H | T | W

HOCHERMAN TORTORELLA & WEKSTEIN, LLP

CLIENT-CENTERED ◊ SOLUTION-ORIENTED

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Geraldine N. Tortorella
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Noelle C. Wolfson

Henry M. Hocherman, Retired

May 28, 2021

Via Electronic Mail (ydesimone@northcastleny.com)

Hon. Christopher Carthy, Chairman
and Members of the Planning Board
Town Hall Annex
17 Bedford Road
Armonk, New York 10504

Re: Applications of 45 Hurlingham, LLC for Site Plan, Special Permit, Wetlands Permit and Tree Removal Permit Approvals to Construct a New Residence, Caretaker's Quarters, Driveway, Tennis Court, Dock and Related Utilities and Improvements
Property: 45 Hurlingham Drive, Town of North Castle
Tax Identification No.: Section 102.04, Block 1, Lot 26

Dear Chairman Carthy and Members of the Planning Board:

This submission is made to apprise the Board of some changes to the site plan requested by our client, as well as to clarify or provide additional information to address questions and comments raised in the Review Memoranda of the Town Planner dated February 12, 2021 (the "Planning Memorandum") and Consulting Town Engineers, dated February 17, 2021 (the "Engineering Memorandum").

Following the Board's site walk of the above-referenced property (the "Property"), our client reexamined the relationship of the Main Residence, tennis court and BBQ Pavilion to the residence on the abutting property to the south and decided to shift the residence and tennis court approximately 100 feet to the east. In addition, a decision was made to detach the BBQ Pavilion and relocate it northwest of the Main Residence (also away from the southerly neighbor). These changes significantly increase the buffer to the adjoining residence, achieving greater privacy for both owners. As a result of shifting the Residence, the driveway to the main residence has become shorter. A further change has been made to the driveway to the Caretaker's Quarters, which has been shifted to the southern side of the building, away from the septic area. None of these site plan changes required or resulted in any material changes in the architectural design of the Main Residence or Caretaker's Quarters nor warranted material changes to the stormwater management system, as the areas of disturbance and coverage remain substantially the same.

The detached BBQ Pavilion is larger than 800 square feet ("s.f.") and, therefore, requires a Special Permit, an application for which is included in this submission. Electronic payment of the Special Permit application fee was arranged by the applicant directly with the Town Planning Department.

We submit the following plans (last revised June 1, 2021 unless otherwise stated) and documents, which reflect the foregoing site plan changes and address the items in the Planning Memorandum and Engineering Memorandum:

1. Plans prepared by D'Andrea Surveying & Engineering, P.C., as follows:
   a. Site Plan Review Set, consisting of:
      i. Topographic Survey;
      ii. Zoning Location Survey;
      iii. Development Plan (Sheet 1);
      iv. Sediment & Erosion Controls (Sheet 2);
      v. Notes and Details (Sheet 3); and
      vi. Septic Design & Details (Sheet 4);
   b. Average Grade Plan (for the Main House and Caretaker's Quarters);
   c. Earthwork Calculations;
   d. Development Plan Showing Possible Subdivision for Caretaker's Quarters (the "Phantom Subdivision Plan"); and
   e. Stormwater Pollution Prevention Plan (SWPPP).

2. Revised Preliminary Drawings for the Main Residence and Caretaker's Quarters (Floor Plans, Elevations, Building Sections and Average Roof Calculations), prepared by Mr. Kokoris (11 Sheets);

3. Landscape Site Plan (Sheet L.1) and Site Plan Details (Sheet L-2), prepared by Jay Fain & Associates, LLC (Victoria Landau, RLA), to which planting schedules (including for mitigation plantings) and details have been added;

4. Signed Special Permit Application for the detached BBQ Pavilion, which exceeds 800 s.f.;

5. Gross Floor Area and Gross Land Coverage Calculation Worksheets for the entire Property;

6. Email communications between Jay Fain and Joshua Fisher of the New York State Department of Environmental Conservation, confirming that no (a) Article 15 Permit or (b) Freshwater Wetlands Permit is required for the proposed dock or foot path;

7. Email communications between Richard Regan, P.E. and Anthony Kunny, Assistant Engineer with the Westchester County Health Department ("WCHD"), concerning bedroom count in the Main Residence and treatment of the "safe room;" and

8. Excerpt from the Declaration of Covenants, Easements and Restrictions for Conyers Farm, recorded in the Office of the Westchester County Clerk at Liber 8008, Page 209 (the "Declaration"), regarding the proposed foot path to Converse Lake.

In an effort to facilitate your review, we address below how each of the comments in the Planning Memorandum and Engineering Memorandum has been addressed.

Planning Memorandum

A. General Comments:
1. The Phantom Subdivision Plan (item 1(d)) has been updated to include a zoning conformance chart showing how each lot conforms with the minimum requirements of the R-2A Zoning District.
2. No response required.
3. The Development Plan (item 1(a)(iii)) has been revised to depict the proposed amount of Town-regulated wetland disturbance and Town-regulated wetland buffer disturbance. The Landscape Site Plan (item 3) includes mitigation at a ratio of at least 2:1.
4. Section 20(B)(c) of the Declaration provides that the topography of the Conservation Easement Area, including for "laying out of foot . . . . paths or trails or any other activity or facility disturbing said areas" shall not be made "without the prior approval of the Town and the Association." The foot path to Converse Lake was included on the plans approved by PARC. By this application, we are seeking Town approval for the path. (An excerpt of the Declaration is provided as item 8.)
5. The gross land coverage backup information is contained on the Phantom Subdivision Plan (item 1(d)).
6. The Building Sections in item 2 demonstrate the building height for the Main Residence and Caretaker's Quarters.
7. The Building Sections in item 2 demonstrate maximum exterior wall height for the Main Residence and Caretaker's Quarters.
8. Basement floor plans for the Main Residence and Caretaker's Quarters are submitted herewith (item 2) and demonstrate that the basement levels should be excluded from the floor area calculation.
9. A Special Permit Application for the detached BBQ Pavilion is submitted herewith.
10. So noted. D'Andrea Engineering has been completing the approval process for the well supply and septic systems for the Main Residence and Caretaker's Quarters with the Westchester County Health Department (WCHD). D'Andrea is now resubmitting revised layout documents to the WCHD and expects approval in the near future. Copies of the WCHD approvals will be submitted when received. Mr. Kunny has determined that there are six bedrooms in the Main Residence. The "safe room" is not being considered a bedroom by the Health Department. (*See* item 7.)
11. According to Mr. Regan, no approval is required from the Town of Greenwich for the construction of the driveway entrance. The length of driveway in Greenwich is less than 50 feet. Hurlingham Drive is a private road in a gated community, and the Town of Greenwich Highway Division does not regulate driveway entrances on private roads. The Development Plan (item 1(a)(iii)) has been revised to include a note stating that the improvements

approved by the Town of North Castle are limited to only those located in the Town of North Castle.

12. Gross Floor Area and Gross Land Coverage Calculation Worksheets for the entire Property ae submitted herewith (*see* item 5).
13. The archery range has been eliminated (*see* the plans referred to in item 2).
14. Mr. Kokoris consulted Building Inspector Melillo who has agreed that the 14-foot wide garage door on one of the bays will accommodate only one vehicle and, therefore, that the garage has only four bays.
15. A note that the tennis court will not be lit has been added to the Development Plan (*see* item 1(a)(iii)).
16. The Landscape Site Plan (item 3) has been revised to include a planting schedule with plant material names, quantities and sizes.
17. The Landscape Site Plan & Site Plan Details (item 3) have been revised to include details for the dock and dock path.

Engineering Memorandum

A. General Comments:
   1. Revisions to, and supporting documentation for, the Phantom Subdivision Plan (item 1(d)) :
      a. A Bulk Zoning Conformance Table for both "phantom" lots is included on the revised Phantom Subdivision Plan.
      b. Steep Slopes are depicted on the Phantom Subdivision Plan.
      c. The Minimum Contiguous Buildable Area for each phantom lot has been added to the Phantom Subdivision Plan.
      d. The depiction of the expansion area for the septic system serving the Caretaker's Quarters (i.e. Lot 2) has been corrected.
      e. The private wells have been added to the Phantom Subdivision Plan.
   2. The maximum exterior wall height for each of the Main Residence and Caretaker's Quarters is shown on the Architectural Plans (item 2).
   3. The boundary of the 100-year Floodplain (Zone A) has been added to the Site Plan Review Set (item 1). The only improvement in the Flood Plain is the dock and no mitigation is required. The Applicant will obtain a Floodplain Development Permit, if required.
   4. DEC has confirmed that no Article 15 Protections of Water Permit will be required for the proposed dock or path (*see* item 6).
   5. DEC has confirmed that no Freshwater Wetlands Permit is required (*see* item 6).
   6. Jay Fain will provide Kellard Sessions with a separate letter certifying that the boundary of the wetlands has not changed. Wetland mitigation plantings (with a mitigation ratio of 2:1) are shown on the Landscape Site Plan & Site Plan Details (item 3).
   7. The Development Plan (item 1(a)(iii)) includes dimensions for the setback of the gate from Hurlingham Drive, the driveway width, proposed passing areas and the driveway courtyard.
   8. The minimum required yard setbacks have been added to the Zoning Location Survey and Development Plans (items 1(a)(ii) and (iii), respectively).

9. So noted. Please see response 10 to the Planning Memorandum.
10. *See* response 10 to the Planning Memorandum. Copies of the Health Department approvals for the septic systems will be provided once received.
11. Infiltration Chamber #6 has been renumbered #5 because two other systems were able to be combined into one. According to D'Andrea Engineering, the setback between a water supply well and drywell is 50 feet and that setback is met in all instances. (*See* WCHD "Rules & Regulations for the Design and Construction of Residential Subsurface Sewage Treatment Systems and Drilled Wells in Westchester County, New York," effective January 1, 2002, page 7.)
12. The Notes & Details Plan (item 1(a)(v)) has been revised to include a driveway profile with vertical geometry to demonstrate compliance with Section 355-59 of the Town Code.
13. No outdoor lighting is proposed for the tennis court (*see* the Development Plan, item 1(a)(iii)). Fencing details will be provided in the future.
14. Cut and fill calculations and related information can be found on the Development Plan (item 1(a)(iii)) and Earthwork Calculations Plan (item 1(a)(c)), which we believe represent a well-balanced site.
15. So noted. No response required.
16. Metal edging is proposed along the majority of the main driveway except in the area of the driveway entrance, where block curbs are proposed. Therefore, both details are required and included on the Notes & Details Plan (item 1(a)(v)).
17. The plans have been revised to reduce the maximum height of the highest retaining wall (which is now 11 feet). A note has been added to the Development Plan (item 1(a)(iii)) to state that (a) all retaining walls equal to or greater than four feet in height will be designed by a NYS licensed professional engineer and satisfy all safety requirements including sliding, bearing pressure and overturning and (b) the design professional must certify that the construction of the walls conforms to the approved plans as a prerequisite to the Applicant obtaining a certificate of occupancy. (*See* General Note #11 on the Development Plan, item 1(a)(iii).)
18. Revisions to the retaining wall detail are included on the Notes & Details Plan (item 1(a)(v)).
19. The retaining wall detail has been revised to show a sleeve for utility crossings. (*See* Notes & Details Plan 1(a)(v).)
20. Preliminary Comments on the SWPPP:
    a. The layout of the Infiltration Chambers has been revised to conform to the NYS Stormwater Management Design Manual, in particular with regards to soil conditions. (*See* the Development Plan, item 1(a)(iii).)
    b. The inlet connections have been revised to be located at the top of the units. (*See* the Development Plan, item 1(a)(iii).)
    c. The callouts for stormwater pipes have been revised as needed. (*See* the Development Plan, item 1(a)(iii).)
    d. The level spreader for Infiltration Chamber #2 is a continuation of the gravel bed surrounding the chambers. No pipe connection is needed. (*See* the Development Plan,

item 1(a)(iii).)

e. All grate and rim elevations for catch basins and junction boxes have been revised as needed. (*See* the Development Plan (item 1(a)(iii).)
f. *See* the response to 20(c).
g. The locations and elevations of the tennis court and the chamber system that serves it have been revised. The chamber system is well below the tennis court and will not cause a tailwater effect on the tennis court drainage. (*See* the Development Plan, item 1(a)(iii).)
h. The inspection port(s) for each infiltration chamber have been added to the Development Plan, (item 1(a)(iii)).

21. The driveway to the Caretaker's Quarters has moved to the south side of the building and is curbed. Runoff from this driveway will be collected and routed to Chamber #1. There will be no runoff from the driveway over the septic fields. (*See* the Development Plan, item 1(a)(iii).)
22. The Erosion and Sediment Control Plan (item 1(a)(iv)) has been revised to show the acreage in each disturbance area, none of which exceeds five acres. Total disturbance is less than five acres.
23. The Erosion and Sediment Control Plan (item 1(a)(iv)) has been revised to state that the limits of the Conservation Easement will be staked in the field with orange construction fencing prior to any disturbance occurring.
24. The Erosion and Sediment Control Plan (item 1(a)(iv) has been revised to indicate that silt fence will be installed downgradient of all disturbed areas and parallel to the contours.
25. Additional Comments on the SWPPP: The proposed conditions watershed model, drainage system design, and other sections of the Report have been updated in the revised SWPPP (item 1(e)) to reflect the revised site layout. Once the stormwater management plan is conceptually acceptable, additional comments will be addressed.
26. Comments on the draft NOI: Some revisions were made in response to these comments. Once the stormwater management plan is conceptually acceptable, additional comments will be addressed.

Kindly schedule this matter for further discussion at the Board's June 14, 2021 meeting, at which time we hope the Board will refer the application to the Architectural Review Board and the Conservation Board, and schedule a public hearing for an August meeting date.

Respectfully yours,

Hocherman Tortorella & Wekstein, LLP

By: Geraldine N. Tortorella

GNT:hc
Enclosures

cc: *(via electronic mail with enclosures)*
Adam R. Kaufman, AICP
Robert Melillo, Building/Fire Inspector
Joseph Cermele, P.E., Consulting Town Engineer
Roland Baroni, Jr., Esq., Town Attorney
Mr. Jed Manocherian
Tasos Kokoris, AIA, RA, LEED AP
Jay Fain, MS, PSS, CPESC, CERP
Richard D'Andrea, P.E.
Adam Cerini, Civil Engineer

S:\# MATTERS\Manocherian 0326\45 Hurlingham, LLC 001\Letters\PB 5-28-21.docx

SITE PLAN REVIEW SET
PROPOSED RESIDENCE

LOCATION

45 HURLINGHAM DRIVE
NORTH CASTLE, NEW YORK
& GREENWICH, CONNECTICUT

PREPARED FOR

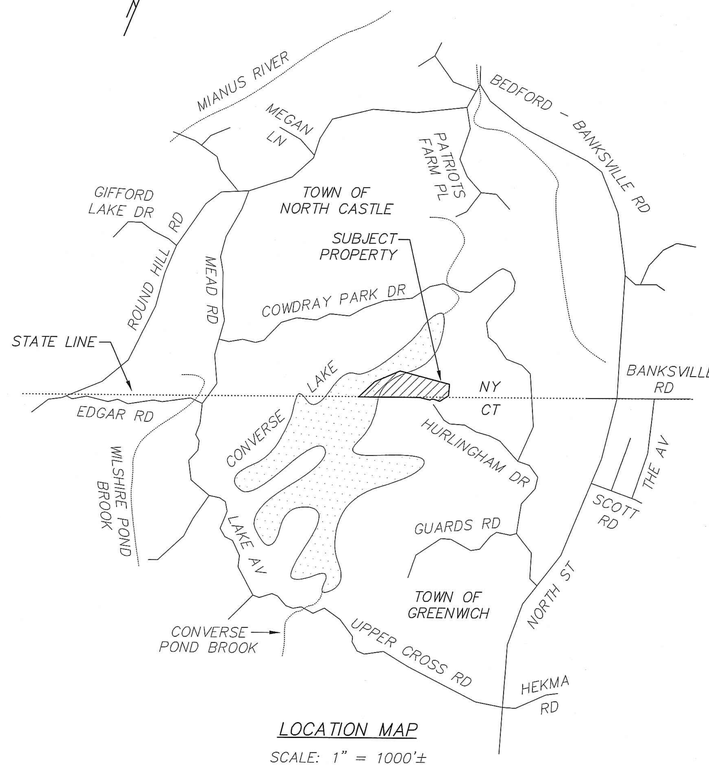
45 HURLINGHAM, LLC

REFER TO MAPS No. 21767 W.C.L.R. AND 5970 G.L.R.

LAND LIES IN "R-2A" ZONE (NORTH CASTLE)
"RA-4" ZONE (GREENWICH)

AREA = 10.3090 ACRES (TOTAL)
10.0216 ACRES (NEW YORK)
0.2874 ACRES (CONNECTICUT)

TAX ID 102.04-1-26



LOCATION MAP

SCALE: 1" = 1000'±

SHEET INDEX

SHEET	TITLE	REVISION	DATE
–	TOPOGRAPHIC SURVEY	–	06-01-21
–	ZONING LOCATION SURVEY	–	06-01-21
1 OF 4	DEVELOPMENT PLAN	2	06-01-21
2 OF 4	SEDIMENTATION & EROSION CONTROLS	1	06-01-21
3 OF 4	NOTES & DETAILS	1	06-01-21
4 OF 4	SEPTIC DESIGN & DETAILS	1	06-01-21

APPLICANT INFO:

45 HURLINGHAM, LLC
c/o GERALDINE N. TORTORELLA, ESQ.
HOCHERMAN TORTORELLA & WEKSTEIN LLP
ONE NORTH BRODWAY, SUITE 701
WHITE PLAINS, NY 10601
(914)-421-1800 EXT. 11

THESE PLANS AND THE SCOPE OF WORK DETAILED HEREIN ARE APPROVED FOR CONSTRUCTION BY THE PLANNING BOARD OF THE TOWN OF NORTH CASTLE.

CHRISTOPHER CARTHY, CHAIR — DATE

ENGINEERING PLANS PREPARED BY:

STATE OF NEW YORK · RICHARD A. REGAN · 61598 · LICENSED PROFESSIONAL ENGINEER

06-01-21
D'ANDREA SURVEYING & ENGINEERING, P.C. — DATE
RICHARD A. REGAN NY PE No. 61598

ONLY COPIES OF THIS SET, BEARING AN ORIGINAL IMPRINT OF THE ENGINEER'S / SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED TO BE TRUE, VALID COPIES.

NOTE:
UNAUTHORIZED ALTERATION OR ADDITION TO THESE PLANS IS NOT PERMITTED UNDER SECTION 7207-(2) OF THE NEW YORK STATE EDUCATION LAW

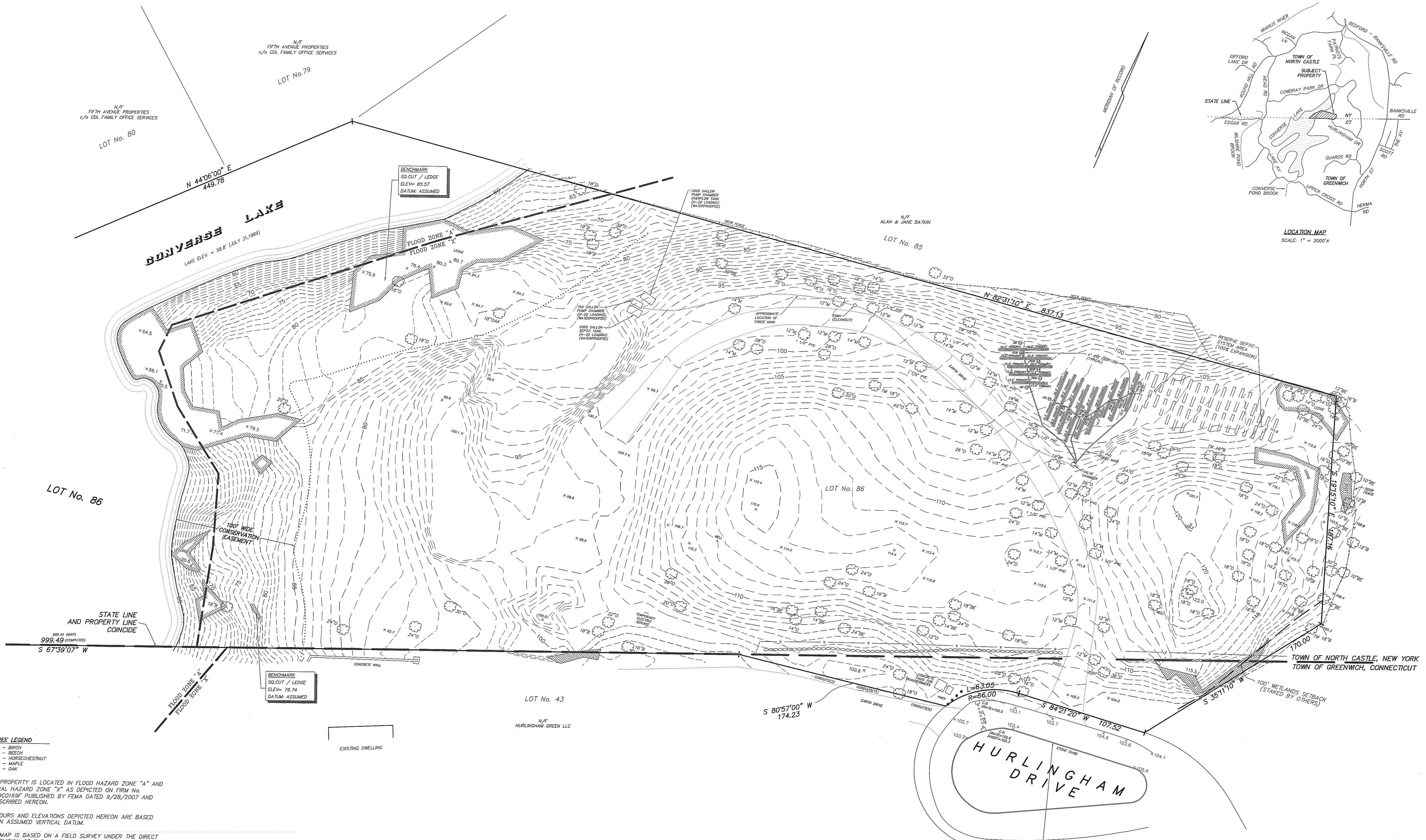
D'ANDREA SURVEYING & ENGINEERING, P.C.
· LAND PLANNERS
· ENGINEERS
· SURVEYORS
P.O. BOX 549, RIVERSIDE, CT 06878 — 6 NEIL LANE, TEL. 637-1779

PROJECT	PROPOSED RESIDENCE
PREPARED FOR	45 HURLINGHAM, LLC
LOCATION	45 HURLINGHAM DRIVE NORTH CASTLE, NEW YORK

REV.	DATE	DESCRIPTION
1	06-01-21	CHANGE SITE LAYOUT AND ADDRESS MUNICIPAL COMMENTS
0	02-08-21	ISSUE TO PB

2005

GENERAL_SHT_COVER_LAND (ASD)



N/F
FIFTH AVENUE PROPERTIES
c/o CDL FAMILY OFFICE SERVICES
LOT No. 79
N/F
FIFTH AVENUE PROPERTIES
c/o CDL FAMILY OFFICE SERVICES
LOT No. 80
N 44°06'00" E
449.78
CONVERSE LAKE
LAKE ELEV. = 58.8' (JULY 31,1989)
BENCHMARK
SQ.CUT / LEDGE
ELEV= 85.57
DATUM: ASSUMED
FLOOD ZONE "A"
FLOOD ZONE "X"
MERIDIAN OF RECORD
N/F
ALAN & JANE BATKIN
LOT No. 85
N 82°31'10" E 837.13
RESERVE SEPTIC SYSTEM AREA (100% EXPANSION)
LOT No. 86
LOT No. 86
100' WIDE CONSERVATION EASEMENT
STATE LINE AND PROPERTY LINE COINCIDE
999.49
S 67°39'07" W
BENCHMARK
SQ.CUT / LEDGE
ELEV= 79.74
DATUM: ASSUMED
CONCRETE WALL
LOT No. 43
N/F
HURLINGHAM GREEN LLC
EXISTING DWELLING
S 80°57'00" W
174.23
L=63.05
R=66.00
S 84°21'20" W 107.52
170.00
S 35°11'10" W
100' WETLANDS SETBACK (STAKED BY OTHERS)
TOWN OF NORTH CASTLE, NEW YORK
TOWN OF GREENWICH, CONNECTICUT
HURLINGHAM DRIVE
BENCHMARK
U-CUT ON CURB
ELEV= 104.41
DATUM: ASSUMED
LOCATION MAP
SCALE: 1" = 2000'±
1 INCH = 30 FEET
SCALE
IN FEET

TREE LEGEND

B – BIRCH
BE – BEECH
HC – HORSECHESTNUT
M – MAPLE
O – OAK

THIS PROPERTY IS LOCATED IN FLOOD HAZARD ZONE "A" AND MINIMAL HAZARD ZONE "X" AS DEPICTED ON FIRM No. 36119C0169F PUBLISHED BY FEMA DATED 9/28/2007 AND TRANSCRIBED HEREON.

CONTOURS AND ELEVATIONS DEPICTED HEREON ARE BASED ON AN ASSUMED VERTICAL DATUM.

THIS MAP IS BASED ON A FIELD SURVEY UNDER THE DIRECT SUPERVISION OF THE UNDERSIGNED, COMPLETED ON NOVEMBER 24, 2020, AND IS INTENDED ONLY TO DEPICT TOPOGRAPHY AND PLANIMETRIC FEATURES OF A PORTION OF THE PROPERTY.

IT IS A VIOLATION OF THE STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED LAND SURVEYOR, TO ALTER ITEMS DEPICTED HEREON IN ANY WAY.

0.2874 ACRES (CONNECTICUT)
10.0216 ACRES (NEW YORK)
AREA = 10.3090 ACRES (TOTAL)

LAND LIES IN "R–2A" ZONE (NORTH CASTLE)
"RA–4" ZONE (GREENWICH)

TAX ID 102.04-1-26 (NORTH CASTLE)

REFER TO MAPS No. 21767 W.C.L.R AND 5970 G.L.R.

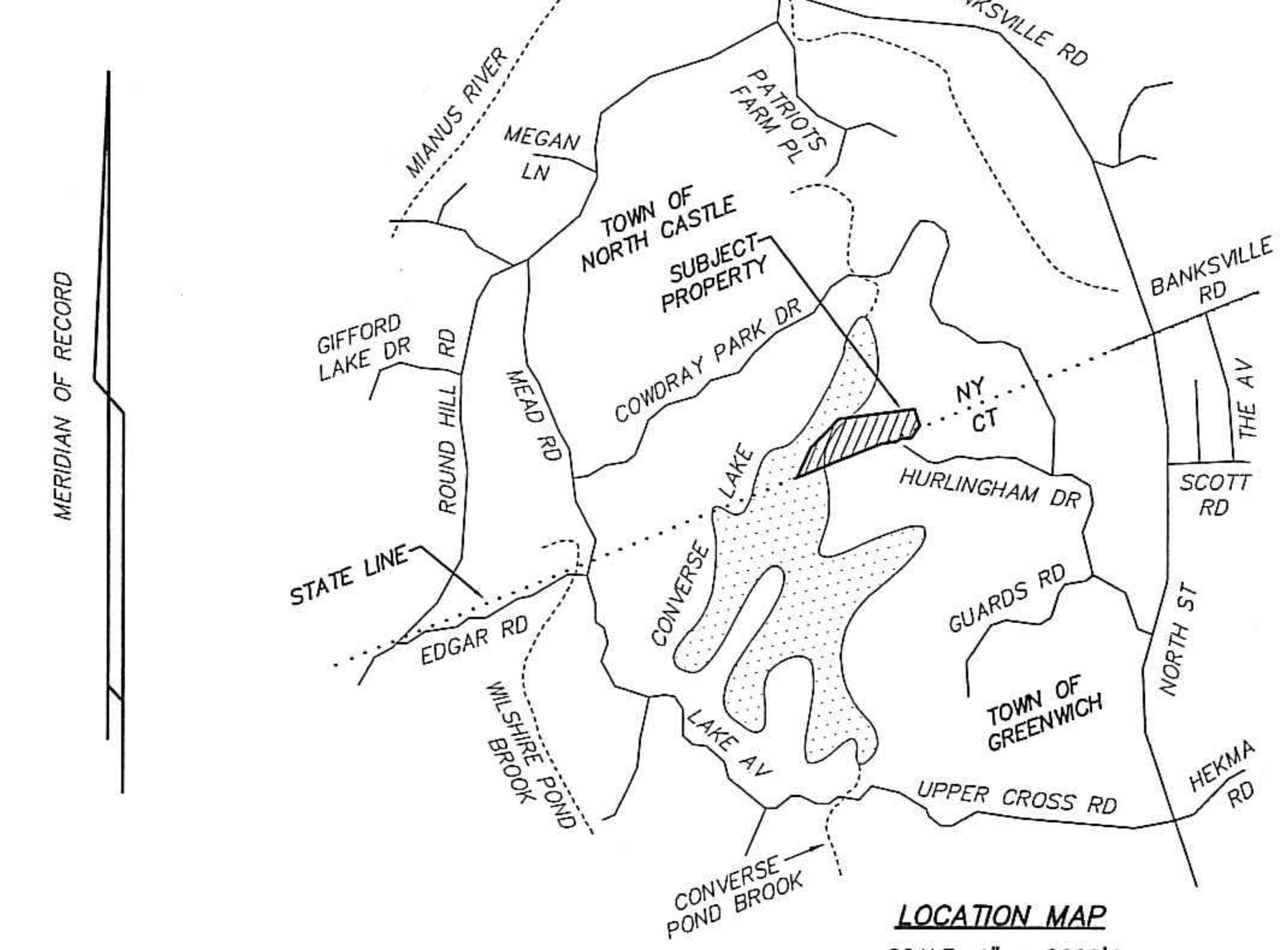
D'ANDREA ENGINEERING AND SURVEYING, P.C.

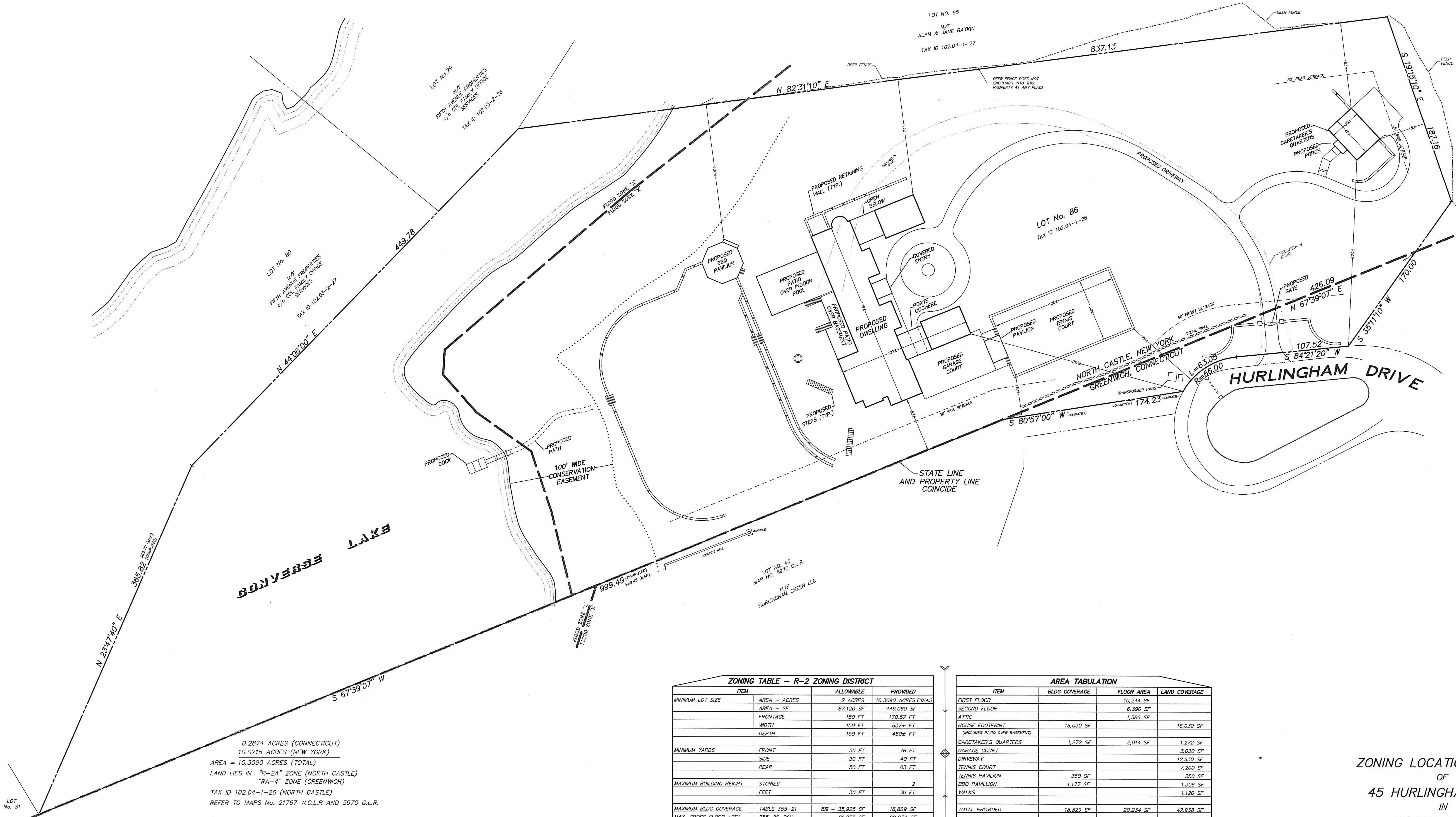
_______, SURVEYOR
EDWIN W. RHODES III – NY LS No. 051073
RIVERSIDE, CONNECTICUT   FEBRUARY 8, 2021   JUNE 1, 2021 (ADD FLOOD ZONE BOUNDARY)

COWHURL_20JS_TS_2.DWG

TOPOGRAPHIC SURVEY
DEPICTING A PORTION OF
45 HURLINGHAM DRIVE
IN
NORTH CASTLE, WESTCHESTER COUNTY, NEW YORK
AND
GREENWICH, CONNECTICUT
PREPARED FOR
45 HURLINGHAM LLC

20JS





0.2874 ACRES (CONNECTICUT)
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REFER TO MAPS No. 21767 W.C.L.R AND 5970 G.L.R.

SURVEY NOTES:

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ZONING TABLE – R–2 ZONING DISTRICT			
ITEM		ALLOWABLE	PROVIDED
MINIMUM LOT SIZE	AREA – ACRES	2 ACRES	10.3090 ACRES (TOTAL)
	AREA – SF	87,120 SF	449,060 SF
	FRONTAGE	150 FT	170.57 FT
	WIDTH	150 FT	837± FT
	DEPTH	150 FT	450± FT
MINIMUM YARDS	FRONT	50 FT	76 FT
	SIDE	30 FT	40 FT
	REAR	50 FT	83 FT
MAXIMUM BUILDING HEIGHT	STORIES		2
	FEET	30 FT	30 FT
MAXIMUM BLDG COVERAGE	TABLE 355–21	8% – 35,925 SF	18,829 SF
MAX. GROSS FLOOR AREA	355–26–B(1)	21,852 SF	20,234 SF
MAX. GROSS LAND COVERAGE	355–26–C(1),(3)	43,255 SF	42,938 SF

AREA TABULATION			
ITEM	BLDG COVERAGE	FLOOR AREA	LAND COVERAGE
FIRST FLOOR		10,244 SF	
SECOND FLOOR		6,390 SF	
ATTIC		1,586 SF	
HOUSE FOOTPRINT	16,030 SF		16,030 SF
(INCLUDES PATIO OVER BASEMENT)			
CARETAKER'S QUARTERS	1,272 SF	2,014 SF	1,272 SF
GARAGE COURT			3,030 SF
DRIVEWAY			12,630 SF
TENNIS COURT			7,200 SF
TENNIS PAVILION	350 SF		350 SF
BBQ PAVILLION	1,177 SF		1,306 SF
WALKS			1,120 SF
TOTAL PROVIDED	18,829 SF	20,234 SF	42,938 SF
MAXIMUM ALLOWABLE	35,925 SF	21,852 SF	43,255 SF

1 INCH = 40 FEET

SCALE

40 0 40

IN FEET

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED.

D'ANDREA ENGINEERING AND SURVEYING, P.C.

______________, SURVEYOR

EDWIN W. RHODES III NY LS No. 051073

RIVERSIDE, CONNECTICUT FEBRUARY 8, 2021 JUNE 1, 2021

COWHURL_20JS_ZLS_1.DWG

ZONING LOCATION SURVEY
OF
45 HURLINGHAM DRIVE
IN
NORTH CASTLE, WESTCHESTER COUNTY, NEW YORK
AND
GREENWICH, CONNECTICUT
PREPARED FOR
45 HURLINGHAM, LLC

REFER TO MAPS No. 21767 W.C.L.R. AND 5970 G.L.R.

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"RA–4" ZONE (GREENWICH)

AREA = 10.3090 ACRES (TOTAL)
10.0216 ACRES (NEW YORK)
0.2874 ACRES (CONNECTICUT)

TAX ID 102.04–1–26

SOIL TESTING RECORDS

Recorded by D'Andrea Surveying & Engineering P.C. on November 2, 2020.

Test holes #101–106 were recorded in the presence of an inspector with the Westchester County Department of Health

All depths are in inches.

Test holes SW–1 through SW–7 were recorded in the presence of an engineer consulting for the Town of North Castle

Infiltration tests were performed on December 8 & 9, 2020 by D'Andrea Surveying & Engineering P.C. in the presence of an inspector with Kellard Sessions, consultant engineers for the Town of North Castle.

#101
0–4 Topsoil
4–15 Decomposing bedrock
Ledge @ 15

#102
0–8 Topsoil
8–18 Brown silty loam
18–42 Decomposing bedrock
Ledge @ 42

#103
0–6 Topsoil
6–42 Light brown sandy loam
Ledge @ 42

#104
0–8 Topsoil
8–42 Light brown sandy loam
Ledge @ 42

#105
0–6 Topsoil
6–30 Medium–coarse, loose Brown loamy sand
30–42 Brown silty loam
Ledge @ 42

#106
0–6 Topsoil
6–24 Brown silty loam
24–45 Gray fine silty sand
Ledge @ 45

#107
0–6 Topsoil
6–42 Broken stone and loam
Ledge @ 42

#108
0–6 Topsoil
6–24 Medium–coarse, loose Brown loamy sand
24–42 Brown silty loam
Ledge @ 42

#109
0–6 Topsoil
6–24 Brown silty loam
Ledge @ 24

#110
0–6 Topsoil
6–27 Septic fill
27–36 Orange–brown silty loam
36–87 Light brown sandy loam

#111
0–8 Topsoil
8–21 Septic fill
21–84 Orange–brown silty loam

#112
0–6 Topsoil
6–24 Septic fill
24–54 Light brown sandy loam
54–72 Tan loamy sand

SW–1
0–6 Topsoil
6–24 Brown loam
24–72 Brown sand and broken stone
Ledge @ 72

SW–2
0–24 Loamy fill
24–42 Original topsoil
42–66 Brown loam
66–80 Tan–gray sand

SW–3
0–24 Brown loamy fill
24–36 Original topsoil
36–60 Tan silty loam
60–96 Tan sand with stones

SW–4
0–6 Topsoil
6–36 Brown loam with stones
36–72 Light brown sand with stones
Ledge @ 72

SW–5
0–4 Topsoil
4–18 Decomposing bedrock
Ledge @ 18

SW–6
0–72 Rocky fill

SW–7
0–36 Loamy rocky fill
36–84 Broken stones

SW–3A
0–112 Fine gray silt and sand

SW–3B
0–60 Fine gray silt and sand
60–100 Brown silty sand with stones

I–TEST #1
Corresponds to soil test hole SW–3

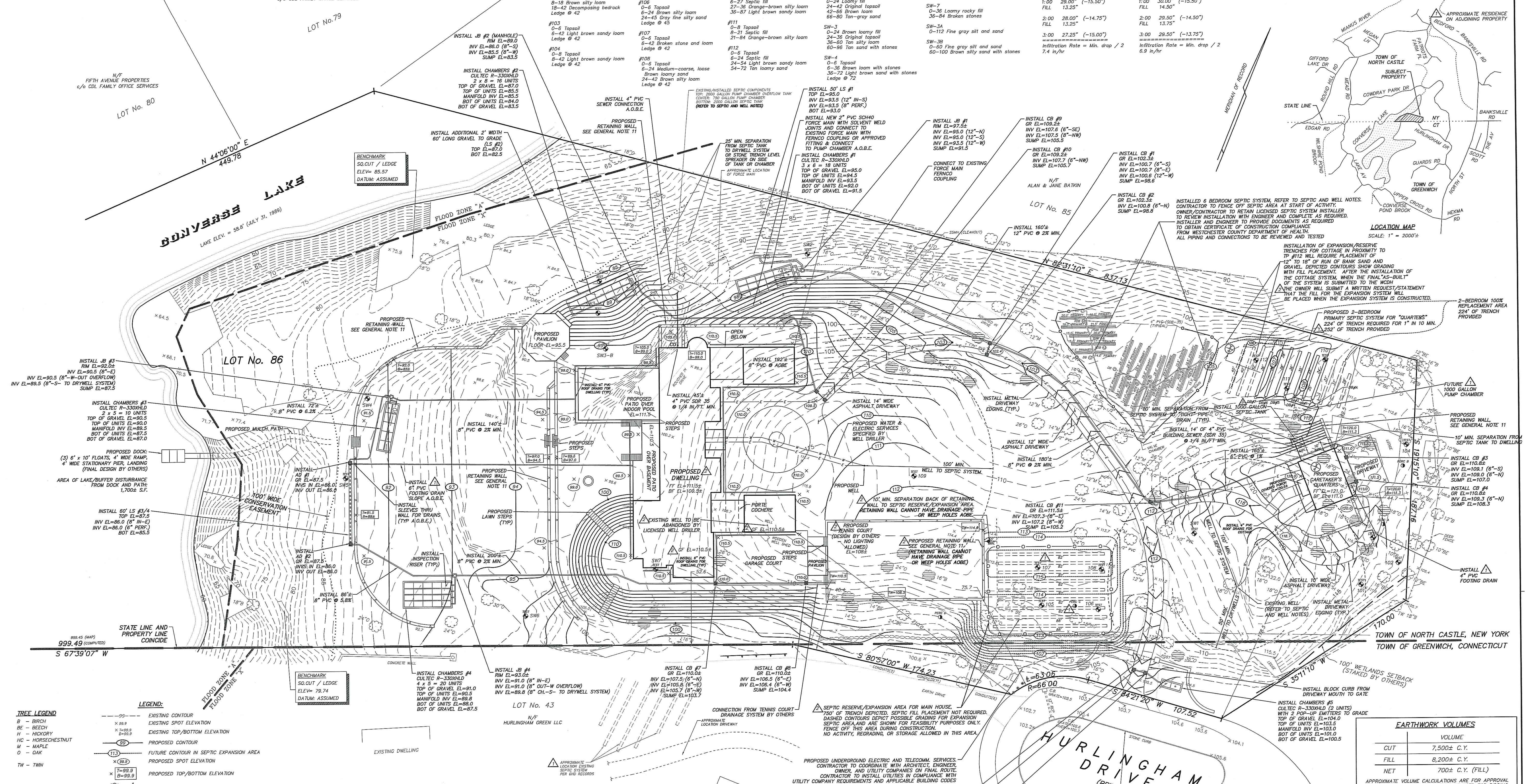
TIME	DEPTH	DROP
0:00	13.50"	
1:00	29.00"	(–15.50")
FILL	13.25"	
2:00	28.00"	(–14.75")
FILL	13.25"	
3:00	27.25"	(–15.00")

Infiltration Rate = Min. drop / 2
7.4 in/hr

I–TEST #2
Corresponds to soil test hole SW–4

TIME	DEPTH	DROP
0:00	15.50"	
1:00	30.00"	(–15.50")
FILL	14.50"	
2:00	29.50"	(–14.50")
FILL	13.75"	
3:00	29.50"	(–13.75")

Infiltration Rate = Min. drop / 2
6.9 in/hr



EARTHWORK VOLUMES

	VOLUME
CUT	7,500± C.Y.
FILL	8,200± C.Y.
NET	700± C.Y. (FILL)

APPROXIMATE VOLUME CALCULATIONS ARE FOR APPROVAL PURPOSES ONLY AND ARE NOT TO BE USED FOR BIDDING OR CONSTRUCTION PURPOSES.

AREA OF ONSITE TOWN REGULATED WETLAND

WATERCOURSE (LAKE) AREA = 3.12 ACRES
OTHER WETLAND AREA* = 0.00 ACRES
WETLAND BUFFER AREA = 1.45 ACRES
*SEE GENERAL NOTE 6

WATERCOURSE DISTURBED = 0.01 ACRES
OTHER WETLAND DISTURBED = 0.00 ACRES
WETLAND BUFFER DISTURBED = 0.03 ACRES

TREE LEGEND

B – BIRCH
BE – BEECH
H – HICKORY
HC – HORSECHESTNUT
M – MAPLE
O – OAK

TW – TWIN

LEGEND:

Symbol	Description
——99——	EXISTING CONTOUR
× 99.9	EXISTING SPOT ELEVATION
× T=99.9 B=99.9	EXISTING TOP/BOTTOM ELEVATION
(99)	PROPOSED CONTOUR
(113)	FUTURE CONTOUR IN SEPTIC EXPANSION AREA
× (99.9)	PROPOSED SPOT ELEVATION
× T=99.9 B=99.9	PROPOSED TOP/BOTTOM ELEVATION
	DECIDUOUS/CONIFEROUS TREE
	EXISTING TREE TO BE REMOVED
	RETAINING WALL
	PROPERTY LINE
——W——	WATER SERVICE
——G——	GAS SERVICE
——E——	ELEC, TELE, & CABLE SERVICES
–□–×–O–	FENCE
	ELECTRIC UTILITY POLE
	SOIL TEST BORING
99	WETLAND FLAG
SDMH	STORM DRAIN MANHOLE
SSMH	SANITARY SEWER MANHOLE
CB	CATCH BASIN
JB	JUNCTION BOX
YD	YARD DRAIN
CO	CLEAN OUT
PVC	POLYVINYL CHLORIDE
CPP	CORRUGATED PLASTIC PIPE
RCP	REINFORCED CONCRETE PIPE
PERF.	PERFORATED
GR	GRATE ELEVATION
INV	INVERT ELEVATION
V.I.F.	VERIFY IN FIELD
A.O.B.E.	AS ORDERED BY ENGINEER

GENERAL NOTES:

1. Refer to a survey entitled entitled "Topographic Survey of 45 Hurlingham Drive in North Castle, Westchester County, New York and Greenwich, Connecticut prepared by 45 Hurlingham LLC" prepared by this firm dated February 8, 2021.

2. Contours and elevations depicted hereon are based on an assumed datum.

3. The locations of subsurface structures and utilities as depicted hereon indicate only that the structures exist, and no responsibility is assumed by the engineer or surveyor for the accuracy of the locations shown.

4. Refer to architectural plans prepared by Tasos Kokoris AIA of Westport, CT.

5. Refer to landscape plans prepared by Jay Fain & Associates of Fairfield, CT.

6. Refer to a letter by soil scientists William Kenny Associates LLC dated March 26, 2009 stating that there is no wetland fringe along the lake edge.

7. All construction shall comply with the Town of North Castle standards and the New York State Building Code.

8. Proposed activities will require review and approval by the applicable boards of the Town of North Castle.

9. A letter of approval for this project was received from PARC (Conyers Farm Planning and Architectural Review Committee) on November 19, 2020.

10. The contractor shall call the project engineer to inspect the installation of the proposed drainage chamber systems and septic structures prior to backfill.

11. All retaining walls at least 4 feet tall shall be designed by a NYS Licensed Professional Engineer prior to issuance of a building permit, and certified by same upon completion of construction prior to issuance of a certificate of occupancy. The design engineer shall demonstrate adequate factors of safety for sliding, bearing pressure, and overturning.

12. The desired start date for this project is circa June 2021, The desired finish date is circa fall 2022.

13. Total amount of proposed land disturbance is approximate 4.7 acres.

(2) 14. The Improvements apporved by the Town of North Castle are limited to only those improvements located in the Town of North Castle.

1 INCH = 30 FEET

SEPTIC AND WELL NOTES:

1. The Westchester County Department of Health (WCDOH) reviewed and approved the 6 bedroom septic system depicted hereon circa 1990. The septic system was installed in 1991 and the WCDOH inspected on August 2, 1991. In October 2005, this office reviewed with Ms. Natasha Court P.E. of the WCDOH the status of the installed septic system. Ms. Court confirmed that since the system had been inspected by the WCDOH it was acceptable for 6 bedrooms. Prior to operation, the septic system and wells will have to receive Certificates of Construction Compliance from the WCDOH. D'Andrea Surveying and Engineering P.C. is filing applications with the WCDOH for approval of the caretaker's quarters septic system and activation of the main house septic system.

2. A septic system installer licensed in the State of New York will review the septic system installation with the Engineer. Valve chamber and upper / lower distribution boxes shall be inspected to confirm satisfactory condition. Tanks and connecting piping will be inspected and completed as ordered by the Engineer. Required pump with panel and wiring shall be installed as ordered by the Engineer and in compliance with New York State Building Code. The licensed septic system installer will perform all testing as required including a satisfactory pump test witnessed by the project engineer and WCDOH. The installer shall provide all documents as required for the certificate of construction compliance issued by the WCDH.

3. A licensed well driller will review and inspect the condition of the existing well proposed to serve the Caretaker's Cottage with the engineer. The pump shall be replaced. Wells will have to comply with the "Westchester County Health Department Rules and Regulations for the Design and Construction of Residential Subsurface Sewage Treatment Systems and Drilled Wells..." The well driller will work with the engineer and owner/contractor to assess whether the well yields meet the owner requirements. Disinfection and bacteriological testing will be performed as required. The well driller will provide documents as required for the certificate of construction compliance issued by the WCDOH.

(1) *Note that the existing well within the proposed garage is proposed to be abandoned. The well shall be abandoned by a licensed well driller in compliance with the requirements of the WCDOH rules and regulations.
Refer also to Department of Health notes on sheet 4 of 4.

(2) **4. Refer to additional notes on Sheet 4 of 4: "Septic Notes and Details".**

OWNER ADDRESS:
45 HURLINGHAM, LLC
145 WEST 67th ST, APT 47C
NY, NY 10023

NOTE:
UNAUTHORIZED ALTERATION OR ADDITION TO THESE PLANS IS NOT PERMITTED UNDER SECTION 7207–(2) OF THE NEW YORK STATE EDUCATION LAW

STATE OF NEW YORK · RICHARD A. REGAN · 61598-1 · LICENSED PROFESSIONAL ENGINEER

REV.	DATE	DESCRIPTION
(2)	6–1–21	SHIFT HOUSE & COURT EAST,
"	"	ISSUE TO NCPB & WCDH
(1)	3–24–21	REV.'S PER TOWN & WCDH,
"	"	ISSUE TO WCDH & NCPB
0	2–8–21	SUBMIT TO PLANNING BOARD

RICHARD A. REGAN NY PE No. 61598
ENGINEER 6–1–21 DATE

ONLY COPIES OF THIS PLAN BEARING AN ORIGINAL IMPRINT OF THE ENGINEER'S EMBOSSED SEAL ARE TRUE, VALID COPIES.

D'ANDREA SURVEYING & ENGINEERING, P.C.
· LAND PLANNERS
· ENGINEERS
· SURVEYORS
P.O. BOX 549
RIVERSIDE, CT 06878
6 NEIL LANE
TEL. 637–1779

PROJECT	PROPOSED RESIDENCE
PREPARED FOR	45 HURLINGHAM, LLC
LOCATION	45 HURLINGHAM DRIVE NORTH CASTLE, NEW YORK
1 OF 4	DEVELOPMENT PLAN

20JS

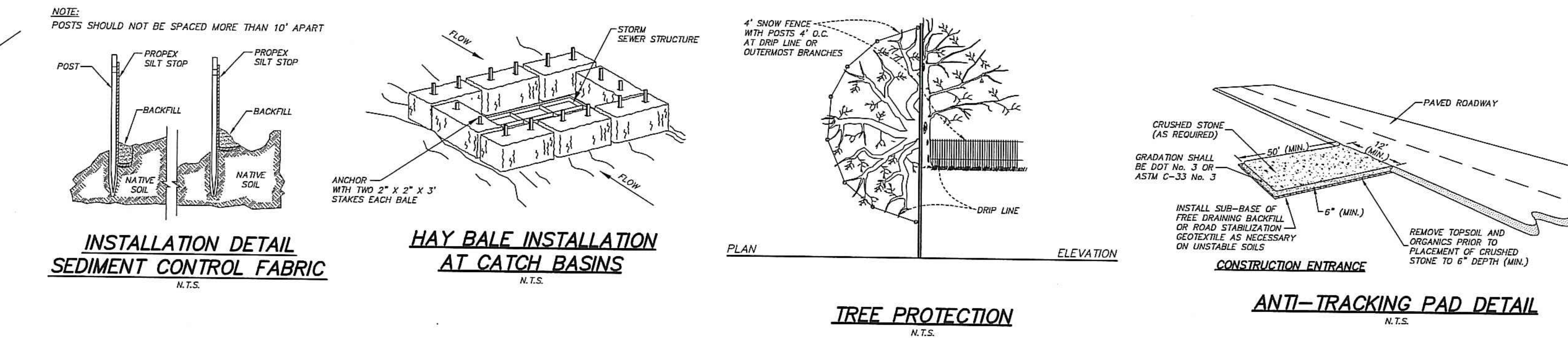
COWHURL_20JS_DP_07_REV2.DWG (RAR)

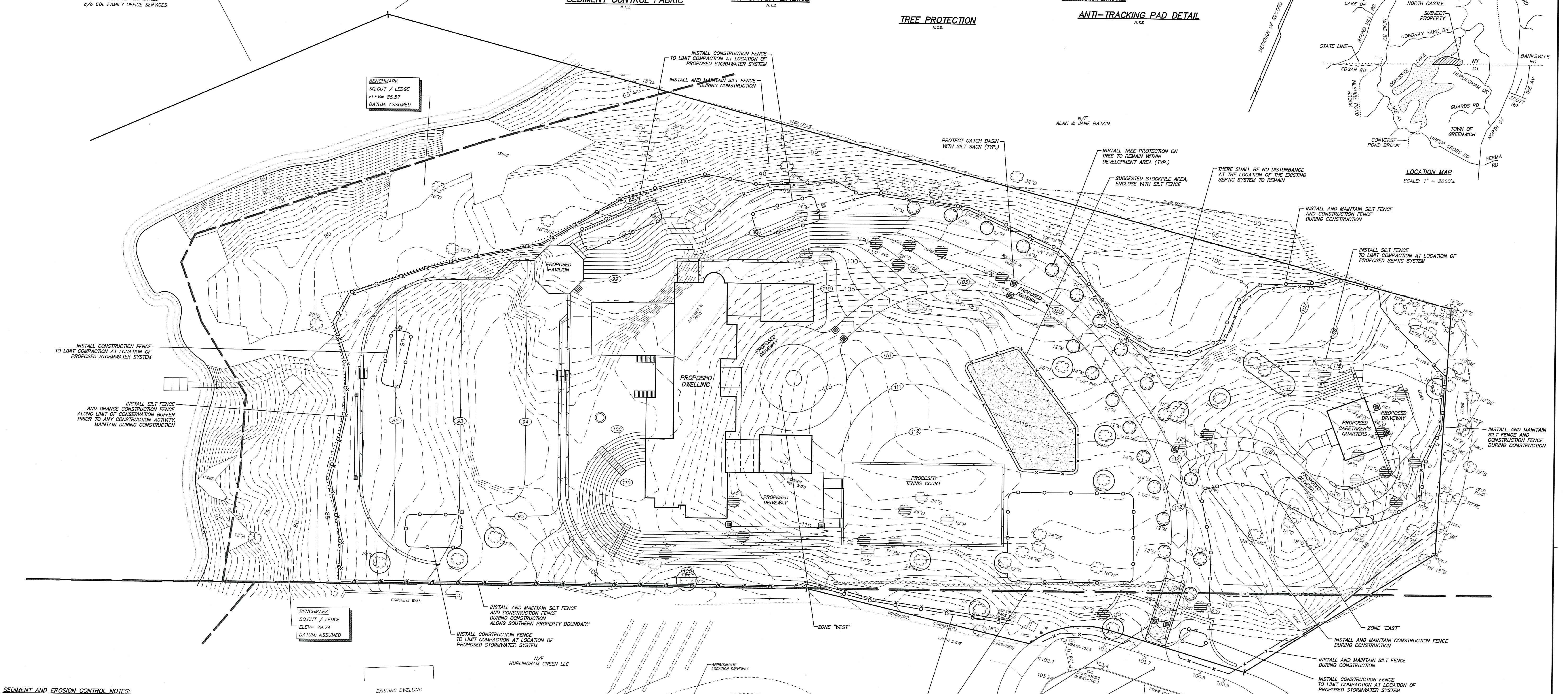
REFER TO MAPS No. 21767 W.C.L.R. AND 5970 G.L.R.

LAND LIES IN "R-2A" ZONE (NORTH CASTLE)
"RA-4" ZONE (GREENWICH)

AREA = 10.3090 ACRES (TOTAL)
10.0216 ACRES (NEW YORK)
0.2874 ACRES (CONNECTICUT)

TAX ID 102.04-1-26





SEDIMENT AND EROSION CONTROL NOTES:

1. Temporary soil and erosion control measures, inclusive of filter barriers and anti-tracking areas, shall remain in place for as long as necessary to permanently stabilize developed areas.

2. Erosion and sediment control devices shall be installed in their proper sequence. No clearing or grading may be done in any area until the erosion control devices for that area, as shown on the plan, are in place and functional.

3. Natural vegetation shall be maintained and protected where practical.

4. No changes of this soil erosion and sediment control plan may be made without prior approval of the supervising engineer.

5. Land disturbance is to be kept to a minimum. Re-establishment and/or stabilization of disturbed areas shall be scheduled as soon as practical.

6. Erosion controls shall be monitored periodically to verify that they are maintained in effective working order. If, during construction, additional control measures are necessary, they shall be installed by that contractor.

7. Sediment or debris shall be removed from the drainage pipes and structures as it accumulates during construction. It shall be disposed of in a manner which is consistent with the intent of this plan.

8. The contractor may provide alternate means of sediment control, but may not eliminate placement of protection in the areas indicated hereon.

9. Sediment fencing shall be installed where required prior to commencing construction. Fencing shall be Propex Silt Stop (TM) as manufactured by Amoco, or engineer approved equivalent.

10. The contractor shall re-grade, topsoil, and seed all disturbed areas immediately after construction has been completed.

11. All designated trees shall be protected during the construction period, except those designated to be removed. Tree protection shall be in accordance with generally accepted standards.

12. Roof leader down spouts and drains shall be connected to the storm drainage system as designated on the development plans.

13. Copies of the proposed Sedimentation and Erosion Control Plan are to be maintained at the site, and provided to the project foreman and subcontractors prior to the start of work at or before the on-site meeting with staff.

14. Additional protection measures shall be implemented should site conditions warrant them.

15. Refer to the New York State Standards for Erosion and Sediment Control for more information.

CONSTRUCTION STAGING:

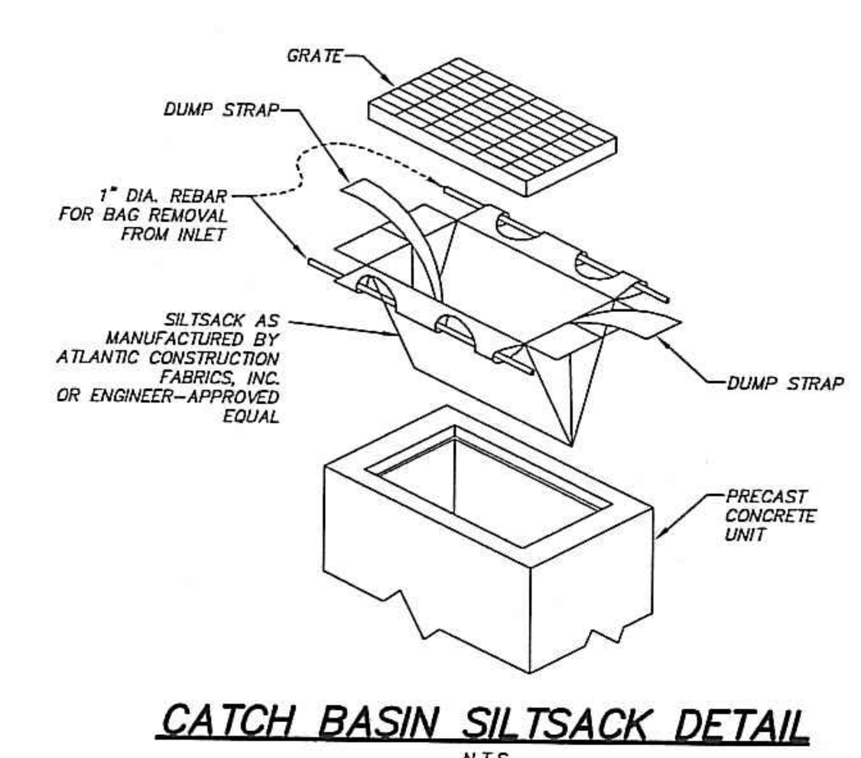
1. Install sedimentation and erosion controls.
2. Remove existing trees as shown on plan.

--"EAST" ZONE--

3. Rough grade access drive.
4. Strip topsoil and stockpile.
5. Excavate and contstruct proposed cottage foundation.
6. Install proposed drainage, sewer, and utilities as required.
7. Backfill and rough grade.
8. Construct proposed cottage.
9. Construct proposed driveway.
10. Fine grade and stabilize.

--"WEST" ZONE--

11. Strip topsoil and stockpile.
12. Excavate and contstruct proposed house foundation and retaining walls.
13. Install proposed drainage, sewer, and utilities as required.
14. Backfill and rough grade.
15. Construct proposed house and tennis court.
16. Construct proposed driveway.
17. Fine grade and stabilize.
18. Landscape as required.
19. Remove sedimentation and erosion controls.



CATCH BASIN SILTSACK DETAIL
N.T.S.
TO BE USED WHERE APPLICABLE

THE LIMITS OF DISTURBANCE ARE DEPICTED WITH SILT FENCING AND CONSTRUCTION FENCING. PROTECTED AREAS MUST NOT BE ENCROACHED UPON.

TOTAL DISTURBED AREA = 4.7± ACRES

S&E SYMBOLS:

- SILT FENCE
- CONSTRUCTION FENCE
- TREE PROTECTION
- SILT SACK

D'ANDREA SURVEYING & ENGINEERING, P.C.
· LAND PLANNERS
· ENGINEERS
· SURVEYORS
P.O. BOX 549
RIVERSIDE, CT 06878
6 NEIL LANE
TEL. 637-1779

REV.	DATE	DESCRIPTION
1	6-1-21	MODIFY SITE LAYOUT
0	2-8-21	SUBMIT TO PLANNING BOARD

RICHARD A. REGAN NY PE No. 61598
ENGINEER 6-1-21 DATE

ONLY COPIES OF THIS PLAN BEARING AN ORIGINAL IMPRINT OF THE ENGINEER'S EMBOSSED SEAL ARE TRUE, VALID COPIES.

PROJECT	PROPOSED RESIDENCE
PREPARED FOR	45 HURLINGHAM, LLC
LOCATION	45 HURLINGHAM DRIVE NORTH CASTLE, NEW YORK
2 OF 4	SEDIMENTATION AND EROSION CONTROLS

COWHURL_20JS_SE_1_REV1.DWG (ASC)

20JS

REFER TO MAPS No. 21767 W.C.L.R. AND 5970 G.L.R.

LAND LIES IN "R-2A" ZONE (NORTH CASTLE)
"RA-4" ZONE (GREENWICH)

AREA = 10.3090 ACRES (TOTAL)
10.0216 ACRES (NEW YORK)
0.2874 ACRES (CONNECTICUT)

TAX ID 102.04-1-26

CONSTRUCTION NOTES:

1. The contractor shall verify the depth and location of all utilities prior to commencing construction, and shall "Call or Click 811 Before You Dig" 48 hours prior to commencing construction.

2. All construction shall comply with applicable sections of State, County, Local, and International Building codes, and those criteria shall take precedent over these plans.

3. Construction shall be inspected by a professional engineer prior to backfill and as the work progresses.

4. Any changes to the plan without the prior approval of the design engineer are not permitted.

5. Certification by a registered professional engineer is required that construction is substantially in accordance with these plans, including the submission of as "as-built" map prepared by a licensed land surveyor.

6. Final design for all utilities other than sewer and drainage shall be provided by the respective utility company.

7. Existing utilities in conflict with the proposed development as depicted on this plan shall be relocated as directed by the appropriate utility company and/or the owner. The contractor shall excavate test pits as required to verify the location and depth of utilities where conflicts may exist.

8. Existing inverts on storm drains and sanitary sewers shall be field verified where appropriate before commencing construction. The contractor shall excavate test pits where indicated hereon or wherever design conflicts may occur. Design conflicts, if any, shall be brought to the attention of the project engineer. Plate or backfill and patch test pits as directed by the project engineer.

9. All gravity PVC storm drain and sanitary sewer pipes shall conform to ASTM D 3034 "Standard Specification for type PSM Poly Vinyl Chloride (PVC) Sewer Pipe and Fittings" or approved equal (SDR35). Pipes shall be sloped at 2% (minimum) or as otherwise noted.

10. Where unsuitable foundation is encountered during construction of storm drains or sanitary sewers, the contractor shall remove the unsuitable material and replace it with other material approved by the project engineer.

11. All existing manhole frames, catch basin grates, and utility structures shall be adjusted to new finished grade as required.

12. In accordance with Town regulations and standard practice, all clear water sources cannot discharge to the sanitary sewer. This includes air conditioning condensate lines and high efficiency boiler/heater system units.

13. The contractor shall provide all equipment, tools, labor, and materials necessary to satisfactorily clean and remove all visible obstructions, dirt, sand, sludge, roots, gravel, stones, etc. from the storm drains, sanitary sewers, and manholes.

14. There shall be no dumping of construction debris and/or excess excavated material into or in proximity to and wetland areas.

15. Excess material excavated during construction shall be disposed of legally off site in an environmentally sound manner.

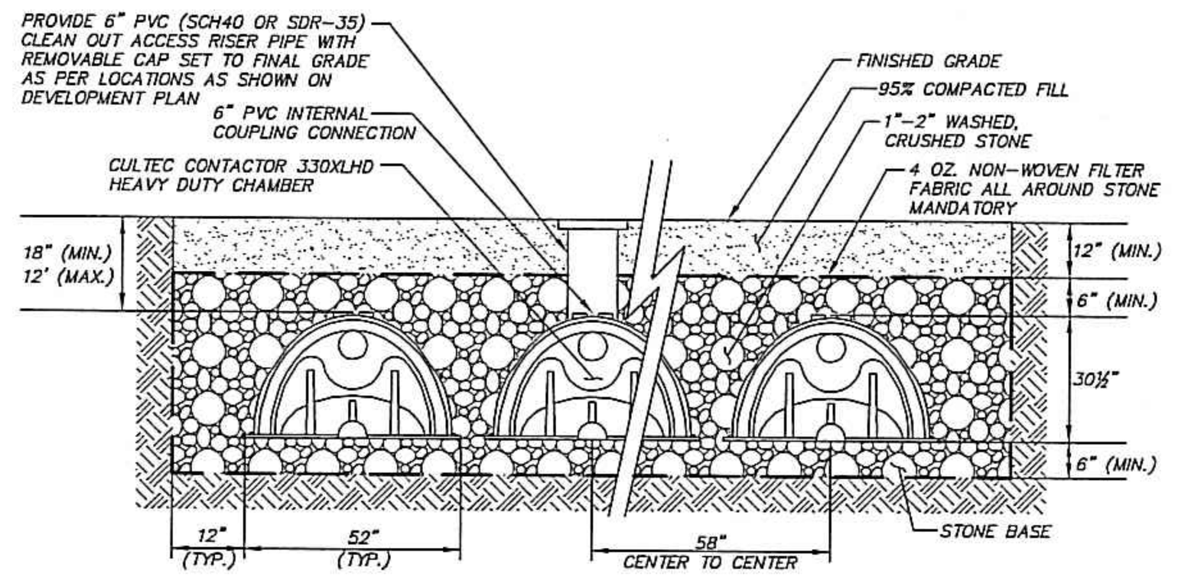
16. All trenches within the private right of way shall be backfilled and/or plated after work hours each day, with the traffic and pedestrian right of way restored to safe/serviceable conditions.

17. Re-grading, filling, and other alterations to the site shall be restricted to the minimum level necessary to complete the project as shown on the approved plans.

18. All retaining walls greater than three feet are required to be designed and inspected during construction by a Professional Engineer registered in the State of New York.

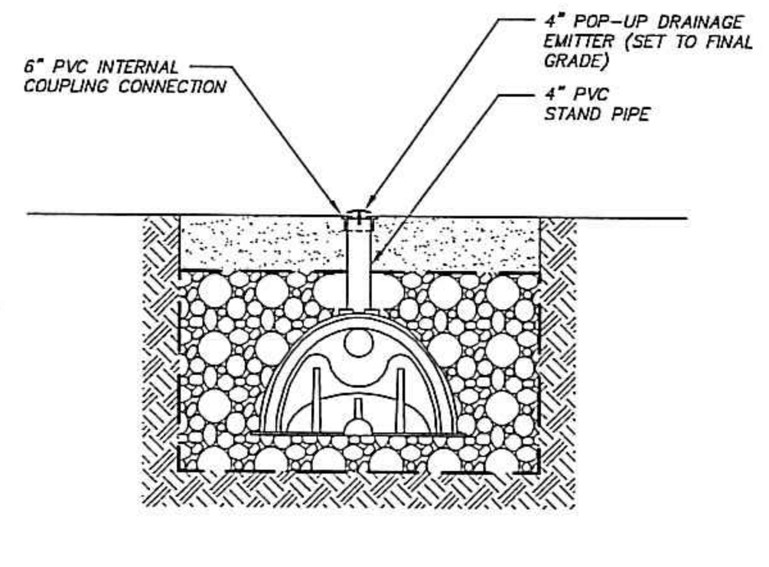
19. Shoulders and disturbed areas shall receive four inches of topsoil, fine graded, and seeded as soon as practical to prevent erosion.

20. All specimen trees shall be protected during the construction period, except those specifically designated to be removed.

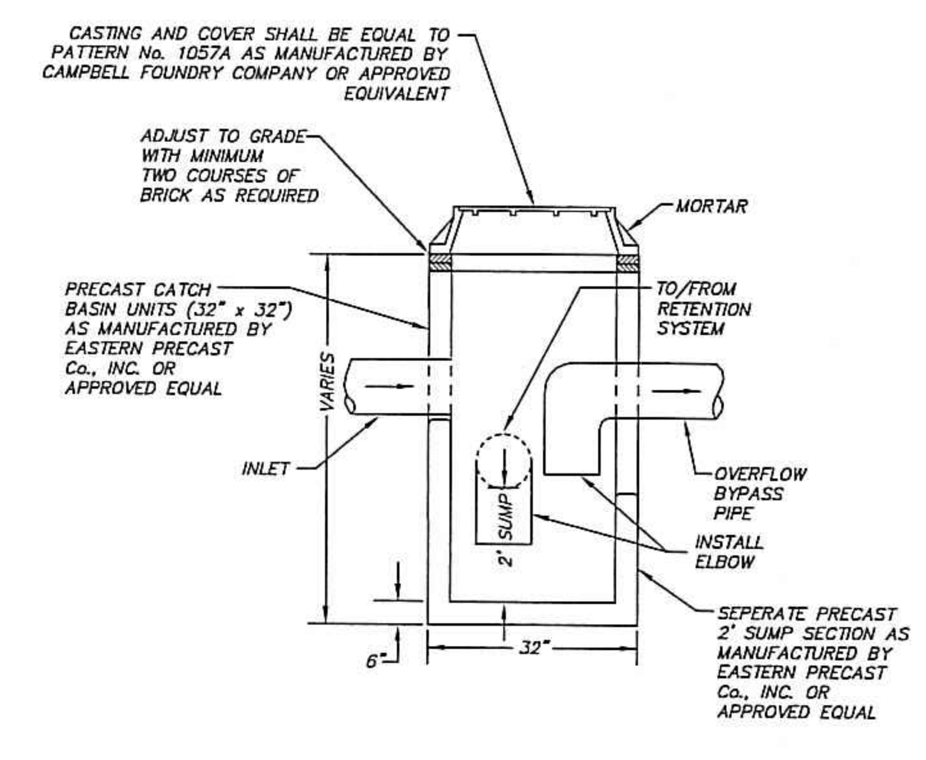


TYPICAL CROSS SECTION DETAIL
CULTEC CHAMBER SYSTEM
RECHARGER 330XLHD
UNPAVED (H-20) LOADING
N.T.S.

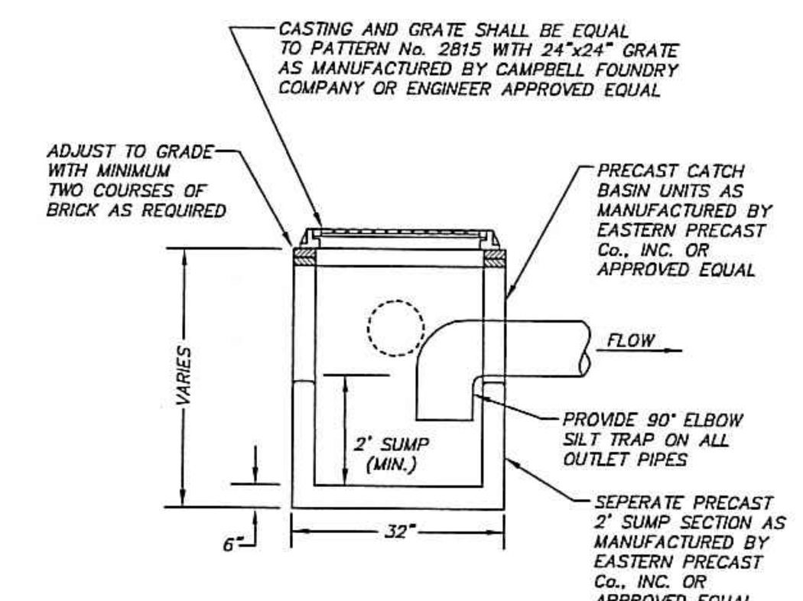
NOTES:
1. STORMWATER CHAMBERS SHALL BE MANUFACTURED BY CULTEC, INC. (800) 428-5832 OR ENGINEER APPROVED EQUAL.
2. ALL CHAMBERS SHALL BE INSTALLED ACCORDING TO MANUFACTURER SPECIFICATIONS.
3. THE SOILS BENEATH THE INFILTRATION SYSTEM SHALL BE SCARIFIED OR TILLED TO IMPROVE INFILTRATION.



WITH POP-UP EMITTER



BYPASS JUNCTION BOX DETAIL
N.T.S.



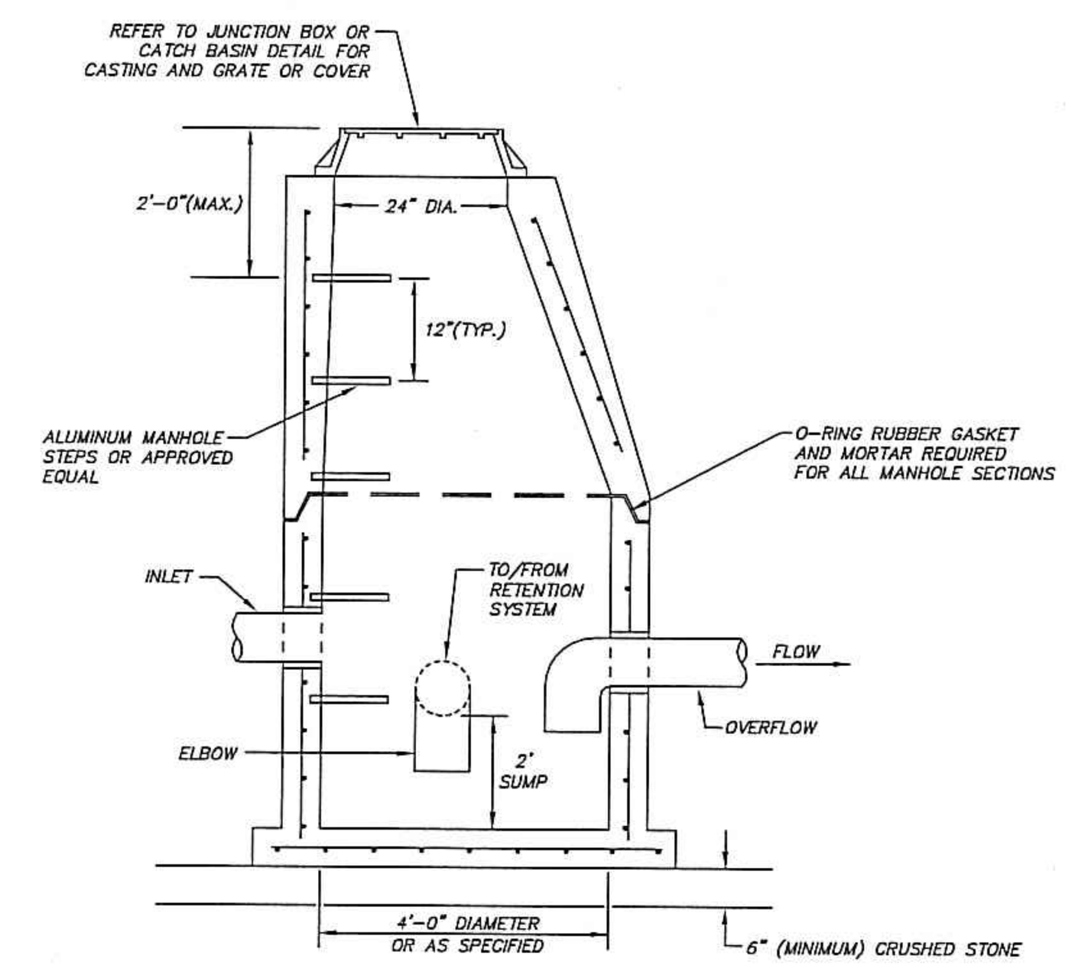
CATCH BASIN DETAIL TYPE "CL"
△1 AND AREA DRAIN DETAIL"
N.T.S.

NOTES:

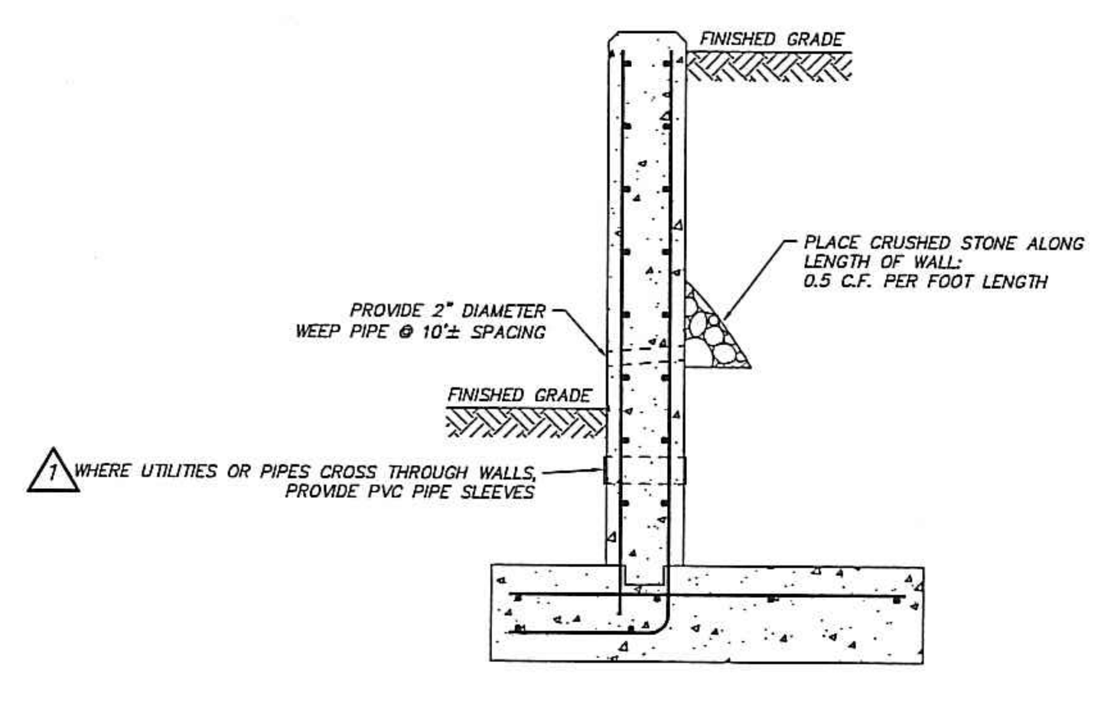
JUNCTION BOXES AND CATCH BASINS SHALL HAVE A MINIMUM SUMP OF 2 FEET AS MEASURED FROM THE LOWEST PIPE INVERT ELEVATION TO THE INTERIOR BOTTOM OF THE STRUCTURE.

CONTRACTOR SHALL PURCHASE AND INSTALL A SEPARATE SUMP SECTION. NO OUTLET OR INLET PIPES SHALL PENETRATE THE BOTTOM SUMP SECTION.

REFER TO DEVELOPMENT PLAN FOR INVERT ELEVATIONS, DIAMETERS, AND DIRECTIONS OF ALL PIPES.



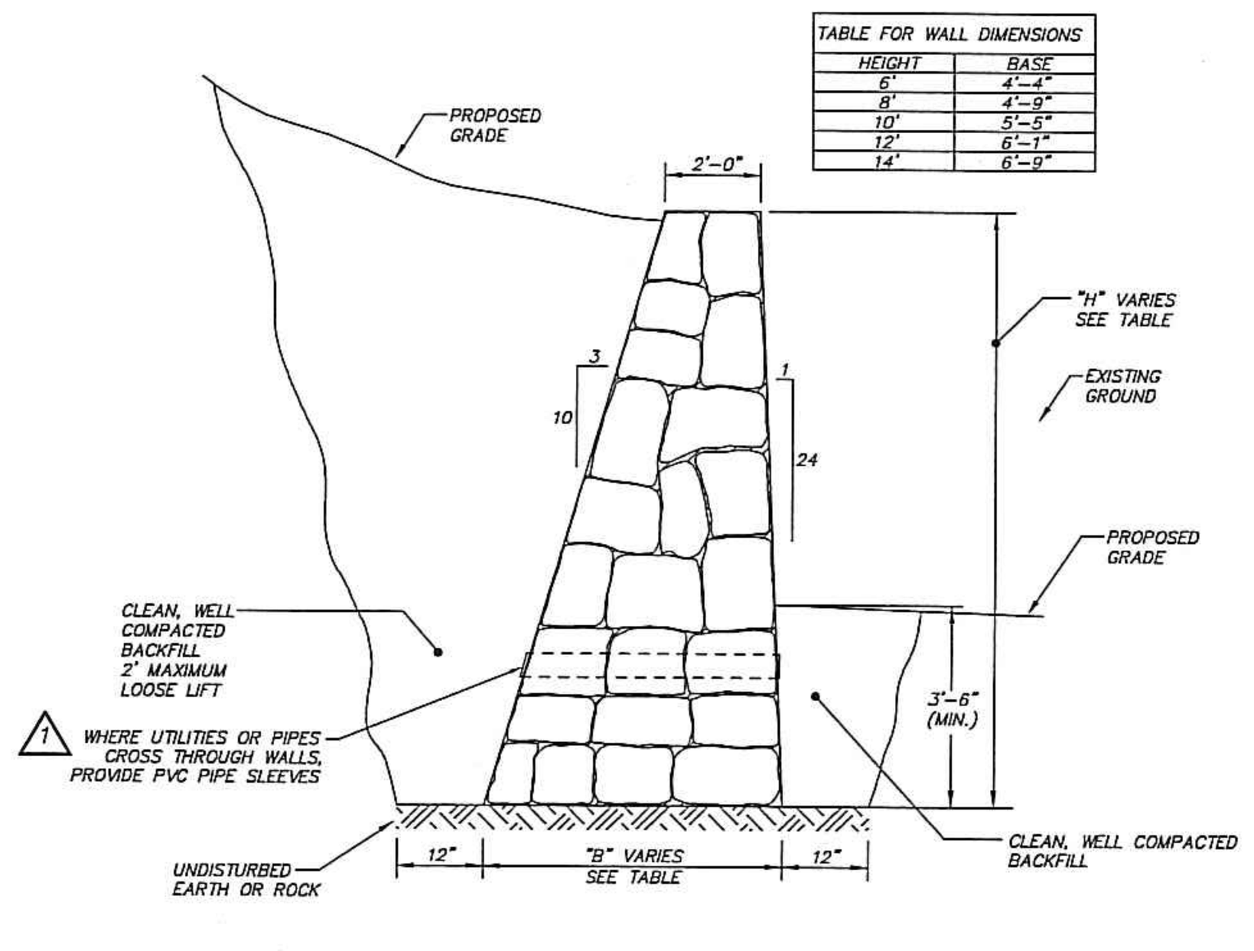
STORM DRAIN MANHOLE DETAIL
(FOR DEEP JUNCTION BOXES AND CATCH BASINS)
N.T.S.



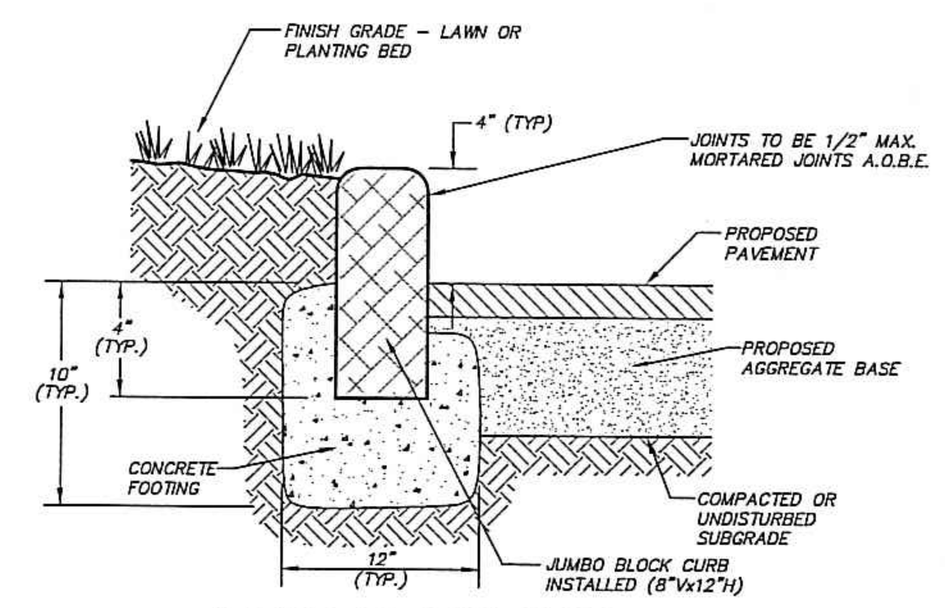
△1 CONCRETE RETAINING WALL DETAIL
N.T.S.

△1 STRUCTURE IS SCHEMATIC ONLY. ALL WALLS AT LEAST 4 FEET TALL TO BE DESIGNED BY A STRUCTURAL ENGINEER.

TABLE FOR WALL DIMENSIONS	
HEIGHT	BASE
6'	4'-4"
8'	4'-9"
10'	5'-5"
12'	6'-1"
14'	6'-9"

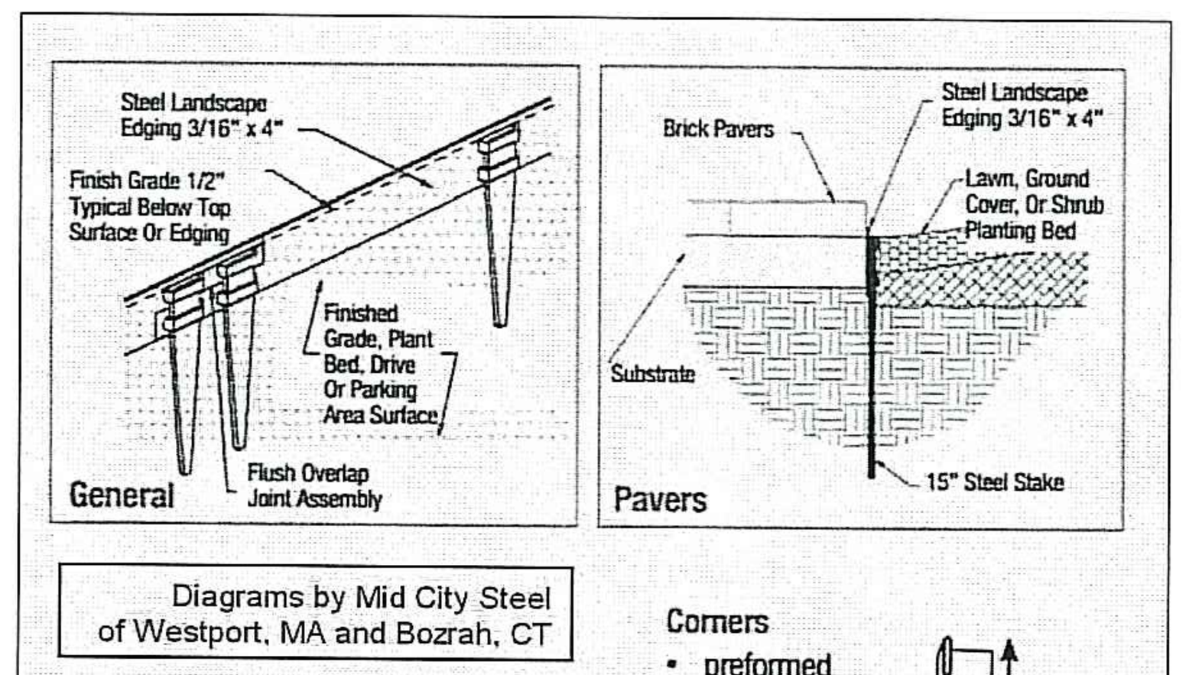


△1 STONE MASONRY WALL
N.T.S.
(ALTERNATE)



JUMBO BLOCK CURB
N.T.S.

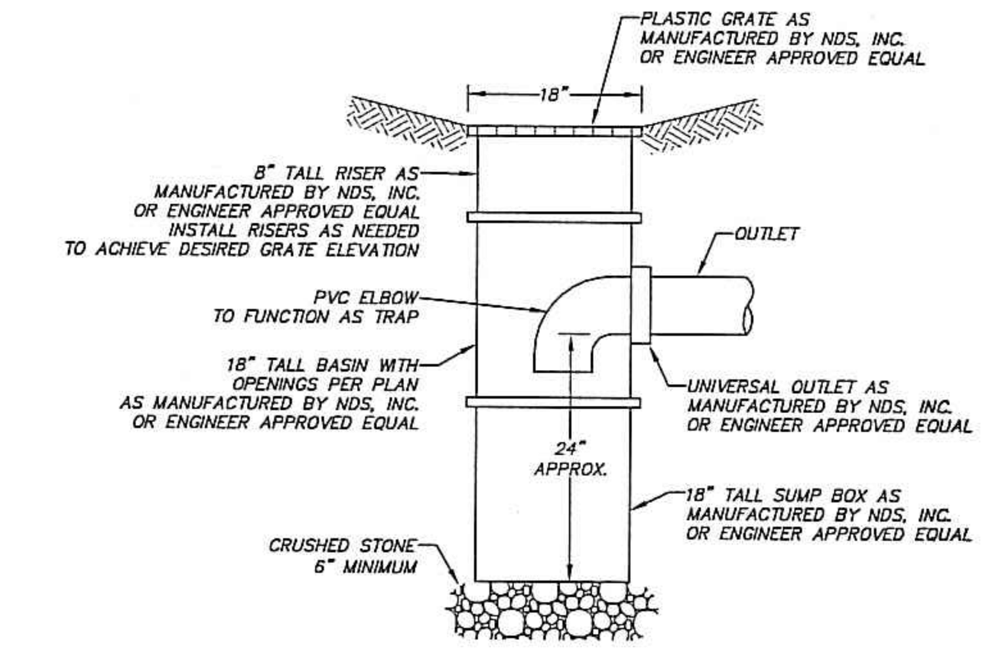
INSTALL ONLY WHERE LABELED ON PLAN.
USE STEEL DRIVEWAY EDGING OTHERWISE.



Diagrams by Mid City Steel of Westport, MA and Bozrah, CT

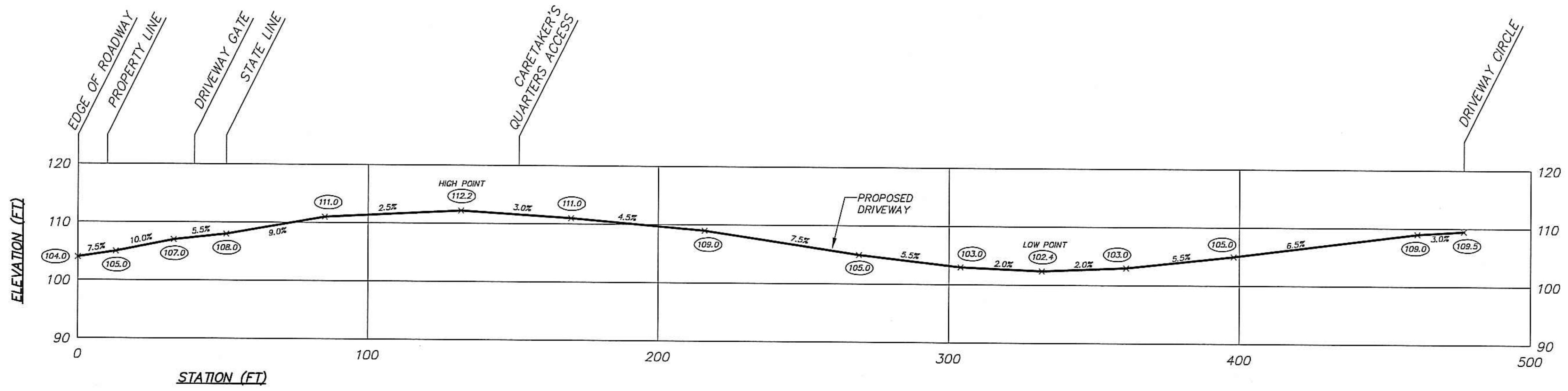
STEEL DRIVEWAY EDGING
N.T.S.

OR APPROVED EQUAL
MUST BE AT LEAST 3/16" THICK



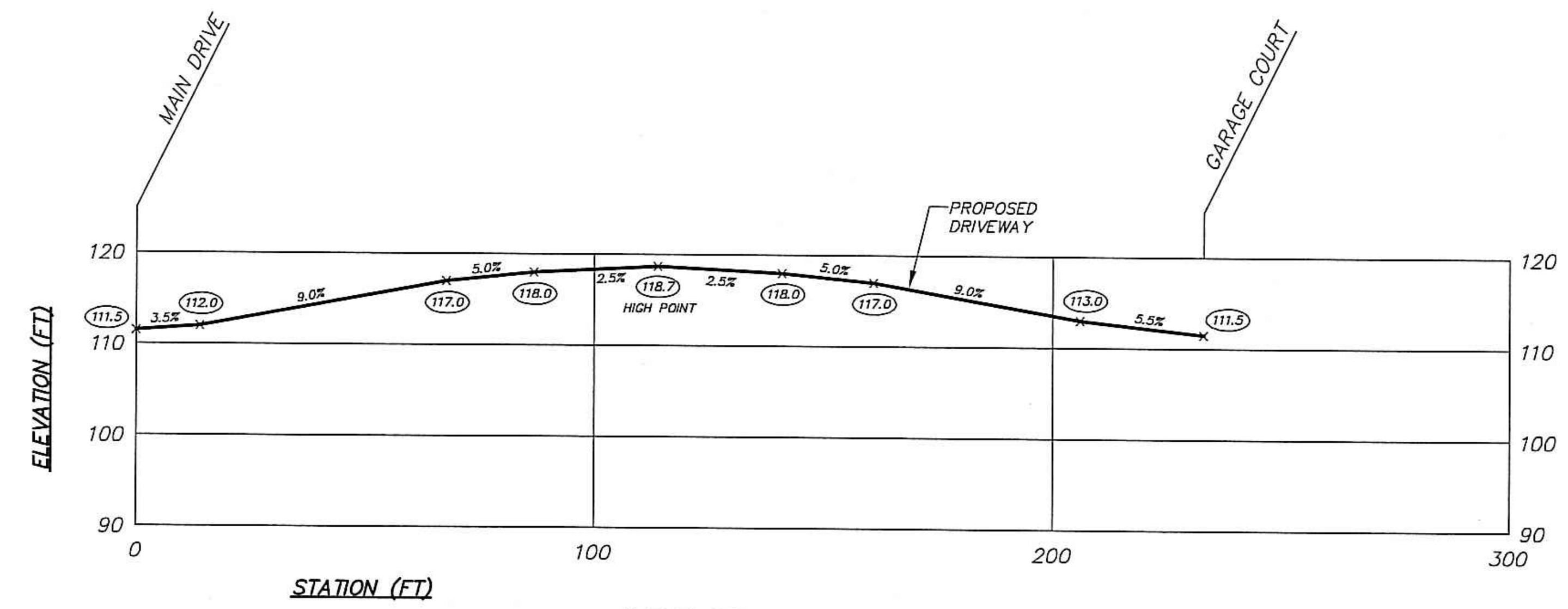
18"x18" PLASTIC YARD DRAIN
N.T.S.

△1 (CONTRACTOR TO PROVIDE ALTERNATE PRICE FOR 18"X 18" YARD DRAINS IN LIEU OF AREA DRAINS)



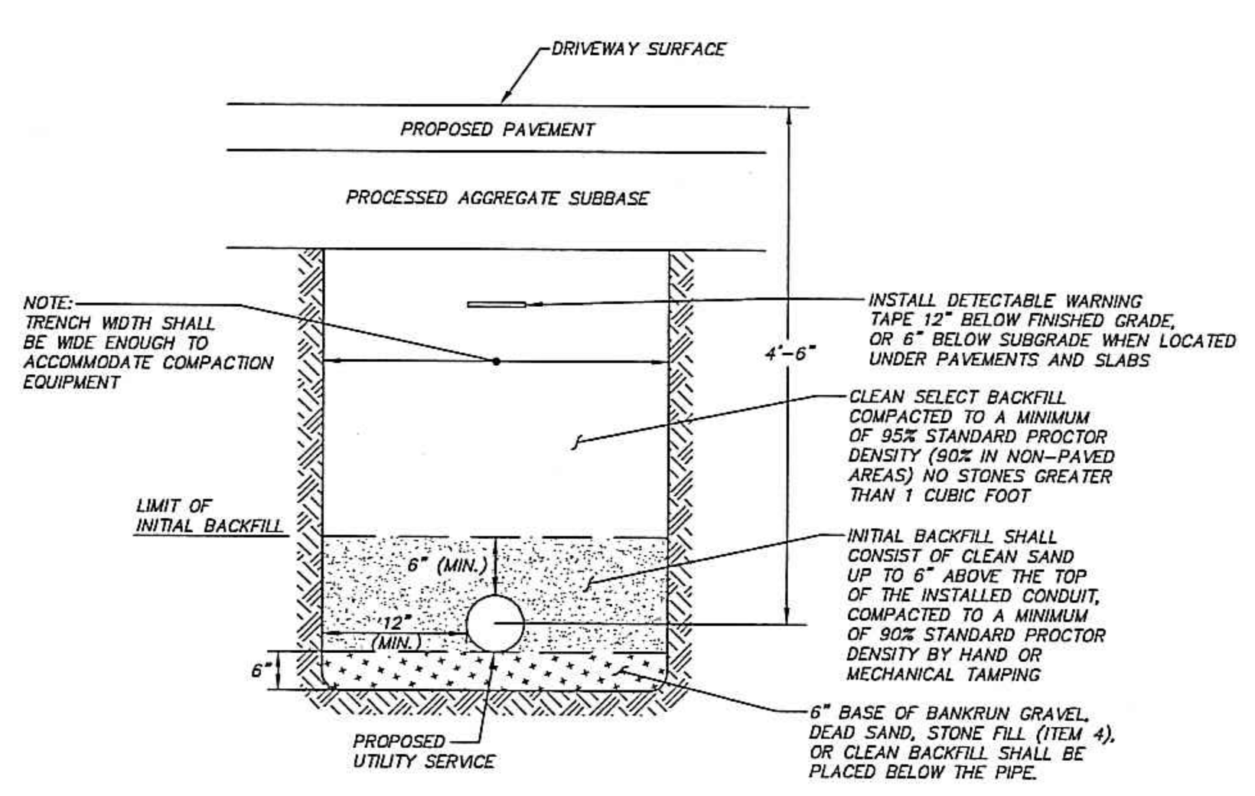
DRIVEWAY PROFILE
MAIN DRIVE FROM STREET TO DRIVEWAY CIRCLE

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 15'
(ASPECT = 2:1)



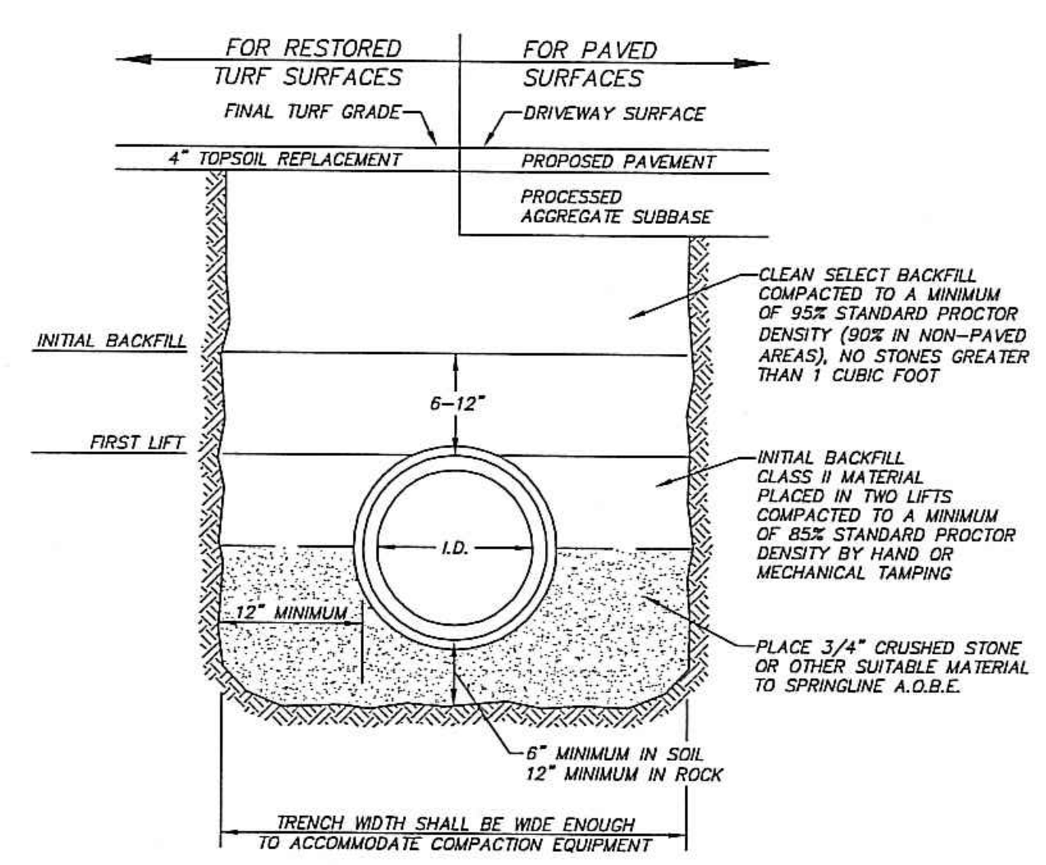
DRIVEWAY PROFILE
TO CARETAKER'S QUARTERS

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 15'
(ASPECT = 2:1)

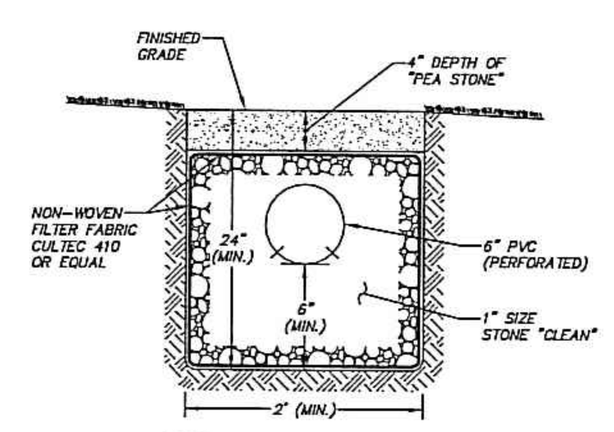


NOTE:
COORDINATE INSTALLATION OF IMPORTED UTILITIES WITH THE RESPECTIVE UTILITY COMPANIES.

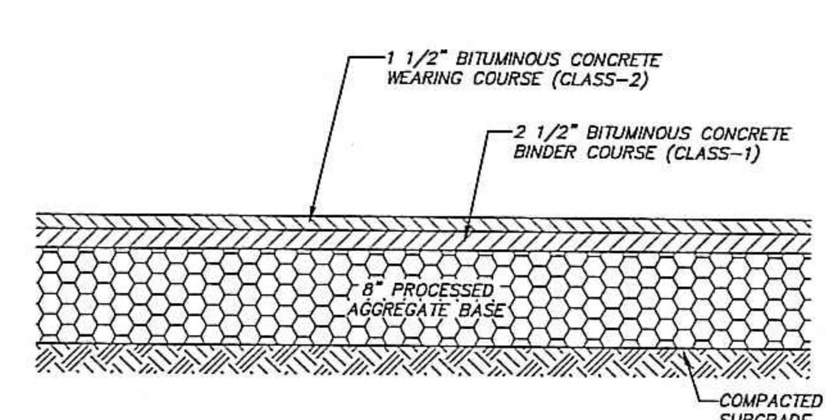
DETAIL FOR UTILITY SERVICE INSTALLATION
N.T.S.



DETAIL FOR P.V.C. SANITARY SEWER AND P.V.C. STORM DRAIN INSTALLATION
N.T.S.



STORM WATER LEVEL SPREADER DETAIL
N.T.S.



ASPHALT DRIVEWAY DETAIL
N.T.S.

△1 (COORDINATE PAVEMENT THICKNESS WITH OWNER, ARCHITECT AND ENGINEER)

D'ANDREA SURVEYING & ENGINEERING, P.C.
· LAND PLANNERS
· ENGINEERS
· SURVEYORS
P.O. BOX 549
RIVERSIDE, CT 06878
6 NEIL LANE
TEL. 637-1779

REV.	DATE	DESCRIPTION
△1	6-1-21	SHIFT HOUSE & COURT EAST,
"	"	ISSUE TO NCPB & WCDH
0	2-8-21	SUBMIT TO PLANNING BOARD

RICHARD A. REGAN NY PE No. 61598
ENGINEER 6-1-21 DATE

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PROJECT	PROPOSED RESIDENCE
PREPARED FOR	45 HURLINGHAM, LLC
LOCATION	45 HURLINGHAM DRIVE NORTH CASTLE, NEW YORK
3 OF 4	NOTES & DETAILS

20JS

Construction Notes: ▲ Note: Contractor shall review site plan. Main house septic system leaching fields and tanks have been installed. Installer and owner to coordinate with engineer.
After on site inspection with engineer and architect. Contractor shall submit a proposal for approval specifing cost for completion and testing of the installed septic tank, Pump chamber and overflow tank with required piping, pump, electrical wiring to make the tanks operational AOBE
Refer to notes on sheet 1

1. Contours and elevations shown hereon are based on an assumed datum. The supervising engineer shall transfer a control benchmark into the working area after site preparation is complete.
2. In accordance with New Yorks Code Rule 753, the owner or the contractor shall be required to verify the depth and location of all utilities prior to commencing construction, and shall contact "Dig Safely, New York" at 1-800-962-7962, 72 hours prior to commencing construction for mark out of underground utilities, (two full working days not counting day of call, not counting weekends or holidays). Refer to digsafelynewyork.com for additional information.
3. Earth material used to cover the sewage disposal system shall be free of large stones, masonry, stumps or construction debris.
4. Machinery that may disturb the alignment of the disposal system shall not be allowed on the disposal area. The septic system areas shall be isolated and protected against damage by erosion, storage of materials, displacement. compaction or other adverse physical change in the characteristics of the soil or in the drainage of the area.
5. No permanent structure shall be constructed over the reserve area.
6. All construction shall comply with applicable sections of the State of New York and County of Westchester Health Codes. Construction shall also comply with the "Westchester County Health Department Rules and Regulations for the Design and Construction of Residential Subsurface Sewage Treatment Systems and Drilled Wells in Westchester New York. . ." effective Jan. 1, 2002.
7. D'Andrea Engineering and Surveying, PC. will not be responsible for the performance of the system unless constructed according to design as it may be amended.
8. Areas disturbed during construction shall be regraded, seeded and mulched, or planted, for permanent stabilization within seven days after construction.
9. Select fill (bank run gravel) shall be placed in 8" to 12" lifts and allowed to settle naturally for a minimum of two months. No mechanical compaction is allowed. Gradation of select fill shall be as follows:

   Sieve size:
   5" 1/4" #40 #100 #200

   % Passing:
   100 25-60 5-25 0-10 0-5 (Preferably no more than 2% passing #200 sieve)

   Prior to the placement of select fill, the contractor shall, at his expense, provide to the local health department, a certified lab analysis of the gradation of select fill and the characteristics of compaction. The percolation rate of the select fill shall be in accordance with the Health Code and approved by the design engineer (1" in 5 min.). Prior to installation of the leaching system, the contractor shall perform a minimum of two percolation tests in the select fill (to be witnessed by the design engineer) to confirm the design rate is met.
10. This system is not designed to accept the wastes from garbage disposal units, backwash from water treatment devices, or discharge from whirlpool type baths greater than 99 gallons.
11. Any change in the location or design of the system without prior approval of the design engineer and the Health Department is not permitted.
12. The septic installer shall be a licensed by Westchester County septic contractor who shall notify D'Andrea Engineering and Surveying, PC (DSEPC,. and the WCHD 48 hours prior to starting each phase DSEPC shall supervise the installation of the septic sytem(s) and make an open works inspection.
13. Manholes on septic tank, pump chamber, and overflow tank, if located under a driveway or traveled way, shall have bolted manhole covers with rubber gaskets.

   Service access manholes on the septic tank, pump chamber and overflow tank shall be set to grade.
14. The pump discharge lines shall be installed 42" below grade(minimum).
15. Installation of the septic system shall be inspected in progress by a professional engineer and an as-built plan certified by a professional engineer, shall be submitted to the Westchester County Health Department before a "Permit to Use and/or Operate" is issued.
16. The contractor shall be solely responsible to coordinate his work with the work being done by others. The contractor shall likewise bear the responsiblilty for delays or other factors related to the work by others. No claims shall be allowed due to the contractor's failure to adequately coordinate such work.
17. Gravity PVC pipe shall conform to ASTM D-3034 "standard specification for type PSM-Poly Vinyl Chloride (PVC) sewer pipe and fitting" or approved equal (SDR-35) unless otherwise noted. Building sewer to conform to force main specifications.
18. Soil tests were conducted by D'Andrea Engineering and Surveying. PC. with the Westchester County Health Department.
19. There shall be no part of a septic system located within 100 feet of a well when the well is located upgradient from the septic system.
20. All distribution boxes shall be designed and constructed for H-10 loading as manufactured by Eastern Precast Co., Inc.
21. All distribution boxes shall be leveled and installed on a minimum of twelve (12) inches of crushed stone.
22. Prior to commencing construction, all of the portions of the septic system shall be clearly marked and enclosed using snow fencing so that they are not subject to H-20 loading from construction equipment or vehicles or other heavy loads from construction activities.
23. Sediment fencing shall be installed where required prior to commencing construction and shall remain in place for the duration of the project. Fencing shall be equivalent to that manufactured by Amoco.
24. All sediment and erosion control devices and provisions shall be maintained in operational condition by the contractor until final acceptance of the project.
25. There shall be no dumping of construction debris and/or excess excavated material into or in proximity to any wetland areas.
26. This property is served by a private well(s).
27. Cast Iron Pipe (CIP) shall be extra heavy class with rubber gasket water tight joints. Pipe to comply with County of Westchester standards. Contractor to supply transition coupling from PVC to CIP as required. Pipe shall comply with ASTM A-74 or ASTM-888. Note: SDR 35 PVC specifed for building sewer, installer to verify with engineer if SDR 35 PVC sewer pipe for building sewer pipe is acceptible in Town of North Castle and for Westchester County Health Department.

   Contractor to provide alternate price for using CIP in lieu of SDR 35 PVC for buildilng sewer pipe.

DEPARTMENT OF HEALTH NOTES

1. The minimum well yield is 5 gpm; yields less than 5 gpm must be immediately reported to the department.
2. The Westchester County Health Department approval expires one year from the date on the approval stamp and is required to be renewed on or before the expiration date. The approval is revocable for cause or may be amended or modified when considered necessary by the department.
3. The installation of the well(s) and On-site Wastewater Treatment System (OWTS) shall be in accordance with the Rules and Regulations for the Design and Construction of Residential Subsurface Sewage Treatment Systems and Drilled Wells in Westchester County, NY.
4. If for any reason the approved construction plan can not be followed, a revised plan must be prepared, submitted, and approved by WCDH.
5. There are no sourses of contamination within 200 feet of the proposed well, except as noted on the design plan.
6. There are no OWTS within 200' of well unless otherwise shown on plan. except as noted on the design plan.
7. Any roof and footing drains from the proposed structure are to be located away from the proposed well and OWTS.
8. **ADDITIONAL WELL(s) ON A SINGLE PROPERTY**
   In accordance with the requirements of Chapter 873, Article VII, Section 873.700(4) of the Westchester County Sanitary Code, the Department will only issue an approval for a proposed additional well(s) ona single parcel of within an area not served by a public water supply when on of the following conditions outlined below are met:

   -When a new well is drilled and the yield is above 5 gallons per minute (gpm). the existing well is required to be abandoned, in accordance with the requirements of the WCDH Rules and Regulations. Any request to retain the existing well must be accompanied by a 6 hour stabilized yield test demonstrationg that the existing well is less than 5 gpm.

   (OR)
   -If the existing well(s) and the new well individual yields, are above 5 gpm, offsite wells located immediately around the subject property must be identified and monitored and demonstrated to the satisfaction of the Dept. that there is no direct influenceon any of the offsie well during the 6 hour stabilized simultaneus yield testing on all onsite wells. In this case, offsite well monitoring plans must be submitted to the Dept. for approval prior to the scheduled yield testing.
9. Within 24-hours of the completion of the septic system, the design professional must notify the WCDH that the septic system is ready for inspection by submitting a completed request for an open works inspection on the approprriate form to the WCDH.

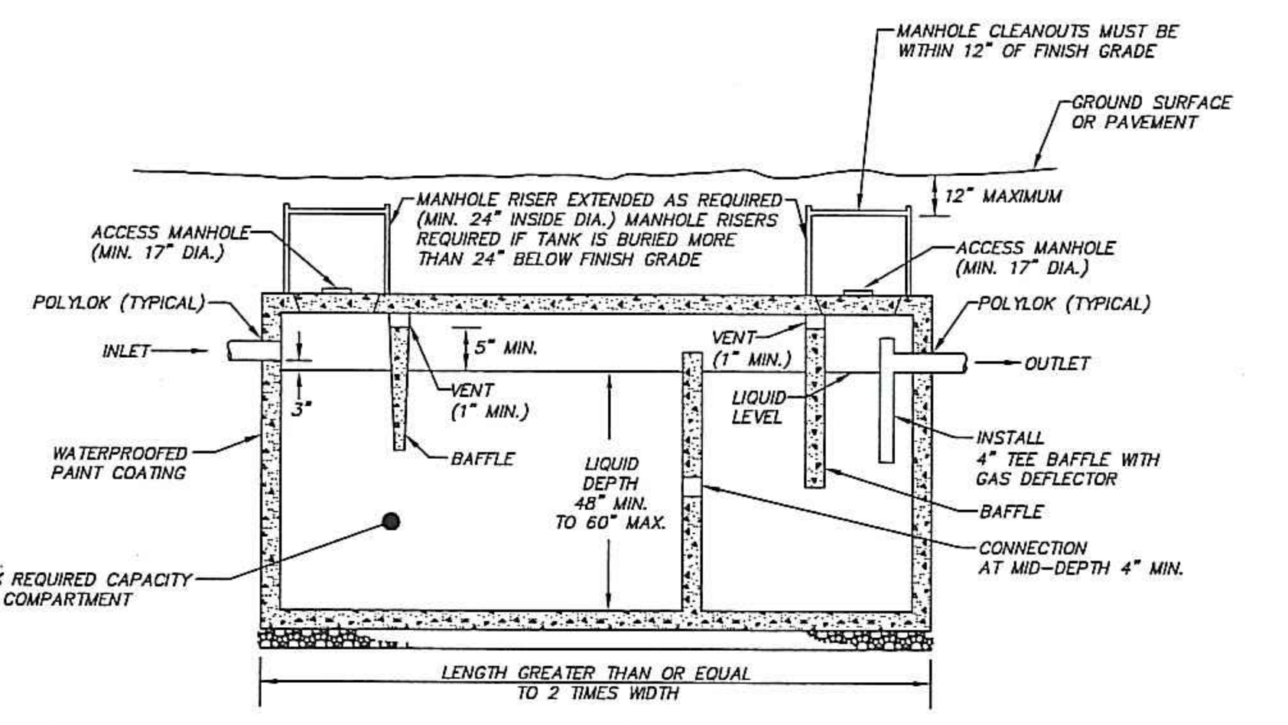
   NOTE THAT NO BACKFILLING OF A COMPLETED SEPTIC SYSTEM CAN OCCUR UNTIL AFTER IT HAS BEEN INSPECTED AND ACCEPTED BY THE WCDH.
10. There shall be no trees within 10' of the septic system.

MAIN HOUSE SYSTEM ELEVATIONS

HOUSE, SEPTIC TANK AND PUMP CHAMBER

INV. EL. OUT OF DWELLING (FT.)	INV. EL. INTO SEPTIC TANK (FT.)	INV. EL. OUT OF SEPTIC TANK (FT.)	INV. EL. INTO PUMP CHAMBER (FT.)	INV. EL. OUT OF PUMP CHAMBER (FT.)
97.0±	90.5±	VIF/ A.O.B.E.	VIF/ A.O.B.E.	VIF/ A.O.B.E.

NOTE: INSTALLER TO VERIFY SEPTIC TANK AND PUMP CHAMBER ELEVATIONS WITH ENGINEER PRIOR TO START OF CONSTRUCTION. INSTALLER SHALL ALSO VERIFY OVERFLOW TANK ELEVATIONS WITH ENGINNER PRIOR TO CONSTRUCTION.



TYPICAL SEPTIC TANK DETAIL

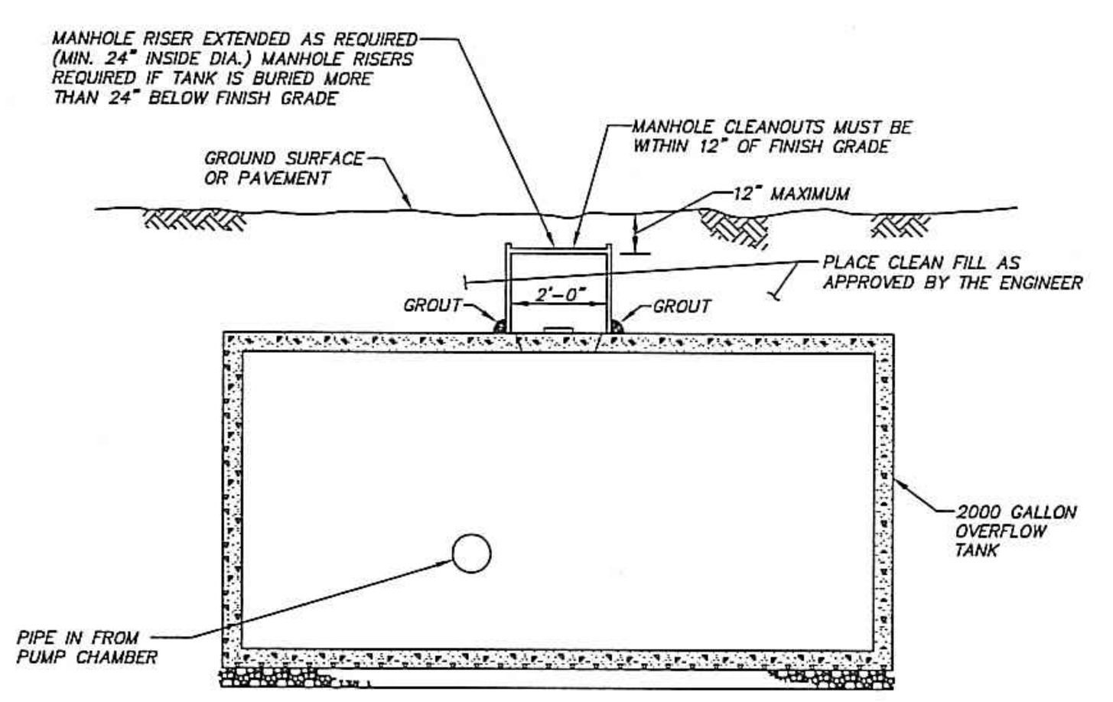
N.T.S.

TANK SIZE GALLONS 2000

DESIGN LOADING EXISTING

(NOTE: PRECAST SEPTIC TANK HAS BEEN INSTALLED REFER TO PLAN)

NOTE:
1.) SEPTIC TANK SHALL COMPLY WITH REQUIREMENTS OR WESTCHESTER COUNTY HEALTH DEPARTMENT RULES & REGULATIONS FOR THE DESIGN AND CONSTRUCTION OF RESIDENTIAL SUBSURFACE SEWAGE TREATMENT SYSTEMS AND DRILLED WELLS IN WESTCHESTER COUNTY, NEW YORK.



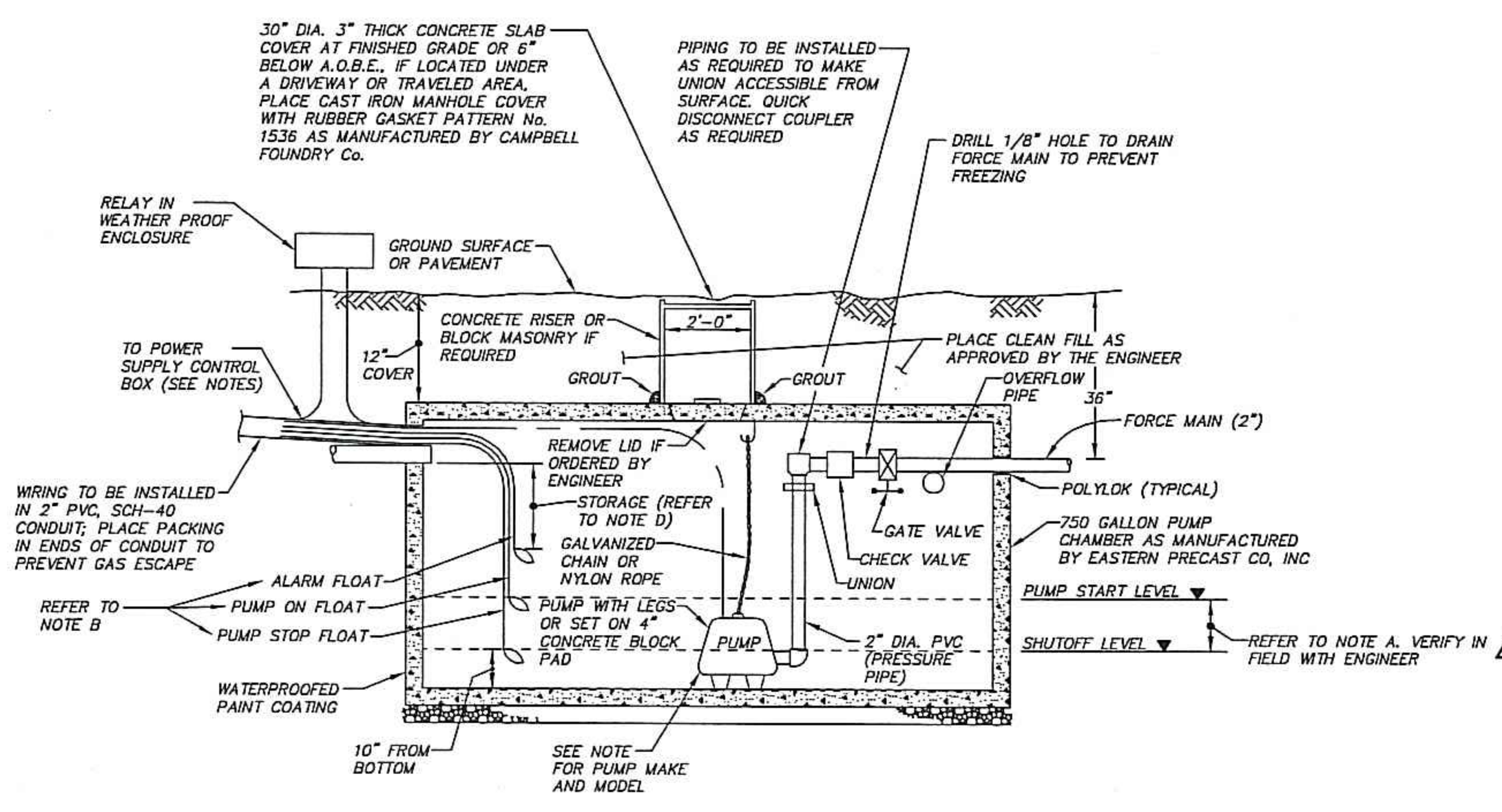
2000 GALLON OVERFLOW TANK

N.T.S.

TANK SIZE GALLONS 2000

DESIGN LOADING EXISTING

(NOTE: PRECAST OVERFLOW TANK HAS BEEN INSTALLED REFER TO PLAN)



PUMP CHAMBER DETAIL

N.T.S.

CHAMBER SIZE GALLONS 750 (VERIFY WITH ENGINEER)

DESIGN LOADING EXISTING

(TO BE VERIFIED WITH ENGINEER AT TIME OF PUMP TEST)
(NOTE: PRECAST PUMP CHAMBER HAS BEEN INSTALLED REFER TO PLAN)

A. The pump chamber shall contain ~~a Liberty LE41M-2 4/10HP pump for total heads less than 15', and~~ for total head from 15' to 50' the pump shall be a Liberty FL61M-2 6/10HP, both with 1 1/2" discharge or equal approved by the design engineer. Pump controls shall be set to discharge 175 gallons per cycle (6 " drawdown, 0.5' VIF with Engineer). A high level alarm with light and bell shall be installed in the dwelling and a service shut-off switch, visible from the pump chamber, shall be installed outside the dwelling. Alarm float activates 3" above pump on pump on.
The pump shall have a manual run option and thus have a Liberty Simplex Control Panel SXL21=3 with alarms noted above, and additionally the pump shall be 115v and have 25' of cord. Coordinate panel location with Engineer, but typically the panel should be in the basement proximate to other control panels.

B. Electrical connections for the pump shall be housed in a water proof box set a minimum of 12" above finished grade. All electrical installations shall meet State and local codes. Underground cable shall be installed in PVC conduit; The septic system installer shall provide a pull line in each conduit. Electrical wiring shall be installed by a licensed electrician; an electrical permit shall be obtained.

C. Submit Pump and Control Specifcation package for review and approval by Engineer.

PERC TEST "C"			
TIME (MIN)	SCALE (IN)	DROP (IN)	RATE (IN/MIN)
0	17		
16	21 1/2	4 1/2	
0	17		
14	20	3	1" IN 4.6 MIN.
0	17		
24	20	3	1" IN 8.0 MIN.
0	17		
33	20	3	1" IN 11.0 MIN.
0	17		
32	20	3	1" IN 10.7 MIN.
		1" IN 11.0 MIN.	

PERC TEST "D"			
TIME (MIN)	SCALE (IN)	DROP (IN)	RATE (IN/MIN)
0	23		
25	28 1/2	5 1/2	1" IN 4.5 MIN.
0	19		
19	22	3	1" IN 6.3 MIN.
0	19		
24	22	3	1" IN 8.0 MIN.
0	19		
47	22	3	1" IN 15.6 MIN.
0	19		
46	22	3	1" IN 15.3 MIN.
		1" IN 15.6 MIN.	

PERCOLATION TEST WERE CONDUCTED ON DECEMBER 9, 2020
BY D'ANDREA ENGINEER AND SURVEYING, PC.
TEST HOLES WERE PRESOAKED
DEPTH OF PERC HOLES: C = 27"
D = 28"

HYDRAULIC LOADING:
Proposed 6 bedroom Dwelling.

SEPTIC TANK:
Existing 2000 gallon septic tank.
Existing 750 gallon pump chamber.
Existing 2000 gallon overflow tank.

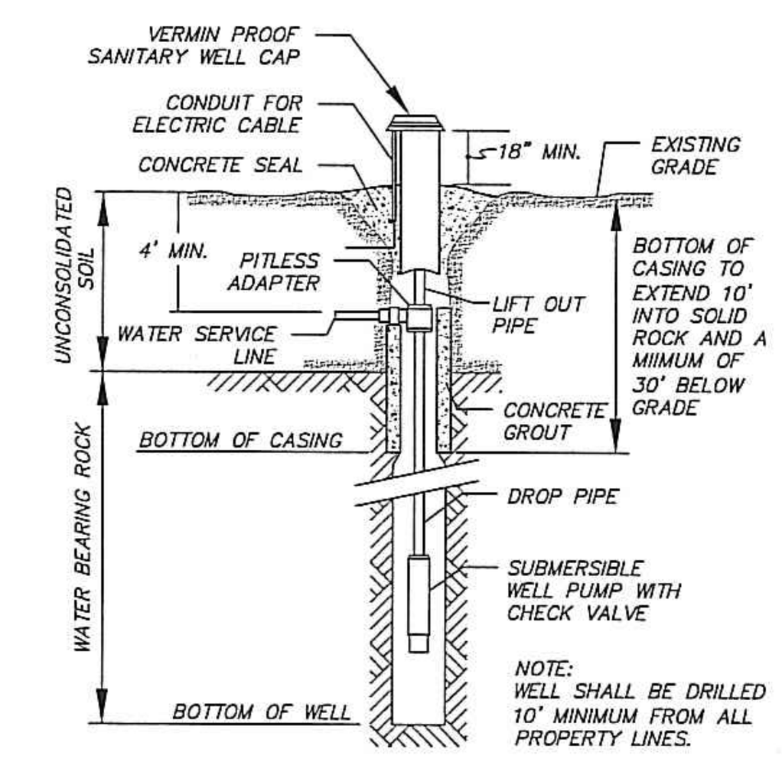
Installed leaching system of 541 LF
Installed circa 1991 and
Inspected by Westchester County Department of Health but
Never placed in operation

RESERVE SYSTEM:

PERCOLATION RATE:
Use 1" in 11-15 minutes. Perc. test "C"

REQUIRED LEACHING AREA:
Proposed 6 bedroom dwelling requires 750 l.f. of 2' wide trenches.
750 l.f. of 2' wide trenches provided.

LEACHING TRENCHES:
7 @ 82' = 574 l.f.
2 @ 88' = 176 l.f.
TOTAL = 750 l.f.

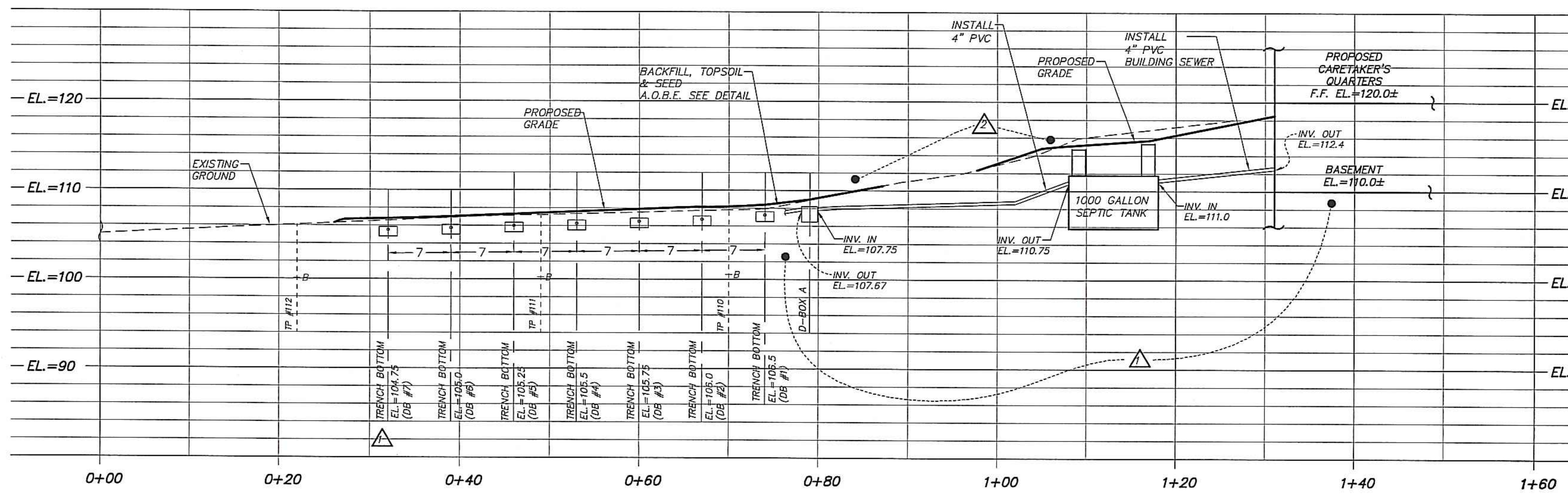


REFER TO DEPARTMENT OF HEALTH NOTES

WELL DETAIL

N.T.S.

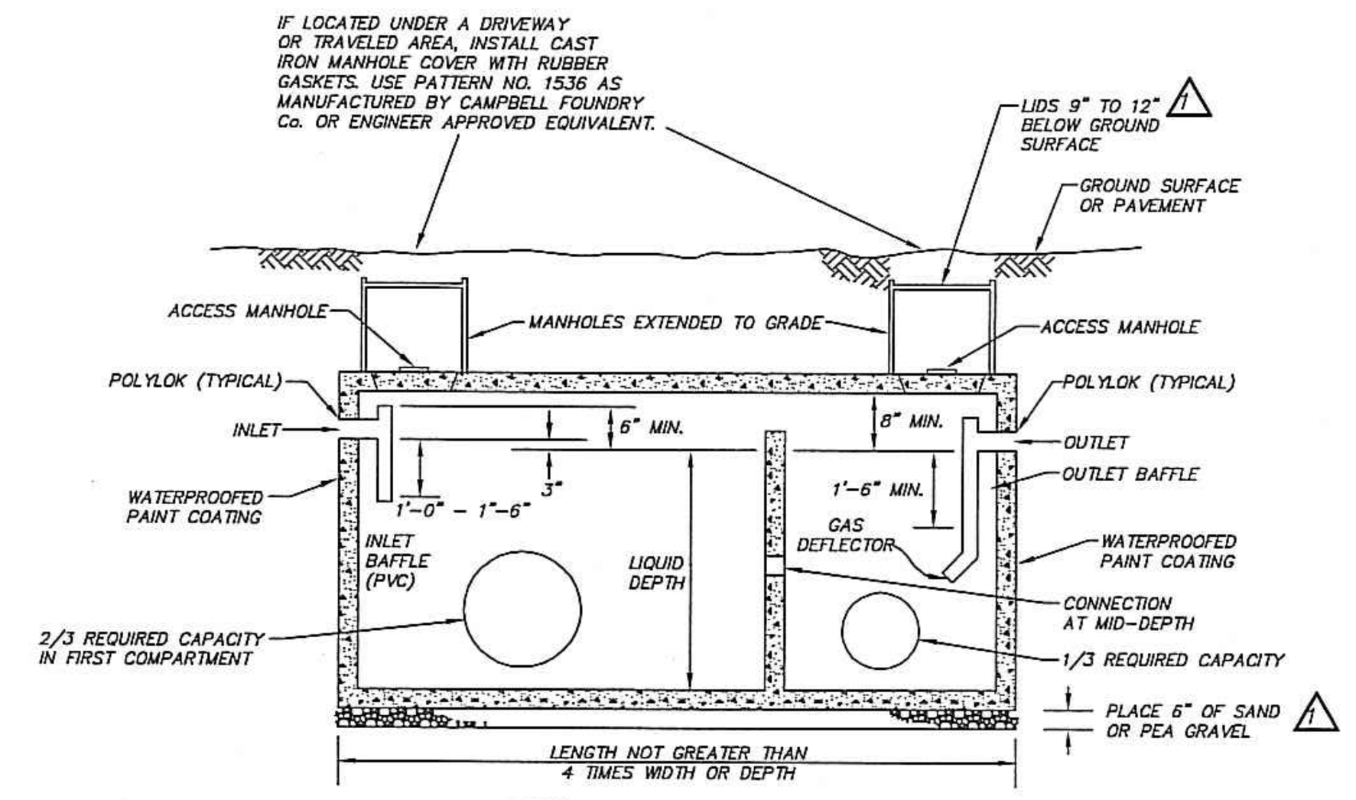
NOTE:
WELL FOR CARETAKER'S QUARTERS IS AN EXISTING WELL.
REFER TO NOTES ON SHEET 1



SECTION X-X

SCALE: 1"=10'

TEST PIT LEGEND:
B - BOTTOM
TW- TOP OF WALL
BW-BOTTOM OF WALL
A.O.B.E. - AS ORDERED BY ENGINEER



TYPICAL SEPTIC TANK DETAIL

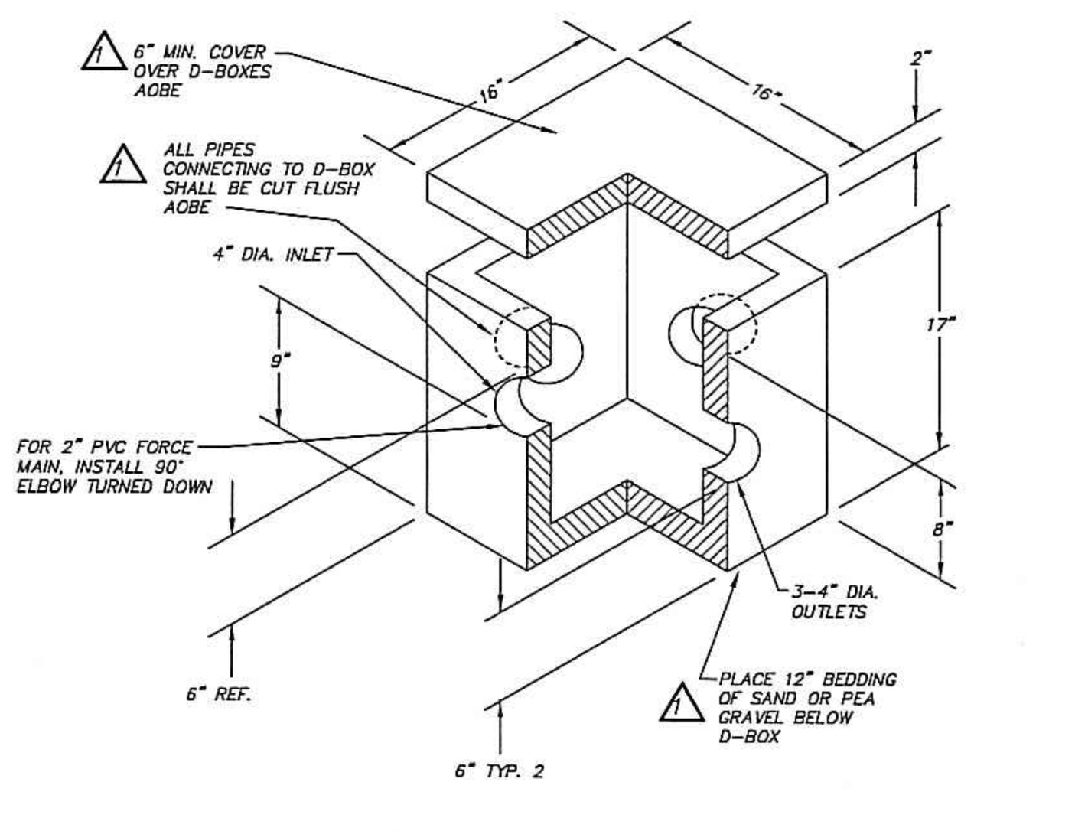
N.T.S.

FOR CARETAKER'S QUARTERS

TANK SIZE GALLONS 1,000

DESIGN LOADING H-10

NOTE:
SEPTIC TANK SHALL COMPLY WITH WESTCHESTER COUNTY HEALTH DEPARTMENT REQUIREMENTS



DB-4 2" HIGH OVERFLOW (N.Y. TYPE)

N.T.S.

SPECIFICATIONS:
-AS MANUFACTURED BY EASTERN PRECAST CO. INC. OR APPROVED EQUAL.
-CONCRETE MINIMUM STRENGTH-4,000 P.S.I. AT 28 DAYS.
-STEEL REINFORCEMENT-6" X 6" # 10 GA. STEEL WIRE MESH.
-MOLDED WITH RUBBER SEALS.

PERC TEST "A"			
TIME (MIN)	SCALE (IN)	DROP (IN)	RATE (IN/MIN)
0	18		
18	21	3	1" IN 6.0 MIN.
0	18		
25	21	3	1" IN 8.3 MIN.
0	18		
30	21	3	1" IN 10.0 MIN.
0	18		
30	21	3	1" IN 10.0 MIN.
0	18		
28	21	3	1" IN 9.3 MIN.
		1" IN 10.0 MIN.	

PERC TEST "B"			
TIME (MIN)	SCALE (IN)	DROP (IN)	RATE (IN/MIN)
0	19		
15	22	3	1" IN 5.0 MIN.
0	19		
24	22	3	1" IN 8.0 MIN.
0	19		
26	22	3	1" IN 8.7 MIN.
0	19		
36	22	3	1" IN 12.0 MIN.
0	19		
47	23 1/2	4 1/2	1" IN 10.4 MIN.
		1" IN 12.0 MIN.	

PERCOLATION TEST WERE CONDUCTED ON DECEMBER 9, 2020
BY D'ANDREA ENGINEER AND SURVEYING, PC.
TEST HOLES WERE PRESOAKED
DEPTH OF PERC HOLES: A = 28"
B = 27"

REFER TO "SEPTIC SYSTEM REPORT FOR PROPOSED SINGLE FAMILY DWELLING ..." REUSED MARCH 24, 2021 FOR PERCOLATION TEST RESULTS FOR "X" "Y" AND "Z". REPORT BY DSEPC.

Test Pit Data
Lot No. 86, 45 Hurlingham Drive
North Castle, New York
Pits #110 through #112
D'andrea Surveying & Engineering. PC. only
November 2, 2020

#110
0-6 Topsoil
6-27 Septic Fill
27-36 Orange-brown silty loam
36-87 Light brown sandy loam

#111
0-8 Topsoil
8-21 Septic Fill
21-84 Orange-brown silty loam

#112
0-6 Topsoil
6-24 Septic Fill
24-54 Light brown sandy loam
54-72 Tan loamy sand

CARETAKER'S QUARTERS SYSTEM ELEVATIONS

SEPTIC TANK

INV. EL. OUT OF DWELLING (FT.)	INV. EL. INTO SEPTIC TANK (FT.)	INV. EL. OUT OF SEPTIC TANK (FT.)	INV. EL. INTO PUMP CHAMBER (FT.)	INV. EL. OUT OF PUMP CHAMBER (FT.)
112.40	111.0	110.75	---	---

NOTE: INSTALLER TO VERIFY SEPTIC TANK AND PUMP CHAMBER ELEVATIONS WITH ENGINEER PRIOR TO START OF CONSTRUCTION. INSTALLER SHALL ALSO VERIFY OVERFLOW TANK ELEVATIONS WITH ENGINNER PRIOR TO CONSTRUCTION.

	DISTRIBUTION BOX				TRENCH	
HIGH OVERFLOW DIST. BOX (H.O.D.B.)	INV. EL. INTO DIST. BOX (FT.)	INV. EL. OUT DIST. BOX (FT.)	INV. EL. TO LEFT TRENCH* (FT.)	INV. EL. TO RIGHT TRENCH* (FT.)	BOTTOM OF TRENCH EL. (FT.)	TOP OF TRENCH EL. (FT.)
1	107.58	107.50	----	107.33	106.5	107.5
2	107.08	107.0	----	106.83	106.0	107.0
3	106.83	------	----	106.58	105.75	106.75
4	106.58	106.5	----	106.33	105.5	106.5
5	106.33	106.25	----	106.08	105.25	106.25
6	106.08	106.0	----	105.83	105.0	106.0
7	105.83	------	----	105.67	104.75	105.75
A SPLIT.	107.75	107.67(2)	----	----	----	----

* LOOKING DOWN-GRADIENT FROM DISTRIBUTION BOX
H.O.D.B. : 2" HIGH OVERFLOW AS MANUFACTURED BY EASTERN PRECAST Co., INC. OR SIMILAR EQUAL
** BAFFLE BOX WITH 2" PVC ELBOW TURNED DOWN

HYDRAULIC LOADING:
Proposed 2 bedroom Caretaker's Quarters.

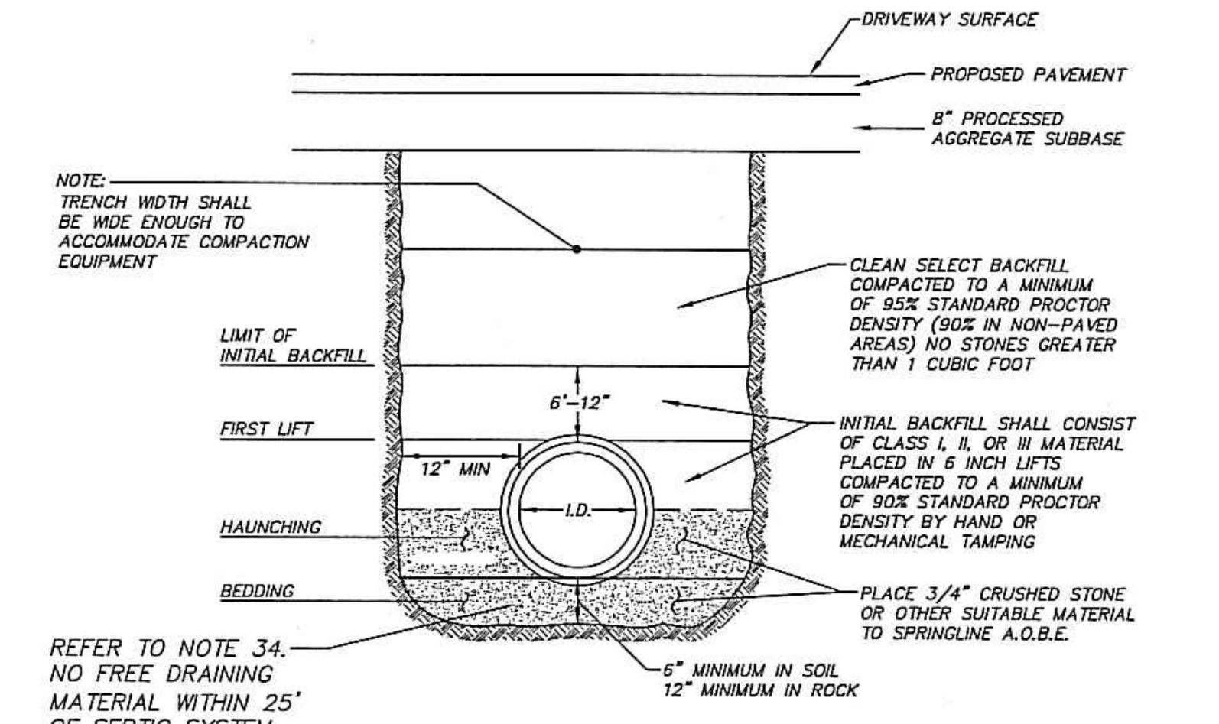
SEPTIC TANK:
Proposed 1000 gallon septic tank.

PERCOLATION RATE:
Use 1" in 10 minutes. ("X" "Y" and "Z" PERC TESTS)

REQUIRED LEACHING AREA:
Proposed 2 bedroom dwelling requires 252 l.f. of 2' wide trenches.
224 l.f. of 2' wide trenches provided.

LEACHING TRENCHES:
1 @ 34' = 34 l.f.
1 @ 35' = 35 l.f.
1 @ 35' = 35 l.f.
1 @ 36' = 36 l.f.
1 @ 38' = 38 l.f.
1 @ 38' = 38 l.f.
1 @ 36' = 36 l.f.
252 l.f.

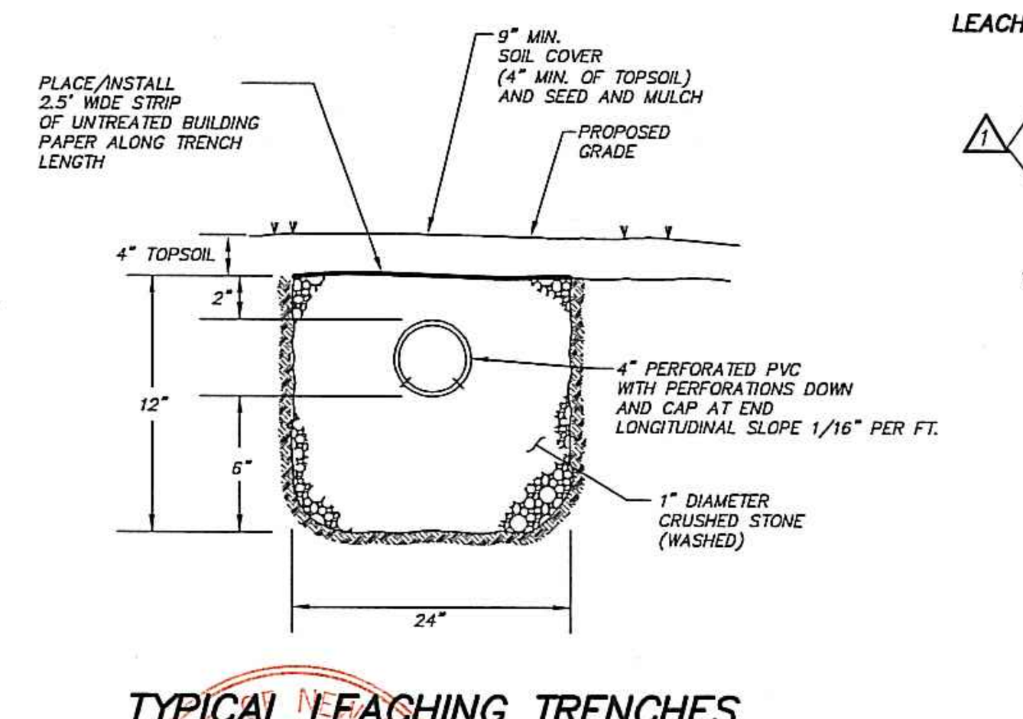
100% of reserve septic system area is provided: 224 l.f. of 2' wide trenches



DETAIL FOR PVC SANITARY SEWER

N.T.S.

NOTES:
1. REFER TO ASTM D2321 (STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS) FOR TRENCHING SPECIFICATIONS.
2. THIS SECTION IS DESIGNED TO RESIST UPLIFT FLOOD FORCES ASSOCIATED WITH THE MINIMUM ELEVATION STANDARD AS SPECIFIED IN THE ZONING REGULATIONS.



TYPICAL LEACHING TRENCHES

N.T.S.

PURSUANT TO NEW YORK STATE EDUCATION LAW, ARTICLE 145, SECTION 7209 SUBDIVISION 2, "IT IS A VIOLATION OF THIS LAW FOR ANY PERSON UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE SEAL OF AN ENGINEER IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION."

REV.	DATE	DESCRIPTION
2	6-1-21	SHIFT HOUSE & COURT EAST,
"	"	ISSUE TO NCPB & WCDH
1	3-24-21	REV.'S PER TOWN & WCDH,
"	"	ISSUE TO WCDH & NCPB
0	2-8-21	ISSUE TO PB & WCDOH

RICHARD A. REGAN, N.Y. PE No. 61598
ENGINEER 6-1-21 DATE

ONLY COPIES OF THIS PLAN BEARING AN ORIGINAL IMPRINT OF THE ENGINEER'S EMBOSSED SEAL SHALL BE CONSIDERED TO BE TRUE, VALID COPIES.

D'ANDREA ENGINEERING AND SURVEYING, PC.
· LAND PLANNERS
· ENGINEERS
· SURVEYORS
P.O. BOX 549
RIVERSIDE, CT 06878
6 NEIL LANE
TEL. 637-1779

PROJECT	PROPOSED RESIDENCE
PREPARED FOR	45 HURLINGHAM, LLC
LOCATION	LOT 86, 45 HURLINGHAM DRIVE TOWN OF NORTH CASTLE, NEW YORK
4 OF 4	SEPTIC DESIGN & DETAILS

NOTES:

1. For a depiction of the site and proposed development, refer to the "Site Plan Review Set" prepared by this firm dated June 1, 2021.
2. Refer to architectural plans prepared by Tasos Kokoris AIA of Westport, CT.
3. Contours and elevations depicted hereon are based on an assumed datum.

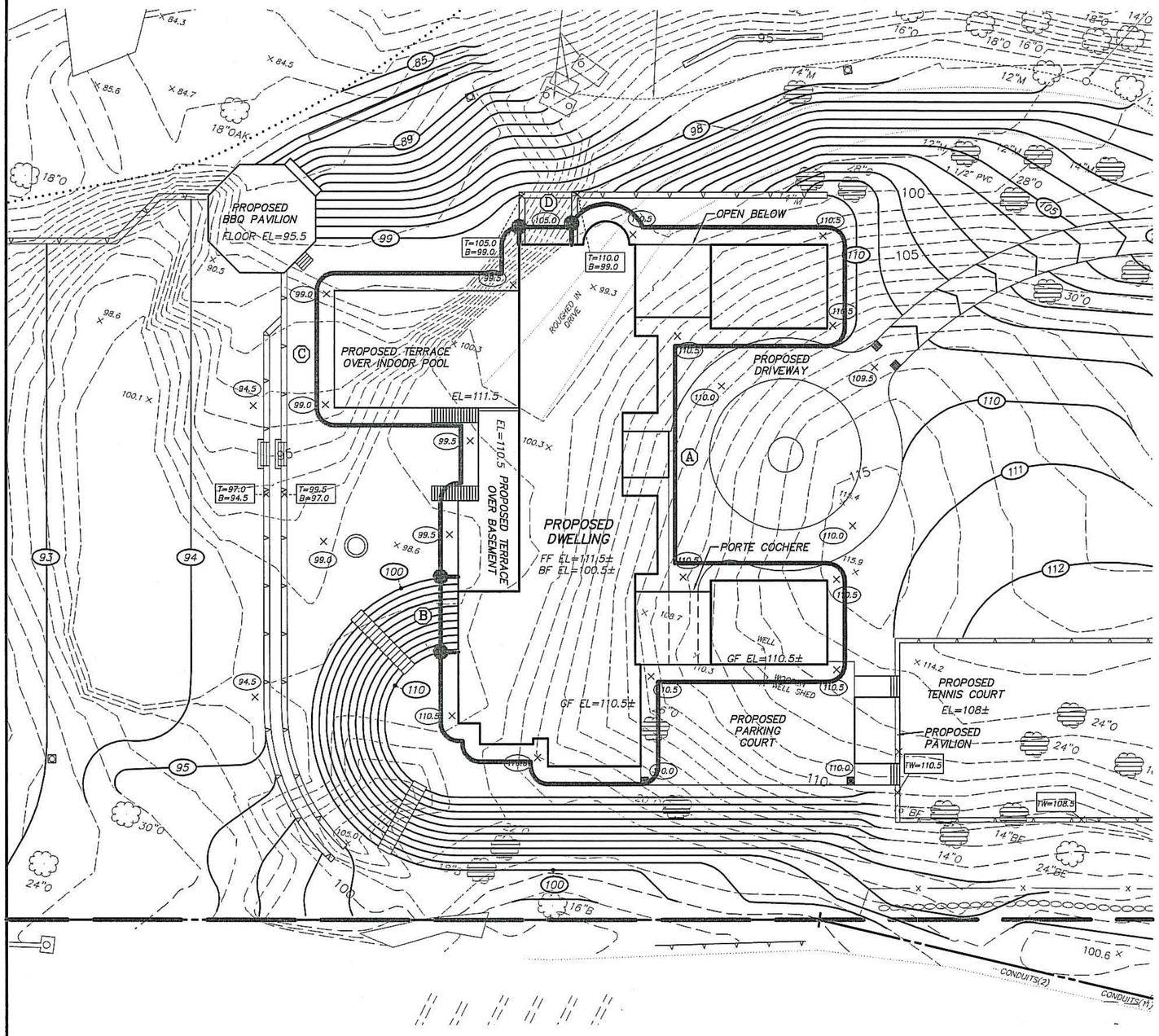
REFER TO MAPS No. 21767 W.C.L.R. AND 5970 G.L.R.

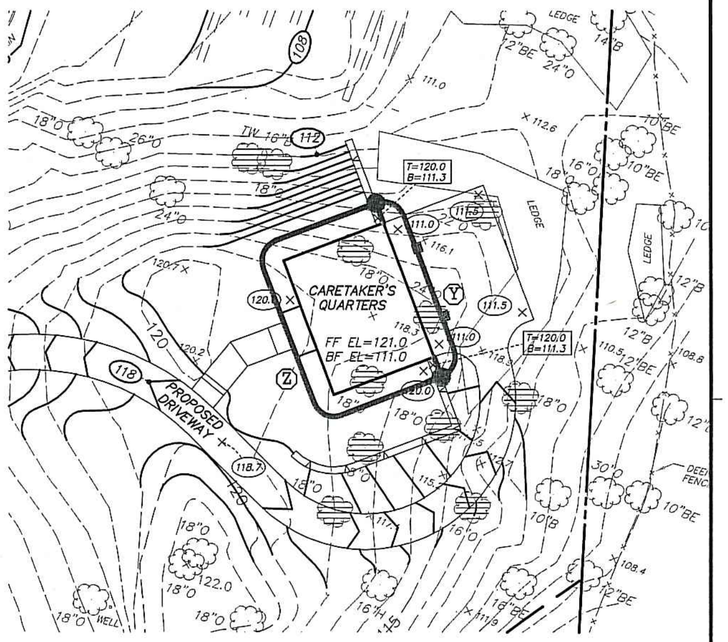
LAND LIES IN "R-2A" ZONE (NORTH CASTLE)
"RA-4" ZONE (GREENWICH)

AREA = 10.3090 ACRES (TOTAL)
10.0216 ACRES (NEW YORK)
0.2874 ACRES (CONNECTICUT)

TAX ID 102.04-1-26

MERIDIAN OF RECORD





AVERAGE GRADE CALCULATION
MAIN DWELLING

6-Foot Envelope Segment	Length (ft)	Average or lowest grade (ft)	Length x Grade
A	569	110.5	62,875
B	26	105.0	2,730
C	236	99.5	23,482
D	19	105.0	1,995
Total	850		91,082
Average Grade = sum(L*Z) / sum(L)			107.2
First Floor Elevation			111.5
Differential			4.3

AVERAGE GRADE CALCULATION
CARETAKER'S QUARTERS

6-Foot Envelope Segment	Length (ft)	Average or lowest grade (ft)	Length x Grade
Y	58.8	111.0	6,527
Z	118.8	120.0	14,256
Total	177.6		20,783
Average Grade = sum(L*Z) / sum(L)			117.0
First Floor Elevation			121.0
Differential			4.0

LEGEND

- EXISTING CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED TOP/BOTTOM OF WALL ELEVATION
- RETAINING WALL
- AVERAGE GRADE ENVELOPE
- AVERAGE GRADE SEGMENT

CONTOUR INTERVAL = ONE FOOT
1 INCH = 30 FEET

SCALE
30 0 30
IN FEET

STATE OF NEW YORK · RICHARD A. REGAN · LICENSED PROFESSIONAL ENGINEER · 61598-1

REV.	DATE	DESCRIPTION
1	6-1-21	MODIFY SITE LAYOUT
0	2-8-21	SUBMIT TO NORTH CASTLE

RICHARD A. REGAN NY PE No. 61598
6-1-21
ENGINEER

ONLY COPIES OF THIS PLAN BEARING AN ORIGINAL IMPRINT OF THE ENGINEER'S EMBOSSED SEAL ARE TRUE, VALID COPIES.

D'ANDREA SURVEYING & ENGINEERING, P.C.
· LAND PLANNERS
· ENGINEERS
· SURVEYORS
P.O. BOX 549 RIVERSIDE, CT 06878
6 NEIL LANE TEL. 637-1779

PROJECT	PROPOSED RESIDENCE
PREPARED FOR	45 HURLINGHAM, LLC
LOCATION	45 HURLINGHAM DRIVE NORTH CASTLE, NEW YORK
1 OF 1	AVERAGE GRADE PLAN

C:\WHURL_20JS_GP_03_REVI.DWG (ASC)

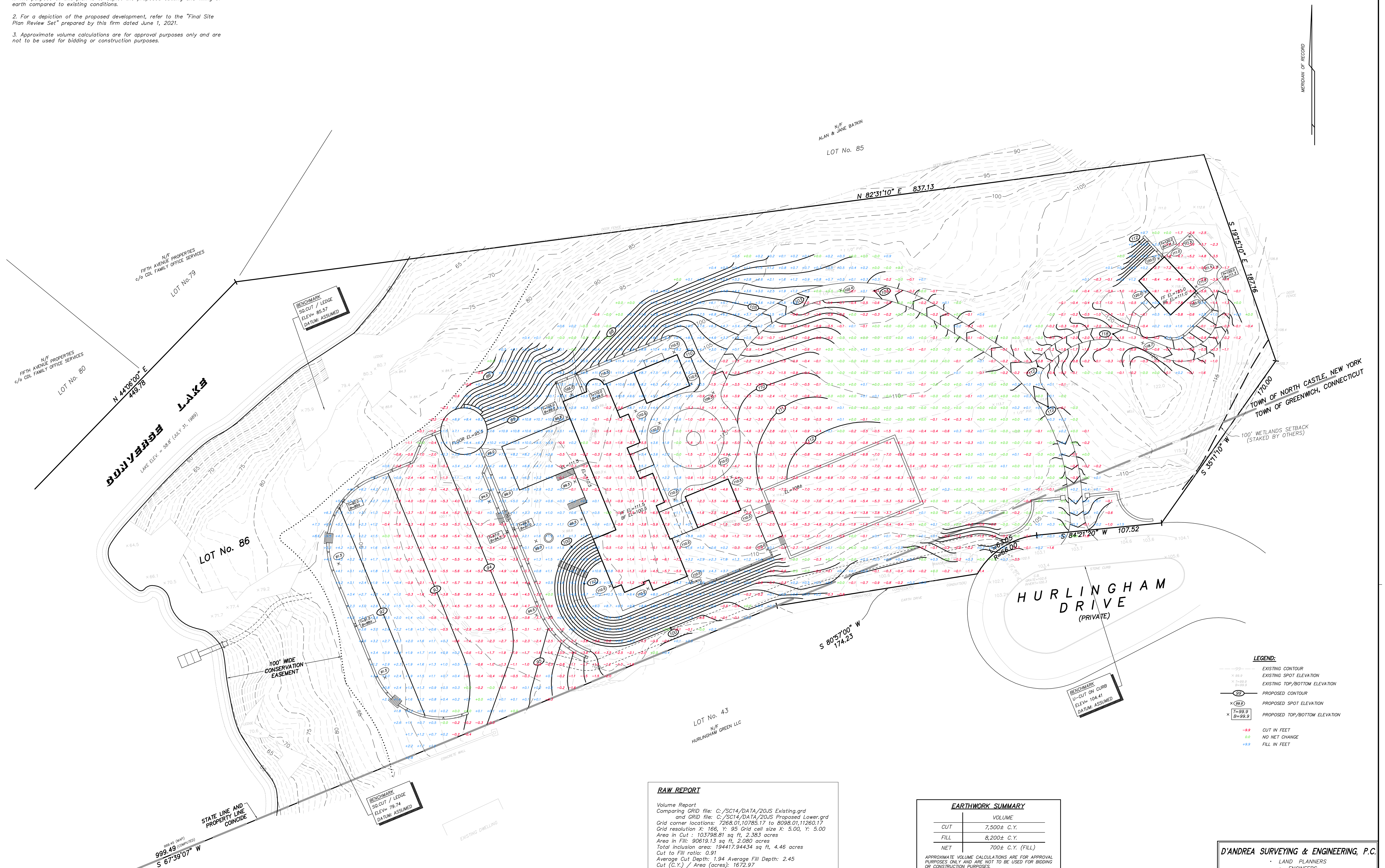
20JS

NOTES:

1. The purpose of this plan is to depict the proposed cutting and filling of earth compared to existing conditions.

2. For a depiction of the proposed development, refer to the "Final Site Plan Review Set" prepared by this firm dated June 1, 2021.

3. Approximate volume calculations are for approval purposes only and are not to be used for bidding or construction purposes.



RAW REPORT

Volume Report
Comparing GRiD file: C:/SC14/DATA/20JS Existing.grd
and GRiD file: C:/SC14/DATA/20JS Proposed Lower.grd
Grid corner locations: 7268.01,10785.17 to 8098.01,11260.17
Grid resolution X: 166, Y: 95 Grid cell size X: 5.00, Y: 5.00
Area in Cut : 103798.81 sq ft, 2.383 acres
Area in Fill: 90619.13 sq ft, 2.080 acres
Total inclusion area: 194417.94434 sq ft, 4.46 acres
Cut to Fill ratio: 0.91
Average Cut Depth: 1.94 Average Fill Depth: 2.45
Cut (C.Y.) / Area (acres): 1672.97
Fill (C.Y.) / Area (acres): 1841.98
Cut volume is 201604.30 cubic ft, 7466.83 cubic yards
Fill volume is 221971.50 cubic ft, 8221.17 cubic yards

EARTHWORK SUMMARY

	VOLUME
CUT	7,500± C.Y.
FILL	8,200± C.Y.
NET	700± C.Y. (FILL)

APPROXIMATE VOLUME CALCULATIONS ARE FOR APPROVAL PURPOSES ONLY AND ARE NOT TO BE USED FOR BIDDING OR CONSTRUCTION PURPOSES.

1 INCH = 30 FEET
SCALE
30 0 30
IN FEET

REV.	DATE	DESCRIPTION
0	6-1-21	SUBMIT TO PLANNING BOARD

D'ANDREA SURVEYING & ENGINEERING, P.C.
· LAND PLANNERS
· ENGINEERS
· SURVEYORS
P.O. BOX 549
RIVERSIDE, CT 06878
6 NEIL LANE
TEL. 637-1779

PROJECT	PROPOSED RESIDENCE
PREPARED FOR	45 HURLINGHAM, LLC
LOCATION	45 HURLINGHAM DRIVE NORTH CASTLE, NEW YORK
1 OF 1	EARTHWORK CALCULATIONS

20JS

COWHURL_20JS_EW_07_REV3.DWG (ASC)

REFER TO MAPS No. 21767 W.C.L.R. AND 5970 G.L.R.

LAND LIES IN "R-2A" ZONE (NORTH CASTLE)
"RA-4" ZONE (GREENWICH)

AREA = 10.3090 ACRES (TOTAL)
10.0216 ACRES (NEW YORK)
0.2874 ACRES (CONNECTICUT)

TAX ID 102.04-1-26

NOTES:

1. The purpose of this drawing is to support the conclusion that the two dwelling structures proposed by the property owner have the possibility of being subdivided into two lots that comply with the Town of North Castle zoning regulations.

2. No actual subdivision is intended.

3. The Conyers Farm neighborhood association prohibits any subdivision resulting in lots smaller than 10 acres in area.

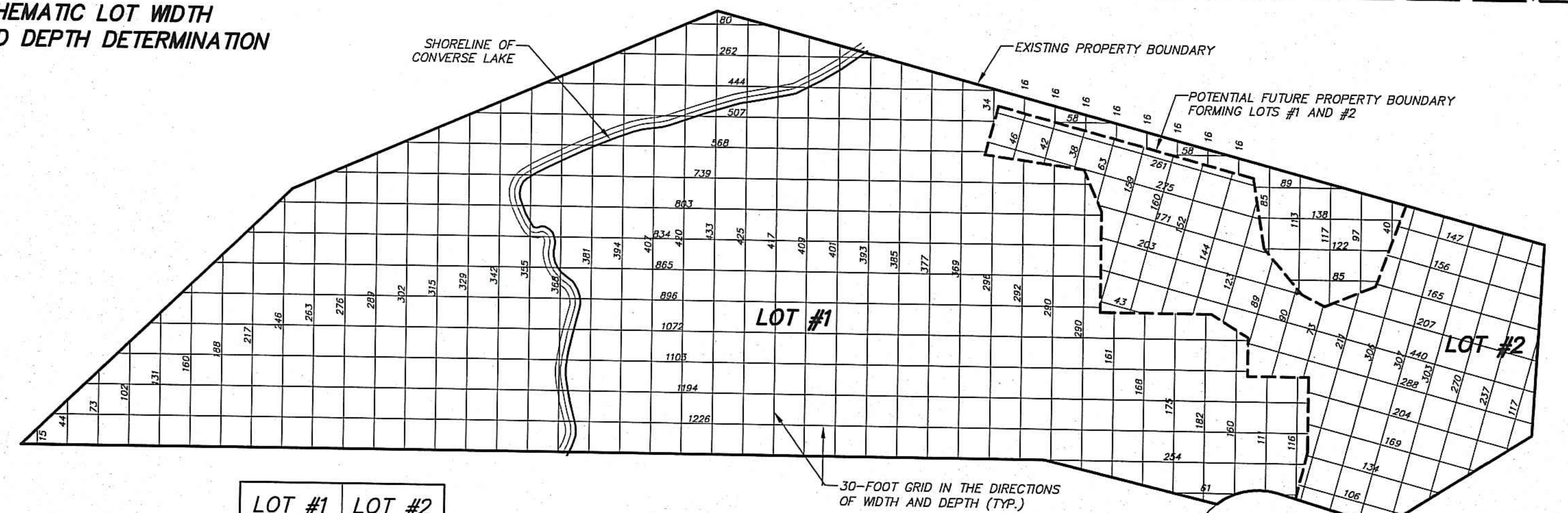
4. For a more complete depiction of the site and proposed development, refer to the "Site Plan Review Set" prepared by this firm dated February 8, 2021.

MINIMUM CONTIGUOUS BUILDABLE AREA

TOWN OF NORTH CASTLE ZONING REGULATIONS – SEC. 355-26 F

	TOTAL LOT AREA	SUBTRACTED AREA	REMAINING AREA	REQUIRED AREA
LOT #1	8.29± ACRES	4.80± ACRES	3.49± ACRES	35,000 S.F. = 0.80± ACRES
LOT #2	2.02± ACRES	0.23± ACRES	1.79± ACRES	35,000 S.F. = 0.80± ACRES

SCHEMATIC LOT WIDTH AND DEPTH DETERMINATION



	LOT #1	LOT #2
LOT WIDTH	521 FT	198 FT
LOT DEPTH	216 FT	154 FT

LOT WIDTH AND DEPTH ARE CALCULATED BY AVERAGING THE LENGTHS OF THE RESPECTIVE GRID LINES.

1 INCH = 100 FEET

LOT 1 ZONING TABLE – R-2 ZONING DISTRICT

ITEM		ALLOWABLE	PROVIDED
MINIMUM LOT SIZE	AREA – ACRES	2 ACRES	8.29 ACRES
	AREA – SF	87,120 SF	361,112 SF
	FRONTAGE	150 FT	85.29 FT
	WIDTH	150 FT	150(+) FT
	DEPTH	150 FT	150(+) FT
MINIMUM YARDS	FRONT	50 FT	323 FT
	SIDE	30 FT	32 FT
	REAR	50 FT	142 FT
MAXIMUM BUILDING HEIGHT	STORIES		2
	FEET	30 FT	26 FT
MAXIMUM BLDG COVERAGE	TABLE 355-21	8% – 28,888 SF	17,632 SF
MAX. GROSS FLOOR AREA	355-26-B(1)	19,194 SF	18,220 SF
MAX. GROSS LAND COVERAGE	355-26-C(1),(3)	33,804 SF	33,566 SF

LOT 1 AREA TABULATION

ITEM	BLDG COVERAGE	FLOOR AREA	LAND COVERAGE
FIRST FLOOR		10,244 SF	
SECOND FLOOR		6,390 SF	
ATTIC		1,586 SF	
HOUSE FOOTPRINT	17,252 SF		17252 SF
MOTOR COURT + CIRCLE			5,014 SF
10' WIDE DRIVE TO CIRCLE			3,800 SF
TENNIS COURT			7,200 SF
TENNIS PAVILION & STEPS	360 SF		300 SF
TOTAL PROVIDED	17,632 SF	18,220 SF	33,566 SF
MAXIMUM ALLOWABLE	28,888 SF	19,194 SF	33,804 SF

LOT 2 ZONING TABLE – R-2 ZONING DISTRICT

ITEM		ALLOWABLE	PROVIDED
MINIMUM LOT SIZE	AREA – ACRES	2 ACRES	2.02 ACRES
	AREA – SF	87,120 SF	87,991 SF
	FRONTAGE	150 FT	85.28 FT
	WIDTH	150 FT	150(+) FT
	DEPTH	150 FT	150(+) FT
MINIMUM YARDS	FRONT	50 FT	152 FT
	SIDE	30 FT	35 FT
	REAR	50 FT	55 FT
MAXIMUM BUILDING HEIGHT	STORIES		2
	FEET	30 FT	22 FT
MAXIMUM BLDG COVERAGE	TABLE 355-21	8% – 6,858 SF	1,272 SF
MAX. GROSS FLOOR AREA	355-26-B(1)	10,223 SF	2,000 SF
MAX. GROSS LAND COVERAGE	355-26-C(1),(3)	13,402 SF	4,952 SF

LOT 2 AREA TABULATION

ITEM	BLDG COVERAGE	FLOOR AREA	LAND COVERAGE
FIRST FLOOR		1200 SF	
SECOND FLOOR		800 SF	
HOUSE FOOTPRINT	1200 SF		1,200 SF
ASPHALT APRON			1,080 SF
10' WIDE DRIVE TO APRON			2,600 SF
FRONT PORCH	72 SF		72 SF
TOTAL PROVIDED	1,272 SF	2,000 SF	4,952 SF
MAXIMUM ALLOWABLE	6,858 SF	10,223 SF	13,402 SF

REV.	DATE	DESCRIPTION
1	6-1-21	ALTERNATE SITE LAYOUT
0	2-8-21	SUBMIT TO PLANNING BOARD

RICHARD A. REGAN NY PE No. 61598

ENGINEER 6-1-21 DATE

ONLY COPIES OF THIS PLAN BEARING AN ORIGINAL IMPRINT OF THE ENGINEER'S EMBOSSED SEAL ARE TRUE, VALID COPIES.

D'ANDREA SURVEYING & ENGINEERING, P.C.
· LAND PLANNERS
· ENGINEERS
· SURVEYORS

P.O. BOX 549
RIVERSIDE, CT 06878

6 NEIL LANE
TEL. 637-1779

PROJECT	PROPOSED RESIDENCE
PREPARED FOR	45 HURLINGHAM, LLC
LOCATION	45 HURLINGHAM DRIVE NORTH CASTLE, NEW YORK
1 OF 1	DEVELOPMENT PLAN SHOWING POSSIBLE SUBDIVISION FOR CARETAKER'S QUARTERS

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

For

Proposed Residence

At

45 Hurlingham Drive
North Castle, New York

Prepared For

45 Hurlingham, LLC

Revised
June 1, 2021

Original
February 8, 2021

Richard A. Regan, PE
NY License #61598

For OSER

20JS SWPPP 2

P.O. Box 549 / 6 Neil Lane
Riverside, CT 06878

D'Andrea Surveying & Engineering P.C.
LAND PLANNERS • CIVIL ENGINEERS • SURVEYORS

203.637.1779
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Table of Contents

Project Summary

The owners are proposing to develop a residence at 45 Hurlingham Drive (a.k.a. Lot 86) in North Castle, New York. This vacant property covers about 10.3 acres in the Conyers Farm private neighborhood, on the border with the State of Connecticut. Also present is a small lake known as Converse Lake.

In addition to the proposed main dwelling, other improvements include a caretaker's quarters, tennis court, indoor pool, driveway, landscaping, grading, utilities, septic systems, and a drainage system. The lake and its 100-foot conservation buffer are meant to be undisturbed.

The proposed development will create 43,720 square feet of impervious cover, in addition to any exposed ledge to remain. A drainage system will be installed to infiltrate the Water Quality Volume (WQV), attenuate peak flows to adjacent properties (excluding the lake) for the 10- and 100-year storm events, and provide non-erosive conveyance. Sedimentation and erosion (S&E) controls will be installed and maintained to prevent pollution and loss of topsoil during construction.

For a depiction of the site and the proposed development, refer to a set of plans prepared by this firm entitled "Final Site Plan Review Set" dated June 1, 2021.

Watershed Analysis

Drainage patterns for the site were analyzed using HydroCAD version 10, with runoff data generated for the 1, 2, 5, 10, 25, 50 and 100-year storm frequency events.

In this analysis, the site was divided into various drainage areas discharging to four primary Points of Concern (POCs) and one ultimate POC. Referring to the watershed maps in Exhibits A & B:

- POC A is the shoreline of Converse Lake
- POC B is the adjacent property to the north/east
- POC C is Hurlingham Drive
- POC D is the adjacent property to the south

POCs B, C, and D eventually discharge to the lake as well. Therefore:

- POC Z is the confluence of POCs A-D and represents Converse Lake

The model boundaries are the land portion of the site – the lake surface is excluded. Little to no offsite area contributes runoff to the subject property.

According to the USDA soil delineation map included in Exhibit C, the property lies within a mapped area of HSG-D soils due to the presence of rock outcrop. On-site soil test pit results, as shown on the plans, reveal varying conditions which determine the locations of the proposed stormwater infiltration systems.

Converse Lake is part of the Byram River watershed, which flows to the Long Island Sound. However, an aqueduct in the Town of Greenwich may divert some water to an adjacent watershed.

Existing Conditions

Under existing conditions, the site has no buildings. It does however have a roughed-in driveway with tree rows, a complete but unused septic system, and evidence of previous earthwork. A quarter-acre section of the site including the driveway entrance is located within the Town of Greenwich, Connecticut, but the vast majority of the site is in the Town of North Castle, New York. No stormwater infrastructure was found on the property, although there are catch basins in Hurlingham Drive.

Existing condition drainage areas are depicted on the Watershed Map in Exhibit A. Refer to Appendix B for inputs and results of the HydroCAD model.

Proposed Conditions

Under proposed conditions, roof drains and driveway catch basins will collect runoff and route to various drywell systems. The systems are located in areas of fill or where soil testing revealed adequate depth to the restrictive layer (typically ledge for this site). Each consists of an array of plastic chambers buried in a gravel bed below the lawn. The systems retain and infiltrate the Water Quality Volume (WQV) of their contributing areas. Overflows are routed to level spreaders for non-erosive discharge. All discharges are outside the 100-foot watercourse conservation easement.

Proposed condition drainage areas are depicted on the Watershed Map in Exhibit B. Refer to Appendix C for inputs and results of the HydroCAD model.

Construction

A copy of this document shall be present at the construction site. The individuals responsible for S&E (sedimentation and erosion) controls and drainage installation shall sign the Contractor Certification Statement (Exhibit E) before commencing construction activities. Refer to *NYS DEC SPDES General Permit for Stormwater Discharges from Construction Activity, Part IV (Inspection and Maintenance Requirements).*

A "Trained Contractor" is responsible for implementing this SWPPP (installing the S&E controls and drainage components). They must be a contractor who completes 4 hours of NYS DEC endorsed training in S&E controls every 3 years.

A "Qualified Inspector" is responsible for inspecting the work of the contractor. They must be a Professional Engineer, Certified Professional in Erosion and Sediment Control, Registered Landscape Architect, NYS Erosion and Sediment Control Certificate Program holder, or someone under the direct supervision of any of the previous and with the same training as the trained contractor.

The contractor shall inspect their S&E controls periodically and especially after a large storm and keep a log. The log should include which areas of the site are stabilized and which are active, the amount of sediment accumulation, the condition of silt fencing and other controls, and evidence of erosion.

Prior to the start of construction, sedimentation and erosion controls will be installed. These include silt fencing downhill of the development area, construction fence delineating the remaining development boundary, and a crushed stone tracking pad at the driveway/construction entrance. The contractor will install protection fencing for any trees within the development area that are to remain, remove those trees designated to be removed, and begin stripping and stockpiling topsoil.

Construction activity can be divided into three zones: The eastern zone which will include the caretaker's quarters, the central zone which includes the tennis court and extensive regrading, and the western zone which will include the primary dwelling. The contractor is directed to do earthwork and grading on one zone at a time to minimize disturbance. If construction is halted in a certain zone or area of the site for an extended period of time (ex. 3 weeks or longer), then that area's soils should be temporary stabilized.

As construction progresses, all sedimentation and erosion controls should be monitored and replaced as needed. The contractor will sweep the street clean and the end of each working day. As the chamber systems are installed, construction fencing should protect them from vehicle traffic and compaction. Newly installed catch basins should also be protected with silt sacks. Any construction debris or litter must be collected and stockpiled before disposing off-site. Chemicals that could pollute the soil and stormwater or are otherwise hazardous must be stored and sealed as appropriate. Contractors shall follow spill prevention protocols and keep spill response protocols.

Nearing completion of construction in an area, topsoil shall be applied and stabilized with plantings, sod, mulch, or hay and grass seed. Once landscaping and lawn has been established, then sedimentation and erosion controls will be removed.

Construction staging and S&E controls are depicted on the Sedimentation and Erosion Control Plan within the civil site plan set.

The property owner is responsible for long-term stormwater management, as listed in the Operations & Maintenance Plan (Appendix D).

Conclusion

The following tables compare the peak flow rates and volumes to each POC for all modeled storm events. Peak flows are reduced to POCs B, C and D for all required storm events. We request exemption for POC A because it is a large water body, of which the site is obviously much less that 10% of the contributing watershed. Total runoff from the site (to POC Z) is

reduced through the 10-year storm, and peaks reduced up to the 1-year storm, because a lot of retention is provided for water quality.

Satisfaction of water quality, runoff reduction, and drawdown requirements are shown in Appendix A. Refer to Appendices B and C for additional information about the hydrologic models.

Since the proposed development of the site will reduce the peak rate and volume of runoff flowing off-site to each point of concern to the maximum extent practicable, and measures are proposed to provide treatment of runoff from new impervious surfaces, the design will not cause any adverse impacts to the site or surrounding area.

This report, the site engineer, the owner, and the contractor are obligated to comply with Town Code Chapter 267: Stormwater Management, as well as the NYS DEC General Permit.

Point of Concern	Storm Frequency	Peak Flow Rate (cfs)			
		Existing	Proposed	Δ	Δ %
A	1 year	5.11	6.14	1.03	20%
	2-year	7.06	10.29	3.23	46%
	5-year	10.39	15.64	5.25	51%
	10-year	13.26	19.61	6.35	48%
	25-year	17.22	25.09	7.87	46%
	50-year	20.16	29.15	8.99	45%
	100-year	23.31	33.50	10.19	44%
B	1 year	3.24	2.07	-1.17	-36%
	2-year	4.50	2.89	-1.61	-36%
	5-year	6.67	4.3	-2.37	-36%
	10-year	8.54	5.53	-3.01	-35%
	25-year	11.12	7.22	-3.90	-35%
	50-year	13.04	8.48	-4.56	-35%
	100-year	15.11	9.83	-5.28	-35%
C	1 year	0.82	0.82	0.00	0%
	2-year	1.15	1.12	-0.03	-3%
	5-year	1.70	1.58	-0.12	-7%
	10-year	2.19	2.03	-0.16	-7%
	25-year	2.85	2.64	-0.21	-7%
	50-year	3.35	3.09	-0.26	-8%
	100-year	3.88	3.58	-0.30	-8%
D	1 year	0.95	0.59	-0.36	-38%
	2-year	1.34	0.83	-0.51	-38%
	5-year	2.00	1.24	-0.76	-38%
	10-year	2.58	1.60	-0.98	-38%
	25-year	3.38	2.10	-1.28	-38%
	50-year	3.97	2.47	-1.50	-38%
	100-year	4.61	2.87	-1.74	-38%
Z (total)	1 year	9.91	8.92	-0.99	-10%
	2-year	13.77	15.10	1.33	10%
	5-year	20.35	22.67	2.32	11%
	10-year	26.04	28.72	2.68	10%
	25-year	33.89	37.00	3.11	9%
	50-year	39.74	43.14	3.40	9%
	100-year	46.00	49.70	3.70	8%

Point of Concern	Storm Frequency	Runoff Volume (cf)			
		Existing	Proposed	Δ	Δ %
A	1 year	16,637	21,649	5,012	30%
	2-year	22,835	30,805	7,970	35%
	5-year	33,560	46,431	12,871	38%
	10-year	42,983	60,028	17,045	40%
	25-year	56,219	79,001	22,782	41%
	50-year	66,225	93,282	27,057	41%
	100-year	77,059	108,702	31,643	41%
B	1 year	11,763	6,626	-5,137	-44%
	2-year	16,206	9,171	-7,035	-43%
	5-year	23,915	13,601	-10,314	-43%
	10-year	30,701	17,510	-13,191	-43%
	25-year	40,247	23,017	-17,230	-43%
	50-year	47,470	27,189	-20,281	-43%
	100-year	55,295	31,713	-23,582	-43%
C	1 year	2,788	2,159	-629	-23%
	2-year	3,850	3,070	-780	-20%
	5-year	5,696	4,649	-1,047	-18%
	10-year	7,322	6,038	-1,284	-18%
	25-year	9,612	7,991	-1,621	-17%
	50-year	11,346	9,469	-1,877	-17%
	100-year	13,225	11,069	-2,156	-16%
D	1 year	3,046	1,988	-1,058	-35%
	2-year	4,233	2,763	-1,470	-35%
	5-year	6,304	4,114	-2,190	-35%
	10-year	8,135	5,309	-2,826	-35%
	25-year	10,718	6,996	-3,722	-35%
	50-year	12,677	8,274	-4,403	-35%
	100-year	14,802	9,662	-5,140	-35%
Z (total)	1 year	34,235	32,423	-1,812	-5%
	2-year	47,125	45,809	-1,316	-3%
	5-year	69,474	68,795	-679	-1%
	10-year	89,141	88,885	-256	0%
	25-year	116,795	117,005	210	0%
	50-year	137,718	138,214	496	0%
	100-year	160,382	161,146	764	0%

COWHURL_20JS_DSR_EX_0.DWG (ASC)

SCALE: 1" = 120'

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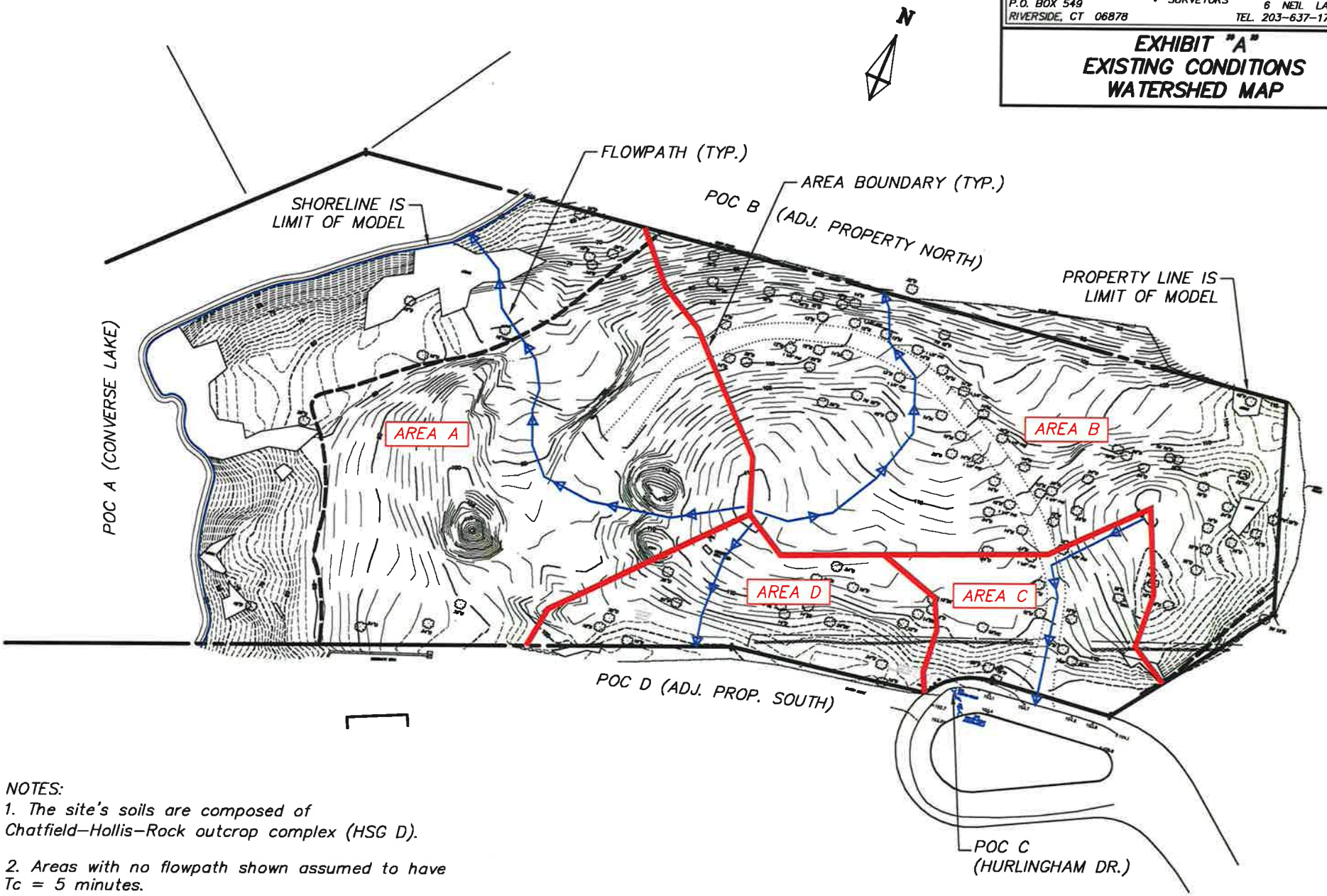
EXHIBIT "A"
EXISTING CONDITIONS WATERSHED MAP



NOTES:
1. The site's soils are composed of Chatfield–Hollis–Rock outcrop complex (HSG D).

2. Areas with no flowpath shown assumed to have Tc = 5 minutes.

COWHURL_20JS_DSR_PR_1.DWG (ASC)

SCALE: 1" = 120'

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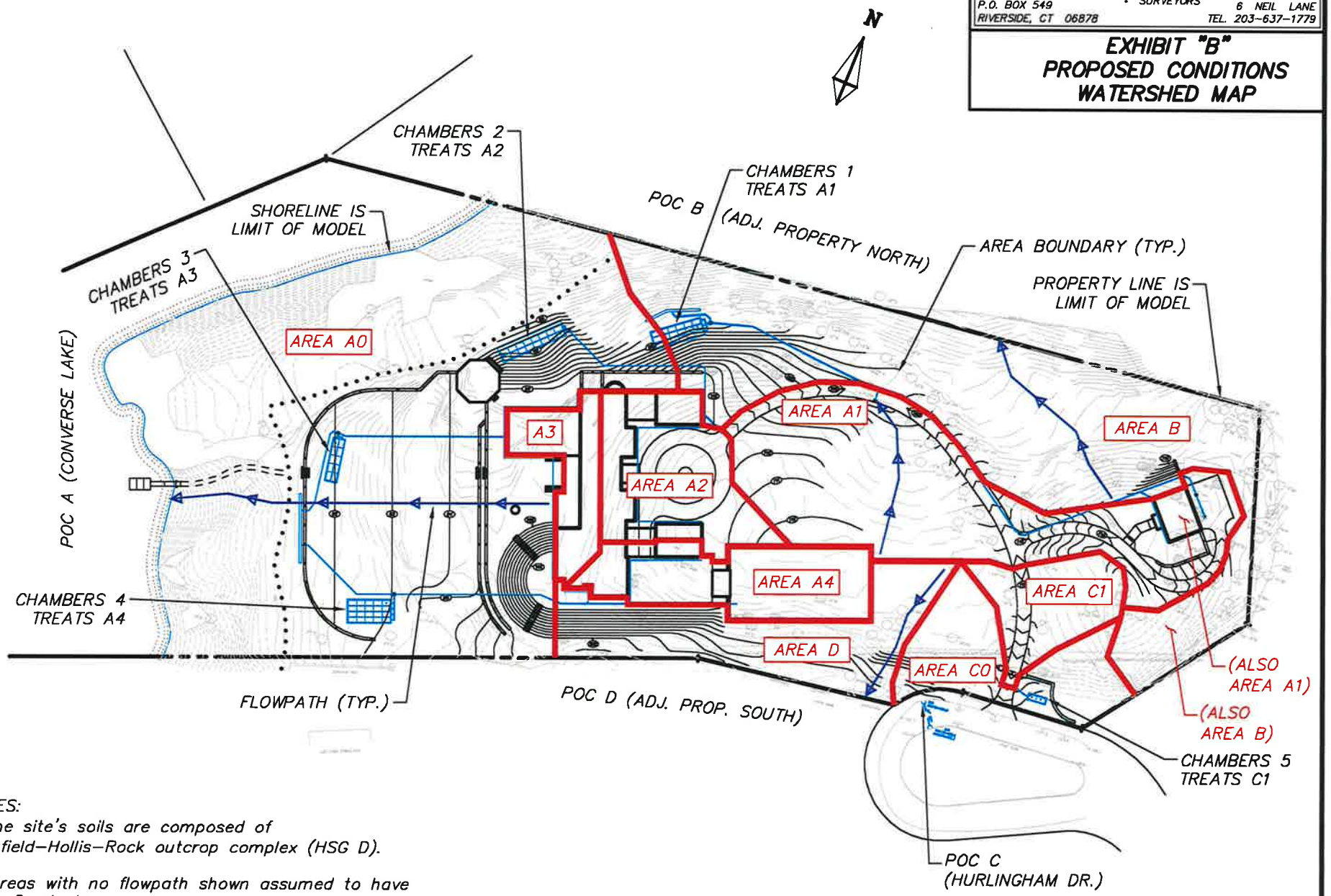
EXHIBIT "B"
PROPOSED CONDITIONS WATERSHED MAP



NOTES:
1. The site's soils are composed of Chatfield–Hollis–Rock outcrop complex (HSG D).

2. Areas with no flowpath shown assumed to have Tc = 5 minutes.

Hydrologic Soil Group—State of Connecticut, and Westchester County, New York

Exhibit C:
Soil Map

Map Scale: 1:3,000 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 40 80 160 240

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

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: State of Connecticut
Survey Area Data: Version 20, Jun 9, 2020

Soil Survey Area: Westchester County, New York
Survey Area Data: Version 16, Jun 11, 2020

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Oct 16, 2017

MAP LEGEND

MAP INFORMATION

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
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	B	0.1	1.2%
75E	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes	D	0.1	1.0%
Subtotals for Soil Survey Area			**0.2**	**2.1%**
Totals for Area of Interest			**9.3**	**100.0%**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CrC	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	B	0.1	1.2%
CuD	Chatfield-Hollis-Rock outcrop complex, 15 to 35 percent slopes	D	7.8	83.8%
W	Water		1.2	12.9%
Subtotals for Soil Survey Area			**9.1**	**97.9%**
Totals for Area of Interest			**9.3**	**100.0%**

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

Exhibit D: Precipitation Frequency

NOAA Atlas 14, Volume 10, Version 3
Location name: Armonk, New York, USA*
Latitude: 41.1371°, Longitude: -73.6507°
Elevation: 463.74 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.363 (0.278-0.464)	0.423 (0.324-0.541)	0.520 (0.397-0.668)	0.601 (0.457-0.774)	0.712 (0.525-0.945)	0.797 (0.576-1.07)	0.884 (0.621-1.22)	0.978 (0.657-1.38)	1.11 (0.718-1.60)	1.21 (0.768-1.78)
10-min	0.514 (0.395-0.657)	0.599 (0.459-0.766)	0.737 (0.563-0.945)	0.852 (0.647-1.10)	1.01 (0.744-1.34)	1.13 (0.816-1.52)	1.25 (0.879-1.73)	1.39 (0.930-1.95)	1.57 (1.02-2.27)	1.72 (1.09-2.52)
15-min	0.605 (0.464-0.773)	0.704 (0.540-0.901)	0.866 (0.662-1.11)	1.00 (0.761-1.29)	1.19 (0.875-1.58)	1.33 (0.959-1.79)	1.47 (1.03-2.04)	1.63 (1.09-2.30)	1.85 (1.20-2.67)	2.02 (1.28-2.97)
30-min	0.852 (0.654-1.09)	0.990 (0.759-1.27)	1.22 (0.930-1.56)	1.40 (1.07-1.81)	1.66 (1.22-2.20)	1.86 (1.34-2.50)	2.06 (1.44-2.83)	2.27 (1.52-3.19)	2.55 (1.65-3.68)	2.77 (1.75-4.06)
60-min	1.10 (0.844-1.41)	1.28 (0.979-1.63)	1.57 (1.20-2.01)	1.81 (1.37-2.33)	2.14 (1.57-2.83)	2.39 (1.72-3.21)	2.65 (1.85-3.63)	2.91 (1.95-4.09)	3.25 (2.11-4.69)	3.51 (2.22-5.15)
2-hr	1.44 (1.11-1.83)	1.67 (1.29-2.13)	2.05 (1.58-2.62)	2.37 (1.81-3.03)	2.81 (2.08-3.69)	3.14 (2.28-4.19)	3.48 (2.44-4.75)	3.83 (2.58-5.35)	4.31 (2.80-6.18)	4.68 (2.97-6.82)
3-hr	1.66 (1.29-2.11)	1.94 (1.50-2.46)	2.39 (1.84-3.03)	2.76 (2.12-3.52)	3.28 (2.43-4.30)	3.67 (2.67-4.88)	4.07 (2.87-5.56)	4.50 (3.04-6.26)	5.08 (3.31-7.26)	5.54 (3.53-8.05)
6-hr	2.09 (1.63-2.63)	2.46 (1.91-3.09)	3.06 (2.37-3.85)	3.56 (2.74-4.50)	4.24 (3.17-5.54)	4.76 (3.49-6.31)	5.30 (3.77-7.22)	5.89 (3.99-8.16)	6.73 (4.39-9.56)	7.40 (4.72-10.7)
12-hr	2.55 (2.00-3.19)	3.04 (2.38-3.80)	3.84 (2.99-4.80)	4.50 (3.49-5.65)	5.41 (4.06-7.02)	6.09 (4.49-8.04)	6.81 (4.88-9.25)	7.62 (5.18-10.5)	8.79 (5.76-12.4)	9.75 (6.24-14.0)
24-hr	2.98 (2.35-3.69)	3.60 (2.83-4.47)	4.61 (3.62-5.74)	5.46 (4.26-6.81)	6.62 (5.01-8.56)	7.48 (5.55-9.84)	8.40 (6.08-11.4)	9.48 (6.46-13.0)	11.1 (7.27-15.5)	12.4 (7.96-17.6)
2-day	3.35 (2.66-4.13)	4.10 (3.25-5.06)	5.33 (4.20-6.58)	6.35 (4.98-7.87)	7.75 (5.90-9.98)	8.78 (6.57-11.5)	9.91 (7.23-13.4)	11.3 (7.70-15.3)	13.3 (8.76-18.5)	15.1 (9.69-21.3)
3-day	3.63 (2.89-4.45)	4.45 (3.53-5.46)	5.78 (4.58-7.12)	6.89 (5.42-8.52)	8.42 (6.44-10.8)	9.55 (7.17-12.5)	10.8 (7.89-14.6)	12.3 (8.40-16.6)	14.5 (9.57-20.1)	16.4 (10.6-23.2)
4-day	3.89 (3.10-4.76)	4.75 (3.78-5.81)	6.16 (4.89-7.56)	7.33 (5.78-9.03)	8.94 (6.84-11.4)	10.1 (7.61-13.2)	11.4 (8.37-15.4)	13.0 (8.91-17.5)	15.3 (10.1-21.2)	17.4 (11.2-24.4)
7-day	4.63 (3.71-5.63)	5.57 (4.45-6.78)	7.11 (5.67-8.68)	8.39 (6.65-10.3)	10.1 (7.80-12.9)	11.5 (8.63-14.8)	12.9 (9.44-17.2)	14.5 (10.0-19.5)	17.0 (11.3-23.4)	19.2 (12.4-26.8)
10-day	5.35 (4.30-6.49)	6.35 (5.09-7.70)	7.98 (6.38-9.70)	9.32 (7.41-11.4)	11.2 (8.61-14.1)	12.6 (9.48-16.1)	14.0 (10.3-18.6)	15.8 (10.9-21.1)	18.3 (12.1-25.1)	20.4 (13.2-28.4)
20-day	7.56 (6.11-9.10)	8.67 (7.00-10.4)	10.5 (8.44-12.7)	12.0 (9.60-14.6)	14.1 (10.9-17.6)	15.7 (11.8-19.9)	17.3 (12.6-22.5)	19.1 (13.2-25.2)	21.5 (14.3-29.2)	23.4 (15.2-32.3)
30-day	9.39 (7.61-11.3)	10.6 (8.58-12.7)	12.6 (10.1-15.1)	14.2 (11.4-17.1)	16.4 (12.7-20.4)	18.2 (13.7-22.9)	19.9 (14.5-25.6)	21.7 (15.1-28.6)	24.0 (16.1-32.5)	25.8 (16.8-35.5)
45-day	11.6 (9.48-13.9)	13.0 (10.5-15.5)	15.1 (12.2-18.1)	16.9 (13.6-20.3)	19.4 (15.0-23.8)	21.3 (16.1-26.5)	23.1 (16.9-29.5)	25.0 (17.5-32.8)	27.3 (18.3-36.7)	28.9 (18.9-39.6)
60-day	13.5 (11.0-16.1)	14.9 (12.2-17.8)	17.2 (14.0-20.6)	19.1 (15.4-23.0)	21.8 (16.9-26.7)	23.8 (18.1-29.6)	25.8 (18.8-32.8)	27.7 (19.4-36.2)	30.0 (20.2-40.4)	31.7 (20.7-43.3)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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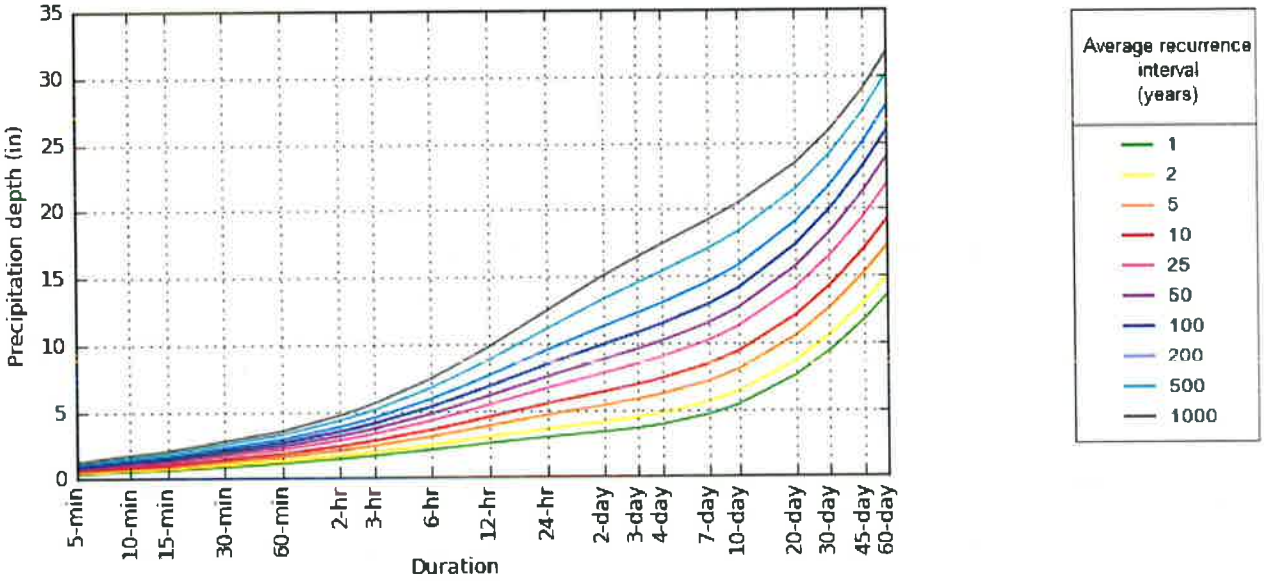
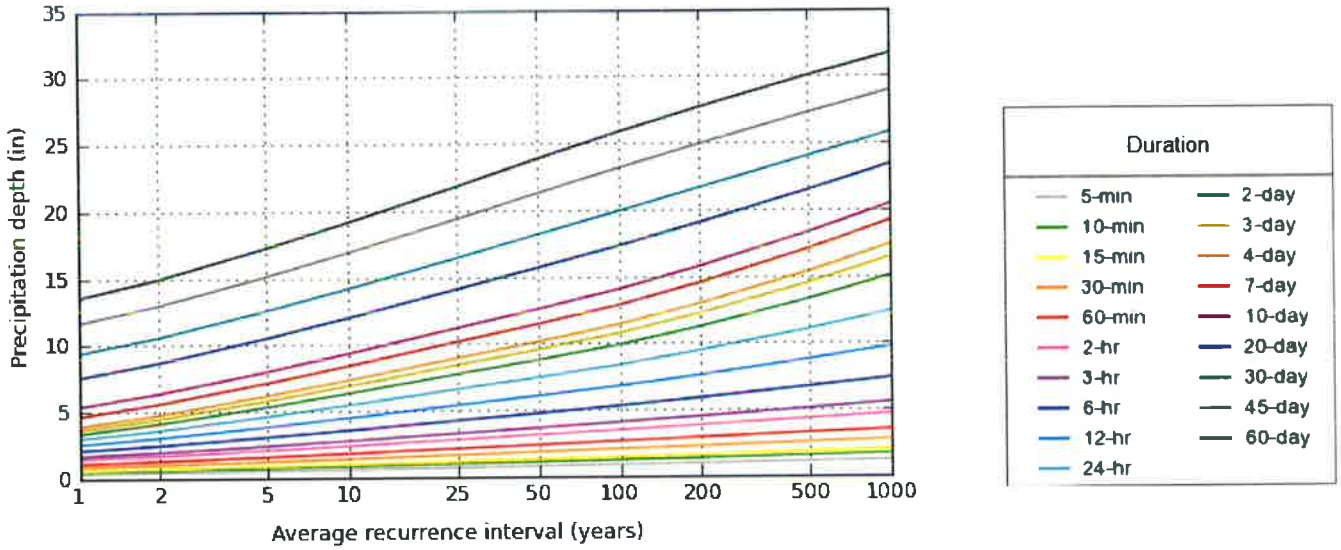
PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 41.1371°, Longitude: -73.6507°





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Created (GMT): Thu Nov 19 14:20:37 2020

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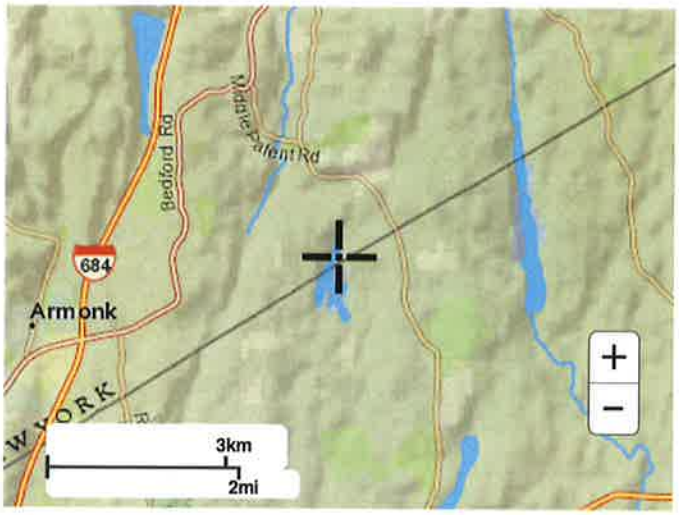
Maps & aerials

Small scale terrain



Large scale terrain

Large scale map

Large scale aerial

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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Proposed Residence – 45 Hurlingham Drive, North Castle, NY

Certification Statement – All contractors and sub-contractors identified in a SWPPP in accordance with Part III.E.1 of this permit shall sign a copy of the following certification statement before undertaking any construction activity at the site identified in the SWPPP:

> "I certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP for the construction site identified in such SWPPP as a condition of authorization to discharge stormwater. I also understand that the operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System (SPDES) general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards".

_____ _____

Name Title

_____

Date

_____

Firm Name

_____

Address

_____ _____

Phone Emergency phone and contact

_____ _____

Email

Note: The signatory requirements outlined in the General Permit must be followed

0644089821

NOTICE OF INTENT

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

NYR ☐☐☐☐☐☐
(for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-15-002

All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

-IMPORTANT-

RETURN THIS FORM TO THE ADDRESS ABOVE

OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)

Owner/Operator Contact Person Last Name (NOT CONSULTANT)

Owner/Operator Contact Person First Name

Owner/Operator Mailing Address

City

State ☐☐ Zip ☐☐☐☐☐-☐☐☐☐

Phone (Owner/Operator) ☐☐☐-☐☐☐-☐☐☐☐ Fax (Owner/Operator) ☐☐☐-☐☐☐-☐☐☐☐

Email (Owner/Operator)

FED TAX ID ☐☐-☐☐☐☐☐☐☐ (not required for individuals)

Project Site Information

Project/Site Name
45 Hurlingham Drive

Street Address (NOT P.O. BOX)
45 Hurlingham Drive

Side of Street
● **North** ○ **South** ○ **East** ○ **West**

City/Town/Village (THAT ISSUES BUILDING PERMIT)
North Castle

State: NY
Zip: 10504 -
County: Westchester
DEC Region: 3

Name of Nearest Cross Street
Cowdray Park Drive

Distance to Nearest Cross Street (Feet)
1800

Project In Relation to Cross Street
○ **North** ○ **South** ○ **East** ● **West**

Tax Map Numbers
Section-Block-Parcel
102.04-1-26

Tax Map Numbers
102.04

1. Provide the Geographic Coordinates for the project site in NYTM Units. To do this you **must** go to the NYSDEC Stormwater Interactive Map on the DEC website at:

www.dec.ny.gov/imsmaps/stormwater/viewer.htm

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located your project site, go to the tool boxes on the top and choose "i"(identify). Then click on the center of your site and a new window containing the X, Y coordinates in UTM will pop up. Transcribe these coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting): 613294

Y Coordinates (Northing): 4554876

2. What is the nature of this construction project?

● **New Construction**

○ **Redevelopment with increase in impervious area**

○ **Redevelopment with no increase in impervious area**

3. Select the predominant land use for both pre and post development conditions.
SELECT ONLY ONE CHOICE FOR EACH

Pre-Development Existing Land Use

- ○ FOREST
- ● PASTURE/OPEN LAND
- ○ CULTIVATED LAND
- ○ SINGLE FAMILY HOME
- ○ SINGLE FAMILY SUBDIVISION
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ○ COMMERCIAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY
- ○ PARKING LOT
- ○ OTHER

Post-Development Future Land Use

- ● SINGLE FAMILY HOME — Number of Lots
- ○ SINGLE FAMILY SUBDIVISION
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ○ COMMERCIAL
- ○ MUNICIPAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY (water, sewer, gas, etc.)
- ○ PARKING LOT
- ○ CLEARING/GRADING ONLY
- ○ DEMOLITION, NO REDEVELOPMENT
- ○ WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
- ○ OTHER

***Note:** for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area Within Disturbed Area
10.3			

5. Do you plan to disturb more than 5 acres of soil at any one time? ○ **Yes** ● **No**

6. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

A	B	C	D
%	%	%	100 %

7. Is this a phased project? ○ **Yes** ● **No**

8. Enter the planned start and end dates of the disturbance activities.

Start Date 04/01/2021 - **End Date** 04/01/2023

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.

Name: Converse Lake

9a. Type of waterbody identified in Question 9?

- ○ Wetland / State Jurisdiction On Site (Answer 9b)
- ○ Wetland / State Jurisdiction Off Site
- ○ Wetland / Federal Jurisdiction On Site (Answer 9b)
- ○ Wetland / Federal Jurisdiction Off Site
- ○ Stream / Creek On Site
- ○ Stream / Creek Off Site
- ○ River On Site
- ○ River Off Site
- ● Lake On Site
- ○ Lake Off Site
- ○ Other Type On Site
- ○ Other Type Off Site

9b. How was the wetland identified?

- ○ Regulatory Map
- ○ Delineated by Consultant
- ○ Delineated by Army Corps of Engineers
- ○ Other (identify)

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-15-002? ○ **Yes** ● **No**

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-15-002? ○ **Yes** ● **No**

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters? ○ **Yes** ● **No**
If no, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey? ○ **Yes** ○ **No**
If Yes, what is the acreage to be disturbed?

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area? ○ **Yes** ● **No**

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)? ○ Yes ● No ○ Unknown

16. What is the name of the municipality/entity that owns the separate storm sewer system?

17. Does any runoff from the site enter a sewer classified as a Combined Sewer? ○ Yes ● No ○ Unknown

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? ○ Yes ● No

19. Is this property owned by a state authority, state agency, federal government or local government? ○ Yes ● No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) ○ Yes ● No

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)? ● Yes ○ No

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)? ● Yes ○ No
If No, skip questions 23 and 27-39.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual? ● Yes ○ No

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

- ● **Professional Engineer (P.E.)**
- ○ **Soil and Water Conservation District (SWCD)**
- ○ **Registered Landscape Architect (R.L.A)**
- ○ **Certified Professional in Erosion and Sediment Control (CPESC)**
- ○ **Owner/Operator**
- ○ **Other**

SWPPP Preparer
D 'Andrea Surveying & Engineering P.C.

Contact Name (Last, Space, First)
Regan Rich

Mailing Address
P.O. Box 549

City
Riverside

State Zip
CT 06878-

Phone
203-637-1779

Fax
- -

Email
rich@rvdi.com
adam@rvdi.com

SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-15-002. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

First Name
Richard

MI
A

Last Name
Regan

Signature

Date
/ /

25. Has a construction sequence schedule for the planned management practices been prepared? ● Yes ○ No

26. Select **all** of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural

- ○ Check Dams
- ○ Construction Road Stabilization
- ○ Dust Control
- ○ Earth Dike
- ○ Level Spreader
- ○ Perimeter Dike/Swale
- ○ Pipe Slope Drain
- ○ Portable Sediment Tank
- ○ Rock Dam
- ○ Sediment Basin
- ● Sediment Traps
- ● Silt Fence
- ● Stabilized Construction Entrance
- ● Storm Drain Inlet Protection
- ● Straw/Hay Bale Dike
- ○ Temporary Access Waterway Crossing
- ○ Temporary Stormdrain Diversion
- ○ Temporary Swale
- ○ Turbidity Curtain
- ○ Water bars

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

- ○ Brush Matting
- ○ Dune Stabilization
- ○ Grassed Waterway
- ● Mulching
- ● Protecting Vegetation
- ○ Recreation Area Improvement
- ● Seeding
- ● Sodding
- ○ Straw/Hay Bale Dike
- ○ Streambank Protection
- ○ Temporary Swale
- ● Topsoiling
- ○ Vegetating Waterways

Permanent Structural

- ○ Debris Basin
- ○ Diversion
- ○ Grade Stabilization Structure
- ○ Land Grading
- ○ Lined Waterway (Rock)
- ○ Paved Channel (Concrete)
- ○ Paved Flume
- ○ Retaining Wall
- ○ Riprap Slope Protection
- ○ Rock Outlet Protection
- ○ Streambank Protection

Other

Street sweeping, staging, construction fence, permanent level spreaders

Post-construction Stormwater Management Practice (SMP) Requirements

Important: Completion of Questions 27-39 is not required if response to Question 22 is No.

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

- ○ **Preservation of Undisturbed Areas**
- ● **Preservation of Buffers**
- ○ **Reduction of Clearing and Grading**
- ○ **Locating Development in Less Sensitive Areas**
- ○ **Roadway Reduction**
- ○ **Sidewalk Reduction**
- ○ **Driveway Reduction**
- ○ **Cul-de-sac Reduction**
- ○ **Building Footprint Reduction**
- ○ **Parking Reduction**

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

- ● All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).
- ○ Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

Total WQv Required

0.140 **acre-feet**

29. Identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required(#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

	Total Contributing Area (acres)		Total Contributing Impervious Area (acres)
RR Techniques (Area Reduction)			
● Conservation of Natural Areas (RR-1)	2.5	and/or	
○ Sheetflow to Riparian Buffers/Filters Strips (RR-2)		and/or	
○ Tree Planting/Tree Pit (RR-3)		and/or	
○ Disconnection of Rooftop Runoff (RR-4)		and/or	
RR Techniques (Volume Reduction)			
○ Vegetated Swale (RR-5)			
○ Rain Garden (RR-6)			
○ Stormwater Planter (RR-7)			
○ Rain Barrel/Cistern (RR-8)			
○ Porous Pavement (RR-9)			
○ Green Roof (RR-10)			
Standard SMPs with RRv Capacity			
○ Infiltration Trench (I-1)			
○ Infiltration Basin (I-2)			
○ Dry Well (I-3)			
● Underground Infiltration System (I-4)	0.92		
○ Bioretention (F-5)			
○ Dry Swale (O-1)			
Standard SMPs			
○ Micropool Extended Detention (P-1)			
○ Wet Pond (P-2)			
○ Wet Extended Detention (P-3)			
○ Multiple Pond System (P-4)			
○ Pocket Pond (P-5)			
○ Surface Sand Filter (F-1)			
○ Underground Sand Filter (F-2)			
○ Perimeter Sand Filter (F-3)			
○ Organic Filter (F-4)			
○ Shallow Wetland (W-1)			
○ Extended Detention Wetland (W-2)			
○ Pond/Wetland System (W-3)			
○ Pocket Wetland (W-4)			
○ Wet Swale (O-2)			

Table 2 - Alternative SMPs
(DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Alternative SMP	Total Contributing Impervious Area (acres)
○ Hydrodynamic	
○ Wet Vault	
○ Media Filter	
○ Other [ ]	

Provide the name and manufacturer of the Alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Name

Manufacturer

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29.

Total RRv provided

0.149 **acre-feet**

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28).

● **Yes** ○ **No**

If Yes, go to question 36.
If No, go to question 32.

32. Provide the Minimum RRv required based on HSG.
[Minimum RRv Required = (P)(0.95)(Ai)/12, Ai=(S)(Aic)]

Minimum RRv Required

. **acre-feet**

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?

○ **Yes** ○ **No**

If Yes, go to question 33.
Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

Note: Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29.

WQv Provided

[ ][ ][ ].[ ][ ][ ] **acre-feet**

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRv provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a). [ ][ ][ ].[ ][ ][ ]

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)? ○ **Yes** ○ **No**

If Yes, go to question 36.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable.

CPv Required

[ ][ ][ ].[ ][ ][ ] **acre-feet**

CPv Provided

[ ][ ][ ].[ ][ ][ ] **acre-feet**

36a. The need to provide channel protection has been waived because:

- ● Site discharges directly to tidal waters or a fifth order or larger stream.
- ○ Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

Total Overbank Flood Control Criteria (Qp)

Pre-Development

[ ][ ][ ].[ ][ ][ ] **CFS**

Post-development

[ ][ ][ ].[ ][ ][ ] **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development

[ ][ ][ ].[ ][ ][ ] **CFS**

Post-development

[ ][ ][ ].[ ][ ][ ] **CFS**

37a. The need to meet the Qp and Qf criteria has been waived because:

- ○ Site discharges directly to tidal waters or a fifth order or larger stream.
- ● Downstream analysis reveals that the Qp and Qf controls are not required

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed? ● Yes ○ No

If Yes, Identify the entity responsible for the long term Operation and Maintenance

45 Hurlingham LLC (Owner)

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required(#28). (See question 32a) This space can also be used for other pertinent project information.

40. Identify other DEC permits, existing and new, that are required for this project/facility.

- ○ Air Pollution Control
- ○ Coastal Erosion
- ○ Hazardous Waste
- ○ Long Island Wells
- ○ Mined Land Reclamation
- ○ Solid Waste
- ○ Navigable Waters Protection / Article 15
- ○ Water Quality Certificate
- ○ Dam Safety
- ○ Water Supply
- ○ Freshwater Wetlands/Article 24
- ○ Tidal Wetlands
- ○ Wild, Scenic and Recreational Rivers
- ○ Stream Bed or Bank Protection / Article 15
- ○ Endangered or Threatened Species(Incidental Take Permit)
- ○ Individual SPDES
- ○ SPDES Multi-Sector GP N Y R
- ○ Other
- ● None

41. Does this project require a US Army Corps of Engineers Wetland Permit? ○ **Yes** ● **No**
If Yes, Indicate Size of Impact. . acres

42. Is this project subject to the requirements of a regulated, traditional land use control MS4? ● **Yes** ○ **No**
(If No, skip question 43)

43. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI? ● **Yes** ○ **No**

44. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned. N Y R

Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Print First Name **MI**

Print Last Name

Owner/Operator Signature

Date / /

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

SWPPP Preparer Certification Form

SPDES General Permit for Stormwater Discharges From Construction Activity (GP-0-20-001)

Project Site Information

Project/Site Name

Proposed Estate - 45 Hurlingham Drive, North Castle

Owner/Operator Information

Owner/Operator (Company Name/Private Owner/Municipality Name)

45 Hurlingham LLC

Certification Statement – SWPPP Preparer

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Richard	A	Regan
First name	MI	Last Name

Signature

Date

Revised: January 2020

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NYS Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information	
1. Owner/Operator Name:	
2. Contact Person:	
3. Street Address:	
4. City/State/Zip:	
II. Project Site Information	
5. Project/Site Name:	Proposed Residence
6. Street Address:	45 Hurlingham Drive
7. City/State/Zip:	North Castle, New York 10504
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information	
8. SWPPP Reviewed by:	
9. Title/Position:	
10. Date Final SWPPP Reviewed and Accepted:	
IV. Regulated MS4 Information	
11. Name of MS4:	
12. MS4 SPDES Permit Identification Number: NYR20A	
13. Contact Person:	
14. Street Address:	
15. City/State/Zip:	
16. Telephone Number:	

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s). Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

VI. Additional Information

(NYS DEC - MS4 SWPPP Acceptance Form - January 2015)

Appendix "A"

Design Calculations

Client: 45 Hurlingham LLC
Address: 45 Hurlingham Drive, North Castle NY
Date: June 1, 2021

Water Quality Volume (WQV)

$$WQV = \frac{1\,ft}{12\,in} P_{90}(R_I A_I + R_P A_P)$$

Where:

P_{90}	=	90th percentile rainfall	=	1.5	inches
R_I	=	Runoff coefficient for impervious	=	0.95	
R_P	=	Runoff coefficient for turf	=	0.05	
A_I	=	Area of impervious			
A_P	=	Area of turf			

Contributing Areas	Treatment	Impervious Area (sf)	Pervious Area (sf)	WQV (cf)
A0	None	1,860	128,990	1,027
A1	Chambers 1	9,220	32,700	1,299
A2	Chambers 2	9,880	5,910	1,210
A3	Chambers 3	7,250	0	861
A4	Chambers 4	14,020	0	1,665
B	None	0	62,790	392
C0	None	220	13,020	108
C1	Chambers 5	1,270	7,610	198
D	None	0	19,320	121
Total		43,720	270,340	6,881

Areas A0, B, C0, and D represent portions of the property that cannot feasibly be treated. They are typically downhill or undisturbed areas containing mostly pervious area and ledge. Ledge is counted as pervious for water quality purposes.

Undisturbed Area (WQV is satisfied)	WQV Subtracted (cf)	Remaining WQV (cf)
2.50 acres (pervious)	681	6,200

Proposed SMPs

Proposed SMP	To POC	WQV (cf)	Retained Volume (cf)	Total Volume (cf)
Chambers #1	A	1,299	1,633	1,633
Chambers #2	A	1,210	1,458	1,475
Chambers #3	A	861	1,114	1,127
Chambers #4	A	1,665	1,790	1,809
Chambers #5	C	198	262	262
Total		6,200*	6,257	6,306

*Remaining WQV site-wide

SMP Drawdown

$$t_{drawdown} = \frac{V}{kA}$$

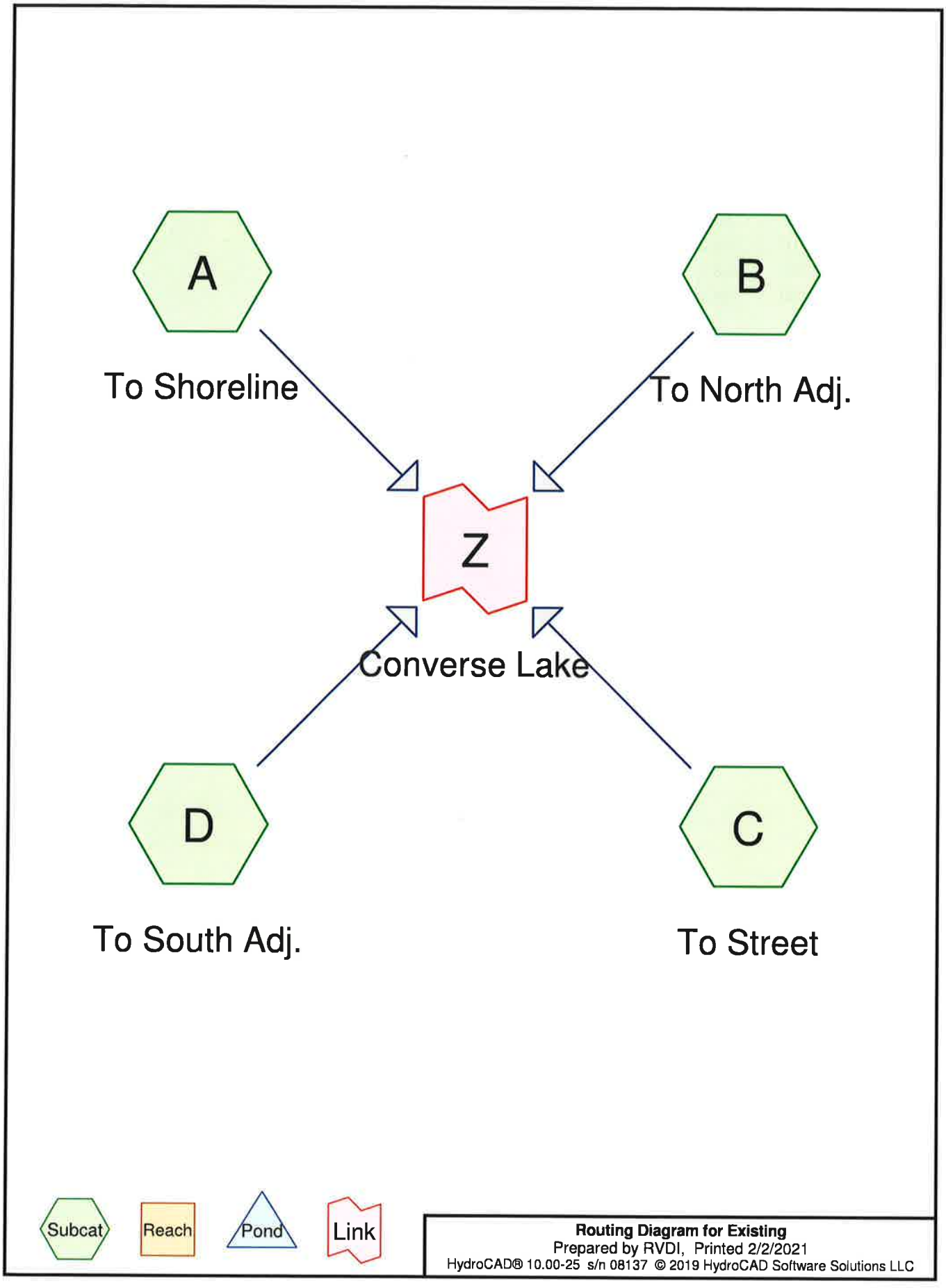
Where:

V = Retained Volume
k = Infiltration (Rawl's) Rate = 6.9 in/hr (Test #2)
A = Infiltration (bottom) Area

Storage SMP	Design Volume (cf)	Infiltration Area (sf)	Drawdown Time (hr)
Chambers #1	1,633	732	4
Chambers #2	1,458	668	4
Chambers #3	1,114	532	4
Chambers #4	1,790	806	4
Chambers #5	262	219	2

Appendix "B"

HydroCAD Analysis – Existing Conditions



Routing Diagram for Existing
Prepared by RVDI, Printed 2/2/2021
HydroCAD® 10.00-25 s/n 08137 © 2019 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
287,220	80.0	>75% Grass cover, Good, HSG D (A, B, C, D)
10,710	89.0	Compacted Dirt Drive (A, B, C)
15,230	98.0	Rock (A, B)
313,160	**81.2**	**TOTAL AREA**

Time span=0.00-25.00 hrs, dt=0.01 hrs, 2501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: To Shoreline Runoff Area=149,330 sf 8.08% Impervious Runoff Depth=1.34"
Flow Length=420' Tc=7.2 min CN=81.6 Runoff=5.11 cfs 16,637 cf

Subcatchment B: To North Adj. Runoff Area=108,200 sf 2.93% Impervious Runoff Depth=1.30"
Flow Length=300' Tc=10.4 min CN=81.1 Runoff=3.24 cfs 11,763 cf

Subcatchment C: To Street Runoff Area=26,030 sf 0.00% Impervious Runoff Depth=1.29"
Flow Length=210' Tc=8.2 min CN=80.8 Runoff=0.82 cfs 2,788 cf

Subcatchment D: To South Adj. Runoff Area=29,600 sf 0.00% Impervious Runoff Depth=1.24"
Flow Length=120' Tc=6.5 min CN=80.0 Runoff=0.95 cfs 3,046 cf

Link Z: Converse Lake Inflow=9.91 cfs 34,235 cf
Primary=9.91 cfs 34,235 cf

Total Runoff Area = 313,160 sf Runoff Volume = 34,235 cf Average Runoff Depth = 1.31"
95.14% Pervious = 297,930 sf 4.86% Impervious = 15,230 sf

Time span=0.00-25.00 hrs, dt=0.01 hrs, 2501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: To Shoreline Runoff Area=149,330 sf 8.08% Impervious Runoff Depth=1.84"
Flow Length=420' Tc=7.2 min CN=81.6 Runoff=7.06 cfs 22,835 cf

Subcatchment B: To North Adj. Runoff Area=108,200 sf 2.93% Impervious Runoff Depth=1.80"
Flow Length=300' Tc=10.4 min CN=81.1 Runoff=4.50 cfs 16,206 cf

Subcatchment C: To Street Runoff Area=26,030 sf 0.00% Impervious Runoff Depth=1.77"
Flow Length=210' Tc=8.2 min CN=80.8 Runoff=1.15 cfs 3,850 cf

Subcatchment D: To South Adj. Runoff Area=29,600 sf 0.00% Impervious Runoff Depth=1.72"
Flow Length=120' Tc=6.5 min CN=80.0 Runoff=1.34 cfs 4,233 cf

Link Z: Converse Lake Inflow=13.77 cfs 47,125 cf
Primary=13.77 cfs 47,125 cf

Total Runoff Area = 313,160 sf Runoff Volume = 47,125 cf Average Runoff Depth = 1.81"
95.14% Pervious = 297,930 sf 4.86% Impervious = 15,230 sf

Time span=0.00-25.00 hrs, dt=0.01 hrs, 2501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: To Shoreline Runoff Area=149,330 sf 8.08% Impervious Runoff Depth=2.70"
Flow Length=420' Tc=7.2 min CN=81.6 Runoff=10.39 cfs 33,560 cf

Subcatchment B: To North Adj. Runoff Area=108,200 sf 2.93% Impervious Runoff Depth=2.65"
Flow Length=300' Tc=10.4 min CN=81.1 Runoff=6.67 cfs 23,915 cf

Subcatchment C: To Street Runoff Area=26,030 sf 0.00% Impervious Runoff Depth=2.63"
Flow Length=210' Tc=8.2 min CN=80.8 Runoff=1.70 cfs 5,696 cf

Subcatchment D: To South Adj. Runoff Area=29,600 sf 0.00% Impervious Runoff Depth=2.56"
Flow Length=120' Tc=6.5 min CN=80.0 Runoff=2.00 cfs 6,304 cf

Link Z: Converse Lake Inflow=20.35 cfs 69,474 cf
Primary=20.35 cfs 69,474 cf

Total Runoff Area = 313,160 sf Runoff Volume = 69,474 cf Average Runoff Depth = 2.66"
95.14% Pervious = 297,930 sf 4.86% Impervious = 15,230 sf

Time span=0.00-25.00 hrs, dt=0.01 hrs, 2501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: To Shoreline Runoff Area=149,330 sf 8.08% Impervious Runoff Depth=3.45"
Flow Length=420' Tc=7.2 min CN=81.6 Runoff=13.26 cfs 42,983 cf

Subcatchment B: To North Adj. Runoff Area=108,200 sf 2.93% Impervious Runoff Depth=3.40"
Flow Length=300' Tc=10.4 min CN=81.1 Runoff=8.54 cfs 30,701 cf

Subcatchment C: To Street Runoff Area=26,030 sf 0.00% Impervious Runoff Depth=3.38"
Flow Length=210' Tc=8.2 min CN=80.8 Runoff=2.19 cfs 7,322 cf

Subcatchment D: To South Adj. Runoff Area=29,600 sf 0.00% Impervious Runoff Depth=3.30"
Flow Length=120' Tc=6.5 min CN=80.0 Runoff=2.58 cfs 8,135 cf

Link Z: Converse Lake Inflow=26.04 cfs 89,141 cf
Primary=26.04 cfs 89,141 cf

Total Runoff Area = 313,160 sf Runoff Volume = 89,141 cf Average Runoff Depth = 3.42"
95.14% Pervious = 297,930 sf 4.86% Impervious = 15,230 sf

Time span=0.00-25.00 hrs, dt=0.01 hrs, 2501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: To Shoreline Runoff Area=149,330 sf 8.08% Impervious Runoff Depth=4.52"
Flow Length=420' Tc=7.2 min CN=81.6 Runoff=17.22 cfs 56,219 cf

Subcatchment B: To North Adj. Runoff Area=108,200 sf 2.93% Impervious Runoff Depth=4.46"
Flow Length=300' Tc=10.4 min CN=81.1 Runoff=11.12 cfs 40,247 cf

Subcatchment C: To Street Runoff Area=26,030 sf 0.00% Impervious Runoff Depth=4.43"
Flow Length=210' Tc=8.2 min CN=80.8 Runoff=2.85 cfs 9,612 cf

Subcatchment D: To South Adj. Runoff Area=29,600 sf 0.00% Impervious Runoff Depth=4.35"
Flow Length=120' Tc=6.5 min CN=80.0 Runoff=3.38 cfs 10,718 cf

Link Z: Converse Lake Inflow=33.89 cfs 116,795 cf
Primary=33.89 cfs 116,795 cf

Total Runoff Area = 313,160 sf Runoff Volume = 116,795 cf Average Runoff Depth = 4.48"
95.14% Pervious = 297,930 sf 4.86% Impervious = 15,230 sf

Time span=0.00-25.00 hrs, dt=0.01 hrs, 2501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: To Shoreline Runoff Area=149,330 sf 8.08% Impervious Runoff Depth=5.32"
Flow Length=420' Tc=7.2 min CN=81.6 Runoff=20.16 cfs 66,225 cf

Subcatchment B: To North Adj. Runoff Area=108,200 sf 2.93% Impervious Runoff Depth=5.26"
Flow Length=300' Tc=10.4 min CN=81.1 Runoff=13.04 cfs 47,470 cf

Subcatchment C: To Street Runoff Area=26,030 sf 0.00% Impervious Runoff Depth=5.23"
Flow Length=210' Tc=8.2 min CN=80.8 Runoff=3.35 cfs 11,346 cf

Subcatchment D: To South Adj. Runoff Area=29,600 sf 0.00% Impervious Runoff Depth=5.14"
Flow Length=120' Tc=6.5 min CN=80.0 Runoff=3.97 cfs 12,677 cf

Link Z: Converse Lake Inflow=39.74 cfs 137,718 cf
Primary=39.74 cfs 137,718 cf

Total Runoff Area = 313,160 sf Runoff Volume = 137,718 cf Average Runoff Depth = 5.28"
95.14% Pervious = 297,930 sf 4.86% Impervious = 15,230 sf

Time span=0.00-25.00 hrs, dt=0.01 hrs, 2501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A: To Shoreline Runoff Area=149,330 sf 8.08% Impervious Runoff Depth=6.19"
Flow Length=420' Tc=7.2 min CN=81.6 Runoff=23.31 cfs 77,059 cf

Subcatchment B: To North Adj. Runoff Area=108,200 sf 2.93% Impervious Runoff Depth=6.13"
Flow Length=300' Tc=10.4 min CN=81.1 Runoff=15.11 cfs 55,295 cf

Subcatchment C: To Street Runoff Area=26,030 sf 0.00% Impervious Runoff Depth=6.10"
Flow Length=210' Tc=8.2 min CN=80.8 Runoff=3.88 cfs 13,225 cf

Subcatchment D: To South Adj. Runoff Area=29,600 sf 0.00% Impervious Runoff Depth=6.00"
Flow Length=120' Tc=6.5 min CN=80.0 Runoff=4.61 cfs 14,802 cf

Link Z: Converse Lake Inflow=46.00 cfs 160,382 cf
Primary=46.00 cfs 160,382 cf

Total Runoff Area = 313,160 sf Runoff Volume = 160,382 cf Average Runoff Depth = 6.15"
95.14% Pervious = 297,930 sf 4.86% Impervious = 15,230 sf

Summary for Subcatchment A: To Shoreline

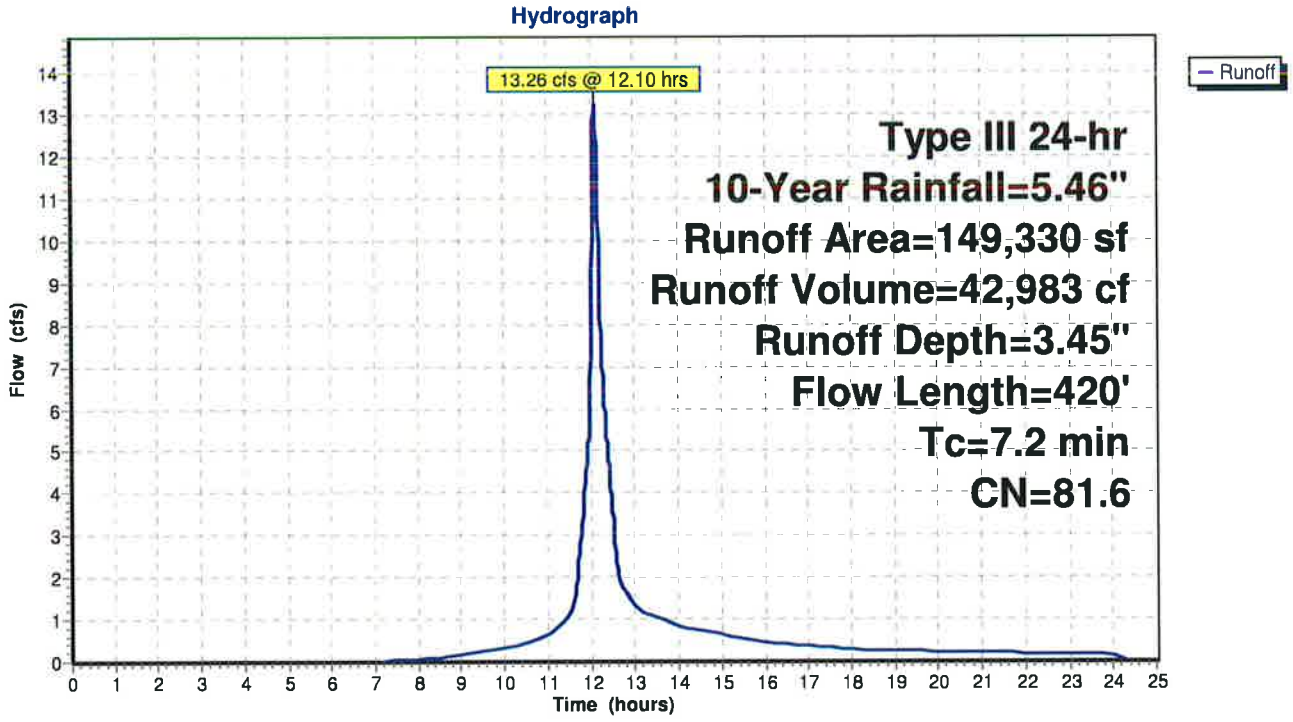
Runoff = 13.26 cfs @ 12.10 hrs, Volume= 42,983 cf, Depth= 3.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-25.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.46"

	Area (sf)	CN	Description
	135,260	80.0	>75% Grass cover, Good, HSG D
*	12,060	98.0	Rock
*	2,010	89.0	Compacted Dirt Drive
	149,330	81.6	Weighted Average
	137,270		91.92% Pervious Area
	12,060		8.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	100	0.1400	0.27		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
1.0	320	0.1200	5.20		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
7.2	420	Total			

Subcatchment A: To Shoreline



Summary for Subcatchment B: To North Adj.

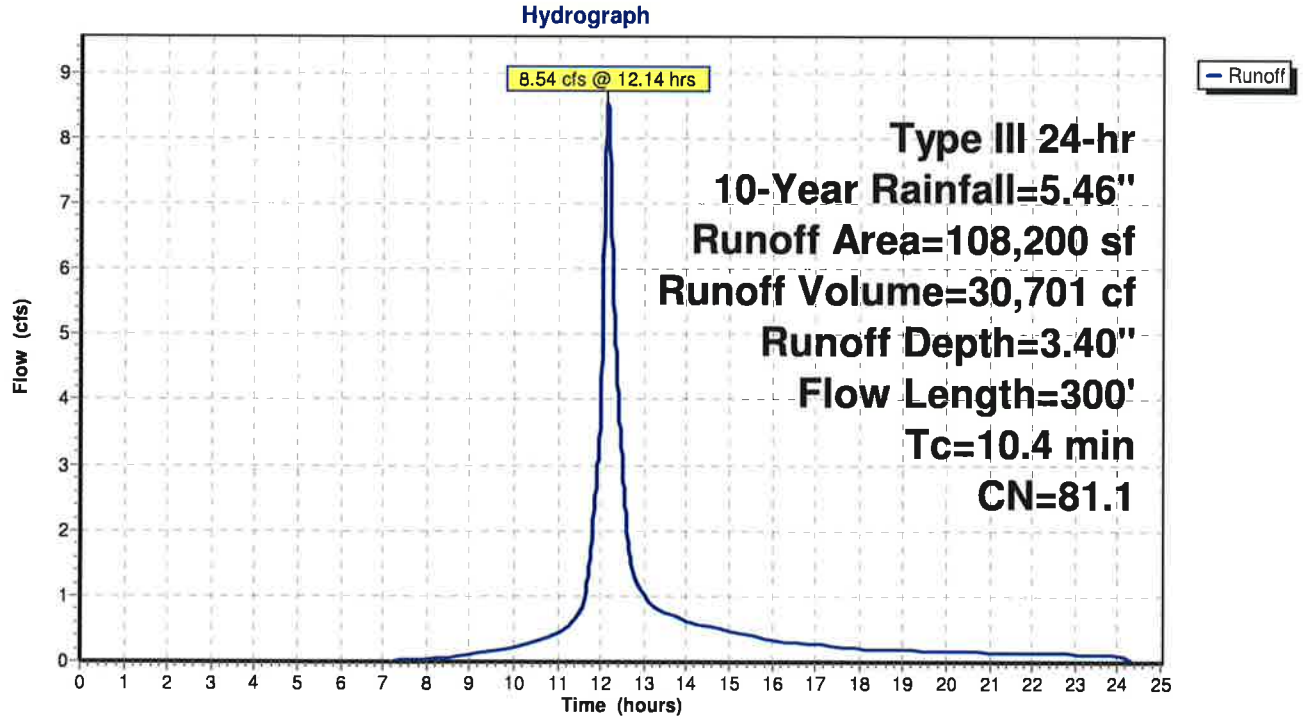
Runoff = 8.54 cfs @ 12.14 hrs, Volume= 30,701 cf, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-25.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.46"

	Area (sf)	CN	Description
	98,730	80.0	>75% Grass cover, Good, HSG D
*	3,170	98.0	Rock
*	6,300	89.0	Compacted Dirt Drive
	108,200	81.1	Weighted Average
	105,030		97.07% Pervious Area
	3,170		2.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.7	100	0.0450	0.17		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
0.7	200	0.1000	4.74		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
10.4	300	Total			

Subcatchment B: To North Adj.



Summary for Subcatchment C: To Street

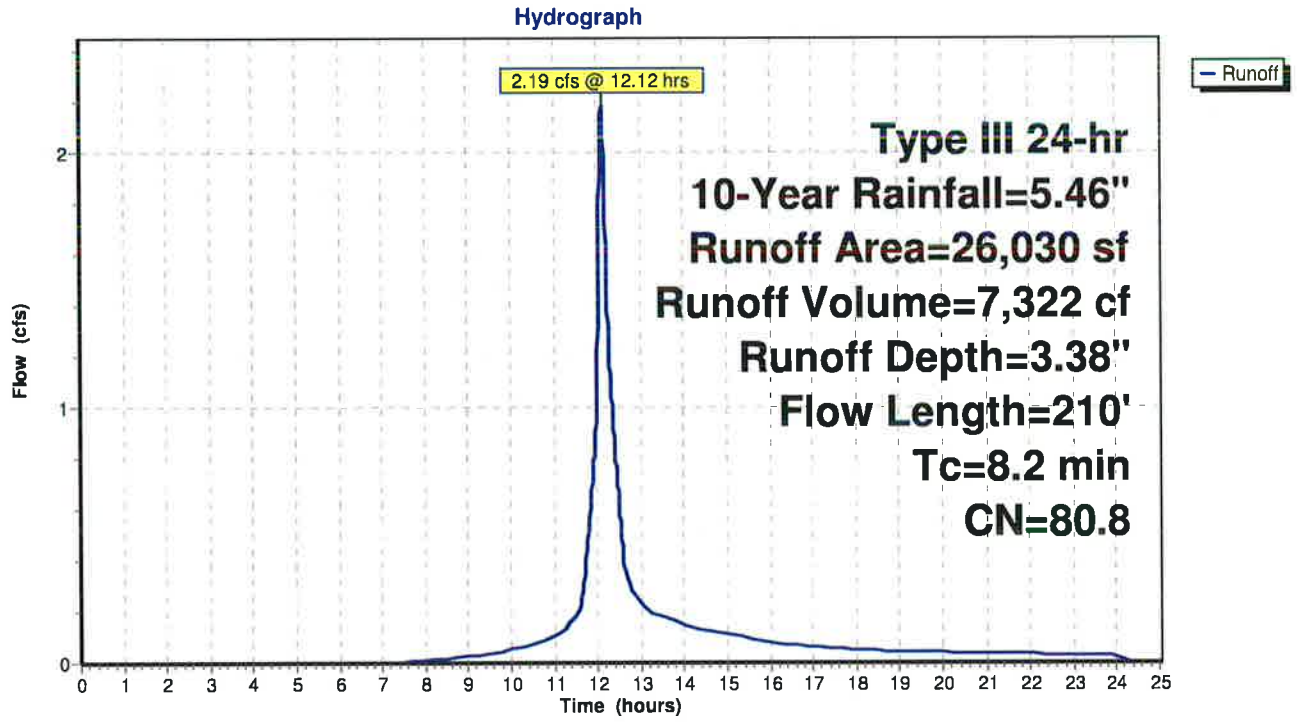
Runoff = 2.19 cfs @ 12.12 hrs, Volume= 7,322 cf, Depth= 3.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-25.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.46"

	Area (sf)	CN	Description
	23,630	80.0	>75% Grass cover, Good, HSG D
*	2,400	89.0	Compacted Dirt Drive
	26,030	80.8	Weighted Average
	26,030		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	100	0.0800	0.22		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
0.5	110	0.0700	3.97		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
8.2	210	Total			

Subcatchment C: To Street



Summary for Subcatchment D: To South Adj.

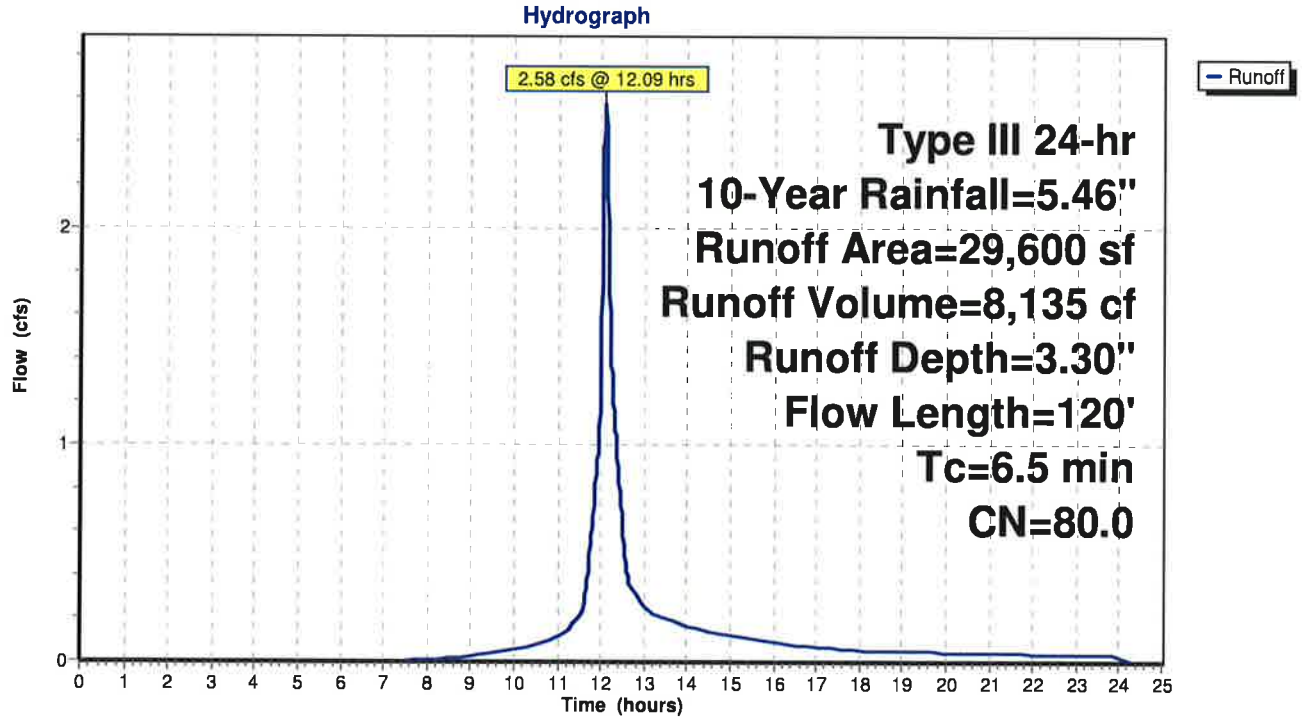
Runoff = 2.58 cfs @ 12.09 hrs, Volume= 8,135 cf, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-25.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.46"

Area (sf)	CN	Description
29,600	80.0	>75% Grass cover, Good, HSG D
29,600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.1300	0.26		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
0.1	20	0.1200	5.20		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.5	120	Total			

Subcatchment D: To South Adj.

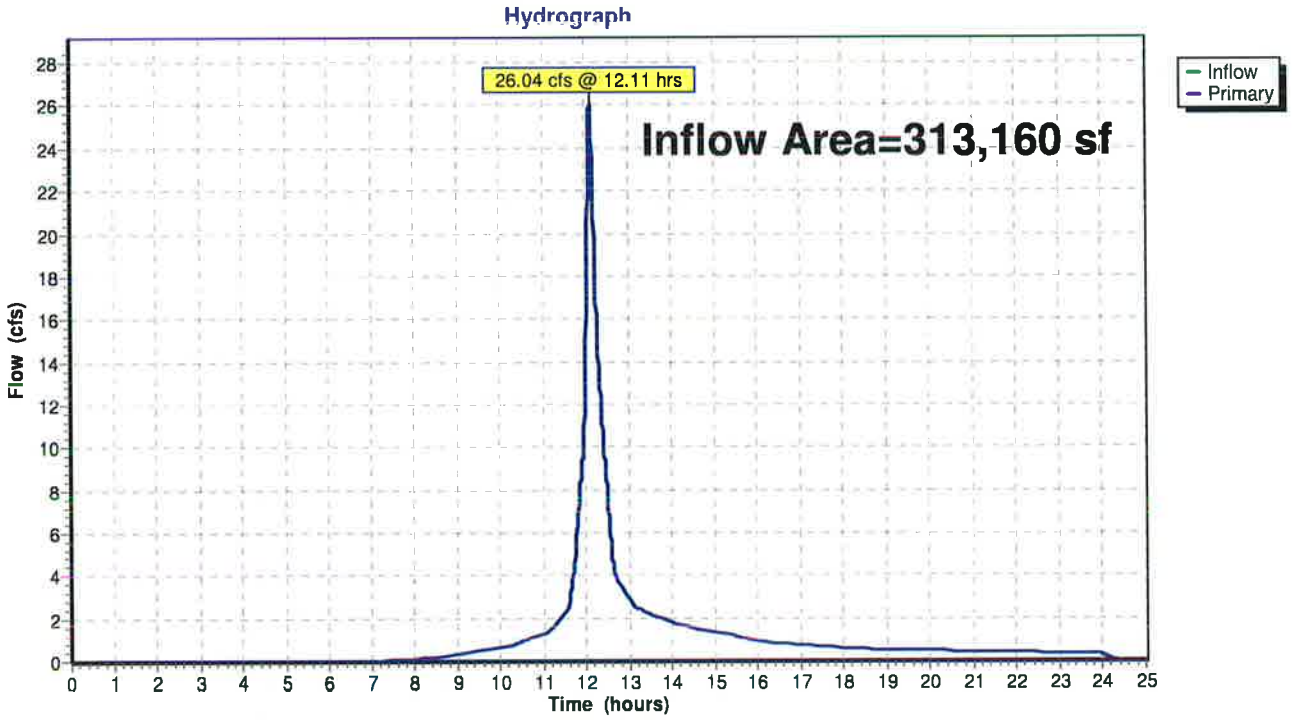


Summary for Link Z: Converse Lake

Inflow Area = 313,160 sf, 4.86% Impervious, Inflow Depth = 3.42" for 10-Year event
Inflow = 26.04 cfs @ 12.11 hrs, Volume= 89,141 cf
Primary = 26.04 cfs @ 12.11 hrs, Volume= 89,141 cf, Atten= 0%, Lag= 0.0 min

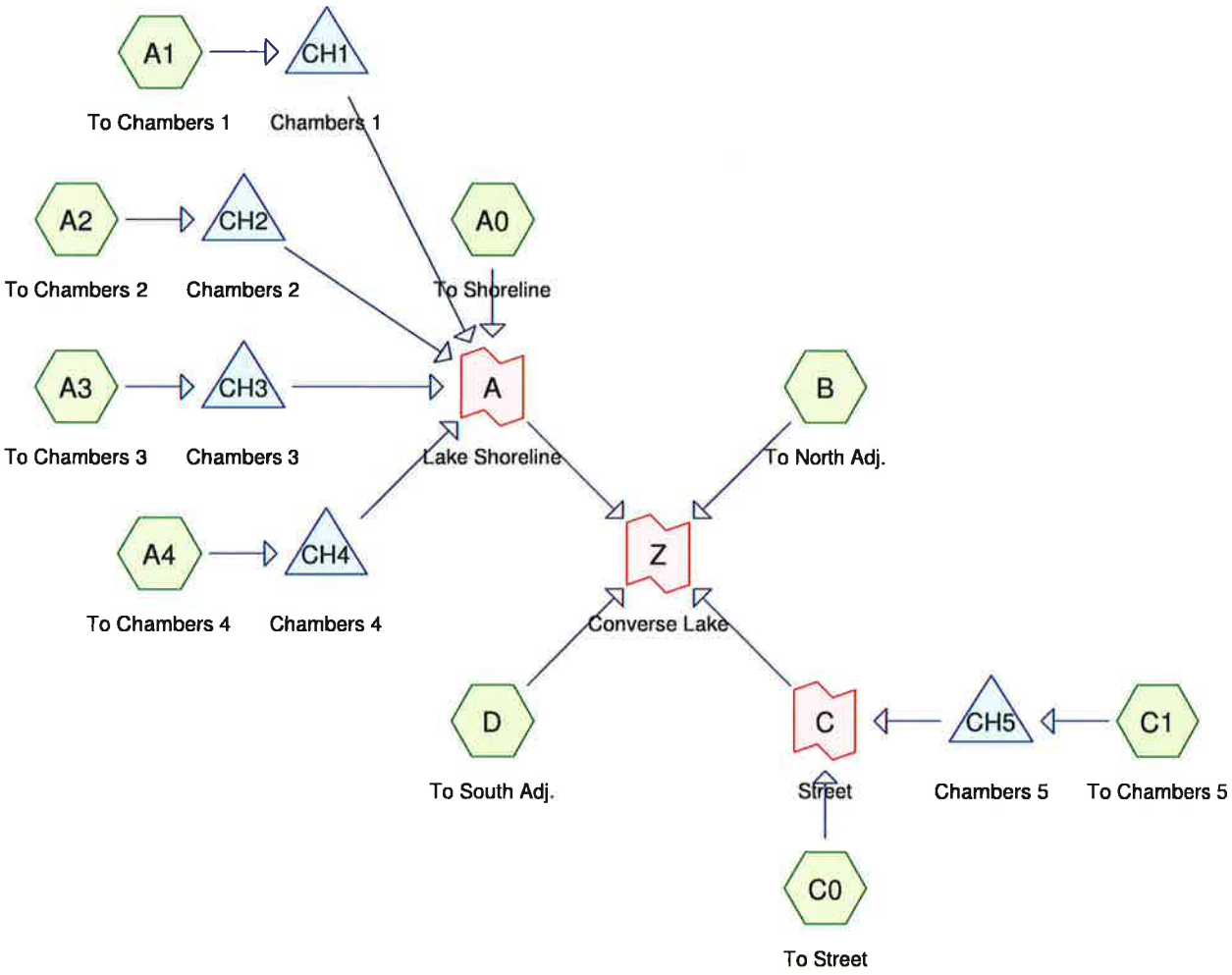
Primary outflow = Inflow, Time Span= 0.00-25.00 hrs, dt= 0.01 hrs

Link Z: Converse Lake



Appendix "C"

HydroCAD Analysis – Proposed Conditions



Subcat Reach Pond Link

Routing Diagram for Proposed 2
Prepared by RVDI, Printed 5/26/2021
HydroCAD® 10.00-25 s/n 08137 © 2019 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
256,500	80.0	>75% Grass cover, Good, HSG D (A0, A1, A2, B, C0, C1, D)
15,770	98.0	Drive (A1, A2, A4, C0, C1)
13,840	98.0	Rock (A0, B)
11,830	98.0	Roof (A0, A1, A2, A4)
7,250	98.0	Roof & Patio (A3)
7,860	98.0	Tennis (A4)
1,010	98.0	Walk (A0, A1, A4)
314,060	**83.3**	**TOTAL AREA**

Time span=0.00-25.00 hrs, dt=0.01 hrs, 2501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A0: To Shoreline Runoff Area=130,850 sf 10.64% Impervious Runoff Depth=1.36"
Flow Length=190' Tc=6.2 min CN=81.9 Runoff=4.71 cfs 14,793 cf

Subcatchment A1: To Chambers 1 Runoff Area=41,920 sf 21.99% Impervious Runoff Depth=1.50"
Flow Length=430' Tc=7.6 min CN=84.0 Runoff=1.60 cfs 5,239 cf

Subcatchment A2: To Chambers 2 Runoff Area=15,790 sf 62.57% Impervious Runoff Depth=2.08"
Flow Length=470' Tc=14.7 min CN=91.3 Runoff=0.67 cfs 2,736 cf

Subcatchment A3: To Chambers 3 Runoff Area=7,250 sf 100.00% Impervious Runoff Depth=2.75"
Tc=6.0 min CN=98.0 Runoff=0.48 cfs 1,660 cf

Subcatchment A4: To Chambers 4 Runoff Area=14,020 sf 100.00% Impervious Runoff Depth=2.75"
Tc=6.0 min CN=98.0 Runoff=0.93 cfs 3,211 cf

Subcatchment B: To North Adj. Runoff Area=62,790 sf 2.83% Impervious Runoff Depth=1.27"
Flow Length=165' Tc=6.6 min CN=80.5 Runoff=2.07 cfs 6,626 cf

Subcatchment C0: To Street Runoff Area=13,240 sf 1.66% Impervious Runoff Depth=1.25"
Tc=6.0 min CN=80.3 Runoff=0.44 cfs 1,383 cf

Subcatchment C1: To Chambers 5 Runoff Area=8,880 sf 14.30% Impervious Runoff Depth=1.40"
Tc=6.0 min CN=82.6 Runoff=0.33 cfs 1,038 cf

Subcatchment D: To South Adj. Runoff Area=19,320 sf 0.00% Impervious Runoff Depth=1.24"
Flow Length=120' Tc=7.9 min CN=80.0 Runoff=0.59 cfs 1,988 cf

Pond CH1: Chambers 1 Peak Elev=95.92' Storage=1,632 cf Inflow=1.60 cfs 5,239 cf
Outflow=2.47 cfs 3,619 cf

Pond CH2: Chambers 2 Peak Elev=87.02' Storage=1,463 cf Inflow=0.67 cfs 2,736 cf
Outflow=0.40 cfs 1,278 cf

Pond CH3: Chambers 3 Peak Elev=90.63' Storage=1,126 cf Inflow=0.48 cfs 1,660 cf
Outflow=0.06 cfs 543 cf

Pond CH4: Chambers 4 Peak Elev=91.52' Storage=1,805 cf Inflow=0.93 cfs 3,211 cf
Outflow=0.71 cfs 1,416 cf

Pond CH5: Chambers 5 Peak Elev=105.21' Storage=272 cf Inflow=0.33 cfs 1,038 cf
Outflow=0.39 cfs 776 cf

Link A: Lake Shoreline Inflow=6.14 cfs 21,649 cf
Primary=6.14 cfs 21,649 cf

Link C: Street Inflow=0.82 cfs 2,159 cf
Primary=0.82 cfs 2,159 cf

Link Z: Converse Lake

Inflow=8.92 cfs 32,423 cf
Primary=8.92 cfs 32,423 cf

Total Runoff Area = 314,060 sf Runoff Volume = 38,676 cf Average Runoff Depth = 1.48"
81.67% Pervious = 256,500 sf 18.33% Impervious = 57,560 sf

Time span=0.00-25.00 hrs, dt=0.01 hrs, 2501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A0: To Shoreline Runoff Area=130,850 sf 10.64% Impervious Runoff Depth=1.86"
Flow Length=190' Tc=6.2 min CN=81.9 Runoff=6.50 cfs 20,258 cf

Subcatchment A1: To Chambers 1 Runoff Area=41,920 sf 21.99% Impervious Runoff Depth=2.02"
Flow Length=430' Tc=7.6 min CN=84.0 Runoff=2.16 cfs 7,065 cf

Subcatchment A2: To Chambers 2 Runoff Area=15,790 sf 62.57% Impervious Runoff Depth=2.66"
Flow Length=470' Tc=14.7 min CN=91.3 Runoff=0.85 cfs 3,506 cf

Subcatchment A3: To Chambers 3 Runoff Area=7,250 sf 100.00% Impervious Runoff Depth=3.37"
Tc=6.0 min CN=98.0 Runoff=0.58 cfs 2,034 cf

Subcatchment A4: To Chambers 4 Runoff Area=14,020 sf 100.00% Impervious Runoff Depth=3.37"
Tc=6.0 min CN=98.0 Runoff=1.13 cfs 3,933 cf

Subcatchment B: To North Adj. Runoff Area=62,790 sf 2.83% Impervious Runoff Depth=1.75"
Flow Length=165' Tc=6.6 min CN=80.5 Runoff=2.89 cfs 9,171 cf

Subcatchment C0: To Street Runoff Area=13,240 sf 1.66% Impervious Runoff Depth=1.74"
Tc=6.0 min CN=80.3 Runoff=0.62 cfs 1,918 cf

Subcatchment C1: To Chambers 5 Runoff Area=8,880 sf 14.30% Impervious Runoff Depth=1.91"
Tc=6.0 min CN=82.6 Runoff=0.46 cfs 1,415 cf

Subcatchment D: To South Adj. Runoff Area=19,320 sf 0.00% Impervious Runoff Depth=1.72"
Flow Length=120' Tc=7.9 min CN=80.0 Runoff=0.83 cfs 2,763 cf

Pond CH1: Chambers 1 Peak Elev=95.84' Storage=1,632 cf Inflow=2.16 cfs 7,065 cf
Outflow=2.19 cfs 5,444 cf

Pond CH2: Chambers 2 Peak Elev=87.03' Storage=1,467 cf Inflow=0.85 cfs 3,506 cf
Outflow=0.90 cfs 2,048 cf

Pond CH3: Chambers 3 Peak Elev=90.83' Storage=1,131 cf Inflow=0.58 cfs 2,034 cf
Outflow=0.34 cfs 917 cf

Pond CH4: Chambers 4 Peak Elev=92.37' Storage=1,808 cf Inflow=1.13 cfs 3,933 cf
Outflow=1.73 cfs 2,138 cf

Pond CH5: Chambers 5 Peak Elev=105.36' Storage=272 cf Inflow=0.46 cfs 1,415 cf
Outflow=0.50 cfs 1,152 cf

Link A: Lake Shoreline Inflow=10.29 cfs 30,805 cf
Primary=10.29 cfs 30,805 cf

Link C: Street Inflow=1.12 cfs 3,070 cf
Primary=1.12 cfs 3,070 cf

Link Z: Converse Lake

Inflow=15.10 cfs 45,809 cf
Primary=15.10 cfs 45,809 cf

Total Runoff Area = 314,060 sf Runoff Volume = 52,062 cf Average Runoff Depth = 1.99"
81.67% Pervious = 256,500 sf 18.33% Impervious = 57,560 sf

Time span=0.00-25.00 hrs, dt=0.01 hrs, 2501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A0: To Shoreline Runoff Area=130,850 sf 10.64% Impervious Runoff Depth=2.72"
Flow Length=190' Tc=6.2 min CN=81.9 Runoff=9.52 cfs 29,700 cf

Subcatchment A1: To Chambers 1 Runoff Area=41,920 sf 21.99% Impervious Runoff Depth=2.92"
Flow Length=430' Tc=7.6 min CN=84.0 Runoff=3.10 cfs 10,186 cf

Subcatchment A2: To Chambers 2 Runoff Area=15,790 sf 62.57% Impervious Runoff Depth=3.64"
Flow Length=470' Tc=14.7 min CN=91.3 Runoff=1.14 cfs 4,784 cf

Subcatchment A3: To Chambers 3 Runoff Area=7,250 sf 100.00% Impervious Runoff Depth=4.37"
Tc=6.0 min CN=98.0 Runoff=0.75 cfs 2,643 cf

Subcatchment A4: To Chambers 4 Runoff Area=14,020 sf 100.00% Impervious Runoff Depth=4.37"
Tc=6.0 min CN=98.0 Runoff=1.45 cfs 5,110 cf

Subcatchment B: To North Adj. Runoff Area=62,790 sf 2.83% Impervious Runoff Depth=2.60"
Flow Length=165' Tc=6.6 min CN=80.5 Runoff=4.30 cfs 13,601 cf

Subcatchment C0: To Street Runoff Area=13,240 sf 1.66% Impervious Runoff Depth=2.58"
Tc=6.0 min CN=80.3 Runoff=0.92 cfs 2,849 cf

Subcatchment C1: To Chambers 5 Runoff Area=8,880 sf 14.30% Impervious Runoff Depth=2.79"
Tc=6.0 min CN=82.6 Runoff=0.67 cfs 2,062 cf

Subcatchment D: To South Adj. Runoff Area=19,320 sf 0.00% Impervious Runoff Depth=2.56"
Flow Length=120' Tc=7.9 min CN=80.0 Runoff=1.24 cfs 4,114 cf

Pond CH1: Chambers 1 Peak Elev=96.17' Storage=1,633 cf Inflow=3.10 cfs 10,186 cf
Outflow=3.11 cfs 8,565 cf

Pond CH2: Chambers 2 Peak Elev=87.04' Storage=1,469 cf Inflow=1.14 cfs 4,784 cf
Outflow=1.23 cfs 3,325 cf

Pond CH3: Chambers 3 Peak Elev=91.04' Storage=1,136 cf Inflow=0.75 cfs 2,643 cf
Outflow=0.75 cfs 1,525 cf

Pond CH4: Chambers 4 Peak Elev=92.08' Storage=1,807 cf Inflow=1.45 cfs 5,110 cf
Outflow=1.45 cfs 3,315 cf

Pond CH5: Chambers 5 Peak Elev=105.63' Storage=272 cf Inflow=0.67 cfs 2,062 cf
Outflow=0.67 cfs 1,800 cf

Link A: Lake Shoreline Inflow=15.64 cfs 46,431 cf
Primary=15.64 cfs 46,431 cf

Link C: Street Inflow=1.58 cfs 4,649 cf
Primary=1.58 cfs 4,649 cf

Link Z: Converse Lake

Inflow=22.67 cfs 68,795 cf
Primary=22.67 cfs 68,795 cf

Total Runoff Area = 314,060 sf Runoff Volume = 75,049 cf Average Runoff Depth = 2.87"
81.67% Pervious = 256,500 sf 18.33% Impervious = 57,560 sf

Time span=0.00-25.00 hrs, dt=0.01 hrs, 2501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A0: To Shoreline Runoff Area=130,850 sf 10.64% Impervious Runoff Depth=3.48"
Flow Length=190' Tc=6.2 min CN=81.9 Runoff=12.13 cfs 37,987 cf

Subcatchment A1: To Chambers 1 Runoff Area=41,920 sf 21.99% Impervious Runoff Depth=3.69"
Flow Length=430' Tc=7.6 min CN=84.0 Runoff=3.90 cfs 12,904 cf

Subcatchment A2: To Chambers 2 Runoff Area=15,790 sf 62.57% Impervious Runoff Depth=4.46"
Flow Length=470' Tc=14.7 min CN=91.3 Runoff=1.38 cfs 5,872 cf

Subcatchment A3: To Chambers 3 Runoff Area=7,250 sf 100.00% Impervious Runoff Depth=5.22"
Tc=6.0 min CN=98.0 Runoff=0.89 cfs 3,155 cf

Subcatchment A4: To Chambers 4 Runoff Area=14,020 sf 100.00% Impervious Runoff Depth=5.22"
Tc=6.0 min CN=98.0 Runoff=1.72 cfs 6,102 cf

Subcatchment B: To North Adj. Runoff Area=62,790 sf 2.83% Impervious Runoff Depth=3.35"
Flow Length=165' Tc=6.6 min CN=80.5 Runoff=5.53 cfs 17,510 cf

Subcatchment C0: To Street Runoff Area=13,240 sf 1.66% Impervious Runoff Depth=3.33"
Tc=6.0 min CN=80.3 Runoff=1.18 cfs 3,671 cf

Subcatchment C1: To Chambers 5 Runoff Area=8,880 sf 14.30% Impervious Runoff Depth=3.55"
Tc=6.0 min CN=82.6 Runoff=0.84 cfs 2,629 cf

Subcatchment D: To South Adj. Runoff Area=19,320 sf 0.00% Impervious Runoff Depth=3.30"
Flow Length=120' Tc=7.9 min CN=80.0 Runoff=1.60 cfs 5,309 cf

Pond CH1: Chambers 1 Peak Elev=96.57' Storage=1,633 cf Inflow=3.90 cfs 12,904 cf
Outflow=3.91 cfs 11,283 cf

Pond CH2: Chambers 2 Peak Elev=87.04' Storage=1,470 cf Inflow=1.38 cfs 5,872 cf
Outflow=1.38 cfs 4,414 cf

Pond CH3: Chambers 3 Peak Elev=91.11' Storage=1,137 cf Inflow=0.89 cfs 3,155 cf
Outflow=0.89 cfs 2,038 cf

Pond CH4: Chambers 4 Peak Elev=92.38' Storage=1,809 cf Inflow=1.72 cfs 6,102 cf
Outflow=1.72 cfs 4,307 cf

Pond CH5: Chambers 5 Peak Elev=106.01' Storage=272 cf Inflow=0.84 cfs 2,629 cf
Outflow=0.84 cfs 2,367 cf

Link A: Lake Shoreline Inflow=19.61 cfs 60,028 cf
Primary=19.61 cfs 60,028 cf

Link C: Street Inflow=2.03 cfs 6,038 cf
Primary=2.03 cfs 6,038 cf

Link Z: Converse Lake

Inflow=28.72 cfs 88,885 cf
Primary=28.72 cfs 88,885 cf

Total Runoff Area = 314,060 sf Runoff Volume = 95,139 cf Average Runoff Depth = 3.64"
81.67% Pervious = 256,500 sf 18.33% Impervious = 57,560 sf

Time span=0.00-25.00 hrs, dt=0.01 hrs, 2501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A0: To Shoreline Runoff Area=130,850 sf 10.64% Impervious Runoff Depth=4.55"
Flow Length=190' Tc=6.2 min CN=81.9 Runoff=15.72 cfs 49,617 cf

Subcatchment A1: To Chambers 1 Runoff Area=41,920 sf 21.99% Impervious Runoff Depth=4.78"
Flow Length=430' Tc=7.6 min CN=84.0 Runoff=5.00 cfs 16,697 cf

Subcatchment A2: To Chambers 2 Runoff Area=15,790 sf 62.57% Impervious Runoff Depth=5.60"
Flow Length=470' Tc=14.7 min CN=91.3 Runoff=1.72 cfs 7,368 cf

Subcatchment A3: To Chambers 3 Runoff Area=7,250 sf 100.00% Impervious Runoff Depth=6.38"
Tc=6.0 min CN=98.0 Runoff=1.08 cfs 3,855 cf

Subcatchment A4: To Chambers 4 Runoff Area=14,020 sf 100.00% Impervious Runoff Depth=6.38"
Tc=6.0 min CN=98.0 Runoff=2.09 cfs 7,455 cf

Subcatchment B: To North Adj. Runoff Area=62,790 sf 2.83% Impervious Runoff Depth=4.40"
Flow Length=165' Tc=6.6 min CN=80.5 Runoff=7.22 cfs 23,017 cf

Subcatchment C0: To Street Runoff Area=13,240 sf 1.66% Impervious Runoff Depth=4.38"
Tc=6.0 min CN=80.3 Runoff=1.55 cfs 4,830 cf

Subcatchment C1: To Chambers 5 Runoff Area=8,880 sf 14.30% Impervious Runoff Depth=4.63"
Tc=6.0 min CN=82.6 Runoff=1.09 cfs 3,424 cf

Subcatchment D: To South Adj. Runoff Area=19,320 sf 0.00% Impervious Runoff Depth=4.35"
Flow Length=120' Tc=7.9 min CN=80.0 Runoff=2.10 cfs 6,996 cf

Pond CH1: Chambers 1 Peak Elev=97.25' Storage=1,633 cf Inflow=5.00 cfs 16,697 cf
Outflow=5.00 cfs 15,076 cf

Pond CH2: Chambers 2 Peak Elev=87.05' Storage=1,470 cf Inflow=1.72 cfs 7,368 cf
Outflow=1.72 cfs 5,910 cf

Pond CH3: Chambers 3 Peak Elev=91.25' Storage=1,141 cf Inflow=1.08 cfs 3,855 cf
Outflow=1.08 cfs 2,738 cf

Pond CH4: Chambers 4 Peak Elev=92.89' Storage=1,809 cf Inflow=2.09 cfs 7,455 cf
Outflow=2.09 cfs 5,660 cf

Pond CH5: Chambers 5 Peak Elev=106.68' Storage=272 cf Inflow=1.09 cfs 3,424 cf
Outflow=1.09 cfs 3,161 cf

Link A: Lake Shoreline Inflow=25.09 cfs 79,001 cf
Primary=25.09 cfs 79,001 cf

Link C: Street Inflow=2.64 cfs 7,991 cf
Primary=2.64 cfs 7,991 cf

Link Z: Converse Lake

Inflow=37.00 cfs 117,005 cf
Primary=37.00 cfs 117,005 cf

Total Runoff Area = 314,060 sf Runoff Volume = 123,259 cf Average Runoff Depth = 4.71"
81.67% Pervious = 256,500 sf 18.33% Impervious = 57,560 sf

Time span=0.00-25.00 hrs, dt=0.01 hrs, 2501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A0: To Shoreline Runoff Area=130,850 sf 10.64% Impervious Runoff Depth=5.36"
Flow Length=190' Tc=6.2 min CN=81.9 Runoff=18.39 cfs 58,404 cf

Subcatchment A1: To Chambers 1 Runoff Area=41,920 sf 21.99% Impervious Runoff Depth=5.60"
Flow Length=430' Tc=7.6 min CN=84.0 Runoff=5.82 cfs 19,553 cf

Subcatchment A2: To Chambers 2 Runoff Area=15,790 sf 62.57% Impervious Runoff Depth=6.45"
Flow Length=470' Tc=14.7 min CN=91.3 Runoff=1.96 cfs 8,483 cf

Subcatchment A3: To Chambers 3 Runoff Area=7,250 sf 100.00% Impervious Runoff Depth=7.24"
Tc=6.0 min CN=98.0 Runoff=1.22 cfs 4,374 cf

Subcatchment A4: To Chambers 4 Runoff Area=14,020 sf 100.00% Impervious Runoff Depth=7.24"
Tc=6.0 min CN=98.0 Runoff=2.36 cfs 8,459 cf

Subcatchment B: To North Adj. Runoff Area=62,790 sf 2.83% Impervious Runoff Depth=5.20"
Flow Length=165' Tc=6.6 min CN=80.5 Runoff=8.48 cfs 27,189 cf

Subcatchment C0: To Street Runoff Area=13,240 sf 1.66% Impervious Runoff Depth=5.17"
Tc=6.0 min CN=80.3 Runoff=1.82 cfs 5,708 cf

Subcatchment C1: To Chambers 5 Runoff Area=8,880 sf 14.30% Impervious Runoff Depth=5.44"
Tc=6.0 min CN=82.6 Runoff=1.27 cfs 4,023 cf

Subcatchment D: To South Adj. Runoff Area=19,320 sf 0.00% Impervious Runoff Depth=5.14"
Flow Length=120' Tc=7.9 min CN=80.0 Runoff=2.47 cfs 8,274 cf

Pond CH1: Chambers 1 Peak Elev=97.87' Storage=1,633 cf Inflow=5.82 cfs 19,553 cf
Outflow=5.82 cfs 17,932 cf

Pond CH2: Chambers 2 Peak Elev=87.06' Storage=1,470 cf Inflow=1.96 cfs 8,483 cf
Outflow=1.96 cfs 7,024 cf

Pond CH3: Chambers 3 Peak Elev=91.36' Storage=1,143 cf Inflow=1.22 cfs 4,374 cf
Outflow=1.22 cfs 3,257 cf

Pond CH4: Chambers 4 Peak Elev=93.31' Storage=1,809 cf Inflow=2.36 cfs 8,459 cf
Outflow=2.36 cfs 6,664 cf

Pond CH5: Chambers 5 Peak Elev=107.29' Storage=272 cf Inflow=1.27 cfs 4,023 cf
Outflow=1.27 cfs 3,761 cf

Link A: Lake Shoreline Inflow=29.15 cfs 93,282 cf
Primary=29.15 cfs 93,282 cf

Link C: Street Inflow=3.09 cfs 9,469 cf
Primary=3.09 cfs 9,469 cf

Link Z: Converse Lake

Inflow=43.14 cfs 138,214 cf
Primary=43.14 cfs 138,214 cf

Total Runoff Area = 314,060 sf Runoff Volume = 144,468 cf Average Runoff Depth = 5.52"
81.67% Pervious = 256,500 sf 18.33% Impervious = 57,560 sf

Time span=0.00-25.00 hrs, dt=0.01 hrs, 2501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment A0: To Shoreline Runoff Area=130,850 sf 10.64% Impervious Runoff Depth=6.23"
Flow Length=190' Tc=6.2 min CN=81.9 Runoff=21.24 cfs 67,915 cf

Subcatchment A1: To Chambers 1 Runoff Area=41,920 sf 21.99% Impervious Runoff Depth=6.48"
Flow Length=430' Tc=7.6 min CN=84.0 Runoff=6.69 cfs 22,636 cf

Subcatchment A2: To Chambers 2 Runoff Area=15,790 sf 62.57% Impervious Runoff Depth=7.36"
Flow Length=470' Tc=14.7 min CN=91.3 Runoff=2.22 cfs 9,679 cf

Subcatchment A3: To Chambers 3 Runoff Area=7,250 sf 100.00% Impervious Runoff Depth=8.16"
Tc=6.0 min CN=98.0 Runoff=1.37 cfs 4,930 cf

Subcatchment A4: To Chambers 4 Runoff Area=14,020 sf 100.00% Impervious Runoff Depth=8.16"
Tc=6.0 min CN=98.0 Runoff=2.65 cfs 9,534 cf

Subcatchment B: To North Adj. Runoff Area=62,790 sf 2.83% Impervious Runoff Depth=6.06"
Flow Length=165' Tc=6.6 min CN=80.5 Runoff=9.83 cfs 31,713 cf

Subcatchment C0: To Street Runoff Area=13,240 sf 1.66% Impervious Runoff Depth=6.04"
Tc=6.0 min CN=80.3 Runoff=2.11 cfs 6,661 cf

Subcatchment C1: To Chambers 5 Runoff Area=8,880 sf 14.30% Impervious Runoff Depth=6.31"
Tc=6.0 min CN=82.6 Runoff=1.47 cfs 4,671 cf

Subcatchment D: To South Adj. Runoff Area=19,320 sf 0.00% Impervious Runoff Depth=6.00"
Flow Length=120' Tc=7.9 min CN=80.0 Runoff=2.87 cfs 9,662 cf

Pond CH1: Chambers 1 Peak Elev=98.63' Storage=1,633 cf Inflow=6.69 cfs 22,636 cf
Outflow=6.69 cfs 21,015 cf

Pond CH2: Chambers 2 Peak Elev=87.06' Storage=1,470 cf Inflow=2.22 cfs 9,679 cf
Outflow=2.22 cfs 8,220 cf

Pond CH3: Chambers 3 Peak Elev=91.50' Storage=1,147 cf Inflow=1.37 cfs 4,930 cf
Outflow=1.37 cfs 3,813 cf

Pond CH4: Chambers 4 Peak Elev=93.86' Storage=1,809 cf Inflow=2.65 cfs 9,534 cf
Outflow=2.67 cfs 7,738 cf

Pond CH5: Chambers 5 Peak Elev=108.07' Storage=272 cf Inflow=1.47 cfs 4,671 cf
Outflow=1.47 cfs 4,409 cf

Link A: Lake Shoreline Inflow=33.50 cfs 108,702 cf
Primary=33.50 cfs 108,702 cf

Link C: Street Inflow=3.58 cfs 11,069 cf
Primary=3.58 cfs 11,069 cf

Link Z: Converse Lake

Inflow=49.70 cfs 161,146 cf
Primary=49.70 cfs 161,146 cf

Total Runoff Area = 314,060 sf Runoff Volume = 167,400 cf Average Runoff Depth = 6.40"
81.67% Pervious = 256,500 sf 18.33% Impervious = 57,560 sf

Summary for Subcatchment A0: To Shoreline

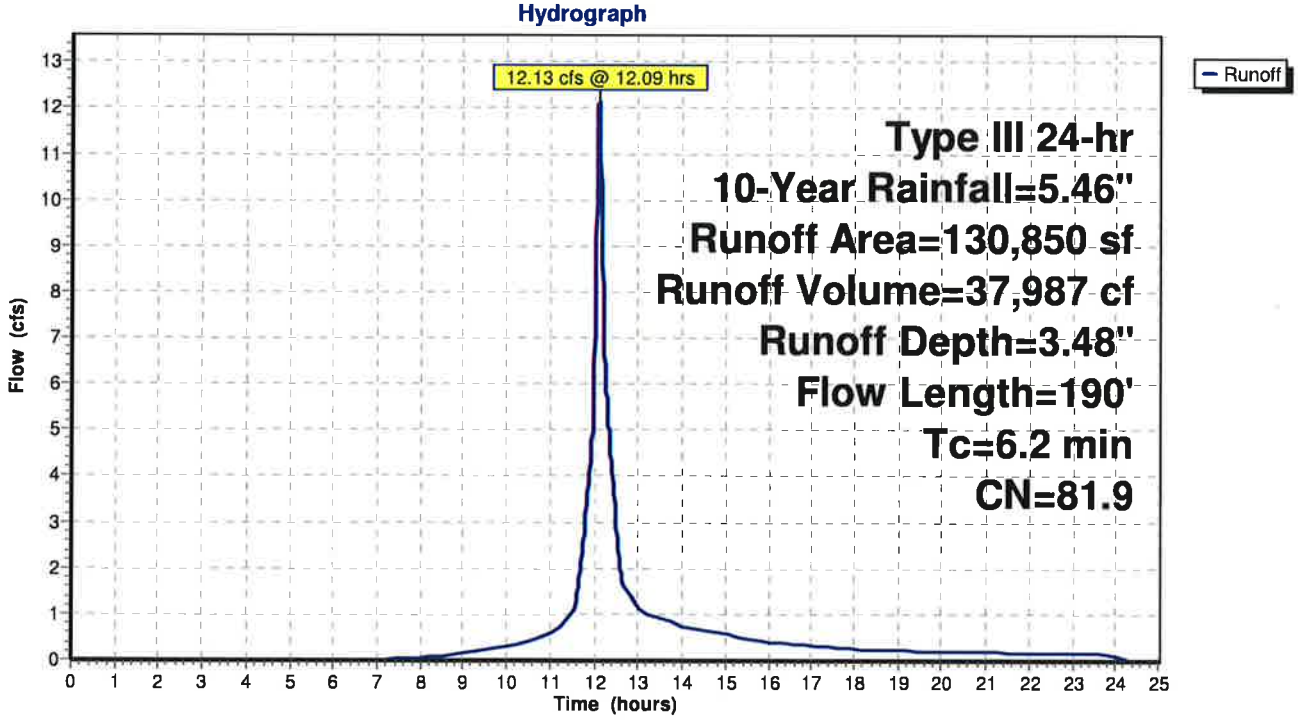
Runoff = 12.13 cfs @ 12.09 hrs, Volume= 37,987 cf, Depth= 3.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-25.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.46"

	Area (sf)	CN	Description
	116,930	80.0	>75% Grass cover, Good, HSG D
*	12,060	98.0	Rock
*	550	98.0	Walk
*	1,310	98.0	Roof
	130,850	81.9	Weighted Average
	116,930		89.36% Pervious Area
	13,920		10.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	100	0.1500	0.28		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
0.2	90	0.3000	8.22		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.2	190	Total			

Subcatchment A0: To Shoreline



Summary for Subcatchment A1: To Chambers 1

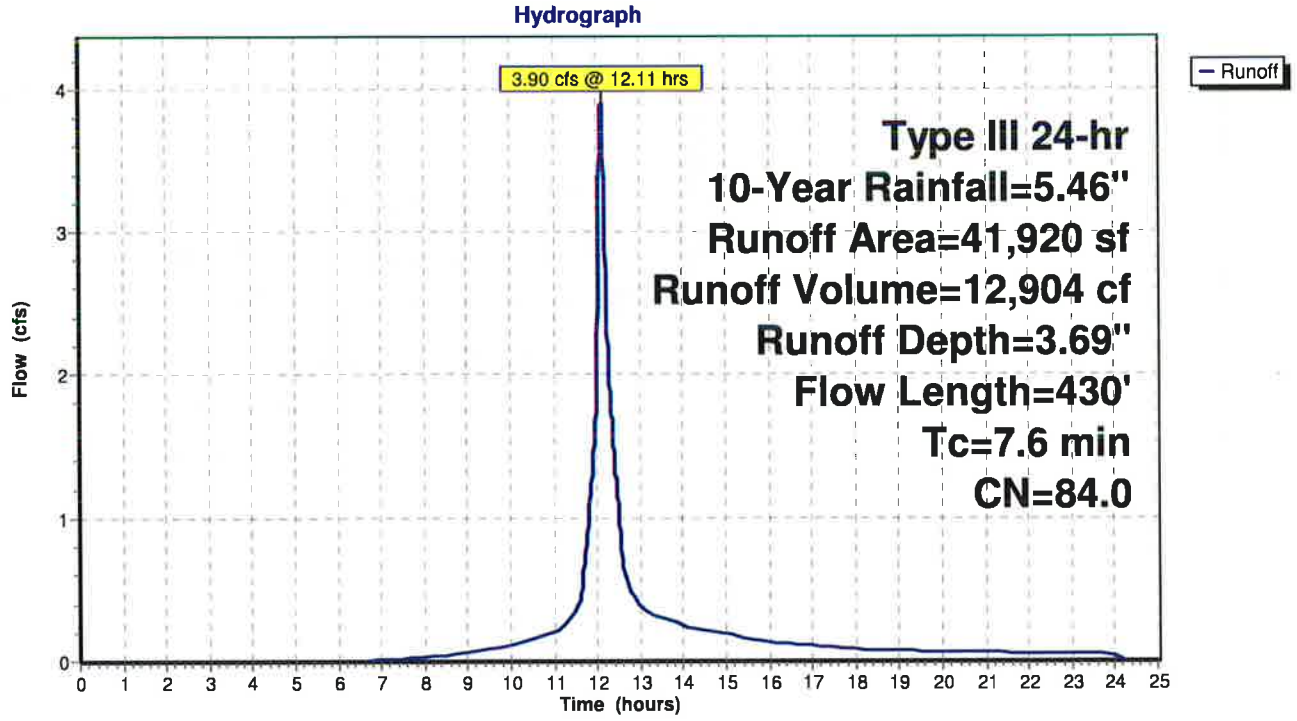
Runoff = 3.90 cfs @ 12.11 hrs, Volume= 12,904 cf, Depth= 3.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-25.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.46"

	Area (sf)	CN	Description
*	1,280	98.0	Roof
*	7,710	98.0	Drive
*	230	98.0	Walk
	32,700	80.0	>75% Grass cover, Good, HSG D
	41,920	84.0	Weighted Average
	32,700		78.01% Pervious Area
	9,220		21.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	85	0.1000	0.23		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
1.4	345	0.0400	4.06		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.6	430	Total			

Subcatchment A1: To Chambers 1



Summary for Subcatchment A2: To Chambers 2

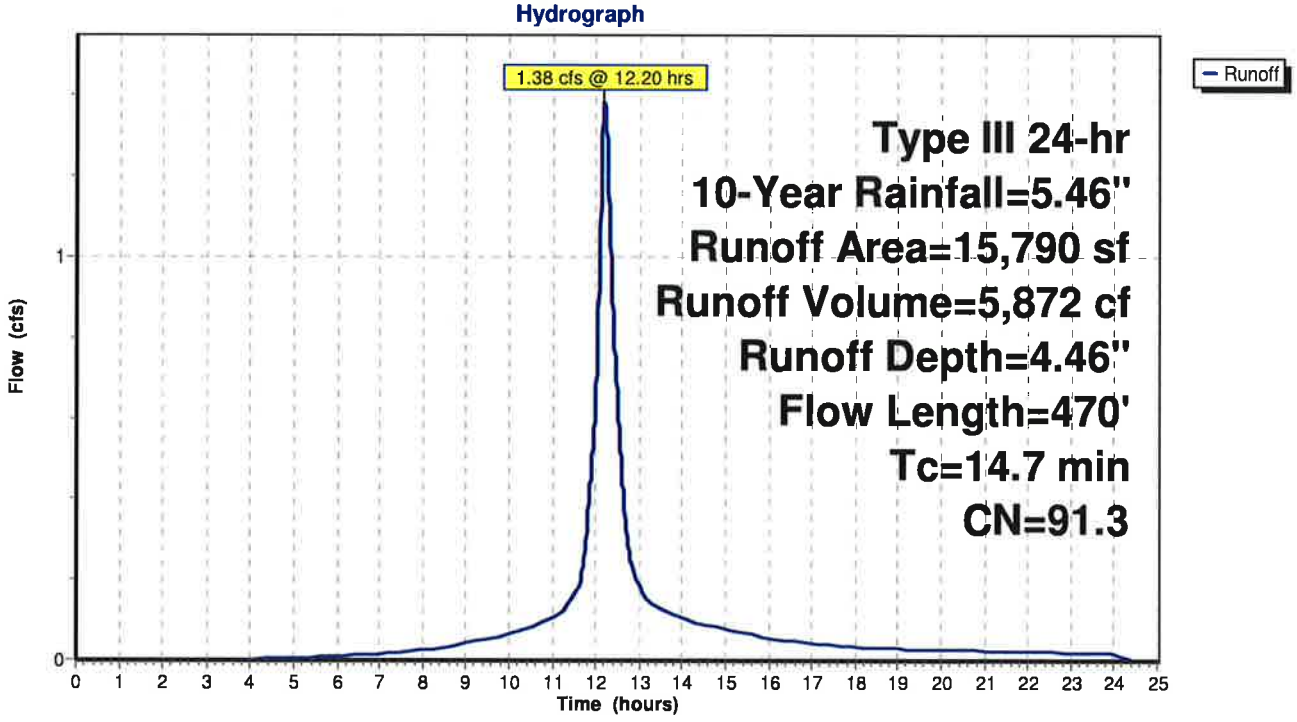
Runoff = 1.38 cfs @ 12.20 hrs, Volume= 5,872 cf, Depth= 4.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-25.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.46"

	Area (sf)	CN	Description
*	6,340	98.0	Roof
*	3,540	98.0	Drive
	5,910	80.0	>75% Grass cover, Good, HSG D
	15,790	91.3	Weighted Average
	5,910		37.43% Pervious Area
	9,880		62.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	100	0.0250	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
1.8	280	0.0300	2.60		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.6	90	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
14.7	470	Total			

Subcatchment A2: To Chambers 2



Summary for Subcatchment A3: To Chambers 3

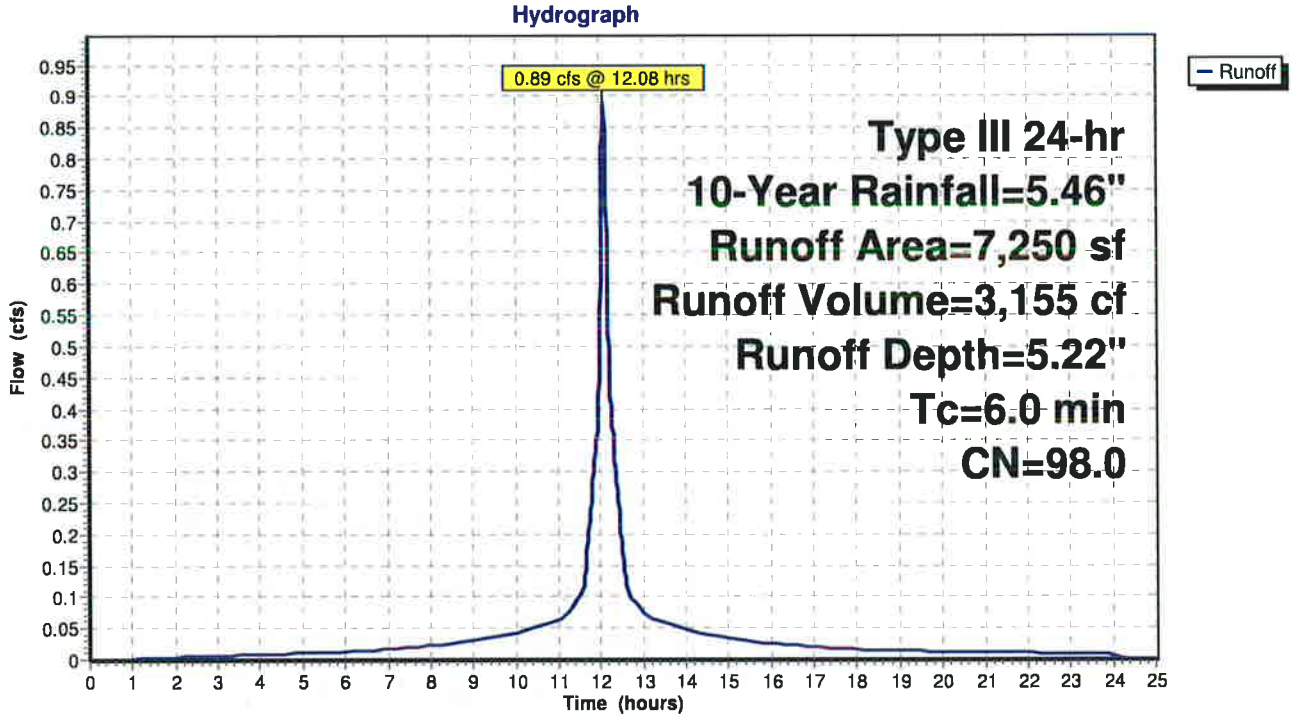
Runoff = 0.89 cfs @ 12.08 hrs, Volume= 3,155 cf, Depth= 5.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-25.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.46"

	Area (sf)	CN	Description
*	7,250	98.0	Roof & Patio
	7,250		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, minimum**

Subcatchment A3: To Chambers 3



Summary for Subcatchment A4: To Chambers 4

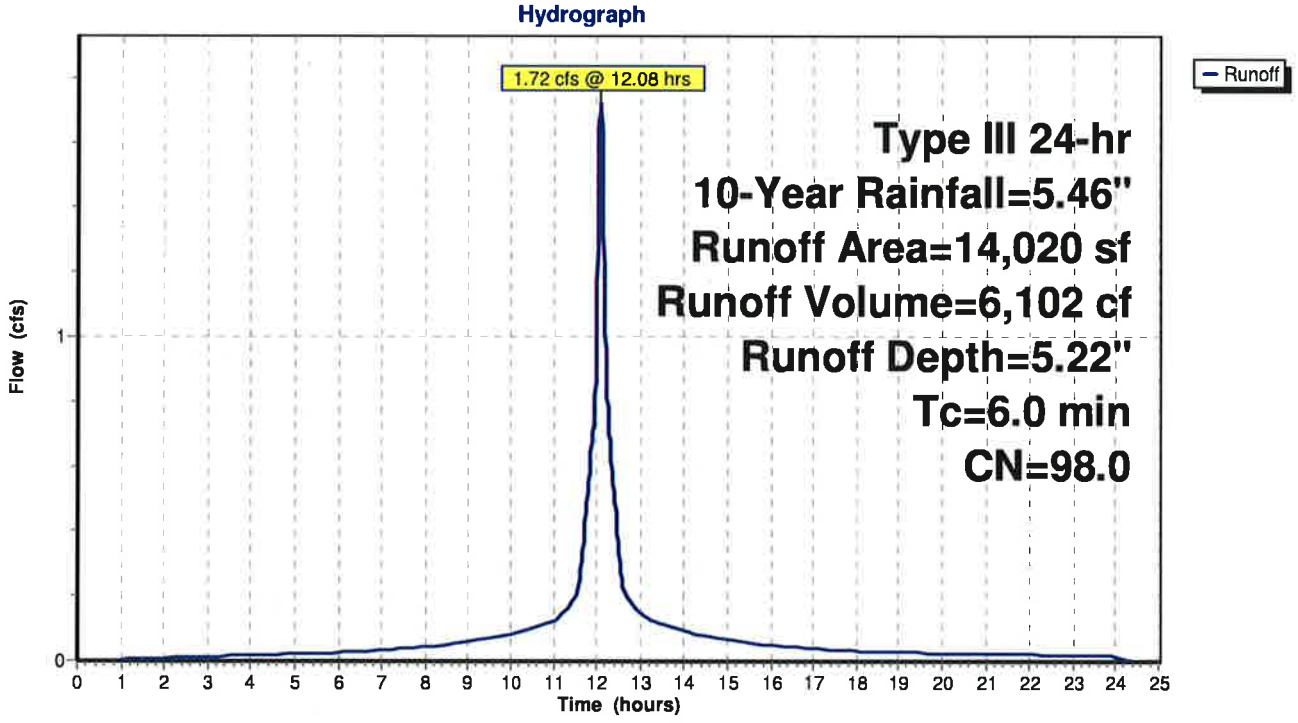
Runoff = 1.72 cfs @ 12.08 hrs, Volume= 6,102 cf, Depth= 5.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-25.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.46"

	Area (sf)	CN	Description
*	2,900	98.0	Roof
*	3,030	98.0	Drive
*	7,860	98.0	Tennis
*	230	98.0	Walk
	14,020	98.0	Weighted Average
	14,020		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, minimum**

Subcatchment A4: To Chambers 4



Summary for Subcatchment B: To North Adj.

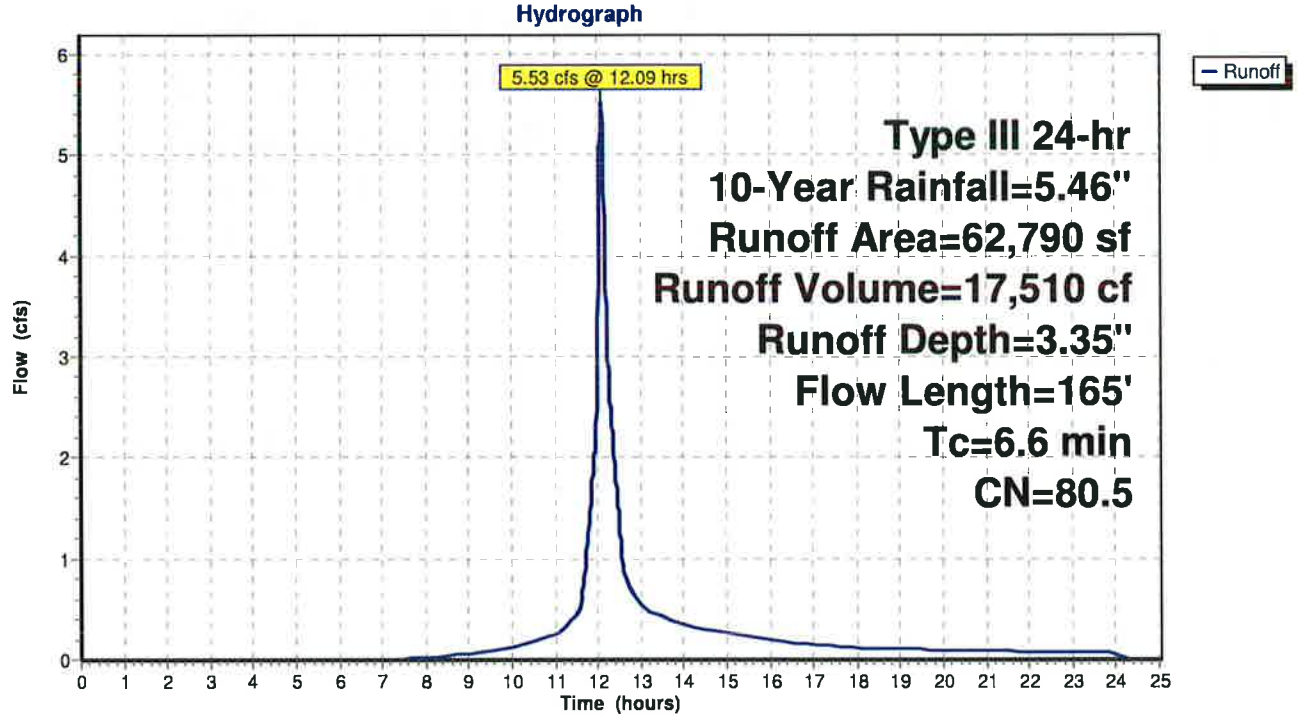
Runoff = 5.53 cfs @ 12.09 hrs, Volume= 17,510 cf, Depth= 3.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-25.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.46"

	Area (sf)	CN	Description
	61,010	80.0	>75% Grass cover, Good, HSG D
*	1,780	98.0	Rock
	62,790	80.5	Weighted Average
	61,010		97.17% Pervious Area
	1,780		2.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	60	0.1600	0.26		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
0.3	15	0.0150	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.60"
2.2	25	0.1200	0.19		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
0.2	65	0.1500	5.81		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.6	165	Total			

Subcatchment B: To North Adj.



Summary for Subcatchment C0: To Street

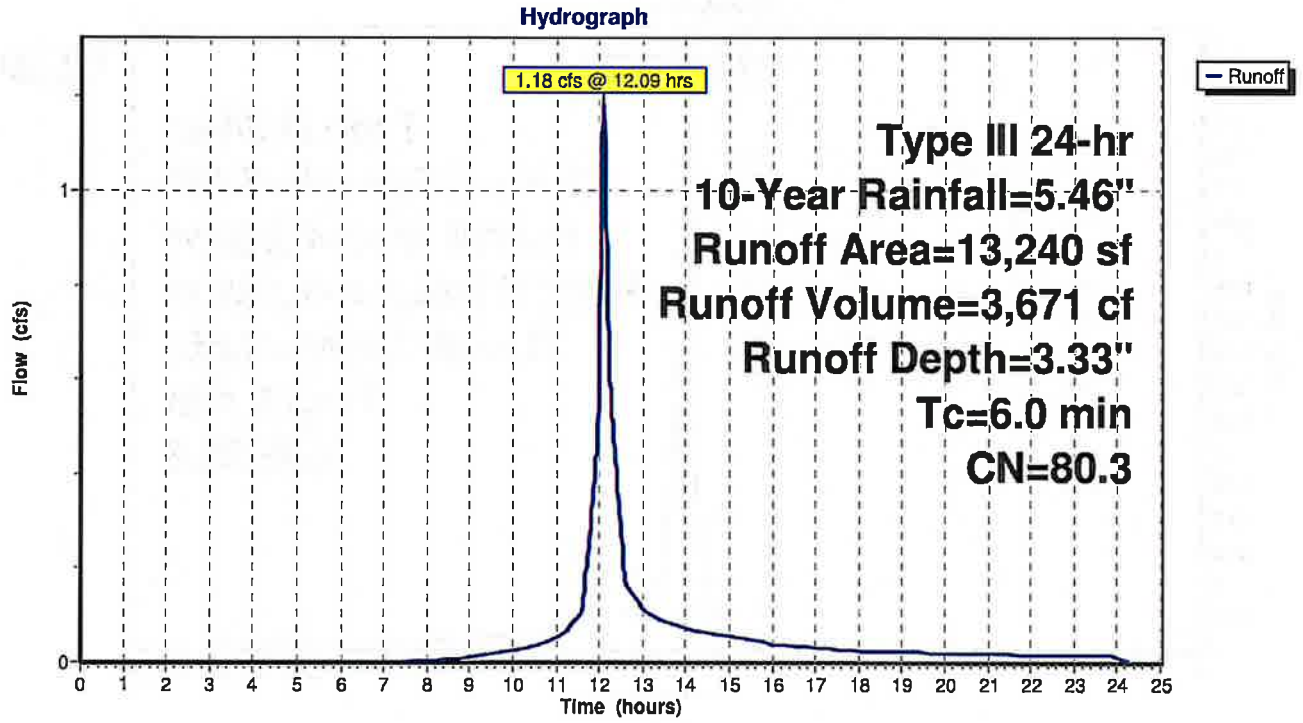
Runoff = 1.18 cfs @ 12.09 hrs, Volume= 3,671 cf, Depth= 3.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-25.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.46"

	Area (sf)	CN	Description
*	220	98.0	Drive
	13,020	80.0	>75% Grass cover, Good, HSG D
	13,240	80.3	Weighted Average
	13,020		98.34% Pervious Area
	220		1.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, minimum**

Subcatchment C0: To Street



Summary for Subcatchment C1: To Chambers 5

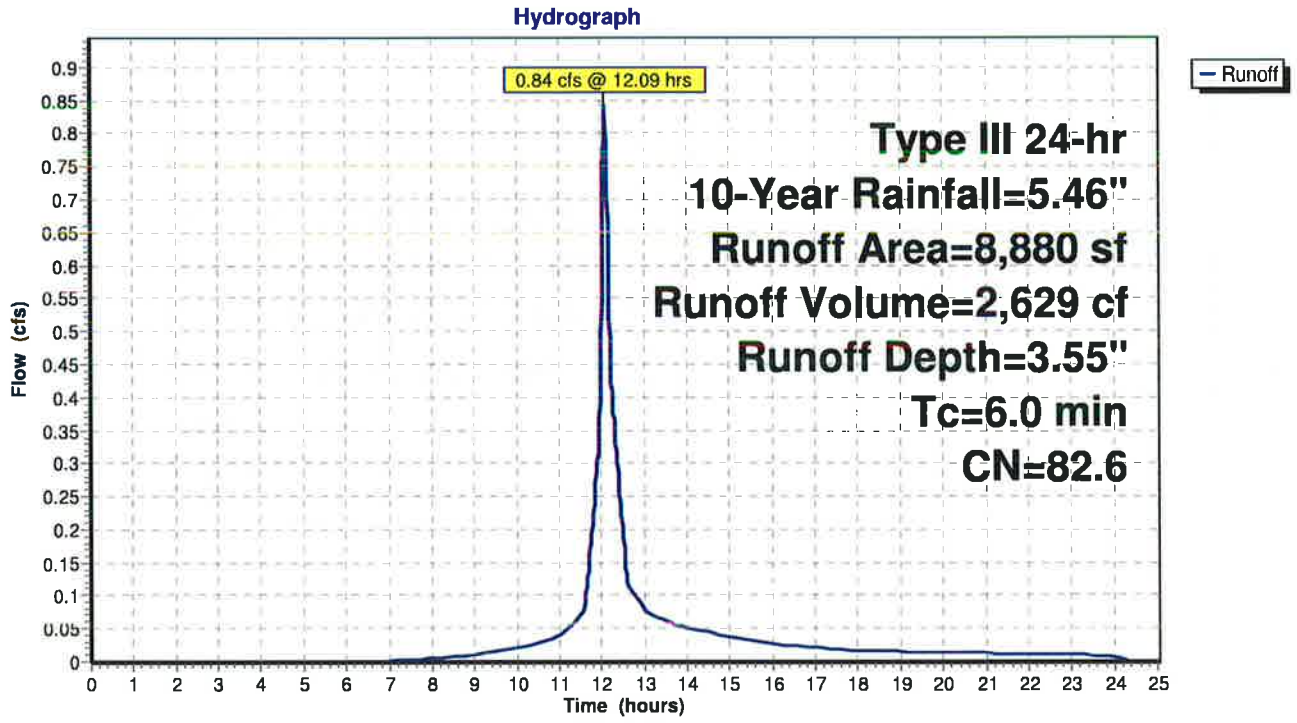
Runoff = 0.84 cfs @ 12.09 hrs, Volume= 2,629 cf, Depth= 3.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-25.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.46"

	Area (sf)	CN	Description
*	1,270	98.0	Drive
	7,610	80.0	>75% Grass cover, Good, HSG D
	8,880	82.6	Weighted Average
	7,610		85.70% Pervious Area
	1,270		14.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, minimum**

Subcatchment C1: To Chambers 5



Summary for Subcatchment D: To South Adj.

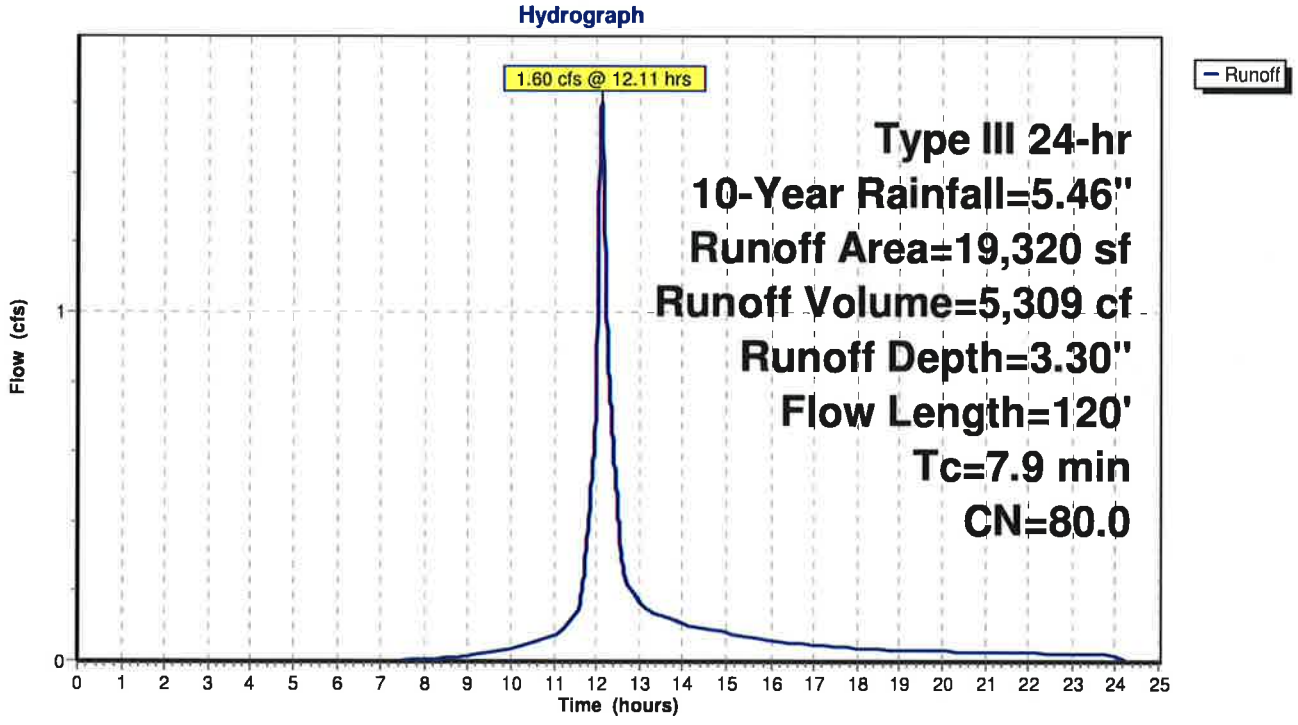
Runoff = 1.60 cfs @ 12.11 hrs, Volume= 5,309 cf, Depth= 3.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-25.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.46"

Area (sf)	CN	Description
19,320	80.0	>75% Grass cover, Good, HSG D
19,320		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	100	0.0800	0.22		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
0.2	20	0.0200	2.12		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
7.9	120	Total			

Subcatchment D: To South Adj.



Summary for Pond CH1: Chambers 1

[93] Warning: Storage range exceeded by 0.57'
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=5)

Inflow Area = 41,920 sf, 21.99% Impervious, Inflow Depth = 3.69" for 10-Year event
Inflow = 3.90 cfs @ 12.11 hrs, Volume= 12,904 cf
Outflow = 3.91 cfs @ 12.10 hrs, Volume= 11,283 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.91 cfs @ 12.10 hrs, Volume= 11,283 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-25.00 hrs, dt= 0.01 hrs
Peak Elev= 96.57' @ 12.10 hrs Surf.Area= 732 sf Storage= 1,633 cf

Plug-Flow detention time= 85.1 min calculated for 11,278 cf (87% of inflow)
Center-of-Mass det. time= 28.2 min (836.8 - 808.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	91.50'	642 cf	**16.00'W x 45.50'L x 3.54'H Field A** 2,578 cf Overall - 972 cf Embedded = 1,606 cf x 40.0% Voids
#2A	92.00'	972 cf	**Cultec R-330XLHD** x 18 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 3 rows
#3	91.50'	18 cf	**2.00'W x 2.00'L x 4.50'H Junction Box**
		1,633 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	95.00'	**12.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=3.90 cfs @ 12.10 hrs HW=96.56' TW=0.00' (Dynamic Tailwater)
↑—**1=Orifice/Grate** (Orifice Controls 3.90 cfs @ 4.96 fps)

Pond CH1: Chambers 1 - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 3 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

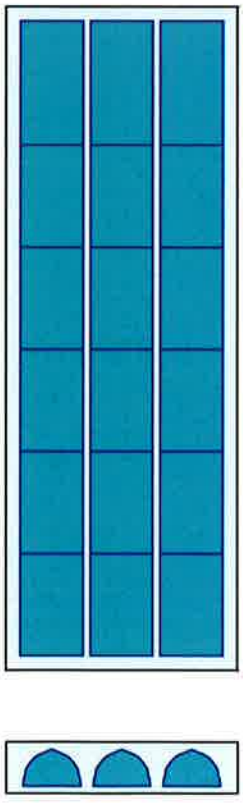
6 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 43.50' Row Length +12.0" End Stone x 2 = 45.50' Base Length
3 Rows x 52.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 16.00' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

18 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 3 Rows = 972.4 cf Chamber Storage

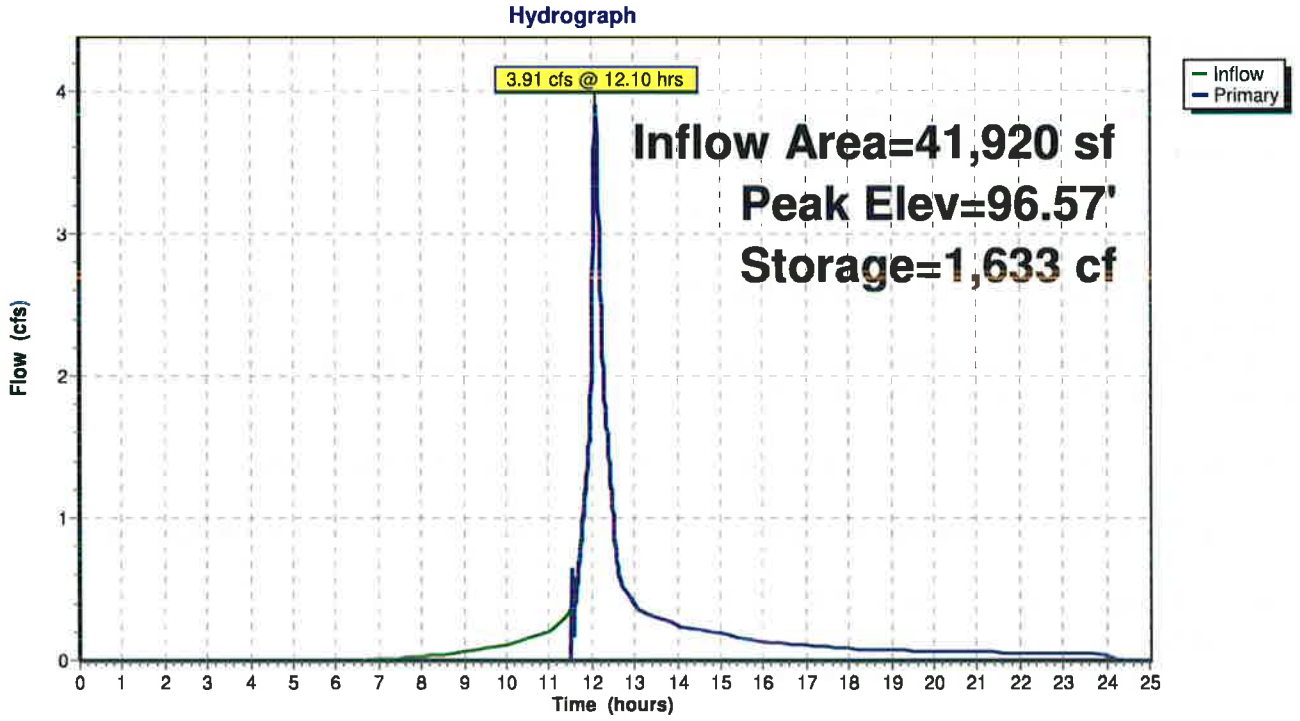
2,578.3 cf Field - 972.4 cf Chambers = 1,606.0 cf Stone x 40.0% Voids = 642.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,614.7 cf = 0.037 af
Overall Storage Efficiency = 62.6%
Overall System Size = 45.50' x 16.00' x 3.54'

18 Chambers
95.5 cy Field
59.5 cy Stone



Pond CH1: Chambers 1



Stage-Area-Storage for Pond CH1: Chambers 1

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
91.50	0	93.58	1,064	95.66	1,631
91.54	12	93.62	1,085	95.70	1,632
91.58	24	93.66	1,106	95.74	1,632
91.62	35	93.70	1,127	95.78	1,632
91.66	47	93.74	1,147	95.82	1,632
91.70	59	93.78	1,168	95.86	1,632
91.74	71	93.82	1,188	95.90	1,632
91.78	83	93.86	1,208	95.94	1,633
91.82	94	93.90	1,227	95.98	**1,633**
91.86	106	93.94	1,246	96.02	**1,633**
91.90	118	93.98	1,265	96.06	1,633
91.94	130	94.02	1,284	96.10	1,633
91.98	142	94.06	1,302	96.14	1,633
92.02	160	94.10	1,320	96.18	1,633
92.06	184	94.14	1,338	96.22	1,633
92.10	208	94.18	1,355	96.26	1,633
92.14	232	94.22	1,371	96.30	1,633
92.18	256	94.26	1,387	96.34	1,633
92.22	280	94.30	1,402	96.38	1,633
92.26	304	94.34	1,417	96.42	1,633
92.30	328	94.38	1,431	96.46	1,633
92.34	352	94.42	1,444	96.50	1,633
92.38	376	94.46	1,457	96.54	1,633
92.42	400	94.50	1,469	96.58	1,633
92.46	424	94.54	1,481		
92.50	448	94.58	1,493		
92.54	472	94.62	1,504		
92.58	496	94.66	1,516		
92.62	519	94.70	1,528		
92.66	543	94.74	1,540		
92.70	566	94.78	1,552		
92.74	590	94.82	1,563		
92.78	613	94.86	1,575		
92.82	636	94.90	1,587		
92.86	659	94.94	1,599		
92.90	683	94.98	1,611		
92.94	706	95.02	1,623		
92.98	729	95.06	1,629		
93.02	752	95.10	1,629		
93.06	775	95.14	1,629		
93.10	798	95.18	1,629		
93.14	821	95.22	1,630		
93.18	844	95.26	1,630		
93.22	867	95.30	1,630		
93.26	889	95.34	1,630		
93.30	912	95.38	1,630		
93.34	934	95.42	1,630		
93.38	956	95.46	1,631		
93.42	978	95.50	1,631		
93.46	1,000	95.54	1,631		
93.50	1,021	95.58	1,631		
93.54	1,043	95.62	1,631		

Summary for Pond CH2: Chambers 2

Inflow Area = 15,790 sf, 62.57% Impervious, Inflow Depth = 4.46" for 10-Year event
Inflow = 1.38 cfs @ 12.20 hrs, Volume= 5,872 cf
Outflow = 1.38 cfs @ 12.20 hrs, Volume= 4,414 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.38 cfs @ 12.20 hrs, Volume= 4,414 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-25.00 hrs, dt= 0.01 hrs
Peak Elev= 87.04' @ 12.20 hrs Surf.Area= 668 sf Storage= 1,470 cf

Plug-Flow detention time= 140.6 min calculated for 4,412 cf (75% of inflow)
Center-of-Mass det. time= 56.5 min (847.4 - 790.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	83.50'	599 cf	**11.17'W x 59.50'L x 3.54'H Field A** 2,353 cf Overall - 857 cf Embedded = 1,496 cf x 40.0% Voids
#2A	84.00'	857 cf	**Cultec R-330XLHD** x 16 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#3	83.50'	20 cf	**2.00'W x 2.00'L x 5.00'H Junction Box**
#4	88.00'	10 cf	**1.00'W x 1.00'L x 0.10'H dummy storage for oscillation errors** x 100
		1,485 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	87.00'	**59.5' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=1.38 cfs @ 12.20 hrs HW=87.04' TW=0.00' (Dynamic Tailwater)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 1.38 cfs @ 0.53 fps)

Pond CH2: Chambers 2 - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

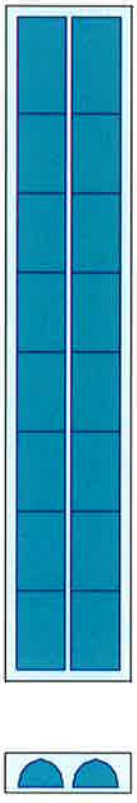
8 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 57.50' Row Length +12.0" End Stone x 2 = 59.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

16 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 856.9 cf Chamber Storage

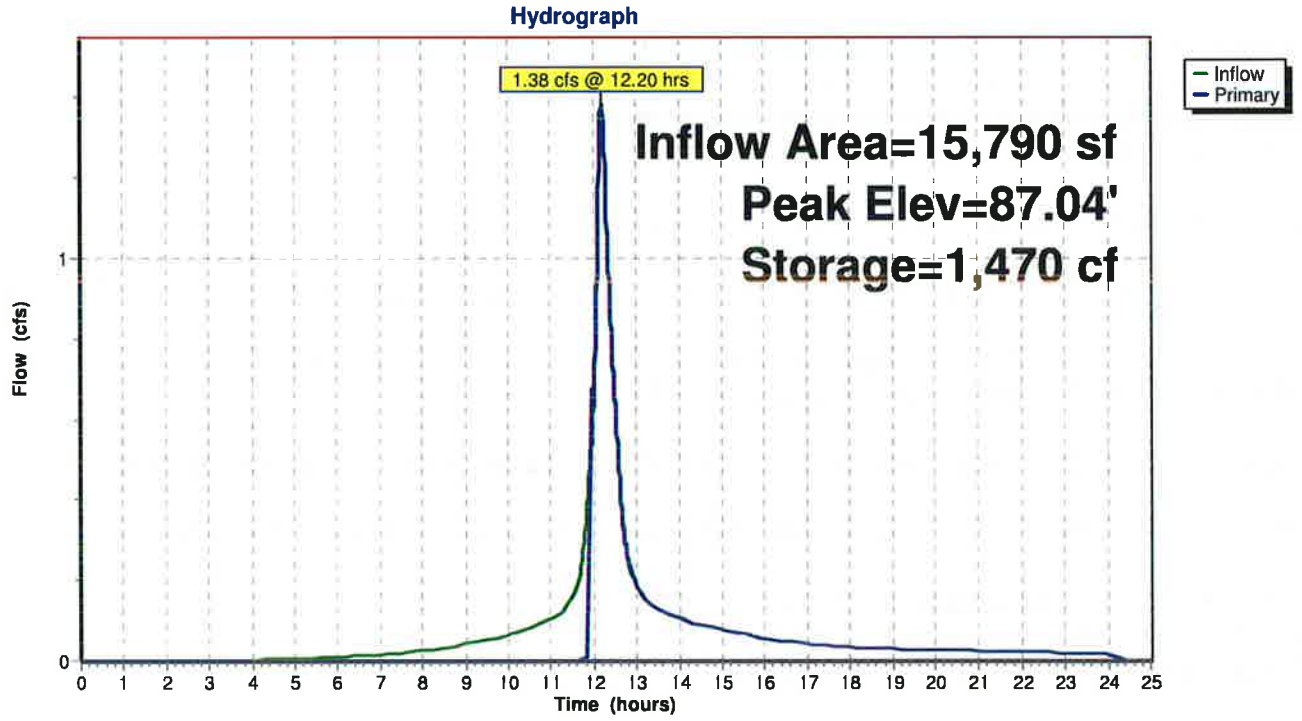
2,353.1 cf Field - 856.9 cf Chambers = 1,496.3 cf Stone x 40.0% Voids = 598.5 cf Stone Storage

Chamber Storage + Stone Storage = 1,455.4 cf = 0.033 af
Overall Storage Efficiency = 61.8%
Overall System Size = 59.50' x 11.17' x 3.54'

16 Chambers
87.2 cy Field
55.4 cy Stone



Pond CH2: Chambers 2



Stage-Area-Storage for Pond CH2: Chambers 2

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
83.50	0	86.10	1,188
83.55	13	86.15	1,208
83.60	27	86.20	1,227
83.65	40	86.25	1,245
83.70	54	86.30	1,263
83.75	67	86.35	1,279
83.80	81	86.40	1,295
83.85	94	86.45	1,309
83.90	108	86.50	1,323
83.95	121	86.55	1,337
84.00	135	86.60	1,350
84.05	162	86.65	1,364
84.10	189	86.70	1,377
84.15	216	86.75	1,391
84.20	243	86.80	1,404
84.25	270	86.85	1,418
84.30	297	86.90	1,431
84.35	324	86.95	1,445
84.40	351	87.00	1,458
84.45	378	87.05	1,470
84.50	405	87.10	1,470
84.55	431	87.15	1,470
84.60	458	87.20	1,470
84.65	484	87.25	1,470
84.70	511	87.30	1,471
84.75	537	87.35	1,471
84.80	563	87.40	1,471
84.85	589	87.45	1,471
84.90	615	87.50	1,471
84.95	641	87.55	1,472
85.00	667	87.60	1,472
85.05	693	87.65	1,472
85.10	719	87.70	1,472
85.15	744	87.75	1,472
85.20	770	87.80	1,473
85.25	796	87.85	1,473
85.30	821	87.90	1,473
85.35	846	87.95	1,473
85.40	871	88.00	1,473
85.45	895	88.05	1,479
85.50	919	88.10	1,484
85.55	943	88.15	1,484
85.60	967	88.20	1,484
85.65	991	88.25	1,484
85.70	1,014	88.30	1,485
85.75	1,037	88.35	1,485
85.80	1,060	88.40	1,485
85.85	1,082	88.45	1,485
85.90	1,104	88.50	**1,485**
85.95	1,126		
86.00	1,147		
86.05	1,168		

Summary for Pond CH3: Chambers 3

Inflow Area = 7,250 sf,100.00% Impervious, Inflow Depth = 5.22" for 10-Year event
Inflow = 0.89 cfs @ 12.08 hrs, Volume= 3,155 cf
Outflow = 0.89 cfs @ 12.09 hrs, Volume= 2,038 cf, Atten= 0%, Lag= 0.2 min
Primary = 0.89 cfs @ 12.09 hrs, Volume= 2,038 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-25.00 hrs, dt= 0.01 hrs
Peak Elev= 91.11' @ 12.09 hrs Surf.Area= 532 sf Storage= 1,137 cf

Plug-Flow detention time= 201.8 min calculated for 2,037 cf (65% of inflow)
Center-of-Mass det. time= 98.2 min (844.8 - 746.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	87.00'	460 cf	**11.17'W x 45.50'L x 3.54'H Field A** 1,799 cf Overall - 648 cf Embedded = 1,151 cf x 40.0% Voids
#2A	87.50'	648 cf	**Cultec R-330XLHD** x 12 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#3	87.00'	18 cf	**2.00'W x 2.00'L x 4.50'H Junction Box**
#4	90.50'	20 cf	**1.00'W x 1.00'L x 1.00'H dummy storage for oscillation errors** x 20
		1,147 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	90.50'	**8.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.89 cfs @ 12.09 hrs HW=91.11' TW=0.00' (Dynamic Tailwater)
↑—**1=Orifice/Grate** (Orifice Controls 0.89 cfs @ 2.66 fps)

Pond CH3: Chambers 3 - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

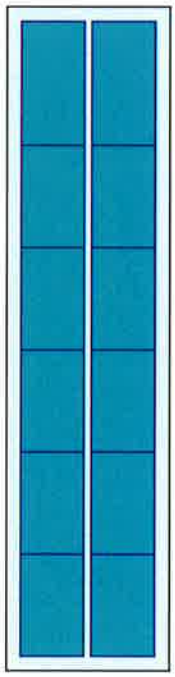
6 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 43.50' Row Length +12.0" End Stone x 2 = 45.50' Base Length
2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

12 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 648.2 cf Chamber Storage

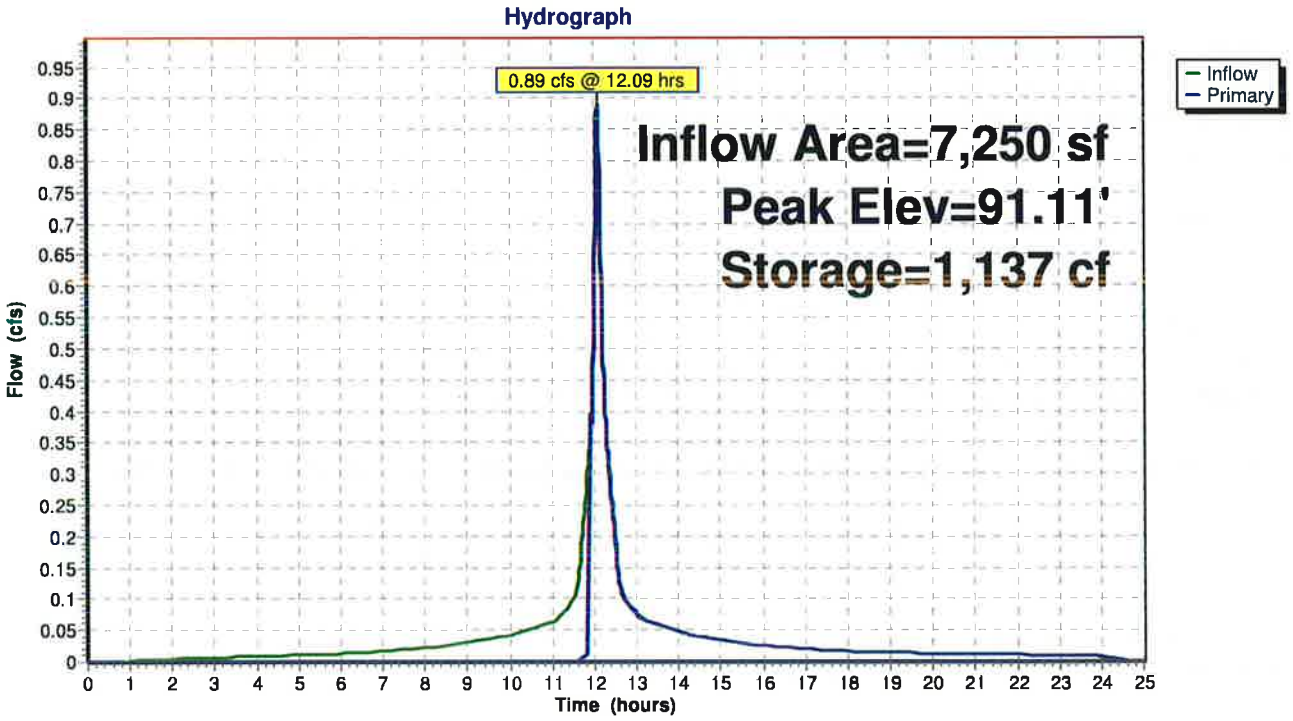
1,799.5 cf Field - 648.2 cf Chambers = 1,151.2 cf Stone x 40.0% Voids = 460.5 cf Stone Storage

Chamber Storage + Stone Storage = 1,108.7 cf = 0.025 af
Overall Storage Efficiency = 61.6%
Overall System Size = 45.50' x 11.17' x 3.54'

12 Chambers
66.6 cy Field
42.6 cy Stone



Pond CH3: Chambers 3



Stage-Area-Storage for Pond CH3: Chambers 3

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
87.00	0	89.60	907
87.05	10	89.65	922
87.10	21	89.70	937
87.15	31	89.75	951
87.20	41	89.80	964
87.25	52	89.85	977
87.30	62	89.90	989
87.35	73	89.95	1,000
87.40	83	90.00	1,011
87.45	93	90.05	1,021
87.50	104	90.10	1,031
87.55	124	90.15	1,042
87.60	145	90.20	1,052
87.65	166	90.25	1,062
87.70	186	90.30	1,073
87.75	207	90.35	1,083
87.80	227	90.40	1,094
87.85	248	90.45	1,104
87.90	268	90.50	1,114
87.95	289	90.55	1,124
88.00	309	90.60	1,125
88.05	330	90.65	1,126
88.10	350	90.70	1,128
88.15	370	90.75	1,129
88.20	390	90.80	1,130
88.25	410	90.85	1,131
88.30	430	90.90	1,132
88.35	450	90.95	1,134
88.40	470	91.00	1,135
88.45	489	91.05	1,136
88.50	509	91.10	1,137
88.55	529	91.15	1,138
88.60	549	91.20	1,140
88.65	568	91.25	1,141
88.70	588	91.30	1,142
88.75	607	91.35	1,143
88.80	627	91.40	1,144
88.85	646	91.45	1,146
88.90	665	91.50	**1,147**
88.95	683		
89.00	702		
89.05	720		
89.10	738		
89.15	756		
89.20	774		
89.25	792		
89.30	809		
89.35	826		
89.40	843		
89.45	860		
89.50	876		
89.55	892		

Summary for Pond CH4: Chambers 4

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=5)

Inflow Area = 14,020 sf,100.00% Impervious, Inflow Depth = 5.22" for 10-Year event
Inflow = 1.72 cfs @ 12.08 hrs, Volume= 6,102 cf
Outflow = 1.72 cfs @ 12.08 hrs, Volume= 4,307 cf, Atten= 0%, Lag= 0.1 min
Primary = 1.72 cfs @ 12.08 hrs, Volume= 4,307 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-25.00 hrs, dt= 0.01 hrs
Peak Elev= 92.38' @ 12.08 hrs Surf.Area= 806 sf Storage= 1,809 cf

Plug-Flow detention time= 179.9 min calculated for 4,305 cf (71% of inflow)
Center-of-Mass det. time= 85.6 min (832.2 - 746.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	87.50'	701 cf	**20.83'W x 38.50'L x 3.54'H Field A** 2,841 cf Overall - 1,088 cf Embedded = 1,753 cf x 40.0% Voids
#2A	88.00'	1,088 cf	**Cultec R-330XLHD** x 20 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 4 rows
#3	87.50'	20 cf	**2.00'W x 2.00'L x 5.00'H Junction Box**
		1,809 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	91.00'	**8.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=1.72 cfs @ 12.08 hrs HW=92.38' TW=0.00' (Dynamic Tailwater)
↑—**1=Orifice/Grate** (Orifice Controls 1.72 cfs @ 4.92 fps)

Pond CH4: Chambers 4 - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 4 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

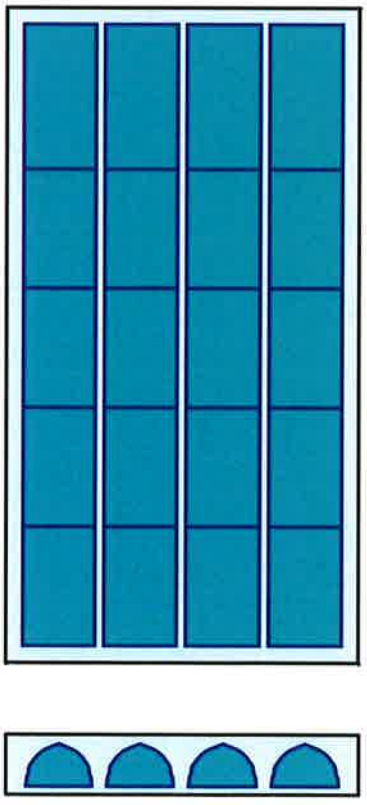
5 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 36.50' Row Length +12.0" End Stone x 2 = 38.50' Base Length
4 Rows x 52.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 20.83' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

20 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 4 Rows = 1,087.8 cf Chamber Storage

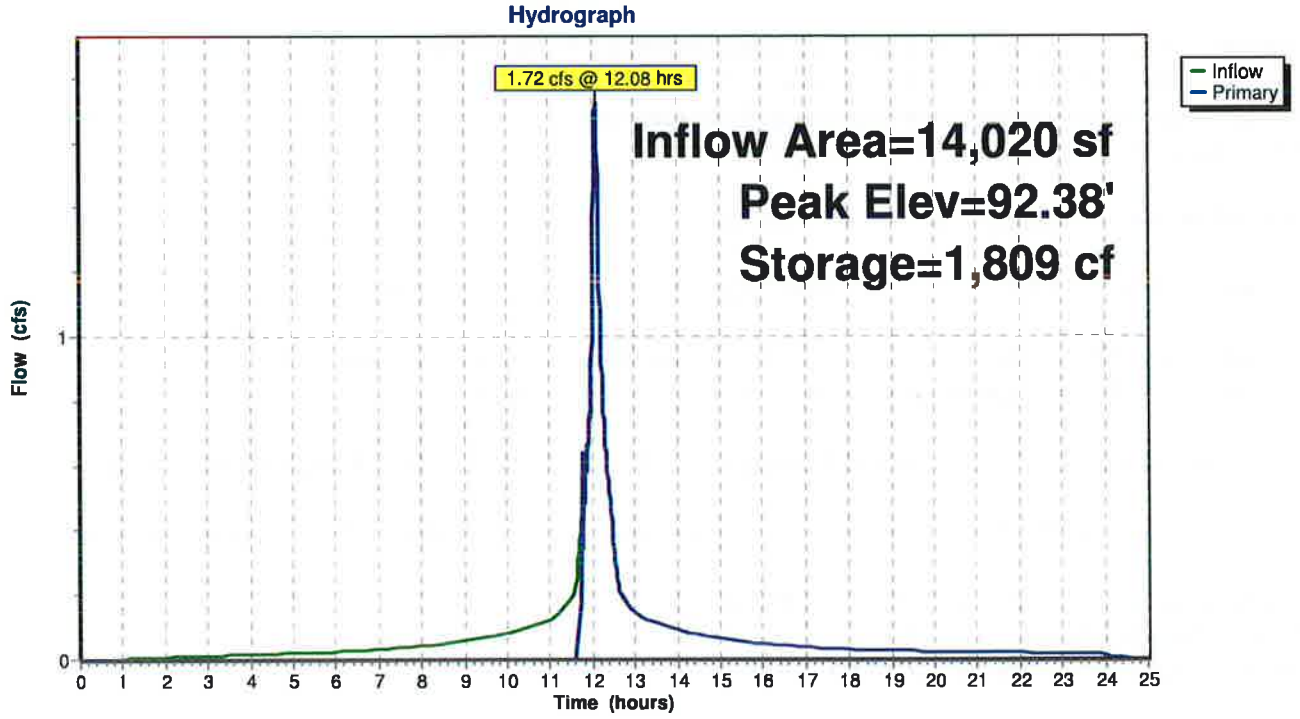
2,840.7 cf Field - 1,087.8 cf Chambers = 1,752.9 cf Stone x 40.0% Voids = 701.1 cf Stone Storage

Chamber Storage + Stone Storage = 1,789.0 cf = 0.041 af
Overall Storage Efficiency = 63.0%
Overall System Size = 38.50' x 20.83' x 3.54'

20 Chambers
105.2 cy Field
64.9 cy Stone



Pond CH4: Chambers 4



Stage-Area-Storage for Pond CH4: Chambers 4

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
87.50	0	90.10	1,463
87.55	16	90.15	1,487
87.60	32	90.20	1,510
87.65	49	90.25	1,532
87.70	65	90.30	1,553
87.75	81	90.35	1,573
87.80	97	90.40	1,592
87.85	114	90.45	1,610
87.90	130	90.50	1,627
87.95	146	90.55	1,643
88.00	162	90.60	1,660
88.05	196	90.65	1,676
88.10	230	90.70	1,692
88.15	263	90.75	1,708
88.20	296	90.80	1,725
88.25	330	90.85	1,741
88.30	363	90.90	1,757
88.35	396	90.95	1,773
88.40	430	91.00	1,790
88.45	463	91.05	1,803
88.50	496	91.10	1,803
88.55	529	91.15	1,804
88.60	562	91.20	1,804
88.65	595	91.25	1,804
88.70	627	91.30	1,804
88.75	659	91.35	1,804
88.80	692	91.40	1,805
88.85	724	91.45	1,805
88.90	756	91.50	1,805
88.95	788	91.55	1,805
89.00	820	91.60	1,805
89.05	852	91.65	1,806
89.10	884	91.70	1,806
89.15	916	91.75	1,806
89.20	948	91.80	1,806
89.25	979	91.85	1,806
89.30	1,010	91.90	1,807
89.35	1,041	91.95	1,807
89.40	1,072	92.00	1,807
89.45	1,102	92.05	1,807
89.50	1,132	92.10	1,807
89.55	1,162	92.15	1,808
89.60	1,191	92.20	1,808
89.65	1,220	92.25	1,808
89.70	1,249	92.30	1,808
89.75	1,277	92.35	1,808
89.80	1,305	92.40	1,809
89.85	1,333	92.45	1,809
89.90	1,360	92.50	**1,809**
89.95	1,386		
90.00	1,412		
90.05	1,438		

Summary for Pond CH5: Chambers 5

[93] Warning: Storage range exceeded by 0.91'

Inflow Area = 8,880 sf, 14.30% Impervious, Inflow Depth = 3.55" for 10-Year event
Inflow = 0.84 cfs @ 12.09 hrs, Volume= 2,629 cf
Outflow = 0.84 cfs @ 12.09 hrs, Volume= 2,367 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.84 cfs @ 12.09 hrs, Volume= 2,367 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-25.00 hrs, dt= 0.01 hrs
Peak Elev= 106.01' @ 12.09 hrs Surf.Area= 219 sf Storage= 272 cf

Plug-Flow detention time= 71.8 min calculated for 2,367 cf (90% of inflow)
Center-of-Mass det. time= 23.3 min (834.4 - 811.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	100.50'	111 cf	**6.33'W x 17.50'L x 3.54'H Field A** 393 cf Overall - 115 cf Embedded = 277 cf x 40.0% Voids
#2A	101.00'	115 cf	**Cultec R-330XLHD** x 2 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 1 rows
#3	100.50'	36 cf	**2.00'W x 2.00'L x 4.50'H Catch Basin x2** x 2
#4	105.00'	10 cf	**1.00'W x 1.00'L x 0.10'H Dummy (for oscillation error)** x 100
		272 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	105.00'	**4.0" Horiz. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.84 cfs @ 12.09 hrs HW=106.01' TW=0.00' (Dynamic Tailwater)
↑—**1=Orifice/Grate** (Orifice Controls 0.84 cfs @ 4.83 fps)

Pond CH5: Chambers 5 - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)
Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf
Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap
Row Length Adjustment= +1.50' x 7.45 sf x 1 rows

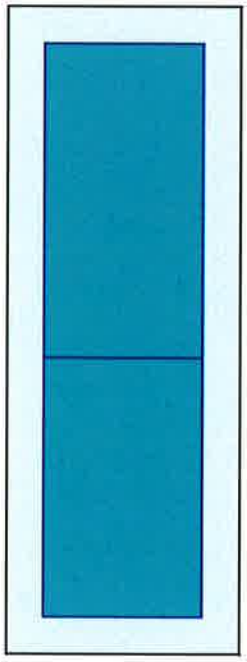
2 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 15.50' Row Length +12.0" End Stone x 2 = 17.50' Base Length
1 Rows x 52.0" Wide + 12.0" Side Stone x 2 = 6.33' Base Width
6.0" Base + 30.5" Chamber Height + 6.0" Cover = 3.54' Field Height

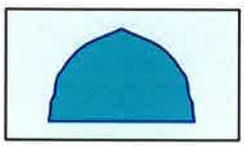
2 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 1 Rows = 115.5 cf Chamber Storage

392.5 cf Field - 115.5 cf Chambers = 277.0 cf Stone x 40.0% Voids = 110.8 cf Stone Storage

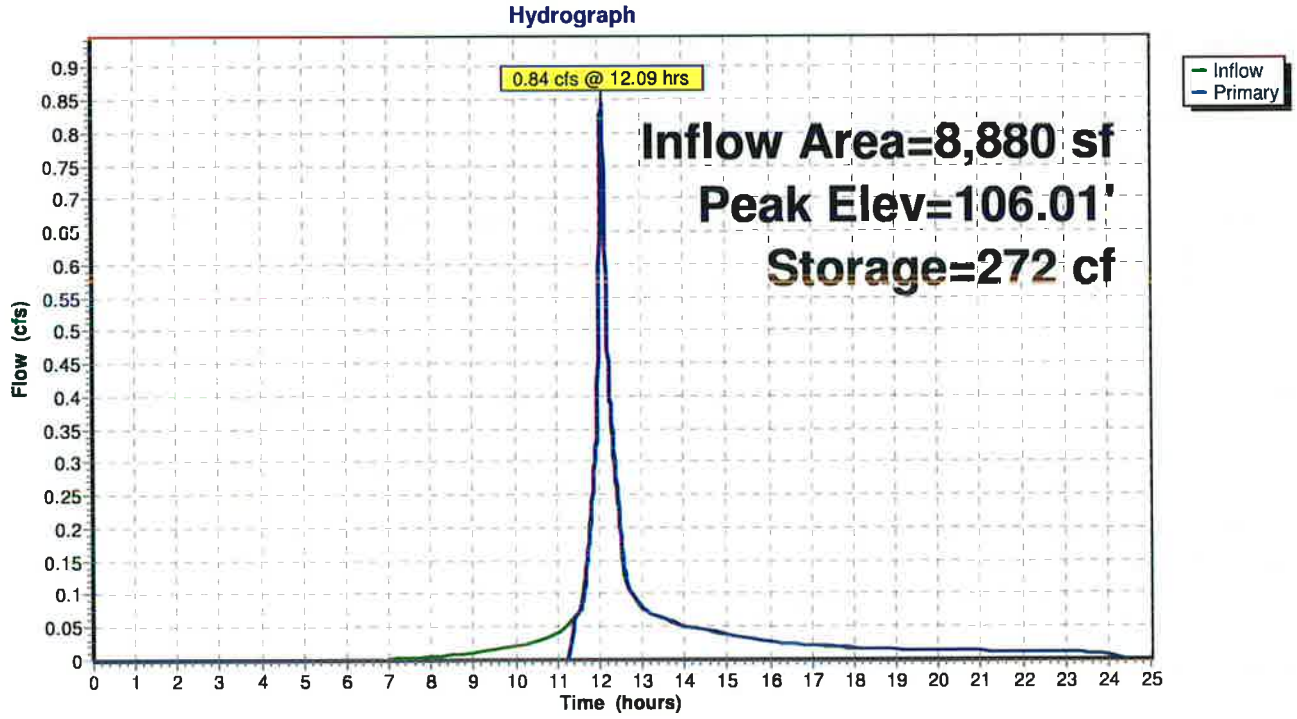
Chamber Storage + Stone Storage = 226.3 cf = 0.005 af
Overall Storage Efficiency = 57.7%
Overall System Size = 17.50' x 6.33' x 3.54'

2 Chambers
14.5 cy Field
10.3 cy Stone





Pond CH5: Chambers 5



Stage-Area-Storage for Pond CH5: Chambers 5

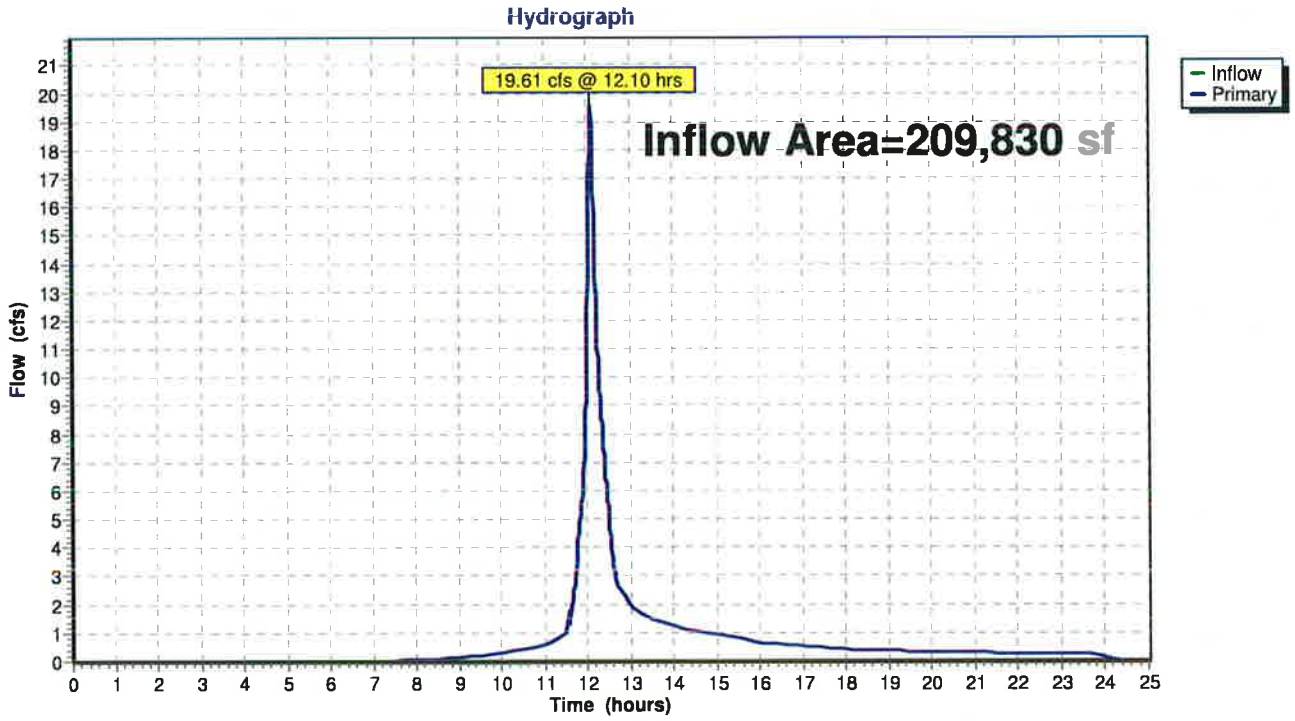
Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
100.50	0	102.58	162	104.66	260
100.54	2	102.62	166	104.70	260
100.58	4	102.66	169	104.74	260
100.62	6	102.70	172	104.78	261
100.66	8	102.74	175	104.82	261
100.70	10	102.78	178	104.86	261
100.74	13	102.82	181	104.90	262
100.78	15	102.86	184	104.94	262
100.82	17	102.90	187	104.98	262
100.86	19	102.94	190	105.02	264
100.90	21	102.98	193	105.06	268
100.94	23	103.02	196	105.10	**272**
100.98	25	103.06	199	105.14	**272**
101.02	28	103.10	202	105.18	272
101.06	32	103.14	204	105.22	272
101.10	35	103.18	207	105.26	272
101.14	39	103.22	210	105.30	272
101.18	42	103.26	212	105.34	272
101.22	46	103.30	215	105.38	272
101.26	49	103.34	217	105.42	272
101.30	53	103.38	220	105.46	272
101.34	56	103.42	222	105.50	272
101.38	60	103.46	224	105.54	272
101.42	63	103.50	226	105.58	272
101.46	67	103.54	228	105.62	272
101.50	70	103.58	230	105.66	272
101.54	74	103.62	233	105.70	272
101.58	78	103.66	235	105.74	272
101.62	81	103.70	237	105.78	272
101.66	85	103.74	239	105.82	272
101.70	88	103.78	241	105.86	272
101.74	91	103.82	243	105.90	272
101.78	95	103.86	245	105.94	272
101.82	98	103.90	247	105.98	272
101.86	102	103.94	249	106.02	272
101.90	105	103.98	251		
101.94	109	104.02	254		
101.98	112	104.06	255		
102.02	116	104.10	255		
102.06	119	104.14	255		
102.10	122	104.18	256		
102.14	126	104.22	256		
102.18	129	104.26	256		
102.22	133	104.30	257		
102.26	136	104.34	257		
102.30	139	104.38	257		
102.34	143	104.42	258		
102.38	146	104.46	258		
102.42	149	104.50	258		
102.46	153	104.54	259		
102.50	156	104.58	259		
102.54	159	104.62	259		

Summary for Link A: Lake Shoreline

Inflow Area = 209,830 sf, 25.87% Impervious, Inflow Depth > 3.43" for 10-Year event
Inflow = 19.61 cfs @ 12.10 hrs, Volume= 60,028 cf
Primary = 19.61 cfs @ 12.10 hrs, Volume= 60,028 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-25.00 hrs, dt= 0.01 hrs

Link A: Lake Shoreline

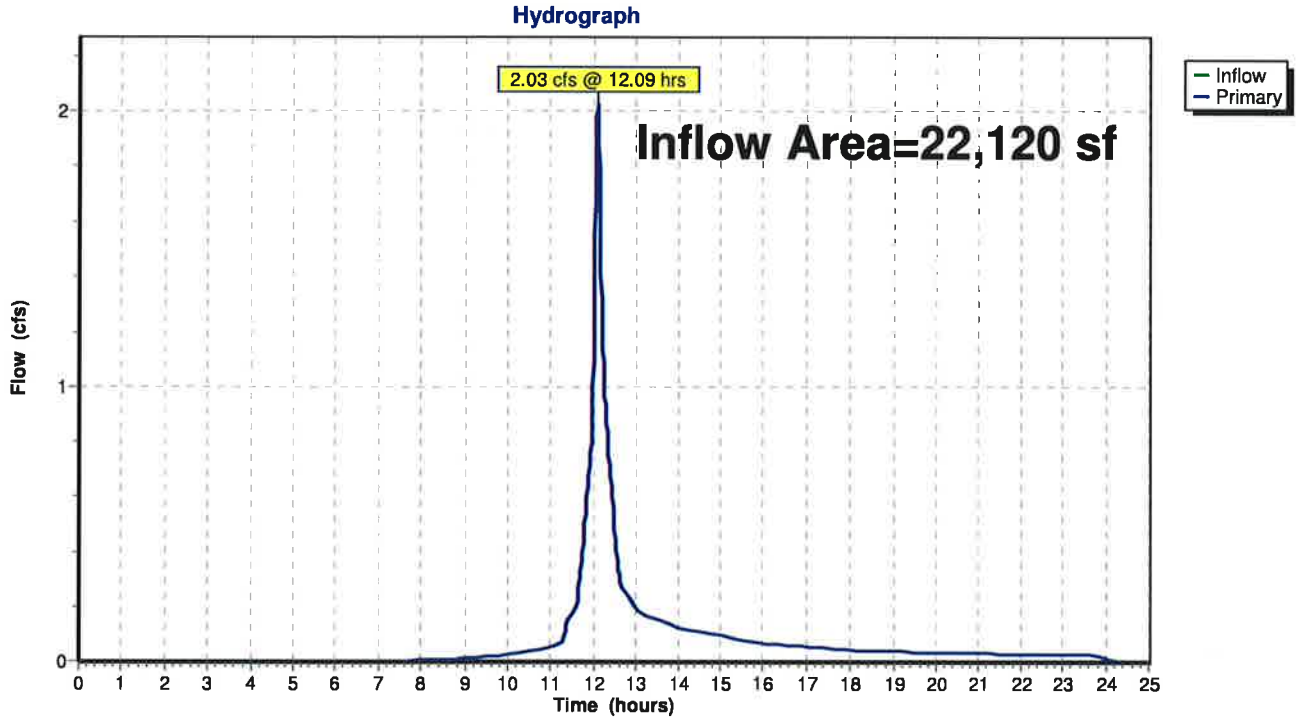


Summary for Link C: Street

Inflow Area = 22,120 sf, 6.74% Impervious, Inflow Depth = 3.28" for 10-Year event
Inflow = 2.03 cfs @ 12.09 hrs, Volume= 6,038 cf
Primary = 2.03 cfs @ 12.09 hrs, Volume= 6,038 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-25.00 hrs, dt= 0.01 hrs

Link C: Street

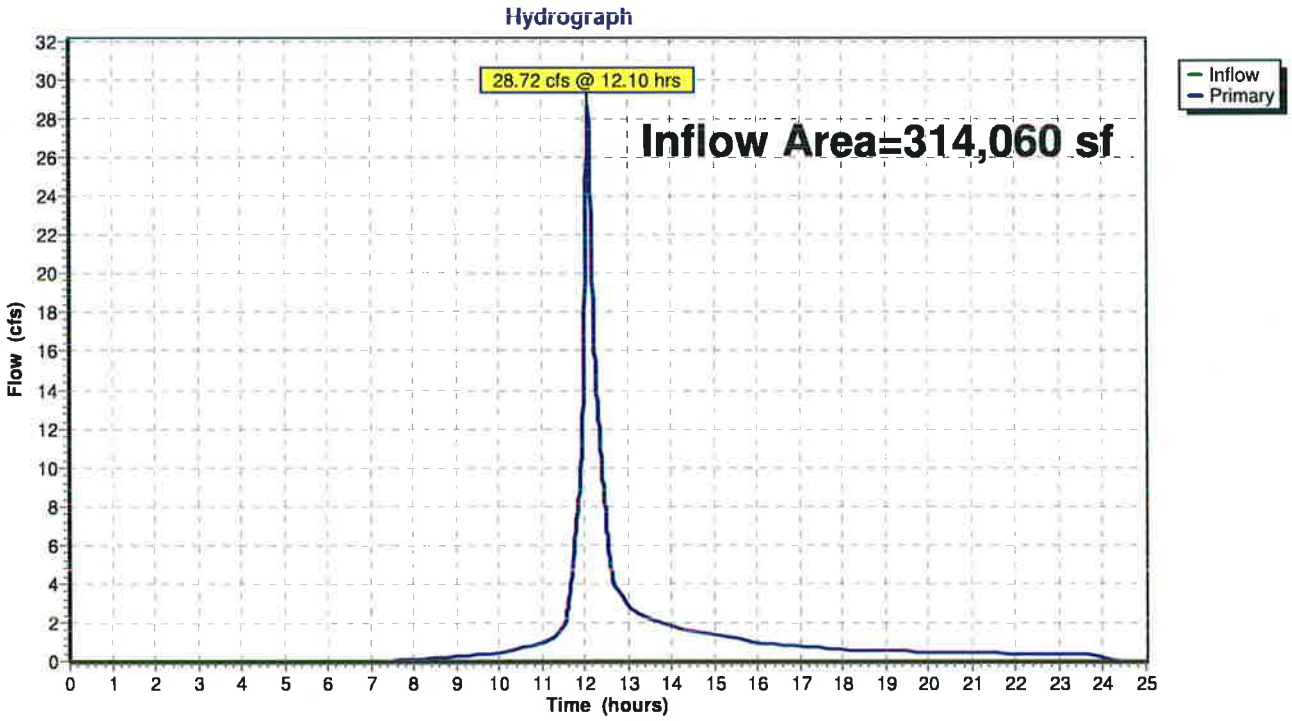


Summary for Link Z: Converse Lake

Inflow Area = 314,060 sf, 18.33% Impervious, Inflow Depth = 3.40" for 10-Year event
Inflow = 28.72 cfs @ 12.10 hrs, Volume= 88,885 cf
Primary = 28.72 cfs @ 12.10 hrs, Volume= 88,885 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-25.00 hrs, dt= 0.01 hrs

Link Z: Converse Lake



Appendix "D"

Operations & Maintenance Plan

Operation & Maintenance Plan

45 Hurlingham Drive, North Castle, NY
February 8, 2021

Scope:

The purpose of the Operations and Maintenance Plan is to ensure that the existing and proposed stormwater components installed at 45 Hurlingham Drive 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. Drainage Outfalls/Splash Pads/Scour Holes/Level Spreaders:

a. All outfalls shall be completely cleaned of accumulated debris and sediments at the completion of construction. Any repairs to outlet protection material (rip rap) shall be performed.
b. For the first year, outfalls shall be inspected on a quarterly basis.
c. Any accumulated debris shall be removed and any repairs made to the outfalls 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 erosion shall be promptly repaired and the cause of the erosion shall be identified and corrected.
g. Any additional maintenance required per the manufacturer's specifications shall also be completed.

5. Drywells and Infiltration Systems:

a. All drywells/infiltrators shall be completely cleaned of accumulated debris and sediments upon the completion of construction.
b. For the first year, the drywells/infiltrators shall be inspected on a quarterly basis.
c. Any accumulated debris within the drywells/infiltrators shall be removed and any repairs made to the units as required.
d. From the second year onward, visual inspection 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 units shall be removed and repairs made as required.
f. Any additional maintenance required per the manufacturer's specifications shall also be completed.

6. 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 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.

Operation & Maintenance Log (Page 1 of 3)

45 Hurlingham Drive, North Castle, NY
February 8, 2021

Type of Inspection: ☐ Spring ☐ Fall ☐ Other

Inspector's Name: _____ Date of Inspection: _____

Affiliation: _____ Phone #: _____

Catch Basins & Drainage Inlets:

- Has accumulated debris been removed from grates? ☐ Yes ☐ No ☐ N/A
- Do any basins require additional repair? (identify below): ☐ Yes ☐ No ☐ N/A
- Have sumps been cleaned of sediment? ☐ Yes ☐ No ☐ N/A

Notes:

Storm Drainage Piping and Manholes/Junction Boxes:

- Has accumulated debris been removed? ☐ Yes ☐ No ☐ N/A
- Do any manholes require additional repair? (identify below): ☐ Yes ☐ No ☐ N/A
- Is there any evidence of stormwater piping failure? ☐ Yes ☐ No ☐ N/A
- Has a comprehensive video inspection been completed? ☐ Yes ☐ No ☐ N/A

Notes:

Stormwater Control Structures:

- Has accumulated debris been removed? ☐ Yes ☐ No ☐ N/A
- Are any repairs required? (identify below): ☐ Yes ☐ No ☐ N/A
- Have orifices and weirs been cleaned of debris? ☐ Yes ☐ No ☐ N/A

Notes:

Operation & Maintenance Log (Page 2 of 3)

45 Hurlingham Drive, North Castle, NY
February 8, 2021

Drainage Outfalls/Splash Pads/Scour Holes/Level Spreaders:

- Have all drainage outlets been cleared of debris? ☐ Yes ☐ No ☐ N/A
- Have all outlet protections been inspected/repaired? ☐ Yes ☐ No ☐ N/A
- Have all erosion issues been repaired? ☐ Yes ☐ No ☐ N/A

Notes:

Drywells and Infiltration Systems:

- Have units been cleared of debris/sediments? ☐ Yes ☐ No ☐ N/A
- Do units require additional repair? (identify below): ☐ Yes ☐ No ☐ N/A
- Has draining times of system been verified? ☐ Yes ☐ No ☐ N/A

Notes:

Roof Gutters:

- Has accumulated debris been removed from gutters? ☐ Yes ☐ No ☐ N/A
- Do any gutters require additional repair? (identify below): ☐ Yes ☐ No ☐ N/A

Notes:

Operation & Maintenance Log (Page 3 of 3)

45 Hurlingham Drive, North Castle, NY
February 8, 2021

Please make additional notes/observations and particular concerns below. Also record any additional maintenance that has been performed:

Signature of Inspector: *Date:*

PRELIMINARY DRAWINGS FOR

PROPOSED RESIDENCE

NORTH CASTLE - NEW YORK

GREENWICH - CONNECTICUT

DATE: 06/01/2021

TASOS KOKORIS AIA, LEED AP - REGISTERED ARCHITECT - WESTPORT, CT - (914) 434-2226

BASEMENT FLOOR PLAN

PROPOSED LAKE HOUSE IN GREENWICH, CT

DATE: 06/01/2021 - TASOS KOKORIS AIA, LEED AP - SCALE: 1".= 16'

LOWER BACKYARD

PLANTED TERRACE

UPPER BACKYARD

OPEN BBQ PAVILION
40-FT DIAMETER
4 X 16 TABLE

DN

DN

DN

FIRE PIT

UP

POOL STOR.

POOL STOR.

POOL SERV. ENTR.

20 X 50 POOL

SERVICE BATH 6X8

42"W DOOR

UP

SERVICE STAIR

42"W DOOR

LAYOUT TBD

UP

STORAGE 5 X 12

LAYOUT TBD

ELEV.

SPA 6 X 12

POOL ROOM 38 X 80

OUTDOOR FURNITURE & BBQ STORAGE 16 x 18

BATH 8 X 14

W D

LAUND. 8 X 8

CLEAN'G STOR

BENCH

CHANG. 4 X 7

ALCOVE 8 X 12

UP

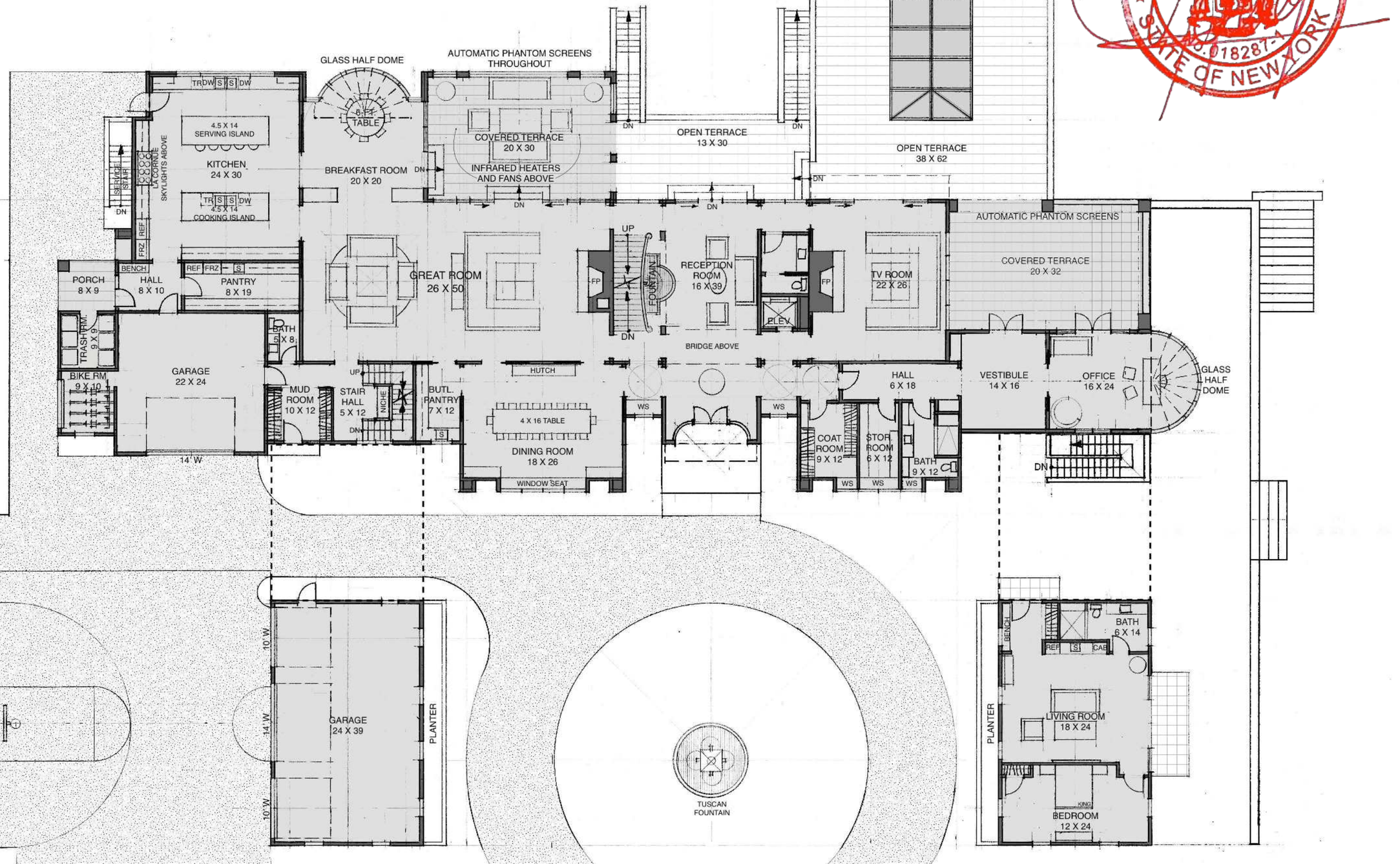
MECHANICAL ROOM

REGISTERED ARCHITECT
TASOS KOKORIS
No. 018287
STATE OF NEW YORK

GROUND LEVEL FLOOR PLAN

PROPOSED LAKE HOUSE IN GREENWICH, CT

DATE: 06/01/2021 - TASOS KOKORIS AIA, LEED AP - SCALE: 1".= 16'

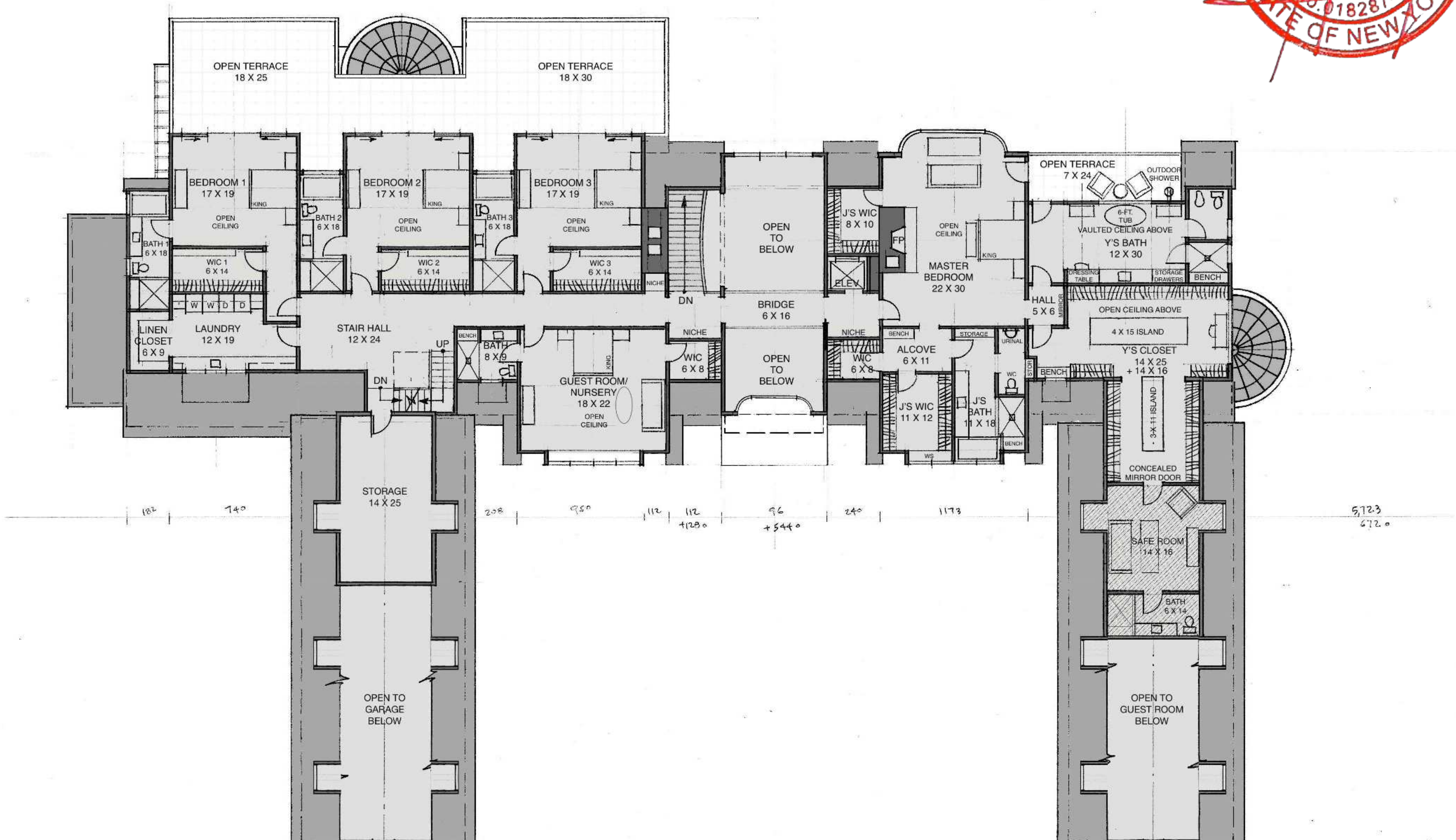


REGISTERED ARCHITECT
ANASTASIOS KOKORIS
018287
STATE OF NEW YORK

BEDROOM LEVEL FLOOR PLAN

PROPOSED LAKE HOUSE IN GREENWICH, CT

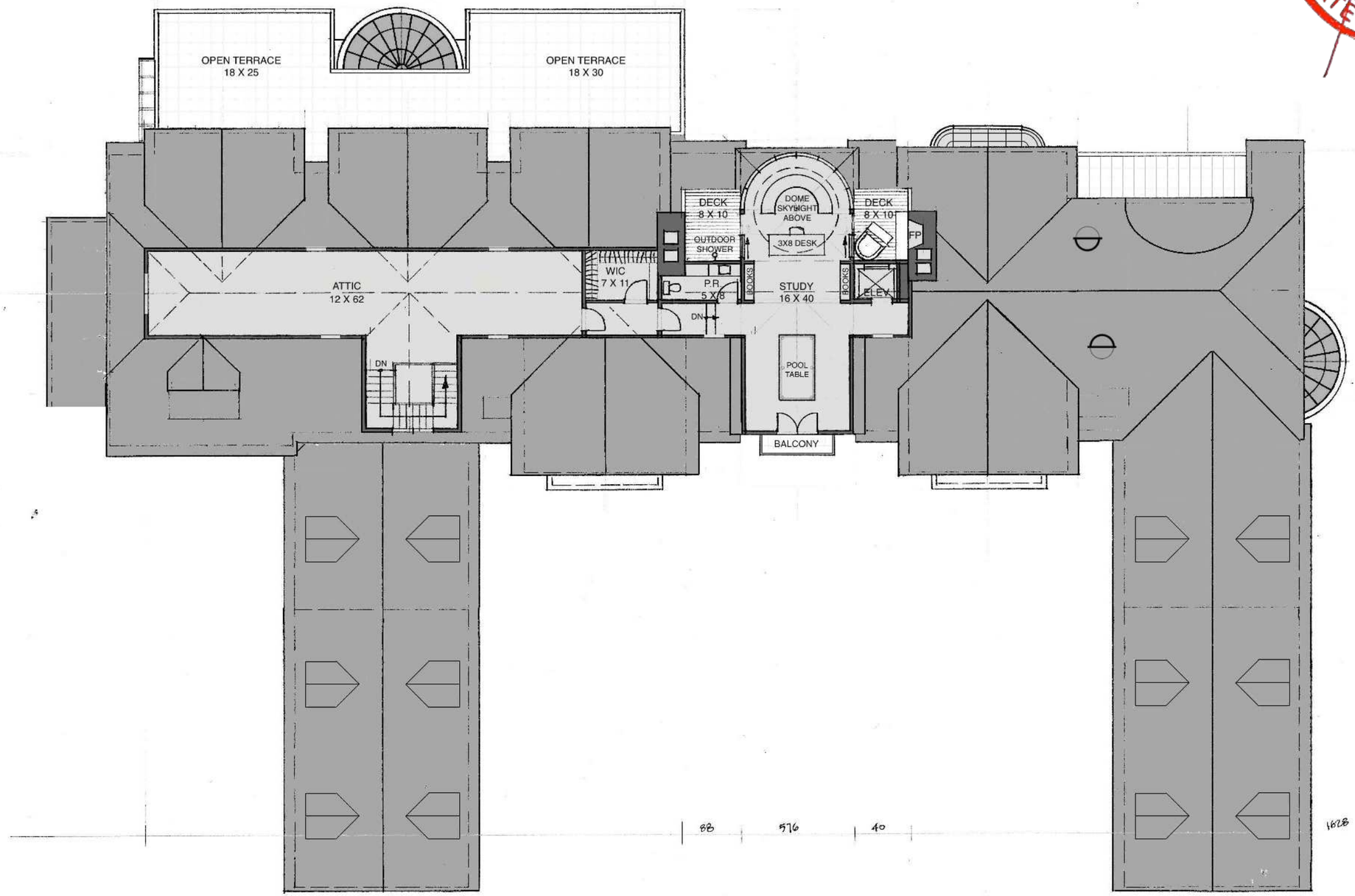
DATE: 06/01/2021 - TASOS KOKORIS AIA, LEED AP - SCALE: 1" = 16'



CLOUD LEVEL PLAN

PROPOSED LAKE HOUSE IN GREENWICH, CT

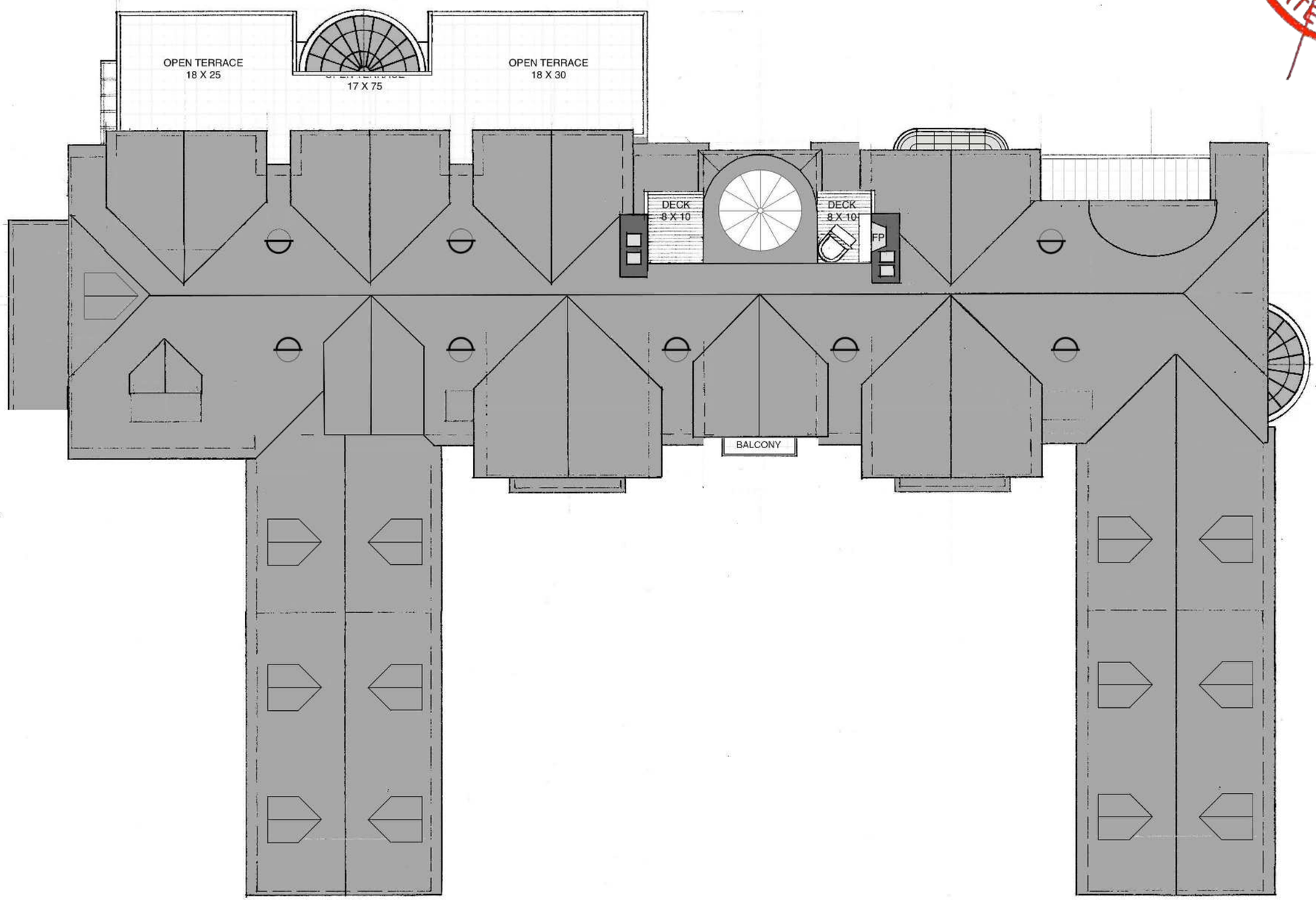
DATE: 06/01/2021 - TASOS KOKORIS AIA, LEED AP - SCALE: 1" = 16'



ROOF PLAN

PROPOSED LAKE HOUSE IN GREENWICH, CT

DATE: 06/01/2021 - TASOS KOKORIS AIA, LEED AP - SCALE: 1".= 16'



REGISTERED ARCHITECT
ANASTASIOS KOKORIS
NO. 018281-1
STATE OF NEW YORK

EAST ELEVATION

PROPOSED LAKE HOUSE IN GREENWICH, CT

DATE: 06/01/2021 - TASOS KOKORIS AIA, LEED AP - SCALE: 1" = 16'

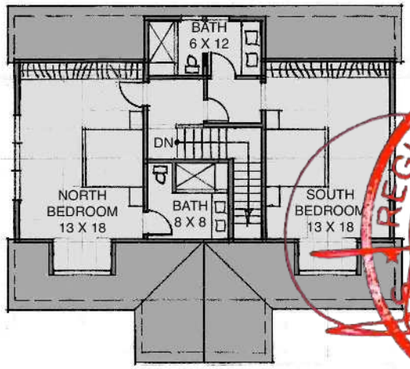
WEST (LAKE) ELEVATION

PROPOSED LAKE HOUSE IN GREENWICH, CT

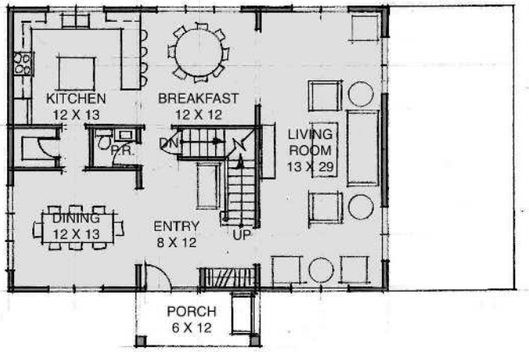
DATE: 06/01/2021 - TASOS KOKORIS AIA, LEED AP - SCALE: 1" = 16'

EAST ELEVATION

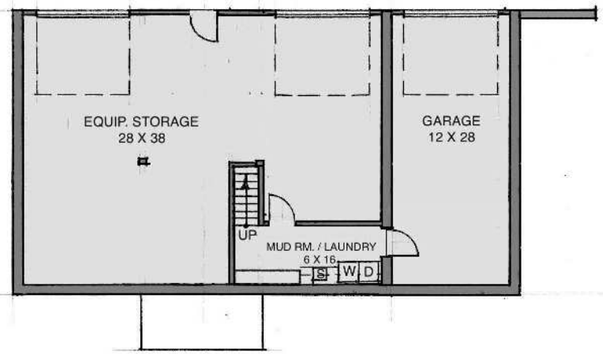
NORTH ELEVATION



SECOND FLOOR PLAN



FIRST FLOOR PLAN



BASEMENT PLAN

WEST (FRONT) ELEVATION

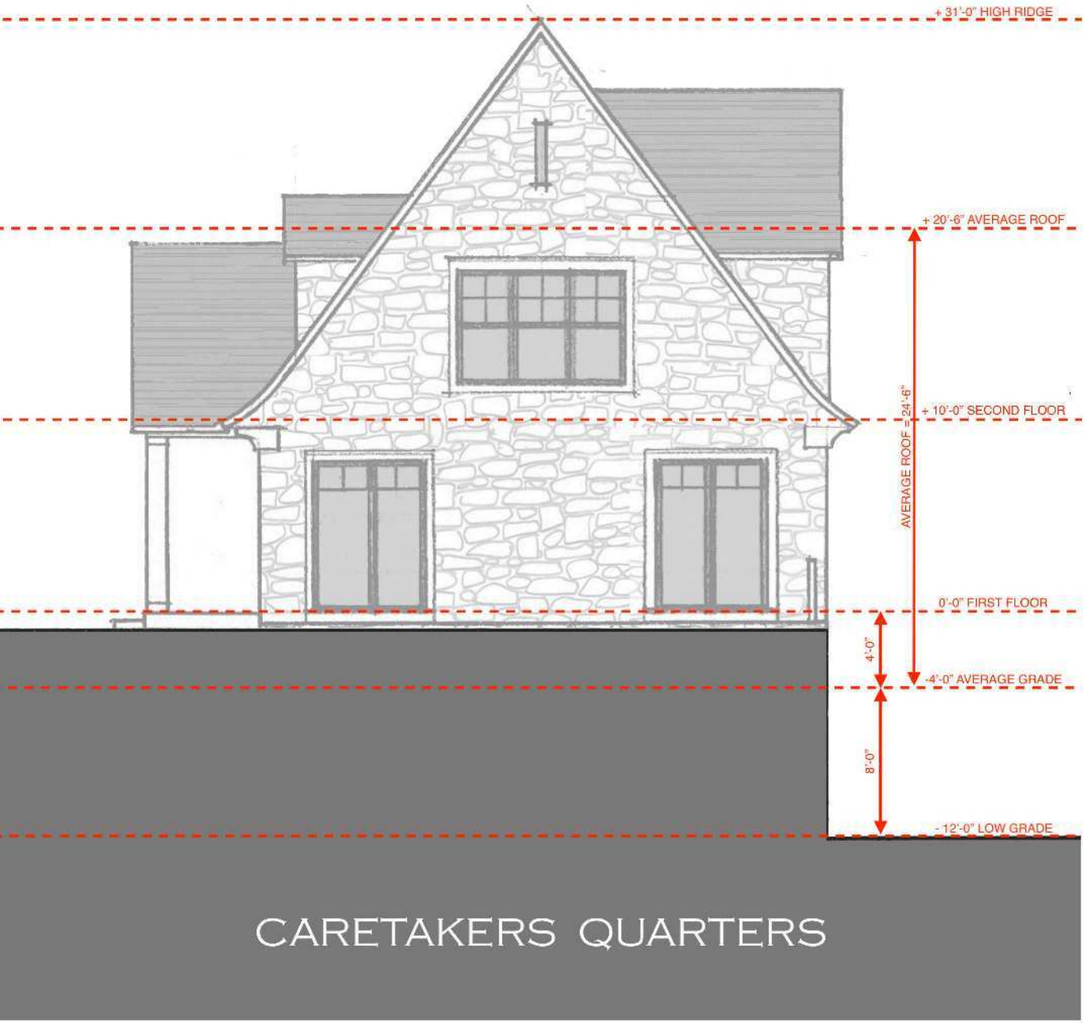
SOUTH ELEVATION

REGISTERED ARCHITECT
ANASTASIOS KOKORIS
NO. 018281
STATE OF NEW YORK

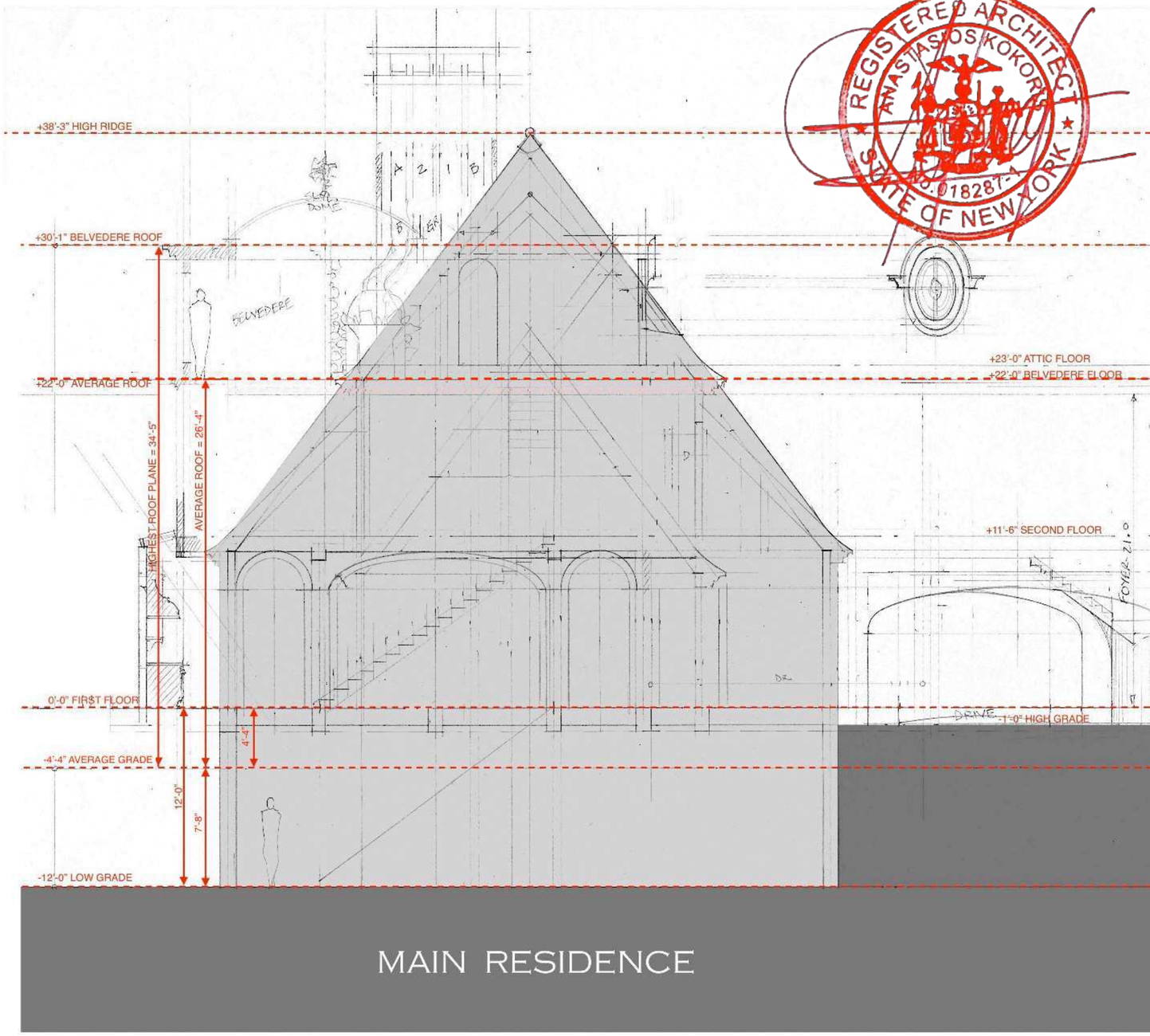
CARETAKER'S COTTAGE

PROPOSED LAKE HOUSE IN GREENWICH, CT

DATE: 06/01/2021 - TASOS KOKORIS AIA, LEED AP - SCALE: 1".= 16'



CARETAKERS QUARTERS



MAIN RESIDENCE

REGISTERED ARCHITECT
TASOS KOKORIS
018281
STATE OF NEW YORK

BUILDING SECTIONS

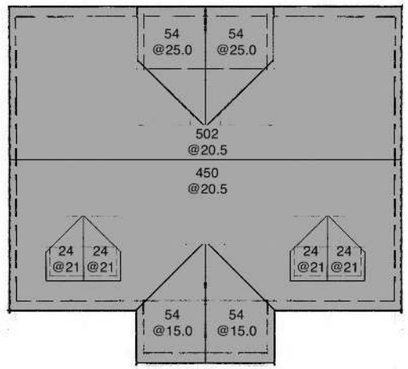
PROPOSED LAKE HOUSE IN GREENWICH, CT

DATE: 06/01/2021 - TASOS KOKORIS AIA, LEED AP - SCALE: 1" = 8'

AVERAGE ROOF CALCULATIONS

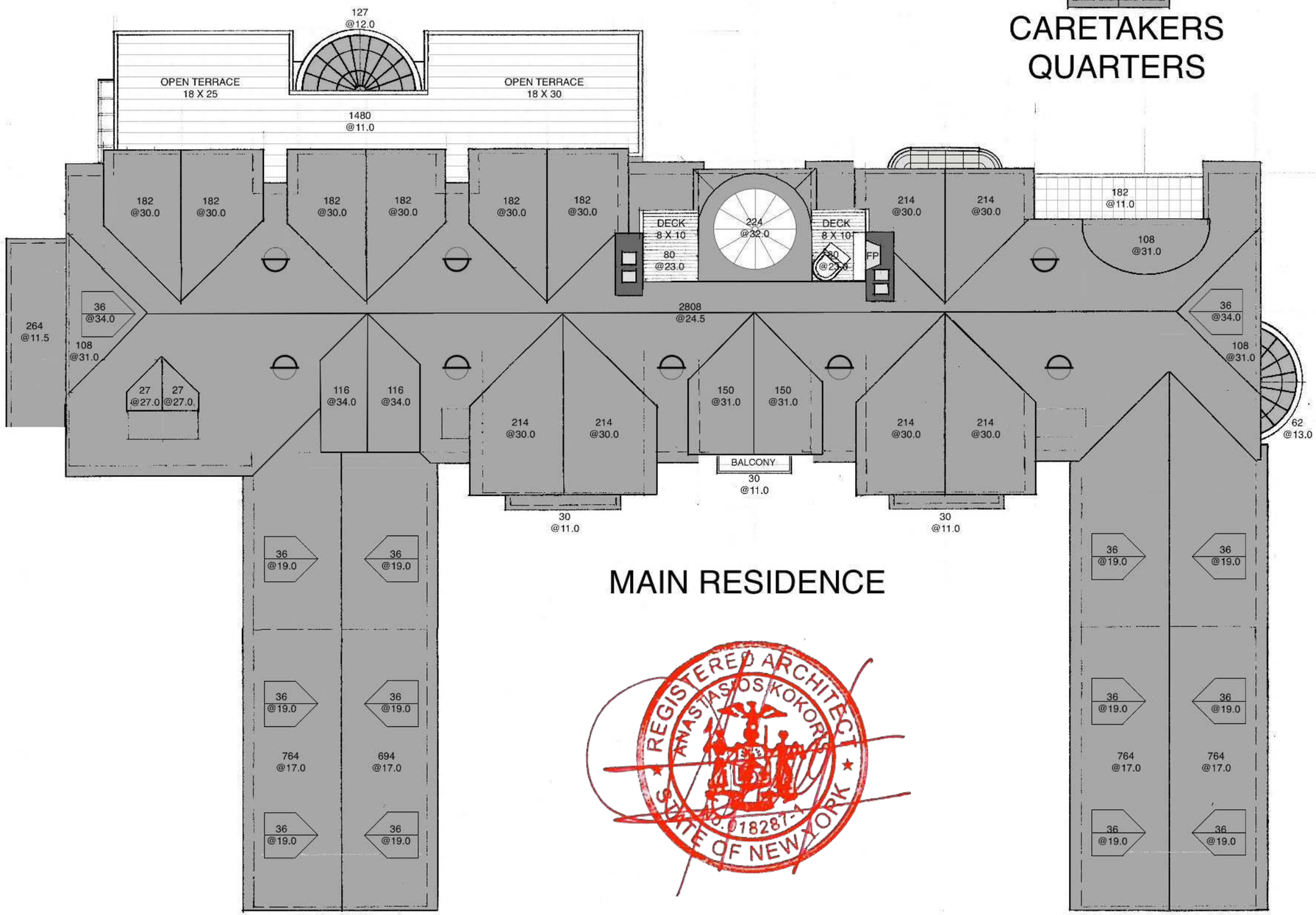
PROPOSED LAKE HOUSE IN GREENWICH, CT

DATE: 06/01/2021 - TASOS KOKORIS AIA, LEED AP - SCALE: 1" = 16'



CARETAKERS QUARTERS

CARETAKERS QUARTERS AVERAGE ROOF FROM F.F. EL. = 0'-0"			
ROOF AREA	NOTE	AV. HEIGHT	VALUE
54	EAST DORMER	25	1350
54	EAST DORMER	25	1350
502	EAST ROOF	20.5	10291
450	WEST ROOF	20.5	9225
96	WEST DORMERS	21	2016
54	WEST PORCH	15	810
54	WEST PORCH	15	810
TOTAL:			TOTAL:
1264			25852
AVERAGE ROOF: 25,852 / 1264 = 20.5 FT			



MAIN RESIDENCE

MAIN RESIDENCE AVERAGE ROOF FROM F.F. EL. = 0'-0"			
ROOF AREA (SF)	NOTE	AV. HEIGHT	VALUE
2808	MAIN	24.5	68796
764	GARAGE	17	12988
694	GARAGE	17	11798
764	GARAGE	17	12988
764	GARAGE	17	12988
432	12 DORMERS	19	8208
30	BAY	11	330
30	BALCONY	11	330
30	BAY	11	330
62	STUDY DOME	13	806
27	DORMER	27	729
27	DORMER	27	729
116	STAIR	34	3944
116	STAIR	34	3944
214	EAST GABLE	30	6420
214	EAST GABLE	30	6420
150	EAST GABLE	31	4650
150	EAST GABLE	31	4650
214	EAST GABLE	30	6420
214	EAST GABLE	30	6420
264	SOUTH ROOF	11.5	3036
108	SOUTH HIP	31	4464
36	DORMER	34	1224
108	NORTH HIP	31	4464
36	DORMER	34	1224
182	WEST GABLE	30	5460
182	WEST GABLE	30	5460
182	WEST GABLE	30	5460
182	WEST GABLE	30	5460
182	WEST GABLE	30	5460
182	WEST GABLE	30	5460
80	DECK	23	1840
224	OFFICE	32	7168
80	DECK	23	1840
214	WEST GABLE	30	6420
214	WEST GABLE	30	6420
108	VAULT	31	3348
182	DECK	11	2002
1480	UPPER TERRACE	11	16280
127	BFST ROOF	12	1524
TOTAL:			TOTAL:
12,173			267902
AVERAGE ROOF: 267,902 / 12,173 = 22.00 FT			

Table of Proposed Mitigation Areas		
Total area of Mitigation required for buffer disturbance = 776 SF (97 ft long by 4 wide path x 2= 776)		
Area	Description	Square Ft.
A	Lake edge with shrubs and forbs	200
B	Lake edge with shrubs and forb	200
D	Woods edge planting mixed understory shrubs & forbs	200
E	Woods edge planting mixed understory shrubs & forbs	200
TOTAL OF MITIGATION AREAS		**800 SF**

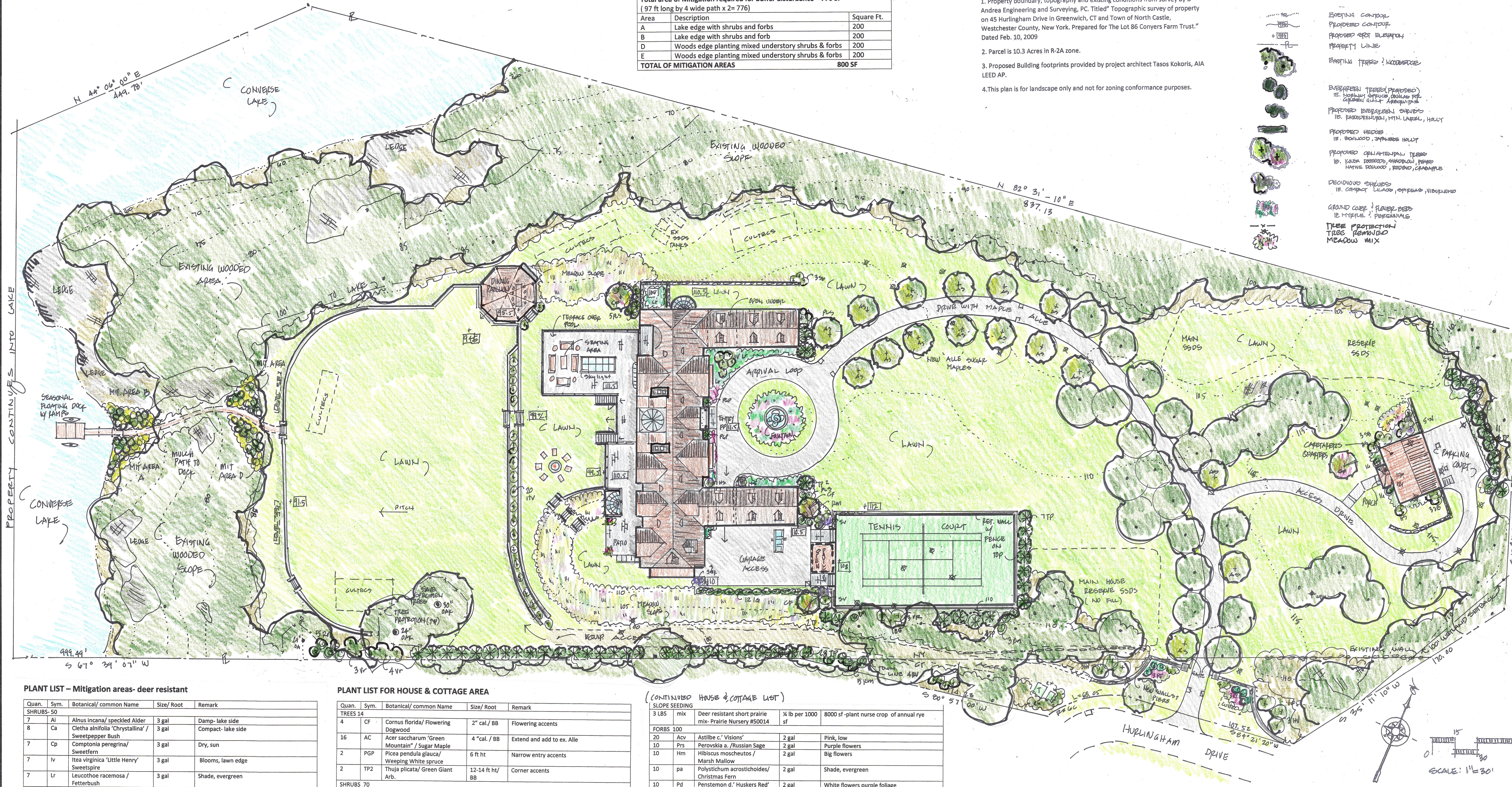
NOTES:

1. Property boundary, topography and existing conditions from survey by D' Andrea Engineering and Surveying, PC. Titled" Topographic survey of property on 45 Hurlingham Drive in Greenwich, CT and Town of North Castle, Westchester County, New York. Prepared for The Lot 86 Conyers Farm Trust." Dated Feb. 10, 2009

2. Parcel is 10.3 Acres in R-2A zone.

3. Proposed Building footprints provided by project architect Tasos Kokoris, AIA LEED AP.

4.This plan is for landscape only and not for zoning conformance purposes.



PLANT LIST – Mitigation areas- deer resistant

Quan.	Sym.	Botanical/ common Name	Size/ Root	Remark
SHRUBS- 50				
7	Ai	Alnus incana/ speckled Alder	3 gal	Damp- lake side
8	Ca	Cletha alnifolia 'Chrystallina' / Sweetpepper Bush	3 gal	Compact- lake side
7	Cp	Comptonia peregrina/ Sweetfern	3 gal	Dry, sun
7	Iv	Itea virginica 'Little Henry' Sweetspire	3 gal	Blooms, lawn edge
7	Lr	Leucothoe racemosa / Fetterbush	3 gal	Shade, evergreen
7	Lb	Lindera benzoin/ spicebush	3 gal	Shade, berries
7	Va	Viburnum acerifolia / Maple leaf Viburnum	3 gal	Shade, flowers & berries
FORBS- 100				
20	oc	Osmunda cinnamomea /Cinnamon Fern	1 gal	damp
10	dm	Dryopteris marginalis/ Wood Fern	1 gal	shade
20	pa	Polystichum acrostichoides/ Christmas Fern	1 gal	shade
10	dp	Dennstaedtia punctilobula / Hayscented Fern	1 gal	Sun
10	cl	Chasmanthium latifolium/ Northern Sea Oats	1 gal	shade
20	pv	Panicum virgatum/ Switchgrass	1 gal	Part shade

PLANT LIST FOR HOUSE & COTTAGE AREA

Quan.	Sym.	Botanical/ common Name	Size/ Root	Remark
TREES 14				
4	CF	Cornus florida/ Flowering Dogwood	2" cal./ BB	Flowering accents
16	AC	Acer saccharum 'Green Mountain" / Sugar Maple	4 "cal. / BB	Extend and add to ex. Alle
2	PGP	Picea pendula glauca/ Weeping White spruce	6 ft ht	Narrow entry accents
2	TP2	Thuja plicata/ Green Giant Arb.	12-14 ft ht/ BB	Corner accents
SHRUBS 70				
5	Ca	Cletha alnifolia 'Chrystallina' / Sweetpepper Bush	5 gal	Compact, white flowers
10	Bp	Buddelia ' Pugster'	3 gal	dwarf
12	Ig	Ilex glabra/ Inkberry	5 gal	evergreen
20	Iv	Itea virginica 'Little Henry' Sweetspire	5 gal	White flowers
4	Hs	Hibiscus syracius / Rose of Sharon	4 ft ht/ BB	Late flowers
20	Lr	Leucothoe racemosa / Fetterbush	5 gal	Low evergreen
6	Pj	Pieris japonica/ Andromeda	5 gal	Evergreen
12	Pls	Prunus l. Schipkaensis/ Schip Laurel	4-5 ft ht	Evergreen, upright
9	Sb	Spirea bumalda 'A.Waterer'	5 gal	Pink flowers
5	St	Spirea thunbergia' Ogon'	5 gal	White with gold foliage
12	Sv	Syringa vulgaris/ Common Lilac	5-6 ft / BB	Flowers large bush
5	Smk	Syringa x 'Miss Kim'	5 gal	Small with purple blooms

(CONTINUED HOUSE & COTTAGE LIST)

SLOPE SEEDING				
3 LBS	mix	Deer resistant short prairie mix- Prairie Nursery #50014	¼ lb per 1000 sf	8000 sf -plant nurse crop of annual rye
FORBS 100				
20	Acv	Astilbe c.' Visions'	2 gal	Pink, low
10	Prs	Perovskia a. /Russian Sage	2 gal	Purple flowers
10	Hm	Hibiscus moscheutos / Marsh Mallow	2 gal	Big flowers
10	pa	Polystichum acrostichoides/ Christmas Fern	2 gal	Shade, evergreen
10	Pd	Penstemon d.' Huskers Red'	2 gal	White flowers purple foliage
10	cl	Chasmanthium latifolium/ Northern Sea Oats	2 gal	shade
20	pv	Panicum virgatum' Shenandoah'/ Switchgrass	2 gal	Part shade
10	Pp	Peonia l./ Peony	2 gal	spring

PLANT LIST FOR SCREENING

Quan.	Sym.	Botanical/ common Name	Size/ Root	Remark
TREES				
52	TP	Thuja plicata / Green Giant Arborvitae	10-12' ht.	Deer resistant fast growing
SHRUBS				
17	Rm	Rhododendron maximum/ Rosebay	4-5' /BB	Shade tolerant
14	Vr	Viburnum rhytidophyllum / Maple leaf Viburnum	7 gal	Deer resistant semi evergreen

REGISTERED LANDSCAPE ARCHITECT
VICTORIA P. LANDAU
001548
STATE OF NEW YORK

DATE	SHEET	REVISION NOTES
6.1.2021		Relo house

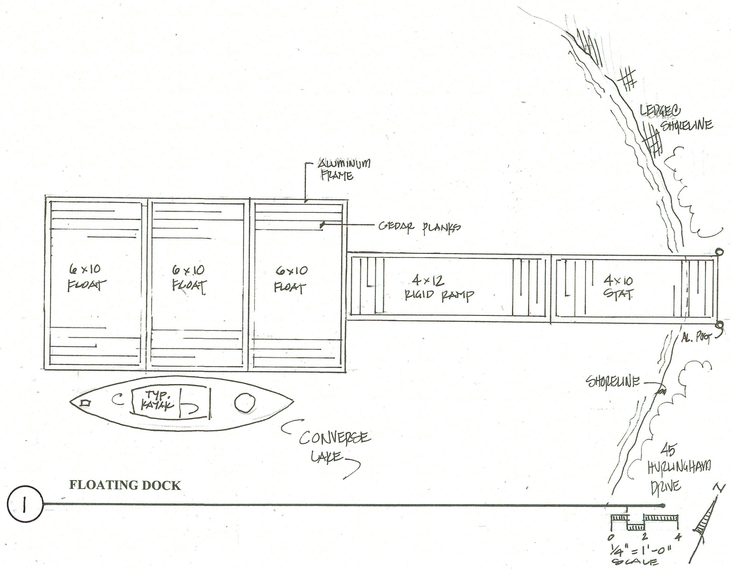
SITE PLAN

PROPOSED RESIDENCE
45 HURLINGHAM DRIVE
NORTH CASTLE, NY

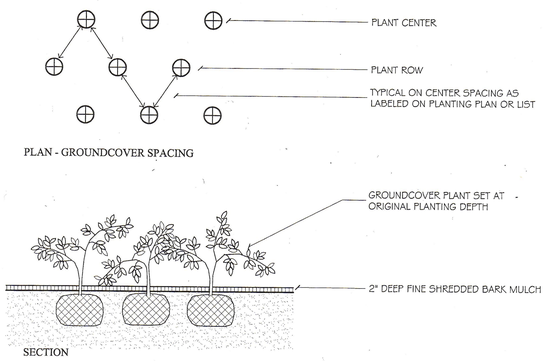
JAY FAIN & ASSOCIATES, LLC
Environmental Consulting Services
134 Round Hill Road Fairfield, CT 06824
203-254-3156 - fax: 203-254-3167

Date: 2.8.2021

Sheet No.: L.1



1 FLOATING DOCK



2 GROUNDCOVER PLANTING

NTS

PLANT NOTES

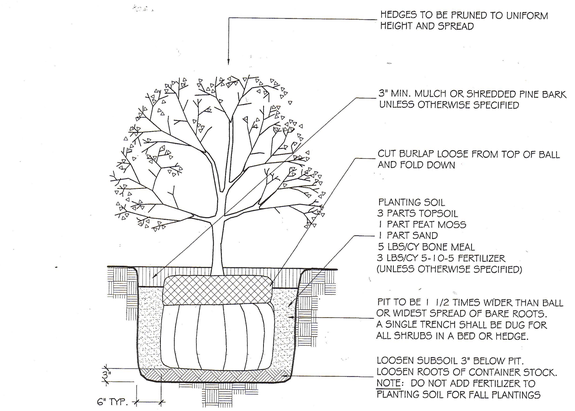
1. Verify the location of all utility lines prior to any planting pit excavation. contact 'Dig Safely New York' at 811 or 1-800-962-7962 at least 72-hours prior to the commencement of any digging operations. Coordinate with property manager regarding other underground systems.
2. Notify the landscape architect at least five (5) days in advance of plant material delivery to the site.
3. Layout all plant material with the landscape architect prior to plant pit excavation. Set up of all material in beds required for owners and landscape architect's approval prior to planting. See plan for bed and plant layout. If any discrepancy occurs between the quantities called for in the plan, notify the landscape architect prior to bid.
4. All plant material is to conform to the requirements of the standards of the American Association of Nurserymen for extra heavy grade unless otherwise specified, true to name and size. investigate sources of supply and be certain it will be possible to provide all plant materials specified in the quality and quantity required prior to bidding.
5. Any plant required under this contract that is dead, dying not true to name of size as specified or not in satisfactory growth, or having branched or deformed structure due to loss of limbs or branched as determined by the landscape architect, that plant must be removed from the project site and replaced with an approved plant of equal size and species. Plant variety and size substitutions will not be permitted unless proved that the specified plant material is unattainable or cannot meet specification requirements, then the use of the nearest equivalent size or variety will be considered. Plant material larger than specified may be used at no increase in cost. Proposed substitutions must receive the landscape architect's authorization prior to bid and prior to purchase.
6. Stake trees only as necessary to insure stability.
7. All plant materials are to be guaranteed for a period of one year from the date of final acceptance as determined by the landscape architect or project manager.
8. Restore all disturbed or damaged areas resulting from planting operations to original conditions.
9. See plan for tree locations, set up trees for approval from owner and landscape architect prior to installation. Reseed any disturbed turf areas with approved mix and mulch new seed with chopped straw. Provide starter fertilizer in seed mix. Install seeding according to supplier's recommendations.

TREE REMOVAL AT 45 HURLINGHAM DRIVE
North Castle, NY

LIST of TREES 5.27.2021

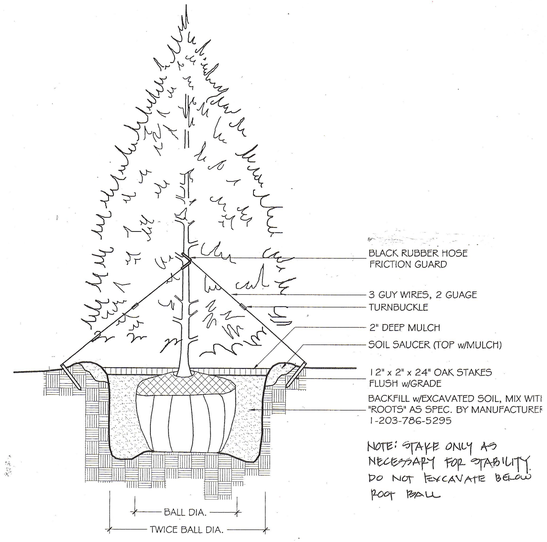
Significant trees = Trees over 24 inch in caliper			
Caliper	Species/ Common Name		
24	Quercus/ Oak		
24	Quercus/ Oak		
24	Quercus/ Oak		
24	Quercus/ Oak		
24	Quercus/ Oak		
28	Quercus/ Oak		
28	Quercus/ Oak		
28	Quercus/ Oak		
30	Quercus/ Oak		
36	Quercus/ Oak		
40	Quercus/ Oak		
Trees less than 24 inch in caliper			
12	Acer saccharum / Sugar Maple		
12	Acer saccharum / Sugar Maple		
12	Acer saccharum / Sugar Maple		
12	Acer saccharum / Sugar Maple		
14	Acer saccharum / Sugar Maple		
14	Acer saccharum / Sugar Maple		
14	Fagus grandiflora/ American Beech		
14	Acer saccharum / Sugar Maple		
14	Acer saccharum / Sugar Maple		
14	Fagus grandiflora/American Beech		
15	Fagus grandiflora/ American Beech		
16	Betula nigra/ Black Birch		
16tw	Betula nigra / Black Birch		
18	Quercus /Oak		
18tw	Quercus / Oak		
18	Quercus / Oak		
18	Quercus / Oak		
18	Quercus / Oak		
18	Quercus /Oak		
18	Quercus / Oak		
18	Quercus / Oak		
18	Quercus / Oak		
18	Quercus / Oak		
20	Quercus / Oak		
22	Quercus / Oak		

Note: No trees proposed to be removed are within the 15' landscape buffer.



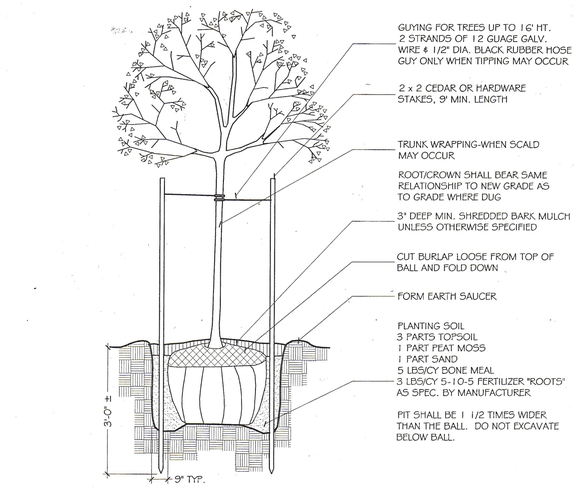
3 SHRUB PLANTING

SECTION NTS



4 EVERGREEN TREE PLANTING

SECTION NTS



5 TREE PLANTING

SECTION NTS

DATE	SHEET	REVISION NOTES
6.1.2021		add tree removal list

SITE PLAN DETAILS

PROPOSED RESIDENCE
45 HURLINGHAM DRIVE
NORTH CASTLE, NY

JAY FAIN & ASSOCIATES, LLC
Environmental Consulting Services
134 Round Hill Road Fairfield, CT 06824
203-254-3156 - fax: 203-254-3167

Date: 2.8.2021

Sheet No.: L-2

TOWN OF NORTH CASTLE

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

PLANNING DEPARTMENT
Adam R. Kaufman, AICP
Director of Planning

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

Application for Special Use Permit Approval

Application Name

Residence at 45 Hurlingham Drive

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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.

- For distribution purposes and mailing to the Planning Board Members and others (as required), multiple copies of application materials shall be collated into separate sets, each containing one copy of every submitted document. All application materials shall be submitted in a form that fits into a **12" x 17" envelope.** Plans shall be **folded** and **rubber banded** as necessary.

- 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.

- For purposes of completing this application form, all responses provided shall be printed, except as otherwise specified.

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

- ✓ SUBMISSION OF A SINGLE PDF FILE (PLANS, APPLICATION FORM, OTHER PAPERWORK) ON A DISK, THUMBDRIVE OR EMAIL

- ✓ COVER LETTER DESCRIBING THE PROJECT OR CHANGES TO THE PROJECT

- ✓ ALL PLANS ARE SIGNED AND SEALED BY A LICENSED NYS PROFESSIONAL

- ✓ ALL PLANS SHALL BE COLLATED AND FOLDED INTO 8 INDIVIDUAL SETS

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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).

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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

WWW.NORTHCASTLENY.COM

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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.

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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 p.m. the day of the meeting the following **must** be submitted.

- List of Neighbors prepared by the Assessor's Office
- 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)

UNITED STATES POSTAL SERVICE®

Firm Mailing Book For Accountable Mail

Name and Address of Sender

Check type of mail or service

- ☐ Adult Signature Required
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery (COD)
- ☐ Insured Mail
- ☐ Priority Mail
- ☐ Priority Mail Express
- ☐ Registered Mail
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation
- ☐ Signature Confirmation Restricted Delivery

Affix Stamp Here
(if issued as an international certificate of mailing or for additional copies of this receipt).
Postmark with Date of Receipt.

	USPS Tracking/Article Number	Addressee (Name, Street, City, State, & ZIP Code™)	Postage	(Extra Service) Fee	Handling Charge	Actual Value if Registered	Insured Value	Due Sender if COD	ASR Fee	ASRD Fee	RD Fee	RR Fee	SC Fee	SCRD Fee	SH Fee
1.															
2.															
3.															
4.															
5.															
6.															
7.															
8.															

Handling Charge - if Registered and over $50,000 in value
Adult Signature Required
Adult Signature Restricted Delivery
Restricted Delivery
Return Receipt
Signature Confirmation
Signature Confirmation Restricted Delivery
Special Handling

Total Number of Pieces Listed by Sender	Total Number of Pieces Received at Post Office	Postmaster, Per *(Name of receiving employee)*

Complete in Ink

Privacy Notice: For more information on USPS privacy policies, visit *usps.com/privacypolicy.*

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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	$300 1st Lot $200 (each additional lot)
Final Subdivision Plat	$250 1st Lot $100 (each additional lot)
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	$200.00

Prior to submission of a sketch or preliminary subdivision Plat, an applicant or an applicant's representative wishes to discuss a subdivision proposal to the Planning Board, a discussion fee of $200.00 shall be submitted for each informal appearance before the board.

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

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PLANNING BOARD SCHEDULE OF ESCROW ACCOUNT DEPOSITS

Type of Application Deposit*	Amount of Initial Escrow Account
Concept Study	$500.00
Site Plan Waiver for Change of Use	$500.00
Site Development Plan for:	
Multifamily Developments	$3,000.00 plus $100.00 per proposed dwelling unit
Commercial Developments	$3,000.00 plus $50.00 for each required parking space
1 or 2 Family Projects	$2,000.00
Special Use Permit	$2,000.00 plus $50.00 for each required parking space
Subdivision:	
Lot Line Change resulting in no new lots	$1,500.00
All Others	$3,000.00 plus $200.00 per proposed new lot in excess of two (2)
Preparation or Review of Environmental Impact Statement	$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.

as of June 1, 2021

Owner/Applicant Signature — Date:

45 Hurlingham LLC, by: Woodbranch Manager, LLC,
by: Jed Manocherian, Authorized Signatory

I. IDENTIFICATION OF PROPERTY OWNER, APPLICANT AND PROFESSIONAL REPRESENTATIVES

Name of Property Owner: 45 Hurlingham LLC
c/o Geraldine N. Tortorella, Esq., Hocherman Tortorella & Wekstein, LLP
Mailing Address: One North Broadway, Suite 701, White Plains, New York 10601

Telephone: (914)421-1800 Fax: (914)421-1856 e-mail g.tortorella@htwlegal.com

Name of Applicant (if different): N/A

Address of Applicant: _____

Telephone: _____ Fax: _____ e-mail _____

Interest of Applicant, if other than Property Owner:
_____

Is the Applicant (if different from the property owner) a Contract Vendee?

Yes ☐ No ☐

If yes, please submit affidavit sating such. If no, application cannot be reviewed by Planning Board

Name of Professional Preparing Site Plan:
D'Andrea Engineering and Surveying, P.C. - Richard Regan, P.E.

Address: 6 Neil Lane, Riverside, Connecticut 06878

Telephone: (703)637-1779 Fax: _____ e-mail rich@rvdi.com

Name of Other Professional: Tasos Kokoris AIA, LEED AP - Architect

Address: P.O. Box 2479, Westport, Connecticut 06880

Telephone: (914)434-2226 Fax: _____ e-mail tasosk@mac.me

Name of Attorney (if any): Geraldine N. Tortorella, Esq., Hocherman Tortorella & Wekstein, LLP

Address: One North Broadway, Suite 701, White Plains, New York 10601

Telephone: (914)421-1800 Fax: (914)421-1856 e-mail g.tortorella@htwlegal.com

Environmental Consultant: Jay Fain, Jay Fain and Associates
2000 Post Road, Suite 201, Fairfield, Connecticut 06824
Telephone: (203)254-3159 (office) Email: elmst@optonline.net

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 of publication and the giving of public notice as required, and further acknowledges that he/she shall be responsible for reimbursing the Town for the cost of professional review services required for this application.

It is further acknowledged by the Applicant that all bills for the expenses of publication and the giving of public notice as well as professional consultant 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.

Signature of Applicant/Owner: _____ Date: as of June 1, 2021

45 Hurlingham LLC, by Woodbranch Manager, LLC, by Jed Manocherian, Authorized Signatory

Signature of Property Owner: _____ Date: _____

MUST HAVE BOTH SIGNATURES

II. IDENTIFICATION OF SUBJECT PROPERTY

Street Address: 45 Hurlingham Drive, Town of North Castle and Town of Greenwich, Connecticut (small segment) (For GIS driving directions, use Greenwich, Connecticut address)

Location (in relation to nearest intersecting street):

1,500 feet (north, south, east or west) of Cowdray Park Drive

Abutting Street(s): _____

Tax Map Designation (NEW): Section 102.04 Block 1 Lot 26

Tax Map Designation (OLD): Section N/A Block _____ Lot _____

Zoning District: R-2A Total Land Area 10.3090 Acres

Land Area in North Castle Only (if different) 10.0216 Acres

Fire District(s) N/A School District(s) Byram Hills

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 ____ Yes (adjacent) _X_ Yes (within 500 feet) _____
If yes, please identify name(s): Town of Greenwich, Connecticut

The boundary of any existing or proposed County or State park or any other recreation area?
No _X_ Yes (adjacent) _____ Yes (within 500 feet) _____

The right-of-way of any existing or proposed County or State parkway, thruway, expressway, road or highway?
No _X_ Yes (adjacent) _____ Yes (within 500 feet) _____

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_ Yes (adjacent) _____ Yes (within 500 feet) _____

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) _____ Yes (within 500 feet) _____

The boundary of a farm operation located in an agricultural district?
No _X_ Yes (adjacent) _____ Yes (within 500 feet) _____

Does the Property Owner or Applicant have an interest in any abutting property?
No _X_ Yes _____

If yes, please identify the tax map designation of that property:

_____

III. DESCRIPTION OF PROPOSED DEVELOPMENT

Type of Special Use Permit:

Accessory Apartment _____

Accessory Structure over 800 square feet _X___ (BBQ-Pavilion)

Gross Floor Area: Existing __0_____S.F. Proposed 1,306 S.F.

Number of Parking Spaces: Existing N/A Proposed N/A

Earthwork Balance:* Cut 7,500+/- C.Y. Fill 8,200+/- C.Y. Net (Fill) 700+/- C.Y.
*Figures are provided for Full Project and not limited to the Accessory Structure that requires a Special Permit.

Will Development on the subject property involve any of the following:

Areas of special flood hazard? No __X___ Yes _____
(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 _____ 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 _____ Yes _X___
(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 _____
(If yes, application for a State Wetlands Permit may also be required.)

IV. SUBMISSION REQUIREMENTS

The special use permit 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) set of the special use permit application package (for distribution to the Town Planner for preliminary review purposes).

- Once a completed preliminary special use permit checklist has been received from the Planning Department, eight (8) additional sets of the site development plan application package (for distribution to Planning Board, Town Engineer, Town Attorney, Town Planner, Planning Board Secretary, police, fire department and ambulance corps).

- One (1) additional reduced sized set (11” x 17”) of the special use permit application package if any portion of the subject property abuts or is located within five hundred (500) feet of the features identified in Section II of this application form (for distribution to Westchester County Planning Board).

- 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 SPECIAL USE PERMIT SITE PLAN

The following checklist is provided to enable the Applicant to determine if he/she has provided enough information on the special use permit plan for the Planning Board to review his/her proposal. Applicants are advised to review Chapter 355 Article VII of the North Castle Town Code for a complete enumeration of pertinent requirements and standards prior to making application for special use permit approval.

The application for special use permit 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**.

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

Legal Data:

__X__ Name of the application or other identifying title.

__X__ Name and address of the Property Owner and the Applicant, (if different).

__X__ Name, address and telephone number of the architect, engineer or other legally qualified professional who prepared the plan.

__X__ 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.

__N/A__ Existing zoning, fire, school, special district and municipal boundaries.

__X__ 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.

__X__ 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. Declaration of Covenants, Easements and Restrictions for Conyers Farm, Westchester County Clerk Liber 8008, page 209, as Amended.*

__X__ 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.

__X__ 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.

__X__ North arrow, written and graphic scales, and the date of the original plan and all revisions, with notation identifying the revisions.

__X__ A signature block for Planning Board endorsement of approval.

* A copy of the Declaration can be provided if desired. Conservation Easement Area along Converse Lake is depicted on plans.

Existing Conditions Data:

N/A Location use and design of existing buildings, identifying first floor elevation, and other structures.

X 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.

X Location of all other existing site improvements, including pavement, walks, curbing, retaining walls and fences.

N/A Location, type, direction, power and time of use of existing outdoor lighting.

X Existing topographical contours with a vertical interval of two (2) feet or less.

X 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:

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

X Proposed location, use and architectural design of all buildings, including proposed floor plans and elevations.

X Proposed means of vehicular and pedestrian access to and egress from the site onto adjacent streets.

N/A Proposed sight distance at all points of vehicular access.

N/A 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.

N/A 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.

X 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.

X 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.

X Location, type, direction, power and time of use of proposed outdoor lighting.
All outdoor lighting will be residential type, with sharp cut-off covers, no spillover.

__X__ Location of proposed landscaping and buffer screening areas, including the type (scientific and common names), size and amount of plantings.

_N/A_ The proposed location, size, design and use of all temporary structures and storage areas to be used during the course of construction.

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

__X__ Proposed soil erosion and sedimentation control measures.

_N/A_ For all proposed 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.

__X__ For all proposed 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.

_N/A_ For all proposed plans involving disturbance to Town-regulated wetlands, the data required to ensure compliance with Chapter 340 of the North Castle Town Code.

The special use permit application package shall also include a narrative document that demonstrates compliance with the following: See letter from Hocherman Tortorella & Wekstein, LLP dated May 28, 2021, submitted herewith.

__X__ The location and size of the use, the nature and intensity of the operations involved in it or conducted in connection with it, the size of the site in relation to it and the location of the site with respect to streets giving access to it are such that it will be in harmony with the appropriate and orderly development of the district in which it is located and that it complies with all special requirements for such use.

__X__ The location, nature and height of buildings, walls, fences and the nature and extent of existing or proposed plantings on the site are such that the use will not hinder or discourage the appropriate development and use of adjacent land and buildings.

__X__ Operations in connection with any special use will not be more objectionable to nearby properties by reason of noise, fumes, vibration or other characteristics than would be the operations of any permitted uses not requiring a special permit.

_N/A_ Parking areas will be of adequate size for the particular use, properly located and suitably screened from adjoining residential uses, and the entrance and exit drives shall be laid out so as to achieve maximum convenience and safety.

_N/A_ Where required, The provisions of the Town Flood Hazard Ordinance shall be met.

__X__ The proposed special permit use will not have a significant adverse effect on the environment.

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

FLOOR AREA CALCULATIONS WORKSHEET

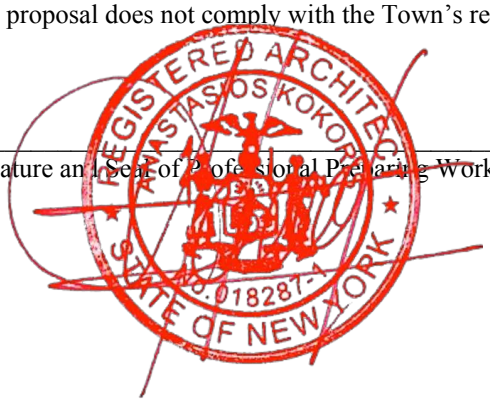
Application Name or Identifying Title: Residence at 45 Hurlingham Drive North Castle, NY Date: 06/01/2021

Tax Map Designation or Proposed Lot No.: 102.04-1-26

Floor Area

1.	Total Lot Area (Net Lot Area for Lots Created After 12/13/06):	10.3090 ACRES - 449,060 SF
2.	**Maximum** permitted floor area (per Section 355-26.B(4)):	21,852 SF
3.	Amount of floor area contained within first floor**:** ____ existing + X proposed =	7,661 SF
4.	Amount of floor area contained within second floor**:** ____ existing + X proposed =	6,390 SF
5.	Amount of floor area contained within garage**:** ____ existing + X proposed =	1,575 SF
6.	Amount of floor area contained within porches capable of being enclosed**:** ____ existing + X proposed =	1,008 SF
7.	Amount of floor area contained within basement (if applicable – see definition)**:** ____ existing + X proposed =	N/A
8.	Amount of floor area contained within attic (if applicable – see definition)**:** ____ existing + X proposed =	1,586 SF
9.	Amount of floor area contained within all accessory buildings: ____ existing + X proposed =	2,014 SF
10.	Proposed **floor area:** Total of Lines 3 – 9 =	20,234 SF

If Line 10 is less than or equal to Line 2, your proposal **complies** with the Town's maximum floor area regulations and the project may proceed to the Residential Project Review Committee for review. If Line 10 is greater than Line 2 your proposal does not comply with the Town's regulations.



Signature and Seal of Professional Preparing Worksheet — Date: 06/01/2021

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

GROSS LAND COVERAGE CALCULATIONS WORKSHEET

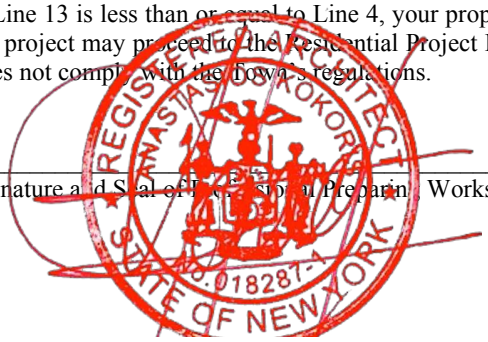
Application Name or Identifying Title: Residence at 45 Hurlingham Drive North Castle, NY Date: 06/01/2021

Tax Map Designation or Proposed Lot No.: 102.04-1-26

Gross Lot Coverage

1.	Total lot Area (Net Lot Area for Lots Created After 12/13/06):	10.3090 ACRES - 449,060 SF	
2.	**Maximum** permitted gross land coverage (per Section 355-26.C(1)(a)):		
3.	**BONUS** maximum gross land cover (per Section 355-26.C(1)(b)):		
	Distance principal home is beyond minimum front yard setback _____ x 10 =		
4.	**TOTAL Maximum Permitted gross land coverage** = Sum of lines 2 and 3		43,255 SF
5.	Amount of lot area covered by **principal building:** _____ existing + X proposed =		16,030 SF
6.	Amount of lot area covered by **accessory buildings:** _____ existing + X proposed =	Tennis Pavilion BBQ Pavilion	350 SF 1,306 SF
7.	Amount of lot area covered by **decks:** _____ existing + _____ proposed =		
8.	Amount of lot area covered by **porches:** _____ existing + _____ proposed =		
9.	Amount of lot area covered by **driveway, parking areas and walkways:** _____ existing + X proposed =	Driveways Garage Court Walks	12,630 SF 3,030 SF 1,120 SF
10.	Amount of lot area covered by **terraces:** _____ existing + _____ proposed =		
11.	Amount of lot area covered by **tennis court, pool and mechanical equip:** _____ existing + X proposed =		7,200 SF
12.	Amount of lot area covered by **all other structures:** _____ existing + _____ proposed =	Caretakers Quarters	1,272 SF
13.	Proposed **gross land coverage:** Total of Lines 5 – 12 =		42,938 SF

If Line 13 is less than or equal to Line 4, your proposal **complies** with the Town's maximum gross land coverage regulations and the project may proceed to the Residential Project Review Committee for review. If Line 13 is greater than Line 4 your proposal does not comply with the Town's regulations.



Signature and Seal of Professional Preparing Worksheet

06/01/2021
Date

Geraldine N. Tortorella

From: Fisher, Joshua M (DEC) <Joshua.Fisher@dec.ny.gov>
Sent: Tuesday, April 20, 2021 1:14 PM
To: elmst
Cc: Geraldine N. Tortorella; 'ANASTASIOS KOKORIS'
Subject: RE: Article 15 Permit - Exempt Dock

As long as there are no other disturbances below mean high water, no other structures related to this dock, and the docking facility provides dockage for five or fewer boats and encompasses within its perimeter an area of less than 4000 square feet including the space that docked boats occupy, then an article 15 permit is not required. Sorry for the terrible run-on sentence.

Josh Fisher
he/him/his
Biologist, Bureau of Ecosystem Health

New York State Department of Environmental Conservation
21 South Putt Corners Road, New Paltz, NY 12561
P: (845) 256-3113 | Cell: (845) 220-8570 | joshua.fisher@dec.ny.gov
www.dec.ny.gov |

From: elmst <elmst@optonline.net>
Sent: Friday, April 16, 2021 3:08 PM
To: Fisher, Joshua M (DEC) <Joshua.Fisher@dec.ny.gov>
Cc: Geraldine Tortorella <g.tortorella@htwlegal.com>; 'ANASTASIOS KOKORIS' <tasosk@me.com>
Subject: RE: Article 15 Permit - Exempt Dock

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No anchors , just has driven posts on shore

Jay Fain

Sent from my Galaxy

-------- Original message --------
From: "Fisher, Joshua M (DEC)" <Joshua.Fisher@dec.ny.gov>
Date: 4/16/21 2:35 PM (GMT-05:00)
To: Jay Fain <elmst@optonline.net>
Cc: Geraldine Tortorella <g.tortorella@htwlegal.com>, 'ANASTASIOS KOKORIS' <tasosk@me.com>
Subject: RE: Article 15 Permit - Exempt Dock

Jay, this seems to meet the exemption for docking facilities, but please provide more detail on what kind of anchoring system or moorings will be used for the dock and the size of that system (amount of "fill" in the lake).

Josh Fisher

he/him/his

Biologist, Bureau of Ecosystem Health

New York State Department of Environmental Conservation

21 South Putt Corners Road, New Paltz, NY 12561

P: (845) 256-3113 | Cell: (845) 220-8570 | joshua.fisher@dec.ny.gov

www.dec.ny.gov | | |

From: Jay Fain <elmst@optonline.net>
Sent: Thursday, March 25, 2021 9:51 AM
To: Fisher, Joshua M (DEC) <Joshua.Fisher@dec.ny.gov>
Cc: Geraldine Tortorella <g.tortorella@htwlegal.com>; 'ANASTASIOS KOKORIS' <tasosk@me.com>
Subject: FW: Article 15 Permit - Exempt Dock

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

Josh, Can you help us with this? We believe this dock is exempt under Article 15, but eh Town wants confirmation from the DEC I have tried Tracey on couple of occasions but she has not responded.

Thanks.

Jay Fain, MS, PSS, CPESC, CERP,

Jay Fain & Associates

134 Round Hill Road

Fairfield, CT 06824

Office - 203 254-3156

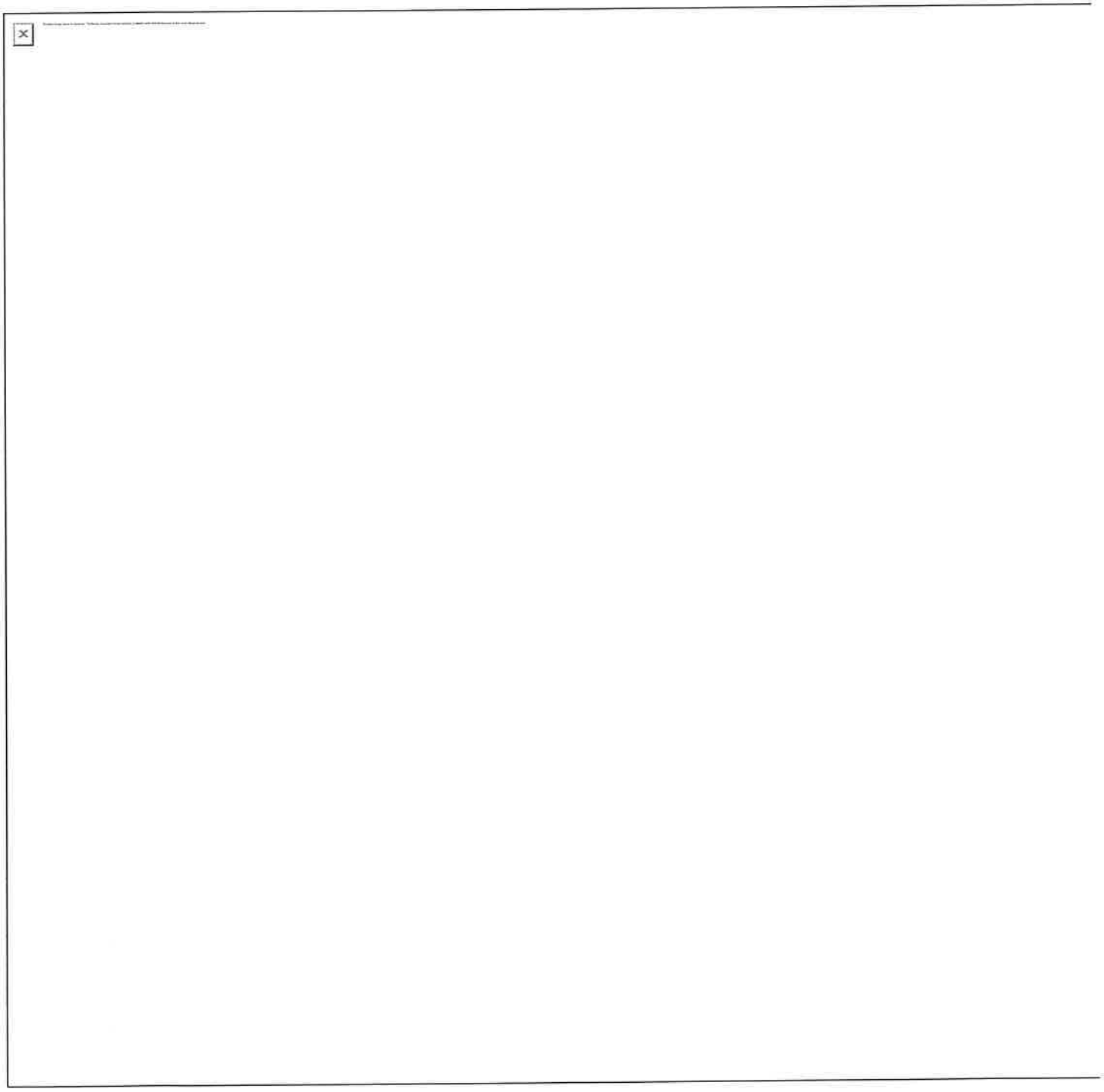
Fax - 203 254-3167

Cell - 203 581-5902

From: Jay Fain <elmst@optonline.net>
Sent: Friday, March 12, 2021 8:46 AM
To: 'tracey.omalley@dec.ny.gov' <tracey.omalley@dec.ny.gov>
Cc: Geraldine Tortorella (g.tortorella@htwlegal.com) <g.tortorella@htwlegal.com>; 'ANASTASIOS KOKORIS' <tasosk@me.com>
Subject: Article 15 Permit - Exempt Dock

Tracey,

I hope this finds you well. I am working on a new project in the Town oof North Castle. This is a residential project and the client is proposing a small, floating dock for his private use to o launch kayaks. A copy of the plan and detail are attached. We believe this is a exempt activity per Number 2 below. The Town has asked for confirmation form the DEC that indeed, no Article 15 permit is required. Is that something you can provide, an email response is sufficient.



Than you,

Jay Fain, MS, PSS, CPESC, CERP,

Jay Fain & Associates

134 Round Hill Road

Fairfield, CT 06824

Office - 203 254-3156

Fax - 203 254-3167

Cell - 203 581-5902

Geraldine N. Tortorella

From: Fisher, Joshua M (DEC) <Joshua.Fisher@dec.ny.gov>
Sent: Wednesday, March 3, 2021 12:17 PM
To: Jay Fain; 'Matt Norden'
Cc: 'Joe Cermele'; Adam Kaufman; Geraldine N. Tortorella
Subject: RE: State wetlands - 45 Hurligham

Hi Jay,

Just for the record, the issue is not that I'm declining to sign a validation block, it's that there are no State regulated wetlands at the specific location you asked me about. If you have a wetland delineation showing a State regulated wetland, and I have verified that it is accurate, then I will sign it.

Josh Fisher
he/him/his
Biologist, Bureau of Ecosystem Health

New York State Department of Environmental Conservation
21 South Putt Corners Road, New Paltz, NY 12561
P: (845) 256-3113 | Cell: (845) 220-8570 | joshua.fisher@dec.ny.gov
www.dec.ny.gov |

From: Jay Fain <elmst@optonline.net>
Sent: Wednesday, March 3, 2021 11:56 AM
To: 'Matt Norden' <mnorden@kelses.com>
Cc: Fisher, Joshua M (DEC) <Joshua.Fisher@dec.ny.gov>; 'Joe Cermele' <jcermele@kelses.com>; Adam Kaufman <akaufman@northcastleny.com>; Geraldine Tortorella <g.tortorella@htwlegal.com>
Subject: FW: State wetlands - 45 Hurligham

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

Matt,

Please see below response from Josh Fischer regarding the presence/absence of NTS DEC wetlands on the 45 Hurlingham Drive parcel. The Kellard/Sessions February 19th PB rmemo requested we add the NYS Dec validation to the survey and have it signed by Josh, which he has declined to do. Will this email response suffice?

Jay Fain, MS, PSS, CPESC, CERP,

Jay Fain & Associates
134 Round Hill Road
Fairfield, CT 06824

Office - 203 254-3156
Fax - 203 254-3167

Cell - 203 581-5902

From: Fisher, Joshua M (DEC) <Joshua.Fisher@dec.ny.gov>
Sent: Wednesday, March 03, 2021 11:42 AM
To: Jay Fain <elmst@optonline.net>
Subject: RE: State wetlands

No, I can't sign something like that but you can provide the Town with what I've said in this email chain. I will add that even if wetland K-54 extends from the currently mapped boundary to Converse Lake then the wetland boundary would still be over 100' from the parcel in question.

Josh Fisher
he/him/his
Biologist, Bureau of Ecosystem Health

New York State Department of Environmental Conservation
21 South Putt Corners Road, New Paltz, NY 12561
P: (845) 256-3113 | Cell: (845) 220-8570 | joshua.fisher@dec.ny.gov
www.dec.ny.gov |

From: Jay Fain <elmst@optonline.net>
Sent: Wednesday, March 3, 2021 11:21 AM
To: Fisher, Joshua M (DEC) <Joshua.Fisher@dec.ny.gov>
Cc: Geraldine Tortorella <g.tortorella@htwlegal.com>
Subject: RE: State wetlands

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Thanks Josh, I could arrange you to get access form NY side, but really don't think this is necessary. Town want a signed plan with validation block, would you be comfortable signing affirming that no wetland on this site, I can assure you, there are not any.

Jay Fain, MS, PSS, CPESC, CERP,

Jay Fain & Associates
134 Round Hill Road
Fairfield, CT 06824

Office - 203 254-3156
Fax - 203 254-3167
Cell - 203 581-5902

From: Fisher, Joshua M (DEC) <Joshua.Fisher@dec.ny.gov>
Sent: Wednesday, March 03, 2021 10:54 AM
To: Jay Fain <elmst@optonline.net>
Subject: RE: State wetlands

I am not allowed to travel out of State. The only possible westerly extension of wetland K-54 from the regulatory map would be along the stream that exits it and flows into the lake, but the wetland would not extend into the lake at this location.

Josh Fisher
he/him/his
Biologist, Bureau of Ecosystem Health

New York State Department of Environmental Conservation
21 South Putt Corners Road, New Paltz, NY 12561
P: (845) 256-3113 | Cell: (845) 220-8570 | joshua.fisher@dec.ny.gov
www.dec.ny.gov |

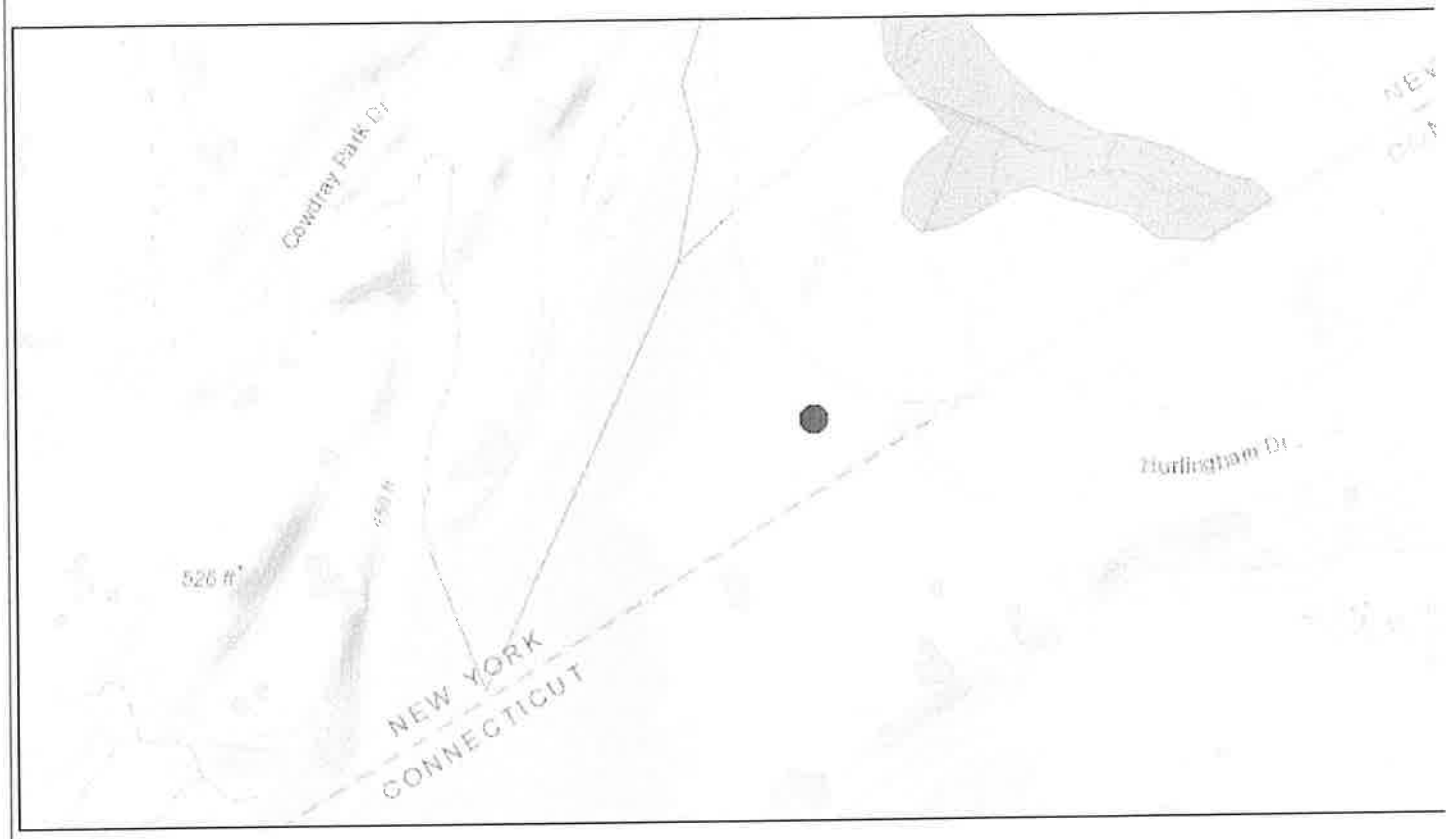
From: Jay Fain <elmst@optonline.net>
Sent: Wednesday, March 3, 2021 8:12 AM
To: Fisher, Joshua M (DEC) <Joshua.Fisher@dec.ny.gov>
Cc: 'Geraldine Tortorella' <g.tortorella@htwlegal.com>
Subject: RE: State wetlands

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

Josh here is info for first one. The wetland is K-24 It is a gatedcommunity with access on North Street in Greenwich CT, so I will need to meet you in order for you tog gain access.

The property only has lake frontage and I don't believe the 100 foot setback extends onto property but I will need you to confirm this.

Environmental Resource Mapper



The coordinates of the point you clicked on are:

UTM 18	**Easting:**	613308.6233662366	**Northing:**	455487
Longitude/Latitude	**Longitude:**	-73.64993005880821	**Latitude:**	41.137

The approximate address of the point you clicked on is:
10504, Armonk, New York

County: Westchester
Town: North Castle
USGS Quad: MOUNT KISCO, NY-CONN

DEC Region

Region 3:
(Lower Hudson Valley) Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester counties. For mo

If your project or action is within or near an area with a rare animal, a permit may be required if the species is l

Jay Fain, MS, PSS, CPESC, CERP,

Jay Fain & Associates
134 Round Hill Road
Fairfield, CT 06824

Office - 203 254-3156
Fax - 203 254-3167
Cell - 203 581-5902

From: Fisher, Joshua M (DEC) <Joshua.Fisher@dec.ny.gov>
Sent: Tuesday, March 02, 2021 2:16 PM
To: Jay Fain <elmst@optonline.net>
Cc: Geraldine Tortorella <g.tortorella@htwlegal.com>
Subject: RE: State wetlands

Hi Jay,

Can you please send me the SBL# for those sites? I can't locate them with the addresses you've given. You could also send a pdf or other image showing exactly where the areas are that you'd like me to look at.

Josh Fisher
he/him/his
Biologist, Bureau of Ecosystem Health

New York State Department of Environmental Conservation
21 South Putt Corners Road, New Paltz, NY 12561
P: (845) 256-3113 | Cell: (845) 220-8570 | joshua.fisher@dec.ny.gov
www.dec.ny.gov |

From: Jay Fain <elmst@optonline.net>
Sent: Friday, February 26, 2021 1:46 PM
To: Fisher, Joshua M (DEC) <Joshua.Fisher@dec.ny.gov>
Cc: Geraldine Tortorella <g.tortorella@htwlegal.com>
Subject: State wetlands

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

Josh the two wetland I have for you to confirm are as follows:

1. 45 Hurlingham, Greenwich ,CT (property is in Armonk but has Greenwich mailing address) Property has no wetland but has frontage on converse Lake. Town wants you to confirm as shoes in DEC check zone on Environmental Mapper.

2. 263 Bedford/Kansasville Road, Armonk . Property front on Byram river and has extensive wetlands- I have flagged them all and need you to determine which areas State wants to assert jurisdiction over.

Snow is malting her and should be gone by mid- March. Let me know our schedule so I can meet you.

Regards,

Jay Fain, MS, PSS, CPESC, CERP,

Jay Fain & Associates
134 Round Hill Road
Fairfield, CT 06824

Office - 203 254-3156
Fax - 203 254-3167
Cell - 203 581-5902

Geraldine N. Tortorella

From: Geraldine N. Tortorella
Sent: Friday, May 28, 2021 4:35 PM
To: Geraldine N. Tortorella
Subject: FW: Manochcherian - 45 Hurlington Drive - North Castle (T) and "safe room" and bedroom count
Attachments: 45 HURLINGHAM DR HOUSE FLOOR PLANS 5-20-21.pdf

From: Richard Regan <rich@rvdi.com>
Sent: Friday, May 28, 2021 1:53 PM
To: Geraldine N. Tortorella <g.tortorella@htwlegal.com>
Subject: FW: Manochcherian - 45 Hurlington Drive - North Castle (T) and "safe room" and bedroom count

Hi Gerri,

The email exchange is below and the floor plan set I sent to him is attached.

Rich

Richard Regan PE
Rocco V. D'Andrea Inc
D'Andrea Surveying & Engineering PC
6 Neil Lane
Riverside CT 06878
203.637.1779

From: Kunny, Anthony <ajk2@westchestergov.com>
Sent: Wednesday, May 26, 2021 4:01 PM
To: Richard Regan <rich@rvdi.com>
Cc: Adam Cerini <adam@rvdi.com>; ANASTASIOS KOKORIS <tasosk@me.com>
Subject: RE: Manochcherian - 45 Hurlington Drive - North Castle (T) and "safe room" and bedroom count

Richard

I have reviewed the floor plans for the proposed residence and determine that the total number of bedrooms is six (6).

Tony

Anthony J Kunny
Assistant Engineer
Westchester County Department of Health
25 Moore Avenue
Mt. Kisco, NY 10549
914-864-7349
914-864-7341 (fax)

ajk2@westchestergov.com

From: Richard Regan <rich@rvdi.com>
Sent: Wednesday, May 26, 2021 9:56 AM
To: Kunny, Anthony <ajk2@westchestergov.com>
Cc: Adam Cerini <adam@rvdi.com>; ANASTASIOS KOKORIS <tasosk@me.com>
Subject: RE: Manochcherian - 45 Hurlington Drive - North Castle (T) and "safe room" and bedroom count

Hi Tony,

Attached are the floor plans, basement to third (cloud level) floor plans.

To me there is 1 br on the first (ground level) floor and 5 br's on the bedroom level floor plan for a total of 6. As stated in the below email the safe room is part of the master bedroom suite and is not a bedroom.

The Town Engineering Consultant would like you to confirm the bedroom count.

Thx Rich

Richard Regan PE
Rocco V. D'Andrea Inc
D'Andrea Surveying & Engineering PC
6 Neil Lane
Riverside CT 06878
203.637.1779

From: Richard Regan
Sent: Wednesday, May 26, 2021 8:40 AM
To: 'Kunny, Anthony' <ajk2@westchestergov.com>
Cc: Adam Cerini <adam@rvdi.com>
Subject: RE: Manochcherian - 45 Hurlington Drive - North Castle (T) and "safe room"

Hi Tony,

Thank you for your prompt reply!! Your answers make sense to me.

Later today I am going to send floor plans to confirm bedroom count. The master suite has a "safe room" in case the house is broken into and it will not be a bedroom and we would like your confirmation that the bedroom count is 6.

Thx Rich

Richard Regan PE
Rocco V. D'Andrea Inc
D'Andrea Surveying & Engineering PC
6 Neil Lane
Riverside CT 06878
203.637.1779

From: Kunny, Anthony <ajk2@westchestergov.com>
Sent: Wednesday, May 26, 2021 6:56 AM
To: Richard Regan <rich@rvdi.com>
Cc: Adam Cerini <adam@rvdi.com>
Subject: RE: Manochcherian - 45 Hurlington Drive - North Castle (T)

Richard,

P02185011

CONYERS FARM

TOWN OF NORTH CASTLE, WESTCHESTER COUNTY, NEW YORK

DECLARATION OF COVENANTS, EASEMENTS AND RESTRICTIONS

A. Conyers Farm, a Connecticut general partnership, c/o Morton R. Ruden, Cohen, Wolf, Pome and Klebanoff, P.C., 10 Middle Street, Bridgeport, Connecticut ("Declarant") is the owner of that certain real property located in the Town of North Castle, New York ("Town"), more particularly described on Schedule A attached hereto and made a part hereof (the "Property").

B. Declarant desires to provide for the preservation and enhancement of the values and amenities in the Property and, to this end, desires to subject the real property described in Schedule A to the covenants, restrictions, easements, charges and liens, herein set forth, each and all of which is and are for the benefit of the Property and each owner thereof; the Declarant has deemed it desirable, for the efficient preservation of the values and amenities of said community, to create an association to which should be delegated and assigned the powers of maintaining and administering the community properties and facilities and administering and enforcing the covenants, easements and restrictions and collecting and disbursing any assessments and charges hereinafter created; and

C. Declarant recognizing that the growing population and expanding economy of the Town and State of New York ("State") have have a profound impact on the life-sustaining natural environment and that the air, water and land, taken for granted since the settlement of the Town and State are now recognized as finite and precious and that human activity must be guided by and in harmony with the systems of relationships among the elements of nature, and recognizing further the importance of preserving open space and the rural nature and character of the Property in order to maintain air quality, the ecological balance and scenic values, the avoidance of problems concerning water supply, sewage disposal and the overtaxing of Town resources and facilities, and the importance of maintaining environmental quality to the Property owners, the people of the Town and of the State and to the overall welfare and development of man, the Declarant desires to provide for the protection, preservation and conservation of open space, the land, clean water and air, the character of the Property, the ecological balance, the environmental quality and the quality of life for the benefit of the Property, each owner thereof, the Town and the State and the people thereof and to maintain and enhance the health, safety and welfare of each said owner and the people of the Town and State for present and future generations, and further, in order that the Property can be used for building purposes without danger to health or the public safety and for the purpose of open spaces, parks and playgrounds and for fulfilling the requirements for same and to induce the Planning Board of the Town to approve the proposed subdivision of Declarant's said Property, the Declarant intends that the Property shall henceforth be subject to the covenants, restrictions and easements set forth in Article VI, Section 20, which covenants, restrictions and easements shall run with the land in perpetuity and shall be binding on the Declarant, its successors and assigns and all future owners of the Property, any part thereof or of any and all of the lots within said Property and that said covenants, restrictions and easements are and shall be in part for the benefit of and enforceable by the Town, the Association, any owner of Lots or parcels of land within said Property and the Declarant and that said covenants, restrictions and easements shall not be amended or cancelled without the prior written consent and approval of the Town and the Association and all owners of lots or parcels of land within the Property. For

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its Planning Board; however, in no event may a Lot, parcel or farm be divided or resubdivided into a lot of less than ten acres.

As to each Lot of ten acres or more shown on an approved and recorded final Subdivision Map, the holding by an owner in single ownership of two or more of said Lots which are adjacent shall not constitute a merger of said Lots and said Lots shall retain their respective separate identity as separate Lots although held in single ownership or used as a single parcel. The Owner of two or more adjacent Lots may, thereafter, convey separate title to each such Lot for use as a separate Lot in the same manner as if said Lots had not been held or used in single ownership.

Lots or other parcels abutting the Connecticut-New York State line and shown on an approved and recorded final Subdivision Map of the Property which contain less than ten (10) acres shall not be developed or built upon except in conjunction with an additional adjacent parcel on the opposite side of such State line so that, in the aggregate, each such total combined building Lot shall contain a minimum of ten (10) acres.

B. Conservation Easement

(a) To insure that land designated as Conservation Easement Areas will remain as open space as watershed protection areas and in an undeveloped and natural state, a Conservation Easement is hereby granted to the Association and to the Town in, over and across all areas shown and designated on the subdivision map of the Property as "Conservation Easement Areas" for the purposes of keeping said areas as open space and in their undeveloped and natural state forever in accordance with the following provisions.

(b) No building or other structure or improvement either temporary or permanent, shall be erected or caused to be placed on any Conservation Easement Area as shown on said map. No farming or farming activities, including horse farming or breeding, grazing of animals or other agricultural activities shall be conducted or permitted in any part of said areas. No part of said areas shall be paved.

(c) The topography of the landscape in said areas shall be maintained in its present condition and no topographic changes shall be made in said areas, including filling, grading, excavating or the altering of natural or existing watercourses of drainage, without the prior approval of the Town and the Association. No grading of soil for roads, drives or utilities, installation of electric and telephone wires, cables and conduits, water wells and pipes, gas, sewer, water and other utility pipes, paving, bridges, dams, recreational facilities, laying out of foot or riding paths or trails or any other activity or facility disturbing said areas shall be made, conducted, installed, placed or done in said areas without the prior approval of the Town and the Association.

(d) No refuse, trash, debris, garbage, waste matter, sewage, or other like substance or offensive material shall be placed, caused to be placed or allowed to remain in or upon such Conservation Easement Areas.

(e) No live or undiseased tree or shrub shall be cut, removed or destroyed in said Areas without the prior approval of the Town and the Association, except as shall be necessary for clearing of approved driveways and roadways.

(f) With the prior approval of the Town and the Association, the Owner of each Lot affected by any such Conservation Easement shall have the right to protect from erosion portions of said Conservation Easement Areas by planting trees, plants and

shrubs where and to the extent necessary, or by other appropriate means as have received prior approval of the Town and the Association. Each such Owner shall also have the right, with such prior approval, to cut fire breaks, or perform other necessary tree cutting operations in such Conservation Easement Areas, all only with prior approval of the Town and the Association.

(g) Declarant expressly reserves to itself, its successors and assigns, reasonable use and enjoyment of said Conservation Easement Areas, in a manner not inconsistent with the intent and provisions of this Declaration and of this Section.

(h) The granting of this Easement does in no way grant to the public or to the owners of any surrounding or adjacent land, the right to enter such Conservation Easement Areas without the express permission of the Owner of any Lot affected by such Conservation Easement.

C. Septic Maintenance

Declarant reserves unto itself, its successors and assigns the right to enter upon any Lot, for the purpose of inspecting, cleaning and otherwise servicing all septic systems now or hereafter installed on such Lot for the purposes of preventing damage or pollution or the threatened damage or pollution to any such wetland, waterbody or watercourse. Declarant, it successors and assigns, shall conduct such inspection, cleaning and servicing on an annual basis, or more frequently in the event of any failure or threatened failure of any such septic system. The Owner or Owners, from time to time, of each such Lot shall pay as a Special Assessment to the Declarant, it successors and assigns, all costs incurred in connection with such inspection, cleaning and servicing. All such costs shall be fixed, established and collected by Declarant in the same manner as provided in Article V thereof with regard to Special Assessments.

D. Use

(a) The property and any building or buildings constructed on any part of the Property shall be used only for one-family residential purposes, recreational facilities and farms, including facilities for the breeding and veterinary care of animals, all to the extent permitted by the ordinances of the Town of North Castle. Underground fuel storage tanks shall not be installed or used unless constructed of noncorrosive material.

(b) No part of the Property shall be used for common or group recreational or parking purposes, without prior approval of the Town. No common or central bathing, beach or swimming area shall be permitted, conducted or allowed to exist on the Property.

(c) No lake, pond, stream, brook or other waterbody or watercourse located on the Property shall be used for any purpose except that the following recreational uses by Owners of Lots abutting any such lake, pond, stream, brook or other waterbody or watercourse and by Owners of such other Lots to whom such rights may hereafter be granted, shall be permitted: a) fishing; b) boating (excluding, however, the use of any gasoline or diesel powered engine); c) ice skating; and d) swimming. All of such uses shall be subject to regulation by all governmental agencies and officers having jurisdiction in connection with the use of any such waterbody or watercourse. For purposes of this paragraph, "Owner" shall be deemed to include the family and guests of such Owner. Nothing contained in this Section 20 shall be deemed to limit, prohibit, or restrict the use of the waters of Converse Lake for drinking supply, fire control or power-generating purposes.