

**ENVIRONMENTAL IMPACT  
STATEMENT**

FOR

**PRELIMINARY SITE PLAN & SUBDIVISION**

AT

**BLOCK 73, LOT 65  
WEST MAIN STREET (CR 513) & MOUNT PLEASANT AVENUE  
BOROUGH OF ROCKAWAY  
MORRIS COUNTY, NEW JERSEY**

For:

**RPM Development Group  
77 Park Street  
Montclair, New Jersey 07042**

Prepared by:



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# TABLE OF CONTENTS

<b>I.</b>	<b>INTRODUCTION</b>	
	A. Purpose	1
<b>II.</b>	<b>PROJECT DESCRIPTION</b>	
	A. Overall Description	3
	B. Compatibility with Planning Goals	4
<b>III.</b>	<b>SITE DESCRIPTION AND INVENTORY</b>	
	A. Geology and Topography	5
	B. Soils	6
	C. Hydrology	6
	1. Wetlands	
	2. Floodplains	
	3. Surface Drainage	
	4. Ground Water	
	D. Vegetation and Wildlife	7
	E. Air Quality	8
	F. Man Made Conditions and Structures	9
	1. Land Use	
	2. Noise Characteristics and Levels	
	G. Aesthetics	11
<b>IV.</b>	<b>AREA AND REGIONAL DESCRIPTION</b>	
	A. Surrounding Environs	12
	B. Infrastructure	12

## TABLE OF CONTENTS (cont.)

<b>V.</b>	<b>ASSESSMENT OF POTENTIAL IMPACTS</b>	
A.	Overview	13
B.	Soil Erosion and Sedimentation	13
C.	Flooding and Floodplain Protection	14
D.	Wetlands	14
E.	Surface Water Quality	14
F.	Groundwater Quantity and Quality	14
G.	Vegetation	15
H.	Wildlife	15
I.	Zoning Analysis	16
J.	Other Environmental Considerations	16
	1. Solid Waste Disposal	
	2. Energy Demand	
	3. Air Quality	
	4. Noise Pollution	
K.	Population Increases	19
L.	Social and Economic Impact	19
M.	Infrastructure	20
	1. Traffic	
	2. Water & Sewer Service	
	3. Utilities	
<b>VI.</b>	<b>RECOMMENDED ACTIONS AND MITIGATION</b>	
A.	Overview	22
B.	Erosion and Sedimentation Control	22
C.	Stormwater Management and Groundwater Protection	23

## TABLE OF CONTENTS (cont.)

VII.	LICENSES, PERMITS, OTHER APPROVALS	25
VIII.	SUMMARY OF RECOMMENDATIONS AND CONCLUSION	26
IX.	STATEMENT OF ALTERNATIVES	26
X.	REFERENCES	28
XI.	QUALIFICATIONS OF PREPARER	29

### FIGURES

Figure 1 - USGS Quadrangle Map

Figure 2 - Physiographic Province Map

Figure 3 - Soils Map

**ENVIRONMENTAL IMPACT STATEMENT  
BLOCK 73, LOT 65, BOROUGH OF ROCKAWAY  
MORRIS COUNTY, NEW JERSEY**

**I. INTRODUCTION**

**A. Purpose**

This report presents the results of an Environmental Impact Assessment of the proposed development of Block 73, Lot 65 in Borough of Rockaway, Morris County, New Jersey. The purposes of this assessment are: (1) to provide an analysis of the relationship between the proposed development project and the natural environment; (2) to identify potential environmental impacts; (3) to recommend mitigating measures where possible, and; (4) to provide a reference for municipal authorities to assist the decision-making process. This report is an adjunct to, and should be reviewed with, other plans and drawings submitted for the application process.

<u>Applicant:</u>	RPM Development Group 77 Park Street Montclair, New Jersey 07042
<u>Location:</u>	Block 73, Lot 65 West Main Street (CR 513) & Mount Pleasant Avenue Borough of Rockaway Morris County, New Jersey
<u>Engineer:</u>	Dykstra Walker Design Group 21 Bowling Green Parkway, Suite 204 Lake Hopatcong, New Jersey 07849

The subject property is located at the northwest side of Morris County Route 513 (West Mains Street) and the southeast side of Mount Pleasant Avenue in a residential area near the center of the Borough of Rockaway. The property is approximately 7.8 acres in size and is currently developed with a single-family residential dwelling and associated site improvements at the Mount Pleasant Avenue side of the site. The remaining portions of the property are undeveloped and generally wooded. Adjoining properties to the north, west and southwest contain single-family residential dwellings and lots along West Main Street to the south and east are developed with a mixture of residential and commercial uses. Donatoni Park is located across West Main Street to the east of the site and the commercial center of Rockaway Borough is situated to the northeast. Refer to **Figure 1** for a USGS Quadrangle map of the site and surrounding area.

The information, format and analyses provided are designed to comply with Borough of Rockaway ordinances governing environmental impact reports. Several local and County planning documents were consulted to insure environmentally sound judgments in a regional context. Field visits to the proposed project site completed the background research tasks.

## **II. PROJECT DESCRIPTION**

### **A. Overall Description**

This project proposes to subdivide the subject property into two (2) lots with one (1) lot along Mount Pleasant Avenue and the other and largest lot along West Main Street. The existing single-family dwelling at Mount Pleasant Avenue will be remain on the one (1) Mount Pleasant lot. At the West Main Street property, a portion of wooded area will be cleared and the land regraded for the construction of a three (3) story senior apartment building. The apartment building will contain sixty-four (64) one-bedroom dwelling units.

Access to the senior apartment development will be via two (2) separate driveway entrances from West Main Street. The southwesterly entrance will provide both ingress and egress to the development and the northeasterly entrance will be for ingress only. Paved parking areas are proposed at the sides and front of the building and will provide 78 parking spaces for the residents of the apartments. A ten (10) foot wide pavement area is also provided at the front of the building for pick up, drop off, loading and unloading and walkways are proposed around the building for access from the parking lot to the building entrances. A screened trash and recycling area is proposed at the parking area at the north side of the building and landscaping and lighting is proposed around the building and throughout the parking areas.

Water, sewer, gas and electric utilities are all available within West Main Street and will be extended on-site to serve the proposed senior apartment building. Stormwater runoff generated by the proposed development will be collected at a

series of subsurface and surface infiltration and detention basins to provide water quantity controls, groundwater recharge and water quality treatment. The proposed development has been designed to comply with New Jersey Department of Environmental Protection (NJDEP) stormwater management regulations.

The subject property and surrounding areas were evaluated by Dykstra Walker Design Group for the presence of freshwater wetlands. Based on this evaluation, no freshwater wetlands are located on, or within 150 feet of the property in the professional opinion of Dykstra Walker Design Group. There are also no floodplains, floodways, flood hazard areas or riparian buffers on-site or within the vicinity of the property based on FEMA mapping and a review of on-line information available from the NJDEP.

**B. Compatibility with Planning Goals**

The subject property is located within the AHO-S (Senior Housing) overlay zone district, underlain by the R-1 (single-family residence) zone district, the O-B (office business) zone district and the G-B (general business) zone district. The single-family residential lot will all be located within the R-1 zone and the senior apartment building lot will be governed by the AHO-S overlay zone requirements. The R-1 zone allows for single-family dwellings and the AHO-S zone allows for senior apartment buildings. Both uses are conforming to the zoning requirements.

### III. SITE DESCRIPTION AND INVENTORY

#### A. Geology and Topography

The project area is located within the Highlands Physiographic Province (**Figure 2**). The Highlands is generally a mountainous belt with rugged topography consisting of a series of discontinuous rounded ridges separated by deep, narrow valleys. In this area, the Highlands Province is underlain by igneous and metamorphic rocks. According to the *Bedrock Geologic Map of the Boonton Quadrangle, Morris County, New Jersey, 2012*, published by the New Jersey Geological Survey, the bedrock geology beneath the proposed project site is Diorite gneiss. This formation is described as a light gray or tan-weathering, greenish gray or greenish brown, massive, foliated rock.

Per the *Surficial Geology of the Dover Quadrangle, New Jersey, 1989*, published by the New Jersey Geological Survey, surficial geology in the project vicinity consists largely of glacial till deposits associated the terminal moraine of the late Wisconsinan glacier. Till deposits are primarily unstratified and unsorted boulders, cobbles and pebbles in a silty fine sand to fine to medium sand matrix and generally includes minor amounts of stratified sand and gravel. The thickness of the moraine deposits varies from twenty (20) to about fifty (50) feet. Beneath the project site, the thickness of the terminal moraine deposits is shown as approximately fifty (50) feet.

Topographically, the subject property is moderately to steeply sloping from a high point along Mount Pleasant Avenue at the northwestern end of the site to lower areas along West Main Street at the southeast end. Ground surface elevations vary

between approximately 660 feet above mean sea level (msl) at the northwest side to 540 feet above msl at the southeastern end at the West Main Street frontage.

## **B. Soils**

The USDA, Natural Resource Conservation Service web soil survey shows soils mapped at the subject property to be **Rockaway sandy loam, 15-25% slopes** (RobDc). Refer to **Figure 3** for a copy of the soil survey.

### Rockaway series

The Rockaway series consists of deep, gently sloping to very steep, well drained and moderately well drained soils on uplands. These soils formed in sandy loam glacial deposits and consist mainly of granitic material. Permeability is typically moderate at the surface and the depth to the seasonal high water table varies but is often greater than ten (10) feet. These soils are mapped at the proposed area of development on-site.

## **C. Hydrology**

### **1. Wetlands**

The subject property and surrounding areas were evaluated by Dykstra Walker Design Group for the presence of freshwater wetlands. Based on this evaluation, no freshwater wetlands are located on, or within 150 feet of the property in the professional opinion of Dykstra Walker Design Group.

### **2. Floodplains**

There are no floodplains, floodways or flood hazard areas on-site or within the vicinity of the property based on FEMA mapping.

### **3. Surface Drainage**

Surface water runoff from the subject and adjoining properties drains by overland flow through the site from the elevated areas along Mount Pleasant Avenue to an existing drainage system located within West Main Street to the southeast.

### **4. Groundwater**

Per New Jersey Geologic Survey mapping, the property is underlain by a bedrock aquifer consisting of igneous and metamorphic rocks. Granite comprises the primary rock in this formation and the bedrock aquifer is estimated to lie approximately fifty (50) feet below the surface. The United States Geological Survey ranks bedrock and surficial aquifers based on the median yield for wells installed in each aquifer. The bedrock aquifer below the subject property has a ranking of D, which indicates a median potential well yield of 25-50 gallons per minute (gpm).

### **D. Vegetation and Wildlife**

A detailed wildlife study and inventory of wildlife and wildlife habitats was neither conducted nor practical for this project as the site is located within a developed area of Rockaway Borough. A cruising survey of the property was conducted and resulted in general observations that can be related to the probability of wildlife present on the property and inhabiting surrounding areas. The undeveloped portions of the site contain successional, regrowth deciduous trees and shrubs. Mammals, birds, amphibians and reptiles are expected to utilize the property either permanently or on a temporary, migratory basis. Mammalian,

amphibian and reptile species may include mice, voles, rabbits, Eastern gray squirrel, raccoons, opossums, White tail deer, Black bear, Eastern toad and Garter snake. Avian species may include the Wild turkey, Blue jay, sparrow species and American robin. No rare species were observed, no completely mature marker trees were noted and no pure stands of any species are present.

#### **E. Air Quality**

The federal and state governments establish ambient air quality standards. The New Jersey Department of Environmental Protection (NJDEP) monitors air quality for a variety of pollutants at various locations throughout the state. The most recent standards and sampling data are from 2005. The pollutants sampled include sulfur dioxide, total suspended particulates, carbon monoxide, ozone, nitrogen dioxide, lead, nitric oxide, and smoke shade. There are no monitoring sites in the Borough of Rockaway so exact pollutant counts in the proximity of the site are not available. However, the municipality lies within the Pollution Standard Index Reporting Region designated 'Suburban' by the NJDEP. This region is monitored by stations in Morristown and surrounding counties with the same suburban characteristics. Information corresponding to a specific location is cited from the nearest station reporting on the particular pollutant. Pollutant levels at the site are generally considered to be better than those levels reported at the cited stations, as those monitoring areas are located within more urban-type settings, which are typically congested with heavy, slow-moving vehicular traffic and manufacturing and industrial buildings.

The ambient air quality of the site is reflective of the encompassing environment inclusive of the surrounding road system and nearby land uses. In the immediate area of the site, the only influences on air quality occur from mobile emission sources (cars, trucks, buses) utilizing the surrounding road system, principally West Main Street. The impact on air quality is dependent upon such factors as wind speed, atmospheric temperature inversion, sunlight, precipitation and traffic intensity. It can be expected that the greatest degradation of local air quality occurs during the morning and evening rush hours on normal workdays. Although no on-site air quality testing was performed, air quality can be classified as good in proximity to the site. Vehicular traffic from the proposed project is not considered to be a factor in the overall volume of traffic in the area.

## **F. MANMADE CONDITIONS AND STRUCTURES**

### **1. Land Use**

The subject property is approximately 7.8 acres in size and located within the AHO-S (Senior Housing) overlay zone district, underlain by the R-1 (single-family residence) zone district, the O-B (office business) zone district and the G-B (general business) zone district. The single-family residential lot will all be located within the R-1 zone and the senior apartment building lot will be governed by the AHO-S overlay zone requirements. The R-1 zone allows for single-family dwellings and the AHO-S zone allows for senior apartment buildings. Both uses are conforming to the zoning requirements and are compatible with the surrounding residential land uses. Development within this area is primarily residential with some commercial uses along West Main Street mixed in with single-family residential lots. Adjoining

properties to the north, west and southwest contain single-family residential dwellings and lots along West Main Street to the south and east are developed with a mixture of residential and commercial uses. Donatoni Park is located across West Main Street to the east of the site and the commercial center of Rockaway Borough is situated to the northeast.

## **2. Noise Characteristics and Levels**

The noise levels generally encountered on this site will be those mainly associated with traffic along West Main Street and surrounding land uses. Noise levels are expected to peak during morning and evening rush times. The projected decibel rating associated with traffic is determined to be between 70 and 85 decibels (db). A decibel range of 70 to 85 is determined to be the range of average to moderate city traffic (Environmental Pollution and Control, 1978). Noise levels within buildings are anticipated to be greatly reduced by the walls and interior air space. The use of insulating building materials (exterior and interior walls and insulating glass) will further reduce or eliminate the exposure to these outside noise levels.

On-site noise will be from vehicles entering and exiting the development and activities associated with the proposed residential use, such as the seasonal use of property maintenance equipment such as power lawnmowers, etc.

Noise levels in decibels and comparative descriptions are identified on the following chart:

**NOISE LEVELS**

<b>Decibels (db)</b>	<b>Description</b>
140	Threshold of pain
130	50 HP Siren at 100 Ft
120	Pneumatic Riveter
110	
100	Air Hammer
90	Heavy city traffic Beginning of hearing damage
80	
70	Average traffic
60	Conversational speech, 3 ft.
50	Business office
40	Average Residence Soft Whisper
30	Room in a quiet house at night
20	Motion Picture studio
10	
0	Threshold of hearing

*Source: Environmental Pollution and Control, P. Aarne Vesilind, Ann Arbor Science Publishers, Inc. 1978.*

**G. Aesthetics**

There are no sites of historic, scenic or aesthetic significance on the subject property.

#### **IV. AREA AND REGIONAL DESCRIPTION**

##### **A. Surrounding Environs**

As noted in the previous section of this report, development within this area is primarily residential with some commercial uses along West Main Street mixed in with single-family residential lots. Adjoining properties to the north, west and southwest contain single-family residential dwellings and lots along West Main Street to the south and east are developed with a mixture of residential and commercial uses. Donatoni Park is located across West Main Street to the east of the site and the commercial center of Rockaway Borough is situated to the northeast.

##### **B. Infrastructure**

The Borough of Rockaway is a residential community in Morris County. Services provided to the residents include a public school system, roadway maintenance, snow removal and solid waste disposal. Centralized utility systems are also in place, including water, sewer, gas and electrical facilities. Other services include fire and police protection and emergency response.

## **V. ASSESSMENT OF POTENTIAL IMPACTS**

### **A. Overview**

This section provides a description and assessment of potential and actual impacts to be expected from the implementation of this project proposal. The following subsections present possible impacts on the natural environment and impact to the socioeconomic infrastructure of the Borough of Rockaway.

Recommended mitigation measures and a discussion of unavoidable impacts are presented in Section VI.

### **B. Soil Erosion and Sedimentation**

Some degree of soil erosion and sedimentation must be expected from almost any construction project. Soil erosion and sedimentation are inevitable and unavoidable as there will be ground disturbance from construction, temporary and permanent alteration of portions of the natural topography and existing vegetation, impervious surfaces, and a storm water management system. Stabilizing the disturbed areas during construction, utilizing best management practices and establishing permanent cover will limit soil loss.

Site preparation will involve the removal of vegetation and rough grading of the site. Construction equipment can loosen and move soil, making it subject to potential wind and water movement. The introduction of impervious surfaces will alter present run-off patterns. Any storm water management system is subject to sporadic surges of water and sediments.

These impacts are not a necessary by-product of development and can be controlled so that the loss is held to acceptable levels. The implementation and

maintenance of both construction phase and post-construction phase soil erosion and sediment control measures are important.

**C. Flooding and Floodplain Disruption**

As previously noted, there are no floodplains, floodways or flood hazard areas on-site or within the vicinity of the property based on FEMA mapping. No floodplain or flooding impacts are anticipated by the proposed development.

**D. Wetlands**

Also as noted, there are no freshwater wetlands located on, or within 150 feet of the subject property. There will be no adverse impacts to wetlands or their associated transition areas as a result of this project.

**E. Surface Water Quality**

Treatment of stormwater runoff from impervious surfaces on-site will be required to ensure compliance with State water quality regulations and provide adequate protections to the aquifer below the subject property. A comprehensive stormwater management plan is required for this project, which includes water quality treatment facilities.

**F. Groundwater Quantity and Quality**

Groundwater quantity is directly related to the amount of impervious surface introduced and the methods used to treat and infiltrate run-off. In this case, runoff from impervious surfaces added to the site will be infiltrated into the ground surface at surface and subsurface infiltration basins. This project will be reviewed for compliance with State regulations as part of approval process.

Another important issue is maintaining ground water quality. Some potential for ground water pollution is associated with the contaminants and particles associated with driveways and parking areas such as oils, greases and salts. In order to maintain ground water quality, the stormwater drainage system for the site must include water quality treatment for runoff from paved surfaces prior to infiltration to comply with State regulations.

#### **G. Vegetation**

Existing on-site vegetation will be disturbed by construction activities and a certain amount of loss is inevitable and acceptable in this type of land use transition. A majority of the property contains successional, regrowth deciduous trees and shrubs. No rare species, completely mature marker trees or pure stands of any species will be impacted.

#### **H. Wildlife**

There may be minor disruptions to wildlife as a result of this project. Based on the developed nature of the surrounding areas, it is not likely that entire habitats unique to a particular species will be removed. The habitat disruption and the noise and activity of construction will cause certain animal species on site to leave and migrate to another location, either temporarily or permanently. This is a natural by-product of land use change where the zoning allows for this type of development. No mitigation is required.

## **I. Zoning Analysis**

No variances are required from the Borough of Rockaway zoning ordinances for the proposed development.

Three (3) design waivers are needed for the proposed development. A design waiver is required for driveway grades in excess of two (2) percent within forty (40) feet of the curb line at West Main Street. A design waiver is also required for a main approach walkway slope in excess of four (4) percent. Lastly, design waivers are required for steep slope disturbance.

## **J. Other Environmental Considerations**

Air quality, noise pollution, energy demands and solid waste disposal comprise another set of potential environmental impacts considered to be secondary for such a small project.

**1. Solid Waste**

Solid waste and recycling pick-up for the proposed development will be by a private waste hauler under contract with the owner. Trash and recycling will be collected at a centralized location adjacent to the parking lot at the north side of the proposed apartment building. The contracted waste hauler will remove trash and recycling from the site on a regular basis.

**2. Energy Demand**

No unusual energy demands are anticipated for the proposed project.

**3. Air Quality**

The proposed project will have a minimal effect on air quality on both a short-term and long-term basis. Upon completion of this project, the primary source of any increase in air pollution will be during morning and evening commuting times when most of the dwelling occupants will be using their vehicles. This is a very short term and low level of impact daily. Some impact on air quality may occur during project construction. This is a short-term temporary increase with no effect on the site or its environs.

**4. Noise Pollution**

The most significant noises to be generated by this proposal will result from the construction work to be performed on the site. Heavy equipment and trucks will produce noise that may impact the surrounding areas. Anticipated construction related noise levels are summarized on the following table.

## CONSTRUCTION RELATED NOISE EMISSIONS

<i>CONSTRUCTION EQUIPMENT</i>	<i>NOISE LEVEL AT 50' (dba)</i>	<i>NOISE LEVEL AT 100' (dba)</i>	<i>NOISE LEVEL AT 200' (dba)</i>	<i>NOISE LEVEL @ 200 FEET STRUCTURE ATTENUATION (-17 dba)</i>
Backhoe	72-94	66-88	60-82	43-65
Front End Loader	72-84	66-88	60-72	43-55
Bulldozer	80-87	74-81	68-75	53-60
Tandem Truck	83-88	77-81	71-75	56-60

Source: Federal Highway Administration Policy and Procedure Memorandum 90-2, April 1972.

Short-term impacts of construction noise will be minimized by contemporary OSHA regulations regarding heavy machinery noise. It should be noted that noise of this nature is temporary and will be limited to normal working hours to the greatest extent possible. These regulations will not only ensure the health and safety of machinery operators and bystanders alike but will also minimize noise levels at the fringes of the property.

Due to the proposed use of the site, noise characteristics following construction are anticipated to be greater than existing conditions but are not anticipated to negatively impact the adjacent properties. The noises generated after occupancy will be those associated with traffic to and from the proposed apartment building, activities associated with the proposed use and outdoor maintenance.

**K. Population Increases**

The proposed project will add sixty-four (64) new dwelling units to the Borough of Rockaway. The proposed project will result in a population increase of approximately 164 persons as calculated using the multipliers from the Rutgers University, Center for Urban Policy Research, residential demographic multipliers, November 2006, for all housing values.

<b>QTY</b>	<b>DESC</b>	<b>HOUSING VALUE</b>	<b>MULTIPLIER</b>	<b>SUM</b>
64	5+ Units, rent and own, 0-1 BR	All Values	1.603	102.6

There is not an anticipated increase of children in local schools from the proposed project as the proposed apartment building will be used for senior housing and therefore is not expected to place a burden on local schools. School tax revenues from the development will far exceed any increases in services.

**L. Social and Economic Impact**

No unusual demands for services are anticipated from this project. Protection against fire and crime are already present for the adjoining developments. From a socioeconomic viewpoint, this project is compatible with the existing, adjoining use. The proposed project will constitute a small percentage of the dwelling units in the overall community. Concern for infrastructure burdening is not warranted.

## **M. Infrastructure**

### **1. Traffic**

The Residential Site Improvement Standards (RSIS) defines a mid-rise apartment building as having more than two (2) and less than ten (10) floors. Per the RSIS, a mid-rise apartment building generates 5.5 average trips per day per dwelling unit. Therefore, this project will result in approximately 352 total trips to and from the property per day. This includes both morning and evening peak rush hour traffic.

West Main Street is a major collector that collects and distributes traffic from the center of Rockaway and the residential neighborhood streets within the Borough to Route 46 to the south and Route 80 to the north. The volume of traffic generated by the proposed development is anticipated to be a small percentage of the overall traffic on that roadway and will not have a significant impact on traffic volume in the area.

There will be temporary impacts to West Main Street as a result of construction activity, including the movement of construction equipment, import and/or export of soil and the ingress and egress of construction workers to and from the site. This is an unavoidable byproduct of construction and the movement of all construction equipment and transport of soil will comply with local limitations and regulations.

## **2. Water & Sewer Service**

Water and sanitary sewer service will be provided to the proposed development by a connection to the municipal water and sewer mains located within the West Main Street right-of-way.

The approximate projected sanitary sewer flows for the development have been calculated as follows per the standards at N.J.A.C. 7:14A-23.3.

- **1-bd dwelling units (du): 64 du x 110 gallons per day (gpd)/du = 7,040 gpd**

As this project proposes a discharge of less than 8,000 gallons per day of sanitary sewage, a treatment works approval permit will not be required from the NJDEP, Bureau of Construction and Connection Permits. Approval of this project by the Rockaway Valley Regional Sewerage Authority signifies that the sewage treatment plant has adequate capacity to handle the additional flows.

The approximate average daily water demand for the development has been calculated as follows per the Residential Site Improvement Standards.

- **1-bd multi-family unit: 64-unit x 120 gpd = 7,680 gpd**

As this project proposes new residential water service to greater than thirty (30) dwelling units, approval from the NJDEP, Bureau of Water System Engineering is required. Approval of this project by the NJDEP signifies that the municipality has adequate capacity to handle the additional flows and use.

## **3. Utilities**

Other utilities such as gas, electric, telephone and cable are readily available, either under or along West Main Street.

## **VI. RECOMMENDED ACTIONS AND MITIGATIONS**

### **A. Overview**

The proposed project has some potential environmental impacts for which mitigating measures should be examined.

### **B. Erosion and Sedimentation Control**

Soil erosion and sedimentation are concerns where ground disturbance activities are proposed, even with relatively level terrain. Some soil loss is inevitable, but sound construction and post-construction practices must be implemented to mitigate adverse impacts.

From initial clearing and demolition through completion of the project, an erosion and sedimentation control program is required and must meet the specifications of the Morris County Soil Conservation District. The district will issue a certification and conduct regular inspections to ensure that conditions of the approval are being met and that erosion and sedimentation is not occurring.

Standard practices and any other measures necessary to ensure erosion control shall be followed. These standard schedules and any adjustments agreed upon as part of the approval from the district are viewed as an acceptable limit of soil loss.

The following is a typical erosion and sediment control schedule:

#### During Construction - Temporary Measures

- (1) Ground limestone to be supplied at a rate to achieve the approved S.C.S. pH Factor.
- (2) Fertilizer at the rate of 11 lbs. per 1,000 square feet, using a 10-20-10 analysis or an equivalent.

- (3) Perennial and annual rye grass seed applied at not less than 1 lb. per 1,000 square feet.
- (4) Mulch shall be secured by liquefied mulch binder per New Jersey Standards on steep slopes.

Protection for undisturbed areas will be established prior to construction. Any drainage swales will be protected by jute meshing and the stabilization of adjacent soils. Lastly, excavated topsoil will be temporarily seeded.

#### Permanent Stabilization

Upon completion of construction, measures to assure continued sediment and erosion control will be put in place. A final planting of approved grass seed mixtures, complete with hay or straw mulch for stabilization, will be spread on exposed areas. A layer of topsoil will be spread before planting and mixed with fertilizer and ground limestone. The exposed areas are not large but require attention.

Vegetation removal should occur at one time for either the entire project or a defined phase so soil is not exposed to erosional forces during one particular event. Erosion and sedimentation control measures designed for a denuded surface should be put in place uniformly. Coordinated vegetation removal is important to controlling erosion and shall comply with any applicable Township requirements.

#### **C. Stormwater Management and Groundwater Protection**

Land disturbance and the construction of impervious surfaces at the subject property will result in changes to the stormwater runoff and groundwater recharge patterns at the site. Mitigation is required through the construction of stormwater management facilities that provide the necessary water quantity controls,

groundwater recharge and water quality treatment to meet State standards and the requirements of Rockaway Borough.

This project proposes to collect stormwater runoff from the development at an inlet and piping system and discharge the water to surface and subsurface detention and infiltration basins. Runoff from roof areas will be discharged to a subsurface infiltration basin at the north side of the building with overflow connections into the existing drainage system located within West Main Street. Groundwater recharge will be provided by this basin. Runoff from pavement areas will be collected and detained at a series of subsurface detention basins to control the rate of runoff from the site. Outflow from the basins will be piped into the existing West Main Street drainage system. One (1) manufactured water quality treatment device is proposed for the water quality treatment of outflow from one subsurface basin. The remaining subsurface basin will discharge to a surface infiltration basin for water quality treatment prior to discharge into the existing drainage system in accordance with NJDEP standards.

This project has been designed to comply with the NJDEP's Stormwater Management regulations at N.J.A.C. 7:8 and Borough of Rockaway requirements. The proposed stormwater management plan will be reviewed by the Rockaway Planning Board Engineer for compliance with applicable standards as part of the approval of this project. Approval of this project will signify compliance with the necessary standards and ensure that any stormwater impacts are appropriately mitigated.

## VII. LICENSES, PERMITS, OTHER APPROVALS

Preliminary & Final Subdivision/Site  
Plan Approval

Borough of Mountain Lakes

Subdivision and Site Plan Approval

Morris County Planning Board

Soil Erosion and Sediment  
Control Plan Certification

Morris County Soil  
Conservation District

Water System Permit

New Jersey Department of  
Environmental Protection

Treatment Works Approval Permit

New Jersey Department of  
Environmental Protection

Road Opening Permit

Morris County Planning Board

Building Permits

Borough of Rockaway

Certificate of Occupancy

Borough of Rockaway

## **VIII. SUMMARY OF RECOMMENDATIONS AND CONCLUSIONS**

This project proposes to subdivide the subject property into two (2) lots with one (1) lot along Mount Pleasant Avenue and the other and largest lot along West Main Street. The existing single-family dwelling at Mount Pleasant Avenue will be remain on the one (1) Mount Pleasant lot. At the West Main Street property, a portion of wooded area will be cleared and the land regraded for the construction of a three (3) story senior apartment building. The apartment building will contain sixty-four (64) one-bedroom dwelling units.

The proposed site activities along with an analysis of project plans revealed a limited set of environmental concerns. The potential environmental issues are related to soil erosion during construction and stormwater runoff from the proposed development. Regulations and standards at the local, County or State level define acceptable limits of environmental impact. If applications for permits and approvals are granted, then there is no adverse environmental impact by local, County or State standards.

## **IX. STATEMENT OF ALTERNATIVES**

Alternatives considered for this project included no build option and a scaled back site design. The no build option leaves the site in its current, undeveloped condition. Avoiding development of the subject property would eliminate any potential environmental impacts from the project. However, as noted above, the potential environmental impacts can be effectively managed and mitigated through proper construction practices, a comprehensive stormwater management plan and conformance with local, County and State requirements. Further, the proposed

development meets the intent and general requirements of the Borough of Rockaway zoning ordinance and therefore, this type of development was contemplated by the Borough for this site. The no build option was rejected because with proper mitigation measures, the proposed development is reasonable and a property owner has a right to reasonable use of the land.

A scaled back design would potentially result in less environmental impacts; however, given the current undeveloped nature of the site, the impacts from the proposed development outlined above would still be present. Since this application meets regulatory requirements and minimizes environmental impacts by proper mitigation, the scaled back design was also rejected because a property owner has a right to reasonable use of the land.

The project design as described in this report and accompanying materials was driven by zoning and land use ordinances. Disturbance has been limited to the fullest extent practicable and the proposed development will comply with the necessary local, County and State standards. The present application is considered to be a reasonable land use at this location. The application reflects an awareness of environmental concerns as required in the Borough of Rockaway Land Use and Zoning Ordinances.

## X. REFERENCES

Borough of Rockaway Land Use and Zoning Ordinances.

Collins, Beryl Robichaud, et al. 1994. Plant Communities of New Jersey. Rutgers University Press: New Brunswick, New Jersey.

Drake, Avery Ala, Jr., et al. 1996. Bedrock Geologic Map of Northern New Jersey. US Geological Survey: Washington D.C.

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Kricher, John C. 1988. Ecology of Eastern Forests. Houghton Mifflin Company: New York.

Stanford, Scott D. 1989. Surficial Geology of the Dover Quadrangle, New Jersey.

Stanford, Scott D., Witte, Ronald W., and Harper, David P. 2003. Hydrogeologic Character and Thickness of the Glacial Sediment of New Jersey.

Tedrow, J.C.F. 1986. Soils of New Jersey. Robert Kreiger Publishing Company: Malabar, Florida.

US Dept. of Agriculture, Soil Conservation Service. 1976. Soil Survey of Morris County.

US Dept. of the Interior, Geological Survey. 1997. Dover, NJ Quadrangle, New Jersey – Morris Co., 7.5 Minute Series (Topographic). US Geological Survey: Washington D.C.

Witte, Ron W. and Monteverde, Don H. 2006. Quaternary Geology and Geologic Material Resources of the Dover Quadrangle, Morris County, New Jersey.

**XI. QUALIFICATIONS OF PREPARER**

# DYKSTRA WALKER *DESIGN GROUP*

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## MARK GIMIGLIANO

Professional Engineer / Project Manager

### Education:

BA - Geography/University of Delaware/1993

MA - Geography/University of Georgia/1997

BS - Civil Engineering/New Jersey Institute of Technology/2007

### Professional Registration:

New Jersey – Professional Engineer License No. 24GE04767100

### Professional Experience:

Mr. Gimigliano has over nineteen (19) years of experience in civil engineering and environmental science. His background includes the performance, coordination and management of a wide range of engineering, environmental and land planning projects. He has extensive experience in the interaction with local, county, state and federal regulatory agencies and the successful review and approval of projects involving, among other things, Phase I Environmental Site Assessments, environmental impact statements, stormwater management design, wetland mitigation, floodplain delineation, dam inspection and rehabilitation, site planning and property subdivision.

### Project Experience:

#### ◆ **The Enclave at Mountain Lakes, Mountain Lakes, NJ**

Site planning, stormwater management design, wetland and floodplain permitting and environmental assessment for a forty (40) unit townhouse development. Responsibilities included project management, site plan design, stormwater management system design, New Jersey Department of Environmental Protection permitting and preparation of an Environmental Impact Statement.

#### ◆ **Budd Lake Elementary School, Mount Olive, NJ**

Preparation of a Phase I Environmental Site Assessment of the former Budd Lake School as part of a potential purchase of the property.

#### ◆ **Pinto Business Park, Montville, NJ**

Site planning, stormwater management design, wetland and floodplain permitting and environmental assessment for a 63,000 sf business park development. Responsibilities included project management, site plan design, stormwater management system design, New Jersey Department of Environmental Protection permitting and preparation of an Environmental Impact Statement.

# DYKSTRA WALKER *DESIGN GROUP*

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**MARK GIMIGLIANO**

**Professional Engineer / Project Manager**

◆ **Commercial Property, Bloomfield, NJ**

Preparation of a Preliminary Assessment of a former dentist office as part of a potential purchase of the property.

◆ **Shadow Lake Club, Franklin Lakes , NJ**

Regular and informal inspections of Shadow Lake Dam and Upper Shadow Lake Dam, including reporting and correspondence with the New Jersey Department of Environmental Protection Dam Safety Section. Responsibilities also included preparation of an operation and maintenance manual and updated to an emergency action plan.

◆ **Yetter's Diner, Augusta, NJ**

Preparation of a Phase I Environmental Site Assessment of a diner/restaurant as part of a potential purchase of the property.

◆ **Green Acres Property, Jefferson, NJ**

Preparation of a Preliminary Assessment and Site Investigation of a large tract of land along Route 15 in Jefferson Township as part of a potential purchase of the property by the State of New Jersey Green Acres program.

◆ **Former McNear Quarry, Roxbury, NJ**

Preparation of a Phase I Environmental Site Assessment of the 136 acre former McNear Quarry as part of a potential purchase of the property.

◆ **Dean Frey Equipment Sales, Wantage, NJ**

Preparation of a Phase I Environmental Site Assessment of a commercial/industrial property in Wantage as part of a potential purchase of the property.

◆ **Doug Hall Excavating, Roxbury, NJ**

Preparation of a Phase I Environmental Site Assessment of a commercial/industrial property in Roxbury as part of a potential purchase of the property.

◆ **Light Industrial Property, Roxbury, NJ**

Preparation of a Phase I Environmental Site Assessment of a commercial/industrial property in Roxbury as part of a potential purchase of the property.

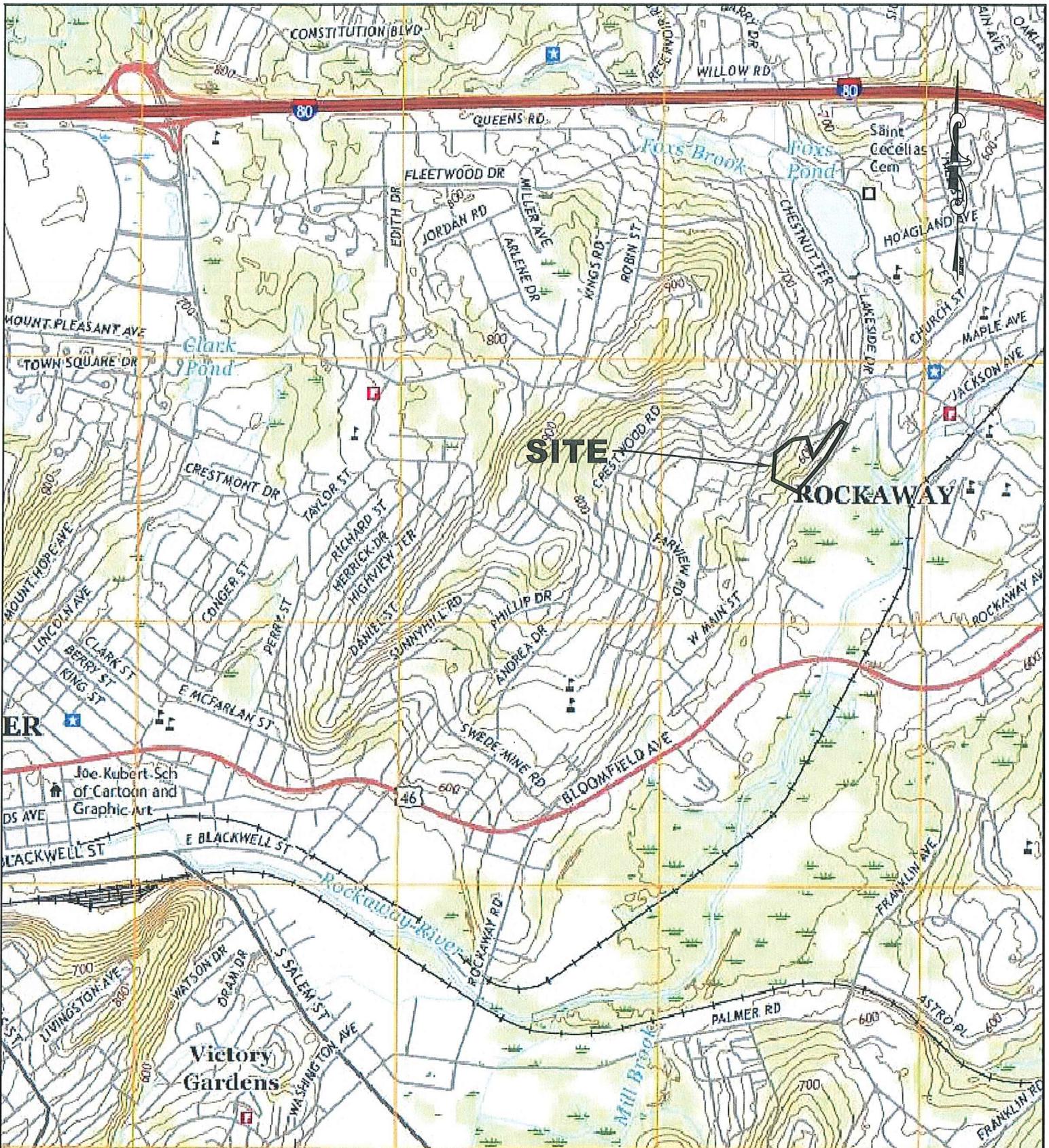
◆ **Environmental Permitting**

Director and author of over one hundred (100) wetland and floodplain studies, including delineation, permitting and mitigation.

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## FIGURES

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**DYKSTRA WALKER  
DESIGN DW GROUP**

PROFESSIONAL ENGINEERS, PLANNERS & SURVEYORS  
21 BOWLING GREEN PARKWAY, SUITE 204 · LAKE HOPATCONG, NJ 07849  
PHONE (973) 663-6540 · FAX (973) 663-0042

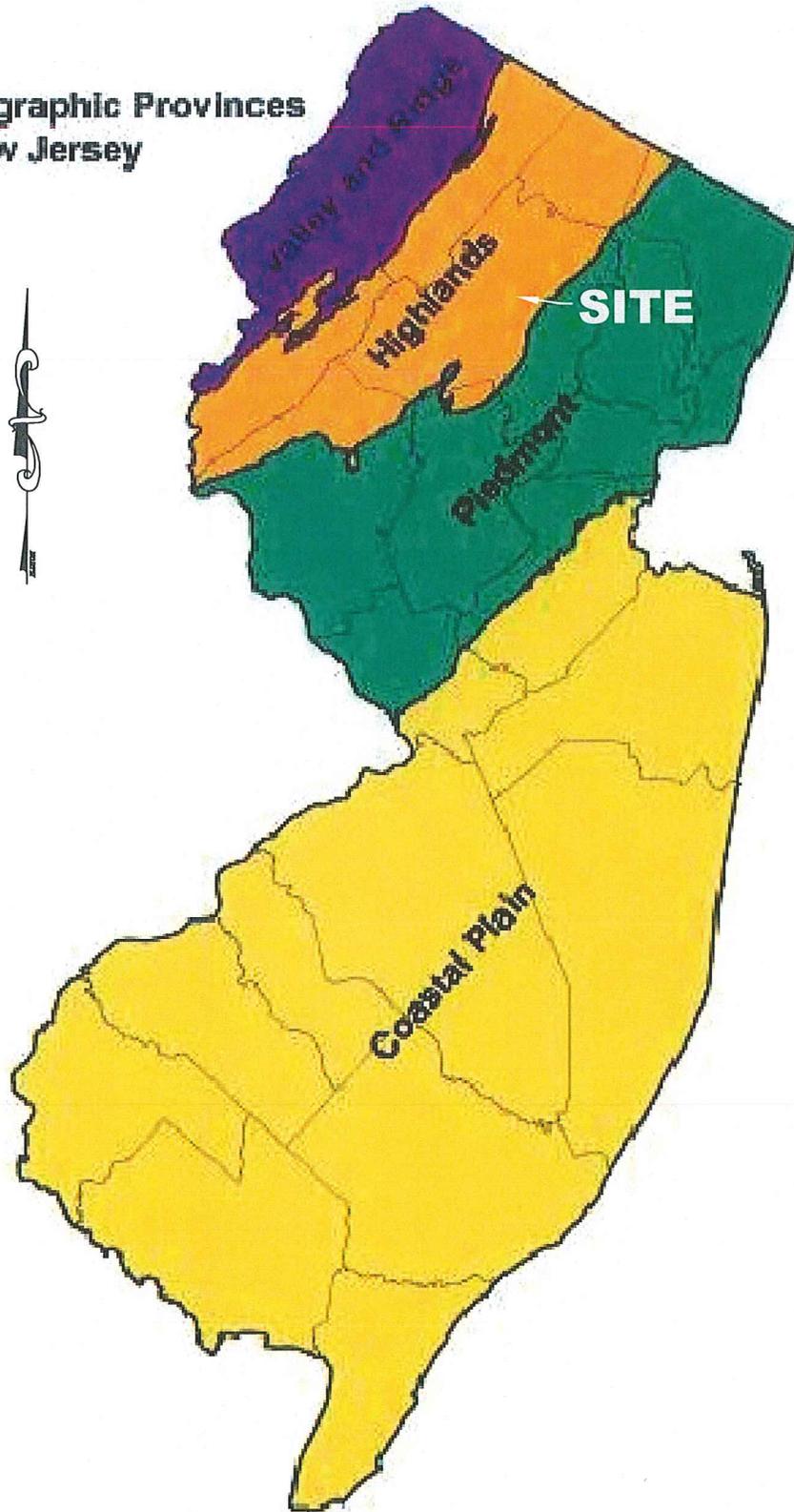
FIGURE 1 – USGS QUADRANGLE MAP  
PRELIMINARY SITE PLAN & SUBDIVISION  
BLOCK 73, LOT 65 (TAX MAP #13)  
WEST MAIN STREET (CR 513) &  
MOUNT PLEASANT AVENUE  
BOROUGH OF ROCKAWAY  
MORRIS COUNTY NEW JERSEY

PROJECT NO.: 04197

SCALE: 1"=1,200'+/-

DATE: 5/18/18

**Physiographic Provinces  
Of New Jersey**



County boundaries for reference only.

**DYKSTRA WALKER  
DESIGN DW GROUP**

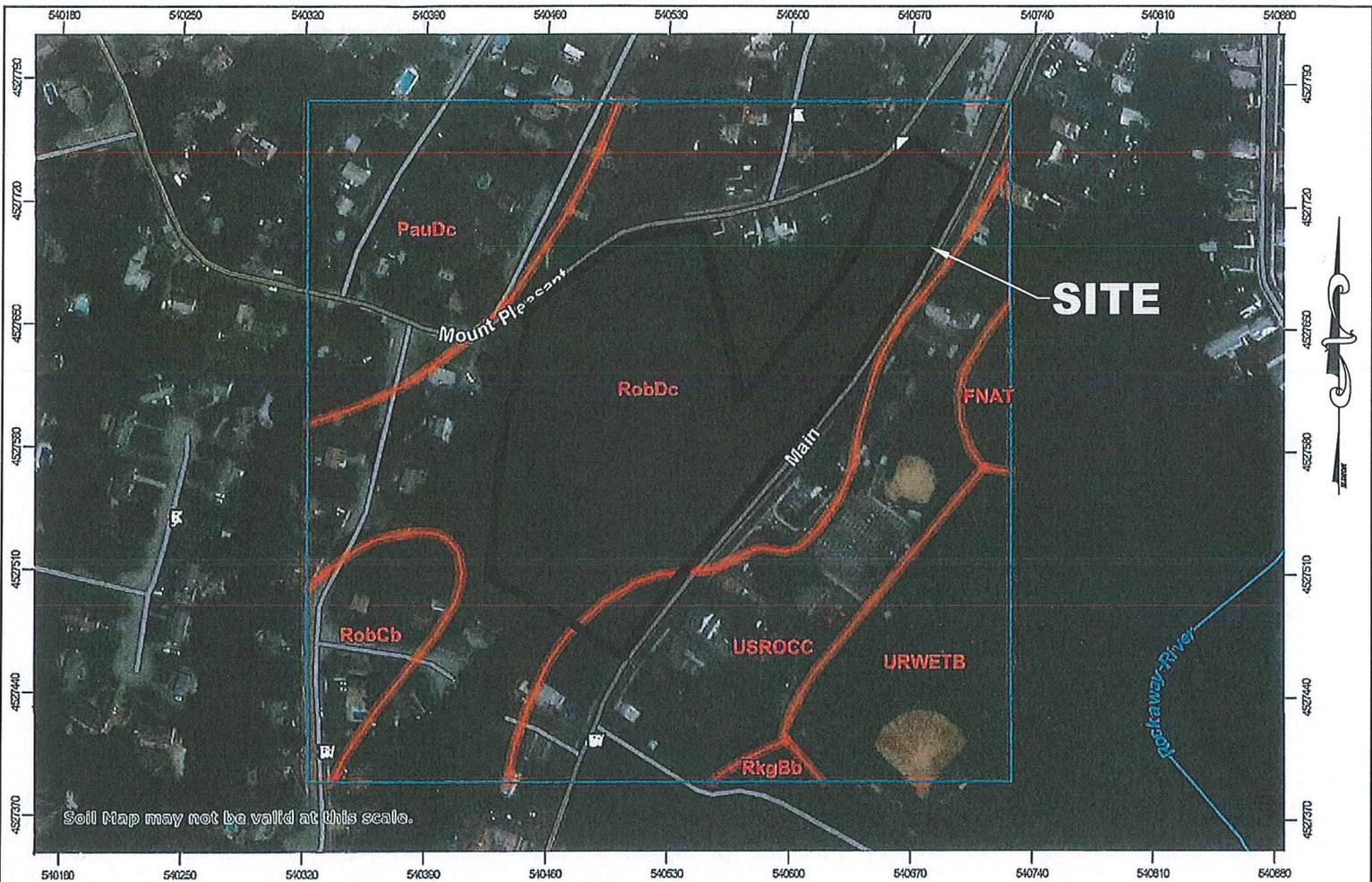
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PROFESSIONAL ENGINEERS, PLANNERS & SURVEYORS  
21 BOWLING GREEN PARKWAY, SUITE 204 · LAKE HOPATCONG, NJ 07849  
PHONE (973) 663-6540 · FAX (973) 663-0042

FIGURE 2 – PHYSIOGRAPHIC PROVINCE MAP  
PRELIMINARY SITE PLAN & SUBDIVISION  
BLOCK 73, LOT 65 (TAX MAP #13)  
WEST MAIN STREET (CR 513) &  
MOUNT PLEASANT AVENUE  
BOROUGH OF ROCKAWAY  
MORRIS COUNTY NEW JERSEY

PROJECT NO.: 04197

SCALE: NOT TO SCALE

DATE: 5/18/18



Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
FNAT	Fluvaquents and Udifluvents, 0 to 3 percent slopes, frequently flooded	0.5	1.3%
PauDc	Parker-Gladstone complex, 15 to 25 percent slopes, extremely stony	5.5	14.1%
RkgBb	Ridgebury loam, 0 to 8 percent slopes, very stony	0.2	0.5%
RobCb	Rockaway sandy loam, 8 to 15 percent slopes, very stony	1.9	4.9%
RobDc	Rockaway sandy loam, 15 to 25 percent slopes, extremely stony	19.7	50.6%
URWETB	Urban land, wet substratum, 0 to 8 percent slopes	3.7	9.6%
USROCC	Urban land-Rockaway complex, 3 to 15 percent slopes	7.4	19.0%
Totals for Area of Interest		39.0	100.0%

**DYKSTRA WALKER**  
**DESIGN DW GROUP**

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 PHONE (973) 663-6540 · FAX (973) 663-0042

**FIGURE 3 – SOILS MAP**

PRELIMINARY SITE PLAN & SUBDIVISION  
 BLOCK 73, LOT 65 (TAX MAP #13)  
 WEST MAIN STREET (CR 513) &  
 MOUNT PLEASANT AVENUE  
 BOROUGH OF ROCKAWAY  
 MORRIS COUNTY NEW JERSEY

PROJECT NO.: 04197

SCALE: 1" = 300'±

DATE: 5/18/18