planning and Zoning Commission  
Town of Greenwich  
101 Field Point Road  
Greenwich, CT 06830

Planning and Zoning Board of Appeals  
Town of Greenwich  
101 Field Point Road  
Greenwich, CT 06830

RE:  11 Eggleston Lane, Old Greenwich, CT 06870

To Whom It May Concern:

We hereby authorize Heagney, Lennon & Slane, LLP to act as our agent to appear before the Town of Greenwich Planning and Zoning Board of Appeals or any other Town Municipal Board in connection with the filing of applications on the above captioned property.

Adam Weitzman

Rachel Weitzman
TOWN OF GREENWICH

AFFIDAVIT OF NOTIFICATION OF SITE PLAN APPLICATION
TO THE PLANNING AND ZONING COMMISSION

STATE OF CONNECTICUT            )
COUNTY OF FAIRFIELD             )    ss:    Greenwich

I, THOMAS J. HEAGNEY, being first duly sworn, do hereby certify that on
March 25, 2020, I caused to be mailed, postage prepaid, evidenced by certificate of mailing, to
those persons whose names are set forth on Exhibit A attached hereto, a copy of the notice
Exhibit B. Said persons are the record owners, as of March 25, 2020, as shown on the Town Tax
Assessor’s Office records of property abutting and across the street from the property for which
an application to construct a new dwelling, deck and pool on the property located at 11
Eggleston Lane, Old Greenwich, Connecticut has been filed with the Town of Greenwich
Planning & Zoning Commission.

[Signature]

THOMAS J. HEAGNEY

Subscribed and sworn to before me
This 25th day of March 2020

[Signature]

EMMA A. MUTINO
NOTARY PUBLIC
State of Connecticut
My Commission Expires
April 30, 2020
EXHIBIT A

Abutting property owners of 11 Eggleston Lane, Old Greenwich, Connecticut:

Patricia J. Hannigan
5 Oak Lane
Old Greenwich, CT 06870
06-2754/S

Brian J. Raabe & Rachel G. Overton
6 Oak Lane
Old Greenwich, CT 06870
06-2591/S

Lars R. & Lynne N. Norell
12 Eggleston Lane
Old Greenwich, CT 06870
06-2593/S

23 Eggleston LLC
23 Eggleston Lane
Old Greenwich, CT 06870
06-2644/S

Eggleston Holdings LLC
19 West Elm Street
Greenwich, CT 06830
06-2643/S

Department of Energy & Environmental Protection
State of Connecticut
79 Elm Street
Hartford, CT 06106
EXHIBIT B

March 25, 2020

To Whom It May Concern:

Notice is hereby given that Adam and Rachel Weitzman have filed an application for site plan approval with the Town of Greenwich Planning and Zoning Commission to construct a new single-family dwelling, deck and pool on their property located at 11 Eggleston Lane in Old Greenwich, Connecticut.

Further information regarding this application may be obtained at the Town of Greenwich Planning and Zoning Commission or this office.

As an adjoining property owner you are entitled to this notice. You may appear at the Public Hearing of this appeal or send a representative. You may also write to the Planning and Zoning Commission to express your position on this matter under review if you so choose. The date of the hearing has not yet been determined. Prior to the hearing a legal notice will be published twice in the Greenwich Time newspaper to announce the date and time of the hearing. The appeal and accompanying documents are on file at Greenwich Town Hall. You may review these public records at Town Hall if you wish.

Thomas J. Heagney

For information contact:
Planning and Zoning Commission
Town Hall, 101 Field Point Road
Greenwich, CT 06830
Tel: 203-622-7894
March 25, 2020

To Whom It May Concern:

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For information contact:
Planning and Zoning Commission
Town Hall, 101 Field Point Road
Greenwich, CT 06830
Tel: 203-622-7894
APPLICATION FOR REVIEW OF COASTAL SITE PLAN

Applicant's Name: Adam & Rachel Weitzman
Date: March 27, 2020

Address: 11 Eggleston Lane, Riverside, CT 06878

Project Address or Locations: 11 Eggleston Lane, Riverside, CT 06878

The following information must be supplied by the applicant and submitted in addition to, and along with, any application, plans and data required for approval of the proposed project under the zoning and/or subdivision regulations of this municipality. Attach additional sheets if more space is required.

I. PLANS

A. Project Plan(s)
   This application must be accompanied by a plan (or plans) of the entire project indicating 1) project location, 2) design of all existing and proposed buildings, structures, and uses, 3) all proposed site improvements or alterations, and 4) ownership and type of use on adjacent properties.

B. Coastal Resources
   This application must be accompanied by a plan showing the location of all coastal resources (as defined in Section 22a-93(7) of the Connecticut Coastal Management Act) on and contiguous to the site.

II. WRITTEN INFORMATION

A. Description of the Proposed Project
   Describe the entire project including types of buildings and structures, uses, methods and timing of construction, type and extend of development adjacent to the site. This information should supplement and/or clarify plans in I (A) above.

Applicant proposes to demolish the existing residence and construct a new single-family home with deck and pool.
B. Description of Coastal Resources

Identify the coastal resources on and contiguous to the site (as shown on the coastal resources map) and describe their condition. This information should supplement and/or clarify the plan in I(B) above.

Property lies on Greenwich Cove

C. Assessment of the Suitability of the Project for the Proposed Site and the Capability of the Resources to Accommodate the Proposed Use.

(1) Identify any and all coastal use policies (in Section 22a-92(10)(b)(1) of Connecticut Coastal Management Act) applicable to the proposed project.

to require that structures in tidal wetlands and coastal waters be designed, constructed and maintained to minimize adverse impacts on coastal resources, circulation and sedimentation patterns, water quality, and flooding and erosion, to reduce to the maximum

(2) Identify and all coastal resource policies (in Section 22a-92(10)(b)(2) of Connecticut Coastal Management Act) applicable to the proposed project.

to preserve tidal wetlands and to prevent the despoliation and destruction thereof in order to maintain their vital natural functions

(3) Describe how the proposed project is consistent with all of the coastal policies identified in C (1) and (2) above (i.e. describe the extent to which the project complies or conflicts with each policy). Note: If a project conflicts with any policy, the project should be modified to reduce or eliminate the conflict.

D. Evaluation of the Potential Beneficial and Adverse Impacts of the Project and Description of Proposed Methods to Mitigate Adverse Effects.

(1) Identify and describe the potential adverse impacts (as defined in Section 22a-93(15) of Connecticut Coastal Management Act and potential beneficial impacts of the project on coastal resources.

None

FOR WATERFRONT PROPERTY ONLY:
(2) Is the project a water dependent use as defined in Section 22a-93(16) of the Connecticut Coastal Management Act? If, so, explain why.

No
FOR WATERFRONT PROPERTY ONLY:

(3) Describe the impacts or effects (either positive or negative) that the project will have on future water dependent uses or development on and adjacent to this site as defined in Section 22a-93(17).

None

(4) Describe the proposed measures to mitigate (reduce or eliminate) any adverse impacts on coastal resources described in D(1) and, if applicable, on future water dependent development opportunities described in D(3).

E. Demonstration of the Acceptability of Remaining or Unmitigated Adverse Impacts on Coastal Resources and Future Water Dependent Uses and Development.

(1) Describe any adverse impacts that remain after employing all reasonable mitigation measures.

(2) Explain why these remaining adverse impacts were not mitigated.

(3) Explain why the commission reviewing this application should find these remaining adverse impacts to be acceptable.
SITE PLAN CHECKLIST

APPLICATION NAME: 11 Eggleston Lane

All applications for preliminary and final site plan approval shall be made on the appropriate forms as provided by the Planning Staff. The following items must also be provided with the application. If any of the following items are not filed at the time of application, the application may be returned to the applicant in order that it may be filed in entirety at an appropriate future date. Required Items: (Sec. 6-14)

CHECK ITEMS SUBMITTED

1. Fifteen copies of a survey, folded to 9" x 12", showing existing conditions, including:
   □ a. Locations and dimensions of all existing buildings, structures, fences, retaining walls, utility facilities, trees of six (6) inches or more in diameter at breast height, and other similar features.
   □ b. Existing contours at no more than a two-foot vertical interval, unless waived by the commission Staff in circumstances where such contours may not be necessarily pertinent. The survey shall indicate topographic conditions of property immediately adjoining the subject parcel.
   □ c. The location of all existing watercourses, intermittent streams wetlands as required by IWWA, Flood Hazard Lines as determined by FEMA, springs and rock outcrops or a note indicating that none exist, with the sources of information listed.
   □ d. The zone in which the land to be developed falls and the location of any town and zone boundary lines within or adjoining the tract, and yard dimensions to existing buildings. Lot area, by zone, shall be indicated.
   □ e. The title of the development, date, revision date if any and nature of revision, north arrow, scale, and the name and address of owner and names of owners of adjacent land.
   □ f. Street and property lines, curbs, edges of pavement, sidewalks, easements, right-of-way, covenants, and deed restrictions.
   □ g. Traffic lights and controls, public trees, catch basins, hydrants, and power and telephone lines in adjacent streets.
   □ h. Certification with the signature and seal or registration number of a registered land surveyor licensed in the State of Connecticut that the drawing is substantially correct to A-2 Standards, and that the property is in a designated zone under the zoning regulations.

2. Fifteen sets of a detailed Site development plan, at a readable scale, folded to 9" x 12", prepared in accordance with all applicable Town standards including the Roadway Design and Drainage Design Manuals, and signed by a professional architect, land surveyor, or engineer licensed in the State of Connecticut, showing:
   □ a. Location, dimension, and elevation of all proposed buildings, structures, walls, fences.
   □ b. Location dimensions and surface treatment of all existing and proposed parking and loading spaces, traffic access and circulation drives, and pedestrian walks. Sidewalks are to be provided as required by the Building Zone Regulations.
   □ c. Approximate location of proposed utility lines, including water, gas, electricity, sewer and the location of any transformers.
   □ d. Note specifying source of water supply and method of sewage disposal.
   □ e. Existing and proposed contours at units of no more than a two foot interval unless waived by the Commission’s staff. Cuts and fills and estimates of blasting to be submitted at time of final site plan.
   □ f. Location, size and type of proposed landscaping and buffer planting and the designation of those areas of natural vegetation not to be disturbed.
   □ g. Any other similar information determined by the Commission staff in order to provide for the proper enforcement of the Building Zone Regulations.
   □ h. Zoning statistics including: Gross Floor Area, Floor Area Ratio, Usable Floor Area, Required Parking, Actual Parking Provided, Building Height, Building Footprint, and Area Devoted to Surface parking, Building and Drives.
   □ i. Provisions for compliance with Americans with Disabilities Act (Handicap Access) and State Building Code.
   □ j. Coastal Area Management Application for projects within the Coastal Overlay Zone.

3. Eight sets of architectural plans, signed and sealed by an architect registered in the State of Connecticut, of all floors, all exterior elevations showing existing and proposed grade conditions. Elevations are to detail architectural elements by labeling materials, color and dimensions. Each architectural elevation shall show the absolute building height as well as building height for zoning purposes. All HVAC facilities are to be shown on architectural elevations.

PZSitePlanChecklist 05/2019
☐ 4. Three copies of Floor Plan Work Sheets with the dimensions and calculated floor areas for each floor prepared in accordance with Sec. 6-5(22). Consult Commission Staff for required format.

☐ 5. Three copies of “building coverage” computation sheets.

☐ 6. Three copies of “area devoted to surface parking, building, and drives” worksheets.

☐ 7. Five copies of sight distance certification reports when required by a preliminary site plan review or when advised by the commission staff pursuant to item 2(g) of this checklist.

☐ 8. Three copies of Volume calculations per 6-101.

☐ 9. Completed Traffic Impact Evaluation Form if applicable. Submission requirements are defined on the form, available at the Commission office. A traffic report may be required.

☐ 10. Ten copies of completed application form signed by applicant or authorized agent, owners and contract purchasers, as applicable.

☐ 11. Ten copies of completed Special Permit form, if required by Building Zone Regulations.

☐ 12. Fifteen copies of detailed, inclusive narrative description of the proposed project. For those projects involving amendments to the Building Zone Regulations and/or amendments to the Building Zone Regulation Map, the narrative description must provide the section number and text for the proposed amendments(s) to the BZR and an explanation providing justification for the proposal. For map changes, a scaled drawing at 1" to 400' needs to be provided for affected area(s).

☐ 13. Eight copies of reductions in, 11 x 17 size, or other appropriate size, providing a readable, clear plan of proposed site development and architectural plans.

☐ 14. A showing that an adequate source of potable water is available to satisfy the needs of the proposed development as per Sec. 6-15(a)(5), signed by C.A.W.C.

☒ 15. An affidavit certifying that all abutting property owners have been notified, as evidenced by the submission of a certificate of mailing or certified or registered mail receipts about said application. A schedule of names, addresses, shown on a GIS map with lot lines indicating the location of the notified property owners. Owners of lots, or portions of lots, which are across a public or private street shall be deemed to be abutting property owners. For projects which require the preliminary review by the Conservation Commission, the notice shall be sent by the applicant to abutting owners two weeks prior to any scheduled hearing date of the Conservation Commission.

☒ 16. Authorization for the agent and contract purchasers to act on behalf of the certified property owner(s).

☐ 17. A separate schematic plan at a scale no larger than 1"=100' indicating buildings, parking and drives on the site and all adjoining properties, including those across the street, and the nearest cross street.

☐ 18. Five copies of a Drainage Summary Report as per Department of Public Works and the Town Drainage Design Manual. The summary report must be prepared in accordance with the following formats: PRELIMINARY: Existing and proposed storm water distribution, existing and proposed runoff rates, capability of off-site drainage facilities to accommodate proposed runoff, capability of off-site soils to accommodate percolation or detention if proposed, and identification of proposed drainage structures. FINAL: Final structure design details, prior approval from IWWA, Engineering Division and Conservation Commission as appropriate, and all information required by the preliminary report or two copies of drainage exemption forms.

☐ 19. In accordance with Sec. 6-183.1 to 6-183.10 of the Building Zone regulations, tree protection and sedimentation and erosion control plans shall be submitted with all site plan applications.

☐ 20. All applications for final site plans shall be in the form of a survey prepared by a registered Connecticut land surveyor having metes and bounds, dimensions of all buildings, parking and drives, setbacks of all structures from property lines, setbacks between buildings, and certification that building dimensions shown thereon are the same as the approved architectural plans. Architectural and drainage plans are to be referenced by title, date(s) and sheet numbers.

☒ 21. Required fee submitted at time of application (see fee schedule).

☐ 22. "It is the belief of the PZC staff that this application is incomplete because of the failure of the applicant to provide the materials referred to above. This application will be reviewed by the PZC and a decision made as to whether it is complete or incomplete at its public meeting to be held in the PZC office."

All applicants must make an appointment to submit this application with the Applications Coordinator, Peter Mangs, who can be reached by (email) Peter.Mangs@greenwichct.org or (phone) 203-622-7894.

NOTE: Any new documentation presented at Planning and Zoning Meetings shall be submitted to staff so that they can be made part of the record. Please ensure all documents can easily be removed from presentation boards.
PERMIT-NEED QUESTIONNAIRE

This form is NOT an IWWA Application

Project Address: 11 Eggleston Lane
Tax ID: 06-2594/S

Property Owner: Adam & Rachel Weitzman
Address: 11 Eggleston Lane, Old Greenwich, CT 06

Contact information – Email or Cell Phone: ________________________________

Authorized Agent: Heagney, Lennon & Slane, LLP
Address: 248 Greenwich Avenue, Greenwich, CT 06

Contact information – Email or Cell Phone: THeagney@HLS248.com (203) 661-8400

Has there ever been an IWWA application for this site? YES ☐ NO ☑ Appl. # ________________

ACTIVITY: [Check one] Addition ☐ Demolition ☐ Deck ☑ Garage ☐ Interior renovations ☐
New residence ☑ Tennis Court ☐ Pool ☑ Site Work/Landscaping ☐
Septic ☐ Generator ☐ Other (specify) ________________________________

Will this activity require an addition to the septic system or a B100a? YES ☑ NO ☐

FEE: $65 for reviews requiring a site visit

A PLOT PLAN IS REQUIRED SHOWING THE PROPOSED ACTIVITY.

IWWA staff will review the project proposal to determine if regulated activities are associated with the proposal and whether an IWWA permit is required. If an IWWA permit is required, the appropriate permit application packet will be provided.

Do not apply for a Building Permit until this review is complete.

No work may begin until an IWWA permit is issued and/or the “Building Permit Application Sign-Off Sheet” has been signed.

The issuance of a building permit alone does not constitute an authorization to proceed.

As the property owner ☐ or, authorized agent ☑ [check one] I believe the information I have submitted is correct.

Signature ________________________________ Date 03/26/2020

Staff Notes

Office Rev Date 03/26/2021 Field Inv Date 03/26/2021 WET/WC? YES ☑ NO ☐ TIDAL ☑ X

Action Required? YES ☑ NO ☐ If yes, D&R ☐ A&D ☐ AR ☐ SIA ☐ Staff ____________________________

Soils Report Date __/__/__ Author ____________________________ soils ____________________________

Comments: No Inland Wetland/yes coastal wetlands. No IWWA permit required.

Received

DCA 3/26/2020

IWWA Questionnaire Revised 3/24/2020
Declaratory Ruling

(To be filled out only when directed to by IWWA staff)

There is a $30 fee for Declaratory Ruling

1. Purpose and description of proposed activity:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

2. Present use of property in area of proposed activity: ____________________________

3. Distance of closest disturbance to Wetlands/Watercourses: _______________________

4. Site acreage: __________  Wetland acreage: __________  Linear feet of watercourse: __________

5. Submit one (1) copy of the following information:

a.  ____ Site plan showing:
   i.  ____ existing and proposed features, with detail and accuracy sufficient to understand full scope of
   proposed work.
   ii.  ____ the location of any wetlands or watercourses and the upland review area for each.

b.  ____ Written consent of owner to the proposed activity, if the applicant is not the property owner.

By signing this application, the applicant or his/her agent certifies that he is familiar with the information provided in this application and is aware of the penalties for obtaining a permit or ruling through deception or by submission of inaccurate or misleading information.

By signing this application, permission is hereby given to conduct necessary and proper inspection of the subject property by the Agency members and designated agents of the Agency, at reasonable times, both before and after a final decision has been rendered.

Owner’s Signature: ___________________________ DATE: __________

Agent’s Signature: ___________________________ DATE: __________
(When applicant is not owner, owner’s authorization is required)

By signing this form, the IWWA Authorized Agent acknowledges a regulated activity is proposed within an upland review area. However, the activity is so minor as to have no potential effect on the wetland or watercourse. The activity is therefore authorized.

IWWA Authorized Agent’s Signature: ___________________________ DATE: __________
June 4, 2020

Scott Marucci
Department of Public Works
Engineering Division
101 Field Point Road
Greenwich, Connecticut 06830

RE:  11 Eggleston Lane- DPW Engineering Site Plan Review

Dear Scott Marucci,

Thank you for your review, included you shall find our revised plans and stormwater management analysis updated in accordance with your comments. Please see below our responses to you comments and conditions of approval letter dated 5/13/2020.

1. A large area of the proposed driveway and parking area are within the private right-of-way of Eggleston Lane. A letter from the private association must be submitted allowing the use of this area for the driveway and parking as well as the potential installation of a porous pavement stormwater BMP.

   The parking area in the right-of-way has been removed from the plans.

2. A revised Form SC-100 needs to be submitted.

   Form SC-100 has been revised and submitted with revised report.

3. Form SC-107 needs to be submitted.

   Form SC-107 has been submitted with revised plans.

4. The Drainage Summary Report is not acceptable. The following revisions and additional information must be submitted:

   a. The project is located in a Critical Area and the design shall treat the Water Quality Volume (WQV) for the post-development site with a treatment train that provides 80% TSS removal, including at least one pretreatment BMP, one treatment BMP, and one infiltration BMP.

   The project has been designed with a permeable pavement stormwater reservoir which will collect and treat 93% of the impervious cover located on the site as a result of the proposed development. The 7% of impervious area not directed to the permeable pavement system includes impervious cover of the pool and the side patio where sediment and oils are expected to be minimal. This area will be directly disconnected per the Greenwich
Stormwater Manual and will discharge overland around the western side of the building and into the northern
vegetated lawn where it will infiltrate into the soils. Additional existing drainage information was added to
the revised plans for this resubmission. The additional information confirms that stormwater on Eggleston
Road flows into the existing drain located its southern end and discharges into Greenwich Cove.

Alternative treatment BMPs were considered however due to the proximity of the Long Island Sound and the
associated flood zones, it was determined that a permeable pavement stormwater reservoir was the best practice
for the property to still provide water quality treatment after various flood events. It was determined that
surface treatment options such as planters, and rain gardens were not suitable due to the necessary
maintenance that would require due to the location in the flood zone. The permeable pavement stormwater
reservoir is designed to handle the water quality volume.

b. All reconstructed and proposed impervious surfaces (this must include the large area of
driveway proposed within the private right-of-way) must be directed to stormwater BMPs
(must meet Critical Area standards) to treat the WQV.

The driveway located within the right of way has been revised to be permeable pavement. All areas of the
driveway excluding the apron will be collected and treated.

c. All proposed infiltration BMPs must meet the required 2-foot separation to the restrictive
layer (mottling/groundwater/ledge). Because this site will be tidal influenced, the bottom of
stone of any system must not be placed below elevation 4.0 (mean high water line is 3.4).

The pond depth has been revised from 2.4 to 3.5 based on our conversation with Scott Marucci. The
additional volume is necessary for the treatment of water quality.

d. Extending stone beds outside of the porous pavement area is not an allowed standard
practice. All other options must first be explored before the acceptance of this modification
will be considered.

Extending the stone outside of the permeable pavement has been removed from the plan.

e. The maximum area that can be directed to a porous pavement area is 5 times the porous
pavement surface area (stone bed area cannot be used). The proposed porous pavement area
is 590 SF and the maximum area that can be directed to it is 2,950 SF. The proposed 0.1
acre area (4,356 SF) is too large. The minimum porous pavement area will need to be 4,356 SF
/ 5 = 872 SF.

The area of the permeable pavement has been revised. The total area of the permeable pavement is 1,026
S.F. 1,026 x 5 = 5,130 S.F. The area directed to the permeable pavement is 5,130 S.F.

f. Using the pool for storage is not acceptable in the Town of Greenwich.

The pool has been removed from the analysis.

g. It appears the proposed decks are concrete or another impervious surface. This needs to
be clarified. If the decks are impervious, they will need to be direct to stormwater BMPs
(must meet Critical Area standards).

The proposed decks are to be a plastic composite material and will have gaps to allow for water to flow to the
ground underneath. Per our discussion, we are modeling the deck as a pervious surface.

h. The patio to the west of the pool and western section of deck must be directed to
stormwater BMPs (must meet Critical Area standards).

The patio and pool will flow directly to the surrounding vegetated lawn. The simple disconnection meets the
standards of the Greenwich Stormwater Manual. Additional information can be found on the LID plan.
i. The existing site all drains to a single point of concern which is Eggleston Lane. The proposed design needs to include more detailed spot elevations along the western property line to show the regraded site does not create a new point of concern at the property line to the west. This area may need to have a swale created to direct all the site runoff around the house.

Additional topography and drainage information has been added to the plan. Please see Site and LID plans for grading and drainage information along the western property.

j. If roof/deck runoff is being collected and discharged into the stone bed of the porous pavement system, the invert of the distribution pipe must be a minimum of one foot above the bottom of stone.

Distribution pipe has been revised to inv. 4.2. There will be 8” of separation distance between the bottom of stone. To maintain 12” of separation distance between the bottom of stone and the pipe would result in the pipe being located within the choker course which could cause maintenance issues to the system.

k. The pool patio area must be directed to stormwater BMPs (must meet Critical Area standards).

See LID plan for additional information.

l. Any impervious areas that are proposing to meet the Critical Area standard by using a simple disconnect (all standards must be met) must include the following on the LID Sheet or on a separate plan within the report:

i. The plan must clearly show how each area meets the required disconnection standard.
ii. Once an area is used another impervious area cannot get credit for the same or overlapping area.
iii. The impervious area being discharged must be shown and include a callout with the total area.
iv. The pervious receiving area must be shown and include a callout with the total area (must be twice the size of the impervious area directed to it).
v. The slope across the pervious area must be shown (maximum slope is 5%).
vi. The travel length across the pervious area must be shown (minimum length is 40-feet).

A callout shall be included that states if the standard has been met or not met.

viii. All areas that do not meet the standard must have an explanation included in the report as to why this should be accepted.

Please see revised LID Plan.

m. The Hydrologic Soil Group Table needs to include the rating (A, B, C, D).

The report identifies the soil group as hydraulic group “B” in section 1.3 of the provided drainage report. The Curve Numbers are identified in section 1.5 for the respective cover types.

n. The existing and proposed conditions routing diagram for Hydraflow must be added.

Report has been revised accordingly

o. As stated, above Pond No. 1 – Pool must be removed.

Report and analysis has been revised accordingly

p. It is unclear why no storage is provided in Pond No. 2 – Permeable Pavement.

Storage is provided in the Hydraflow analysis as well as in the attached storage volume calculation in Appendix F

q. The conveyance computations and outlet protection computations must be submitted prior to building permit.

Analysis will be provided prior to building permit

r. Review and revise all other computations as needed.

Report and analysis will be revised accordingly
5. The construction plan set will be reviewed in detail with the revised Drainage Summary Report. The following are initial comments:
   a. General Requirements for Plan Set
      i. Sheet 2 of 7 was missing from the plan set.
   b. Existing Conditions Survey Sheet
      i. Show a note certifying the survey T-2.
      ii. Additional spot elevations throughout the property and along the western property line need to be added.
      iii. Show one (1) permanent benchmark on the site within one hundred feet of the proposed construction.
      iv. The existing storm drainage with the right-of-way of Eggleston Lane must be added (include grate elevations, pipe inverts, pipe size, etc.)
   c. Site Plan Sheets
      i. The plan must show proposed spot elevations and detailed grading between the proposed house and the western property line. Any runoff directed toward the western property line must be kept on the property and directed around the proposed house and towards the point of concern. Any existing runoff from the western property that under existing conditions traveled onto 11 Eggleston Lane and across the property to the point of concern must be maintained.
      ii. Show excavation and fill quantities in a table.
      iii. Show proposed spot elevations throughout the property and Right-of-Way.
      iv. Show the entire pipe network from the starting point (roof leaders, catch basin, etc.) to the outfall.
      v. Show structural and non-structural (e.g., source controls) BMPs.
      vi. Show all disconnected roof discharges (splash pads and level spreaders).
      vii. Show top and bottom elevations for all retaining walls and stone fences.
      viii. Show all catch basins/yard drains/drain inlets with the following in the callout:
            1. Grate elevation.
            2. Invert elevation of each pipe.
            3. Pipe location in structure (n, s, e, w, etc.).
            4. Pipe size.
            5. Sump elevation.
      ix. Show all pipes with the following in the callout:
            1. Pipe size.
            2. Pipe material.
            3. Pipe slope.
      x. Show all permeable pavements with the following in the callout:
            1. Permeable surface type (unilock eco-pavers, porous asphalt, gravel pave 2, etc.).
            2. Permeable Pavement surface thickness.
            3. Permeable Pavement surface area.
            4. Bottom of no. 8 stone elevation.
            5. Bottom of no.57 stone elevation.
            6. Bottom of no.2 stone elevation.
            7. Underdrain/outlet pipe sizes, material, and invert elevations.
   d. Low Impact Development Plan Sheet:
      i. The scale shall be 1” = 10’.
      ii. Show structural and non-structural (e.g., source controls) BMPs.
iii. Show each area of roof with a callout specifying which BMP receives runoff.
iv. Show areas of disconnected roofs.

e. Driveway Profile & Sight Distance Sheet
   i. Show width of driveways at property line.
   ii. Show width of driveways at edge of road.
   iii. The profile for the driveway from edge of road to garage must include slopes, spot elevations and if porous pavement is used the entire porous pavement section to the bottom of stone shall be included with elevations.
   iv. Show slope of driveways for first five feet on profile (required minimum slope is +3% to 6%).
   v. Show slope of driveways for next twenty feet on profile (required maximum slope is 4% when remaining slope ≥ 10%).
   vi. Show slope of driveways for the remaining distance to garage on profile (required maximum slope is 8% for commercial, 12% residential (two or more family), and 15% for residential).

f. Construction Details Sheets
   i. Show retaining wall cross-section.
   ii. Show standard driveway pavement cross-section.

iii. The Town of Greenwich Standard Construction Notes need to be revised as follows:
   1. Note 5 and 6 are one note. Correct and revise the note numbers.

Plans have been revised accordingly. Additional survey information has been added and requested information haven been added.

6. The draft Operations and Maintenance Plan Report shall be revised as needed and submitted for review. The Operations and Maintenance Plan has been revised accordingly.
STORM WATER MANAGEMENT ANALYSIS

for

11 Eggleston Lane
Old Greenwich, Connecticut

March 17, 2020

Prepared for:
RPM Home Inc.
Southport, Connecticut

Prepared by:

15 Research Drive
Suite 3
Woodbridge, Connecticut 06525
Phone: (203) 881-8145
www.bbengrs.com

Bryan P. Nesteriak, PE, LS 23556
Job #997
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. INTRODUCTION &amp; LID TECHNIQUES</td>
<td>2</td>
</tr>
<tr>
<td>1.1 Project Narrative</td>
<td>2</td>
</tr>
<tr>
<td>1.2 LAND USE REGULATIONS</td>
<td>2</td>
</tr>
<tr>
<td>1.3 SITE INVENTORY &amp; EVALUATION</td>
<td>2</td>
</tr>
<tr>
<td>1.4 DEVELOPMENT ENVELOPE</td>
<td>3</td>
</tr>
<tr>
<td>1.5 LID CONTROL STRATEGIES</td>
<td>3</td>
</tr>
<tr>
<td>2. STRUCTURAL BMPS</td>
<td>6</td>
</tr>
<tr>
<td>2.1 WATER QUALITY VOLUME (WQV)</td>
<td>6</td>
</tr>
<tr>
<td>2.2 INFILTRATION SYSTEM DRAWDOWN TIME</td>
<td>6</td>
</tr>
<tr>
<td>2.3 TSS REMOVAL EFFICIENCY</td>
<td>6</td>
</tr>
<tr>
<td>2.4 RUNOFF REDUCTION VOLUME</td>
<td>6</td>
</tr>
<tr>
<td>2.5 PEAK RUNOFF ATTENUATION</td>
<td>6</td>
</tr>
<tr>
<td>3. CONCLUSION</td>
<td>7</td>
</tr>
<tr>
<td>4. REFERENCES</td>
<td>7</td>
</tr>
</tbody>
</table>

## APPENDICES

### Figures
- Figure 1: USGS Location Map
- Figure 2: Existing Watershed Area Map
- Figure 3: Proposed Watershed Area Map
- Figure 4: Town of Greenwich Form SC-100

### APPENDIX A
NRCS Soil Map & Hydrologic Soil Rating

### APPENDIX B
Soil Testing Results

### APPENDIX C
Credits for LID BPMs

### APPENDIX D
Storm Water Management Standard Narrative

### APPENDIX E
Water Quality/BMP Calculations
- Water Quality Volume (WQV)
- Ground Water Recharge Volume (GRV)
- Infiltration System Drawdown Time
- TSS Removal Efficiency
- Runoff Reduction Volume Calculations

### APPENDIX F
Watershed Analysis

### APPENDIX G
Operations and Maintenance Plan Report
1. INTRODUCTION & LID TECHNIQUES

1.1 PROJECT NARRATIVE
The proposed project includes the construction of a new single family dwelling located at 11 Eggleston Lane in Old Greenwich, Connecticut. The existing home, associated surficial and underground features will be demolished and removed. There is no existing storm water collection or management system located on-site. A new driveway, utilities, and landscaping will be part of the re-development.

The 0.31 acre parcel is located on the southern side of Eggleston Lane with Middle Marsh Lane being its closest cross street which is approximately 350 ft from the parcel. Under existing conditions, the lot supports a single family dwelling, and a bituminous driveway. The majority of the remainder of the lot consists of lawn area throughout the property. Existing storm water runoff flows from a highpoint located near the western end of the lot towards Eggleston Lane. No existing storm water from this lot contributes to any town storm drainage system.

The development on this lot will disturb approximately half of the site. Non-structural BMPs were considered for the proposed development but due to the lot size and shape, were considered unfeasible. Therefore, structural BMPs were proposed to treat and control storm water runoff so that there will be no adverse effects to adjoining properties and private road- Eggleston Lane. The structural BMPs have been placed in strategic areas where they will be effective. On-site excavated soil testing showed some acceptable soil types for infiltration BMPs. Refer to Appendix C for the "Credits for Low Impact Development Best Management Practices Checklist" outlining the inclusions or exclusion of each non-structural BMP.

The proposed project will conform to all applicable storm water management standards as depicted in the Town of Greenwich Drainage Manual. Refer to Appendix "D" for a narrative detailing the projects compliance with each storm water management standard.

1.2 LAND USE REGULATIONS
The parcel is approximately 0.31 acres and is located in the Residence Zone "R-12" District. The proposed plan will follow the guidelines as depicted in the Greenwich CT Zoning Regulations. There are no tidal or inland wetlands located on this parcel.

1.3 SITE INVENTORY & EVALUATION
The existing parcel consists of a minor slope that is pitched from a highpoint near the western side of the lot, towards the Eggleston Lane. The majority of the property is lawn.

The subject parcel was researched and tested for storm water infiltration suitability. According to the Soil Survey of Fairfield County, the parcel is underlain with Sutton- Urban land complex (250B) hydraulic group “B”. The Web Soil Survey Report has been included in Appendix A. The results of the on-site testing are located on the Site Development Plan and have also been included in Appendix B.

Under existing conditions, all storm water runoff flows towards the eastern side of the property and eventually offsite. All proposed storm water runoff that is not detained and infiltrated will flow as it does today therefore not changing existing drainage patterns.
1.4 DEVELOPMENT ENVELOPE

Due to the size of the lot, the development envelope takes up the majority of the property. Silt fence will be installed on the bottom of all downward slopes of the proposed development area to control the sediment on site. There are no steep slopes on the property.

1.5 LID CONTROL STRATEGIES

Hydrology

This study was prepared using the Soil Conservation Service (SCS) methodology. This method outlines procedures for calculating peak rates of runoff resulting from precipitation events and procedures for developing runoff hydrographs. The calculations use the unit hydrograph method as described by Technical Release 55 (TR-55). The rates of runoff for the pre and post-developed conditions were compared to determine any change as a result of the development.

Composite values for area, curve number (CN) and time of concentration (Tc) were calculated for each the predevelopment and post development condition. The pre-development condition was modeled as one watershed, in which storm water runs over land towards front property line. The curve numbers were calculated using the following values:

<table>
<thead>
<tr>
<th>Cover Description</th>
<th>Hyd. Condition</th>
<th>CN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing: woods-grass combination</td>
<td>Fair</td>
<td>65</td>
</tr>
<tr>
<td>Proposed Lawn: grassland</td>
<td>Good</td>
<td>65</td>
</tr>
<tr>
<td>Existing/Proposed: house, driveway, etc.</td>
<td>-</td>
<td>98</td>
</tr>
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</table>

The values calculated for the existing condition were as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Area</th>
<th>CN</th>
<th>Tc</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-Development</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[Existing: woods-grass combination]</td>
<td>0.31 acres</td>
<td>75</td>
<td>16.6 min.</td>
</tr>
<tr>
<td>[Existing: house &amp; driveway]</td>
<td>0.22 acres</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>[Existing: house, driveway, etc.]</td>
<td>0.09 acres</td>
<td>98</td>
<td></td>
</tr>
</tbody>
</table>

The proposed condition was first modeled without the use of the storm drainage structures. The values used for this model were as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Area</th>
<th>CN</th>
<th>Tc</th>
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</thead>
<tbody>
<tr>
<td><strong>Post Development No BMPs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[Proposed Lawn: grassland]</td>
<td>0.31 acres</td>
<td>77</td>
<td>13.6 min.</td>
</tr>
<tr>
<td>[Proposed: house, driveway, pool, etc.]</td>
<td>0.20 acres</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>Proposed: house, driveway, etc.</td>
<td>0.11 acres</td>
<td>98</td>
<td></td>
</tr>
</tbody>
</table>

The proposed condition was then modeled similarly to the pre-development condition, with watershed draining runoff to the aforementioned locations. Most part of runoff from predevelopment condition woods-grass combination area is modeled in the post development condition as Undetained Area, and allowed to flow over land and off of the property towards the eastern boundary of the parcel as it does today. Pond Inflow includes runoff from the house, driveway, and some surrounding grass area. A porous asphalt driveway was modeled as the detention system for Pond Inflow, with equivalent water volume calculations attached in Appendix F. Undetained Area accounts for the remaining grass area, pool overflow and patio to run over land and off of the property as it does today.
The values used for the post-developed condition were as follows:

<table>
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<th>Description</th>
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<th>CN</th>
<th>Tc</th>
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</thead>
<tbody>
<tr>
<td><strong>Undetained Area</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proposed lawn: grassland</td>
<td>0.19 acres</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>Proposed: patio, walks, etc.</td>
<td>0.02 acres</td>
<td>98</td>
<td></td>
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<tr>
<td><strong>Pool Inflow</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proposed: pool</td>
<td>0.01 acres</td>
<td>98</td>
<td>6.0 min.</td>
</tr>
<tr>
<td><strong>Pond Inflow</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proposed lawn: grassland</td>
<td>0.01 acres</td>
<td>98</td>
<td>6.0 min.</td>
</tr>
<tr>
<td>Proposed: house &amp; driveway</td>
<td>0.08 acres</td>
<td>98</td>
<td></td>
</tr>
</tbody>
</table>

The design storm used for this study is the 24 hour SCS Type III cumulative rainfall distribution. Twenty-four (24) hour rainfall depths for the 1-year, 2-year, 5-year, 10-year, 25-year, 50-year, and 100-year storms were considered. The storm events analyzed include the following:

- A 1-year, 24-hour storm consisting of 2.9 inches of rainfall;
- A 2-year, 24-hour storm consisting of 3.4 inches of rainfall;
- A 5-year, 24-hour storm consisting of 4.3 inches of rainfall;
- A 10-year, 24-hour storm consisting of 5.1 inches of rainfall;
- A 25-year, 24-hour storm consisting of 6.4 inches of rainfall;
- A 50-year, 24-hour storm consisting of 7.6 inches of rainfall;
- A 100-year, 24-hour storm consisting of 9.1 inches of rainfall;

Rainfall hydrographs developed from SCS methods for proposed and existing conditions were compared in order to determine the peak flows that will be observed for the respective storm event. All hydrographs and routing calculations were performed with the aid of the computer program Hydraflow Hydrographs Extension for AutoCAD Civil 3D 2019.

**Proposed Storm Water Treatment System**

The multistage storm water treatment system includes the collection of the dwelling, driveway and a portion of surrounding grass area storm water runoff and piped into a proposed porous asphalt driveway.

Since the system is relying solely on structural BMPs, it is required to attenuate and treat up to the 10-year, 24 hour storm as required by the Town of Greenwich Drainage Manual. However, the system has been designed to attenuate and pass up to at least the 100-year storm while keeping the proposed development’s runoff flow rates lower than the existing rates.

The proposed detention system was routed with the use of the computer program Hydraflow Hydrographs Extension for AutoCAD Civil 3D 2019; the results of which are located in Appendix F. In order to accurately analyze the proposed condition, the peak pre-development flow was compared to the sum of the peak flows of the Routed storm drainage system and Post Development Undetained Area. This hydrograph was named "Final Combined". The porous asphalt model was adjusted to create an equivalent volume and outlet in order to accurately model the behavior of the system. Calculations for the equivalent water volumes are included in Appendix F.
**Hydrograph Analysis**

The calculated storm water flows (CFS) are as follows:

<table>
<thead>
<tr>
<th>Condition</th>
<th>1-YEAR FLOW</th>
<th>2-YEAR FLOW</th>
<th>5-YEAR FLOW</th>
<th>10-YEAR FLOW</th>
<th>25-YEAR FLOW</th>
<th>50-YEAR FLOW</th>
<th>100-YEAR FLOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Development</td>
<td>0.227</td>
<td>0.321</td>
<td>0.504</td>
<td>0.679</td>
<td>0.977</td>
<td>1.261</td>
<td>1.620</td>
</tr>
<tr>
<td>Undetained Area</td>
<td>0.085</td>
<td>0.136</td>
<td>0.242</td>
<td>0.347</td>
<td>0.530</td>
<td>0.710</td>
<td>0.945</td>
</tr>
<tr>
<td>Pool Inflow</td>
<td>0.027</td>
<td>0.032</td>
<td>0.040</td>
<td>0.048</td>
<td>0.060</td>
<td>0.072</td>
<td>0.086</td>
</tr>
<tr>
<td>Pool Route</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.035</td>
</tr>
<tr>
<td>Pond Inflow</td>
<td>0.169</td>
<td>0.214</td>
<td>0.294</td>
<td>0.367</td>
<td>0.484</td>
<td>0.591</td>
<td>0.725</td>
</tr>
<tr>
<td>Pond Route</td>
<td>0.166</td>
<td>0.224</td>
<td>0.286</td>
<td>0.359</td>
<td>0.484</td>
<td>0.606</td>
<td>0.725</td>
</tr>
<tr>
<td>Post Development No BMPs</td>
<td>0.379</td>
<td>0.522</td>
<td>0.800</td>
<td>1.060</td>
<td>1.496</td>
<td>1.906</td>
<td>2.424</td>
</tr>
<tr>
<td>Final Combined</td>
<td>0.216</td>
<td>0.308</td>
<td>0.471</td>
<td>0.631</td>
<td>0.883</td>
<td>1.132</td>
<td>1.467</td>
</tr>
<tr>
<td>Proposed Difference</td>
<td>-0.011</td>
<td>-0.013</td>
<td>-0.033</td>
<td>-0.048</td>
<td>-0.094</td>
<td>-0.129</td>
<td>-0.153</td>
</tr>
</tbody>
</table>

The differences between pre and post-development for peak flow and total volume are as follows:

<table>
<thead>
<tr>
<th>Storm Event</th>
<th>Flow/Volume</th>
<th>Pre-Development</th>
<th>Final Combined</th>
<th>Change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Year</td>
<td>Q (cfs)</td>
<td>0.227</td>
<td>0.216</td>
<td>-4.8%</td>
</tr>
<tr>
<td></td>
<td>V (cf)</td>
<td>983</td>
<td>911</td>
<td>-7.3%</td>
</tr>
<tr>
<td>2-Year</td>
<td>Q (cfs)</td>
<td>0.321</td>
<td>0.308</td>
<td>-4.0%</td>
</tr>
<tr>
<td></td>
<td>V (cf)</td>
<td>1.351</td>
<td>1.245</td>
<td>-7.8%</td>
</tr>
<tr>
<td>5-Year</td>
<td>Q (cfs)</td>
<td>0.504</td>
<td>0.471</td>
<td>-6.5%</td>
</tr>
<tr>
<td></td>
<td>V (cf)</td>
<td>2.079</td>
<td>1.909</td>
<td>-8.2%</td>
</tr>
<tr>
<td>10-Year</td>
<td>Q (cfs)</td>
<td>0.679</td>
<td>0.631</td>
<td>-7.1%</td>
</tr>
<tr>
<td></td>
<td>V (cf)</td>
<td>2.777</td>
<td>2.549</td>
<td>-8.2%</td>
</tr>
<tr>
<td>25-Year</td>
<td>Q (cfs)</td>
<td>0.977</td>
<td>0.883</td>
<td>-9.6%</td>
</tr>
<tr>
<td></td>
<td>V (cf)</td>
<td>3.978</td>
<td>3.657</td>
<td>-8.1%</td>
</tr>
<tr>
<td>50-Year</td>
<td>Q (cfs)</td>
<td>1.261</td>
<td>1.132</td>
<td>-10.2%</td>
</tr>
<tr>
<td></td>
<td>V (cf)</td>
<td>5.137</td>
<td>4.733</td>
<td>-7.9%</td>
</tr>
<tr>
<td>100-Year</td>
<td>Q (cfs)</td>
<td>1.620</td>
<td>1.467</td>
<td>-9.4%</td>
</tr>
<tr>
<td></td>
<td>V (cf)</td>
<td>6.632</td>
<td>6.151</td>
<td>-7.3%</td>
</tr>
</tbody>
</table>

The proposed change shows that the storm water flow rates and volumes are to be reduced for up to the 100-year storm as a result of the proposed development. Calculations and hydrographs for the basin routing are included in Appendix F. For convenience and to conserve resources, the reports were limited to the 100-year event.

**Water Quality**

The majority of storm water introduced to the system will be roof runoff where the observance of any oils, grease or particulates is remote. Since the driveway is primarily limited to residential vehicles, the anticipated levels of sediment and oils should be negligible. The proposed catch basin and proposed asphalt driveway should be cleaned periodically in order to remove accumulated sediment. Salts and other dissolved matter will infiltrate to the ground via the detention system where the soil will encourage filtering.
The storm water treatment system has been designed in accordance with the Town of Greenwich Drainage Manual. The water quality volume (WQV) is the amount of storm water runoff from any given storm that should be captured and treated in order to remove a majority of storm water pollutants on an average annual basis. The recommended WQV satisfies requirement of a minimum 60 percent of the WQV treated by using non-structural and structural LID BMP’s, as depicted in Town of Greenwich Drainage Manual. The area analyzed is limited to the contributing runoff area, and the detention system outlet control structure has been designed to contain at least the WQV. Calculations for the WQV are located in Appendix E.

The water quality flow (WQF) is the peak flow rate associated with the water quality design storm or WQV. A storm water treatment facility must have a flow rate capacity equal to or greater than the WQF in order to treat the entire water quality volume. The WQF is not applicable to this storm water system and therefore was not calculated.

Above all, the homeowner will be responsible to implement an annual maintenance program which should include driveway sweeping, gutter and yard drain cleaning and pipe maintenance. As always, proper fertilizer and pesticide management and household pet waste management should be observed. A draft Operation and Maintenance Plan has been prepared under a separate cover.

Conformance to the standards for water quality, infiltration system drawdown time, TSS removal efficiency, and runoff reduction volume and peak runoff attenuation will be achieved through the installation of the permeable pavement driveway system.

2. STRUCTURAL BMPS

2.1 WATER QUALITY VOLUME (WQV)

The combination of the designed basins will provide adequate storage for the calculated water quality volume. Refer to Appendix E for the Water Quality Volume calculations.

2.2 INFILTRATION SYSTEM DRAWDOWN TIME

The porous asphalt driveway will drawdown within the maximum 72 hour limit. Refer to Appendix E for the Infiltration System Drawdown Time calculations.

2.3 TSS REMOVAL EFFICIENCY

The proposed storm water system will comply with the 80% TSS Removal standard. Refer to Appendix E for the TSS Removal Efficiency calculations.

2.4 RUNOFF REDUCTION VOLUME

The post development runoff volume does not exceed the existing runoff volume for the 1-year, 24 hour storm event. Refer to Appendix E for the Runoff Reduction Volume calculations.

2.5 PEAK RUNOFF ATTENUATION

As a result of the proposed development, the system provides peak flow attenuation up to the 100-year, 24 hour storm. Refer to the Hydrograph Analysis Table in Section 1.5 for peak flow rates.
3. **CONCLUSION**

The proposed storm water collection system has been designed to adequately convey the required storm event without any adverse impacts or increase in overall storm water flow and while maintaining adequate water quality in accordance with the Town of Greenwich Drainage Manual.

4. **REFERENCES**

FIGURES
Figure 1: USGS Location Map
Figure 2: Existing Watershed Area Map
Figure 3: Proposed Watershed Area Map
Figure 4: Town of Greenwich Form SC-100
WATERSHED LIMIT

POND INFLOW
AREA: 0.12 AC

UNDETAINED
AREA: 0.20 AC

TIME OF
CONCENTRATION PATH

PROPOSED
WATERSHED AREA
MAP
OF
11 EGGLINGTON LANE
GREENWICH, CT

Land Surveying, Professional Engineering & Land Use Consultants

15 Research Drive
Woodbridge, CT 06525
P: (203) 881-8145
www.bbengrs.com

1" = 30'

6/3/2020
3/17/2020

997
Engineer of Record Certification

Project Name: 11 Eggleston

Project Address: 11 Eggleston Lane, Old Greenwich

Engineer's Name: Bryan Nesteriak (PE, LS)

Engineering Firm's Name: B&B Engineering LLC

Street Address: 15 Research Drive City: Woodbridge State: CT Zip: 06525 Phone: (203)881-8145 Fax: Email: bn@bbengrs.com

The undersigned Registered Professional Engineer of Record certifies that the Stormwater Management Report and Plans submitted herewith entitled:


Stormwater Management Report Last Revision Date: 6/4/2020

Number of Plan Sheets: 7 Last Revision Date: 6/4/2020


Engineer's Signature

Date 6/4/2020

[Stamp: Engineer's Seal]

Form SC-100 February 2014
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA) CERTIFICATION
BUILDING PERMIT SUBMITTALS

Property Address: 11 Eggleston Lane
Tax Account No.: 2594/S

Building Permit No.: 

PLANS & DRAINAGE SUMMARY REPORT INFORMATION

Engineering Firm: B&B Engineering

Design Plans Date: 3/17/2020, Revised 6/4/2020
Drainage Report Date: 3/17/2020, Revised 6/4/202

PROPERTY INFORMATION FOR DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)

Total Property Area (SF)¹
13,666 S.F.

Total Proposed Site Disturbance Area (SF)²
10,900 S.F.

% Impervious Area Directed to LID BMPs
31.5%

Total Impervious Area Under Existing Conditions (SF)³
3,962 S.F.

Total Impervious Area Under Proposed Conditions (SF)³
4,851 S.F.

Total Disconnected Impervious Area Under Proposed Conditions (SF)⁴
4,851 S.F.

Total Directly Connected Impervious Area Under Proposed Conditions (SF)⁵
0 S.F.

¹ The entire property area (i.e. parcel/lot area) based on property address and tax account number.

² The entire area being disturbed for the proposed construction activity (foundations, buildings, houses, stormwater systems, septic systems, pools, patios, accessory structures, vegetative soil cover modifications, etc.). The project disturbance area (delineated with construction/silt fence) shall be depicted on the design, construction, and mitigation plans, and shall be installed on-site prior to commencing land disturbance activities.

³ Impervious surfaces include but are not limited to roofs (including green roofs), buildings, houses, walks, patios, walls, tennis/sport courts (all surface types must be counted), landscape ponds, pools, paved streets/drives/parking areas constructed with concrete, asphalt, compacted dirt, gravel, or permeable pavements.

⁴ All impervious surfaces that are directed to stormwater BMPs that meet the water quality volume (WQV) standard will be considered disconnected impervious cover. Acceptable stormwater BMPs are Bioretention (infiltrating/filtering), Constructed Stormwater Wetlands, Extended Dry Detention Basins (infiltration required), Gravel Wetlands, Constructed Wet Stormwater Ponds, Sand/Organic Filters (sand filters, tree filters, stormwater planters, etc.), Infiltration Systems (drywells, Cultecs, etc.), Permeable Pavement Areas (infiltrating/filtering), Green Roofs, and Disconnected Impervious Area (must meet all the standards under Simple Disconnection on page 44 and 45 of the Drainage Manual).

⁵ Subtract the Total Disconnected Impervious Area Under Proposed Conditions (SF) from the Total Impervious Area Under Proposed Conditions (SF).

Engineer's Signature 
Date 6/4/2020

Form SC-107
March 2019
STORM WATER OPERATIONAL & MAINTENANCE PLAN

for

11 Eggleston Lane
Old Greenwich, Connecticut

March 17, 2020

Prepared for:
RPM Home Inc.
Southport, Connecticut

Prepared by:

BB Engineering

15 Research Drive
Suite 3
Woodbridge, Connecticut 06525
Phone: (203) 881-8145
www.bbengrs.com

Bryan P. Nesteriak, PE, LS 23556
Job #997
# TABLE OF CONTENTS

Stormwater Management Practices Maintenance Declaration (Form MD-100)

## EXHIBITS

<table>
<thead>
<tr>
<th>Exhibit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
<td>Stormwater Operation &amp; Maintenance Plan</td>
</tr>
<tr>
<td>A-2</td>
<td>Stormwater Operation &amp; Maintenance Log</td>
</tr>
<tr>
<td>B</td>
<td>Improvement Location Survey</td>
</tr>
</tbody>
</table>
Stormwater Management Practices Maintenance Declaration
Form MD-100
Stormwater Management Practices Maintenance Declaration

THIS DECLARATION is made this date, ___________ 20___, by and between the Town of Greenwich, a municipal corporation with principal offices located at 101 Field Point Road, Greenwich, CT 06830 and

__________________________
[Owner(s) Name]

__________________________
[Address]

hereinafter referred to as “Owner(s)” of the “Property” as more fully described in a deed recorded in Book _______ at Page _______ of the Greenwich Land Records. In accordance with the Town of Greenwich Drainage Manual as Amended, the “Owner(s)” agree to install and maintain stormwater management practice(s) on the subject Property in accordance with approved plans and conditions. The Owner further agrees to the terms stated in this document to ensure that the stormwater management practice(s) continues serving the intended function in perpetuity. This Declaration includes the following exhibits located in the project files of one or all of the following Town of Greenwich Departments:

• Building Division – Permit # __________________________
• Inland Wetlands and Watercourses Agency – Application # __________________________
• Planning and Zoning – Application # __________________________

Exhibit A: Long-term Maintenance Plan that prescribes those activities that must be carried out to maintain compliance with this Declaration. Approved Maintenance Plan dated ___________.

Exhibit B: Improvement Location Survey depicting “As-Built” conditions and showing an accurate location of each stormwater management practice affected by this Declaration. Approved Improvement Location Survey dated ___________.

Note: After construction has been verified and accepted by the Town of Greenwich for the stormwater management practices, this declaration shall be recorded by the Owner on the Greenwich Land Records and copies of the recorded document shall be submitted to all of the following Town of Greenwich Departments involved in the approval:

  o  Building Division
  o  Inland Wetlands and Watercourses Agency
  o  Planning and Zoning

Through this Declaration, the Owner(s) hereby subjects the Property to the following covenants, conditions, and restrictions:

1. The Owner(s), at its expense, shall secure from any affected owners of land all easements and releases of rights-of-way necessary for utilization of the stormwater practices identified in Exhibit B and shall record them with the Town Clerk. These easements and releases of rights-of-way shall
not be altered, amended, vacated, released or abandoned without prior written approval of the Town of Greenwich.

2. The Owner(s) shall be solely responsible for the installation, maintenance and repair of the stormwater management practices, drainage easements and associated landscaping identified in Exhibit B in accordance with the Operation and Maintenance Plan (Exhibit A).

3. No alterations or changes to the stormwater management practice(s) identified in Exhibit B shall be permitted unless they are deemed to comply with this Declaration and are approved in writing by the Town of Greenwich.

4. The Owner(s) shall retain the services of a qualified inspector (as described in Exhibit A) to operate and ensure the maintenance of the stormwater management practice(s) identified in Exhibit B in accordance with the Operation and Maintenance Plan (Exhibit A).

5. The Owners(s) must maintain all records (logs, invoices, reports, data, etc.) and have them readily available for inspection at all times. Inspection Documentation must be maintained as frequently as required in Exhibit A.

6. The Town of Greenwich or its designee is authorized to access the property as necessary to conduct inspections of the stormwater management practices or drainage easements to ascertain compliance with the intent of this Declaration and the activities prescribed in Exhibit A. Upon written notification by the Town of Greenwich or their designee of required maintenance or repairs, the Owner(s) shall complete the specified maintenance or repairs within a reasonable time frame determined by the Town of Greenwich. The Owner(s) shall be liable for the failure to undertake any maintenance or repairs so that the public health, safety, general welfare or the environment shall not be endangered.

7. If the Owner(s) does not keep the stormwater management practice(s) in reasonable order and condition, or complete maintenance activities in accordance with the Operation and Maintenance Plan contained in Exhibit A, or the required maintenance or repairs under 6 above within the specified time frames, the Town of Greenwich is authorized, but not required, to perform the specified inspections, maintenance or repairs in order to preserve the intended functions of the practice(s) and prevent the practice(s) from becoming a threat to public health, safety, general welfare or the environment. In the case of an emergency, as determined by the Town of Greenwich, no notice shall be required prior to the Town of Greenwich performing emergency maintenance or repairs. The Town of Greenwich may levy the costs and expenses of such inspections, maintenance, repairs and appropriate fees against the Owner(s). The Town of Greenwich at the time of entering upon said stormwater management practice for the purpose of maintenance or repair may file a notice of lien upon the property affected by the lien. If said costs and expenses are not paid by the Owner(s), the Town of Greenwich may pursue the collection of same through appropriate court actions.

8. The Owner(s) hereby conveys to the Town of Greenwich an easement over, on and in the Property for the purpose of access to the stormwater management practice(s) for the inspection, maintenance and repair thereof, should the Owner(s) fail to properly inspect, maintain and repair the practice(s). The Town of Greenwich’s execution of any repair or maintenance does not alter the Owner(s) responsibility to maintain in future.
9. The Owner(s) agrees that this Declaration shall be recorded and that the land described in a deed recorded in Book ________ at Page ________ of the Greenwich Land Records shall be subject to the covenants and obligations contained herein, and this Declaration shall bind all current and future owners of the property.

10. The Owner(s) agrees in the event that the Property is sold, transferred, or leased to provide information to the new owner, operator, or lessee regarding proper inspection, maintenance and repair of the stormwater management practice(s). The information shall accompany the first deed transfer and include Exhibits A and B and this Declaration. The transfer of this information shall also be required with any subsequent sale, transfer or lease of the Property.

11. The Owner(s) agree that the rights, obligations and responsibilities hereunder shall commence upon execution of the Declaration.

12. The parties whose signatures appear below hereby represent and warrant that they have the authority and capacity to sign this declaration and bind the respective parties hereto.

13. The Proprietor, its agents, representatives, successors and assigns shall defend, indemnify and hold the Town of Greenwich harmless from and against any claims, demands, actions, damages, injuries, costs or expenses of any nature whatsoever, hereinafter “Claims”, fixed or contingent, known or unknown, arising out of or in any way connected with the design, construction, use, maintenance, repair or operation (or omissions in such regard) of the storm drainage system referred to in the permit as Exhibit “A” hereto, appurtenances, connections and attachments thereto which are the subject of this Declaration. The Proprietor, its agents, representatives, successors and assigns shall not be required to indemnify the Town, its officers, agents, servants, or employees, against any such damages occasioned solely by acts or omissions of the Town, its officers, agents, servants or employees, other than supervisory acts or omissions of the Town, its officers, agents; servants, or employees, in connection with such Claims or the enforcement of this Declaration.
IN WITNESS WHEREOF, the “Owner(s)” have executed this Declaration on this ______day of ______________________, 20____.

By: ________________________________
[Owner(s)]

By: ________________________________
[Owner(s)]

STATE OF CONNECTICUT )
) ss: Greenwich
COUNTY OF FAIRFIELD )

The foregoing instrument was acknowledged before me on this__________ day of
____________________, 20____, by ________________________________, the
“Owner(s)” of ____________________________________________.
[Owner(s)]

[Address]

Notary Public ________________________________

My Commission Expires On:

WHEN RECORDED RETURN COPY TO:
[All of the following departments involved in approval:
Building Division, Inland Wetlands & Watercourses Agency, and Planning & Zoning]
EXHIBIT “A-1”
Stormwater Operation & Maintenance Plan
Exhibit A
Operations and Maintenance Plan
11 Eggleston Lane
3/17/2020

Scope:
The purpose of the Operations and Maintenance Plan is to ensure that the existing and proposed stormwater components installed at (Property Address) are maintained in operational condition throughout the life of the project. The service procedures associated with this plan shall be performed as required by the parties legally responsible for their maintenance.

Recommended Frequency of Service:
As further defined below, all stormwater components should be checked on a periodic basis and kept in full working order. Ultimately, the required frequency of inspection and service will depend on runoff quantities, pollutant loading, and clogging due to debris. At a minimum, we recommend that all stormwater components be inspected and serviced twice per year, once before winter begins and once during spring cleanup.

Qualified Inspector:
The inspections must be completed by an individual experienced in the construction and maintenance of stormwater drainage systems. Once every five years the inspections must be completed by a professional engineer.

Service Procedures:
1. **Catch Basins & Drainage Inlets:**
   a. Catch basins and drainage inlets shall be completely cleaned of accumulated debris and sediments at the completion of construction.
   b. For the first year, catch basins and drainage inlets shall be inspected on a quarterly basis.
   c. Any accumulated debris within the catch basins/inlets shall be removed and any repairs as required.
   d. From the second year onward, visual inspections shall occur twice per year, once in the spring and once in the fall, after fall cleanup of leaves has occurred.
   e. Accumulated debris within the catch basins/inlets shall be removed and repairs made as required.
   f. Accumulated sediments shall be removed at which time they are within 12 inches of the invert of the outlet pipe.
   g. Any additional maintenance required per the manufacturer’s specifications shall also be completed.

2. **Storm Drainage Piping and Manholes/Junction Boxes:**
   a. All storm drainage piping shall be completely flushed of debris and accumulated sediment at the completion of construction.
   b. Manholes/Junction Boxes shall be inspected and repaired on an annual basis.
   c. Unless system performance indicates degradation of piping, comprehensive video inspection of storm drainage piping shall occur once every ten years.
   d. Any additional maintenance required per the manufacturer’s specifications shall also be completed.
3. **Stormwater Control Structures:**

   a. All control structures (orifice, weir, etc.) shall be completely cleaned of accumulated debris and sediments at the completion of construction. Any repairs shall be performed.
   b. For the first year, control structures (orifice, weir, etc.) shall be inspected on a quarterly basis.
   c. Any accumulated debris shall be removed and any repairs made to the control structures (orifice, weir, etc.) as required.
   d. From the second year onward, visual inspections shall occur twice per year, once in the spring and once in the fall, after fall cleanup of leaves has occurred.
   e. Accumulated debris shall be removed and repairs made as required.
   f. Any additional maintenance required per the manufacturer’s specifications shall also be completed.

4. **Porous Pavement (Pervious Concrete, Porous Asphalt, Permeable Interlocking Concrete Pavers, Flexi pave, Etc.):**

   a. Changing the porous pavement surface to an impervious surface requires the review and approval of the Town of Greenwich DPW Engineering Division.
   b. Clean and vacuum (Regenerative Air Vacuum for Permeable Interlocking Concrete Pavers) the porous pavement upon the completion of construction.
   c. Check for standing water on the surface of the pavement after a precipitation event. If standing water remains within 30 minutes after rainfall had ended, cleaning of porous pavement is recommended.
   d. Vacuum sweeper shall be used regularly to remove sediment and organic debris on the pavement surface. The sweeper may be fitted with water jets.
   e. Pavement vacuuming should occur during spring cleanup following the last snow event to remove accumulated debris, at a minimum.
   f. Pavement vacuuming should occur during fall cleanup to remove dead leaves, at a minimum.
   g. Power washing can be an effective tool for cleaning clogged areas. See manufacturer’s specifications.
   h. Check for debris accumulating on pavement, especially debris buildup in winter. For loose debris, a power/leaf blower or gutter broom can be used to remove leaves and trash.
   i. In the event that the porous surface becomes clogged an engineer must be retained to determine how to restore the porous surface to its original condition.
   j. Any additional maintenance required per the manufacturer’s specifications shall also be completed.

5. **Roof Gutters:**

   a. Remove accumulated debris and inspect for damage. Any damage should be repaired as required.

---

**Disposal of Debris and Sediment:**

All debris and sediment removed from the stormwater structures and bioretention/biofiltration basins shall be disposed of legally. There shall be no dumping of silt or debris into or in proximity to any inland or tidal wetlands.
Maintenance Records:

The Owners(s) must maintain all records (logs, invoices, reports, data, etc.) and have them readily available for inspection at all times.
EXHIBIT “A-2”
Stormwater Operation & Maintenance Log
# Operations and Maintenance Log

**Location:** 11 Eggleston Lane

<table>
<thead>
<tr>
<th>Type of Inspection (Please Circle):</th>
<th>Spring</th>
<th>Fall</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspector's Name:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspection Date:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affiliation:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phone Number:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Catch Basins & Drainage Inlets

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has accumulated debris been removed from grates?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do any basins require additional repair? (identify below)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have sumps been cleaned of sediment?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

## Storm Drainage Piping and Manholes/Junction Boxes

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has accumulated debris been removed?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do any manholes require additional repair? (identify below)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there any evidence of stormwater piping failure?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has a comprehensive video inspection been completed?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

## Stormwater Control Structures

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has accumulated debris been removed?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are any repairs required? (identify below)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have orifices and weirs been cleaned of debris?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
<table>
<thead>
<tr>
<th>Porous Pavement</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is there any standing water noticed after rainfall?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has pavement been vacuum swept?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are there any damaged areas that need repair?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has draining times been verified?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is stockpiling of materials avoided on the pavement?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:

---

<table>
<thead>
<tr>
<th>Roof Gutters</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has accumulated debris been removed from gutters?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do any gutters require additional repair? (identify below)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:

---

additional maintenance that has been performed.

Signature of Inspector: ___________________________  Date: ___________
EXHIBIT “B”
Improvement Location Survey
LEGEND:
1. GAF TIMBERLINE ASPHALT SHINGLES
2. PTD. WHITE CEDAR R & R SHINGLE SIDING (5" EXPOSED RAILING)
3. PTD. 1X10 C-CHANNEL SHIPLAP HORIZONTAL BOARDS
4. 1/4" SQUARE COLUMN PTD - (SEE DETAIL)
5. PTD. 1X FLAT
6. PTD FLAT FASCIA BOARD
7. ZINC TIN COATED COPPER STANDING SEAM ROOF
8. 6" ALUMINUM HALF ROUND GUTTER
9. PTD MDO RECESSED PANEL
10. STAINLESS STEEL ROD RAIL w/ NATURAL MAHOGANY (TYP.)
11. 5/4"X6" X CASING & SILL (WINDOWS & DOORS)
12. GARAGE DOOR PTD.
13. 6" SKIRT FLAIR
14. CABLE RAILING
15. STONE VENEER
LEGEND:
1- GAF TIMBERLINE ASPHALT SHINGLES
2- PTD. WHITE CEDAR R & R SHINGLE SIDING (5" EXPOSURE) 3- PTD. 1x10 C-CHANNEL SHIPLAP HORIZONTAL BOARDS 4- 14" SQUARE COLUMN PTD - (SEE DETAIL) 5- PTD. 1" FLAT 6- PTD FLAT FASCIA BOARD 7- ZINC TIN COATED COPPER STANDING SEAM ROOF 8- 6" ALUMINUM HALFROUND GUTTER 9- PTD MDO RECESSED PANEL 10- STAINLESS STEEL ROD RAIL w/ NATURAL MAHOGANY (TYP.) 11- 5/4"X6" CASING & SILL (WINDOWS & DOORS)
## AS BUILT F.A.R. & GROSS FLOOR AREA CALCULATIONS

NOTE: CALCULATIONS GENERATED BASED ON SURVEY COMPLETED BY LAND SURVEYING SERVICES

Zone RA-12
12,916 SF LOT AREA
F.A.R. 315 x 12,916 = 4,068.54 SF ALLOW FAIR

### HOUSE FIRST FLOOR SQUARE FOOTAGE CALCULATIONS

<table>
<thead>
<tr>
<th>AREA</th>
<th>SQUARE FOOTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>997 SQ FT</td>
</tr>
<tr>
<td>B</td>
<td>53 SQ FT</td>
</tr>
<tr>
<td>C</td>
<td>35 SQ FT</td>
</tr>
<tr>
<td>D</td>
<td>60 SQ FT</td>
</tr>
<tr>
<td>E</td>
<td>228 SQ FT</td>
</tr>
<tr>
<td>F</td>
<td>23 SQ FT</td>
</tr>
<tr>
<td>G</td>
<td>62 SQ FT</td>
</tr>
<tr>
<td>H</td>
<td>529 SQ FT</td>
</tr>
</tbody>
</table>

**TOTAL** 2,884 SQ FT

### HOUSE SECOND FLOOR SQUARE FOOTAGE CALCULATIONS

<table>
<thead>
<tr>
<th>AREA</th>
<th>SQUARE FOOTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>56 SQ FT</td>
</tr>
<tr>
<td>B</td>
<td>66 SQ FT</td>
</tr>
<tr>
<td>C</td>
<td>83 SQ FT</td>
</tr>
<tr>
<td>D</td>
<td>106 SQ FT</td>
</tr>
<tr>
<td>E</td>
<td>148 SQ FT</td>
</tr>
<tr>
<td>F</td>
<td>88 SQ FT</td>
</tr>
<tr>
<td>G</td>
<td>155 SQ FT</td>
</tr>
<tr>
<td>H</td>
<td>44 SQ FT</td>
</tr>
<tr>
<td>I</td>
<td>24 SQ FT</td>
</tr>
<tr>
<td>J</td>
<td>43 SQ FT</td>
</tr>
</tbody>
</table>

**TOTAL** 955 SQ FT

PERCENTAGE OF ATTIC AREA OVER 2ND FLOOR FOOTPRINT: 38%

### HOUSE ATTIC FLOOR SQUARE FOOTAGE CALCULATIONS

**TOTAL** 9 SQ FT

### TOTAL SQUARE FOOTAGE

**GRAND TOTAL** 4,051 SQ FT

### ALLOWABLE GROSS FLOOR AREA = 4,068.54 SQ FT

GROSS FLOOR AREA BELOW ALLOWABLE GFA (4,068.54 - 4,031.51) = 17.54 SQ FT
NOTE:  -CONFIRM ALL FIXTURE FINISH COLOR WITH OWNER

-ALL ROOMS TO HAVE AT LEAST ONE NIGHT LIGHT SWITCH

ELECTRICAL SYMBOLS

NOTE:  -ONE SWITCH TO BE ILLUMINATED DECORA IN EACH ROOM

-ALL OUTLETS TO BE TO CODE

LIGHTING FIXTURE SCHEDULE