

SUPREME COURT OF THE STATE OF NEW YORK  
COUNTY OF ROCKLAND

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In the Matter of

LENA BODIN, LYNDA GELLIS, NANCY KENT,  
SHERYL SANTI-LUKS, JOHN PORTA, ROBERT  
SOLOMON, SANDRA SOLOMON, EDITH THORNBURG,  
JOHN THORNBURG, ANNE WILLIAMS, WILLIAM  
ABRAMSKY, BARBARA ABRAMSKY, and HILLCREST  
FIRE COMPANY No. 1,

Index No. 149/12  
(Walsh, J.)

Petitioners-Plaintiffs,

For a Judgment pursuant to Article 78 of the CPLR,

- against -

**AFFIDAVIT OF  
ANDREW  
WILLINGHAM, P.E.  
IN SUPPORT OF  
VERIFIED PETITION  
AND COMPLAINT**

THE PLANNING BOARD OF THE TOWN OF RAMAPO,  
THE TOWN BOARD OF THE TOWN OF RAMAPO, THE  
TOWN OF RAMAPO, SCENIC DEVELOPMENT, LLC,  
FORTY- SIX- FIFTY TWO WADSWORTH TERRACE  
CORP., and NEWFIELDS ESTATES, INC.

Respondents-Defendants.

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STATE OF NEW YORK            )  
  ) ss:  
COUNTY OF ROCKLAND        )

ANDREW WILLINGHAM, being duly sworn, hereby deposes and, under penalties of perjury, states as follows:

1. I am Andrew Willingham. I am a licensed Professional Engineer. A copy of my resume is attached hereto as Exhibit "A." I submit this Affidavit in support of Petitioners' legal challenge, pursuant to Article 78 of the New York State Civil Practice Law and Rules to annul, vacate and set aside three (3) Decisions (the "Subject Decisions") issued by the Planning Board ("Planning Board") of the Town of Ramapo ("Town") on December 27, 2011 in connection with a development project, referred to as Patrick Farm (the "Project"), proposed for real property

located on the east side of Route 202, 0 feet south of Route 306 (the "Site").

2. The engineering firm that I work for, David Clouser and Associates ("Clouser"), was retained by Ramapo Organized for Sustainability and Safe Aquifer ("ROSA"), which represents the interests of many of the Petitioners, to assist it in its technical review of the materials underlying the Subject Decisions.

3. I set forth the results of my review of the Project materials in a detailed written submission, dated December 21, 2011, which was submitted during the Public Hearing held in conjunction with the Planning Board's issuance of the Subject Decisions. (The "December 21<sup>st</sup> Submission," copy annexed hereto as Exhibit "B"). I understand that a copy of this submission is contained in the Certified Record prepared by the Town at page 377-383, and that maps I prepared are set forth in the Record at pages 912-914.

4. As I advised the Planning Board in my December 21<sup>st</sup> Submission, the Project documentation fails to accurately depict the wetlands that exist on the Site.

5. Wetland areas that the Applicant's engineering consultant previously acknowledged are now not only missing from the Site Plans, but, are proposed to be developed.

6. As a result of the Planning Board's use of an inaccurate wetland delineation, the Planning Board failed to properly calculate, as required by the Town Code, the amount of developable land at the Site.

7. Section 376-42 of the Town Code requires that fifty percent (50%) of wetland areas must be subtracted from the lot area when determining minimum lot area (e.g. Subdivision) and maximum unit density (e.g. Site Plan).

8. By failing to factor in all wetlands on the Site, the Planning Board erroneously approved an illegally dense Project.

9. In addition, as set forth in my December 21<sup>st</sup> Submission, the Project materials contain a substantial error in its stormwater analysis, such that the Project lacks proper sized stormwater management structures.

10. Basic stormwater management planning mandates that post-development stormwater runoff rates correlate to pre-development stormwater runoff rates. This ensures that a project does not exacerbate flooding conditions in the area.

11. Our review indicates, however, that the Applicant has overestimated pre-development runoff. As a result the Applicant has not properly planned for post-development stormwater management, which will likely exacerbate downstream flooding.

### **Professional Experience**

12. I received a Bachelor of Science in Civil Engineering from the State University of New York at Buffalo in 2000.

13. Since graduating, I have worked for several engineering firms. I have been with David Clouser and Associates (“Clouser”) since 2005.

14. Clouser is an engineering consulting firm that specializes in Civil & Environmental Engineering, land planning and development, environmental reviews and assessments, as well as land surveying throughout the Hudson Valley.

15. Clouser currently serves as the Planning Board Review Engineer for numerous municipalities including the Towns of New Paltz, Plattekill, and Stanford, and the Villages of New Paltz and Millbrook. Our planning review services include subdivision and commercial site plan development review, with particular emphasis on SEQRA review, local code compliance, drainage and stormwater permitting requirements, state and federal wetland regulations, water supply and sewage disposal systems, and traffic and safety issues.

16. My responsibilities at Clouser include serving as a Senior Project Manager and Engineer for complex land development projects.

**The Approved Plans Do Not Reflect All Wetlands On Site**

17. Regarding the present project, our review focused primarily on engineering and associated environmental elements, with particular emphasis on stormwater management, wetlands, and conformance with zoning laws.

18. We advised the Planning Board in the December 21<sup>st</sup> Submission that a review of the Record clearly shows that the Project's wetland mapping shows that the mapping was crude, incomplete, and inaccurate.

19. By way of background, the Applicant's plans only reflect wetlands that are subject to the jurisdiction of the United States Army Corps of Engineers ("ACOE") and the New York State Department of Environmental Conservation ("DEC").

20. While these are certainly important wetlands, there may be wetlands on the Site other than those subject to ACOE and DEC jurisdiction.

21. In our experience, many of the site features shown on the plan, including the large pond, smaller ponds, and many of the tributaries on the Site would ordinarily qualify as wetlands. They are not, however, identified as such on the plans.

22. In any event, as discussed below, I believe the vast majority of wetlands that have not been mapped would be considered ACOE wetlands if that delineation process were conducted properly.

23. I prepared a Map, titled "W-1 – Wetland Mapping," which superimposes several standard wetland references onto the subject property, including both wetlands identified on the current development plans and likely additional wetland areas.

24. I understand that a copy of Map W-1 is included in the Certified Record at page 912. I understand, however, that this copy is in black and white. Attached hereto as Exhibit "B" is a copy of the Map in color, which is how it was provided to the Planning Board.

25. As shown on Map W-1, there are significant areas of the Site that should constitute wetlands under Town Code Section 376-42, but do not appear to have been properly included in the Applicant's plans submitted for review by the Planning Board's.

**The Site Almost Certainly Contains More ACOE Wetlands**

26. As we advised the Planning Board, the Site, further, almost certainly contains more wetlands that are subject to ACOE jurisdiction. Again, Section 376-42 of the Town Code obviously encompasses ACOE wetlands.

27. The Applicant's consultant also had previously identified ACOE wetlands on other areas of the Site, which are not shown on its current plans. The Applicant identified these areas in submissions it made to ACOE several years ago in response to a Cease and Desist Order.

28. The ACOE issued a Cease and Desist Order to the Applicant in 2004 in response to some evident, unauthorized wetland disturbances at the site. (See December 21<sup>st</sup> Submission at 2.)

29. In response, the Applicant's engineer, Leonard Jackson Associates, provided ACOE with recommended mitigation measures for some of these disturbed wetland areas. This was set forth in correspondence dated May 17, 2004.

30. The May 17, 2004 letter included a sketch of some of the disturbed areas, all of which were located to the north and southeast of the existing large pond located towards the western portion of the property. The purpose of this letter was to request permission from the ACOE to allow the Applicant to install erosion control measures in these regulated wetland

areas, in an effort to stabilize the previous disturbance.

31. Critically, *these same areas identified as wetlands in the Leonard Jackson Associates sketch are not identified as regulated wetlands on the current development plans.*

32. The Court is respectfully referred to the map attached to my December 21<sup>st</sup> Submission, entitled “W-2 – Wetland Disturbance – Pond Area”, which superimposes the areas identified as wetlands on the Applicant’s 2004 sketch submission to ACOE onto the current Site Plans.

33. I understand that a copy of Map W-2 is set forth in the Certified Record at page 913, but that it has been reproduced in black and white. To facilitate the Court’s understanding of the aforementioned problem, I have attached hereto as Exhibit “B” color copies of this Map, which is how it was originally presented to the Planning Board.

34. Map W-2 clearly shows not only that these regulated wetland areas are erroneously missing from the Site Plans, but, moreover, they are proposed to be disturbed by the development.

35. In our December 21<sup>st</sup> Submission, we urged the Planning Board to consider how it could reconcile the fact that certain Site areas constituted ACOE wetlands for the purposes of the 2004 Cease and Desist Order, with the fact that exactly the same areas are not identified ACOE wetlands on the current Plan. (December 21<sup>st</sup> Submission at 3.)

36. To my knowledge, however, the Planning Board made no effort to reconcile these conflicting facts.

37. Similarly, as we also advised the Planning Board, the record of the 2004 Cease and Desist Order quantifies more wetlands on the Site than are currently shown.

38. The “Memorandum of Record” attached to an ACOE letter to the Applicant,

dated May 17, 2004, indicates that a previous jurisdictional determination of the wetlands revealed that the Site consists of “28 acres of wetlands.”

39. The Applicant’s current plans, however, *only show 26.90 acres* of ACOE wetlands.

40. Again, we urged the Planning Board to clarify how the Site’s ACOE regulated wetlands could have been reduced by 1.1 acres since a previously approved wetland delineation. To my knowledge, however, the Planning Board did not provide a clarification.

41. Moreover, the 2004 ACOE documents actually indicate that there are more wetlands than the 28 acres acknowledged at that time. The caption under the last photo attached to the ACOE correspondence of May 17, 2004 indicates “*This particular wetland that was impacted had not appeared in a previous delineation*”. Since the previous delineation yielded 28 acres of wetlands, this statement implies that there are additional wetlands beyond the 28 acres previously mentioned.

42. We also included in the Maps submitted to the Planning Board ACOE wetland boundaries that were taken from the National Wetland Inventory (“NWI”) Mapping, which is published by the United States Fish and Wildlife Service. NWI mapping was created to provide general locations of known federally regulated (ACOE) wetlands. In our experience, the presence of ACOE wetlands on the property per NWI mapping results, on almost every occasion, in actual ACOE wetlands being field delineated in the same location. Further, field delineated ACOE wetlands are typically larger than shown on NWI Mapping.

43. Again, our review shows that the Applicant’s Plans do not show all wetlands identified in NWI Mapping.

44. As shown on Map W-2, again, an ACOE wetland is identified to be directly under

proposed parking areas and a building proposed as part of the Patrick Farm development.

**The Applicant's Claim That ACOE Confirmed  
The Site's Wetland Boundaries Appears Inaccurate**

45. I understand that the Applicant's engineering consultant represented to the Planning Board that it received "a letter from the USACOE dated January 5, 2011 . . . which confirms that no Corps of Engineers permits are required for the project as Wetlands and Waters of the United States have been avoided." (LJA, December 20, 2012 at 6.)

46. My review of the letter referenced by the Applicant's consultant indicates that it only concerns certain "arch culverts [that would] serve as pedestrian and linear transportation crossings."

47. The referenced "arch culverts," however, do not reflect the entire universe of the Project's impacts on ACOE wetlands.

48. By way of example, I again refer the Court to Map W-2, which we prepared. This Map shows that the roads and residential structures would be developed in ACOE wetlands.

49. As such, I respectfully submit that the Applicant's assertion that the ACOE January 5, 2011 letter "confirms that no Corps of Engineers permits are required for the project as Wetlands and Waters of the United States have been avoided" is misleading.

**DEC Wetlands Also Appear To Be Missing**

50. As shown on Map W-1, there is an approximately 1.2 acre area in the northeast portion of the DEC wetland referenced as "TH-30" that was previously identified by DEC staff in 1997 as a DEC regulated wetland. Specifically, the NYSDEC signed a wetland validation block on a map showing this additional wetland area. The map was entitled "Clarkstown Municipal Golf Course – Freshwater Wetlands Map", dated last revised July 24, 1997, prepared by Atzl, Scatassa & Zigler, P.C.



51. The current Site Plans, however, do not identify this area as wetland.

52. Clearly, the wetland delineation on the plans is inaccurate and must be amended to accurately show wetland areas and the proposed disturbance.

**Because The Planning Board Did Not Factor In All Wetlands On Site, It Approved An Illegally Dense Project**

53. As set forth in our December 21<sup>st</sup> submission, the Planning Board could not rationally determine whether the Project meets the Town of Ramapo's basic zoning requirements because the Site's wetlands have not been accurately delineated.

54. The Project density would be reduced if the wetlands on the site were properly delineated.

55. The Town Code requires that fifty percent (50%) of wetland areas must be subtracted from the lot area when determining minimum lot area (e.g. Subdivision) and maximum unit density (e.g. Site Plan). (See Town Code, § 376-42.)

56. Specifically, Section 376-42 of the Town Code establishes that the Planning Board must subtract at least fifty percent (50%) of land encumbered by wetlands and other sensitive properties when calculating minimum lot area or maximum unit density:

As part of any minimum lot area requirement of this chapter for all uses, not more than fifty percent of any land underwater, subject to or within the one-hundred-year-frequency floodplain, wetlands,.... shall be counted towards meeting the minimum lot area. .... The application of this section to any particular lot shall be the responsibility of the Town Planning Board at the time of subdivision or site development plan approval.

57. Again, based on our review of Site documentation and photographs, we are almost certain that all wetlands are not properly shown on the plans.

58. In addition, it does not appear that the Planning Board properly considered other areas that should be deducted in making density calculations pursuant to Section 376-42.

59. The Applicant, for example, appears to have subtracted the large pond on the Site as regulated “land underwater” pursuant to Section 376-42, but did not factor in the various streams or smaller ponds on the Site.

60. Similarly, there is a floodplain along Brian Brook, which affects lots 66, 67, 68, 71 and 72, which is not shown on the plan. The floodplain limit cannot be verified to determine if the density calculation is correct because it is not shown on the plans.

61. Moreover, Section 45(B)(4) of the Town Subdivision Code also indicates “*Low-lying lands along watercourses subject to flooding or overflowing during storm periods, whether or not included in areas for dedication, shall be preserved .... Such land or lands subject to periodic flooding shall not be computed in determining the number of lots to be utilized for average density procedure nor for computing the area requirement of any lot.*”

62. The proposed stormwater detention ponds are subject to flooding by design and should be subtracted from the minimum lot area.

63. Consequently, it appears that the Planning Board has approved an illegally dense Project.

**The Applicant’s Stormwater Pollution Prevention Plan Does not Meet Town Code**

64. Per Town Code Section 237-12(A)(1), stormwater management practices must be designed and constructed in accordance with the most current version of New York State Stormwater Management Design Manual (“Design Manual”).

65. The most current version of the Design Manual is dated August 2010 and includes substantial revisions from its previous version. The extensive revisions to the Design Manual include but are not limited to; requirements to infiltrate runoff volume, the use of “Green

Infrastructure Practices” and the requirement to decompact soils that are altered/disturbed during construction.

66. I am advised by Petitioners’ Counsel that Section 237-22 of the Town Code requires that a stormwater pollution prevention plan (“SWPPP”), consistent with the requirements set forth in the Code, is required for Site Plan approval.

67. Per our review of the project’s latest Stormwater Pollution Prevention Plan, dated last revised October 10, 2010, the project’s design does not conform or even acknowledge the current August 2010 Design Manual.

68. The extensive new requirements included in the August 2010 Design Manual have not been met.

69. The new Design Manual requirements were added to minimize the impact of impervious surfaces associated with new development. Specifically, the proposed stormwater management design must include infiltration and Green Infrastructure Practices that replenish the water table and mimic predevelopment hydrology. Additionally, the new Design Manual mandates that the stormwater management design require a Minimum Runoff Reduction calculated in accordance with the new Design Manual.

70. Conformance with the August 2010 Design Manual would likely require substantial revisions to the project’s Stormwater Pollution Prevention Plan (“SWPPP”) and stormwater management design.

71. The Planning Board has approved an SWPPP and associated stormwater management design that does not meet Town Code.

**The Applicant’s Stormwater Pollution Prevention Plan Is Premised On A Substantial Error, Which Could Exacerbate Downstream Flooding Conditions**

72. We also advised the Planning Board in our December 21<sup>st</sup> Submission that there was a substantial error in the Applicant's calculations regarding stormwater management.

73. Town Code Section 237-12(A)(1) requires conformance with the New York State Stormwater Management Design Manual, which mandates that post-development stormwater runoff rates be reduced to at or below pre-development stormwater runoff rates for applicable storm events. As such, consistent with the Design Manual requirements, the Town Code Section 237-8(C)(5) requires a “[c]omparison of post-development stormwater runoff conditions with predevelopment conditions.”

74. This requirement is intended to ensure that post-development runoff rates equal to or less than pre-development runoff rates in order to prevent downstream flooding caused by a proposed development.

75. Our review indicates, however, that the Applicant has overestimated pre-development runoff. As a result the Applicant has not properly planned for post-development stormwater management, which could exacerbate downstream flooding.

76. One of the fundamental and most important parameters in calculating runoff for a given drainage area is the Curve Number.

77. The Curve Number characterizes the runoff properties for a particular soil and ground cover. It is dependent on the soil types in the drainage area (defined by the Rockland County Soil Survey) and the ground cover conditions on the site, which are determined by the design engineer.

78. The higher the Curve Number assumed in the calculations for a specific drainage area, the more runoff will be calculated to discharge from that area, and vice versa for lower Curve Numbers.

79. Our review indicates that the Applicant's stormwater analysis contains a serious error involving the Curve Number used for the wooded areas on the Site.

80. The Site is currently almost entirely wooded. Therefore, the assumptions regarding the Curve Numbers used for wooded areas are critical.

81. By way of background, the Curve Numbers for "*Fair Condition*" are higher than for "*Good Condition*" – i.e., areas in a Fair Condition would have a higher runoff rate.

82. All of the wooded areas located on the property were assumed to be "*Woods in Fair Condition*", which is defined in the TR-55 method (i.e., the method used in the project's SWPPP) as "*Woods are grazed but not burned, and some forest litter covers the soil*".

83. To our knowledge, however, the woods on the Site are not grazed and forest litter adequately covers the soil. The analysis should have more accurately used "*Woods in Good Condition*," which is defined as "*Woods are protected from grazing, and litter and brush adequately cover the soil*".

84. In fact, nearly all of the wooded areas in the Hudson Valley should be characterized as "*Good Condition*", since the adequate rainfall and the climate in the area typically allows for dense vegetation and ground cover.

85. Indeed, the Applicant assumed that the wooded areas associated with the offsite drainage areas were in "*Good Condition*."

86. We advised the Planning Board that it should require the Applicant to explain why it characterized offsite wooded areas to be in a different condition than onsite wooded areas. It appears that the Planning Board did not provide an explanation.

87. Moreover, the Applicant's analysis assumed that the identical wooded areas in the pre-development condition, which were assumed for pre-development analysis to be in "*Fair*

Condition,” somehow would rise to being in “*Good Condition*” for the post-development condition. This is an obvious error.

88. The Curve Number – which generates the expected runoff rate – of undisturbed wooded areas would not change due to the development of land in other areas of the site. Development in other areas would not alter the perviousness of undisturbed areas, for example.

89. Thus, as we advised the Planning Board, the Applicant’s analysis is incorrect with regard to the Curve Numbers assumed for the undisturbed wooded areas. These wooded areas on the site are in “*Good Condition*” for the both the pre-development and post-development condition.

90. As a result of the Applicant’s mischaracterization of the wooded areas, it overestimated pre-development runoff.

91. As a result, the Applicant designed the post-development condition to provide runoff rates equal to the overestimated and inaccurate pre-development runoff rates. Therefore, the Project’s potential runoff impacts have been underestimated.

92. As a result, due to the overestimation of pre-development runoff, *the proposed detention ponds are likely undersized.*

93. As the Planning Board was aware, substantial flooding conditions are prevalent downstream. This was evidenced, for example, in video footage displayed to the Planning Board at the Project’s December 13, 2011 Public Hearing.

94. As approved, the Project could exacerbate existing flooding conditions because of the inadequately sized detention basins.

**The Applicant’s Plans Do not Meet The Requirements Of The Town’s Scenic District Law**

95. The property is located within the Town of Ramapo’s Scenic Road District which

triggers specific requirements under the Town Code (Local Law No. 7-2004).

96. Section 215-4(A)(3) of the Town Scenic District Law requires that the Planning Board “must find” that “important scenic and natural features of the site will be substantially preserved.”

97. Per our review of the plans, however, the Project will decimate the scenic and natural features of the Site with its extremely dense and highly visible development.

98. In addition, Section 215-4(A)(4)(e) of the Town Scenic Road Law requires that “[e]xisting vegetation shall be preserved to the maximum extent possible.” It establishes that “[e]very attempt shall be made to limit cutting so as to maintain native vegetation as a screen for structures as seen from road, parks and other public views within the Ramapo Scenic Road District.”

99. To the contrary, the Site’s perimeter vegetation will largely be removed and clear views of the Project from the surrounding roadways will result.

100. Per our review of the plans, there will be a clear view of the condominium buildings from the entrance drive along Route 202.

101. Unsightly stormwater detention ponds will also be in clear view.

102. As such, the Project design conflicts with the mandates of the Scenic Road Law.

*Andrew Willingham*  
ANDREW WILLINGHAM

Sworn to before me this  
23<sup>rd</sup> day of April 2012

*Deborah L. Mullin*  
Notary Public



DEBORAH L. MULLIN  
Notary Public, State of New York  
Reg. 011106145244  
Qualified in Ulster County  
Commission Expires May 01, 20 14





## ANDREW WILLINGHAM, P.E.

**POSITION** Associate Engineer  
David Clouser and Associates, New Paltz, New York

**PROFESSIONAL  
LICENSES** Professional Engineer of New York No. 83984

**EDUCATION** State University of New York @ Buffalo (1995-2000)  
Degree: B.S. Civil Engineering

**EXPERIENCE** **David Clouser and Associates**, (2005 - Present)  
New Paltz, New York – Project Engineer, Associate Engineer

**Oswald & Gillespie, P.C.**, (2003 – 2004)  
Hopewell Junction, New York – Project Engineer

**The Chazen Companies** (2000 – 2003)  
Poughkeepsie, New York – Staff Engineer, Project Engineer

### RESPONSIBILITIES AND PROJECT EXPERIENCE

Responsible for the management of land development, municipal, environmental, utility infrastructure and construction administration projects. Previous experience includes serving as project engineer/designer for multifaceted land development projects of varying scope and scale, providing management and technical expertise through complex review and permitting processes.

#### Land Planning and Development

Project manager and design engineer in charge of complex land development projects that include commercial and industrial site plans, residential subdivisions, stormwater management, small sewer and water infrastructure and treatment systems as well as recreational facilities. Guiding projects through the design, environmental review, permitting and construction process. Project scale ranges from small developments to massive land development projects.

#### Municipal Services

Serve as Assistant Town Engineer to various municipalities throughout the Hudson Valley Region, representing Planning Boards in reviewing development plans for conformance with local codes and ordinances, and advising the Board through SEQRA review procedures. Provide construction administration and inspection of infrastructure systems to be dedicated or owned by the municipality. Designed new recreation parks, bridges, roads and other improvements as needed by the municipality.

#### Environmental Services

Steer projects through the State Environmental Quality Review (SEQR) process and analyze a project's impact on the environment with regard to zoning, wetlands, stormwater, site disturbance, potable water, sanitary sewer and other potential impacts. Recommend mitigation measures to minimize impacts to the environment on behalf of developers, municipalities or concerned citizen groups.

#### Surveying and Mapping

Manage survey crew for land survey projects that include engineering design, property boundary, construction stakeout and land development projects.

#### Construction Administration

Provide construction management and inspection services for quality assurance and conformance with approved documents. Projects involve utility installation, road construction, erosion and sediment control, general excavation, septic system installation and stormwater management.

### **AFFILIATIONS / COMMUNITY SERVICE**

Member - American Society of Civil Engineers  
Town of New Paltz Environmental Conservation Commission –  
Past Member



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December 21, 2011

Town of Ramapo Planning Board  
237 Route 59  
Suffern, NY 10901

Re: Patrick Farm Site Plan / Subdivision  
State Routes 202 & 306  
Town of Ramapo, New York  
**Technical Evaluation of Project Documents**

Dear Mr. Chairman and Members of the Planning Board:

Our firm has been retained by Rockland Organized for Sustainability and Safe Aquifer (ROSA) to review the submitted Site Plan and Subdivision Approval materials for the proposed Patrick Farm Development. Our review focused primarily on the engineering and associated environmental elements of the proposed project, with particular emphasis on stormwater management, wetlands, and conformance with zoning laws. The following review comments are being submitted on behalf of our client, to be entered into the public hearing record for this proposed development.

## **I. Summary of Review Findings**

Our review of the Site Plans and Subdivision materials was conducted to determine whether substantive impacts associated with the proposed development require further investigation and to identify if the project's design meets Town Zoning Code requirements and other applicable laws.

The results of our review indicate that the project documentation:

- Does not demonstrate conformance with basic Town of Ramapo Zoning requirements.
- Does not include an accurate depiction of the regulated wetlands that exist on the site.
- Does not include an accurate stormwater analysis and proper sizing of stormwater management structures.

The following details the substantial errors and omissions regarding the Site Plan/ Subdivision application, failure to correctly map onsite wetlands and the clear nonconformance with Town of Ramapo Zoning Laws.

## II. Wetlands

As the Board knows, in any proposed land development, it is critical to properly identify the location of regulated wetlands on a site. The direct impact and disturbance of wetlands is regulated by multiple governmental agencies, therefore it is critical that the wetlands are delineated on the plans accurately to ensure compliance with all applicable laws.

### Conformance with Zoning

The Town of Ramapo requires a subtraction of 50% of area that is considered wetlands. Specifically, §376-42 (A) states "*As part of any minimum lot area requirement of this chapter for all uses, not more than fifty percent of any land underwater, subject to or within the one-hundred-year-frequency floodplain, wetlands, .... shall be counted towards meeting the minimum lot area. .... The application of this section to any particular lot shall be the responsibility of the Town Planning Board at the time of subdivision or site development plan approval.*"

Clearly, an accurate delineation of the wetlands on the site has a substantial effect on the development potential of a property with regard to the project's conformance to the basic zoning requirements within the Town of Ramapo. Specifically, 50% of wetland areas must be subtracted from the lot area when determining minimum lot area (e.g. Subdivision) or maximum unit density (e.g. Site Plan).

Despite the clear need to properly identify the site's wetlands to determine conformance with Town Code, we found that this task was completed in crude, incomplete and inaccurate fashion, as further detailed below. As a result, the Applicant has not shown that the project meets the Town of Ramapo's basic zoning requirements and we believe the project density would be substantially reduced if the wetlands on the site were properly delineated.

### ACOE Wetlands

Per our review of the project plans, the proposed limit of land disturbance comes to within inches of the federally regulated Army Corps of Engineer's (ACOE) wetlands that are identified on the plans. When a development's limits are directly adjacent to regulated wetland areas, it is critical that the regulatory agency's staff confirm the wetland delineation that has been delineated by the Applicant's consultants. In our experience, a wetland delineation will often change after the review of the wetland delineation by the regulatory agency.

Per our review of the documentation provided by the Applicant, the confirmation and documentation of the ACOE regulated wetlands on the site by ACOE staff is fragmented and incomplete. After a review of historic documentation and site photos, we are almost certain that all of the regulated wetlands are not properly shown on the plans.

The ACOE issued a cease and desist order in 2004 (See "Memorandum of Record" that is attached to an ACOE letter addressed to the Applicant dated May 17, 2004) in response to some evident wetland disturbances at the site. Although it is not clear exactly where some of the areas were located (no maps were provided in the ACOE reports), the applicant's engineer, Leonard

Jackson Associates, provided a recommendation for mitigation of some of these disturbed wetland areas in a correspondence from their office to the ACOE dated May 17, 2004. The letter included a sketch of some of the disturbed areas, all of which were located to the north and southeast of the existing large pond located in the western portion of the property. The purpose of the letter was to request permission from the ACOE to allow the Applicant to install erosion control measures in these regulated wetland areas, in an effort to stabilize the previous disturbance.

These same areas identified as wetlands in the Leonard Jackson Associates sketch are not identified as regulated wetlands on the current development plans. Please see the attached map entitled "W-2 – Wetland Disturbance – Pond Area", prepared by this office. We have superimposed the areas identified as wetlands on the Leonard Jackson Associates sketch onto the current Site Plans. The map clearly shows that these regulated wetland areas are not only erroneously missing from the Site Plans, they are proposed to be disturbed by the development. It must be clarified as to how certain areas would warrant a cease and desist order from the ACOE for their disturbance, whereas these exact same areas are not identified and subsequently regulated as ACOE wetlands on the current plan.

ACOE wetland boundaries were also taken from National Wetland Inventory Mapping, which is published by the United States Fish and Wildlife Service. As shown on map W-2 , an ACOE wetland is identified to be directly under parking and a building proposed as part of the Patrick Farm development. Clearly, the wetland delineation on the plans is inaccurate and must be amended to accurately show wetland areas and the proposed disturbance.

The "Memorandum of Record" that is attached to an ACOE letter addressed to the Applicant dated May 17, 2004 indicates that a previous jurisdictional determination of the wetlands revealed that the site consists of "28 acres of wetlands". Per our review of the current plans, 26.90 acres of ACOE regulated wetlands are shown. It must be clarified how the site's ACOE regulated wetlands have been reduced by 1.1 acres since a previously approved wetland delineation.

The caption under the last photo attached to the ACOE correspondence of May 17, 2004 indicates "*This particular wetland that was impacted had not appeared in a previous delineation*". Although it was unclear where this particular wetland is located, the statement implies that there are additional wetlands beyond the 28 acres previously mentioned.

#### NYSDEC Wetlands

In our experience, many of the site features shown on the plan, including the large pond, smaller ponds, and many of the tributaries on the site typically qualify as ACOE and/or NYSDEC wetlands, however most are not identified as such on the plans. Per the attached drawing "W-1 – Wetland Mapping" prepared by this office, several wetland references have been superimposed onto the subject property, including wetlands identified on the current development plans and likely additional wetland areas. Please note that an approximate 1.2 acre area in the northeast portion of NYSDEC wetland TH-30 was previously identified by NYSDEC staff in 1996 as NYSDEC regulated wetland. However, the current site development plans do not identify that

area as wetland. Additionally, we believe the wetlands within and connected to the pond (both to the north and to the south) have a high potential to be interconnected with NYSDEC wetland TH-14, which is located to the west of the proposed development. Should these areas be deemed wetland and connected to Wetland TH-14, a 100-foot regulated wetland buffer would be imposed on these wetlands which would likely substantially alter the Patrick Farm development layout to allow compliance with NYSDEC permit requirements.

### **III. Stormwater**

#### Conformance with 2010 NYSDEC Design Manual

As the Board knows, the project requires coverage for the discharge of stormwater under the NYSDEC administered SPDES Permit GP-0-10-001. As a requirement of this permit, the project's Stormwater Pollution Prevention Plan (SWPPP) and associated stormwater management design must be in conformance with the latest New York State Stormwater Management Design Manual (hereafter referred to as the "Design Manual").

The Design Manual was revised in August 2010, which included substantial revisions from the previous edition. Among the many new requirements within the 2010 Design Manual, are minimum infiltration volume (Runoff Reduction Volume – RRV), the required use of Green Infrastructure Practices, and the requirement to decompact altered/disturbed soils. Per our review of the latest SWPPP (dated 10/04/10) provided by the Applicant, there is no conformance with or acknowledgement whatsoever of the revised Design Manual.

Per NYSDEC policy, to be "grandfathered" under the previous Design Manual, the project must have received the necessary permits from the NYSDEC, or have filed a Notice of Intent which would authorize the project under the General SPDES Permit on or before March 1, 2011. It should be noted that the filing of a Notice of Intent would require signoff on the SWPPP from the Stormwater Management Officer for the Town of Ramapo, since the town is a designated MS4 (Municipal Separate Storm Sewer System) municipality. To our knowledge, the project has not received permits from the NYSDEC nor has a Notice of Intent been filed with the NYSDEC. Therefore, the project's SWPPP must be revised in accordance with the August 2010 Design Manual.

As mentioned above, the new requirements are extensive, which will likely require a substantial change in the projects proposed stormwater management design. The most notable revisions to the Design Manual relate to the need to provide infiltration into the subsoil with detailed, specific calculations required per the Design Manual in this regard, and to be shown in the SWPPP. The calculations were not provided in the latest SWPPP.

The revised Design Manual also has requirements for soil decompaction of disturbed soils. If soil decompaction is not undertaken at the site, substantial revisions to the calculations are necessary to account for the reduced perviousness of the soil. This information was not provided or accounted for in the latest SWPPP.



The project's SWPPP must be revised to be in conformance with SPDES permit GP-0-10-001, which requires conformance with the latest Design Manual of August 2010. With the Ramapo Sole Source Aquifer directly underneath the property and the issues associated with that water supply (lack of quantity in the summer months), the issue of providing infiltration of stormwater (recharge) becomes even more substantial.

### Runoff Curve Numbers

One of the fundamental and most important parameters in calculating runoff for given drainage areas is the Curve Number. The higher the curve number assumed in the calculations for a specific drainage area, the more runoff will be calculated to discharge from that area, and vice versa for lower curve numbers. The curve number is dependent on the soil types in the drainage area (defined by the Rockland County Soil Survey) and the ground cover conditions on the site, which are determined by the design engineer.

As a requirement under the NYSDEC SPDES permit, the post-development runoff rates must be limited to the pre-development runoff rates to prevent downstream flooding caused by the proposed development. Per our review, a substantial error exists in the calculations that has overestimated runoff in the pre-development condition and subsequently incorrectly predicted that the project will not have a runoff impact downstream.

Specifically, the error involved the Curve Number used for the wooded areas on the site. The property is currently almost entirely wooded, therefore the assumptions regarding the curve numbers used for wooded areas are critical. All of the wooded areas located on the property were assumed to be "*Woods in Fair Condition*", which is defined in the TR-55 method (method is used in the project's SWPPP) as "*Woods are grazed but not burned, and some forest litter covers the soil*". To our knowledge, the woods on the site are not grazed and forest litter adequately covers the soil. The analysis should have more accurately used "*Woods in good condition*", which is defined as "*Woods are protected from grazing, and litter and brush adequately cover the soil*". Nearly all of the wooded areas in the Hudson Valley should be characterized as "*Good Condition*", since the adequate rainfall and the climate in the area typically allows for dense vegetation and ground cover.

The Curve Numbers for "*Fair Condition*" are higher than for "*Good Condition*", therefore the result is an overestimation of pre-development runoff, and a subsequent underestimation of the runoff impacts when compared to the post-development condition.

The wooded areas associated with the offsite drainage areas analyzed were assumed to be in "*Good Condition*". It must be clarified how it was determined that the offsite wooded areas are in a different condition than onsite wooded areas.

Moreover, the analysis assumed that the identical wooded areas in the pre-development condition that were assumed to be in "*Fair Condition*" became in "*Good Condition*" for the post-development condition. This is an obvious error, since undisturbed wooded areas would not change perviousness due to the development of land in other areas of the site. The analysis is incorrect with regard to the Curve Numbers assumed for the wooded areas. The wooded areas

on the site are in “Good Condition” for the both the pre-development and post-development condition.

The analysis must be revised to accurately represent site conditions and accurately estimate the project’s impact with regard to stormwater runoff. Due to the overestimation of pre-development runoff, the proposed detention ponds are likely undersized. As the Board knows, substantial flooding conditions are prevalent downstream, as evidenced in video footage displayed at the project’s 12/13/11 Public Hearing.

#### **IV. Viewshed/Scenic Drive**

The property is located within the Town of Ramapo Scenic Road District which has requirements under the Town Code (Local Law No. 7-2004). The law requires that the project substantially preserve the scenic and natural features of the site. Per our review of the plans, the development will decimate the scenic and natural features of the site with extremely dense and highly visible development.

The law also requires that the project preserve existing vegetation to screen structures from public view. To the contrary, the site’s perimeter vegetation will largely be removed providing clear views of the project from the surrounding roadways. Per our review of the plans, there will be a clear view of the condominium buildings from the entrance drive along Route 202 buildings with very little existing vegetation and no noticeable screening preserved. Unsightly stormwater detention ponds will be at the forefront of the view. The development’s design does not meet the requirements of this section of law in any regard.

#### **V. Zoning Conformance**

##### Lot Width

According to the Town Zoning Code, lot width is measure at the front setback line (50’ setback in R-40) with a minimum lot width of 160’. The Subdivision Plans (see bulk table on Subdivision Plat Sheets 1 and 2) show that Lots 10, 11, 12, 13, 22, and 65 do not have the minimum 160’ lot width. The table also inaccurately states that Lots 69, 70 and 71 have over 350 feet of lot width each, when they actually all have less than 160’. There are nine (9) lots that do not meet the minimum lot width requirements.

§376-42 (D) allows the Board to reduce the lot width, however, we could not find any record of the Board granting this waiver. In fact, the Preliminary Approval Resolution states “*No lot width variances are sought or required.*”(Comment 18)

##### Lands Underwater/Subject to Flooding

§376-42 (A) states that fifty (50%) percent of any land underwater, subject to or within the 100-year floodplain, wetlands, overhead utility easements and steep slopes 25% or greater must be subtracted from the minimum lot area. For lands underwater, we question the Applicant’s rational to subtract the farm pond but not the streams or smaller ponds.

With regard to lots 66, 67, 68, 71 and 72 the floodplain along Brian Brook is not shown on the plan. The floodplain limit cannot be verified to determine if the density calculation is correct because it is not shown on the plans.

§45 (B) (4) of the Subdivision Code also indicates "*Low-lying lands along watercourses subject to flooding or overflowing during storm periods, whether or not included in areas for dedication, shall be preserved .... Such land or lands subject to periodic flooding shall not be computed in determining the number of lots to be utilized for average density procedure nor for computing the area requirement of any lot.*" The proposed stormwater detention ponds are subject to flooding by design and should be subtracted from the minimum lot area.

#### **VI. Conclusions and Recommendation -**

As detailed above, an inaccurate delineation of the wetlands on the property prevents the determination of the project's conformance with basic zoning requirements. The Board should require, at a minimum, an accurate delineation of all of the wetlands on site with meaningful correspondence and documentation from the ACOE and NYSDEC regarding their review and approval of the wetland delineation proposed by the Applicant. The stormwater management calculations are incorrect, resulting in the likely undersizing of the proposed stormwater management ponds and runoff impacts downstream caused by the development.

We strongly urge the Board to require the Applicant to provide the very basic information above before any further consideration of this project.

Thank you for your consideration of this matter and appreciate the opportunity to provide these comments. Please feel free to contact me at your convenience with any questions or comments.



Sincerely,  
David Clouser & Associates

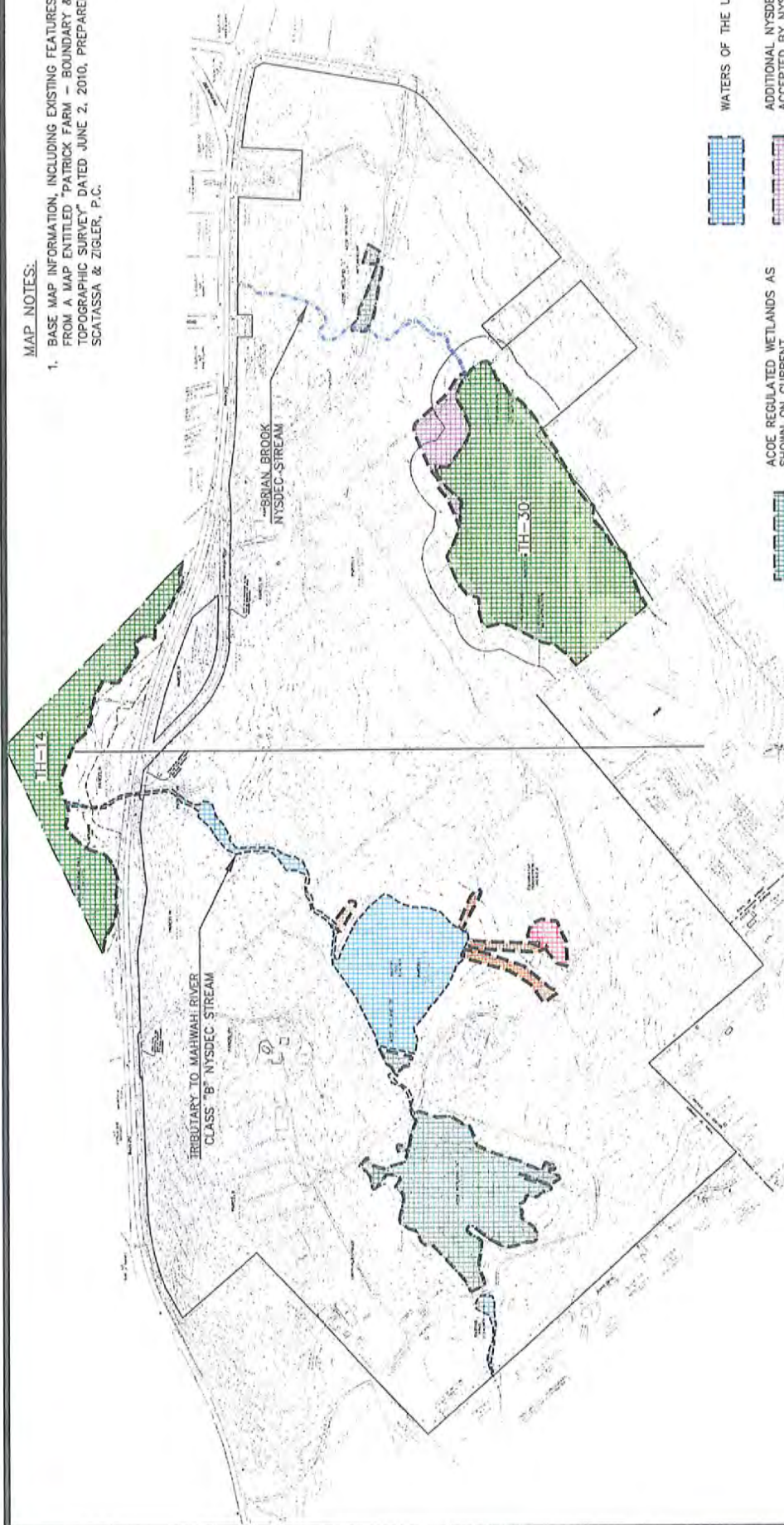
A handwritten signature in black ink that reads "Andrew Willingham".

Andrew Willingham, PE  
NYS Professional Engineer No. 083984

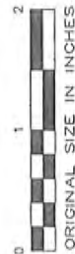
cc: Suzanne Mitchell / ROSA

**MAP NOTES:**

1. BASE MAP INFORMATION, INCLUDING EXISTING FEATURES TAKEN FROM A MAP ENTITLED "PATRICK FARM - BOUNDARY & TOPOGRAPHIC SURVEY" DATED JUNE 2, 2010, PREPARED BY ATZL, SCATASSA & ZIGLER, P.C.



- IDENTIFIED AS ACOE WETLANDS ON NATIONAL WETLANDS INVENTORY MAPPING
- ACOE REGULATED WETLANDS AS SHOWN ON CURRENT DEVELOPMENT PLANS FOR PATRICK FARM
- NYSDEC REGULATED WETLANDS AS SHOWN ON CURRENT DEVELOPMENT PLANS FOR PATRICK FARM
- WETLAND AREAS DISTURBED IN 2004, WHICH RESULTED IN A CEASE & DESIST ORDER FROM THE ARMY CORPS OF ENGINEERS
- ADDITIONAL NYSDEC WETLANDS ACCEPTED BY NYSDEC STAFF ON 08/23/96
- WATERS OF THE UNITED STATES



DATE	DRAWN BY
12/09/11	AVW
PROJECT NO.	
80039	
SHEET NO.	
W-1	

**WELAND DISTURBANCE**  
 PATRICK FARM  
 ROCKLAND ORGANIZED FOR SUSTAINABILITY & A SAFE ADUIFER  
 STATE ROUTES 202/08  
 ROCKLAND COUNTY, NEW YORK

**David Clouser & Associates**  
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REV	DATE	DESCRIPTION

  
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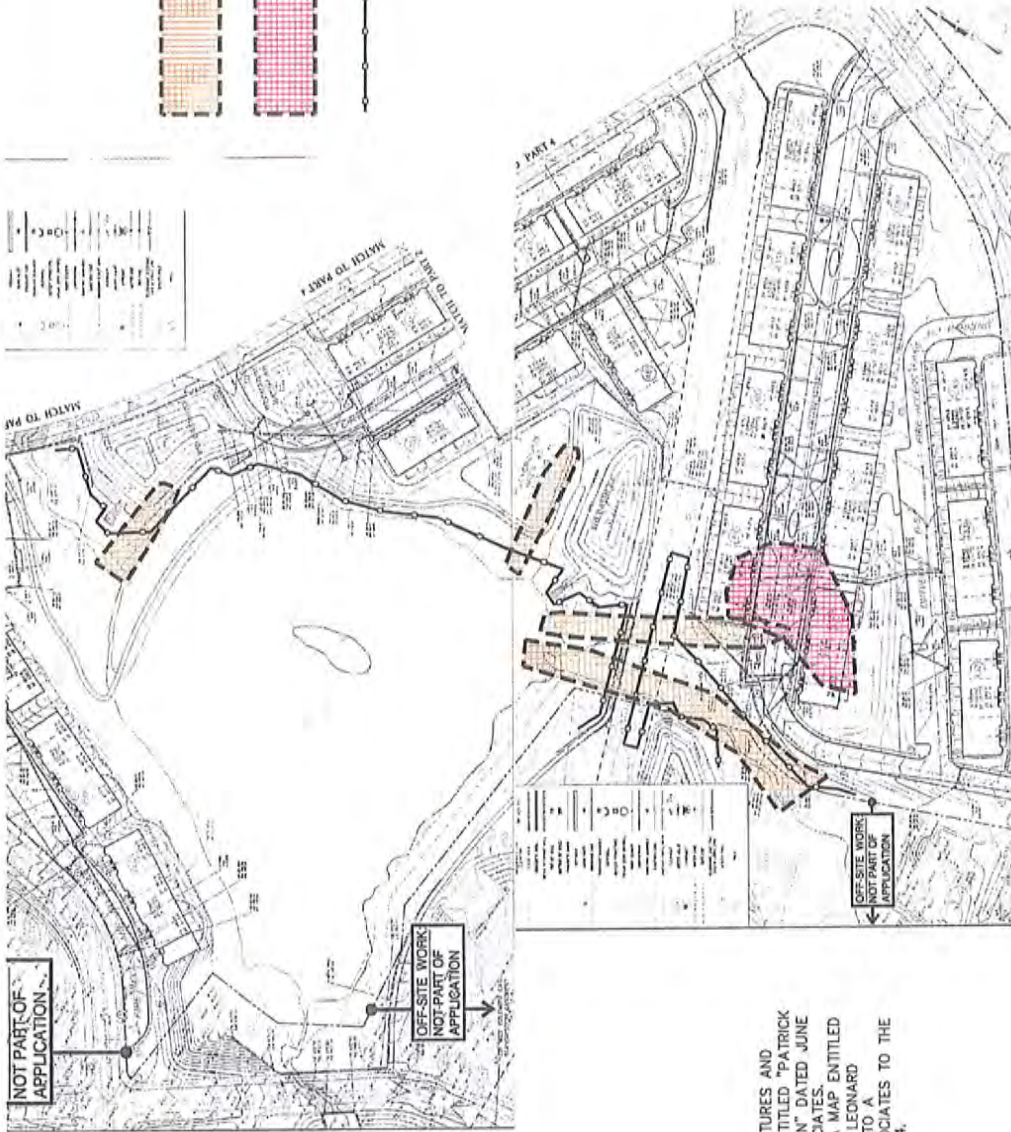


1	Wetland Areas Disturbed in 2004	Orange Hatched Area
2	Wetlands Identified as ACOE Wetlands on National Wetlands Inventory Mapping	Pink Hatched Area
3	Approximate Proposed Limit of Disturbance per Current Proposed Development Plans	Black Dashed Line

WETLAND AREAS DISTURBED IN 2004, WHICH RESULTED IN A CEASE & DESIST ORDER FROM THE ARMY CORPS OF ENGINEERS

IDENTIFIED AS ACOE WETLANDS ON NATIONAL WETLANDS INVENTORY MAPPING

APPROXIMATE PROPOSED LIMIT OF DISTURBANCE PER CURRENT PROPOSED DEVELOPMENT PLANS



**MAP NOTES:**

1. BASE MAP INFORMATION, INCLUDING EXISTING FEATURES AND PROPOSED DEVELOPMENT TAKEN FROM A MAP ENTITLED "PATRICK FARM CONDOMINIUM - GRADING & DRAINAGE PLAN" DATED JUNE 2, 2010, PREPARED BY LEONARD JACKSON ASSOCIATES.
2. DISTURBED WETLAND AREAS WERE TAKEN FROM A MAP ENTITLED "SKETCH 1" DATED JUNE 7, 2004, PREPARED BY LEONARD JACKSON ASSOCIATES. THE MAP WAS ATTACHED TO A CORRESPONDENCE FROM LEONARD JACKSON ASSOCIATES TO THE ARMY CORPS OF ENGINEERS DATED MAY 17, 2004.



DATE	DRAWN BY
12/09/11	AVW
PROJECT NO.	
80039	
SHEET NO.	
W-2	

**WELAND DISTURBANCE - POND AREA**

PATRICK FARM  
 ROCKLAND ORGANIZED FOR SUSTAINABILITY & A SAFE AQUIFER  
 STATE ROUTES 202/205  
 TOWN OF RAMAPO  
 ROCKLAND COUNTY, NEW YORK

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