DEVELOPMENT OF REGIONAL SIGNIFICANCE (DRS) APPLICATION

VENEZIA SQUARE

Compatible Growth Area, Central Pine Barrens Zone

Hamlet of Wading River, Town of Riverhead
Suffolk County New York

NPV No. 06180

Prepared for Submission to:

Central Pine Barrens Joint Planning &
Policy Commission (CPBJPPC)
624 Old Riverhead Road
Westhampton Beach, NY 11978

Prepared by:

NELSON POPE VOORHIS
environmental • land use • planning

70 Maxess Road
Melville, NY 11747
Contact: Charles J. Voorhis, CEP, AICP, Principal
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February 7, 2023

DEVELOPMENT OF REGIONAL SIGNIFICANCE (DRS) APPLICATION

Venezia Square

Compatible Growth Area, Central Pine Barrens Zone

Hamlet of Wading River, Town of Riverhead
Suffolk County, New York

Applicant: Venezia Corp./Joseph Vento
15 Seville Lane
Stony Brook, NY 11790
Contact: Mr. Joseph Vento
(631) 941-0456

For Submission to: Central Pine Barrens Joint Planning & Policy Commission
624 Old Riverhead Road
Westhampton Beach, New York 11978
Contact: Judy Jakobsen, Executive Director
(631) 288-1079

Prepared by: Nelson, Pope & Voorhis, LLC
70 Maxess Road
Melville, New York 11747
Contact: Charles Voorhis, CEP, AICP, Principal
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2929 Expressway Drive North
Hauppauge, NY 11749
Contact: Dale Koch, Associate

February 7, 2023

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TRANSMITTAL LETTER

DEVELOPMENT OF REGIONAL SIGNIFICANCE APPLICATION
TRANSMITTAL LETTER

Dear Commissioners:

Please accept this package as an application for development review of the project known as

Venezia Square

submitted on February 10, 2023 (Date) by Venezia Corp. (Applicant's Name)

This project is located within the Compatible Growth Area of the Central Pine Barrens as described in Section 57-0107 of the New York State Environmental Conservation Law. I realize that this proposal is a **Development of Regional Significance** and must meet the **Standards and Guidelines for Land Use** as per the Central Pine Barrens Comprehensive Land Use Plan including the Final Generic Environmental Impact Statement filed June 12, 1995.

I believe that this project meets all of the standards and guidelines, and appropriate supporting documentation is included in this application. Please find below an explanation, and specific page references to the accompanying support materials, showing consistency with the standards and guidelines. I have also enclosed the required additional materials as noted below. I understand that it is important that I read the enclosed standards and guidelines thoroughly and that my application may be considered incomplete if an explanation is not provided for each of the items described therein and listed below.

In addition to the information noted above, the following requisite material has also been included in this packet: *(please check those items that are included)*

X A copy of any and all approvals that have been received to date

X Three copies of the final approved map or site plan including any required conditions or revisions.

X Copies of other maps or data that document and support the information presented in the attached forms.

X Forms pursuant to the State Environmental Quality Review Act or findings statement and supporting documentation (Environmental Assessment Form, Draft and Final Environmental Impact Statements)

N/A A copy of the Suffolk County Planning Commission determination (if applicable) regarding this application.

N/A Completed and Notarized Owner's Affidavit (form attached) - only required if the applicant does not own the property.

I understand that public hearing will be scheduled for this project once my application has been deemed complete.

(Applicant's Signature)

JOSEPH VENTO
(Applicant's Name Printed)

I authorize the following individual to act as my agent throughout the review process for this application. Please contact them with all information pertaining to this matter.

Agent's Name, Address and Phone Number:

Charles J. Voorhis, CEP, AICP, Principal

Nelson, Pope & Voorhis, LLC

70 Maxess Road

Melville, New York 11747

(Agent's Signature)

PROJECT DATA SHEET

DEVELOPMENT OF REGIONAL SIGNIFICANCE APPLICATION
PROJECT DATA SHEET

Applicant Information	
Name	Joseph Vento, Venezia Corp.
Address	15 Seville Lane, Stony Brook, NY 11790
Phone/Fax	(631) 941-0456 (phone)
Agent's Name	Charles J. Voorhis, CEP, AICP; Principal
Address	Nelson Pope Voorhis, 70 Maxess Road, Melville, NY 11747
Phone/Fax	(631) 427-5665/(631) 427-5620
Project Information	
Project Name	Venezia Square
Tax Map Number(s)	District 0600; Section 73; Block 1; Lots 1.4 & 1.16 to 1.19
Street Location	Sound Avenue (NYS Route 25A), opposite Dogwood Drive
Hamlet & Town	Wading River, Riverhead
Total Project Site Area	6.34 acres
Existing Land Use	Vacant overgrown/successional field. The site was cleared of natural vegetation in the past for farming and has been undergoing successional revegetation for a number of years. See existing conditions survey *(refer to plans in pouch at back of document)*.
Present Zoning	Business CR
Project Description	The project site is 6.34 acres and is comprised of five tax lots. The proposed commercial development will include five (5) one-story buildings, with sizes varying from 4,000 square feet (SF) to 10,000 SF. Specifically, there will be a 6,000 SF building for two "take-out" restaurants (1,500 SF/16 seats each) and 3,000 SF/76 seat "sit-down" restaurant; a 4,000 SF bank with drive-thru service; a 7,000 SF retail building; and two 10,000 SF retail buildings. Thus, the total floor area of the project is 37,000 SF. With an additional 855 SF in the project's outdoor sign and other small structures, the total building coverage of the site is 37,855 SF (*refer to the plans in pouch at back of document*). Infrastructure including drainage, parking, sanitary systems, and landscaping will also be constructed and a new signalized intersection is proposed. As depicted on the Site Plan, the proposed project conforms to all of the bulk and setback requirements of the Town Code, as well as to the requirements of Central Pine Barrens (CPB) Comprehensive Land Use Plan (CLUP). As a result, no variances, special exceptions or special permits are needed to implement the project and pending Town review. The site has been designed so that the developed area will occupy the northern and central portions of the site, so that the southerly and easterly portions, abutting vacant lands, would remain undisturbed and naturally-vegetated. Such an arrangement will maximize the contiguity of natural vegetation, for aesthetic and habitat benefits. Approximately 0.87 acres of the site will be covered with buildings, another 2.28 acres will be paved surfaces, and new

	landscaping will cover 0.96 acres of which 0.86 will be fertilized and 0.10 will be unfertilized; the remaining 2.23 acres of the site will be retained naturally-vegetated land. One combined vehicle access into and exit from the site is planned, off Sound Avenue (NYS Route 25A) opposite Dogwood Drive, which will have been created as a four-way intersection controlled by a new traffic signal. The eastern portion of the site will be provided with a right turn/exit only, configured to direct exiting vehicles in the eastbound direction on Sound Avenue (NYS Route 25A). This exit will be controlled by a Stop sign. At the developed area's eastern boundary, a parking area aisle is designed so as to be available for conversion to an internal access to the undeveloped land abutting to the east, should this land be developed in the future. This is consistent with Town of Riverhead planning goals to reduce curb cuts on Sound Avenue (NYS Route 25A), provide interconnected parking and ultimately create a through road from the subject site east to Wading River Road. A minimum of 171 parking spaces are required by Town Code for the uses and yields proposed; the project will provide 174 parking spaces, in conformance with this requirement. Storm water drainage features will be provided to capture, store and recharge runoff generated by impervious surfaces. The project's total demand on the Riverhead Water District will average 4,701 gpd from mid-April to mid-September, and decrease to an average of 1,950 gpd from mid-September to mid-April. The proposed project will generate a total of 1,230 gallons of sanitary wastewater daily. Each of the five proposed buildings will be provided with a separate Innovative/Alternative Onsite Wastewater Treatment System (I/A OWTS). The total domestic flow of the project (i.e., the total amount of water used in the structures for combined sanitary and other purposes), will be 1,950 gpd. This value represents the amount of water conveyed to the project's treatment systems. A natural buffer will be located between the backs of the two southern retail structures and the southern property line. This buffer will vary in depth from 119 feet to 243 feet. Along the western side of the site, an approximately 42-foot deep buffer of natural vegetation will be retained between the property line and the internal access roadway. For the eastern side, a buffer of natural vegetation varying between 30 feet and 121 feet will be retained. Landscaping will be installed along the site's northern boundary abutting Sound Avenue (NYS Route 25A); this area will feature a landscaped buffer between 38 feet and 55 feet in depth. The project is in the Compatible Growth Area of the Central Pine Barrens Zone and will provide a conforming 35% of the site's acreage as retained natural open space. The proposal constitutes development pursuant to New York State Environmental Conservation Law (ECL) §57-0107(13). According to a Jurisdiction Determination

	provided by CPBJPPC, dated January 18, 2023, the proposal meets the Plan's criteria for a DRS due to levels of service changes caused by the traffic impacts precipitated by the project.
Permit Information *(please note which permits or plans are required and why, if they have been received and as of what date)*	
SEQRA	Complete: Expanded EAF (see **Attachment A**), prepared by Nelson Pope Voorhis, dated December 1, 2022
Town Permits	Site Plan – Planning Board Building Permits – Building Department Site Plan Review – Town Fire Marshal Highway Work Permit – Town Highway Superintendent
Project Plans Enclosed	(*in pouches at the back*)
NYSDEC	State Pollutant Discharge Elimination System (SPDS) General Construction Permit
SCDHS	Wastewater Disposal & Water Supply permits
SCPC	Referral by Town
Other	Highway Work Permit – NYSDOT PSEGLI – Electrical Service Connection Water Supply - RWD DRS – CPBJPPC

STANDARDS AND GUIDELINES FOR LAND USE

STANDARDS AND GUIDELINES FOR LAND USE
Central Pine Barrens Comprehensive Land Use Plan (CLUP)

Standard (S)/Guideline (G)		Explanation and Document Page Reference *(Attach additional sheets if necessary)*
5.3.3.1 Nitrate-nitrogen		
S 5.3.3.1.1	Suffolk County Sanitary Code Article 6 compliance	The property is located in Groundwater Management Zone III, wherein the maximum allowed sanitary wastewater generation is 300 gallons per day (gpd)/acre, if an on-site septic system is used. For the 6.34-acre subject site, this means that, if septic systems are desired, the total wastewater generation of the project may not exceed 1,902 gpd. Based on the uses and yields proposed, and the applicable standards of the Suffolk County Sanitary Code (SCSC) Article 6 for wastewater system design, the project engineer has determined that the proposed project will generate a total of 1,900 gpd of sanitary wastewater daily. Thus, septic systems would be allowed under SCSC Article 6, and will be used; each of the five proposed buildings will be provided with an Innovative/Alternative Onsite Wastewater Treatment System (I/A OWTS). The proposed project will conform to SCSC Article 6 requirements for the treatment, handling and disposal of its sanitary wastewater. All wastewater will be treated and recharged to groundwater through facilities conforming to SCSC Article 6 requirements. Appropriate County approvals and permits will be obtained. The proposed project will not exceed SCSC Article 6 allowable flow.
S 5.3.3.1.2	Sewage treatment plant discharge	The proposed project will conform to SCSC Article 6 requirements; based on its standards, septic systems would be allowed for the proposed project, so that no STP is necessary. It is acknowledged that the project's effluent will be recharged within the Compatible Growth Area (CGA). However, the project will operate under the jurisdiction of the Suffolk County Department of Health Services (SCDHS) and in conformance with SCSC Article 6, thereby assuring that no impact to underlying groundwater quality will occur. Review of the orientation of the water table contours indicates that groundwater flows toward the north, away from the Central Pine Barrens. This implies that water recharged on this site does not (and would not in the future) flow into the CGA or the Core Preservation Area (CPA), where it could otherwise adversely impact groundwater in this critical region.
G 5.3.3.1.3	Nitrate-nitrogen goal	This guideline does not apply as the subject site is not in the "vicinity of ponds or wetlands" (CLUP; Chapter 5; Guideline 5.3.3.1.3). Nevertheless, based on the measures incorporated into the project that would tend to minimize potential nitrogen impacts to groundwater (i.e., conformance to SCSC Article 6, minimizing the area of fertilizer-dependent landscaping), the project is expected to generate an overall nitrogen concentration in recharge of 2.20 mg/l (see **Attachments B-1 and B-2**), which is less than the 2.5 mg/l concentration sought by this guideline even though it does not apply.
5.3.3.2 Other chemical contaminants of concern		
S 5.3.3.2.1	Suffolk County Sanitary Code Articles 7 & 12 compliance	These regulations concern water pollution control (Article 7) and storage of hazardous or toxic materials associated with industrial use (Article 12). The proposed project is consistent with SCSC Article 7 in that it will not store or use hazardous or toxic materials in excess of the quantities allowed. As the proposed project is not an industrial operation, SCSC Article 12 is not applicable. It is acknowledged that the proposed project will include the use, storage and handling of various chemicals (e.g., landscaping fertilizers, pesticides, etc., and cleaning agents for retail, office & restaurant maintenance, etc.). However, the project will provide for proper facilities for these substances, as well as procedures for their application by trained and certified personnel, as well as procedures for cleanup and disposal, in conformance with pertinent County and State regulations and professional standards.
5.3.3.3 Wellhead protection		
S 5.3.3.3.1	Significant discharges and public supply well locations	This standard restricts activities that could degrade the public water supply within a 200-foot radius of a public supply well. However, no public water supply wellfields are located within 200 feet of the project site, and the proposed project will not have a "significant discharge" such that it would have the potential to impact public water supply. The subject property slopes downward slightly from northwest to southeast *(see Boundary & Topographic Survey)*. The highest elevation of 125 feet above mean sea level (asl) is encountered at the northwest corner of the property while the lowest elevation is in the eastern portion. The elevation of groundwater beneath the subject property is approximately 35 feet asl, depending on meteorological conditions associated with the water year. Therefore, the depth to groundwater is approximately 93 feet. Test holes installed in 2006 by McDonald Geoscience to a depth of 17 feet did not encounter water. Therefore, sufficient vertical separation between the water table and the bottoms of the proposed leaching pools will be maintained to ensure proper performance of the on-site septic systems. The septic systems will be subject to the review and approval of the SCDHS. Review of the orientation of the water table contours indicates that groundwater flows toward the north, away from the CPB. This implies that water recharged on this site does not (and would not in the future) flow into the CGA or the CPA, where it could otherwise adversely impact groundwater in this critical region.
G 5.3.3.3.2	Private well protection	The proposed project is in accordance with SCSC Articles 6 and 7, and all sanitary recharge will flow in a northerly direction. As a result, sanitary recharge will flow in a direction away from that portion of the Riverhead Water District that would include public water supply wellfields, so that no impact to any such wellfield's cone of depression would occur. The proposed project is not expected to include the presence, use, generation, or disposal of toxic or hazardous materials, so SCSC Articles 7 or 12 permitting will not be necessary. The project will conform to the standards and requirements of SCSC Articles 6, and its sanitary wastewater will be treated and recharged via on-site sanitary systems that were designed, reviewed, approved, and operated under the jurisdiction of the County. This would tend to minimize the potential for adverse impact to any private wells that may be located in the downgradient direction. Further, reference to the Suffolk County Water Authority (SCWA) Distribution System maps indicates that the residential area to the south of the project site (the direction in which groundwater flows in the area) is served by public water from the Riverhead Water District. As a result, no impact to private wells from recharge associated with the proposed project would occur.

5.3.3.4 Wetlands and surface waters		
S 5.3.3.4.1	Nondisturbance buffers	N/A; there are no areas of designated or suspected Town-regulated freshwater wetlands on the project site or in the immediate vicinity; no impacts to this resource are expected, and no buffers are necessary or proposed. Please also refer to the Expanded EAF dated December 1, 2022.
S 5.3.3.4.2	Buffer delineations, covenants and conservation easements	N/A; there are no areas of designated or suspected Town-regulated freshwater wetlands on the project site or in the immediate vicinity; no impacts to this resource are expected, and no buffers are necessary or proposed. Please also refer to the Expanded EAF dated December 1, 2022.
S 5.3.3.4.3	Wild, Scenic & Recreational Rivers Act compliance	N/A; the project site is not within the regulated limits of any river under the jurisdiction of the WSRR Act. Please also refer to the Expanded EAF dated December 1, 2022.
G 5.3.3.4.4	Additional nondisturbance buffers	N/A; there are no areas of designated or suspected Town-regulated freshwater wetlands on the project site or in the immediate vicinity; no impacts to this resource are expected, and no buffers are necessary or proposed. Please also refer to the Expanded EAF dated December 1, 2022.
5.3.3.5 Stormwater runoff		
S 5.3.3.5.1	Stormwater recharge	This standard requires that adequate drainage capacity be provided for retention and recharge of stormwater runoff generated on-site. There are no natural surface areas on or proximate to the proposed development area that could be used as part of the project's drainage system. In lieu of such features, the proposed project will utilize a combination of slopes on paved surfaces, catch basins and leaching pools to retain all runoff within the property for on-site recharge in a drainage system designed in conformance with Town requirements. The project's drainage system will not utilize a man-made pond. No runoff from developed surfaces will be allowed to exit the site, based on the stringent retention and design requirements of the Town. The project's drainage system will be subject to the review and approval of the Town engineering staff and the project will comply with SPDES GP 0-20-001 for stormwater project notification and preparation of a SWPPP (if applicable). The proposed stormwater design conforms to the intent of this standard. An erosion & sediment control plan will be prepared for the proposed project to ensure that impacts from soil erosion during and/or after the construction period do not occur.
G 5.3.3.5.2	Natural recharge and drainage	There are no natural recharge areas on or near the site that can be used in the project's drainage system. As described above, in lieu of such features, the project will utilize a combination of slopes on paved surfaces, catch basins and leaching pools to retain all runoff within the property for on-site recharge.; no recharge basin is proposed. The drainage system will distribute recharge of stormwater across the site and conforms with the intent of this guideline to the extent that it is applicable.
G 5.3.3.5.3	Ponds	N/A; the proposed project does not include any surface ponds, whether for solely aesthetic or for a combination of aesthetic and stormwater control functions.
G 5.3.3.5.4	Natural topography in lieu of recharge basins	N/A; the project does not include any recharge basins, and no natural topographic low points or swales are available to be utilized for stormwater runoff detention or recharge.
G 5.3.3.5.5	Soil erosion and stormwater runoff control during construction	An erosion & sediment control plan will be prepared for the proposed project to ensure that impacts from soil erosion during and/or after the construction period do not occur. Additionally, if applicable, a SPDES GP 0-20-001 permit will be obtained prior to the onset of construction of the proposed project, and the project will comply with its requirements. The project will be subject to Town drainage requirements, engineering review, implementation of erosion control measures during construction, and measures to ensure that off-site sediment transport does not occur. The site is relatively flat and existing topography is not expected to result in off-site sedimentation.
5.3.3.6 Natural vegetation and plant habitat		
S 5.3.3.6.1	Vegetation Clearance Limits	The project site is zoned Business CR, wherein the maximum allowed clearing is 65% which, for the 6.34-acre site, is 4.12 acres (conversely, a minimum of 35% of the site, or 2.22 acres, would have to be retained in its existing, naturally-vegetated state). The proposed project will clear 4.11 acres, or 64.83% of the site, and retain 2.23 acres (35.2%) of the site. As a result, the project will conform to this standard.
S 5.3.3.6.2	Unfragmented open space	This standard concerns preservation of natural vegetation in large unbroken blocks to establish open spaces contiguous to on-site and, if possible, off-site property. The project will retain the entire southern third of the property in such a condition, which reflects the character of the abutting land to which it will be contiguous, thereby forming an open space continuum as intended by this standard.
S 5.3.3.6.3	Fertilizer dependent vegetation limit	No more than 15% of a project site shall be established in fertilizer-dependent vegetation. As the project site is a total of 6.34 acres in size, up to 0.95 acres of landscaping that requires fertilization may be planted on this site. Based on the Site Plan, a total of 0.96 acres of landscaping area proposed. Of this landscaped area, a maximum of 0.86 acres will be fertilized; therefore, the project will conform to this standard on fertilized acreage. Final site plans will ensure that less than 15% of the site is established in fertilizer-dependent vegetation. None of the non-native species listed in Figure 5-2 of the CLUP will be used as part of the project's final site plan landscape design plans.
S 5.3.3.6.4	Native Plantings	More than 35% of the site will remain in its current vegetated state. Landscaping will primarily include grass species and typical shrub/tree plantings in the vicinity of the building. Landscaping will consider the species listed in Figure 5-2 of the CLUP to the maximum extent practicable. None of the non-native species listed in Figure 5-2 of the CLUP will be used as part of the project's final site plan landscape design plans.

5.3.3.7 Species and communities of special concern		
S 5.3.3.7.1	Special Species and Ecological Communities	The property is presently comprised of 6.34 acres of successional old field previously utilized for farming practices. The site was cleared of natural vegetation by virtue of its past use as farmland; no significant vegetation or habitats are present on the subject property. Information on the potential presence of rare, threatened, endangered or special concern species that may inhabit or use the subject site was solicited from the NYS Natural Heritage Program (NYSNHP); the response is provided in **Appendix C**. The endangered Tiger Salamander was identified as being present in ponds approximately ¼ mile from the project site. The species would have no association with the site due to the following: • The species travels upland from vernal ponds typically in the range of 535 feet, but sometimes just over 1,000 feet. The location (1/3 mile away) is more than 1,700 feet from the subject site and as a result, migration to the property is not expected. • There is intervening development south of the site between the Tiger Salamander breeding pond and the subject site. • The site does not contain optimum upland sandy soil, pine barrens habitat for mole habits of the Tiger Salamander. As a result, no impact is expected with respect to the Tiger Salamander. Finally, it should be noted that not all of the site's existing natural habitat will be removed; an estimated 2.24 acres of successional old field vegetation (35.3% of the site, in conformance with the CLUP Standard 5.3.3.6.1) will remain. This will enable the site to continue to support wildlife and plant life.
5.3.3.8 Soils		
G 5.3.3.8.1	Clearing envelopes	N/A; this Guideline refers to establishment of clearing envelopes for individual lots within a subdivision; as the proposed project does not include a subdivision, this guideline does not strictly apply. Additionally, as the subject site was previously cleared and graded for use as agricultural fields, no natural slopes (whether in excess of 10% or not) remain on it.
G 5.3.3.8.2	Stabilization and erosion control	N/A; this Guideline refers to implementing erosion control measures associated with development of individual homes; as the proposed project is commercial in nature and does not include a subdivision, this guideline does not strictly apply. Nevertheless, an Erosion & Sediment Control Plan will be prepared as part of the site plan application for the project. Erosion prevention measures to be taken during construction may include: use of groundcovers (vegetative or artificial), drainage diversions, soil traps, minimizing the area of soil exposed to erosive elements at one time, and minimizing the time span that soil is exposed to erosive elements. Soil removed during grading and excavation will be used as backfill (if it displays acceptable bearing capacity and leaching characteristics) to produce acceptable slopes for construction. The proposed stormwater design conforms to the intent of this standard. Applicable Town of Riverhead standards and construction practices specified by the appropriate Town agencies will be followed. Conformance to the Town Code and to the requirements of NYSDEC SPDES review of stormwater control measures may be necessary, to be consistent with Phase II stormwater permitting requirements for construction sites in excess of 1-acre (the SPDES GP-0-20-001 permit; hereafter, the General Permit), if applicable.
G 5.3.3.8.3	Slope analysis	A slope interval map has been prepared depicting slope intervals of 0-10%, 10-15% and greater than 15% (see Figure 8 of December 1, 2022 Expanded EAF). As shown, there are only small areas of acres of steep slopes (i.e., in excess of 10% and 15%) on the subject site, and these are located along the northern and the western property lines, in areas of the site that will not be disturbed.
G 5.3.3.8.4	Erosion and sediment control plans	N/A; only small areas of slopes in excess of 15% are found on the project site. The potential for erosion to occur during construction or after construction is completed will be controlled by implementing a SWPPP, which will include engineered Erosion Control Plans within the Site Plan review.
G 5.3.3.8.5	Placement of roadways	N/A; only small areas of slopes in excess of 10% are found on the project site.
G 5.3.3.8.6	Retaining walls and control structures	N/A; There are only small areas of acres of steep slopes (i.e., in excess of 10% and 15%) on the subject site, and these are located along the northern and the western property lines, in areas of the site that will not be disturbed. As only small areas of slopes in excess of 10% are found on the subject site, no use of retaining walls or control structures for the project's parking areas or buildings is foreseen. The site plan to be reviewed by the Town Planning Board will include site grading and drainage. All grading is subject to Town engineering review and is typical of the developed portions of a commercial site with minimal topographic relief.
5.3.3.9 Coordinated design for open space management		
S 5.3.3.9.1	Receiving entity for open space dedications	N/A; the proposed project does not include any dedications of land for public open space purposes. The 2.23 acres of retained naturally-vegetated land on-site will remain in private ownership, to be preserved under binding covenant.
G 5.3.3.9.2	Clustering	While the proposed project does not specifically incorporate clustering of the structures, the portion of the site to be developed has preferentially been located in the northern and central parts of the site, to minimize the area developed and thereby meet the CLUP Clearing Standard.
G 5.3.3.9.3	Protection of dedicated open space	The Applicant will participate in the preparation of a covenant to permanently protect the naturally-vegetated portion of the site, to remain under private ownership if required. Otherwise, the approved site plan is binding and will ensure preservation of the remaining natural areas on the site.

5.3.3.10 Agriculture and horticulture		
G 5.3.3.10.1	Best Management Practices	N/A; the project is commercial in nature, and does not include any agricultural or horticultural components.
5.3.3.11 Scenic, historic and cultural resources		
G 5.3.3.11.1	Cultural resource consideration	Site inspections have not revealed the existence of any recreational or educational trails or trail corridors, or active recreation sites, on the project site. The Archaeological Investigation prepared for the proposed project did not reveal the presence of any cultural resources on the subject site. In consideration of the above, it may be concluded that the proposed project will not impact any scenic, historic or cultural resources.
G 5.3.3.11.2	Inclusion of cultural resources in application	N/A; the Archaeological Investigation prepared for the project site (see **Appendix D-1**) does not indicate the presence of any cultural resources. Further, in **Appendix D-2**, the NYS OPRHP confirms that no impact to cultural resources is anticipated from the proposed project.
G 5.3.3.11.3	Protection of scenic and recreational resources	Project design will retain buffers of natural vegetation along the site's southern and western boundaries, which will reduce potential adverse visual impacts for observers in these directions. Due to the commercial nature of the project, the small size of the site, and the presence and proximity of other, complementary commercial sites to the north and the east, it is not feasible to retain buffers of natural vegetation in these directions as well. It is noteworthy that the decision to maintain natural buffers to the south and to the west (by placing the developed area in the northern portion of the property) reflects the applicant's decision to maximize protection of aesthetics for observers in these directions (where development is less prevalent), as opposed to the north and the east, where development already exists. The northern setback area will be landscaped appropriately, using species approved in the CLUP, Figure 5-2. The project's buildings and amenities will employ an attractive architectural treatment and complementary landscape design that would be consistent with the aesthetics of the area and congruent with the surrounding land uses.
G 5.3.3.11.4	Roadside design and management	The project's developed area has been located so as to provide for the maximum practicable retention of natural vegetation as buffers to the more sensitive receptors (i.e., to the south and to the west), recognizing that the existing pattern of development along NYS Route 25A (to the east and north) precludes protection of scenic resources along this commercial corridor. Finally, plantings of landscape species around and within the developed area will add to the buffering effect of natural vegetation, reducing the potential adverse impact on scenic resources and community character.
5.3.3.12 Commercial and industrial development		
S 5.3.3.12.1	Commercial and industrial compliance with Suffolk County Sanitary Code	The proposed project complies with all applicable requirements of the SCSC, including Articles 6, 7 and 12, as well as with all applicable requirements of the SCDHS. The project has been designed to comply with the applicable bulk and setback requirements of the Town Code for the CR Business zone.

ATTACHMENTS

ATTACHMENT A
Expanded Environmental Assessment Form (EAF)

Nelson Pope Voorhis, *December 1, 2022*
(Main Text and Figures only)

EXPANDED ENVIRONMENTAL ASSESSMENT FORM (EAF)

Venezia Square

Site Plan Application

Hamlet of Wading River, Town of Riverhead, NY

NPV No.06180

Prepared for Submission to:

Riverhead Town Planning Board
c/o Town Planning Department
201 Howell Avenue
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Phone: (631) 727-3200

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Phil Malicki, CEP, AICP LEED AP; Senior Environmental Planner
office: 631.427.5665 | cvoorhis@nelsonpopevoorhis.com

December 1, 2022

EXPANDED ENVIRONMENTAL ASSESSMENT FORM

VENEZIA SQUARE

Site Plan Application

NYS Route 25A, opposite Dogwood Drive
SCTM: 0600-73-1-1.4 & 1.16 to 1.19

Hamlet of Wading River, Town of Riverhead
Suffolk County, New York

Prepared for:

Venezia Corp./Joseph Vento
15 Seville Lane
Stony Brook, NY 11790
Contact: Mr. Joseph Vento
(631) 941-0456

For Submission to:

Riverhead Town Planning Board
c/o Town Planning Department
201 Howell Avenue
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1.0 INTRODUCTION

This document is an Expanded Environmental Assessment Form (EEAF) that has been prepared in response to the Town Planning Department Staff Report (see **Appendix A**) on a pending site plan application for a proposed commercial development known as "Venezia Square" (hereafter, the "proposed project"). The purpose of this EEAF is to provide the Riverhead Town Planning Board (hereafter, "the Board"), the entity having discretionary jurisdiction over the site plan application, with information necessary to support the Determination of Significance that the Board is required to prepare, under the New York State (NYS) Environmental Quality Review Act (SEQRA).

The site of the proposed project is located on the south side of Sound Avenue (NYS Route 25A), approximately 780 feet west of Wading River Road, in the hamlet of Wading River, Suffolk County, New York (see **Figures 1a and 1b,** *located immediately following the text portion of this document*). The property is comprised of 6.34 acres of successional field. The site was cleared of natural vegetation in the past for farming and has been undergoing successional revegetation for a number of years. The site is not characteristic of native pine barrens habitat (see **Figure 2**) as the site habitat is characterized as an overgrown successional field.

The subject property is surrounded by vacant, commercial and residential uses. Residential uses are generally located to the south, commercial uses to the west, north and east along Sound Avenue (NYS Route 25A) and farmland abuts the property to the east. As shown in **Figure 3**, abutting the site to the west is a funeral home (in the Town of Brookhaven); land to the north across Sound Avenue (NYS Route 25A) is a mix of vacant and commercial uses (i.e., at the northeast corner of the intersection of Dogwood Dr. is a dentist's office, for which a site plan application was submitted for an addition). Toward the northeast there is vacant wooded land, an automotive garage, and a small shopping center with various uses including another dental office and a Subway sandwich shop); to the east is vacant, naturally-vegetated land and farmed land (on the Mays Farm parcel, for which a site plan has been submitted for two buildings, one to be built initially for office use, including a veterinary office, and a future building for office/retail), and to the south are single-family residences and farmland.

The subject property is zoned Business CR, which matches that of abutting properties and much of the area, particularly along the Sound Avenue (NYS Route 25A) commercial corridor (see **Figure 4**). Additionally, R-80 Residence zoning and development is located immediately south of the subject property and to the north, beyond the Business CR-zoned land along the Sound Avenue (NYS Route 25A) commercial corridor. Zoning in the vicinity also includes sites zoned in the SC-Shopping Center, VC-Village Center, and IN-Institutional districts.

As shown in the **Boundary & Topographic Survey** (*in a pouch at the back of this document*), the project site consists of five tax lots (as designated in the Suffolk County Tax Map; see **Table 1**):

TABLE 1
TAX LOTS

District	Section	Block	Lot(s)
0600	73	1	1.4
			1.16
			1.17
			1.18
			1.19

This document is organized to address each of issues specified in the Town Staff Report. This format provides the Town Planning Board with information that is responsive to staff comments pertaining to potential environmental impacts of the proposed action and facilitates staff and Town review and use of this EEAF as a decision-making document.

This EEAF ensures that the Board has sufficient information to take a "hard look" at the proposed project prior to issuing its Determination of Significance pursuant to Title 6, New York Code of Rules & Regulations (6 NYCRR), Part 617, which administers the SEQRA review process.

2.0 DESCRIPTION OF THE PROPOSED PROJECT

As depicted on the **Site Plan** (*in a pouch at the back of this document*), the proposed project conforms to all of the bulk and setback requirements of the Town Code, as well as to the requirements of Central Pine Barrens (CPB) Comprehensive Land Use Plan (CLUP). As a result, no variances, special exceptions or special permits are needed to implement the project and pending Town review and confirmation of consistency with the project with the Town's Pine Barrens Overlay District [Article XLI; Chapter 301; §301-197 A. (1) through (16)], no separate review by the Central Pine Barrens Joint Planning & Policy Commission is needed (CPBJPPC).

The proposed commercial development will include five (5) one-story buildings, with sizes varying from 4,000 square feet (SF) to 10,000 SF. Specifically, there will be a 6,000 SF building for two "take-out" restaurants (1,500 SF/16 seats each) and a 3,000 SF/84 seat "sit-down" restaurant; a 4,000 SF bank (with drive-thru service; and three 10,000 SF retail buildings. Thus, the total floor area of the project is 40,000 SF. With an additional 855 SF in the project's outdoor sign and other small structures, the total building coverage of the site is 40,855 SF.

The site has been designed so that the developed area will occupy the northern and central portions of the site, so that the southerly and easterly portions, abutting vacant lands, would remain undisturbed and naturally-vegetated. Such an arrangement will maximize the contiguity of natural vegetation, for aesthetic and habitat benefits.

The five structures are arranged so the bank will be located in the center of the site's developed area, with the other four structures arrayed around it; these latter four buildings will be oriented so that their front facades will face inward, toward the bank. In this way, the focus of the overall development would stress internal aesthetics and walkability with a sense of place through inclusion of a sitting area with a water feature planned for the area adjacent to the bank but open to all site patrons. Sidewalks, crosswalks and pedestrian ramps along all buildings fronts will enable safe movement within the site; these will also connect to sidewalks to be installed along the south side of Sound Avenue (NYS Route 25A).

Approximately 0.94 acres of the site will be covered with buildings, another 2.32 acres will be paved surfaces, and new landscaping will cover 0.84 acres; the remaining 2.24 acres of the site will be retained naturally-vegetated land.

One combined vehicle access into and exit from the site is planned, off Sound Avenue (NYS Route 25A) opposite Dogwood Drive, which will have been created as a four-way intersection controlled by a new traffic signal. The eastern portion of the site will be provided with a right turn/exit only, configured to direct exiting vehicles in the eastbound direction on Sound Avenue (NYS Route 25A). This exit will be controlled by a Stop sign. At the developed area's eastern boundary, a parking area aisle is designed so as to be available for conversion to an internal access to the undeveloped land abutting to the east, should this land be developed in the future. This is consistent with Town of Riverhead planning goals to reduce curb cuts on Sound Avenue (NYS Route 25A), provide

interconnected parking and ultimately create a through road from the subject site east to Wading River Road.

A minimum of 186 parking spaces are required by Town Code for the uses and yields proposed; the project will provide 186 parking spaces, in conformance with this requirement. Storm water drainage features will be provided to capture, store and recharge runoff generated by impervious surfaces.

The property is located in Groundwater Management Zone III, wherein the maximum allowed sanitary wastewater generation is 300 gallons per day (gpd)/acre, if an on-site septic system is used. For the 6.34-acre subject site, this means that, if septic systems are desired, the total wastewater generation of the project may not exceed 1,902 gpd. Based on the uses and yields proposed, and the applicable standards of the Suffolk County Sanitary Code (SCSC) Article 6 for wastewater system design, the proposed project will generate a total of 1,320 gallons of sanitary wastewater daily (gpd; see **Table 2**). Thus, septic systems would be allowed under SCSC Article 6, and will be used; each of the five proposed buildings will be provided with a separate septic system. Note that the above 1,320 gpd represents only one part of the overall domestic water use value of the project; according to SCSC Article 6, the total domestic flow of the project (i.e., the total amount of water used in the structures for combined sanitary and other purposes), will be 2,040 gpd. This value represents the amount of water conveyed to the project's treatment systems.

TABLE 2
ANTICIPATED WATER USE/WASTEWATER GENERATION
Proposed Project

Project Component	**Yield**	**Sanitary Flow** (per SCSC Article 6)	**Sanitary Flow** (gpd)	**Total Flow** (per SCSC Article 6)	**Total Flow** (gpd)
Take Out Restaurant	1,500 SF/16 seats	0.03 gpd/SF	45	0.15 gpd/SF	225
Take out Restaurant	1,500 SF/16 seats	0.03 gpd/SF	45	0.15 gpd/SF	225
Restaurant	3,000 SF/84 seats	0.03 gpd/SF	90	0.15 gpd/SF	450
Bank	4,000 SF	0.06 gpd/SF	240	0.06 gpd/SF	240
Retail	10,000 SF	0.03 gpd/SF	300	0.03 gpd/SF	300
Retail	10,000 SF	0.03 gpd/SF	300	0.03 gpd/SF	300
Retail	10,000 SF	0.03 gpd/SF	300	0.03 gpd/SF	300
Totals	---	---	*1,320*		*2,040*
Landscape Irrigation	0.84 acres (max.)	---	---	---	0/2,433*
TOTALS	**---**	**---**	**1,320**	**---**	**2,040/4,473**

* Indicates range in irrigation demand over the course of a calendar year; averages 2,433 gpd during the 5-month irrigation season, and 0 gpd outside of irrigation season.

Finally, assuming an irrigation rate of 16 inches over the irrigation season, an irrigation season of five months duration (mid-April to mid-September assumed), and 0.84 acres of landscaped area, it

is calculated that irrigation demand will vary from 0 gpd outside of the irrigation season to 2,433 gpd during the 150-day irrigation season.

Based on the above discussion of water use, the project's total demand on the Riverhead Water District will average 4,473 gpd from mid-April to mid-September, and decrease to an average of 2,040 gpd from mid-September to mid-April.

A natural buffer will be located between the backs of the two southern retail structures and the southern property line. This buffer will vary in depth from 104 feet to 243 feet. Along the western side of the site, a 36-foot deep buffer of natural vegetation will be retained between the property line and the internal access roadway. For the eastern side, a buffer of natural vegetation varying between 30 feet and 121 feet will be retained. Landscaping will be installed along the site's northern boundary abutting Sound Avenue (NYS Route 25A); this area will feature a landscaped buffer between 38 feet and 55 feet in depth.

3.0 ANALYSIS OF POTENTIAL IMPACTS

3.1 Critical Environmental Area: SGPA

A "Special Groundwater Protection Area" (SGPA) is defined in the NYS Environmental Conservation Law (ECL) as:

> A recharge watershed area within a designated sole source aquifer area contained within counties having a population of one million or more which is particularly important for the maintenance of large volumes of high quality groundwater for long periods of time. For the purposes of this article, each "special groundwater protection area" shall be classified as a critical area of environmental concern as used under article eight of this chapter (Section 55-0107 ECL Article 55).

In response to this legislation, the SGPA Plan was prepared by the Long Island Regional Planning Board in 1992 to study land use and groundwater quality within the several SGPAs designated on Long Island. The subject site was designated within the Central Suffolk SGPA (North) sector, and is recommended for Commercial Use (see **Figure 5**). The SGPA Plan makes general recommendations that are applicable to all of the identified SGPA, as well as specific recommendations for development within each SGPA. Where restrictions of the CPB CLUP, as promulgated under the Long Island Pine Barrens Protection Act, duplicate those of the SGPA Plan, the former supersedes those of the latter. The plan is useful for historical context but it is recognized that groundwater protection can be achieved through development that conforms to current sanitary and stormwater management standards as well as recommendations of the SGPA Plan.

The following is that portion of the “Opportunities” segment of the SGPA Plan that discusses issues of concern in the Central Suffolk SGPA (North) sector pertaining to the subject site.

> The northeast sector of the Central Suffolk SGPA contains a continuous belt of farmland that extends from Wading River on the west to the Riverhead-Southold town boundary on the east, and from Route 25 on the south to Sound Avenue on the north. With selective acquisitions that belt could be linked with the farm areas in western Southold. Over 3,000 acres of productive agricultural land have been protected from development, primarily through the Suffolk County Farmland Development Rights Program. There is an opportunity to expand the Farm Preserve through continued purchase of development rights, albeit on a reduced scale, and through the transfer of development rights to sites outside the SGPA. The use of mandatory clustering with the reservation of at least half of the property for agriculture or open space could allow further expansion of the protected area at minimal cost. Such clustering could preserve half of the farmland while allowing development that meets Health Department regulations to occur on the remainder.
>
> It would be most desirable to transfer the development rights of properties that are surrounded by protected farmland to areas north of Sound Avenue or around the hamlet of

Riverhead. Admittedly, farming activities have been a source of groundwater contamination, however, there is an opportunity to employ modern best management practices that reduce the reliance on agricultural chemicals and lessen the threat to groundwater.

The acquisition of selected woodland and other non-farm parcels could facilitate watershed preservation and wellhead protection. Purchase of the unused portion of Camp Wauwepex in Wading River could protect pine barrens land and provide a well site that would be preferable to the proposed Wading River Road site in the middle of the farmland. A few smaller acquisitions in the Town of Riverhead could enhance the already partially protected Peconic River corridor.

Most of the commercial development in Riverhead is outside or at the periphery of the SGPA, and could be confined to present locations. There are some commercial services located at the end of the Expressway, and the edge of the Wading River business district is in the SGPA. There are also small business areas in Jamesport and Aquebogue, and a few neighborhood or highway commercial establishments on Sound Avenue, Middle Road and Route 25. In western Southold, there is extensive commercial development south of the railroad tracks in Mattituck and a small cluster of commercial development south of the railroad tracks in Mattituck and a small cluster of commercial buildings on Aldrich Land and Route 25 in Laurel. The siting of new business development at locations outside the SGPA or within the boundaries of existing commercial areas within the SGPA could help to maintain the integrity of the agricultural and open space lands that protect the groundwater and surface waters in this sector.

Specific SGPA Plan recommendations for the Central Suffolk SGPA (North) sector include the following:

- Suffolk County, together with the Towns of Riverhead and Southold should expand the existing agricultural preserve. The County should continue to acquire development rights under its Farmland Preservation Program.
- The Town of Riverhead should amend its zoning to require a five-acre minimum lot size for all farmland located within the SGPA. At the same time, it should provide for the transfer of development rights to non-farm sites outside the SGPA at one dwelling unit per two acres.
- The Town of Riverhead should require clustering of development on those parcels where TDR [transfer of development rights] is not feasible. The County and the Town of Southold should use a combination of selective acquisition, TDR and mandatory clustering to assemble and protect a 200+ acre watershed preserve in the vicinity of Laurel Lake. Such a preserve would comprise both woodlands and portions of farm parcels.
- The Towns of Riverhead and Southold should review their zoning ordinances and amend them as necessary to preclude the expansion of commercial activities beyond the limits of those SGPA areas where such activities currently exist.

The proposed project will conform to the Commercial Use recommended for the subject property in the SGPA Plan.

The project will eliminate the potential for a renewal of farming on the project site. However, such activity ceased on the site a number of years ago, which would presumably have reflected the farmer's response to conditions no longer conducive to farming on this small parcel of land.

The elimination of farming on the subject site would also end the use of any agricultural chemicals (e.g., pesticides, herbicides, fungicides) on the site, which incrementally reduce impacts to groundwater quality in the area. The proposed 0.84 acres of landscaped area is small, conforms to the CPB CLUP and Town Code §301-197 A.(9), and will require minimal maintenance.

The subject site is located along the northern boundary of the SGPA, where analysis indicates that the water recharged on the subject site will flow northward, away from the SGPA.

The site is located at the periphery of the Wading River business district [within the Sound Avenue (NYS Route 25A) commercial corridor], and is on land zoned for commercial use. This would suggest that the Town Board has determined that, assuming that the requirements of the Town Zoning Code, CLUP and SCSC Article 6 are met, the location would be appropriate for commercial use.

3.2 Critical Environmental Area: Central Pine Barrens

The Long Island Pine Barrens Act of 1993 divided the Long Island Pine Barrens into two geographic areas, the entire CPB of about 100,000 acres, and within this larger area is the smaller 52,500-acre Core Preservation Area (CPA). Areas not contained within the CPA are referred to as the Compatible Growth Area (CGA) and comprise approximately 47,500 aces. As shown in **Figure 6**, the subject site is in the CGA. As a result, under NYS ECL 57-0123(2)(a) and Section 4.5.4 of the CPB CLUP, the project is subject to conformance with the CPB CLUP. The Town of Riverhead adopted the Town Pine Barrens Overlay District [Article XLI; Chapter 301; §301-197 A. (1) through (16)], which establishes standards or development in the CGA of the CPB. If the project is not a Development of Regional Significance, and the applicable Pine Barrens standards are adhered to, then no separate review by the CPBJPPC is needed. The applicant has reviewed the applicable Town standards in the Pine Barrens Overlay District and it is believed that the project is consistent with all applicable standards (see **Appendix B-1**).

In addition, **Appendix B-2** presents each of standards and guidelines of the CPB CLUP for development within the CGA, with accompanying descriptions/discussions of whether and how the proposed project conforms to each. The table demonstrates that the proposed project is in conformance with and consistent with the Standards and Guidelines of the CPB CLUP as well as the Town Pine Barrens Overlay District.

Finally, the updated Traffic Impact Study (TIS) for the project (see **Appendix E**) determined that the proposed project, with mitigation at the intersection of NYS Route 25A and Wading River-Manor Road, would not result insignificant adverse impacts to traffic conditions:

> The capacity analysis results demonstrate that the addition of Venezia Square will impact the NYS Route 25A and Wading River Manor Road intersection LOS at the Midday and Saturday peak periods, lowering each from a C to a D and an E to an F, respectively. However, if the signal timing is changed, the LOS at these peak periods can be a C and a D, respectively. To further help improve traffic conditions and the LOS, we recommend installing a right-turn lane at the eastbound approach. Overall, the addition of Venezia Square will not significantly impact traffic conditions.

The significance of this potential impact is that, under CLUP Section 4.5.5.1, *"A development project resulting in a traffic impact which would reduce service by two (2) levels below existing conditions or to a level of service of D or below"* would constitute a Development of Regional Significance (DRS), requiring a Hardship application and review by the CPBJPPC. In response, the Applicant had a revised analysis prepared to establish whether the intersection in question would still experience the same reduction in LOS if the mitigation described in the TIS were not implemented. This revised analysis (see **Appendix F**) states:

> Schneider Engineering, PLLC has prepared this report to serve as an updated version of the Traffic Impact Study we had submitted in December 2018 for the Venezia Square project. The location of this project is on NY-25A across from Dog Wood Drive, Wading River, New York.
>
> In a letter from the Town of Riverhead Planning Department dated February 15, 2022 to Nelson, Pope & Voorhis, LLC, concern was expressed regarding the Level-of-Service (LOS) impact at the intersection of NYS 25A and Wading River Manor Road. The 2018 existing conditions capacity analysis identified the overall LOS as operating at LOS C during the peak midday, PM and Saturday conditions. The future build scenario with mitigation measures identified the overall LOS reducing from a C to a D during the PM peak hour and Saturday peak hour. The Town's concern is that the proposed development would result in a traffic impact which would reduce service to a level D or below.
>
> In this report we prepared [a new] LOS analysis at the intersection with new turning movement counts (2022) and [new] background traffic growth from other proposed developments in the immediate vicinity. Our finding is that under a conservative analysis, the future no build scenario will have an overall LOS C during the peak midday and PM conditions and LOS D during the Saturday condition. In the build scenario service levels will not be reduced from the no build scenario. Therefore, the proposed development will not result in a traffic impact that reduces service levels.

The above-described revised traffic impact analysis indicates that the proposed project does not qualify as a DRS under the CLUP, so that no Hardship submission to the CPBJPPC is necessary or warranted.

3.3 Proximity to Cultural Areas

As shown in **Figure 9**, the site lies within a NYS-designated archaeologically sensitive area, which suggests that cultural resources (e.g., surface or subsurface pre-historic era or historic era cultural remains) may be present. As a result, the applicant has elected to complete a full Phase I Archaeological Investigation of the site and vicinity, to determine the presence and location of such resources and, if found, to estimate the potential for impacts. That document is presented herein in **Appendix C-1**. The following has been taken from the Phase I Archaeological Investigation.

INTRODUCTION

Between July 7 and 20, 2016, TRACKER Archaeology, Inc. conducted a Phase IA documentary study and Phase IB archaeological testing and reconnaissance at the proposed Venezia Square subdivision, in Wading River, Township of Riverhead, Suffolk County, New York.

The purpose of the documentary study was to determine the prehistoric and historic potential of the project area for the recovery of archaeological remains. This was accomplished by a review of the original and current environmental data, archaeological site files, other archival literature, maps, and documents.

A prehistoric and historic site file search was conducted utilizing the resources of the New York State Historic Preservation Office [NYSHPO] in Waterford, New York. Various historic and archaeology web sites were visited to review any pertinent site information.

The purpose of the Phase IB field survey was to determine the presence or absence of archaeological sites on the property. This was accomplished through subsurface testing and ground surface reconnaissance.

The project area (APE [area of potential effect]) consists of the about 4.5 acres from the approximate 6-acre property. The property is located on the south side of Port Jefferson-Riverhead Road (NYS Route 25A, Sound Avenue) at the intersection of Dogwood Drive. It is bound to the north by Port Jefferson-Riverhead Road (NYS Route 25A, Sound Avenue) and to the remaining sides by other private properties.

CONCLUSIONS AND RECOMMENDATIONS

Based upon topographic characteristics and distance to known prehistoric sites and Indian trails, the property was assessed as having a higher than average potential for encountering prehistoric sites. Based upon topographic characteristics and distance to historic map

> documented structures, reported wigwams, and Indian trails, the property was assessed as having a moderate potential for encountering historic aboriginal sites.
>
> During the course of the Phase IB archaeological field survey, 79 ST [shovel test] holes were excavated. No prehistoric or historic sites were encountered. No historic sites were encountered. No further work is recommended.

The Phase I Archaeological Investigation concludes that there are no cultural (i.e., prehistoric or historic era) resources on the project site, so that there could be no impact on such resources associated with the proposed project.

Appendix C-2 contains correspondence from the NYS Office of Parks, Recreation and Historic Preservation (OPRHP) that states:

> We have reviewed the report entitled "Phase I Archaeological Investigation at the Venezia Subdivision, Wading Rover, Town of Riverhead, Suffolk County, New York" (July 2016). No archaeological resources were identified and no additional archaeological work is necessary.
>
> We have no concerns regarding the project's potential to impact historic architectural resources. Therefore, it is OPRHP's opinion that the project will have No Impact on archaeological and/or historic resources listed in or eligible for the New York State and National Registers of Historic Places.

3.4 Proximity to Threatened and Endangered Species

Figures 10 and 11 depict the presence and proximity of freshwater wetlands to the subject site, for wetlands designated by the NYS Department of Environmental Conservation (NYSDEC) and the National Wetlands Inventory (NWI), respectively. As can be seen, there is only one surface water body in the vicinity; it is named Deep Pond (designated by the NYSDEC as freshwater wetland W-1), and is located about 3,800 feet to the southeast of the site.

The property is presently comprised of 6.34 acres of successional old field previously utilized for farming practices. The site was cleared of natural vegetation by virtue of its past use as farmland; no significant vegetation or habitats are present on the subject property. Information on the potential presence of rare, threatened, endangered or special concern species that may inhabit or use the subject site was solicited from the NYS Natural Heritage Program (NYSNHP); the response is provided in **Appendix D**. The endangered Tiger Salamander was identified as being present approximately 1/3 mile from the project site. The species would have no association with the site due to the following:

- The species travels upland from vernal ponds typically in the range of 535 feet, but sometimes just over 1,000 feet. The location (1/3 mile away) is more than 1,700 feet from the subject site and as a result, migration to the property is not expected.

- There is intervening development south of the site between the Tiger Salamander breeding pond and the subject site.
- The site does not contain suitable upland sandy soil, pine barrens habitat for mole habits of the Tiger Salamander.

As a result, no impact is expected with respect to the Tiger Salamander.

Finally, it should be noted that not all of the site's existing natural habitat will be removed; an estimated 2.24 acres of successional old field vegetation (35.3% of the site, in conformance with the CLUP Standard), will remain. This will enable the site to continue to support wildlife and plant life.

3.5 Clearing

The Town Pine Barrens Overlay District, §301-197 A. (8) and the CPB CLUP allows, for development of a commercial use, a maximum of 65% of the site to be cleared. As noted above, the subject site is presently fully covered by successional field vegetation. Thus, the clearing standard would permit clearing of up to 4.12 acres of this natural vegetation. As shown on the **Site Plan**, the proposed project seeks to clear 4.10 acres of land, which is 64.6% of the total site. Thus, the proposed project conforms to the clearance standard of the CPB CLUP.

3.6 Parking Sufficiency

As shown in the **Site Plan**, a total of at least 186 parking spaces are required by Town Code Section 108-60A. **Table 3** presents the individual minimum parking requirements for each of the three commercial use types proposed:

TABLE 3
PARKING REQUIREMENTS

Commercial Use Proposed	**Commercial Yield Proposed**	**Parking Space Rate** (per Town Code, minimum)	**Parking Spaces Required** (minimum)
Bank	4,000 SF	1 space/150 SF	27
Retail (total)	30,000 SF	1 space/250 SF	120
Restaurants (total)	116 seats	1 space/3 seats	39
Total Parking	**---**	**---**	**186 spaces**

The **Site Plan** shows that the project will provide a total of 186 parking spaces, in conformance with the Town Code.

3.7 Traffic Impacts

The following discussion and analysis of the traffic-related aspects of the project has been taken from the TIS prepared for the project, by Schneider Engineering, PLLC of Ronkonkoma, New York. The entire revised TIS is contained herein, as **Appendix E**.

Existing Conditions

The area surrounding the subject development site contains a mixture of commercial uses and undeveloped land parcels. The western perimeter of the site borders Alexander Rothwell Funeral Home. The eastern and southern perimeter of the site borders on undeveloped land parcels. The northern perimeter of the site borders NYS Route 25A.

NYS Route 25A is a two-lane state highway (one lane in each direction) serving eastbound and westbound traffic. It is classified as a Principal Urban Arterial (FC-14) and is under the jurisdiction of the NYSDOT. At and near the proposed site, the lanes on the highway are approximately 12 feet in width in each direction with paved shoulders at approximately 8 feet in width. The posted speed limit in the vicinity of the site is 45 mph for both directions.

Dogwood Drive, on the north side of NYS Route 25A and across from the proposed site, is a two-lane local roadway serving northbound and southbound traffic that forms the northern leg of a three-legged T-intersection with NYS Route 25A. It intersects NYS Route 25A with a slight skew and traffic is STOP controlled on the side street. Traffic on NYS Route 25A at that intersection is not controlled. While it is not marked as a two-lane approach, the roadway is flared at the intersection and allows ample room for the queuing of vehicles turning left and right. The roadway serves commercial and residential properties located near NYS Route 25A. It is under Town of Riverhead Jurisdiction. The road is approximately 30 feet wide although there is no centerline marking installed. Sidewalk is present only on the departure lane adjacent to the Astoria Bank. The posted speed limit is 30 mph for both directions.

The intersection of NYS Route 25A and Wading River Manor Road is a four-way signalized intersection, with NYS Route 25A running east and west and Wading River Manor Road running north and south. The speed limit on Wading River Manor Road is 30 mph. Each of the four approaches has an exclusive left-turn lane and a shared through and right turn lane. Surrounding the intersection are commercial-use buildings such as McDonald's, Speedway, BNB Bank, Greek Island Diner, Little Bay Realty, Phil's Restaurant, and more along NYS Route 25A. The intersection is controlled by a multiphase semi-actuated uncoordinated signal with the following phasing:

- Eastbound and westbound protected left turns
- East-west through movements with permitted left turns
- North-south protected left turns
- North-south through movements with permitted left turns

2018 Existing Conditions Traffic Volumes

Peak periods for the proposed site, as it is classified as a Shopping Center (Land Use 820) by ITE in its Trip Generation Manual, are expected to be 11:00AM-1:00PM and 4:00PM-6:00PM during the week and 11:00AM-2:00PM on weekends. Turning movement counts were collected for these times on dates Thursday, October 18, 2018 and Sunday, October 28, 2018 at the intersections of NYS Route 25A with Dogwood Drive and Wading River Manor Road. The Sunday counts were taken because of very poor weather conditions on Saturday and will be used as Saturday peak volumes. The difference effects are expected to be negligible to our analysis due to the urban nature of the area. The turning movement count data are presented in Appendix A [of **Appendix E**].

Since the traffic counts were conducted in October, a seasonal factor was applied to the recorded peak hour traffic to account for the summer months when traffic in the area increases. A factor of 1.23 was applied to the midday and PM peak hour traffic, and a factor of 1.19 was applied to the Saturday peak hour traffic. The 2017 NYSDOT seasonal adjustment factors that were used can be found in Appendix B [of **Appendix E**].

At the intersection of NYS 25A and Dogwood Drive, the traffic volume data revealed that the midday peak period occurred at 12:30PM, the PM peak period occurred at 5:30PM, and the Saturday peak period occurred at 1:30PM. The peak hour traffic volumes for NYS 25A and Dogwood Drive are depicted in Figure 4 [of **Appendix E**].

At the intersection of NYS Route 25A and Wading River Manor Road, the traffic volume data revealed that the midday peak period occurred at 12:45PM, the PM peak period occurred at 5:15PM, and the Saturday peak period occurred at 12:30PM. The peak hour traffic volumes for NYS 25A and Wading River Manor Road are also depicted in Figure 4 [of **Appendix E**].

2018 Existing Conditions Capacity Analysis

The existing conditions capacity analysis results are illustrated in **Table 4** for intersections NYS Route 25A and Dogwood Drive and NYS Route 25A and Wading River Manor Road. The capacity analysis reports for the existing conditions are presented in Appendix C [of **Appendix E**].

TABLE 4
2018 EXISTING CONDITIONS CAPACITY ANALYSIS

Intersection	Movement	Lane Group	Midday		PM		Saturday	
			Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
NYS Route 25A & Dogwood Drive	SB	RL	23.8	C	48.6	E	25.5	D
NYS Route 25A & Wading River Manor Road	EB	L	10.4	B	13.6	B	12.4	B
		TR	18.8	B	19.8	B	28.2	C
		Approach	17.8	B	19.1	B	26.8	C
	WB	L	13.6	B	13.3	B	19.8	B
		TR	16.0	B	18.8	B	17.3	B
		Approach	15.7	B	18.0	B	17.7	B
	NB	L	45.7	D	48.4	D	44.1	D
		TR	56.2	E	57.0	E	61.0	E
		Approach	51.5	D	53.1	D	53.7	D
	SB	L	43.9	D	44.3	D	46.7	D
		TR	54.7	D	52.6	D	55.6	E
		Approach	50.4	D	49.4	D	51.9	D
	Overall		**28.5**	**C**	**29.0**	**C**	**34.0**	**C**

2020 No Build Conditions

In order to examine the effects of the proposed development on the surrounding roadway network, first the existing condition traffic volumes must be projected for the year in which the project is anticipated to be completed. Based on the NYSDOT *Long Island Transportation Plan (LITP)*, the traffic volumes were projected by applying an annual growth rate of 1.7% annually to account for normal background traffic growth. Therefore, a total growth rate of 3.4% was utilized (1.7% x 2 years) for developing the background growth for the estimated time of completion (ETC) of Venezia Square in 2020.

In addition to normal background growth, we examined traffic associated with other nearby projects presently under development or planned for the near future. The Planning Departments at the Towns of Brookhaven and Riverhead identified several projects containing new development or the expansion of existing developments. The projects and their descriptions are listed as follows:

- **Central Square** – is located along the south side of Route 25A, approximately a quarter mile to the east of the intersection of Wading River Manor Road and Route 25A. The proposed development is comprised of a restaurant, 14,076 SF of retail space, a 4,250 SF bank with drive thru and 28,962 SF of professional office space.
- **6333 Realty Group** – is located adjoining Venezia Square on the east. This proposed development comprises of 6,960 SF of Medical Offices and 1,120 SF of General Office.

- **6336 Route 25A** – is located on the northeast corner of Route 25A and Dogwood Drive. This proposed development includes a proposed 1,212 SF addition to an existing medical office building for the purpose of providing a 15-seat take-out restaurant.
- **Hamlet Professional Offices** – is located on the north side of NYS Route 25A, east of Wading River Manor Road. This proposed development will consist of 5 office buildings for use as professional offices with a gross floor area of 31,181 SF.
- **Real Life Church of Wading River** – is located approximately 315 FT north of the intersection of Route 25A and Dogwood Drive. The proposed development includes a proposed 2,952 SF expansion to the existing 2,533 SF church, which will include approximately 1,220 SF of office area in the basement of the church, 1,323 SF of meeting rooms in the basement, and 409 SF of sanctuary space to include 205 seats.

The other planned development traffic volumes are illustrated in Figure 5 [of **Appendix E**]. To obtain the 2020 No Build traffic volumes at the study intersections, the trips anticipated to be generated by the other planned developments in the vicinity of Venezia Square were added to the resulting volumes inflated by the background growth factor. The 2020 No Build traffic volumes are illustrated in Figure 6 [of **Appendix E**].

2020 No Build Capacity Analysis

The anticipated future no build conditions capacity analysis results are illustrated in **Table 5** for the intersections of NYS Route 25A with Dogwood Drive and Wading River Manor Road. The capacity analysis reports for the future no build conditions are included in Appendix D [of **Appendix E**].

TABLE 5
2020 FUTURE NO BUILD CONDITIONS CAPACITY ANALYSIS

Intersection	Movement	Lane Group	Midday		PM		Saturday	
			Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
NYS Route 25A & Dogwood Drive	SB	RL	36.3	E	147.3	F	66.2	F
NYS Route 25A & Wading River Manor Road	EB	L	14.4	B	28.7	C	19.7	B
		TR	28.4	C	34.9	C	84.1	F
		Approach	26.7	C	34.2	C	77.9	E
	WB	L	21.0	C	25.9	C	41.2	D
		TR	21.6	C	38.7	C	27.8	C
		Approach	21.6	C	36.7	D	29.9	C
	NB	L	41.8	D	46.3	D	77.7	E
		TR	62.9	E	65.7	E	64.9	E
		Approach	53.8	D	57.0	E	70.3	E
	SB	L	45.5	D	41.9	D	108.7	F
		TR	50.2	D	49.0	D	56.7	E
		Approach	48.1	D	46.0	D	79.8	E
	Overall		**33.5**	**C**	**40.6**	**D**	**63.6**	**E**

Venezia Square Trip Generation

The proposed development is a 37,000 SF shopping center consisting of a bank with three drive thru windows (4,000 SF), three retail buildings (10,000 SF for two of those buildings and 7,000 SF for one), two fast food restaurants (1,500 SF each), and an 84-seat sit-down restaurant (3,000 SF). In order to assess its potential impact on future traffic conditions, the total traffic generated by the new facility was estimated for each analysis period. The trip generation was based on data from the ITE Trip Generation Manual, 9th Edition, where Shopping Center (Land Use Code 820) was selected as most appropriate for the proposed development based on the description in the manual. We decided to use a component size of 40,000 SF to be conservative and account for additional traffic using the cross-access from the adjoining eastern property, 6333 Realty Group.

The trip generation calculations are presented in **Table 6**.

TABLE 6
VENEZIA SQUARE SITE GENERATED TRIPS

Project Component	Size	Midday Peak Hour		PM Peak Hour		Saturday Peak Hour	
ITE #820 Shopping Center	40,000 SF	Trips = EXP(0.67*LN (X/1,000) +3.31)		Trips=EXP(0.67*(X/1,000) +3.31)		Trips=EXP(0.67*LN(X/1,000) +3.78)	
		Entering 48% 158	Exiting 52% 166	Entering 48% 158	Exiting 52% 166	Entering 52% 252	Exiting 48% 231
		Total = 324		**Total = 324**		**Total = 483**	

Pass-by trips involve traffic already on the road making an unplanned stop at the particular land use. According to ITE's Trip Generation Handbook, 3rd Edition, there is a pass-by credit associated with the shopping center land use. ITE recommended an average pass-by percentage of 34% during the PM peak hour and 26% during the Saturday peak hour. We applied the recommended PM Peak hour 34% pass-by rate to the traffic generated during the midday and PM peak hour traffic and the recommended 26% pass-by rate to the Saturday peak hour.

The new versus pass-by generated trips are presented in **Table 7**.

TABLE 7
NEW vs. PASS-BY SITE GENERATED TRIPS

	Midday Peak Hour		PM Peak Hour		Saturday Peak Hour	
	Enter	**Exit**	**Enter**	**Exit**	**Enter**	**Exit**
New	104	112	104	112	186	165
Pass-by	54	54	54	54	66	66
Total	**158**	**166**	**158**	**166**	**252**	**231**

2020 Build Condition Traffic Volumes

The site generated traffic volumes were added to the 2020 No Build condition traffic volumes at the intersections NYS Route 25A with Dogwood Drive and Wading River Road, and the site's right-turn out only driveway to establish the 2020 Build Condition traffic volumes. This condition represents the anticipated traffic volumes that will occur in the build-out year and includes background growth, other development growth, and site generated traffic. The 2020 Build Condition traffic volumes are presented in Figure 8 [of **Appendix E**].

2020 Build Condition Capacity Analysis

The anticipated future build conditions capacity analysis results are found in **Table 8** for the intersections of NYS Route 25A with Dogwood Drive and Wading River Manor Road. A capacity analysis was also performed for the site's right turn out only driveway 360± feet east of the site's main drive. The capacity analysis reports for the future build conditions are included in Appendix E [of **Appendix E**].

TABLE 8
FUTURE WITH BUILD CONDITIONS CAPACITY ANALYSIS

Intersection	Movement	Lane Group	Midday		PM		Saturday	
			Delay (s/veh)	**LOS**	**Delay (s/veh)**	**LOS**	**Delay (s/veh)**	**LOS**
NYS Route 25A & Dogwood Drive	EB	L	6.6	A	32.9	C	12.3	B
		TR	12.7	B	20.8	C	31.8	C
		Approach	12.5	B	21.2	C	31.4	C
	WB	L	9.5	A	20.9	C	33.5	C
		TR	9.4	A	35.3	D	14.5	B
		Approach	9.4	A	34.5	C	16.4	B
	NB	L	49.3	D	49.6	D	52.7	D
		TR	47.3	D	48.5	D	47.2	D
		Approach	48.6	D	49.2	D	50.8	D
	SB	TLR	47.3	D	47.6	D	45.6	D
	Overall		**14.3**	**B**	**29.6**	**C**	**26.2**	**C**
Venezia Square Right Turn Out Exit	NB	R	18.6	C	24.7	C	25.8	D

Intersection	Movement	Lane Group	Midday		PM		Saturday	
			Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
& NYS Route 25A								
NYS Route 25A & Wading River Manor Road	EB	L	15.7	B	38.3	D	23.1	C
		TR	33.5	C	46.5	D	128.9	F
		Approach	31.4	C	45.5	D	118.8	F
	WB	L	25.0	C	38.7	D	41.2	D
		TR	23.4	C	53.0	D	32.3	C
		Approach	23.6	C	50.9	D	33.6	C
	NB	L	46.4	D	54.2	D	136.4	F
		TR	62.8	E	65.7	E	64.8	E
		Approach	55.3	E	60.3	E	97.6	F
	SB	L	45.5	D	41.9	D	108.4	F
		TR	51.3	D	49.2	D	60.7	E
		Approach	48.8	D	46.2	D	81.4	F
	Overall		**36.0**	**D**	**50.3**	**D**	**85.3**	**F**

Since the worst conditions occur on Saturday where the LOS for the intersection at NYS Route 25A and Wading River Manor Road becomes an F, we recommend changing the signal timing of the light following the capacity analysis reports in Appendix [of **Appendix E**] in order to result in better and more acceptable LOS as shown in **Table 9**.

TABLE 9
FUTURE WITH BUILD CONDITIONS CAPACITY ANALYSIS WITH MITIGATION MEASURES

Intersection	Movement	Lane Group	Midday		PM		Saturday	
			Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
NYS Route 25A & Wading River Manor Road	EB	L	14.7	B	38.0	D	18.5	B
		TR	28.8	C	34.8	C	67.8	F
		Approach	27.1	C	35.2	D	63.0	E
	WB	L	22.0	C	33.8	C	61.1	E
		TR	21.9	C	41.8	D	25.3	C
		Approach	21.9	C	40.6	D	30.5	C
	NB	L	49.3	D	56.8	E	69.3	E
		TR	54.9	D	54.0	D	53.9	D
		Approach	52.3	D	55.4	E	61.2	E
	SB	L	47.1	D	43.3	D	68.8	E
		TR	51.8	D	50.5	D	53.3	D
		Approach	49.7	D	47.4	D	60.2	E
	Overall		**33.4**	**C**	**42.1**	**D**	**53.1**	**D**

Conclusions

This updated traffic impact study was performed to investigate the potential impacts from traffic associated with Venezia Square, a 40,000 SF proposed shopping center, located along NYS Route 25A adjacent to the Alexander-Rothwell Funeral Home in Wading River, Riverhead. The intersections examined in this study were NYS Route 25A with Dogwood Drive and NYS Route 25A with Wading River Manor Road. Presently, the site is vacant. The estimated time of completion (ETC) of the project is 2020.

Existing traffic volume counts were taken in October, and the appropriate seasonal factors were applied to account for the area's busier season. Traffic volumes were then projected to the project year of completion using conservative background growth rates of 1.7% per annum in addition to adding site generated trips from new or expanded development in the area. These projections were used to perform capacity analysis to estimate the likely future traffic conditions with, and without, the proposed development. The results were compared to determine the difference in traffic conditions and if this difference would result in any appreciable impact on the surrounding roadway network.

The capacity analysis results demonstrate that the addition of Venezia Square will impact the NYS Route 25A and Wading River Manor Road intersection LOS at the Midday and Saturday peak periods, lowering each from a C to a D and an E to an F, respectively. However, if the signal timing is changed, the LOS at these peak periods can be a C and a D, respectively. To further help improve traffic conditions and the LOS, we recommend installing a right-turn lane at the eastbound approach. Overall, the addition of Venezia Square will not significantly impact traffic conditions.

The accident history review examined all of the accidents that occurred at the study intersections and surrounding roadway segments for the most recently available three year period. The analysis revealed that there is a pattern of rear-end accidents occurring at both intersections of NYS Route 25A with Dogwood Drive and Wading River Manor Road. General countermeasures for rear-end accidents can be found in Table 10. Additionally, a handful of deer-crossing related accidents occur in this area each year, but these accidents are unrelated to the roadway design. The to-be installed signalized light at Dogwood Drive with NYS Route 25A is expected to relieve the frequency of rear-end accidents occurring at this location.

As noted in **Section 3.2**, the updated TIS of December 2018 was revised in May 2022 in response to a Town Planning Department inquiry as to whether the intersection of NYS 25A and Wading River Manor Road would experience the same reduction in LOS if the mitigation described in the updated TIS were not implemented. The revised analysis (see **Appendix F**) indicates that, with new turning movement counts and considering updated background traffic growth, the future no build scenario will have an overall LOS C during the peak midday and PM conditions and LOS D during the Saturday condition. In the build scenario, service levels will not

be reduced from the no build scenario. Therefore, the proposed development will not result in a traffic impact that reduces service levels.

3.8 Cumulative Impacts

This subsection analyzes the impacts of the other projects in the area whose impacts, in conjunction with those of the proposed project, may cumulatively result in impacts that are significantly greater than the individual impacts that would occur from each project.

Based on the revised TIS (as determined by the Towns of Riverhead and Brookhaven planning departments for that study), there are two (2) other development project pending in the vicinity of the subject site:

- **Central Square** - is located along the south side of NYS Route 25A, approximately a quarter mile to the east of the intersection of Wading River Manor Road and NYS Route 25A. The proposed development is comprised of a restaurant, 14,076 SF of retail space, a 4,250 SF bank with drive thru and 28,962 SF of professional office space.

- **Real Life Church of Wading River** - is located approximately 315 feet north of the intersection of NYS Route 25A and Dogwood Drive. The proposed development includes a proposed 2,952 SF expansion to the existing 2,533 SF church, which will include approximately 1,220 SF of office area in the basement of the church, 1,323 SF of meeting rooms in the basement, and 409 SF of sanctuary space to include 208 seats.

The following briefly describes and discusses potential cumulative impacts that may be expected.

- It should be noted that each of these proposals would be constructed independently of the other, on separate time schedules. As a result, the construction-related impacts anticipated from each proposal may not occur simultaneously with the other project, which would mitigate the potential cumulative construction-related impacts.
- Temporary increases in the potential for fugitive dust and construction-related traffic and noise impacts would be expected for any proposal. However, as these impacts would be temporary in nature, no significant cumulative construction impacts are expected.
- In total, these proposals would involve some disturbance to local geological resources, primarily as a result of excavations for building foundations and utility connections. The area is relatively flat, so extensive volumes of soil are not expected from site grading operations.
- Each of these applications will conform to the requirements of SCSC Article 6, ensuring that significant adverse impacts to groundwater quality do not occur, either separately or cumulatively

- There are no freshwater wetlands in the vicinity of these proposals, so no impacts to surface water bodies are expected, as each development site will have to conform to Town requirements for on-site retention of stormwater runoff.
- As the proposal sites are either already developed or do not have significant ecological resources, no adverse cumulative impacts to ecological resources are expected, from habitat loss, removal of significant natural vegetation, or eradication of significant flora or fauna.
- New uses are anticipated to occupy buildings that would conform to height, bulk and setback requirements of their respective zonings, unless special permits or variances are requested. For each of these five proposals, the applicable Town entity would be responsible to determine the degree of conformance to, among other parameters, the patterns of land uses and zoning in the area, the applicable zoning requirements, and the recommendations of the Town Land Use Plan, the SGPA, the CPB CLUP, and any other applicable plans. As a result, development of each of these sites would have to demonstrate conform to a range of established land use and development controls, thereby minimizing the potential for adverse impacts to the use, zoning and planning environment in the area.
- Each of the proposals under consideration here are relatively small in scale, so that the anticipated traffic-related impacts of each on the local roadway network would also be relatively small. Cumulatively, however, these small impacts may result in a large impact on the operation of local intersections, necessitating improvements such as signal timing changes, new signal installations, road striping, roadside drainage systems, road lighting, turning lanes or road widenings. However, the revised TIS that was prepared for the proposed project (see **Appendix F**) included the two other development proposals in its analysis, so that the cumulative traffic-related impacts of all three proposals has been addressed. That analysis concluded that no significant adverse impacts to traffic conditions would occur.
- While these applications would combine to increase the demand upon local community services (e.g., schools, fire and police protection, public water supply, solid waste handling, etc.), these service demand increases would be incremental in nature, and would not introduce any new service needs. On the other hand, each of these services will receive an increase in funds from the tax revenues generated from the developments, which would offset at least a portion of the increased expenditures made necessary by these new developments, enabling these service providers to continue to have sufficient capability to provide services.
- As each of these projects would change the use and appearance of their sites, there will be a cumulative impact on the visual resources and character of the community. However, the area is already significantly developed with uses of a type similar to those of these five proposals.

In general, while some impacts are anticipated from these projects, based on the forgoing considerations, it is the applicant's opinion that impacts would not cumulatively be significant. Ultimately the involved agencies will review each application on its own merits, will weigh the

potential cumulative impacts outlined herein, and will render a decision on the significance of impacts and appropriateness of each project.

4.0 SUMMARY & CONCLUSIONS

The investigations contained in this document are useful in determining the importance of the proposed project's impacts, based on the criteria included in the format for an Expanded EAF. The criteria are as follows:

- the probability of the impact occurring,
- the duration of the impact,
- its irreversibility, including permanently lost resources of value,
- whether the impact can or will be controlled,
- the regional consequence of the impact,
- the potential divergence from local needs and goals,
- whether known objections to the project relate to this impact.

The following summarizes the anticipated impacts of the proposed project, as described and discussed in **Section 3.0** of this document.

4.1 Summary

Critical Environmental Area: SGPA

- The proposed project will conform to the Commercial Use recommended for the subject property in the SGPA Plan.
- The project will eliminate the potential for a renewal of farming on the project site. However, such activity ceased on the site a number of years ago, which would presumably have reflected the farmer's response to conditions no longer conducive to farming on this small parcel of land.
- The elimination of farming on the subject site would also end the use of any agricultural chemicals (e.g., pesticides, herbicides, fungicides) on the site, which incrementally reduce impacts to groundwater quality in the area. The proposed 0.84 acres of landscaped area is small, conforms to the CPB CLUP and Town Code §301-197 A.(9), and will require minimal maintenance.
- The subject site is located along the northern boundary of the SGPA, where analysis indicates that the water recharged on the subject site will flow northward, away from the SGPA.
- The site is on the periphery of the Wading River business district (within the Sound Avenue/NYS Route 25A commercial corridor), and is on land zoned for commercial use. This would suggest that the Town Board has determined that, assuming that the requirements of the Town Zoning Code, the Town Pine Barrens Overlay District, the CLUP and SCSC Article 6 are met, the location would be appropriate for commercial use.

Critical Environmental Area: Central Pine Barrens

- The tables in **Appendix B** presents each of standards and guidelines of the Town Pine Barrens Overlay District and the CPB CLUP for development within the CGA, with accompanying

descriptions/discussions of whether and how the proposed project conforms to each. The tables **(Appendices B-1 and B-2**) demonstrate that the proposed project is in conformance with and consistent with the Town Pine Barrens Overlay District and the Standards and Guidelines of the CPB CLUP.

- The revised TIS indicates that the intersection of NYS Route 25A and Wading River-Manor Road will not experience any decline in LOS, so that the project would not qualify as a DRS under CLUP, and no Hardship review by the CPBJPPC would be necessary or warranted.

Proximity to Cultural Areas

- The Phase I Archaeological Investigation concludes that there are no cultural (i.e., prehistoric or historic era) resources on the project site, so that there could be no impact on such resources associated with the proposed project.
- **Appendix C-2** contains correspondence from the NYS OPRHP that states:
  - We have reviewed the report entitled "Phase I Archaeological Investigation at the Venezia Subdivision, Wading Rover, Town of Riverhead, Suffolk County, New York" (July 2016). No archaeological resources were identified and no additional archaeological work is necessary.
  - We have no concerns regarding the project's potential to impact historic architectural resources. Therefore, it is OPRHP's opinion that the project will have No Impact on archaeological and/or historic resources listed in or eligible for the New York State and National Registers of Historic Places.

Proximity to Threatened and Endangered Species

- The endangered Tiger Salamander was identified by the NYS NHP as being present in ponds approximately 1/3 mile from the project site. The species would have no association with the site due to the following:
  - The species travels upland from vernal ponds typically in the range of 535 feet, but sometimes just over 1,000 feet. The location (1/3 mile away) is more than 1,700 feet from the subject site and as a result, migration to the property is not expected.
  - There is intervening development south of the site between the Tiger Salamander breeding pond and the subject site.
  - The site does not contain suitable upland sandy soil, pine barrens habitat for mole habits of the Tiger Salamander.
- As a result, no impact is expected with respect to the Tiger Salamander.
- It should be noted that not all of the site's existing vegetation will be removed; an estimated 2.24 acres of successional old field vegetation (35.3% of the site, in conformance with the Town and CLUP Standard), will remain. This will enable the site to continue to support wildlife and plant life.

Clearing

- The Town Pine Barrens Overlay District and the CPB CLUP allow, for development of a commercial use, a maximum of 65% of the site to be cleared. The subject site is presently fully covered by successional farm field vegetation. Thus, the clearing standard would

permit clearing of up to 4.12 acres of this natural vegetation. As shown on the **Site Plan**, the proposed project seeks to clear 4.10 acres of land, which is 64.6% of the total site. Thus, the proposed project conforms to the clearance standard of the Town Pine Barrens Overlay District and the CPB CLUP.

Parking Sufficiency

- As shown in the **Site Plan**, a total of at least 186 parking spaces are required by Town Code Section 108-60A. The **Site Plan** shows that the project will provide a total of 186 parking spaces, in conformance with the Town Code.

Traffic Impacts

- An updated TIS (2018) and a revised TIS (2022) were prepared to investigate the traffic and transportation impacts of the proposed project. Traffic volumes anticipated to be generated by the project were calculated using established background growth rates and allowances for new or expanded development in the area. These projections were used to perform capacity analyses to estimate the likely future traffic conditions with, and without, the proposed development. The results were compared to determine the difference in traffic conditions and if this difference would result in any appreciable impact on the surrounding roadway network. The results demonstrate that the proposed development will not have any appreciable impact on the surrounding roadway network.

Cumulative Impacts

- In general, while some impacts are anticipated from the three projects evaluated, based on the forgoing considerations, it is the applicant's opinion that impacts would not cumulatively be significant. Ultimately the involved agencies will review each application on its own merits, will weigh the potential cumulative impacts outlined herein, and will render a decision on the significance of impacts and appropriateness of each project.

4.2 Conclusions

The environmental review process is a balancing process, wherein the potential adverse impacts of the proposed project are weighed against its merits, to give reviewing entities sufficient information and analysis to render an informed decision to approve or deny the application. The analyses in this document (and summarized in **Section 4.1** above) support a conclusion that the potential adverse impacts of the proposed project will not be significant and will, in any case, be geographically localized.

This report has been structured to provide additional information on the issues specified in the Town Planning Department memo, which reflects the concerns of the Town planning and environmental staff acting on behalf of the Town Board. The impact discussions and analyses herein are to be used to determine the environmental significance of the proposed project. Therefore, based on the contents of this EEAF, it is respectfully submitted that no significant impacts are expected to occur, and thus, a Negative Declaration is appropriate for the proposed project.

FIGURES

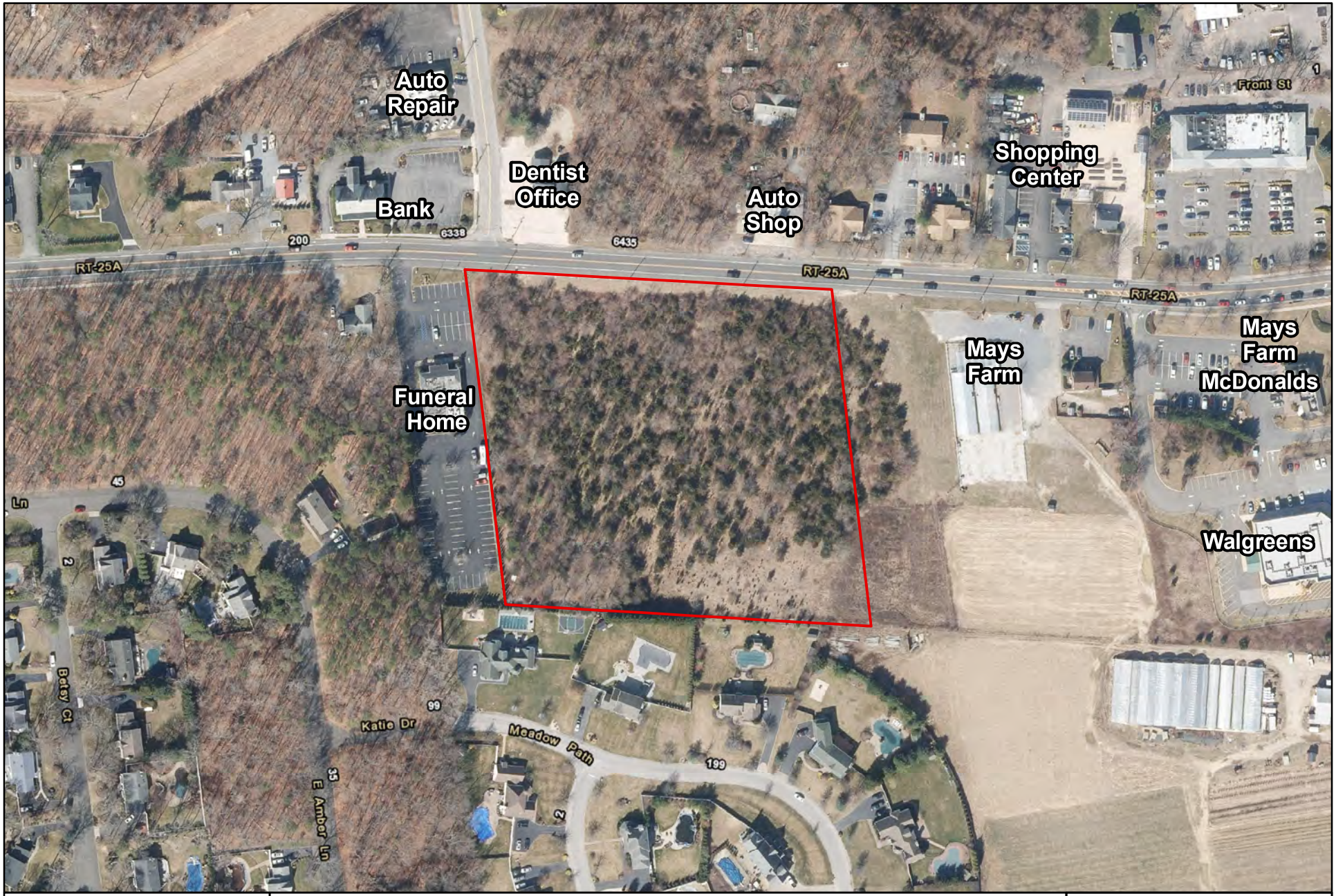
NPV

FIGURE 1a
LOCATION MAP, REGIONAL

Source: ESRI WMS

Scale: 1 inch = 1,000 feet

Venezia Square
Wading River
Site Plan Application
Expanded EAF



NPV

FIGURE 1b
LOCATION MAP, LOCAL

Source: NYS Orthophotography, 2020

Scale: 1 inch = 200 feet

N

Venezia Square
Wading River
Site Plan Application
Expanded EAF

NPV

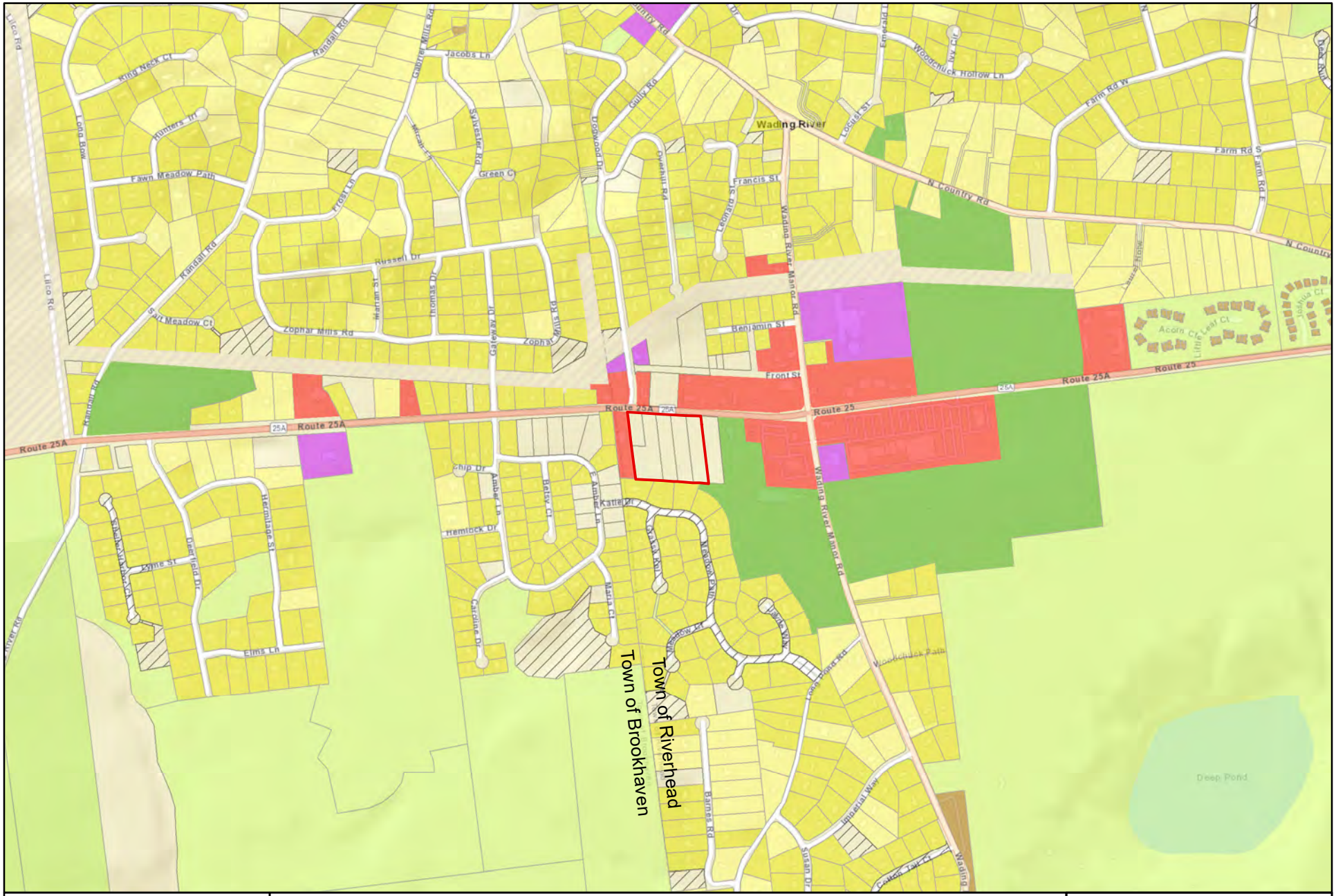
FIGURE 2
EXISTING CONDITIONS

Source: NYS Orthophotographyk, 2020

Scale: 1 inch = 100 feet

N

Venezia Square
Wading River
Site Plan Application
Expanded EAF



NPV

FIGURE 3
LAND USE MAP

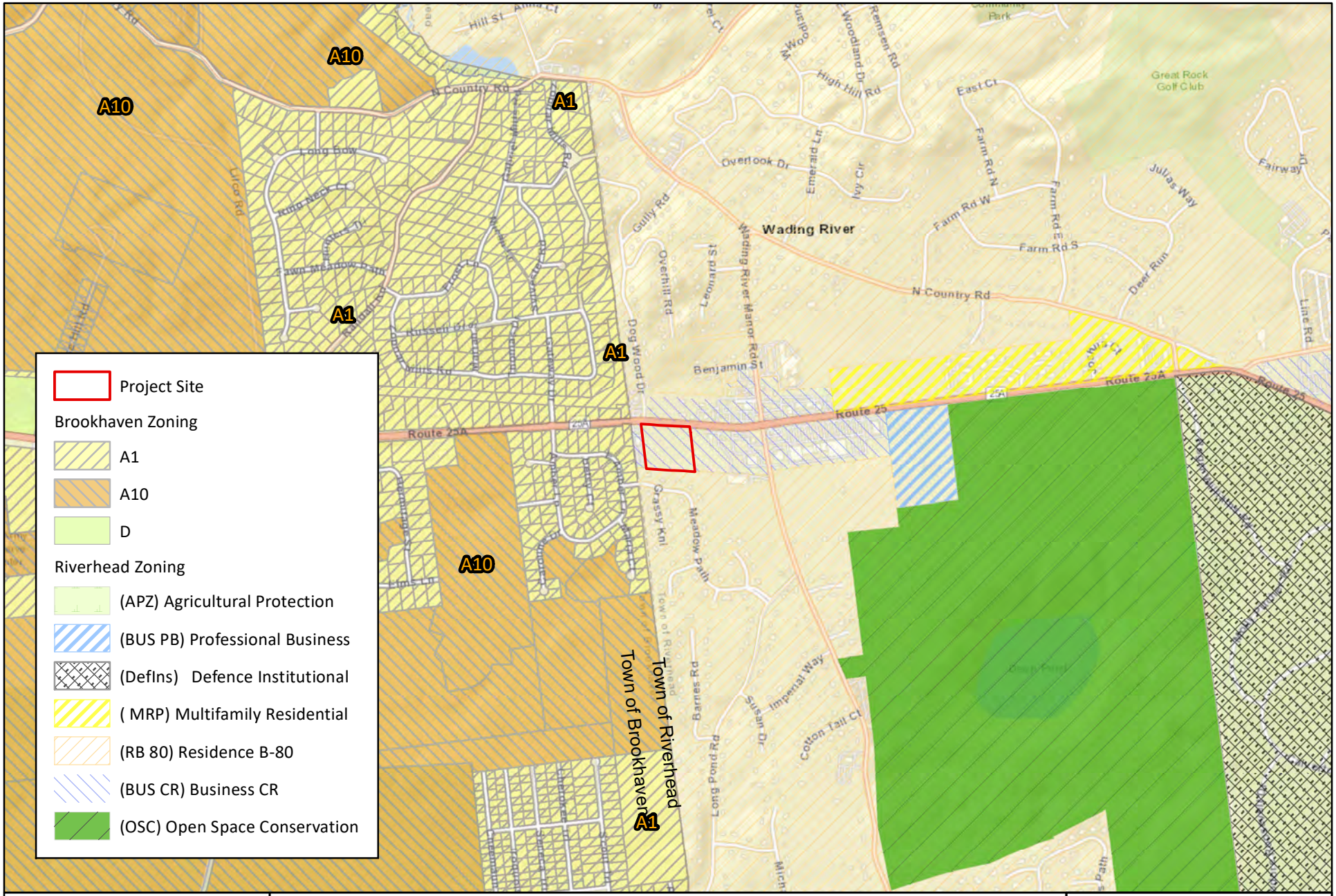
Source: ESRI WMS; Suffolk County LU, 2016

Scale: 1 inch = 1,000 feet

N

Venezia Square
Site Plan Application

Expanded EAF



NPV

FIGURE 4
ZONING MAP

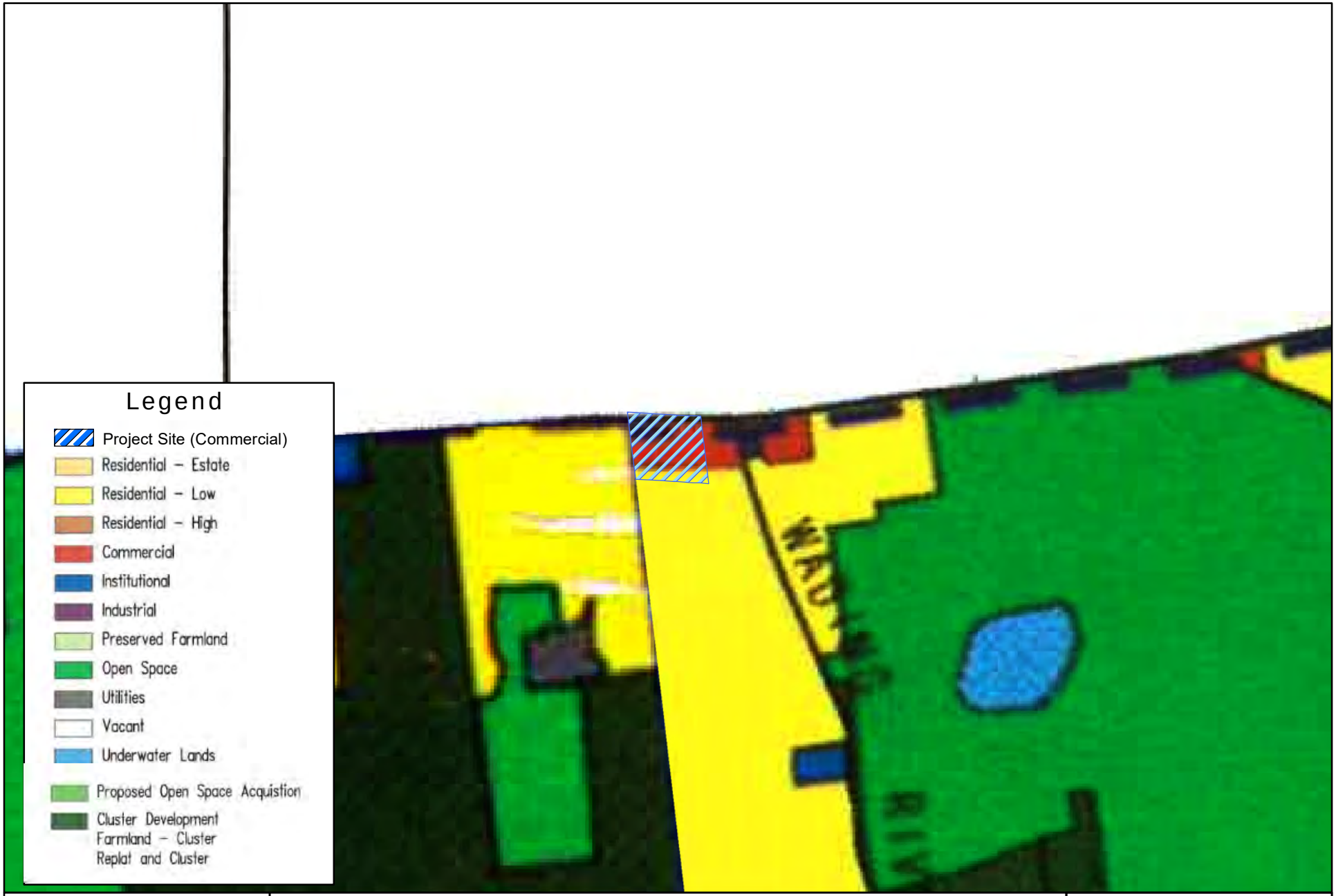
Source: ESRI WMS; Town of Riverhead, Town of Brookhaven Zoning

Scale: 1 inch = 1,500 feet

N

Venezia Square
Site Plan Application

Expanded EAF



NPV

FIGURE 5

SGRA PLAN, RECOMMENDED LAND USE MAP

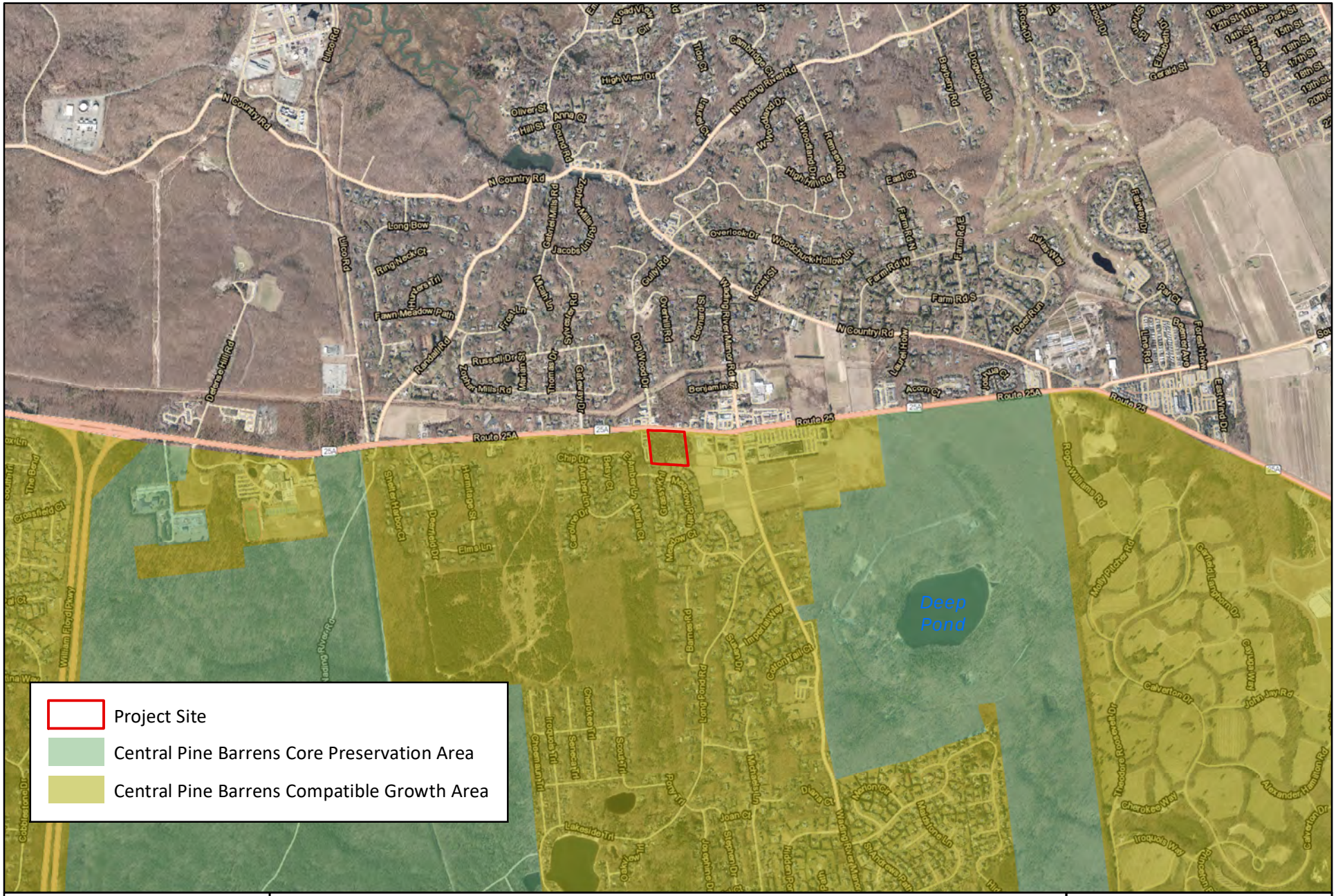
Source: Long Island Comprehensive Special Groundwater Protection Area Plan, Long Island Regional Planning Board, 1992

Scale: 1 inch = 1,000 feet

N

Venezia Square
Site Plan Application

Expanded EAF



NPV

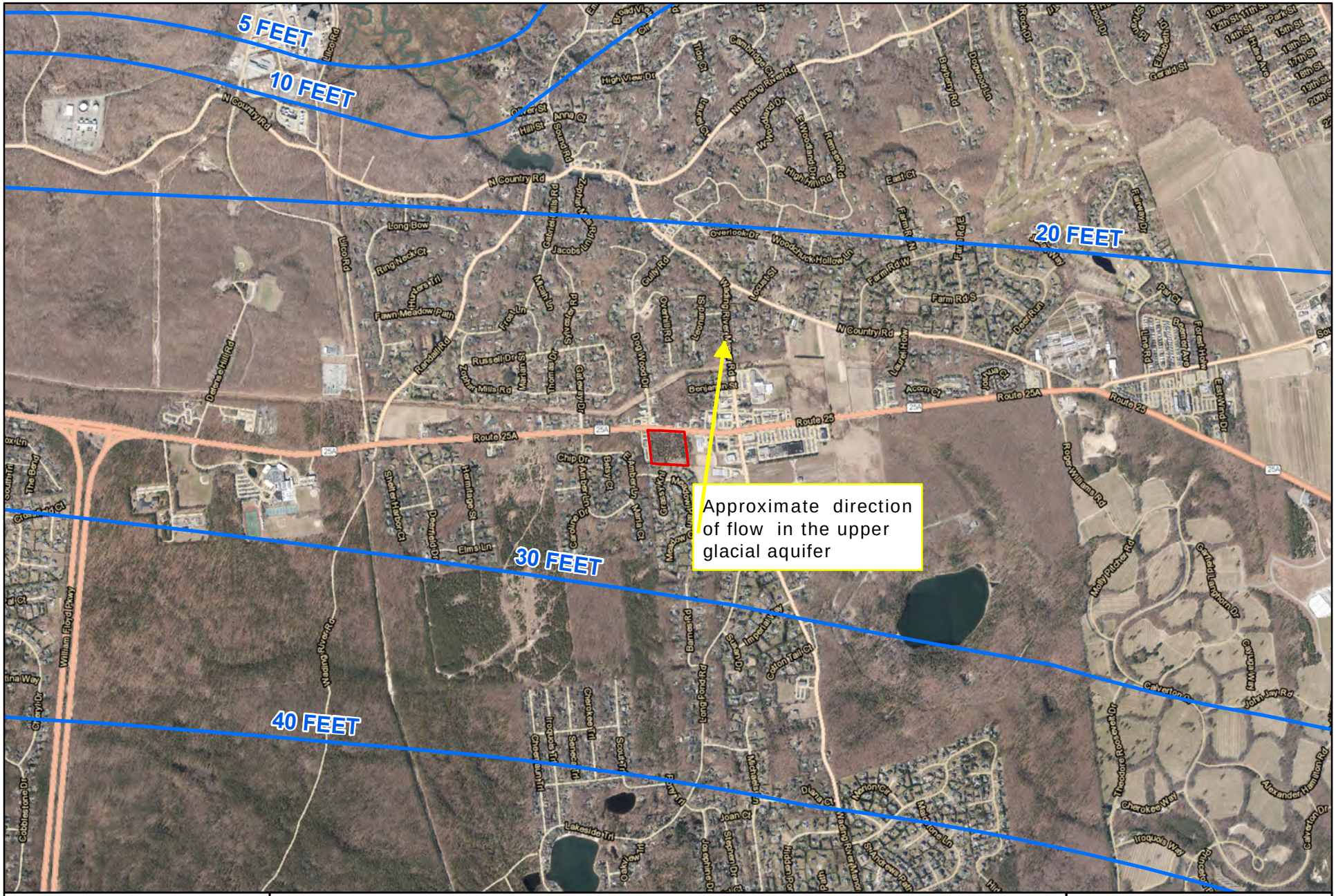
FIGURE 6
CENTRAL PINE BARRENS, CGA MAP

Source: NYS Orthophotography, 2020; Suffolk County data

Scale: 1 inch = 2,000 feet

Venezia Square
Site Plan Application

Expanded EAF



NPV

FIGURE 7
WATER TABLE CONTOUR MAP

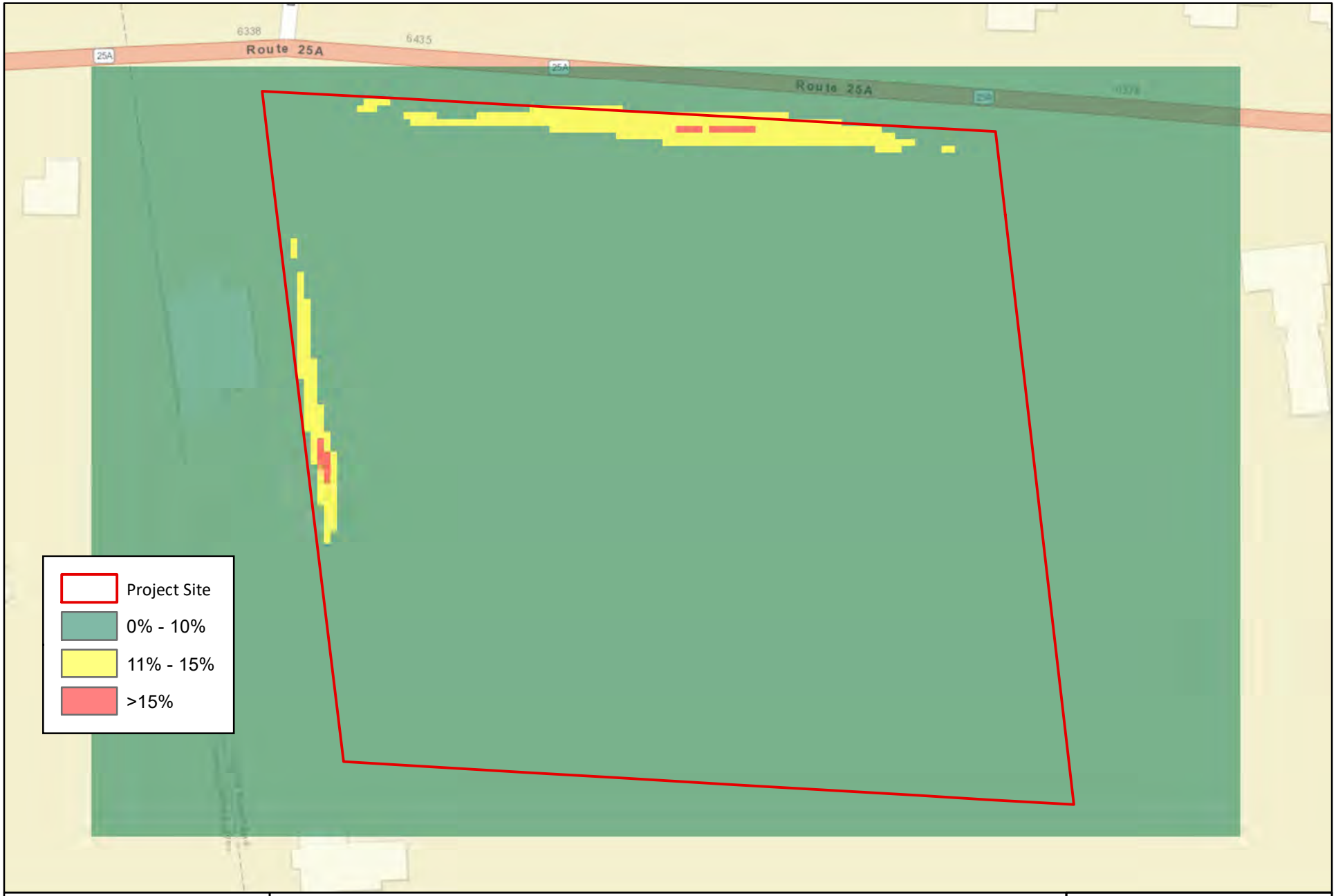
Source: NYS Orthophotography, 2020; USGS SIM 3398, 2016 data

Scale: 1 inch = 2,000 feet

N

Venezia Square
Site Plan Application

Expanded EAF



NPV

FIGURE 8
SLOPE MAP

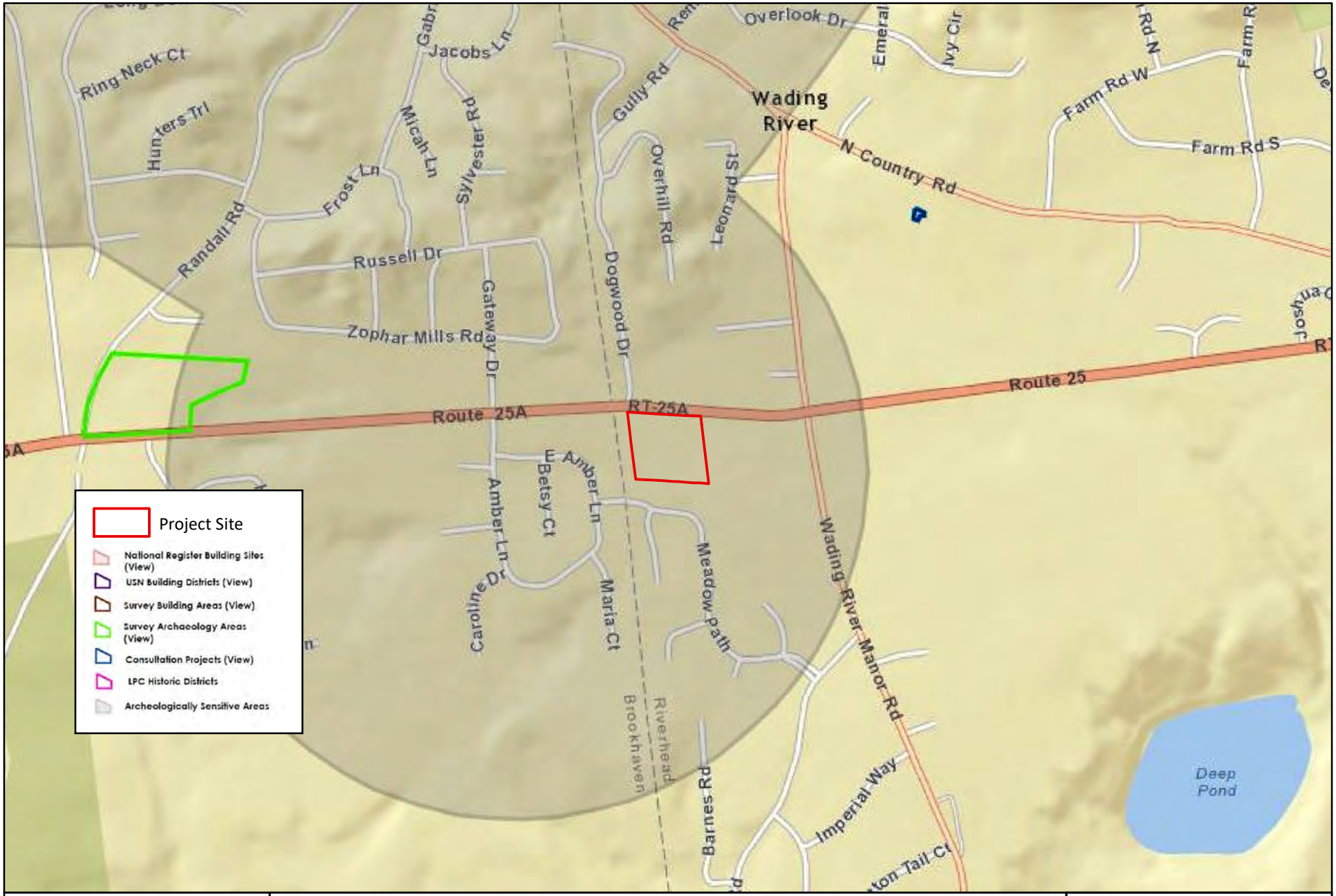
Source: ESRI WMS; Slope calculated from FEMA LiDAR, 2006

Scale: 1 inch = 100 feet

N

Venezia Square
Site Plan Application

Expanded EAF



NPV

FIGURE 9
CULTURAL RESOURCES SENSITIVITY MAP

Source: ESRI WMS; NYS Cultural Resourses Information System (CRIS)

Scale: 1 inch = 1,000 feet

N

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Site Plan Application

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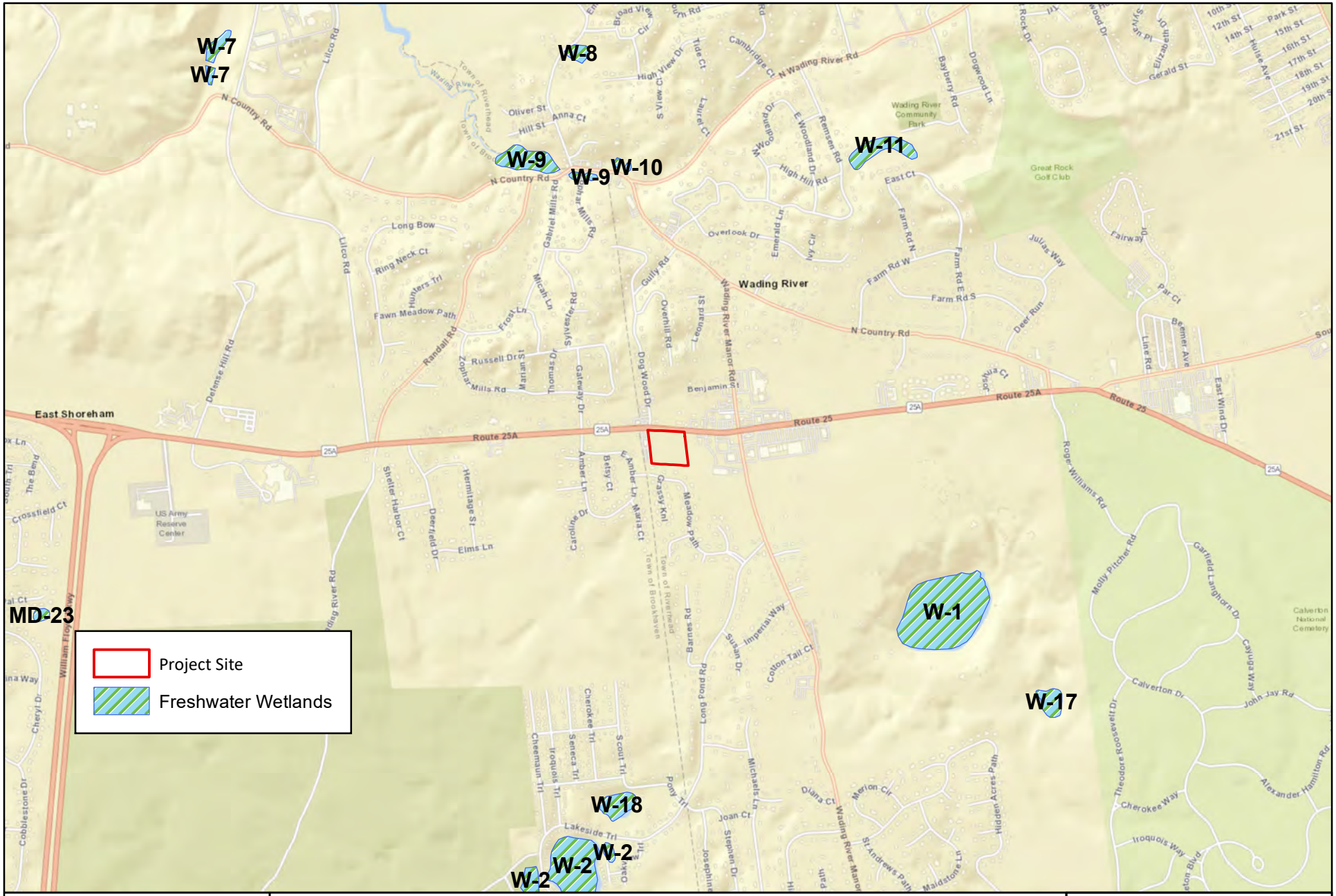

NPV

FIGURE 10
NYSDEC FRESHWATER WETLANDS MAP

Source: ESRI WMS; NYSDEC

Scale: 1 inch = 2,000 feet

N

Venezia Square
Site Plan Application

Expanded EAF

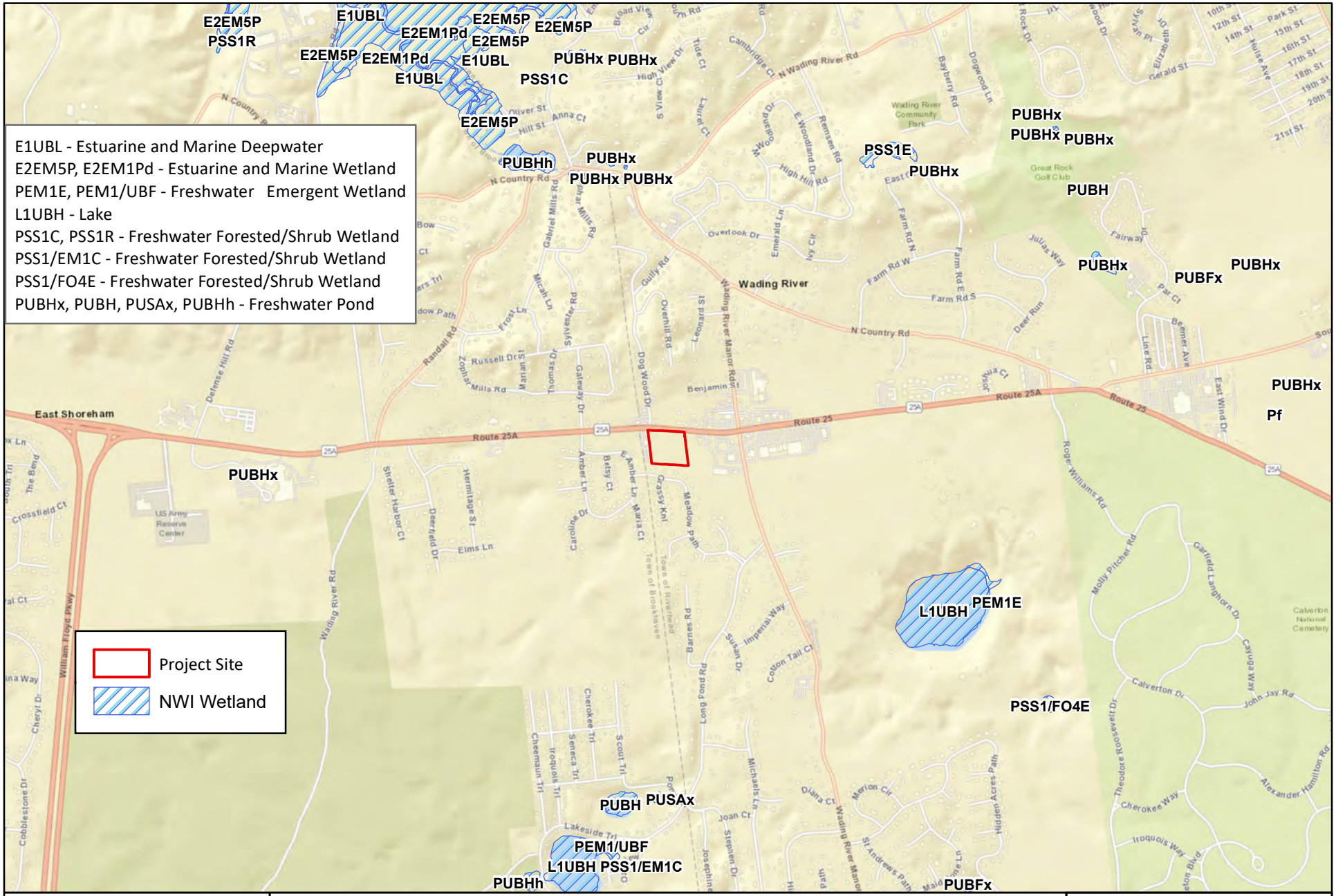

FIGURE 11
NATIONAL WETLANDS INVENTORY MAP

Source: ESRI WMS; USFWS National Wetlands Inventory

Scale: 1 inch = 2,000 feet

N

Venezia Square
Site Plan Application

Expanded EAF

ATTACHMENT B
SONIR COMPUTER MODEL DOCUMENTS

Venezia Square, Wading River
Town of Riverhead
DRS Application

Attachment B-1
SONIR Model User's Guide

NPV

SONIR MODEL USER'S GUIDE

Simulation of Nitrogen in Recharge (SONIR)
Nelson, Pope & Voorhis, LLC Microcomputer Model

February 1, 2023

INTRODUCTION

SONIR is a microcomputer model developed by Charles J. Voorhis, CEP, AICP and copyrighted with the Library of Congress for exclusive use by Nelson, Pope & Voorhis, LLC (NP&V) in order to simulate the hydrologic water budget of a site and determine total nitrogen and nitrogen present in recharge in connection with land use projects. The model was developed on the Microsoft Excel Spreadsheet (trademark of Microsoft Products) for IBM (trademark of International Business Machines, Inc.) or compatible Personal Computers capable of running Excel. SONIR is updated periodically by NP&V to account for updated references and data in keeping with industry standards and environmental changes. NP&V is a professional environmental planning consulting firm with expertise in water resource management and impact assessment, nitrogen budget modeling, watershed management plans, and groundwater, soil and air sampling and environmental monitoring. Firm qualifications are provided in **Attachment A**.

Nitrogen has been identified as a source of contamination primarily from sanitary discharge and lawn fertilization. Nitrogen is of concern as a drinking water contaminant, and there is an established health limit of 10 milligrams per liter (mg/l) in drinking water. Nitrogen is also of concern in surface water, as it is a nutrient that when present in high concentrations can cause algal blooms (including harmful algal blooms, HABs), resulting in biological oxygen demand as algae is biologically decomposed as well as unsafe and potentially toxic conditions in the case of cyanobacteria. Depleted oxygen in surface waters causes conditions unfavorable to fish species and can result in extremely undesirable aesthetic impacts, primarily related to odors. Accordingly, it is necessary to understand the concentration of nitrogen in recharge as well as nitrogen load, as related to a proposed site development, examination of mitigation measures and comparison of alternatives.

Utilizing a mass-balance concept, and applying known hydrologic facts and basic assumptions, it is possible to predict the concentration of nitrogen in recharge to the shallow aquifer underlying a given site. This prediction can in turn be used to determine impacts and significance of impacts in consideration of hydrogeologic factors. Similar techniques have been used to simulate nitrogen in recharge as published by the New York State Water Resources Institute, Center for Environmental Research at Cornell University, Ithaca, New York (**Hughes and Pacenka, 1985**). SONIR is intended to provide a more versatile model based upon the BURBS Mass-Balance concept. SONIR allows for use of the model to predict nitrogen impact from many sources including sewage treatment plants, and further allows for determination of a wider variety site coverage and recharge components under the hydrologic water budget

section. SONIR has more versatility in the input of information, and also provides a printout of each step performed by the model, in order for regulatory agencies and review entities to understand how values are derived.

This text describes in detail the definition of terms, supported by referenced information regarding input of data for the simulation. The concept of determining the concentration of nitrogen in recharge involves a predication of the weight (mass) of nitrogen introduced to the site, as compared to the quantity of recharge resulting from precipitation and wastewater water discharge. Losses due to evapotranspiration and runoff must be accounted for in the simulation. The values and relationship associated with these parameters determines the quantity of recharge which enters the site. The prediction is generally annualized due to the availability of average annual hydrologic data; however, data input can be determined on a seasonal basis if information is available.

The model includes four (4) data sheets identified as follows:

Data Input Field - Sheet 1
Site Recharge Computations - Sheet 2
Site Nitrogen Budget - Sheet 3
Nitrogen in Recharge Output Field - Sheet 4

All information required by the model is input in Sheet 1- Data Input Field. Sheets 2 and 3 utilize data from Sheet 1 to compute the Site Recharge and the Site Nitrogen Budget. Sheet 4 utilizes the total values from Sheets 2 and 3 to perform the final Nitrogen in Recharge computations. Sheet 4 also includes tabulations of all conversion factors utilized in the model.

It should be noted that the simulation is only as accurate as the data which is input into the model. An understanding of hydrologic principles is necessary to determine and justify much of the data inputs used for water budget parameters. Further principles of environmental science and engineering are applied in determining nitrogen sources, application and discharge rates, degradation and losses, and final recharge. Users must apply caution in arriving at assumptions in order to ensure justifiable results.

Since the preparation of the Draft EIS, information has become available from the Long Island Nitrogen Action Plan (LINAP), which is useful updating nitrogen budget model assumptions. LINAP included a metadata analysis of all available information to establish recommended nitrogen application rates, leaching rates, population data, pet waste assumptions and updated methods to determine atmospheric deposition. LINAP assumptions were received from the Suffolk County Department of Health Services and the New York State Department of Environmental Conservation as of January, 2017, and are used where appropriate for many updated nitrogen budget analyses in SONIR. A copy of the LINAP assumptions is included as **Attachment B** to this SONIR Model User's Guide.

SITE RECHARGE COMPUTATIONS

Overview

SONIR utilizes the basic hydrologic equation for determining the quantity of recharge anticipated by subtracting recharge losses from total precipitation. The quantity of recharge resulting from a given site is determined using the hydrologic budget equation **(Koszalka, 1984; p. 19):**

$$R = P - (E + Q)$$

where:
R = recharge
P = precipitation
E = evapotranspiration
Q = overland runoff

The quantity of recharge must be determined for each type of land use existing on a site, in order to determine the resultant site recharge. Surfaces commonly considered include: impervious surfaces; turfed areas; and natural areas; however, SONIR allows for a variety of land cover types to be considered in the model. In addition, site recharge occurs as a result of irrigation and wastewater discharge. In cases where water is imported to a site via a public water system, this quantity of recharge must be considered as additional water recharged on site. SONIR allows for all of these recharge components to be included in the simulation. Many sites have fresh surface water in the form of lakes and ponds. Precipitation falls upon these surfaces; however, such features generally act as a mechanism for water loss as a result of evaporation. SONIR includes a Water Area Loss component in determining the site Hydrologic Water Budget and in computing recharge nitrogen.

Data Input - Sheet 1

The following provides a discussion of data sources and assumptions associated with the hydrologic water budget, corresponding to the Data Input Field in Sheet 1 of SONIR:

1. *Area of Site* - The total area of the site (in acres) that is capable of recharging precipitation is entered in this data cell. For sites that include tidal wetlands, the area that is inundated by tidal waters should be excluded, as recharge from these areas should not be considered in the context of nitrogen simulation. For sites that include fresh surface water, the area can be included, provided evaporative water loss from surface water is considered by entering the acreage of surface water in Data Cell 15 noted below.

2. *Precipitation Rate* - Precipitation in the form of rainfall and snowmelt is determined using long-term recorded values from local weather stations. Cornell University

maintains the Northeast Regional Climate Center, from which long-term precipitation data for Long Island weather stations is available. Monthly precipitation averages are published for the period 1951-1980 in Thornthwaite and Mather's Climatic Water Budget Method **(Snowden and Pacenka, 1985).** More updated precipitation data from the NOAA National Climatic Data Center for the period 1981 to 2010 was obtained from http://www.currentresults.com/Weather/New-York/average-yearly-precipitation.php. The nearest precipitation monitoring stations included Bridgehampton and Brookhaven, NY. Bridgehampton is listed as 50.1 inches per year and Brookhaven is listed as 49.9 inches/year. Data entry is in inches. The value for Brookhaven, NY was used in this simulation.

3. *Acreage of Fertilized (SONIR allows multiple categories of fertilizer dependent vegetation to be entered)* - The total area fertilized (in acres) is entered in this Data Cell. This area includes all lawn/turf area that is irrigated and fertilized. If there is no lawn area, a value of zero (0) is entered.

4. *Fraction of Land in Fertilized* - No entry need be made in this Data Cell. SONIR will compute the Fraction of Land in Fertilized by dividing the lawn area by total area.

5. *Evapotranspiration from Fertilized* - Evapotranspiration is the natural water loss attributed to evaporation and plant utilization. Rainwater that is evaporated and transpired by plants is returned to the atmosphere as vapor. There are various methods for determining evapotranspiration, including direct measure and calculation. A commonly recognized method is the Thornthwaite and Mather Climatic Water Budget Method. Evapotranspiration rates for various locations on Long Island have been determined by the U.S. Geological Survey, as documented in: "Ground-Water-Recharge Rates in Nassau and Suffolk Counties, New York" **(Peterson, 1987; p. 10).** The following general rates as a percent of total precipitation are excerpted from that reference:

Location	Soil Type	Vegetation	ET (in)	ET (%)
Bridgehampton	sandy loam	shallow root	21.2	46.6
	silt loam	shallow root	21.4	47.2
LaGuardia	sand	shallow root	24.2	52.9
	clay loam	shallow root	25.4	55.5
	sandy loam	moderate root	26.2	57.2
JFK Airport	sand	shallow root	22.5	53.8
	clay loam	shallow root	23.9	57.3
	sandy loam	moderate root	25.0	60.0
Mineola	sand	shallow root	22.4	47.8
	sand-silt	shallow root	23.8	51.0
	sandy loam	moderate root	25.1	53.7
	sandy loam	orchards	25.5	54.5
Patchogue	fine sand	mature forest	25.5	53.5
Riverhead	sandy loam	shallow root	22.4	49.3
		orchards	24.8	54.7

Setauket	sandy loam	mature forest	26.8	57.9
Upton	silt loam	deep root	23.9	48.4
	sandy loam	moderate root	23.0	46.5

The most applicable rate for this project is 23 inches per year, based on the soils and land cover associated with Upton.

6. *Runoff from Fertilized* - Runoff is the quantity of water that travels overland during a precipitation event. Soil infiltration capacity is the critical factor in determining runoff; however, factors such as slope and vegetation also determine runoff characteristics to a lesser extent on Long Island because of soil conditions. Less urbanized areas of Long Island with characteristically dry soils with groundcover will have a low runoff percentage as a function of total precipitation, as compared to the more urbanized portions of western Long Island. Peterson **(1984; p. 14)** estimates runoff as a percent of total precipitation for Nassau County (2.1 %); Suffolk County (0.7 %), and Long Island in general (1.0 %). If an average precipitation rate of 45-50 inches per year is assumed, runoff will vary from 0.31 to 0.94 inches. Fertilized areas would be expected to be in the higher end of the range. Judgements of higher and lower runoff can be made on a site-specific basis depending upon slope and groundcover types.

7. *Acreage of Unvegetated* - The total acreage of unvegetated area is entered in this Data Cell. This area includes sand, barren soils, and porous drives and trails. If there is no unvegetated area, a value of zero (0) is used.

8. *Fraction of Land Unvegetated* - No entry need be made in this Data Cell. SONIR will compute the Fraction of Land Unvegetated by dividing the unvegetated area by total area.

9. *Evapotranspiration from Unvegetated* - Evapotranspiration from Unvegetated areas is determined to be 30% of the evapotranspiration for vegetated surfaces due to lack of groundcover vegetation.

10. *Runoff from Unvegetated* - The runoff coefficients noted in the discussion for Data Cell 6 above, are applied to unvegetated areas on a site-specific basis. Runoff in the middle to the higher end of the range (2.1% of precipitation) is expected due to lack of groundcover vegetation.

11. *Acreage of Water (this category could include irrigation ponds and/or other surface water features)* - SONIR considers evaporation from surface water in the computation of site recharge. Surface water, particularly groundwater fed lakes and ponds are a source of water loss in the water budget. The quantity of fresh surface water (in acres) is entered in this Data Cell.

12. *Fraction of Land in Water* - No entry need be made in this Data Cell. SONIR will compute the Fraction of Water on the site by dividing the water area by total area.

13. *Evaporation from Water* - Surface water features will cause evaporation of water in excess of normal evapotranspiration as documented by **Warren et al, 1968,** Hydrology of Brookhaven National Laboratory and Vicinity Suffolk County, New York. It is estimated that the upper limit of evaporation from a large free-water surface is approximately 30.00 inches per year **(Warren et al, 1968; p. 26).** This value is entered in Data Cell 17 as the most accurate approximation.

14. *Makeup Water* - SONIR allows for consideration of the impact of man-made lakes on site recharge. Lakes are generally lined with an impermeable material. Evaporation occurs from the surface of the lake at a rate of 30.00 inches per year. In order to maintain a constant water level, an on-site well is generally installed to provide make-up water to the lake or pond. The quantity of make-up water is equivalent to the quantity of evaporation, given the fact that the function of the well is to replace water that is evaporated. Therefore, for cases where make-up water is used to maintain a constant water level, a value of 30.00 inches per year is entered in Data Cell 18.

15. *Acreage of Natural* - The total quantity of natural area (in acres) is entered in this Data Cell. This area includes naturally vegetated areas such as woodland, meadow, etc. If there is no natural area, a value of zero (0) is entered.

16. *Fraction of Land Natural* - No entry need be made in this Data Cell. SONIR will compute the Fraction of Land Natural by dividing the natural area by total area.

17. *Evapotranspiration from Natural* - Evapotranspiration from Natural areas is determined in the same manner as described for Data Cell 5 above.

18. *Runoff from Natural* - The runoff coefficients noted in the discussion for Data Cell 6 above, are applied to natural areas on a site specific basis. Generally lower values in the range of 0.7 % of precipitation are expected due to groundcover and canopy vegetation.

19. *Acreage of Impervious* - The total area of impervious surface (in acres) is entered in this Data Cell. This area includes paved driveways, parking areas, roofs, roads, etc. If there are no impervious surfaces, a value of zero (0) is entered.

20. *Fraction of Land Impervious* - No entry need be made in this Data Cell. SONIR will compute the Fraction of Land in Impervious by dividing the impervious area by total area.

21. *Evaporation from Impervious* - Impervious surfaces will allow water to evaporate, particularly during summer months. There is no vegetation; therefore there is no transpiration by plants. Evaporation from Impervious is estimated to be approximately 10 % of total precipitation **(Hughes and Porter, 1983; p. 10).** This value accounts for evaporation from parking lots and other surfaces during summer months, averaged over the entire year. This indicates that recharge/runoff would comprise the remaining 90%

of precipitation. This assumption coincides with most drainage computations required by Code Subdivision Regulations for determined leaching pool capacity.

22. *Runoff from Impervious* - The approximation of Evaporation from Impervious would indicate that recharge/runoff would comprise the remaining 90% of precipitation, as there are no other losses from impervious surfaces. In consideration of paved areas, runoff is not transported off the site or to surface water as a loss. Runoff is diverted to leaching pools and allowed to re-enter the hydrologic system beneath a given site. Therefore, in terms of site recharge computations, the value for Runoff from Impervious is zero (0).

23. *Acreage of Other Area (SONIR provides this portion of the model to customize additional cover types)* - This is a general category which can be used to include additional groundcover types in the simulation. Acreage of Other Area is entered (in acres). This Data Cell can be used to include site recharge considerations from a portion of the site that has different hydrologic properties, such as rain gardens, a moist hardwood forest or vegetated freshwater wetland, where evapotranspiration would be high and runoff would be extremely low or is a placeholder to customize data input/analysis.

24. *Fraction of Land in Other Area* - No entry need be made in this Data Cell. SONIR will compute the Fraction of Land in Other Area by dividing the land in other area by total area.

25. *Evapotranspiration from Other Area* - Evapotranspiration from Other areas is determined in the same manner as described for Data Cell 5 above. Value can be varied depending upon the hydrologic properties of the groundcover type. For rain gardens, this value would be high and similar to wetlands and surface water at 30 inches/year.

26. *Runoff from Other Area* - The runoff coefficients noted in the discussion for Data Cell 6 above, are applied to Other Areas on a site-specific basis. Value can be varied depending upon the hydrologic properties of the groundcover type. For rain gardens, no runoff would be expected.

27. *Acreage of Land Irrigated* – Use of water for irrigation purposes is an additional site recharge component not considered in any of the Data Cells above. The quantity of land irrigated on a given site is entered in this Data Cell (in acres).

28. *Fraction of Land Irrigated* - No entry need be made in this Data Cell. SONIR will compute the Fraction of Land Irrigated by dividing the Land Irrigated area by total area.

29. *Irrigation Rate* - The rate of irrigation must be entered in this Data Cell (in inches). Hughes and Porter **(1983; p. 19)** indicated that lawn irrigation is estimated to be about 5.5 inches per year; however, many sources recommend that irrigation be used to supplement natural rainfall to ensure that at least 1 inch of water is applied per week (http://www.gardening.cornell.edu/homegardening/scene7866.html). Assuming a

growing season after spring when rainfall is more abundant and summer is hotter with typically less rainfall than spring, a 20-24 week period from May through October is used, with an irrigation rate of 1-1.2 inches per week. This value (20-24 inches) is entered in Data Cell 29 as the most accurate approximation for subdivision use. Golf courses receive more irrigation.

30. *Number of Dwellings* - The number of dwellings is entered in this Data Cell in order to allow for computation of wastewater disposal from residential use. Wastewater imported to a site, or even withdrawn from on-site wells and recharged through sanitary effluent is an additional recharge component that must be considered. If the project is for a commercial use or utilizes a denitrification system, the number of dwellings should not be entered in the Data Entry Field, as the wastewater flow will include recharge and nitrogen components. The DEIS contains information regarding the number of dwellings.

31. *Water Use per Dwelling* - The water use should correspond to the total site non-irrigation water use, divided by the number of units. An average of 300 gpd for single family units is used appropriate.

32. *Wastewater Design Flow (units)* - No entry need be made in this Data Cell if the analysis is for single family homes. SONIR will compute the Wastewater Design Flow by multiplying the Number of Dwellings by the Water Use per Dwelling. If multifamily homes, the wastewater design flow should be used.

33. *Wastewater Design Flow* - SONIR permits the consideration of recharge and nitrogen input based on wastewater design flow if this is more appropriate than a determination based on number of units. This could include residential wastewater flow (e.g., combined units and clubhouse), commercial projects, denitrification systems and sewage treatment plants. SCDHS design flow factors are typically used to determine wastewater design flow. Once computed, the anticipated wastewater flow is entered in this Data Cell.

Site Recharge Computations - Sheet 2

Once data entry is complete for Site Recharge Parameters, SONIR will complete a series of detailed Water Budget computations for the overall site. The following describes the computations that are performed by the model:

A. *Fertilizer Area Recharge* - Fertilizer Area Recharge is determined by use of the basic Hydrologic Budget Equation [R = P - (E + Q)] as defined previously. The quantity of recharge determined by this method is then multiplied by that portion of the site occupied by Lawn Area to determine the component of Lawn Area Recharge in overall site recharge.

B. *Unvegetated Area Recharge* - Unvegetated Area Recharge is determined by use of the basic Hydrologic Budget Equation. The quantity of recharge determined by this method is then multiplied by that portion of the site occupied by Unvegetated Area to determine the component of Unvegetated Area Recharge in overall site recharge.

C. *Water Area Loss* - The Hydrologic Budget Equation is modified to consider Water Area Loss. This is particularly useful in water quantity stressed areas of Long Island. If runoff (Q) is considered be zero (0), then lake storage/recharge without make-up water would be Precipitation minus Evaporation (P - E). The resultant quantity of lake storage/recharge is then reduced by the amount of make-up water (M). The final quantity of loss is then multiplied by that portion of the site occupied by water to determine the component of water loss as related to the overall site water budget.

D. *Natural Area Recharge* - Natural Area Recharge is determined by use of the basic Hydrologic Budget Equation. The quantity of recharge determined by this method is then multiplied by that portion of the site occupied by Natural Area to determine the component of Natural Area Recharge in overall site recharge. This area can also include land that is revegetated to natural conditions.

E. *Impervious Area Recharge* - Impervious area recharge is also determined using the Hydrologic Budget Equation; however, the value for runoff is zero (0) due to the fact that runoff is controlled by conveyance to on site leaching facilities or is allowed to runoff into depressions where runoff is recharged on site.

F. *Other Area Recharge* - Other Area Recharge is determined by use of the basic Hydrologic Budget Equation. The quantity of recharge determined by this method is then multiplied by that portion of the site occupied by Other Area to determine the component of Other Area Recharge in overall site recharge.

G. *Irrigation Recharge* - Irrigation recharge is an additional recharge component artificially added on sites where irrigation occurs. This quantity is determined in the same manner as the Hydrologic Water Budget except that the irrigation rate (in inches) is substituted for precipitation. The resultant recharge is multiplied by the area of the site that is irrigated, in order to determine the Irrigation Recharge in overall site recharge.

H. *Wastewater Recharge* - Wastewater is also a recharge component artificially added to a site. SONIR annualizes the wastewater design flow and assumes it is applied over the entire by multiplying Wastewater Design Flow by the Area of the Site, resulting in a per foot measure of wastewater over the site. This is converted to inches to be included in overall site recharge.

Once the eight (8) series of Site Recharge Computations are complete, SONIR totals each individual component to determine Total Site Recharge. The sum of these recharge contributions, is that quantity of water that is expected to enter the site on an annual basis due

to precipitation, after the development is completed. This value is important in determining the concentration of nitrogen in recharge, and is important as a means of determining hydrologic impacts of a project in terms of changes to site recharge.

SITE NITROGEN BUDGET

Overview

The total nitrogen released on a given site must be determined in order to provide a means of simulating nitrogen in recharge. Nitrogen sources include: sanitary nitrogen; fertilizer nitrogen; pet waste nitrogen; precipitation nitrogen; and water supply nitrogen (wastewater and irrigation). The total of these quantities represents total site nitrogen.

Data Input - Sheet 1

The following provides a discussion of data sources and assumptions associated with the nitrogen budget, corresponding to the Data Input Field in Sheet 1 of SONIR:

1. *Persons per Dwelling* – For residential projects the number of persons per dwelling is a demographic multiplier used in the determination of human population of a site. The US Census Bureau publishes data for household population. The average population per household for a senior development is 1.5 persons per dwelling. For single family homes, the household population is based on US Census data for the Southampton Census Designated Place (CDP). For multifamily use, the population is less.

2. *Nitrogen per Person per Year* – For untreated wastewater, annual nitrogen per person is a function of nitrogen bearing waste in wastewater. For residential land use the population of the development is determined and the nitrogen generated is assumed to be 10 pounds per capita per year **(Hughes and Porter, 1983; p. 8).** This value is also consistent with LINAP assumptions.

3. *Sanitary Nitrogen Leaching Rate* - For normal residential systems, Porter and Hughes report that 50% of the nitrogen entering the system is converted to gaseous nitrogen and the remainder leaches into the soil **(Porter and Hughes, 1983; p. 14).** LINAP provides updated values for leaching from a conventional sanitary system, finding that there is 6% loss/attenuation from the septic tank and 10 percent attenuation from leaching rings/plume, indicating an 84% leaching rate. This rate is used for conventional sanitary system leaching. For wastewater treatment systems, minimal further attenuation is expected and as a result a 95% leaching rate is applied.

4. *Area of Land Fertilized 1* - The area of land fertilized is input in Data Cell 4. This value may correspond to the Acreage of Lawn and/or the Acreage of Land Irrigated, but is not necessarily the same value. This entry should be determined on a site-specific basis.

5. *Fertilizer Application Rate 1* - Fertilizer nitrogen is determined by a fertilizer application rate over a specified area of the site. The fertilizer application rates vary depending

upon the type of use. The following table indicates the rate of fertilization as a function of use as excerpted from the Non-Point Source Management Handbook **(Koppelman, 1984; Chapter 5, p.6):**

Residential (contract)	1.5 lbs/1000 sq ft
Residential (unmanaged)	2.3 lbs/1000 sq ft
Commercial	3.5 lbs/1000 sq ft
Golf Course	3.5 lbs/1000 sq ft
Sod Farms	4.0 lbs/1000 sq ft
Recreational Lands	0.2 lbs/1000 sq ft

If a use has a Fertilizer Management Plan then the plan should be consulted for application rates. In addition, a commercial landscaping firm has been interviewed to determine trends in commercial fertilizer application. Various fertilizer formulations are used including 10-6-4, 16-4-8 and 20-10-5 (nitrogen-phosphate-potash) depending upon season. Heavier nitrogen application rates are generally used in the spring. Fertilizer used is 50% organic nitrogen. This is applied in a dry form approximately 2-3 times per year, and a 50-pound bag is applied over approximately 16,000 square feet. Based on this rate if 20-10-5 nitrogen were applied in the spring, and 16-4-8 were applied during summer and fall, this would result in an application rate of 1.5-2.1 pounds per 1000 square feet. The high of this range is a conservative value based on three applications of relatively high nitrogen fertilizer. Judgment must be used to determine the application rates per above and further review of references as appropriate or for specific instances. LINAP fertilization rates are found in **Attachment B**; however, there is no rate for commercial application. Commercial/multifamily turf that is managed by a lawn care management company is expected to be in the range of 2 lbs/1,000 SF.

For golf course use, specific information may be consulted regarding empirical data of fertilizer applied for existing golf courses, and/or planned application rates for a given golf course.

For agricultural use, Porter & Hughes **(1983)** provides information on N-fertilizer application rates that were researched for the study "Land Use and Groundwater Quality in the Pine Barrens of Southampton." Various farm uses were assessed and it was found that nurseries fertilized at a rate of 168.3 lbs/acre of nitrogen (or 3.86 lbs/1000 SF), potato forms applied 175 lbs/acre of nitrogen (4.02 lbs/1000 SF) and vegetable crops applied 140 lbs/acre of nitrogen (3.21 lbs/1000 SF). Other advancements in farming practice are expected to have occurred, such that application rates are less than what was found in 1983.

6. *Fertilizer Nitrogen Leaching Rate 1* - Nitrogen applied as fertilizer is subject to plant uptake (20 to 80%; 50% on average) and storage in thatch and soils (36 to 47%), thereby reducing the total amount of nitrogen leached. The percentage of plant uptake and storage are based on studies cited in the LIRPB's Special Groundwater Protection Area Plan. Those studies estimated a conservative nitrogen leaching rate of 14-15%. LINAP

leaching rates are found in **Attachment B**. LINAP estimates leaching rates from residential lawn turf to be 30% and golf course leaching rates to be less, at 20%. Properly managed turf can achieve leaching rates of 10% or less. LINAP does not provide a leaching rate for commercially used land. It is expected that turf management would be employed and expected leaching rates would range from 10-15%. Further work by the Cornell University School of Integrative Plant Science, Horticulture Section was consulted as well as references from A. Martin Petrovic, Ph.D. at Cornell University **(1990, Petrovic, A.M.)**. Further review of references from this source finds a useful comparison of turfgrass fertilizer leaching rates from various land cover types including golf courses and lawns. When considering four (4) field studies of golf course fertilizer nitrogen leaching, the leaching rates ranged from 0.02% to 13.2% and averaged 3%. When considering field studies for lawn nitrogen leaching rates, the average was 9.61% **(2008, Petrovic, A.M.)**. The purpose of the document was to advise the Massachusetts Estuary Program on appropriate turfgrass leaching rates for the Pleasant Bay Region on Cape Cod.[1] Though lawn and golf course leaching rates were not substantially different, the results did identify residential lawns as having a higher leaching average leaching rate based on field studies. Local conditions should be considered in terms of the level of detail needed for nitrogen budget analysis; however, a range of 5-10% for golf courses (noted to be greater than the average of 3% from field studies) is supported for golf courses, particularly when subject to a Golf Course Management plan to properly prepare soils and turf for maximum nutrient uptake.

7. *Area of Land Fertilized 2* - More than one fertilizer nitrogen input is provided in order allow consideration of mixed use and/or golf course projects where land is fertilized at different rates.

8. *Fertilizer Application Rate 2* - Fertilizer Application Rates for this entry can be determined based upon Data Cell 5 above.

9. *Fertilizer Nitrogen Leaching Rate 2* - Fertilizer Nitrogen Leaching Rates can be determined based upon Data Cell 6 above.

10. *Outdoor Cat Population* – This section of SONIR considers LINAP information for pet waste nitrogen. Pet waste nitrogen results from the excretion of domestic pets in the outside environment. There is relatively little definitive information concerning this nitrogen source; however, several references were located and are analyzed herein. The 208 Study provides a table of nitrogen concentration in manure for various animals, not including dogs or cats. Total nitrogen values in the range of 0.30-0.43 lbs/day/1000 lbs live weight are reported for cattle, sheep and horses **(Koppelman, 1978; Animal Waste report p. 3).** It is assumed that dogs constitute the major source of animal waste that would be present in the yards of residential developments. Cat waste would be significantly less due to the lesser live weight of cats and the fact that many cat owners

[1] Hydrogeologic conditions on Cape Cod are similar to Long Island due to glacial origin, bays and estuaries.

dispose of cat waste in solid waste by using an indoor litter box. If an average of 0.35 lbs of nitrogen is assumed for dogs, and an average of 25 pounds live weight is assumed per dog, then the total annual nitrogen per pet would be 3.19 lbs/year. The only other reference identified for this User Manual that approximates nitrogen in pet waste is Land Use and Ground-Water Quality in the Pine Barrens of Southampton **(Hughes and Porter, 1983; p. 10).** This reference assumed an application rate of 6.5 lbs/acre of nitrogen. Pet waste was assumed to be deposited evenly over all turf. This assumption was not correlated to population density or pet density, but only to turfed acreage. In comparison of the two values, the per pet value corresponds to approximately 2 turfed acres. For the purpose of this model, the value of 3.19 lbs/pet/year is considered to be the most justifiable value for pet waste and is entered in this Data Cell.

Pet waste is also subject to a leaching rate factor. Pet waste is generally found to be a minor contributor of nitrogen in an overall nitrogen budget. A conservative leaching rate of 50% of the nitrogen applied to the ground to be removed through N reduction processes.

LINAP examined pet waste and has revised some of the assumptions that came from prior reports based on a metadata search of available literature through January 2017. LINAP estimates indoor and outdoor cat populations at 1.16 cats/household and 0.74 cats/household, respectively, and an outdoor dog population of 1.4 dogs/household. LINAP further estimates the pounds of nitrogen per year at 3.22 lbs/year for cats and 4.29 lbs/year for dogs, and further estimates a volatilization rate of 75% or a leaching factor 25%. These updated assumption values are used in this document, subject to consideration of the type of land use anticipated. Single family residential use would be expected to have a higher population of cats, and greater potential for outdoor occupancy. Multiple family use would be expected to have a lower population of cats and a lower likelihood of outdoor pet occupancy, with more indoor cats and therefore greater use of litter boxes and alternative disposal of cat waste (i.e., landfill disposal as compared to land surface defecation). For multiple family and senior citizen MF use, a lower cat population would be expected (on the order of one-quarter), and some uses may prohibit cats. Adjustments can be made as needed to reflect practical rates and expected conditions.

11. *Cat Waste Nitrogen Load* - This is quantified as 3.22 lbs/year of nitrogen per cat for outdoor cats per LINAP. This would apply to single family residential use. For multiple family use, indoor cats are assumed.

12. *Outdoor Dog Population* – This is quantified as 1.4 dogs/household per LINAP. This would apply to single family residential use. For multiple family use, a lower dog population would be expected, and some uses may prohibit dogs. Adjustments can be made as needed to reflect practical rates and expected conditions.

13. *Dog Waste Nitrogen Load* – This has been updated to 4.29 lbs/year of nitrogen per dog per LINAP. This would apply to single family residential use. For multiple family use, less dogs as well as effective "pick up after your pet" programs are assumed, resulting in one-quarter the expected Dog Waste Nitrogen Load for multifamily and senior MF housing.

14. *Pet Waste Nitrogen Leaching Rate* – This has been updated to 25% based on LINAP assumptions, which seem reasonable due to waste deposited on the ground and subject additional "weathering" and volatilization in the surface environment prior to recharge.

15. *Adjusted Pet Waste (if applicable)(days/year occupied)* – This entry allows for an adjustment for seasonal communities where year round occupancy is not expected. An estimated occupancy rate is inserted in this cell.

16. *Area of Land Irrigated* - No entry need be made in this Data Cell. This value is the same as Data Cell 27 of the Site Recharge Parameters and SONIR will transfer the data entry to this Cell.

17. *Irrigation Rate* - No entry need be made in this Data Cell. This value is the same as Data Cell 29 of the Site Recharge Parameters and SONIR will transfer the data entry to this Cell.

18. *Irrigation Nitrogen Leaching Rate* - Hughes and Porter **(1983; p. 10)** states "plant uptake and gaseous losses are assumed to remove at least 85% of the nitrogen entering in precipitation." Irrigation nitrogen would be expected to be subject to the same losses as applied to fertilizer leaching; therefore, a leaching rate in the range of 10-15% can be assumed and entered in this Data Cell.

19. *Atmospheric Nitrogen Application/Load* – This section of SONIR is changed from the Draft EIS, based on LINAP information. The Draft EIS assessed Precipitation Nitrogen using the concentration of Nitrogen in Precipitation and the Precipitation Nitrogen Leaching Rate described in the Draft EIS as follows: "*Nitrogen in Precipitation* - Groundwater nitrogen is partially derived from rainwater. Nitrate-nitrogen concentrations in precipitation have been reported to be on the order of 1-2 mg/l in Nassau and Suffolk Counties **(SCDHS, 1987; p. 6-4)**, with some evidence of decrease since preparation of the SCCWRMP. A conservative value of 0.75 mg/l was used." *"Precipitation Nitrogen Leaching Rate*, which was described as follows: "A slightly higher nitrogen leaching rate may be appropriate for precipitation which falls generally on natural as well as turfed surfaces. While turfgrass leaching has been extensively documented and found to reduce leaching as a result of plant uptake and thatch/root zone processes, natural areas in sandy soils may result in less uptake. A factor of 15% is applied to precipitation nitrogen as based on Hughes and Porter) **(1983; p. 10)**." For the Draft EIS, there was also a *Nitrogen in Water Supply* factor, described as follows: "The concentration of Nitrogen in Water Supply determines the quantity of nitrogen that

enters the site as a result of irrigation nitrogen and wastewater flow. Local water supply data should be utilized if available, otherwise a value of between 1 and 2 mg/l could be utilized."

LINAP has conducted more updated research regarding Atmospheric Deposition. An Atmospheric Deposition Application/Load is assumed to be 0.041 lbs/1000 SF of land area. This is then subject to various leaching rates depending on the type of groundcover.

20. *Atmospheric N Leaching Rate (Natural/Wetlands)* – The estimated leaching rate value for natural area/wetlands is 25% per LINAP.

21. *Atmospheric N Leaching Rate (Turf 30%/Golf 20%)* – The estimated leaching rate value for turfed areas is 30% and for golf course turfed areas is 20% per LINAP.

22. *Atmospheric N Leaching Rate (Agriculture; Impervious; Other)* - Agricultural land leaching is estimated to be 40% as are other surfaces not specifically identified as natural, wetlands, turf or golf turf.

23. *Nitrogen in Water Supply* – An entry cell for nitrogen in water supply is provided if this is needed for analysis.

24. *Nitrogen in Commercial/STP Flow 1* - This data entry allows SONIR to compute the quantity of nitrogen resulting from commercial discharge, denitrification systems and/or sewage treatment plants. Total nitrogen in community wastewater is identified as having a total nitrogen concentration of 20 mg/l in weak effluent; 40 mg/l in medium strength effluent, and 85 mg/l in strong effluent **(Metcalf & Eddy, Inc, 1991).** The Reclaim our Water website estimates a nitrogen concentration of as much as 65 mg/l for untreated residential waste. For comparison purposes, it is recommended that a value of 50 mg/l be used for total nitrogen concentration in sanitary systems;[2] however, higher rates per the Reclaim Our Water website may be appropriate for some use comparisons.

Properly functioning denitrification systems and sewage treatment plants are capable of reducing total nitrogen to less than 10 mg/l in accordance with discharge limitations. A value of 10 mg/l can be entered in this data cell for such systems or other applicable value dependent on specific treatment efficiencies. A value of 8 mg/l is commonly used to demonstrate improved treatment efficiencies.

Alternative wastewater systems for single family homes and commercial uses are approved in Suffolk County; such systems are achieving treatment to reduce nitrogen to

[2] SCDHS General Guidance Memo #28 includes guidelines for siting proposed or expanded STPs; this memo indicates: "A total nitrogen concentration of 50 mg/l may be used when calculating the equivalent mass loadings."

19 mg/l or less. The Suffolk County Reclaim our Water website has sample data from approved systems that can be used for the purpose of inputting sanitary nitrogen from innovative/alternative onsite wastewater treatment systems (I/A OWTS).

The SONIR model computes the number of pounds of nitrogen in sanitary discharge as a function of concentration. The absolute nitrogen is utilized in the model; however, it must recognized that from the discharge point, nitrogen is nitrified through conversion of ammonia to nitrate in the leaching area beneath the discharge point. Further, natural transformation in the form of denitrification occurs as a result of bacteria. This causes release of nitrogen gas and may account for further reduction of 50% or more subsequent to discharge **(Canter and Knox, 1979; pp. 77-78; Hughes and Porter, 1983; p. 14).** As a result, SONIR is conservative in predicting the concentration of nitrogen in recharge, and when natural denitrification of sanitary effluent is considered, actual concentration would be less.

25. *Nitrogen in Commercial/STP Flow 2* – An additional entry cell is provided for an alternative concentration should this be needed for analysis.

Site Nitrogen Budget - Sheet 2

Once data entry is complete for Nitrogen Budget Parameters, SONIR will complete a series of detailed computations to determine the individual component of nitrogen from each source and the total nitrogen for the overall site and use. The following describes the computations that are performed by the model:

A. *Sanitary Nitrogen - Residential* - SONIR establishes the site population using the number of units on the site, and the demographic multiplier. The nitrogen load factor is then applied and reduced by the leaching rate, resulting in the total residential nitrogen component. If the project is for a commercial use or residential sanitary wastewater flow is used to determine nitrogen from residential, then the resultant value should be zero (0).

B. (B) *Cat Waste Nitrogen* – The pet waste nitrogen was determined on a per pet basis; however, the number of pets for a given residential project must be determined. In order to correlate the number of pets to human population, a ratio was determined using information contained in the 208 Study, wherein it was estimated that there is 1 dog per 5 residents in suburban areas and 1 dog per 7 residents in urban areas **(Koppelman, 1978; Animal Waste Report, pp. 6).** This results in an average number of dogs based upon of 17% of the human population. Accordingly, this multiplier is used based upon the population of a land use project in order to estimate the nitrogen waste from pets. The pet waste nitrogen is subject to reduction as a function of the leaching rate, leading to the total pet waste nitrogen in pounds."

Updated analysis s provided based on LINAP assumptions which determine both Cat Waste and Dog Waste Nitrogen by using an updated pet population (number of pets per dwelling), an updated pet waste nitrogen load and an updated leaching rate. Cat Waste Nitrogen uses the numbers inserted in the Nitrogen Budget Parameter sheet in SONIR as described above.

(B') *Dog Waste Nitrogen* - Dog Waste Nitrogen is also determined by using an updated pet population (number of pets per dwelling), an updated pet waste nitrogen load and an updated leaching rate. Dog Waste Nitrogen uses the numbers inserted in the Nitrogen Budget Parameter sheet in SONIR as described above.

C. *Sanitary Nitrogen (Commercial/STP)* - SONIR utilizes the Commercial/STP Flow that is converted to liters and multiplied by the nitrogen concentration in waste. This provides a weight of nitrogen in milligrams, which is converted to pounds for the total nitrogen from this component.

D. *Water Supply Nitrogen* (other than wastewater, if applicable) - SONIR utilizes the residential wastewater design flow to compute the weight of nitrogen contributed from the water supply. The method of calculation is the same as Sanitary Nitrogen (Commercial/STP). For commercial projects, this value is accounted for in the Commercial/STP Flow and as a result, the value is zero (0).

E. *Fertilizer Nitrogen 1 (Fertilized Landscaping)* - This calculation utilizes data entry from the Area of Land Fertilized 1, in the Data Input Field, to determine the weight of fertilizer nitrogen applied to the area. The area is multiplied by the application rate and reduced by the leaching rate documented previously to arrive at total weight.

F. *Fertilizer Nitrogen 2 (Optional Fertilization Rate)* - If fertilization rates vary, the Area of Land Fertilized 2, is utilized to determine nitrogen from this source.

G. *Atmospheric Nitrogen* – Updated analysis is provided based on LINAP assumptions which determine Atmospheric Deposition using the Nitrogen Budget Parameters outlined above. The deposition rate of 0.041 lbs/1000 SF is multiplied by the square footage of each cover type, and then subject to an individual leaching rate based on the cover type. Section G computes the resultant Atmospheric Deposition.

H. *Irrigation Nitrogen* - Although a very small component, the Irrigation Nitrogen is determined using the Irrigation Recharge R(irr) computed in the Site Recharge Computations, over the irrigated area of the site to produce a volume of irrigation recharge. The Irrigation Recharge value is used in order to account for reduction of recharge due to evapotranspiration, since this component is only intended to determine nitrogen leaching into soil as a result of irrigation

nitrogen in the water supply. This value is converted to liters and multiplied by the concentration of nitrogen in irrigation water supply. The Irrigation Nitrogen Leaching Rate (expected to the same as for precipitation) is applied to the weight to determine the total nitrogen from this source.

Once the eight (8) series of Site Nitrogen Budget computations are complete, SONIR totals each individual component to determine the Total Site Nitrogen. This value is used in determining the weight per volume ratio of nitrogen in recharge as computed in Sheet 4 of the SONIR model.

FINAL COMPUTATIONS AND SUMMARY

SONIR utilizes data generated in Sheets 2 and 3 of the model to compute a mass/volume ratio for nitrogen in recharge. Nitrogen in recharge is converted from pounds to milligrams in order to provide units compatible for mass/volume concentration. Likewise, the quantity of site recharge is applied over the site in order to determine an overall volume number for site recharge. This is then converted to liters. The final computation divides the total weight of nitrogen in milligrams, by the total volume of recharge in liters, to arrive at the Nitrogen in Recharge ratio in milligrams per liter (mg/l). This concentration represents the Final Concentration of Nitrogen in Recharge, which is highlighted on Sheet 4.

Sheet 4 also provides a site recharge summary in order to compare recharge between natural conditions, a proposed project and/or alternatives. Total Site Recharge is presented in both inches, and as a volume in cubic feet/year, gallons/year and million gallons/year (MGY). The final sheet also summarizes the Conversions Used in SONIR. Conversions are standard conversion multipliers as found in standard engineering references.

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SONIR is a valuable tool allowing for versatile determination of site recharge as determined from many components of site recharge. SONIR determines the weight of nitrogen applied to a site from a variety of sources as well. SONIR is a fully referenced model utilizing basic hydrologic and engineering principals, in a simulation of nitrogen in recharge. Input data should be carefully justified in order to achieve best results. SONIR can be used effectively in comparing land use alternatives and relative impact upon groundwater due to nitrogen. By running the model for Existing Conditions, Proposed Project conditions and/or alternative land uses, comparison of impacts can be made and mitigation can be evaluated for consideration in land use decision-making. Questions, comments or suggestions concerning this model should be addressed to: Nelson, Pope & Voorhis, LLC, 70 Maxess Road, Melville, New York 11747.

SIMULATION OF NITROGEN IN RECHARGE (SONIR)

NELSON, POPE & VOORHIS, LLC MICROCOMPUTER MODEL

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ATTACHMENT A

NP&V QUALIFICATIONS

ATTACHMENT B

LINAP ASSUMPTIONS – JANUARY 2017

STATEMENT OF QUALIFICATIONS
WATER QUALITY ASSESSMENTS

NELSON POPE VOORHIS

environmental • land use • planning

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January 2021

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INTRODUCTION

Nelson, Pope & Voorhis, LLC ("Nelson Pope Voorhis" or "NPV") is an environmental planning and consulting firm established in 1997 that serves governmental and private sector clients preparing creative solutions specialized in the area of complex environmental project management and land use planning/analysis. Our offices are strategically located in Melville, Long Island, NY and Suffern, NY in the Hudson River Valley. NPV consists of three divisions, created to better serve clients with high quality, innovative and responsive consulting services in all aspects of environmental planning. The three divisions are:

- **Environmental Resource and Wetland Division:** conducts ecological assessment and planning, landscape and coastal restoration, wetland delineation and restoration, habitat assessment, conducts stormwater modeling and green infrastructure planning and implementation. This division assists clients through permitting and SEQRA processes.

- **Environmental and Community Planning Division:** prepares comprehensive plans, long-term planning studies, corridor redevelopment studies, brownfield plans and comprehensive and strategic zoning amendments. The group is effective in the use of geographic information systems (GIS) mapping to evaluate issues and present baseline data. Effective community outreach strategies are developed and tailored for each project and the community in which the project is taking place. The group represents a number of planning boards in the region.

- **Phase I/II ESA and Remediation Division:** prepares Phase I/II Environmental Site Assessments with soil and groundwater sampling services, lead based paint, asbestos and radon inspection services, and all forms of environmental sampling. The division evaluates the implications of past and/or present contamination and property uses on future land uses.

The primary focus of the firm is to provide quality planning services that meet the needs and goals of our clients while respecting the environment. We pride ourselves being extremely responsive to each client. Clients rely on NPV's depth of experience and expertise to provide solutions to each unique project within budget and on schedule. Our clientele, some of whom we have represented for decades, recognize NPV's capabilities and are secure in knowing that they receive quality professional services from project inception through completion. NPV's multidisciplinary staff includes AICP-certified planners, economists, ecologists, hydrologists, certified environmental professionals, grants specialists, and GIS specialists.

As a local firm, NPV has significant expertise in performing Water Quality Assessments. We have served as a primary planner to many municipalities and have established a solid track-record of completed projects and local government references throughout Long Island.

NPV has the capabilities to provide the following services:

ENVIRONMENTAL AND WETLAND ASSESSMENT

ENVIRONMENTAL ANALYSIS
NYS SEQRA/NYC CEQR Administration
NEPA Analysis/Documentation
EIS/EAF Preparation
GEIS & Regional Impact Analysis
Noise Monitoring & Assessment
Air Impact Analysis
Visual Assessment

STORMWATER MANAGEMENT
Stormwater Permitting
Stormwater Pollution Prevention Plans (SWPPP)
Erosion & Sediment Control Plans
NYSDEC "Qualified Inspectors" for Construction Field Monitoring
Stormwater Management Programs
NYSDEC Annual Reports
Construction Stormwater Field Monitoring
Outfall & Infrastructure Inventory
GIS Mapping & Analysis
Stormwater BMP's
Stormwater Management Planning
Low Impact Design

ECOLOGY & WETLANDS
Wetland Delineation and Permits
Permit Plans
Restoration/Mitigation Plans
Ecological Studies and Surveys
Endangered Species Surveys
Pond Management Plans
Invasive Species Control
Water Quality Evaluation
Habitat Management
Watershed Management Plans
Environmental Education /Outreach

COASTAL & WATERFRONT MANAGEMENT
Waterfront Management Plans
Waterfront Certifications
Coastal Erosion Hazard Area
FEMA Compliance
Shoreline Restoration Planning
Ecological Landscape Design

COMMUNITY AND LAND PLANNING

PLANNING
Development of Feasibility Studies
LEED Planning
Public Outreach Meetings
Demographic Analysis
Municipal Review Services
Planning & Zoning Analysis
Build Out Analysis
GIS Analysis
Code Preparation & Review
Downtown Revitalization
Regional Planning & Land Use Plans
Recreation Planning
LWRP & Harbor Management Plans
Grant Writing & Administration
Public Outreach & Community Surveys Community Visioning
District Mapping
Spatial Analysis of Call Database
Needs Assessment
Demographic Analysis

ECONOMIC
Fiscal Impact Analysis
Economic Impact Analysis
IMPLAN and RIMS II Economic Impact Modeling
School District/Community Service Impact Analysis
Market Studies
Niche Market Analysis
Demographic Studies
Economic Development Planning
Business Retention & Expansion Strategies
Downtown Revitalization
IDA Financing Assistance

PHASE I/II ESA AND REMEDIATION

ENVIRONMENTAL AUDITS
Phase I ESA & Due Diligence Investigations
Phase II ESA
Groundwater Investigations
Soil Sampling, Boring and Classifications
Soil Gas Surveys
Monitoring Wells & Piezometers
Tank Sampling
Pesticide Sampling & Plans
Soil Management Plans
Remediation
Brownfield/Voluntary Cleanup Plans
RCRA Closures
Superfund Sites
Asbestos Surveys
Influent/Effluent Sampling
Lead Based Paint Surveys
Subsurface Investigations
Ground Penetrating Radar (GPR)
Dewatering Services
Pipe Camera
Magnetometer
Groundwater Monitoring Studies
Flow Studies
Water Supply Studies
Nitrogen Load/TMDL Evaluation

Watershed Management

Water quality protection through proper land use management. What is applied to the land determines water quality through direct stormwater runoff and groundwater outflow. Inventory of watershed conditions, identification of best management practices (BMP's) and implementation are the critical analyses used by NPV in creating sound and innovative Watershed Management Plans to New York State Department of State (DOS) and other recognized specifications.

Groundwater & Water Quality Studies

Monitoring of surface and groundwaters for migration and contaminant control. NPV routinely conducts groundwater assessments to determine migration patterns and contaminant levels. Surface water quality monitoring is critical to fingerprint pollutant types to link to sources in order to monitor development pollution controls. Our expertise in these areas is a mainstay of our business.

KEY PERSONNEL

All NPV professionals are available to assist on an as-needed basis. Charles J. Voorhis, CEP, AICP will serve as the project coordinator, working as the primary contact and assigning projects to the various professionals on the team. Specific individuals expected to provide services and their individual roles for Environmental Site Assessments initiatives are noted as follows:

Personnel	Qualifications, Project Role
Charles J. Voorhis, CEP, AICP Managing Partner	Project Coordinator
Eric Arnesen, PG Licensed Professional Geologist	Site Inspections, Groundwater monitoring well installation, Environmental Testing
Beth Cartwright Environmental Engineer/GIS Specialist	Graphics/Map Design

Nelson Pope Voorhis is managed by a select group of partners. Each provides specific expertise in the field of environmental planning, land use planning/analysis, remediation, engineering and land surveying that is unique within the industry. The diverse leadership of NPV couples the experience of our senior partners with the innovation and enthusiasm of our younger partners. Many of the team's staff have advanced technical degrees and/or technical certifications. Such as LEED Accredited Professional (LEED AP), OSHA 40 Hour HAZWOPER, and American Institute of Certified Planners (AICP), etc.

Charles Voorhis, CEP, AICP is Managing Partner of NPV and has over 40 years of experience in environmental planning on Long Island and in the New York metropolitan area. Mr. Voorhis is a member of the American Institute of Certified Planners (AICP) and is a Certified Environmental Professional (CEP). He has a wealth of experience in managing large scale municipal projects including regional environmental planning, downtown revitalization and action planning, Generic Environmental Impact Statements, stormwater management, wetlands and coastal management, and municipal consulting. Mr. Voorhis and his firm serve as environmental planning consultants to many of New York Towns and Villages and are currently in the process of preparing several long-range planning initiatives for several Towns in Nassau and Suffolk Counties.

Eric C. Arnesen, PG is a Project Manager/Hydrogeologist of the Phase I/II Assessments & Remediation Division of NPV. He has an M.S. in Hydrogeology from SUNY, Stony Brook, and a B.S. in Geology from SUNY Cortland, and has taken OSHA 40 Hour HAZWOPER and 8-hour refresher courses as well as training courses in GPR operation. He has over 30 years of experience in the environmental impact assessment and characterization of hydrogeologic systems on Long Island and is also a Licensed Professional Geologist in NYS. Mr. Arnesen routinely conducts Phase I/II Environmental Site Assessments, prepares remedial action plans, provides oversight of remedial action activities and actively oversees field staff and personnel. Mr. Arnesen is responsible for providing technical and professional expertise for groundwater, surface water, soil and solid waste issues and all aspects of Water Quality Assessment report preparation. Mr. Arnesen also is responsible for providing assistance to Steven McGinn for supervision of staff and subcontractor operations during Phase II ESA field sampling.

Beth Cartwright is an Environmental Engineer/GIS Specialist with NPV since 2001 and has over 33 years of professional environmental consulting experience. She holds a M.S and B.S. degree in Civil Engineering from the University of Texas and has taken several USGS groundwater modeling courses during her employment there in 1988-1995. Ms. Cartwright specializes in spatial analysis, environmental modeling and mapping using GIS, as well as database analysis and management. Ms. Cartwright utilizes Spatial Analyst to delineate watershed boundaries using USGS Digital Elevation Models which are then refined utilizing local information from fieldwork and site-specific information. Ms. Cartwright provides spatial analysis and mapping expertise and can provide integration with GIS data sources to produce quality graphics, mapping and data synthesis needed for preparation of Water Quality Assessment reports.

Resumes along with copies of licenses/certifications can be provided upon request.

RELEVANT EXPERIENCE

Sag Harbor Water Quality Improvement Project Plan (WQIPP)

NPV was hired by the Village of Sag Harbor to develop a Water Quality Improvement Project Plan (WQIPP) to identify and rank water quality improvement projects within the Village of Sag Harbor. The plan assessed the local land use, water resource conditions, watershed priority areas and developed water quality improvement projects within the Village of Sag Harbor for which Community Preservation Fund (CPF) funding was sought. NPV the provided locations, feasibility, and cost estimates of potential projects to address non-point stormwater source abatements and reduction of stormwater with the use of green infrastructure improvements within the Village of Sag Harbor. The projects were then subsequently ranked by the cost per pound of Nitrogen removed for each project after modeling each project for effectiveness.

The Towns of East Hampton and Southampton awarded CPF grants in 2019 for the highest ranked projects, and N&P/NPV are currently preparing construction plans for various green infrastructure projects that will have significant benefits in reducing pollutant load to Sag Harbor. Project effectiveness will be evaluated with monitoring equipment to determine pollutant load reductions made by the green infrastructure systems and benefits to the receiving waterbody.

Sag Harbor Environmental Planner

NPV has served as the Village of Sag Harbor's planner and environmental consultant since 2016. In this role, NPV routinely reviews and tracks site plan and subdivision applications for the Village Planning Board; attends public meetings to present and answer questions and provides SEQRA review and administration. For wetlands applications, NPV delineates wetlands, reviews applications and provides feedback to applicants and the Village Harbor Committee, and prepares permits. In addition, NPV conducts Coastal Consistency reviews and prepares Recommendations for consideration by the Harbor Committee for consistency with the policies of the Village's adopted Local Waterfront Revitalization Program (LWRP).

NPV has completed a number of long range planning efforts on behalf of the Village.

NPV prepared the WQIPPP for the Village early in 2016 which identified multiple locations for implementation of Green Infrastructure throughout the Village. The WQIPP has been used as the basis for over a dozen grant funded implementation projects, for which NPV assisted in the grant applications. NPV and N+P have been responsible for design and implementation of rain gardens as well as public engagement and monitoring to demonstrate the long term benefits of Green Infrastructure.

NPV is working on the LWRP Update which will incorporate an updated Harbor Management Plan including the Harbor Management Charts which were prepared by NPV and adopted by the Village in the spring of 2020 along with amendments to Chapter 278 Waterways.

Village of Southampton Planner and Environmental Consultant

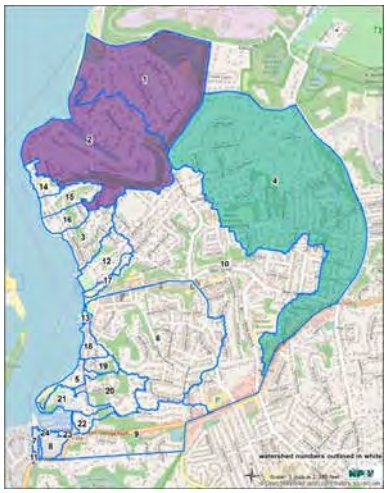
NPV has served as the Village Environmental and Planning Consultant for the Village of Southampton since 2006. In this role, NPV provides day to day consulting services for each of the Village boards including application review, coastal and wetland permit review, wetland delineation, and SEQRA review and administration. Day to review of applications includes plan review, coordination with applicants and involved departments/agencies, preparation of resolutions and permits, and presentation of project reviews and reports to the Village Boards. Our affiliated firm, Nelson + Pope serves as the Village Engineer.

Since 2006, NPV has also provided planning and environmental services in the completion of long-range plans and support for grant funding. These special projects have included a watershed management plan for Lake Agawam whose recommendations are being implemented, the build out analysis and SEQRA for an addendum to the Comprehensive Plan and zoning amendments for the historic downtown village business district, a parking utilization study which produced a guide to public parking brochure for visitors, a study to support a change in zoning to restrict offices on the ground floor in the business district, and several green infrastructure design projects.

Northport Sub Watershed Assessment

NPV was hired by the Village of Northport to assist the Village develop solutions for persistent flooding issues within the vicinity of Main Street and to address contributing areas and pollutant load to Northport Harbor. The Village approached the project in two phases, 1) conduct a sub-watershed assessment to identify the areas (or sub-watersheds) within the Village which contribute the most significant volumes of stormwater runoff and the greatest pollutant loads to the Northport Harbor, and

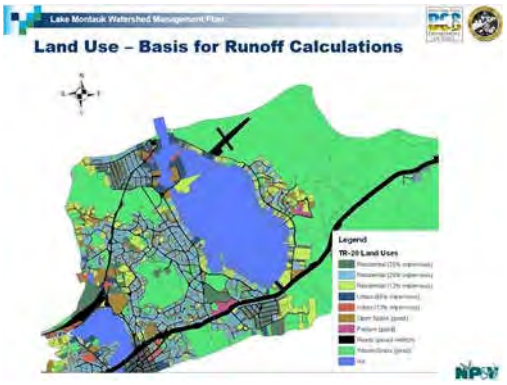
2) identify drainage improvement projects based on the results of the first phase. Potential drainage solutions were prioritized based effectiveness of both volume reduction and pollutant loads, availability of land and cost considerations. After careful consideration of the sub-watersheds, pollutant load modeling, and understanding of the watershed loads within the Village, NPV provided locations, feasibility, and cost estimates of potential projects to address non-point stormwater source abatements and reduction of stormwater with the use of green infrastructure improvements for water quality along with traditional stormwater infiltration practices. The projects were then subsequently ranked based on effectiveness of pollutant removal and stormwater volume controls.



Great Cove Watershed Management Plan

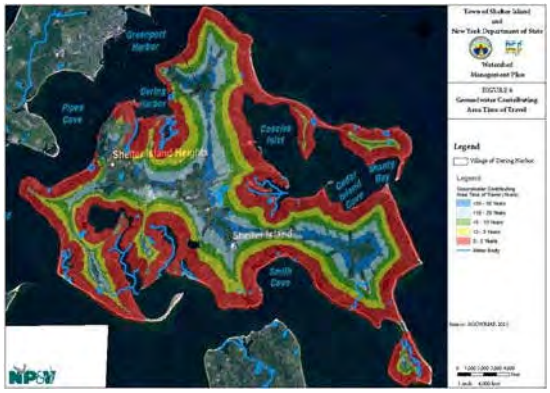
NPV prepared the Great Cove Watershed Management Plan for the Town of Islip (funded by the New York State Department of State). The study area includes the western half of the Town's frontage on the Great South Bay (16,000+ acres). The upland contributing drainage areas to Great Cove are comprised of industrial, commercial and higher population suburban areas constructed prior to 1970. Many areas within the watershed have high groundwater conditions, extensive impervious cover and drainage infrastructure and collection systems that discharge directly to Great Cove and the creeks tributary to it. The Management Plan focuses on improvement of water quality through the identification, control and reduction of non-point source pollution. The Management Plan focuses on improvement of water quality through the identification, control and reduction of non-point source pollution. Sixteen conceptual designs for drainage improvement projects within the watershed were prepared, of which three projects have been successfully implemented using grant funding. Conceptual designs and estimated construction costs were prepared for each location. Additionally, the project included a review of municipal operations and best management practices identified for salt storage, truck washing, roadway and stormwater system maintenance, and highway yard storage and drainage.

Lake Montauk Watershed Management Plan (WMP)



NPV completed the Lake Montauk Watershed Management Plan for the Town of East Hampton (funded by the New York State Department of State). NPV worked with the Town and CCE (who conducted surface water sampling and DNA analysis, as well as eel grass surveys and habitat assessments) to prepare a complete characterization of the Lake, gather input from the WMP advisory committee and furnish recommendations for watershed management. The upland contributing drainage areas to Lake Montauk are comprised of primarily residential uses with some commercial uses, marinas and yacht clubs located along or in immediate proximity to the waterfront. Many areas within the watershed have high groundwater conditions, poorly draining soils, and aged sanitary systems that impact the health of the Lake. The Management Plan focuses on improvement of water quality through the identification, control and reduction of non-point source pollution. Additionally, recommendations considered potential direct sanitary discharge to the Lake as evidence suggested contribution of coliform due to sanitary system failure. An implementation matrix that included sources of grant funding was prepared to aid in simple and rapid implementation of recommendations by the Town. The project was completed in July 2014.

Town of Shelter Island Watershed Management Plan



The Town of Shelter Island and Village of Dering Harbor retained NPV to prepare a watershed management plan for the entirety of the island. The plan was funded by a grant from the NYSDOS and developed according to NYSDOS guidelines for watershed management plans. This document characterizes the watershed's natural resources, identifies known impairments, inventories existing land uses and open space, provides a comprehensive stormwater infrastructure inventory, determines critical stormwater runoff areas, identifies gaps in existing local laws, programs and practices, recommends actions to prevent further degradation, as well as identifies an implementation strategy to restore the watershed. Recommendations considered non-point source pollution from runoff and sanitary systems, as well as methods for remediation of a phosphorus impaired pond. Development of the plan included public participation and outreach to the local community. The project was completed in July 2014.

Tuthills Creek Watershed Management Plan

NPV prepared a Watershed Management Plan for Tuthills Creek, a tributary to Patchogue Bay and the South Shore Estuary Reserve, located in the Town of Brookhaven, NY. The Watershed Management Plan was prepared to serve as a long-term strategy for the protection and restoration of water quality and ensure compatible land use and development in the Tuthills Creek watershed. The management plan characterized the waterbody and watershed, including an inventory of watershed features, demographic and population data; land use and land cover; water quality classifications; key aquatic habitats; and an assessment of pollutant loads. The Plan prioritized subwatersheds by pollutant load, assessed local laws, programs, and practices affecting water quality, identified management practices, approaches and strategies for watershed protection and restoration, identified potential water quality improvement projects and provided an implementation strategy and schedule.

Attachment B LINAP Assumptions

N Source	Application Load (lb-N/1,000sf/yr)	% of Parcel Fertilized	Leaching Rate (%) / Soil	Vadose Zone Loss	Aquifer Loss	Notes	Reasoning
Fertilizer	2.04	20-60%	30%	0%	0-15%	Residential; 1 lb-N/1,000 sf per application; 49% > 1 application per year (3-4); 31% 1 application per year; 4.5% 1 application every 3 years; 15.5% No fertilizer; Represent averages. Vaudrey gives average, low and high values	Modified from Vaudrey. 40% leaching rate is double the leaching rate used by MEP and between that and the NLM values. Leaching rate doubled due to age of turf and irrigation practices in Suffolk County. No strong evidence for vadose zone losses. Aquifer denitrification potential will be tested in sensitivity simulationsm as will a range of leaching rates (20 to 61%). Use Cornell % Turf for residential. Golf course application consistent with Cornell/Porter.
	3.89	Greens and Fairways	20%	0%	0-15%	golf courses	
	0.92	75%	30%	0%	0-15%	Parks and athletic fields; Assumes 50% of parks use fertilizer; Assumes 75% of the land is fertilized	
	0.46	90%	40%	0%	0-15%	Pasture/hay	Generally a permanent, non-rotating form of ag
	1.61	90%	40%	0%	0-15%	Orchards	Generally a permanent, non-rotating form of ag
	0.34	90%	40%	0%	0-15%	Vineyards (vinifera grapes)	Generally a permanent, non-rotating form of ag
	5.74	90%	40%	0%	0-15%	Sod	Generally a permanent, non-rotating form of ag
	2.53	90%	40%	0%	0-15%	Other Crops	Rotating crops. This represents the weighted average of the other crop types.

N Source	Application Load (lb-N/1,000sf/yr)	Leaching Rate (%) / Soil	Vadose Zone Loss	Aquifer Loss	Notes	Reasoning
Atmospheric	0.041	25%	0%	0-15%	Natural vegetation	Application load reduced to correspond with Southold Cedar Beach data and CASTNET data from surrounding stations. Leaching rates from TNC (2016).
		30%	0%		Turf	
		40%	0%		Agriculture	
		25%	0%		Wetlands	

N Source	Load (lbs-N/person/yr)	Attenuation Factors			Reasoning
		Septic Tank (Suffolk)	Leaching Ring & Plume	Aquifer	
On-Site Wastewater Systems (Residential)	10	6%	10%	0-15%	This loading estimate is consistent with what was used on Long Island and the NLM but slightly reduced from the 10.58 (NLM) and the 11 lbs/person/yr mentioned by the Chesapeake report to account for additional N load from non-residential sources. The 6% lost in the septic tank from NLM. 10% from leaching rings and plume. 15% from aquifer as per Young, Kroeger and Hanson (2013), but this is likely the high end for Long Island. This will be evaluated with sensitivity simulations. For residential developments served by STPs, use County DMR data (No individual load appied to parcels served by STPs). People per household supplied by the Towns / Census

Population (people per household)
See Population_EastEnd and Population_WestEnd
Eastern towns will be weighted for seasonal population (assuming July and August)

	Approach
On-Site Wastewater Systems (Non-Residential)	Use County DMR data. For sites without DMR data, use Suffolk County Commercial Sewer Standards (flow per unit area), building footprints and an assumed effluent of 60 mg-N/L.

Land Use Type	Flow (gpd/sf)
Commercial	0.07
Industrial	0.04
Institutional	0.06
Downtown Commercial	0.07

PLUS an assumed 2 dwelling units

For Parks
Number of cars/trucks per park per year (from SCDHS) x 4 people per vehicle (SCHDS) x 5 gallons per person (SCDHS) x 60 mg-N/L

Animal N Load (lbs-N/animal/yr)	Cats	Dogs	% Lost to Volatilization	Geese & Ducks	Deer
	3.22	4.29	75%	*	*

Cat & Dog Population (number per household)		
	Indoor	Outdoor
Cats	1.16	**0.74**
Dogs	0	**1.4**

Attachment B-2
SONIR Model Results, Proposed Project

SIMULATION OF NITROGEN IN RECHARGE (SONIR) **SHEET 1**

NELSON, POPE & VOORHIS, LLC MICROCOMPUTER MODEL

NAME OF PROJECT **Venezia Square**

Wading River, NY **2/8/2023**

DATA INPUT FIELD

A	*Site Recharge Parameters*	*Value*	*Units*
1	Area of Site	6.34	acres
2	Precipitation Rate	49.90	inches
3	Acreage of Fertilized Landscaping	0.86	acres
4	Fraction of Land in above	0.136	fraction
5	Evapotranspiration from above	23.00	inches
6	Runoff from above	0.50	inches
7	Acreage of Unfertilized Landscaping	0.10	acres
8	Fraction of above	0.016	fraction
9	Evapotranspiration from above	23.00	inches
10	Runoff from above	0.50	inches
11	Acreage of Unvegetated/Dirt Roads	0.00	acres
12	Fraction of above	0.000	fraction
13	Evapotranspiration from above	23.00	inches
14	Runoff from above	0.00	inches
15	Acreage of Water/Ponds	0.00	acres
16	Fraction of Site in above	0.000	fraction
17	Evaporation from above	30.00	inches
18	Makeup Water (if applicable)	0.00	inches
19	Acreage of Natural	2.23	acres
20	Fraction of above	0.352	fraction
21	Evapotranspiration from above	23.00	inches
22	Runoff from above	0.50	inches
23	Acreage of Impervious/Paved/Bldgs	3.15	acres
24	Fraction of Land in above	0.497	fraction
25	Evapotrans. from above	4.99	inches
26	Runoff from Impervious	0.00	inches
23	Acreage of Other	0.00	acres
24	Fraction of Land in above	0.000	fraction
25	Evapotrans. from above	23.00	inches
26	Runoff from above	0.00	inches
27	Acreage of Land Irrigated	0.86	acres
28	Fraction of Land Irrigated	0.136	fraction
29	Irrigation Rate	24.00	inches
30	Number of Dwellings	0	units
31	Water Use per Dwelling	0	gal/day
32	Wastewater Design Flow	1,900	gal/day

B	*Nitrogen Budget Parameters*	*Value*	*Units*
1	Persons per Dwelling	1.50	persons
2	Nitrogen per Person per Year	10.0	lbs
3	a. Sanitary Nitrogen Leaching Rate	84%	percent
3	b. Treated Sanitary Nitrogen Leaching Rate	100%	percent
4	Fertilized Landscaping	0.86	acres
5	Fertilizer Application Rate (for above)	2.30	lbs/1000 sq ft
6	Fertilizer Nitrogen Leaching Rate (for above)	15%	percent
7	Fertilized Land (other, if applicable)	0.00	acres
8	Fertilizer Application Rate (for above)	0.00	lbs/1000 sq ft
9	Fertilizer Nitrogen Leaching Rate (for above)	0%	percent
10	Outdoor Cat Population	0.19	pets/dwelling
11	Cat Waste Nitrogen Load	3.22	lbs/pet/year
12	Outdoor Dog Population	0.35	pets/dwelling
13	Dog Waste Nitrogen Load	4.29	lbs/pet/year
14	Pet Waste Nitrogen Leaching Rate	25%	percent
15	Area of Land Irrigated	0.86	acres
16	Irrigation Rate	24.00	inches
17	Irrigation Nitrogen Leaching Rate	15%	percent
18	Atmospheric Nitrogen Application/Load	0.04	lbs/1000 sq ft
19	Atmos. N Leaching Rate (Natural/Wetlands)	25%	percent
20	Atmos. N Leaching Rate (Turf/Landscaped)	20%	percent
21	Atmos. N. Leaching Rate (Ag; Imperv; Other)	40%	percent
22	Nitrogen in Water Supply	2.00	mg/l
23	Nitrogen in Sanitary Flow	19.00	mg/l

C	*Comments*
1)	Please refer to user manual for data input instructions; updated per LINAP.

	Building Area	47,500	
	Total Acreage Check	6.3	100%

NPV

Venezia Square

SITE RECHARGE COMPUTATIONS

A	*Fertilized Landscaping*	*Value*	*Units*
1	A = Fraction of Land in Cover Type	0.136	fraction
2	P = Precipitation Rate	49.90	inches
3	E = Evapotranspiration Rate	23.00	inches
4	Q = Runoff Rate	0.50	inches
5	R(a) = P - (E + Q)	26.40	inches
6	R(A) = R(a) x A	3.58	inches

B	*Unfertilized Landscaping*	*Value*	*Units*
1	A = Fraction of Land in Cover Type	0.016	fraction
2	P = Precipitation Rate	49.90	inches
3	E = Evapotranspiration Rate	23.00	inches
4	Q = Runoff Rate	0.50	inches
5	R(b) = P - (E + Q)	26.40	inches
6	R(B) = R(b) x A	0.42	inches

C	*Unvegetated/Dirt Roads*	*Value*	*Units*
1	A = Fraction of Land in Cover Type	0.000	fraction
2	P = Precipitation Rate	49.90	inches
3	E = Evapotranspiration Rate	23.00	inches
4	Q = Runoff Rate	0.00	inches
5	R(c) = P - (E + Q)	26.90	inches
6	R(C) = R(c) x A	0.00	inches

D	*Water/Ponds*		
1	A = Fraction of Site in Water	0.000	fraction
2	P = Precipitation Rate	49.90	inches
3	E = Evaporation Rate	30.00	inches
4	Q = Runoff Rate	0.00	inches
5	M = Makeup Water	0.00	inches
6	R(d) = {P - (E+Q)} - M	19.90	inches
7	R(D) = R(d) x A	0.00	inches

E	*Natural*		
1	A = Fraction of Land in Cover Type	0.352	fraction
2	P = Precipitation Rate	49.90	inches
3	E = Evapotranspiration Rate	23.00	inches
4	Q = Runoff Rate	0.50	inches
5	R(e) = P - (E + Q)	26.40	inches
6	R(E) = R(e) x A	9.29	inches

F	*Impervous/Paved/Roads*	*Value*	*Units*
1	A = Fraction of Land in Cover Type	0.497	fraction
2	P = Precipitation Rate	49.90	inches
3	E = Evapotranspiration Rate	4.99	inches
4	Q = Runoff Rate	0.00	inches
5	R(f) = P - (E + Q)	44.91	inches
6	R(F) = R(f) x A	22.31	inches

G	*Other*		
1	A = Fraction of Land in Cover Type	0.000	fraction
2	P = Precipitation Rate	49.90	inches
3	E = Evapotranspiration Rate	23.00	inches
4	Q = Runoff Rate	0.00	inches
5	R(g) = P - (E + Q)	26.90	inches
6	R(G) = R(g) x A	0.00	inches

H	*Irrigation Recharge*		
1	A = Fraction of Land Irrigated	0.136	fraction
2	I = Irrigation Rate	24.00	inches
3	E = Evaptranspiration Rate	21.40	inches
4	Q = Runoff Rate	0.00	inches
5	R(h) = I - (E + Q)	2.60	inches
6	R(H) = R(H) x A	0.35	inches

I	*Wastewater Recharge*		
1	WDF = Wastewater Design Flow	1,900	gal/day
2	WDF = Wastewater Design Flow	92,721	cu ft/yr
3	A = Area of Site	276,170	sq ft
4	R(j) = WDF/A	0.34	feet
5	R(I) = Wastewater Recharge	4.03	inches

J	*Runoff Recharge*		
1	Q(A) = Runoff from Landscaped	0.068	inches
2	Q(B) = Runoff from Unfertilized Landscaping	0.008	inches
3	Q(C) = Runoff from Unvegetated	0.000	inches
4	Q(E) = Runoff from Natural	0.176	inches
5	Q(H) = Runoff from Other	0.000	inches
6	Q(I) = Runoff from Irrigation	0.00	inches
7	Q(tot) = Q(A)+Q(B)+Q(C)+Q(E)+Q(H)+Q(I)	0.25	inches

Total Site Recharge			
R(T) =	R(A)+R(B)+R(C)+R(D)+R(E)+R(F)+R(G)+R(H)+R(I)+R(J)+Q(tot)		
R(T) =	**40.23**	**inches**	

NPV

Venezia Square

SITE NITROGEN BUDGET

A	*Sanitary Nitrogen-Residential*	*Value*	*Units*
1	Number of Dwellings	0	units
2	Persons per Dwelling	1.50	capita
3	P = Population	0.00	capita
4	N = Nitrogen per person	10	lbs
6	N = (total; pre loss/removal)	0	lbs
7	LR = Leaching Rate	84%	percent
8	N(S) = P x N x LR	0.00	lbs
9	N = loss/removed	0.00	lbs

B	*Cat Waste Nitrogen*	*Value*	*Units*
1	Number of Cats per Dwelling	0.19	cats/dwelling
2	Number of Cats (Cats/dwelling x dwellings)	0	cats
3	Cat Waste Nitrogen Load	3.22	lbs/cat/year
4	N(p) = AR x cats x Adjustment (if applicable)	0.00	lbs/year
5	LR = Leaching Rate	25%	percent
6	N(P) = N(p) x LR	0.00	lbs
7	N = (loss/removed)	0.00	lbs

B'	*Dog Waste Nitrogen*	*Value*	*Units*
1	Number of Dogs per Dwelling	0.35	dogs/dwelling
2	Number of Dogs (Dogs/dwelling x dwellings)	0	dogs
3	Dog Waste Nitrogen Load	4.29	lbs/dog/year
4	N(p) = AR x dogs x Adjustment (if applicable)	0.00	lbs/year
5	LR = Leaching Rate	25%	percent
6	N(P) = N(p) x LR	0.00	lbs
7	N = (loss/removed)	0.00	lbs

C	*Sanitary Nitrogen (Wastewater Design Flow)*		
1	CF = Commercial/STP Flow	1,900	gal/day
2	CF = Commercial/STP Flow	2,624,898	liters/yr
5	N =Nitrogen	19.00	mg/l
6	N = Nitrogen	109.97	lbs
7	LR = Leaching Rate	100%	percent
8	N(S) = CF x N x LR	49,873,053	milligrams
9	N(S) = Sanitary Nitrogen	109.97	lbs
10	N = loss/removed	0.00	lbs

D	*Water Supply Nitrogen (other than wastewater, if applicable)*		
1	WDF = Wastewater Design Flow	0	gal/day
2	WDF = Wastewater Design Flow	0	liters/yr
3	N = Nitrogen in Water Supply	19.00	mg/l
4	N(WW) = WDF x N	0	milligrams
5	N(WW) = Wastewater Nitrogen	0.00	lbs

E	*Fertilized Land (Fertilized Landscaping)*		
1	A = Area of Land Fertilized	37,462	sq ft
2	AR = Application Rate	2.30	lbs/1000 sf
3	N(T) = Nitrogen (total applied)	86.16	lbs
4	LR = Leaching Rate	15%	percent
5	N(F1) = A x AR x LR	12.92	lbs
6	N = loss/removed	73.24	lbs

F	*Fertilized Land (Unfertilized Landscaping)*		
1	A = Area of Land Fertilized 2	0	sq ft
2	AR = Application Rate	0.00	lbs/1000 sf
3	N(T) = Nitrogen (total applied)	0.00	lbs
4	LR = Leaching Rate	0%	percent
5	N(F2) = A x AR x LR	0.00	lbs
6	N = loss/removed	0.00	lbs

G	*Atmospheric Nitrogen (existing condition)*		
1	Application Load	0.041	lbs/1000 sf
2	Area of Natural/Wetlands/1000 sf	101	1000 sf
3	Leaching Rate	25%	percent
4	Atmos. N Load-1 (natural/wetlands)	1.04	lbs/year
5	Area of turf/landscaped/1000 sf	37	1000 sf
6	Leaching Rate	20%	percent
7	Atmos. N Load-2 (golf/turf)	0.31	lbs/year
8	Area of Impervious/Agricult/1000 sf	137	1000 sf
9	Leaching Rate	40%	percent
10	Atmos. N Load-3 (ag; imperv; other)	2.25	lbs/year
11	N(at) = N Load 1 + 2 +3	3.60	lbs
12	N = loss/removed	7.73	lbs

H	*Irrigation Nitrogen*		
1	R = Irrigation Recharge (inches)	0.35	inches
2	R = Irrigation Rate (feet)	0.0294	feet
3	A = Area of Land Irrigated	1,045,440	sq ft
4	R(I) = R(irr) x A	30,726	cu ft
5	R(I) = Site Irrigation (liters)	870,149	liters
6	N = Nitrogen in Water Supply	2.00	mg/l
7	N(T) = Nitrogen (total applied)	3.84	lbs
8	LR = Leaching Rate	15%	percent
9	N(irr) = R(I) x N x LR	261,045	milligrams
10	N(irr) = Irrigation Nitrogen	0.58	lbs
11	N = loss/removed	3.26	lbs

Total Site Nitrogen	
N=	N(S) + N(P) + N(WW) + N(F1) + N(F2) + N(ppt) + N(irr)
N=	**127.07** lbs

NPV

NAME OF PROJECT **Venezia Square**
Wading River, NY

FINAL COMPUTATIONS

A	*Nitrogen in Recharge (concentr.)*	*Value*	*Units*
1	N = Total Nitrogen (lbs)	127.07	lbs
2	N = Total Nitrogen (milligrams)	57,688,760	milligrams
3	R(T) = Total Recharge (inches)	40.23	inches
4	R(T) = Total Recharge (feet)	3.35	feet
5	A = Area of Site	276,170	sq ft
6	R = R(T) x A	925,855	cu ft
7	R = Site Recharge Volume	26,220,212	liters
9	NR = N/R	2.20	mg/l

CONCENTRATION OF
NITROGEN IN RECHARGE **2.20**

A	*Nitrogen in Recharge*	*Value*	*Units*
1	N = Total Nitrogen (lbs)	127.07	lbs
2	N = Total Nitrogen (milligrams)	57,688,760	milligrams
3	R(T) = Total Recharge (inches)	40.23	inches
4	R(T) = Total Recharge (feet)	3.35	feet
5	A = Area of Site	276,170	sq ft
6	R = R(T) x A	925,855	cu ft
7	R = Site Recharge Volume	26,220,212	liters
9	NR = N/R	2.20	mg/l

B	*Site Recharge Summary*	*Value*	*Units*
1	R(T) = Total Site Recharge	40.23	inches/yr
2	R = Site Recharge Volume	925,855	cu ft/yr
3	R = Site Recharge Volume	6,925,877	gal/yr
4	R = Site Recharge Volume	6.93	MG/yr

Conversions used in SONIR	
Acres x 43,560 = Square Feet	Gallons x 0.1337 = Cubic Feet
Cubic Feet x 7.48052 = Gallons	Gallons x 3.785 = Liters
Cubic Feet x 28.32 = Liters	Grams / 1,000 = Milligrams
Days x 365 = Years	Grams x 0.002205 = Pounds
Feet x 12 = Inches	Milligrams / 1,000 = Grams

Nitrogen Load Summary - On-Site	**Load**	**Percent**
Sanitary Nitrogen (On-Site Wastewater)	109.97	86.54%
Fertilized Landscaping	12.92	10.17%
Dog Waste Nitrogen	0.00	0.00%
Cat Waste Nitrogen	0.00	0.00%
Atmospheric Nitrogen	3.60	2.83%
Irrigation Nitrogen	0.58	0.45%
Total Pounds Nitrogen	127.07	100.00%

ATTACHMENT C
NEW YORK STATE NATURAL HERITAGE PROGRAM (NHP) CORRESPONDENCE

From:	Hannah Emouna
To:	NaturalHeritage@dec.ny.gov
Cc:	Phil Malicki
Subject:	Information Request
Date:	Wednesday, July 27, 2016 1:21:45 PM

To Whom it May Concern,

My firm has been retained by the owners of the referenced property to prepare an Expanded Environmental Assessment Form for a proposed commercial development on a vacant property identified as SCTM # 0600-73-1-1.4 & 1.16 through 1.19. The site of the proposed project is located on the south side of Sound Avenue (New York State [NYS] Route 25A), approximately 780 feet west of Wading River Road, in the hamlet of Wading River, Suffolk County, New York (40.943480,-72.845913).

It would be beneficial to consult the Natural heritage Program files for any information you may have regarding the unique habitats, and/or species of vegetation and wildlife. Please provide any information you may have on this specific site or other unique ecological features within the vicinity. Your attention to this request would be greatly appreciated. Please do not hesitate to call if you have any questions regarding this correspondence.
Thank you.

Hannah Emouna
Environmental Scientist

NELSON, POPE & VOORHIS, LLC
ENVIRONMENTAL • PLANNING • CONSULTING
572 Walt Whitman Road
Melville, NY 11747
ph: (631) 427-5665 ext. 220
fax: (631) 427-5620
hemouna@nelsonpopevoorhis.com
www.nelsonpopevoorhis.com

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program
625 Broadway, 5th Floor, Albany, New York 12233-4757
Phone: (518) 402-8935 • **Fax:** (518) 402-8925
Website: www.dec.ny.gov

September 01, 2016

Hannah Emouna
Nelson, Pope & Voorhis, LLC
572 Walt Whitman Road
Melville, NY 11747

Re: Commercial development, south side of Sound Avenue (NYS Route 25A), Wading River
Town/City: Riverhead. County: Suffolk.

Dear Hannah Emouna:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities that our database indicates occur, or may occur, on your site or in the immediate vicinity of your site.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

Our database is continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, as listed at www.dec.ny.gov/about/39381.html.

Sincerely,

Andrea Chaloux

Andrea Chaloux
Environmental Review Specialist
New York Natural Heritage Program

1077

The following state-listed animals have been documented in the vicinity of your project site.

The following list includes animals that are listed by NYS as Endangered, Threatened, or Special Concern; and/or that are federally listed or are candidates for federal listing.

For information about any permit considerations for your project, contact the Permits staff at the NYSDEC Region 1 Office. For information about potential impacts of your project on these species, and how to avoid, minimize, or mitigate any impacts, contact the Wildlife Manager.

A listing of Regional Offices is at http://www.dec.ny.gov/about/558.html.

The following species have been documented within 0.3 mile of the project site.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*FEDERAL LISTING*	
Amphibians				
Tiger Salamander	*Ambystoma tigrinum*	Endangered		8317

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the listed animals in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, and from NYSDEC at www.dec.ny.gov/animals/7494.html.

ATTACHMENT D
CULTURAL RESOURCES RELATED DOCUMENTS

Attachment D-1
Phase I Archaeological Investigation

TRACKER Archaeology, Inc., *July 2016*

NPV

Phase I Archaeological Investigations at the Venezia Square subdivision Wading River, Town of Riverhead, Suffolk County, New York

July 2016

Prepared for:
Nelson Pope & Voorhis, LLC, Melville, New York

Alfred G. Cammisa, RPA
Alexander Padilla (CAD)

868

MANAGEMENT SUMMARY

PR#:
not known

Involved agencies:
Town of Riverhead

Phase:
Phase IA & IB

Location:
Wading River
Town of Riverhead
Suffolk County

Survey Area:
Length: about 400 feet (122m) north-south
Width: about 540 feet (165m) east-west.
Acres Surveyed: approximately 4.5 acres (1.8 hectares)

USGS:
Wading River, NY

Survey overview:
ST no. & interval: 79 ST's at 50-25 ft (15-7.5m) intervals
Size of freshly plowed area: na
Surface survey transect interval: na

Results:
No prehistoric or historic remains

Strucutres:
No. Of buildings/structures/cemeteries in project area: none
No. Of buildings/structures/cemeteries adjacent to project area: 2
No. Of previously determined NR listed or eligible buildings/structures/cemeteries/districts: none
No. Of identified eligible buildings/structures/cemeteries/districts: none

Authors:
Alfred G. Cammisa, M.A./RPA
Alexander Padilla, B.A. (CAD)

Date of Report:
Report completed July 2016

TABLE OF CONTENTS

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INTRODUCTION

Between July 7 and 20, 2016, TRACKER Archaeology, Inc. conducted a Phase IA documentary study and Phase IB archaeological testing and reconnaissance at the proposed Venezia Square subdivision, in Wading River, Township of Riverhead, Suffolk County, New York.

The purpose of the documentary study was to determine the prehistoric and historic potential of the project area for the recovery of archaeological remains. This was accomplished by a review of the original and current environmental data, archaeological site files, other archival literature, maps, and documents.

A prehistoric and historic site file search was conducted utilizing the resources of the New York State Historic Preservation Office in Waterford, New York. Various historic and archaeology web sites were visited to review any pertinent site information.

The purpose of the Phase IB field survey was to determine the presence or absence of archaeological sites on the property. This was accomplished through subsurface testing and ground surface reconnaissance.

The project area (APE) consists of the about 4.5 acres from the approximate 6 acre property. The property is located on the south side of Port Jefferson-Riverhead Road (SR 25A-Sound Avenue) at the intersection of Dogwood Drive. It is bound to the north by Port Jefferson-Riverhead Road (SR 25A-Sound Avenue) and to the remaining sides by other private properties.

The study was conducted by TRACKER Archaeology, Inc. of Monroe, New York. Prehistoric and historic research was conducted by Alfred G. Cammisa, M.A.. Phase IB field work was conducted by field director, Edward Tassinari, B.A. and field technician Conner Winters, B.A. Report preparation by Alfred G. Cammisa and Alexander Padilla, B.A.

The work was performed for Nelson Pope & Voorhis, LLC, Melville, New York

ENVIRONMENT

Geology

The study area is located in the southeast portion of New York State, in the northeastern part of Suffolk County. This portion of New York lies in the Atlantic Coastal Plains Physiographic Province. The coastal plains slopes gently eastward and is actually a strip of recently emerged sea bottom. The soils in this region consist largely of sand, clay and marl (a mixture of clay, finely fragmented shell and calcite). The project area lies on an outwash plain south of the Harbor Hill Moraine (Schuberth 1968: cover map, 9, 184-186; Jensen and Soren 1974; Sirkin 1995: 45).

Soils and Topography

Soils in the study area consist primarily of:

Name	Soil Horizon Depth cm(in)	Color	Texture Inclusion	Slope %	Drainage	Landform
Haven loam	A 0-3in(0-7) B 3-10(7-25) B2 10-19(25-48)	10YR4/2 7.5YR4/4 7.5YR5/6	Lo	0-2	well	outwash plains
Riverhead	A=0-12 (0-30) B=12-27 (-69)	10YR4/3 7.5YR5/6	SaLo	0-3 & 3-8	well	moraines & outwash plains

(Warner 1975: map#26, pg. 71, 81-83).

Elevations on the property are approximately 110 feet above mean sea level.

Hydrology
The property is about 3928 feet southeast of Wading River and 3749 feet northwest of Deep Pond. Wading River drains north into the Long Island Sound.

Vegetation
The predominant forest community inhabiting the Atlantic Coastal Plain Physiographic province in this vicinity (Cape Cod to the Carolinas) was the Northern Pine-Oak Forest. Northern Pine-Oak Forests occur on sandy, or otherwise poor soils that are overly dry. These forests are maintained largely by the effects of frequent fires. The Northern Pine-Oak Forest is actually a unique part of the Oak-Hickory Forest that never quite becomes dominated by oak and hickories due to the combination of dry, sandy soil and resulting frequent fires. Were it not for the fires which the pine species have adapted to, these forests would slowly changes to mesic, dominated by oak, hickory and red maple. The Atlantic Coastal Plains are all Xeric (dry forest). They generally have lower species diversity than bottomland forests (Kricher 1988: 16-17, 65-66).

At the time of the Phase IB survey, the property consisted of a heavily overgrown wooded parcel along the road with an open weedy field with scattered hardwood and softwood further from the road.

PREHISTORIC POTENTIAL

A prehistoric site file search was conducted utilizing the resources of the New York State Historic Preservation Office - Field Services Bureau (NYSHPO). The site file search included a 1 mile radius around the study area. The following sites were recorded:

NYSM Site	NYSHPO Site	Distance from APE ft(m)	Site Type
	10302.000021	571 (174)	Kurovics Farm: Early Archaic to Transitional, Late Woodland with numerous points (from a pot-hunter collection-plowed fleids)
4880		3968 (1210)	ACP: large shell middens

NYSM Site	NYSHPO Site	Distance from APE ft(m)	Site Type
5587		1 mile	Split Rock: orient points., flakes, some 2oth century

Indian trails were recorded in the vicinity. One appeared to parallel the Wading River south to the Peconic following the drainage ponds. Although the trails were recorded during the Contact Period, they undoubtedly existed prior to European settlement (Stone nd: map).

Assessing the known environmental and prehistoric archaeological data, we can summarize the following points.

-The property is about 3928 feet southeast of Wading River and 3749 feet northwest of Deep Pond. Wading River drains north into the Long Island Sound.

-The project area contains well drained soils on level to moderately sloping terrain.

-Prehistoric sites have been recorded in the vicinity.

-Indian trails were in the vicinity of the project property.

In our opinion, the study area has a higher than average potential for the recovery of prehistoric sites. The type of site encountered could be a small procurement/processing camp from the Archaic or Woodland prehistoric periods.

HISTORIC POTENTIAL

Contact Period (Seventeenth Century)
At the time of European contact and settlement, the study area was possibly occupied by the Pahquahkossit people. These people were probably a branch or village of the larger Yennocock tribe (Stone nd: map; Stone-Levine 1980: 161). Indian trails were recorded in the vicinity. Indian trails were recorded in the vicinity. One appeared to parallel the Wading River south to the Peconic following the drainage ponds (Stone nd:map).

Ross (1903:1010) mentions that Aquebogue was the site of an Indian village of considerable size with a strange temple and graves which were desecrated in 1879. Lower Aquebogue is situated east of Aquebogue proper and is now known as Jamesport (Bayles 1962:300).

Eighteenth Century
Native American wigwams were still being used and reported during this time. Wigwams were reported in the 1740's by Reverand Horton who may have lived in them, along the aforementioned Indianfoot trail, nearby the project area (see above). The term “wigwam” may refer to 1 dwelling or a small hamlet/village of dwellings.

Population growth was slow during this century with the addition of only 4 or 5 dwellings. Several mills were established along the Peconic River and included a grist mill, a fulling mill, and a saw mill and later a woolen factory and a planning and moulding mill. These were located at Upper Mills about a mile from the village and within the general vicinity of the study area (Bayles 1982: 11; Thompson 1918:275).

Cordwood, used as fuel, was an early thriving industry in the Town. A pine-oak forest, particularly on the sandy soils along the southern part of the Town, provided the natural resource (Thompson 1918: 273-274).

By the end of the Revolution, agriculture in Riverhead was at a low point. People went to Coram or Middle Island to buy grain (Bailey 1949: 200).

Nineteenth Century

By 1800 Riverhead farmers began to use "bunkers" (fish) as fertilizer to assist in soil fertility. Judge Woodhull first used wood ashes as fertilizer in 1825 which was later copied by other farmers. As a result of the use of fertilizers during this century, farm land in Riverhead proved more productive. Although there were less farms in the southern part of the Town, a prosperous community of farmers developed along the northern portion of Riverhead. Cranberries were raised in marshes which abounded in the western part of Town while small fruits, garden vegetables and root crops were more commonly grown in the eastern part of the town (Bayles 1982:1; Bailey 1949:200).

Before 1825 mail was delivered to Riverhead by horseback. By about 1825, mail was brought in by a 1 horse wagon and later on by stagecoach. The route was along the Middle Country Road from Jamaica. The Long Island Rail Road was operating by 1844 and at this time mail was transported via this means of transport (Bailey 1949:198)

The 1836 Colton map does not show Port Jefferson-Riverhead Road (SR 25A-Sound Avenue but does show Deep Pond. One possible structures is depicted near the project parcel (Figure 3).

The 1858 Chace map also does not show Port Jefferson-Riverhead Road (SR 25A-Sound Avenue but does show Deep Pond. No structures are nearby the project area (Figure 4).

The 1896 Hyde atlas appears to depict what could be the new road (25A/Sound Ave./Pt. JeffersonRiverhead Rd.) nearby but not finished. No structures are on or immediately adjacent to the project area (Figure 5).

Nearby Calverton was a farming community carved out of wetlands where cranberries were the main cash crop. This business hit its peak around the turn of the century (www.eastlongisland.com).

Twentieth Century

The 1903 USGS shows what appears to be a portion of the current Rt. 25A/Sound Ave./Port Jefferson-Riverhead Rd. However, no structures are near the project area (Figure 6).

Riverhead village's development was gradual. By the early part of this century the village had approximately 70 dwellings (Thompson 1918: 275).

An historic site file search was conducted at the New York State Historic Preservation Office. The site file search included 1 mile radius around the project area. The following historic sites were recorded:

NYSM Site	NYSHPO Site	Distance from APE ft(m)	Site Type
	10302.000023	796 (243)	FT A Kurovics Homestead & Farm Buildings Site: field stone foundation w/ concrete, Nassau Brick chimney flue, cellar beneath main house section, ca 1930

Assessing the known environmental and historic data, we can summarize the following points:

-The property is about 3928 feet southeast of Wading River and 3749 feet northwest of Deep Pond. Wading River drains north into the Long Island Sound.

-The project area contains well drained soils on level to moderately sloping terrain.

-Indian trails were near the project property. Contact Period wigwams/villages were situated in the vicinity along the trail.

-An historic site was reported nearby the project area.

-No historic map documented structures were on or adjacent to the project area.

In our opinion, the study area has a moderate potential for the recovery of aboriginal historic sites. There is a low potential for European-American sites.

FIELD METHODS

Walkover-Reconnaissance

Any exposed ground surfaces (70 to 100 percent visibility) were subjected to a close quarters walkover, at 3 to 5 meter intervals, to observe for artifacts. Covered ground terrain was reconnoitered at about 15-7.5 meter (50ft), or less, intervals to observe for any above ground features, such as berms, depression, or rock configurations, which could be evidence for a prehistoric or historic site. Photographs were taken of the project area.

Shovel Testing

Shovel tests (ST's) were excavated at about 15 to 7.5 meter (50ft) intervals. Each ST measured about 30 to 40 cm. in diameter and was dug into the underlying subsoil (B horizon) 10 to 20 cm. when possible. All soils were screened through 1/4 inch wire mesh and observed for artifacts. Shovel tests were flagged in the field. All ST's were mapped on the project area map at this time.

Soil stratigraphy was recorded according to texture and color. Soil color was matched against the Munsell color chart for soils. Notes were transcribed in a notebook and on pre-printed field forms.

FIELD RESULTS

Field testing of the project area included the excavation of 79 ST's at 50 to 25 foot intervals. No prehistoric artifacts or features were encountered. No historic artifacts or features were encountered.

Stratigraphy
Stratigraphy across the project area included the following:

-A/O horizon - 2 to 10 cm. of leaf litter, root mat, and humus.

-A horizon - 3 to 8 cm. thick of 10YR 4/3 brown loamy sand.

-B horizon - 10 to 20 cm. dug into of 10YR5/4 yellow brown loamy sand.

CONCLUSIONS AND RECOMMENDATIONS

Based upon topographic characteristics and distance to known prehistoric sites and Indian trails, the property was assessed as having a higher than average potential for encountering prehistoric sites.

Based upon topographic characteristics and distance to historic map documented structures, reported wigwams, and Indian trails, the property was assessed as having a moderate potential for encountering historic aboriginal sites.

During the course of the Phase IB archaeological field survey, 79 ST’s were excavated. No prehistoric or historic sites were encountered. No historic sites were encountered. No further work is recommended.

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<u>Maps</u>
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United States Geological Survey
1956 *Riverhead, New York quadrangle,* 7.5 minute series map.

1903 *Moriches, NY* quadrangle, 15 minute series map.

APPENDIX 1


Figure 1
Wading River, NY USGS
N
Wading R
NORTH
150
BM
119
Well
project
area
WADING
100

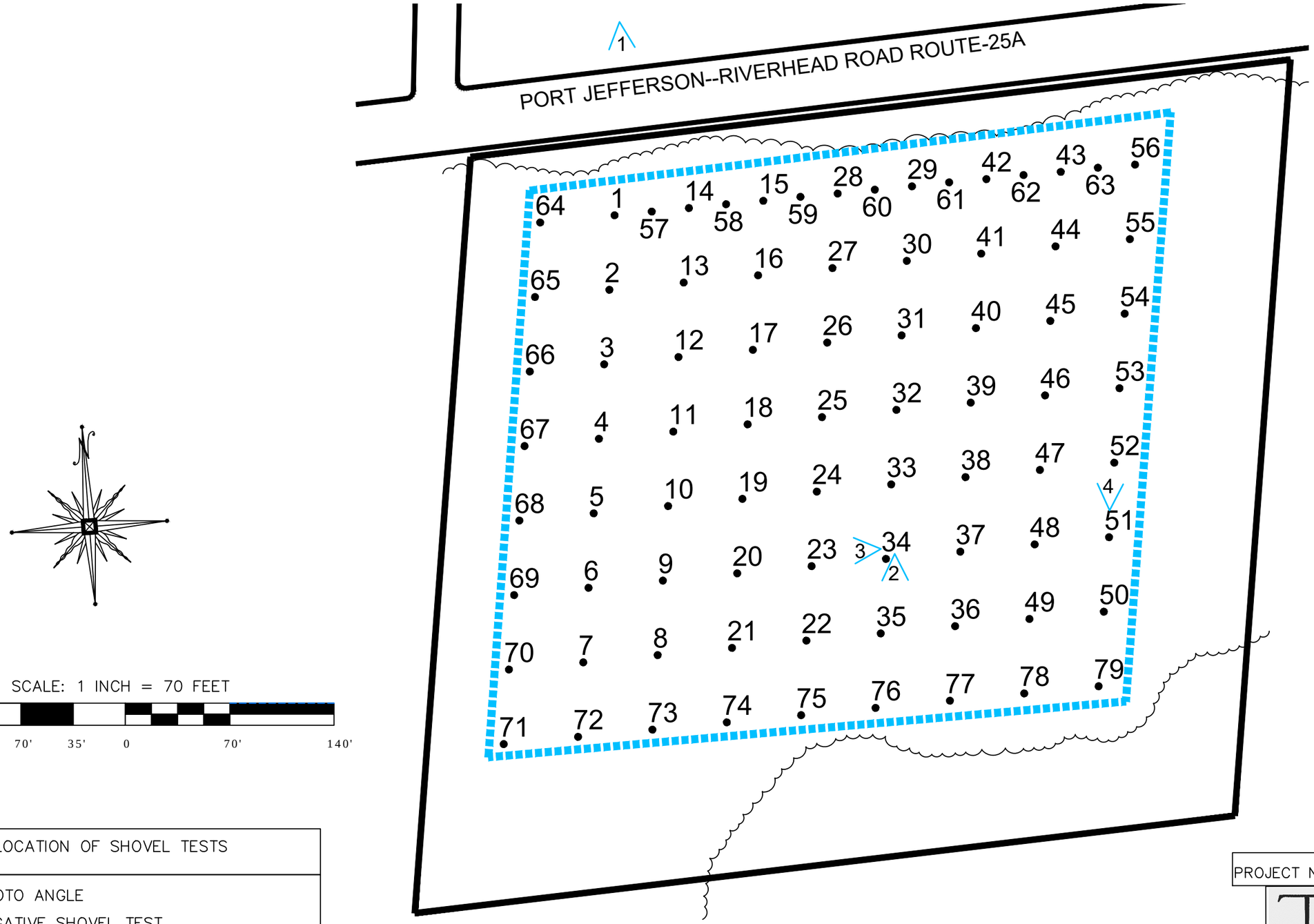


FIGURE 2: LOCATION OF SHOVEL TESTS

- PHOTO ANGLE
- NEGATIVE SHOVEL TEST
- PROJECT AREA LIMITS(A.P.E.)

PROJECT NAME: VENEZIA

TRACKER
Archaeology Services, Inc.
Tracking the Footsteps of the Ancestors

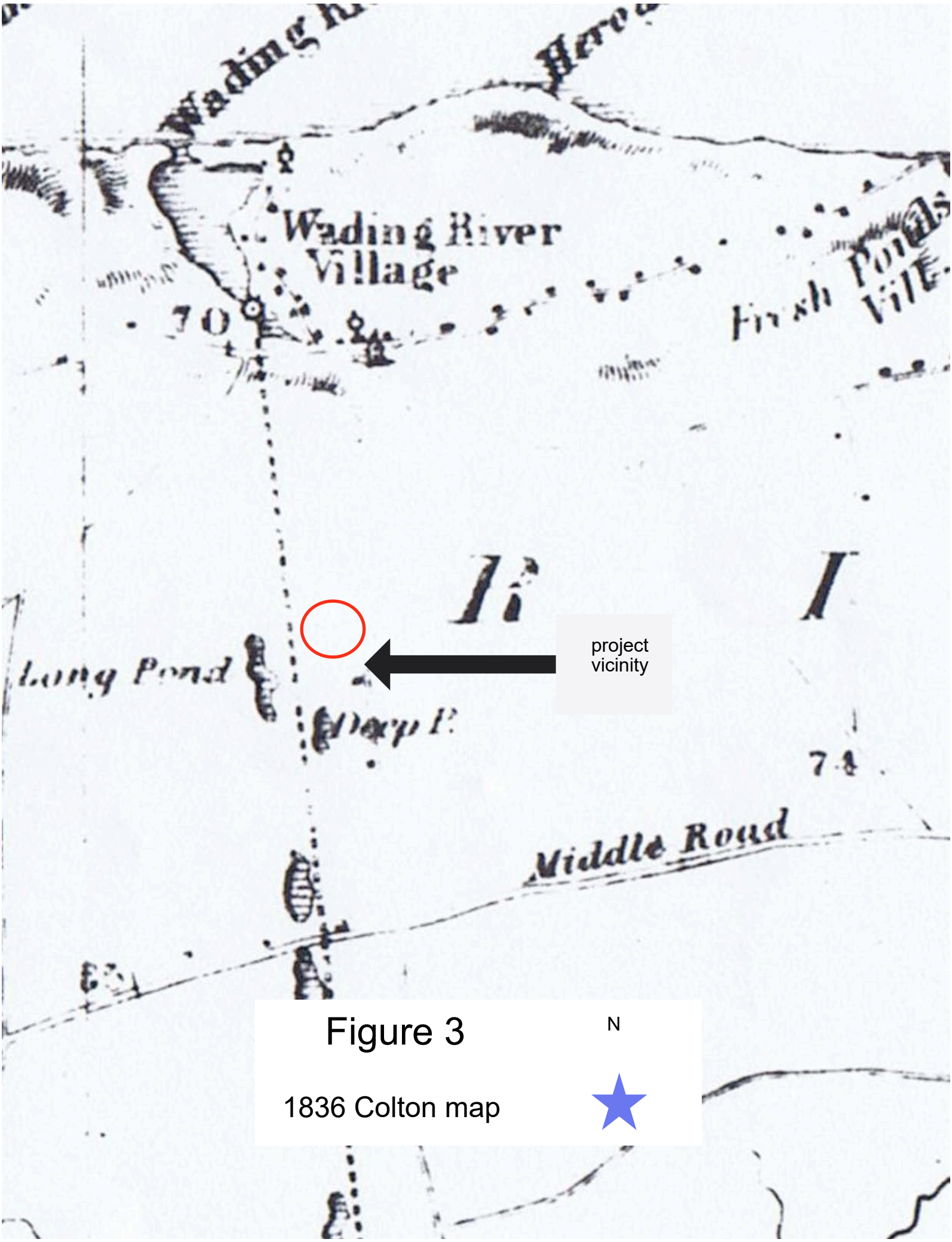


Figure 3

1836 Colton map

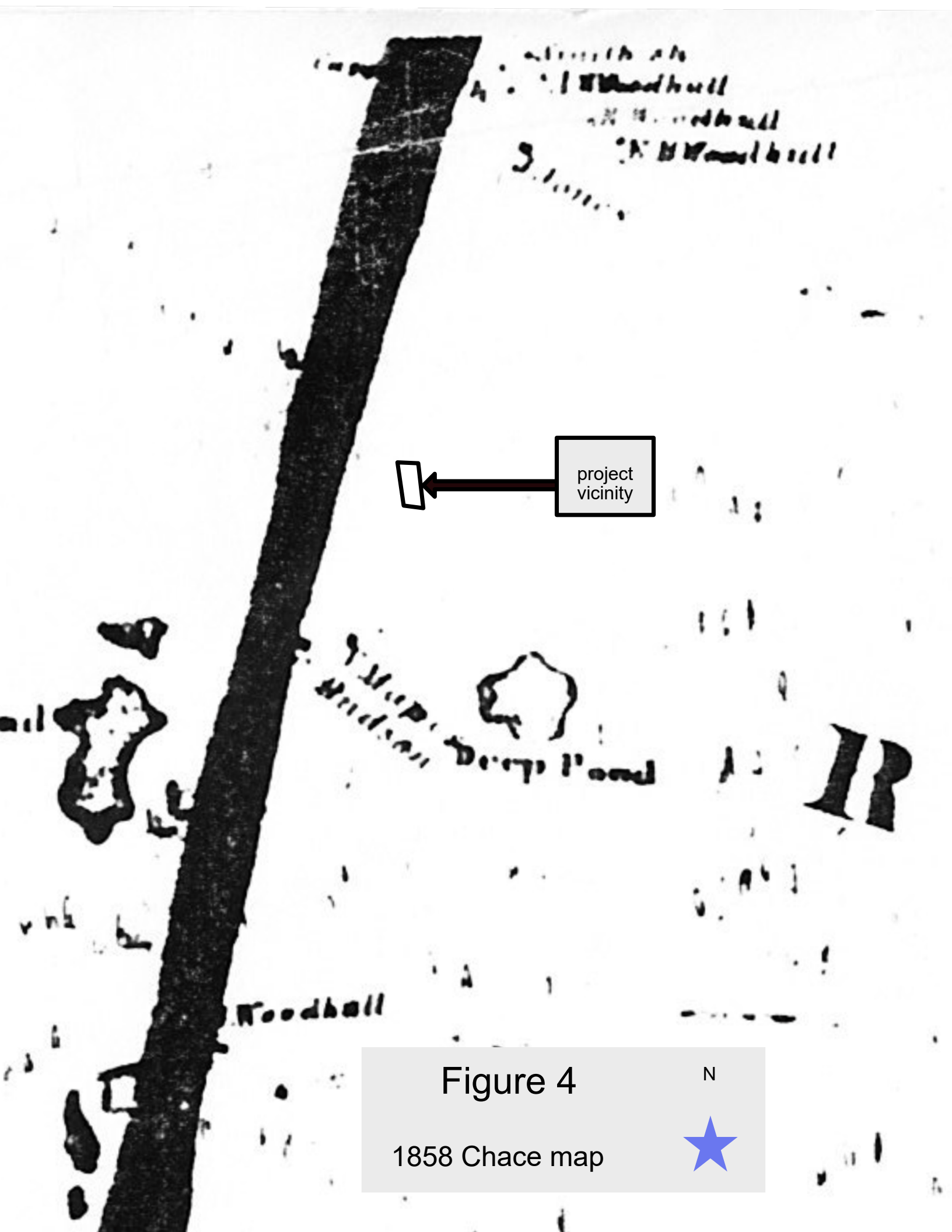


Figure 4

1858 Chace map

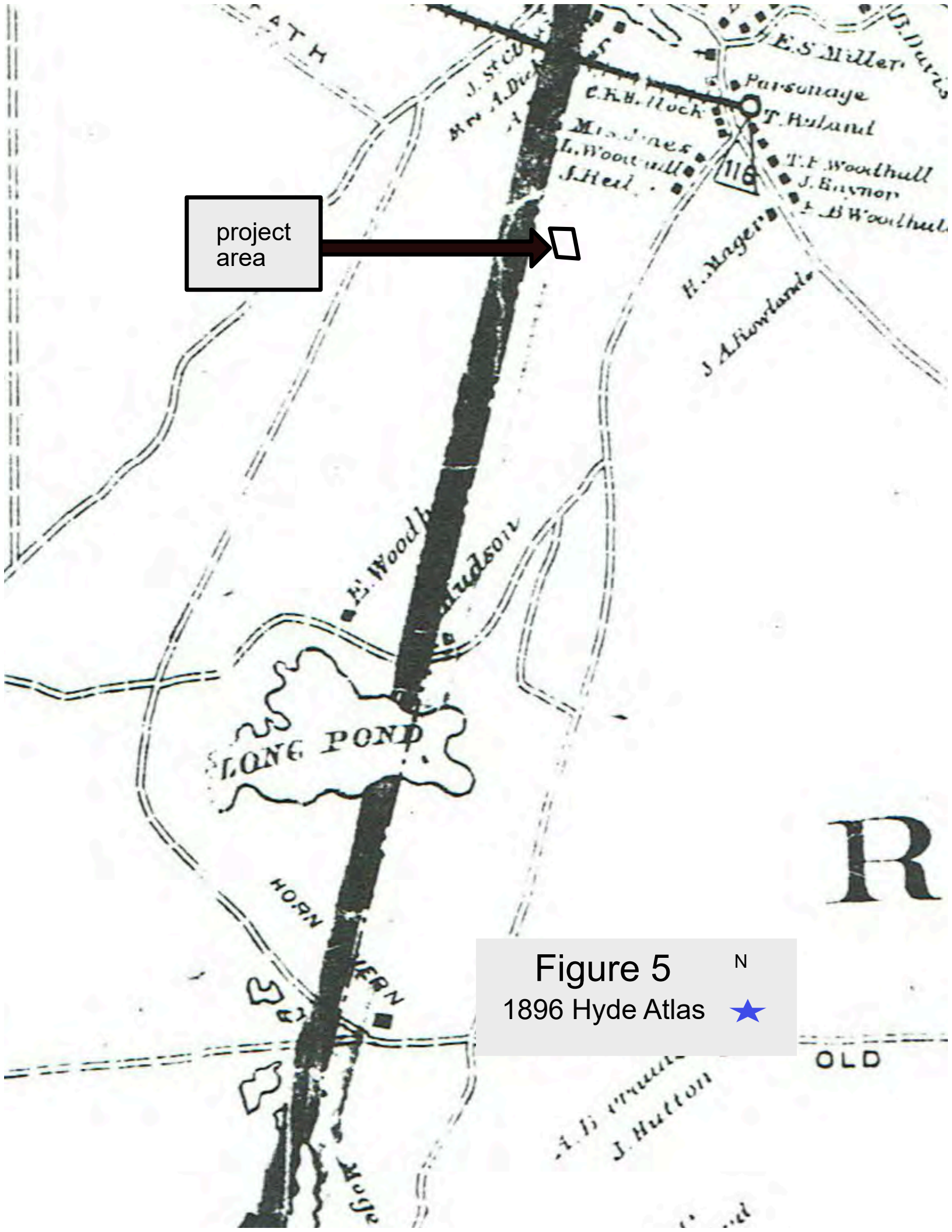


Figure 5

1896 Hyde Atlas

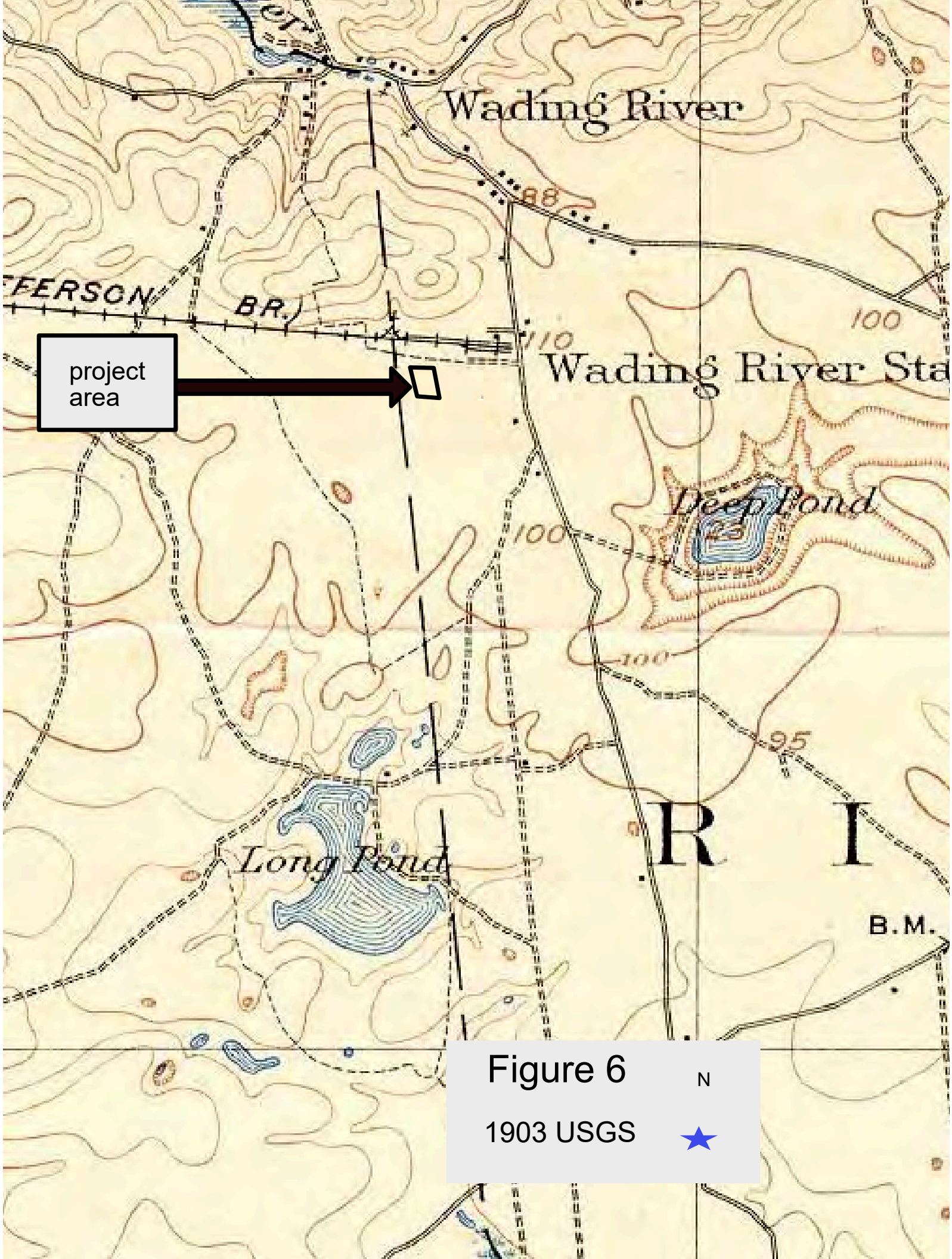


Figure 6

1903 USGS

N

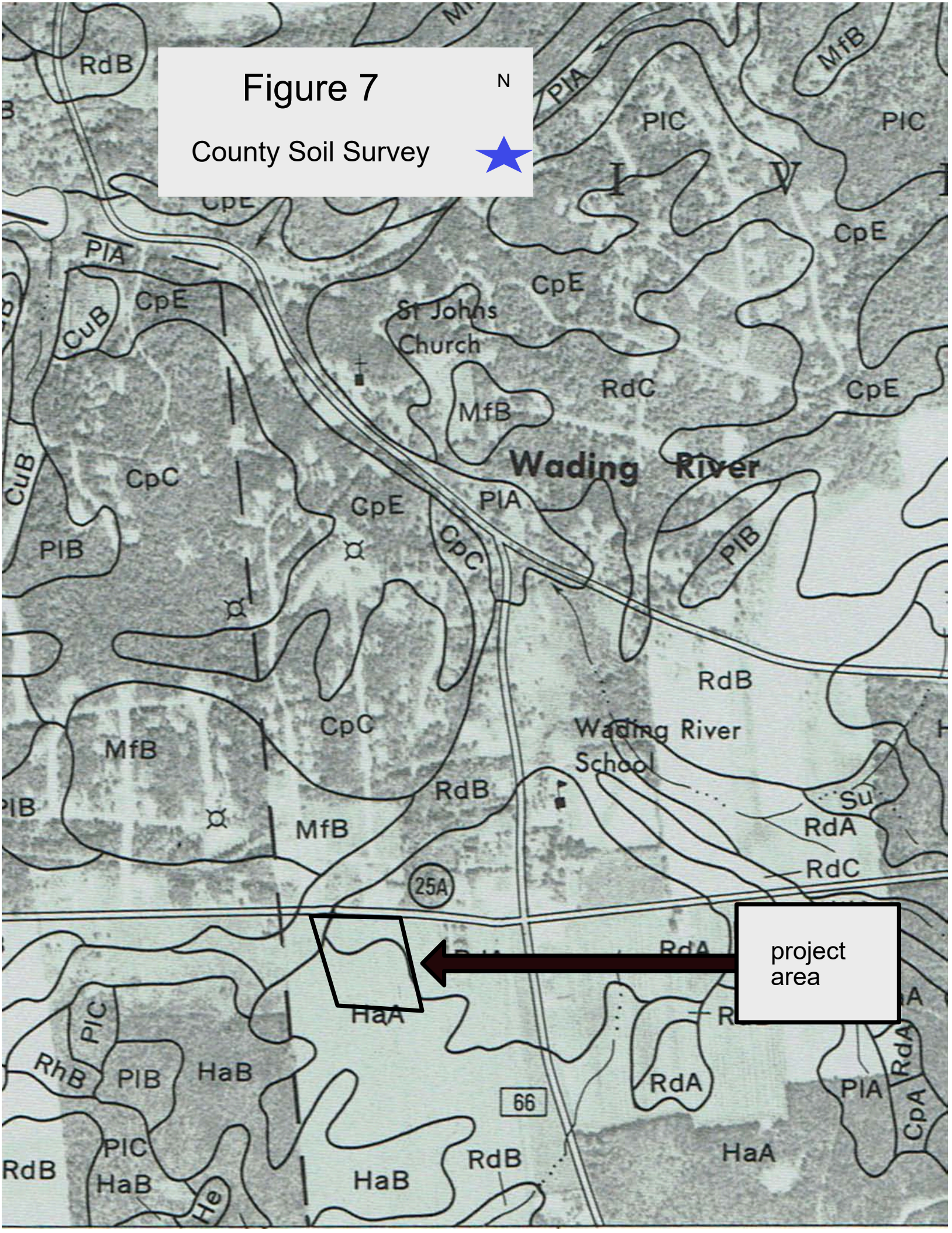


Figure 7
County Soil Survey
N
project area
Wading River
St Johns Church
Wading River School
RdB
PIA
PIC
MfB
CpE
CuB
RdC
CpC
PIB
MfB
RdA
RdC
HaA
RhB
HaB
RdB
He
25A
66


Photo 1
Looking at the project area from the road


Photo 2
Looking south from near ST 34

Photo 3

Looking west from near ST 34


Photo 4
Looking north from near ST 51

APPENDIX 2

SHOVEL TESTS

STP	LV	DEPTH(CM)	TEXTURE	COLOR	HOR	COMMENT
1	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-13	LoSa	10YR4/3	A	NCM
	3	13-23	LoSa	10YR5/4	B	NCM
2	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-12	LoSa	10YR4/3	A	NCM
	3	12-23	LoSa	10YR5/4	B	NCM
3	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-13	LoSa	10YR4/3	A	NCM
	3	13-23	LoSa	10YR5/4	B	NCM
4	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-14	LoSa	10YR4/3	A	NCM
	3	14-33	LoSa	10YR5/4	B	NCM
5	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-10	LoSa	10YR4/3	A	NCM
	3	10-30	LoSa	10YR5/4	B	NCM
6	1	0-8	rootmat,leaves,humus		A/O	NCM
	2	8-16	LoSa	10YR4/3	A	NCM
	3	16-33	LoSa	10YR5/4	B	NCM
7	1	0-9	rootmat,leaves,humus		A/O	NCM
	2	9-15	LoSa	10YR4/3	A	NCM
	3	15-35	LoSa	10YR5/4	B	NCM
8	1	0-11	rootmat,leaves,humus		A/O	NCM
	2	11-18	LoSa	10YR4/3	A	NCM
	3	18-38	LoSa	10YR5/4	B	NCM
9	1	0-9	rootmat,leaves,humus		A/O	NCM
	2	9-12	LoSa	10YR4/3	A	NCM
	3	12-33	LoSa	10YR5/4	B	NCM
10	1	0-10	rootmat,leaves,humus		A/O	NCM
	2	10-14	LoSa	10YR4/3	A	NCM
	3	14-33	LoSa	10YR5/4	B	NCM
11	1	0-7	rootmat,leaves,humus		A/O	NCM
	2	7-14	LoSa	10YR4/3	A	NCM
	3	14-34	LoSa	10YR5/4	B	NCM
12	1	0-10	rootmat,leaves,humus		A/O	NCM
	2	10-18	LoSa	10YR4/3	A	NCM
	3	18-35	LoSa	10YR5/4	B	NCM
13	1	0-8	rootmat,leaves,humus		A/O	NCM
	2	8-16	LoSa	10YR4/3	A	NCM
	3	16-35	LoSa	10YR5/4	B	NCM

14	1	0-7	rootmat,leaves,humus		A/O	NCM
	2	7-13	LoSa	10YR4/3	A	NCM
	3	13-33	LoSa	10YR5/4	B	NCM
15	1	0-7	rootmat,leaves,humus		A/O	NCM
	2	7-13	LoSa	10YR4/3	A	NCM
	3	13-33	LoSa	10YR5/4	B	NCM
16	1	0-8	rootmat,leaves,humus		A/O	NCM
	2	8-12	LoSa	10YR4/3	A	NCM
	3	22-32	LoSa	10YR5/4	B	NCM
17	1	0-7	rootmat,leaves,humus		A/O	NCM
	2	7-13	LoSa	10YR4/3	A	NCM
	3	13-33	LoSa	10YR5/4	B	NCM
18	1	0-9	rootmat,leaves,humus		A/O	NCM
	2	9-14	LoSa	10YR4/3	A	NCM
	3	14-34	LoSa	10YR5/4	B	NCM
19	1	0-7	rootmat,leaves,humus		A/O	NCM
	2	7-13	LoSa	10YR4/3	A	NCM
	3	13-33	LoSa	10YR5/4	B	NCM
20	1	0-7	rootmat,leaves,humus		A/O	NCM
	2	7-13	LoSa	10YR4/3	A	NCM
	3	13-33	LoSa	10YR5/4	B	NCM
21	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-23	LoSa	10YR4/3	A	NCM
	3	23-34	LoSa	10YR5/4	B	NCM
22	1	0-7	rootmat,leaves,humus		A/O	NCM
	2	7-13	LoSa	10YR4/3	A	NCM
	3	13-33	LoSa	10YR5/4	B	NCM
23	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-11	LoSa	10YR4/3	A	NCM
	3	11-31	LoSa	10YR5/4	B	NCM
24	1	0-7	rootmat,leaves,humus		A/O	NCM
	2	7-13	LoSa	10YR4/3	A	NCM
	3	13-33	LoSa	10YR5/4	B	NCM
25	1	0-7	rootmat,leaves,humus		A/O	NCM
	2	7-13	LoSa	10YR4/3	A	NCM
	3	13-33	LoSa	10YR5/4	B	NCM
26	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-13	LoSa	10YR4/3	A	NCM
	3	23-33	LoSa	10YR5/4	B	NCM

27	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-15	LoSa	10YR4/3	A	NCM
	3	15-35	LoSa	10YR5/4	B	NCM
28	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-15	LoSa	10YR4/3	A	NCM
	3	15-35	LoSa	10YR5/4	B	NCM
29	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-15	LoSa	10YR4/3	A	NCM
	3	15-35	LoSa	10YR5/4	B	NCM
30	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-15	LoSa	10YR4/3	A	NCM
	3	15-35	LoSa	10YR5/4	B	NCM
31	1	0-8	rootmat,leaves,humus		A/O	NCM
	2	8-16	LoSa	10YR4/3	A	NCM
	3	16-36	LoSa	10YR5/4	B	NCM
32	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-15	LoSa	10YR4/3	A	NCM
	3	15-35	LoSa	10YR5/4	B	NCM
33	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-17	LoSa	10YR4/3	A	NCM
	3	17-38	LoSa	10YR5/4	B	NCM
34	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-14	LoSa	10YR4/3	A	NCM
	3	14-34	LoSa	10YR5/4	B	NCM
35	1	0-8	rootmat,leaves,humus		A/O	NCM
	2	8-13	LoSa	10YR4/3	A	NCM
	3	13-33	LoSa	10YR5/4	B	NCM
36	1	0-8	rootmat,leaves,humus		A/O	NCM
	2	8-15	LoSa	10YR4/3	A	NCM
	3	15-35	LoSa	10YR5/4	B	NCM
37	1	0-8	rootmat,leaves,humus		A/O	NCM
	2	8-13	LoSa	10YR4/3	A	NCM
	3	13-31	LoSa	10YR5/4	B	NCM
38	1	0-9	rootmat,leaves,humus		A/O	NCM
	2	9-17	LoSa	10YR4/3	A	NCM
	3	17-30	LoSa	10YR5/4	B	NCM
39	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-15	LoSa	10YR4/3	A	NCM
	3	15-35	LoSa	10YR5/4	B	NCM

40	1	0-8	rootmat,leaves,humus		A/O	NCM
	2	8-15	LoSa	10YR4/3	A	NCM
	3	15-35	LoSa	10YR5/4	B	NCM
41	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-15	LoSa	10YR4/3	A	NCM
	3	15-35	LoSa	10YR5/4	B	NCM
42	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-10	LoSa	10YR4/3	A	NCM
	3	10-30	LoSa	10YR5/4	B	NCM
43	1	0-9	rootmat,leaves,humus		A/O	NCM
	2	9-13	LoSa	10YR4/3	A	NCM
	3	13-33	LoSa	10YR5/4	B	NCM
44	1	0-8	rootmat,leaves,humus		A/O	NCM
	2	8-16	LoSa	10YR4/3	A	NCM
	3	16-31	LoSa	10YR5/4	B	NCM
45	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-13	LoSa	10YR4/3	A	NCM
	3	13-33	LoSa	10YR5/4	B	NCM
46	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-12	LoSa	10YR4/3	A	NCM
	3	12-32	LoSa	10YR5/4	B	NCM
47	1	0-7	rootmat,leaves,humus		A/O	NCM
	2	7-15	LoSa	10YR4/3	A	NCM
	3	15-35	LoSa	10YR5/4	B	NCM
48	1	0-8	rootmat,leaves,humus		A/O	NCM
	2	8-15	LoSa	10YR4/3	A	NCM
	3	15-35	LoSa	10YR5/4	B	NCM
49	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-15	LoSa	10YR4/3	A	NCM
	3	15-35	LoSa	10YR5/4	B	NCM
50	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-15	LoSa	10YR4/3	A	NCM
	3	15-30	LoSa	10YR5/4	B	NCM
51	1	0-8	rootmat,leaves,humus,		A/O	NCM
	2	8-15	LoSa	10YR4/3	A	NCM
	3	15-30	LoSa	10YR5/4	B	NCM
52	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-15	LoSa	10YR4/3	A	NCM
	3	15-35	LoSa	10YR5/4	B	NCM

53	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-13	LoSa	10YR4/3	A	NCM
	3	13-33	LoSa	10YR5/4	B	NCM
54	1	0-9	rootmat,leaves,humus		A/O	NCM
	2	9-16	LoSa	10YR4/3	A	NCM
	3	16-35	LoSa	10YR5/4	B	NCM
55	1	0-9	rootmat,leaves,humus		A/O	NCM
	2	9-11	LoSa	10YR4/3	A	NCM
	3	11-31	LoSa	10YR5/4	B	NCM
56	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-15	LoSa	10YR4/3	A	NCM
	3	15-35	LoSa	10YR5/4	B	NCM
57	1	0-10	rootmat,leaves,humus		A/O	NCM
	2	10-19	LoSa	10YR4/3	A	NCM
	3	19-33	LoSa	10YR5/4	B	NCM
58	1	0-8	rootmat,leaves,humus		A/O	NCM
	2	8-13	LoSa	10YR4/3	A	NCM
	3	13-33	LoSa	10YR5/4	B	NCM
59	1	0-7	rootmat,leaves,humus		A/O	NCM
	2	7-11	LoSa	10YR4/3	A	NCM
	3	11-22	LoSa	10YR5/4	B	NCM
60	1	0-8	rootmat,leaves,humus		A/O	NCM
	2	8-12	LoSa	10YR4/3	A	NCM
	3	12-32	LoSa	10YR5/4	B	NCM
61	1	0-7	rootmat,leaves,humus		A/O	NCM
	2	7-14	LoSa	10YR4/3	A	NCM
	3	14-32	LoSa	10YR5/4	B	NCM
62	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-15	LoSa	10YR4/3	A	NCM
	3	15-35	LoSa	10YR5/4	B	NCM
63	1	0-9	rootmat,leaves,humus		A/O	NCM
	2	9-17	LoSa	10YR4/3	A	NCM
	3	17-37	LoSa	10YR5/4	B	NCM
64	1	0-7	rootmat,leaves,humus		A/O	NCM
	2	7-13	LoSa	10YR4/3	A	NCM
	3	13-33	LoSa	10YR5/4	B	NCM
65	1	0-8	rootmat,leaves,humus		A/O	NCM
	2	8-12	LoSa	10YR4/3	A	NCM
	3	12-32	LoSa	10YR5/4	B	NCM
66	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-15	LoSa	10YR4/3	A	NCM

	3	15-35	LoSa	10YR5/4	B	NCM
67	1	0-8	rootmat,leaves,humus		A/O	NCM
	2	8-15	LoSa	10YR4/3	A	NCM
	3	15-35	LoSa	10YR5/4	B	NCM
68	1	0-9	rootmat,leaves,humus		A/O	NCM
	2	9-16	LoSa	10YR4/3	A	NCM
	3	16-30	LoSa	10YR5/4	B	NCM
69	1	0-9	rootmat,leaves,humus		A/O	NCM
	2	9-16	LoSa	10YR4/3	A	NCM
	3	16-30	LoSa	10YR5/4	B	NCM
70	1	0-8	rootmat,leaves,humus		A/O	NCM
	2	8-11	LoSa	10YR4/3	A	NCM
	3	11-31	LoSa	10YR5/4	B	NCM
71	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-15	LoSa	10YR4/3	A	NCM
	3	15-33	LoSa	10YR5/4	B	NCM
72	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-15	LoSa	10YR4/3	A	NCM
	3	15-35	LoSa	10YR5/4	B	NCM
73	1	0-9	rootmat,leaves,humus		A/O	NCM
	2	9-15	LoSa	10YR4/3	A	NCM
	3	15-35	LoSa	10YR5/4	B	NCM
74	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-15	LoSa	10YR4/3	A	NCM
	3	15-35	LoSa	10YR5/4	B	NCM
75	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-13	LoSa	10YR4/3	A	NCM
	3	13-33	LoSa	10YR5/4	B	NCM
76	1	0-9	rootmat,leaves,humus		A/O	NCM
	2	9-15	LoSa	10YR4/3	A	NCM
	3	15-35	LoSa	10YR5/4	B	NCM
77	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-14	LoSa	10YR4/3	A	NCM
	3	14-34	LoSa	10YR5/4	B	NCM
78	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-13	LoSa	10YR4/3	A	NCM
	3	13-33	LoSa	10YR5/4	B	NCM
79	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-15	LoSa	10YR4/3	A	NCM
	3	15-35	LoSa	10YR5/4	B	NCM

Attachment D-2
OPRHP, Division of Historic Preservation Correspondence

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ROSE HARVEY
Commissioner

February 15, 2017

Mr. Phillip Malicki
Senior Environmental Planner
NP&V, LLC
572 Walt Whitman Road
Melville, NY 11747

Re: DEC
Venezia Square Commercial Development
Route 25A, Riverhead, NY
17PR00875

Dear Mr. Malicki:

Thank you for requesting the comments of the Division for Historic Preservation of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the submitted materials in accordance with the New York State Historic Preservation Act of 1980 (section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the Division for Historic Preservation and relate only to Historic/Cultural resources.

We have reviewed the report entitled "Phase I Archaeological Investigation at the Venezia Subdivision, Wading Rover, Town of Riverhead, Suffolk County, New York" (July 2016). No archaeological resources were identified and no additional archaeological work is necessary.

We have no concerns regarding the project's potential to impact historic architectural resources. Therefore, it is OPRHP's opinion that the project will have No Impact on archaeological and/or historic resources listed in or eligible for the New York State and National Registers of Historic Places.

If further correspondence is required regarding this project, please refer to the OPRHP Project Review (PR) number noted above. If you have any questions, I can be reached at 518-268-2186.

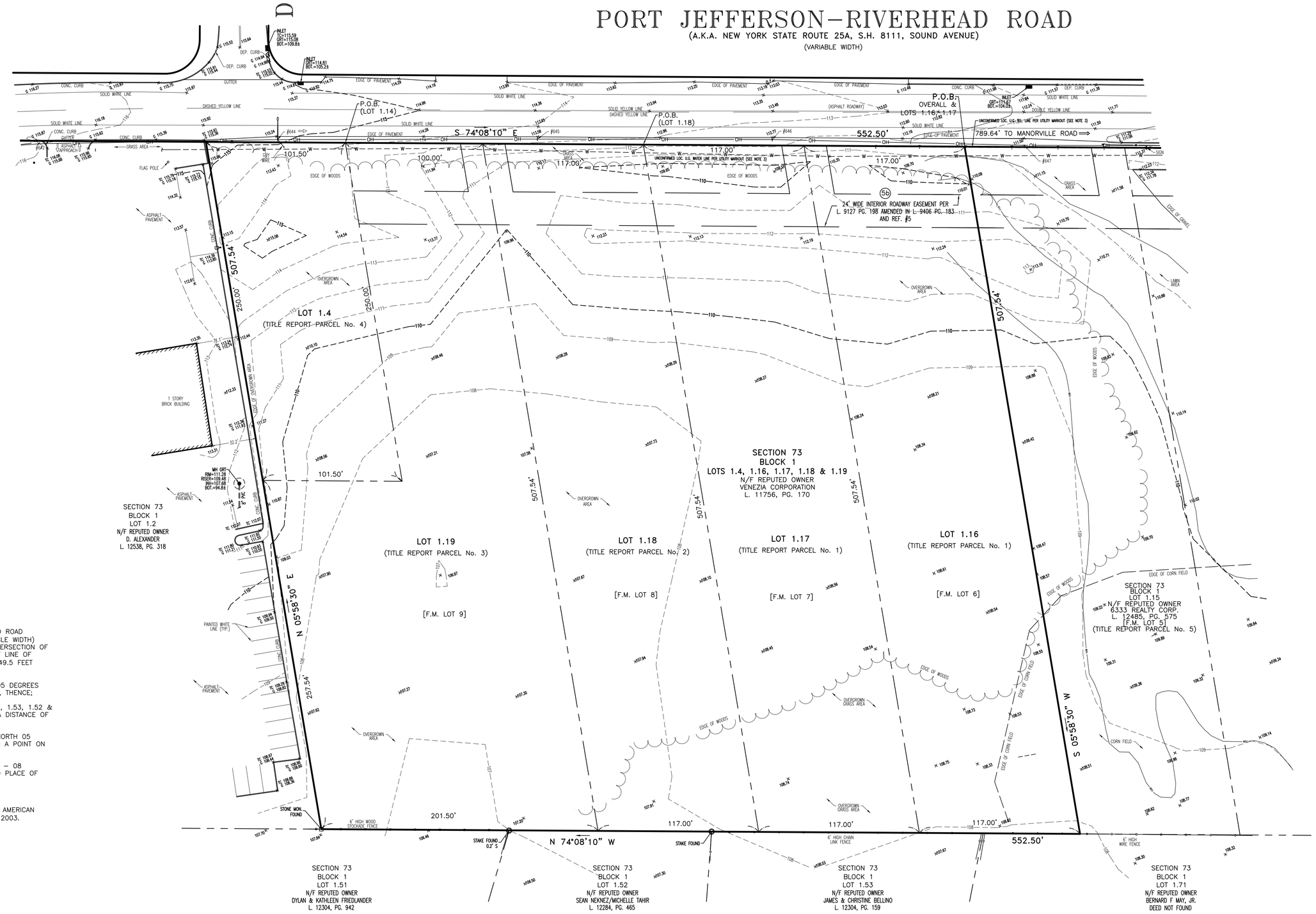
Sincerely,

Tim Lloyd, Ph.D., RPA
Scientist - Archaeology
timothy.lloyd@parks.ny.gov

via e-mail only

PLANS

VICINITY MAP
©1997 DeLorme. Street Atlas USA



METES AND BOUNDS DESCRIPTION
LOTS 1.4, 1.16, 1.17, 1.18 AND 1.19, BLOCK 1
SECTION 73, DISTRICT 0600
WADING RIVER, TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK

BEGINNING AT A POINT ON THE SOUTHERLY LINE OF PORT JEFFERSON – RIVERHEAD ROAD (A.K.A. NEW YORK STATE ROUTE 25A, STATE HIGHWAY 8111, SOUND AVENUE, VARIABLE WIDTH) SAID POINT BEING DISTANT 789.64 FEET WESTERLY ALONG THE SAME FROM THE INTERSECTION OF THE SOUTHERLY LINE OF PORT JEFFERSON – RIVERHEAD ROAD WITH THE WESTERLY LINE OF MANORVILLE ROAD (A.K.A. WADING RIVER – MANORVILLE ROAD, COUNTY ROUTE 25, 49.5 FEET WIDE) AND FROM SAID POINT OF BEGINNING RUNNING THENCE;

1. ALONG THE DIVIDING LINE BETWEEN LOT 1.16 AND LOT 1.15, BLOCK 1, SOUTH 05 DEGREES – 58 MINUTES – 30 SECONDS WEST, A DISTANCE OF 507.54 FEET TO A POINT, THENCE;
2. ALONG THE DIVIDING LINE BETWEEN LOTS 1.16, 1.17, 1.18, 1.19 AND LOTS 1.71, 1.53, 1.52 & & 1.51, BLOCK 1, NORTH 74 DEGREES – 08 MINUTES – 10 SECONDS WEST, A DISTANCE OF 552.50 FEET TO A STONE MONUMENT FOUND, THENCE;
3. ALONG THE DIVIDING LINE BETWEEN LOTS 1.19 & 1.4 AND LOT 1.2, BLOCK 1, NORTH 05 DEGREES – 58 MINUTES – 30 SECONDS EAST, A DISTANCE OF 507.54 FEET TO A POINT ON THE SOUTHERLY LINE OF PORT JEFFERSON – RIVERHEAD ROAD, THENCE;
4. ALONG SAID LINE OF PORT JEFFERSON – RIVERHEAD ROAD, SOUTH 74 DEGREES – 08 MINUTES – 10 SECONDS EAST, A DISTANCE OF 552.50 FEET TO THE POINT AND PLACE OF BEGINNING.

CONTAINING 276,249 SQUARE FEET OR 6.342 ACRES

THIS DESCRIPTION IS WRITTEN WITH REFERENCE TO A TITLE REPORT PREPARED BY AMERICAN LAND SERVICES, INC., TITLE No. SS–16680, WITH AN EFFECTIVE DATE OF JULY 17, 2003.

LEGEND

123	EXISTING CONTOUR
X 123.45	EXISTING SPOT ELEVATION
X TC 123.45	EXIST. TOP OF CURB ELEVATION
X G 122.95	EXIST. GUTTER ELEVATION
X TW 123.45	EXIST. TOP OF WALL ELEVATION
X BW 122.95	EXIST. BOTTOM OF WALL ELEVATION
OH	OVERHEAD WIRES
T	UNCONFIRMED LOC. UNDERGROUND TEL. LINE
W	UNCONFIRMED LOC. UNDERGROUND WATER LINE
	UTILITY POLE
	UTILITY POLE/LIGHT POLE
	LIGHT POLE
	GUY WIRE
	MONITORING WELL
	ELECTRIC METER
	SIGN
	MAIL BOX
	AREA LIGHT
	PAINTED ARROWS
	DENOTES PARKING SPACE COUNT
[F.M. LOT 9]	FILED MAP LOT NUMBER
5a	TITLE REPORT EXCEPTION

NOTES:
1. PROPERTY KNOWN AS LOTS 1.4, 1.16, 1.17, 1.18 & 1.19, BLOCK 1, SECTION 73, AS SHOWN ON THE OFFICIAL TAX MAPS OF SUFFOLK COUNTY, NEW YORK
2. AREA = 276,249 S.F. OR 6.342 AC.
3. LOCATION OF ALL UNDERGROUND UTILITIES ARE APPROXIMATE. ALL LOCATIONS AND SIZES ARE BASED ON UTILITY MARK–OUTS, ABOVE GROUND STRUCTURES THAT WERE VISIBLE & ACCESSIBLE IN THE FIELD, AND THE MAPS AS LISTED IN THE REFERENCES AVAILABLE AT THE TIME OF THE SURVEY. AVAILABLE ASBUILT PLANS AND UTILITY MARKOUT DOES NOT ENSURE MAPPING OF ALL UNDERGROUND UTILITIES AND STRUCTURES. BEFORE ANY EXCAVATION IS TO BEGIN, ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED AS TO THEIR LOCATION, SIZE AND TYPE BY THE PROPER UTILITY COMPANIES
4. THIS PLAN IS BASED ON INFORMATION PROVIDED BY A SURVEY PREPARED IN THE FIELD BY CONTROL POINT ASSOCIATES, INC. AND OTHER REFERENCE MATERIAL AS LISTED HEREON.
5. THIS SURVEY IS PREPARED WITH REFERENCE TO A TITLE REPORT PREPARED BY AMERICAN LAND SERVICES, INC., TITLE No. SS–16680, WITH AN EFFECTIVE DATE OF JULY 17, 2003. WHERE THE FOLLOWING SURVEY RELATED EXCEPTIONS APPEAR IN SCHEDULE B;
   - (5a) COVENANTS AND RESTRICTIONS IN LIBER 8147, PG. 398, AFFECTS PROPERTY – BLANKET, NOT SHOWN.
   - (5b) COVENANTS, RESTRICTIONS AND 24' WIDE INTERIOR ROADWAY EASEMENT IN LIBER 9127, PG. 198 AMENDED IN LIBER 9406, PG. 183, AFFECTS LOTS 1.15 THRU 1.19 – EASEMENT SHOWN.
   - (5c) COVENANTS AND RESTRICTIONS IN LIBER 11892, PG. 509, AFFECTS LOT 1.15 – BLANKET, NOT SHOWN.
6. THE EXISTENCE OF UNDERGROUND STORAGE TANKS, IF ANY, WAS NOT KNOWN AT THE TIME OF THE FIELD SURVEY.
7. ELEVATIONS ARE BASED UPON NAVD 88, REF. BM #Z38, ELEV=117.80'
8. PROPERTY IS LOCATED IN FLOOD HAZARD ZONE X (AREAS DETERMINED TO BE OUTSIDE 500–YEAR FLOODPLAIN) PER REF. #2
9. THE NEW YORK STATE D.O.T. HAS NOT YET RESPONDED TO A REQUEST FOR HIGHWAY PLANS.

REFERENCES:
1. THE OFFICIAL TAX MAPS OF SUFFOLK COUNTY, NEW YORK
2. MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, SUFFOLK COUNTY, NEW YORK, (ALL JURISDICTIONS), PANEL 428 OF 1026, MAP NUMBER 3610350428 G, EFFECTIVE DATE: MAY 4, 1998.
3. MAP ENTITLED "AS–BUILT SURVEY, McDONALD'S CORPORATION, LOTS 1.12 & 1.20, BLOCK 1, SEC. 073, DIST 0600, PORT JEFFERSON–RIVERHEAD ROAD & MANORVILLE ROAD, WADING RIVER, TOWN OF RIVERHEAD, SUFFOLK COUNTY, NEW YORK", PREPARED BY CONTROL POINT ASSOCIATES, INC., DATED 8–29–01, FILE NO. C98345AB.
4. MAP ENTITLED "SITE PLAN PREPARED FOR ARTHUR KRETSCHMER AT WADING RIVER, TOWN OF RIVERHEAD, SUFFOLK COUNTY, N.Y." PREPARED BY HOWARD W. YOUNG, DATED OCT. 3, 1990, LAST REVISED OCT. 2, 1991
5. MAP ENTITLED "SUBDIVISION MAP FOR WADING RIVER MANOR ASSOCIATES AT WADING RIVER, TOWN OF RIVERHEAD, SUFF. CO., N.Y." PREPARED BY YOUNG & YOUNG, DATED JUNE 9, 1983, REVISED JUNE 15, 1983, FILED IN THE SUFFOLK COUNTY CLERK'S OFFICE ON JULY 12, 1983 IN FILE No. 7201, ABS #9425
6. MAP ENTITLED "MAP OF SUBDIVISION AT WADING RIVER, SUFFOLK COUNTY, N.Y., KNOWN AS TERMINAL PARK" PREPARED BY H.J. MILLER, DATED MAY, 1926, FILED IN THE SUFFOLK COUNTY CLERK'S OFFICE ON AUG 25, 1926 IN FILE No. 815, ABS #518
7. MAP ENTITLED "NEW YORK STATE DEPARTMENT OF TRANSPORTATION, DESCRIPTION AND MAP FOR THE ACQUISITION OF PROPERTY, PORT JEFFERSON–RIVERHEAD, PART 2B, S.H. 8111, SUFFOLK COUNTY," MAP NO. 18, PARCEL NO. 28, SHEET 1 OF 2.

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

UTILITIES:
THE FOLLOWING COMPANIES WERE NOTIFIED BY THE NEW YORK ONE CALL SYSTEM (1–800–272–4480) AND REQUESTED TO MARK OUT UNDERGROUND FACILITIES AFFECTING AND SERVICING THIS SITE. THE UNDERGROUND UTILITY INFORMATION SHOWN HEREON IS BASED UPON THE UTILITY COMPANIES RESPONSE TO THIS REQUEST.
SERIAL NUMBER(S): 2020249 (2003 MARKOUT)

UTILITY COMPANY	PHONE NUMBER
LIPA	(631) 755 – 6900
KEYSPAN	(631) 289 – 8262
CABLEVISION RIVERHEAD	(631) 727 – 6300
TOWN OF RIVERHEAD	(631) 727 – 3200
VERIZON	(631) 435 – 2205

No.	DESCRIPTION OF REVISION	DRAWN:	APPROVED:	DATE
2	REVISE PER FIELD UPDATE	M.H.S.	J.P.L.	1–18–2016
1	REVISE TITLE BLOCK	G.J.S.	J.P.L.	2–3–2015

UNAUTHORIZED ALTERATION OR ADDITION TO A SURVEY MAP BEARING A LICENSED LAND SURVEYOR'S SEAL IS A VIOLATION OF SECTION 7209, SUB–DIVISION 2, OF THE NEW YORK STATE EDUCATION LAW.

ONLY COPIES FROM THE ORIGINAL OF THIS SURVEY MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED TO BE VALID TRUE COPIES.

NOT A VALID ORIGINAL DOCUMENT UNLESS EMBOSSED WITH RAISED IMPRESSION OR BLUE INK SEAL

1–18–2016
DATE

JOHN P. LYNCH
NEW YORK PROFESSIONAL LAND SURVEYOR #50720

FIELD DATE: 5–28–08
FIELD BOOK NO.: 08–16
FIELD BOOK PG.: 23
DRAWN: J.R.W.
REVIEWED: T.F.M.
APPROVED: T.F.M.

BOUNDARY & TOPOGRAPHIC SURVEY
THE NORTHWIND GROUP, LLC
PORT JEFFERSON–RIVERHEAD ROAD (N.Y.S.R. 25A)
LOTS 1.4, 1.16, 1.17, 1.18 & 1.19, BLOCK 1, SECTION 73, DISTRICT 0600
WADING RIVER, TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK

CONTROL POINT ASSOCIATES, INC.
35 TECHNOLOGY DRIVE
WARREN, NJ 07059
908.668.0099 · 908.668.9595 FAX
NEW BRITAIN CORPORATE CENTER
1600 MANOR DRIVE, SUITE 120
CHALFONT, PA 18914
215.712.9800 – 215.712.9802 FAX

DATE	SCALE	FILE NO.	DWG. NO.
6–4–2008	1"=40'	C03243.01	1 OF 1

PORT JEFFERSON–RIVERHEAD ROAD

(A.K.A. NEW YORK STATE ROUTE 25A, S.H. 8111, SOUND AVENUE)

(VARIABLE WIDTH)

DOGWOOD DRIVE

PROP. 5' WIDE PEDESTRIAN CROSSWALK

PROP. AT GRADE CLEAR TURNING SPACE OPTION 4 DETECTABLE WARNING OPTION C CURB RETURNS

PROP. TRAFFIC SIGNAL TO BE APPROVED BY NYSDOT

PROP. NYSDOT TYPE I CURB RAMP: OPTION 2 DETECTABLE WARNING OPTION A FLARED CONCRETE ON R.O.W. SIDE OPTION C CURB RETURN ON SITE SIDE

APPROX. LOCATION OF RELOCATED UTILITY POLE/STREET LIGHT. CONTRACTOR SHALL COORDINATE WITH NYSDOT/GOVERNING UTILITY COMPANY PRIOR TO CONSTRUCTION.

PROP. NYSDOT TYPE I CURB RAMP: OPTION 2 DETECTABLE WARNING OPTION C CURB RETURN ON EACH SIDE

APPROX. LOCATION OF EXIST. 25/BIKE SIGN TO REMAIN

PROP. NYSDOT TYPE I CURB RAMP: OPTION 4 DETECTABLE WARNING OPTION A FLARED CONCRETE ON R.O.W. SIDE OPTION C CURB RETURN ON SITE SIDE

PROP. NYSDOT TYPE 10 CURB RAMP: OPTION 1 DETECTABLE WARNING OPTION D UNCURBED SIDE ON EAST SIDE OPTION C CURB RETURN ON WEST SIDE

P.O.B. OVERALL & LOTS 1.16, 1.17 77.6'

PROP. 5 WIDE BIKE LANE 362.8'

66.4' CURB CUT

43.4' CURB CUT

S 74°08'10" E 552.50'

789.64' TO MANORVILLE ROAD ⟹

PROP. BICYCLE LANE SYMBOL

PROP. DEDICATION LINE TO NYS DEPARTMENT OF TRANSPORTATION

PROP. 32 SF MONUMENT SIGN

PROPOSED TAKE OUT (1,600 SF (6 SEATS)) 15'

PROPOSED TAKE OUT (1,600 SF (6 SEATS)) 20'

PROPOSED RESTAURANT (3,000 SF) (76 SEATS) (ONE STORY, NO BASEMENT) 40'

PROP. BENCH

NATURAL AREA TO REMAIN UNDISTURBED (2,842 SF)

PROPOSED BANK (4,000 SF) (ONE STORY) (NO BASEMENT) 62'

PROPOSED RETAIL (10,000 SF) (ONE STORY, NO BASEMENT) 95'

ISLAND TO BE MOUNTABLE CURB

POTENTIAL FUTURE CROSS ACCESS

SECTION 73 BLOCK 1 LOT 1.2 N/F REPUTED OWNER D. ALEXANDER L 12538, PG. 318

ZONE: BUSINESS CR USE: FUNERAL HOME

PROPOSED RETAIL (7,000 SF) (ONE STORY) (NO BASEMENT) 77.78'

PROPOSED RETAIL (10,000 SF) (ONE STORY, NO BASEMENT) 133.3'

N 05°58'30" E 507.54'

S 05°58'30" W 507.54'

PROP. "ORCHARD" PLANTING TREE (TYP. OF 20)

NATURAL AREA TO REMAIN UNDISTURBED (94,503 SF)

AREA PREVIOUSLY CORNFIELD HAS BEEN RESTORED TO NATURAL CONDITION. AREA WILL REMAIN VEGETATED & UNDISTURBED UNDER NEW DEVELOPMENT, THEREFORE IS NOT INCLUDED IN 'CLEARED' AREA FOR PINE BARRENS PURPOSES.

N 74°08'10" W 552.50'

STONE MON. FOUND

STONE FOUND, 0.2' S

STONE FOUND

SECTION 73 BLOCK 1 LOT 1.51 N/F REPUTED OWNER DYLAN & KATHLEEN FREDLANDER L. 12304, PG. 942

ZONE: RESIDENCE B–80 USE: RESIDENCE

SECTION 73 BLOCK 1 LOT 1.52 N/F REPUTED OWNER SEAN NEKNEZ/MICHELLE TAHR L. 12284, PG. 465

ZONE: RESIDENCE B–80 USE: RESIDENCE

SECTION 73 BLOCK 1 LOT 1.53 N/F REPUTED OWNER JAMES & CHRISTINE BELLINO L. 12304, PG. 159

ZONE: RESIDENCE B–80 USE: RESIDENCE

SECTION 73 BLOCK 1 LOT 1.71 N/F REPUTED OWNER BERNARD F. MAY, JR. DEED NOT FOUND

ZONE: BUSINESS CR USE: VACANT

SECTION 73 BLOCK 1 N/F REPUTED OWNER 6333 REALTY CORP. L. 12485, PG. 575 [F.M. LOT 5]

(TITLE REPORT PARCEL No. 5)

ZONE: BUSINESS CR USE: FARM/GREENHOUSE

SECTION 73 BLOCK 1 LOT 1.9 N/F REPUTED OWNER BERNARD F. MAY, JR. L. 9127, PG. 211

LEGEND

EXISTING	PROPOSED
BUILDING	
PROPERTY LINE	
ADJACENT PROPERTY LINE	
PROPOSED NYSDOT DEDICATION	
SAWCUT LINE	
CONCRETE CURB	
SIGN	
UTILITY POLE	
STREET LIGHT	(RELOCATED)
AREA LIGHT	
FENCE	
INLET/ CURB INLET	
MANHOLE COVER	
CLEAN OUT	
FIRE HYDRANT	
TRANSFORMER	
PAVEMENT MARKINGS	
PARKING STALL COUNT	(12)

HEAVY DUTY PAVEMENT ON–SITE

CONC. SIDEWALK IN ROW

ASPHALT REPLACEMENT

LANDSCAPING IN ROW

NATURAL AREA TO REMAIN UNDISTURBED

KEY DESCRIPTION

- (AS) ON–SITE ASPHALT PAVEMENT
- (BC) CONCRETE FILLED BOLLARD
- (BI) BIKE RACK
- (BP) BRICK PAVER WALKWAY
- (CC) CONCRETE CURB
- (CP) CONCRETE PAD
- (CW) CONCRETE SIDEWALK
- (CY) CANOPY
- (ET) ELECTRIC TRANSFORMER
- (FC) 6' CHAIN LINK FENCE W/ STOCKADE ATTACHED
- (HR) ACCESSIBLE RAMP
- (HS) PAINTED ACCESSIBLE PARKING SYMBOL / STRIPING (BLUE)
- (HY) FIRE HYDRANT
- (LS) LANDSCAPED AREA
- (SB) PAINTED STOP LINE
- (SD) "STOP" / "DO NOT ENTER" SIGNS (R1–1 AND R5–1, PER MUTCD)
- (SH) ACCESSIBLE PARKING SIGN
- (SN) "NO PARKING ANYTIME" SIGN
- (SS) STOP SIGN (R1–1C, PER MUTCD)
- (ST) PAINTED STRIPING
- (TE) TRASH ENCLOSURE

SCALE

40 20 10 0 40

1 inch = 40 ft.

DO NOT SCALE

811 NEW YORK CITY ONE CALL CENTER 1-800-272-4480 WHEN YOU DIG CALL THEN DIG

NYSDOT NOTES

1. **THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND SHALL REPLACE ALL SIGNAL INTERCONNECT CABLE, DETECTOR CABLE, CONDUIT AND ALL UNDERGROUND ACCESSORY EQUIPMENT DAMAGED DURING CONSTRUCTION.**
2. PRIOR TO STARTING ANY WORK AT THIS LOCATION, THE CONTRACTOR SHALL NOTIFY THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION THAT A TONE–OUT SIGNAL EQUIPMENT IS NEEDED. CALL INFORM AT (631) 904–3050
3. ALL TRAFFIC SIGNALS SHALL BE MAINTAINED IN A TRAFFIC RESPONSIVE OPERATION AND ALL INTERCONNECT, WHERE EXISTING, SHALL BE MAINTAINED. THE CONTRACTOR SHALL PAY A LIQUIDATED DAMAGES CHARGE OF $500.00 PER CALENDAR DAY IF ACTUATION AND COORDINATION IS NOT MAINTAINED.
4. THE CONTRACTOR IS RESPONSIBLE TO CLEAN EXISTING DRAINAGE BASINS ALONG AND IMMEDIATELY ADJACENT TO THE NYS ROUTE 25A SITE FRONTAGE AT THE COMPLETION OF CONSTRUCTION.
5. TACK COATING REQUIRED BETWEEN ALL LIFTS REGARDLESS WHEN PLACED.
6. CONTRACTOR TO REPAIR EXISTING SHOULDER, SIDEWALK AND CURBING AS ORDERED BY STATE ENGINEER.
7. THE SUBJECT SITE FALLS BETWEEN NYSDOT MILE MARKER 25 0703 1417 AND 25 0703 1416.
8. WORK WITHIN THE R.O.W. OF PORT JEFFERSON–RIVERHEAD ROAD SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS OF NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARDS.
9. ALL LANES MUST BE OPEN TO TRAFFIC BEFORE 10 AM AND AFTER 3 PM. NO LANE CLOSINGS ARE PERMITTED ON WEEKENDS OR HOLIDAYS. NIGHTTIME LANE CLOSINGS WILL NOT BE PERMITTED WITHOUT PRIOR APPROVAL FROM THE STATE PERMIT INSPECTOR.
10. ANY UTILITY WORK PROPOSED IN STATE HIGHWAY RIGHT–OF–WAY WILL REQUIRE A SEPARATE APPLICATION AND SUBMISSION OF UTILITY PLANS TO THE NYSDOT MAINTENANCE FACILITY AT CENTRAL ISLIP.
11. ALL DRIVEWAYS SHALL CONFIRM TO NYSDOT 608–03 STANDARD SHEETS.
12. CONTRACTOR MUST COORDINATE WITH NYSDOT CASE NO. 32842 FOR WORK AT NORTHEAST CORNER OF DOGWOOD DRIVE.
13. CONTRACTOR MUST INSTALL SURVEY MONUMENTS AT THE R.O.W. LINE FRONTING THE SUBJECT SITE.
14. NYSDOT ITEM #'S FOR PROPOSED WORK IN R.O.W.

ASPHALT/CONCRETE/COMPOSITE PAVEMENT CONSTRUCTION
- 633.11 CLEANING, EXISTING PAVEMENT AND/OR SHOULDERS
- 633.12 CLEANING, SEALING AND/OR FILLING CRACKS
- 633.13 CLEANING, SEALING AND/OR FILLING JOINTS
- 10520.05 SAW CUTTING PORTLAND CEMENT CONCRETE AND COMPOSITE PAVEMENT
- 10520.09 SAWCUTTING ASPHALT PAVEMENT
- 490.40 MISCELLANEOUS COLD MILLING OF PORTLAND CEMENT
- 490.30 MISCELLANEOUS COLD MILLING OF BITUMINOUS PAVEMENT
- 407.0101 TACK COAT TO BE PLACED BETWEEN ALL HMA LIFTS
- 402.098102 9.5 MM F1 SUPERPAVE HMA, 80 SERIES COMPACTION
- 402.198902 19 MM F9 SUPERPAVE HMA, 80 SERIES COMPACTION
- 402.378902 37.5 MM F9 SUPERPAVE HMA, 80 SERIES COMPACTION
- 203.02 UNCLASSIFIED EXCAVATION AND DISPOSAL
- 403.0951:3201 COLD JOINTS SEALED
- 17304.101199 SUBBASE COURSE – TYPE 1011–2

CURBS
- 520.60900002 SAWCUTTING CURB
- 608.01050109 CURB RAMP CONFIGURATION TYPE 1
- 608.01051009 CURB RAMP CONFIGURATION TYPE 10
- 609.0401 CAST–IN–PLACE CONCRETE CURB TYPE VF150

SIDEWALKS
- 608.01050010 CONCRETE SIDEWALKS – UNREINFORCED (GRADING INCLUDED)
- 608.21 EMBEDDED DETECTABLE WARNING
- 608.010609 CONSTRUCTION CONCRETE SIDEWALK CURB RAMPS

LANDSCAPE
- 610.1602 TURF ESTABLISHMENT – LAWNS
- 610.1403 TOPSOIL – LAWNS

MONUMENT
- 626.0111 FURNISH AND INSTALL NEW MONUMENT

SITE CLEARING SUMMARY

EXISTING	AREA	% OF SITE
SITE AREA	276,249 SF	-
NATURAL AREA	276,249 SF	100%
CLEARED AREA	0	0%
PROPOSED	**AREA**	**% OF SITE**
SITE AREA	276,249 SF	-
NATURAL AREA	97,345 SF	35.24 %
CLEARED AREA	178,904 SF	64.76 %

SIGNAGE REQUIREMENTS

ITEM	CODE	PERMITTED	PROPOSED
MAX. NUMBER OF PRIMARY SIGNS	§ 301-249C.	1	1 (FREESTANDING SIGN)
MAX. FREESTANDING SIGN AREA	§ 301-249C.(2)	32 SF	32 SF
MIN. FREESTANDING SIGN SETBACK	§ 301-249C.(4)	15' (FRONT/REAR) 25' (SIDES)	25' (FRONT) 265.9' (SIDE)
MAX. FREESTANDING SIGN HEIGHT ABOVE GRADE	§ 301-249C.(3)	10'	10'

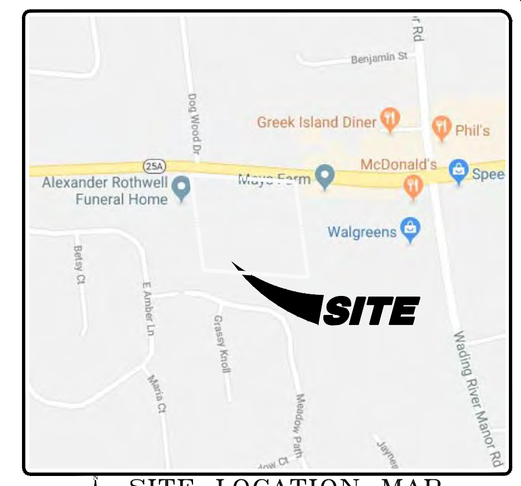
PARKING REQUIREMENTS

ITEM	CODE	PERMITTED	PROPOSED
MIN. STALL SIZE	§ 301-231E.(2)	10' X 20'	10' X 20'
MIN. ACCESSIBLE STALL SIZE	§ 301-231M.(1)	10' X 20' W/ 8' ACCESS AISLE	10' X 20' W/ 8' ACCESS AISLE
MIN. AISLE WIDTH	§ 301-231E.(1)	24' (90° STALLS) 18' (60° STALLS)	24' (90° STALLS) 18' (60° STALLS)
MIN. NUMBER OF STALLS	§ 301 ATT. 1	174	174
MIN. CURB CUT WIDTH	§ 301-231E.(3)	ONE-WAY = 16' TWO WAY = 24'	ONE-WAY = 38.2' TWO WAY = 100.2'
MIN. CURB CUT SEPARATION	§ 301-98B.(5)	400'	352.9'
MIN. LANDSCAPE COVERAGE WITHIN PARKING FIELD	§ 301-98B.(7)	15% (13,114.63 SF)	16.81% (13,866.18 SF)
MIN. TREES WITHIN PARKING FIELD	§ 301-98B.(8)	1 TREE / 10 STALLS = 18 TREES	19 TREES

REQUIRED FOR BANK = 1 STALL/150 SF = 4,000 SF X 1/150 SF = 27 STALLS
REQUIRED FOR RETAIL = 1 STALL/250 SF = 27,000 SF X 1/250 = 108 STALLS
REQUIRED FOR RESTAURANT = 1 STALL/3 SEATS = 108 SEATS X 1/3 = 36 STALLS
TOTAL STALLS REQUIRED = 171 STALLS
TOTAL STALLS PROVIDED = 174 STALLS (INCLUDING 10 ACCESSIBLE STALLS)

PINE BARRENS COMPATIBLE GROWTH AREA

ITEM	CODE	PERMITTED	PROPOSED
MAX. CLEARING OF NATURAL VEGETATION	§ 301-197A.(8)(a)	65% (179,561.85 SF)	64.76% (178,904 SF)
MAX. FERTILIZER DEPENDENT VEGETATION	§ 301-197A.(9)	15%	<15%



SITE LOCATION MAP

SCALE: 1" = 600'

Google Image

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SITE PLAN NOTES

1. **THE GENERAL NOTES SHEET SHALL BE PART OF THIS ENTIRE DOCUMENT PACKAGE AND IS PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES SHEET IS REFERENCED HEREIN AND IS TO BE REFERRED TO BY THE CONTRACTOR. THE CONTRACTOR IS TO FAMILIARIZE HIMSELF AND ACKNOWLEDGES HIS FAMILIARITY WITH ALL THE NOTES ON THE GENERAL NOTES SHEET AS WELL AS ANY AND ALL DRAWING SHEET SPECIFIC NOTES BELOW.**
2. SIGNS SHALL BE PROVIDED IN ACCORDANCE WITH §301–249, THE SIGNAGE ORDINANCE. SIGNS TO BE FILED UNDER SEPARATE APPLICATIONS.
3. LIGHTING FIXTURES SHALL BE "FULL CUTOFF" TYPE AND SHALL BE SHIELDED SO AS NOT TO SHINE ONTO NEIGHBORING PROPERTIES AND CANNOT BE METAL HALIDE.
4. LOCATION OF EXISTING AND PROPOSED SERVICES SHOWN ARE APPROXIMATE AND MUST BE CONFIRMED INDEPENDENTLY BY THE CONTRACTOR WITH THE UTILITY COMPANIES PRIOR TO COMMENCEMENT OF CONSTRUCTION. IF DISCREPANCIES EXIST, NOTIFY THE ENGINEER IMMEDIATELY IN WRITING.
5. STORMWATER RUNOFF WITHIN PROPERTY TO BE COLLECTED ON–SITE WITH NO OVERLAND RUNOFF ONTO RIGHT–OF–WAY OR ADJACENT PROPERTIES.
6. UNSUITABLE MATERIAL, CONSTRUCTION DEBRIS, EXCESS SOILS, ETC. SHALL BE PROPERLY REMOVED AND DISPOSED OF OFF–SITE IN ACCORDANCE WITH ALL APPLICABLE CODES, ORDINANCES AND LAWS.
7. THE CONTRACTOR IS RESPONSIBLE TO TAKE EROSION CONTROL MEASURES NECESSARY IN ACCORDANCE WITH NYS GUIDELINES FOR URBAN EROSION & SEDIMENT CONTROL TO PREVENT SEDIMENT AND/OR LOOSE DEBRIS FROM WASHING ONTO ADJACENT PROPERTIES.
8. DIRECTIONAL SIGNAGE TO COMPLY WITH THE LATEST NYS MUTCD STANDARDS.
9. ALL SIDEWALKS, CURBS, AND PAVEMENT DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REPAIRED OR REPLACED, WHETHER SPECIFIED ON THIS PLAN OR NOT.
10. ALL TRASH GENERATED BY THE PROPOSED BANK WILL BE STORED INDOORS AND COLLECTED NIGHTLY FOR DISPOSAL DUE TO THE SENSITIVE NATURE OF THE MATERIAL. AN OUTDOOR TRASH ENCLOSURE WILL NOT BE PROVIDED.
11. RELOCATION AND/OR REMOVAL OF EXISTING UTILITY POLES, TRAFFIC SIGNS, ETC., SHALL BE COORDINATED BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR FIELD–VERIFYING THEIR PRESENCE.
12. EXCAVATION SHALL BE PROPERLY BACKFILLED WITH CLEAN MATERIALS. CONTRACTOR SHALL REFER TO GEOTECHNICAL ENGINEER REPORTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPACTION TESTING AND SHALL SUBMIT SUCH REPORTS AND RESULTS TO THE ENGINEER OF RECORD AND OWNER.
13. WORK WITHIN THE R.O.W. OF PORT JEFFERSON–RIVERHEAD ROAD SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS OF NEW YORK STATE DEPARTMENT OF TRANSPORTATION.
14. OWNER/ OPERATOR SHALL FILE THE NOI FOR NPDES PERMITS AT APPROPRIATE TIMEFRAMES BASED UPON THE DESIRED START OF CONSTRUCTION. LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY GOVERNING AUTHORITIES (INCLUDING STORMWATER POLLUTION PREVENTION PLAN, PER TOWN OF RIVERHEAD REQUIREMENTS). THE CONTRACTOR SHALL STRICTLY ADHERE TO THE APPROVED SWPPP PLAN DURING CONSTRUCTION OPERATIONS (IF PROVIDED).
15. NO RETAIL BUSINESS ESTABLISHMENT SHALL REMAIN OPEN BETWEEN THE HOURS OF 12:00 MIDNIGHT AND 5:00AM

ZONING TABLE

ZONE: BUSINESS CR (RURAL NEIGHBORHOOD BUSINESS)
USE: RETAIL, RESTAURANTS & BANKS PERMITTED PER §301-96 A. AND §301-96C.

BULK REQUIREMENTS

ITEM	CODE	PERMITTED	PROPOSED
MIN. LOT AREA	§ 301 ATT. 3	40,000 SF	276,249 SF (6.342 AC)
MIN. LOT WIDTH AT FRONT STREET	§ 301 ATT. 3	200'	552.50'
MIN. FRONT YARD	§ 301 ATT. 3	30'	46.2'
MIN. SIDE YARD	§ 301 ATT. 3	25' EACH / 50' COMBINED	30' (MIN.) / 71.7' COMBINED
MIN. REAR YARD	§ 301 ATT. 3	25'	137.20'
MAX. BUILDING HEIGHT	§ 301 ATT. 3	35'	<35'
MAX. FAR	§ 301 ATT. 3	0.20	0.137 (37,855 SF)
MAX. BUILDING COVERAGE	§ 301 ATT. 3	15%	13.70% (37,855 SF)
MAX. IMPERVIOUS SURFACE	§ 301 ATT. 3	75%	49.70% (137,293.57 SF)
MIN. BUFFER ADJOINING RESIDENTIAL USE	§ 301-236A.(2)	10' W/ MIN. 6' HIGH EVERGREEN PLANTINGS	109.9'
MIN. FENCING/ SCREENING	§ 301-236C.(2)	6' HIGH CLF W/ STOCKADE ATTACHED ALONG RESIDENTIAL BUFFERS	COMPLIES
MIN. STREET TREES	§ 301-236B.	SPACED AT AVERAGE DIAMETER OF BRANCHING HABIT AT MATURITY	COMPLIES (SEE LANDSCAPE PLAN)
MIN. LANDSCAPE ISLANDS	§ 301-236D.	20 SF OF LANDSCAPE ISLAND PER STALL; MIN. 8' WIDE W/ 1 TREE PER 100 SF (3,560 SF)	3,936.53 SF
MIN. NUMBER OF BUILDINGS	§ 301-98A.(1)	4 BUILDINGS (FOR PARCELS >3 ACRES)	5 BUILDINGS
MAX. PARKING STALLS IN FRONT YARD	§ 301-98A.(2)(a)	35 STALLS (20% OF TOTAL PARKING)	19 STALLS
MAX. PARKING ROWS IN FRONT YARD	§ 301-98A.(2)(b)	1	1 ROW
MIN. FRONT YARD PARKING SETBACK	§ 301-98A.(2)(c)	30'	30'
CENTRAL SQUARE VISIBILITY	§ 301-98A.(4)(a)	VISIBLE FROM FRONT & ADJOINING STREETS	COMPLIES
CENTRAL SQUARE AREA DIMENSION	§ 301-98A.(4)(b)	MIN. 50' X 30'	50' X 44'
CENTRAL SQUARE LOCATION	§ 301-98A.(4)(c)	OUTSIDE OF REQUIRED YARDS	COMPLIES
CENTRAL SQUARE FEATURES	§ 301-98A.(4)(d)	PAVERS, SEATING, SHADE ELEMENTS, ETC.	COMPLIES
STRUCTURES LOCATED WITHIN REQUIRED YARDS	§ 301-98A.(5)	PROHIBITED	COMPLIES
BUILDING ORIENTATION	§ 301-98A.(6)	ALONG SIDES OF CENTRAL SQUARE W/ ENTRANCES FACING CENTRAL SQUARE	COMPLIES
SECONDARY BUILDING ENTRY	§ 301-98A.(7)	PERMITTED IF PRIMARY ENTRANCE FACES CENTRAL SQUARE	COMPLIES
BUILDING ORIENTATION CONT'D.	§ 301-98A.(8)	REAR OF BLDG. MAY NOT FACE R.O.W.	COMPLIES
CROSS ACCESS TO ADJ. PARCELS	§ 301-98A.(9)	IMPROVED CROSS ACCESS	COMPLIES
PEDESTRIAN WALKWAYS	§ 301-98A.(11)	PEDESTRIAN WALKWAYS TO EACH BUILDING AND R.O.W.	COMPLIES
BUILDING & WALKWAY PLACEMENT	§ 301-98A.(12)	BREAK BUILDINGS INTO UNITS <200' INTERSPERCED WITH WALKWAYS	COMPLIES
TRASH ENCLOSURE SCREENING	§ 301-98A.(17)(a)	WOOD FENCE OR LANDSCAPING	COMPLIES (SEE LANDSCAPE PLAN)
USE OF REQ'D YARDS	§ 301-98A.(17)(b)	OPEN SPACE OR LANDSCAPED	COMPLIES (SEE LANDSCAPE PLAN)
RESIDENTIAL BUFFER	§ 301-98A.(17)(c)	LANDSCAPE W/ CANOPY TREES & EVERGREEMS	COMPLIES (SEE LANDSCAPE PLAN)

BOHLER ENGINEERING

- WARREN, NJ - CORPORATE OFFICE
- WHITE PLAINS, NY
- ALBANY, NY
- BOWIE, MD
- TOWSON, MD
- CHALFONT, PA
- CENTER VALLEY, PA
- SOUTHBOROUGH, MA
- STERLING, VA
- WARRENTON, VA
- FT. LAUDERDALE, FL

APPROVALS

REVISIONS

No	Date	DESCRIPTION
1	12/3/09	REVISED AS PER SCDHS COMMENTS
2	11/18/15	REV. PER TOWN PLANNING DEPARTMENT COMMENTS
3	9/20/17	REV. PER DISTURBED AREA
4	3/16/18	REV. LAYOUT & NYSDOT COMMENTS
5	11/19/18	REV. PER NYSDOT COMMENTS
6	12/2/19	TOWN OF RIVERHEAD SUBMISSION

BOHLER ENGINEERING

CIVIL & CONSULTING ENGINEERS

2929 EXPRESSWAY DRIVE NORTH
HAUPPAUGE, NY 11749

Phone: 631.738.1200
Fax: 631.285.6464

WWW.BOHLERENGINEERING.COM

JOSEPH A. DEAL
PROFESSIONAL ENGINEER
NEW YORK LICENSE No. 087122

DATE:	09/18/08	DRAWN BY:	MD
SCALE:	AS SHOWN	CHECKED BY:	JPC
CAD I.D. No.:	N08029-SS-6A	PROJECT No.	N08029

NOT FOR CONSTRUCTION

NYSDOT CASE #:	N/A
HEALTH DEP. REF. #:	N/A

CLIENT/ PROJECT:

VENEZIA SQUARE, LLC c/o THE NORTHWIND GROUP

PORT JEFFERSON-RIVERHEAD ROAD (NYS ROUTE 25A)
WADING RIVER
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NY 11792
TAX MAP # : 600-73-1-1.4, 1.16-1.19

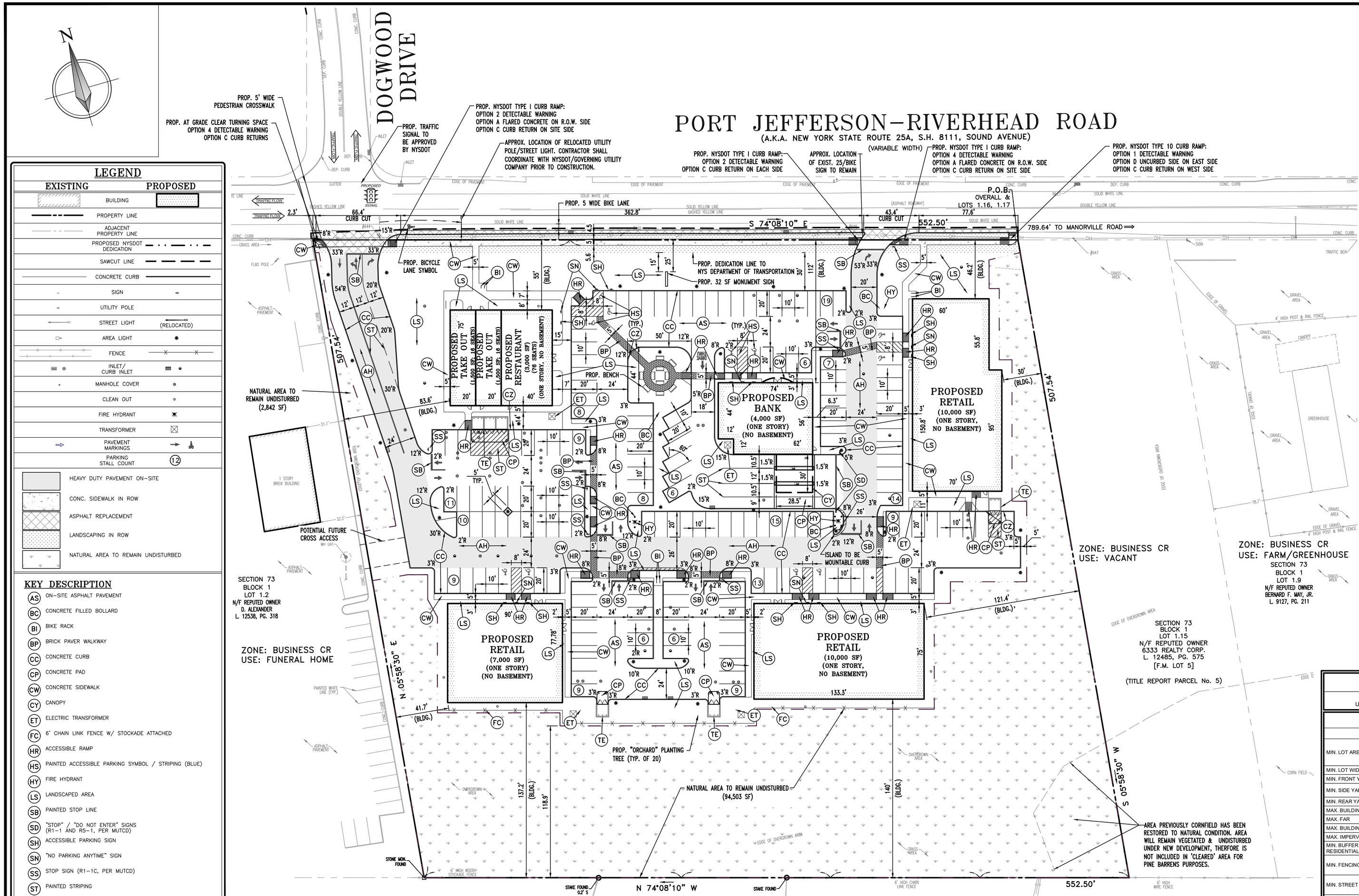
TITLE:

SITE PLAN

SHEET NO. C-3 OF 15

REV. 6

SUBMISSION SET



LEGEND

EXISTING	PROPOSED	
		BUILDING
		PROPERTY LINE
		ADJACENT PROPERTY LINE
		PROPOSED NYSDOT DEDICATION
		SAWCUT LINE
		CONCRETE CURB
		SIGN
		UTILITY POLE
		STREET LIGHT
		AREA LIGHT
		FENCE
		INLET/ CURB INLET
		MANHOLE COVER
		CLEAN OUT
		FIRE HYDRANT
		TRANSFORMER
		PAVEMENT MARKINGS
		PARKING STALL COUNT

(RELOCATED)

- HEAVY DUTY PAVEMENT ON–SITE
- CONC. SIDEWALK IN ROW
- ASPHALT REPLACEMENT
- LANDSCAPING IN ROW
- NATURAL AREA TO REMAIN UNDISTURBED

KEY DESCRIPTION

- (AS) ON–SITE ASPHALT PAVEMENT
- (BC) CONCRETE FILLED BOLLARD
- (BI) BIKE RACK
- (BP) BRICK PAVER WALKWAY
- (CC) CONCRETE CURB
- (CP) CONCRETE PAD
- (CW) CONCRETE SIDEWALK
- (CY) CANOPY
- (ET) ELECTRIC TRANSFORMER
- (FC) 6' CHAIN LINK FENCE W/ STOCKADE ATTACHED
- (HR) ACCESSIBLE RAMP
- (HS) PAINTED ACCESSIBLE PARKING SYMBOL / STRIPING (BLUE)
- (HY) FIRE HYDRANT
- (LS) LANDSCAPED AREA
- (SB) PAINTED STOP LINE
- (SD) "STOP" / "DO NOT ENTER" SIGNS (R1–1 AND R5–1, PER MUTCD)
- (SH) ACCESSIBLE PARKING SIGN
- (SN) "NO PARKING ANYTIME" SIGN
- (SS) STOP SIGN (R1–1C, PER MUTCD)
- (ST) PAINTED STRIPING
- (TE) TRASH ENCLOSURE

NYSDOT NOTES

1. **THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND SHALL REPLACE ALL SIGNAL INTERCONNECT CABLE, DETECTOR CABLE, CONDUIT AND ALL UNDERGROUND ACCESSORY EQUIPMENT DAMAGED DURING CONSTRUCTION.**
2. PRIOR TO STARTING ANY WORK AT THIS LOCATION, THE CONTRACTOR SHALL NOTIFY THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION THAT A TONE–OUT SIGNAL EQUIPMENT IS NEEDED. CALL INFORM AT (631) 904–3050
3. ALL TRAFFIC SIGNALS SHALL BE MAINTAINED IN A TRAFFIC RESPONSIVE OPERATION AND ALL INTERCONNECT, WHERE EXISTING, SHALL BE MAINTAINED. THE CONTRACTOR SHALL PAY A LIQUIDATED DAMAGES CHARGE OF $500.00 PER CALENDAR DAY IF ACTUATION AND COORDINATION IS NOT MAINTAINED.
4. THE CONTRACTOR IS RESPONSIBLE TO CLEAN EXISTING DRAINAGE BASINS ALONG AND IMMEDIATELY ADJACENT TO THE NYS ROUTE 25A SITE FRONTAGE AT THE COMPLETION OF CONSTRUCTION.
5. TACK COATING REQUIRED BETWEEN ALL LIFTS REGARDLESS WHEN PLACED.
6. CONTRACTOR TO REPAIR EXISTING SHOULDER, SIDEWALK AND CURBING AS ORDERED BY STATE ENGINEER.
7. THE SUBJECT SITE FALLS BETWEEN NYSDOT MILE MARKER 25 0703 1417 AND 25 0703 1416.
8. WORK WITHIN THE R.O.W. OF PORT JEFFERSON–RIVERHEAD ROAD SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS OF NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARDS.
9. ALL LANES MUST BE OPEN TO TRAFFIC BEFORE 10 AM AND AFTER 3 PM. NO LANE CLOSINGS ARE PERMITTED ON WEEKENDS OR HOLIDAYS. NIGHTTIME LANE CLOSINGS WILL NOT BE PERMITTED WITHOUT PRIOR APPROVAL FROM THE STATE PERMIT INSPECTOR.
10. ANY UTILITY WORK PROPOSED IN STATE HIGHWAY RIGHT–OF–WAY WILL REQUIRE A SEPARATE APPLICATION AND SUBMISSION OF UTILITY PLANS TO THE NYSDOT MAINTENANCE FACILITY AT CENTRAL ISLIP.
11. ALL DRIVEWAYS SHALL CONFIRM TO NYSDOT 608–03 STANDARD SHEETS.
12. CONTRACTOR MUST COORDINATE WITH NYSDOT CASE NO. 32842 FOR WORK AT NORTHEAST CORNER OF DOGWOOD DRIVE.
13. CONTRACTOR MUST INSTALL SURVEY MONUMENTS AT THE R.O.W. LINE FRONTING THE SUBJECT SITE.
14. NYSDOT ITEM #'S FOR PROPOSED WORK IN R.O.W.

ASPHALT/CONCRETE/COMPOSITE PAVEMENT CONSTRUCTION
- 633.11 CLEANING, EXISTING PAVEMENT AND/OR SHOULDERS
- 633.12 CLEANING, SEALING AND/OR FILLING CRACKS
- 633.13 CLEANING, SEALING AND/OR FILLING JOINTS
- 10520.05 SAW CUTTING PORTLAND CEMENT CONCRETE AND COMPOSITE PAVEMENT
- 10520.09 SAWCUTTING ASPHALT PAVEMENT
- 490.40 MISCELLANEOUS COLD MILLING OF PORTLAND CEMENT
- 490.30 MISCELLANEOUS COLD MILLING OF BITUMINOUS PAVEMENT
- 407.0101 TACK COAT TO BE PLACED BETWEEN ALL HMA LIFTS
- 402.098102 9.5 MM F1 SUPERPAVE HMA, 80 SERIES COMPACTION
- 402.198902 19 MM F9 SUPERPAVE HMA, 80 SERIES COMPACTION
- 402.378902 37.5 MM F9 SUPERPAVE HMA, 80 SERIES COMPACTION
- 203.02 UNCLASSIFIED EXCAVATION AND DISPOSAL
- 403.09513201 COLD JOINTS SEALED
- 17304.101199 SUBBASE COURSE – TYPE 1011–2

CURBS
- 520.60900002 SAWCUTTING CURB
- 608.01050109 CURB RAMP CONFIGURATION TYPE 1
- 608.01051009 CURB RAMP CONFIGURATION TYPE 10
- 609.0401 CAST–IN–PLACE CONCRETE CURB TYPE VF150

SIDEWALKS
- 608.01050010 CONCRETE SIDEWALKS – UNREINFORCED (GRADING INCLUDED)
- 608.21 EMBEDDED DETECTABLE WARNING
- 608.010609 CONSTRUCTION CONCRETE SIDEWALK CURB RAMPS

LANDSCAPE
- 610.1602 TURF ESTABLISHMENT – LAWNS
- 610.1403 TOPSOIL – LAWNS

MONUMENT
- 626.0111 FURNISH AND INSTALL NEW MONUMENT

811 NEW YORK CITY ONE CALL CENTER 1-800-272-4480 KNOW WHAT'S BELOW. CALL BEFORE YOU DIG!

SITE CLEARING SUMMARY

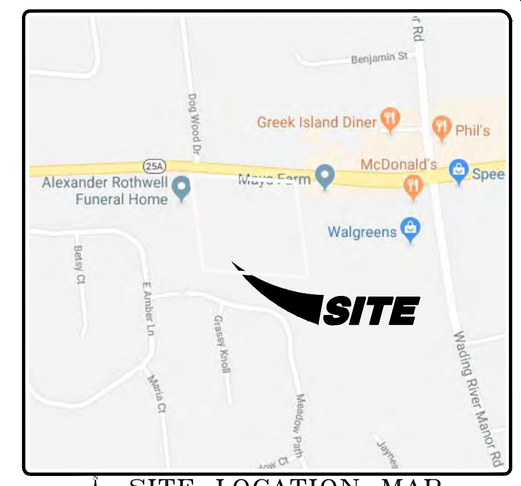
EXISTING	AREA	% OF SITE
SITE AREA	276,249 SF	
NATURAL AREA	276,249 SF	100%
CLEARED AREA	0	0%
PROPOSED	**AREA**	**% OF SITE**
SITE AREA	276,249 SF	
NATURAL AREA	97,345 SF	35.24 %
CLEARED AREA	178,904 SF	64.76 %

SITE AREA SUMMARY

COVERAGE TYPE	AREA SQ. FT.	AREA ACRES	% OF SITE
FERTILIZED LANDSCAPING	38066	0.874	13.78
UNFERTILIZED LANDSCAPING	4356	0.100	1.58
AREA TO REMAIN NATURAL	97345	2.235	35.24
BUILDINGS	37855	0.869	13.70
HARDSCAPE	98627	2.264	35.70
TOTAL SITE AREA	276249	6.342	100.0

SIGNAGE REQUIREMENTS

ITEM	CODE	PERMITTED	PROPOSED
MAX. NUMBER OF PRIMARY SIGNS	§ 301-249C.	1	1 (FREESTANDING SIGN)
MAX. FREESTANDING SIGN AREA	§ 301-249C.(2)	32 SF	32 SF
MIN. FREESTANDING SIGN SETBACK	§ 301-249C.(4)	15' (FRONT/REAR) 25' (SIDES)	25' (FRONT) 265.9' (SIDE)
MAX. FREESTANDING SIGN HEIGHT ABOVE GRADE	§ 301-249C.(3)	10'	10'



SITE LOCATION MAP
SCALE: 1" = 600'
Google Image
Copyright Map Data ©2018 Google

SITE PLAN NOTES

1. **THE GENERAL NOTES SHEET SHALL BE PART OF THIS ENTIRE DOCUMENT PACKAGE AND IS PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES SHEET IS REFERENCED HEREIN AND IS TO BE REFERRED TO BY THE CONTRACTOR. THE CONTRACTOR IS TO FAMILIARIZE HIMSELF AND ACKNOWLEDGES HIS FAMILIARITY WITH ALL THE NOTES ON THE GENERAL NOTES SHEET AS WELL AS ANY AND ALL DRAWING SHEET SPECIFIC NOTES BELOW.**
2. SIGNS SHALL BE PROVIDED IN ACCORDANCE WITH §301–249, THE SIGNAGE ORDINANCE. SIGNS TO BE FILED UNDER SEPARATE APPLICATIONS.
3. LIGHTING FIXTURES SHALL BE "FULL CUTOFF" TYPE AND SHALL BE SHIELDED SO AS NOT TO SHINE ONTO NEIGHBORING PROPERTIES AND CANNOT BE METAL HALIDE.
4. LOCATION OF EXISTING AND PROPOSED SERVICES SHOWN ARE APPROXIMATE AND MUST BE CONFIRMED INDEPENDENTLY BY THE CONTRACTOR WITH THE UTILITY COMPANIES PRIOR TO COMMENCEMENT OF CONSTRUCTION. IF DISCREPANCIES EXIST, NOTIFY THE ENGINEER IMMEDIATELY IN WRITING.
5. STORMWATER RUNOFF WITHIN PROPERTY TO BE COLLECTED ON–SITE WITH NO OVERLAND RUNOFF ONTO RIGHT–OF–WAY OR ADJACENT PROPERTIES.
6. UNSUITABLE MATERIAL, CONSTRUCTION DEBRIS, EXCESS SOILS, ETC. SHALL BE PROPERLY REMOVED AND DISPOSED OF OFF–SITE IN ACCORDANCE WITH ALL APPLICABLE CODES, ORDINANCES AND LAWS.
7. THE CONTRACTOR IS RESPONSIBLE TO TAKE EROSION CONTROL MEASURES NECESSARY IN ACCORDANCE WITH NYS GUIDELINES FOR URBAN EROSION & SEDIMENT CONTROL TO PREVENT SEDIMENT AND/OR LOOSE DEBRIS FROM WASHING ONTO ADJACENT PROPERTIES.
8. DIRECTIONAL SIGNAGE TO COMPLY WITH THE LATEST NYS MUTCD STANDARDS.
9. ALL SIDEWALKS, CURBS, AND PAVEMENT DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REPAIRED OR REPLACED, WHETHER SPECIFIED ON THIS PLAN OR NOT.
10. ALL TRASH GENERATED BY THE PROPOSED BANK WILL BE STORED INDOORS AND COLLECTED NIGHTLY FOR DISPOSAL DUE TO THE SENSITIVE NATURE OF THE MATERIAL. AN OUTDOOR TRASH ENCLOSURE WILL NOT BE PROVIDED.
11. RELOCATION AND/OR REMOVAL OF EXISTING UTILITY POLES, TRAFFIC SIGNS, ETC., SHALL BE COORDINATED BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR FIELD–VERIFYING THEIR PRESENCE.
12. EXCAVATION SHALL BE PROPERLY BACKFILLED WITH CLEAN MATERIALS. CONTRACTOR SHALL REFER TO GEOTECHNICAL ENGINEER REPORTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPACTION TESTING AND SHALL SUBMIT SUCH REPORTS AND RESULTS TO THE ENGINEER OF RECORD AND OWNER.
13. WORK WITHIN THE R.O.W. OF PORT JEFFERSON–RIVERHEAD ROAD SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS OF NEW YORK STATE DEPARTMENT OF TRANSPORTATION.
14. OWNER/ OPERATOR SHALL FILE THE NOI FOR NPDES PERMITS AT APPROPRIATE TIMEFRAMES BASED UPON THE DESIRED START OF CONSTRUCTION. LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY GOVERNING AUTHORITIES (INCLUDING STORMWATER POLLUTION PREVENTION PLAN, PER TOWN OF RIVERHEAD REQUIREMENTS). THE CONTRACTOR SHALL STRICTLY ADHERE TO THE APPROVED SWPPP PLAN DURING CONSTRUCTION OPERATIONS (IF PROVIDED).
15. NO RETAIL BUSINESS ESTABLISHMENT SHALL REMAIN OPEN BETWEEN THE HOURS OF 12:00 MIDNIGHT AND 5:00AM

ZONING TABLE

ZONE: BUSINESS CR (RURAL NEIGHBORHOOD BUSINESS)
USE: RETAIL, RESTAURANTS & BANKS PERMITTED PER §301-96 A. AND §301-96C.

BULK REQUIREMENTS

ITEM	CODE	PERMITTED	PROPOSED
MIN. LOT AREA	§ 301 ATT. 3	40,000 SF	276,249 SF (6.342 AC) (270,724 SF - 6,215 AC AFTER DOT DEDICATION)
MIN. LOT WIDTH AT FRONT STREET	§ 301 ATT. 3	200'	522.50'
MIN. FRONT YARD	§ 301 ATT. 3	30'	46.2'
MIN. SIDE YARD	§ 301 ATT. 3	25' EACH / 50' COMBINED	30' (MIN.) / 71.7' COMBINED
MIN. REAR YARD	§ 301 ATT. 3	25'	137.20'
MAX. BUILDING HEIGHT	§ 301 ATT. 3	35'	<35'
MAX. FAR	§ 301 ATT. 3	0.20	0.137 (37,855 SF)
MAX. BUILDING COVERAGE	§ 301 ATT. 3	15%	13.70% (37,855 SF)
MAX. IMPERVIOUS SURFACE	§ 301 ATT. 3	75%	49.40% (136,489 SF)
MIN. BUFFER ADJOINING RESIDENTIAL USE	§ 301-236A.(2)	10' W/ MIN. 8' HIGH EVERGREEN PLANTINGS	109.9'
MIN. FENCING/ SCREENING	§ 301-236C.(2)	6' HIGH CLF W/ STOCKADE ATTACHED ALONG RESIDENTIAL BUFFERS	COMPLIES
MIN. STREET TREES	§ 301-236B.	SPACED AT AVERAGE DIAMETER OF BRANCHING HABIT AT MATURITY	COMPLIES (SEE LANDSCAPE PLAN)
MIN. LANDSCAPE ISLANDS	§ 301-236D.	20 SF OF LANDSCAPE ISLAND PER STALL; MIN. 8' WIDE W/ 1 TREE PER 100 SF (3,560 SF)	3,936.53 SF
MIN. NUMBER OF BUILDINGS	§ 301-98A.(1)	4 BUILDINGS (FOR PARCELS >3 ACRES)	5 BUILDINGS
MAX. PARKING STALLS IN FRONT YARD	§ 301-98A.(2)(a)	35 STALLS (20% OF TOTAL PARKING)	19 STALLS
MAX. PARKING ROWS IN FRONT YARD	§ 301-98A.(2)(b)	1	1 ROW
MIN. FRONT YARD PARKING SETBACK	§ 301-98A.(2)(c)	30'	30'
CENTRAL SQUARE VISIBILITY	§ 301-98A.(4)(a)	VISIBLE FROM FRONT & ADJOINING STREETS	COMPLIES
CENTRAL SQUARE AREA DIMENSION	§ 301-98A.(4)(b)	MIN. 50' X 30'	50' X 44'
CENTRAL SQUARE LOCATION	§ 301-98A.(4)(c)	OUTSIDE OF REQUIRED YARDS	COMPLIES
CENTRAL SQUARE FEATURES	§ 301-98A.(4)(d)	PAVERS, SEATING, SHADE ELEMENTS, ETC.	COMPLIES
STRUCTURES LOCATED WITHIN REQUIRED YARDS	§ 301-98A.(5)	PROHIBITED	COMPLIES
BUILDING ORIENTATION	§ 301-98A.(6)	ALONG SIDES OF CENTRAL SQUARE W/ ENTRANCES FACING CENTRAL SQUARE	COMPLIES
SECONDARY BUILDING ENTRY	§ 301-98A.(7)	PERMITTED IF PRIMARY ENTRANCE FACES CENTRAL SQUARE	COMPLIES
BUILDING ORIENTATION CONT'D.	§ 301-98A.(8)	REAR OF BLDG. MAY NOT FACE R.O.W.	COMPLIES
CROSS ACCESS TO ADJ. PARCELS	§ 301-98A.(9)	IMPROVED CROSS ACCESS	COMPLIES
PEDESTRIAN WALKWAYS	§ 301-98A.(11)	PEDESTRIAN WALKWAYS TO EACH BUILDING AND R.O.W.	COMPLIES
BUILDING & WALKWAY PLACEMENT	§ 301-98A.(12)	BREAK BUILDINGS INTO UNITS <200' INTERSPERCED WITH WALKWAYS	COMPLIES
TRASH ENCLOSURE SCREENING	§ 301-98A.(17)(a)	WOOD FENCE OR LANDSCAPING	COMPLIES (SEE LANDSCAPE PLAN)
USE OF REQ'D YARDS	§ 301-98A.(17)(b)	OPEN SPACE OR LANDSCAPED	COMPLIES (SEE LANDSCAPE PLAN)
RESIDENTIAL BUFFER	§ 301-98A.(17)(c)	LANDSCAPE W/ CANOPY TREES & EVERGREEMS	COMPLIES (SEE LANDSCAPE PLAN)

PARKING REQUIREMENTS

ITEM	CODE	PERMITTED	PROPOSED
MIN. STALL SIZE	§ 301-231E.(2)	10' X 20'	10' X 20'
MIN. ACCESSIBLE STALL SIZE	§ 301-231M.(1)	10' X 20' W/ 8' ACCESS AISLE	10' X 20' W/ 8' ACCESS AISLE
MIN. AISLE WIDTH	§ 301-231E.(1)	24' (90° STALLS) 18' (60° STALLS)	24' (90° STALLS) 18' (60° STALLS)
MIN. NUMBER OF STALLS	§ 301 ATT. 1	174	174
MIN. CURB CUT WIDTH	§ 301-231E.(3)	ONE-WAY = 16' TWO WAY = 24'	ONE-WAY = 38.2' TWO WAY = 100.2'
MIN. CURB CUT SEPARATION	§ 301-98B.(5)	400'	352.9'
MIN. LANDSCAPE COVERAGE WITHIN PARKING FIELD	§ 301-98B.(7)	15% (13,114.63 SF)	16.81% (13,866.18 SF)
MIN. TREES WITHIN PARKING FIELD	§ 301-98B.(8)	1 TREE / 10 STALLS = 18 TREES	19 TREES

REQUIRED FOR BANK = 1 STALL/150 SF = 4,000 SF X 1/150 SF = 27 STALLS
REQUIRED FOR RETAIL = 1 STALL/250 SF = 27,000 SF X 1/250 = 108 STALLS
REQUIRED FOR RESTAURANT = 1 STALL/3 SEATS = 108 SEATS X 1/3 = 36 STALLS
TOTAL STALLS REQUIRED = 171 STALLS
TOTAL STALLS PROVIDED = 174 STALLS (INCLUDING 10 ACCESSIBLE STALLS)

PINE BARRENS COMPATIBLE GROWTH AREA

ITEM	CODE	PERMITTED	PROPOSED
MAX. CLEARING OF NATURAL VEGETATION	§ 301-197A.(8)(a)	65% (179,561.85 SF)	64.76% (178,904 SF)
MAX. FERTILIZER DEPENDENT VEGETATION	§ 301-197A.(9)	15%	13.78%

APPROVALS

REVISIONS

No.	Date	DESCRIPTION
1	12/3/09	REVISED AS PER SCDHS COMMENTS
2	11/18/15	REV. PER TOWN PLANNING DEPARTMENT COMMENTS
3	9/20/17	REV. PER DISTURBED AREA
4	3/16/18	REV. LAYOUT & NYSDOT COMMENTS
5	11/19/18	REV. PER NYSDOT COMMENTS
6	12/2/19	TOWN OF RIVERHEAD SUBMISSION
7	2/13/23	REV. SITE COVERAGE AREAS

BOHLER ENGINEERING
WARREN, NJ - CORPORATE OFFICE
WHITE PLAINS, NY | CENTER VALLEY, PA
ALBANY, NY | SOUTHBOROUGH, MA
BOWIE, MD | STERLING, VA
TOWSON, MD | WARRENTON, VA
CHALFONT, PA | FT. LAUDERDALE, FL

BOHLER ENGINEERING
CIVIL & CONSULTING ENGINEERS
2929 EXPRESSWAY DRIVE NORTH
HAUPPAUGE, NY 11749
Phone: 631.738.1200
Fax: 631.285.6464
WWW.BOHLERENGINEERING.COM

STATE OF NEW YORK JOSEPH A. DEAL 087122 LICENSED PROFESSIONAL ENGINEER

DATE:	09/18/08	DRAWN BY:	MD
SCALE:	AS SHOWN	CHECKED BY:	JPC
CAD I.D. No.:	N08029-SS-7A	PROJECT No.	N08029

NOT FOR CONSTRUCTION

NYSDOT CASE #:	N/A
HEALTH DEP. REF. #:	N/A

CLIENT/ PROJECT: VENEZIA SQUARE, LLC c/o THE NORTHWIND GROUP

PORT JEFFERSON-RIVERHEAD ROAD (NYS ROUTE 25A)
WADING RIVER
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NY 11792
TAX MAP #: 600-73-1-1.4, 1.16-1.19

TITLE: **SITE PLAN**

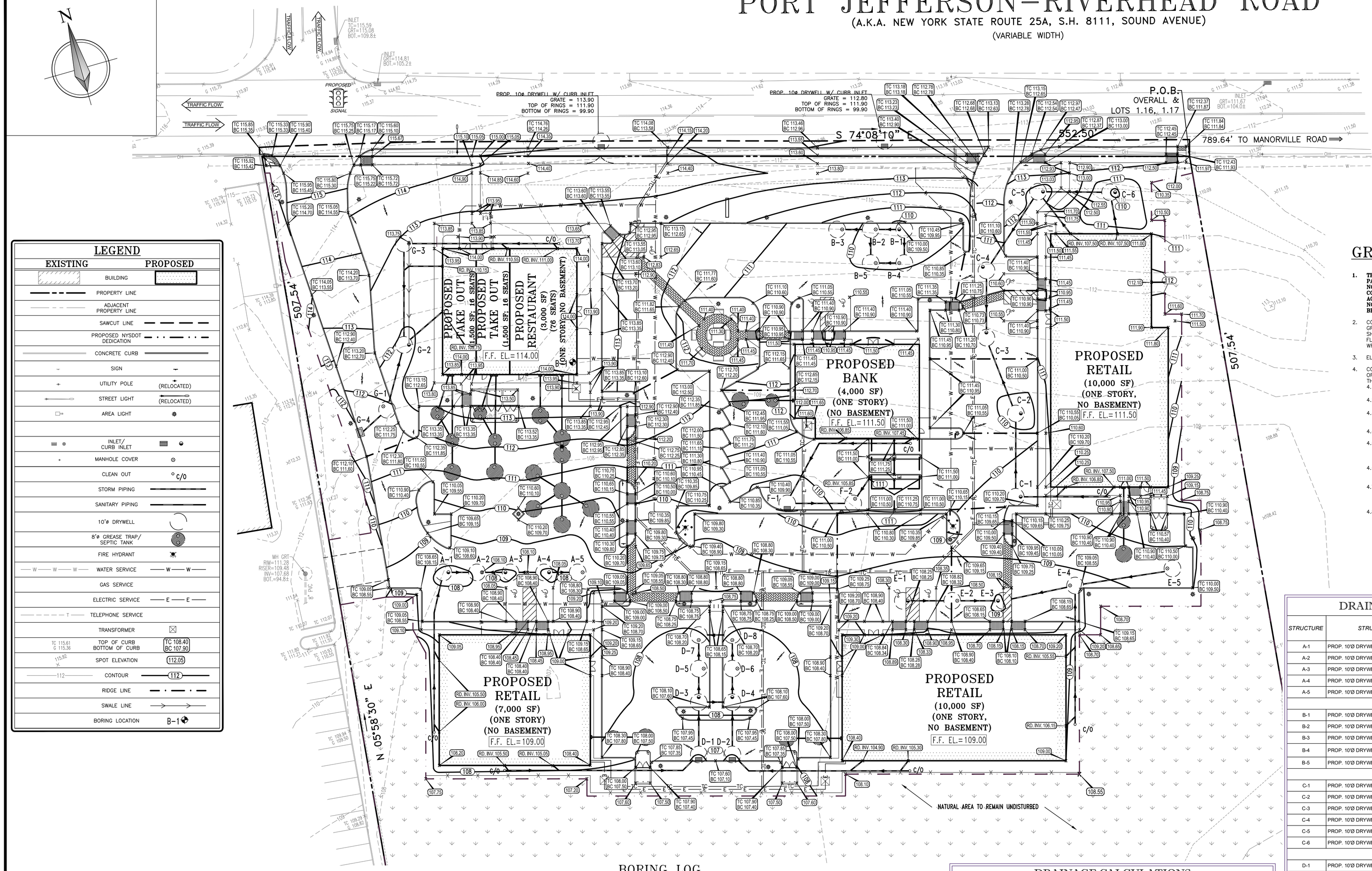
SHEET NO. C-3 OF 15 REV. 7

SUBMISSION SET

PORT JEFFERSON–RIVERHEAD ROAD

(A.K.A. NEW YORK STATE ROUTE 25A, S.H. 8111, SOUND AVENUE)

(VARIABLE WIDTH)



LEGEND

EXISTING	PROPOSED
BUILDING	
PROPERTY LINE	
ADJACENT PROPERTY LINE	
SAWCUT LINE	
PROPOSED NYSDOT DEDICATION	
CONCRETE CURB	
SIGN	
UTILITY POLE	(RELOCATED)
STREET LIGHT	(RELOCATED)
AREA LIGHT	
INLET/ CURB INLET	
MANHOLE COVER	
CLEAN OUT	c/o
STORM PIPING	
SANITARY PIPING	
10'ø DRYWELL	
8'ø GREASE TRAP/ SEPTIC TANK	
FIRE HYDRANT	
WATER SERVICE	W — W
GAS SERVICE	
ELECTRIC SERVICE	E — E
TELEPHONE SERVICE	
TRANSFORMER	
TOP OF CURB / BOTTOM OF CURB	TC 108.40 / BC 107.90
SPOT ELEVATION	112.05
CONTOUR	112
RIDGE LINE	
SWALE LINE	
BORING LOCATION	B-1

SCALE

30 15 7.5 0 30

1 inch = 30 ft.

DO NOT SCALE

BORING LOG

THIS PLAN REFERENCES A GEOTECHNICAL REPORT AS DESCRIBED ON COVER SHEET:

McDONALD GEOSCIENCE

Box 1002 • Southold, New York 11971 • (631) 765-5977

TEST HOLE DATA SHEET

Name:

Surveyor:

Location:

Tax Map Number:

Project Description:

Date:

Comments:

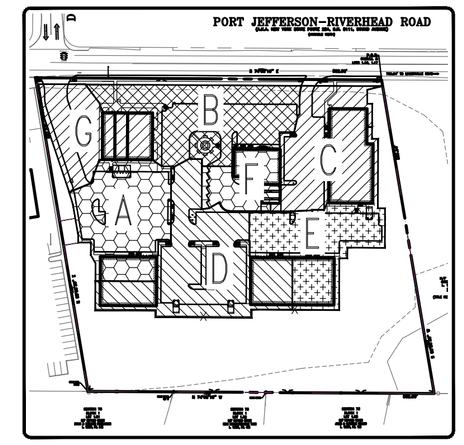
DRAINAGE DESIGN CRITERIA

1. RUNOFF COEFFICIENTS:
   PAVEMENT= 1.00
   ROOF= 1.00
   LANDSCAPED= 0.30
2. PROVIDE STORAGE FOR 2" RAINFALL
3. 10'ø DRYWELL CAPACITY = 68.42 CF/VF
   MINIMUM SEPARATION OF DRYWELLS = 10 LF
4. TRENCH DRAIN/CATCH BASIN/DRYWELL INTERCONNECTING PIPE TO BE 12"ø ADS N-12 CPP @ 1.5% MIN.
   ALL ROOF DRAIN SHALL BE 6"ø ADS N-12 CPP AT A MINIMUM SLOPE OF 1.5% UNLESS OTHERWISE NOTED.

DRAINAGE CALCULATIONS

SYSTEM NAME	AREA	TRIBUTARY AREA (SF)	STORAGE REQ. (CF)	STORAGE DEPTH REQ. (VF)	STORAGE DEPTH PROVIDED (VF)	STORAGE PROVIDED (CF)
A	PAVEMENT	18504	3866.4	56.5	60	4105.2
	ROOF	3500				
	LANDSCAPE	3982				
B	PAVEMENT	17352	3533.7	51.6	55	3763.1
	ROOF	0				
	LANDSCAPE	12833				
C	PAVEMENT	12089	3885.7	56.8	58	3968.4
	ROOF	10000				
	LANDSCAPE	4084				
D	PAVEMENT	23584	5666.9	82.8	88	6021.0
	ROOF	8500				
	LANDSCAPE	6392				
E	PAVEMENT	13586	3347.7	48.9	52	3557.8
	ROOF	5000				
	LANDSCAPE	5001				
F	PAVEMENT	4891	1663.9	24.3	25	1710.5
	ROOF	4855				
	LANDSCAPE	791				
G	PAVEMENT	5809	2299.5	33.6	34	2326.3
	ROOF	6000				
	LANDSCAPE	6626				
TOTAL *		173379	24263.8	355.1	372	25452.2

*DRAINAGE CALCULATIONS DO NOT INCLUDE LAND ALONG THE R.O.W. BEING DEDICATED TO NEW YORK STATE NOR DO THEY INCLUDE THE EXISTING LAND TO REMAIN UNDISTURBED PER PINE BARRENS COMPATIBLE GROWTH AREA REGULATIONS.



TRIBUTARY AREA MAP

N.T.S.

GRADING & DRAINAGE NOTES

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2. CONTRACTOR SHALL ADJUST ALL REMAINING STRUCTURES TO MEET PROPOSED GRADE FLUSH. WARPING OF PAVEMENT SURFACE TO MEET EXISTING STRUCTURES SHALL NOT BE PERMITTED. IF STRUCTURES CANNOT BE ADJUSTED TO MEET GRADE FLUSH, CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD IMMEDIATELY IN WRITING.
3. ELEVATIONS ARE BASED UPON NAVD 88 DATUM.
4. CONTRACTOR SHALL ENSURE THAT CONSTRUCTION OF PROPOSED ON AND OFF-SITE ACCESSIBLE AREAS CONFORMS WITH THE FOLLOWING CRITERIA AND THRESHOLDS:
   4.1. RAMP SLOPES SHALL NOT EXCEED A MAXIMUM RUNNING SLOPE OF 1:12 (8.33%) AND A MAXIMUM CROSS SLOPE OF 1:50 (2.00%).
   4.2. CURB RAMP FLARES (IF PROVIDED) SHALL NOT EXCEED A SLOPE OF 1:10 (10.00%).
   4.3. NO CRACKS / GAPS WIDER THAN 1/2" MAXIMUM AND NO LIPS HIGHER THAN 1/2" MAXIMUM ARE ALLOWED WITHIN THE PAVEMENT, SIDEWALKS AND/OR RAMP SURFACES ALONG THE PEDESTRIAN ACCESS ROUTE.
   4.4. EXCEPT FOR CURB RAMPS, HANDRAILS SHALL BE PROVIDED ALONG BOTH SIDES OF ANY PROPOSED RAMP EXCEEDING A RISE OF 6".
   4.5. LANDINGS SHALL BE PROVIDED FOR ALL PROPOSED RAMPS IN COMPLIANCE WITH THE LOCATIONS AND DIMENSIONS INDICATED IN THE RAMP DETAILS PROVIDED ON THE DETAIL SHEET. LANDINGS SHALL NOT EXCEED A MAXIMUM SLOPE OF 1:50 (2.00%) IN ANY DIRECTION.
   4.6. PEDESTRIAN WALKWAYS AND/OR CROSSWALKS SHALL NOT EXCEED A MAXIMUM RUNNING SLOPE OF 1:20 (5.00%) AND A MAXIMUM CROSS SLOPE OF 1:50 (2.00%).
   4.7. WHERE A PEDESTRIAN WALKWAY OR RAMP CHANGES DIRECTION OR INTERSECTS ANOTHER WALKWAY OR RAMP, A LANDING MEASURING A MINIMUM OF 5' X 5' SHALL BE PROVIDED. SLOPES WITHIN THIS LANDING SHALL NOT EXCEED 1:50 (2.00%) IN ANY DIRECTION.
   4.8. ADA PARKING STALLS AND ADA STRIPED ACCESS AISLES, SHALL NOT EXCEED A MAXIMUM SLOPE OF 1:50 (2.00%) IN ANY DIRECTION ACROSS THE ENTIRE ADA PARKING AREA.

DRAINAGE STRUCTURE SCHEDULE

STRUCTURE	STRUCTURE TYPE	RIM	TOP OF RINGS	BOT. OF RINGS	INV. IN	INV. OUT	EFF. DEPTH
A-1	PROP. 10'Ø DRYWELL W/ FRAME & GRATE	107.80	106.50	94.50	104.55	104.55	12
A-2	PROP. 10'Ø DRYWELL W/ MANHOLE COVER	108.10	106.50	94.50	104.40	104.55	12
A-3	PROP. 10'Ø DRYWELL W/ FRAME & GRATE	107.90	106.50	94.50	104.40	104.55	12
A-4	PROP. 10'Ø DRYWELL W/ FRAME & GRATE	107.90	106.50	94.50	-	104.55	12
A-5	PROP. 10'Ø DRYWELL W/ MANHOLE COVER	108.50	106.50	94.50	104.40	-	12
						TOTAL A:	60
B-1	PROP. 10'Ø DRYWELL W/ FRAME & GRATE	109.45	107.75	95.75	-	106.75	11
B-2	PROP. 10'Ø DRYWELL W/ MANHOLE COVER	109.75	107.75	95.75	106.60	106.75	11
B-3	PROP. 10'Ø DRYWELL W/ MANHOLE COVER	110.20	107.75	95.75	105.80	-	11
B-4	PROP. 10'Ø DRYWELL W/ FRAME & GRATE	109.90	107.75	95.75	106.60	106.75	11
B-5	PROP. 10'Ø DRYWELL W/ FRAME & GRATE	109.90	107.75	95.75	106.60	-	11
						TOTAL B:	55
C-1	PROP. 10'Ø DRYWELL W/ FRAME & GRATE	109.50	107.80	97.80	106.30	106.30	10
C-2	PROP. 10'Ø DRYWELL W/ FRAME & GRATE	109.70	107.80	97.80	105.70	106.30	10
C-3	PROP. 10'Ø DRYWELL W/ FRAME & GRATE	110.05	108.00	99.00	105.80	-	9
C-4	PROP. 10'Ø DRYWELL W/ FRAME & GRATE	110.20	108.00	99.00	106.00	106.50	9
C-5	PROP. 10'Ø DRYWELL W/ FRAME & GRATE	111.30	109.20	99.20	106.10	107.70	10
C-6	PROP. 10'Ø DRYWELL W/ FRAME & GRATE	109.90	108.20	98.20	106.70	106.70	10
						TOTAL C:	58
D-1	PROP. 10'Ø DRYWELL W/ CURB INLET	106.95	105.25	94.25	103.75	103.75	11
D-2	PROP. 10'Ø DRYWELL W/ CURB INLET	106.95	105.25	94.25	103.75	103.75	11
D-3	PROP. 10'Ø DRYWELL W/ FRAME & GRATE	107.40	105.25	94.25	103.40	103.40	11
D-4	PROP. 10'Ø DRYWELL W/ FRAME & GRATE	107.40	105.25	94.25	103.40	103.40	11
D-5	PROP. 10'Ø DRYWELL W/ MANHOLE COVER	107.65	105.25	94.25	103.25	103.25	11
D-6	PROP. 10'Ø DRYWELL W/ MANHOLE COVER	107.65	105.25	94.25	103.25	103.25	11
D-7	PROP. 10'Ø DRYWELL W/ MANHOLE COVER	107.95	105.25	94.25	103.10	-	11
D-8	PROP. 10'Ø DRYWELL W/ MANHOLE COVER	107.95	105.25	94.25	103.10	-	11
						TOTAL D:	88
E-1	PROP. 10'Ø DRYWELL W/ FRAME & GRATE	108.10	106.15	96.15	-	104.65	10
E-2	PROP. 10'Ø DRYWELL W/ MANHOLE COVER	108.40	106.15	96.15	104.35	104.65	10
E-3	PROP. 10'Ø DRYWELL W/ MANHOLE COVER	107.90	106.15	95.15	104.35	104.35	11
E-4	PROP. 10'Ø DRYWELL W/ MANHOLE COVER	108.55	106.75	95.75	104.95	105.25	11
E-5	PROP. 10'Ø DRYWELL W/ MANHOLE COVER	109.70	107.20	97.20	104.40	105.70	10
						TOTAL E:	52
F-1	PROP. 10'Ø DRYWELL W/ CURB INLET	109.40	107.60	94.60	106.10	106.10	13
F-2	PROP. 10'Ø DRYWELL W/ MANHOLE COVER	110.50	107.60	94.60	105.65	-	12
						TOTAL F:	25
G-1	PROP. 10'Ø DRYWELL W/ MANHOLE COVER	112.80	111.00	100.00	109.40	109.40	11
G-2	PROP. 10'Ø DRYWELL W/ FRAME & GRATE	112.80	111.00	100.00	108.95	108.95	11
G-3	PROP. 10'Ø DRYWELL W/ MANHOLE COVER	113.75	112.00	99.00	108.20	108.20	12
G-4	PROP. CATCH BASIN W/ CURB INLET	111.40	-	-	-	109.60	-
						TOTAL G:	34

APPROVALS

BOHLER ENGINEERING

WARREN, NJ - CORPORATE OFFICE
WHITE PLAINS, NY
ALBANY, NY
BOWIE, MD
TOWSON, MD
CHALFONT, PA
CENTER VALLEY, PA
SOUTHBOROUGH, MA
STERLING, VA
WARRENTON, VA
FT. LAUDERDALE, FL

REVISIONS

No	Date	DESCRIPTION
1	12/3/09	REVISED AS PER SCDHS COMMENTS
2	11/18/15	REV. PER TOWN PLANNING DEPARTMENT COMMENTS
3	9/20/17	REV. PER DISTURBED AREA
4	3/16/18	REV. LAYOUT & NYSDOT COMMENTS
5	11/19/18	REV. PER NYSDOT COMMENTS
6	12/2/19	TOWN OF RIVERHEAD SUBMISSION
7	2/13/23	REV. SITE COVERAGE AREAS

BOHLER ENGINEERING

CIVIL & CONSULTING ENGINEERS

2929 EXPRESSWAY DRIVE NORTH
HAUPPAUGE, NY 11749

Phone: 631.738.1200
Fax: 631.285.6464

WWW.BOHLERENGINEERING.COM

STATE OF NEW YORK — JOSEPH A. DEAL — 087122 — LICENSED PROFESSIONAL ENGINEER — PROFESSIONAL ENGINEER — NEW YORK LICENSE No. 087122

DATE:	09/18/08	DRAWN BY:	MD
SCALE:	AS SHOWN	CHECKED BY:	JPC
CAD I.D. No.:	N08029-SS-7A	PROJECT No.:	N08029

NOT FOR CONSTRUCTION

NYSDOT CASE #:	N/A
HEALTH DEP. REF. #:	N/A

CLIENT:
PROJECT:
VENEZIA SQUARE, LLC c/o THE NORTHWIND GROUP

PORT JEFFERSON-RIVERHEAD ROAD
(NYS ROUTE 25A)
WADING RIVER
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NY 11792
TAX MAP # : 600-73-1-1.4, 1.16-1.19

TITLE:

GRADING & DRAINAGE PLAN

SHEET NO. C-4 REV. 7

OF 15

SUBMISSION SET CONSTRUCTION SET

811 NEW YORK CITY ONE CALL CENTER 1(800)272-4480 NEW YORK STATE CALL THEN DIG SAFELY

PORT JEFFERSON–RIVERHEAD ROAD

(A.K.A. NEW YORK STATE ROUTE 25A, S.H. 8111, SOUND AVENUE)

(VARIABLE WIDTH)

NOTE FOR UTILITY SERVICES:
IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COORDINATE THE ROUTING OF THE PROP. UNDERGROUND ELECTRIC, GAS, TELEPHONE AND WATER SERVICES FOR THE PROP. BUILDING WITH THE GOVERNING UTILITY COMPANIES. CONTRACTOR SHALL ALSO COORDINATE AVAILABILITY OF SERVICES WITHIN THE RIGHT-OF-WAY WITH THE UTILITY COMPANIES.

CONTRACTOR MUST COORDINATE TAPS FOR 8" WATER MAIN LOOP WITH SCWA PRIOR TO CONSTRUCTION

PROP. ELECTRIC SERVICE LAYOUT IS PRELIMINARY AND SUBJECT TO CHANGE BASED UPON THE USE CHARACTERISTICS OF THE PROP. BUILDINGS. THIS LAYOUT IS NOT TO BE CONSTRUCTED AS FINAL.

CONTRACTOR TO COORDINATE POLE RELOCATION PRIOR TO CONSTRUCTION

P.O.B.-
OVERALL &
LOTS 1.16, 1.17

S 74°08'10" E 552.50'

789.64' TO MANORVILLE ROAD ⟹

LEGEND

EXISTING	PROPOSED
BUILDING	
PROPERTY LINE	
ADJACENT PROPERTY LINE	
SAWCUT LINE	
PROPOSED NYSDOT DEDICATION	
CONCRETE CURB	
SIGN	
UTILITY POLE	(RELOCATED)
STREET LIGHT	(RELOCATED)
AREA LIGHT	
INLET/ CURB INLET	
MANHOLE COVER	
CLEAN OUT	c/o
FIRE HYDRANT	
STORM PIPING	
SANITARY PIPING	
10'ø DRYWELL	
8'ø GREASE TRAP/ SEPTIC TANK	
10'ø LEACHING POOL	
WATER SERVICE	W — W
GAS SERVICE	
ELECTRIC SERVICE	E — E
TELEPHONE SERVICE/ TELEPHONE & CABLE SERVICE	T — TC
TRANSFORMER	
CONTOUR	112
RIDGE LINE	
SWALE LINE	
BORING LOCATION	B-4

PROPOSED TAKE OUT (1,500 SF; 16 SEATS)
PROPOSED TAKE OUT (1,500 SF; 16 SEATS)
PROPOSED RESTAURANT (3,000 SF) (76 SEATS) (ONE STORY, NO BASEMENT)
F.F. EL.=114.00

PROPOSED BANK (4,000 SF) (ONE STORY) (NO BASEMENT)
F.F. EL.=111.50

PROPOSED RETAIL (10,000 SF) (ONE STORY, NO BASEMENT)
F.F. EL.=111.50

PROPOSED RETAIL (7,000 SF) (ONE STORY) (NO BASEMENT)
F.F. EL.=109.00

PROPOSED RETAIL (10,000 SF) (ONE STORY, NO BASEMENT)
F.F. EL.=109.00

PROP. 50% EXPANSION POOL (TYP.)
PROP. ELECTRIC SERVICE
PROP. 8"ø ON-SITE WATER MAIN
PROP. CABLE & TELEPHONE SERVICE
PROP. FIRE HYDRANT (TYP.)
PROP. 8"ø ON-SITE WATER nMAIN

N 05°58'30" E 507.54'
S 05°58'30" W 507.54'
N 74°08'10" W 552.50'

ZONE: BUSINESS
USE: VACANT

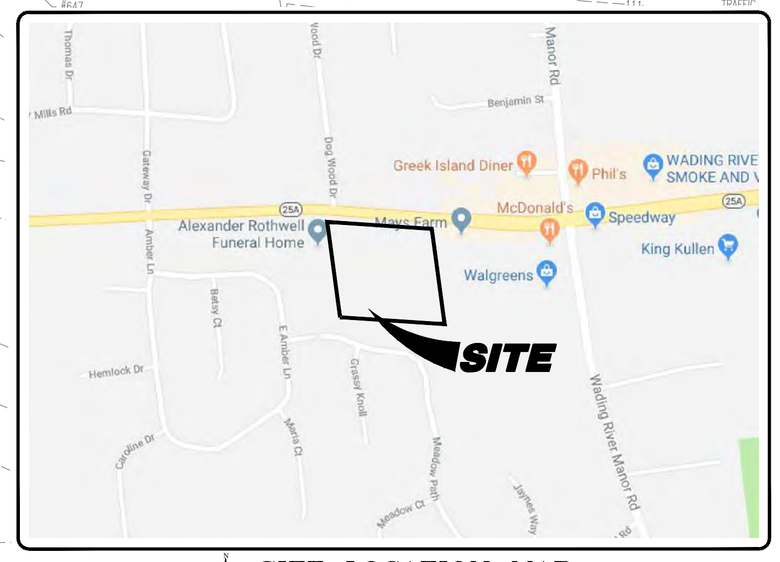
ZONE: BUSINESS CR
USE: FUNERAL HOME

ZONE: RESIDENCE B-80
USE: RESIDENCE

SECTION 73
BLOCK 1
LOT 1.51
N/F REPUTED OWNER
DYLAN & KATHLEEN FRIEDLANDER
L. 12304, PG. 942

SECTION 73
BLOCK 1
LOT 1.52
N/F REPUTED OWNER
SEAN NEKNEZ/MICHELLE TAHIR
L. 12284, PG. 465

SECTION 73
BLOCK 1
LOT 1.53
N/F REPUTED OWNER
JAMES & CHRISTINE BELLINO
L. 12304, PG. 159



SITE LOCATION MAP

SCALE: 1" = 600'

Google Image
Copyright Map Data ©2018 Google

UTILITY & SANITARY PLAN NOTES:

1. **THE GENERAL NOTES SHEET SHALL BE PART OF THIS ENTIRE DOCUMENT PACKAGE AND IS PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES SHEET IS REFERENCED HEREIN AND IS TO BE REFERRED TO BY THE CONTRACTOR. THE CONTRACTOR IS TO FAMILIARIZE HIMSELF AND ACKNOWLEDGES HIS FAMILIARITY WITH ALL THE NOTES ON THE GENERAL NOTES SHEET AS WELL AS ANY AND ALL DRAWING SHEET SPECIFIC NOTES BELOW.**
2. THE CROSSING OF WATER AND SEWER LINES SHALL BE AS FOLLOWS:
   A. SEWER LINES SHALL BE LAID BELOW THE WATER LINE WITH A SEPARATION OF AT LEAST EIGHTEEN INCHES BETWEEN THE BOTTOM OF THE WATER LINE AND THE TOP OF THE SEWER LINE; AND
   B. SEWER LINE JOINTS SHALL BE AT LEAST 10 FEET FROM THE POINT OF CROSSING;
3. WHEN LOCAL CONDITIONS PREVENT PLACEMENT OF THE WATER LINE ABOVE THE SEWER LINE, THE FOLLOWING ADDITIONAL CONDITIONS APPLY:
   A. A VERTICAL SEPARATION OF AT LEAST EIGHTEEN INCHES SHALL BE PROVIDED BETWEEN THE BOTTOM OF THE SEWER LINE AND THE TOP OF THE WATER LINE; AND
   B. WATER LINE JOINTS SHALL BE AT LEAST 10 FEET FROM THE POINT OF CROSSING; AND
   C. SEWER LINES SHALL BE CONSTRUCTED OF MATERIALS AND JOINTS THAT ARE IN ACCORDANCE WITH WATER MAIN STANDARDS OF CONSTRUCTION AND SHALL BE PRESSURE-TESTED TO ASSURE WATERTIGHTNESS PRIOR TO BACKFILLING.
4. ON-SITE WATER MAIN & SERVICES MUST BE MINIMUM 4.5 FEET BELOW GRADE. WATER SERVICE PIPING TO BE TYPE "K" COPPER TUBING. WATER MAIN PIPING TO BE DUCTILE IRON. REFER TO SEPARATE PLANS FOR WATER SERVICE AND FOR BACKFLOW PREVENTION DEVICE INSTALLATION.
5. CONTRACTOR TO FURNISH AND INSTALL ALL UNDERGROUND CONDUITS AND/OR PIPING FOR ALL NEW UTILITY SERVICES (GAS, WATER, ELECTRIC, TELEPHONE/CATV) IN ACCORDANCE WITH UTILITY COMPANY STANDARDS.
6. ALL PROPOSED AND EXISTING UTILITY LOCATIONS, POINT OF ENTRY, AND SIZES ARE SCHEMATIC ONLY AND ARE BASED UPON INFORMATION AVAILABLE AT THE TIME OF PLAN PREPARATION. THE ACTUAL LENGTHS, SIZES, AND LOCATIONS OF CABLES, PIPES, CONDUITS, VALVES, METERS, ETC. ARE SUBJECT TO CHANGE BASED ON UTILITY COMPANY REQUIREMENTS. CONTRACTOR MUST VERIFY THE REQUIREMENTS AND SCOPE OF RESPONSIBILITY OF EACH UTILITY COMPANY AND COORDINATE THE INSTALLATION OF ALL UTILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
7. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXACT LOCATION AND DEPTH OF UTILITIES, PIPING, DRYWELLS, ETC. PRIOR TO THE START OF WORK. THE CONTRACTOR MUST CONTACT THE APPROPRIATE LOCAL "ONE CALL" SYSTEM (800-272-4480) TO ENSURE THAT ALL UTILITIES ARE PROPERLY AND COMPLETELY MARKED OUT IN THE FIELD PRIOR TO ANY WORK AT THE SITE. ANY DISCREPANCIES BETWEEN THE FIELD LOCATIONS AND THE PLANS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY. THE CONTRACTOR IS ADVISED THAT UTILITY INFORMATION SHOWN ON THE PLAN IS A COMPILATION OF FIELD LOCATIONS AND RECORD DRAWINGS AND MUST BE CONFIRMED ACCORDINGLY. THE CONTRACTOR IS ALSO ADVISED THAT ALL SUCH FACILITIES DISTURBED DURING CONSTRUCTION MUST BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
8. THERE SHALL BE A CLEANOUT AT THE FACE OF THE BUILDING WITH A MINIMUM TWO FOOT LENGTH OF CAST-IRON SEWER LINE EXTENDING THROUGH THE BUILDING FOUNDATION PER SCDHS STANDARDS.
9. CONTRACTOR SHALL REFER TO BUILDING PLANS AND SPECIFICATIONS FOR ACTUAL LOCATION OF ALL UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC WATER SERVICE, ELECTRICAL, TELEPHONE, AND GAS SERVICE. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES WITH INDIVIDUAL UTILITY COMPANIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND ASSURE PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH TOWN/RIVERHEAD SEWER DISTRICT UTILITY REQUIREMENTS AS TO LOCATION AND SCHEDULING FOR TIE-INS/CONNECTIONS PRIOR TO CONNECTING TO EXISTING UTILITIES.
10. UTILITY CONNECTIONS TO BE MADE OFF SITE MAY REQUIRE A ROAD OPENING PERMIT FROM NYSDOT. THIS SHALL BE OBTAINED BY THE CONTRACTOR.
11. THERE ARE NO KNOWN NEIGHBORING WELLS WITHIN 150'.
12. PROPOSED SANITARY LINES TO BE MINIMUM PVC SDR-35.
13. CONTRACTOR MUST REFER TO THE SCDHS TABLE OF MINIMUM SEPARATION DISTANCES ON SHEET C-9.

SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES APPROVAL

APPROVALS

SCALE
30 15 7.5 0 30
1 inch = 30 ft.
DO NOT SCALE

NEW YORK CITY ONE CALL CENTER
(800) 272-4480
MEMBER OF ONE-CALL-THEN DIG SYSTEM

BOHLER ENGINEERING

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TOWSON, MD
CHALFONT, PA
CENTER VALLEY, PA
SOUTHBOROUGH, MA
STERLING, VA
WARRENTON, VA
FT. LAUDERDALE, FL

REVISIONS

No	Date	DESCRIPTION
1	12/3/09	REVISED AS PER SCDHS COMMENTS
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3	9/20/17	REV. PER DISTURBED AREA
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5	11/19/18	REV. PER NYSDOT COMMENTS
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BOHLER ENGINEERING
CIVIL & CONSULTING ENGINEERS
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HAUPPAUGE, NY 11749
Phone: 631.738.1200
Fax: 631.285.6464
WWW.BOHLERENGINEERING.COM

STATE OF NEW YORK — JOSEPH A. DEAL — 087122 — PROFESSIONAL ENGINEER — LICENSED PROFESSIONAL ENGINEER

DATE:	09/18/08	DRAWN BY:	MD
SCALE:	AS SHOWN	CHECKED BY:	JPC
CAD I.D. No.:	N08029-SS-7A	PROJECT No.	N08029

NOT FOR CONSTRUCTION

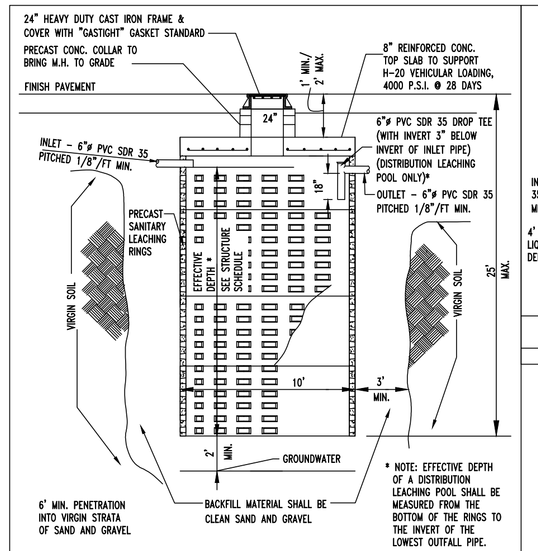
NYSDOT CASE #:	N/A
HEALTH DEP. REF. #:	N/A

CLIENT/ PROJECT:
VENEZIA SQUARE, LLC c/o THE NORTHWIND GROUP
PORT JEFFERSON-RIVERHEAD ROAD (NYS ROUTE 25A)
WADING RIVER
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NY 11792
TAX MAP #: 600-73-1-1.4, 1.16-1.19

TITLE:
UTILITY & SANITARY PLAN

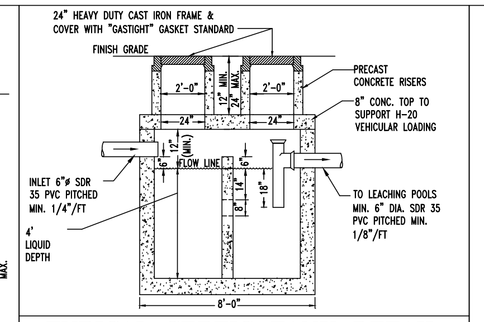
SHEET NO. C-8 OF 15 REV. 7

SUBMISSION SET — CONSTRUCTION SET



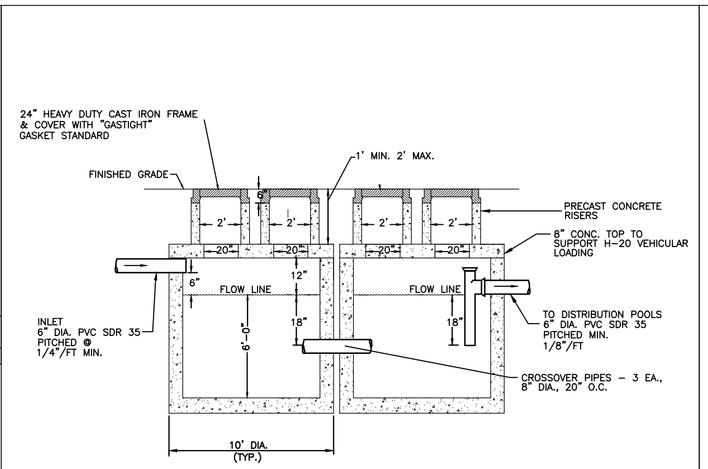
SANITARY LEACHING POOL DETAIL

N.T.S.



TYPICAL SEPTIC TANK DETAIL

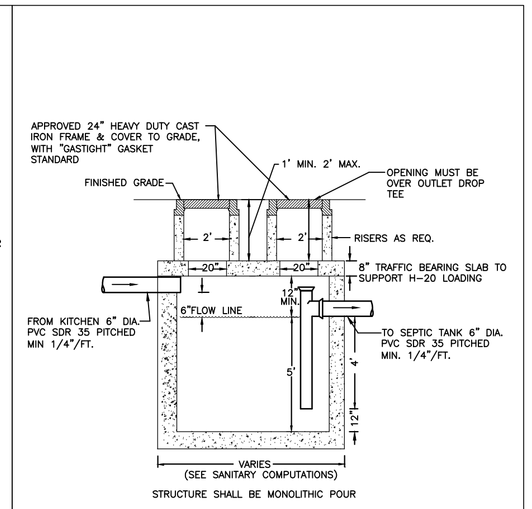
N.T.S.



(6,000 GAL. CAPACITY)

DOUBLE CHAMBER SEPTIC TANK DETAIL

N.T.S.



EXTERIOR GREASE TRAP

N.T.S.

SANITARY DENSITY COMPUTATIONS

ALLOWABLE SANITARY DENSITY FLOW

SITE AREA = 6.342 ACRES (276,249 SF)
GROUNDWATER MANAGEMENT ZONE III = .300 GPD/AC
AREA OF SITE IN GROUNDWATER MANAGEMENT ZONE III = 6.342 ACRES
(300 GPD/AC X 6.342 AC) = 1,902.6 GPD ALLOWABLE

PROPOSED SANITARY FLOW

DENSITY COMPUTATIONS PER TENANT LIST (PROPOSED CONDITIONS)					
Tenant	*Use*	*Building Area*	*Restaurant seats*	*Density Flow Rate*	*Density Flow*
TENANT 1	WET RETAIL W/FOOD	1,500 SF	16 SEATS	0.03 GPD/SF	45.00 GPD
TENANT 2	WET RETAIL W/FOOD	1,500 SF	16 SEATS	0.03 GPD/SF	45.00 GPD
TENANT 3	RESTAURANT	3,000 SF	76 SEATS	10 GPD/SEAT	760.00 GPD
TENANT 4	BANK	4,000 SF	--------	0.06 GPD/SF	240.00 GPD
TENANT 5	DRY RETAIL	10,000 SF	--------	0.03 GPD/SF	300.00 GPD
TENANT 6	DRY RETAIL	10,000 SF	--------	0.03 GPD/SF	300.00 GPD
TENANT 7	DRY RETAIL	7,000 SF	--------	0.03 GPD/SF	210.00 GPD
	Total:	37,000 SF		*Total Density Flow:*	1,900.00 GPD

ALLOWABLE DENSITY FLOW = 1,902.6 GPD
PROPOSED DENSITY FLOW = 1,900.0 GPD

SANITARY SYSTEM DESIGN #1 & 2

DESIGN FLOW

USE: WET RETAIL W/FOOD = 0.15 GPD/SF
BUILDING AREA = 1,500 SF
TOTAL DAILY FLOW = 1,500 SF x 0.15 GPD/SF = 225 GPD

SEPTIC TANK

REQUIRED CAPACITY = 2 DAYS FLOW =
225 GPD X 2 DAYS = 450 GAL
MINIMUM ALLOWABLE SEPTIC TANK PER SCDHS STANDARDS IS 1,200 GAL
USE A SINGLE SEPTIC TANK 8' DIA. X 4' LIQ. DEPTH
CAPACITY = 1,200 GAL

LEACHING POOLS

DESIGN FLOW = 225 GPD
LEACHING RATE = 1.5 GPD/SF
REQUIRED SIDEWALL AREA = 225 GPD/1.5 GPD/SF = 150 SF
MINIMUM ALLOWABLE LEACHING POOL PER SCDHS STANDARDS IS 300 SF (9.55 VF)
USE 1 LEACHING POOL @ 10'ø X 10 VF EFFECTIVE DEPTH FOR EACH SYSTEM
TOTAL EFFECTIVE DEPTH = 10 VF

GREASE TRAP

DESIGN FLOW = 1,500 SF X 0.12 GPD/SF = 180 GPD
MINIMUM ALLOWABLE GREASE TRAP PER SCDHS STANDARDS
IS 8'ø X 5' LIQUID DEPTH (1,500 GAL.)
USE A 8ø X 5' LIQUID DEPTH GREASE TRAP FOR SYSTEM A
USE A 8ø X 5' LIQUID DEPTH GREASE TRAP FOR SYSTEM B

SANITARY SYSTEM DESIGN #3

DESIGN FLOW

USE: RESTAURANT = 30 GPD/SEAT
NUMBER OF SEATS = 76 SEATS
TOTAL DAILY FLOW = 76 SEATS x 30 GPD/SEAT = 2,280 GPD

SEPTIC TANK

REQUIRED CAPACITY = 2 DAYS FLOW =
2,280 GPD X 2 DAYS = 4,560 GAL
USE A DOUBLE SEPTIC TANK 10' DIA. X 5' LIQ. DEPTH
CAPACITY = 5,000 GAL

LEACHING POOLS

DESIGN FLOW = 2,280 GPD
LEACHING RATE = 1.5 GPD/SF
REQUIRED SIDEWALL AREA = 2,280 GPD/1.5 GPD/SF = 1,520 SF
REQUIRED DEPTH = 1,520 SF/31.42 SF/VF = 48.38 VF
USE 5 LEACHING POOLS @ 10'ø X 10 VF EFFECTIVE DEPTH
TOTAL EFFECTIVE DEPTH = 50 VF

GREASE TRAP

DESIGN FLOW = 76 SEATS X 20 GPD/SF = 1,520 GPD
MINIMUM ALLOWABLE GREASE TRAP GREASE TRAP PER SCDHS
STANDARDS IS 10'ø X 5' LIQUID DEPTH (2,500 GAL)
USE A 10ø X 5' LIQUID DEPTH GREASE TRAP

SANITARY SYSTEM DESIGN #4

DESIGN FLOW

USE: BANK = 0.06 GPD/SF
BUILDING AREA = 4,000 SF
TOTAL DAILY FLOW = 4,000 SF x 0.06 GPD/SF = 240 GPD

SEPTIC TANK

REQUIRED CAPACITY = 2 DAYS FLOW =
240 GPD X 2 DAYS = 480 GAL
MINIMUM ALLOWABLE SEPTIC TANK PER SCDHS STANDARDS IS 1,200 GAL
USE A SINGLE SEPTIC TANK 8' DIA. X 4' LIQ. DEPTH
CAPACITY = 1,200 GAL

LEACHING POOLS

DESIGN FLOW = 240 GPD
LEACHING RATE = 1.5 GPD/SF
REQUIRED SIDEWALL AREA = 240 GPD/1.5 GPD/SF = 160 SF
MINIMUM ALLOWABLE LEACHING POOL PER SCDHS STANDARDS IS 300 SF (9.55 VF)
USE 1 LEACHING POOL @ 10'ø X 10 VF EFFECTIVE DEPTH
TOTAL EFFECTIVE DEPTH = 10 VF

SANITARY SYSTEM DESIGN #5 & 6

DESIGN FLOW

USE: DRY RETAIL = 0.03 GPD/SF
BUILDING AREA = 10,000 SF
TOTAL DAILY FLOW = 10,000 SF x 0.03 GPD/SF = 300 GPD

SEPTIC TANK

REQUIRED CAPACITY = 2 DAYS FLOW =
300 GPD X 2 DAYS = 600 GAL
MINIMUM ALLOWABLE SEPTIC TANK PER SCDHS STANDARDS IS 1,200 GAL
USE A SINGLE SEPTIC TANK 8' DIA. X 4' LIQ. DEPTH FOR EACH SYSTEM
CAPACITY = 1,200 GAL

LEACHING POOLS

DESIGN FLOW = 300 GPD
LEACHING RATE = 1.5 GPD/SF
REQUIRED SIDEWALL AREA = 300 GPD/1.5 GPD/SF = 200 SF
REQUIRED DEPTH = 200 SF/31.42 SF/VF = 6.37 VF
USE 1 LEACHING POOL @ 10'ø X 10 VF EFFECTIVE DEPTH FOR EACH SYSTEM
TOTAL EFFECTIVE DEPTH = 10 VF

SANITARY SYSTEM DESIGN #7

DESIGN FLOW

USE: DRY RETAIL = 0.03 GPD/SF
BUILDING AREA = 7,000 SF
TOTAL DAILY FLOW = 7,000 SF x 0.03 GPD/SF = 210 GPD

SEPTIC TANK

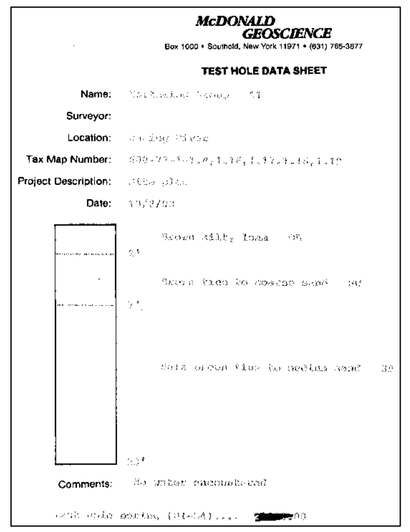
REQUIRED CAPACITY = 2 DAYS FLOW =
300 GPD X 2 DAYS = 420 GAL
MINIMUM ALLOWABLE SEPTIC TANK PER SCDHS STANDARDS IS 1,200 GAL
USE A SINGLE SEPTIC TANK 8' DIA. X 4' LIQ. DEPTH FOR EACH SYSTEM
CAPACITY = 1,200 GAL

LEACHING POOLS

DESIGN FLOW = 210 GPD
LEACHING RATE = 1.5 GPD/SF
REQUIRED SIDEWALL AREA = 210 GPD/1.5 GPD/SF = 140 SF
REQUIRED DEPTH = 140 SF/31.42 SF/VF = 4.46 VF
USE 1 LEACHING POOL @ 10'ø X 10 VF EFFECTIVE DEPTH
TOTAL EFFECTIVE DEPTH = 10 VF

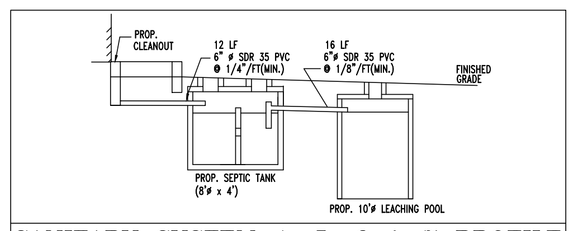
BORING LOG

THIS PLAN REFERENCES A GEOTECHNICAL REPORT AS DESCRIBED ON COVER SHEET:



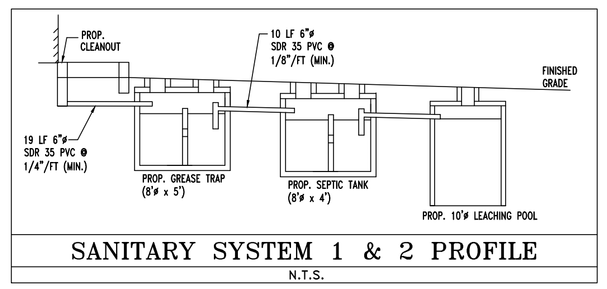
SANITARY STRUCTURE SCHEDULE

STRUCTURE	STRUCTURE TYPE	RIM	TOP OF RINGS	BOT. OF RINGS	INV. IN	INV. OUT	EFF. DEPTH
S1-1	KITCHEN OUTLET	114.00	-	-	-	111.00	-
S1-2	SANITARY OUTLET	114.00	-	-	-	111.00	-
S1-3	8'Ø GREASE TRAP	112.95 / 112.75	111.00	105.00	110.50	110.00	5
S1-4	8'Ø SEPTIC TANK	112.20/ 112.00	110.30	105.30	109.80	109.30	4
S1-5	10'Ø LEACHING POOL	111.25	109.50	98.50	108.50	-	10
					TOTAL S1 LEACHING POOL EFF. DEPTH:		10
S2-1	KITCHEN OUTLET	114.00	-	-	-	111.00	-
S2-2	SANITARY OUTLET	114.00	-	-	-	111.00	-
S2-3	8'Ø GREASE TRAP	113.25/ 113.05	111.00	105.00	110.50	110.00	5
S2-4	8'Ø SEPTIC TANK	112.35/ 112.15	110.30	105.30	109.80	109.30	4
S2-5	10'Ø LEACHING POOL	111.40	109.55	98.55	109.00	-	10
					TOTAL S2 LEACHING POOL EFF. DEPTH:		10
S3-1	KITCHEN OUTLET	114.00	-	-	-	111.00	-
S3-2	SANITARY OUTLET	114.00	-	-	-	111.00	-
S3-3	10'Ø GREASE TRAP	113.20/ 112.90	111.05	105.05	110.55	110.05	5
S3-4A	10'Ø SEPTIC TANK	112.30/ 111.90	109.70	103.70	109.20	107.20	5
S3-4B	10'Ø SEPTIC TANK	111.70/ 111.40	109.70	103.70	107.20	108.70	5
S3-5	10'Ø DISTRIBUTION POOL	110.25	108.95	97.95	108.20	107.95	10
S3-6	10'Ø LEACHING POOL	111.05	108.80	97.80	107.80	-	10
S3-7	10'Ø LEACHING POOL	110.10	107.55	96.55	106.55	-	10
S3-8	10'Ø LEACHING POOL	109.55	107.55	96.55	106.55	-	10
S3-9	10'Ø LEACHING POOL	109.80	107.55	96.55	106.55	-	10
					TOTAL S3 LEACHING POOL EFF. DEPTH:		50
S4-1	SANITARY OUTLET	112.25	-	-	-	107.50	-
S4-2	8'Ø SEPTIC TANK	111.95/ 111.95	109.75	102.75	107.25	106.75	4
S4-3	10'Ø LEACHING POOL	111.95	109.55	96.55	106.55	-	10
					TOTAL S4 LEACHING POOL EFF. DEPTH:		10
S5-1	SANITARY OUTLET	111.50	-	-	-	107.50	-
S5-2	8'Ø SEPTIC TANK	110.30/ 110.10	107.75	102.75	107.25	106.75	4
S5-3	10'Ø LEACHING POOL	109.65	107.55	96.55	106.55	-	10
					TOTAL S5 LEACHING POOL EFF. DEPTH:		10
S6-1	SANITARY OUTLET	109.65	-	-	-	105.00	-
S6-2	8'Ø SEPTIC TANK	107.95/ 107.90	106.25	100.25	104.75	104.25	4
S6-3	10'Ø LEACHING POOL	107.70	105.10	94.10	104.10	-	10
					TOTAL S6 LEACHING POOL EFF. DEPTH:		10
S7-1	SANITARY OUTLET	108.65	-	-	-	105.00	-
S7-2	8'Ø SEPTIC TANK	107.95/ 107.90	106.25	100.25	104.75	104.25	4
S7-3	10'Ø LEACHING POOL	107.75	105.10	94.10	104.10	-	10
					TOTAL S7 LEACHING POOL EFF. DEPTH:		10



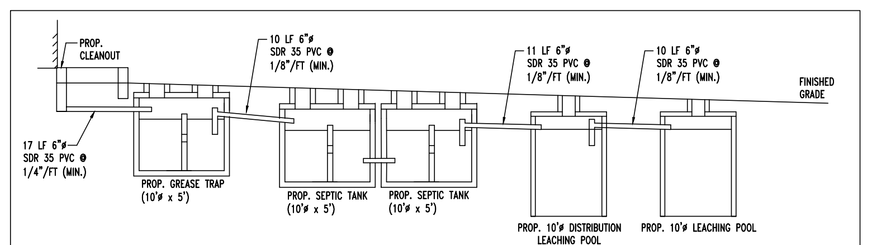
SANITARY SYSTEM 4, 5, 6 & 7 PROFILE

N.T.S.



SANITARY SYSTEM 1 & 2 PROFILE

N.T.S.



SANITARY SYSTEM 3 PROFILE

N.T.S.

TABLE 2 - MINIMUM HORIZONTAL SEPARATION DISTANCES

Table of Minimum Horizontal Separation Distances From:	Septic Tank, Pump Station, Grease Trap, or Manhole	Leaching Pool [3]	Sewer Line, Force Main
Building with Cellar	10 ft.	10 ft.	5 ft.
Building on Slab	5 ft.	10 ft.	5 ft.
Water Service Line/Laterals/Mains [5]	10 ft.	10 ft.	10 ft. [4]
Underground Utilities	5 ft.	5 ft.	5 ft.
Surface Water/Regulated Wetlands	75 ft.	100 ft.	50 ft.
Public Water Well [2]	200 ft.	200 ft.	50 ft.
Private Well [1]	100 ft.	150 ft.	50 ft.
Storm Drain/Stormwater Recharge Basin [5]	20 ft.	20 ft.	10 ft.
Catch Basins (non leaching)/Drainage Pipe [6]	5 ft.	10 ft.	5 ft.
Leaching Pool	8 ft.	8 ft.	10 ft. [7]
Septic Tank, Pump Station, Grease Trap, or Manhole [8]	5 ft.	8 ft.	5 ft.
Property Lines	5 ft.	10 ft.	5 ft.
Swimming Pool	20 ft.	20 ft.	5 ft.
Retaining Wall (water proof)	10 ft.	10 ft.	5 ft.
Fuel Storage Tanks (below ground)	20 ft.	20 ft.	10 ft.
Top of Embankment or Steep Slope (15 % slope or greater)	25 ft.	25 ft.	25 ft.
Bluffs	65 ft.	65 ft.	65 ft.

1 Increased distance between leaching pools and private wells may be required based upon the depth of the well(s) involved and the direction of groundwater flow. Refer to **Standards For The Design Of Individual Water Supply Systems**. Discharges from treatment works shall be located down gradient of the well or out of the groundwater flowpath towards the well. **Precise groundwater flow direction measurements may be required.**
2 Significant discharges (generally greater than 5,000 gpd or those in proximity to wells) are subject to a separate site review by the department.
3 Leaching pools for treatment works have different distance requirements. See **Appendix A** and **Appendix B** for distance requirements for leaching pools or recharge beds associated with modified subsurface sewage disposal systems and treatment works, respectively.
4 Water and sewer lines may be in the same trench if the water line is placed on an undisturbed bench or shelf so that the bottom of the water main is at least 18 inches higher than the top of the sewer and the sewer is not subject to settling, vibration, superimposed loads, or frost action.
5 A minimum of 10 foot separation is required between water service line/laterals/mains and the edge of all stormwater drainage leaching structures.
6 A minimum of 5 foot separation is required between water service line/laterals/mains and the edge of all stormwater drainage non-leaching structures and associated piping.
7 Sewer piping between clusters of leaching pools may be installed at lesser separation distances.
8 Multiple unit septic tanks and grease traps shall be considered one structure and therefore individual components may be installed at lesser separation distances.

SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES APPROVAL

APPROVALS

BOHLER ENGINEERING
WARREN, NJ - CORPORATE OFFICE
WHITE PLAINS, NY
ALBANY, NY
BOWIE, MD
TOWSON, MD
CHALFONT, PA
CENTER VALLEY, PA
SOUTHBOROUGH, MA
STERLING, VA
WARRENTON, VA
FT. LAUDERDALE, FL

REVISIONS

No.	Date	DESCRIPTION
1	12/3/09	REVISED AS PER SCDHS COMMENTS
2	11/18/15	REV. PER TOWN PLANNING DEPARTMENT COMMENTS
3	9/20/17	REV. PER DISTURBED AREA
4	3/16/18	REV. LAYOUT & NYSDOT COMMENTS
5	11/19/18	REV. PER NYSDOT COMMENTS
6	12/2/19	TOWN OF RIVERHEAD SUBMISSION
7	2/13/23	REV. SITE COVERAGE AREAS

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CIVIL & CONSULTING ENGINEERS
2929 EXPRESSWAY DRIVE NORTH
HAUPPAUGE, NY 11749
Phone: 631.738.1200
Fax: 631.285.6464
WWW.BOHLERENGINEERING.COM

STATE OF NEW YORK — JOSEPH A. DEAL — LICENSED PROFESSIONAL ENGINEER — No. 087122

DATE: 09/18/08	DRAWN BY: MD
SCALE: AS SHOWN	CHECKED BY: JPC
CAD I.D. No.: N08029-SS-7A	PROJECT No.: N08029

NOT FOR CONSTRUCTION

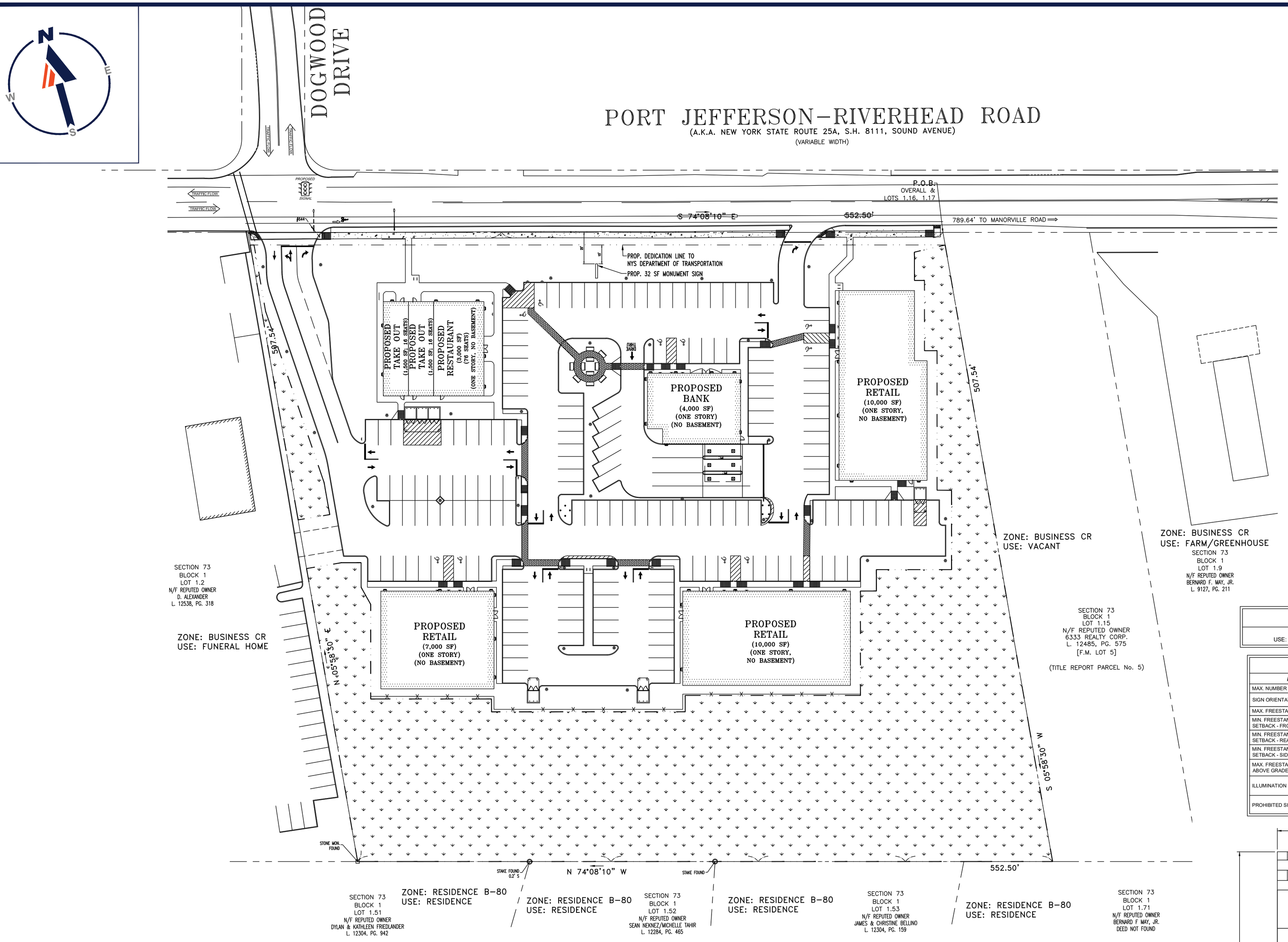
NYSDOT CASE #: N/A
HEALTH DEP. REF. #: N/A

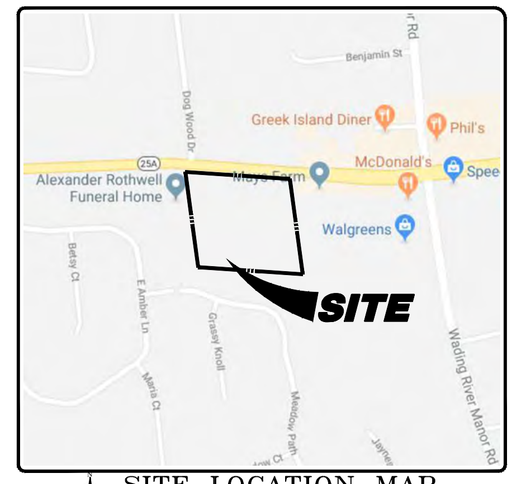
CLIENT:
PROJECT: VENEZIA SQUARE, LLC c/o THE NORTHWIND GROUP
PORT JEFFERSON-RIVERHEAD ROAD
(NYS ROUTE 25A)
WADING RIVER
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NY 11792
TAX MAP # : 600-73-1-1.4, 1.16-1.19

TITLE: **SANITARY DETAILS & COMPUTATIONS**

SHEET NO. C-9 OF 15 REV. 7

SUBMISSION SET - CONSTRUCTION SET





SITE LOCATION MAP
SCALE: 1" = 600'
Google Image
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LEGEND

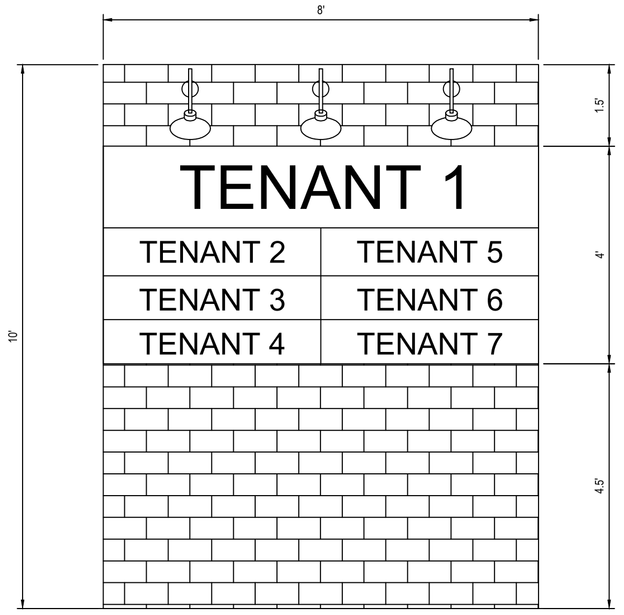
EXISTING		PROPOSED
	BUILDING	
	PROPERTY LINE	
	ADJACENT PROPERTY LINE	
	PROPOSED NYSDOT DEDICATION	
	CONCRETE CURB	
	SIGN	
	UTILITY POLE	
	STREET LIGHT	(RELOCATED)
	AREA LIGHT	
	FENCE	
	FIRE HYDRANT	
	TRANSFORMER	
	PAVEMENT MARKINGS	
	NATURAL AREA TO REMAIN UNDISTURBED	

ZONING TABLE

ZONE: BUSINESS CR (RURAL NEIGHBORHOOD BUSINESS)
USE: RETAIL, RESTAURANTS & BANKS PERMITTED PER §301-96 A. AND §301-96C.

SIGNAGE REQUIREMENTS

ITEM	CODE	PERMITTED	PROPOSED
MAX. NUMBER OF PRIMARY SIGNS	§ 301-249C.	1	1 (FREESTANDING SIGN)
SIGN ORIENTATION	§ 301-249	MUST FACE PUBLIC R.O.W.	COMPLIES
MAX. FREESTANDING SIGN AREA	§ 301-249C.(2)	32 SF	32 SF
MIN. FREESTANDING SIGN SETBACK - FRONT	§ 301-249C.(4)	15'	25' TO PL 15' TO PROP. DOT DEDICATION
MIN. FREESTANDING SIGN SETBACK - REAR	§ 301-249C.(4)	15'	COMPLIES
MIN. FREESTANDING SIGN SETBACK - SIDE	§ 301-249C.(4)	25'	COMPLIES
MAX. FREESTANDING SIGN HEIGHT ABOVE GRADE	§ 301-249C.(3)	10'	10'
ILLUMINATION	§ 301-254F.(1)	INTERNAL ILLUMINATION PROHIBITED	EXTERNAL ILLUMINATION
PROHIBITED SIGN FEATURES	§ 301-254F.(2)	TIME/ TEMPERATURE DISPLAY	COMPLIES



SIGN DETAIL
(NTS)

40 0 20 40
GRAPHIC SCALE 1 INCH = 40 FEET

R:\CLIENT_DWGS\NORTHWIND\2008\N08029\SIGNAGE\N08029-SGN-0A-----LAYOUT: SGN-1
GT

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REV	DATE	COMMENT	DRAWN BY / CHECKED BY

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DATE: 2/9/23
CAD I.D.: N08029-SGN-0A

PROJECT:

SIGNAGE PLANS

FOR

VENEZIA SQUARE, LLC
c/o THE NORTHWIND GROUP
PROPOSED DEVELOPMENT
PORT JEFFERSON-RIVERHEAD ROAD (NYS ROUTE 25A)
WADING RIVER
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NY 11792
SCTM # 600-73-1- 1.4 & 1.16 THRU 1.19

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BOHLER ENGINEERING NY, PLLC
275 BROADHOLLOW ROAD, SUITE 100
MELVILLE, NY 11747
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Fax: (631) 285-6464
www.BohlerEngineering.com

DALE E. KOCH
PROFESSIONAL ENGINEER
NEW YORK LICENSE No. 089418-1

SHEET TITLE:

SIGNAGE SITE PLAN

SHEET NUMBER:

SGN-1

ORG. DATE - 2/9/23