

December 12, 2022

William Pfaff Chair, Upper Nyack Planning Board 328 N. Broadway Upper Nyack, NY 10960

Dear Mr. Pfaff,

Following the Planning Boards' (PB) commentary from the October 19th, 2022 hearing, T.M.Rybak & Associates and Jay A. Greenwell have collectively responded to the memorandum issued by consulting village engineer, Dennis M. Letson. Below we have listed the major points that were underlined by the Planning Board.

After effectively relocating the structure to minimize the disturbance to the existing steep slopes, a thorough drainage report has been completed. Moreover, additional details of the metal walkway have been provided along with pervious paver construction details. The roof projections have been addressed with the town attorney. A simplified landscaping plan of the property has been provided. Please note, the Owner does not wish to pursue any extensive landscaping at this time. Finally, erosion and sediment control details have been added.

Please note, T.M.Rybak & Associates and Jay A. Greenwell have met with the village fire chiefs on site during (2) separate meetings. The lot, as proposed, was deemed acceptable and accessible under the following conditions: an emergency access easement through 649 N.Broadway, installation of a Emergency Key Box or "Knox Box" at the access gate of 649 N.Broadway, fully sprinklered dwelling and proposed yard hydrant. The town attorney has been notified of the requirements/requests set forth by the fire chiefs.

ARCHITECTS - ENGINEERS - INTERIOR DESIGNERS 15 WEST ERIE AVENUE RUTHERFORD NEW JERSEY 07070 TEL; 201-460-0473 FAX 201-460-0931



We kindly ask that you please accept this submission and allow us to continue with obtaining local and state approvals for the abovementioned project. As shown on the proposed re-submission we believe the revised plans address the board's comments and concerns. Please contact me with any additional questions or concerns, and thank you for considering this request.

Sincerely,

Tom Rybak Principal-in-Charge and Senior Architect



DRAINAGE ANALYSIS

Prepared For:

647 North Broadway

Village of Upper Nyack Rockland County, NY

Prepared By:

Civil Design Works, LLC 19 Squadron Boulevard, Suite #4 New City, New York 10956



Disclaimer: Unauthorized alteration or additions to the enclosed information is a violation of the N.Y.S. Education Law, Article 145, Section 7209.

Compiled Date: December 2022 CDW: 2206

METHODOLOGY

The subject site is located on the easterly side of North Broadway in the Village of Upper Nyack. The property consists of approximately 1.2 acres with approximately 0.35 acres to be disturbed as part of this application. The site is largely undeveloped except for a macadam driveway that exists providing access from North Broadway. The topography of the site features a distinct westerly to easterly drainage pattern with all the stormwater draining towards the Hudson River.

The applicant is proposing to further re-develop the property with a residential use and associated site amenities. The proposed project will add impervious surfaces on the property with the construction of a dwelling, walkways and carport. The roof of the proposed dwelling is comprised of a rooftop garden rendering the residence as pervious as related to this drainage analysis. The impervious macadam driveway is being removed and replaced with a pervious paver driveway. The carport and impervious bluestone walkway along the western portion of the property total approximately 1,285 SF of impervious surfaces. The macadam driveway that is being removed totaled approximately 1,700 SF. This results in a decrease of impervious surfaces along the western portion of the property, prior to the start of the elevated walkways. The elevated walkways are suspended above the ground, supported by piles, leaving grass beneath them as a pervious surface.

Due to the presence of the Hudson River, we have analyzed the site for Water Quality and pre-treatment only. We have provided pre-treatment and storage of the Water Quality storm required by the installation of the new impervious surfaces of the carport and bluestone walkway.

To offset the runoff associated with the new impervious surfaces, a series of stormwater management facilities will be utilized. A series of catch basins is proposed which will receive the runoff from the carport roof leaders as well as the surface drainage from the bluestone walkway. Although the carport is considered to be clean runoff, we have sized the catch basin sumps (32 CF each, 64 CF total) to provide the required pre-treatment volume for that area as well. A drywell is proposed to receive and infiltrate the runoff from the two sump catch basins.

In total, the Stormwater Management Facilities have been configured and sized to provide water quality and pretreatment of the new impervious surfaces (carport and bluestone walkway) along the western portion of the property.

Water Quality Pre-treatment

Section 6.3.3 of the NYSDEC *Stormwater Management Design Manual* states the following in regard to the required pretreatment for infiltration practices:

• A minimum pretreatment volume of 25% of the WQv must be provided prior to entry to an infiltration facility and can be provided in the form of a sedimentation basin, sump pit, grass channel, plunge pool or other measure.

The proposed sump catch basin has been designed and sized to store and treat the required 25% WQv prior to entry into the infiltration basin (drywell).

Pre-treatment Calculations:

Total Required WQv for Site (see below)	= 153 ft ³
Required Pre-Treatment Volume = 25% WQv	= 38 ft ³
Sump Storage Provided from two (2), 4'L x 4'W x 2' Sump Catch Basins	= 64 ft ³

Pre-Treatment Storage Volume Provided > 25% WQv → ✓

Water Quality Calculations

Utilize the procedures outlined in Chapter 4 "Unified Stormwater Sizing Criteria" of NYSDEC publication Stormwater Management Design Manual.

Total Area =

1,285 ft²

Compute Water Quality Volume (WQv)

Use 90% Capture Rule

From Figure 4.1 of Stormwater Management Design Manual, 90% Rainfall = 1.5"

WQv = $[(P) (RV) (A)] / 12 = [(1.5") (0.95) (1,285)] / 12 = 153 ft^{3}$

Volume of Drywell + 24 Hour Percolation Volume = $271 \frac{\text{ft}^3}{\text{s}^3} > 100\% \text{ WQv} \rightarrow \checkmark$

Civil Design Works, LLC

19 Squadron Boulevard, Suite #4

New City, New York	10956				-			
			DRYW	ELL DESIGN	N			
Project 647 No	orth Broadway		Ву	ZK		Date	11/30/2022	
Location Upper	Nyack, New York		Checked	GM		Date	11/30/2022	
Basin ID: Propo	osed							
1. Select Design	n Storm							
	Design Frequency 100	year,	_	Rainfall, I	P (24-hr) 9	inches		
<u>2. Sel</u> ect Size o	f Basin: (See page 2 for key plan							
	Type of Basin = Cylinde	er		Basin	wall thickness =	= 3	inches	
	Diameter of Basin = 4	ft		3/4" St	one Perimeter =	- 6	inches	
	Depth of Basin = 4	ft		3/4" Sto	one Void Space =	= 40	%	
3. Determine S	oil Percolation Rate (Sr)							
	Depth of test hole = 8	inches		Measur	es Water Drop =	= 1	in	
	Diameter of test hole = 8	inches		Soil Pe	ercolation Rate =	= 30	min (per wa	ter drop)
	Area of bottom = 0.349	sf (Ac)			Perc Rate =	= 0.00	0278 cf/sf/mi	in
	Volume of Percolation = 0.029	cf(Vp)			Perc Rate =	= 4.	00 cf/cf/day	
	Volume of recondition of elect				I GIU MALE	-		'Y
4. Calculate Re	ouired Storage Volume							
Existing Runoff (Curve Number							
								[
Hydrologic Group	Cover Description	ו 		Soil	Name	CN	Area (Acres)	CN x Area
С	Open Space - Good Co	ndition				74	0.11	8.14
С	Impervious Area	а				98	0.04	3.92
						Totals =	0.15	12.06
						CN _{ex} (we	ighted) 🗪	80.4
Proposed Runof	f Curve Number				-			
Hydrologic Group	Cover Description	n		Soil	Name	CN	Area (Acres)	CN x Area
C.	Impervious Are	a				98	0.03	2.94
C C	Onen Snace - Good Co	ndition				74	0.00	2.5 8.88
		Huition	<u> </u>			/4	0.12	0.00
l1			I			Totals =	0.15	11.87
100	year Docign Storm						ighted)	78.8
100	inch 24-hour rainfall						ignicaj ,	/0.0
_		Exis	ting	Pronosed	1			
	Curve Number	80	4	78.8	-			
Max Purpoff S (in) 2.44			44	2 69	-			
			+ 4 ΛΩ	0.54	-			
			+5 60	6.42	D\/r -	- 0.20	in	
	Runon, vi (m)	0.0	52	0.42	UVI -	= -0.20	IN	
	Vs =	= (DVr x /	Area) =	-107.1	cf			

Civil Design Works, LLC 19 Squadron Boulevard, Suite #4

New City, New York 10956					
		DRYWELL DESIGN	J		
Project	647 North Broadway	^{By} ZK	Date	11/30/2022	
Location	Upper Nyack, New York	Checked GM	Date	11/30/2022	
Basin ID:	Proposed				
5. Calcu	late volume per drywell (Vw)				
	Type of Basin = Cylinder	Basin	wall thickness = 3	inches	
	Diameter of Basin = 4 ft	3/4" St	one Perimeter = 6	inches	
	Depth of Basin = 4 ft	3/4" Sto	one Void Space = 40	%	
	Avg Inside Diameter = 4 ft	Stone Wall	Length = 5.5 ft (avg rir	ng dia + 2 x stone perimeter)	
	Avg Inside Area = 12.57 sf	Total Stone Wa	II Area = 88 sf (area in	n contact with soil)	
	Avg Outside Diameter = 4.5 ft	Avg Area of	Stone = 14.346 sf (minus	avg ring area)	
	Avg Outside Area = 15.9 sf	Volume	Stone = 22.953 cf (minus	avg ring volumeand voids)	
	Avg Inside Volume = 50.27 cf		Vw = 73.219 cf (availa	ble void space per basin)	
	Avg Outside Volume = 63.62 cf				
6. Calcu	late 24-hour percolation volume per dryw	ell (Vp)			
	Vp = Bottom Area	of drywell x soil percolatior	n rate (Sr)		
	Vp = 198 cf/da	y/drywell			
	Note: Bottom of Drywell	not included			
7. Calcu	late the total 24-hour volume per drywell	(Vt)			
	Vt = Volume of dry	/well (Vw) + percolation vo	lume (Vp)		
	Vt = 271.2 cf				
8. Deter	mine number of drywells required				
	DWr = required volu	me of storage (Vs)/Total vo	lume per drywell (Vt)		
	DWr = -0.395 units				
	-0 395 units	required			
		-1			
	Summary:		BAS	SIN DIA	
	Utilize: -1 units @				
	Cylinder Drywell Shape				
	4 ft diameter ba	asin @ top	DIA. + 2	x Stone Per. —	
	4 ft depth				
6 in stone perimeter DIA. + 2 x Stone Per.					
	Additional Notes:				
				IDE DIA	
			b BAS	SIN DIA.	
			NOTE: 4' DIA.	BASIN IS INSIDE DIA.	
			FIF \	ATION	



•HW·	
	UE
СВ	



TEGORIES	TOTAL AREA	SLOPE DEDUCTION	LIMITATION OF DISTURBANCE PER SECT. 6.7.1	AMOUNT PR
SLOPE 40% DR GREATER	9746 SF	NO CREDIT TOWARD NET AREA (9,746 SF REDUCTION)	(NO DISTURBANCE PERMITTED WITHOUT VARIANCE)	12 (VARIAN
LOPE 25%-39%	6460 SF	50% CREDIT TOWARD NET AREA (3,230 SF REDUCTION)	NO MORE THAN 20% OF THIS AREA MAY BE DISTURBED WITHOUT VARIANCE)	1.
LOPE 15%-24%	2619 SF	100% CREDIT TOWARD NET AREA (NO REDUCTION)	NO MORE THAN 35% OF THIS AREA MAY BE DISTURBED WITHOUT VARIANCE	1 (VARIAI

GROSS AREA =
$$62,376$$
 SF
-100% (>40%) = 9,746 SF

TE	REVISIONS	SLOPE CATEGORY MAP	TAX LOT # 60.06–1–5.2
)2/22	MISC REVS	AND LIVIT OF DISTURBANCE	AREA
2/22	REV DWLGARDEQPES		SEE ABOVE
22	GREEN	- 047 NO. DIVOADWAT	FILE
			21324_647SLOPE
		VILLAGE OF UPPER NTACK Rockland county New York	SCALE
			1 = 20
	DW	JAY A. GREENWELL, PLS, LLC	DATE 04/07/22
ED <u>J</u>		LAND SURVEYING - LAND PLANNING	JOB NO.
VED <u>J</u>	AG JAY A. GREENWELL, PLS NYS LIC. # 49676	85 LAFAYETTE AVENUE, SUFFERN, NEW YORK, 10901 PHONE 845–357–0830 FAX 845–357–0756	21324
			SHEET 2



SHEET 4

BUILDING FRONT ELEVATION

SCALE: 1/4"=1'-0"

06-22-22 PLANNING BOARD MEETING 07-20-22 PLANNING BOARD RESUBMISSION 09-06-22 ZONING BOARD SUBMISSION 10-11-22 ZONING BOARD RESUBMISSION 10-19-22 PLANNING BOARD RESUBMISSION 12-21-22 PLANNING BOARD RESUBMISSION

KS 4533

MD 7823

MA 8687

GUEST HOUSE ELEVATIONS

ARCHITECTURAL LICENSE NUMBERS:		
NY 019357-	1	
CT 07984	MI 1301040380	
DE 0005320	MN 26586	
DC ARC101043	MO 007521	
IL 001-015551	NH 3078	

NH 3078 NJ 21Al00962900 PA RA-010849-B

NJ PROFESSIONAL PLANNER: 33LI00355400

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DATE: 04-26-22 SCALE: AS NOTED DRAWN BY: RM CHECKED BY: GH

07-20-22 PLANNING BOARD RESUBMISSION 09-06-22 ZONING BOARD SUBMISSION 10-11-22 ZONING BOARD RESUBMISSION 10-19-22 PLANNING BOARD RESUBMISSION 12-21-22 PLANNING BOARD RESUBMISSION

WG. TITLE:	
PARTIAL SITE PLAN AND SITE	
SECTIONS	

ARCHITECTURAL LICENSE NUMBERS:		
NY 019357-	- 1	
CT 07984 DE 0005320 DC ARC101043 IL 001-015551 KS 4533 MD 7823 MA 8687	MI 1301040380 MN 26586 MO 007521 NH 3078 NJ 21AI00962900 PA RA-010849-B	

NJ PROFESSIONAL PLANNER: 33LI00355400

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