## studio raí,

Architectural Design P.C.
$505^{\text {th }}$ ave..
Pelham, NY 10803
Tel: (914) 273-6843
Fax:(914) 763-0216

Att: Mr. Adam R. Kaufman AICP, RPRC Chair

Re: Arben Gecaj Residence 6 Cannato Place
Zone: R-1A Tax ID:101.01-1-45 Application \# 2023-0511
Dear Mr. Kaufman,
Attached please find our Submission to the Planning Board as requested by RPRC Determination Letter.
Plans and application included.

Sincerely,
Lucío Dí Leo

Lucio Di Leo R.A., AIA

## PROPOSED NEW RESIDENCE

6 CANNATO PLACE ARMONK, NY 10504

Tuesday, July 25, 2023





For Estimating Purposes Only
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| SITEPLAN |
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| SCHEDUE |

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Gecaj Residence
6 Cannato Place
August 2, 2023
( pouder design group


Legend


Plant Schedule



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FIRST FLOOR 4,308 sq.ft.

PROPOSED TOTAL AREA---6,936.5 sq.ft.
MAX FLOOR AREA ALLOWED 6,978 sq.ft.
98.5 sq.ft.


SECOND FLOOR 2,628.5 sq.ft.


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## SECTION 1: GENERAL DATA





## SECTION 2 : SITE WORK


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## SECTION 3 : CONCRETE

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SECTION 4: MASONRY










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SECTION 6: WOOD AND PLASTICS














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SECTION 7: THERMAL AND MOISTURE PROTECTION


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## SECTION 8: WINDOWS AND DOORS




## SECTION 9 : FINISHES





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SECTION 10: SPECIALITIES
SECTION 11: EQUIPMENT


| SECTION 12 | FURNISHINGS |
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SECTION 13: SPECIAL CONSTRUCTION




SECTION 14: CONVEYING SYSTEMS

SECTION 15: MECHANICAL


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DESIGN LOAD ALLOWANCES


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FIRST FLOOR LIGHTING PLAN









studio rai


SECOND FLOOR LIGHTING PLAN

| ELECTRICALLEGEND |
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PLANNING DEPARTMENT
Adam R. Kaufman, AICP Director of Planning

TOWN OF NORTH CASTLE
WESTCHESTER COUNTY
17 Bedford Road
Armonk, New York 10504-1898

# Application for Site Development Plan Approval 

TOWN OF NORTH CASTLE

## WESTCHESTER COUNTY

17 Bedford Road
Armonk, New York 10504-1898

PLANNING DEPARTMENT
Adam R. Kaufman, AICP Director of Planning

Telephone: (914) 273-3542
Fax: (914) 273-3554
www.northcastleny.com

## Important General Information

- Prior to submitting an application, the "Notice to Applicants" should be reviewed.
- To appear before the Planning Board, all required application materials shall be submitted not later than 12:00 P.M., Monday, fourteen (14) days prior to the date of the Planning Board meeting at which the application is scheduled to be heard or as otherwise noted by the Planning Board Secretary. Continuing Business can be submitted 12 days prior to the Next Planning Board meeting by the close of business. Except where noted.
If all required application materials, including the pertinent application fee and escrow monies are not submitted by that deadline, the application shall be automatically removed from the agenda.
At the discretion of the Planning Board Chairman, the application may be rescheduled, if appropriate, for the next available Planning Board meeting or the application may be removed from future agendas altogether. Without prior authorization from the Planning Board, application submissions shall not be accepted at Planning Board meetings.
- At the time of submission, all required application materials shall be submitted. Piecemeal submissions shall not be accepted. Substitution of previously submitted materials shall not be permitted.
- All submissions shall be dated, with revision dates identified on new submissions.
- All submissions shall be accompanied by a cover letter describing the project and/or any changes as compared to previous submissions.
- To be considered complete for Planning Board hearing purposes, an application package shall contain the information identified in Parts IV and V of this application form.

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Adam R. Kaufman, AICP
Fax: (914) 273-3554
Director of Planning

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## AT THE TIME OF SUBMISSION TO THE PLANNING DEPARTMENT PLEASE MAKE SURE THE FOLLOWING IS PROVIDED

$\checkmark$ SUBMISSION OF A SINGLE PDF FILE (PLANS, APPLICATION FORM, OTHER PAPERWORK) ON A DISK, THUMBDRIVE OR EMAIL
$\checkmark$ COVER LETTER DESCRIBING THE PROJECT OR CHANGES TO THE PROJECT
$\checkmark$ ALL PLANS ARE SIGNED AND SEALED BY A LICENSED NYS PROFESSIONAL

# PLANNING DEPARTMENT <br> Adam R. Kaufman, AICP Director of Planning 

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## NOTICE TO APPLICANTS

In the Town of North Castle, the Planning Board is responsible for the review and approval of all applications concerning site plans, subdivisions and lot line changes; some applications concerning special use permits, wetlands permits and tree removal permits; and the environmental review of those applications over which it has jurisdiction. The Planning Board may also have an advisory role in connection with some applications before the Town Board, such as those involving other categories of special use permits and zoning amendments.

The Planning Board is composed of five volunteer members - all residents of North Castle - who are appointed by the Town Board for five-year terms. As part of the review of some applications, the Planning Board is assisted on an as-needed basis by other lay boards of the Town, such as the Conservation Board (CB), the Zoning Board of Appeals (ZBA), the Open Space Committee and the Architectural Review Board (ARB). As part of the review of most applications, the Planning Board is also assisted by the Director of Planning, the Town Engineer, the Town Attorney and other special consultants when required.

## FEES:

If you submit an application for Planning Board review, you will be required to reimburse the Town for the cost of professional review services, including legal and engineering services, incurred in connection with the review of your application. The charges for professional planning review services have been $\$ 120 /$ hour. If other types of professional consultant review services are required, those charges will be in accord with fees usually charged for such services and pursuant to a contractual agreement between the Town and such professional.

At the time of submission of an application, the Planning Board will require the establishment of an escrow account from which withdrawals shall be made to reimburse the Town for the cost of consultant fees and professional staff services.

## ESCROW ACCOUNT:

Escrow Accounts are established for each application. Monies will be deducted from the account for professional review services rendered. Monthly escrow disbursement summaries will be mailed for your reference regarding your project. When the balance in such escrow account is reduced to one-third ( $1 / 3$ ) of its initial amount, a letter will be mailed to the applicant and the applicant shall deposit additional funds into such account to restore its balance to the amount of the initial deposit. Additional information on these requirements is provided in the North Castle Town Code (see Sections 355-79B and 275-36.C).

TOWN OF NORTH CASTLE

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## PROCEDURE:

Prior to submitting an application to the Planning Board for review and approval, prospective applicants should schedule an appointment with the Planning Board Secretary at (914) 273-3542 for a consultation with the Town Planner and the Town Engineer. When the appointment is made, a verbal description of the proposal should be provided to the Planning Board Secretary. The Town of North Castle is providing the services of the Director of Planning and the Town Engineer for initial consultation at no cost to the applicant so that it is possible to conduct the application review as efficiently as possible for the benefit of the applicant as well as the Planning Board.

After meeting with the Town Planner and Town Engineer, prospective applicants should prepare one complete set of application documents and plans. This set will be reviewed for completeness by the Town Planner. If determined to be incomplete, the Planning Department will submit a checklist indicating which items have not been adequately addressed. If determined to be complete, the checklist will be initialed and the Applicant should submit the remainder of the required application packages.

Once the checklist has been initialed and all application packages have been submitted, the Planning Board Secretary will schedule the application for the first available opening on the Planning Board's meeting agenda. However, if the required application material packages, including the pertinent application fee are not received at the Planning Board office by 12:00 PM, Monday, 14 days prior to the date of the Planning Board meeting at which you are scheduled to appear (or otherwise scheduled by the Planning Board Secretary), your application will be automatically removed from the agenda. At the discretion of the Planning Board Chairman, your application may be rescheduled, if appropriate, for the next available Planning Board meeting or the application may be removed from future agendas altogether. Additional requirements pertinent to each type of application are provided on the individual application forms, which you should carefully review prior to submitting your application.

When an application is deemed complete and submitted for review, it will be forwarded to the Planning Board Members and its professional advisors in advance of the meeting to allow adequate time for review, preparation of written reports and site inspections as necessary. Your application may also be forwarded to other boards and staff of the Town as well as to agencies outside of the Town, if required. Compliance with State Environmental Quality Review (SEQR) procedures is also required as part of the processing of all applications.

At your first appearance before the Planning Board, the Applicant will describe the project and the Planning Board will discuss any preliminary issues. The Planning Board discussion may be continued at future meetings, or if the Planning Board review has progressed sufficiently, the Application may be scheduled for a public hearing (if one is required) The public hearing may occur at a single Planning Board meeting, or it may be adjourned and continued at another Planning Board meeting. Because the nature and complexity of each application varies

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considerably, it is not possible to predict in advance the length of time needed to secure Planning Board approval. There are certain steps that you can take, however, to expedite the review process. These include, but are not limited to, the following:

- Be thoroughly familiar with the requirements pertinent to your application. Carefully review relevant provisions of the North Castle Town Code and the application form for your particular type of application. Be sure to check on what other types of approvals may be required in addition to that of the Planning Board. Approvals by other Town boards or departments as well as agencies outside of the Town may be required before you will be allowed to proceed with your project.
- Make sure that your application materials are accurately prepared and contain all required information. The information that we initially request is required, so make sure that your submission is complete. If supplementary information is requested as the review process continues, make sure that it is submitted in a timely fashion so the Planning Board can continue to move your application along.
- Follow up to make sure that your application materials are being submitted on time, or deliver them to the Planning office yourself.
- Attend the Planning Board meeting at which your application will be discussed and be on time for the meeting. If you cannot appear personally, make sure that your representative will be there and is thoroughly familiar with your application.

If the Application is approved by the Planning Board, a resolution of approval will be adopted by the Planning Board. It is the Applicant's responsibility to address any and all conditions of approval. Permits from the Building Department cannot be issued until all conditions have been addressed and the plans have been signed by the Planning Board Chair and the Town Engineer.

## ON LINE AGENDAS \& PLANNING DEPARTMENT MEMORANDA CAN BE REVIEWED AT

PLANNING DEPARTMENT<br>Adam R. Kaufman, AICP Director of Planning

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## INFORMATION REGARDING PUBLIC HEARINGS

1. The North Castle Assessor's Office shall prepare a list of neighbors to be notified for the neighbor notifications and public hearings - A minimum of one week's notice is required. The fee is $\$ 50.00$ which includes the list of neighbors and two sets of labels for mailing. The Assessor's Office may be reached Monday - Friday from 8:30 a.m.4:30 p.m. at 273-3324. You may also e-mail your request to assessor@northcastleny.com

When requesting your list please reference the list of application types below so that you can tell the Assessor's office how many feet on all sides of the property to create the list for.

Subdivisions - All lots zoned R-10, R-5 and R-2F shall notice all neighbors within 200 feet from all sides of their property. All other zoning districts shall notice neighbors within 500 feet from all sides of their property. Public hearing notice must be published in the newspaper.

Special Use Permit for Structures over 800 sq ft. \& Accessory Apartment - All Zoning Districts shall notice all neighbors within 250 feet from all sides of their property. Public hearing notice must be published in the newspaper.

Site Plan, Non Residential - All Zoning Districts shall notice all neighbors within 250 feet from all sides of their property. Public hearing notice must be published in the newspaper.

Site Plan, Residential/ Neighbor Notification - All zoning districts R-3/4A or smaller shall notice all neighbors within 250' from all sides of their property. All zoning districts zoned R-1A or larger shall notice all neighbors within 500 ' from all sides of the property. No public hearing required, no publication in the newspaper required.

Wetlands Permit - All Zoning Districts shall notice all abutting property owners. Public hearing notice must be published in the newspaper.
2. The Director of Planning will prepare a Public Notice. The applicant and or professional will review, sign, date and return to the Planning Department Secretary. If there are any changes necessary, please edit and return for corrections. The corrections will be made and emailed back to the applicant who will forward it to the Journal Newspaper, when applicable.

If notification to the newspaper is not required, please continue to \#3.

TOWN OF NORTH CASTLE

WESTCHESTER COUNTY<br>17 Bedford Road<br>Armonk, New York 10504-1898

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You may email your public notice to legals@lohud.com. Please request an affidavit of publication which must be submitted to the Planning Board secretary prior to the public hearing. The Journal News requires three days prior notice before 12 noon, not counting weekends and holidays, for ad placement. Make sure the notice placement of the ad in the Greater Westchester Area. This notice cannot be published any sooner than 20 days prior to the meeting and must be published no less than 10 days prior to the meeting.

If you have any questions regarding your publication you may call 888-516-9220: Email Address: legals@lohud.com

It is suggested that you purchase the newspaper for your records the day the notice is published.
3. Send out the Public Hearing Notice/ Neighbor Notification by First Class Mail. Notice shall be mailed by the applicant in official envelopes provided by the North Castle Planning Department; the list of noticed neighbors will be prepared by the Assessor's Office. This must be sent out no less than 10 days prior to the meeting and no more than 20 days prior to the meeting date. A Certificate of Mailing (PS Form 3817 or 3877) shall be filled out and post marked by the Post Office on the day of mailing. Neighbor Notifications - no publication in the newspaper required.
4. The Friday before the meeting or no later than $12: 00 \mathrm{p} . \mathrm{m}$. the day of the meeting the following must be submitted.

- $\quad$ List of Neighbors prepared by the Assessor’s Office
- $\quad$ Certificate of Mailing - PS form 3817 or 3877 post marked by the US Post Office
- Affidavit of publication from the Newspaper (only if published in the newspaper)



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## APPLICATIONS REQUIRING PLANNING BOARD APPROVAL SCHEDULE OF APPLICATION FEES

| Type of Application | Application Fee |
| :---: | :---: |
| Site Development Plan | \$200.00 |
| Each proposed Parking Space | \$10 |
| Special Use Permit (each) | \$200 (each) |
| Preliminary Subdivision Plat | $\begin{aligned} & \$ 3001^{\text {st }} \text { Lot } \\ & \$ 200 \text { (each additional lot) } \end{aligned}$ |
| Final Subdivision Plat | $\begin{aligned} & \text { \$250 } 1^{\text {st }} \text { Lot } \\ & \$ 100 \text { (each additional lot) } \end{aligned}$ |
| Tree Removal Permit | \$75 |
| Wetlands Permit | \$50 (each) |
| Short Environmental Assessment Form | \$50 |
| Long Environmental Assessment Form | \$100 |
| Recreation Fee | \$10,000 Each Additional Lot |
| Discussion Fee <br> Prior to submission of a sketch or prelim representative wishes to discuss a subdivis $\$ 200.00$ shall be submitted for each info | \$200.00 <br> applicant or an applicant's ning Board, a discussion fee of e board. |

*Any amendment to previously approved applications requires new application forms and Fes*

## PLANNING BOARD SCHEDULE OF ESCROW ACCOUNT DEPOSITS

## Type of Application

## Deposit*

Concept Study
Site Plan Waiver for Change of Use
Site Development Plan for:
Multifamily Developments

Commercial Developments

1 or 2 Family Projects
Special Use Permit
Subdivision:
Lot Line Change resulting in no new lots
All Others

Preparation or Review of Environmental Impact
Statement

Amount of Initial Escrow Account
$\$ 500.00$
\$500.00
\$3,000.00 plus $\$ 100.00$ per proposed dwelling unit
$\$ 3,000.00$ plus $\$ 50.00$ for each required parking space
\$2,000.00
$\$ 2,000.00$ plus $\$ 50.00$ for each required parking space
\$1,500.00
\$3,000.00 plus $\$ 200.00$ per proposed new lot in excess of two (2)
\$15,000.00

* If a proposed action involves multiple approvals, a single escrow account will be established. The total amount of the initial deposit shall be the sum of the individual amounts indicated. When the balance in such escrow account is reduced to one-third (1/3) of its initial amount, the applicant shall deposit additional funds into such account to restore its balance to the amount of the initial deposit.


## I. IDENTIFICATION OF PROPERTY OWNER, APPLICANT AND PROFESSIONAL REPRESENTATIVES



## Applicant Acknowledgement

By making this application, the undersigned Applicant agrees to permit Town officials and their designated representatives to conduct on-site inspections in connection with the review of this application.

The Applicant also agrees to pay all expenses for the cost of professional review services required for this application.

It is further acknowledged by the Applicant that all bills for the professional review services shall be mailed to the Applicant, unless the Town is notified in writing by the Applicant at the time of initial submission of the application that such mailings should be sent to a designated representative instead.


MUST HAVE BOTH SIGNATURES

## II. IDENTIFICATION OF SUBJECT PROPERTY

Street Address: 6 Cannato Place
Location (in relation to nearest intersecting street):
$\qquad$ feet (north, south, east or west) of $\qquad$ High Street

Abutting Street(s): $\qquad$
Tax Map Designation (NEW): Section_101.01_Block_ 1 Lot_ 45
Tax Map Designation (OLD): Section_101.01_Block__ 1 Lot_ 45
Zoning District: R-1A Total Land Area 1 Acre
Land Area in North Castle Only (if different) $\qquad$
Fire District(s)_N/A School District(s)_ N/A
Is any portion of subject property abutting or located within five hundred (500) feet of the following:
The boundary of any city, town or village?
No X Yes (adjacent) $\qquad$ Yes (within 500 feet) $\qquad$ If yes, please identify name(s): $\qquad$
The boundary of any existing or proposed County or State park or any other recreation area?
No $\qquad$ X Yes (adjacent) $\qquad$ Yes (within 500 feet) $\qquad$
The right-of-way of any existing or proposed County or State parkway, thruway, expressway, road or highway?
No X Yes (adjacent) $\qquad$ Yes (within 500 feet) $\qquad$
The existing or proposed right-of-way of any stream or drainage channel owned by the County or for which the County has established channel lines?
No X_Y Yes (adjacent) ___ Yes (within 500 feet) $\qquad$
The existing or proposed boundary of any county or State owned land on which a public building or institution is situated?
No X Yes (adjacent) $\qquad$ Yes (within 500 feet) $\qquad$
The boundary of a farm operation located in an agricultural district?
No X Yes (adjacent) $\qquad$ Yes (within 500 feet) $\qquad$
Does the Property Owner or Applicant have an interest in any abutting property?
No X Yes $\qquad$
If yes, please identify the tax map designation of that property:

## III. DESCRIPTION OF PROPOSED DEVELOPMENT

Proposed Use: $\qquad$ Residential

Gross Floor Area: Existing N/A_S.F. Proposed _6,943.5 S.F.
Proposed Floor Area Breakdown:


Number of Parking Spaces: Existing N/A Required ___ Proposed $\qquad$
Number of Loading Spaces: Existing N/A Required $\qquad$ Proposed $\qquad$ Earthwork Balance: Cut $\qquad$ C.Y. Fill $\qquad$ C.Y.

Will Development on the subject property involve any of the following:
Areas of special flood hazard? No X__ Yes $\qquad$
(If yes, application for a Development Permit pursuant to Chapter 177 of the North Castle Town Code may also be required)

Trees with a diameter at breast height (DBH) of 8" or greater?
No $\qquad$ Yes X
(If yes, application for a Tree Removal Permit pursuant to Chapter 308 of the North Castle Town Code may also be required.)

Town-regulated wetlands? No X Yes $\qquad$
(If yes, application for a Town Wetlands Permit pursuant to Chapter 340 of the North Castle Town Code may also be required.)

State-regulated wetlands? No X Yes $\qquad$
(If yes, application for a State Wetlands Permit may also be required.)

## IV. SUBMISSION REQUIREMENTS

The site development plan application package shall include all materials submitted in support of the application, including but not limited to the application form, plans, reports, letters and SEQR Environmental Assessment Form. Submission of the following shall be required:

- One (1) PDF set of the site development plan application package in a single PDF file .
- A check for the required application fee and a check for the required Escrow Account, both made payable to "Town of North Castle" in the amount specified on the "Schedule of Application Fees."
(continued next page)


## V. INFORMATION TO BE INCLUDED ON SITE DEVELOPMENT PLAN

The following checklist is provided to enable the Applicant to determine if he/she has provided enough information on the site development plan for the Planning Board to review his/her proposal. Applicants are advised to review ARTICLE VIII, Site Development Plan of the North Castle Town Code for a complete enumeration of pertinent requirements and standards prior to making application for site development plan approval.

The application for site development plan approval will not be accepted for Planning Board review unless all items identified below are supplied and so indicated with a check mark in the blank line provided. If a particular item is not relevant to the subject property or the development proposal, the letters "NA" should be entered instead. In addition, the project will not be scheduled on a Planning Board agenda until the Applicant receives an initialed "site plan checklist" from the Planning Department.

The information to be included on a site development plan shall include:

## Legal Data:



Name of the application or other identifying title.
Name and address of the Property Owner and the Applicant, (if different).
Name, address and telephone number of the architect, engineer or other legally qualified professional who prepared the plan.
Names and locations of all owners of record of properties abutting and directly across any and all adjoining streets from the subject property, including the tax map designation of the subject property and abutting and adjoining properties, as shown on the latest tax records.


Existing zoning, fire, school, special district and municipal boundaries.
Size of the property to be developed, as well as property boundaries showing dimensions and bearings as determined by a current survey; dimensions of yards along all property lines; name and width of existing streets; and lines of existing lots, reservations, easements and areas dedicated to public use.


Reference to the location and conditions of any covenants, easements or deed restrictions that cover all or any part of the property, as well as identification of the document where such covenants, easements or deed restrictions are legally established.

Schedule of minimum zoning requirements, as well as the plan's proposed compliance with those requirements, including lot area, frontage, lot width, lot depth, lot coverage, yards, off-street parking, off-street loading and other pertinent requirements.

Locator map, at a convenient scale, showing the Applicant's entire property in relation to surrounding properties, streets, etc., within five hundred (500) feet of the site.

North arrow, written and graphic scales, and the date of the original plan and all revisions, with notation identifying the revisions.
$\qquad$ A signature block for Planning Board endorsement of approval.

## Existing Conditions Data:



Location of existing use and design of buildings, identifying first floor elevation, and other structures.
Location of existing parking and truck loading areas, with access and egress drives thereto.
Location of existing facilities for water supply, sanitary sewage disposal, storm water drainage, and gas and electric service, with pipe sizes, grades, rim and inverts, direction of flow, etc. indicated.

Location of all other existing site improvements, including pavement, walks, curbing, retaining walls and fences.
$\qquad$ Location, size and design of existing signs.
$\qquad$ Location, type, direction, power and time of use of existing outdoor lighting.
Location of existing outdoor storage, if any.
Existing topographical contours with a vertical interval of two (2) feet or less.
Location of existing floodplains, wetlands, slopes of $15 \%$ or greater, wooded areas, landscaped areas, single trees with a DBH of 8" or greater, rock outcrops, stone walls and any other significant existing natural or cultural features.

## Proposed Development Data:

$\checkmark$ Proposed location of lots, streets, and public areas, and property to be affected by proposed easements, deed restrictions and covenants.

Proposed location, use and architectural design of all buildings, including proposed floor elevations and the proposed division of buildings into units of separate occupancy.
$\checkmark$
Proposed means of vehicular and pedestrian access to and egress from the site onto adjacent streets.
$\qquad$ Proposed sight distance at all points of vehicular access.
$\qquad$ Proposed number of employees for which buildings are designed
Proposed streets, with profiles indicating grading and cross-sections showing the width of the roadway; the location and width of sidewalks; and the location and size of utility lines.

Proposed location and design of any pedestrian circulation on the site and off-street parking and loading areas, including handicapped parking and ramps, and including details of construction, surface materials, pavement markings and directional signage.

Proposed location and design of facilities for water supply, sanitary sewage disposal, storm water drainage, and gas and electric service, with pipe sizes, grades, rim and inverts, direction of flow, etc. indicated.

$\square$
Proposed location of all structures and other uses of land, such as walks, retaining walls, fences, designated open space and/or recreation areas and including details of design and construction.
$\qquad$ Location, size and design of all proposed signs.
$\qquad$ Location, type, direction, power and time of use of proposed outdoor lighting.
$\qquad$ Location and design of proposed outdoor garbage enclosure.
$\qquad$ Location of proposed outdoor storage, if any.
$\qquad$ Location of proposed landscaping and buffer screening areas, including the type (scientific and common names), size and amount of plantings.
$\qquad$ Type of power to be used for any manufacturing
$\qquad$ Type of wastes or by-products to be produced and disposal method
$\qquad$ In multi-family districts, floor plans, elevations and cross sections
The proposed location, size, design and use of all temporary structures and storage areas to be used during the course of construction.

$\checkmark$Proposed grade elevations, clearly indicating how such grades will meet existing grades of adjacent properties or the street.


Proposed soil erosion and sedimentation control measures.
For all proposed site development plans containing land within an area of special flood hazard, the data required to ensure compliance with Chapter 177 of the North Castle Town Code.

For all proposed site development plans involving clearing or removal of trees with a DBH of 8 " or greater, the data required to ensure compliance with Chapter 308 of the North Castle Town Code.
$\qquad$ For all proposed site development plans involving disturbance to Town-regulated wetlands, the data required to ensure compliance with Chapter 340 of the North Castle Town Code.

F:\PLAN6.0\Application Forms\2016 Full Set\Part B - Site Devel 2016.doc

# Short Environmental Assessment Form <br> Part 1 - Project Information 

## Instructions for Completing

Part 1 - Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.



| 14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:Shoreline Forest $\square$ Agricultural/grasslands $\square$ Early mid-successional$\square$ Wetland Urban $\square$ Suburban |  |  |
| :---: | :---: | :---: |
| 15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered? | NO | YES |
|  | $\square$ |  |
| 16. Is the project site located in the 100 -year flood plan? | NO | YES |
|  | $\square$ |  |
| 17. Will the proposed action create storm water discharge, either from point or non-point sources? If Yes, | NO | YES |
|  |  | $\square$ |
| b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)? If Yes, briefly describe: <br> Stormwater runoff will be collected \& conveyed via a comprehensive drainage system and discharged to sub-surface infilltration chambers. | $\square$ |  |
|  | $\square$ |  |
|  |  |  |
| 18. Does the proposed action include construction or other activities that would result in the impoundment of water or other liquids (e.g., retention pond, waste lagoon, dam)? <br> If Yes, explain the purpose and size of the impoundment: $\qquad$ | NO |  |
|  |  |  |
|  | $\square$ |  |
| 19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? <br> If Yes, describe: | NO | YES |
|  | $\square$ |  |
| 20.Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? <br> If Yes, describe: | NO | YES |
|  | $\square$ |  |
|  |  |  |
| I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE |  |  |
| Applicant/sponsor/name; Mienter spein <br> Date: 08/04/2023 |  |  |
| Signature: $\qquad$ Title: Professional Engineer |  |  |


Part 1 / Question 7 [Critical Environmental No
Area]

Part 1 / Question 12a [National or State No Register of Historic Places or State Eligible Sites]
Part 1 / Question 12b [Archeological Sites] Yes
Part 1 / Question 13a [Wetlands or Other Yes - Digital mapping information on local and federal wetlands and Regulated Waterbodies] waterbodies is known to be incomplete. Refer to EAF Workbook.
Part 1 / Question 15 [Threatened or No Endangered Animal]
Part 1 / Question 16 [100 Year Flood Plain] No
Part 1 / Question 20 [Remediation Site] No

ENGINEERING
CONSULTING, P.C.

April 29, 2021
Adam R. Kaufman AICP, Chair
Residential Project Review Committee
Town of North Castle
17 Bedford Road
Armonk, NY 10504
Re: New Single-Family Residence 6 CANNATO PL Application no.: 2023-0511
Tax ID: 101.01-1-45
Dear Mr. Kaufman:
We have received your comment memo dated July 5, 2023, and offer the following responses on behalf of the applicant. Responses are in bold.

1. The lot line labeling and depicted setbacks are incorrect. The front lot line is the line fronting on Cannato Place. The line opposite the front lot line is the rear and all other lot lines are side lot lines.

Comment noted. See revised lot line labeling and setbacks on sheet C-2.
2. The site plan depicts the removal of 17 Town-regulated trees. The Applicant should submit a tree mitigation/landscaping plan for review.

A tree mitigation/landscaping plan is included in this submission from the landscape architect.
3. The site contains Town-regulated steep slopes. The Applicant has provided steep slope information for the whole site but did not quantity proposed Town-regulated steep slope disturbance (in square feet).

See steep slopes data on sheet C-2 showing Town-regulated steep slope disturbance.
4. The proposed garage apron is proposed to be constructed on a steep slope necessitating the construction of a two-tiered retaining wall and the regrading of the hillside to the property line. The retaining wall should be increased in height to eliminate the slope re-grading.

Adam R. Kaufman AICP, Chair
Residential Project Review Committee
Town of North Castle
17 Bedford Road
Armonk, NY 10504
Page 2 of 4

Comment noted. The height of the proposed retaining walls has been increased to eliminate most of the disturbance/re-grading to the hillside. See sheet C-2.
5. The submitted elevations should be revised to depict Building Height (average grade to weighted roof midpoint).

## See architectural plans from Studio Rai.

6. The submitted elevations should be revised to depict Max. Ext Wall Height (lowest grade to weighted roof midpoint).

## See architectural plans from Studio Rai.

7. The Applicant should submit a gross land coverage backup exhibit for review.

## See sheet C-1.

8. The applicant shall provide stormwater mitigation and design calculations for the runoff generated by the net increase in impervious surface for the 100-year, 24hour design storm.

## See Stormwater Narrative.

9. The stormwater system design should address the location and direction of overflow discharge from the system.

See sheet C-3, Stormwater Management Plan. The proposed 12x12 catch basin upstream of the proposed Cultec units acts as an overflow should exfiltration rates fail to keep up with the storm event.
10. The applicant shall perform deep and percolation soil testing in the vicinity of the proposed mitigation system to be witnessed by the Town Engineer. Contact the Town Engineer to schedule the testing.

Adam R. Kaufman AICP, Chair
Residential Project Review Committee
Town of North Castle
17 Bedford Road
Armonk, NY 10504
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## Comment noted.

11. The lower rear patio will drain to the rear of the property and discharge on top of a very steeply, sloping hillside below. The applicant should mitigate the patio runoff and avoid any discharge to the steep hillside.

Please note the lower patio is covered by a first-floor patio which is tributary to the proposed Cultec system. See sheet C-3, Stormwater Management Plan.
12. The property is accessed by a common driveway also servicing two (2) neighboring properties. A portion of the common driveway (located on this parcel) is missing on the Site Plan, please show. The applicant should submit the driveway easement documentation for the existing common driveway.

## See updated survey and plan set. The common driveway and easement are shown.

13. The applicant shall provide a driveway profile for the new section of the driveway.

## See sheet C-2.

14. The applicant shall prepare a cut and fill analysis for the project. The results shall be added to the proposed grading plan. Importation of fill in excess of 50 c.y. shall require a Fill Permit from the Town Building Department.

## See cut/fill analysis on sheet C-2.

15. The applicant should provide construction details and specifications for all proposed retaining walls on the plan. Walls adjacent to the proposed driveway shall be designed by a Professional Engineer for bearing, sliding, and overturning.

Adam R. Kaufman AICP, Chair
Residential Project Review Committee
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17 Bedford Road
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## Comment noted. Retaining walls will be certified by a Professional Engineer.

16. The plan shall note that the construction of all walls greater than four (4) feet in height shall be inspected during its installation and certified by the Design Professional prior to the issuance of a Certificate of Occupancy/Completion.

## Note has been added to sheet C-2 under Town of North Castle Notes.

17. The applicant should avoid filling on the hillside south of the proposed residence. It appears a slight increase in the height of the proposed retaining walls could eliminate further disturbance of the hillside.

## Comment noted.

18. The applicant will need to provide a copy of the Westchester County Department of Health (WCHD) Approval for the proposed on-site wastewater treatment system and drilled well.

OWTS and Private Well plans are currently being reviewed by WCHD. A copy of approval will be provided upon availability.

If you should have any additional questions or comments, please do not hesitate to contact our office at (914) 909-0420, or via email at nick@hudsonec.com.

Sincerely,
Nicholas Shirriah

# STORMWATER MANAGEMENT PLAN \& DRAINAGE ANALYSIS 

6 Cannato Place Town of North Castle - New York

June 1, 2023<br>Revised August 4, 2023



Hudson Engineering \& Consulting, P.C.
45 Knollwood Road - Suite 201
Elmsford, NY 10523
(914) 909-0420

Narrative

# STORMWATER MANAGEMENT PLAN \& DRAINAGE ANALYSIS 6 Cannato Place Town of North Castle - New York 

## INTRODUCTION

This Stormwater Management Plan presents the proposed Best Management Practices (BMPs) to control erosion and sedimentation and manage stormwater during and upon construction of Single-Family Dwelling on a 1.0 Acre lot at 6 Cannato Place, Armonk [SBL: 101.01-1-45] in the Town of North Castle, Westchester County, New York.

This Plan consists of this narrative and a plan set entitled: "Proposed Single Family Dwelling, 6 Cannato Place, Town of North Castle, Westchester County - New York", all as prepared by Hudson Engineering and Consulting, P.C., Elmsford, New York, latest date August 4, 2023. The design is in accordance with the Town of North Castle's requirements. The approximate area of the limits of disturbance is 0.70 -acres. Since the project disturbance is less than one acre the New York State Department of Environmental Conservation [NYSDEC] stormwater regulations are not applicable.

## METHODOLOGY

The stormwater analysis was developed utilizing the Soil Conservation Service (SCS) TR-20, 24-hour Type III storm events (HydroCad®) to assist with the design of the mitigating practices. The "Complex Number" (CN) value determination is based on soil type, vegetation, and land use. The design is in accordance with the Town of North Castle's stormwater regulations. The "Time of Concentration" ( $T_{c}$ ) was determined as a direct entry of one-minute. The CN and $\mathrm{T}_{\mathrm{c}}$ data are input into the computer model. The project site was modeled for the 100-year Type III - 24hour storm event.

## PRE-DESIGN INVESTIGATIVE ANALYSIS

A pre-design investigative analysis was performed including percolation and deep hole tests in the locations shown on the plans. A series of percolation tests were performed in the vicinity of the potential stormwater mitigation practice [TP-1] until constant rates were achieved, their results as follows:

- TP-1: A percolation rate of 1.04 -minutes per inch (57.69-inches per hour) was observed. A percolation rate of 25 -inches per hour was utilized in the design.

Three (3) deep test holes were excavated and labeled [TP-1, TP-2 \& TP-3] as shown on the plans.

- TP-1 was excavated to a depth of 96 -inches. The test revealed topsoil to a depth of 6 -inches, and sandy loam w/ small rocks to invert the invert. No groundwater or ledge rock was observed.
- TP-2 was excavated to a depth of 40 -inches. The test revealed topsoil to a depth of 5-inches, and moderately compact sandy loam w/ some silt to the invert. No groundwater was observed. Ledge rock was encountered at 40inches.
- TP-3 was excavated to a depth of 48-inches. The test revealed topsoil to a depth of 4-inches, and sandy loam, very rocky to the invert. No groundwater was observed. Ledge rock was encountered at 48 -inches.

The deep test hole log and percolation test data sheets are attached.

## PRE-DEVELOPED CONDITION

In the pre-developed condition, the site is characterized as sloping from northeast to southwest. The soil classification based upon USDA Web Soil Survey is primarily Charlton-Chatfield complex, 15 to 35 percent slopes, very rocky. The site vegetation can be characterized as lawn and landscaped. The site is located on the western side of the cul-de-sac on Cannato Place. The site consists of an existing dwelling, detached garage, stone patio, retaining walls and asphalt driveway.

In the pre-developed condition, the project site is modeled as one watershed denoted as Watershed 1, tributary to Design Point 1.

Watershed 1 contains approximately 43,562 square feet, consisting of 6,994 sf of impervious area in the form of the existing dwelling, detached garage, asphalt driveway and other impervious areas. The remaining 36,478 sf in Watershed 1 consists of woodland areas in "B" soils. The weighted complex number (CN) value is calculated as 61 and the Time of Concentration (Tc) is calculated as 11.9 minutes. Overland flow from this watershed originates at the rear of the existing dwelling and flows in a western direction, eventually exiting the watershed at the western property line.

| Pre-Developed Conditions |  |
| :---: | :---: |
|  | $100-$ Year |
|  | cfs |
| DP-1 | 4.20 |

## POST-DEVELOPED CONDITION

In the post-developed condition, the project site is modeled as two watersheds denoted as Watershed $1 A$ \& $1 B$.

Watershed 1A contains approximately 7,235 square feet of tributary area in the form of the proposed dwelling, asphalt driveway \& patio. The weighted Complex Number (CN) value for this area is 98 and the Time of Concentration (Tc) is calculated as a direct entry of 1 minute. The stormwater runoff from this tributary area is conveyed via a comprehensive drainage system to Fourteen (14) Cultec® 330XLHD stormwater chambers set in one foot of gravel at the sides and six inches of gravel at the invert. The system is designed to fully accept (no release) the entire stormwater runoff volume for the 100-year storm event from the watershed and exfiltrate the runoff into the surrounding soil sub-strata.

Watershed $1 B$ contains approximately 36,327 square feet, consisting of 840 sf of impervious area in the form of the proposed walkway and a section of the proposed asphalt driveway. The remaining 35,487 sf in Watershed $1 B$ consists of woodland areas in " $B$ " soils. The weighted complex number (CN) value is calculated as 56 and the Time of Concentration (Tc) is calculated as 8.9 minutes. Overland flows from this watershed originates near the north rear end of the proposed dwelling and flows in a western direction, eventually exiting the watershed at the western property line.

| Post-Developed Conditions |  |
| :---: | :---: |
|  | $100-$ Year |
|  | cfs |
| DP-1 | 3.26 |

## SUMMARY OF FLOWS AT DESIGN POINT

The peak runoff rates at DP-1 were calculated as follows:

| Flows at Design Point (DP-1) |  |
| :---: | :---: |
|  | $100-$ Year |
|  | cfs |
| Pre- | 4.20 |
| Post- | 3.26 |

## CONCLUSION:

The stormwater management plan meets all the requirements set forth by the Town of North Castle. Design modification requirements that may occur during the approval process will be performed and submitted for review to the Town of North Castle.

## Soils Map



## MAP LEGEND

| Area of Interest (AOI) |  | $C$$C / D$ |
| :---: | :---: | :---: |
| Area of Interest (AOI) |  |  |
| Soils $\square$ |  |  |
| Soil Rating Polygons |  |  |
| $\square \mathrm{A}$ | $\square$ | Not rated or not available |
| A/D | Water Fe | ures |
|  | $\sim$ | Streams and Canals |
| B |  |  |
|  | Transpo | tion |
| B/D | H+ | Rails |
| C | $\sim$ | Interstate Highways |
| C/D | - | US Routes |
| D | $\approx$ | Major Roads |
| Not rated or not available | 12) | Local Roads |
| Soil Rating Lines | Backgro |  |
| $\cdots \mathrm{A}$ |  | Aerial Photography |
| $\cdots$ A/D |  |  |
| $\cdots B$ |  |  |
| $\cdots$ B/D |  |  |
| $\cdots \mathrm{C}$ |  |  |
| $\cdots$ C/D |  |  |
| $\cdots$ D |  |  |
| * Not rated or not available |  |  |
| Soil Rating Points |  |  |
| $\square \quad \mathrm{A}$ |  |  |
| $\square \quad \mathrm{A} / \mathrm{D}$ |  |  |
| $\square \quad \mathrm{B}$ |  |  |
| $\square \mathrm{B} / \mathrm{D}$ |  |  |

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.
Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)
Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.
This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.
Soil Survey Area: Westchester County, New York
Survey Area Data: Version 18, Sep 10, 2022
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 21, 2022-Oct 27, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Hydrologic Soil Group

| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
| :--- | :--- | :--- | ---: | ---: |
| CrC | Charlon-Chatfield <br> complex, 0 to 15 <br> percent slopes, very <br> rocky | B | 4.2 | $53.6 \%$ |
| CsD | Chatfield-Charlton <br> complex, 15 to 35 <br> percent slopes, very <br> rocky | B | 3.3 | $42.3 \%$ |
| HrF | Hollis-Rock outcrop <br> complex, 35 to 60 <br> percent slopes | D | 0.3 | $4.0 \%$ |
| Totals for Area of Interest | $\mathbf{7 . 8}$ | $\mathbf{1 0 0 . 0 \%}$ |  |  |

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified
Tie-break Rule: Higher

## Extreme Precipitation Table

Extreme Precipitation Tables

## Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

| Metadata for Point |  |
| :---: | :---: |
| Smoothing State | Yes |
| Location |  |
| Latitude | 41.148 degrees North |
| Longitude | 73.711 degrees West |
| Elevation | 170 feet |
| Date/Time | Mon Apr 102023 14:06:16 GMT-0400 (Eastern Daylight Time) |

Extreme Precipitation Estimates

|  | 5 min | 10min | 15 min | 30min | 60 min | 120 min |  | 1 hr | 2hr | 3hr | 6hr | 12hr | 24hr | 48hr |  | 1day | 2day | 4day | 7day | 10day |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 yr | 0.34 | 0.52 | 0.64 | 0.84 | 1.05 | 1.31 | 1 yr | 0.91 | 1.23 | 1.50 | 1.85 | 2.28 | 2.80 | 3.18 | 1 yr | 2.48 | 3.05 | 3.55 | 4.26 | 4.90 | 1 yr |
| 2 yr | 0.40 | 0.62 | 0.77 | 1.02 | 1.28 | 1.60 | 2 yr | 1.11 | 1.49 | 1.84 | 2.27 | 2.79 | 3.42 | 3.85 | 2 yr | 3.03 | 3.70 | 4.26 | 5.04 | 5.71 | 2 yr |
| 5 yr | 0.47 | 0.73 | 0.92 | 1.23 | 1.58 | 1.99 | 5 yr | 1.36 | 1.83 | 2.30 | 2.85 | 3.51 | 4.31 | 4.88 | 5 yr | 3.81 | 4.69 | 5.45 | 6.32 | 7.09 | 5 yr |
| 10 yr | 0.53 | 0.83 | 1.05 | 1.42 | 1.85 | 2.35 | 10yr | 1.59 | 2.15 | 2.73 | 3.40 | 4.19 | 5.13 | 5.84 | 10 yr | 4.54 | 5.62 | 6.56 | 7.51 | 8.35 | 10 yr |
| 25 yr | 0.61 | 0.97 | 1.24 | 1.71 | 2.28 | 2.94 | 25 yr | 1.97 | 2.66 | 3.42 | 4.28 | 5.29 | 6.46 | 7.42 | 25 yr | 5.72 | 7.14 | 8.40 | 9.42 | 10.38 | 25 yr |
| 50 yr | 0.69 | 1.11 | 1.42 | 1.99 | 2.68 | 3.48 | 50 yr | 2.31 | 3.12 | 4.07 | 5.10 | 6.30 | 7.70 | 8.90 | 50 yr | 6.82 | 8.56 | 10.13 | 11.19 | 12.23 | 50yr |
| 100 yr | 0.78 | 1.27 | 1.63 | 2.31 | 3.15 | 4.13 | 100 yr | 2.72 | 3.67 | 4.84 | 6.08 | 7.52 | 9.19 | 10.67 | 100 yr | 8.13 | 10.26 | 12.22 | 13.30 | 14.42 | 100yr |
| 200 yr | 0.89 | 1.45 | 1.88 | 2.69 | 3.72 | 4.91 | 200 yr | 3.21 | 4.31 | 5.77 | 7.26 | 8.98 | 10.97 | 12.80 | 200 yr | 9.71 | 12.31 | 14.75 | 15.80 | 17.00 | 200 yr |
| 500 yr | 1.06 | 1.75 | 2.28 | 3.31 | 4.63 | 6.16 | 500 yr | 3.99 | 5.34 | 7.26 | 9.17 | 11.36 | 13.89 | 16.31 | 500 yr | 12.29 | 15.68 | 18.93 | 19.86 | 21.16 | 500 yr |

## Lower Confidence Limits

|  | 5 min | 10 min | 15 min | 30 min | 60 min | 120 min |  | 1hr | 2hr | 3hr | 6 hr | 12hr | 24hr | 48hr |  | 1day | 2day | 4day | 7day | 10day |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 yr | 0.26 | 0.39 | 0.48 | 0.65 | 0.80 | 1.00 | 1 yr | 0.69 | 0.98 | 1.29 | 1.60 | 2.00 | 2.58 | 2.70 | 1 yr | 2.28 | 2.59 | 3.19 | 3.66 | 4.35 | 1 yr |
| 2 yr | 0.39 | 0.61 | 0.75 | 1.01 | 1.25 | 1.49 | 2 yr | 1.08 | 1.46 | 1.70 | 2.18 | 2.74 | 3.33 | 3.73 | 2 yr | 2.94 | 3.59 | 4.12 | 4.88 | 5.55 | 2 yr |
| 5 yr | 0.43 | 0.66 | 0.82 | 1.13 | 1.44 | 1.74 | 5 yr | 1.24 | 1.70 | 1.97 | 2.57 | 3.21 | 3.99 | 4.53 | 5 yr | 3.53 | 4.35 | 5.02 | 5.83 | 6.59 | 5 yr |
| 10 yr | 0.47 | 0.72 | 0.89 | 1.24 | 1.61 | 1.96 | 10 yr | 1.39 | 1.92 | 2.21 | 2.92 | 3.64 | 4.59 | 5.23 | 10yr | 4.07 | 5.03 | 5.82 | 6.58 | 7.48 | 10yr |
| 25 yr | 0.51 | 0.77 | 0.96 | 1.37 | 1.80 | 2.29 | 25 yr | 1.55 | 2.24 | 2.54 | 3.45 | 4.29 | 5.52 | 6.36 | 25 yr | 4.89 | 6.12 | 7.10 | 7.67 | 8.84 | 25 yr |
| 50 yr | 0.53 | 0.81 | 1.00 | 1.44 | 1.94 | 2.56 | 50 yr | 1.68 | 2.51 | 2.83 | 3.92 | 4.85 | 6.38 | 7.39 | 50 yr | 5.64 | 7.11 | 8.25 | 8.53 | 10.01 | 50 yr |
| 100 yr | 0.56 | 0.85 | 1.06 | 1.53 | 2.10 | 2.86 | 100 yr | 1.81 | 2.80 | 3.16 | 4.45 | 5.49 | 7.37 | 8.59 | 100 yr | 6.52 | 8.26 | 9.60 | 9.52 | 11.34 | 100yr |
| 200 yr | 0.59 | 0.89 | 1.13 | 1.64 | 2.29 | 3.21 | 200 yr | 1.97 | 3.14 | 3.52 | 5.07 | 6.24 | 8.52 | 9.98 | 200 yr | 7.54 | 9.60 | 11.19 | 10.54 | 12.86 | 200yr |
| 500 yr | 0.63 | 0.94 | 1.21 | 1.76 | 2.51 | 3.74 | 500 yr | 2.16 | 3.65 | 4.08 | 6.07 | 7.40 | 10.35 | 12.20 | 500 yr | 9.16 | 11.73 | 13.72 | 12.02 | 15.18 | 500 yr |

Upper Confidence Limits

|  | 5 min | 10 min | 15 min | 30 min | 60 min | 120 min |  | 1 hr | 2 hr | 3 hr | 6 hr | 12hr | 24hr | 48hr |  | 1day | 2day | 4day | 7day | 10day |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 yr | 0.37 | 0.58 | 0.70 | 0.94 | 1.16 | 1.41 | 1 yr | 1.00 | 1.38 | 1.58 | 2.08 | 2.62 | 3.06 | 3.47 | 1 yr | 2.70 | 3.34 | 3.82 | 4.59 | 5.30 | 1 yr |
| 2 yr | 0.43 | 0.66 | 0.81 | 1.10 | 1.36 | 1.58 | 2 yr | 1.17 | 1.55 | 1.82 | 2.31 | 2.89 | 3.54 | 3.98 | 2 yr | 3.13 | 3.83 | 4.41 | 5.30 | 5.93 | 2 yr |
| 5 yr | 0.51 | 0.79 | 0.98 | 1.35 | 1.72 | 2.02 | 5 yr | 1.48 | 1.97 | 2.32 | 2.97 | 3.71 | 4.63 | 5.27 | 5 yr | 4.10 | 5.07 | 5.86 | 6.80 | 7.63 | 5 yr |
| 10 yr | 0.61 | 0.93 | 1.16 | 1.62 | 2.09 | 2.43 | 10 yr | 1.81 | 2.37 | 2.80 | 3.60 | 4.51 | 5.70 | 6.50 | 10 yr | 5.04 | 6.25 | 7.26 | 8.37 | 9.26 | 10yr |
| 25 yr | 0.77 | 1.18 | 1.46 | 2.09 | 2.75 | 3.13 | 25 yr | 2.37 | 3.06 | 3.63 | 4.65 | 5.81 | 7.47 | 8.59 | 25 yr | 6.62 | 8.26 | 9.67 | 11.00 | 11.98 | 25 yr |
| 50 yr | 0.92 | 1.40 | 1.74 | 2.50 | 3.37 | 3.81 | 50 yr | 2.91 | 3.72 | 4.42 | 5.65 | 7.05 | 9.18 | 10.62 | 50 yr | 8.13 | 10.21 | 12.01 | 13.55 | 14.55 | 50 yr |
| 100 yr | 1.11 | 1.68 | 2.10 | 3.03 | 4.16 | 4.64 | 100 yr | 3.59 | 4.53 | 5.39 | 6.88 | 8.58 | 11.29 | 13.14 | 100 yr | 9.99 | 12.63 | 14.93 | 16.69 | 17.70 | 100 yr |
| 200 yr | 1.34 | 2.01 | 2.55 | 3.69 | 5.14 | 5.63 | 200 yr | 4.44 | 5.50 | 6.57 | 8.35 | 10.42 | 13.87 | 16.23 | 200 yr | 12.28 | 15.61 | 18.55 | 20.56 | 21.53 | 200 yr |
| 500 yr | 1.73 | 2.58 | 3.31 | 4.81 | 6.85 | 7.28 | 500 yr | 5.91 | 7.12 | 8.55 | 10.83 | 13.49 | 18.22 | 21.50 | 500 yr | 16.13 | 20.67 | 24.72 | 27.20 | 27.87 | 500 yr |

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## Pre-Development Analysis of the 100-year Storm Event




## Watershed 1



## 6 Cannato - Existing Condition

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Rainfall Events Listing (selected events)

| Event\# | Event <br> Name | Storm Type | Curve | Mode | Duration <br> (hours) | B/B | Depth <br> (inches) |
| ---: | :--- | :--- | :--- | :--- | ---: | ---: | ---: |
| 1 | AMC |  |  |  |  |  |  |
| $100-Y e a r ~ T y p e ~ I I I ~ 24-h r ~$ | Default | 24.00 | 1 | 9.19 | 2 |  |  |

## Summary for Subcatchment 1: Watershed 1

Runoff $=4.20$ cfs @ 12.17 hrs, Volume $=15,883 \mathrm{cf}$, Depth= 4.38"

Routed to Reach DP-1 : Design Point 1
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs Type III 24-hr 100-Year Rainfall=9.19"


## Subcatchment 1: Watershed 1



## Summary for Reach DP-1: Design Point 1

Inflow Area $=\quad 43,562$ sf, $15.11 \%$ Impervious, Inflow Depth $=4.38$ " for 100-Year event Inflow = 4.20 cfs @ 12.17 hrs, Volume=

15,883 cf
Outflow = 4.20 cfs @ 12.17 hrs , Volume $=\quad 15,883 \mathrm{cf}$, Atten= $0 \%$, Lag= 0.0 min
Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

## Reach DP-1: Design Point 1

Hydrograph


## Post-Development Analysis of the 100-year Storm Event




Watershed 1A
14 Cultec R-330XLHD


## Watershed 1B

Design Point 1


## 6 Cannato - Proposed Condition

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Page 2

## Rainfall Events Listing (selected events)

| Event\# | Event <br> Name | Storm Type | Curve | Mode | Duration <br> (hours) | B/B | Depth <br> (inches) | AMC |
| ---: | :--- | :--- | :--- | :--- | ---: | ---: | ---: | ---: |
| 1 | 100-Year | Type III 24-hr |  | Default | 24.00 | 1 | 9.19 | 2 |

## Summary for Subcatchment 1A: Watershed 1A

Runoff $=1.79$ cfs @ 12.01 hrs, Volume= $5,396 \mathrm{cf}$, Depth= 8.95"

Routed to Pond 1P : 14 Cultec R-330XLHD
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs Type III 24-hr 100-Year Rainfall=9.19"

|  | Area (sf) | CN | Description |
| :--- | ---: | ---: | :--- |
| * | 4,386 | 98 | Proposed Dwelling |
| $*$ | 2,196 | 98 | Section of Proposed Driveway |
| $*$ | 653 | 98 | Proposed Patio |

Subcatchment 1A: Watershed 1A


Summary for Subcatchment 1B: Watershed 1B
Runoff $=\quad 3.26 \mathrm{cfs} @ 12.13 \mathrm{hrs}$, Volume= $\quad 11,354 \mathrm{cf}$, Depth= 3.75" Routed to Reach DP-1 : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs Type III 24-hr 100-Year Rainfall=9.19"

|  | Area (sf) | CN D | Description |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| * | 209 |  |  |  | Proposed Walkway |
|  | 35,487 | 55 | Woods, Go | od, HSG B |  |
| * | 631 | 98 S | Section of Proposed Driveway |  |  |
|  | 36,327 | 56 | Weighted Average 97.69\% Pervious Area 2.31\% Impervious Area |  |  |
|  | 35,487 |  |  |  |  |
|  | 840 |  |  |  |  |
| $\begin{array}{r} \mathrm{Tc} \\ (\mathrm{~min}) \\ \hline \end{array}$ | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
| 8.6 | 99 | 0.1768 | 0.19 |  | Sheet Flow, A->B |
|  |  |  |  |  | Woods: Light underbrush $\mathrm{n}=0.400 \mathrm{P} 2=3.42$ " |
| 0.3 | 53 | 0.4811 | 3.47 |  | Shallow Concentrated Flow, B->DP-1 |
|  |  |  |  |  | Woodland Kv= 5.0 fps |
| 8.9 | 152 | Total |  |  |  |

Subcatchment 1B: Watershed 1B


## Summary for Reach DP-1: Design Point 1

| Inflow Area $=$ | $36,327 \mathrm{sf}$, | $2.31 \%$ Impervious, | Inflow Depth $=3.75 "$ for $100-$ Year event |
| :--- | :--- | :--- | :--- |
| Inflow | $=$ | $3.26 \mathrm{cfs} @$ | 12.13 hrs , Volume $=$ |
| Oufflow | $=$ | $3.26 \mathrm{cfs} @$ | 12.13 hrs , Volume $=$ |

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

## Reach DP-1: Design Point 1

Hydrograph


## Summary for Pond 1P: 14 Cultec R-330XLHD



Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev=2.67' @ 12.38 hrs Surf.Area= 621 sf Storage= 1,028 cf
Plug-Flow detention time $=$ (not calculated: outflow precedes inflow)
Center-of-Mass det. time= $12.6 \min (747.5-734.9)$

| Volume | Invert | Avail.Storage | Storage Description |
| :---: | :---: | :---: | :---: |
| \#1A | 0.00' | 262 cf | $16.00^{\prime} \mathrm{W} \times 31.50^{\prime} \mathrm{L} \times 3.04$ 'H Field A <br> 1,533 cf Overall - 659 cf Embedded $=874$ cf $\times 30.0 \%$ Voids |
| \#2A | 0.50' | 659 cf | Cultec R-330XLHD $\times 12$ Inside \#1 <br> Effective Size $=47.8^{\prime \prime} \mathrm{W} \times 30.0^{\prime \prime} \mathrm{H}=>7.45 \mathrm{sf} \times 7.00^{\prime} \mathrm{L}=52.2 \mathrm{cf}$ Overall Size $=52.0^{\prime \prime} \mathrm{W} \times 30.5^{\prime \prime} \mathrm{H} \times 8.50^{\prime} \mathrm{L}$ with 1.50 ' Overlap Row Length Adjustment $=+1.50$ ' $\times 7.45 \mathrm{sf} \times 3$ rows |
| \#3B | 0.00' | 69 cf | 11.17 'W x 10.50 'L x 3.04 'H Field B <br> 357 cf Overall -127 cf Embedded $=230$ cf $\times 30.0 \%$ Voids |
| \#4B | 0.50' | 127 cf | Cultec R-330XLHD x 2 Inside \#3 <br> Effective Size $=47.8^{\prime \prime} \mathrm{W} \times 30.0^{\prime \prime} \mathrm{H}=>7.45 \mathrm{sf} \times 7.00^{\prime} \mathrm{L}=52.2 \mathrm{cf}$ Overall Size $=52.0^{\prime \prime} \mathrm{W} \times 30.5^{\prime \prime} \mathrm{H} \times 8.50^{\prime} \mathrm{L}$ with $1.50^{\prime}$ Overlap <br> Row Length Adjustment $=+1.50$ ' $\times 7.45 \mathrm{sf} \times 2$ rows |
|  |  | 1,117 cf | Total Available Storage |

Storage Group A created with Chamber Wizard
Storage Group B created with Chamber Wizard
Device Routing Invert Outlet Devices
\#1 $\quad$ Discarded $\quad 0.00^{\prime} \quad 25.000 \mathrm{in} / \mathrm{hr}$ Exfiltration over Surface area
Discarded OutFlow Max=0.36 cfs @ 11.66 hrs HW=0.03' (Free Discharge)
-1=Exfiltration (Exfiltration Controls 0.36 cfs)

Pond 1P: 14 Cultec R-330XLHD


## Percolation \& Deep Hole Test Logs

SITE ADDRESS: 6 Cannato Place
TOWN/VILLAGE: Town of North Castle
DATE: $\underline{03 / 29 / 2023 ~ T I M E: ~ 9: 30 a m ~}$
WEATHER: Sunny TEMP. $40^{\circ} \mathrm{F}$
WITNESSED BY: Nicholas Shirriah

## DEEP TEST HOLE DATA SHEET - STORMWATER MANAGEMENT SYSTEM



- Indicate level at which Ground Water (GW), Mottling and/or Ledge Rock is encountered.
- Indicate level for which water level rises after being encountered.

EXCAVATION PERFORMED BY: PRECISION FIELD TESTING

HUDSON
ENGINEERING CONSULTING, P.C.

SITE ADDRESS: 6 Cannato Place
TOWN/VILLAGE: North Castle (Armonk)
DATE: 03/29/2023 TIME: 11:00am
WEATHER: Sunny
TEMP. $45^{\circ} \mathrm{F}$
WITNESSED BY: Matt Williams

## PERCOLATION TEST HOLE DATA SHEET - STORMWATER MANAGEMENT SYSTEM

Owner

| HOLE \# | CLOCK TIME |  |  |  | PERCOLATION |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Run } \\ & \text { No. } \\ & \hline \end{aligned}$ | Start | Stop | Elapse Time (Min.) | Depth to Water From Ground Surface |  | Water Level in Inches Drop in inches | Soil Rate |  |
| Hole <br> Number |  |  |  |  | Start Inches | Stop Inches |  | Min. per inch | Inches per Hour |
| \# _1 | 1 | 11:08 | 11:20 | 12 | 22 | 46 | 24 | 0.5 | 120 |
| 4" $\varnothing$ | 2 | 11:21 | 11:38 | 17 | 22 | 46 | 24 | 0.71 | 84.51 |
|  | 3 | 11:40 | 12:04 | 24 | 22 | 46 | 24 | 1 | 60 |
|  | 4 | 12:05 | 12:30 | 25 | 22 | 46 | 24 | 1.04 | 57.69 |
|  | 5 |  |  |  |  |  |  |  |  |
| \# _2 | 1 |  |  |  |  |  |  |  |  |
| 4" $\varnothing$ | 2 |  |  |  |  |  |  |  |  |
|  | 3 |  |  |  |  |  |  |  |  |
|  | 4 |  |  |  |  |  |  |  |  |
|  | 5 |  |  |  |  |  |  |  |  |
| \# _3 | 1 |  |  |  |  |  |  |  |  |
| 4" $\varnothing$ | 2 |  |  |  |  |  |  |  |  |
|  | 3 |  |  |  |  |  |  |  |  |
|  | 4 |  |  |  |  |  |  |  |  |
|  | 5 |  |  |  |  |  |  |  |  |

Notes:

1) Tests to be repeated at the same depth until approximately equal soil rates are obtained at each percolation test hole. All data to be submitted for review.
2) Depth measurements to be made from top of hole

