

**MEMORANDUM OF UNDERSTANDING
FOR THE CONSTRUCTION & OPERATION
OF A NEW WASTEWATER COLLECTION SYSTEM AND
SEWAGE TREATMENT PLANT**

Among

**THE TOWN OF TUXEDO AND
THE TOWN OF TUXEDO ON BEHALF OF
THE HAMLET OF TUXEDO SEWER DISTRICT AND
THE TUXEDO FARMS SEWER DISTRICT**

and

THE TUXEDO FARMS LOCAL DEVELOPMENT CORPORATION

and

TUXEDO RESERVE OWNER, L.L.C.,

and

TUXEDO SEWAGE-WORKS CORP.

This Memorandum of Understanding (the “Agreement”), dated April __, 2015, is made among the Town of Tuxedo, a body corporate and politic constituting a municipal corporation of the State of New York maintaining an office at 1 Temple Drive, Tuxedo, New York 10987, acting on behalf of itself and The Hamlet of Tuxedo Sewer District (the “Hamlet District”) (collectively “Town”); the Tuxedo Farms Local Development Corporation (the “LDC”) maintaining an office at 1 Temple Drive, Tuxedo, New York 10987; and Tuxedo Reserve Owner L.L.C., (“Developer”) and the Tuxedo Sewage-Works Corp., both maintaining an office for the conduct of business c/o The Related Companies, L.P., 60 Columbus Circle, New York, New York 10023. This Agreement sets forth the terms and conditions under which Developer and its successors and assigns, the Town, and the LDC will construct and operate a new wastewater treatment plant to serve the planned development on Developer’s Southern Tract, the Tuxedo Farms Development (the “Development”), and to serve the Tuxedo Hamlet as required under the Special Permit issued in November 2004 and later amended in November 2010, including appurtenances (the “WWTP”). This Agreement shall be binding upon the Developer, its successors and assigns, the Town, the LDC, the Hamlet District, and the Tuxedo Farms Sewer District and Tuxedo Sewage-Works Corp., both defined herein.

THE PROPERTY

That parcel of land owned by the Town and located at the end of Contractor's Road in Tuxedo, New York, which is partially occupied by the Town's existing sewage treatment plant, on property identified on the tax map as section 9, lot 16.11 (the "**Property**").

The Town shall lease the Property to the LDC for a term to be initiated upon the commencement of construction of the WWTP on the Property. The lease shall extend to the later of the payment of the bonds used to finance the construction of the WWTP or when the to-be-formed transportation corporation ceases to operate the WWTP. The consideration for such lease shall be \$1.00 per year. A copy of the lease is attached as Exhibit F.

The Town shall retain access to the site to continue to run the existing wastewater treatment plant until such time as the WWTP shall begin to accept sewage from the Hamlet District.

Prior to the commencement of the lease, the Town shall cooperate in good faith with the Developer to identify, engineer, and install a wetland mitigation and restoration project on the Property, or at a location(s) otherwise acceptable to the Army Corps of Engineers ("ACOE") as required, to mitigate for the fill material that has been placed on the Property within a previously delineated ACOE jurisdictional wetland area (the "**Wetland Restoration**"). A conceptual outline of the Wetland Restoration plan, which is subject to change as required by ACOE, is attached as Exhibit G. Should the Wetland Restoration require site plan or other approvals from the Town Planning Board, the Town Planning Board shall expeditiously process such approval applications in order to implement the Wetland Restoration. The Wetland Restoration shall be at no cost to the Town.

THE TRANSCO

Developer formed with the Town's consent the Tuxedo Sewage-Works Corp., pursuant to the provisions of the Transportation Corporations Law (the "**TransCo**"). The purpose of the TransCo will be to construct and operate the WWTP to serve the Tuxedo Farms Sewer District that will serve the Development (the "**Farms District**") and the Hamlet District. In addition, the TransCo will be authorized to operate and maintain the wastewater collection system for the Hamlet District (the "**Hamlet Collection System**") and Farms District.

Subject to the approval of the New York State Department of Environmental Conservation ("**NYSDEC**") (such approval had previously been under the jurisdiction of the Orange County Department of Health), the statutorily required environmental review,

if any, and the approval of all documents by the attorney for the Town, the Town shall consent to the formation of the TransCo.

The TransCo shall construct and operate the WWTP in compliance with the Transportation Corporations Law until such time that the Town exercises its option, as hereinafter set forth, to assume the operation of the WWTP.

The TransCo's assets shall include, but not be limited to, the permits, easements, and licenses to maintain and operate the WWTP, accumulated operating funds, contracts, accounts receivables and reserves for capital replacements and extraordinary repairs. The stock of the TransCo shall be held in escrow by the Town Clerk to be released to the Town in the event that the Town exercises its option to acquire the TransCo's assets.

In accordance with the terms contained herein, the Town shall contract with the TransCo to operate and maintain the Hamlet Collection System. All costs associated with providing this service shall be allocated to and paid by the Hamlet District through an assessment by the Town on the property in the Hamlet District.

THE WWTP

The LDC shall, through the issuance of bonds, finance the cost and expense for the construction of the WWTP. The repayment of the bonds will be administered by the bond trustee ("**Trustee**"). The cost for demolition and removal of the existing sewage treatment plant is part of the cost of the WWTP.

The LDC shall contract with the TransCo for the construction of the WWTP and for the operation and maintenance of the WWTP in accordance with the State Pollutant Discharge Elimination System ("**SPDES**") permit.

Nothing contained herein shall restrict or prohibit Developer or the TransCo from the recovery of any cost they may incur for the WWTP and the collection system in the Development through the sale of land or by other means. No capital cost for the WWTP or the collection system in the Development shall be borne by the Town or the Hamlet District.

The WWTP shall at full capacity be capable of accommodating all sewage flow from the Development not to exceed 400,000 gallons per day (gpd) and the users and property owners served by, or entitled to be served by, the Hamlet District not to exceed 100,000 gpd. The WWTP (including all phases) shall (i) be designed in accordance with the Wastewater Treatment Plant Engineering Report

attached hereto as Exhibit A (the “**Engineering Report**”), and any subsequent revisions as may be approved by the Town and the NYSDEC, in order to (ii) meet NYSDEC standards and *Recommended Standards for Wastewater Facilities – Great Lakes Upper Mississippi River Board of State Public Health & Environmental Managers (latest revision)* (the “**Design Standards**”), and (iii) constructed in accordance with the final drawings and specifications approved by the Town and the NYSDEC.

In order to minimize the upfront capital expenditures of the LDC and the operating deficits to the Hamlet District and the Farms District, associated with the operations of the WWTP prior to full build out of the Development, the WWTP will be constructed in phases as outlined in the Engineering Report.

The average current metered wastewater flow generated by the Hamlet District is 30,000 gpd. An evaluation of the required capacity to provide wastewater treatment for the remaining undeveloped parcels within the Hamlet District yields a WWTP average daily capacity requirement of 50,000 gpd.

The Town acknowledges that the Hamlet District’s existing sewer collection system can achieve wastewater peak flows up to 100,000 gpd due to well-known infiltration and inflow during storm events. The Town has identified approximately 1,260 LF of existing 8” gravity sewer that is located along the banks of the Ramapo River from the vicinity of the now or former Gulf Oil Corp. property to the existing treatment plant’s influent pump station which has been compromised due to overgrowth of trees and root intrusion.

To address this problem, the Town may obtain all easements and/or rights-of-way, permits, and approvals (collectively “Approvals”) that may be required for the Developer to construct a new gravity sewer line of approximately 1,260 LF on the west side of the railroad tracks between the tracks and the existing structures and shall abandon the existing sewer line in place as represented and limited by the Concept Sketch that is Exhibit B (the “Sewer Line Replacement”). If the Town, at its sole expense, secures the Approvals within 24 months from the date the construction on the WWTP begins, the Developer shall complete the construction of the Sewer Line Replacement within 24 months after the date the Town secured the Approvals. If the Approvals are not obtained within the time prescribed, the Developer would have no obligation to construct the Sewer Line Replacement. In consideration of the investment by Developer in construction of the Sewer Line Replacement, regardless of actual reduction in I/I flows as a result of the line replacement, the Hamlet District allocation shall be reduced to 50,000 gpd and the Developer shall have allocated to it for use or resale the 50,000 gpd of excess

capacity within the Town's existing SPDES permit and the SPDES permit issued for the new WWTP. If there is no actual construction of the Sewer Line Replacement, there is no reduction in the Town's capacity.

If, after the above transfer is completed, the needs of the Hamlet District are different than contemplated herein, then the purchase price and capacity available for sale would be determined by the parties at such future date. For 10 years from the date of this agreement, the Town may purchase up to 50,000 gpd of capacity to be used within the Hamlet District, as delineated in 2014, for a price per gallon calculated by dividing the construction costs of the 1,260 LF gravity sewer line by 50,000 gpd.

The WWTP shall be designed for an advanced level of treatment capacity to be achieved by incorporating Membrane Bioreactor ("MBR") technology or other technology that achieves similar effluent standards in the treatment process such that the entire plant is capable of meeting the SPDES permit requirements required by the NYSDEC at the time each phase is proposed and approved by the NYSDEC. The cost of such upgrade for the entire plant to the SPDES requirements shall be borne by the LDC to the extent that funds remain from the initial financing and then by the Developer.

Prior to final completion and pursuant to its contract with the LDC, the TransCo shall be responsible for the demolition and removal of the existing sewage treatment plant in accordance with the NYSDEC approved closure plans.

The collection system in the Development shall also be designed in accordance with the Design Standards, NYSDEC requirements, and submitted to the Town's Engineers for approval prior to approval by the Town.

**TUXEDO FARMS
SEWER DISTRICT**

The recently formed Tuxedo Farms Sewer District (herein referenced as the "**Farms District**") will serve the Developer's Southern Tract properties.

**DESIGN &
ENGINEERING**

The TransCo shall provide the engineering required for the permitting and design of all phases of the WWTP. The TransCo shall also provide for the construction of all phases of the WWTP and all required system improvements to serve the Development. Developer will be reimbursed for the expenses it incurs on behalf of the TransCo or LDC. The Town Engineer shall perform all services provided in Transportation Corporations Law § 118, and the Town

shall be reimbursed by the LDC through its contract with the TransCo. Without limiting the foregoing, the LDC shall reimburse the Town for the reasonable and customary expenses incurred in reviewing and monitoring the design of each phase of the WWTP.

For each of the phases of the WWTP, the TransCo shall provide for preparation of an engineering report that describes the proposed treatment processes in sufficient detail as may be reasonably required by the Town's Engineers and submit it to the Town Engineer for review and approval. The TransCo's Engineer shall incorporate the Town's comments as reasonable and appropriate and then resubmit to the Town for approval. At the various stages of design, the TransCo's Engineer shall submit to the Town Engineer drawings and specifications for review to determine consistency with the Engineering Report or Expansion Engineering Reports for future phases and the Design Standards. The Town Engineer agrees to meet with the TransCo's Engineer to discuss any comments as necessary. The TransCo's Engineer shall address the Town Engineer's comments and, upon concurrence that the drawings and specifications are consistent with the Engineering Report(s) and the Design Standards, the Town Engineer will issue an approval letter to the TransCo indicating such (the "**Town Engineer Approval**").

In the event that the TransCo's Engineer and Town Engineer cannot agree with the manner in which the Town's comments have been addressed in the revised drawings and specifications for the WWTP, the dispute shall be submitted for binding arbitration to a third party, independent engineer acceptable to both the Town and the TransCo, a list of whom is attached as Exhibit C or other engineering firm acceptable to the parties.

The TransCo shall prepare the New York State Department of Environmental Conservation SPDES application for (i) a new SPDES permit for construction and operation of the WWTP and the Developer wastewater collection system including written endorsement from the Town and (ii) notification and engineering plans as required in 6 NYCRR Part 750-2.11 for the closure of the existing Hamlet wastewater treatment plant. Subsequent permit applications for expansion of the WWTP shall be submitted to the Town Engineer for review and approval and then submitted to NYSDEC by the TransCo.

Upon receipt of the effluent limitations in the new SPDES permit, the TransCo's Engineer shall prepare and submit 60% drawings and technical specifications to the Town Engineer for review and approval as contemplated by the Transportation Corporations Law.

The TransCo's Engineer shall prepare and submit 100% design drawings and specifications to the Town Engineer for review and approval.

If approval is required by the Town's Architectural Review Board (the "**ARB**"), applicable drawings and specifications shall be submitted for review and approval.

Upon receipt of the Town Engineer Approval, the TransCo's Engineer shall prepare and provide the Town copies of the 100% drawings and specifications to the Town for record purposes.

CONSTRUCTION

Pursuant to its contract with the LDC, the TransCo shall construct the approved WWTP, the performance of which shall be secured in accordance with New York Transportation Corporations Law § 119 as described herein.

As provided in New York Transportation Corporations Law § 119, a performance bond shall be posted by the TransCo for the completion of construction of the WWTP. Additionally, a guaranty in the form of a bond ("**O&M Escrow**") to be held by the Town Attorney for the continued operation and maintenance of the system for a period of five years from the initiation of operations after Final Completion as defined herein shall be provided by the TransCo. The O&M Escrow shall be renewed every five years thereafter until 80% of the units within the Development, or 956 residential units, are sold and certificates of occupancy issued. The value of the bond shall be calculated as the estimated annual cost of operation and maintenance of the WWTP for each of the five years less the estimated revenues received from properties served in the Farms District and the Hamlet District for each of the five years of operation of the WWTP. The cost associated with the performance bond and the O&M Escrow shall be included in the amounts paid to the TransCo by the LDC. The O&M Escrow funds shall be released by the Town Attorney to the Town in the event that the TransCo abandons or discontinues operation and maintenance of the WWTP. Once 80% of the units within the Development, or 956 residential units, are sold and certificates of occupancy issued, the O&M Escrow shall be extinguished at the end of that calendar year.

Construction of the first phase of the WWTP is estimated to be complete within 18 months from the commencement of construction.

All contractors shall meet the insurance requirements shown in Exhibit D and provide certificates of insurance and policy endorsements which name the LDC and the Town as an additional insured.

The TransCo's wastewater design engineer shall provide construction management and inspection services during the construction phase of the project and provide written certifications to the TransCo, the LDC and the Town. As provided in New York Transportation Corporations Law § 118, the Town of Tuxedo will utilize the services of the Engineer for the Town or his representative to periodically monitor the progress of construction during and after the construction of the WWTP and provide a report to the Town. These services will include:

- a) Optional attendance at routine monthly onsite construction meetings;
- b) Review of status reports and other pertinent information submitted by the TransCo or Developer's onsite construction management engineering firm;
- c) Review of as-built construction drawings certified by the Engineer for the TransCo or Developer;
- d) Participation in the development of punch list itemization;
- e) Participation in final inspection(s);
- f) Review of O&M documents and manuals; and
- g) Review of appropriate project close out documents.

Since the WWTP will be operated by the TransCo, the Town will not be providing full-time inspection. During construction, the Town Engineer or his representative will periodically monitor the construction for general conformance with the plans and specifications. No substantial deviations and/or substitutions from the approved plans and specifications shall be performed unless they have been reviewed and approved by the Town Engineer. Substantial deviations and/or substitutions shall be defined as changes from the approved plans and specifications involving equipment, materials of construction, and/or process technology which significantly alter its intended use, hydraulic or organic capacity, treatment efficiency, reliability, or life span. The Town Engineer or his representative will be on site periodically during construction.

AS-BUILT PLANS

The TransCo shall provide certified as-built plans to the Town Engineer upon the substantial completion of the new WWTP, in hard copy and electronic format (PDF and CAD). The as-built plans shall include all mechanical, civil/site, electrical, HVAC and structural modifications made during the course of the construction.

OWNERSHIP OF THE WWTP

The LDC shall own the WWTP and contract with the TransCo to maintain and operate the WWTP.

The Town shall have the option to acquire all of the stock and assets of the TransCo for \$1.00 upon either the abandonment or discontinuance of maintenance and operation of the sewer system as defined in New York Transportation Corporations Law § 119 or at full build-out of the Developer's project as defined in the Amended & Restated Special Permit issued in November 2010, whichever is sooner. In the event, the TransCo fails to provide the required sewer services, and in accord with its contracts with the LDC, the TransCo would be required to assign its contractual interest in the WWTP to the Town to facilitate the Town's operation of the WWTP. Any transfer to the Town shall be free and clear of all liens and encumbrances save for any outstanding principal and interest as may be or come due on the LDC construction bonds.

The words "discontinuance of maintenance and operation of the Sewer System" shall not mean isolated, single, or non-material failures to meet requirements, but shall mean continuing, repeated and material failures of maintenance operations that result in a reduction in hydraulic or organic capacity, treatment efficiency, and/or reliability. Should the WWTP fail to meet material SPDES permit requirements for three consecutive months after the WWTP has been operational for a year, as determined by the Town, provided that, upon notification of a violation, the TransCo is required to file a response thereto within thirty (30) days or such shorter period if required by NYSDEC, which response demonstrates how the TransCo will remedy the violation, and the failure to correct violations as directed by the Town or DEC within three (3) months. In the event the Town exercises its option, the TransCo shall indemnify and hold harmless the Town from any alleged violations of environmental law or regulation arising out of the operations of the WWTP prior to the date of transfer of the stock and assets from the TransCo to the Town. Should the Town exercise its option due to the abandonment or discontinuance, then Developer and its assignees must negotiate a new operating agreement with the Town in order for Developer to build future phases of the WWTP.

CHARGES FOR SEWER SERVICE

The LDC and Town, on behalf of the Farms District and Hamlet District, shall contract with the TransCo for the collection and treatment of sewage, the operation and maintenance of the WWTP, the operation, maintenance, and repair of the collection system for the Farms District, and, at the Town's election, the operation, maintenance, and repair of the Hamlet Collection System. The terms of each such agreement shall be for a period not greater than ten years.

Town shall continue to operate, maintain, and fund the Hamlet WWTP until the new WWTP is certified by the TransCo's Engineer as operational under the SPDES permit. As of that date, the charges for sewer service for each district shall include respective debt service as outlined herein, operation and maintenance costs for the WWTP, and operation and maintenance costs for each collection system. The amount and method for determining the charges are subject to modification by future agreement.

Any existing debt issued by the Town on behalf of the Hamlet District existing at the execution of this agreement and any debt issued in the future for repair, replacement, or improvements to the infrastructure of the Hamlet District shall be assessed and collected by the Town against the real property located within the Hamlet District on a benefit basis.

Debt service and appurtenant costs of the debt issued for the construction of the WWTP shall be assessed on a benefit basis and collected by the Town against the real property located within the Farms District. The revenue from such assessments shall be used solely for the payment of debt and its appurtenant cost, for no other purpose, and paid over to the LDC to service the debt and its appurtenant costs.

Prior to the operation of the WWTP and annually thereafter, the TransCo shall prepare and submit an operation and maintenance budget ("**O&M Budget**") to the Town. The O&M Budget shall include funding for capital replacements and extraordinary expenses, which will also be separately identify for the WWTP, the Hamlet Collection System, and the Farms District collection system. The O&M Budget shall coordinate with the Town's budget process and include a level of detail at a minimum as provided in Exhibit E. The O&M Budget shall separately identify the costs for (1) the operation and maintenance expenses for the WWTP ("WWTP O&M"), (2) the Hamlet Collection System, and (3) the Farms District collection system. Each succeeding annual budget shall be reconciled to the

actual amounts expended and collected in the prior period separately setting forth any under and over collection for the WWTP O&M, the Hamlet Collection System, and the Farms District collection system. The difference shall be added or subtracted from the amount to be collected in the succeeding budget, as appropriate for each of the sub budgets, so that the TransCo would be made whole for all costs, including any carrying costs that may be incurred as a result of a short-fall. The budget for WWTP, as agreed upon by the Town and the TransCo, shall be used to establish the WWTP O&M charge to each district.

Except for the initial periods as detailed below, the WWTP O&M charge to each sewer district shall be calculated by dividing the annual WWTP O&M Budget by the actual annual flow received by the plant from each district in the prior calendar year.

The Farms District will only be partially developed in the early years of the WWTP's operation. To normalize the charge to the Hamlet District, a reserve of \$320,000 will be established (the "O&M Fund") to fund that portion of the WWTP O&M not assessed on the Districts. Until this fund is depleted, the amount charged and paid by the Hamlet District for its share of the WWTP O&M will be calculated in the first year that the WWTP operates, the Hamlet District will pay 17.7% of the WWTP O&M, which is the Hamlet District's estimated percentage of the flow to the WWTP when Phases 1A & 1B of the Farms District are fully developed. The current estimate of the flow from the Farms District when Phases 1A & 1B are fully developed is 139,000 gpd. In the second through fourth years of operation, the Hamlet District's share of WWTP O&M will be the lower of the amount computed by dividing its measured flow (in gpd) by 139,000 gpd plus the Hamlet District's measured flow or by dividing its measured flow by the total flow treated by the WWTP. After the fourth year or immediately after the O&M Fund is depleted, whichever comes first, the Hamlet District's share of the WWTP O&M shall be calculated as in the immediately preceding paragraph. Any balance remaining in the O&M Fund after the fourth year will be returned to the Developer.

All flow from the Hamlet District will be directed through a flow meter prior to flowing to the WWTP. Metered flows from the Hamlet District to the WWTP shall be recorded automatically by the WWTP Supervisory Control and Data Acquisition (SCADA) system and shall be the basis for the annual charge to the Hamlet District by the TransCo to the Town. The Town shall in turn bill the Hamlet District customers annually, remitting payment to the Trustee for all revenues collected within 30 days of the date of receipt by the Town.

The Town shall include in its assessment for the Hamlet District the Hamlet District's share of the WWTP O&M charges plus all charges incurred by the TransCo directly for operation, maintenance, repair, or replacement of the collection system for the Hamlet District.

The owner(s) of the real property within the Farms District shall, through an annual assessment made by the Town, pay the debt service for the WWTP in addition to O&M charges as outlined herein. The assessment for capital and O&M charges shall be set forth separately on the owner(s)' tax bills. The Town shall pay the Trustee the assessments collected to service the debt within 30 days of the date of receipt by the Town. The Town shall pay the TransCo the balance of this assessment for the portion of the O&M Budget allocated to the Farms District shall be paid within 30 days of the date of receipt by the Town.

If the Town fails to make the required payments on behalf of its improvement districts to the LDC for sewer services, the LDC, in addition to other legal remedies it may have, may cease providing sewer services pursuant to the LDC's contract with the Town.

If the Town exercises its option to acquire the stock and assets of the TransCo, the Town shall assume operation and maintenance costs and responsibilities for the operation and maintenance of the WWTP and the Farms District collection system. The Town shall thereafter assess properties within the Farms District as provided in Article 12 of the Town Law.

**ONGOING WWTP
FLOW
MONITORING**

During the moratorium on connections to the Hamlet sewer system, a certificate of occupancy will not be issued for any houses or commercial buildings within either sewer district until such time as the new WWTP is certified as fully functional by the TransCo's Engineer to the NYSDEC. The Developer may obtain building permits for construction within the Farms District at any time after a building permit is issued for the construction of the new WWTP. Thereafter, the Town shall not restrict the ability of Developer, its successors and assigns, from obtaining building permits provided that there exists "**Sufficient Sewer Capacity**" at the WWTP as measured by actual flows at the WWTP plus an adjustment for those units where building permits have been issued, but certificates of occupancy have not yet been issued and are not yet occupied. The adjustment shall be based on the design values incorporated in the approved Engineering Report(s). The Hamlet District shall not exceed the capacities allocated to it herein. Sufficient Sewer Capacity shall be defined as the more restrictive of either (i) the then-current

NYSDEC guidelines for required available WWTP capacity or (ii) 20,000 gpd of available SPDES capacity.

FUTURE WWTP PHASES

Should Developer, its successors and assigns, wish to obtain building permits for future development within the Development and there is not Sufficient Sewer Capacity, then the TransCo shall prepare the Expansion Engineering Report to initiate the design, engineering, and construction for expansion of the WWTP up to the 500,000 gpd as provided in the special permit.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized officers or representatives as of the day and year first above written.

TUXEDO RESERVE OWNER LLC

TOWN OF TUXEDO

By: _____

President

By: _____

Town Supervisor

THE TUXEDO FARMS LOCAL DEVELOPMENT CORPORATION

THE HAMLET OF TUXEDO SEWER DISTRICT

By: _____

President

By: _____

Town Supervisor

TUXEDO SEWAGE-WORKS CORP.

By: _____

President

STATE OF NEW YORK)
 ss.:
COUNTY OF)

On the ____ day of _____, 2015, before me, the undersigned, a notary public in and for said state, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity as president of TUXEDO RESERVE OWNER LLC and TUXEDO SEWAGE-WORKS CORP. and that by his signature on the instrument, TUXEDO RESERVE OWNER LLC and TUXEDO SEWAGE-WORKS CORP. executed the instrument.

Notary Public

STATE OF NEW YORK)
 ss.:
COUNTY OF)

On the ____ day of _____, 2015, before me, the undersigned, a notary public in and for said state, personally appeared _____ personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity as Town Supervisor of the Town of Tuxedo and that by his signature on the instrument, the Town of Tuxedo executed the instrument.

Notary Public

STATE OF NEW YORK)
 ss.:
COUNTY OF)

On the ____ day of _____, 2015, before me, the undersigned, a notary public in and for said state, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity as president of THE TUXEDO FARMS LOCAL DEVELOPMENT CORPORATION and that by his signature on the instrument, THE TUXEDO FARMS LOCAL DEVELOPMENT CORPORATION executed the instrument.

Notary Public

LIST OF EXHIBITS

- A. Tuxedo Reserve Wastewater Treatment Plant Engineering Report
- B. Concept Sketch of Ramapo River Gravity Sewer Replacement
- C. Approved Third Party Engineers for Dispute Resolution
- D. Insurance Requirements
- E. Minimum Operations and Maintenance Budget Line Items
- F. Lease WWTP Site
- G. Wetland Restoration Outline

EXHIBIT A

INITIAL ENGINEERING REPORT

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TUXEDO RESERVE WASTEWATER TREATMENT PLANT ENGINEERING REPORT

TOWN OF TUXEDO
ORANGE COUNTY, NEW YORK



PREPARED FOR:

**TUXEDO RESERVE OWNER, LLC
C/O RELATED COMPANIES**

60 COLUMBUS CIRCLE
NEW YORK, NEW YORK 10023

PREPARED BY:

 **DELAWARE ENGINEERING, P.C.**

28 MADISON AVENUE EXTENSION
ALBANY, NEW YORK 12203
518-452-1290

JUNE 2013

REVISED JULY 2014

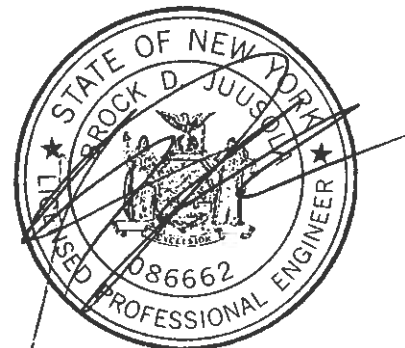


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EXHIBITS

- Exhibit A Soil Borings and Preliminary Foundation Recommendations
- Exhibit B NYSDEC Correspondence on Anticipated SPDES Limits
- Exhibit C Construction Cost Estimate

APPENDICES

- Appendix A Tuxedo Reserve PID SEQRA Findings Statement and Special Use Permit

1.0 INTRODUCTION

1.1 Project Overview and History

Tuxedo Reserve Owner, LLC, c/o Related Companies is developing Tuxedo Reserve, a residential and commercial Planned Integrated Development (PID) to be located in the Town of Tuxedo, New York. The project was initiated in 1989 with the submission of an application by R.H. Tuxedo Development, L.P. to the Town of Tuxedo and various modifications were made to size and character of the PID during project development. The Town acted as Lead Agency under the State Environmental Quality Review Act (SEQRA) for review of the Tuxedo Reserve PID, including its sewage infrastructure. A Final Environmental Impact Statement (FEIS) was issued in November 2003 and the Town issued a Lead Agency Findings Statement concurrently with a Special Permit on November 15, 2004.

Under terms of the Special Permit, Tuxedo Reserve Owner, LLC must either fund construction of a new sewer plant with a capacity sufficient to treat the existing sewage flow from the Town of Tuxedo plus that of the residential Southern Tract of the planned development, or alternatively provide a connection to the Rockland County Sewer District No. 1. Black & Veatch, the previous engineer for the Tuxedo Reserve project, recommended construction of a new wastewater treatment plant (WWTP) as the preferred alternative and the Town of Tuxedo agreed with this recommendation. Copies of the Findings Statement and Special Permit are included in Appendix A.

This engineering report will focus on the treatment of wastewater generated by both the Town of Tuxedo and the Tuxedo Reserve development. In 2007, Delaware Engineering completed a Basis of Design report for a WWTP with an annual average daily flow (ADF) of 500,000 gpd. The plant was designed to serve the entire proposed development as well as provide sanitary sewer service for the Town of Tuxedo. The 2007 design was based on a sequencing batch reactor (SBR) system followed by Continuous Backwash Upflow Sand Filters (CBUDS). Due to recent technological advancements and reduced costs, a MBR system is now a more cost effective treatment option than a SBR/CBUDS combination. Use of MBR technology will allow for effluent parameters meeting the capability of the SBR/CBUDS system with a decreased overall plant footprint.

Additionally, the Owner has elected to construct a WWTP that will be built in phases as the Tuxedo Reserve project develops. The first phase is designed to provide treatment for all the wastewater generated by the Town of Tuxedo as well as Phases 1A and 1B of the Tuxedo Reserve development. The WWTP will be initially constructed to accept and treat a maximum monthly daily flow (MMDF) of 311,000 gpd while including provisions to facilitate future expansion to a capacity of 500,000 gpd at full buildout.

1.1.1 Existing Utilities, Site Conditions and Location

The Tuxedo Reserve WWTP will be constructed on two parcels of land currently owned by the Town of Tuxedo at the southern end of Contractors Road. A portion of the construction will occur on the Town's existing treatment plant site (Tax Parcel 13-7-6.1, 0.8 acres) with the remainder constructed on the adjacent southern parcel (Tax Parcel 13-7-7, 1.0 acres). Potable water from the Town's water system and electrical services are located within the general vicinity of the site and will serve the facility. See Figure 1 for a site location map.

Soil borings and a geotechnical report were conducted on the proposed site in 2007. This investigation and report show that the site has a soil bearing capacity of 4 kips/ft² provided that foundations for all structures are constructed below the "fill" noted on the soil borings, or on structural fill which extends below the "fill" depth. See Exhibit A for details on soil borings and preliminary foundation recommendations at the project site.

The proposed site has been filled since the geotechnical report was prepared. It is assumed that this fill was placed in an uncontrolled fashion and without removal of the organic materials at the fill/original contours interface. As such, all areas which will have an impact on the Tuxedo Reserve WWTP will be excavated to the original contours lines, with all the organic materials removed prior to any structures being constructed.

1.1.2 Proposed Conditions

The first phase of the Tuxedo Reserve WWTP will be capable of treating 311,000 gpd of wastewater, with 100,000 gpd coming from the Town of Tuxedo and 209,000 gpd generated by the Tuxedo Reserve development. The facility will utilize membrane bioreactor (MBR) technology in lieu of the 2007 plan for a sequencing batch reactor followed by a sand filtration process. Note that the MBR process will provide significantly higher quality effluent than the anticipated SPDES permit will require. See Figure 2 for a Site Plan of the proposed Tuxedo Reserve WWTP. See Figures 3 and 4 for conceptual floor plans of the proposed facility.

1.2 Regulatory and Design Standards

This Engineering Report was prepared in conformation with applicable NYSDEC Design Standards and:

- *Recommended Standards for Wastewater Facilities - Great Lakes Upper Mississippi River Board of State Public Health & Environmental Managers, 2004 (Commonly referred to as Ten States Standards).*

In addition, recommendations in the following wastewater design manuals have been followed:

- *Wastewater Engineering: Treatment, Disposal and Reuse: 3rd Edition*, Metcalf & Eddy, Inc, revised by G. Tchobanoglous and Franklin L. Barton, McGraw-Hill, Inc., New York, 1991. (Commonly referred to as *Metcalf & Eddy*).
- *Design of Municipal Wastewater Treatment Plants, WEF Manual of Practice No. 8, 4th Edition*, ASCE Manuals and Report of Engineering Practice No. 76, Water Environment Federation and American Society of Civil Engineers, 1998.

2.0 PROCESS OVERVIEW

2.1 Treatment Process

The proposed Tuxedo WWTP design consists of a mechanical influent fine screens and grit removal followed by flow equalization. This design utilizes a membrane bioreactor system (MBR) for the biological treatment and clarification requirements. The final effluent will be disinfected utilizing ultraviolet light, with the disinfected MBR effluent being discharged to the Ramapo River. See Figure 5 for a Process Schematic.

2.2 Hydraulic Loading, Solids Loadings and Anticipated SPDES Permit

Table 1 lists the hydraulic loading characteristics for the Tuxedo Reserve WWTP from the Phase 1A and 1B components of the development.

Table 1. Hydraulic Loading – Tuxedo Reserve

Use	# of Units	Flow/Unit (gpd) - '88 DEC Standards with water saving devices (20% reduction)	Total Flow (gpd on 30 day average basis)
4 Bedroom Units	60	380	22,800
3 Bedroom Units	308	320	98,560
2 Bedroom Units	343	240	82,320
1 Bedroom Units	20	120	2,400
Commercial	30,000 SF	0.1	3,000
Total Flow - Phase 1A and 1B			209,080

Table 2. Hydraulic Loading – Town of Tuxedo

Year	Annual Average Flow (ADF - gpd)	Maximum 30 Day Average Flow (MMDF - gpd)	Month of MMDF
2009	24,000	34,000	October 2009
2010	30,000	66,000	March 2010
2011	47,000	94,000	March 2011
2012	26,000	36,000	January 2012

Based on the historical flows from 2009 to 2012, the Town of Tuxedo's maximum 30 day flow was 94,000 gpd which occurred in March of 2011. This number is suspect as the flow data has no flow recorded for multiple days followed by a very large daily flow number. The second highest recorded 30 day average flow occurred in September 2011 (Hurricane Irene) and was 71,000 gpd. The Tuxedo Reserve WWTP will allocate 100,000 gpd on a 30 day average basis for the Town. This matches the Town's current SPDES permit limit flow limit of 100,000 gpd on a 30 day average basis. The initial design and projected permitted flows for the WWTP are as follows:

WWTP Design Flows – Current Flows:

1. Average Daily Flow (365 day average): 259,000 GPD
2. Maximum Monthly Daily Flow (Maximum 30 Day Average - 1.2 X ADF): 311,000 GPD
3. Peak Daily Flow: 569,800 GPD (2.2 X ADF)
4. Peak Hourly Flow: 854,700 GPD (3.3 X ADF)

To accommodate full buildout of the Tuxedo Reserve development, the ultimate flows at the WWTP are assumed to be as follows:

WWTP Design Flows – Full Buildout (*note that these values are used only to the extent that buildout is considered in the initial construction and are subject to change during the future design of the buildout*):

1. Average Daily Flow: 500,000 GPD
2. Peak Daily Flow: 1,100,000 GPD (2.2 X ADF)
3. Peak Hourly Flow: 1,650,000 GPD (3.3 X ADF)

Portions of the Tuxedo WWTP will be constructed for full buildout as noted within the pertinent sections of this report.

Table 3. Influent Organic Loading

Parameter	Average Influent Concentration
BOD ₅	250 mg/L
TSS	250 mg/L
NH ₃ (as N)	35 mg/L
Organic N (as N)	15 mg/L
TKN (as N)	50 mg/L
Phosphorous	8 mg/L

See Exhibit B for a copy of NYSDEC correspondence regarding the anticipated SPDES permit limits.

Table 4. Anticipated SPDES Permit Limits

Parameter	Limit
Flow (30 day average)	311,000 gpd
UOD (daily maximum)	65 mg/l
Solids, Suspended (7 day average)	45 mg/l
Solids, Suspended (30 day average)	30 mg/l
Solids, Settleable (daily maximum)	0.1 ml/l
pH (range)	6.0-9.0
Nitrogen, Ammonia (as NH ₃) (daily maximum – June 1 to October 31)	5.0 mg/l
Nitrogen, Ammonia (as NH ₃) (daily maximum – Nov. 1 to May 31)	10.0 mg/l
Phosphorous, Total (as P) (30 day arithmetic mean)	1.0 mg/l
Temperature	Monitor
Coliform, Fecal (30 day geometric mean)	200 / 100 ml
Coliform, Fecal (7 day geometric mean)	400 / 100 ml
Chlorine Residual (daily maximum)	0.1 mg/l
Dissolved Oxygen (daily minimum)	4.0 mg/l

3.0 CAPITAL PLAN

3.1 Wastewater Treatment Plant

3.1.1 Design Approach

An evaluation of the requirements for each proposed unit process at the WWTP was conducted utilizing the hydraulic loadings, a detailed review of operating data for influent organic loadings and knowledge of the anticipated SPDES discharge parameters. This

review establishes design intent and capacity required to achieve SPDES compliance. The following unit processes were evaluated and selected as the optimal process for the Tuxedo Reserve WWTP:

1. Influent Screening
2. Grit Removal
3. Flow Equalization and Pumping
4. Biological Treatment System
5. Chemical Feed Systems
6. Sanitary Disinfection
7. Sludge Handling Facilities

3.1.2 Site Considerations

The Tuxedo WWTP site slopes down from Contractors Road towards the Ramapo River. The site plan will take into consideration the sloped nature of the site and utilize this to the extent possible to allow for easily accessible dry-pit pumps, valves and appurtenances. The Base Flood Elevation at the site is 402' and all components of the facility will be protected from damage in the event of a 100-year flood. A portion of the WWTP site was historically delineated as a wetland. Much of this wetland has been filled by an outside party and permitting/corrective actions are being addressed outside the scope of this report.

3.1.3 Hydraulic and Organic Load Capacity

The design flows for the Tuxedo WWTP are as follows:

The capacity of each unit process is evaluated based on Average Annual Daily Flow (ADF), Maximum Monthly Daily Flow (MMDF), and/or Peak Hydraulic Flow (PHF). The process includes flow equalization which reduces the PHF conditions downstream of the equalization tanks. The design flow conditions are represented in Table 5.

Table 5. Design Capacity

Parameter	Flow
Annual Average Daily Flow (ADF)	259,000 gpd
Maximum Monthly Daily Flow (MMDF) – <i>Permitted Flow</i>	311,000 gpd
Peak Hydraulic Flow (<i>Before Equalization – peak hydraulic capacity of influent screening, grit removal and flow equalization</i>)	854,700 gpd
Peak Hydraulic Flow (<i>After Equalization – peak hydraulic capacity of MBR process, disinfection and post-aeration</i>)	569,800 gpd

In accordance with current regulatory standards and good engineering practice, each unit process requires a specific hydraulic design standard. The overall plant capacity is then rated as the capacity of the unit process with the most restrictive design capacity. The anticipated SPDES permit that sets the discharge value at 311,000 gpd is based on a 30 day average flow (MMDF). In accordance with Table 2-8 of *Metcalf & Eddy* the maximum monthly daily flow (maximum 30 day average or MMDF) is 120% larger than the annual average daily flow (ADF). As such, the Tuxedo WWTP is designed for an ADF of 259,000 GPD and an associated MMDF of 311,000 GPD. The permitted flow is anticipated to be based on the MMDF and is 311,000 gpd.

3.1.4 Unit Process Design

The following narrative describes the illustrated unit process designs.

3.1.4.1 WWTP Influent Piping

The proposed wastewater collection system entering the facility will be a 12" gravity sewer. The influent piping will have a minimum slope not less than 0.3% and a minimum capacity of 2,100,000 gpd.

Influent Piping Capacity Calculations – 12" PVC

$Q = 1.49 * A * R^{(2/3)} * S^{(1/2)} / n$	Manning's Equation	
n =	0.009	
d/D =	1	
A/D ² =	0.785	
R/D =	0.25	
D =	1	
R =	0.25	
A =	0.79	
S =	0.004	
Q =	3.3	ft ³ /sec
Q =	1464	GPM
Q =	2.11	MGD

3.1.4.2 Headworks - Influent Screening and Grit Removal

The Tuxedo Reserve WWTP will employ membrane bioreactors (MBRs), therefore fine screening is required to ensure that no debris enters the system that could damage the membranes. Two (2) 3 mm mechanical fine screens will be provided to ensure that the facility can operate with one screen out of service. Each screen will be rated for a peak hydraulic flow of 854,700 gpd. The screenings will be discharged to a trash bin for off-site disposal.

The WWTP will be equipped with a vortex style grit removal system will be rated for 1.65 mgd and sized for full buildout of the facility. This system operates by funneling inorganic solids to the bottom of a vortex tank. The degritted wastewater will discharge from the grit chamber to the flow equalization tanks. The grit will be pumped from the bottom of grit chamber via a grit pump to a cyclone grit classifier. The dewatered grit will be transferred to a trash bin for off-site disposal.

The screens and grit removal system will be housed in a dedicated room with odor control to alleviate any potential odor issues.

3.1.4.3 Flow Equalization Tanks

The WWTP will include flow equalization tanks with a storage capacity of 20% of the average daily flow. Under the current design ADF of 259,000 gpd, a minimum of 51,800 gallons of equalization capacity will be provided. To enhance operational flexibility, two basins will be provided with each providing a minimum capacity of 25,900 gallons.

The equalization tanks will be aerated to ensure mixing and aeration of the wastewater stored within tank. Regulatory standards require that 1.25 scfm / 1,000 gallons of storage be provided. Stainless steel coarse bubble diffusers and a blower sized for 65 scfm will be utilized for the mixing and aeration requirements of the equalization tank. To ensure operation in the event of a failure of the equalization blower, the equalization air piping will be interconnected to the digester blowers and the equalization tank and the digesters will share a common redundant blower.

Note that a portion of the equalization tanks needed for full buildout of the facility may serve as the foundation for the headworks building. Under this scenario, the equalization tanks required for the full buildout flow of 500,000 GPD would be constructed in the initial phase. At least two equalization tanks would provided, each with a minimum capacity of 50,000 gallons, and the equalization blower size would be increased to 125 scfm.

3.1.4.3 Equalization Pumps

The Tuxedo Reserve WWTP will be equipped with flow equalization pumps capable of accommodating the maximum daily flow conditions of 569,800 gpd (peak flow after flow equalization). A minimum of a duplex equalization pump system will be provided, with each pump rated for 569,800 gpd. Depending upon the turndown capabilities of the pump selected during final design, it is possible that a triplex station will be provided, with each pump rated for 284,900 gpd. To accommodate varying daily flows, the equalization pumps will utilize variable frequency drives to allow for feed rates into the plant that will be adjusted to reflect actual influent flow conditions. The control system will include a

high level alarm that will override the preset flow rate and pace the pumps to 100% speed in the event the water level in the equalization tank exceeds a preset high level. The equalization pumps will discharge to MBR swing tank(s).

3.1.4.4 *Aeration and Membrane Bioreactor*

The WWTP design utilizes a membrane bioreactor system (MBR) for removal of BOD, TSS, ammonia and phosphorous. MBR technology was selected in lieu of the previously designed SBR/CBUDS system as the MBR is capable of producing equal quality effluent with a significantly decreased footprint and associated capital costs. The system allows for a much smaller footprint as clarification is achieved by drawing permeate (effluent) through the membrane and filtering out the solids portion of the mixed liquor. This removes the solids loading considerations required with gravity settling and allows for aeration basins to be operated at significantly higher mixed liquor concentrations.

The oxygen requirements within an MBR system are provided in both the pre-aeration tanks and the air scour blowers within the MBR basin themselves. The Tuxedo Reserve WWTP is sized to carry the peak hydraulic and organic loading by utilizing two pre-aeration basins and three membrane basins. Each membrane basin will be equipped with two flat plate membrane units. Each membrane unit will consist of 400 flat plate membranes with a total membrane surface area of approximately 6,400 ft² per unit.

Few design standards regarding membrane bioreactors have been established. Delaware Engineering has completed multiple pilots and full scale projects utilizing MBR technology and has determined the following optimum membrane flux rates of the MBR system which is processing municipal waste only.

- Flux rate under average daily flow conditions: 8-11 gal/day/ft²
- Flux rate under peak daily flow conditions: 16-19 gal/day/ft²

The proposed membrane units consist of a stacked system, with each membrane unit containing approximately 400 cartridges and each cartridge having approximately 16 ft² of surface area. This equates to a flux rate at the permitted ADF of 6.7 gal/day/ft² and a flux rate of 17.8 gal/day/ft² for the peak flow with five units in service.

The aeration system is sized to accommodate the projected maximum monthly daily flow of 311,000 gpd. The Tuxedo Reserve WWTP has the following aeration requirements at the maximum monthly daily flow.

Aeration Requirement Calculations

Flow	0.311	mgd
BOD Loading	250	mg/l
BOD Loading	648	lbs/day
TKN	50	mg/l
TKN Loading	130	lbs/day
Oxygen Demand	1.5	lbs O ₂ / lb BOD
AOR (BOD) =	973	lb O ₂ / Day
AOR (TKN) =	4.6	lb O ₂ / lb (TKN)
AOR (TKN) =	597	lbs O ₂ / Day
Total AOR =	1,570	lbs O ₂ / Day

To provide the required aeration, the Tuxedo Reserve WWTP will utilize two (2) MBR air scour blowers and two (2) pre-aeration system blowers. Each membrane basin will be 16,750 gallons and will be fitted with an air scour system which will maintain the mixed liquor in suspension and also provide scouring to clean the membrane units. Each membrane unit will have coarse/medium (manufacturer dependent) bubble diffusers and will require between 40-70 scfm of air scour to ensure fouling doesn't occur on the membranes. With two MBR units per basin (6 total), each MBR blower will be sized to provide 420 scfm. To provide for the air flow range required and the low flows anticipated prior to and during the buildout of the Tuxedo Reserve development, the blowers will be equipped with variable frequency drives. The MBR blowers will be speed controlled with variable frequency drives to provide the required air scour rate. The MBR blowers will provide not only mixing/scouring but will also provide a portion of the oxygen required for the oxidation of the wastewater.

MBR Basin Calculations

MBR Basin			
# of basins	3		
Length	14	ft	
Width	10	ft	
SWD	16	ft	
Basin Size	16,750	gallons	
Total Basin Volume	50,250		
Target MLSS	10,000	mg/L	
Total Solids	4,190	lbs	
# of Blowers	2		
Air Scour Rate	420	scfm	40-70 SCFM / Membrane Unit
Blower Discharge Pressure	7.5		psi

OTE:	0.75%		0.75% efficiency / foot of submergence (worst case, some manufacturers provide medium bubble which increases available oxygen)
Oxygen Provided (AOR/SOR =0.45)	529	lbs O2 / day	Course Bubble - AOR/SOR based on Alpha 0.6, Beta 0.95, 29.4 inHG

The Tuxedo Reserve WWTP will utilize two pre-aeration tanks, each 57,200 gallons. Each of the pre-aeration tanks will be fitted with fine bubble diffusers. The pre-aeration fine bubble diffuser system will be fitted with two 420 scfm blowers which will serve both pre-aeration tanks. The total aeration demand of the aeration tanks is 420 scfm, with the second blower serving as a redundant blower.

Pre-Aeration Tank Calculations

Aeration Tanks			
Total Aeration Tanks	2.0		
Width	15	ft	
Length	30	ft	
Water Depth	17	ft	
Volume Each	57,200	gallons	
Total Volume	114,400	gals	
Target MLSS	8,000	mg/L	
Total Solids	7,640	lbs	
# of Blowers	2		
Blower Size	420	scfm	
Blower Discharge Pressure	7.9		psi
OTE:	32%		2.00% efficiency / foot of submergence
Oxygen Provided (AOR/SOR =0.37)	1,240	lbs O2 / day	Fine Bubble - AOR/SOR based on Alpha 0.5, Beta 0.95, 29.4 inHG

This system provides 1,770 lbs O2 / day (529 lbs in three MBR basins and 1,240 lbs in pre-aeration basins) which is in excess of the required aeration of 1,570 lbs O2 / day.

The effluent from the MBR system will be withdrawn from the MBR basins through the membranes utilizing permeate pumps. Each MBR basin will be equipped with a dedicated permeate pump, with the permeate pump suction header valved to allow for a common spare permeate pump to be utilized for any of the basins. The MBR system will be equipped with four permeate pumps (3 duty pumps and 1 standby pump) each rated for a maximum hydraulic flow of 256,000 gpd (180 gpm). The permeate pumps will discharge the effluent to the UV disinfection system. The mixed liquor will discharge from the MBR basins to an anoxic swing tank located adjacent to the MBR basins.

In summary, the MBR system will consist of two pre-aeration basins serviced by two 420 scfm blowers (one duty, one standby) and three MBR basins serviced by two 420 scfm blowers (one duty, one standby). Each MBR basin will contain two 400 unit flatplate membranes, with each membrane containing approximately 6,400 ft² of membrane surface. At start-up, the system will be operated utilizing one MBR basin and the swing tank. As the flows to the facility increase, additional pre-aeration and MBR basins will be brought on-line as the loading to plant requires. Design processes for the range of various anticipated influent loadings are as follows:

Design Process – Initial Plant Startup (30,000 GPD) - Only the Town of Tuxedo flow
One (1) MBR and Swing Tank in Service

Flow	0.03	mgd
BOD Loading	250	mg/l
BOD Loading	63	lbs/day
TKN Loading	50	mg/l
TKN Loading	13	lbs/day
Oxygen Demand	1.5	lbs O ₂ /lb BOD
AOR (BOD) =	94	lb O ₂ per lb (BOD)
AOR (TKN) =	4.6	lb O ₂ per lb (TKN)
AOR (TKN) =	58	lbs O ₂ /Day
Total AOR =	151	lbs O ₂ /Day
Total Volume	21,000	gallons (assumes 5,000 gallons in swing tank)
MCRT	35	days
F/M Ratio	0.05	
Required O ₂	151	lbs O ₂ /Day
O ₂ Available	177	lbs O ₂ /Day
Flux @ 20,000 gpd (2 units in service)	2.4	gpd/sf

Design Process – 50% Capacity (130,000 GPD)**One (1) Pre-Aeration Basin, One (1) MBR Basin and Swing Tank in Service**

Flow	0.130	mgd
BOD Loading	250	mg/l
BOD Loading	271	lbs/day
TKN	50	mg/l
TKN Loading	54	lbs/day
Oxygen Demand	1.5	lbs O ₂ /lb BOD
AOR (BOD) =	407	lb O ₂ per lb (BOD)
AOR (TKN) =	4.6	lb O ₂ per lb (TKN)
AOR (TKN) =	249	lbs O ₂ /Day
Total AOR =	656	lbs O ₂ /Day
Total Volume	90,200	gallons (assumes swing tank 1/4 full)
Hyd Detention Time	12	hours
MCRT	29	days
F/M Ratio	0.06	
Required O ₂	660	lbs O ₂ /Day
O ₂ Available	800	lbs O ₂ /Day
Flux @ 130,000 gpd (2 units in service)	10.42	gpd/sf

Design Process – Average Daily Flow (259,000 GPD)**Two (2) Pre-Aeration Basin and Three (3) MBR Basins and Swing Tank in Service**

Flow	0.259	mgd
BOD Loading	250	mg/l
BOD Loading	540	lbs/day
TKN	50	mg/l
TKN Loading	108	lbs/day
Oxygen Demand	1.5	lbs O ₂ /lb BOD
AOR (BOD) =	810	lb O ₂ per lb (BOD)
AOR (TKN) =	4.6	lb O ₂ per lb (TKN)
AOR (TKN) =	497	lbs O ₂ /Day
Total AOR =	1,307	lbs O ₂ /Day
Total Volume	190,000	gallons (assumes swing tank 1/2 full)
Hyd Detention Time	17	hours
MCRT	41	days
F/M Ratio	0.05	(9,000 mg/l in MBR basins – 7,000 mg/l in aeration/swing basins)
Required O ₂	1,307	lbs O ₂ /Day
O ₂ Available	1,770	lbs O ₂ /Day
Flux Rate (5 units in service - 1 out of service)	8.30	gpd/sf

**Design Process – Maximum Monthly Daily Flow (311,000 gpd)
Two (2) Pre-Aeration Basin and Two (3) MBR Basins and Swing Tank in Service**

Flow	0.311	mgd
BOD Loading	250	mg/l
BOD Loading	648	lbs/day
TKN	50	mg/l
TKN Loading	130	lbs/day
Oxygen Demand	1.5	lbs O ₂ /lb BOD
AOR (BOD) =	972	lb O ₂ per lb (BOD)
AOR (TKN) =	4.6	lb O ₂ per lb (TKN)
AOR (TKN) =	596	lbs O ₂ /Day
Total AOR =	1568	lbs O ₂ /Day
Total Volume	190,000	gallons (assumes swing tank 1/2 full)
Hyd Detention Time	15	hours
MCRT	39	days
F/M Ratio	0.05	(10,000 mg/l in MBR basins – 8,000 mg/l in aeration/swing basins)
Required O ₂	1,570	lbs O ₂ /Day
O ₂ Available	1,770	lbs O ₂ /Day
Flux Rate (5 units in service - 1 out of service)	9.96	gpd/sf

3.1.4.6 RAS / Anoxic / Swing Tank

The MBR treatment system will be equipped with two (2) anoxic swing basins located adjacent to the MBR basins. These basins will accept both the mixed liquor from the MBR basins as well as the influent from the flow equalization tanks. The anoxic basins will each be sized for a volume of 23,500 gallons with the liquid level of the basin controlled by the plant SCADA to maintain between 0.5 and 1.5 hours of hydraulic detention time to provide for denitrification. Two basins will be provided so the facility will operate properly during the low flow startup period and will also have capacity for increased flow rates as the Tuxedo Reserve development approaches full buildout. Two separate basins will permit continuous operation if a swing tank needs to be taken out of service for maintenance. The anticipated SPDES permit does not include total nitrogen limits and therefore does not require denitrification, but the facility design includes denitrification as a method to recover alkalinity used during the nitrification process required for the removal of ammonia. The anoxic tanks will be equipped with a submersible mixer to ensure mixing. Additionally, one of the anoxic tanks will be equipped with fine bubble diffusers serviced by air from the pre-aeration blowers. These diffusers will only be utilized during the initial startup of the facility when very low influent levels require some air within the anoxic zone to prevent septic conditions from occurring.

The anoxic basin will be equipped with two (2) return activated sludge (RAS) pumps. These pumps recycle activated sludge and influent from the anoxic tank to the pre-aeration tanks or MBR basins. Each pump is sized for 4 times the peak influent flow (2,279,000 gpd, 1,600 gpm) to ensure adequate recycle rates are maintained with one pump operating as the duty pump and one pump operating as the standby pump. The RAS pumps will be equipped with variable frequency drives to allow for flow adjustments as the influent flows into the WWTP change. A triplex station (each pump rated for 1,139,500 gpd, 800 gpm) may be provided depending on the turndown capabilities of the pump selected during final design.

3.1.4.7 Ammonia Removal

The ammonia limits for the Tuxedo Reserve WWTP is anticipated to be 9.8 mg/l, but the nature of a MBR (extended aeration type) process may result in nitrification to levels which meet ammonia limits of 1.5 mg/l in the summer months and 2.2 mg/l in the winter months. Since no data exists regarding influent TKN levels, the facility design conservatively assumes an influent TKN of 50 mg/l. To achieve the required ammonia reduction required by the anticipated SPDES permit, the aeration and alkalinity capabilities must be sized for the TKN. To achieve nitrification, the system must have sufficient alkalinity, sufficient dissolved oxygen and sufficient mean cell residence time (function of temperature). The required parameters for nitrification at the WWTP are as follows:

Nitrification Requirements

Nitrification Requirements		
Alkalinity Required - assumes TKN = 50 mg/l	1,697	lbs/day
Alkalinity Required	357	mg/l
pH Required	6.0-9.0	
Influent Min Temperature	8	C
Influent TKN Concentration	50	mg/l
Aeration Tank DO	2	mg/l
Min MCRT	10	days
Design Min MCRT	14	days

The WWTP design assumes an influent alkalinity of 100 mg/l and an influent TKN of 50 mg/l. Under these conditions the plant will require the addition of alkalinity to achieve full nitrification within the aeration process. The Tuxedo Reserve WWTP will be designed to include a magnesium hydroxide feed system to achieve full denitrification. The magnesium hydroxide will be injected into the anoxic/swing tank. The system will include dual (one duty, one standby) chemical feed pumps, each rated for 40 gpd and will include a 500 gallon liquid bulk storage tank. Sizing calculations for the magnesium hydroxide feed system are as follows:

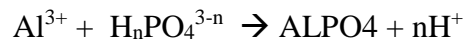
Alkalinity Feed Requirements

Alkalinity - Influent	100.00	mg/l		
TKN - to Be Removed	50.00	mg/l		
Alkalinity Required as CaCO ₃	7.10	mg/l per mg/l TKN		
		ADF Conditions		Max Day Condition
Alkalinity Required as CaCO ₃	767	lbs/day	1,687	lbs/day
Alkalinity Available as CaCO ₃	216	lbs/day	475	lbs/day
Required Additional Alk as CaCO ₃	551	lbs/day	1,212	lbs/day
Maximum Alk recovered (De-Nit)	386	lbs/day	848	lbs/day
Alkalinity (as CaCO ₃) to be added	165	lbs/day	364	lbs/day
Mg(OH) ₂ Equivalent	1.71		1.71	
Alk as Mg(OH) ₂ required	4.2	mg/l per mg/l TKN	4.2	mg/l per mg/l TKN
Alkalinity (as Mg(OH) ₂) to be added	97	lbs/day	213	lbs/day
Mg(OH) ₂ Concentration (53% Solution and S.G. = 1.45)	6.4	lbs/gal	6.4	lbs/gal
Gallons / Day Required	15	gpd	33	gpd
30 day Storage Requirements	450	gallons	990	gallons
Size for chemical feed pump rated for 40 gpd.				
Provide 500 gallon bulk storage tank for Mg(OH) ₂				

3.1.4.8 Phosphorous Removal

The Tuxedo Reserve WWTP is designed to achieve a maximum effluent phosphorous limit of 0.5 mg/l. This will be accomplished utilizing a liquid alum feed system. The alum will be injected into the anoxic tank. The system will include dual (one duty, one standby) chemical feed pumps, each rated for 57 gpd and will include a 760 gallon liquid bulk storage tank.

Alum removes phosphorous with the aluminum bonding with the dissolved phosphorous to create aluminum phosphate. The aluminum phosphate is then precipitated out and removed with the waste activated sludge. The basic reaction of aluminum and phosphorous for chemical precipitation is as follows:



Based on the equation above, the molar ratio of aluminum to phosphorous is 1:1. The sizing calculations for the alum feed system are as follows:

Alum Feed Requirements

Phosphorus - Influent	8.00	mg/l		
Phosphorus - Design Limit	0.50	mg/l		
%P removed in sludge	20.00%			
P Removed in BioMass	1.60	mg/l		
Required P Removal by Alum	5.90	mg/l		
Molecular Weight Al ₂ (SO ₄) ₃	342.00	g/mol		
Mole Alum / Mole Al Ratio	2 to 1			
Molecular Weight P	31.00	g/mol		
mg alum required per mg P - 1 to 1 ratio	5.52			
Safety factor - size pumps for 2.0 to 1	11.03	mg/l alum per mg/l P		
Molecular Weight AlPO ₄	122.00	g/mol		
Ratio AlPO ₄ and P	3.94			
Lbs AlPO ₄ Produced - ADF	50.16	lbs/day		
Required Dosage	65.09	mg/l		
		ADF Conditions	Max Day Condition	
Alum Required	141	lbs/day	309	lbs/day
Alum Concentration	50.00%		50.00%	
Alum S.G.	1.33		1.33	
Alum (lbs/gal - 50% solution)	5.55	lbs/gal	5.55	
Gallons / Day Required	25	gpd	56	gpd
30 day Storage Requirements	760	gallons	1,671	gallons
Size for chemical feed pump rated for 56 gpd.				
Provide 760 gallon bulk storage tank for alum				

3.1.4.9 Sanitary Disinfection

The Tuxedo Reserve WWTP will be equipped with two ultra-violet (UV) disinfection systems, each rated for the peak hydraulic capacity of the WWTP of 659,800 gpd. The UV system will be sized for a dosage rate of 30 mJ/cm² and will be flow paced based on the permeate pump flow meters to ensure disinfection requirements are maintained.

3.1.4.10 Sludge Handling Facilities

The Tuxedo Reserve WWTP will be equipped with two aerobic digesters, with each digester providing a minimum of 19,400 gallons. The facility will also be equipped with a membrane bioreactor (MBR) to aid in the sludge thickening. *Ten States Standards* requires multiple digesters with a total volume of 3.0 ft³ / population equivalent for an aerobic digester serving an extended aeration facility (MBR most closely resembles an extended aeration process) “unless sludge thickening facilities are utilized to thicken the sludge concentration to greater than 2 percent. If such thickening is provided, the

digestion values may be decreased proportionally.” The MBT process at the Tuxedo Reserve WWTP will provide sludge thickening in excess of 4 percent and as such, the total digester capacity will be 1.5 ft³ / population equivalent. With the population equivalent of 3,453, (ADF/75 gpd/cap) the required digester volume is 38,746 gallons.

For equipment continuity, the MBT unit will consist of a single flat plate membrane unit (half of the double stack units utilized for the MBR) and will consist of approximately 3,200 ft² of membrane surface area. Few design standards for membrane bioreactors have been established. Delaware Engineering has completed multiple pilots utilizing MBT technology and has determined the optimum maximum membrane flux rates should not exceed 4-5 gal/day/ft². With a total membrane area of 3,200 ft², the MBT permeate pump will be sized for a peak flow of 10 gpm which corresponds to a peak flux rate of 4.5 gal/day/ft². Piloting has also revealed that the optimum return rate between the MBT and the digester is 6 times the permeate rate. As such, the facility will be equipped with two positive displacement return pumps (one duty, one standby), each rated for 60 gpm.

The design point of the MBT/Digester system operating at 259,000 gpd is as follows:

Solids Production (324 lbs WAS and 50 lbs alum sludge)	374	lbs/day
WAS solids concentration	0.8 %	
WAS rate at 0.8% solids	5,600	gpd
Liquid sludge to be hauled concentration	4.5%	
Volume of liquid sludge (4.5%) to be hauled	995	gpd
Permeate rate	4,600	gpd
Permeate rate at 24 hours / day	3.20	gpm
Flux rate at 3.20 gpm	1.44	gal/day/ft ²
Permeate rate at 8 hours/day	9.59	gpm
Flux rate at 9.59 gpm	4.32	gal/day/ft ²

Aeration and mixing of the digesters and MBT will be accomplished utilizing coarse bubble diffusers and blowers. Pilot testing has shown that the proposed flat plate membrane requires air scour of up to 0.6 scfm per plate. With 200 plates, the MBT blower will be sized to provide 120 scfm. Standards require 30 scfm / 1,000 ft³ of digester capacity. This equates to a required blower capacity of 160 scfm to service both digesters. Two 160 scfm digester blowers will be provided, with one duty blower and one standby blower. To provide a continuity, the MBT blower will be sized for 160 scfm. The digested sludge will be hauled in liquid form from the facility to a facility capable of final dewatering and disposal of the liquid sludge.

3.1.4.11 WWTP Discharge

The Tuxedo Reserve WWTP will discharge to the Ramapo River utilizing the existing outfall from the Town's WWTP.

3.1.4.12 Supervisory Control and Data Acquisition (SCADA)

The WWTP will be equipped with a full supervisory control and data acquisition (SCADA) system. This system will provide automated control and data acquisition to all components of the facility and will allow for the facility to operate in an unmanned condition. The SCADA system will provide influent and effluent flow monitoring, flow pacing of pumps/blowers/chemical feed systems to match varying process conditions, automatic restart of all equipment in the event of a utility power failure, automatic start of backup equipment in the event of the duty equipment failure and alarm callouts to the facility operators in the event of failure. Further, the facility will be equipped with an emergency generator and automatic transfer switch which will automatically transfer the facility to backup power in the event of a utility power disruption.

4.0 CONSTRUCTION OPERATIONS

A construction sequence will be prepared as part of detailed design.

5.0 OPERATION AND MAINTENANCE

An Operations and Maintenance Manual will be prepared and provided to the operators during the start-up period. Training on all new equipment will also be provided by the equipment manufacturers.

6.0 CONSTRUCTION COSTS

A preliminary Construction Cost Estimate is attached as Exhibit C.

7.0 DESIGN SUMMARY

A summary of the design criteria for the Tuxedo Reserve WWTP is outlined in Table 6.0.

**TABLE 6.0
DESIGN CRITERIA SUMMARY**

Average Annual Daily Flow, ADF	259,000	GPD
Maximum Monthly Daily Flow, MMDF (30 Day Average)	311,000	GPD
Peak Flow (before equalization)	854,700	GPD
Peak Flow (after equalization – Peak Day)	569,800	GPD

Influent Screening	Proposed
Number of Units	2
Flow Velocity at PHF (fps)	3.0
Regulatory Maximum (fps)	3.0
Capacity / Screen (gpm)	600

Grit Removal Equipment (Vortex and Classifiers)	Proposed
Number of Units	1 (with bypass)
Capacity / Unit (gpm)	1,150

Equalization Tank	Proposed
Number of Units	2
Capacity per Unit (gallons)	25,900
Total Capacity (gallons)	51,800
Number of EQ Pumps	2
Capacity of Each Unit (gpm)	400
Total Capacity w/ Largest Unit Out of Service (gpm)	400
Number of Blowers (<i>utilizes common spare w/digester blowers</i>)	1
Capacity / Blower (scfm)	65
Capacity with largest unit out of service (scfm)	65

Pre-Aeration Tanks	Proposed
Number of Units	2
Total Volume Each (gallons)	57,200
Total Pre-Aeration Volume (gallons)	114,400
Number of Blowers	2
Capacity / Blower (scfm)	420
Capacity with largest unit out of service (scfm)	420

MBR Basins	Proposed
Number of MBR Basins	3
MBR Units / Basin	2
Total Surface Area / Unit(sf)	6,400
Flux @ ADF (gpd/sf – all units in service)	6.7
Flux at PHF (gpd/sf – one unit out of service)	17.8

Number of Air Scour Blowers	2
Capacity / Blower (scfm)	420
Capacity with largest unit of service (scfm)	420
Number of Permeate Pumps	4
Capacity / Pump (gpm)	180
Capacity with largest unit out of service (gpm)	180

Return Sludge Pumping	Proposed
Number of Units	2
Capacity / Pump (gpm)	1,600
Total Capacity w/ One Unit Out of Service (gpm)	1,600

Digester Tanks	Proposed
Number of Units	2
Total Volume Each (gallons)	19,400
Total Digester Volume (gallons)	38,800
Number of Blowers	2
Capacity / Blower (scfm)	160
Capacity with largest unit out of service (scfm)	160

MBT Basin	Proposed
Number of MBT Basins	1
MBT Units / Basin	1
Total Surface Area / Unit(sf)	3,200
Flux at ADF – 24 Hour Operation (gpd/sf)	1.21
Flux at ADF – 8 Hour Operation (gpd/sf)	3.64
Number of Air Scour Blowers (<i>common spare w/digester blowers</i>)	1
Capacity / Blower (scfm)	160
Capacity with largest unit of service (scfm)	160
Number of Permeate Pumps	1
Capacity / Pump (gpm)	10

Chemical Feed Systems	Alum	Magnesium Hydroxide
Number of Units	2	2
Capacity / Pump (gpd)	57	40
Capacity with largest unit out of service (gpd)	57	40
Chemical Tank Size (gallons)	760	500

FIGURES

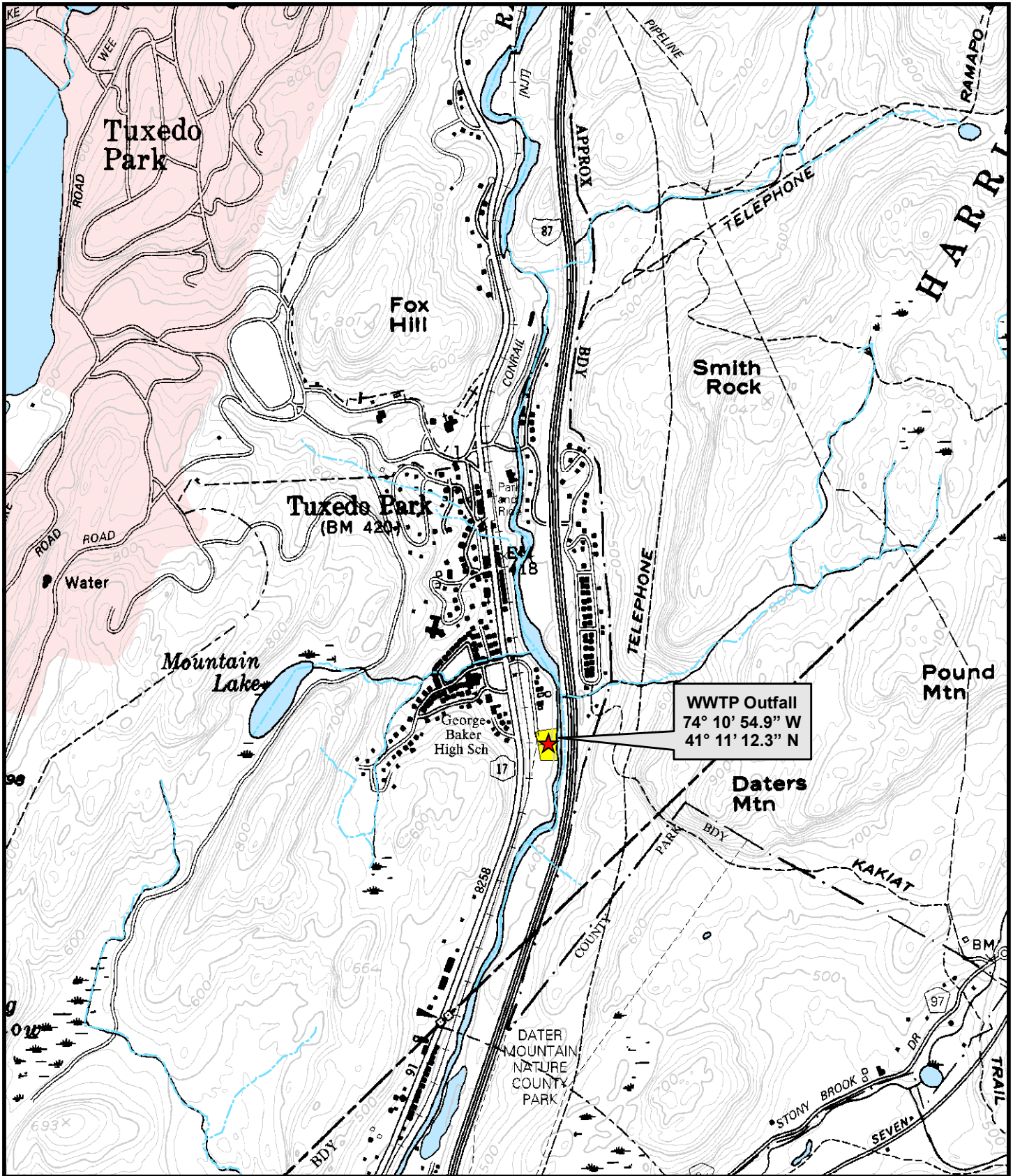
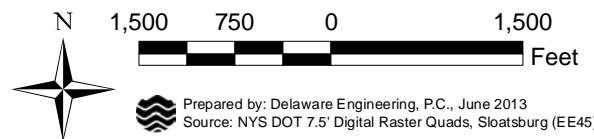
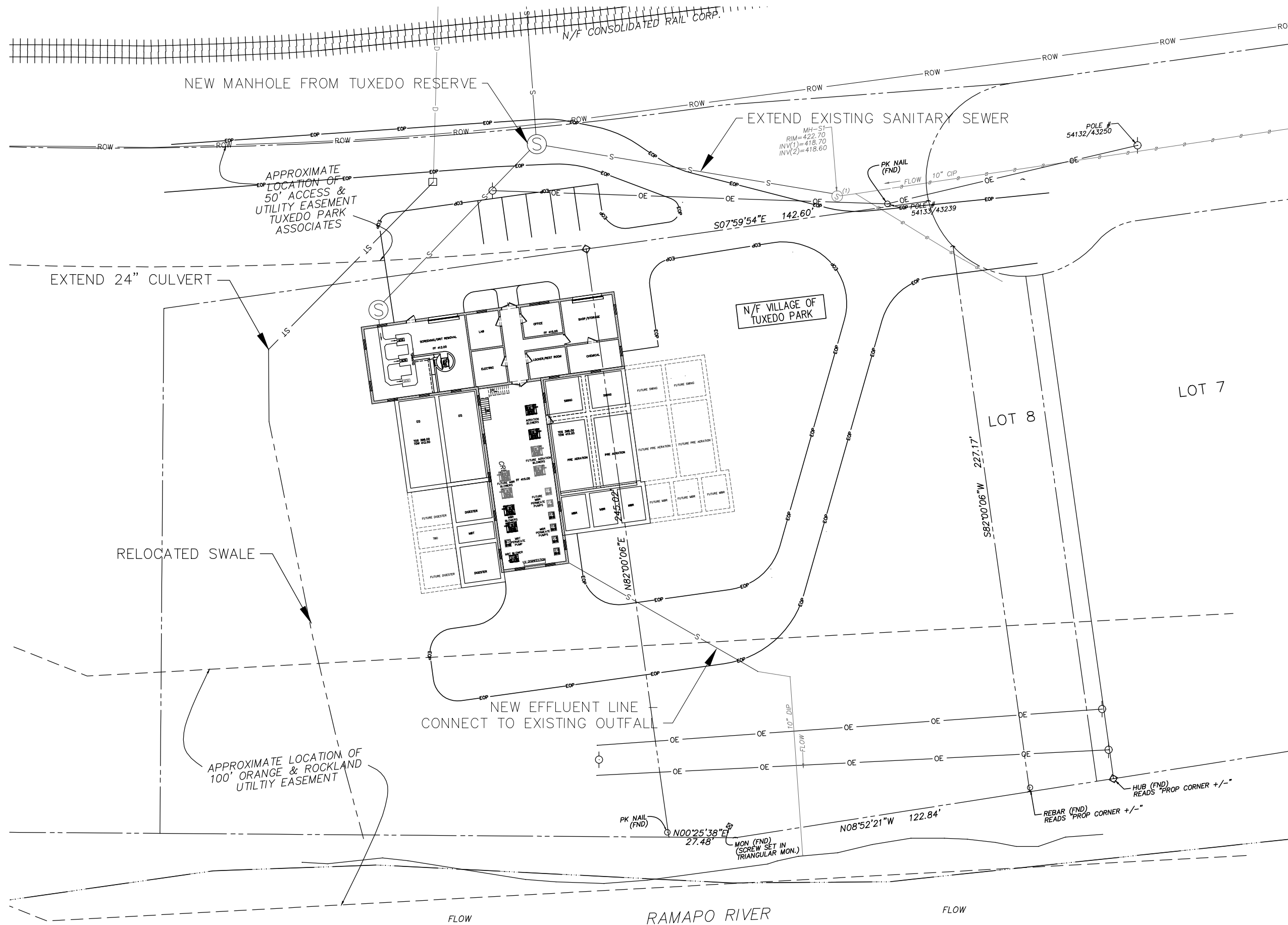


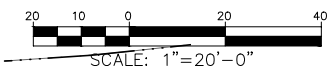
FIGURE 1
TUXEDO RESERVE WWTP
LOCATION MAP
 TOWN OF TUXEDO, ORANGE COUNTY, NEW YORK



H:\Drawings\Tuxedo Reserve\TUXEDO WWTP\Tuxedo WWTP Site Rev2.dwg, FIG 2, 6/21/2013 3:07:47 PM



PROPOSED SITE PLAN
SCALE: 1" = 20'



CONCEPTUAL

DATE: 6/13
DRAWN BY: [blank]
SCALE: [blank]
REVIEWED BY: BDJ
PROJECT NO.: 12-905
FILE: [blank].nme

DELAWARE ENGINEERING, P.C.
CIVIL AND ENVIRONMENTAL ENGINEERING
28 MADISON AVENUE EXTENSION, ALBANY, NY 12203-5118, 452.1290
8-2 DIETZ STREET, SUITE 303, ONEONTA, NY 13820-6074, 432.8073

NO.	DATE	DESCRIPTION

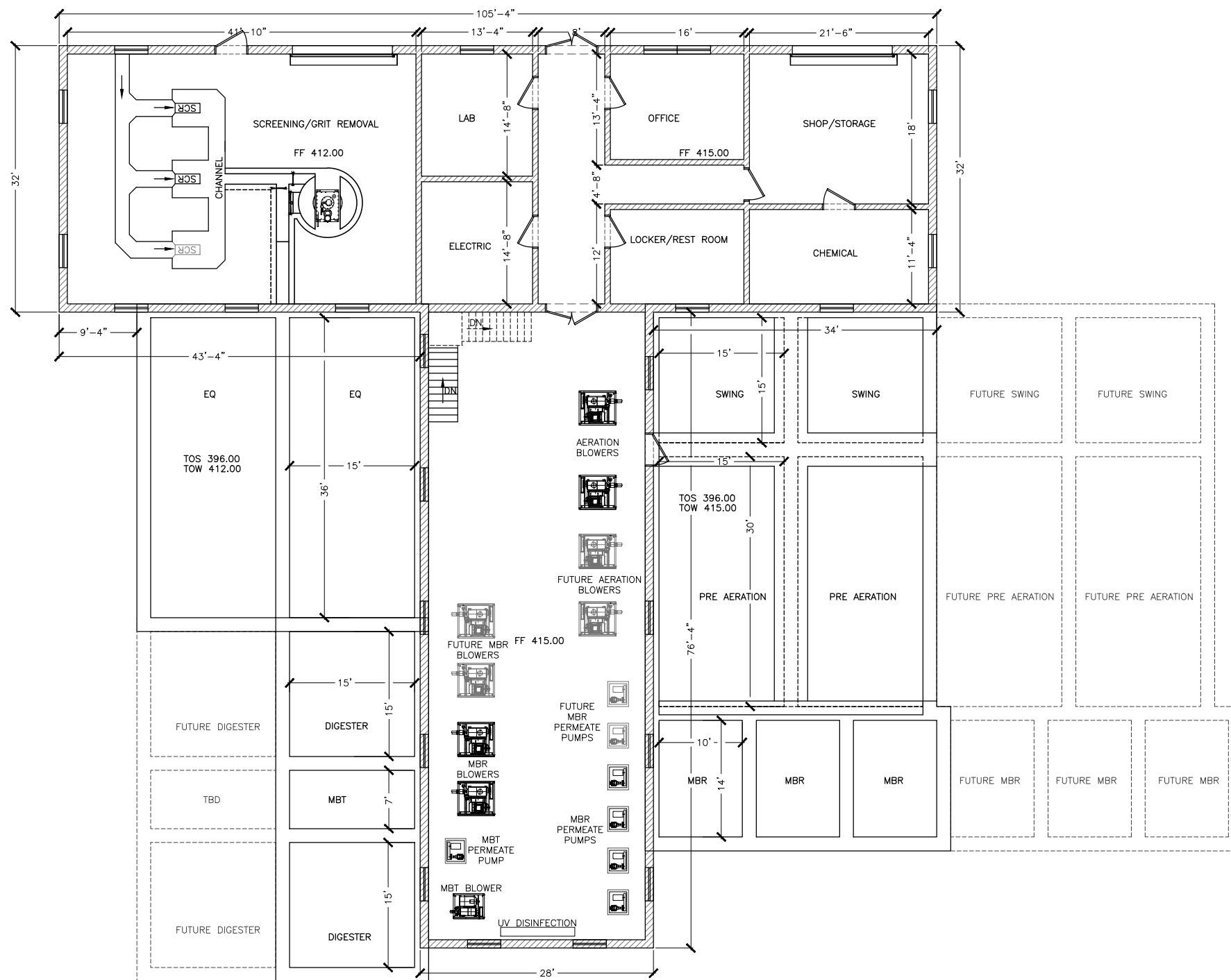
WASTEWATER TREATMENT PLANT
TUXEDO RESERVE
TOWN OF TUXEDO
ORANGE COUNTY, NY

PROPOSED TUXEDO
WASTEWATER
TREATMENT PLANT
SITE PLAN

SHEET:
FIG 2

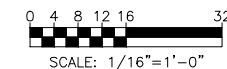
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H:\Drawings\Tuxedo Reserve\TUXEDO WWTP\TuxedoWWTP Rev2.dwg, FIG 3, 6/21/2013 10:50:39 AM



MECHANICAL PLAN @ EL 415.0, 412.0

SCALE: 1/16"=1'-0"



CONCEPTUAL

CONCEPTUAL WWTP
MECHANICAL PLAN
@ EL 415.0, 412.0

SHEET:

FIG 3

WASTEWATER TREATMENT PLANT
TUXEDO RESERVE
TOWN OF TUXEDO
ORANGE COUNTY, NY

REVISIONS	
NO.	DESCRIPTION

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ENGINEERING, P.C.**
CIVIL AND ENVIRONMENTAL ENGINEERING

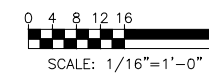
28 MADISON AVENUE EXTENSION, ALBANY, NY 12203 - 518.452.1290
8-P DIEZ STREET, SUITE 303, ONEONTA, NY 13820 - 607.432.8073

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FILE: TuxedoWWTP Rev2

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MECHANICAL PLAN @ EL 404.0, 396.0
SCALE: 1/16"=1'-0"



CONCEPTUAL

CONCEPTUAL WWTP
MECHANICAL PLAN
@ EL 404.0, 396.0

SHEET:

FIG 4

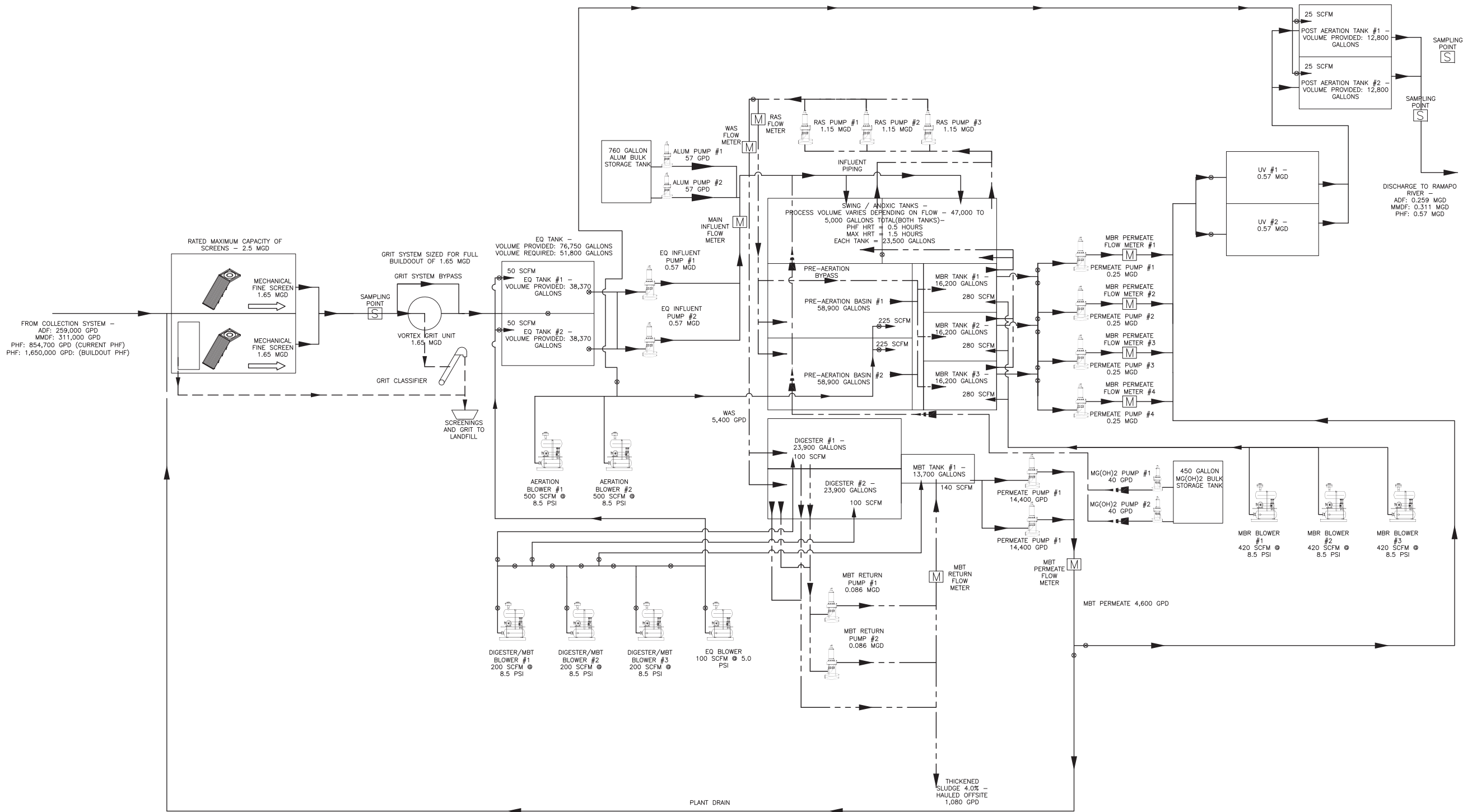
WASTEWATER TREATMENT PLANT
TUXEDO RESERVE
TOWN OF TUXEDO
ORANGE COUNTY, NY

REVISIONS	
NO.	DESCRIPTION

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8-2 DIETZ STREET, SUITE 303, ONEONTA, NY 13820-6074, 432.8073

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FILE: BenaWWTP Rev1

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PROCESS SCHEMATIC
SCALE: NTS

DATE: 1/14
DRAWN BY: BDU
SCALE: NTS
REVIEWED BY: BDU
PROJECT NO.: 12-905
FILE: TUXEDO_PROCESSSCHEMATIC.DWG

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NO.	DATE	DESCRIPTION

WASTEWATER TREATMENT PLANT
TUXEDO RESERVE
TOWN OF TUXEDO
ORANGE COUNTY, NY

PROPOSED PROCESS SCHEMATIC

SHEET:
FIG 5

WARNING - IT IS A VIOLATION OF NEW YORK EDUCATION LAW SECTION 7209.2, FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR, TO ALTER THIS DOCUMENT IN ANY WAY. IF ALTERED THE ALTERING PERSON SHALL COMPLY WITH THE REQUIREMENTS OF NEW YORK EDUCATION LAW, SECTION 7209.2.

REGULATORY SUBMISSION

EXHIBITS

Exhibit A

Soil Borings and Preliminary Foundation Recommendations

River Drive Center 1 Elmwood Park, NJ 07407 T: 201.794.6900 F: 201.794.0366

TO: Andrew Dance / Tuxedo Reserve Owner, LLC

FROM: Giorgi Khardzeishvili, P.E. G.K.
Mark Seel, P.E., P.G.

INFO: Terry Wright / Delaware Engineering
George Derrick / Langan
Barbara Ito / Langan

DATE: 13 November 2007

RE: **Preliminary Foundation Recommendations**
Proposed Wastewater Treatment Plant Facility
Tuxedo, New York
Langan Project No.: 9108604

As requested, we have completed a preliminary subsurface investigation for a proposed wastewater treatment plant facility at the above referenced site. This memorandum summarizes our initial thoughts regarding a foundation type for the proposed waste water treatment facility; a formal report summarizing the investigation and final recommendations will be prepared once final layout and loading information is available.

PROJECT DESCRIPTION

The site is located in Tuxedo Park, New York and is bounded by the Ramapo River to the east, Contractors Road to the west, and industrial buildings to the south the existing waste water treatment plant to the north; see drawing LP-1 for location.

Based on a concept sketch prepared by Delaware Engineering, P.C., we received on 30 October 2007, current development plans call for constructing a waste water treatment plant having a gross footprint area of approximately 11,700 ft². Four (4) borings were requested to be drilled in the central portion of the building. We understand that the lowest bottom of the slab elevation in the central portion of the building is 392 feet; and in northern and southern portions of the building lowest bottom of the slab elevations are 412 feet and 398 feet, respectively.

Based on currently available structural loading information provided by Delaware Engineering, we understand the following non-factored loads: wall load at the top of the foundation level of 2,000 pounds per linear foot; maximum floor slab loads for the basins, filters, sludge holding tank, equipment, and office areas is to be 1000 pounds per square foot (psf) and 1250 psf for dead and live loads, respectively.

Technical Memorandum

Preliminary Foundation Recommendations
Proposed Wastewater Treatment Plant Facility
Tuxedo, New York
Langan Project No.: 9108604
13 November 2007- Page 2 of 3

SUBSURFACE FINDINGS

Four (4) borings were drilled for this study between 31 October 2007 and 5 November 2007 by Soiltesting, Inc., using a track-mounted drill rig. The borings were advanced using hollow-stem auger and mud rotary techniques to depths ranging from 42 feet to 54 feet below existing ground surface; see Appendix A for Boring Logs. Surface elevations were inferred from a February 2007 survey prepared by Langan Engineering and 1998 aerial survey prepared by ADR.

The boring data indicates the building footprint is underlain by approximately 4 feet to 11 feet of fill, which is underlain by typically medium dense to dense sand with varying amounts of silt and gravel to depths of at least 54 feet, where auger refusal was encountered in one boring. Groundwater was encountered approximately 8 feet to 20 feet below ground surface, corresponding to elevations of 390.0 feet to 392.0 feet. See drawing BP-1 for a Boring Profile.

Eight (8) borings were drilled in July and August 2005 and February 2007 for earlier and superseded plant layouts; these boring logs are included in Attachment B.

PRELIMINARY FOUNDATION DESIGN RECOMMENDATIONS

Shallow Foundations and Ground Floor Slabs

Considering the excavations needed to achieve proposed lowest bottom of the slab elevations, the existing soils are suitable to support the proposed structures on shallow footings and a combination of conventional slab-on-grade and pressure slab.

At this time we recommend footings bearing on natural site soils or approved compacted fill be designed using an allowable contact stress of 4 kips/ft². Once the final layout, grading, elevations, and loading data of the structure become available, we will prepare final report with final footing design bearing pressure recommendations.

We understand a 2-foot thick pressure slab is required in the lowest process areas of the facility. A conventional slab-on-grade can be constructed above the 100-year flood level of el 403 feet. A 6-inch thick layer of free-draining crushed stone should be constructed between the slabs and bearing surfaces. The slabs can be designed using a modulus of subgrade reaction of 150 lbs/in³.

Since lowest portion of the plant will be located below the 100-year flood level of el 403 feet, the slabs should be fully waterproofed with a membrane-type waterproofing material such as Preprufe 300R as manufactured by W.R. Grace or equivalent and water stops placed between all joints. Footing elements and floor slabs below the 100-year flood level will be subjected to uplift forces caused by flooding. Should the mass of the structures be insufficient to resist the uplift forces, anchors can be installed. Individual foundation elements and on-grade floor slabs subjected to uplift loads can be restrained by pre-stressed double corrosion protected steel anchors drilled and grouted into soil. The anchors should be spaced not closer than 5 ft center-to-center. We anticipate a 1¼-inch diameter double corrosion protected SAS threadbar

LANGAN

Technical Memorandum

embedded into existing sandy soils can sustain an uplift load of 114 kips. The anchor's minimum anchor bond zone diameter should be 5 inches. These values are based on the anchors being tested to 133% of the design load; field tests are required to confirm this preliminary anchor capacity.

Seismic Factors

The following parameters obtained from the New York State Building Code, and the United States Geologic Survey should be used for seismic design of the proposed building:

- Site Class = D
- Maximum Considered Earthquake Ground Motions:
 - 0.2 Second Spectral Response Acceleration, %g: $S_s = 0.384$
 - 0.1 Second Spectral Response Acceleration, %g: $S_1 = 0.148$

The above ground motions should be adjusted for site class effects using the following factors:

$$F_a = 1.49$$

$$F_v = 2.40$$

Below-Grade Walls

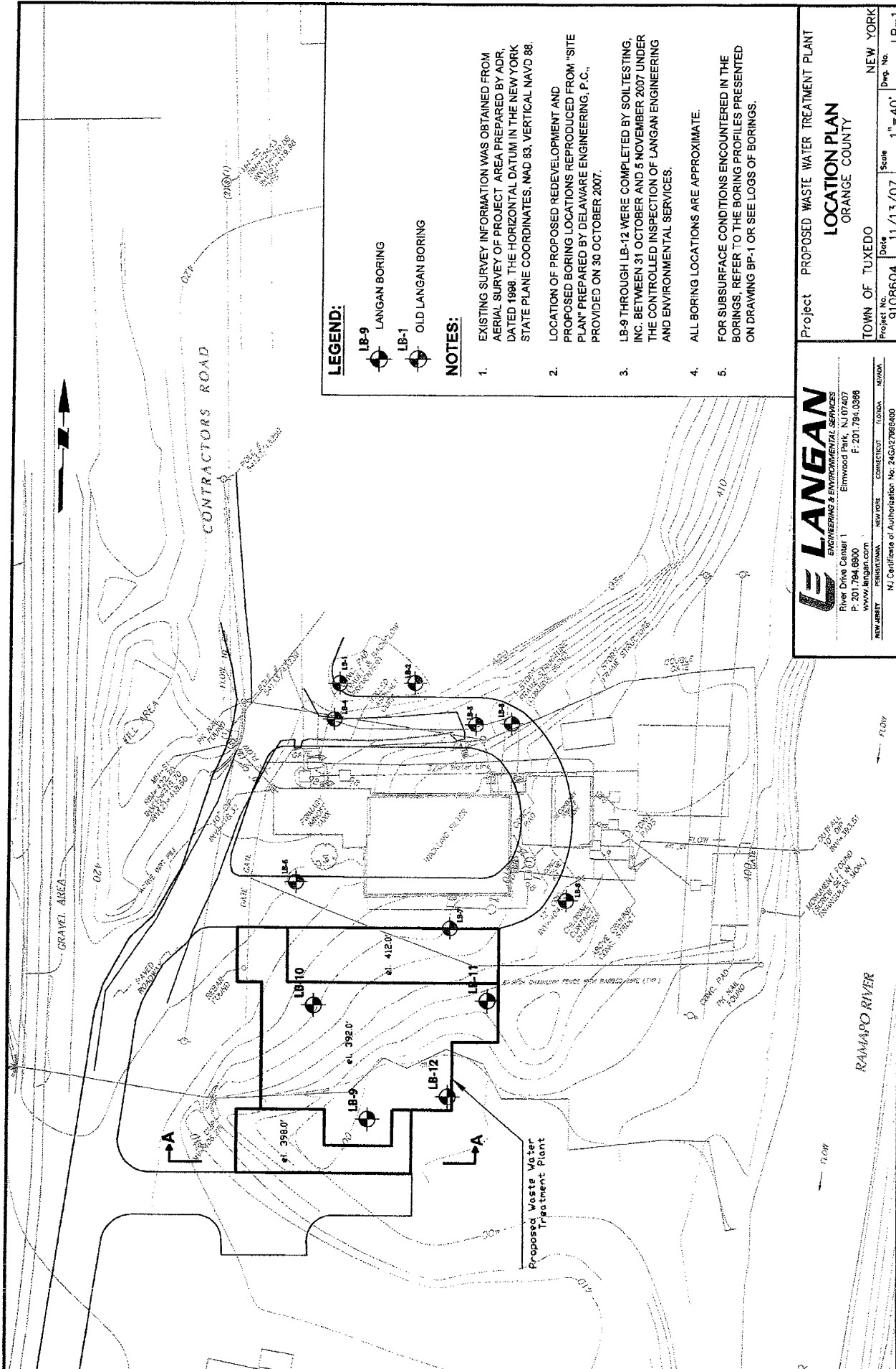
The foundation walls will be subjected to long-term lateral pressures. Considering the proposed development and our site observations to date, we have calculated preliminary lateral pressures considering soil, surface surcharge, and earthquake loading that would be applied to the below-grade walls. Diagrams giving our recommended lateral pressures for use in below-grade wall design are shown in Figure LPD-1. All walls below the 100-year flood level should be fully waterproofed using membrane-type waterproofing material such as Preprufe 160R as manufactured by W.R. Grace or equivalent.

CLOSURE

This technical memorandum gives our preliminary site preparation and foundation recommendations. If you have any questions, please call.

DRAWINGS

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LEGEND:

- LB-9 LANGAN BORING
- LB-1 OLD LANGAN BORING

NOTES:

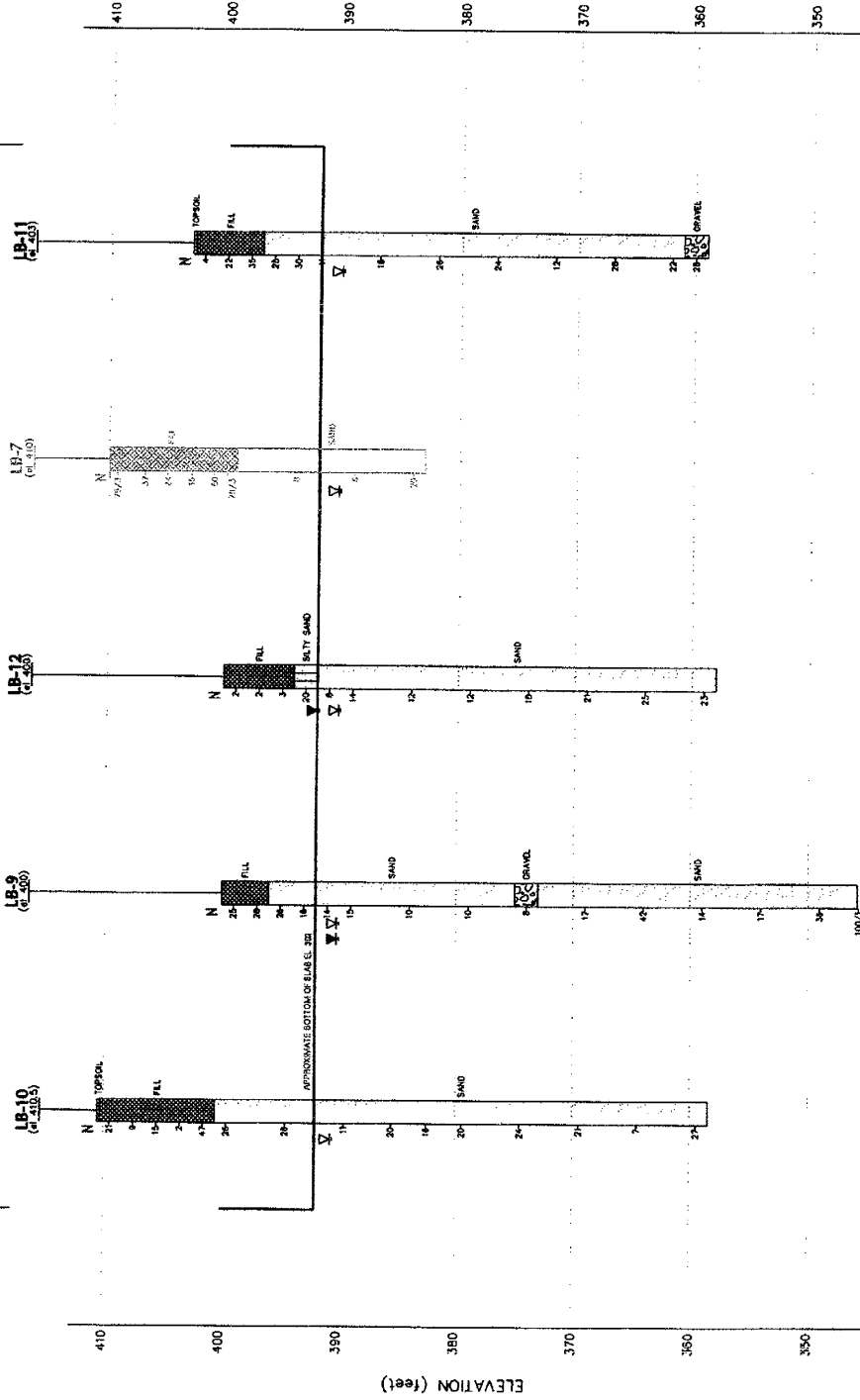
1. EXISTING SURVEY INFORMATION WAS OBTAINED FROM AERIAL SURVEY OF PROJECT AREA PREPARED BY ADR, DATED 1988. THE HORIZONTAL DATUM IN THE NEW YORK STATE PLANE COORDINATES, NAD 83, VERTICAL NAVD 88.
2. LOCATION OF PROPOSED REDEVELOPMENT AND PROPOSED BORING LOCATIONS REPRODUCED FROM "SITE PLAN" PREPARED BY DELAWARE ENGINEERING, P.C., PROVIDED ON 30 OCTOBER 2007.
3. LB-9 THROUGH LB-12 WERE COMPLETED BY SOIL TESTING, INC. BETWEEN 31 OCTOBER AND 5 NOVEMBER 2007 UNDER THE CONTROLLED INSPECTION OF LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES.
4. ALL BORING LOCATIONS ARE APPROXIMATE.
5. FOR SUBSURFACE CONDITIONS ENCOUNTERED IN THE BORINGS, REFER TO THE BORING PROFILES PRESENTED ON DRAWING BP-1 OR SEE LOGS OF BORINGS.

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 River Drive Center 1
 Elmwood Park, NJ 07407
 P: 201.794.6900
 www.langan.com

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 CONNECTICUT: P.E. # 000000000
 FLORIDA: P.E. # 000000000
 MARYLAND: P.E. # 000000000
 N.J. Certificate of Authorization No. 24G427886400

Project		PROPOSED WASTE WATER TREATMENT PLANT	
Location		ORANGE COUNTY	
Town		TOWN OF TUJEDO	
Project No.	Date	Scale	Dwg. No.
91G8604	11/13/07	1" = 40'	LP-1

PROPOSED BUILDING



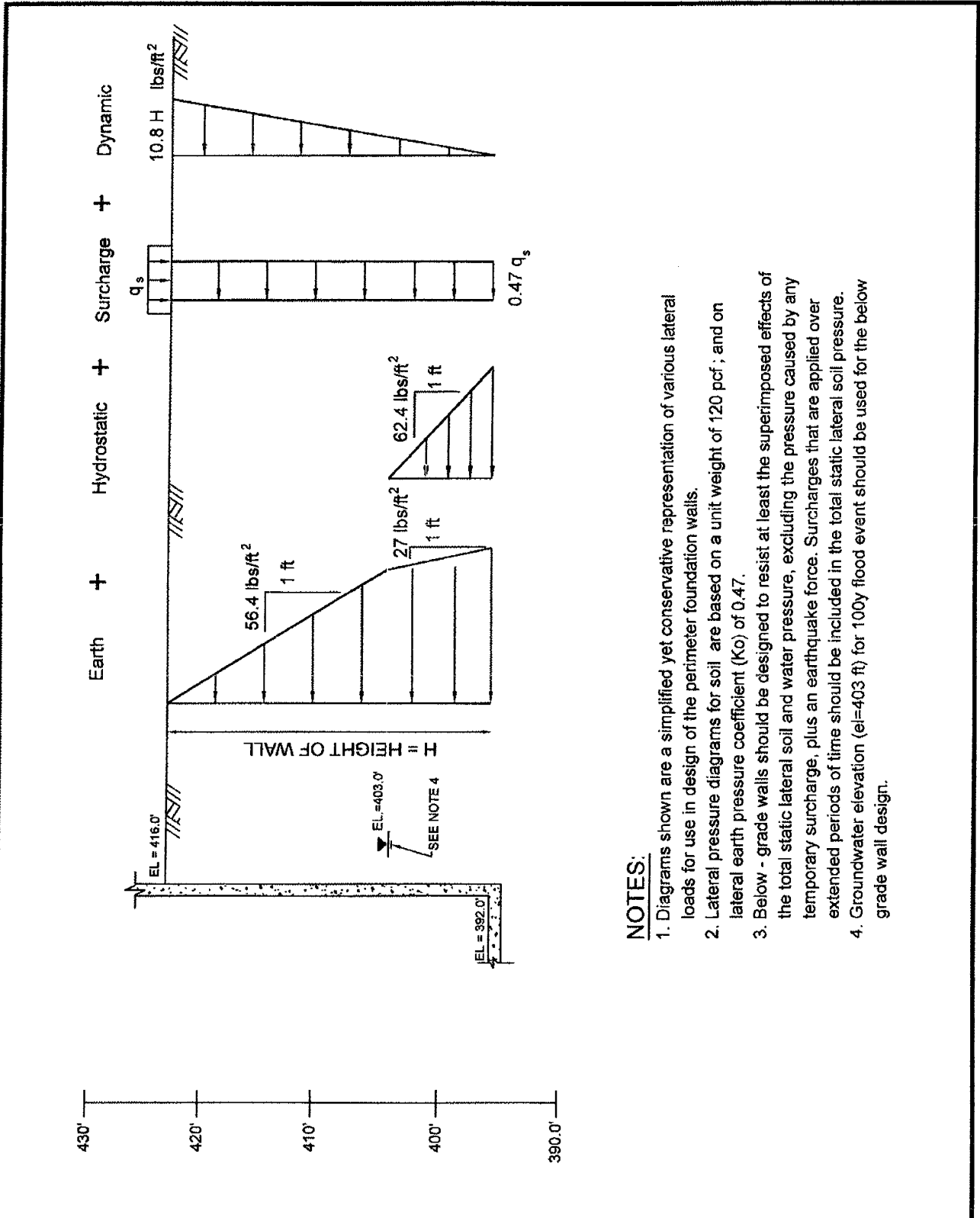
SECTION A-A
 VERTICAL: 1"=10'
 HORIZONTAL: NTS

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NEW JERSEY NEW YORK CONNECTICUT ILLINOIS INDIANA MISSOURI
 NJ Certificate of Authorization No. 216A027086-600

Project: **PROPOSED WASTE WATER TREATMENT PLANT**
BORING PROFILE
 ORANGE COUNTY
 TOWN OF TUXEDO

Project No. 9108604 Date 11/13/07 Scale AS SHOWN
 NEW YORK Dwg. No. BP-1



NOTES:

- Diagrams shown are a simplified yet conservative representation of various lateral loads for use in design of the perimeter foundation walls.
- Lateral pressure diagrams for soil are based on a unit weight of 120 pcf ; and on lateral earth pressure coefficient (K_0) of 0.47 .
- Below - grade walls should be designed to resist at least the superimposed effects of the total static lateral soil and water pressure, excluding the pressure caused by any temporary surcharge, plus an earthquake force. Surcharges that are applied over extended periods of time should be included in the total static lateral soil pressure.
- Groundwater elevation ($e_i=403 \text{ ft}$) for 100y flood event should be used for the below grade wall design.



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NEW JERSEY PENNSYLVANIA NEW YORK CONNECTICUT FLORIDA NEVADA

NJ Certificate of Authorization No: 24GA27996400

Project PROPOSED WASTE WATER TREATMENT PLANT
**LATERAL PRESSURE
 DESIGN DIGRAM**

TUXEDO ORANGE COUNTY NEW YORK

Project No. 9108604	Date 11/13/07	Scale AS SHOWN	Dwg. No. LPD-1
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APPENDIX A

Boring Logs

Project Tuxedo Reserve - Waste Water Treatment Plant				Project No. 9108604			
Location Tuxedo, NY				Elevation and Datum Approx. el. 400			
Drilling Agency Soiltesting, Inc				Date Started 11/2/07		Date Finished 11/2/07	
Drilling Equipment Diedrich D-50L				Completion Depth 54.2 ft		Rock Depth 54.2 ft	
Size and Type of Bit 3-3/4" I.D. HSA, 2-7/8" Tri-cone Roller Bit (Mud Rotary)				Number of Samples Disturbed 15		Undisturbed - Core -	
Casing Diameter (in) 3" I.D. Steel Casing		Casing Depth (ft) 54.25		Water Level (ft.) First ∇ 10		Completion ∇ 9.5 24 HR. ∇ 10	
Casing Hammer Safety	Weight (lbs) 300	Drop (in) 30		Drilling Foreman Tom Page			
Sampler 2" Split Spoon Sampler				Inspecting Engineer Oleg Tkachenko			
Casing Hammer Safety	Weight (lbs) 140	Drop (in) 30					

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MATERIAL SYMBOL	Elev. (ft)	Sample Description	Casing blws/ft	Depth Scale	Sample Data					Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)	
					Number	Type	Recov. (ft)	Penetr. resist. BL/in	N-Value (Blows/ft)		
	400.0	Dark brown f-c SAND, some silt, trace f-m gravel, trace roots (moist) [FILL]		0							Started drilling on 11/2/07 at 9:10 am.
				1	S-1	SS	13			25*	
		Dark brown f-c SAND, some silt, trace f-m gravel (moist) [FILL]		2							Drilled to 4' using H.S.A.
				3	S-2	SS	12			28*	
	396.0	Brown f-c SAND, trace f-c gravel, trace silt (moist)		4							Auger grinding from 4' to 8'.
				5	S-3	SS	13			26*	
		Brown f-c SAND, trace silt (moist)		6							Drilled to 8' using H.S.A.
				7	S-4	SS	12			16*	
		Brown f-c SAND, trace silt (moist)		8							Water at 10' (inferred for the cuttings).
				9	S-5	SS	12			14*	
		Brown f-c SAND, trace f-m gravel, trace silt (wet)		10							Drilled to 15' using H.S.A.
				11	S-6	SS	16			15*	
				12							
				13							
				14							
		Brown f-c SAND, trace f-m gravel, trace silt (wet)		15							
				16	S-7	SS	3			10*	
				17							
				18							
				19							
				20							

Project		Project No.									
Tuxedo Reserve - Waste Water Treatment Plant		9108604									
Location		Elevation and Datum									
Tuxedo, NY		Approx. el. 400									
MATERIAL SYMBOL	Elev. (ft)	Sample Description	Casing blws/ft	Depth Scale	Sample Data					Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)	
					Number	Type	Recov. (in)	Penetr. resist. BL/6in	N-Value (Blows/ft)		
		No Recovery		20							Driller advanced casing to 20'. Drilled to 20'.
				9	S-8	SS		8			
				21			0	5	10		
				15				5			
				22				7			
				14							
				23							
				11							
				24							
	375.0	Brown f-c GRAVEL, trace f-c sand (wet)		25				12			Advanced casing to 25'. Drilled to 25'.
				7	S-9	SS	6	4	8		
				26				4	10		
	373.0			14							
		Brown f-c SAND, trace f-m gravel, trace silt (wet)		27							Advanced casing to 30'. Drilled to 30'.
				17							
				28							
				12							
				29							
				10							
				30				11			
				4	S-10	SS	12	9	17		
				31				8			
				9				7			
				32							
				10							
				33							
				12							
				34							
		Brown f-c SAND, some f-m gravel, trace silt (wet)		35				17			Advanced casing to 35'. Drilled to 35'.
				17	S-11	SS	9	26	42		
				36				16			
				32				8			
				37							
				27							
				38							
				16							
				39							
				24							
		Brown f-m SAND, trace silt (wet)		40				15			Advanced casing to 40'. (1") silt lense.
				5	S-12	SS	14	7	14		
				41				7			
				9				8			
				42							
				15							
				43							
				16							
				44							
				21							
				45							

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Project		Project No.								
Tuxedo Reserve - Waste Water Treatment Plant		9108604								
Location		Elevation and Datum								
Tuxedo, NY		Approx. el. 400								
MATERIAL SYMBOL	Elev. (ft)	Sample Description	Casing above ft	Sample Data					Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)	
				Depth Scale	Number	Type	Recov. (in)	Penetr. resist. BL/ft		N-Value (Blows/ft)
[Pattern]	345.8	Brown f-c SAND, trace silt (wet)	45							Advanced casing to 45'. Drilled to 45'.
		10	45			25				
		7	46	S-13	SS	13	7	17*		
		13	47				8			
		16	48							
		22	49							
		7	50				11			
		9	51	S-14	SS	7	19	36*		
		43	52				22			
		285	53							
	151	No recovery End of LB-9 at 54'-3".	54	S-15	SS	0	100/1"	Refusal	Casing refusal at 54.25'. Roller bit and split spoon sampler refusal at 54'-3" on possible bedrock. Driller installed temporary monitoring well upon completion. Stopped drilling on 11/2/07 at 1:30 pm.	
			55							
			56							
			57							
			58							
			59							
			60							
			61							
			62							
			63							
			64							
			65							
			66							
			67							
			68							
			69							
			70							

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Project Tuxedo Reserve - Waste Water Treatment Plant		Project No. 9108604	
Location Tuxedo, NY		Elevation and Datum Approx. el. 410.5	
Drilling Agency Soiltesting, Inc		Date Started 11/5/07	Date Finished 11/5/07
Drilling Equipment Diedrich D-50L		Completion Depth 52 ft	Rock Depth
Size and Type of Bit 3-3/4" I.D. HSA, 2-7/8" Tri-cone Roller Bit (Mud Rotary)		Number of Samples Disturbed 15	Undisturbed - Core -
Casing Diameter (in) 3" I.D. Steel Casing	Casing Depth (ft) 50	Water Level (ft.) First 20	Completion 20 24 HR. -
Casing Hammer Safety	Weight (lbs) 300	Drop (in) 30	Drilling Foreman Tom Page
Sampler 2" Split Spoon Sampler	Inspecting Engineer Oleg Tkachenko		
Sampler Hammer Safety	Weight (lbs) 140	Drop (in) 30	

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MATERIAL SYMBOL	Elev. (ft)	Sample Description	Casing blow ft	Sample Data					Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)	
				Depth Scale	Number	Type	Recev. (in)	Penetr. resist. BLU/in		N-Value (Blows/ft)
	410.5	TOPSOIL (Black f-m SAND, some decomposed tree leaves (moist))		0				2		Started drilling on 11/5/07 at 8:30 am.
		Brown f-c SAND, some silt, trace f-m gravel (moist) [FILL]		1	S-1	SS	8	4	21	
		Brown f-m SAND, some silt, trace brick and asphalt fragments (moist) [FILL]		2				3		Drilled to 4' using H.S.A. Auger grinding from 4' to 8'.
		Brown f-c SAND, some brick fragments, some silt (moist) [FILL]		3	S-2	SS	7	4	9	
		Dark brown f-m SAND, some silt, trace glass fragments, trace wood fragments (moist) [FILL]		4				5		
		Dark brown f-c SAND, some silt, trace f-c gravel (moist) [FILL]		5	S-3	SS	4	8	15	
				6				7		Drilled to 8' using H.S.A.
				7	S-4	SS	7	1	1	
				8				1		Drilled to 10' using H.S.A.
				9	S-5	SS	4	34	13	
	400.5	Brown f-c SAND, trace silt, trace f. gravel (moist)		10				8		Piece of gravel stuck at the tip of the spoon. Drilled to 10' using H.S.A.
				11	S-6	SS	14	16	26	
				12				10		Drilled to 15' using H.S.A.
		No recovery		13						
				14						
				15				11		
				16	S-7	SS	0	13	26	
				17				13		
				18				14		
				19						
				20						

Project		Project No.								
Tuxedo Reserve - Waste Water Treatment Plant		9108604								
Location		Elevation and Datum								
Tuxedo, NY		Approx. el. 410.5								
MATERIAL SYMBOL	Elev. (ft)	Sample Description	Casing blow ft	Depth Scale	Sample Data				Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)	
					Number	Type	Recov. (in)	Penetr. resist. BL/ft		N-Value (Blows/ft)
[Material Symbol]		Brown f-c SAND, trace silt, trace f-m gravel (wet)	20							
			0							
			21	S-8	SS	3	4	11		
			15				7			
			22				7			
			9							
			23							Losing mud from 23' to 25'.
			9							
			Brown f-c SAND, trace f-m gravel, trace silt (wet)	24						
				8				33		
			25	S-9	SS	1	16	20		
			12				4			
			26				6			
			13							
			Brown f-c SAND, trace f-m gravel, trace silt (wet)	27						
				14				17		
			28	S-10	SS	10	7	18		
			12				9			
			29				9			
			10							
			Brown f-c SAND, trace silt, trace f. gravel (wet)	30						
				12				17		
			31	S-11	SS	12	10	20		
			21				10			
			32				10			
			14							
			33							
			15							
			34							
			17							
			Brown f-c SAND, trace f. gravel, trace silt (wet)	35						
				14				31		
			36	S-12	SS	12	11	24		
			16				11			
			37				11			
			15							
			38							
			17							
			39							
			18							
			Brown f-c SAND, trace f-m gravel, trace silt (wet)	40						
				14				18		
			41	S-13	SS	10	10	21		
			19				10			
			42				12			
		15								
		43								
		16								
		44								
		8								
		45								

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Project		Project No.							
Tuxedo Reserve - Waste Water Treatment Plant		9108604							
Location		Elevation and Datum							
Tuxedo, NY		Approx. el. 410.5							
MATERIAL SYMBOL	Elev. (ft)	Sample Description	Casing blow ft	Sample Data				Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)	
				Depth Scale	Number	Type	Recov. (ft)		Penetr. resist. BL/ft
[Pattern]	358.5	No recovery	45					Advanced casing to 45'. Drilled to 45'.	
			9						
			46	S-14	SS	0	5		7
			18				2		
			47						15
			19						
			48						
			23						
			49						
			30						
		Brown f-c SAND, trace f. gravel, trace silt (wet)	50					Advanced casing to 50'. Drilled to 50'.	
			51	S-15	SS	16	16		27
			52				11		
		End of LB-10 at 52'-0".	52				4		
			53						
			54						
			55						
			56						
			57						
			58						
			59						
			60						
			61						
			62						
			63						
			64						
			65						
			66						
			67						
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			70						

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Project Tuxedo Reserve - Waste Water Treatment Plant		Project No. 9108604	
Location Tuxedo, NY		Elevation and Datum Approx. el. 403	
Drilling Agency Soiltesting, Inc		Date Started 10/31/07	Date Finished 10/31/07
Drilling Equipment Diedrich D-50L		Completion Depth 44 ft	Rock Depth
Size and Type of Bit 3-3/4" I.D. HSA, 2-7/8" Tri-cone Roller Bit (Mud Rotary)		Number of Samples Disturbed 13 Undisturbed - Core -	
Casing Diameter (in) 3" I.D. Steel Casing	Casing Depth (ft) 42	Water Level (ft.) First ∇ 13 Completion ∇ -	24 HR. ∇ -
Casing Hammer	Weight (lbs)	Drop (in)	
Sampler 2" Split Spoon Sampler		Drilling Foreman Tom Page	
Sampler Hammer	Safety	Weight (lbs) 140	Drop (in) 30
		Inspecting Engineer Oleg Tkachenko	

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MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data				Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
				Number	Type	Recov. (in)	Penetr. resist. BL/ft	
	+403.0		0					
	+402.8	TOPSOIL (Black f-m SAND, some decomposed tree leaves (moist))						Started drilling on 10/31/07 at 9:44 am.
		Brown f-c SAND, trace silt, trace f-m gravel (moist) [FILL]	1	S-1	SS	8	2	
		Brown f-c SAND, some silt, trace f-c gravel (moist) [FILL]	2				2	
		Brown f-c SAND, some silt, trace f-c gravel (moist) [FILL]	3	S-2	SS	6	10	22
		Brown f-c SAND, some silt, trace f-m gravel (moist) [FILL]	4				12	
		Brown f-c SAND, some silt, trace f-m gravel (moist) [FILL]	5	S-3	SS	12	18	35
	+397.0	Light brown f-c SAND, trace silt, trace f-m gravel (moist)	6				15	
		Brown f-c SAND, trace silt, trace f-c gravel (moist)	7	S-4	SS	6	15	25
		Brown f-c SAND, trace silt, trace f-c gravel (moist)	8				10	
		Brown f-c SAND, some f-c gravel, trace silt (moist)	9	S-5	SS	8	15	30
		Brown f-c SAND, some f-c gravel, trace silt (moist)	10				8	
		Brown f-c SAND, some f-c gravel, trace silt (moist)	11	S-6	SS	7	19	41
		Brown f-c SAND, some f-c gravel, trace silt (moist)	12				13	
		Brown f-c SAND, trace f-c gravel, trace silt (wet)	13				19	
		Brown f-c SAND, trace f-c gravel, trace silt (wet)	14				17	
		Brown f-c SAND, trace f-c gravel, trace silt (wet)	15				6	
		Brown f-c SAND, trace f-c gravel, trace silt (wet)	16	S-7	SS	3	9	15
		Brown f-c SAND, trace f-c gravel, trace silt (wet)	17				7	
		Brown f-c SAND, trace f-c gravel, trace silt (wet)	18				5	
		Brown f-c SAND, trace f-c gravel, trace silt (wet)	19					
		Brown f-c SAND, trace f-c gravel, trace silt (wet)	20					

Project		Project No.									
Tuxedo Reserve - Waste Water Treatment Plant		9108604									
Location		Elevation and Datum									
Tuxedo, NY		Approx. el. 403									
MATERIAL SYMBOL	Elev. (ft)	Sample Description	Casing bhw/ft Casing min/ft	Depth Scale	Sample Data				Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)		
					Number	Type	Recov. (in)	Penetr. resist. BL/ft		N-Value (Blows/ft)	
[Symbol: Dotted pattern]		Brown f-c SAND, trace f-m gravel, trace silt (wet)		20				11		Drilled to 20'.	
				21	S-8	SS	12	14	26		
				22				12			
				23				8			
				24							
			Brown f-c SAND, trace silt (wet)		25			8			Start drilling using mud-rotary method. Drilled to 25'.
					26	S-9	SS	14	14		
					27			10	29		
					28			13			
					29						
			Brown f-c SAND, some f-m gravel, trace silt (wet)		30			11			Drilled to 30'.
					31	S-10	SS	8	7		
					32			5	12		
				33			6		Mud lost from 33'-34'.		
				34							
		No recovery		35			30		Drilled to 35'. Borehole collapsed at 30'. Driller advanced 3" steel casing to 35'.		
				36	S-11	SS	0	21			
				37			7	28			
				38			8				
				39							
		No recovery		40			14		Driller advanced 3" steel casing to 40'. Drilled to 40'.		
				41	S-12	SS	0	11			
				42			11	22			
				43			9		Driller advanced 3" steel casing to 42'. Drilled to 42'.		
		Brown and Red f-m GRAVEL, trace f-m sand, trace silt (wet)		42			27				
				43	S-13	SS	5	12	28		
				44			16				
				45			9		Stopped drilling on 10/31/07 at 3:40 pm. Driller pulled augers out of the borehole		
		End of LB-11 at 44'-0".		44							

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Project Tuxedo Reserve - Waste Water Treatment Plant		Project No. 9108604	
Location Tuxedo, NY		Elevation and Datum Approx. el. 403	

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Casing blws / ft Comp. min / ft	Depth Scale	Sample Data				Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
					Number	Type	Recov. (ft)	Penetr. resist. BLU/in	
				45					on 11/1/07. Borehole collapsed at 6.5 feet below ground surface. Borehole was backfilled using drilling cuttings mixed with grout on 11/1/07.
				46					
				47					
				48					
				49					
				50					
				51					
				52					
				53					
				54					
				55					
				56					
				57					
				58					
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				60					
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				70					

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Project Tuxedo Reserve - Waste Water Treatment Plant			Project No. 9108604		
Location Tuxedo, NY			Elevation and Datum Approx. el. 400		
Drilling Agency Soiltesting, Inc			Date Started 11/1/07		Date Finished 11/1/07
Drilling Equipment Diedrich D-50L			Completion Depth 42 ft		Rock Depth
Size and Type of Bit 3-3/4" I.D. HSA, 2-7/8" Tri-cone Roller Bit (Mud Rotary)			Number of Samples Disturbed 12		Undisturbed - Core -
Casing Diameter (in) 3" I.D. Steel Casing		Casing Depth (ft) 40	Water Level (ft.) First ∇ 10		Completion ∇ 8 24 HR. ∇ 8
Casing Hammer Safety	Weight (lbs) 300	Drop (in) 30	Drilling Foreman Tom Page		
Sampler 2" Split Spoon Sampler			Inspecting Engineer Oleg Tkachenko		
Casing Hammer Safety	Weight (lbs) 140	Drop (in) 30			

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MATERIAL SYMBOL	Elev. (ft)	Sample Description	Casing blow/ft	Depth Scale	Sample Data					Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
					Number	Type	Recov. (in)	Penetr. resist. BL/6in	N-Value (Blows/ft)	
	400.0	Dark brown f-m silty SAND (wet) [FILL]		0				1	10	Started drilling on 11/1/07 at 9:50 am.
				1	S-1	SS	8	1	20	
		Dark brown f-c silty SAND (wet) [FILL]		2				1		Drilled to 4' using H.S.A.
				3	S-2	SS	24	1	2	
		Dark brown to Black f-c SAND, some silt (wet) [FILL]		4				1		
				5	S-3	SS	18	2	1	
	394.0	Brown f-c SAND, some silt, trace f-m gravel (wet)		6				5		Drilled to 8' using H.S.A.
				7	S-4	SS	12	5	20	
	392.0	Brown f-m SAND, trace f-m gravel, trace silt (wet)		8				10		
				9	S-5	SS	16	3	8	
		Brown f-m SAND, trace f-m gravel, trace silt (wet)		10				0		
				11	S-6	SS	14	7	14	
				12				9		Advanced casing to 15'. Drilled to 15'.
				13						
				14						
				15						
		Brown m-c SAND, some f-m gravel, trace silt (wet)		15				8		
				16	S-7	SS	4	6	12	
				17				5		
				18						
				19						
				20						

Project		Project No.							
Tuxedo Reserve - Waste Water Treatment Plant		9108604							
Location		Elevation and Datum							
Tuxedo, NY		Approx. el. 400							
MATERIAL SYMBOL	Elev. (ft)	Sample Description	Casing blow/ft	Sample Data				Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)	
				Depth Scale	Number	Type	Recov. (in.)		Penetr. resist. BLU/ft
		No recovery		20					
				2				7	
				21	S-8	SS	0	6	12
				3				6	
				22				6	
				2					
				23					
				5					
				24					
				7					
		Brown f-c SAND, trace f-m gravel, trace silt (wet)		25				8	
				4	S-9	SS	12	6	18
				26				10	
				22				16	
				27					
				15					
				28					
				21					
				29					
		No recovery		30				11	
				4	S-10	SS	0	10	21
				31				11	
				12				13	
				32					
				24					
				33					
				21					
				34					
				22					
		Brown f-c SAND, trace f-c gravel, trace silt (wet)		35				15	
				20	S-11	SS	7	14	25
				36				11	
				21				6	
				37					
				23					
				38					
				25					
				39					
				19					
		Brown f-c SAND, trace f-m gravel, trace silt (wet)		40				8	
				41	S-12	SS	13	14	23
				42				9	
				43				6	
		End of LB-12 at 42'-0"		44					
				45					

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Stopped drilling on 11/1/07 at 3:00 pm. Driller installed temporary monitoring well upon completion. Driller removed the pvc pipe on 11/2/07. Driller backfilled borehole using drilling cuttings mixed with grout on

Project		Project No.								
Tuxedo Reserve - Waste Water Treatment Plant		9108604								
Location		Elevation and Datum								
Tuxedo, NY		Approx. el. 400								
MATERIAL SYMBOL	Elev. (ft)	Sample Description	Casing blwr/ft	Sample Data					Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)	
				Depth Scale	Number	Type	Recov. (in)	Penetr. resist. BL/6in		N-Value (Blows/ft)
				45						11/5/07.
				46						
				47						
				48						
				49						
				50						
				51						
				52						
				53						
				54						
				55						
				56						
				57						
				58						
				59						
				60						
				61						
				62						
				63						
				64						
				65						
				66						
				67						
				68						
				69						
				70						

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APPENDIX B
Old Boring Logs

LANGAN

Project Tuxedo Wastewater Treatment Plant		Project No. 9108604	
Location Tuxedo, NY		Elevation and Datum Approx. 420 NGVD 1929	

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data				Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
				Number	Type	Recov. (ft)	Penetr. resist. BL/ft	
[Stippled Pattern]	393.0	Yellowish brown f-c SAND, some f-c Gravel, trace silt, moist to wet	20				26	Auger to 25'. Borehole backfilled with cuttings upon completion. End boring at 1:30 PM.
			21	S8	SS	8	29	
	22					28		
	23					32		
	24							
	25	Yellowish brown f-c SAND, some f-m Gravel, trace silt, wet	25				18	
	26		26	S9	SS	8	10	
	27	End of boring at 27 ft	27				12	
			28				26	
			29					
			30					
			31					
			32					
			33					
			34					
			35					
			36					
			37					
			38					
			39					
			40					
			41					
			42					
			43					
			44					
			45					

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Project		Project No.							
Tuxedo Wastewater Treatment Plant		9108604							
Location		Elevation and Datum							
Tuxedo, NY		Approx. 422 NGVD 1929							
MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data					Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
				Number	Type	Recon. (in)	Penetr. resist. Bl/ft	N-Value (Blows/ft) 10 20 30 40	
[Pattern]	395.0	Brown f-c SAND, little f-c Gravel, moist	20				38		
			21	S8	SS	11	38		
			22				38		Hard grinding between 23'-25'.
			23				34		
			24						Borehole backfilled with cutting upon completion. End of boring at 12:15 PM.
			25	S9	SS	6	37		
			26				50/4"	Refusal	
		Brownish gray f-c SAND, some f-c Gravel, dry to moist End of boring at 27 ft.	27						
			28						
			29						
			30						
			31						
			32						
			33						
			34						
			35						
			36						
			37						
			38						
			39						
			40						
			41						
			42						
			43						
			44						
			45						

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Project Tuxedo Wastewater Treatment Plant		Project No. 9108604	
Location Tuxedo, NY		Elevation and Datum Approx. 413 NGVD 1929	
Drilling Agency Soil Testing Inc.		Date Started 7/1/05	Date Finished 7/1/05
Drilling Equipment Diedrich D-120		Completion Depth 27 ft	Rock Depth N/E
Size and Type of Bit 3 1/4" Hollow Stem Auger		Number of Samples	Disturbed 10 Undisturbed 0 Core 0
Casing Diameter (in) -	Casing Depth (ft) -	Water Level (ft.) First ∇ 21.2	Completion 24 HR. ∇ -
Casing Hammer -	Weight (lbs) -	Drop (in) -	
Sampler 2" OD Std. Split Spoon		Drilling Foreman Matt Deangelis	
Sampler Hammer Safety		Inspecting Engineer Atish Lanewala	
Weight (lbs) 140 lbs		Drop (in) 30"	

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Elev. (ft)	Sample Description	Depth Scale	Sample Data				Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
			Number	Type	Recoy (in)	N-Value (Blows/ft)	
+413.0	Topsoil	0	S1A		1	10	Start at 1.45 PM.
+412.7	Yellowish brown f-c SAND, some Clay, trace Silt, moist to wet [FILL]	1	S1B	SS	2	20	
	Yellowish brown f-c SAND, some Clay, trace Silt moist to wet [FILL]	2	S2	SS	2	20	
	Grayish brown to yellowish brown f-c SAND, trace Silt, trace f Gravel, trace Clay, moist to wet [FILL]	3	S3	SS	3	20	
	Yellowish brown f-m SAND, trace Silt, moist to wet	4	S4	SS	22	30	
	Brownish gray f-c SAND, trace f-m Gravel, trace roots, moist [FILL]	5	S5	SS	16	35	
	Yellowish brown to Dark brown f-c SAND, little f Gravel trace Silt, trace Brick, trace roots, moist [FILL]	6	S6	SS	14	25	
	Grayish brown to yellowish brown f-c SAND, some f-c Gravel, trace Silt, trace Clay, trace Brick, moist [FILL]	7	S7	SS	23	35	
		8			9		
		9			11		
		10			14		
		11			13		
		12			15		
		13			24		
		14			20		
		15			15		
		16			21		
		17			30		
		18			21		
		19					
		20					

Project		Project No.							
Tuxedo Wastewater Treatment Plant		9108604							
Location		Elevation and Datum							
Tuxedo, NY		Approx. 413 NGVD 1929							
MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data				Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)	
				Number	Type	Recov. (in)	Penetr resist BU/6in		N-Value (Blows/ft)
[Symbol: Dotted pattern]	386.0	Yellowish brown f-c SAND, some f-m Gravel trace Clay, trace silt, wet	20						
			21	S8	SS	13	13	25	
		Brown f-c SAND, trace f-m Gravel, trace Silt, wet	25						Borehole backfilled with cuttings upon completion. End of boring at 2:50 PM.
			26	S9	SS	8	10	13	
			27				3		
		End of boring at 27 ft.	27				6		
			28						
			29						
			30						
			31						
			32						
			33						
			34						
			35						
			36						
			37						
			38						
			39						
			40						
			41						
			42						
			43						
			44						
			45						

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Project Tuxedo Wastewater Treatment Plant			Project No. 9108604		
Location Tuxedo, NY			Elevation and Datum Approx. 420 NGVD 1929		
Drilling Agency Soil Testing Inc.			Date Started 8/22/05		Date Finished 8/22/05
Drilling Equipment Diedrich D-120			Completion Depth 40 ft		Rock Depth N/E
Size and Type of Bit 3 1/4" Hollow Stem Auger			Number of Samples 11		Disturbed 0
Casing Diameter (in) -		Casing Depth (ft) -	Water Level (ft.) First 29		Completion 29
Casing Hammer -		Weight (lbs) -	Drop (in) -		Drilling Foreman Matt Deangelis
Sampler 2" OD Std. Split Spoon			Inspecting Engineer Giorgi Khardzeishvili		
Sampler Hammer Safety		Weight (lbs) 140 lbs	Drop (in) 30"		

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MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data				Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)	
				Number	Type	Recov (in)	N-Value (Blows/ft)		
	+420.0		0				14	Automatic hammer was used	
		Brown to Gray c-m-f SAND, some c-m-f Gravel, concrete fragments, asphalt [FILL]	1	S1	SS	10	17 16	33	Automatic hammer was used
		Brown m-f SAND, trace m-f Gravel [FILL]	2	S2	SS	12	9 11	29	Automatic hammer was replaced with manual. piece of rock stuck in sample
		Light brown c-f SAND, little m-f Gravel, trace rock fragments [FILL]	3	S3	SS	6	16 50/5"	Refusal	High resistance. Rock fragment stuck in the sample
		Light brown c-f SAND, little m-f Gravel, trace rock fragments [FILL]	4	S4	SS	6	25 50	Refusal	Piece of rock stuck in the sample
		Light brown c-f SAND, little m-f Gravel, trace rock fragments [FILL]	5	S5	SS	8	16 51 50/5"	Refusal	
		Light brown c-m-f SAND, little m-f Gravel, trace rock fragments, moist [FILL]	6	S6	SS	20	51 49 39		
	+405.4	Grayish brown c-f SAND, little m-f Gravel	7				17		
			8						
			9						
			10						
			11						
			12						
			13						
			14						
			15						
			16						
			17						
			18						
			19	S7	SS	6	20 21 18	39	
			20				21		

Project		Project No.								
Tuxedo Wastewater Treatment Plant		9108604								
Location		Elevation and Datum								
Tuxedo, NY		Approx. 420 NGVD 1929								
MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data					Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)	
				Number	Type	Recov. (ft)	Penetr. resist. BLU/ft	N-Value (Blows/ft)		
			20							
		Brown m-f SAND, trace m-f Gravel	23							
			24	S8	SS	1	12			The sample collected might have fallen from the top
			25				16			
			26				15			
		27				16				
		Brown m-f SAND, little m-f Gravel	28							
			29	S9	SS	8	19			The sample collected might have fallen from the top
		30				12				
		Gray m-f SAND, little fine Gravel, wet	31							
			32				18			
		Brown c-m SAND, some f-m Gravel, wet	33							
			34	S10	SS	6	8			Refusal
						50/5"				
		Light Brown m-f GRAVEL, little m-c Sand, wet	38							
			39	S11	SS	24	12			
			40				25			
		End of boring at 40'	41							
			42							
			43							
			44							
			45							

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Project Tuxedo Wastewater Treatment Plant		Project No. 9108604	
Location Tuxedo, NY		Elevation and Datum Approx. 414 NGVD 1929	
Drilling Agency Soil Testing Inc.		Date Started 8/22/05	Date Finished 8/22/05
Drilling Equipment Diedrich D-120		Completion Depth 37 ft	Rock Depth N/E
Size and Type of Bit 3 1/4" Hollow Stem Auger		Number of Samples	Disturbed 12
Casing Diameter (In) -		Casing Depth (ft) -	Undisturbed 0
Casing Hammer -		Weight (lbs) -	Drop (in) -
Sampler 2" OD Std. Split Spoon		Water Level (ft.) First	Completion 23
Sampler Hammer Safety		Weight (lbs) 140 lbs	Drop (in) 30"
		Drilling Foreman Matt Deangelis	
		Inspecting Engineer Giorgi Khardzeishvili	

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MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data				Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
				Number	Type	Recov. (in)	N-Value (Blows/ft)	
	414.0		0					
		Light brown to gray c-m-f SAND, little c-m Gravel, trace rock fragments [FILL]	1	S1	SS	4	8	29*
		Light brown to gray c-m-f SAND, little c-m Gravel, trace rock fragments [FILL]	3	S2	SS	1	5	9*
		Brown c-m-f SAND, trace m-f Gravel, trace wood [FILL]	5	S3	SS	7	5	9*
		Brown c-m-f SAND, trace m-f Gravel, trace wood [FILL]	7	S4	SS	12	5	10*
		Light brown f-m SAND and c-f GRAVEL, trace rock and brick fragments [FILL]	9	S5	SS	14	5	13*
		Brown m-f SAND, little f-m Gravel, trace rock fragments, trace brick [FILL]	14	S6	SS	10	7	14*
		Light brown to brown c-f SAND, little c-f Gravel, trace concrete, trace rock fragments [FILL]	19	S7	SS	12	15	29*

Project		Project No.								
Tuxedo Wastewater Treatment Plant		9108604								
Location		Elevation and Datum								
Tuxedo, NY		Approx. 414 NGVD 1929								
MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data						Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
				Number	Type	Recov. (in)	Penetr. resist. BLU/in	N-Value (Blows/ft)		
			20							
			21							
			22							
	391.0		23							
		Brown c-m SAND, little f-m Gravel, wet	24	S8	SS	18	6	9	9	
			25				9	9	9	
			26							
			27							
			28				6			
		Brown c-m SAND, little f-m Gravel, wet	29	S9	SS	10	6	8	8	14
			30	S10	SS					
			31							
			32							
			33				5			
		Brown c-m SAND, little f-m Gravel, wet	34	S11	SS	20	5	5	11	10
			35				6			
		Light brown c SAND, little m-f Gravel, wet	36	S12	SS	24	6	14	17	31
	377.0		37				14			
		End of boring at 37'	38							
			39							
			40							
			41							
			42							
			43							
			44							
			45							

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Project Tuxedo Wastewater Treatment Plant			Project No. 9108604		
Location Tuxedo, NY			Elevation and Datum Approx. 415.5 NGVD 1929		
Drilling Agency Soil Testing Inc.			Date Started 2/20/07		Date Finished 2/21/07
Drilling Equipment CME 550X			Completion Depth 32 ft		Rock Depth N/E
Size and Type of Bit 4 1/4" HSA, 2 7/8" Tri-cone Roller Bit			Number of Samples 10	Disturbed 10	Undisturbed 0
Casing Diameter (in) 3 1/8" ID Steel	Casing Depth (ft) 29		Water Level (ft.) 25	First 25	Completion -
Casing Hammer Safety	Weight (lbs) 300	Drop (in) 30	Drilling Foreman Tom Page		
Sampler 2" OD Split Spoon			Inspecting Engineer Ronald Manney		
Sampler Hammer Safety	Weight (lbs) 140	Drop (in) 30			

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MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data					Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
				Number	Type	Recov (in)	Penetr resist BL/ft	N-Value (Blows/ft)	
	415.5		0	S-1	SS	5	23 50/0"	10 20 30 40	Start at 9:00 AM.
		Gray to black f-c GRAVEL, some f-c Sand, trace Silt, trace Roots, dry [FILL] Brown f-c SAND, some f-c Gravel, trace Silt, dry [FILL]	1						SS 0' to 0.5'
		Brown f-c SAND, some f-c Gravel, some Silt, trace Clay, dry to moist [FILL]	2				9		Augered to 2'.
			3	S-2	SS	13	8 7	15	SS 2' to 4'
		Brown f-c SAND, some f-c Gravel, trace Silt, moist [FILL]	4				8 6		Augered to 4'.
			5	S-3	SS	5	10 4	14	SS 4' to 6'; piece of gravel in spoon tip.
		Brown f-c SAND, little f-c Gravel, little Silt, moist [FILL]	6				5 8		
			7	S-4	SS	9	8 7	15	SS 6' to 8'
		Brown to black f-c SAND, little f-c Gravel, trace Silt, moist [FILL]	8				9 7		Augered to 8'. Drilled to 8'; fluid loss.
			9	S-5	SS	6	5 4	9	SS 8' to 10'
		No Recovery	10				3 20		Augered to 10'. SS 10' to 10.8'
			11	S-6	SS	0	75/4"		Refusal
			12						
			13						Augered to 15'; very hard augering from 12' to 15'.
			14						
		Brown f-c SAND, some f-c Gravel, trace Silt, moist [FILL]	15				14		
			16	S-7	SS	9	15 9	21	SS 15' to 17'.
			17				10		Stopped drilling at 17' at 11:45 AM on 2/20/07. Resumed drilling at 12:25 PM on 2/21/07. Installed casing to 19' using safety hammer. Drilled to 20'; brown was color.
			18						
			19						
			20						

Project		Project No.								
Tuxedo Wastewater Treatment Plant		9108604								
Location		Elevation and Datum								
Tuxedo, NY		Approx. 415.5 NGVD 1929								
MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data				Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)		
				Number	Type	Recov. (ft)	Penetr. resist. BL/ft		N-Value (Blows/ft)	
[Symbol: Dotted pattern]		Brown to gray f-c SAND, trace c Gravel, wet	20							
			21	S-8	SS	2	7	15	SS 20' to 22' Gravel fragments got stacked in the tip of the sampler.	
			22				8	14		
			23							
				24					Installed casing to 24' using auto hammer. Drilled to 25'.	
			Grayish brown f-c SAND, trace f Gravel, moist	25						
				26	S-9	SS	11	6	11	SS 25' to 27'
				27				5	5	
				28						Installed casing to 29' using auto hammer. Drilled to 30'.
				29						
		Grayish brown f-m SAND, some Silt, wet	30							
			31	S-10	SS	8	14	12	SS 30' to 32'	
			32				11	9		
	383.5	End of boring at 32 ft.	32						End at 3:15 PM. Borehole backfilled with cuttings upon completion.	
			33							
			34							
			35							
			36							
			37							
			38							
			39							
			40							
			41							
			42							
			43							
			44							
			45							

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Project Tuxedo Wastewater Treatment Plant			Project No. 9108604		
Location Tuxedo, NY			Elevation and Datum Approx. 410 NGVD 1929		
Drilling Agency Soil Testing Inc.			Date Started 2/21/07		Date Finished 2/21/07
Drilling Equipment CME 550X			Completion Depth 27 ft		Rock Depth N/E
Size and Type of Bit 4 1/4" HSA, 3 7/8" Tri-cone Roller Bit			Number of Samples		Disturbed 9
Casing Diameter (in)			Casing Depth (ft)		Undisturbed 0
Casing Hammer			Weight (lbs)		Drop (in)
Sampler 2" OD Split Spoon			Weight (lbs)		Drop (in)
Safety			Weight (lbs)		Drop (in)
Weight (lbs)			140		Drop (in)
Drop (in)			30		
Drilling Foreman Tom Page			Inspecting Engineer Ronald Manney		

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data						Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)			
				Number	Type	Recov. (in)	Penetr. resist. Bl/ft in	N-Value (Blows/ft)					
									10	20	30	40	
	+410.0	Brown to gray f-c SAND, some c Gravel, trace Concrete, trace Silt, moist [FILL]	0	S-1	SS	7	12						Start at 3:45 PM.
			1				40						SS 0' to 1.25'
			2				75/3"						Refusal
		Brown f-c SAND, some f-c Gravel, trace Silt, dry [FILL]	3	S-2	SS	14	16						Augered to 2'.
			4				26						SS 2' to 4'
			5				11						Augered to 4'.
		Gray f-c Gravel, some f-c Sand, dry [FILL]	6	S-3	SS	5	10						Drilled to 4' using mud rotary.
			7				12						SS 4' to 6'
			8				12						
		Brown f-c SAND, some f-c Gravel, trace Concrete, dry [FILL]	9	S-4	SS	7	17						Augered to 8'.
			10				22						Drilled to 8' using mud rotary.
			11				13						SS 6' to 8'
			12				9						Augered to 8'.
		Gray f-c GRAVEL, some f-c Sand, dry [FILL]	13	S-5	SS	3	14						Drilled to 8' using mud rotary.
			14				27						SS 8' to 10'
			15				23						
			16				49						
		Gray f-c GRAVEL, dry [FILL]	17	S-6	SS	1	75/3"						Refusal
			18										Augered to 10'.
			19										Drilled to 10' using mud rotary.
			20										SS 10' to 10.25'; possible cobble.
			21										Inferred layer change based on wash color change.
			22										
			23										Augered to 15'.
			24										Drilled to 15' using mud rotary; hard drilling from 10' to 11'. Dark brown to gray was color begins at 11'.
		No Recovery	25	S-7	SS	0	4						SS 15' to 17'; piece of gravel in spoon tip.
			26				4						
			27				4						
			28				24						
			29										Augered to 20'.
			30										Drilled to 20' using mud rotary; brown was color.

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Project		Project No.							
Tuxedo Wastewater Treatment Plant		9108604							
Location		Elevation and Datum							
Tuxedo, NY		Approx. 410 NGVD 1929							
MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data					Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
				Number	Type	Recov. (ft)	Penetr resist. BL6in	N-Value (Blows/ft) 10 20 30 40	
[Symbol: Yellowish brown f-c SAND, little f-c Gravel, trace Silt, wet]	20	Yellowish brown f-c SAND, little f-c Gravel, trace Silt, wet	20						SS 20' to 22'
	21		S-8	SS	5	2	5		
	22		22						
	23		23						
	24		24						Augered to 25'. Drilled to 25' using mud rotary; brown wash color.
	25	Brown f-c SAND, some f-c Gravel, trace Silt, wet	25						
	26		S-9	SS	8	8	20		
	27	End of boring at 27 ft.	26						SS 25' to 27'
	27								
	28		28						End at 5:20 PM. Borehole backfilled with cuttings upon completion.
	29		29						
	30		30						
	31		31						
	32		32						
	33		33						
	34		34						
	35		35						
	36		36						
	37		37						
	38		38						
	39		39						
	40		40						
	41		41						
	42		42						
	43		43						
	44		44						
	45		45						

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Project Tuxedo Wastewater Treatment Plant		Project No. 9108604	
Location Tuxedo, NY		Elevation and Datum Approx. 405 NGVD 1929	
Drilling Agency Soil Testing Inc.		Date Started 2/20/07	Date Finished 2/21/07
Drilling Equipment CME 550X		Completion Depth 42 ft	Rock Depth N/E
Size and Type of Bit 4 1/4" HSA, 2 7/8" Tri-cone Roller Bit		Number of Samples	Disturbed 13
Casing Diameter (in) 3 1/8" ID Steel		Casing Depth (ft) 29	Undisturbed 0
Casing Hammer Safety		Weight (lbs) 300	Drop (in) 30
Sampler 2" OD Split Spoon		Drilling Foreman Tom Page	
Sampler Hammer Safety		Weight (lbs) 140	Drop (in) 30
		Inspecting Engineer Ronald Manney	

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MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data				N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
				Number	Type	Recov. (in)	Penetr. resist Blows/in		
	+405.0		0	S-1	SS	8	29	75/3"	Refusal
		Brown f-c SAND, some f-c Gravel, trace silt, trace Concrete, trace Brick, dry to moist [FILL]	1						
			2						
		Gray to brown f-c GRAVEL, some f-c Sand, trace Silt, moist [FILL]	3	S-2	SS	3	17	38	
			4						
		Brown f-c SAND, some fine Gravel, some Silt, dry [FILL]	5	S-3	SS	11	19	38	
			6						
		Brown f-c SAND, some f-c Gravel, trace Silt, dry [FILL]	7	S-4	SS	13	20	41	
			8						
		Brown to gray f-c SAND AND f-c GRAVEL, trace silt, dry [FILL]	9	S-5	SS	10	20	42	
			10						
		Brown f-c SAND, some f-c Gravel, some Silt, dry to moist [FILL]	11	S-6	SS	13	11	21	
			12						
			13						
			14						
			15						
	390.0		16	S-7	SS	8	2	3	
		Orange-brown m-c SAND, some f-c Gravel, trace f Sand, trace Silt, wet	17						
			18						
			19						
			20						

Stopped drilling at 17' at 1:30 PM on 2/20/07.
 Resumed drilling at 7:45 AM on 2/21/07.
 Installed casing to 19' using safety hammer.
 Drilled to 20' using mud rotary.

Project		Project No.										
Tuxedo Wastewater Treatment Plant		9108604										
Location		Elevation and Datum										
Tuxedo, NY		Approx. 405 NGVD 1929										
MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data				Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)				
				Number	Type	Recov. (ft)	Penetr. resist. BL/6in		N-Value (Blows/ft)			
		Gray m-c SAND, some f-c Gravel, wet	20				8					
			21	S-8	SS	5	4	7				SS 20' to 22'
				22				3				
				23								
				24								Installed casing to 24' using safety hammer. Drilled to 25'; gray wash color.
			Brown f-c SAND, some f-c Gravel, wet	25				5				
		379.0	Gray f-c GRAVEL, some m-c Sand, wet	26	S-9	SS	8	7	25	32		SS 25' to 27'
		378.0		27				28				
				28								Installed casing to 29' using auto hammer. Drilled to 30'; gray to light brown wash color.
			No Recovery	30								
				31	S-10	SS	0	5	4	9		SS 30' to 32'
				32				4				
			Light brown f-c SAND, some f-c Gravel, trace Silt, wet	33	S-11	SS	12	6	9	15		SS 32' to 34'
			34				8					
			35								Installed casing to 34' using auto hammer. Drilled to 35'; light brown wash color.	
		Light brown m-c SAND, trace f Sand, trace f Gravel, wet	36	S-12	SS	11	15	5	19		SS 35' to 37'	
			37									
			38									
			39								Installed casing to 39' using auto hammer. Drilled to 40'; light brown wash color.	
			40									
		Brown f-c SAND, some f-c Gravel, wet	41	S-13	SS	11	7	9	17		SS 40' to 42'	
			42					9			End at 11:30 AM. Borehole backfilled with cuttings and clean sand to 20' depth. Installed 20" monitoring well using 1" diameter PVC pipe. Borehole backfilled with clean sand to 8' depth and cuttings from 8' depth to surface. Well cut flush with grade and capped.	
	363.0	End of boring at 42 ft.	43									
			44									
			45									

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Exhibit B

NYSDEC Correspondence on Anticipated SPDES Limits

Brock Juusola

From: Aparna Roy <axroy@gw.dec.state.ny.us>
Sent: Friday, June 27, 2014 9:27 AM
To: Brock Juusola
Subject: RE: FW: Tuxedo Water Supply Application - Project Justification Changes

Hi Brock: You can revised the reports with UOD limit. There are Ammonia limits in both options.

Thanks
Aparna

>>> Brock Juusola <BJuusola@delawareengineering.com> 5/30/2014 10:01 AM >>>

Aparna,

We have not revised the Engineering Report to reflect the preliminary effluent limits noted in your 2/10/14 email but will do so. Note that the revised limits will not change the design of the WWTP as the proposed MBR process will meet these limits with no changes to the design. You provided two options for the effluent limits in regards to CBOD5 and TKN as follows:

ammonia (as NH3) = 5.0 mg/l summer
ammonia (as NH3) = 10.0 mg/l winter
UOD = 65 mg/l daily max

or

CBOD5 = 15 mg/l daily max
TKN = 11 mg/l daily max

As noted, the proposed facility will have no issue meeting either of these and I have no preference to which way the permit is written. Please let me know which way it will be written so I can have the revised report match the effluent limits which as listed in the permit.

A response to your 2/10/14 comments will accompany the submission of the revised engineering report.

Thanks

Brock Juusola, P.E.
Delaware Engineering, P.C.
28 Madison Avenue Ext.
Albany, New York 12203
(518) 452-1290
bjuusola@delawareengineering.com

Brock Juusola

From: John K. Brust <jbrust@delawareengineering.com>
Sent: Tuesday, February 11, 2014 11:09 AM
To: Brock Juusola
Subject: FW: Tuxedo Reserve WWTP: Preliminary effluent limit

Brock,

Do you see any problems with these limits?

JB

From: Aparna Roy [mailto:axroy@gw.dec.state.ny.us]
Sent: Tuesday, February 11, 2014 8:57 AM
To: jbrust@delawareengineering.com
Cc: James Eldred
Subject: Tuxedo Reserve WWTP: Preliminary effluent limit

Hi John:
FYI

The preliminary limits (secondary) were provided in 2008 and are not applicable now for this discharge. Our Water Quality Engineer provided the updated preliminary effluent limits. The analysis was done for the full 0.5 mgd design since this is a water quality limits stream.

TSS = 30/45 mg/l MA/DM
SS = 0.1 ml/l
pH = 6.0 - 9.0
phosphorous = 4.2 lbs/day (1 mg/l @ 0.5 mgd) MA
ammonia (as NH₃) = 5.0 mg/l summer
ammonia (as NH₃) = 10.0 mg/l winter
Dissolved Oxygen = 4.0 mg/l daily minimum
UOD = 271 lbs/day (65 mg/l @ 0.5 mgd) daily max

OR
(CBOD₅ = 62 lbs/day (15 mg/l @ 0.5 mgd) daily max
and TKN = 46 lbs/day (11 mg/l @ 0.5 mgd) daily max)
Please note that the flow limit for the permit will be 0.31 mgd. So mass loading will be changed for .31 mgd plant.

I will let you know when I receive Temperature limit.

Thanks
Aparna

Exhibit C

Construction Cost Estimate

Tuxedo Reserve WWTP
Preliminary Construction Cost Estimate

Screenings and Grit Removal Building	Quantity	Units	Price / Unit	Total Price
Fine Screen and Press	2	EA	\$175,000.00	\$350,000.00
Mechanical - Piping, Valves etc,	1	LS	\$75,000.00	\$75,000.00
Grit Vortex, Classifier and Grit Pump	1	EA	\$250,000.00	\$250,000.00
Headworks Building Equipment Total				\$675,000.00

Flow Equalization Tank	Quantity	Units	Price / Unit	Total Price
EQ Pumps	2	EA	\$15,000.00	\$30,000.00
Mechanical - Piping, Valves etc,	1	LS	\$45,000.00	\$45,000.00
Diffusers and Blowers	1	LS	\$90,000.00	\$90,000.00
Flow EQ Tank Total				\$165,000.00

MBR System	Quantity	Units	Price / Unit	Total Price
MBR SMUs	12	EA	\$45,000.00	\$540,000.00
Blowers	3	EA	\$30,000.00	\$90,000.00
Permeate Pumps	4	EA	\$20,000.00	\$80,000.00
RAS Pumps	2	EA	\$25,000.00	\$50,000.00
Mechanical - Piping, Valves etc,	1	LS	\$100,000.00	\$100,000.00
MBR System				\$860,000.00

Aeration and Digester Tanks	Quantity	Units	Price / Unit	Total Price
Aeration Blowers	3	EA	\$35,000.00	\$105,000.00
Valve/Fittings	1	LS	\$40,000.00	\$40,000.00
Aeration Piping	100	LF	\$150.00	\$15,000.00
Fine Bubble Diffusers	1	LS	\$40,000.00	\$40,000.00
Digester Blowers	2	EA	\$30,000.00	\$60,000.00
Valve/Fitting	1	LS	\$40,000.00	\$40,000.00
Digester Air Piping	100	LF	\$150.00	\$15,000.00
Course Bubble Diffusers	1	LS	\$30,000.00	\$30,000.00
Aeration and Digester Total				\$345,000.00

MBT System	Quantity	Units	Price / Unit	Total Price
MBT SMUs	1	EA	\$50,000.00	\$50,000.00
Blowers	1	EA	\$20,000.00	\$20,000.00
Permeate Pumps	1	EA	\$15,000.00	\$15,000.00
Mechanical - Piping, Valves etc,	1	LS	\$50,000.00	\$50,000.00
MBT System				\$135,000.00

UV Disinfection	Quantity	Units	Price / Unit	Total Price
UV Disinfection Unit	2	EA	\$95,000.00	\$190,000.00
Mechanical - Piping, Valves etc,	1	LS	\$25,000.00	\$25,000.00
UV Disinfection				\$215,000.00

Architectural	5,500	SF	\$170.00	\$935,000.00
Structural Concrete	1,350	CY	\$1,550.00	\$2,092,500.00
Grating/Railing/Stairs	1	LS	\$95,000.00	\$95,000.00
General Excavation	3,000	CY	\$60.00	\$180,000.00
Dewatering	1	LS	\$40,000.00	\$40,000.00
Yard Piping	1	LS	\$125,000.00	\$125,000.00
Grading/Site Work/Restoration	1	LS	\$110,000.00	\$110,000.00
SCADA System	1	LS	\$350,000.00	\$350,000.00
Electrical	1	LS	\$450,000.00	\$450,000.00
HVAC	1	LS	\$100,000.00	\$100,000.00
Plumbing	1	LS	\$50,000.00	\$50,000.00

	Total	10% Cont.	Total with Cont.
Tuxedo Reserve WWTP - Project Total	\$6,922,500.00	\$692,250	\$7,614,750.00

APPENDIX A

Tuxedo Reserve PID
SEQRA Findings Statement and Special Use Permit

LEAD AGENCY FINDINGS STATEMENT
State Environmental Quality Review Act

This Findings Statement has been prepared in accordance with Article 8 of the Environmental Conservation Law, the State Environmental Quality Review Act (SEQRA), and its implementing regulations promulgated at 6 NYCRR Part 617.

Lead Agency: Town Board of the Town of Tuxedo (Town Board)
Address: Town Hall
One Temple Drive
Tuxedo, New York 10987

Name of Proposed Action: Tuxedo Reserve Planned Integrated Development

SEQRA Classification: Type 1 Action

Description of Proposed Action:

R.H. Tuxedo Development, L.P., the applicant and project sponsor, proposes to construct 1,195 housing units and approximately 266,000 square feet of associated nonresidential uses as part of a Planned Integrated Development known as "Tuxedo Reserve." Approximately 1,722 acres of the 2,376 acre project site would remain undeveloped open space. A detailed description of the proposed action is provided below.

Location:

The proposed action will be located on 2,376 acres of land located primarily within the Town of Tuxedo, Orange County, New York, with approximately 40 acres in the Village of Sloatsburg, Rockland County, New York. Major roads generally bordering the site are Warwick Brook Road on the north, County Route 84 on the west, County Route 72 and Eagle Valley Road on the south, and State Route 17 on the east.

I. INTRODUCTION

This Findings Statement for the Tuxedo Reserve Planned Integrated Development (Project) provides the Town Board's rationale for its decision on the Project, drawing upon information in the Final Environmental Impact Statement (FEIS) prepared at the direction of the Town Board as SEQRA lead agency, as well as related documents and public comments received on the Project, including the Draft Supplemental Environmental Impact Statement dated October, 1999 (DSEIS) and the Draft Generic Environmental Impact Statement dated September, 1996 (DGEIS):

This Findings Statement also certifies that the Town Board, as lead agency, has met the applicable requirements of Part 617 in reviewing the Project, including but not limited to:

- Establishing the Town Board as the lead agency;

- Causing the preparation of the DSEIS and DGEIS by the project sponsor;
- Accepting both the DSEIS and DGEIS for public review and comment;
- Holding public hearings on the DSEIS and DGEIS;
- Receiving public comments on the DSEIS and DGEIS within the prescribed period after the close of the public hearings;
- Causing the preparation of the FEIS by the Town's consultants; and
- Accepting the FEIS and filing a Notice of Completion.

II. PROJECT HISTORY

In 1989, R.H. Tuxedo Development, L.P. submitted an application to the Town of Tuxedo (Town) requesting approval of a Planned Integrated Development (PID). The application process was initiated by submission of a concept plan proposing development of 2,856 dwelling units and 1.1 million square feet of light industrial/office space.

In 1991, the Town granted concept approval for a PID consisting of: (a) a maximum 2,450 residential units; (b) a minimum 1.1 million square feet for non-residential use; and (c) retention of a minimum 202 acres of research/office (RO) zoning. This non-binding concept approval was contingent on a comprehensive assessment of the environmental impacts associated with the density of development pursuant to SEQRA.

In 1992, the applicant submitted a preliminary development plan to the Town that proposed 2,450 dwelling units, but reduced the non-residential component to 555,000 square feet. Subsequent to this submission, the Town Board issued a determination of significance (i.e. a positive declaration) under SEQRA and required preparation of a draft environmental impact statement (DEIS). On or about December, 1992, the Town Board adopted a scoping document setting forth the areas of environmental concern to be addressed in the DEIS.

Approximately four years later, the applicant submitted a Draft Generic Environmental Impact Statement (DGEIS) for the Project. The DGEIS was accepted as adequate for public review and a public hearing on the DGEIS was conducted on December 2, 1996. Based on comments received at that public hearing and during the statutory public comment period, the applicant decided to modify the proposed Project.

In 1998, the applicant submitted a modified Project which reduced the number of dwelling units to 1,747 and further reduced non-residential development to 521,250 square feet. Also in 1998, the Town amended its PID zoning regulations. The Project was "grandfathered" from many of these PID amendments and the legislation expressly permitted the Project to proceed with a maximum 1,375 residential units.

In 1999, the applicant submitted a modified Project conforming to the 1998 PID amendments. That Project proposed 1,375 residential units and 268,600 square feet of non-residential use. Thereafter, the applicant prepared a Draft Supplemental Environmental Impact Statement (DSEIS) on this latest modified proposal. The DSEIS was accepted as adequate for public review on October 18, 1999. Public hearings were conducted on the DSEIS on January 12, 2000 and March 22, 2000.

In August 2000, the applicant submitted a preliminary Final Environmental Impact Statement (FEIS) for the Project. Upon review, the Town Board determined that the applicant's preliminary FEIS did not adequately respond to comments received on the DSEIS and did not adequately address certain potential adverse environmental impacts. In an effort to address these issues, numerous meetings were conducted between the applicant and Town representatives, and additional study and analysis of impacts was undertaken at the direction of the Town Board. The result of these meetings and analyses was a final modification to the Project which reduced the total number of residential units to 1,195 and incorporated recommendations for additional and accelerated mitigation to address certain identified impacts.

The FEIS was completed at the direction of the Town Board to reflect the latest Project modifications. The FEIS was resubmitted to the Town Board, and subsequently accepted by the Town Board on November 20, 2003. On December 15, 2003 the Town Board conducted a public hearing on the FEIS and obtained comments from the public and agencies for consideration during the deliberation/decision-making period. The Town Board considered these comments and conducted several public workshops to prepare this Findings Statement. The Findings Statement is the final step in the SEQRA process for the Project.

III. DETAILED DESCRIPTION OF PROJECT

The Project is a planned mixed-use residential and nonresidential development on 2,376 acres primarily located in the Town of Tuxedo, but with a small portion in the Village of Sloatsburg (Project Site). The Project will consist of 1,195 residential units (including 197 units of active adult housing) and 266,100 square feet of nonresidential space that will be constructed in three phases over a 12-year period. The Project plan is attached hereto as Appendix A.

The Project will be located in the southeastern corner of the Town of Tuxedo and Orange County, with approximately 40 acres in the northern corner of the Village of Sloatsburg and Rockland County. The Project's boundaries are Route 17 and the Orange/Rockland County border to the east and south, Warwick Brook Road (also known as Warwick Turnpike) to the north, and County Route 84 (also known as Long Meadow Road) and South Gate Road to the west. The portion of the Project Site in Sloatsburg fronts on Route 17, approximately 1,500 feet south from the County border. Approximately 1,722 acres (nearly 70 percent of the Project Site) will remain open space. The majority of this open space will be contiguous and undisturbed.

A. Development Tracts

The Project Site consists of three principal development tracts: the Southern Tract, the Northern Tract and the Fox Hill Tract. The applicant will cluster residential and nonresidential uses on approximately 417 acres of the Southern Tract. The Northern Tract will accommodate commercial uses consisting of office, light industrial, research and development and warehousing uses, which will be undertaken as market conditions dictate. A portion of the Northern Tract is proposed to be annexed to the Village of Tuxedo Park for potential future development of up to four homes (approximately 29 acres). The Fox Hill

Tract will remain undeveloped open space except for a portion proposed to be annexed to the Village of Tuxedo Park for potential future development of up to three homes (approximately 24 acres).

B. Development Program

1. Residential Uses

The Project is designed as a collection of small neighborhoods each connected by a system of roads and pedestrian trails to a central "Village Commons." A range of market-rate housing types will be provided, including single-family detached homes, semi-detached homes, townhouses, stacked flats and duplexes including housing for active adults. A total of 1,195 single- and multi-family, and active adult residential units will be sited in the Southern Tract.

Minimum lot sizes will vary according to housing type. Estate lots intended for four-bedroom homes will vary in size and shape, but will be a minimum of 125 feet wide and 135 feet deep. Manor lots intended for three- or four-bedroom homes will also vary in size and shape, but will be a minimum of 100 feet wide and 125 feet deep. Likewise, village lots for three- and four-bedroom homes will be a minimum of 80 feet wide and 100 feet deep. Cottage lots for two- or three-bedroom houses will be a minimum 65 feet wide by 100 feet deep. Semi-detached carriage houses will be constructed on lots that are a minimum of 40 feet wide and 100 feet deep. Multi-family housing, in either a townhome or stacked flat/duplex configuration, will be located in the higher-density Village Commons area.

The Long Ridge active adult neighborhood will consist of 197 detached and semi-detached units. Age restrictions on this active seniors neighborhood are regulated by HUD under the Fair Housing Act (42 U.S.C. § 3601 *et. seq.*) and require that a minimum of 80 percent of the units be occupied by at least one person who is 55 years of age and older.

2. Nonresidential Uses

The Southern Tract will include a total of 70,000 square feet of space to accommodate amenities for Tuxedo Reserve residents. These amenity uses will consist of 48,000 square feet for (1) a daycare center, (2) health facilities (e.g. tennis courts, swimming pool), (3) a business center for telecommuters and (4) meeting rooms, all of which will be located in the Village Commons, as well as swimming and canoe/kayak facilities. This space will also include a sales, marketing and administrative center (for Tuxedo Reserve only) and a gourmet delicatessen (approximately 3,000 square feet) in the Village Commons, as well as a separate greeting house to be located near the commons at the northern entrance to Tuxedo Reserve on Route 17 in the Town of Tuxedo. A site will be provided in the Village Commons for the location of a library facility. A separate pool and changing rooms will be provided to residents of the Augusta Ridge community and a health club and meeting facilities will be provided to residents of the Long Ridge active adult community (22,000 square feet). Other than the Tuxedo Reserve sales, marketing and administrative center and gourmet delicatessen, commercial uses will be strictly prohibited on the Southern Tract. Accordingly, the Special Permit will specify that should the restricted commercial uses be discontinued, this space will revert to one of the four amenity uses described above.

The Northern Tract will contain approximately 196,100 square feet of space for office, flex/light industrial, and/or warehousing uses, and will retain approximately 40 acres of RO zoned land with direct frontage on Warwick Brook Road for future nonresidential development. The Northern Tract will accommodate larger, more flexible spaces for service-oriented businesses, research and development, or firms that assemble finished products from manufactured pieces. The space will be located along County Route 84 and Warwick Brook Road, adjacent to International Paper, and will be configured to avoid a timber rattlesnake habitat located on the tract.

3. Open Space and Community Land

Open space and community land within Tuxedo Reserve will consist of shared and dedicated open spaces including an integrated trail system on the Southern Tract. The Special Permit will require adherence to the landscape design guidelines established for the Project to ensure a continuity of landscape elements throughout the development and to prevent non-native, invasive species from adversely affecting the existing vegetative communities and wildlife habitat.

Shared open spaces will include land surrounding developed areas but not contained within individual lots, including open spaces within the Village Commons. This property will be held in common by the Tuxedo Reserve Homeowners Association (TRHOA). Smaller neighborhood open spaces will also be provided and will serve as either focal points for residential development or as transition areas between the Village Commons and adjoining residential neighborhoods. These areas will be located adjacent to the development and linked through the Project's trail system. Facilities within the Village Commons, easements for stormwater drainage systems and open space surrounding the larger wetlands systems on the site will also be located on TRHOA land. As set forth in the Special Permit, these open spaces and facilities will be owned and maintained by the TRHOA.

On the Northern Tract, approximately 700 acres of land will be set aside for open space and gifted to the Palisades Interstate Parks Commission (PIPC) or other conservation organization satisfactory to the Town Board or otherwise restricted by conservation easement. As noted in the FEIS, approximately 40 acres of RO zoned land with direct frontage on Warwick Brook Road will be retained for future nonresidential development. This parcel was inadvertently depicted as open space in Figure 1-4 of the FEIS. Open space on the Fox Hill Tract will be gifted to the Village of Tuxedo Park and, with the exception of three residential housing lots, will be precluded from future development. The Special Permit will require conservation easements to be placed on these open space lands to protect them in perpetuity.

On the Southern Tract, open space will be retained in the ownership of the TRHOA and administered by the TRHOA. A small two-acre parcel will be gifted to the Tuxedo Club at the South Gate Road emergency access. Deed restrictions or other appropriate conditions will be imposed as part of the Special Permit to ensure that no further development will take place on Southern Tract open space. Similarly, wetlands and wetland buffer areas within Project Site will be protected from development, except for a 3.13-acre buffer disturbance associated with road design. Several of the larger, more scenic wetland areas will be enhanced by trails

to allow for access by Project residents. Finally, rights-of-ways for major collector roads will be offered for dedication to the Town of Tuxedo and will be developed with landscaping and amenities consistent with the Town's street specifications.

C. Community Resources and Infrastructure

1. Educational Facilities

The applicant will dedicate a 40-acre parcel on the Southern Tract to the Tuxedo Union Free School District (TUFSD) for the construction of a public school. As detailed in the Special Permit, the applicant will rough grade the property, complete any necessary environmental remediation and construct needed utility connections up to the school site.

The parcel is located to the southwest of the existing Euvrard ballfields that are at the end of Mountain Road and north of the new South Village Road. A conceptual site plan anticipates that portions of the school building will be 2 stories and that several new playing fields will be provided. In recognition of the topographic conditions on the site, the applicant will pay for the costs associated with handling rock outcroppings on the parcel to provide level, tiered building areas. The applicant will deliver the site to the TUFSD with all utility connections including water, sewer, electric, gas and cable. The applicant will pay the cost to extend these utilities into to the school site to the edge of the school building.

2. Recreation

The integrated trail system planned for the Southern Tract will allow walking, but not use of all-terrain-vehicles. As set forth in the Special Permit, the TRHOA will be responsible for trail maintenance and security, and Town residents will be able to use the trail system free of charge. Trails within this system will be established with defined purposes (e.g. a nature walk, a walk to Mountain Lake, aerobic walks with exercise stations and jogging trails) and will lead to scenic viewpoints, allowing for both passive and active trail use and encouraging pedestrian circulation within the Southern Tract.

A recreation complex or "sports lodge" will be constructed in the Village Commons which will include aerobic exercise rooms, weight rooms, lockers, a pool, tennis courts, paddle tennis and possibly spa facilities. Adjoining the sports lodge will be a child day care center with play areas. A separate pool and changing rooms will be provided to residents of the Augusta Ridge community and a health club will be provided to residents of the Long Ridge active adult community. These facilities will be private Project amenities for Tuxedo Reserve residents that will not be open to the public. The trail system will be accessible to Town residents through an annual permit, but will not be open to residents outside the Town.

3. Water Supply

For the Southern Tract, water will be supplied from on-site wells to be constructed by the applicant. A water transportation corporation will be formed to manage the water system, with a back-up municipal water district established. Creation of this water transportation corporation requires consent of the Town and will be subject to conditions intended to protect

Town residents against abuse of the water resource. These conditions will include (but are not limited to): limiting the corporation's service area to the Town of Tuxedo; prohibiting water sales to locations outside of the Town without the approval of the Town Board; prohibiting the sale or transfer of the corporation without Board approval; and requiring any transferee to take subject to all conditions of the original consent to form the transportation corporation. The Town will also be granted a right of first refusal giving it the ability to acquire the corporation's assets in the event it is proposed for transfer. In any event, the Town will retain the right to take title to the assets and operate the system at any time if the system is not operated to standard.

For the Northern Tract, water service will be derived from onsite resources. Water resources could not be transported off-site without the Town's consent in the formation of a municipal water district or water transportation corporation.

As a condition of the Special Permit, the Town will require that any required water supply test protocol be coordinated with the Town and reviewed by the Town Engineer, and, upon completion of testing, an engineers report be furnished to the Town Planning Board as part of the first site plan/subdivision plan application for the Project. The Special Permit will also require monitoring of the water table and will restrict drawdown limits to ensure existing wells in the area are not impacted.

4. Sanitary Wastewater

To meet the sanitary wastewater needs of the Southern Tract, the Special Permit will require the applicant to construct a new sewage treatment plant in the Tuxedo hamlet to replace and expand on the same site the capacity of the existing sewage treatment plant at the end of Contractor's Road. As an alternative, the Special Permit will require the applicant to construct a connection from the Southern Tract and the hamlet to the regional wastewater treatment plant to be constructed by Rockland County Sewer District No. 1 in the Village of Hillburn. Under either alternative, the Special Permit will require that sewage treatment of Southern Tract effluent receive tertiary treatment. On the Northern Tract, the applicant will install a community septic system capable of treating effluent generated by the applicant's proposed commercial development.

5. Hamlet Revitalization

As part of the Project, the applicant will provide \$6 million in funding to assist in the Town Board's continuing efforts to revitalize the Tuxedo hamlet. This funding will be provided in accordance with the terms of the Hamlet Revitalization Funding Program, attached hereto as Appendix B. The obligation to fund this program will be guaranteed by the Related Companies L.P. Of the \$6 million, the applicant will provide \$2 million to the Town for direct assistance of activities that benefit the Town hamlet. The remaining \$4 million will be made available to provide low-cost revolving loans to carry out commercially viable residential and nonresidential development projects within the hamlet.

6. Payments-In-Lieu-Of-Taxes (PILOT)

The Project also includes a PILOT program to the Town for delayed construction of nonresidential ratables in the Northern Tract. Annual PILOT payments of \$150,000 will be made for 14 years and will be offset by any real property taxes generated in the Northern Tract once nonresidential development occurs (as market conditions dictate). The first payment will be made simultaneously with the issuance of the first building permit for the Project. At the conclusion of 14 years in the event that build out of the Northern Tract has not been accomplished, the PILOT payments would continue at the applicant's election based on a then current appraisal of the Northern Tract parcels the applicant proposes for development, with the Town retaining the option to purchase the property for a nominal price (\$1) if the applicant declines to continue the PILOT payment.

D. Development Controls

The Special Permit will be conditioned upon the applicant's adherence to architectural design guidelines, landscape guidelines, performance standards and bulk standards. The architectural design guidelines and bulk standards applicable to the Project are attached hereto as Appendices C and D, respectively. Consistent with the Town's code, these guidelines and standards will be enforced at the site planning stage by the Planning Board, with the Town's Architectural Review Board (ARB) responsible for assuring that building plans comply with the Project's design and landscape guidelines. Lot and bulk standards specifying setbacks, building heights, fences, driveways and accessory structures adequately address the Town's concern with the placement of large homes on relatively small lots. In addition, the applicant will reimburse the Town for the services of a professional architect, dedicated to the review of architectural plans for Tuxedo Reserve, to assist the ARB and the Town's Building Department.

The TRHOA will administer the following performance standards, with Town oversight and enforcement, to assure the continued protection of environmentally sensitive areas, the preservation of open space and the compatibility of development with the site's natural features:

1. Stormwater and Erosion Control

The applicant has prepared a comprehensive stormwater management plan to address runoff and water quality issue. The applicant will be required to adhere to NYSDEC Best Management Practices (BMPs) for stormwater management and erosion control, subject to any additional conditions imposed by NYSDEC as part of a SPDES general permit. The applicant will also monitor and maintain stormwater management and erosion control measures during post-construction occupancy. BMPs will ensure that surface and groundwater resources are protected from excessive sedimentation and that soils are not transported offsite as a result of construction activities or over the course of normal occupancy of the land.

The only encroachments to non-DEC wetland areas will be due to placement of the Project's roads. To minimize impacts to wetlands, road placement will be adjusted to avoid wetlands

wherever possible after the completion of site-specific wetland delineations for each development area. Disturbance to NYSDEC-regulated wetland buffers will also be minimized to the greatest extent possible. However, certain site limitations may make disturbance to buffer areas unavoidable. In these areas, standard wetland protection measures will be followed including the identification of wetland boundaries and the implementation of stormwater management practices to protect wetlands from excessive sedimentation.

2. Trees and Vegetation

The protection of trees will be accomplished during all stages of the Project's development. A complete landscaping plan will be submitted during site plan review of each development area. The tree protection measures set forth in the landscape guidelines will be adhered to and a process for removing specimen trees will be established during site plan review for each phase. In addition, the Special Permit will require adherence to the measures identified in Chapter 9 of the DSEIS for the protection of existing trees, vegetation and soils. Maintenance of a diverse forest structure, including species diversity and age diversity, provide suitable habitat for wildlife. Site plans will be required to include variable width open space corridors, minimization of fragmentation of forest interiors (and minimization of new edge conditions), and protection of critical wildlife habitat such as standing-dead trees, logs, and rock outcrops. These measures will provide protection for many different species of wildlife.

E. Street Patterns

Street patterns would be configured to reflect the small-town vision for the development and to respect the environment and topography of the site. Street design would make use of traditional practices such as fewer curbs, a variety of paving materials and architecturally distinctive site lighting. While Project streets would adhere to Town code specifications, the Special Permit would waive some of these specifications (e.g., shorter radii, elimination of street curbing, narrowing of streets), subject to the review and approval by the Planning Board as part of site plan review.

F. Tuxedo Reserve Homeowners Association

The Special Permit will require the establishment of the TRHOA (as well as any needed sub-homeowner associations, if necessary) for the purposes of (1) owning and managing lands and facilities owned in common by Tuxedo Reserve residents (including operation of a jitney service) and (2) ensuring continued compliance with the Project's guidelines and performance standards. All property owners in Tuxedo Reserve (except for owners of commercial facilities in the Northern Tract) will automatically become members by reason of their ownership of property in the development. Individually owned home lots, the commercial facilities in the Northern Tract, the access roads and major collector roads depicted in FEIS Appendix I will not be included in the TRHOA property.

G. Access

Access to and within the Project Site will be provided via private vehicles, jitneys and walking/biking trails. Vehicle access to the Southern Tract will be provided from two new roads intersecting Route 17. The principal access will be within the Town of Tuxedo just north of the Orange County/Rockland County border consisting of a landscaped boulevard entrance with a greeting house at the entrance to Tuxedo Reserve. A second access point will be within the Village of Sloatsburg just south of Park Avenue. A third road will connect the Southern Tract with County Road 72 via Eagle Valley Road during Phase 1. The Special Permit will provide that two additional access points to the Southern Tract via South Gate Road and Mountain Avenue will be for emergency use only. Vehicle access to commercial development in the Northern Tract will be provided by a new road near the intersection of County Route 84 and Warwick Brook Road. The major collector roads within the development will be dedicated to the Town of Tuxedo. Minor roads and cul-de-sacs will be owned and maintained by the TRHOA but will be fully integrated into the Town road network without barriers or access checkpoints.

A jitney service will be available to Tuxedo Reserve residents. This jitney service will provide transportation to commuter and senior residents in and around Tuxedo Reserve, reduce commuter vehicle trips within the Southern Tract, and reduce the number of vehicle trips to the train stations. The Special Permit will require that the jitney service be funded and operated by the TRHOA. The service will link the development with selected destinations within the Town of Tuxedo and the Village of Sloatsburg, including the Metro-North train stations, the Town hamlet and express bus stops.

Pedestrian access will be provided by the trail system in the Southern Tract which will link together the various Tuxedo Reserve neighborhoods, the Village Commons, the Town hamlet and the Southern Tract's open space, and will interconnect to existing trails within the Town and PIPC's park system. The precise configuration of the trail system will be subject to site plan review and approval by the Planning Board. Lighted walkways along South Village Road to the Village Commons will connect residents with the new public school, the existing school campus and the Tuxedo hamlet. The trail system will primarily utilize existing woods roads, with existing bridle trails and paths found throughout the Project Site to be used to the greatest extent possible. Trails will be located on land owned, maintained, and regulated by the TRHOA but will be available for use at no charge to Tuxedo town residents on an annual permit basis.

Bike trails will be incorporated into the Project's primary roads, to the extent that topographic conditions permit, to encourage bike use and other recreational activities such as rollerblading. These bike trails will directly connect to the school site and link to the paths proposed along Euvrard Field.

H. Development Phasing

The Special Permit will require that development of the Project be phased to ensure a rational progression of construction in three phases over the proposed 12-year build-out. Phase 1 will begin with the development of the areas closest to the existing infrastructure, such as roads

and utilities, and then progress to the development of areas farther into the site. The applicant will construct approximately 890 single family detached and semi-detached homes, approximately half of which will be constructed during Phase 1 (409 units) along with the Project's approximately 305 multi-family units (townhouses, stacked flats and duplexes). All active adult housing will be constructed in Phase 2 (197 units), with the remaining 284 single family detached dwellings to be constructed in Phase 3.

1. Phase 1

Phase 1 will occur entirely within the Southern Tract, which encompasses about 33 percent of the Project Site's land area, including the area closest to Route 17 in both the Village of Sloatsburg and the Town of Tuxedo. The southern extent of this phase of the Project is just north of the Orange and Rockland utility easement except for the Eagle Valley Road connection, which will be completed during Phase 1. The northern extent is adjacent to existing development in the Tuxedo hamlet. Two large NYSDEC wetland areas (SL-2 and SL-24) define the western boundary of Phase 1 development. Approximately 714 dwellings will be constructed as part of Phase 1, as well as 48,000 square feet of neighborhood nonresidential space in the Village Commons consisting of a daycare facility, a fitness health lodge, a telecommuter business center, a small gourmet delicatessen and the Tuxedo Reserve sales office. The Village Commons will be located along South Village Road fronting on two sides of a tear-drop shaped village green with a band stand. Each of the buildings will be a maximum of 4 stories or 52 feet in height.

Non-residential development will front on the western end of the village green, while a large wetland/open space area will be located on the eastern side of the green. The village green will be landscaped with ornamental plantings, walkways, benches and a band stand. Parking will be centrally located in the middle of the Village Commons and surrounded by the mixed use buildings to enhance the visual continuity of residential and nonresidential uses.

The neighborhood of manor and estate homes to the west will be set on a hillside overlooking the Village Commons. A trail system leading to Mountain Lake will originate near the end of the western-most cul-de-sac in this neighborhood.

The northern end of Phase 1 will consist of several areas of cottage, village, manor, and estate lots located on a loop road. The new public school will also be located in this northern end adjacent to the existing Euvrard ballfields. As depicted in Appendix A, access to Route 17 will be provided to the main road in this area. A greeting house with approximately 3,500 square feet of space and designed to convey a traditional Hudson Valley village feeling in its materials and massing, will welcome visitors to Tuxedo Reserve.

2. Phases 2 and 3

Phase 2 will be comprised of 197 units of active adult senior dwellings which will occupy approximately 156 acres and will be located south of both the Phase 1 development and the existing Orange and Rockland utility easement running through the Southern Tract. The active senior community will have its own private amenities including a clubhouse, meetings

rooms, a swimming pool, a fitness center and ancillary facilities directly related to these uses.

Phase 3 will be comprised of approximately 284 single family detached dwellings and is projected for completion in the year 2015. Phase 3 will be located west of Phase 1 and will occupy about 242 acres. Access to Phase 3 will be via the two entrances off of Route 17 and the southerly Eagle Valley entrance.

Nonresidential development is proposed on the Northern Tract during Phase 3 and includes 196,100 square feet of office/light industrial/flex space. The applicant does not propose a development timetable for the Northern Tract as part of the three Project phases. Rather, nonresidential development will occur on the Northern Tract as market conditions dictate.

IV. PROBABLE IMPACTS OF THE PROJECT

The Town Board has considered potential environmental impacts resulting from the Project, including modifications and relevant new information received by the Town since publication of the DSEIS. As discussed below, the Project, as modified and set forth in the FEIS, will not result in significant adverse environmental impacts beyond those previously identified and analyzed in the DSEIS and discussed in the FEIS; for many areas of environmental concern, the Project's impacts will be either substantially the same or less than those presented in the DSEIS.

A. Land Use, Comprehensive Planning and Zoning

The Project will not have a significant adverse impact on land use, comprehensive planning and zoning. The uses proposed for the Project Site will be compatible with nearby land uses, consistent with state and regional plans that focus on open space preservation, and in conformity with all the objectives and requirements of the PID in a manner that will not differ from the objectives of the Town's zoning.

1. Land Use and Comprehensive Planning

The Project will (1) retain land on the Northern Tract for future nonresidential development; (2) concentrate residential land uses exclusively on the Southern Tract; (3) prohibit retail uses in the Village Commons except for a gourmet delicatessen; and (4) support Town's efforts to revitalize the Tuxedo Hamlet. The Project is consistent with the purposes of the Town's zoning code, master plan and subdivision regulations. Light industrial, warehouse and office space will be located on the Northern Tract. The total area proposed to be dedicated for open space will be approximately 1,722 acres.

The amount of land dedicated to nonresidential uses on the Southern Tract will be 70,000 square feet to accommodate Project amenities servicing Tuxedo Reserve residents. The concept of the Village Commons as the center of Tuxedo Reserve will be retained with the presence of these amenities and a community green. The Town Board finds that commercial uses will negatively impact existing commercial uses within the Tuxedo hamlet and

accordingly commercial uses will be prohibited in the Village Commons except for a gourmet delicatessen and a Tuxedo Reserve sales, marketing and administrative office.

The road connection proposed from the Southern Tract to Eagle Valley Road across PIPC land or within an existing Con Ed utility easement will not have a significant impact on land use in and around the Project Site. The proposed road (Long Ridge Road) will connect to Eagle Valley Road in an area that is currently vacant. The road will be aligned and signed to allow only right turns out of the Southern Tract to eliminate vehicles that might travel along Eagle Valley Road in an easterly direction into the Village of Sloatsburg. Traffic will be directed to County Road 72 (Sterling Mine Road), a county-maintained highway in both Orange and Rockland counties. This alignment will reduce impacts to residences along the Sloatsburg segment of Eagle Valley Road.

On the Northern Tract, commercial land uses will be concentrated along County Route 84 and Warwick Brook Road to avoid recently discovered timber rattlesnake habitat. The applicant has proposed annexation of approximately 53 acres on the Northern and Fox Hill Tracts to the Village of Tuxedo Park. The applicant has indicated that the annexation will allow for potential future development of the property for the construction of up to seven single-family dwellings. Access to these lots will be provided directly from existing roads in the Village of Tuxedo Park, and proposed residences will be required to conform to the Village's zoning law. The proposed residential density will be comparable to residential densities in the Village. The annexation will be consistent with adjoining residential uses in the Village and will not result in a significant adverse impact.

2. Zoning

All residential areas in the Southern Tract will be zoned R-2. Southern Tract open space will be zoned R-1, with additional smaller open spaces intertwined within R-2 zoned residential areas. On the Northern Tract, the areas proposed to be developed for nonresidential uses will be zoned LIO and RO. Portions of the RO and LIO districts will also contain some of the Project's open space. The Fox Hill Tract and areas of the Northern and Southern Tracts reserved for open space will be zoned R-1, except that the 53 acres proposed for annexation in the Northern and Fox Hill Tracts will be zoned R-2.

The amount of RO zoned land along Warwick Brook Road will be 108 acres (5 percent of the site). RO districts in the Southern Tract will be eliminated. Zoning for the parcels north of Warwick Brook Road will be entirely R-1, further decreasing the amount of land zoned RO. The applicant will retain approximately 40 acres of RO-zoned land on the Northern Tract for possible future nonresidential development to provide future employment opportunities and enhance the Town's ratable base, consistent with the objectives of the Town's master plan.

B. Population and Housing Characteristics

1. Population and Schoolage Children

Based on population estimates prepared by the Town's planning consultant, the Project is estimated to add 3,210 new residents to the Town of Tuxedo. At Project buildout the Town population is expected to be 6,544 persons based on the Town's 2000 census population. The Town's average household population is approximately 2.5 persons/occupied housing unit. The Project will result in an average household size of 2.6 persons/occupied housing unit, slightly higher than the Town average, but insignificant.

The Town Board has considered six different student generation estimates based on different assumptions regarding the geographic scope of the study area, the age of dwelling structures, home values and bedroom counts derived from U.S. Census Public Use Microdata Samples (PUMS). The Town Board finds that the estimate of 427 public school students is the most reasonable overall estimate of potential schoolage children that will be generated by the Project due to its relatively large sample size and the higher student generation rate observed for units built within 10 years of the PUMS data set compared with older units. The Town Board further finds that there will be sufficient time to plan for and construct the infrastructure and community services necessary to accommodate Project residents because construction will be gradually phased over a 12-year period.

2. Housing Characteristics

The Town Board finds the Project's housing mix will be consistent with the existing residential character of the Town in terms of: (1) the mix of single-family detached, single-family attached and multifamily units (2) the proportion of owner-occupied to renter-occupied dwellings and (3) the overall mix of housing unit bedroom count.

The Project consists of 1,195 housing units. The development program will introduce 197 active adult dwellings into the Town that will be inhabited by adults ages 55 and over. These housing units will provide the Town with a broader spectrum of senior living facilities, along with the independent and assisted multifamily dwellings that have been constructed elsewhere in the Town.

The elimination of rental units originally proposed on the Project Site is consistent with the Town's housing plans and policies to concentrate higher density housing, including rental opportunities, within the Tuxedo hamlet. Moreover, the development program reflects a reduction in the number of market rate cottage and carriage 2-bedroom and 3-bedroom dwellings to address the Town's concern that these units would have ultimately been converted into dwellings with more bedrooms, thereby inducing a long-term change in the household size and mix.

The mix of single-family detached, semi-detached and attached housing and the number of multifamily dwellings will result in a Project that is compatible with the Town's existing housing stock. Overall, the applicant proposes to construct 822 single-family detached dwellings that will comprise 64 percent of the Project's residential program. Single-family

semi-detached dwellings (in the form of active senior carriage homes) total 68 units (6 percent). Multifamily dwellings will total 305 units, or 25.5 percent of the development program.

The Special Permit will require that Project development phases be constructed to ensure a compatible housing mix throughout the 12-year buildout period. Of the approximately 714 units to be constructed during the first phase of the Project, 57 percent will be single-family detached units, consistent with the Town's recommendation that a minimum of 50 percent of all dwellings be single-family detached dwellings during all phases of the development. As all multifamily housing units are proposed for Phase 1, the percentage of single-family detached and attached dwellings during Phases 2 and 3 will be higher than 50 percent, meeting the Town Board's objective that the present residential character of the Town be maintained at all phases of Project development.

C. Community Facilities and Services

The Town Board has examined the demand for community services that will result from the Project and has considered the revised assessment of community resource and service needs prepared by the Town's planning consultant. The Town Board finds that, while the Project will generate additional service demands resulting in a need for increased personnel, equipment, and capital improvements, it will also generate sufficient revenues to offset any costs associated with these increased demands.

This finding is based on the Town Board's consideration of the incremental demands on municipal services that will result from the Project including the additional personnel and equipment needs associated with the Town's police, fire, ambulance and highway services. Additionally, based on information from the Mayor of the Village of Sloatsburg, the Town Board has determined that potential community resources impacts to the Village of Sloatsburg will be addressed by the applicant's providing municipal improvements, including a new library roof, construction of a commuter parking lot in the Village and an annual payment of \$60,000 for ten years.

1. Library

With the Project nearly doubling the Town's existing population, annual circulation of the Tuxedo Park Library is also expected to double. The Town Board has determined that the existing library facility will be inadequate to accommodate this increased circulation and that approximately 18,000 square feet will be required to adequately serve a Town population that includes Tuxedo Reserve. The existing facility can be expanded to meet this demand with the purchase of adjoining land to accommodate an expansion. The Town Board also finds that the location of library space within the Village Commons to meet this increased demand will have no significant adverse environmental impact, but will instead mitigate any impact the Project will have on library circulation.

2. Educational Facilities

Based on the revised student population estimate, a new public school will be required to service additional schoolchildren generated from development of the Project Site whether it is developed as proposed (1,195 residential units) or as-of-right (700 to 800 single-family, detached residential units). TUFSD representatives have indicated that a new school will be required three years after the Project commences to service additional schoolchildren. Without the Project, the TUFSD anticipates that it would need to renovate existing facilities, add ballfields, add a transportation facility and construct a new gymnasium.

As part of its Project, the applicant will gift a 40-acre site on the Southern Tract to the TUFSD for the construction of a new public school in close proximity to the existing Euvrard ballfields. In order to defray some of the school district's capital costs associated with the new school, the applicant will also rough grade the site, carry out any needed environmental remediation and bring utilities to the perimeter of the school building. The Town Board finds that, with the applicant's dedication of this school site and its carrying out needed site improvements, the Project will accommodate the additional capacity needs of TUFSD.

3. Recreation and Open Space

Nearly 70 percent of the Project Site will remain undeveloped open space with the possibility of future use for passive recreation. On the Northern Tract, land designated for open space will be gifted to the PIPC or other conservation organization satisfactory to the Town, or otherwise restricted by conservation easements. Open space on the Fox Hill Tract will be gifted to the Village of Tuxedo Park and, with the exception of three residential housing lots, will be precluded from future development. On the Southern Tract, remaining open space will be retained in the ownership of the TRHOA, and will include a trail system linked to the Tuxedo hamlet. Although it will not be open to the public, all Town residents will be able to use the trail system at no charge with an annual permit. The applicant has not proposed any specific public recreational amenities. Accordingly, the Town Board preliminarily finds, subject to the determination of the Planning Board pursuant Town Code § 85-25, that the development program does not include adequate public park and recreational amenities and that, in lieu thereof, the applicant's payment of a recreation fee for each unit of residential development is required.

D. Economic and Fiscal Analysis

The Town Board has considered the revised fiscal analyses presented in the FEIS and provided by the Town's planning consultant which reflect changed budget and revenue conditions in the Town. The Town Board has also considered the fiscal effect of the Project on the TUFSD in light of: (1) the revised assessment of the number of school children that will be generated by the Project; (2) increased costs to the school district to serve special needs children since publication of the DSEIS; and (3) amortized capital costs associated with the construction of a new school.

The Project will result in a net fiscal surplus during all three of its development phases. Although particular fund categories (the TUFSD, Tuxedo Joint Fire District and Tuxedo

General Fund Townwide) are projected to experience deficits during some phases of the development, other fund categories (General Fund Outside Village, Highway Townwide, Highway Outside Village) are projected to experience surpluses that will more than offset any deficits in the other funds. Like many municipalities in New York State, the Town of Tuxedo will experience additional expenses in coming fiscal years due to greater funding demands associated with municipal pensions. Although these increased expenses will affect property tax rates in the Town, the net fiscal surplus expected from development of the Project would help mitigate any additional tax burden borne by Town residents.

E. Cultural Resources

The area to be developed during Phase 1 has been the subject of both a phase I archeological investigation report and a phase IB archeological survey that included the proposed school site. The phase IB report indicated that Phase 1 development will not interfere with any areas of potential cultural sensitivity and that no modifications to the development plan will be necessary. Development will no longer be located near the McCrea cemetery in the Northern Tract, although a field verification study was conducted on the site which included archival research, interviews, photography, and field measurements. Instead, this area will be preserved as permanent and undisturbed open space.

The applicant and the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) have entered into a Memorandum of Understanding (MOU) on a process for ensuring that potential future impacts to cultural resources on the Project Site will be adequately identified, evaluated and mitigated in Phases 2 and 3. The MOU will require a phase IB archeological survey of these development areas during the site plan review process. Within those areas, the applicant will submit the results of the phase IB survey to OPRHP for its review and comment prior to the grant of site and/or subdivision plan approval in Phases 2 and 3. A phase II archeological investigation will be required where survey results indicate that an archaeological site cannot be avoided. Disturbance activities will then be reviewed by OPRHP, and if necessary, mitigations, including project changes, will be reviewed at the time phase-specific site plans are advanced. The MOU is attached hereto as Appendix E.

In view of the archeological investigations already completed and the process that is now in place for addressing any resources that remain undiscovered, the Town Board has determined that the Project will not have a significant adverse environmental impact on cultural resources.

F. Visual Quality and Community Character

The Town Board has determined that the Project will not have a significant adverse impact in terms of visual quality and community character. The Project's visual impact will be limited by the substantial distance between existing residences and Project structures, the Project's extensive open space system and the visual buffer provided by the site's topography. The Town Board's concern with an undesirable "canyon effect" has been addressed by residential bulk standards that increase minimum lot sizes for smaller dwellings; including dwellings in

the Village Commons. The Town Board finds that these bulk standards will ensure that there is a proper relationship between building mass to lot size.

The Project will include a \$6 million hamlet revitalization program to beautify the Tuxedo hamlet streetscape and introduce new commercial or residential uses within the hamlet. Of the \$6 million, the applicant will provide the Town with \$2 million in direct grants for hamlet revitalization activities coupled with an additional \$4 million in low cost revolving loans for commercially viable residential and nonresidential projects within the hamlet. The Town Board finds that these Project elements will complement the Town's ongoing hamlet revitalization efforts, enhance the community's character and provide commercial services needed by Project residents.

With the exception of a gourmet delicatessen and a Tuxedo Reserve sales, marketing and administrative office, commercial uses on the Southern Tract will be strictly prohibited because they would compete directly with, and potentially drain market demand from, the existing Town hamlet. The prohibition on retail uses in the Southern Tract is expected to channel commercial demand to both the Tuxedo hamlet and the Village of Sloatsburg, reaffirming the status of both locations as centers of their communities.

G. Geology, Soils and Topography

The Project Site consists of a complex of rock outcrop and shallow soils. Development is proposed in areas with rock outcrop that may require blasting. The applicant will adhere to the requirements of the Town's blasting code and the performance standards set forth in the DSEIS so that no significant impacts from blasting will occur. Should the blasting code conflict with the performance standards, the applicant shall adhere to the stricter of the two requirements. Town's blasting regulations require that properties within 600 feet be identified and notified of the potential impact that a blasting activity may have on a property within that distance. Performance standards require that property owners within 150 feet of the Project's entrances be given the option of having a pre-condition survey conducted to monitor blasting impacts. Blasting will not be permitted within the Con Ed right-of-way. The Planning Board may impose additional conditions as authorized by law to further minimize adverse environmental impacts from blasting.

Steep slopes (25% or greater) will be avoided where practicable in the siting of Project structures. Project roads will also be configured to reduce impacts to steep slopes. An area of steep slopes will be impacted by proposed development of commercial space on the Northern Tract, however the Town has determined that the impacts will not be significant. Minimal rock excavation is anticipated for the construction of commercial buildings on the Northern Tract and the depth of rock excavation will likely be less than 10 feet where required.

Construction will adhere to the *New York State Standards and Specifications for Erosion and Sediment Control* and the best management practices developed by the NYSDEC as described in the *New York State Stormwater Design Manual, 2001*. Construction drawings prepared during the site plan and/or subdivision review process will contain detailed erosion control plans and procedures showing locations of all erosion control features. The applicant

will also adhere to performance standards for grading and earthwork, set forth in Appendix F to the FEIS, that have been revised to further minimize impacts to the Project Site's topography.

The Town Board finds that, with the applicant's adherence to blasting procedures and performance standards relating to erosion control, the Project will have no significant adverse environmental impacts in relation to the Project Site's geology, soils and topography.

H. Natural Resources

The Town Board finds that the Project will not have a significant impact on the natural resource environment. Protected open space remains an important component of the Project's natural resource protection measures. The total land disturbance (vegetation removal and grading) from the Project's development will total approximately 337 acres, or approximately 14 percent of the site. Of this total, the acres of disturbance that will result in an impervious surface from the proposed collector roads, buildings, driveways, and other infrastructure will be approximately 158 acres.

1. Wetlands

The applicant will substantially avoid wetlands and wetland buffer areas, and will use existing woods roads wherever possible to minimize land disturbance. Wetland and wetland buffer area impacts will be limited to the Project's Southern Tract. Overall, the disturbance of wetlands on the Project Site will be limited to 1.75 acres. While the location of any mitigation will be determined by the U.S. Army Corps of Engineers, it is the Town Board's preference that any wetland mitigation occur on the Project Site. In addition, approximately 3.13 acres of wetland buffer area in the Southern Tract will be affected and addressed through on-site mitigation. Wetland and stream crossings will be kept to a minimum, with only 4-5 crossings occurring within each phase, and most of these consisting of arched bridges designed to preserve the existing streams and wetlands.

NYSDEC has approved wetland delineation maps for Phase 1, and subsequent Phases 2 and 3 will require the same approval. As the freshwater wetland locations for Phases 2 and 3 have not been finally confirmed by the U.S. Army Corps of Engineers or NYSDEC, the layout of development in these areas will be reconfigured to avoid significant impacts to wetland and buffer areas if necessary. Development lots will be located outside wetlands and the 100-foot buffer areas. Except in the areas where the on-site streams will be crossed by internal road system, a minimum 50 feet setback from the stream corridor to the development areas will be provided.

One of the Project's detention basins will be located to avoid the 100-foot buffer area of NYSDEC wetlands, however the locations of the other four detention basins within the buffer area are justified (subject to NYSDEC concurrence) based on steep slope conditions, the need for a level terrain and the need to avoid large berms around the basins. To better utilize existing woods roads and their associated culverted stream crossings, the applicant will be required to examine the alignment of Valley Road in the vicinity of Hickory Place (in

Phase 3) and to replace old culverts and pipes which may carry streams under existing woods roads with new culverts approved by NYSDEC.

2. Wildlife

The applicant will minimize any potential significant negative impacts to the timber rattlesnake den and the snake population located on the Northern Tract. Development of the Northern Tract will be limited to a small area located at the intersection of County Road 84 and Warwick Brook Road to accommodate 196,100 square feet of flex/light industrial development. This area consists of 40-acres of moderately sloping wooded hillside situated immediately across Warwick Brook Road from the existing International Paper industrial facility. Vehicular access will be provided via County Road 84. Development on the Southern Tract and Fox Hill Tract will have no impact on the timber rattlesnake habitat. As stated on page 2-20 of the FEIS, the Northern Tract development area would occur more than one mile from the rattlesnake den and no dens or basking areas are located in this area.

Development of the Project Site will result in some wildlife species being concentrated in greenway and open space areas. To facilitate the safe movement of species between these areas, the Project will include wildlife underpasses along roadways, along all on-site stream channels and where open space parcels abut both sides of the road. Wildlife underpasses and culverts under roadways will be designed to direct smaller species across roads by traversing under the roadway rather than across the pavement. Open-bottom culverts and arched bridges will be provided at all larger crossings and will be designed to preserve the natural stream bottom and corridor. The use of curbing on Project roads will also be designed and configured to facilitate the mobility of small species. Design specifications for each of these features will be provided to NYSDEC for its approval.

The Town Board has also determined that timber harvesting on the Project Site's open space is inconsistent with the Project's open space objectives. Accordingly, timber harvesting in open space areas shall be prohibited unless it will be performed on a selective basis for the express purpose of improving ecological habitat. Selective harvesting will require approval of the Town Board.

I. Hydrology and Stormwater Management

The Town Board finds that the Project will not have a significant adverse impact on hydrology or stormwater management. The Town Engineer has confirmed that the conceptual drainage system presented in the DSEIS will be more than adequate to minimize potential adverse effects associated with stormwater runoff. A detailed stormwater management plan will be provided during site and subdivision plan reviews consistent with the overall drainage system identified in the preliminary plan.

The proposed Eagle Valley Road connection and the configuration of the commercial development on the Northern Tract will be subject to the same comprehensive stormwater management plan that will be designed for the overall Project. This plan is required to conform with NYSDEC's best management practices so that no significant adverse impacts on stormwater drainage or hydrology will result.

J. Water Supply and Energy

The Project will not have a significant adverse impact on water supply or energy. Adequate water resources exist to service the development, with the residential component of the Project expected to result in water consumption of approximately 351,420 gallons per day and consumption from nonresidential uses to be approximately 21,999 gallons per day. The location of water distribution lines will not result in any significant impact.

To utilize the groundwater aquifers, the drilling and establishment of a separate, independent well and distribution system would need to be constructed both for the proposed Northern and Southern Tracts. Both onsite pump testing and published sources indicate that adequate groundwater resources are available on the Project Site to accommodate the entire water demand of the Project. Pump tests undertaken for the Southern Tract, described in the DSEIS, indicate that the projected water demand for the proposed development within this tract would be met by the existing groundwater supply. No adverse effects to adjacent water bodies or depletion of the bedrock aquifer were shown during the 72 hour pump test. In addition, published information indicates that groundwater recharge for the entire 2,376 acre Project Site would amount to 1,155,000 to 1,260,000 gallons per day. This is well in excess of the increase in water demands expected to result from the Project. Thus, both pump testing and published sources indicate that adequate groundwater supply is available to service the Project's projected water demand.

Given the similarity in geology, the Northern Tract is anticipated to exhibit fracture-trace patterns similar to those observed on the Southern Tract. With the similarities in hydrogeologic conditions, the same groundwater recharge rates are applicable to the Northern Tract. As such, one or more properly located wells in the Northern Tract will be capable of accumulating yield in excess of 100 gallons per minute, without causing an adverse impact on the local ground-water resource. The actual location and number of such wells will be contingent upon the results of an exploration and testing program similar to that completed for the Southern Tract. As specified in the Special Permit, well testing on the Northern Tract will be conducted at the time the first site plan/subdivision plan is submitted for the tract.

Although the use of wells could slightly affect the recharge rate of the aquifers, and the development of the Project will increase the amount of impervious areas, the Project will utilize best management practices to offset the impacts of construction and aid in the recharging of the groundwater aquifers. These best management practices include the construction of stormwater detention/water quality basins adjacent to existing wetlands and streams. Water quality basins will treat the stormwater runoff prior to its entering the wetland areas. Through the use of stormwater detention, groundwater percolation and aquifer recharge will occur. In addition, the majority of the Project Site will remain as open space, roughly 72 percent, with only 158 acres of impervious surfaces. This would preserve the groundwater recharge function of the site and no significant adverse impact on the groundwater recharge capacity of the underlying bedrock aquifer is anticipated.

K. Sanitary Sewer Services

Wastewater generated from the Project is not expected to have a significant adverse environmental impact. The applicant will, at its own expense, replace and expand the existing sewage treatment plant in the Tuxedo hamlet to provide for the sanitary sewer needs of both the Southern Tract and the hamlet. Alternatively, the applicant will provide for the connection of the Southern Tract and the hamlet to a new regional wastewater treatment plant to be constructed by Rockland County Sewer District No. 1, provided the plant has sufficient excess capacity to accommodate the Project. Under either alternative, Southern Tract effluent will be required to receive tertiary treatment. The applicant will be required to pay for all sewer extension costs to bring the sewer lines to the Southern Tract and its structures.

On the Northern Tract, the applicant will be required to construct a community septic system capable of treating effluent generated by the proposed commercial areas. However, the Town Board has determined that a subsurface sewage disposal system is not appropriate in this area at higher levels of wastewater demand. Accordingly, the applicant will install a package plant should wastewater demands exceed those presented in the DSEIS (13,629 gallons per day).

L. Solid Waste

The Project will not result in a significant impact on the Town's ability to manage solid waste. The amount of solid waste generated from the Project at build-out is expected to constitute less than one percent of the total residential and non-residential solid waste generated in Orange County. It is also expected that residential solid wastes generated by the Project will be collected by a hauler contracted either through the municipality or privately. Residential recyclables will be source-separated and collected curbside by either the municipal or private hauler, as required by both the Town and Orange County. Residents will be expected to deliver their hazardous household waste to the Orange County designated collection facility. Nonresidential solid wastes and source-separated recyclables will be collected by a private hauler.

M. Hazardous Materials

The applicant has evaluated the type and extent of contaminants in the Project Site's soil and groundwater and analyzed the potential for significant adverse impacts from development activities. The applicant has also agreed to gift a 40-acre site in the Southern Tract to the TUFSD for the location of a new public school. Prior to delivering the school site to the TUFSD for construction, the applicant will be responsible for any additional site assessments and remediation of any solid or other waste material that may have been deposited on the site. As stated in the DSEIS, no hazardous waste or chemical disposal, storage or oil spill sites were found on the Project Site.

N. Traffic

The DSEIS examined potential traffic impacts associated with the Project, and identified significant impacts whether or not a new New York State Thruway Interchange 15B is

constructed to connect to Route 17A, north of the Project Site. The DSEIS also identified measures to mitigate the Project's potential traffic impacts below defined levels of significance. The FEIS indicated that impacts associated with Project traffic will be significantly reduced from those presented in the DSEIS. As stated on page 2-26 of the FEIS, 211 fewer trips are expected during the AM peak hour and 274 fewer trips are expected during the PM peak hour compared with the analysis presented in the DSEIS.

Future conditions without the Project (i.e., No Build conditions) would be substantially the same as those presented in the DSEIS for the scenario without the Sterling Forest development and without Interchange 15B. The one percent per year general growth factor assumed for determining future No Build traffic would account for the number of trips generated by the current Sterling Forest development through the studied intersections.

1. Access and Circulation

The access and circulation plan for the Project includes the construction of a new access connection from the Southern Tract to Eagle Valley Road. This new access point will be installed prior to the completion of Phase 1 of the development, with a traffic signal to be installed at the intersection of Eagle Valley Road and County Route 72 if so required by Rockland County or New York State. This connection will improve access to the Southern Tract and will result in a reduction in traffic through the Sloatsburg hamlet. In addition, the Special Permit will require that access roads to South Gate Road and Mountain Road be designated for emergency use only.

2. Traffic Generation and Adjustments

The FEIS updated the traffic analysis and examined the Project's traffic impacts as a result of the reduction in the number of residential units proposed in the DSEIS. Two adjustments were made to the traffic generation expected from the Project. First, an adjustment to the estimate of traffic from the Project was made to account for the likelihood of a substantial number of second home buyers at Tuxedo Reserve. The Project's market analysis indicated that as many as 15 to 25 percent of the single-family home buyers are likely to be purchasing for use as a second home (primarily for recreational and weekend use) and will not be contributing to Project traffic volumes during peak periods.

A second adjustment was made to the residential trip rates to reflect the use of public transportation. As a condition of the Special Permit, the applicant will provide on-site jitney service connecting to nearby commuter service at the Tuxedo and Sloatsburg rail stations and express bus stops. The jitney will provide regularly scheduled drop-off and pick-up service at these locations, scheduled to coincide with bus and train schedules. The provision of a jitney service will have the two-fold benefit of reducing the number of persons using private autos to travel to mass transit, as well as inducing increased usage of public transportation by persons who might otherwise choose to drive.

Both adjustments have been determined to be appropriate by the Town's traffic consultant and will be verified through the monitoring program described below.

3. Significant Impacts

The Project will result in seven locations where significant impacts will occur by Phase 1. These locations are (1) Route 17A and Route 17 Ramps (unsignalized intersection), (2) Route 17 and Route 17A South Ramp (signalized intersection), (3) Route 17 and Washington Avenue (unsignalized intersection), (4) Route 17 and Warwick Brook Road (unsignalized intersection), (5) Route 17 and Seven Lakes Drive (signalized intersection), (6) Route 17 and Eagle Valley Road (signalized intersection) and (7) the Thruway North off-ramp to Route 17. At full development in 2015, the Project will result in significant impacts at an eighth location, the unsignalized intersection at Route 17A and Route 84. All significant Project impacts at these locations will be mitigated subject to verification based on the results of the traffic monitoring program.

4. Specialized Traffic Analyses

a) Ramp Analysis

The Route 72 eastbound ramp to Route 17 southbound and the Route 17 northbound ramp at its intersection with Route 72 westbound will have minor decreases in operational Level of Service by Phase 3 with both a small speed reduction and a slight increase in density of traffic. The anticipated maximum queue on the I-87 northbound off-ramp at Interchange 15A in the year 2015 will be approximately 30 vehicles per lane. At approximately 25 feet per vehicle, these vehicles can be stored on the existing ramp without impacting the Thruway mainline.

b) Arterial Analysis

In order to assess traffic conditions along the Route 17 corridor in Sloatsburg, an arterial analysis was performed for the section of roadway between the signalized intersections at Eagle Valley Road and Seven Lakes Drive. Arterials are divided into segments that typically begin and end at signalized intersections that serve as "nodes." The arterial analysis directly utilizes the capacity/delay results from these signalized intersections to generate levels of service for the individual segments of the arterial. The arterial analysis performed for Route 17 resulted in Level of Service (LOS) "C" or better.

c) Multilane Highway Analysis

The Multi-lane Highway Analysis looked at the divided section of NYS Route 17 between the County Route 72 Interchange and the Interchange 15A of the NY Thruway. The analysis differs from that of the arterial analysis noted above in that the level of service descriptions cover only the mainline link and do not cover intersections. In this section of NYS Route 17, there are no intersections and the roadway is divided. The results of this analysis indicated that with the Project, as modified, a worst case of LOS "C" will be expected at the completion of Phase 3 in the year 2015.

d) Route 17 Gap Study

A gap analysis was conducted to examine the impact of Project traffic on unsignalized intersections. A gap is generally defined as the headway between two successive vehicles in which a turning, crossing or merging maneuver can be safely executed. Project traffic will merge with the existing traffic volumes along the New York State Route 17 corridor and reduce some of the available gaps for side street turning movements. The gaps created by the signal changes at the adjacent signalized intersections in Sloatsburg will insure that a certain number of gaps will always be available to accommodate turning vehicles at driveways or unsignalized locations. Traffic signals upstream and downstream will provide gaps to allow Park Avenue residents sufficient space for ingress and egress to their homes. In addition, the widening of Route 17 at the southerly access will result in additional pavement width for vehicles turning at Park Avenue, which will provide a safer and more efficient traffic flow.

5. Single Tuxedo Access to Route 17

An alternate traffic analysis was performed in the event that there is only a single access point along Route 17 in the Town of Tuxedo. With the addition of a second exclusive right turn lane exiting the site, the entrance intersection will continue to operate at an overall acceptable LOS "C" during the AM peak hour and LOS "B" during the PM peak hour for all scenarios studied. In addition, internal circulation through the site will be designed to provide an ease of flow through the development in conjunction with the Eagle Valley Road connection. Jitney services will be expanded to include additional vehicles and more routes to accommodate the longer travel path within the Tuxedo Reserve community under this scenario. Because of the advancement of mitigation measures and other improvements, the Project can be accommodated on the existing roadway network with a single access point so as to maintain or improve current conditions on the Route 17 corridor.

O. Air Quality

The Project's potential air quality impacts were analyzed in the DSEIS based on projections of the pollutants that would have been generated by 1,375 dwelling units and 521,560 square feet of nonresidential space. Impacts associated with increased mobile and stationary source emissions from the Project were evaluated. For mobile sources, the worst case future year results indicated that the Project would not result in any exceedances of National and New York State Ambient Air Quality Standards for carbon monoxide. Moreover, with the Eagle Valley Road connection, Project traffic will be distributed over a larger area and be less concentrated at the key intersections analyzed in the DSEIS. This will result in slightly lower mobile source carbon monoxide concentrations compared to the analysis in the DSEIS.

Stationary source emissions are associated with the Project's individual fossil fuel-fired heating and hot water systems. The primary pollutants of concern when burning oil are sulfur dioxide and particulates; whole nitrogen oxide (NO₂) is of concern when natural gas is used. Since background concentrations of these pollutants indicated that levels are well below the standards in the Project's study area, no significant air quality impacts are expected from the Project.

P. Noise

The Town Board has considered potential noise impacts associated with the Project, including traffic-related and construction-related noise, and finds them to be insignificant. Although the Project is expected to increase ambient noise levels during construction, outdoor construction would generally be limited to weekday, daytime hours. Major construction noise sources are expected to be blasting and possible pile-driving activities which would be of short duration. Modern blasting techniques, such as timed multiple charges, blastmats, etc., will be utilized during pre-defined time periods and frequency. A specification will be inserted into construction contracts requiring the contractor to implement a vibration protection program in coordination with responsible government entities. Compliance with noise control measures will be ensured by the applicant's including them in contract documents as material specifications and by directives to the construction contractor. The contractor will be required to abide by all applicable federal, state and Town laws and regulations governing noise.

Q. Construction Impacts

The DSEIS presented a discussion of the Project's potential construction impacts. The Project has subsequently been modified to alter the sequencing of construction activities however, associated construction impacts will remain insignificant. The applicant now proposes to construct the Long Ridge neighborhood as Phase 2 of the development; previously, this was proposed to be constructed as Phase 3. The effect of the revised construction sequencing will be to accelerate construction of the Eagle Valley Road connection, improving access from the Eagle Valley neighborhood to the development and the future public school to be located on the Southern Tract. This will eliminate traffic that would have traveled along Sterling Mine Road and Route 17 during the construction period. The concentration of commercial development on the Northern Tract into a tighter building footprint is also likely to reduce potential construction-related impacts. Layout changes will provide additional buffering between the commercial development and on site freshwater wetlands that will further reduce impacts.

There will not be a significant adverse environmental impact due to construction traffic because construction activities will be dispersed over the course of the Project's 12-year build-out; construction staging will occur on-site; and the arrival/departure times of construction employees will not typically coincide with the AM and PM peak hours. To further reduce traffic impacts during the construction period, delivery of materials by trailer truck and access by heavy construction vehicles will be restricted during the AM and PM peak hours. The Planning Board may require additional measures regarding the impact of construction traffic as part of its site plan review responsibilities.

R. Growth Inducing Aspects

Development of the Project is intended to result in the orderly development of the 2,376-acre Project Site. It is estimated that the Tuxedo Reserve development will have a population of approximately 3,210 persons if developed as proposed. In addition, the 1,195 housing units that will be added to the Town will have a moderate amount of growth-inducing impacts,

since the basic public circulation system and capital infrastructure systems already exist to serve the site. The growth to the Town that will result from Tuxedo Reserve is consistent with the growth projections developed by the Town Board. These projections were factored into the adoption of the Town's PID law.

S. Unavoidable Impacts

The Town Board finds after considering the Project and all practicable mitigation measures, that no unavoidable significant adverse environmental impacts will result. Although development of the site would result in relatively permanent changes in land use, views, increased local traffic, and related factors, the Town Board finds that these changes are not significant, since the Town's Master Plan, zoning, and regional land use plans have historically provided for similar uses to occupy the Project Site.

T. Irreversible Commitment of Resources

The conversion of the Tuxedo Reserve property would involve the consumption of raw materials, such as lumber, sand and gravel, oil and iron ore, and other minerals. Resources-such as water, electricity, petroleum products, and a variety of other natural and distilled resources-would be required for operation of the street system and other land uses. All of these actions involve an irreversible and irretrievable commitment of resources.

Ultimately, no development is an irreversible commitment of resources, since it is possible to remove the development at any time. To reverse such a commitment, however, would require the expenditure of future natural and financial resources, which is not expected to have a high degree of probability. In concert with the assumption, it must be recognized that the natural environment cannot ever be fully reconstructed and replenished to its original state.

V. MITIGATION

The Town Board has considered measures to minimize or avoid, to the maximum extent practicable, potentially significant adverse impacts that were identified in the DSEIS, including its discussion of the applicant's proposals to avoid and mitigate impacts to traffic conditions, cultural resources and wetlands. The Town Board finds that these measures will mitigate significant adverse environment impacts of the Project to the maximum extent practicable.

A. Cultural Resources

As stated in the DSEIS, the Barnes House and adjacent structure situated along Route 17 within the Village of Sloatsburg will be demolished as part of the Project and replaced with the Tuxedo Reserve greeting house. Both structures will be evaluated in a full stage II investigation prior to demolition. In addition to more intensive field investigation designed to establish site boundaries, integrity and age, this study will include architectural assessment, background research including property deeds and a structure evaluation by a

qualified architectural historian. Potential impacts to cultural resources will be mitigated to the maximum extent practicable.

B. Natural Resources

Wetland mitigation will be provided for the 1.75 acres of disturbance to wetlands on the Project Site. This acreage is the total impact acreage of small wetland fills associated with steam/wetland road crossings that would be incurred over the 12 year buildout of the Project and represents about one percent of the approximately 250 acres of wetlands on the Project Site. These wetland disturbances would range in size from 0.004 to 0.43 acres.

The Project will provide wetland mitigation as directed by the Army Corps of Engineers through its permit approval process. Whenever possible, mitigation will be carried out on-site. If suitable land for wetland creation is not identified within the Project Site, wetlands will be created within the same watershed as the wetlands to be disturbed, and will be designed to provide similar functions and values to the wetlands lost. Created wetlands will be designed to replace the community disturbed, i.e., forested wetland disturbance will be replaced by the creation of forested wetlands. Wetland creation areas will use native wetland species, nursery grown to thrive within wetland conditions. Wherever possible, native topsoil from wetlands to be disturbed will be preserved for use in the wetland creation areas. Wetland topsoil often contains natural seed and root stocks from the disturbed wetland area that can then become established in the created wetland. If alternative wetland mitigation measures become necessary during the application for a permit, the applicant would also discuss with the Corps the potential for other creative mitigation options, including off-site land or monetary donations.

C. Traffic

The Project will result in significant traffic impacts at, depending upon the phase of development, eight analysis locations. At each of these locations, Project impacts will be mitigated through conventional traffic management and engineering measures. These measures will consist primarily of traffic control signage, installation of traffic signals, retiming of traffic signals, provisions for new turning lanes, and increases in the number of traffic lanes. The traffic mitigations are set forth in the FEIS and annexed hereto in Appendix F. Since publication of the DSEIS, the applicant has proposed changes to the Project that include accelerating the implementation of measures designed to mitigate Project traffic to below significant impact thresholds.

1. Accelerated Mitigations/Improvements

The applicant will undertake the following measures along Route 17 and at Eagle Valley Road to further reduce the Project's traffic impacts.

- Route 17. At Route 17 and Seven Lakes Drive, the applicant will create a southbound left-turn lane and wider through lanes at the completion of 525 residential units where there was no proposal previously. At Route 17 and Washington Avenue, the applicant will construct a southbound left-turn lane at the end of Phase 1 where

there was no proposal previously. At Route 17 and Route 17A, the applicant will provide an eastbound right-turn lane with channelized island for free-flow operation by the end of Phase 1, as well as potential signalization and construction of a northbound left-turn lane on the Route 17 connector ramp by the end of Phase 2.

- Eagle Valley Connector Road. The main artery connecting the Phase 1 development area to Eagle Valley Road, to be known as Long Ridge Road, will be advanced from Phase 3, and will be installed prior to the completion of Phase 1. If only one access to Route 17 from the Southern Tract can be secured, the Eagle Valley connection will be required to be installed earlier in Phase 1, prior to the completion of 525 units, or earlier if required by the Town's subdivision regulations.

Along with the elimination of 180 units from the DSEIS development program, the advancement of these mitigations and improvements will mitigate all significant adverse traffic impacts such that the Project will maintain or improve current conditions along the Route 17 corridor.

2. Monitoring Program

As detailed below, the Town retains the authority to require additional mitigation if Project-generated traffic exceeds pre-defined thresholds and results in deteriorated levels of service. This is a critical check on the pacing of Project construction that will be made a condition of the Special Permit.

Traffic will be monitored to verify that estimates of Project-generated traffic are accurate. Traffic monitoring will be carried out at the applicant's expense by a reputable traffic consultant selected by the Town. The traffic consultant will provide traffic counts of Project-generated traffic at each of the Project's driveway access points. These will include both machine counts for one typical week, and manual turning movement observations for one typical weekday, to identify the traffic flows on Route 17 and directional distribution entering and leaving the development. Should Project traffic counts exceed the applicant's traffic projections by the thresholds below, the applicant has agreed that the Town will be required to withhold any further Project building permits until adequate traffic mitigation measures are identified and in place.

The traffic monitoring intervals will be as follows: (1) at the completion of 300 units; (2) at the completion of 525 units; (3) at the end of Phase 1; (4) at the end of Phase 2; and (5) at the end of Phase 3. In addition to the vehicle counts, ridership data will also be collected for the jitney service at each traffic monitoring interval. Should the ridership of the jitney service fall below estimates in the FEIS, modifications to the service will be made with the goal to increase ridership to projected levels. A unit will be determined to be complete when a certificate of occupancy is issued.

The driveway traffic counts and jitney ridership data will be compared to the projections of Project-generated traffic at each phase of the development, as stated in the traffic assessment sections of the FEIS. The data will then be submitted to the Town of Tuxedo, the Village of Sloatsburg, the Rockland County Department of Highways and the NYSDOT.

During the 300 and 525 unit monitoring interval, if the actual trip generation exceeds the Project traffic projections as stated in the FEIS by 20 percent, acceleration of the proposed mitigation or additional mitigation measures will be required. The applicant, in conjunction with the entities listed in the previous paragraph, will carry out such mitigation measures to achieve the Levels of Service projected for each phase of the development in the FEIS before the Town could approve additional building permits for the Project. One of the potential mitigations remains the construction of Interchange 15B.

The same requirements will apply during the monitoring intervals at the end of each development phase, however the threshold deviation from FEIS traffic projections will be reduced to 10 percent. Should deviation from the projected volumes exceed 10 percent, traffic volumes will also be counted at all of the locations analyzed in the FEIS. A report providing this updated traffic assessment, and any recommended additions or modifications to the proposed mitigation, will be submitted to the above noted agencies for their review.

The monitoring program will also evaluate traffic circulation of all internal intersections within Tuxedo Reserve in the event a second access to Route 17 is not secured. In this case, construction of the Eagle Valley Road access will be required to be installed earlier in Phase I (i.e. before the completion of 525 units) and the applicant will be required to monitor traffic circulation within the Tuxedo Reserve development. If monitoring results indicate that traffic circulation within Tuxedo Reserve is at a LOS "D" or worse, the Town will be required to withhold building permits until mitigation measures are installed which improve internal traffic flow to LOS "C".

To assist the Town in administering the traffic monitoring program, the applicant shall provide a cover sheet for each application for site plan approval stating prominently: (1) the number of residential units that are the subject of the site plan application, (2) the total number of residential units that have received site plan approval as of the date of the application, (3) the total number of residential units that have received ARB approval as of the date of the application, (4) the total number of residential units that have been completed and received a certificate of occupancy and (5) a reproduction of the following table:

**Traffic Monitoring Program
Tuxedo Reserve
Monitoring Points**

Monitoring Point (Units)	Permitted Deviation
300	20%
525	20%
714	10%
911	10%
1195	10%

3. Jitney Service

A jitney service will be operated during the weekday AM and PM peak hours to serve residents destined to and from the Tuxedo and Sloatsburg train stations and nearby express bus stops. The service will be initiated at the beginning of Phase 1, i.e., within the first 50 units of development, through a contractual "taxi-type" car service that will be available to residents during morning and afternoon peak hours, and funded by the applicant and/or the TRHOA. The service will be overseen by the on-site Project management team.

As the density of the development increases, the ridership will increase to a level where a van or an airport-type bus will be utilized to transport residents to the Tuxedo and Sloatsburg train stations and express bus stops. Based on previous experience, this level of ridership occurs with developments of approximately 200 to 250 units. This service will be operated during the commuter hours, in the morning and evening peak periods. During Phase 1, it should include approximately five to six pickup points, including one near the Village Commons and one near the major subdivisions. In addition, a bus stop should be provided in close proximity to Route 17 for residents who would utilize bus transit for commuting. Bus shelters will be provided at selected locations. As the development proceeds in both the number and location of units, the operation will be extended to provide adequate service.

At the completion of Phase 1, an off-peak hour service will also be operated in connection with the commuter jitney service. This off-peak operation will be used to transport residents to and from the proposed Village Commons and the Tuxedo hamlet. This will also be funded and administered by the TRHOA.

D. Noise

The two potential sources of noise — traffic and blasting during construction — would not result in any significant adverse impacts. However, to minimize the potential for noise disturbance during blasting, the Project has been designed with significant buffer distances

separating most blasting locations from existing housing. The blasting plan described in the DSEIS will provide the sequence of blasting operations and establish design and monitoring standards, in addition to those required by the Town's code, to ensure that no significant adverse noise impacts occur. The applicant will also encourage construction contractors to use quiet construction equipment.

VI. ALTERNATIVES

The Town Board has considered the following five alternatives to the Project:

A. No Build Alternative

The no build alternative represents the future conditions if the Project Site is not developed. This is the condition described throughout the DSEIS as "The Future Without the Project". Under this alternative, no significant new development would be expected at the Tuxedo Reserve site by the Project full build year. Similarly, the substantial investment in infrastructure improvements to roads, sewers and schools would not take place. Instead, the Tuxedo Reserve site would be expected to remain in its current condition. The no build alternative would avoid those adverse impacts identified for the proposed Project, but it would also forgo the substantial benefits of the Project.

B. As-of-Right Development Alternative

For this alternative 700 to 800 single-family, detached residential units and up to 3.6 million square feet of light industrial office space is considered as-of-right on the Project Site. However, because of steep slopes and wetlands, it is estimated that no more than 1.74 million square feet of light industrial/office space could be developed. This scenario would use all available upland on the Project Site with 640 single-family homes and 1.2 million square feet of non-residential development in the Southern Tract, 100 single-family homes and 540,000 square feet of non-residential development in the Northern Tract, and approximately 60 single-family homes in the Fox Hill Tract. The light industrial/office development would be contained in 40 buildings on the Southern Tract and 23 buildings on the Northern Tract. Construction of the residential units would not be linked to implementation of the light industrial/office development under the as-of-right alternative. Although the amount of residential use would be reduced under this alternative compared to the Project, impacts on schools would be similar, the increased commercial component would create substantially more traffic, and the lack of a master plan and single developer would likely eliminate the opportunity to create large areas of cohesive, dedicated open space on the Project Site. In addition, the measures that have been incorporated into the Project to protect wetlands, flora and fauna would not necessarily be incorporated into an as-of-right development.

C. Development According to Concept Plan Alternative

Development according to the 1991 concept plan would result in 2,450 residential units and 1.1 million square feet of light industrial/office space. All of the non-residential space would be located in the Northern Tract. No development would be anticipated in the Fox Hill Tract. There would be a linkage of residential and commercial development, as required by the PID.

This alternative is similar to the proposal considered in the DGEIS, which examined impacts of 2,450 residential units and 550,000 square feet of light industrial/office space. It would not be possible to fit 1.1 million square feet of light industrial/office development in the Northern Tract, due to environmental constraints (i.e., wetlands, steep slopes and a timber rattlesnake den), or the Southern Tract, which was entirely occupied by residential and accessory uses. Overall, the impacts of this alternative would be greater than those of the Project. In particular, this alternative would generate more traffic and would not be able to preserve the same quality and size of contiguous open space on the site, compared to the Project.

D. All Residential Development Alternative

The all residential alternative would include 700 to 800 dwelling units and no light industrial or commercial development. There would be no linkage between residential and non-residential development, and no clustering or residential development. The pattern of development would take place mainly on the Southern Tract, with some units in the Northern and Fox Hill Tracts, as well. This alternative would reduce traffic and demand for infrastructure and municipal services compared to the Project; however, its fiscal effects on schools would be less beneficial than that of the project (even potentially adverse), and the benefits of the Project -- a planned community with design guidelines, performance standards and phasing to guide development, large areas of contiguous, dedicated open space, comprehensive storm water management on site -- would not be realized. The measures that have been incorporated into the design of Tuxedo Reserve to protect wetlands, flora and fauna would not necessarily be incorporated into an all residential development plan.

E. Single Access Alternative

As proposed, the Southern Tract would have two access points, one at the northern end of Route 17 in Tuxedo, and the other, to the South in Sloatsburg. An alternative was considered of providing only the northernmost access point along Route 17, thereby eliminating the entry in Sloatsburg. In most respects, this alternative would have impacts identical to those of the Project. The only substantive differences relate to traffic and air quality.

This alternative would alter the distribution of Project traffic so that all vehicles entering and exiting the Southern Tract would utilize the main access in the Town of Tuxedo, approximately 0.8 miles to the north. Since vehicles would continue to have direct access to Route 17, other than at the Project driveway, the incremental traffic at study area locations and the associated impacts would be the same as those with the Project.

The air quality analysis which was performed for the Project in the DSEIS included a receptor site at NYS Route 17 and South Tuxedo access (Site 2) and at other sites along Route 17. The air quality modeling results for the Project indicated that maximum predicted future CO levels near the South Tuxedo access for future build conditions would be well within the applicable standards. Under this alternative with only one site access, there would be additional traffic processed through the Route 17 access in Orange County. Based on the air quality findings for sites on Route 17 that were performed for the Project, carbon

monoxide levels near the one access point would be within air quality standards, and this alternative would not result in any significant adverse air quality impacts.

VII. CERTIFICATION OF FINDINGS TO APPROVE

The Town Board has considered the relevant environmental impacts, facts and conclusions disclosed in the FEIS and has weighed and balanced relevant environmental impacts with social, economic and other considerations.

Based on the foregoing and on the appendices hereto, the Town Board certifies that consistent with social, economic and other essential considerations from among the reasonable alternatives available, the action is one that avoids or minimizes adverse environmental impacts to the maximum extent practicable, and that adverse environmental impacts will be avoided or minimized to the maximum extent practicable by incorporating as conditions to the decision those mitigative measures that were identified as practicable.

Additional Information can be obtained from:

Contact Person: Honorable Kenneth R. Magar, Sr.
Telephone Number: (845) 351-2265

Appendices:

- A - Tuxedo Reserve Project Plan
- B - Hamlet Revitalization Funding Program
- C - Design Guidelines
- D - Bulk Standards
- E - Memorandum of Understanding
- F - Traffic Mitigation Measures

**SPECIAL
PERMIT
FOR
TUXEDO
RESERVE**

Adopted: November 15, 2004

Special Permit Table of Contents

****Please note that the Special Permit was assembled by the Town and incorporates the Findings that were previously issued by the Town within the document. This is why there are two sets of appendices that overlap.**

1. Resolution Granting Special Permit Approval to Tuxedo Reserve
2. Appendix A: Town of Tuxedo Zoning Code 98-23
3. Appendix B: Tuxedo Hamlet Revitalization Fund
4. Appendix C: Lead Agency Findings Statement—SEQRA
 - Appendix A: *Map of Proposed Project, Town of Tuxedo, Orange County*
 - Appendix B: *Tuxedo Hamlet Revitalization Fund*
 - Appendix C: *Village Commons Design Guidelines*
 - Appendix D: *General Bulk Standards Table*
 - Appendix E: *Memorandum of Understanding between the NYS Office of Parks, Recreation and Historic Preservation and The Related Companies, L.P. regarding Tuxedo Reserve*
 - Appendix F: *Summary of Levels of Service and Mitigation measures with and without Oakbrook*
5. Appendix D: Protocol Governing Monitoring of Private Water Wells on Residential Properties
6. Appendix E: Letter of Intent regarding School Site at Tuxedo Reserve, Final Terms of Proposed Contributions to Tuxedo Union Free School District

**RESOLUTION GRANTING SPECIAL PERMIT APPROVAL
TO
TUXEDO RESERVE**

WHEREAS, the Town of Tuxedo Town Board (hereinafter the "Town" or "Town Board") received an application, pursuant to §98-23 of the Town of Tuxedo Zoning Law¹, from R.H. Tuxedo Development, L.P., (hereinafter the "Applicant") for Special Permit approval to permit construction of a Planned Integrated Development known as "Tuxedo Reserve" on 2,376 acres located primarily in the Town of Tuxedo, Orange County, New York (hereinafter the "Project"); and

WHEREAS, the Project consists of 1,195 housing units and 266,000 square feet of associated non-residential use; and

WHEREAS, a public hearing on the Special Permit application was conducted on December 15, 2003 at which time public comment was received and considered by the Town Board; and

WHEREAS, a Preliminary Plan for the Project was submitted and reviewed by the Town of Tuxedo Planning Board (hereinafter the "Planning Board"); and

WHEREAS, the Planning Board issued a favorable report to the Town Board conditioned upon certain clarification of Project elements and suggested modifications to the Project; and

WHEREAS, modifications to the Project and Preliminary Plan have been made in response to comments from the Planning Board, the public, the Town Board and other agencies involved in the review of the Project; and

WHEREAS, the revised project proposes less development with fewer residential units and less significant environmental impacts than the project reviewed by the Planning Board, therefore

¹ Section 98-23 was amended in its entirety by Local Law # 4A of 1999. Section 2 of that Local Law exempted Tuxedo Reserve from review under its provisions and mandated review of the Project under the Planned Integrated Development regulations in effect immediately prior to the adoption of the Local Law. A copy of those prior regulations are attached hereto as Appendix "A" and are incorporated herein by reference. Section 2 of Local Law # 4A also prescribed the following specific development standards and limits for Tuxedo Reserve:

5. No more than 1,195 residential dwelling units may be constructed on the Tuxedo Reserve planned Integrated development of which no more than 180 units shall be rental and no less than 866 units shall be single family detached and semidetached. An additional 180 dwelling units may be constructed provided those units are constructed for senior citizens and persons in need of congregate care or assisted living.

6. Under no circumstance shall the housing mix in the Tuxedo reserve Planned Integrated Development be less than the minimum required under §98-23 F. (7) of this Local Law.

7. Nothing contained herein shall be construed as any approval of the pending application of Tuxedo Reserve. Said application is subject to all applicable environmental and land use processes and approvals.

no further review by the Planning Board is required; and

WHEREAS, the revised Preliminary Plan last dated November, 2004 is attached hereto as Appendix "B" and is made a part hereof; and

WHEREAS, the Town Board is lead agency for review of this application pursuant to the requirements of the State Environmental Quality Review Act ("SEQRA"); and

WHEREAS, on November 15, 2004 the Town Board issued its Lead Agency Findings Statement under SEQRA in connection with the application; and

WHEREAS the Lead Agency Findings Statement and its associated appendices are attached hereto as Appendix "C" and made a part hereof; and

WHEREAS, a full statement of the proposed action was submitted to the Orange County Planning Department in October of 2003 in accordance with §239-1 and §239-m of the General Municipal Law; and

WHEREAS, on March 18, 2004 the Orange County Planning Department issued its report under §239-1 and 239-m of the General Municipal Law; and

WHEREAS, the Town Board and its consultants have thoroughly reviewed the application and revisions thereto and determined that it is in a form for approval subject to the incorporation of appropriate and necessary safeguards and conditions; and

WHEREAS, in consideration of the public health, safety and welfare and the comfort and convenience of the public in general and of the immediate neighborhood in particular, appropriate and necessary safeguards and conditions have been identified and are set forth in full herein.

NOW THEREFORE BE IT RESOLVED that the Town of Tuxedo Town Board hereby makes the following findings and determinations in accordance with §98-23 and §98-39 of the Town of Tuxedo Zoning Law and Local Law #4A of 1999.

1. A variety of housing types and ownership capabilities have been provided.

The Project incorporates the following housing types: single family detached homes; semi-detached homes; townhouses, stacked flats; duplexes and active adult housing. The Project incorporates the following ownership types: fee simple and condominium.

2. Usable open space, recreational facilities and reservation for educational facilities have been provided.

Approximately 1,722 acres of the Project (approximately 70 Percent of the Project site) will remain as open space. The Project's Southern Tract consists of private and shared spaces such as private yards, neighborhood greens, and dedicated open space such as an integrated trail system. The Applicant has informed the Town Board that the Applicant is aware of the conservation values that much of the Northern Tract and the Fox Hill Tract possess. The Applicant has further informed the Town Board that it desires to preserve much of the Northern Tract and Fox Hill Tract, prevent future development, and cause the vast majority of these areas to remain open space. Accordingly, the Applicant has offered and the Town Board has agreed that large portions of the Northern Tract and the Fox Hill Tract are to be gifted as follows: approximately 702 acres in the Northern Tract to be gifted or restricted by a conservation easement to a conservation organization acceptable to the Town; and all of the Fox Hill Tract to the Village of Tuxedo Park, except for a tract of land reserved for approximately 3 homes. In addition, the Applicant has offered to gift to the Village of Tuxedo Park certain parcels of land in the Northern Tract and Southern Tract which will function as conservation buffers. To protect these parcels from future development, the Applicant has offered to and will impress all the lands to be donated with conservation easements, thereby assuring that the donated lands will remain permanent open space. The requirement for a Conservation Easement shall not be applicable to any lands gifted to the Palisades Interstate Park Commission.

The applicant has also agreed to restrict by Conservation Easement a portion of the open space on the Southern Tract as depicted on the Preliminary Plan.

The Project provides its residents the following active recreational opportunities: an integrated trail system in the Project's Southern Tract with amenities such as a nature walk, a walk to Mountain Lake to a proposed canoe/kayak hut and picnic areas, aerobic walks with exercise stations and jogging trails; bike trails incorporated into the Project's primary roads to the extent practical; and a "sports lodge" in the Village Commons.

Recreation fees will be paid by the Applicant to the Town for Town-wide recreation needs as required by applicable Town of Tuxedo Local Law.

The Project includes a 40-acre parcel on the Southern Tract to be gifted to the Tuxedo Union Free School District for the construction of a public school.

3. Maximum preservation of outstanding topographical, geological and water resources features of the site has been assured.

The Project has been designed to maximize the preservation of existing topographic, geologic and water resource features on the site. Only 14% of the Project site will be

disturbed by development activity. All disturbance areas are subject to a comprehensive set of performance standards specifically addressed to stormwater and erosion control, trees and vegetation and wildlife habitat. Specific and strict blasting procedures have also been incorporated into the Project. Only 1.75 acres of wetlands and 3.13 acres of wetland buffer area on the entire Project site will be disturbed.

4. **The development is staged in a manner that provides for an orderly transition of land from vacant to occupied use.**

The Project will be constructed in three phases over a 12 year period. Phase 1 entails construction of 714 dwellings consisting of 409 single family detached and semi-detached homes, 305 multi-family units and 48,000 square feet of neighborhood non-residential in the Village Commons. Phase 2 entails construction of 197 units of active adult senior dwellings and a health club with meeting facilities not to exceed 16,000 square feet for the Long Ridge Active Adult community. Phase 3 entails 6,000 square foot community facility, and 196,100 square feet of office/light industrial /flex space on the Northern Tract.

Development is staged so that construction will commence in areas closest to existing infrastructure and then progress to the development of areas farther into the site. Sub-phases of development will likely be processed by the Applicant within each overall development phase. In those instances not covered by the Lead Agency Findings Statement or the Special Permit, development thresholds will be established by the Town of Tuxedo Planning Board whereby percentages of phases or sub-phases must be complete prior to commencing construction on additional phases.

5. **All general design requirements and standards for planned integrated development have been met.**

The Preliminary Plan demonstrates that the following development standards for the proposed planned integrated development have been met: The Project contains the required minimum area. The Project meets required ownership criteria. The Project will be served by public water and sewer service. The project meets the special permit criteria of §98-39 of the Zoning Law as described herein. All uses proposed by the Project are permitted uses. Adequate ownership provisions have been identified for common owned property. The Project is subject to architectural review in accordance with Town of Tuxedo local law.

Unless as otherwise permissibly modified by this Special Permit or the Preliminary Plan, all required design standards for a Planned Integrated Development have been met including, but not necessarily limited to, standards relating to lot area and yard requirements, height limitations, street design, access, building area, boundary

setbacks, buffer areas and transitional uses, off-street parking and loading and multiple residence and attached-dwelling structure design and density requirements. Standards that have been permissibly modified by the Special Permit or the Preliminary Plan provide for the harmonious location of structures and will ensure that such structures will not be detrimental to adjacent development.

6. Adequate mechanisms have been identified for the control and governance of common property.

Common property will be owned by the Tuxedo Reserve Home Owner's Association. Creation of this Association as well as any individual condominium association formed for the Project is subject to review and approval by the New York State Attorney General pursuant to the provisions of the Martin Act.

7. Appropriate Project specific design standards have been developed.

Specific bulk standards, architectural design guidelines and landscape guidelines have been developed for the Project and are attached to the Lead Agency Findings Statement attached hereto as Appendix "C". In addition, performance standards and other site development criteria are set forth in the FEIS for the Project.

8. All proposed structures, equipment or material are readily accessible for fire and police protection.

The Preliminary Plan for the Project evidences that all structures are generally located in a manner that is readily accessible to police and fire protection services. In addition, there are two emergency access points within the Project; South Gate Road and Mountain Avenue. The Planning Board will further review emergency access for police and fire in connection with its review of individual site plans for the Project and will consult with the police department and fire district upon each site plan submission.

9. The proposed use is of such location, size and character that, in general, it will be in harmony with the appropriate and orderly development of the district in which it is proposed to be situated and will not be detrimental to the orderly development of adjacent properties in accordance with the zoning classifications of such properties.

The Project complies in all respects with the applicable PID regulations and has evolved after extensive review over many years. The Project is located on a vast expanse of territory. Its building development is clustered and surrounded by large areas of protected open space. The substantial open space buffers that have been created protect adjacent properties and negate adverse impacts on their orderly

development.

10. **Pedestrian and vehicular circulation to and from the proposed development and the assembly of persons in connection therewith will not be hazardous or inconvenient to or in conflict with the normal traffic of the neighborhood.**

A complete traffic study has been done for the Project. Traffic mitigation has been identified and made a condition of this Special Permit. This mitigation includes an extensive Traffic Monitoring Program to monitor vehicle trips generated from the Project. The required mitigation and Monitoring Program is detailed in the Lead Agency Findings Statement at pages 29-31. In the event the Traffic Monitoring Program reveals deterioration in the levels of service and Project traffic generation beyond fixed thresholds, development will be stopped until mitigation is accelerated or new suitable mitigation is identified and put into place so that all significant traffic impacts are mitigated below significant impact thresholds.

11. **The location and height of buildings, the location nature and height of walls and fences, and the nature and extent of landscaping on the site is such that the proposed development will not hinder or discourage the appropriate development and use of adjacent land and buildings.**

Building and site features will be regulated by an extensive set of design guidelines including, architectural design guidelines, landscape design guidelines, bulk standards and performance standards. These have been developed to guarantee design continuity and quality within the Project. Implementation of these standards will ensure no adverse impacts or impediments to the appropriate development of adjacent land and buildings.

12. **The development standards and limits set forth in Local Law #4A of 1999 have been met.**

1,195
890/k
The Project consists of 1,195 housing units of which 890 units are single family detached and semi-detached. The Project's housing mix complies with the requirements of §98-23 F (7) set forth in Local Law #4A of 1999.

13. **The requirements of 6 NYCRR Part 617 have been met.**

The Town Board, as lead agency for purposes of compliance with SEQRA, has accepted a Final Environmental Impact Statement ("FEIS") in connection with the Project and on November 15, 2004 issued its Lead Agency Findings Statement for the proposed Project. (See Appendix "C")

NOW THEREFORE BE IT FURTHER RESOLVED, that the Town of Tuxedo Town Board

hereby grants Special Permit approval to the application and Project subject to the following terms and conditions:

1. Compliance Required

This Special Permit is subject to and conditioned upon: (a) full compliance with the Preliminary Plan for the Project attached hereto as Appendix "B" (b) full compliance with all of the mitigation measures, Project specifications, best management practices, and performance standards, incorporated by reference in the Lead Agency Statement of Findings including all of its appendices, attached hereto as Appendix "C" and set forth in the Environmental Impact Statement for the Project. (For purposes of this provision the Environmental Impact Statement for the Project shall comprise the Draft Supplemental Environmental Impact Statement ("DSEIS") dated October, 1999 and accepted as complete on October 18, 1999 and the Final Environmental Impact Statement ("FEIS") dated November, 2003 and accepted as complete on November 20, 2003 it being understood that the Project was changed from the DSEIS to the FEIS and in the event of differences between the DSEIS and FEIS relating to those changes, the latter shall govern) (c) construction of the Project as described and shown in the Preliminary Plan (d) full compliance with any plan approved by the Planning Board for the Project including any terms and conditions attendant to such approval and all notes and other information on the approved site plan (e) full compliance with any permit or approval for the Project issued by any other Federal, State or local agency with jurisdiction over the Project including any terms and conditions attendant to such permit or approval and (f) full compliance with all other terms and conditions set forth in this Special Permit.

The Town Board may, after 30 days' prior written notice and an opportunity to be heard, suspend the issuance of building permits or certificates of occupancy for a failure to comply as set forth herein above or, may immediately suspend permit or certificate concerning a specific parcel of property in the event a failure to comply at such parcel presents an imminent threat to the health safety and welfare of the public or the environment. The Town Board may also, after 30 days prior written notice and hearing, revoke this Special Permit for failure to comply with the conditions of this Special Permit. Such revocation shall not abrogate the Applicant's affirmative obligations hereunder for any portion of the Project constructed or partially constructed at the time of revocation.

2. Recording of Special Permit

This Special Permit shall be executed by the Applicant and the Town in a form that is recordable by the Orange County Clerk and the Applicant consents to recording of this Special Permit in the chain of title of the property.

3. Binding Effect

This Special Permit runs with the land and is binding upon the Applicant and any successor in interest to the Applicant, including, without limitation, subsequent purchasers and transferees, vendees, heirs, assignees, distributees, mortgagees, agents, employees and contractors.

In the event the Applicant transfers any interest in the Project, it shall provide a copy of this Special Permit to the transferee upon such transfer. Within ten (10) business days of such transfer the Applicant shall provide the Town with written notice of the transfer which notice shall contain the following: (a) the name and address of the transferee (b) the date of the transfer (c) the precise interest in the Project that was transferred and (d) a sworn statement in writing from the transferee that it has received a copy of the Special Permit, that it understands all of the terms and conditions of the Special Permit and that it agrees to be bound by all of the applicable terms and conditions of the Special Permit.

4. Building Permits

No building permit shall be issued in Tuxedo Reserve unless and until (a) final plan approvals (site plan and subdivision) have been received from the Planning Board for the applicable phase or sub-phase, if any, of the Project (b) all applicable required outside agency permits have been obtained (c) all required fees have been paid and any outstanding accounts brought current (d) all required financial assurances and bonds have been posted and are maintained and (e) there is compliance with this Special Permit.

5. Limitations on Project Uses

No more than 1,195 residential units may ever be constructed on the Project site. No less than 866 residential units shall be single family detached and semi-detached; of this number at least one hundred ninety seven (197) units shall be "active adult" residences restricted to persons 55 years of age and older in accordance with Federal and State regulations. There may not be more than 305 multi-family residential units (i.e. flats, townhouses and duplexes) constructed on the Project site. All residential uses must be located in the Project's Southern Tract.

Except as otherwise authorized under paragraph 7 below, no more than 2,860 bedrooms for non-age restricted residential units may ever be constructed on the Project Site. There shall be no bedroom limitation for age-restricted (i.e. the "active adult") residential units constructed on the Project Site.

Non-residential uses in the Southern Tract shall be limited to the following: (a) Project Amenities: Village Commons -consisting of a day care center, health facilities, business center for tele-commuters and meeting rooms not to exceed 48,000 square feet; Augusta Ridge: pool and changing rooms for residents not to exceed 6,000 square feet; Long Ridge Active Adult Community: a health club with meeting facilities not to exceed 16,000 square

feet (b) Commercial Uses: limited to a Tuxedo Reserve sales, marketing and administration center and a gourmet delicatessen which delicatessen may not exceed 3,000 square feet. The 3,000 square feet for the delicatessen shall be included in the maximum 48,000 square feet permitted in the Village Commons. In the event either of these commercial uses are discontinued, the vacant space may only revert to one of the "Project Amenities" uses listed above or residential use so long as there is no increase in the overall number of housing units for the Project.

In no event shall Project Amenities and Commercial Uses on the Southern Tract exceed 70,000 square feet.

6. Phasing

Development Phasing: The Project shall be developed in three principal phases. Phase 1 shall be limited to 714 residential dwelling units and 48,000 square feet of non-residential space known as the "Village Commons." The residential dwelling units shall consist of 409 units of single family detached and semi-detached units and 305 multi-family units (townhouses, stacked flats and duplexes). Construction of single family and multi family dwelling units shall be paced to ensure a reasonably balanced mix of single family detached and townhouse/multi family units during this Phase. Phase 2 shall be *at least* 197 units of active adult housing. Phase 3 shall be limited to 284 single-family detached dwelling units on the Southern Tract and 196,100 square feet of office/light industrial/flex space on the Northern Tract. The Northern Tract non-residential use may be constructed in earlier development phases.

Construction Phasing: Prior to receipt of any site plan approval for the Project, the Applicant shall submit a construction phasing plan to the Tuxedo Planning Board for review and approval. The construction phasing plan approved by the Planning Board shall include development thresholds whereby percentages of phases or sub-phases must be complete prior to commencing construction on subsequent phases and paced to ensure a reasonably balanced mix of single family and multi-family units during Phase 1.

7. Lot and Unit Flexibility

In recognition that the Applicant requires some reasonable flexibility in implementing the Project to respond to market conditions and other factors, the Applicant is authorized as follows, notwithstanding anything that may appear to the contrary in this Special Permit:

- (a) The Applicant shall be entitled to change any or all of the carriage lots with semi-detached homes that are part of the housing for active seniors in Phase 2 to fully detached homes on cottage lots, affecting a potential maximum of 68 lots/homes. This authority shall be separate and apart from and shall not count toward the flexibility provisions in paragraph (c) of this section.

- (b) The Applicant shall be entitled to change any or all of the one bedroom flats in the Village Commons to two bedroom flats. This authority shall be separate and apart from and shall not count toward the flexibility provisions in paragraph (c) of this section.
- (c) The Applicant shall be entitled to switch a maximum of 60 residential units from one type to another so long as the total number of residential units does not exceed 1195 and so long as the number of active adult units is only increased and never decreased.
- (d) The Applicant shall be entitled to shift a maximum of six percent of lots for single family homes (excluding active adult seniors) between phases with no phases being increased or decreased by more than six percent.

Example: The Applicant is permitted to decrease the number of single family homes in Phase 1 by up to 24 units ($409 \text{ single family homes} \times .06 = 24 \text{ units}$). The required offsetting increase in units could be achieved by (1) increasing the number of single family homes in Phase 2 by no more than 11 units ($197 \text{ single family homes} \times .06 = 11 \text{ units}$) or (2) increasing the number of single family homes in Phase 3 by no more than 17 units (and increasing the number of single family homes in Phase 3 by no more than 17 units ($284 \text{ single family homes} \times .06 = 17 \text{ units}$) in any combination totaling 124 units.

UNDER NO CIRCUMSTANCE SHALL THE TOTAL NUMBER OF RESIDENTIAL UNITS IN THE PROJECT EXCEED 1,195 NOR THE NUMBER OF SINGLE FAMILY DETACHED OR SEMI-DETACHED UNITS IN THE PROJECT BE LESS THAN 866 NOR THE NUMBER OF MULTI-FAMILY UNITS BE GREATER THAN 305.

8. Bulk Subdivision

For financing and ownership transfer purposes, the Applicant shall be entitled to apply for and obtain from the Planning Board bulk subdivision approval at any time after issuance of this Special Permit. No construction or ground disturbance shall be authorized by such bulk subdivision approval and a note to this effect shall be placed on any bulk subdivision plan.

9. Open Space

Southern Tract: Open space areas on the Southern Tract referred to in the Lead Agency Findings Statement as "shared open spaces" and as "dedicated open spaces" shall be

restricted in perpetuity by a Declaration of Covenants and Restrictions which ensures that such open space can never be developed for commercial or residential uses and which ensures that any recreational or other similar activity on or in such open space is consistent with the Tuxedo Reserve Project as delineated in the Preliminary Plan, the Special Permit, and all applicable site plans and subdivision approvals. The Town of Tuxedo shall be a designated beneficiary of the Declaration of Covenants and Restrictions. In addition, those lands depicted on the Preliminary Plan designated to be restricted by conservation easement shall be further encumbered by a Conservation Easement. Such Conservation Easement shall be granted to the Town and a land trust or other open space protection entity acceptable to the Town. The Declaration of Covenants and Restrictions and the Conservation Easement required herein shall be reviewed and approved by the attorney for the Town prior to their filing and recording in the office of the Orange County Clerk. Such covenants and Restrictions and Conservation Easement shall allow installation of Water Supply infrastructure, including wells, pumps, tanks, limited maintenance access ways and similar water infrastructure improvements, all of which are subject to Planning Board site plan approval.

The 31.682 +/- acre Conservation Buffer depicted on the Preliminary Plan shall be gifted to the Village of Tuxedo Park. A Conservation Easement shall be placed upon such land prohibiting any development of the land for any purpose. Such Conservation Easement shall be granted to the Town. The Village shall comply with and be bound by the terms and conditions of this Special Permit and shall acknowledge such in the manner prescribed in paragraph 3 above. The attorney for the Town shall be provided with copies of all documents of agreement and transfer for review and approval to ensure donor and donee's compliance with this provision.

A 2.00 +/- acre parcel shall be gifted to the Tuxedo Club in the location designated on the Preliminary Plan. Such gift shall be subject to the reservation of an easement by the Applicant and the simultaneous conveyance by the Applicant of an identical easement to the Town of Tuxedo for the limited purposes of (1) providing emergency access to the Project by means of emergency vehicles such as fire trucks, ambulances, and police vehicles but not to be used for access by the general public or as an access for construction or maintenance vehicles of the Applicant or its agents, contractors or employees; such access shall be constructed in a manner provided for by the Planning Board in its site plan review of the Project but, at a minimum, shall be designed to assure, to the maximum extent practicable that the property is not misused by the general public to become an unauthorized point of general ingress and egress (2) installing and maintaining such drainage pipes, detention basins, and other structures as may be required by the Planning Board in its site plan review of the Project and (3) installing and maintaining utilities, lighting and signage. In addition, a Declaration of Covenants and Restrictions shall be placed on the 2.00 +/- acre parcel prohibiting the development of the land for any purpose except the three limited purposes described above. The Town of Tuxedo shall be designated as a beneficiary of the Declaration

of Covenants and Restrictions. The Tuxedo Club shall comply with and be bound by the terms and conditions of this Special Permit and shall acknowledge such in the manner prescribed in paragraph 3 above. The attorney for the Town shall be provided with copies of all documents of agreement and transfer for review and approval to ensure donor and donee's compliance with this provision.

Northern Tract: Pursuant to the offer of the Applicant, open space areas on the Northern Tract shall be gifted or otherwise restricted by conservation easement as depicted on the Preliminary Plan as follows: approximately 702.28 +/- acres to a conservation organization acceptable to the Town and 50.26 +/- to the Village of Tuxedo Park as a Conservation Buffer. The terms of such gifts shall require that the open space gifted can never be developed for any purpose and that the donees agree to comply with and be bound by the terms and conditions of this Special Permit. All of these lands shall be encumbered by a Conservation Easement. Such Conservation Easement shall be granted to a land trust or other open space protection entity acceptable to the Town. The attorney for the Town shall be provided with copies of all documents of agreement and transfer for review and approval to ensure donor and donee's compliance with the applicable provisions of this Special Permit. The requirement for a Conservation Easement shall not be applicable to any lands gifted to the Palisades Interstate Park Commission.

Fox Hill Tract: Pursuant to the offer of the Applicant, the entire Fox Hill Tract, less the annexation parcel of 24.27 +/- acres shall be gifted to the Village of Tuxedo Park. A Conservation Easement shall be placed upon such land prohibiting any development of the land for any purpose except that the Village may use the ravine near the race track located off of Clubhouse Road as a chipping facility to chip leaves and brush. Such Conservation Easement shall be granted to a land trust or other open space protection entity acceptable to the Town. The Village shall comply with and be bound by the terms and conditions of this Special Permit and shall acknowledge such in the manner prescribed in paragraph 3 above. The attorney for the Town shall be provided with copies of all documents of agreement and transfer for review and approval to ensure donor and donee's compliance with this provision.

All Gifts, Conservation Easements, Declarations, etc. required under this provision shall be made prior to the issuance of the first building permit and prior to the commencement of any construction and of any disturbance of the Project site.

10. Annexation Parcels

The applicant may petition the Town of Tuxedo and Village of Tuxedo Park to annex the following parcels into the Village of Tuxedo Park: 24.27 +/- acre parcel located on the Fox Hill Tract; 28.65 +/- acre parcel located in the Northern Tract. Upon completion of the

annexation, the Applicant may subdivide the Northern Tract annexation parcel into no more than 4 lots for single family detached homes and the Fox Hill annexation parcel into no more than 3 lots for single family detached homes. The annexation parcels shall not be considered part of the Project and are authorized in addition to the maximum number of approved lots and unit types for the Project.

11. Tuxedo Union Free School District

Prior to the issuance of the first building permit for the Project and prior to any construction or disturbance of the Project site, the applicant shall (a) convey the 40 acre parcel depicted on the Preliminary Plan as a future school site to the Tuxedo Union Free School District ("TUFSD") (b) undertake, at its own expense, any environmental remediation of the parcel necessary for the intended use of the parcel and c) enter into a binding agreement with the TUFSD which, at a minimum, shall incorporate the terms and conditions set forth in the letter of intent between the Applicant and TUFSD attached hereto as Appendix "E". A copy of this agreement shall be filed with the Town Board and accompanied by an opinion of counsel, in a form approved by the Attorney for the Town, rendered by the attorneys for the school district and the Applicant that the Agreement was properly authorized and is a binding agreement upon the parties.

12. Tuxedo Public Library

The Applicant has offered a site in the Village Commons approximately ½ acre which is adequately sized to construct a library facility with required off street parking and drainage facilities. The library shall notify the Applicant in writing within 12 years of the date of this Special Permit that it has obtained a financing commitment for construction of the library facility and thereupon the Applicant shall convey title to the Library of the Library site. In the event the Library does not commence construction within one year of the date of the conveyance and does not proceed diligently to complete construction, the Library site shall revert back to the Applicant. Prior to the actual conveyance of the site to the Library, the Applicant may landscape and/or use the site for recreation purposes. A different location on the Project Site for the library may be designated upon mutual agreement of the Applicant and the Library. Such designation shall not alter the required time frames herein.

13. Recreation

The trail system in the Southern tract shall be made permanently available to Town of Tuxedo residents utilizing an annual "free of charge" permit system administered by the

Tuxedo Reserve Home Owner's Association. The Tuxedo Reserve Home Owners Association shall be responsible for all trail maintenance and security. The trail system shall be made available to Town residents simultaneous with it being made available for residents of Tuxedo Reserve. The offering plan filed in the office of the New York State Attorney General establishing the Tuxedo Reserve Home Owner's Association shall disclose the permanent availability of the trail system to Town of Tuxedo residents as well the fact that such access shall be free of charge. No motorized vehicles of any nature shall be permitted on the trail system except as necessary for access to maintain the system and for security. Nor shall the trail system be lighted in any manner except for purposes of safety, security and trail heading marking. The Tuxedo Reserve Home Owners Association shall be authorized to adopt and enforce rules and regulations for the use and operation of the trails system to maintain and protect the security and safety of the Tuxedo Reserve property owners and Town residents. These rules and regulations shall be provided to the Town so the Town can confirm that adequate access is in fact provided.

The Applicant shall pay fees in lieu of recreation in accordance with Town Local Law. The trail use by Town residents described above shall not be considered a "fee in lieu of recreation" by which the Applicant can claim a credit or offset against recreation fees otherwise required by the Town's local law.

14. Water Supply

Southern Tract: Prior to the issuance of the first building permit for the Project and prior to any construction or disturbance of the Project site, a Water Works Corporation under the Transportation Corporations Law shall be formed to provide pure and wholesome water at reasonable rates to development on the Southern Tract. The establishment of such Water Works Corporation shall, at a minimum, be conditioned upon the following: (a) limitation of the corporation's service area to the Town of Tuxedo and elimination of any extension rights under Transportation Corporation Law Section 46; (b) prohibiting water sales to locations outside the Town and elimination of any extension rights to extend pipes in adjoining Cities, Towns and Villages under Transportation Corporation Law Section 43; (c) granting the Town a right of first refusal giving it the ability to acquire the Corporation's assets or shares at a fair market value in the event the assets or shares are proposed for transfer, merger or consolidation; (d) the right of the Town to take possession and title to the assets in the event the system fails to provide pure and wholesome water at reasonable rates to its customers or is not operated in material compliance with the health and safety standards maintained and issued by the Town of Tuxedo, NYS Department of Health, NYS Department of Environmental Conservation and NYS Public Service Commission (hereafter "Agencies"); however the Corporation shall first be provided with the right and opportunity to correct any deficiency identified by the Agencies in a timely manner; (e) formation of a back-up water district pursuant to the Town Law provisions for special improvement districts

to put in place and be effective in the event the Water Works Corporation fails to provide pure and wholesome water at reasonable rates to its customers or is not operated in material compliance with the standards maintained and issued by the Agencies; however the Corporation shall first be provided with the opportunity to correct any deficiencies identified by the Agencies in a timely manner (f) the real property tax assessment of the Water Works Corporation facilities for real tax purposes may be on an "income" approach and not subject to challenge as to taxing methodology and (g) prohibiting the sale or transfer of the Water Works Corporation or any of its assets unless the transferee acquires the Corporation or any of its assets subject to items (a) through (f) set forth above, and all conditions of the original consent to form the Water Works Corporation. For purposes of this provision, water shall be deemed "pure and wholesome" if it meets or exceeds applicable regulatory standards issued by the NYSDEC and NYSDOH for drinking water supplies. Furthermore, "reasonable rates" shall mean those rates approved by the Public Service Commission for the sale of water by the Water Works Corporation.

Northern Tract: Water supply in the Northern Tract shall be provided by the development of on site ground water resources. Well testing, in accordance with NYSDEC requirements, shall be conducted at the time the first site plan/ subdivision is submitted for the Northern Tract. In the event a community water supply system is required to service Northern tract uses, a Water Works Corporation would be required which, at a minimum, would be subject to all of the same terms and conditions set forth above for the Water Works Corporation in the Southern Tract. Under no circumstance shall any water supply generated on the Northern tract be permitted to be sold outside of the Northern Tract. A backup water improvement district for this Northern Tract shall also be similarly established at the Applicant's cost.

Prior to conducting any additional well testing for the Project, a water supply testing protocol shall be submitted to the Town Engineer and Planning Board for review and approval. Upon completion of additional well testing for the Project, the results of such testing shall be provided to the Town Engineer and Planning Board who shall confirm that such testing yields a sufficient quantity and quality of water to service the Project or portion of the Project proposed to be constructed.

The Applicant or any successor Water Works Corporation shall monitor designated pre-existing water supply wells on Mountain Road, Hillside Avenue and Southside Place in accordance with the protocol attached hereto as Appendix D. All monitoring reports are to be filed with the Town Clerk, the Town Engineer, and the Planning Board. Remedial actions shall be taken by the Applicant or any successor Water Works Corporation, at its sole cost and expense, as required in Appendix D. Failure of the Applicant to undertake such remedial actions as required shall constitute a violation of the Special Permit.

15. Sanitary Sewer

Southern Tract: Prior to the issuance of the 80th certificate of occupancy for the Project, the Applicant shall undertake either one of the following alternatives:

Construct, at the Applicant's sole cost and expense, a new 500,000 gallon per day sewage treatment plant in the Tuxedo hamlet to replace, on the same site, the existing sewage treatment plant at the end of Contractor's Road. Such plant shall be capable of accommodating all sewage flow from planned development on Tuxedo Reserve's Southern Tract and the users and property owners served by or entitled to be served by the existing sewage treatment plant facility. Such plant shall be constructed according to plans and specifications approved by the Town, the Town Engineer and the New York State Department of Environmental Conservation. Such plant shall be designed for an advanced tertiary level of treatment capacity; or

Construct, at the Applicant's sole cost and expense, a connection from the Southern Tract and the Tuxedo Hamlet to the nearest connection point of the Rockland County Sewer District conveyance system leading to the regional wastewater treatment plant to be constructed by Rockland County Sewer District No. 1. The Applicant shall comply with all requirements of Rockland County Sewer District No. 1 related to the extension of sewer service to the Project and any agreement negotiated between the Town and Rockland County Sewer District No. 1 for the extension of sewer service, and shall provide payment for capital improvements as may be required to obtain service from Rockland County Sewer District No. 1 for the Project; and secure the same by a Letter of Credit or other financial instrument acceptable to Rockland County Sewer District No. 1.

Those sewer district extensions or new district creation for the Tuxedo Reserve project, shall be at the Applicant's sole cost.

Northern Tract: Sewage treatment in the Northern Tract shall be via a community septic system with a Sewage Works Corporation formed pursuant to the Transportation Corporation Law provided under New York Law or, with a landowner's association which shall own and maintain said system on behalf of landowners within a commercial or industrial condominium. Such system shall be constructed and approved according to plans and specifications approved by the Town of Tuxedo, New York State Department of Health, and the New York State Department of Environmental Conservation. A back up sewer district shall be established by the Town at the Applicant's cost. The Applicant shall be required to install a package plant if Northern Tract effluent exceeds 13,629 gallons per day.

16. Hamlet Revitalization

In order to benefit and preserve Tuxedo's community character and enhance the Tuxedo hamlet as the Town's social and commercial center, the Applicant has offered to provide a \$6 million fund to assist the Town Board in its continuing effort to revitalize the hamlet.

The fund shall be established and administered in accordance with the "Hamlet Revitalization Funding Program" attached to the SEQRA Statement of Findings. All legal mechanisms and agreements necessary to create and implement the funding program, including the required Guarantee from the Related Companies L.P., shall be completed and in place prior to the issuance of the first building permit for the Project and prior to the commencement of any construction or disturbance of the Project Site.

17. PILOT

In order to assist in having its Project achieve fiscal balance, the Applicant has offered to make payments in lieu of taxes (PILOT) to the Town on the 88.78 acres of LIO zoned land depicted on the Preliminary Plan (PILOT Property) under the following terms and conditions:

The Applicant shall make annual payments to the Town in the amount of \$150,000.00 for a period of 14 years with the first payment to be made simultaneously with the issuance of the first building permit for the Project (hereinafter the "Anniversary Date"). Thereafter, the Applicant shall make payments on or before each Anniversary Date through and including year 14. The \$150,000.00 payment shall be offset by the amount of any real property taxes generated annually by any nonresidential improvements actually constructed on the PILOT Property during the PILOT period. At the conclusion of the 14 year PILOT period, the Applicant may elect to continue making PILOT payments or convey the remaining undeveloped portion of the PILOT Property to the Town for \$1.00. In the event the Applicant elects to continue to make PILOT payments, the amount to be paid shall be determined to be the amount which would be paid in real property taxes (school, town and county) as determined by an appraisal of the highest and best use of the remaining undeveloped PILOT Property assuming such highest and best use is actually constructed in accordance with the Town's applicable zoning laws, as calculated and determined by an appraisal conducted by certified appraiser engaged by the Town. During this continuing PILOT period, payments shall be offset by the amount of any real property taxes generated by new nonresidential improvements actually constructed during that extended period. The Applicant shall continue to make PILOT payments in this manner on each Anniversary Date until the PILOT Property is fully developed and a full year's real property tax payments (without regard to any tax abatements) are actually made.

Prior to the issuance of any building permit for the Project and prior to commencement of any construction or site disturbance, the terms and conditions of the PILOT shall be reduced to an agreement between the Town and Applicant.

18. Streets

All streets in Tuxedo Reserve shall be constructed in accordance with Town street specifications except that the Town of Tuxedo Planning Board may, on a case by case basis, modify the Town's street specifications to allow shorter radii, elimination of street curbing, lengths of cul-de-sacs only, vertical geometry, sidewalks and reduction in street width. The Town Board hereby grants the necessary waivers permitting the Planning Board to effect these modifications. The Planning Board is authorized to grant such waivers as appropriate to foster the Project's community character as shown on the Preliminary Plan and described in the EIS for the Project.

19. Access and Traffic Control

Except as otherwise provided in this paragraph, the Project shall contain the following entry/exit access points, as depicted on the Preliminary Plan: Route 17 in the Town of Tuxedo, Route 17 in the Village of Sloatsburg and Eagle Valley Road. In addition, the Project shall contain two "emergency access only" points at Mountain Road and South Gate Road. The Route 17 access points in the Town of Tuxedo, shall be constructed and completed prior to the issuance of the first certificate of occupancy for the Project. The Mountain Road emergency access point shall be constructed and completed not later than the issuance of the 20th certificate of occupancy for the Project. The Eagle Valley Road access shall be constructed and completed prior to the completion of Phase 1 development. In the event that the Route 17 access point in the Village of Sloatsburg is not approved, the Eagle Valley Road connection shall be installed prior to the issuance of the 525th certificate of occupancy for the Project. The South Gate Road emergency access will be constructed as part of Phase 3 of the Project. If required by Rockland County or New York State, the Applicant shall design and install a traffic signal at the intersection of Eagle Valley Road and County Route 72. The design and installation of this traffic signal shall be reviewed and approved by Rockland County or the State of New York as appropriate.

All on-site and off-site traffic mitigation measures shall be implemented in the manner and time frame described in the FEIS and Lead Agency's Statement of Findings.

The traffic Monitoring Program established for the Project shall be implemented in the manner and time frame described in the FEIS and Lead Agency's Finding Statement.

A jitney service shall be established, funded and operated by the TRHOA in the manner and time frame set forth in the FEIS and Lead Agency Statement of Findings. The jitney service shall be in place prior to the issuance of the 50th certificate of occupancy for the Project. The availability of this jitney service shall be disclosed in the documents filed with the New York State Attorney General for the establishment of the Tuxedo Reserve Home Owners' Association. The operation of the jitney service shall be monitored in accordance with the Monitoring Program described in the Lead Agency Findings Statement. In the event ridership falls below estimates set forth in the FEIS, modifications to the jitney service shall be made with a goal to increase ridership to projected levels.

All monitoring required hereunder shall be undertaken by a reputable traffic consultant selected by the Town. All reasonable expenses incurred by the Town in connection with the Traffic Monitoring Program shall be reimbursed to the Town by the applicant.

Construction vehicles shall avoid, to the extent practicable, entering and exiting the Project site during the AM and PM peak traffic generation hours identified in the EIS. The Applicant shall, at its sole cost and expense, coordinate with local police authorities for appropriate traffic management in the event construction traffic is likely to disrupt normal traffic flows on highways and roads adjacent to the Project site.

20. Cultural Resources:

The Applicant shall comply with the OPRHP Memorandum of Understanding a copy of which is appended to the SEQRA Statement of Findings and shall provide written confirmation of compliance as a condition of Planning Board approval.

21. Active Adult Housing

The active adult housing proposed for Phase 2 of the Project shall be market rate housing limited to active adults aged 55 years and older. Prior to the issuance of any building permit for active adult housing, the Applicant shall cause a restriction, in a form satisfactory to the attorney for the Town, to be placed on the active adult property ensuring that the required age limitation runs with the land in perpetuity.

22. Tuxedo Reserve Homeowners Association

Prior to the issuance of the first certificate of occupancy for the Project, the Applicant shall create the Tuxedo Reserve Home Owners Association for the purposes of (1) owning and managing lands and facilities owned in common by Tuxedo Reserve residents (including the jitney service) (2) instituting a permit process for the trail system and (3) ensuring continued compliance with the Project's guidelines and performance standards. All property owners in the Southern Tract of Tuxedo Reserve shall be a members of the Tuxedo Reserve Home Owners Association. The Tuxedo Reserve Homeowners Association shall grant the Town police authority to access and patrol HOA owned roads.

23. Administration of Design Guidelines, Performance Standards and Bulk Standards

The required Performance Standards and Bulk Standards shall be reflected by note and/or design on each site plan submitted to the Planning Board, and the Planning Board shall confirm that each plan and the Project as a whole complies with the Performance Standards and Bulk Standards prior to the grant of any site plan approval. The Planning Board shall have the authority to modify the Bulk Standards for height as solely relates to the height of buildings in the Village Commons. However, in no event shall the height of these buildings exceed 56 feet.

Compliance with the Architectural and Landscape Design Guidelines shall be verified by the Town of Tuxedo Architectural Review Board (ARB). The Planning Board shall not issue any site plan or subdivision approval until it has received written verification from the ARB of compliance with the Guidelines. The Building Inspector shall not issue any building permit for any lot or unit until he/she has received written verification from the ARB of compliance with the Guidelines. The ARB is hereby empowered to engage architects and landscape architects to assist it in verifying compliance with the Guidelines. The Applicant shall reimburse the Town for reasonable costs incurred in connection with the an architect's review of proposed building guidelines for compliance with applicable architectural and design guidelines.

24. Clearing, Grading and Filling Requirements

Any clearing, grading and filling activities on the Project site shall be conducted in conformance with the requirements of §98-22 Q of the Town of Tuxedo Zoning Law. In addition, there shall be full compliance with the preservation measures set forth in the DSEIS related to existing trees, vegetation and soil as reasonably administered by the Planning Board and with the understanding that strict application of these measures may not be

feasible on an individual lot basis where site conditions make it impossible or impracticable to preserve a tree or trees. In addition, the Planning Board, at the time of site plan approval, may impose additional reasonable conditions on Project construction for the preservation and protection of trees, vegetation and soil.

25. Blasting

Any blasting required in connection with the Project shall conform to all State and Town blasting regulations as well as all blasting protocols disclosed in the EIS and any further reasonable blasting protocols established by the Town Planning Board for the Project. The Planning Board shall review and approve all blasting plans at the time of site plan review. In the event blasting resulting from the Project disrupts service to the water supply wells at enumerated properties on those portions of Mountain Road, Hillside Avenue and Southside Place that abut the Project, the Applicant shall immediately, and at its sole cost and expense, take whatever steps are necessary to restore such service including but not limited to repair of the well, replacement of the well or connection to the Project's water system. In the event connection is made to the Project's water system, there shall be no charge to the property owner for such connection or for the water received from the water system.

26. Attorney General Filings

All filings with the New York State Attorney General in connection with any matter relating to Tuxedo Reserve, including but not limited to creation of homeowners and condominium associations and amendments thereto shall be provided to the attorney for the Town simultaneous with such filing. The attorney for the Town shall ensure that all filings are consistent with this Special Permit. All Home Owner Association and Condominium Association filings and amendments approved by the New York State Attorney General shall be filed in the offices of the Town Clerk and Planning Board.

27. Fees and Costs

The Applicant shall pay all applicable fees and costs as are required under the Town's local laws in the manner prescribed by those local laws. The Applicant shall also reimburse the Town for any additional fees and costs incurred by the Town relating to its administration and enforcement of this Special Permit. Such additional fees and costs may include, but are not limited to, legal fees for preparation, review and interpretation of legal documents required, contemplated under, or resulting from the Special Permit; legal fees for enforcement matters and proceedings; Planning Board and Town Board consultant review fees; consultant fees for the Traffic Monitoring Program and consultant fees for a

professional architect who will be dedicated to the review of architectural plans for Tuxedo Reserve. All fees and costs required hereunder shall be paid within sixty (60) days of the Applicant's receipt of the fee invoice. Failure to pay within such period shall result in no further building permits or certificates of occupancy being issued until payment is made. Failure to make payment within 120 days shall be grounds for revocation of this Special Permit.

28. Bonding of Improvements

Prior to the issuance of any building permit for the Project and prior to commencement of construction or disturbance of the Project Site, the Applicant shall post an irrevocable letter of credit in an amount and form acceptable to the Town to secure the completion of all off-site and on-site public improvements and on-site common area improvements required in connection with the development. This security may be posted on a development phase or sub-phase basis and may be reduced as construction proceeds in accordance with applicable procedures in the Town's local laws. All letters of credit are required to be "evergreen."

29. Continuing Jurisdiction

The Town Board shall have continuing jurisdiction over all matters related to this Special Permit so long as the Special Permit is in effect. Nothing herein is intended to restrict or limit the rights, duties, authority or jurisdiction of any Town agency under any Town, State or Federal law, rule or regulation.

30. Pre-Construction Site Activities

Notwithstanding anything to the contrary in this Special Permit, the Applicant is hereby authorized to undertake limited site disturbance in order to investigate conditions on the project site in preparation for construction. Such limited site disturbance may include roughing in of the main Project access road from its intersection with Route 17 no more than 6,600 feet into the Project Site, well tests, soil tests, geo-technical borings, wetland delineations, surveys and the like. No rough-in of the main Project access road or access roads to test sites shall be undertaken without it first receiving a clearing and grading permit from the Planning Board. The Planning Board may require the Applicant to post a bond in a form and manner acceptable to the Town may require the Applicant to post a bond in a form and manner acceptable to the Town Board to assure adequate reclamation of any disturbed site area.

On a roll call vote as follows, this Resolution granting Special Permit approval to the Tuxedo Reserve Planned Integrated Development is adopted:

Supervisor Magar	Aye <input checked="" type="checkbox"/> Nay
Councilperson McCathern	Aye <input checked="" type="checkbox"/> Nay
Councilperson Rauch	Aye <input checked="" type="checkbox"/> Nay
Councilperson Lemanski	Aye <input checked="" type="checkbox"/> Nay
Councilperson Didriksen	Aye Nay <input checked="" type="checkbox"/>

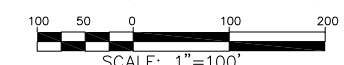
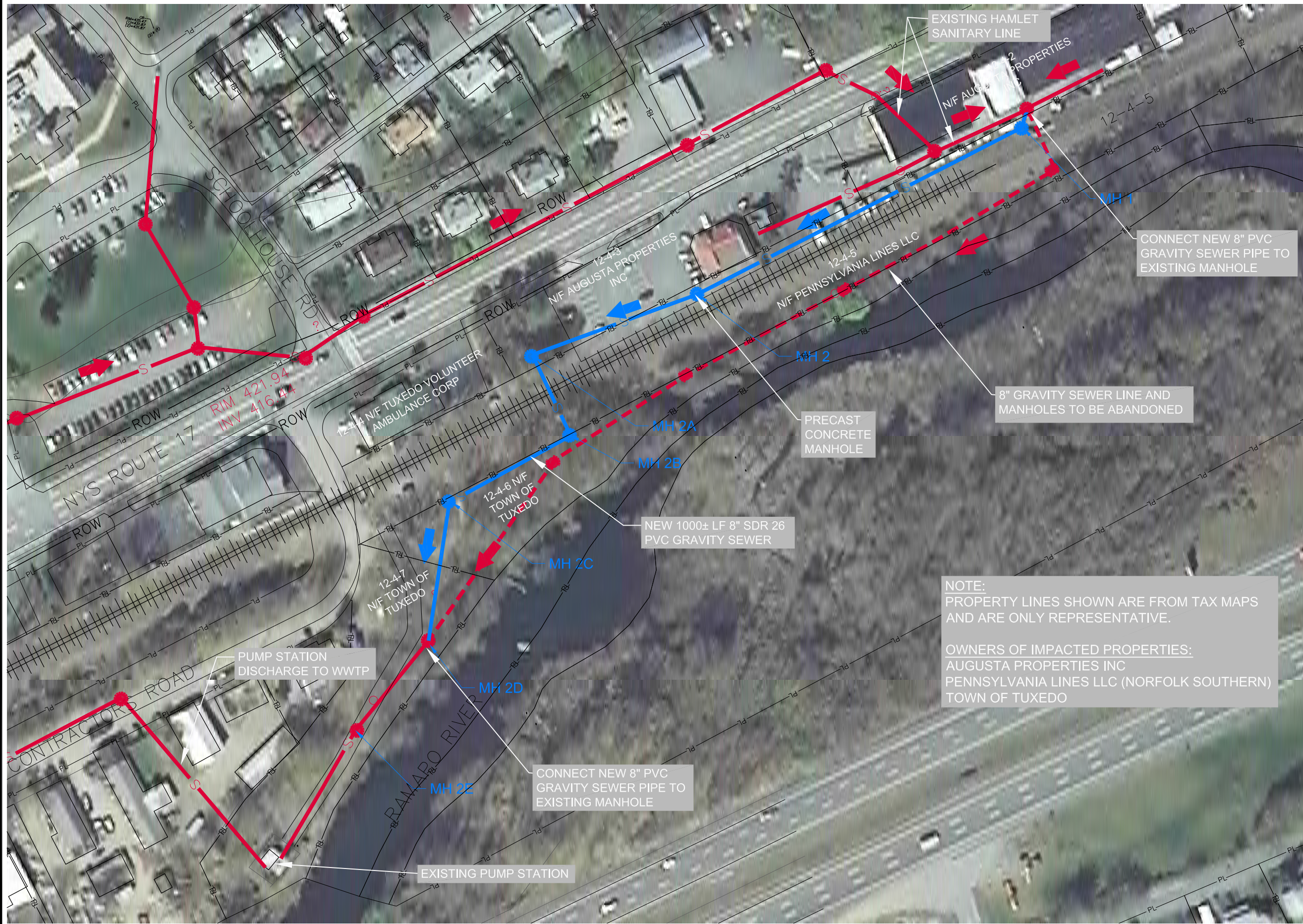
Dated: November 15, 2004

EXHIBIT B

CONCEPT SKETCH OF RAMAPO RIVER GRAVITY SEWER REPLACEMENT

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H:\Drawings\Tuxedo Reserve\DE TuxTPS Connection Rev1.dwg, TPS CONNECTION 12-13, 12/17/2013 4:08:08 PM



NOTE:
PROPERTY LINES SHOWN ARE FROM TAX MAPS AND ARE ONLY REPRESENTATIVE.

OWNERS OF IMPACTED PROPERTIES:
AUGUSTA PROPERTIES INC
PENNSYLVANIA LINES LLC (NORFOLK SOUTHERN)
TOWN OF TUXEDO

DATE: 1/13
DRAWN BY: [blank]
SCALE: [blank]
REVIEWED BY: FMG
PROJECT NO.: 12-905
FILE NAME: [blank]

DELAWARE ENGINEERING, P.C.
CIVIL AND ENVIRONMENTAL ENGINEERING

28 MADISON AVENUE EXTENSION, ALBANY, NY 12203-518, 452.1290
8-12 DIETZ STREET, SUITE 303, ONEONTA, NY 13820-607, 432.8073

REVISIONS	
NO.	DESCRIPTION

TUXEDO RESERVE
TOWN OF TUXEDO
ORANGE COUNTY, NY
VILLAGE OF SLOATSBURG
ROCKLAND COUNTY, NY

CONCEPTUAL TUXEDO PARK
SEWER CONNECTION TO NEW
GRAVITY SEWER LINE

SHEET:
FIG 1

WARNING - IT IS A VIOLATION OF NEW YORK EDUCATION LAW SECTION 7209.2, FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR, TO ALTER THIS DOCUMENT IN ANY WAY. IF ALTERED THE ALTERING PERSON SHALL COMPLY WITH THE REQUIREMENTS OF NEW YORK EDUCATION LAW, SECTION 7209.2.

EXHIBIT C

APPROVED THIRD PARTY ENGINEERS FOR DISPUTE RESOLUTION

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EXHIBIT C

APPROVED THIRD PARTY ENGINEERS FOR DISPUTE RESOLUTION

MASER CONSULTING, PA
331 Newman Springs Road, Suite 203
Red Bank, NJ 07701-5699
Contact: Susan S. Brasefield, PE, PP
Department Manager
732-383-1950 x 3401
Fax: 732.383.1984
SBrasefield@maserconsulting.com

ROHDE, SOYKA & ANDREWS CONSULTING ENGINEERS, P.C.
40 Garden Street
Poughkeepsie, NY 12601
John Andrews, Jr., P.E.
Vice President
845.452.7515
Fax: 845.452.8335

LANC& TULLY, ENGINEERING AND SURVEYING, P.C.
3132 Route 207
Campbell Hall, NY 10916
John J. O'Rourke, PE
Partner
(845) 294-3700
fax (845) 294-8609
jor@lanctully.com

EXHIBIT D

INSURANCE REQUIREMENTS

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EXHIBIT D

CONTRACTOR'S INSURANCE

Each Contractor shall not commence work until it has complied with the insurance required below and has submitted to and obtained approval from the Town. Each Contractor shall maintain at a minimum the following giving evidence of same to the Town of Tuxedo in the form of Certificates of Insurance, copy of the General Liability Declaration Page, copy of the Additional Insured Endorsement, and provide 30 days' notice of cancellation, non-renewal or material change. New York State licensed carrier is preferred; any non-licensed carriers will be accepted at the District's discretion. The insurance carrier must have an AM Best Rating of at least A-IX. All subcontractors must adhere to Worker's Compensation and NYS Disability, Commercial General Liability, Umbrella Liability and Auto Liability as specified below.

(a) Worker's Compensation Insurance and New York State Disability Insurance

Coverage Statutory
Extensions Voluntary compensation
 All states coverage employers
 Employer's liability - unlimited

(b) Commercial General Liability Insurance

Coverage	Occurrence – 1988 ISO or equivalent	
Limits	General Aggregate	\$2,000,000
	Products-Comp/Ops Aggregate	\$2,000,000
	Personal & Advertising Injury	\$1,000,000
	Each Occurrence	\$1,000,000
	Fire Damage (Any one Fire)	\$50,000
	Medical Exp. (Any one Person)	\$5,000

Additional Insured - Town of Tuxedo and all appointed and elected officials, employees, volunteers, and agents.

Endorsements - Notwithstanding any 'other insurance clause' contained herein, it is agreed that this Policy shall be 'primary to' the comprehensive General Liability coverage available to any person or organization to whom the Named Insured has agreed by written contract, but only with respect to operations performed by or on behalf of the Named Insured and only with respect to occurrences subsequent to the making of such written contract.

It is agreed that the Company waives any rights of subrogation to which it may be entitled if prior to loss the insured has agreed to such waiver in writing, but only to the extent required by said written agreement.

(c) Automobile Liability Insurance

Coverage Standard New York policy insuring all owned, hired, and non-owned vehicles
Limits Minimum Limit - \$1,000,000 CSL

Additional Insured - Town of Tuxedo and all appointed and elected officials, employees, volunteers, and agents.

(d) Umbrella Liability Insurance

Coverage Umbrella or Excess Form providing excess of General Liability and Automobile Liability

Minimum Limit \$2,000,000

Additional Insured - Town of Tuxedo and all appointed and elected officials, employees, volunteers, and agents.

Hold Harmless:

To the fullest extent permitted by law, the Contractor and their subcontractors shall indemnify and hold harmless the Town of Tuxedo, it's Board, all elected and appointed officials, employees, agents, representatives, and volunteers from and against all claims, damages, losses and expenses, including but not limited to, attorneys' fees, arising out of or resulting from the performance of the Contractor and any of their sub-contractors work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death or to injury to or destruction of tangible property (other than the work itself), including the loss of use resulting there from, regardless of whether or not it is caused in part by a party indemnified there under. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist to any party or person described in this paragraph.

In any and all claims against the Town of Tuxedo or any of its agents or employees by any employee of the contractor or subcontractor, anyone directly or indirectly employed by any of them or anyone whose acts any of them may be liable, the indemnification obligation under the above paragraph shall not be limited in any way by any limitation on the amount of type of damages, compensation or benefits payable by or for the contractor or their sub-contractor under Workers Compensation acts, disability acts, or other employee benefit acts.

Each Contractor shall furnish the Town of Tuxedo with certificates of each insurer insuring the Contractor or any Sub-Contractor under this contract. Certificates as furnished and the insurance policy (as required) shall bear the policy numbers, the expiration date of the policy and the limit or limits of liability thereunder. Both the certificates and the policy shall be further endorsed to provide the Town of Tuxedo with any notice of cancellation at least ten (10) days prior to the actual date of such cancellation.

EXHIBIT E

MINIMUM OPERATIONS AND MAINTENANCE BUDGET LINE ITEMS

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TUXEDO WASTEWATER SYSTEM
MINIMUM OPERATION MAINTENANCE BUDGET LINE ITEMS

WASTEWATER TREATMENT PLANT O&M	
ITEM	BUDGET AMOUNT
Electricity	
<i>List Unit Processes as Appropriate</i>	\$ -
Chemicals	
<i>List as Appropriate</i>	\$ -
Personnel & Administration	
<i>Operators - Personal Services</i>	\$ -
<i>Engineering</i>	\$ -
<i>Legal</i>	\$ -
<i>Insurance</i>	\$ -
<i>Office Supplies</i>	\$ -
<i>Computer Supplies</i>	\$ -
<i>Postage/Shipping</i>	\$ -
<i>Permits and Fees</i>	\$ -
<i>Taxes (if not tax exempt)</i>	\$ -
<i>Administration - Personal Services</i>	\$ -
<i>Payroll Processing</i>	\$ -
<i>Clerical - Personal Services</i>	\$ -
<i>Employee Benefits</i>	\$ -
Maintenance & Utilities	
<i>Equipment Service Contracts - List Separately</i>	\$ -
<i>Equipment Maintenance - List Separately</i>	\$ -
<i>Instrument Service Contracts - List Separately</i>	\$ -
<i>Instrument Maintenance - List Separately</i>	\$ -
<i>Lab Fees</i>	\$ -
<i>Lab Supplies</i>	\$ -
<i>Fuel Oil/Propane</i>	\$ -
<i>Equipment/Mechanical Spare Parts</i>	\$ -
<i>Instrument Spare Parts</i>	\$ -
<i>Maintenance Supplies</i>	\$ -
<i>Property Maintenance (e.g. snow removal, lawn mowing, etc.)</i>	\$ -
<i>Structure Maintenance (e.g. building upkeep, etc.)</i>	\$ -
<i>Telecommunications</i>	\$ -
<i>Water (if applicable)</i>	\$ -
<i>Sludge Hauling</i>	\$ -
TOTAL	\$ -

EXHIBIT F
LEASE WWTP SITE

[Intentionally left blank]

LEASE

THIS LEASE, executed the _____ day of _____, 2014, by and between the TOWN OF TUXEDO, a body corporate and politic constituting a municipal corporation of the State of New York, acting on behalf of itself and the Hamlet of Tuxedo Sewer District (the "Hamlet Sewer District") and a to-be-formed sewer district as defined herein (collectively "Town" or "Lessor") maintaining an office at 1 Temple Drive, Tuxedo, New York 10987, and TUXEDO FARMS LOCAL DEVELOPMENT CORPORATION, a not-for-profit New York corporation ("LDC" or "Lessee"), with an address at 1 Temple Drive, Tuxedo, New York 10987;

WITNESSETH:

WHEREAS, the Town operates a wastewater treatment plant ("Existing WWTP") to serve the Hamlet Sewer District;

WHEREAS, the Town is required to replace its Existing WWTP with a new modern wastewater treatment plant;

WHEREAS, the Town intends to cease owning or operating any wastewater treatment plant;

WHEREAS, on or about the date of this Lease, LDC, the Tuxedo Reserve Owner, L.L.C. ("Developer") and the to-be-formed Tuxedo Sewage-Works Corp. are entering into an Agreement for the Construction and Operation of a New Wastewater Collection System and Sewage Treatment Plant ("STP Agreement") that provides, *inter alia*, for the construction of the new wastewater treatment plant ("WWTP") and the demolition of the Existing WWTP;

WHEREAS, the WWTP will serve both the Hamlet Sewer District and a new sewer district that is to be formed to serve the planned development on Developer's Southern Tract of property in the Town ("Development Sewer District");

WHEREAS, the WWTP will be located on a parcel of land owned by the Town, which is partially occupied by the Town's existing sewage treatment plant (the "Property");

WHEREAS, the Town will be responsible for the operation and maintenance of the Existing WWTP until construction of the WWTP is completed and it becomes operational;

WHEREAS, upon the completion and construction of the WWTP, the Town will no longer be in the business of providing wastewater treatment services, it will no longer require the Property for its public use, the Town Board has passed or is adopting

as of this date a resolution declaring that the Property is no longer required for public use;

WHEREAS, this Lease requires that the leased property be utilized solely for the WWTP, the Town found that the compensation provided herein is adequate consideration for leasing the Property; and

WHEREAS, the Town Board has passed or is adopting as of this date a resolution approving the aforesaid STP Agreement and this Lease;

NOW, THEREFORE, in consideration of the premises and the mutual promises and agreements hereinafter set forth, and for other good and valuable consideration paid over by each party to the other, the receipt and sufficiency of which is hereby acknowledged, it is hereby stipulated, covenanted, and agreed by and between the parties as follows:

**ARTICLE 1
RECITALS**

1. The above recitals are incorporated herein as substantive terms to this Lease.

**ARTICLE II
THE PROPERTY**

2. Lessor does hereby lease and demise unto Lessee, and Lessee does hereby lease from Lessor, upon and subject to the conditions hereinafter expressed:

a. The Property means the land described as:

Tax Map Designation - Section 13 - Block 7 - Lot 6.1 & Lot 7

All that lot, parcel or piece of land, situate in the Town of Tuxedo, County of Orange and State of New York and being more particularly described as follows:

Beginning at a point on a curve on the southerly line of Contractors Road, said point being on the easterly line of the lands now or formerly of DeMarino and Sons LLC, said point also being the northwesterly corner of the lands herein described;

Thence from the above-described point and along the easterly line of the lands now or formerly of DeMarino and Sons LLC, (1) South 7 degrees 59 minutes 54 seconds East a distance of 318.60 feet to a point on the lands now or formerly of De Marino and Sons LLC, said point also being the southwesterly corner of the lands herein described.

Thence (2), continuing along the lands now or formerly of DeMarino and Sons LLC, South 89 degrees 34 minutes 22 seconds East a distance of 216.59 feet to a point on the westerly line of Interstate Highway #87 and the westerly side of the Ramapo River, said point also being the southeasterly corner of the lands herein described.

Thence (3) following along the westerly line of Interstate #87 and along the westerly side of the Ramapo River, North 0 degrees 25 minutes 38 seconds East a distance of 237.48 feet to a point.

Thence (4) continuing along the westerly line of Interstate #87 and the westerly side of the Ramapo River, North 8 degrees 52 minutes 21 seconds West a distance of 122.84 feet to the southeasterly corner of the lands now or formerly of Mottola, said point also being the northeasterly corner of the lands herein described.

Thence (5) along the southerly line of the lands now of formerly of Mottola, South 82 degrees 00 minutes 06 seconds West a distance of 227.17 feet to a point on a curve on the southerly line of Contractors Road, said point being the southwesterly corner of the lands now or formerly of Mottola.

Thence (6) along the southerly line of Contractors Road and along a curve to the right having a radius of 40.00 feet and a curve length of 21.59, as described by the chord, South 61 degrees 40 minutes 27 seconds West a distance of 21.33 feet to the point or place of beginning.

The above described parcel contains 1.87 +/- acres of land.

Being the same Lands as described in Deed Liber 4845 at Page 127 and Deed Liber 2633 at Page 268, as on file in the Orange County Clerk's Office.

b. Including all easements that benefit the parcel or used for the existing wastewater treatment plant, parking for the plant, and access or egress to and from the plant.

c. Subject to any rights-of-way, easements, covenants or restrictions of record.

d. Conditions that an accurate survey and inspection would show.

e. The condition and state of repair of the Property as the same may be on the date of the commencement of the term of this Lease.

**ARTICLE III
TERM OF LEASE**

3. The term shall commence upon the commencement of construction of the WWTP and terminate ninety-nine (99) years after the commencement date unless sooner terminated pursuant the provisions of this Lease.

**ARTICLE IV
RENT**

4. Throughout the term the annual rent shall be one (\$1.00) dollar payable on the full execution of this Lease and on each successive anniversary hereof, payable to the Town Treasurer at Town Hall.

**ARTICLE V
USE OF PREMISES**

5. The Property shall be used solely for the WWTP that Lessee shall own, construct, operate, maintain, repair, and replace as necessary.

**ARTICLE VI
PAYMENT OF TAXES, ASSESSMENTS,
IMPOSITIONS, ETC.**

6. This Lease does not vest Lessee in any ownership rights to the Property and the Existing WWTP. It is agreed that the Lessor/Town shall retain full ownership of the Property and the Existing WWTP. It is further agreed that, while this Lease is in effect, all improvements and fixtures erected upon the Property by the Lessee, including the WWTP, shall remain the property of the Lessee.

7. Consequently, there are no taxes, assessments, or impositions levied against the Property and Lessee is not obligated for payment in that regard.

**ARTICLE VII
CONSTRUCTION OF WASTEWATER TREATMENT PLANT
AND DEMOLITION OF EXISTING FACILITY**

8. Lessee shall, pursuant to the STP Agreement, contract with the sewage-works corporation established pursuant to the New York State Transportation Corporations Law to design, build, and operate the WWTP and provide sewer services to the Hamlet Sewer District and the Development Sewer District. Obtaining all licenses, permits, and approvals for the construction and operation of the WWTP shall be the sole responsibility of the Lessee and its contractor.

9. The Lessor consents to and agrees that Lessee shall have the right to grant one or more leasehold liens to secure a loan obtained by the Lessee to finance the construction of the WWTP. Each such leasehold lien by its terms shall be expressly subject and in subordinate in all respects to the Lessor's fee estate in the Property and the Lessor's rights under the STP Agreement.

10. After the WWTP is completed and serving the Hamlet District, Lessee shall contract either directly or through the sewage-works corporation with a licensed contractor to demolish the Existing WWTP and restore the Property to a satisfactory condition. Such demolition shall be conducted in accordance with all governmental regulations and ordinances affecting the Property.

**ARTICLE VIII
INSURANCE**

11. During the course of the construction of the WWTP, Lessee's contractors shall have and maintain the insurance coverage prescribed in the STP Agreement.

12. After the completion of the WWTP, Lessee or the Sewage Works Corporation shall maintain:

a. Insurance against loss or damage by fire and against loss or damage by other risks now embraced by Extended Coverage Endorsement, as presently adopted for use with New York Standard Fire Insurance Policy, in amounts at all times sufficient to prevent Town/Lessor or Lessee from becoming a co-insurer under the terms of the applicable policies, shall be maintained by Lessee or the Sewage-Works Corporation which Lessee has contracted with to maintain and operate the WWTP. In the event of any change in the co-insurance requirements applicable to the WWTP by the New York

Fire Insurance Rating Organization or any similar body, or by statute, the policies to be furnished by Lessee shall comply with such changes, provided such changes do not adversely affect Lessor's right hereunder or thereunder.

b. General Public Liability Insurance protecting and indemnifying Lessee and Lessor from and against any and all claims for damages to persons or property or for loss of life or of property occurring upon, in, or about the Property and the WWTP and the adjoining streets, such insurance to afford immediate protection against any and all claims for bodily injury, death or property damages no less than \$2,000,000.00 in respect of bodily injury or death arising out of any one occurrence, and to the limit of not less than \$2,000,000.00 for property damage.

c. Such other insurance on the Property and the WWTP and in such amounts as from time to time reasonably may be required by Lessor against other insurable hazards which at the time commonly are insured against, due regard being given to the height and type of the WWTP, its construction, location, use, and occupancy.

13. All insurance provided for in this Article VIII, if readily obtainable, shall be effected under standard form policies, issued by stock mutual company insurers of recognized responsibility authorized to do business in the State of New York which are well rated by National Rating Organizations and have been approved in writing by Lessor, which approval shall not be unreasonably withheld or delayed.

14. Any policies of insurance of the character described in this Article VIII shall expressly provide that any losses thereunder shall be adjusted with and approved by Lessor, and Lessee, as their interests may appear.

15. Each policy delivered hereunder shall contain an agreement by the insurer that such policy shall not be canceled or surrendered without at least thirty (30) days' prior written notice to Lessor and to any mortgagee named in such policy, if any. Each such policy shall also contain a provision to the effect that no act or omission of any named insured shall serve to invalidate, cancel, release, or relieve the insurer from any liability to any other named insured.

16. Each policy of insurance procured by Lessee, or its sewer contractor, shall contain a provision waiving subrogation against Lessor. If such insurance shall require the payment of an additional premium for such waiver, Lessee shall pay the additional premium for such waiver. Lessee hereby releases Lessor from any liability which Lessor may have for damage by fire or other casualty with respect to which Lessee shall be insured under a policy of insurance containing such provision waiving subrogation.

ARTICLE IX DAMAGE OR DESTRUCTION

17. If, at any time during the term of this Lease, the WWTP or any part thereof shall be damaged or destroyed by fire or other casualty (including any casualty for which insurance coverage was not obtained or obtainable) of any kind or nature, ordinary or extraordinary, foreseen or unforeseen, Lessee, or its sewer contractor, whether or not the insurance proceeds, if any, shall be sufficient for the purpose, shall proceed with reasonable diligence (subject to a reasonable time allowance for the purpose of adjusting the insurance loss and for unavoidable delay) to repair, alter, restore, replace, or rebuild the same as nearly as possible to its value, condition, and character immediately prior to such damage or destruction, subject to such changes or alterations as Lessee may elect. Such repair, alteration, replacement, or rebuilding, including such changes and alterations as aforementioned and including temporary repairs for the protection of other property pending the completion of any thereof, are sometimes referred to in this Lease as the "Work."

18. Except as otherwise provided in this Article IX, the conditions under which any Work is to be performed and the method of proceeding with and performing the same shall be governed by all of the provisions of this Lease. The cost of the Work shall include the reasonable fees of an engineer, if any, employed by Lessor for the purpose of examining the Plans and seeing that the Work conforms therewith and, in the event of any dispute as to the reasonableness of said architect's fees, such dispute shall be determined by arbitration in the manner set forth in Article XVIII.

19. All insurance proceeds paid on account of such damage or destruction under the policies of insurance provided for in this Lease, less the cost, if any, incurred in connection with the adjustment of the loss and the collection thereof, shall be applied to the payment of the cost of the Work to the extent that the insurance proceeds shall be sufficient for such purpose, and shall be paid out to or for the account of Lessee, or its sewer contractor, time to time as the Work progresses. The Insurance Company shall make such payments or disbursement upon the written request by Lessee, or its sewer contractor, when accompanied by the following:

A certificate dated not more than fifteen (15) days prior to such request, signed by Lessee and by an architect in charge of the Work who shall have been selected by Lessee and approved in writing by Lessor (which approval Lessor shall not unreasonably withhold or delay), setting forth that:

i. the sum then requested either has been paid by Lessee, or its sewer contractor, or is justly due to the fire or loss adjuster, contractors, subcontractors, materialmen, architects, or other persons who have rendered services or

furnished materials in connection with the Work, giving a brief description of the services and materials and the several amounts so paid or due, and stating that no part thereof has been made the basis of any previous or then-pending request or has been paid out of any proceeds of insurance received by Lessee, or its sewer contractor, and that the sum requested does not exceed the value of the services and materials described in the certificate; and

ii. except for the amount stated in such certificate to be due as aforesaid, there is no outstanding indebtedness known to the persons signing such certificate after due inquiry which might become the basis of a vendor's, mechanic's, materialman's, or similar lien upon the Work, the Property or Lessee's leasehold interest, or any part thereof.

20. If the Work shall not have been commenced within sixty (60) days after the insurance adjustment and payment to Lessee, or if the Work shall not proceed expeditiously after commencement, unless there be an unavoidable delay or force majeure, Lessor shall have the right, but not the obligation, to terminate this Lease and the term by giving Lessee not less than thirty (30) days' written notice of its intention to do so. Upon the expiration of the date fixed in such notice, if the Work shall not have commenced or if Lessee, or its sewer contractor, is not then proceeding expeditiously with the Work, this Lease and term shall wholly cease and expire with the same effect as if terminated for default pursuant to Article XIII, and the insurance proceeds shall be paid over to the Institutional Construction Lender, if any, and Lessor, as their interests may appear, and all policies of insurance and Insurance Proceeds receivable shall belong to and be retained by Lessor, without claim thereon by Lessee, or its sewer contractor. If, after receipt of Lessor's notice of termination, Lessee, or its sewer contractor, shall dispute Lessor's claim, the dispute may be submitted to and determined by arbitration pursuant to Article XVIII, in which event Lessee shall not be deemed in default hereunder unless the arbitrators shall have decided that Lessee is in default and the balance of the insurance proceeds shall not be paid out until after a final decision by the Court and Appellate Courts, if appeals have or will be taken, as to the validity or correctness of such arbitration determination.

ARTICLE X REPAIRS AND MAINTENANCE

21. During the term of this Lease, Lessee, or its sewer contractor, will take good care of the WWTP and the surrounding area, all alleyways and passageways and the sidewalks, curbs, and vaults adjoining the Property and Lessee shall keep all of the foregoing in good order and condition, ordinary wear and tear excepted, and make all necessary repairs thereto, interior and exterior, structural and nonstructural, ordinary

and extraordinary, and foreseen and unforeseen. Lessee shall also keep the sidewalks and curbs in first-class order, repair, and condition. Lessee, or its sewer contractor, shall also keep the Property and sidewalks adjacent to the Property free and clean of rubbish, ice, and snow and shall not encumber or obstruct same or allow same to be encumbered or obstructed. When used in this Article X, the term “repairs” shall include all necessary replacements, renewals, alterations, and additions. All repairs made by Lessee, or its sewer contractor, shall be at least equal in quality and class to the original construction of the WWTP. Lessee, or its sewer contractor, will do or cause others to do all necessary shoring of foundations and walls of the WWTP and every other act or thing for the safety and preservation thereof which may be necessary by reason of any excavation or other building operation upon any adjoining property or street, alley or passageway if obligated to do so by law. Lessee, or its contractor, shall make all repairs necessary to avoid any damage or injury to the Property or Lessor’s interest in and to the Property.

**ARTICLE XI
LESSOR’S RIGHT OF ENTRY**

22. Prior to the completion of construction and the demolition of the existing plant, Lessor shall have access to the Property to maintain and operate the existing plant and shall be responsible and liable for any existing or future violations of governmental laws, regulations, or ordinances arising out of such access to the property or operation of the Existing WWTP.

23. Thereafter, Lessor and its authorized representatives shall retain its right to enter the Property at all reasonable times for the purposes of inspecting the same and making any necessary repairs thereto and performing any work therein that may be necessary by reason of Lessee’s failure to cure any violations of any governmental law, regulation, or ordinance and to make any such repairs or perform any work or to commence the same. Nothing herein shall imply any duty upon the part of Lessor to do any such work, and performance by Lessor shall not constitute a waiver of Lessee’s default in failing to perform the same.

**ARTICLE XII
INDEMNIFICATIONS**

24. Lessee shall and hereby does save, defend, indemnify, and hold harmless Lessor from and against all liabilities, obligations, damages, penalties, claims, costs, charges, and expenses, including reasonable architects’ and attorneys’ fees, which may be imposed upon or incurred by or asserted against Lessor or the fee or reversionary

interest of Lessor in the Property by reason of any of the following during the term of this Lease:

a. any work or thing done in, on, or about the Property or any part thereof, except for the negligence of Lessor or any of its agents, contractors, servants, employees, sublessees, licenses, or invitees;

b. any use, possession, occupation, condition, operation, maintenance, or management of the Property or any part thereof or any street, alley, sidewalk, curb, vault, passageway, or space adjacent thereto by the Lessee or any of its agents, contractors, servants, employees, sublessees, licenses, or invitees;

c. any negligence on the part of Lessee or any of its agents, contractors, servants, employees, sublessees, licenses, or invitees;

d. any accident, injury, or damage to any person or property occurring in, on, or about the Property or any part thereof or any street, alley, sidewalk, curb, vault, passageway, or space adjacent thereto, except for the negligence of Lessor or any of its agents, contractors, servants, employees, sublessees, licenses, or invitees;

e. any failure on the part of Lessee to perform or comply with any of the covenants, agreements, terms, provisions, conditions, or limitations contained in this Lease on its part to be performed or complied with.

25. During the time that Lessor and its agents have access to the Property for the continued operation and maintenance of the Existing WWTP, Lessor shall and hereby does save, defend, indemnify, and hold harmless Lessee, or its sewer contractor from and against all liabilities, obligations, damages, penalties, claims, costs, charges, and expenses, including reasonable architects' and attorneys' fees, which may be imposed upon or incurred by or asserted against Lessee, or any of its agents, contractors, servants, employees, sublessees, or licenses arising from the following:

a. any work or thing done in, on, or about the Property or any part thereof, by Lessor or any of its agents, contractors, servants, employees, sublessees, or licenses;

b. any use, possession, occupation, condition, operation, maintenance, or management of the Property or any part thereof or any street, alley, sidewalk, curb, vault, passageway, or space adjacent thereto, by Lessor or any of its agents, contractors, servants, employees, sublessees, or licenses;

c. any negligence on the part of Lessor or any of its agents, contractors, servants, employees, sublessees, licenses, or invitees;

d. any accident, injury, or damage to any person or property occurring in, on, or about the Property or any part thereof or any street, alley, sidewalk, curb, vault, passageway, or space adjacent thereto, caused by Lessor or any of its agents, contractors, servants, employees, sublessees, licenses, or invitees;

e. any failure on the part of Lessor, or any of its agents, contractors, servants, employees, sublessees, or licenses to perform or comply with any of the covenants, agreements, terms, provisions, conditions, or limitations contained in this Lease on its part to be performed or complied with.

ARTICLE XIII CONDITIONAL LIMITATIONS; DEFAULT PROVISIONS

26. An “event of default” or a “default” shall mean, whenever they are used herein, any one or more of the following events: (a) failure by Lessor or Lessee to observe and perform any covenant, condition, or agreement on its part to be observed or performed; (b) insolvency of Lessee; or (c) an event of default on the part of Lessee or the Sewage-Works Corporation under the STP Agreement.

27. If default shall be made by Lessee, or its agents, in the performance of or compliance with any of the covenants, agreements, terms, or conditions contained in this Lease and such default shall continue for a period of twenty (20) days after written notice (“Notice to Cure”) from Lessor to Lessee, or in the case of a default or a contingency which cannot with due diligence be cured within such period of twenty (20) days, Lessee fails to prosecute the curing of such default with all due diligence (it being intended that in connection with a default not susceptible of being cured with due diligence within twenty (20) days that the time of Lessee within which to cure the same shall be extended for such period as may be necessary to complete the same with all due diligence), then and in any such event or events Lessor, at any time thereafter, may give written notice (“Termination Notice”) to Lessee specifying such Event or Events of Default have not been cured within the specified time periods, if any, referred to above, and stating that this Lease shall expire and terminate on the date specified in such second notice, which date shall be at least five (5) days after the giving of such Termination Notice, and upon the date specified in such Termination Notice this Lease shall terminate fully and completely and all rights of Lessee under this Lease shall expire and terminate and Lessee shall remain liable for damages as hereinafter provided.

28. Upon any such expiration or termination of this Lease or any termination by summary proceedings or otherwise, Lessee shall quit and peacefully surrender the Property and the then buildings and improvements thereon to Lessor, without any

payment therefor by Lessor, and Lessor, upon or at any time after any such expiration or termination, may without further notice enter upon and re-enter the Property and possess and repossess the Property by use of “self help,” summary proceedings, ejectment, or otherwise; may dispossess Lessee and remove Lessee and all other persons and property from the Property, and may have, hold, and enjoy the Property and the buildings thereon and the right to receive all rental income, if any.

29. In the event of any breach or threatened breach by Lessee of any of the covenants, agreements, terms, or conditions contained in this Lease, Lessor shall be entitled to enjoin such breach or threatened breach and shall have the right to invoke any right or remedy allowed at law or in equity or by statute or otherwise as though re-entry, summary proceedings, and other remedies were not provided in this Lease.

30. Each right or remedy of Lessor provided for in this Lease shall be cumulative and shall be in addition to every other right or remedy provided for in this Lease or now or hereafter existing at law or in equity or by statute or otherwise, and the exercise or beginning of the exercise by Lessor of any one or more of the rights or remedies provided for in this Lease or now or hereafter existing at law or in equity or by statute or otherwise shall not preclude the simultaneous or later exercise by Lessor of any or all other rights or remedies provided for in this Lease or now or hereafter existing at law or in equity or by statute or otherwise.

ARTICLE XIV NO WAIVER

31. The failure of Lessor to seek redress for violation of, or to insist upon the strict performance of, any covenant or condition of this Lease, shall not prevent a subsequent act, which originally would have constituted a violation, from having all the force and effect of an original violation. Lessor may restrain any breach or threatened breach of any covenant, agreement, term, provision, or condition herein contained through an order, judgment, or decision of a court of competent jurisdiction. The mention herein of any particular remedy shall not preclude Lessor from any other remedy it might have, either at law, in equity, or otherwise. The failure of Lessor to insist upon the strict performance of any one of the covenants, agreements, terms, provisions, or conditions of this Lease or to exercise any right, remedy, or election herein contained or permitted by law shall not constitute or be construed as a waiver or relinquishment for the future of such covenant, agreement, term, provision, condition, right, remedy, or election, but the same shall continue and remain in full force and effect. Any right or remedy of Lessor in this Lease specified or any other right or remedy that Lessor may have at law, in equity or otherwise upon breach of any covenant, agreement, term, provision, or condition in this Lease contained upon the part of Lessee to be performed

shall be distinct, separate, and cumulative rights or remedies and no one of them, whether exercised by Lessor or not, shall be deemed to be in exclusion of any other. No covenant, agreement, term, provision, or condition of this Lease shall be deemed to have been waived by Lessor unless such waiver be in writing, signed by Lessor or Lessor's agent duly authorized in writing. Consent of Lessor to any act or matter must be in writing and shall apply only with respect to the particular act or matter in which such consent is given and shall not relieve Lessee from the obligations wherever required under this Lease to obtain the consent of Lessor to any other act or matter.

ARTICLE XV NOTICES

32. All notices, demands, requests, or other communications which may or are permitted, desirable or required to be given, served or sent hereunder shall be in writing and shall be deemed to have been given or sent: (a) if intended for Lessee, by certified mail, return receipt requested, to Lessee at its address given in the first paragraph of this Lease; or, (b) if intended for Lessor, by certified mail, return receipt requested, to Lessor at its address given in the first paragraph of this Lease. Service of all such notices shall be effective five (5) days after such mailing.

ARTICLE XV CONDITION OF PROPERTY

33. The Town shall retain access to the site to continue to run the existing wastewater treatment plant until such time as the WWTP shall begin to accept sewage from the Hamlet District. Prior to the commencement of the lease, the Town shall work in good faith with the Developer to identify, engineer, and install a wetland mitigation and restoration project on the Property, or at a location(s) otherwise acceptable to the Army Corps of Engineers as required, to mitigate for the fill material that has been placed on the Property within a previously delineated ACOE jurisdictional wetland area (the "Wetland Restoration"). A conceptual outline of the Wetland Restoration Outline is attached as Exhibit A. Should the Wetland Restoration require site plan or other approvals from the Town Planning Board, the Town Planning Board shall expeditiously process such approval applications in order to effect the Wetland Restoration.

34. Other than as set forth in the preceding paragraph, Lessee represents that the Property, the title thereto, the sidewalks, and structures adjoining the same, any subsurface conditions thereof, have been examined by Lessee and that Lessee accepts the same in the condition or state in which they or any of them now are, without

representation or warranty, express or implied, in fact or by law, the nature, condition or usability thereof or the use or uses to which the Property or any part thereof may be put except that Lessor is responsible for any and all violations of any law, regulation, or rule that it or any of its agents, contractors, servants, employees, sublessees, licenses, or invitees have violated, whether, heretofore determined by an adjudicator or not, or that may occur in the future as a result of actions or failure to act by the Lessor or any of its agents, contractors, servants, employees, sublessees, licenses, or invitees.

ARTICLE XVII QUIET ENJOYMENT

35. Lessee, during its full performance and compliance with the covenants, agreements, and conditions of this Lease, shall quietly have and enjoy the Property during the term of this Lease without hindrance or molestation by anyone claiming by, through, or under the Lessor.

ARTICLE XVIII ARBITRATION

36. Wherever this Lease provides that a dispute shall be determined by arbitration, the arbitration shall be conducted as provided in this Article XVIII. The party desiring such arbitration shall give written notice to that effect to the other, specifying the dispute to be arbitrated and the name and address of the person designated to act as the arbitrator in its behalf. Within ten (10) days after said notice is given, the other party shall give written notice to the first party, specifying the name and address of the person designated to act as arbitrator on its behalf. If the second party fails to notify the first party of the appointment of its arbitrator as aforesaid by the time above specified, then the appointment of the second arbitrator shall be made in the same manner as hereinafter provided for the appointment of a third arbitrator. The arbitrators so chosen shall, within ten (10) days after the second arbitrator is appointed, appoint a third arbitrator, and if they cannot agree upon said appointment, the third arbitrator shall be appointed upon their application or upon the application of either party, by the American Arbitration Association in the State of New York, County of Orange, or any successor thereto, or if there is no successor, by the Supreme Court of Orange County. The three arbitrators shall meet and decide the dispute within thirty (30) days after the appointment of the third arbitrator. A decision in which two of the three arbitrators concur shall be binding and conclusive upon the parties and judgment thereon may be entered in any court having jurisdiction thereof. In designating arbitrators and in deciding the dispute, the arbitrators shall act in accordance with the rules then in force

of the American Arbitration Association (or any successor thereto), subject, however, to such limitations or directions as may be placed upon them by the provisions of this Lease. Each party shall pay the fees and expenses of its respective arbitrator and both shall share equally the fees and expenses of the third arbitrator, if any, as well as any fees payable to the American Arbitration Association or its successor.

37. The obligation of Lessor and Lessee to submit a dispute to arbitration is limited to disputes arising under those Articles of this Lease which specifically provide for arbitration.

ARTICLE XIX EXCAVATION AND SHORING

38. If any excavation shall be required for the construction of the WWTP, or the demolition of the Existing WWTP, such excavation shall be done in such manner as to protect the safety and preservation of adjoining properties and the structures and/or any building(s) on the Property, or the adjacent properties from injury or damage and to support the same by proper foundations.

39. Lessee shall not, by reason of any such excavation or work, have any claim against Lessor for damages or indemnity.

ARTICLE XX END OF TERM

40. Upon the expiration or termination of this Lease for any reason whatsoever, or upon re-entry by Lessor upon the Property pursuant to Article XI or otherwise surrender and deliver up the Property into the possession and use of Lessor without delay and in good order, condition and repair, ordinary wear and tear excepted, free and clear of all leases, tenancies, occupancies, and/or subleases, other than those to which Lessor shall have consented to in writing provided that, when such subleases are entered into, the same shall contain a covenant by which the sublessee agrees, upon termination of the term of this Lease, to attorn to the Lessor and recognize Lessor as sublessor under said sublease as though Lessor was named as sublessor in said sublease in the first instance, and free and clear of all liens and encumbrances other than those, if any, created or consented to by Lessor without any payment or allowance whatever to Lessee on account of, or for, the WWTP contemplated to be built or any part thereof.

41. Any personal property of Lessee or any sublessee which shall remain in on or about the Property after the termination of this Lease and the removal of Lessee or such sublessee from the Property, may, at the option of Lessor, be deemed to have been abandoned by Lessee or such sublessee and either may be retained by Lessor as its property or be disposed of, without accountability, in such manner as Lessor may see fit.

42. Notwithstanding anything to the contrary contained in this Lease, Lessor shall not be responsible for any loss or damage occurring to any property owned by Lessee or any sublessee. Lessor shall not be responsible for loss, theft, removal, or damage of personal property.

ARTICLE XXI LESSOR'S RIGHT TO PERFORM

43. If Lessee shall default in the performance of any other covenant, agreement, term, provision, or condition on its part to be made or performed, after twenty (20) days' notice to Lessee from Lessor, except when other notice is expressly provided for in this Lease (or without notice in case of an emergency), and without waiving or releasing Lessee from any obligation of Lessee contained in this Lease, then Lessor may (but shall be under no obligation to) do any of the following:

- a. as to Article VIII, procure, pay for, and maintain any of the insurance policies provided for therein, and
- b. make any payment or perform any other act on Lessee's part to be performed under this Lease and may enter upon the Property for any such purpose, and take any such action as may be necessary to protect Lessor's interests.

44. Lessor may restrain by injunction, restraining order, or otherwise any breach or threatened breach of any covenant, agreement, term, provision, or condition herein contained, but the mention herein of any particular remedy shall not preclude Lessor from any other remedy it might have, either in law or in equity, or otherwise.

ARTICLE XXII MISCELLANEOUS

45. **INVALIDITY:** If any term or provision of this Lease or the application thereof to any person or circumstances shall, to any extent, be invalid or unenforceable, the remainder of this Lease, or the application of such term or provision to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not

be affected thereby, and each term and provision of this Lease shall be valid and be enforceable to the fullest extent permitted by law.

46. **RECORDING OF LEASE:** Lessor and Lessee agree that at the request of either of them, each will execute a short form memorandum of this Lease in form and content satisfactory to Lessor and Lessee for recording in the Office of the Dutchess County Clerk pursuant to the New York Real Property Law.

47. **ENTIRE AGREEMENT:** This Lease with its schedules and annexes, if any, contains the entire agreement between Lessor and Lessee, and any executory agreement hereafter made between Lessor and Lessee shall be ineffective to change, modify, waive, release, discharge, terminate, or effect an abandonment of this Lease, in whole or in part, unless such executory agreement is in writing and signed by the party against whom enforcement of the change, modification, waiver, release, discharge, termination, or abandonment is sought.

48. **CAPTION:** The captions of Articles in this Lease and its Table of Contents are inserted only as a convenience and for reference and they in no way define, limit, or describe the scope of this Lease or the intent of any provision thereof. References to Articles are to those in this Lease unless otherwise noted.

49. **SINGULAR AND PLURAL:** If two or more persons, firms, corporations, or other entities constitute either Lessor or Lessee, the word "Lessor" or the word "Lessee" shall be construed as if it reads Lessors or Lessees, any such Lessors and Lessees shall be jointly and severally liable for the performance of their respective obligations under this Lease and the pronouns "it," "he" and "him" appearing herein shall be construed to be the singular or plural, masculine, feminine, or neuter gender as the context in which it is used shall require.

50. **COVENANTS BINDING:** The covenants, agreements, terms, provisions, and conditions of this Lease shall be binding upon and inure to the benefit of the successors and assigns of Lessor and, except as otherwise provided herein, the successors and assigns of Lessee.

IN WITNESS WHEREOF, the parties hereto have duly executed this instrument as of the day and year first above written.

Lessor:

Lessee:

TOWN OF TUXEDO, NEW YORK

TUXEDO LOCAL DEVELOPMENT CORPORATION

by: _____

by: _____

Print Name: _____

Print Name: _____

Title: _____

Title: _____

Date:

Date:

EXHIBIT A

WETLAND RESTORATION OUTLINE

Note, this Lease when signed will include a copy of the Wetland Restoration Outline. This unsigned Lease, which is an attachment to the Agreement, does not include a copy of the Wetland Restoration Outline since it is attached to the Agreement as Exhibit G.

EXHIBIT G

WETLAND RESTORATION OUTLINE

[Intentionally left blank]

Wetland Restoration Outline

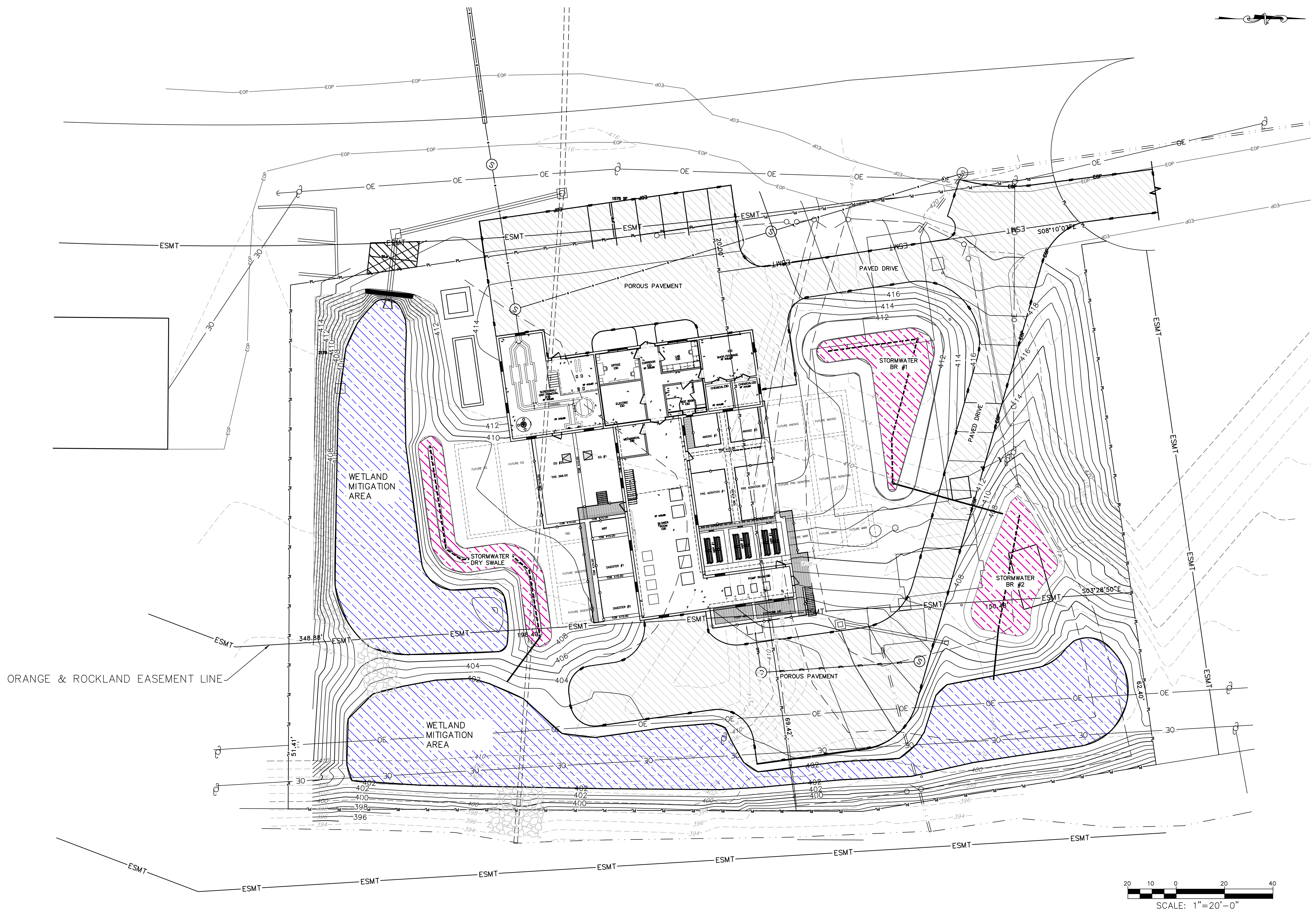
Related will modify the proposed sewage treatment plant design to restore/create wetlands on the proposed plant site. The wetland creation can begin as soon as fill material is removed from the former wetlands. A conceptual map is provided (“Site Map”). No water quality treatment will occur within the created wetlands. The hydrology of the wetlands will be from the original channel that is currently piped under many feet of fill material. Discharge from the created wetlands to the river could be through the existing outlet structure, thereby avoiding impacts to the wooded stream banks.

E. DeMarino & Sons, LLC (“DeMarino”), shall remove the fill from the former wetlands, remove stockpiled materials, and return the site to its original elevations. This work must be completed before the work on the proposed wastewater treatment plant can begin. DeMarino shall stabilize the slope at the south end of the present fill stockpile by seeding to help prevent further erosion and siltation of the area to be mitigated as indicated by the red triangle shown on the attached conceptual map that is provided (“Site Map”) and described in the accompanying specifications prepared by Lehman & Getz, PC, Consulting Engineers.

In addition, Related will create wetlands at the south end of the DeMarino property. This area is currently entirely unvegetated and appears to be more of DeMarino’s rock storage area. Approximately 0.5 acres of wetlands, connected directly to the Ramapo River, could be created at this location.

Related plans to remove excess soils that have eroded and filled the area from the runoff of the DeMarino stock pile. To contain future runoff stabilization of the stockpile slope, large boulders shall be placed at the toe of the DeMarino stockpile (in the areas of numbers 1 and 4 shown on the Site Map). Boulders may also be placed along the toe of the slope paralleling the railroad tracks to help stabilize that slope. Material will then be excavated to an elevation just above the current elevation of the river. Wetland soil shall be placed along with wetland plantings. This area will then be an area for the river to flood during high water events.

The area to become mitigated back into its natural “wetland” state is the approximate area shown on the Site Map indicated by the red triangle.



DATE: 1/14
 DRAWN BY: [blank]
 SCALE: [blank]
 REVIEWED BY: BDJ
 PROJECT NO.: 12-905
 FILE: FILE NAME

DELAWARE ENGINEERING, D.P.C.
 CIVIL AND ENVIRONMENTAL ENGINEERING

28 MADISON AVENUE EXTENSION, ALBANY, NY 12203 - 518.452.1290
 8-12 DIETZ STREET, SUITE 303, ONEONTA, NY 13820 - 607.432.8073

NO.	DATE	DESCRIPTION

WASTEWATER TREATMENT PLANT
 TUXEDO RESERVE
 TOWN OF TUXEDO
 ORANGE COUNTY, NY

CONCEPTUAL
 TUXEDO RESERVE
 WWTP SITE PLAN

SHEET:
SP-1

WARNING - IT IS A VIOLATION OF NEW YORK EDUCATION LAW SECTION 7209.2, FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR, TO ALTER THIS DOCUMENT IN ANY WAY. IF ALTERED THE ALTERING PERSON SHALL COMPLY WITH THE REQUIREMENTS OF NEW YORK EDUCATION LAW, SECTION 7209.2.