Wildrick Residence Conservation Board Submission
09-01-2021

Submission material list:

- Cover Letter
- FEMA Flood map
- Natural pool information booklet
- Revised drawing set:
    - Site Plan
    - Floor plans
    - Building Elevations
    - 3D views
    - ZBA approved variances/ site information

178 Main Street Cold Spring New York 10516 t: 845.265.2254 f: 845.265.2273

September 3, 2021

Attn: Mark Galezo, Chairperson, and Max Garfinkle. Wetlands Inspector
238 Main Street
Cold Spring, NY, 10516

Dear Mr. Galezo and Mr. Garfinkle,

We are following up on our application submitted January 26, 2021on behalf of our clients, Jena Girouard and Jesse Wildrick, residing at #30 Hudson River Lane, Philipstown, NY, New York. They own this property, and the adjoining #28 Hudson River Lane.

As you may recall, our clients wish to combine the two existing lots into one extinguishing the property line between. They also wish to replace the existing houses & detached structures with a single 4-bedroom house plus new garage, install a new septic system, replace the deteriorated gabion basket seawall situated on # 28 with a precast concrete gravity block wall to match the one situated on #30. The proposed new dwelling unit will be raised above the 500-year flood plain, designed to eliminate all fossil fuels on site, including the removal of a propane-fired generator and propane tanks, oil burners, and oil tanks. The new dwelling will utilize solar PV collection and battery storage and all-electric equipment. We are also proposing a new natural, chemical-free swimming pool.

Important updates to this application are that our designs have progressed, and we have received Zoning Board of Appeals variances on non-conforming aspects of our site and site plan. The sea wall improvements have been designed by Race Engineering. Race has submitted applications on July 6, 2021 with NYS DEC and Army Corps of Engineers and are awaiting any comments from their review.

We respectfully request your evaluation of this application based on our efforts to address sea-level rise, improve on-site water absorption, construct a highly effective and appropriately sized septic appropriate for the site conditions, and our desire to minimize climate impact through the use Net-Positive energy consumption and low-embodied energy construction strategies. We are pursuing certification with Passive House Institute US, Source Net-Zero with this project.

We look forward to resuming this conversation with you.

Gratefully,

James Hartford | AIA, LEED AP, NCARB, CPHC
River Architects, PLLC | Principal
MWBE, DBE, & SBE Certified Business
Passive House | Net Zero | Living Buildings | LEED

National Flood Hazard Layer FIRMette

FEMA

73°58'41"W 41°19'58"N

73°58'4"W 41°19'31"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

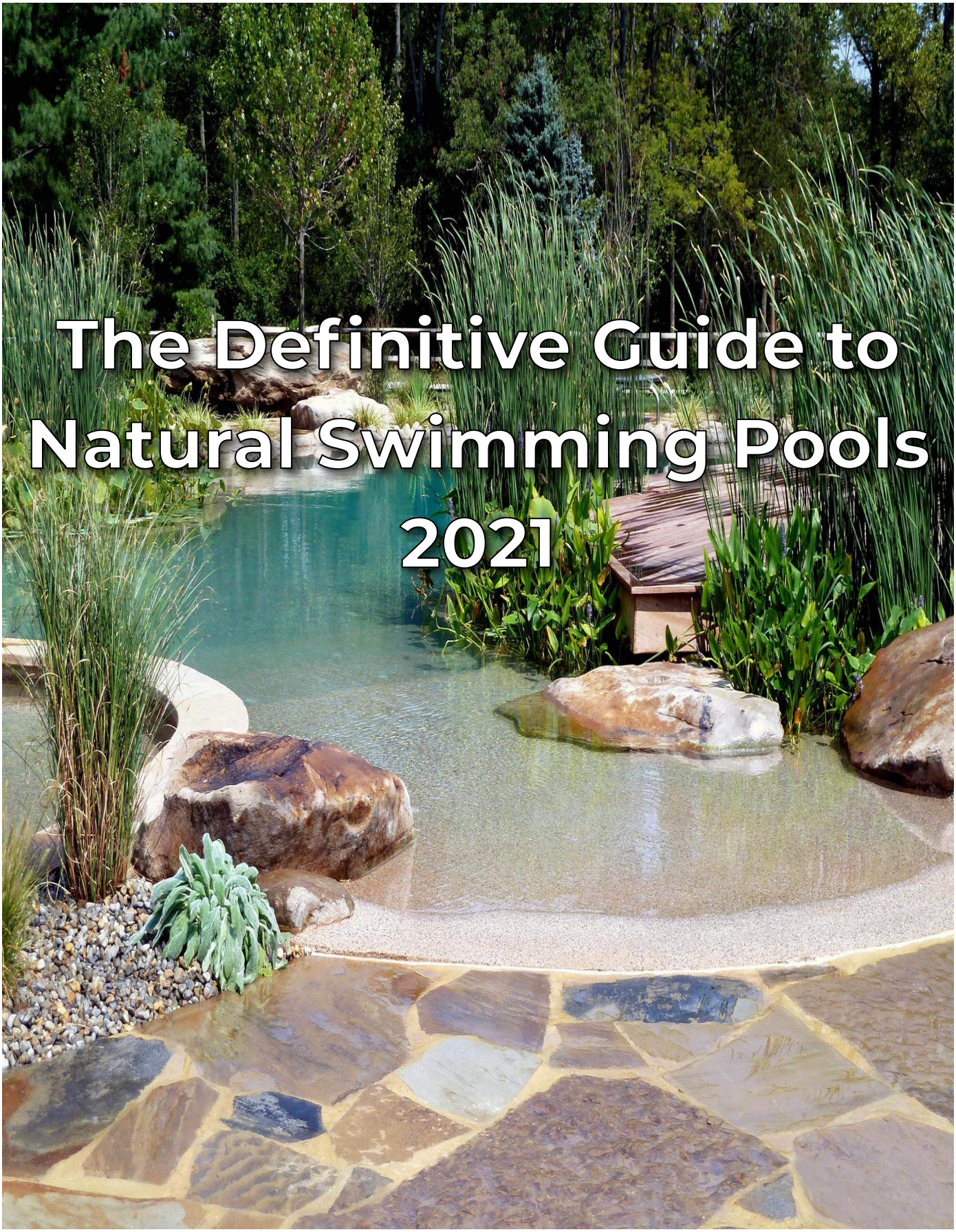
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/15/2020 at 1:12 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

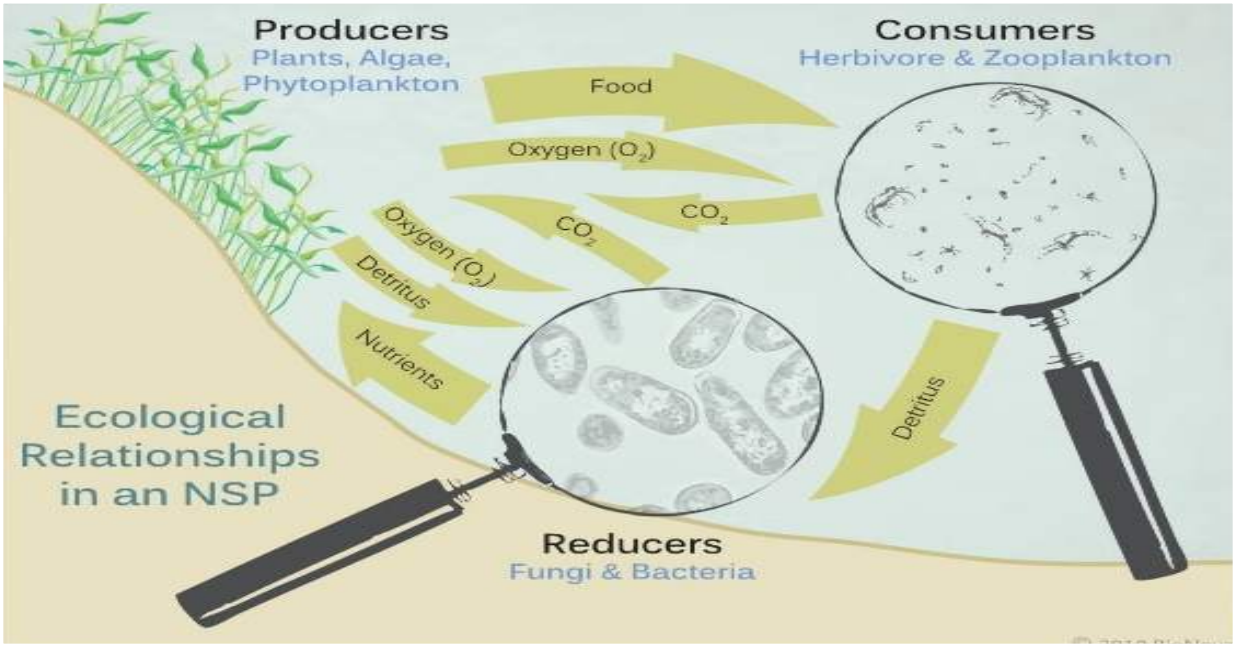
BioNova® natural pool



The Definitive Guide to Natural Swimming Pools 2021

Harmonious Living Water

In a chemical pool, debris is referred to as a contaminant. In an NSP, this debris is referred to as ***nutrients***. A chemical pool must constantly remove contaminants because pathogenic organisms still exist in the water and will grow if this "food source" is not removed. An NSP nurtures the development of the microorganisms to remove these ***nutrients*** by feeding on them. By doing so, they outcompete the undesirable microbes. Through this cycle they ***control*** and ***suppress*** the population of harmful organisms. This process dives into a bit of junior high earth science, but BioNova® enjoys taking on the role of educating and enlightening people!



Naturally purified water isn't manufactured, it gradually happens. What may seem like magic is simply crafting the right environment to nurture the growth of natural bacteria, thus creating microbial harmony.

-**Producers** like plants, algae, and phytoplankton, create energy for their own metabolic needs, as well as food and oxygen for others. This is a byproduct of photosynthesis (plants converting sunlight into energy).

-**Consumers** consume the gases and metabolic byproducts created by the producers and begin the breakdown of nitrogen.

-**Reducers,** like bacteria and fungi, feed on the remaining organic by-products, and this host of beneficial microorganisms multiply.
These ecosystems occur naturally, but they do have some basic requirements. If provided with a surface on which to grow, this biotic community will form a biofilm. Biofilm is the result of free-floating microbes finding a spot to call home in the biological filter of the NSP. One of the key components of biofilm is the film itself. The film, called an **Extracellular Polymeric Substance (EPS)**, encapsulates the community of organisms, providing protection from the elements and a means for the colony to capture nutrients and anchor to a suitable surface. This biofilm is home to numerous species of bacteria and fungi, each with a specific function and metabolic purpose. Imagine biofilm as a biological pantry—a sort of long term nutrient storage. An aquatic symphony of life sustenance emerges out of this microbial cycle.

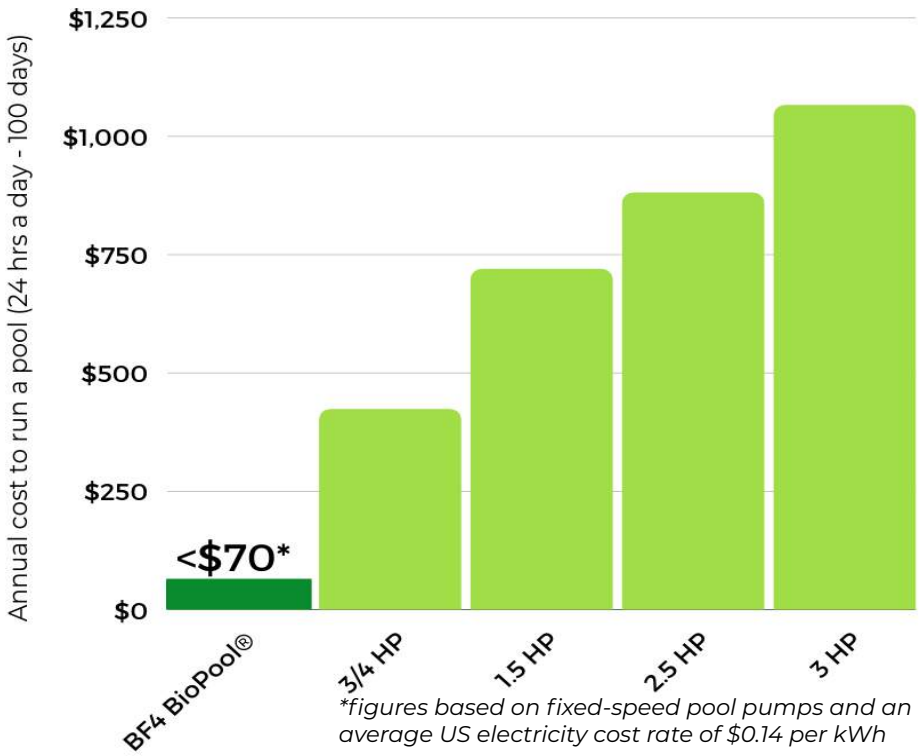
An NSP is in harmony with nature!

Harnessing Nature

Biofilm forms on surfaces—the more surface area, the better. With a desirable place to form, the remaining requirement is nourishment for the biofilm and that comes from the swimming vessel. The flow of the water from the swimming area into the biological filter area provides an abundance of nutrients to feed the biofilm and the water is cleansed as the nutrients are removed. This ***positive feedback loop*** is an incredibly efficient way to purify water and na-

ture has been doing it for millennia. Through constant and properly maintained water flow, this natural system will provide clear, soft water for bathers and swimmers. Another ***sustainable*** attribute of the NSP is that the filters that we use are all open-to-atmosphere, meaning they are not pressurized vessels like the filters that are used in chemical pools. Because they are open-to-atmosphere, the NSP filters can run at much lower pressures and achieve the same flow rates while consuming far less power.

Our NSP BioPool® design using a BF4 biofilm filter can run a 535 sq. ft. swimming pool with the equivalent electrical consumption of two (2) 100-Watt light bulbs. Since we are using no chemicals, this is a very ***sustainable*** option for a backyard swimming pool. With the help of solar power, this could easily be a pool operating entirely off the grid!



figures based on fixed-speed pool pumps and an average US electricity cost rate of $0.14 per kWh

In a final note on sustainability, BioNova® knows the logistics involved in production, packaging, and transportation of pool chemicals is detrimental to the environment from the beginning to the end of its life cycle. This is environmentally ***unsustainable***, energy-intensive, and economically inefficient. BioNova® believes the creation of life-bearing biological filters are far more valuable than wasting resources.

The Swimming Pool Paradigm Shift

BioNova® recognizes the desire to have options in sync with lifestyle choices that support ***greener living*** and ***environmental responsibility***.
Natural swimming pools provide current or hopeful pool owners with an entirely new choice for outdoor recreation.

What is a BioNova® NSP?

A BioNova® NSP has 4 defining criteria:

The pool is a self-contained environment in a waterproof vessel - The vessel is constructed using gunite with a plaster finish, steel walls with a PVC membrane or composite equivalent. This closed-circulation structure prevents outside water sources and runoff into the NSP.

The swimming zone is clearly defined - If there are aquatic plants in a regeneration zone, they are separated from the swimming zone for swimmer comfort and health.

No chemicals - Salt chlorine generators, ozone generators, ionizers, mineral systems, or any other devices are not used.

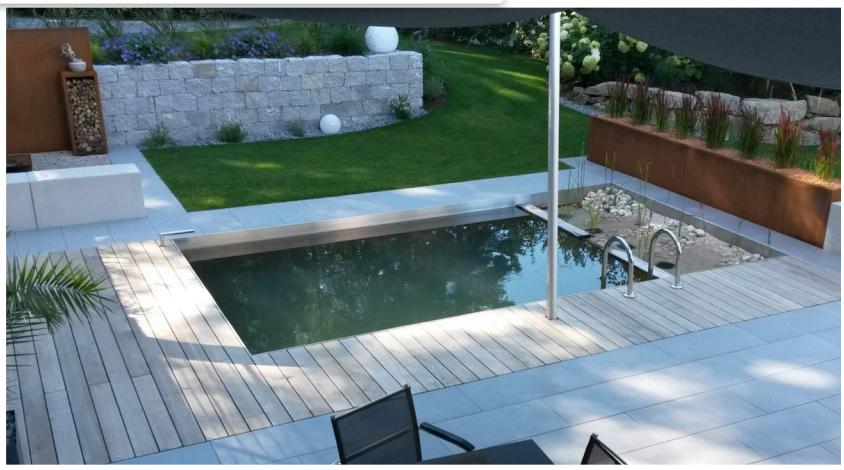
Conformance with applicable swimming pool codes - Local laws and guidelines dictate the proper swimming pool construction process. We consider the importance of pool accessibility and safe slopes and depths for swimmers young and old.

NSPs share a few similarities to a chemical-treated pool. First, it is a contained, waterproofed, and recirculated system. Second, it is designed, permitted, and constructed in conformance with swimming pool code. This is where the similarities end, however.

NSP BioPool®

A modern marvel of water health and pool engineering, The NSP BioPool® uses a biofilm filter zone instead of a planted regeneration zone. The biofilm filter is separated from the swimming zone and provides a surface area for biofilm to grow. A faster circulation rate mirrors a moving water body like a river or stream. This encourages the abundant growth of biofilm away from the swimming zone, which allows all nutrients in the water to be consumed.

A BioNova® BioPool® in Martha's Vineyard, MA



This leaves nothing for plants or algae to grow, resulting in beautiful, emerald or aquamarine-tinted water. The tradeoff is also much more efficient use of space—typically less than 10% of the pool's surface area with no minimum build size required!

The biofilm filters are easily installed adjacent to the swimming zone or elsewhere on the property. The filters come in different sizes and configurations. Trained BioNova® engineers will specify which one is appropriate depending on the site and the hydraulic requirements of the design. Owing to our ***sustainability principles***, they are designed to be easily flushed out, and the biologically rich effluence makes an excellent garden fertilizer.

GEOGRAPHIC INDEX 41-19-51.6 -73-58-21.8

T.M. : 89.7-1-7

Closed by GJW On 06-19-19

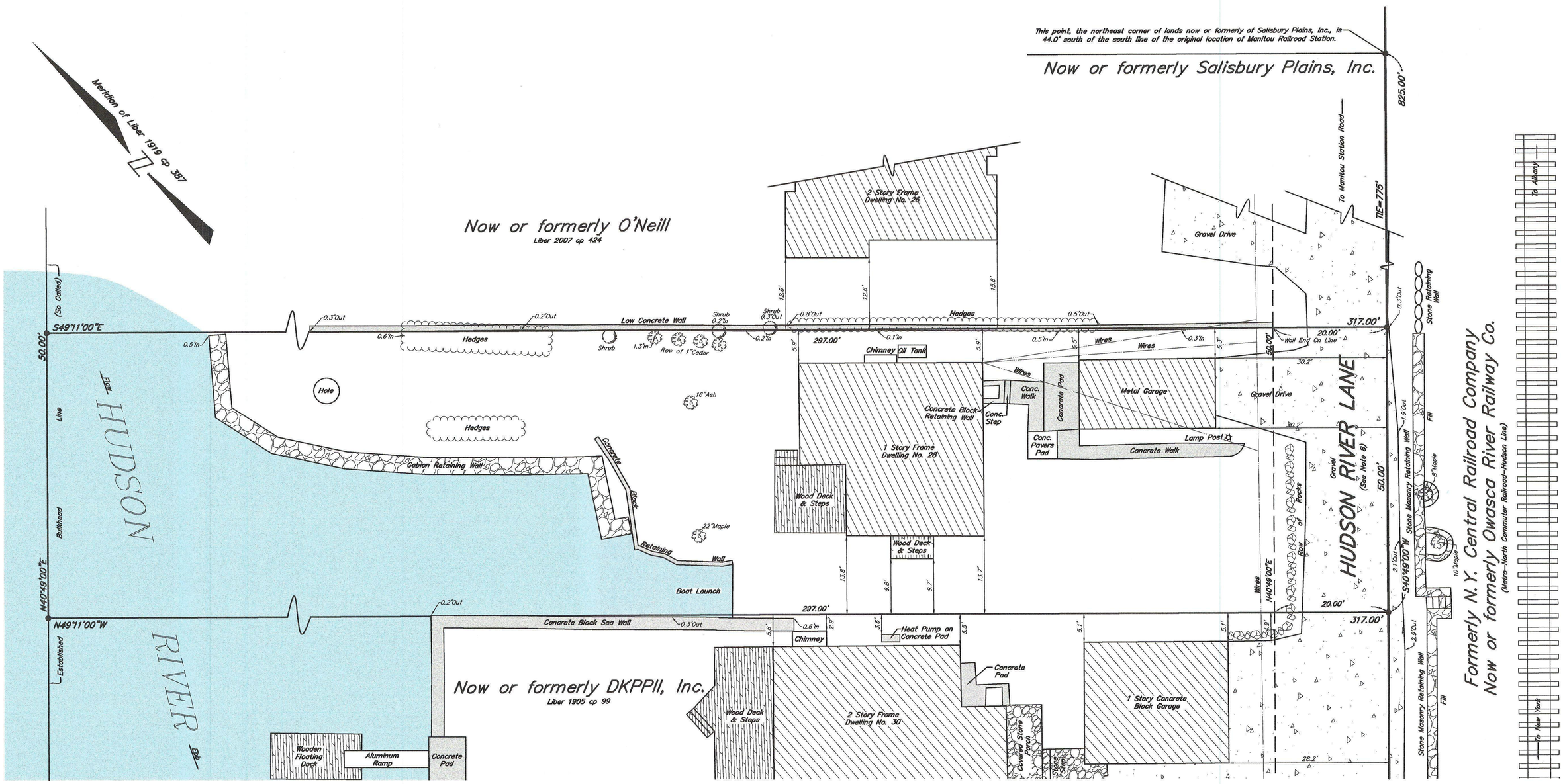
Drawn by NAM

Spell checked by NAM

Checked by GJW/JWR

Layout: SURVEY W.O. No. 21788, 24787

Drawing Name: LS24787B_R03



Area = 15,850 Sq. Ft.

of which approximately 8,284 sq. ft. is upland
of which 1,000 sq. ft. lies within Hudson River Lane

This map was prepared for the exclusive use of and is certified only to:

JESSE HASTED WILDRICK
JENA MARLEASE GIROUARD

FIRST AMERICAN TITLE INSURANCE CO. OF NY
but only for use in connection with their Title No. 478-014382PU

FIRST REPUBLIC BANK
its successors and/or assigns, but only as their interest may appear in a 2019 mortgage to it by JESSE HASTED WILDRICK and JENA MARLEASE GIROUARD

BADEY & WATSON
Surveying & Engineering, P.C.
3063 Route 9
Cold Spring, NY 10516
www.Badey-Watson.com
845.265.9217
845.265.4428 (Fax)
877.3.141593 (Toll Free)

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3. All certifications are valid for this map and copies thereof only if said map or copies bear the embossed seal of the surveyor whose signature appears hereon.
4. If underground improvements, easements, or encroachments exist and are neither visible during normal field survey operations nor described in instruments provided to these surveyors, they may not be shown on this map.
5. This property may be affected by instruments which have not been provided to these surveyors. Users of this map should verify title with their attorney or a qualified title examiner.
6. This survey is of property described in the Putnam County Clerk's Liber 1919 of deeds at page 387 (Borger to Lucky Enough, Inc.).
7. Users are referred to that certain "Map of Property belonging to Highland Chemical Co....." which was filed in the Putnam County Clerks Office on May 22, 1899 as Map No. 10C.
8. The Right-of-way shown hereon provides the only wheeled motor vehicle and pedestrian access to this property. The recent deeds in this chain do not mention the Right-of-way. However this surveyor's personal knowledge, it has serviced this property for at least 45 years.

SURVEY OF PROPERTY
PREPARED FOR

JESSE HASTED WILDRICK
AND
JENA MARLEASE GIROUARD

SITUATE IN THE
TOWN OF PHILIPSTOWN
PUTNAM COUNTY
NEW YORK

SCALE 1 in. = 10 ft. JUNE 12, 2019

We hereby certify that the survey shown hereon was completed by us on June 12, 2019 that this map was completed on June 19, 2019 and that this survey has been prepared in accordance with the existing Code of Practice for Land Surveys adopted by The New York State Association of Professional Land Surveyors, Inc.

STATE OF NEW YORK
GLENNON J WATSON
48167
LICENSED LAND SURVEYOR

BADEY & WATSON
Surveying & Engineering, P.C.
by
NEW YORK STATE LICENSED LAND SURVEYOR
LICENSE No. 48167

PRINTED
JUN 19 2019
BADEY & WATSON
Surveying & Engineering, P.C.

FILE No. 80-120

GEOGRAPHIC INDEX 41–19–51.6 –73–58–21.8

T.M. : 89.7–1–7

On 06–19–19 Closed by GJW

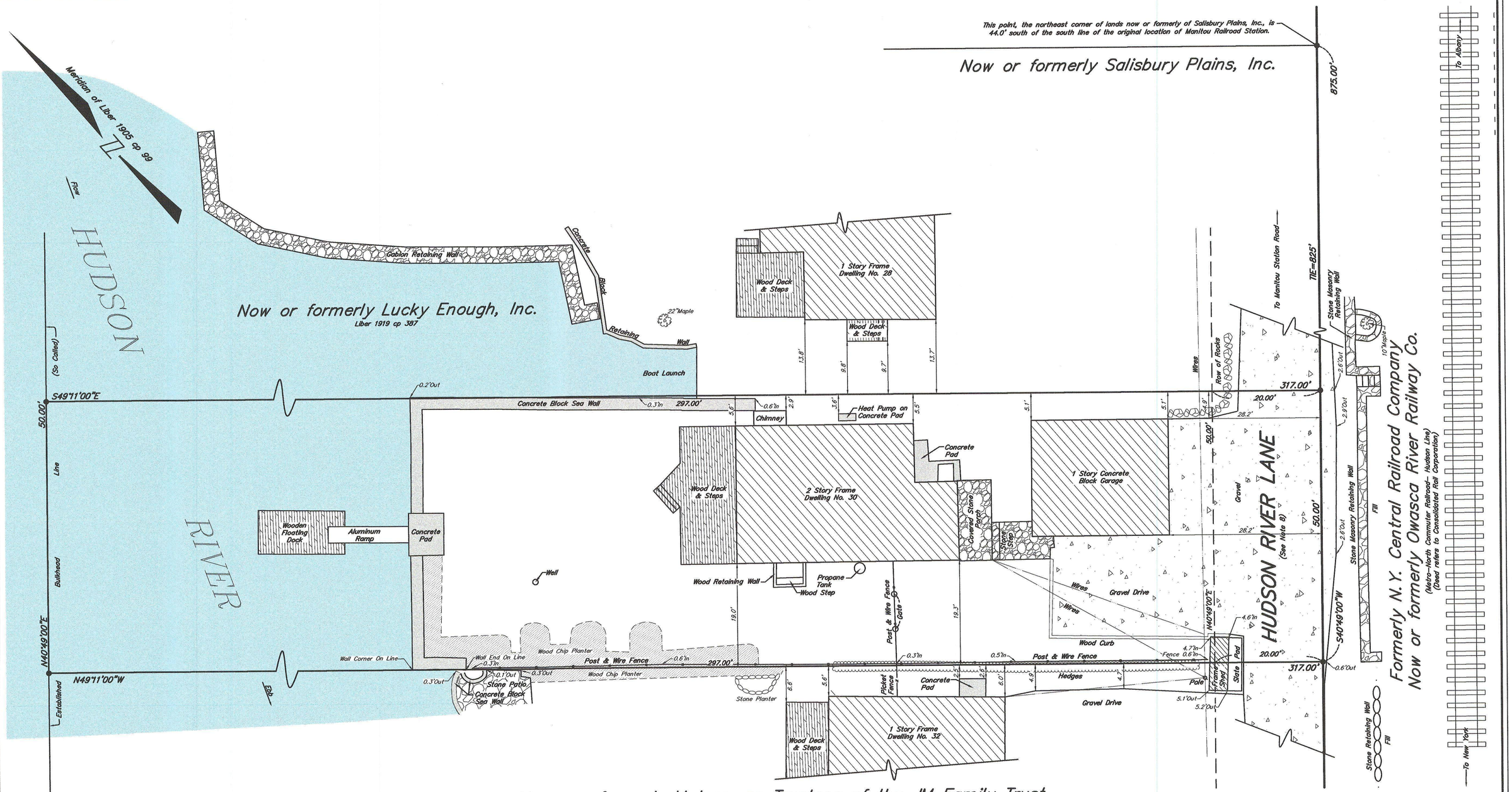
Drawn by NAM

Spell checked by NAM

Checked by GJW/JWR

Layout: SURVEY W.O. No. 21788, 24787

Drawing Name: LS24787A___R03



Now or formerly Matero, as Trustees of the JM Family Trust
Liber 2079 cp 388

Area = 15,850 Sq. Ft.

of which approximately 8,415 sq. ft. is upland
of which 1,000 sq. ft. lies within Hudson River Lane

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5. This property may be affected by instruments which have not been provided to these surveyors. Users of this map should verify title with their attorney or a qualified title examiner.
6. This survey is of property described in the Putnam County Clerk's Liber 1905 of deeds at page 99 (Jache to DKPPII, Inc.).
7. Users are referred to that certain "Map of Property belonging to Highland Chemical Co...." which was filed in the Putnam County Clerks Office on May 22, 1899 as Map No. 10C.
8. The Right–of–way mentioned in Liber 1137 cp 57, a previous deed in this chain, was designated by the Town of Philipstown as Hudson River Lane during the road identification program necessary to the installation of Putnam County's E911 emergency response system.

SURVEY OF PROPERTY
PREPARED FOR

JESSE HASTED WILDRICK
AND
JENA MARLEASE GIROUARD

SITUATE IN THE
TOWN OF PHILIPSTOWN
PUTNAM COUNTY
NEW YORK

SCALE 1 in. = 10 ft. JUNE 12, 2019

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STATE OF NEW YORK
JENNIFER W REAP
50389
LICENSED LAND SURVEYOR

BADEY & WATSON
Surveying & Engineering, P.C.
by
NEW YORK STATE LICENSED LAND SURVEYOR
LICENSE No. 50389

PRINTED
JUN 19 2019
BADEY & WATSON
Surveying & Engineering, P.C.

FILE No. 80–120

IMPERVIOUS COVERAGE CALC (EXCL. LAND UNDER WATER)

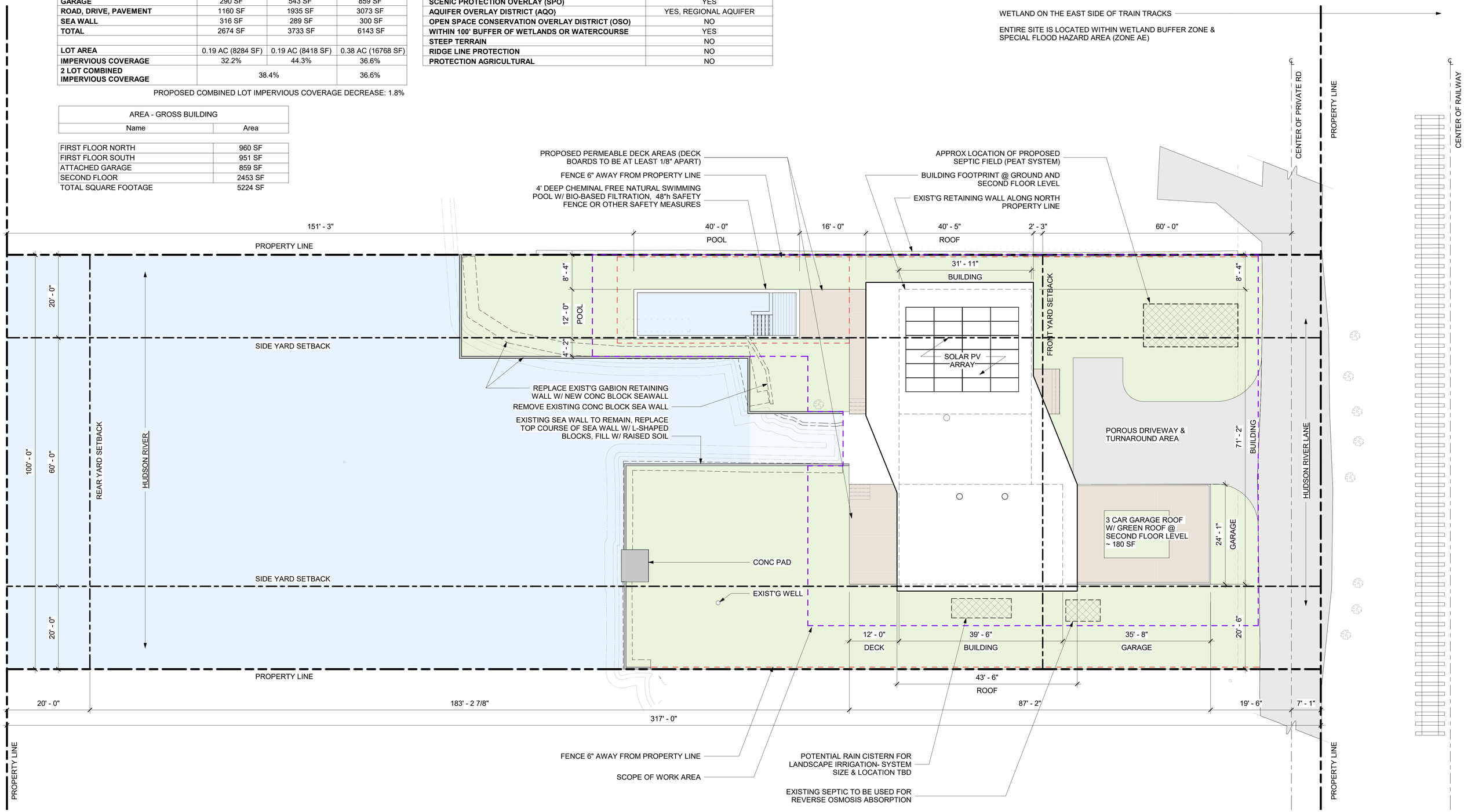
	EXIST		PROPOSED (COMBINED LOT)
	LOT: 89.7-1-8	LOT: 89.7-1-7	
DWELLING UNIT	908 SF	966 SF	1911 SF
GARAGE	290 SF	543 SF	859 SF
ROAD, DRIVE, PAVEMENT	1160 SF	1935 SF	3073 SF
SEA WALL	316 SF	289 SF	300 SF
TOTAL	2674 SF	3733 SF	6143 SF
LOT AREA	0.19 AC (8284 SF)	0.19 AC (8418 SF)	0.38 AC (16768 SF)
IMPERVIOUS COVERAGE	32.2%	44.3%	36.6%
2 LOT COMBINED IMPERVIOUS COVERAGE	38.4%		36.6%

PROPOSED COMBINED LOT IMPERVIOUS COVERAGE DECREASE: 1.8%

OVERLAY DISTRICT ON THE PROPERTY

FLOODPLAIN OVERLAY DISTRICT - NFIP MAP (FPO)	YES, ZONE AE, EL 7'-0"
MOBILE HOME OVERLAY DISTRICT (MHO)	NO
COLD SPRING RESERVOIR WATER SHED OVERLAY (WSO)	NO
SCENIC PROTECTION OVERLAY (SPO)	YES
AQUIFER OVERLAY DISTRICT (AQO)	YES, REGIONAL AQUIFER
OPEN SPACE CONSERVATION OVERLAY DISTRICT (OSO)	NO
WITHIN 100' BUFFER OF WETLANDS OR WATERCOURSE	YES
STEEP TERRAIN	NO
RIDGE LINE PROTECTION	NO
PROTECTION AGRICULTURAL	NO

AREA - GROSS BUILDING	
Name	Area
FIRST FLOOR NORTH	960 SF
FIRST FLOOR SOUTH	951 SF
ATTACHED GARAGE	859 SF
SECOND FLOOR	2453 SF
TOTAL SQUARE FOOTAGE	5224 SF



River ARCHITECTS

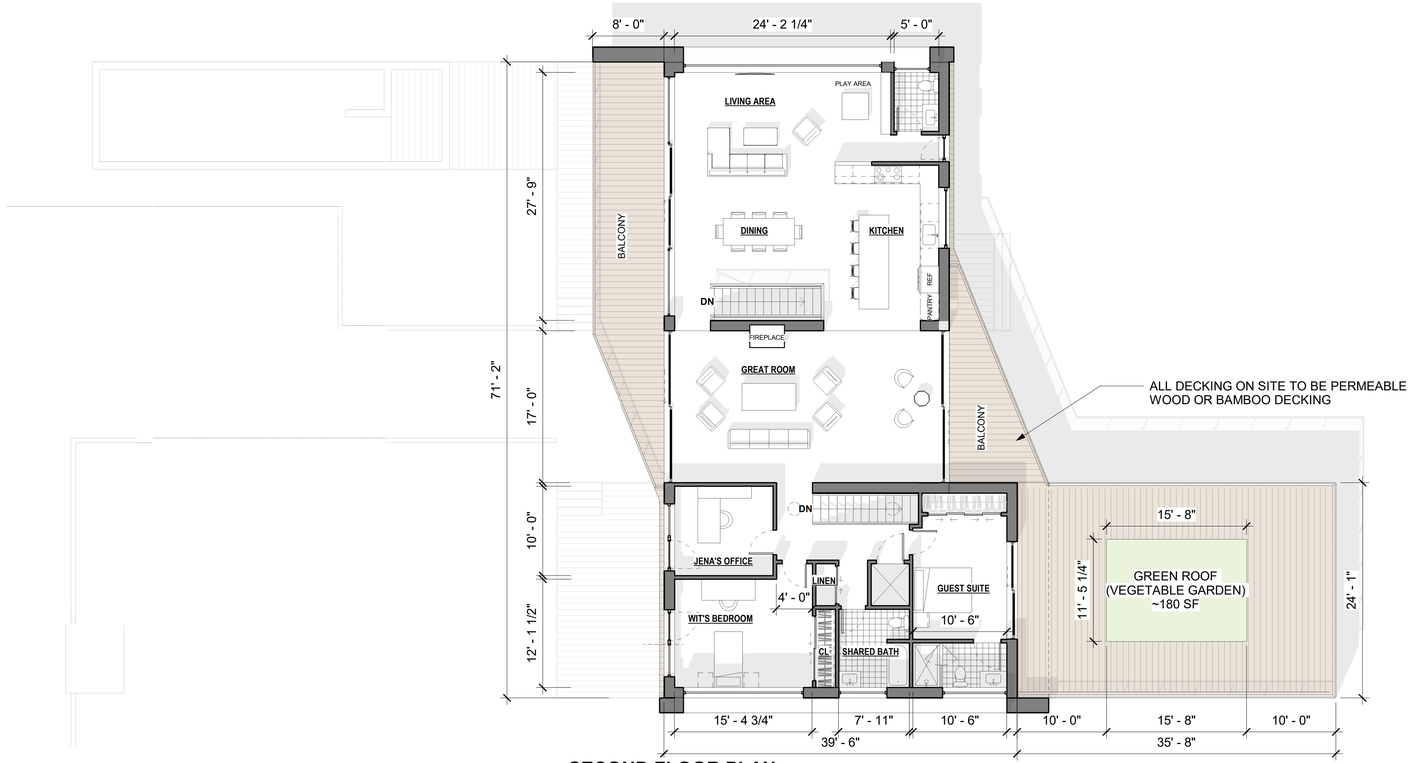
WILDRICK RESIDENCE

PROPOSED SITE PLAN

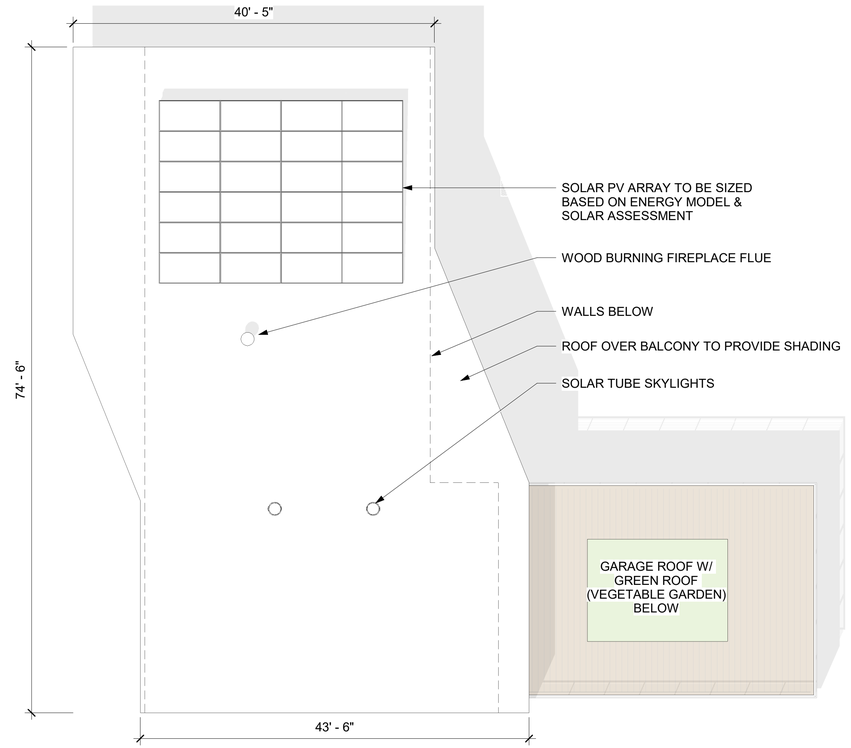
NORTH

1" = 10'-0"

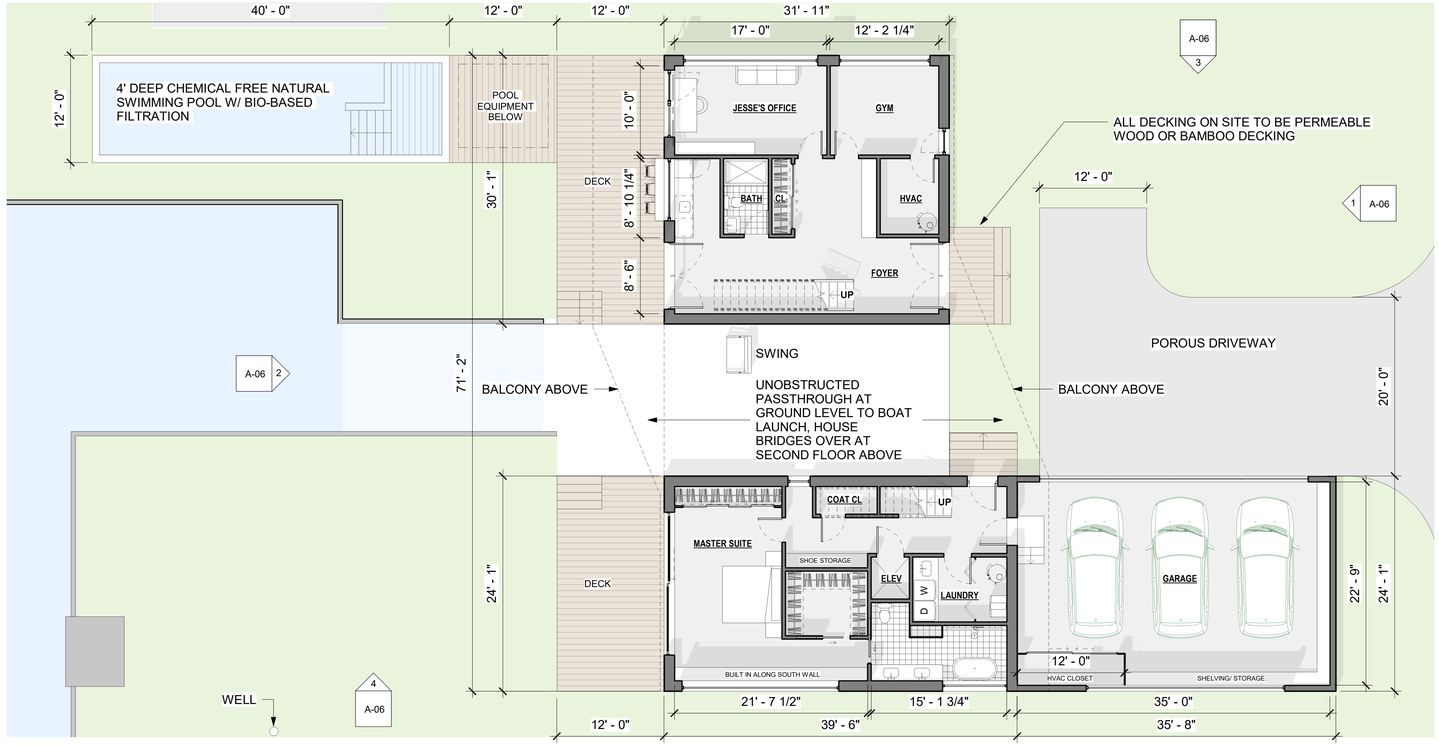
09/01/2021



SECOND FLOOR PLAN



ROOF PLAN



FIRST FLOOR PLAN

.River ARCHITECTS

WILDRICK RESIDENCE

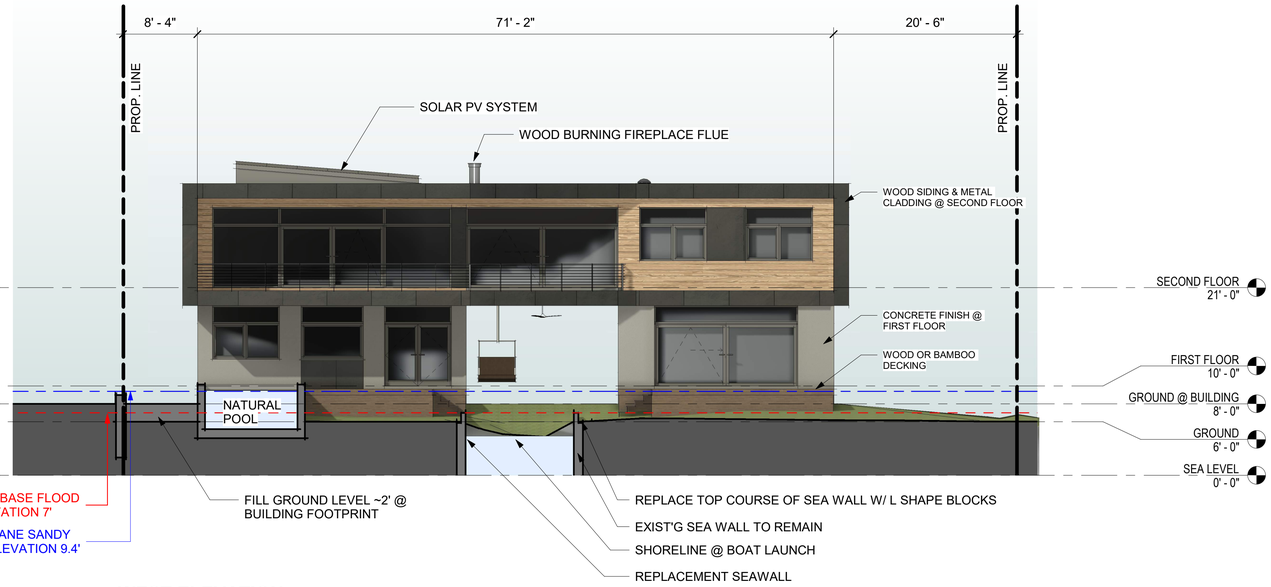
FLOOR PLAN

NORTH

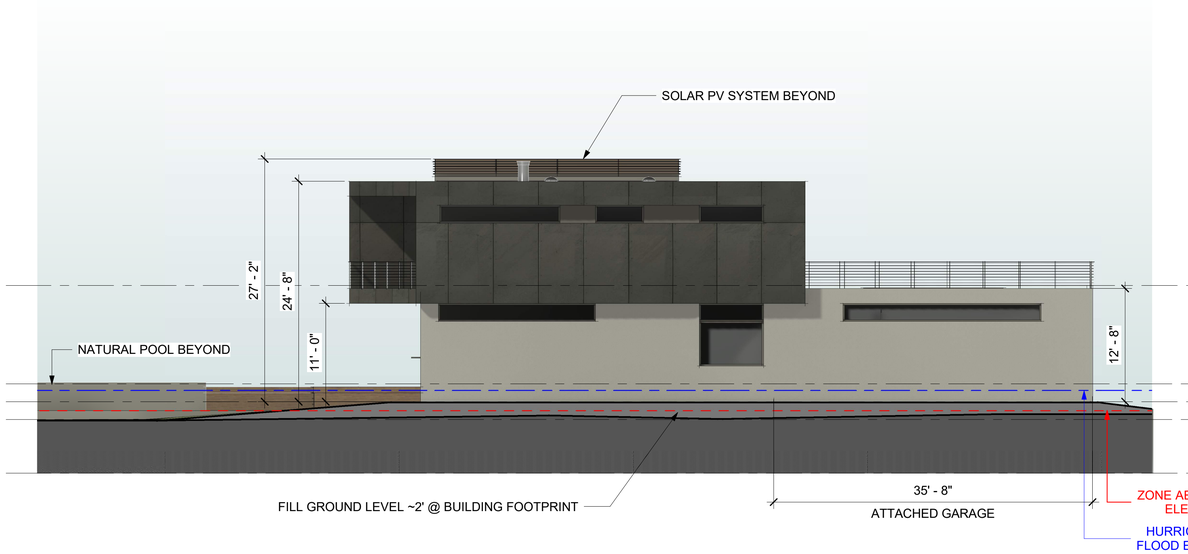
1/8" = 1'-0"

09/01/2021

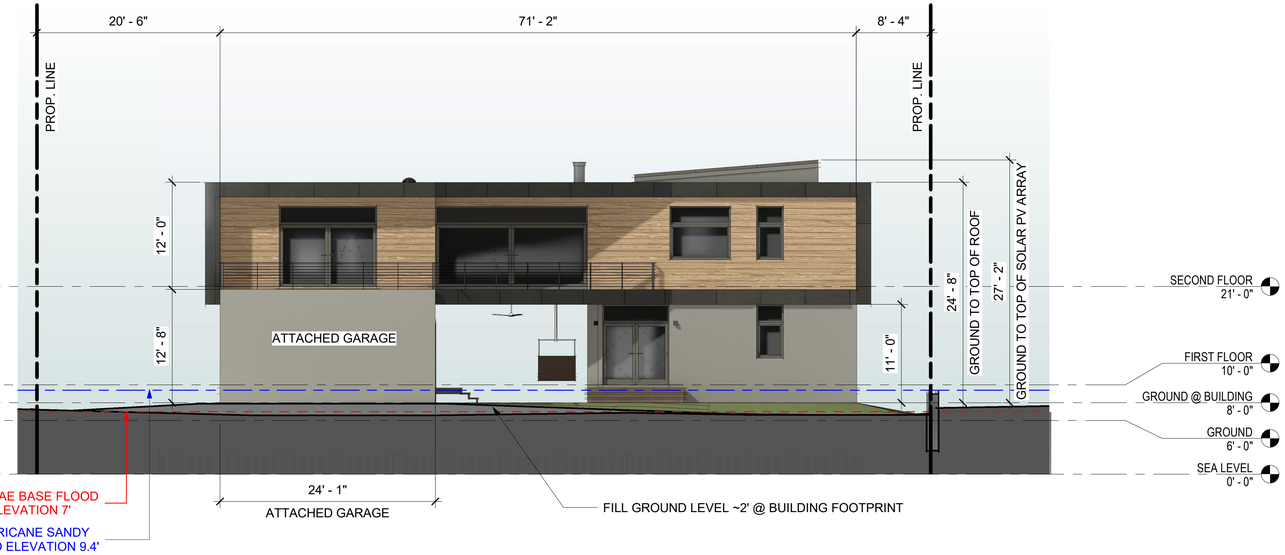
NORTH ELEVATION



WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION

River ARCHITECTS

WILDRICK RESIDENCE

BUILDING ELEVATIONS

1/8" = 1'-0"

09/01/2021

River
ARCHITECTS

WILDRICK RESIDENCE

3D VIEW FROM SOUTH-WEST

09/01/2021

River
ARCHITECTS

WILDRICK RESIDENCE

3D VIEW FROM NORTH-EAST

09/01/2021

ZONING CONFORMANCE CHART

ZONING DISTRICT: RR (RURAL RESIDENTIAL)

28 HUDSON RIVER LANE (89.7-1-8)
30 HUDSON RIVER LANE (89.7-1-7)

	REQUIRED	ACTUAL (EXIST)		ACTUAL (PROP.)	CONFORMANCE	VARIANCE REQUESTED
		LOT: 89.7-1-8	LOT: 89.7-1-7	COMBINED LOT		
MAX DENSITY (CONSERVATION)	3 AC/DU					
MIN LOT SIZE	5AC	0.36 AC	0.36 AC	0.72 AC	EXISTING NON-CONFORMING	4.28 AC
MIN ROAD FRONTAGE FOR CONVENTIONAL SUBDIVISON						
PRIVATE ROAD	250'-0"	50'-0"	50'-0"	100'-0"	EXISTING NON-CONFORMING	150'-0"
MIN FRONT YARD SETBACK **MEASURED FROM CENTER OF HUDSON RIVER LN (PRIVATE ROAD)**	60'-0"	23'-1"	21'-1"	19'-6"	DOES NOT CONFORM	40'-6"
MIN SIDE YARD SETBACK_N	20'-0"	5'-6"	2'-11"	6'-0"	DOES NOT CONFORM	14'-0"
MIN SIDE YARD SETBACK_S	20'-0"	9'-9"	19"-3"	20'-0"	CONFORMS	
MIN REAR YARD SETBACK	20'-0"	209'-0"	193'-3"	152'-3"	CONFORMS	
MAX IMPERVIOUS SURFACE COVERAGE	10%	27.8%	42.8%	37.4%	DOES NOT CONFORM	27.4%
MAX HEIGHT	40'-0"	1 STORY	2 STORY	± 26'-1"	CONFORMS	
MAX FOOTPRINT FOR NONRESIDENTIAL STRUCTURES	4,000	N/A	N/A	N/A	N/A	

IMPERVIOUS COVERAGE CALC (EXCL. LAND UNDER WATER)

	EXIST		PROPOSED (COMBINED LOT)
	LOT: 89.7-1-8	LOT: 89.7-1-7	
DWELLING UNIT	908 SF	966 SF	2042 SF
GARAGE	290 SF	543 SF	859 SF
ROAD, DRIVE, PAVEMENT	1160 SF	1935 SF	3073 SF
SEA WALL	316 SF	289 SF	300 SF
TOTAL	2674 SF	3733 SF	6274 SF
LOT AREA	0.19 AC (8284 SF)	0.19 AC (8418 SF)	0.38 AC (16768 SF)
IMPERVIOUS COVERAGE	32.2%	44.3%	37.4%
2 LOT COMBINED IMPERVIOUS COVERAGE	38.4%		37.4%

PROPOSED COMBINED LOT IMPERVIOUS COVERAGE DECREASE: 1%

BUILDING AREA COMPARISON TABLE

	EXIST		PROPOSED (COMBINED LOT)
	LOT: 89.7-1-8	LOT: 89.7-1-7	
DWELLING UNIT	908 SF	1932 SF	4740 SF
GARAGE	290 SF	543 SF	859 SF
TOTAL	1198 SF	2475 SF	5599 SF
	3673 SF		5599 SF
TOTAL AREA INCREASE %			52.4%

River ARCHITECTS

WILDRICK RESIDENCE

ZBA APPROVED SITE INFORMATION

1/8" = 1'-0"
09/01/2021