Appendix A

Notices and Scoping Document for DEIS

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SEQR

Intention to be Lead Agency

This notification is for the purpose of designating a lead agency according to the requirements of Article 8 of New York State Environmental Conservation Law for the following proposed action:

Date: August 17, 2017

To: All Involved Agencies

From: Village of Warwick Planning Board 77 Main Street Warwick, NY 10990 Orange County, NY George Aulen, Chairman

Project Title: Village View Estates Cluster Subdivision Warwick, NY 10990

Description of Proposed Action: To develop a cluster subdivision with 45 lots on property located on the corner of Woodside Dr. and Locust St. in the Village of Warwick.

This notification is being sent to involved agencies with the request that you consent to our agency serving as Lead Agency. If, however, you do not agree, you may follow the procedures outlined in 6NYCRR 617.6(b)(5).

Attachments to This Notice:

- 1) Environmental Assessment Form (Part 1)
- 2) Site Plan

A copy of this Notice is being sent to the following Involved Agencies:

Town of Warwick Planning Board 32 Kings Hwy. Warwick, NY 10990 Attn: Ben Astorino, Chairman

NYS Department of Transportation 3233 Route 6 Middletown, NY 10940 Attn: Kimberley A. Henken Orange County Dept. of Planning 124 Main Street Goshen, NY 10924 Attn: David Church

Town of Warwick 32 Kings Hwy Warwick, NY 10990 Attn: Town Board Orange County Dept. of Health 124 Main St. Goshen, NY 10924

NYS Office of Parks, Recreation & Historic Field Services Bureau-Peebles Island P.O. Box 189 Waterford, NY 12188-0189 NYS Dept. of Environmental Conservation 21 South Putt Corner Rd. Region 3 New Paltz, NY 12561

US Army Corps of Engineering Regulatory Branch-New York District Room 1937 26 Federal Plaza New York, New York 10278

Village of Warwick Village Board 77 Main St. Warwick, NY 10990

Full Environmental Assessment Form Part 1 - Project and Setting

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the project sponsor to verify that the information contained in Part 1 is accurate and complete.

A. Project and Sponsor Information.

Name of Action or Project:		
Project Location (describe, and attach a general location map):		
Brief Description of Proposed Action (include purpose or need):		
Name of Applicant/Sponsor:	Telephone:	
	E-Mail:	
Address:		
City/PO:	State:	Zip Code:
Project Contact (if not same as sponsor; give name and title/role):	Telephone:	I
	E-Mail:	
Address:		
City/PO:	State:	Zip Code:
Property Owner (if not same as sponsor):	Telephone:	
	E-Mail:	
Address:		
City/PO:	State:	Zip Code:

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial		
Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Council, Town Board, □ Yes □ No or Village Board of Trustees		
b. City, Town or Village □ Yes □ No Planning Board or Commission		
c. City Council, Town or □ Yes □ No Village Zoning Board of Appeals		
d. Other local agencies \Box Yes \Box No		
e. County agencies \Box Yes \Box No		
f. Regional agencies \Box Yes \Box No		
g. State agencies \Box Yes \Box No		
h. Federal agencies \Box Yes \Box No		
i. Coastal Resources. <i>i</i> . Is the project site within a Coastal Area	, or the waterfront area of a Designated Inland Wate	erway? □ Yes □ No
<i>ii.</i> Is the project site located in a communi <i>iii.</i> Is the project site within a Coastal Erosi	ty with an approved Local Waterfront Revitalization on Hazard Area?	n Program? \Box Yes \Box No \Box Yes \Box No

C. Planning and Zoning

C.1. Planning and zoning actions.	
 Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? If Yes, complete sections C, F and G. If No, proceed to question C.2 and complete all remaining sections and questions in Part 1 	□ Yes □ No
C.2. Adopted land use plans.	
a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located?	□ Yes □ No
If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located?	□ Yes □ No
 b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) If Yes, identify the plan(s): 	□ Yes □ No
 c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? If Yes, identify the plan(s): 	□ Yes □ No

 a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. If Yes, what is the zoning classification(s) including any applicable overlay district? b. Is the use permitted or allowed by a special or conditional use permit? c. Is a zoning change requested as part of the proposed action? If Yes, <i>i</i>. What is the proposed new zoning for the site? C.4. Existing community services. a. In what school district is the project site located? b. What police or other public protection forces serve the project site? 	
b. Is the use permitted or allowed by a special or conditional use permit? c. Is a zoning change requested as part of the proposed action? If Yes, <i>i</i> . What is the proposed new zoning for the site?	□ Yes □ No
 c. Is a zoning change requested as part of the proposed action? If Yes, i. What is the proposed new zoning for the site? C.4. Existing community services. a. In what school district is the project site located? b. What police or other public protection forces serve the project site? c. Which fire protection and emergency medical services serve the project site?	□ Yes □ No
C.4. Existing community services. a. In what school district is the project site located? b. What police or other public protection forces serve the project site? c. Which fire protection and emergency medical services serve the project site?	□ Yes □ No
a. In what school district is the project site located? b. What police or other public protection forces serve the project site? c. Which fire protection and emergency medical services serve the project site?	
b. What police or other public protection forces serve the project site?	
c. Which fire protection and emergency medical services serve the project site?	
e. When the protection and emergency medical services serve the project site:	
d. What parks serve the project site?	

D. Project Details

D.1. Proposed and Potential Development	
a. What is the general nature of the proposed action (e.g., residential, industrial components)?	l, commercial, recreational; if mixed, include all
b. a. Total acreage of the site of the proposed action?	acres
b. Total acreage to be physically disturbed?	acres
c. Total acreage (project site and any contiguous properties) owned	
or controlled by the applicant or project sponsor?	acres
c. Is the proposed action an expansion of an existing project or use?	□ Yes □ No
<i>i</i> . If Yes, what is the approximate percentage of the proposed expansion and square feet)? % Units:	identify the units (e.g., acres, miles, housing units,
d. Is the proposed action a subdivision, or does it include a subdivision?	\Box Yes \Box No
If Yes,	
<i>i</i> . Purpose or type of subdivision? (e.g., residential, industrial, commercial; if	f mixed, specify types)
<i>ii.</i> Is a cluster/conservation layout proposed?	\Box Yes \Box No
<i>iii</i> . Number of lots proposed?	
<i>iv.</i> Minimum and maximum proposed lot sizes? Minimum Ma	ximum
e. Will proposed action be constructed in multiple phases?	\Box Yes \Box No
<i>i</i> . If No, anticipated period of construction:	months
<i>ii.</i> If Yes:	
• Total number of phases anticipated	
• Anticipated commencement date of phase 1 (including demolition)	month year
Anticipated completion date of final phase	monthyear
 Generally describe connections or relationships among phases, includ determine timing or duration of future phases: 	ing any contingencies where progress of one phase may

f. Does the proje	ct include new resi	dential uses?			\Box Yes \Box No
If Yes, show nun	nbers of units prop	osed.			
	One Family	Two Family	Three Family	Multiple Family (four or more)	
Initial Phase					
At completion					
of all phases					
g. Does the prop	osed action include	new non-residentia	al construction (inclu	iding expansions)?	\Box Yes \Box No
If Yes,	_				
<i>i</i> . Total number	r of structures		1 1. 4.		
<i>iii</i> Approximate	(in feet) of largest p	space to be heated	neight;	Width; and length	
		space to be neated			
n. Does the propo	s creation of a wat	er supply reservoir	pond lake waste la	a result in the impoundment of any	\Box Yes \Box No
If Yes,		er suppry, reservon	, pond, lake, waste h	agoon of other storage:	
<i>i</i> . Purpose of the	e impoundment:				
<i>ii</i> . If a water imp	ooundment, the prin	ncipal source of the	water:	□ Ground water □ Surface water stream	ms \Box Other specify:
<i>iii</i> . If other than w	water, identify the t	type of impounded/	contained liquids and	d their source.	
<i>iv.</i> Approximate	size of the propose	ed impoundment.	Volume:	million gallons: surface area:	acres
v. Dimensions of	of the proposed dan	n or impounding str	ructure:	height; length	
vi. Construction	method/materials	for the proposed da	m or impounding st	ructure (e.g., earth fill, rock, wood, cond	crete):
					
D 2 Project Or	erations				
a Does the prop	osed action include	any excavation m	ning or dredging d	uring construction operations or both?	□ Ves □ No
(Not including	general site prepar	ration, grading or in	stallation of utilities	or foundations where all excavated	
materials will	remain onsite)	with, grading of in			
If Yes:					
<i>i</i> .What is the pr	urpose of the excav	vation or dredging?			·····
<i>ii</i> . How much ma	iterial (including ro	ock, earth, sediment	s, etc.) is proposed t	o be removed from the site?	
• Volume	(specify tons of cu	101c yards):			
• Over wi	re and characterist	ics of materials to h	e excavated or dreds	ged and plans to use manage or dispos	e of them
				jou, and plans to use, manage of alspos	
$\frac{1}{1}$ will there be	onsite dewatering	or processing of ex	cavated materials?		□ Ves □ No
If yes, descri	ibe.	or processing of ex			
v. What is the to	otal area to be dred	ged or excavated?		acres	
<i>vi</i> . What is the n	naximum area to be	e worked at any one	time?	acres	
vii. What would	be the maximum de	epth of excavation of excavati	or dredging?	teet	
<i>viii.</i> will the exc	te reclamation goal	sung? Is and plan:			
	te reclamation goal				
b. Would the pro	posed action cause	or result in alteration	on of, increase or de	crease in size of, or encroachment	\Box Yes \Box No
into any exist	ing wetland, waterl	oody, shoreline, bea	ch or adjacent area?		
II Yes: i Identify the y	vetland or waterba	dy which would be	affected (by name	water index number watland man numb	er or geographic
<i>i</i> . Identify the v	venanu or water 000	uy which would be	anceleu (by name, v	vater much number, wettand map numb	or or geographic
		·····			

<i>ii.</i> Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placem alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in so	nent of structures, or quare feet or acres:
<i>iii.</i> Will proposed action cause or result in disturbance to bottom sediments? If Yes, describe:	□ Yes □ No
<i>iv.</i> Will proposed action cause or result in the destruction or removal of aquatic vegetation? If Yes:	\Box Yes \Box No
acres of aquatic vegetation proposed to be removed:	
expected acreage of aquatic vegetation remaining after project completion:	
• purpose of proposed removal (e.g. beach clearing, invasive species control, boat access):	
proposed method of plant removal:	
if chemical/herbicide treatment will be used, specify product(s):	
v. Describe any proposed reclamation/mitigation following disturbance:	
c. Will the proposed action use, or create a new demand for water?	□ Yes □ No
If Yes:	
<i>i</i> . Total anticipated water usage/demand per day: gallons/day	
<i>u</i> . Will the proposed action obtain water from an existing public water supply?	\Box Yes \Box No
 Name of district or service area: 	
 Does the existing public water supply have capacity to serve the proposal? 	□ Yes □ No
 Is the project site in the existing district? 	\Box Yes \Box No
 Is expansion of the district needed? 	\Box Yes \Box No
• Do existing lines serve the project site?	\Box Yes \Box No
<i>iii.</i> Will line extension within an existing district be necessary to supply the project?	\Box Yes \Box No
If Yes:	
Describe extensions or capacity expansions proposed to serve this project:	
• Source(s) of supply for the district:	
<i>iv.</i> Is a new water supply district or service area proposed to be formed to serve the project site? If, Yes:	□ Yes □ No
Applicant/sponsor for new district:	
Date application submitted or anticipated:	
Proposed source(s) of supply for new district:	
<i>v</i> . If a public water supply will not be used, describe plans to provide water supply for the project:	
vi. If water supply will be from wells (public or private), maximum pumping capacity: gallons/m	inute.
d. Will the proposed action generate liquid wastes?	\Box Yes \Box No
If Yes:	
<i>i</i> . Total anticipated liquid waste generation per day: gallons/day	11 components and
approximate volumes or proportions of each).	in components and
<i>iii.</i> Will the proposed action use any existing public wastewater treatment facilities?	□ Yes □ No
If Yes:	
Name of wastewater treatment plant to be used:	
 Invalue of district. Does the existing wastewater treatment plant have consolity to some the project? 	
 Is the project site in the existing district? 	$\Box \operatorname{Ves} \Box \operatorname{No}$
 Is expansion of the district needed? 	\Box Yes \Box No
- is expansion of the district needed:	

• Do existing sewer lines serve the project site?	□ Yes □ No
• Will line extension within an existing district be necessary to serve the project?	□ Yes □ No
If Vec.	100 110
 Describe extensions or canacity expansions proposed to serve this project: 	
• Describe extensions of capacity expansions proposed to serve this project.	
	· · · · · · · · · · · · · · · · · · ·
<i>iv.</i> Will a new wastewater (sewage) treatment district be formed to serve the project site?	\Box Yes \Box No
If Yes:	
• Applicant/sponsor for new district:	
• Date application submitted or anticipated:	
• What is the receiving water for the wastewater discharge?	
v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including spec	cifying proposed
receiving water (name and classification if surface discharge, or describe subsurface disposal plans):	<i>y</i> 01 1
vi. Describe any plans or designs to capture, recycle or reuse liquid waste:	
e. will the proposed action disturb more than one acre and create stormwater runoff, either from new point	\Box Y es \Box No
sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point	
source (i.e. sneet now) during construction of post construction?	
11 I CS.	
<i>i</i> . How much impervious surface will the project create in relation to total size of project parcel?	
Square feet or acres (narcel size)	
<i>ii</i> Describe types of new point sources	
iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent r	properties,
groundwater, on-site surface water or off-site surface waters)?	1 ,
If to surface waters, identify receiving water bodies or wetlands:	
If to surface waters, identify receiving water bodies or wetlands:	
If to surface waters, identify receiving water bodies or wetlands:	□ Yes □ No
If to surface waters, identify receiving water bodies or wetlands: Will stormwater runoff flow to adjacent properties? Will stormwater runoff flow to adjacent properties?	□ Yes □ No □ Yes □ No
If to surface waters, identify receiving water bodies or wetlands: Will stormwater runoff flow to adjacent properties? iv. Does proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? f. Does the proposed action include, or will it use on site, one or more sources of air emissions, including fuel	□ Yes □ No □ Yes □ No
If to surface waters, identify receiving water bodies or wetlands: Will stormwater runoff flow to adjacent properties? Will stormwater runoff flow to adjacent properties? iv. Does proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion waste incineration or other processes or operations?	□ Yes □ No □ Yes □ No □ Yes □ No
If to surface waters, identify receiving water bodies or wetlands: Will stormwater runoff flow to adjacent properties? Will stormwater runoff flow to adjacent properties? iv. Does proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? If Yes_identify:	□ Yes □ No □ Yes □ No □ Yes □ No
If to surface waters, identify receiving water bodies or wetlands: Will stormwater runoff flow to adjacent properties? Will stormwater runoff flow to adjacent properties? iv. Does proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? If Yes, identify: Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)	□ Yes □ No □ Yes □ No □ Yes □ No
If to surface waters, identify receiving water bodies or wetlands:	□ Yes □ No □ Yes □ No □ Yes □ No
If to surface waters, identify receiving water bodies or wetlands:	□ Yes □ No □ Yes □ No □ Yes □ No
If to surface waters, identify receiving water bodies or wetlands:	□ Yes □ No □ Yes □ No □ Yes □ No
If to surface waters, identify receiving water bodies or wetlands:	□ Yes □ No □ Yes □ No □ Yes □ No
If to surface waters, identify receiving water bodies or wetlands: Will stormwater runoff flow to adjacent properties? iv. Does proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? If Yes, identify: i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles) ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers) iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)	□ Yes □ No □ Yes □ No □ Yes □ No
If to surface waters, identify receiving water bodies or wetlands:	□ Yes □ No □ Yes □ No □ Yes □ No □ Yes □ No
If to surface waters, identify receiving water bodies or wetlands: If to surface waters, identify receiving water bodies or wetlands: Will stormwater runoff flow to adjacent properties? Will stormwater runoff flow to adjacent properties? Will stormwater runoff flow to adjacent properties? Will be proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? If Yes, identify: i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles) ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers) iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation) g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit?	□ Yes □ No □ Yes □ No □ Yes □ No □ Yes □ No
If to surface waters, identify receiving water bodies or wetlands: If to surface waters, identify receiving water bodies or wetlands: Will stormwater runoff flow to adjacent properties? Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? If Yes: If Yes: If the project site leagted in an Air anality non attainment area? (Area rantingly or paridially fails to most	□ Yes □ No □ Yes □ No □ Yes □ No □ Yes □ No □ Yes □ No
 If to surface waters, identify receiving water bodies or wetlands: Will stormwater runoff flow to adjacent properties? <i>iv</i>. Does proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? If Yes, identify: <i>i</i>. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles) <i>ii</i>. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers) <i>iii</i>. Stationary sources during operations (e.g., process emissions, large boilers, electric generation) g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? If Yes: <i>i</i> Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) 	□ Yes □ No □ Yes □ No
 If to surface waters, identify receiving water bodies or wetlands:	□ Yes □ No □ Yes □ No
 If to surface waters, identify receiving water bodies or wetlands:	□ Yes □ No □ Yes □ No
 If to surface waters, identify receiving water bodies or wetlands: Will stormwater runoff flow to adjacent properties? <i>iv</i>. Does proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? If Yes, identify: 	□ Yes □ No □ Yes □ No □ Yes □ No □ Yes □ No □ Yes □ No
 If to surface waters, identify receiving water bodies or wetlands:	□ Yes □ No □ Yes □ No □ Yes □ No □ Yes □ No □ Yes □ No
If to surface waters, identify receiving water bodies or wetlands:	□ Yes □ No □ Yes □ No □ Yes □ No □ Yes □ No □ Yes □ No
If to surface waters, identify receiving water bodies or wetlands:	□ Yes □ No □ Yes □ No □ Yes □ No □ Yes □ No □ Yes □ No
If to surface waters, identify receiving water bodies or wetlands:	□ Yes □ No □ Yes □ No □ Yes □ No □ Yes □ No □ Yes □ No

 h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? If Yes: <i>i</i>. Estimate methane generation in tons/year (metric): <i>ii</i>. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generation to generation). 	□ Yes □ No generate heat or
electricity, flaring):	
 i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust): 	□ Yes □ No
j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services?	□ Yes □ No
<i>i</i> . When is the peak traffic expected (Check all that apply): □ Morning □ Evening □ Weekend □ Randomly between hours of to <i>ii</i> . For commercial activities only, projected number of semi-trailer truck trips/day:	
 <i>iv.</i> Does the proposed action include any shared use parking? <i>v.</i> If the proposed action includes any modification of existing roads, creation of new roads or change in existing 	□ Yes □ No access, describe:
 <i>vi.</i> Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? <i>vii</i> Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? <i>viii.</i> Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? 	□ Yes □ No □ Yes □ No □ Yes □ No
 k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? If Yes: i. Estimate annual electricity demand during operation of the proposed action: 	□ Yes □ No
<i>ii.</i> Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/other):	local utility, or
<i>iii.</i> Will the proposed action require a new, or an upgrade to, an existing substation?	\Box Yes \Box No
1. Hours of operation. Answer all items which apply. ii. During Operations: i. During Construction: ii. During Operations: • Monday - Friday: • Monday - Friday: • Saturday: • Saturday: • Holidays: • Holidays:	

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both?	\Box Yes \Box No
If yes:	
<i>i</i> . Provide details including sources, time of day and duration:	
<i>ii.</i> Will proposed action remove existing natural barriers that could act as a noise barrier or screen? Describe:	\Box Yes \Box No
n Will the proposed action have outdoor lighting?	\Box Yes \Box No
<i>i</i> . Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:	
<i>ii.</i> Will proposed action remove existing natural barriers that could act as a light barrier or screen?	□ Yes □ No
Describe:	
o. Does the proposed action have the potential to produce odors for more than one hour per day?	\Box Yes \Box No
occupied structures:	
p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage?	\Box Yes \Box No
If Yes:	
<i>i</i> . Product(s) to be stored	
<i>iii.</i> Generally describe proposed storage facilities:	
q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides,	□ Yes □ No
If Yes:	
<i>i</i> . Describe proposed treatment(s):	
<i>ii</i> Will the proposed action use Integrated Pest Management Practices?	□ Yes □ No
r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal	\Box Yes \Box No
of solid waste (excluding hazardous materials)?	
<i>i</i> . Describe any solid waste(s) to be generated during construction or operation of the facility:	
Construction: tons per (unit of time)	
• Operation : tons per (unit of time)	
 Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste: Construction: 	
Operation:	
iii. Proposed disposal methods/facilities for solid waste generated on-site:	
Construction:	
• Operation:	·····

s. Does the proposed action include construction or modification of a solid waste management facility?	🗆 Yes 🗆 No
If Yes:	
<i>i</i> . Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting,	landfill, or
other disposal activities):	
<i>ii.</i> Anticipated rate of disposal/processing:	
• Tons/month, if transfer or other non-combustion/thermal treatment, or	
• Tons/hour, if combustion or thermal treatment	
iii. If landfill, anticipated site life: years	
t. Will proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste?	\Box Yes \Box No
If Yes:	
<i>i</i> . Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility:	
<i>ii</i> . Generally describe processes or activities involving hazardous wastes or constituents:	
<i>III.</i> Specify amount to be handled of generatedtons/month	
<i>W.</i> Describe any proposals for on-site minimization, recycling or reuse of nazardous constituents:	······
	<u></u>
v Will any hazardous wastes be disposed at an existing offsite hazardous waste facility?	□ Yes □ No
If Yes: provide name and location of facility:	- 105 - 110
If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:	
E. Site and Setting of Proposed Action	
E.1. Land uses on and surrounding the project site	

а	Existing	land	uses
ч.	Lindenia	iuna	abeb.

i. Check all uses that occur on, adjoining and near the project site.

□ Industrial □ Commercial □ Urban

□ Residential (suburban)

□ Forest □ Agriculture □ Aquatic

□ Rural (non-farm) \Box Other (specify): _

ii. If mix of uses, generally describe:

b. Land uses and covertypes on the project site. Land use or Current Acreage After Change **Project Completion** (Acres +/-) Covertype Acreage Roads, buildings, and other paved or impervious • surfaces Forested • Meadows, grasslands or brushlands (non-• agricultural, including abandoned agricultural) Agricultural ٠ (includes active orchards, field, greenhouse etc.) Surface water features • (lakes, ponds, streams, rivers, etc.) Wetlands (freshwater or tidal) • Non-vegetated (bare rock, earth or fill) • • Other Describe:

c. Is the project site presently used by members of the community for public recreation?<i>i.</i> If Yes: explain:	□ Yes □ No
 d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? If Yes, <i>i</i>. Identify Facilities: 	□ Yes □ No
 e. Does the project site contain an existing dam? If Yes: <i>i</i>. Dimensions of the dam and impoundment: 	□ Yes □ No
• Dam height: feet	
Dam length: feet	
Surface area:acres	
Volume impounded: gallons OR acre-feet	
<i>ii.</i> Dam's existing hazard classification:	
iii. Provide date and summarize results of last inspection:	
	- 37 - 31
I. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facil If Yes:	□ Yes □ No ity?
<i>i</i> . Has the facility been formally closed?	\Box Yes \Box No
If yes, cite sources/documentation:	
<i>ii.</i> Describe the location of the project site relative to the boundaries of the solid waste management facility:	
<i>iii.</i> Describe any development constraints due to the prior solid waste activities:	
 g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? If Yes: <i>i</i> Describe waste(s) handled and waste management activities including approximate time when activities occurrent. 	□ Yes □ No
 h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? If Yes: 	□ Yes □ No
<i>i</i> . Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply:	□ Yes □ No
□ Yes – Spills Incidents database Provide DEC ID number(s):	
□ Yes – Environmental Site Remediation database Provide DEC ID number(s):	
<i>ii.</i> If site has been subject of RCRA corrective activities, describe control measures:	
<i>iii.</i> Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? If yes, provide DEC ID number(s):	□ Yes □ No
<i>iv.</i> If yes to (i), (ii) or (iii) above, describe current status of site(s):	

v. Is the project site subject to an institutional control limiting property uses?	\Box Yes \Box No
If yes, DEC site ID number:	
Describe the type of institutional control (e.g., deed restriction or easement):	
Describe any use limitations: Describe any engineering controls:	
 Will the project affect the institutional or engineering controls in place? 	\Box Yes \Box No
 Explain: 	- 105 - 116
E.2. Natural Resources On or Near Project Site	
a. What is the average depth to bedrock on the project site? feet	
b. Are there bedrock outcroppings on the project site?	\Box Yes \Box No
If Yes, what proportion of the site is comprised of bedrock outcroppings?%	
c Predominant soil type(s) present on project site:	0/
	^{/0}
	%
d. What is the average depth to the water table on the project site? Average: feet	
e. Drainage status of project site soils: Well Drained: % of site	
□ Moderately Well Drained:% of site	
\Box Poorly Drained% of site	
f. Approximate proportion of proposed action site with slopes: 0-10%: % of site	
$\Box 10-15\%: \qquad \qquad \ \ \ \ \ \ \ \ \ \ \ \ $	
\Box 15% or greater:% of site	
g. Are there any unique geologic features on the project site?	\Box Yes \Box No
If Yes, describe:	
h. Surface water features.	
<i>i</i> . Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers,	\Box Yes \Box No
ponds or lakes)?	
u. Do any wetlands or other waterbodies adjoin the project site?	\Box Yes \Box No
If Yes to either <i>l</i> or <i>ll</i> , continue. If No, skip to E.2.1.	
<i>iii.</i> Are any of the wettands of waterbodies within of adjoining the project site regulated by any rederal, state or local agency?	
<i>iv.</i> For each identified regulated wetland and waterbody on the project site, provide the following information	on:
Streams: Name Classification	
• Lakes or Ponds: Name Classification	
Wetlands: Name Approximate Siz	e
• Wetland No. (If regulated by DEC)	
waterbodies?	
If yes, name of impaired water body/bodies and basis for listing as impaired:	
i. Is the project site in a designated Floodway?	\Box Yes \Box No
j. Is the project site in the 100 year Floodplain?	\Box Yes \Box No
k. Is the project site in the 500 year Floodplain?	\Box Yes \Box No
1. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer?	\Box Yes \Box No
If Yes:	
<i>i</i> . Name of aquiter:	

m. Identify the predominant wildlife species that occupy or use the project s		
 n. Does the project site contain a designated significant natural community? If Yes: <i>i</i> Describe the habitat/community (composition function and hasis for designated significant natural community) 	signation).	□ Yes □ No
	<u> </u>	
<i>ii.</i> Source(s) of description or evaluation:		
<i>ui</i> . Extent of community/habitat:	20705	
Following completion of project as proposed:	acres	
Gain or loss (indicate + or -):	acres	
. Does project site contain any species of plant or animal that is listed by th	a faderal government or NVS as	
endangered or threatened, or does it contain any areas identified as habitat	for an endangered or threatened speci	es?
p. Does the project site contain any species of plant or animal that is listed b special concern?	by NYS as rare, or as a species of	□ Yes □ No
q. Is the project site or adjoining area currently used for hunting, trapping, fi If yes, give a brief description of how the proposed action may affect that us	shing or shell fishing? e:	□ Yes □ No
F 2 Designated Decklip Description Open Name Designat Site		
E.3. Designated Public Resources On or Near Project Site	district cartified pursuant to	
Agriculture and Markets Law, Article 25-AA, Section 303 and 304? If Yes, provide county plus district name/number:	district certified pursuant to	
b. Are agricultural lands consisting of highly productive soils present?		□ Yes □ No
<i>i</i> . If Yes: acreage(s) on project site?		
<i>ii.</i> Source(s) of soil rating(s):		
 c. Does the project site contain all or part of, or is it substantially contiguous Natural Landmark? If Yes: 	s to, a registered National	□ Yes □ No
<i>i.</i> Nature of the natural landmark: <i>ii.</i> Provide brief description of landmark, including values behind designat	□ Geological Feature ion and approximate size/extent:	
 d. Is the project site located in or does it adjoin a state listed Critical Environ If Yes: <i>i.</i> CEA name: 	mental Area?	□ Yes □ No
<i>ii.</i> Basis for designation:		
<i>iii.</i> Designating agency and date:		

 e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on, or has been nominated by the NYS Board of Historic Preservation for inclusion on, the State or National Register of Historic Places? If Yes: i. Nature of historic/archaeological resource: □ Archaeological Site □ Historic Building or District 	□ Yes □ No
<i>iii.</i> Brief description of attributes on which listing is based:	
f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory?	□ Yes □ No
 g. Have additional archaeological or historic site(s) or resources been identified on the project site? If Yes: <i>i</i>. Describe possible resource(s): <i>ii</i>. Basis for identification: 	□ Yes □ No
 h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? If Yes: i. Identify resource: ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or 	□ Yes □ No scenic byway,
etc.):	
 i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? If Yes: <i>i</i>. Identify the name of the river and its designation: 	□ Yes □ No
<i>ii.</i> Is the activity consistent with development restrictions contained in 6NYCRR Part 666?	\Box Yes \Box No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name

The Tula ____

Date

Title

Signature_

VILLAGE OF WARWICK PLANNING BOARD NOTICE OF PUBLIC SCOPING SESSION FOR FEBRUARY 15, 2018

Pursuant to 6 NYCRR 617.8(e) that the Planning Board of the Village of Warwick, New York, will hold a Public Hearing at the Village Hall, 77 Main Street, Warwick, New York on the 15th day of February, 2018 at 7:30 PM, or as soon thereafter as the matter can be heard.

The purpose of the public hearing is to receive comments from the public on a Draft Scoping Document which, when finalized by the Planning Board, will serve as the basis for the preparation of a Draft Environmental Impact Statement on the application of Village View Estates, LLC for Preliminary Subdivision and site plan Approval.

The applicant proposes creation of 45 single family residential building lots clustered on 20.3+/- acres of vacant land within the Residential (R) zoning district westerly of the intersection of Locust and Woodside Drive as same are located within said Village and as same are shown generally on the tax maps as section, block, and lots: 201-1-1.1, 1.2, 1.3, and 2. The project is proposed to be serviced by municipal sewer and water.

The Planning Board has assumed Lead Agency under the State Environmental Review Act for this purposed project and has issued a Positive Declaration requiring the preparation of a Draft Environmental Impact Statement.

A copy of the plan and the draft scoping document is available for public inspection at the office of the Planning Board during regular business hours. At this hearing citizens and persons interested will have an opportunity to be heard. The meeting is open to the public. The public hearing may be closed or continued at the Planning Board's discretion. Written comments regarding the DEIS will be received until 10 days after the close of the public hearing

Dated: Warwick, New York December 21, 2017 BY ORDER OF THE PLANNING BOARD OF THE VILLAGE OF WARWICK, NEW YORK BY: GEORGE AULEN, CHAIRMAN

DRAFT SCOPE

FOR THE PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT STATEMENT

Name of Action:	VILLAGE VIEW CLUSTER SUBDIVISION
Location of Action:	VILLAGE OF WARWICK, ORANGE COUNTY, NEW YORK
Date Submitted:	MAY 4, 2017, REVISED JANUARY 15, 2018
Lead Agency:	Village of Warwick Planning Board Village Hall, PO Box 369 Warwick, NY 10990 (845) 986-9888

I. FRONT MATERIAL

A. Cover Sheet. The DEIS shall begin with a cover sheet that identifies the following:

- This it is a Draft Environmental Impact Statement
- Date Submitted.
- The name and location of the project.
- The Town of Warwick Planning Board is acting as the Lead Agency for the Project with the name and telephone number of a person at the Agency to be contacted for information.
- The name and address of the Project Sponsor, and the name and telephone number of a contact person representing the Sponsor.
- The name and address of the primary preparer(s) of the DEIS and the name and telephone number of a contact person representing the preparer.
- Date of acceptance of the DEIS (to be inserted at a later date).
- The deadline by which comments on the DEIS are due (to be inserted at a later date).
- A list of all Consultants involved with the project with associated names, addresses, telephone numbers and project responsibilities.
- Table of Contents: The DEIS will include a table of contents identifying major sections and subsections of the document including a list of figures, tables, appendix items and a list of any additional DGEIS volumes, if any.

II. SUMMARY

The DEIS shall include a summary. The summary will only include information found elsewhere in the body of the DEIS but at a minimum should include:

- 1. A brief description of the action 45-lot cluster subdivision with associated internal road network. Access to the Site will be from Locust Street and Woodside Drive. The site is to be served by available village services. A minimum of 20% of the Site will be preserved as permanent open space.
- 2. A list of Involved Agencies with required approvals and permits.
- 3. A brief listing of the existing conditions, anticipated impacts, and proposed mitigation measures for each impact discussed in the DEIS. The presentation and format should be simple and concise.
- 4. A brief description of the project alternatives considered in the DEIS.

III. DESCRIPTION OF PROPOSED ACTION

The DEIS shall include a description of the proposed action with the following information:

- A. Introduction: The introduction should provide a description of the purpose of the Draft Environmental Impact Statement including a statement of the steps in the SEQRA process as it relates to the project.
- B. Site Description: The site description should include the following:
 - 1. Precise location, size, zoning and tax lot number(s).
 - 2. Description of existing character of the site and surrounding area. This shall include natural features such as streams, wetlands, woodlands or other significant features, prominent land use characteristics and overall general characteristics of the surrounding area and transportation corridors.
 - 3. Brief history of former uses of the site and any permits and brief history of any land use approvals associated with prior uses, if any.
 - 4. Discussion summarizing any Easements or Fee ownership of any utility installations, rights of way or other private agreements that may affect the proposed use of the site.
- C. Project Description: The Section shall include a description of the project and its potential impacts as identified in "Section IV" herein. This Section shall also discuss how the Cluster Subdivision fits with "purposes" of Cluster Subdivisions as set forth in Section 145-29(A) of the Village Code. The means of permanently protecting the Open Space created by the subdivision shall be discussed. Any alternatives considered, including, at a minimum, the previous annexation request and approved 28 lot subdivision plan, shall be also be discussed together with any plans to phase the project.
- D. Summary of beneficial and potential adverse impacts from the project; listing of any mitigation measures where applicable.
- E. Involved and Interested Agencies and Required Approvals: List all required or requested approvals and the associated involved agencies that have permitting or approval authority. Also list Interested Agencies, which are those agencies that have

expressed, or are likely to have, an interest in the project but who have no permitting or approval authority. Both Interested and Involved Agencies will receive copies of the DEIS.

Agencies identified as Interested and Involved shall include:

Village of Warwick Village Board Village Hall, PO Box 369 Warwick, NY 10990

Town of Warwick Town Board 132 Kings Highway Warwick, NY 10990

Town of Warwick Planning Board 132 Kings Highway Warwick, NY 10990

NYS Department of Environmental Conservation Region 3 21 South Putt Corners Road New Paltz, NY 12561

NYS Office of Parks, Recreation and Historic Preservation Field Services Bureau – Peebles Island PO Box 189 Waterford, NY 12188-0189

Orange County Department of Planning 124 Main Street Goshen, NY 10924

Orange County Department of Health 124 Main Street Goshen, NY 10924

US Army Corps of Engineers Regulatory Branch - New York District Room 1937 26 Federal Plaza New York, New York 10278

IV. ENVIRONMENTAL SETTING: EXISTING CONDITIONS, ANTICIPATED IMPACTS AND PROPOSED MITIGATION

The DEIS will explore, in order, the existing conditions, anticipated impacts, and proposed mitigation for each major topic of concern outlined as follows:

- A. Soils, Topography and Geology, This section should describe soil types, relevant geological and topographic features of the site, associated impacts relevant to these features due both to site grading and long term residential use of the site including sewerage disposal, and proposed mitigation. Specify whether any blasting is anticipated; if so, quantify to the extent practicable.
- B. Ground and Surface Water Resources: This section should describe the ground and surface water resources within the site and the project area, which includes streams, wetlands, watercourses, floodplains and any other surface water resources. Include classification information on all watercourses and water bodies and seek Jurisdictional Determination for wetland delineation and permitting for wetland crossing. Discuss potential impacts due to development including pollutant loading and storm water quantity. Quantify all disturbances to wetlands and streams and mitigate to the greatest extent practical. Describe mitigation measures including water quality and quantity, erosion control and open bottom wetlands crossings.
- C. Wastewater Management: This section should describe sewer treatment availability in the Village system and projected usage figures from the Site. Consideration of capacity of waste water transmission lines, pump stations and other facilities serving the site shall be given.
- D. Water Supply: This section should describe the existing capacity of the Village water system and projected usage figures from the Site. Calculations should include consideration of any existing approved and/or pending projects within the Village, with a list of same to be provided by the Village Engineer. Fire flow and domestic water pressures should be discussed together with any improvements that may be necessary.
- E. Storm water Management: Flooding: This section should include a pre and post development analysis of the storm water drainage and required storm water management for the proposed project. Any potential for downstream impacts should be discussed. Compliance with NYS SPDES Permit requirements should be demonstrated.
- F. Flora and Fauna: This section should describe existing on-site flora and fauna, classify on-site wildlife communities and characterize typical plants and animals expected or observed on site. Also identify any habitats or animals on site that may be endangered, threatened, or species of special concern as per NYCRR Part 182. Evaluate project impacts on same.
- G. Traffic: This section should describe the existing and future traffic conditions with and without the project. The traffic study shall determine the weekday AM and

PM peak traffic hours and analyze traffic conditions during both the AM and PM peaks. The following intersections shall be analyzed:

- 1. Entrances to project site Locust Street and Woodside Drive.
- 2. NYS Route 17A/94 and Locust Street.
- 3. NYS Route 17A/94 and Grand Street.
- 4. Intersection of Woodside Drive and Grand Street.
- 5. Intersection of Crescent Avenue and Grand Street
- 6. Accident data should be reported for the preceding 5-year period for locations in the vicinity of the intersections listed above. Note that not all accidents are reported to law enforcement agencies.
- 7. The condition, safety and adequacy of Locust Street and Woodside Drive in the vicinity of the site will be discussed in light of its capacity of handle the additional traffic and project needs.
- 8. Future road connections with adjoining properties in the Town will be discussed.
- 9. Traffic study shall consider approved and pending projects in the area (list to be provided by Village Engineer).
- H. Land Use and Zoning: This section should describe the compatibility of the project with existing land uses, the Master Plan of the Village of Warwick, the Zoning Code of the Village of Warwick and the annexation of lands from the Town of Warwick to the Village of Warwick.
- I. School Services: This section shall specifically address the projected impacts of site development on the school district, with projecting numbers of school children and fiscal impacts of the subdivision on the schools.
- J. Fiscal Impact: This section should describe the current tax revenue generated from the site, projected revenue generated from the site, and anticipated impacts in terms of costs vs. revenue to the Town. Fiscal impacts related to the affordability of housing should also be discussed.
- K. Cultural Resources: This section should describe the findings of the Cultural Resource Survey that has been completed.

V. ADVERSE IMPACTS THAT CANNOT BE AVOIDED

This section will describe those impacts that cannot be avoided regardless of mitigation measures that are implemented.

VI. ALTERNATIVES

The following alternatives to the proposed action are to be evaluated in terms of impact issues listed above, when applicable.

- A. No Action Alternative.
- B. Previous Subdivision that has secured Preliminary Approval
- C. Previous proposal for Annexation

VII. IRRETREIVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES

This section will describe the resources described in Section IV that will be consumed, converted, or made unavailable for future use.

VIII. GROWTH INDUCING IMPACTS

This section will describe the potential growth aspects the proposed project may have, including impacts on population, business and further development potential.

IX. EFFECTS ON USE AND CONSERVATION OF ENERGY

This section will describe those energy sources that will be used and ways to reduce energy use.

X. SOURCES AND BIBLIOGRAPHY

XI. APPENDICES

Appendices to include the following at a minimum:

- A. All SEQR documentation
- B. Copies of all official correspondence related to issues discussed in the DEIS
- C. Copies of all technical studies (traffic, drainage, cultural resources, etc.).

Appendix B

Correspondence Received During Public Comment Period

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KIRK ROTHER, P.E.

CONSULTING ENGINEER, PLLC

5 SAINT STEPHENS LANE Phone (845) 988-0620 Fax (845) 988-1628 WARWICK, NY 10990

Email krother@kirkrother.com

February 2, 2017

George Aulen, Chairman Village of Warwick Planning Board 77 Main Street Warwick, NY 10990

Re: Village View Estates Cluster Subdivision Project #04170.0

Dear Chairman Aulen:

In reference to the above named project, enclosed please find the following:

- 9 Short Environmental Assessment Form
- 9 Sketch Cluster Subdivision Plan
- 9 Site Context Plan
- 9 Existing Resource Map

As discussed during recent appearances before the Planning Board, the Applicant wishes to pursue a Cluster Subdivision of the property known as Village View with the goal of creating a project that is more economically viable but which also preserves the environmentally sensitive features of the property. The enclosed materials are submitted in support of the Cluster Subdivision Application. Please note that a signed Application Form will be submitted directly to the Planning Board under separate cover.

The Existing Resources Map and Site Context Plan have been prepared in accordance with the criteria identified in the Village's Zoning Regulations for Cluster Subdivisions. Primary and Secondary conservations areas, along with other existing site features, have been identified. It is proposed that the approved Village View subdivision map be used as the basis of determining the Lot yield of the property, which is 28 lots. An addional 17 lots are proposed through the Cluster Subdivision criteria resulting in 45 lots total. The enclosed sketch plan depicts 45 lots having typical lot widths of approximately – feet, typical lot size's in the range of --- to --- Square Feet while providing approximately --% Open Space. Proposed streets are depicted with – foot wide right-of ways and – wide pavement, consistent with the Village's Street Specifications.

While the Cluster Subdivision is under review by the Planning Board the applicant wishes to maintain the existing preliminary subdivision approval and therefore respectfully requests a 90 day extension of the existing approval.

Kindly place this matter on the February 2017 Planning Board agenda for discussion. Should you have any questions, or require any additional materials, please feel free to contact our office.

Respectfully,

Jul Tula

Kirk Rother, P.E.

cc: Client Jay Myrow, Esq.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 3 21 South Putt Corners Road, New Paltz, NY 12561-1620 P: (845) 256-3054 | F: (845) 255-4659 www.dec.ny.gov



Department of Environmental Conservation

September 26, 2017

Mr. George Aulen Village of Warwick Planning Board 77 Main Street Warwick, NY 10990

RE: Village View Estates, off of Locust Street and Woodside Drive Village of Warwick, Orange County CH#: 7238

Dear Mr. Aulen:

Department of Environmental Conservation (DEC) staff have reviewed the Village of Warwick's State Environmental Quality Review (SEQR) Lead Agency coordination, including the Full Environmental Assessment Form (FEAF), and plans entitled "Village View Cluster Subdivision," sheet 1 through 3. The DEC has no objection to the Village assuming Lead Agency and we offer the following comments:

DEC previously reviewed and approved a proposal for Village View Subdivision as a 25lot subdivision and issued permit IDs 3-5534-00628/00001 & /00002, for Stream Disturbance and Section 401 Water Quality Certification to Mr. Robert Silber. The permit was issued on September 18, 2013 and currently expires on December 31, 2018. As the project has changed, an application for a new permit or modification of the old permit is required. Please note that, if modified, the maximum permit term would be September 17, 2023.

PROTECTION OF WATERS

The following stream/pond/waterbody is located within or near the site indicated:

Name	Class	DEC Water Index Number	Status
Tributary of Waywayanda Creek	C(T)	H-139-13-61-9-21	Protected

A Protection of Waters permit is required to physically disturb the bed or banks (up to 50 feet from stream) of any streams identified above as "protected."

Although not required in the previous permit, staff will review current records at the time of submittal of an application and a time restriction may be required for protection of cold water trout fisheries (waters classified under Article 15 of the Environmental Conservation Law (ECL) with a "T" or "TS" designation), beginning October 1 and ending April 30.



If a permit is not required, please note, however, the project sponsor is still responsible for ensuring that work shall not pollute any stream or waterbody. Care shall be taken to stabilize any disturbed areas promptly after construction, and all necessary precautions shall be taken to prevent contamination of the stream or waterbody by silt, sediment, fuels, solvents, lubricants, or any other pollutant associated with the project.

FRESHWATER WETLANDS

The project/site is not within a New York State protected Freshwater Wetland. An Army Corps of Engineers permit may be required pursuant to Section 404 of the Clean Water Act. If a Section 404 permit is required, you will also require a Water Quality Certification pursuant to Section 401 of the Clean Water Act. Issuance of these certifications in NYS has been delegated to the DEC. Please contact the Army Corps of Engineers in New York City, telephone 917-790-8411 for any permitting they might require.

STATE-LISTED SPECIES

DEC has reviewed the State's Natural Heritage records. We have determined that the site is located within or near record(s) of the following state-listed species:

Name	Status
Indiana bat, Myotis sodalis	Endangered

A permit is required for the incidental taking of any species identified as "endangered" or "threatened," which can include the removal of habitat. The application of a time of year (TOY) restriction with tree removal taking place between October 1 and March 31 will be required, as conditioned in the previous permit. It was unclear from the materials provided how many trees are proposed for removal. If over 10 acres of tree removal is proposed, additional review of impacts to habitat and indirect impacts to bats are required. Please see the attached USFWS New York Field Office "Indiana Bat Project Review Fact Sheet" for additional information.

Questions on determining impacts and meeting the avoidance requirements can be directed to Lisa Masi, DEC Bureau of Wildlife, at 845-256-2257.

Please note that a project sponsor may not commence site preparation, including tree clearing, until the provisions of SEQR are complied with and all necessary permits are issued for the proposed project.

The absence of data does not necessarily mean that rare or state-listed species, natural communities or other significant habitats do not exist on or adjacent to the proposed site. Rather, our files currently do not contain information which indicates their presence. For most sites, comprehensive field surveys have not been conducted. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

CULTURAL RESOURCES

We have reviewed the statewide inventory of archaeological resources maintained by the New York State Museum and the New York State Office of Parks, Recreation, and Historic Preservation. These records indicate that the project is located within an area considered to be sensitive with regard to archaeological resources. For more information, please visit the New York State Office of Historic Preservation website at http://www.nysparks.com/shpo/.

STATE POLLUTION DISCHARGE ELIMINATION SYSTEM (SPDES) STORMWATER - CONSTRUCTION

It appears the overall project will disturb over one acre of land, therefore, the project sponsor must obtain coverage under the current SPDES General Permit (GP-0-15-002) for Stormwater Discharge from Construction Activities, and a Stormwater Pollution Prevention Plan (SWPPP) must be developed which conforms to requirements of the General Permit.

<u>OTHER</u>

Other permits from this Department or other agencies may be required for projects conducted on this property now or in the future. Also, regulations applicable to the location subject to this determination occasionally are revised and the project sponsor should, therefore, verify the need for permits if the project is delayed or postponed. This determination regarding the need for permits will remain effective for a maximum of one year unless you are otherwise notified. Applications may be downloaded from our website at www.dec.ny.gov under "Programs" then "Division of Environmental Permits."

Please contact this office if you have questions regarding the above information. Thank you.

Sincerely,

Sarah Pawliczak \bigcirc Division of Environmental Permits Region 3, Telephone No. 845-256-3050

Encl: Indiana Bat Project Review Fact Sheet

cc: Brian Drumm, NYSDEC Bureau of Habitat Lisa Masi, NYSDEC Bureau of Wildlife Brian Orzel, USACE Robert Silber, Silber Construction Town of Warwick Town Board



February 6, 2017

Village of Warwick Planning Board 77 Main Street Warwick, NY 10990

- Att: George Aulen, Chairman
- Re: Village View Estates Subdivision Cluster L&G #1802.40

Dear Mr. Aulen and Planning Board Members:

We have reviewed the following information submitted for the Village View project:

- Letter dated 2/2/2017 from Kirk Rother, P.E.
- Planning Board Application, dated 1/31/2017
- Short Form EAF, dated 1/31/2017
- Existing Resources Map, dated 1/4/2017
- Site Context Plan, dated 1/3/2017
- Sketch Subdivision Plan, dated 2/12/2017

Review comments:

1. The applicant has submitted materials for a cluster subdivision, which comply with the code.

SITE CONTEXT MAP

- 1. Please show the tax map lots for the project site on the plan.
- 2. Two local roads should be shown on the site context plan Morehouse Lane and Panorama Drive.

EXISTING RESOURCES MAP

- 1. Contour elevations are missing.
- 2. Please show Town/Village line.
- 3. Label Federal/State wetlands.
- 4. Label stream classification.

CLUSTER PLAN

1. Open space in a cluster subdivision must be a minimum of 20% of the total acreage. The applicant proposes 6.32 acres of open space on the four lots which total 20.3 acres (approximately 30% open space).

- 2. The code recommends that open space be connected, and there are isolated areas of open space that may be difficult to maintain.
- 3. Where will stormwater practices be located?
- 4. Contour elevations should be turned on.
- 5. Further, more detailed review, will be done if the applicant chooses to pursue a cluster subdivision.

Sincerely. H. Emmuh

Lehman & Getz, P.C., Village Engineers Karen H. Emmerich, AICP, CPESC

cc: Robert J. Dickover via email <Robert.Dickover@DDDBLaw.Com>

Dickover, Donnelly & Donovan, LLP Attorneys And Counselors At Law

David A. Donovan Michael H. Donnelly Robert J. Dickover 28 Bruen Place P.O. Box 610 Goshen, NY 10924 Phone (845) 294-9447 dickover@dddllplaw.com Fax (845) 294-6553 (Not for Service of Process)

Successor Law Firm To: Alexander Appelbaum, P.C., Florida, N.Y. (1915-1988) Ludmerer & Vurno, Esqs., Warwick, N.Y.

January 7, 2017

George Aulen, Chairman Village Planning Board Village of Warwick 77 Main Street Warwick, NY 10990 (*via fax* 987-1215)

RE: Village View Cluster Subdivision

Dear Chairman Aulen:

In an effort to assist the Board with the Village View cluster subdivision application I offer the following notes:

Summary of Application and Procedural History

- This is an application for a new and different subdivision than that previously granted conditional subdivision approval by the Board on July 17, 2008. Since that time extensions of the approval have been granted by the Planning Board in recognition, in part, of the challenging climate of the real estate market since then.
- At this time the applicant seeks a new and different subdivision plan utilizing the cluster subdivision regulations adopted by the Village on December 8, 2015. At the same time the applicant seeks to maintain its existing approval while pursuing the new cluster plan. I find no local law or state law that prohibits such a request.
- On the applicants request for an extension of time to complete the conditions of its previous subdivision approval the issues for the Board to consider are the same as on previous requests for extensions, i.e., whether there have been any significant changes that may impact or be affected by the project. Such changes might include:
 - Whether there have been any changes in local zoning or subdivision rules.
 - Whether there have been any changes in State or Federal rules and/or regulations that are applicable to the project.
 - ➤ Whether there has been any new information concerning environmental issues that are applicable to this project and were not previously considered during the

Board's SEQRA review.

➤ Whether the applicant has diligently pursued completion of the conditions attached to the preliminary approval.

At this time it might be observed that the applicant has not diligently pursued completion of the conditions to the previous approval but rather now is diligently pursuing a new and different plan. There have also been changes in the local zoning and subdivision rules inclusive of the cluster subdivision regulations under which the applicant now seeks to proceed. There have also been stormwater regulation changes since the time of the approval in 2008.

Pursuant to the foregoing the Board may either grant an extension or decline to do so.

Procedures as to the Cluster Subdivision

Pursuant to a new section of the Village Subdivision regulations Section 145-29 was added providing for cluster subdivisions. The full Chapter is reproduced and annexed hereto for reference.

Cluster Subdivision Procedures:

<u>Authorization</u>: The Planning Board (PB) is authorized to modify applicable zoning provisions as to lot size, width, etc. subject to the <u>purposes</u>, standards and procedures so as to accommodate a cluster development. (145-29.B "Authorization") A reference to the "purpose" provision of the ordinance shows:

145-29.A. "Purposes" - The following regulations are intended to apply to land existing within the Village and residentially zoned. Land which is annexed into the Annexation District (AD) shall be subject to Section 27 herein. A subdivision is considered a cluster development when lots and dwelling units are clustered closer together than otherwise permissible in a conventional subdivision and where open space is created on the remainder of the property. Cluster developments are authorized under § 7-738 of New York State Village Law, are encouraged, and where appropriate required, herein. The purposes of residential cluster developments are as follows:

1. To provide greater economy, efficiency and convenience in the siting of services and infrastructure, including the opportunity to reduce road lengths, utility runs, and the amount of paving required;

2. To conserve important unique and sensitive natural features such as steep slopes, floodplains, stream corridors, and wetlands by permanently setting them aside from development;

3. To provide multiple options for landowners to minimize impacts on environmental resources and natural or cultural features such as mature woodlands, hedgerows and tree lines, critical wildlife habitats, historic buildings and sites, and fieldstone walls;

4. To create neighborhoods with a traditional Village character as discussed in the

Village's Comprehensive Plan;

5. To provide for a balanced range of lot sizes, building densities, and housing choices to accommodate a variety of age and income groups and residential preferences, so that Warwick's population diversity may be maintained;
6. To implement policies to conserve a variety of irreplaceable and environmentally sensitive resource lands as set forth in the Village Comprehensive Plan, including provisions to create a greenway trail system and other areas for active or passive recreational use for the benefit of present and future residents;

7. To conserve scenic views;

8. To promote development in harmony with the goals and objectives of the Village Comprehensive Plan; and

9. To mitigate identified environmental impacts under the State Environmental Quality Review Act (SEQR).

<u>Purpose</u>: The Board should review the purposes provision and make a determination as to whether the goals of the cluster regulations are met by the present cluster plan. If the Board determines that the purposes of the Cluster subdivision regulations are met by the present application it may review and entertain the application.

<u>Permitted Uses</u>: Single family homes as proposed by the current application are permitted uses within a cluster subdivision. (145-29.C)

<u>Density</u>: The applicant suggests that the current plan which has conditional subdivision approval can and should serve as the Yield Plan for the new cluster subdivision. On this point the applicant is correct. The current plan shows a yield of 28 lots. Once initial density is established, the total number of permitted dwelling units may be increased to the maximum number of units that will fit on a parcel while maintaining all setbacks required herein and maintaining a minimum lot area of 10,000 square feet. (145-29.D.4) On this calculation the applicant is showing a sketch plan yielding 45 lots.

<u>Design Process</u>: The applicant has submitted a sketch plan, a site context plan, and a resources plan as each is called for under 145-29.E.

The Cluster regulations provide for a four step process to be followed. (145-29.E.3) That process must be followed. It is not repeated herein for brevity. It is expected that the Board's Engineer will comment upon the technical requirements thereof as and if the matter progresses.

<u>Dimensional Standards</u>: Section 145-29.F sets for the bulk area standards for lots within a cluster. They are summarized as:

1. Minimum required open space: In all zoning districts, a cluster development must preserve twenty percent (20%) of the tract's developed acreage as open space land. Parking areas and roads shall not be included in the calculation of the minimum required open space.

2. Minimum lot width at building line: 50 feet.
3. Yard regulations: the builder or developer is urged to consider variations in the principal building position and orientation, but shall observe the following minimum standards:

Front Yard: 15 feet Rear Yard: 25 feet

Side Yard: 10 feet separation for principal buildings.

4. Maximum Impervious coverage. No more than thirty five (35%) of any lot shall be covered with impervious surface.

5. Minimum lot size. The minimum lot size shall be ten thousand (10,000) square feet per single-family unit. Attached or townhouse style units shall be condominium, cooperative, or other acceptable ownership options. A minimum of 5,000 square feet per attached two-family, or apartment unit shall be provided.

There are other standards applicable to the open space areas, house lots, and streets and driveways. These standards must be addressed by the applicant as and if the matter progresses.

If the matter progresses the applicant will have to address the permanent protection of the open space areas by either conservation easement, fee simple dedication to the Village, homeowners association, or other. (145-29.K)

SEQRA.

Though this project previously underwent SEQRA review by the Board as part of the conventional subdivision application this is a new action and requires SEQRA compliance.

The applicant has included with its application a short form EAF. The SEQRA process will be commented upon in a memorandum to follow.

Respectfully,

Robert J. Dickover, Esq. Attorney for the Planning Board 145-29 Residential Cluster Development.

A. Purposes. The following regulations are intended to apply to land existing within the Village and residentially zoned. Land which is annexed into the Annexation District (AD) shall be subject to Section 27 herein. A subdivision is considered a cluster development when lots and dwelling units are clustered closer together than otherwise permissible in a conventional subdivision and where open space is created on the remainder of the property. Cluster developments are authorized under § 7-738 of New York State Village Law, are encouraged, and where appropriate required, herein. The purposes of residential cluster developments are as follows:

1. To provide greater economy, efficiency and convenience in the siting of services and infrastructure, including the opportunity to reduce road lengths, utility runs, and the amount of paving required;

2. To conserve important unique and sensitive natural features such as steep slopes, floodplains, stream corridors, and wetlands by permanently setting them aside from development;

3. To provide multiple options for landowners to minimize impacts on environmental resources and natural or cultural features such as mature woodlands, hedgerows and tree lines, critical wildlife habitats, historic buildings and sites, and fieldstone walls;

4. To create neighborhoods with a traditional Village character as discussed in the Village's Comprehensive Plan;

5. To provide for a balanced range of lot sizes, building densities, and housing choices to accommodate a variety of age and income groups and residential preferences, so that Warwick's population diversity may be maintained;

6. To implement policies to conserve a variety of irreplaceable and environmentally sensitive resource lands as set forth in the Village Comprehensive Plan, including provisions to create a greenway trail system and other areas for active or passive recreational use for the benefit of present and future residents;

7. To conserve scenic views;

8. To promote development in harmony with the goals and objectives of the Village Comprehensive Plan; and

9. To mitigate identified environmental impacts under the State Environmental Quality Review Act (SEQR).

B. Authorization. Authorization is hereby granted to the Planning Board to modify applicable provisions of this Zoning Law as to lot size, lot width, depth, yard, and other applicable requirements of the Zoning Law, Subdivision Regulations and Street Specifications, as well as type of residential use, subject to the purposes, standards and

procedures contained herein, so as to accommodate Cluster Developments. Prior to filing a formal application for approval of a subdivision, the applicant shall participate in a preapplication conference. The applicant shall make a deposit, in accordance with the Village's Fee Schedule, sufficient to cover the pre-application expenses required for review by the Village's professional engineer, planner and attorney. The Planning Board may require clustering where it finds any one (1) of the following

elements present, as determined through review of an Existing Resources Map and Site Analysis Plan as described herein, justifying conservation of natural, cultural or historic resources, scenic features, or preservation of neighborhood character.

1. Slopes: slopes of fifteen percent (15%) or greater on twenty-five percent (25%) or more of the property.

2. Water resources: wetlands, aquifer and aquifer recharge areas, municipal water supply watershed areas, flood-prone areas as shown on Federal Emergency Management Agency maps, or New York State Protected Streams.

3. Agricultural lands: lands within 2,000 feet of a New York State certified Agricultural District.

4. Important Environmental Areas. Lands within or contiguous to areas identified by the Metropolitan Conservation Alliance in the Southern Wallkill Biodiversity Plan (available for the Office of the Village Clerk), areas identified as a Critical Environmental Area designated pursuant to Article 8 of the Environmental Conservation Law or other areas identified by a government agency as important for conservation purposes.

5. Designated open space areas: lands contiguous to publicly owned or designated open space areas or privately owned designated natural areas.

6. Historic structures and sites: historic structures or areas of national, state or local importance.

7. Scenic Viewsheds and Special Features: sites bordering designated State, County, Village or Village Scenic Roads, or other special features identified in the Village Comprehensive Plan.

8. Trails: existing trails, bikeways, and pedestrian routes of Village, Town, County or State significance.

9. Recreation: lakes, ponds or other significant recreational areas, or opportunities or sites designated in the Village Comprehensive Plan.

10. Applicant Request: on lands where the applicant has requested approval of a Cluster Development.

The Planning Board shall require cluster development where it finds any one (1) of the

following elements present:

1. Significant natural areas and features: areas with rare vegetation, significant habitats, or habitats of endangered, threatened or special concern species as determined by the New York Department of Environmental Conservation (Natural Heritage Program) or the Metropolitan Conservation Alliance's Southern Wallkill Biodiversity Plan, mature forests over 100 years old, locally important vegetation (such as trees over 24" in diameter at breast height), or unique natural or geological formations.

2. Gateway locations as identified in the Village Comprehensive Plan.

C. Permitted, accessory and special permit uses:

1. Permitted, accessory and special permit uses within a cluster development shall be the same as those otherwise allowed in the zoning district in which the development is located. As an alternative to single-family detached dwellings, two-family, townhouse and multi-family units are also permitted in cluster developments provided common areas are in common or cooperative ownership and subject to review by the Village Attorney. A maximum of 10% of the total number of proposed units may be apartments. A maximum of 25% of the total number of proposed units may be townhouses or two-family units.

2. Open space land as defined in § 145-29.J.

D. Density. Density shall initially be established based on the permitted number of dwelling units that would be permitted if the land were subdivided into lots fully conforming to the minimum lot size and density requirements of this chapter applicable to the district or districts in which such land is situated and conforming to all other requirements of the Village of Warwick Code. To determine density, the applicant shall submit a Yield Plan, designed so that no waivers from any provision of the Village of Warwick Code shall be necessary and meeting the following requirements:

1. Yield Plans shall be prepared as a conceptual sketch plan in accordance with the minimum lot sizes and other development standards for the Zoning district involved.

2. Yield plans shall show proposed lots, streets, rights-of-way, and other pertinent features.

3. The yield subdivision plans shall be realistic and must not show potential house sites or streets in areas that would not ordinarily be legally permitted in a conventional subdivision. All minimum front, side and rear yard requirements must be satisfied by measurement wholly on dry land, except to the extent which may be permitted by any other section of this Zoning Law.

4. Once initial density is established, the total number of permitted dwelling units may

be increased to the maximum number of units that will fit on a parcel while maintaining all setbacks required herein and maintaining a minimum lot area of 10,000 square feet. Additional units over the number which was established by the Yield Plan shall be subject to a Special Use Permit of the Village Board and shall be subject to a fee established by the Village Board as provided in the Village Schedule of Fees. All payments shall be made prior to the signing of the final subdivision plat.

E. Cluster development design process. The following steps shall constitute the design process for a cluster subdivision:

1. Sketch Plan. A Sketch Plan shall be submitted by the applicant as a diagrammatic basis for informal discussions with the Planning Board regarding the design of a proposed subdivision or land development. The purpose of a sketch plan is to facilitate an expedient review of proposed new subdivisions in conformance with the Village Zoning Law and Comprehensive Plan. Sketch Plan submission is a way to help applicants and Planning Board members develop a better understanding of the property and to help establish an overall design approach that respects its special or noteworthy features and to establish the density permitted under the Zoning Law. To provide a full understanding of the site's potential and to facilitate the most effective exchange with the Planning Board, the Sketch Plan shall include the information listed below.

a. The information required by the Village Subdivision Regulations;

b. 100-year floodplain limits, and approximate location of State and/or Federal wetlands, if any;

c. Topographical and physical features, including existing structures, wooded areas, hedgerows and other significant vegetation, steep slopes (over 15%), soil types, ponds, streams within two hundred (200) feet of the tract, and existing rights-of-way and easements;

d. Schematic layout indicating a general concept for land conservation and development ("bubble" format is acceptable for this delineation of conservation areas); and

e. In the case of land development plans, proposed general layout, including building locations, parking lots, and open spaces.

f. Site Context Map. A map showing the location of the proposed subdivision within its neighborhood context shall be submitted. For all sites, such maps shall be at a scale not less than 1"= 1000', and shall show the relationship of the subject property to natural and man-made features existing within 2,000 feet of the site. The features that shall be shown on Site Context Maps include topography and streams (from USGS maps), State and/or Federal wetlands, woodlands over one-half acre in area (from aerial photographs), ridgelines, public roads and trails, utility easements and rights of way,

public land, and land protected under conservation easements.

2. Cluster plan documents. A preliminary Cluster development plan shall consist of and be prepared in accordance with the following requirements, which are designed to supplement and, where appropriate, replace the requirements of the Village of Warwick Subdivision Regulations:

a. Preliminary Plan. The submission requirements for a Preliminary Plan include the requirements for Sketch Plans listed in § 145-29.E(1) above;

b. The submission requirements of the Subdivision Regulations, and;

c. Existing Resources and Site Analysis Plan. For all Cluster developments (except those in which all proposed lots are to be ten or more acres in area), an Existing Resource Plan shall be prepared to provide the developer and the Planning Board with a comprehensive analysis of existing conditions, on the proposed development site.

The Planning Board shall review the Plan to assess its accuracy and thoroughness. Unless otherwise specified by the Planning Board, such plans shall be prepared at the scale of 1"=100' or 1"=200', whichever would fit best on a single standard size sheet. The following information shall be included in this Plan:

(1) Topography, the contour lines of which shall be at two-foot intervals, determined by photogrammetry (although 10-foot intervals are permissible beyond the parcel boundaries, interpolated from published USGS maps). Slopes greater than fifteen percent (15%) shall be clearly indicated. Topography for major subdivisions shall be prepared by a professional land surveyor or professional engineer from an actual field survey of the site or from stereoscopic aerial photography and shall be coordinated with official USGS benchmarks.

(2) The location and delineation of ponds, streams, and natural drainage swales as well as the 100-year floodplains and wetlands, as defined by the State of New York and the US Army Corps of Engineers.

(3) Vegetative cover conditions on the property according to general cover type including cultivated land, permanent grass land, old field, hedgerow, woodland and wetland, isolated trees with a caliper in excess of twelve (12) inches, the actual canopy line of existing trees and woodlands. Vegetative types shall be described by plant community, relative age and condition.

(4) Soil series and types, as mapped by the U.S. Department of Agriculture, Natural Resources Conservation Service in the Orange County Soil Survey.

(5) Ridge lines and watershed boundaries shall be identified, if any exist.

(6) Public roads, public parks, public forests, and other designated open space areas

within 1,000 feet of the project site from which the project site may be visible.

(7) Geologic formations on the proposed development parcel, based on available published information or more detailed data obtained by the applicant.

(8) The location and dimensions of all existing streets, roads, buildings, utilities and other man-made improvements on the property.

(9) Locations of all historically significant sites or structures on the tract and on any abutting tract.

(10) Locations of trails that have been in public use (pedestrian, equestrian, bicycle, etc.) or proposed in the Village Comprehensive Plan within 500 feet of the site.

(11) All easements and other encumbrances of property which are or have been filed of record with the Orange County Clerk's Office shall be shown on the plan.

3. Four-Step Design Process for Cluster Developments. All sketch plans shall include Step 1 of the four step design process. All preliminary plans shall include documentation of a four-step design process in determining the layout of proposed open space lands, house sites, streets and lot lines, as described below.

Figure 11a. Primary Conservation Areas

a. Step 1: Delineation of Open Space Lands. Proposed open space lands shall be designated using the Existing Resources Plan as a base map and the Subdivision Regulations, dealing with Resource Conservation and Greenway Delineation Standards. The Village's Comprehensive Plan shall also be considered. Primary Conservation Areas shall be delineated comprising floodplains, wetlands and slopes over twenty-five percent (25%) as shown by example on Figure 11a. Secondary Conservation Areas shall be delineated comprising mature forested areas, significant habitat areas and historic or archeological sensitive sites. The applicant shall prioritize natural and cultural resources on the tract in terms of their highest to least suitability for inclusion in the proposed open space, in consultation with the Planning Board after a site inspection, to create a prioritized list of resources to be conserved. On the basis of those priorities and practical considerations given to the tract's configuration, its context in relation to resource areas on adjoining and neighboring properties, and the applicant's subdivision objectives, Secondary Conservation Areas shall also be delineated in Step 1 and may be used to meet the minimum area percentage requirements for open space lands. Calculations shall be provided indicating the applicant's compliance with the acreage requirements for open space areas on the tract. The result is shown on Figure 11b, potential development areas. Figure 11b. Potential Development Areas

b. Step 2: Location of House Sites. Potential house sites shall be tentatively located (see Figure 12), using the proposed open space lands as a base map as well as other

relevant data on the Existing Resources and Site Analysis Plan such as topography and soils. Dwelling units should generally be located not closer than 100 feet from Primary Conservation Areas and 50 feet from Secondary Conservation Areas, taking into consideration the potential negative impacts of residential development on such areas as well as the potential positive benefits of such locations to provide attractive views and visual settings for residences.

Figure 12. House Sites

c. Step 3: Alignment of Streets. Upon designating the house sites, a street plan shall be designed to provide vehicular access to each house, complying with the standards identified herein and bearing a logical relationship to topographic conditions as illustrated in Figure 13. Impacts of the street plan on proposed open space lands shall be minimized, particularly with respect to crossing environmentally sensitive areas such as wetlands and traversing slopes exceeding 15%. Existing and future street connections are encouraged to eliminate the number of new cul-de-sacs to be maintained by the Village and to facilitate access to and from homes in different parts of the tract and adjoining parcels. Cul-de-sacs are appropriate only when they support greater open space conservation or provide pedestrian linkages.

d. Step 4: Drawing In the Lot Lines. Upon completion of the preceding three steps, lot lines are drawn as required to delineate the boundaries of individual residential lots – see Figure 14.

Figure 13. Aligning Streets and Trails

Figure 14. Drawing the Lot Lines

e. Where traditional streetscapes and "terminal vistas" are of great importance, Steps Two and Three may be reversed, so that streets and squares are located during the second step, and house sites are located immediately thereafter. The first step is to identify open space lands, including both Primary and Secondary Conservation Areas.

F. Dimensional Standards. The Planning Board shall have the discretion to modify the applicable bulk and dimensional standards from that which is required in a conventional subdivision except that lots shall maintain the following minimum standards:

1. Minimum required open space: In all zoning districts, a cluster development must preserve twenty percent (20%) of the tract's developed acreage as open space land. Parking areas and roads shall not be included in the calculation of the minimum required open space.

2. Minimum lot width at building line: 50 feet.

3. Yard regulations: the builder or developer is urged to consider variations in the principal building position and orientation, but shall observe the following minimum standards:

Front Yard: 15 feet Rear Yard: 25 feet Side Yard: 10 feet separation for principal buildings.

4. Maximum Impervious coverage. No more than thirty five (35%) of any lot shall be covered with impervious surface.

5. Minimum lot size. The minimum lot size shall be ten thousand (10,000) square feet per single-family unit. Attached or townhouse style units shall be condominium, cooperative, or other acceptable ownership options. A minimum of 5,000 square feet per attached two-family, or apartment unit shall be provided.

G. Open space standards:

1. The required open space land may consist of a combination of Primary Conservation Areas and Secondary Conservation Areas as described above. The proposed subdivision design shall strictly minimize disturbance of these environmentally sensitive areas. Primary Conservation Areas shall be included in the required open space area to the greatest extent practical. The applicant shall also demonstrate that such features will be protected by the proposed subdivision plan. Secondary Conservation Areas include special features of the property that would ordinarily be overlooked or ignored during the design process such as significant habitat areas, mature forests, historic structures and sites and archeological sensitive areas. Secondary Conservation Areas shall be included in the required open space area to the greatest extent practical such that protecting these resources will, in the judgment of the Planning Board, achieve the purposes of this section.

2. Open space lands shall be laid out in general accordance with the Village Comprehensive Plan to better enable an interconnected network of open space.

3. A recreational fee in lieu of land, as set forth in the Village's fee schedule, shall be imposed to accommodate the foreseeable recreational needs of the proposed subdivision's residents. Upon the recommendation of the Planning Board and where the Village Board of Trustees deems it appropriate for land to be deeded for recreational purposes, up to ten percent (10%) of the total acreage may be subject to the Village's recreational land dedication requirement. Typically, this acreage will be used to provide potential connections within the Village's long-range trail network.

4. Active agricultural land with farm buildings may be used to meet the minimum required open space land when part of a parent parcel. Access to open space land used for agriculture may be appropriately restricted for public safety and to prevent interference with agricultural operations. Land used for agricultural purposes shall be buffered from residential uses, either bordering or within the tract, by a minimum setback of at least 75 feet and if practical three hundred (300) feet deep. No clearing of trees or understory growth shall be permitted in this setback (except as may be

necessary for street or trail construction). Where this buffer is unwooded, the Planning Board may require vegetative screening to be planted, or that it be managed to encourage natural forest succession through "no-mow" policies and the periodic removal of invasive alien plant and tree species.

5. Open space land should generally remain undivided and connect to areas of adjacent open space where applicable.

6. No portion of any house lot may be used for meeting the minimum required open space land unless encumbered with a conservation restriction.

H. House lot standards. Development areas for the location of house lots include the necessary building envelope for each dwelling unit, constituting the remaining lands of the tract outside of the designated open space areas. House lots shall be designed in accordance with the following standards:

1. House lots shall not encroach upon Primary Conservation Areas and their layout shall respect Secondary Conservation Areas.

2. All new dwellings shall meet the following setback requirements to the greatest extent practicable:

a. From agricultural lands either bordering or within the tract 75 feet

b. From buildings or barnyards housing livestock 300 feet

c. From active recreation areas such as courts or playing fields (not including tot lots) 150 feet

3. House lots shall, to the greatest extent practical, be accessed from interior streets, rather than from roads bordering the tract.

4. Dwellings should be generally orientated towards the street. Front setbacks should be similar to those in surrounding existing neighborhoods, but in no case should exceed 40 feet unless specifically authorized by the Planning Board.

5. Maximum lot development coverage shall remain that which is required for the particular use in the zone as shown the Table of Bulk Requirements in Section 145-41. I. Streets and driveways.

1. Proposed streets shall meet the Village Street Specifications, unless access arrangements have been made in accordance with § 7-732 of New York State Village Law. New intersections with existing public roads shall be minimized. Although two access ways into and out of subdivisions containing twenty (20) or more dwellings are generally required for safety, proposals for more than two entrances onto public roads shall be discouraged if they would unnecessarily disrupt traffic flow or unduly impact the environment. Regardless of the street design employed, the applicant shall demonstrate and the Planning Board shall find that emergency services access is adequate for the number of dwellings proposed.

2. Straight segments connected by 90 degree and 135 degree bends are preferred.

3. The use of reverse curves should be considered for local access streets in Cluster developments in conjunction with long horizontal curve radii (at least 250 feet) and where traffic speeds will not exceed 25 mph.

4. Sidewalks shall be required on proposed streets and shall tie into the existing sidewalk system of the Village where applicable. Street trees shall be required in accordance with Chapter 131 of the Village Code. Depending upon the open or wooded character of the parcel the Planning Board may waive street tree requirements.

J. Permanent protection of open space. Conservation easements are the preferred method to protect open space under Article 49 of the New York State Environmental Conservation Law. In all cases, the permanent preservation of such open space shall be legally assured to the satisfaction of the Planning Board and Village Attorney and the Village Board shall be granted third party enforcement rights to enforce the terms of the conservation restriction. The following regulations shall apply:

1. If a conservation easements is proposed, the conservation easement shall be titled to a private conservation organization provided that:

a. The conservation organization is acceptable to the Village and is a bona fide conservation organization as defined in Article 49 of the New York State Environmental Conservation Law;

b. The conveyance contains appropriate provisions for proper reverter or retransfer in the event that the conservation organization becomes unwilling or unable to continue carrying out its functions; and

c. A maintenance agreement acceptable to the Village is established between the owner and the conservation organization to insure perpetual maintenance of the open space.

2. The conservation restriction shall permanently restrict the open space from future subdivision, shall define the range of permitted activities, and shall give the Village the ability to enforce these restrictions. Under no circumstances shall any development be permitted in the open space at any time, except for the following uses: a. Conservation of open land in its natural state (for example, woodland, fallow field, or managed meadow). The clearing of woodland shall generally be prohibited, except as necessary to create trails and active recreation facilities. The determination of necessity shall lie with the Planning Board.

b. Game preserve, wildlife sanctuary, or other similar conservation use.

c. Woodlots, arboreta, agriculture and silviculture in keeping with established standards for best management practices, selective harvesting, and sustained-yield forestry.

d. Neighborhood open space uses such as village greens, commons, picnic areas, community gardens, trails, and similar low-impact passive recreational uses

specifically excluding motorized off-road vehicles, rifle ranges, and other uses similar in character and potential impact as determined by the Planning Board. e. Active non-commercial recreation areas, such as playing fields, playgrounds, and courts, provided such areas do not consume more than half of the minimum required open space land or five acres, whichever is less. Playing fields, playgrounds, and courts shall not be located within 150 feet of abutting properties nor shall such facilities be equipped with lighting. Parking facilities for the same shall also be permitted, and they shall generally be gravel-surfaced, unlighted, properly drained, provide safe ingress and egress, and contain no more than ten parking spaces. Such recreation uses may be a public park or recreation area owned and operated by a public or private nonprofit agency, but shall not include storage of materials, trucking or repair facilities, or private or municipal sanitary landfills. f. Stormwater detention areas designed, landscaped, and available for use as an integral part of the open space area.

g. Easements for drainage; access, sewer or water lines, or other public purposes. h. Underground utility rights-of-way. Above ground utility and street rights-of-way may traverse conservation areas but shall not count toward the minimum required open space land.

K. Ownership of open space land and common facilities. The following methods may be used, either individually or in combination, for ownership of open space land (exclusive of its conservation easement) and common facilities. Open space trails may be initially offered for dedication to the Village. Open space land and common facilities shall not be transferred to another entity except for transfer to another method of ownership permitted under this section. Ownership methods shall conform to the following:

1. Fee simple dedication to the Village. The Village may, but shall not be required to, accept any portion of the open space land and common facilities, provided that:

a. There is no substantial cost of acquisition to the Village; and

b. The Village agrees to and has access to maintain such facilities; and

c. Such facilities shall be accessible for public use.

2. Homeowners" Association. Open space land and common facilities may be held in common ownership by a homeowners" association, subject to all of the provisions for homeowners" associations set forth in New York State regulations. In addition, the following regulations shall be met:

a. The applicant shall provide the Village with a description of the organization of the proposed association, including its by-laws, and all documents governing ownership, maintenance, and use restrictions for common facilities.

b. The proposed association shall be established by the owner or applicant and shall be operating (with financial subsidization by the owner or applicant, if necessary) before the sale of any dwelling units in the development.

c. Membership in the association shall be mandatory for each property owner within the subdivision and successive owners in title with voting rights of one vote per lot or unit, and the subdivider's control, therefore, passing to the individual lot/unit owners on sale of the majority of the lots or units. d. The association shall be responsible for liability insurance, local taxes and maintenance of open space land, recreational facilities and other commonly held facilities.

e. The by-laws shall confer legal authority on the association to place a lien on the real property of any member who falls delinquent in his or her dues. Such dues shall be paid with the accrued interest before the lien may be lifted.

f. Written notice of any proposed transfer of common facilities by the association or the assumption of maintenance for common facilities must be given to all members of the association and to the Village no less than thirty (30) days prior to such event. g. The association shall have adequate resources to administer, maintain, and operate such common facilities.

3. Non-common private ownership. The required open space land may be included within one or more large "conservancy lots" provided the open space is permanently restricted from future development.

4. Other instruments, such as deed restriction acceptable to the Village Attorney, may also be used to protect open space as may be proposed by the applicant.

L. Maintenance. Unless otherwise agreed to by the Village Board, the cost and responsibility of maintaining common open space and facilities shall be borne by the homeowners" association, conservation organization, private owner, or, in the case of open space and facilities deeded to the Village, the municipality.

Adopted December 8, 2015

KIRK ROTHER, P.E.

CONSULTING ENGINEER, PLLC

5 SAINT STEPHENS LANE

Phone (845) 988-0620 Fax (845) 988-1628 WARWICK, NY 10990

Email krother@kirkrother.com

May 3, 2017

George Aulen, Chairman Village of Warwick Planning Board 77 Main Street Warwick, NY 10990

Re: Village View Estates Cluster Subdivision Project #04170.0

Dear Chairman Aulen:

In reference to the above, enclosed please find the following:

- 9 Revised Conceptual Subdivision Plan
- 9 Existing Resources Plan
- 9 Revised Site Context Plan
- 9 Long EAF
- 9 Draft Scoping Document

Plan revisions are based upon review comments dated February 6, 2017 from the Village Engineer. Our specific responses to the follow:

Site Context Map:

1. As requested the Tax lot numbers have been added to the plan.

2. Local roads of Morehouse Lane and Panorama Drive are now shown on the plan.

Existing Resources:

- 1. Contour elevation have been added to the plan.
- 2. The Town/Village line has been added to the plan
- 3. Wetlands are now shown on the plan and designation numbers added.

4. The classification of the stream has been added to the plan.

Cluster Plan:

- 1. No response.
- 2. No response.
- 3. Conceptual areas for proposed storm water management have been added to the plan.
- 4. Contour elevation have been added to the plan.
- 5. No response.

Kindly place this matter on the May 2017 Planning Board agenda for discussion of the Cluster subdivision plan and consideration of circulation for Lead Agency designation. Should you have any questions, or require any additional materials, please feel free to contact our office.

Respectfully,

The Tela

Kirk Rother, P.E.



May 10, 2017

Village of Warwick Planning Board 77 Main Street Warwick, NY 10990

- Att: George Aulen, Chairman
- Re: Village View Cluster Subdivision L&G #1802.40

Dear Mr. Aulen and Planning Board Members:

We have reviewed the following information submitted for the Village View Cluster project:

- Letter dated 5/3/17 from Kirk Rother, P.E.
- Full EAF, Part 1, dated 5/4/17
- Draft Scope for the preparation of a Draft Environmental Impact Statement, dated 5/4/17
- Existing Resources Map, revised 3/29/17
- Site Context Plan, dated 3/29/17
- Sketch Subdivision Plan, dated 3/29/17.

We provide the following review comments:

- 1. Cluster subdivision requirements are included in Section 145-29 of the Village code. The regulations can allow for an increased lot count in exchange for a fee to be paid to the Village. Section 63-1 of the Village code, "Schedule of Fees", currently states that the fee for each additional dwelling unit is \$50,000.
- 2. The cluster plan submitted includes 45 lots. The Village View plan that has received preliminary approval includes 28 lots. In my opinion, the 28-lot plan can serve as the yield plan described in 145-29.D.
- 3. The purposes of residential cluster development are presented in 145-29.A (attached). During the review process, the Planning Board will evaluate the cluster plan's ability to satisfy these purposes.
- 4. The plan involves construction on at least two properties located outside the Village. The affected properties should be identified in the application forms and on the plans. The ownership of the properties should be discussed with the Board. Section B of the EAF should be revised to show that an annexation is proposed, which will require approval of both the Village Board and the Town Board.

- 5. The cluster plan includes construction on areas with steep slopes. A conceptual grading plan would be helpful to understand the magnitude of the proposed earthwork. Preliminary stormwater calculations would also be helpful to demonstrate the required size of the stormwater measures.
- 6. The Board should discuss the DEIS process and the draft scoping document that has been submitted.

Sincerely,

Lehman & Getz, P.C., Village Engineers David A. Getz, P.E.

cc: Robert J. Dickover via email <Robert.Dickover@DDDBLaw.Com>

Village of Warwick Zoning Law

- b. Other arrangements which will provide for or reduce the cost of public services and facilities such as childcare, health care, elder services, disabled services, recreation, transportation or water conservation.
- c. Provisions of housing needs for diverse population groups. Special consideration may be given to the scheduling of developments that include attached units or apartments.
- d. Commitments already made in the development schedules for approved developments.
- e. Site design, which responds to, incorporates, and protects natural features such as vegetation, topography, watercourses and views, or which is designed to respond to the character of the neighborhood.

M. Ownership/Maintenance

- 1. Developments within a Traditional Neighborhood Design District may be in either single or multiple ownership. Units and/or lots may be leased or owned separately.
- 2. At the time of submission of a detailed Site Plan to the Planning Board for approval, the applicant shall be required to prepare and submit a written program for the maintenance of any commonly owned area, including open space and recreation areas, walkways, driveways, parking areas and other common utilities and facilities. This program shall fix the responsibility for the maintenance program on either the landlord or a home association, or a combination thereof, and shall demonstrate, to the satisfaction of the Planning Board and the Village Attorney, how such responsibility will be legally bound and enforceable. If authorized and approved by the Village Board, community areas may be dedicated to the Village by the applicant.
- 3. In the case of multiple ownership of land or buildings, including singlefamily homes and condominium or cooperative ownership of apartments or townhouses, a homeowners' association shall be formed. Membership in this association shall be required for all owners of dwelling units within the development, and the association shall be responsible for the maintenance program. Where the development is a combination of multiple ownership and leased units, the landlord shall be a member of the homeowners' association with maintenance responsibilities proportional to the number of units which he or she owns.

145-29 Residential Cluster Development.

A. Purposes. The following regulations are intended to apply to land existing within the Village and residentially zoned. Land which is annexed into the Annexation District (AD) shall be subject to Section 27 herein. A subdivision is considered a cluster development when lots and dwelling units are clustered closer together than otherwise permissible in a conventional subdivision and where open space is created on the remainder of the property. Cluster developments are authorized under § 7-738 of New York State Village

Village of Warwick Zoning Law

Law, are encouraged, and where appropriate required, herein. The purposes of residential cluster developments are as follows:

- 1. To provide greater economy, efficiency and convenience in the siting of services and infrastructure, including the opportunity to reduce road lengths, utility runs, and the amount of paving required;
- 2. To conserve important unique and sensitive natural features such as steep slopes, floodplains, stream corridors, and wetlands by permanently setting them aside from development;
- 3. To provide multiple options for landowners to minimize impacts on environmental resources and natural or cultural features such as mature woodlands, hedgerows and tree lines, critical wildlife habitats, historic buildings and sites, and fieldstone walls;
- 4. To create neighborhoods with a traditional Village character as discussed in the Village's Comprehensive Plan;
- 5. To provide for a balanced range of lot sizes, building densities, and housing choices to accommodate a variety of age and income groups and residential preferences, so that Warwick's population diversity may be maintained;
- 6. To implement policies to conserve a variety of irreplaceable and environmentally sensitive resource lands as set forth in the Village Comprehensive Plan, including provisions to create a greenway trail system and other areas for active or passive recreational use for the benefit of present and future residents;
- 7. To conserve scenic views;
- 8. To promote development in harmony with the goals and objectives of the Village Comprehensive Plan; and
- 9. To mitigate identified environmental impacts under the State Environmental Quality Review Act (SEQR).
- **B.** Authorization. Authorization is hereby granted to the Planning Board to modify applicable provisions of this Zoning Law as to lot size, lot width, depth, yard, and other applicable requirements of the Zoning Law, Subdivision Regulations and Street Specifications, as well as type of residential use, subject to the purposes, standards and procedures contained herein, so as to accommodate Cluster Developments. Prior to filing a formal application for approval of a subdivision, the applicant shall participate in a pre-application conference. The applicant shall make a deposit, in accordance with the Village's Fee Schedule, sufficient to cover the pre-application expenses required for review by the Village's professional engineer, planner and attorney.

The Planning Board may require clustering where it finds any one (1) of the following elements present, as determined through review of an Existing Resources Map and Site Analysis Plan as described herein, justifying conservation of natural, cultural or historic resources, scenic features, or preservation of neighborhood character.

- 1. Slopes: slopes of fifteen percent (15%) or greater on twenty-five percent (25%) or more of the property.
- 2. Water resources: wetlands, aquifer and aquifer recharge areas, municipal water supply watershed areas, flood-prone areas as shown on Federal Emergency Management Agency maps, or New York State Protected Streams.

February 17, 2009



Orange County Department of Planning

124 Main Street Goshen, NY 10924-2124 Tel: (845) 615-3840 Fax: (845) 291-2533 David E. Church, AICP Commissioner

www.orangecountygov.com/planning planning@orangecountygov.com

County Reply – Mandatory Review of Local Planning Action as per NYS General Municipal Law §239-l, m, &n

Local Referring Board: Village of Warwick Planning BoardReferral ID #: WRV 05-17NApplicant: Robert SilberTax Map #: 201-1-1.1, 1.2, 1.3, & 2Project Name: Village View EstatesLocal File #: none providedProposed Action: Major Subdivision creating 45 lots in a cluster arrangement on 20.3 acresReason for County Review: Within 500 feet of the Town of Warwick/Village of Warwick boundaryDate of Full Statement: sketch plan received August 18, 2017; full statement not received at this time

Comments:

The Department has received the above referenced major subdivision and has found no evidence that significant intermunicipal or countywide impacts would result from its approval. Although the submittal is a sketch plan and is not a full statement at this time, we offer the following comments for the consideration of the Planning Board and the applicant:

<u>Affordable Housing</u>: The Village of Warwick Code does not specify a number or percentage of units in a development or subdivision that must be made affordable. The County Comprehensive Plan is clear that providing housing options that are affordable for residents improves the local economy, provides stability for residents and allows residents to be more invested in their communities. We therefore advise the Planning Board to require that a minimum of 10% of these units (5 units) be sold at prices that are affordable to people making 80% of the County's median income. This would translate to a housing price for these units not to exceed \$260,000 (2017 dollars). We further advise the Planning Board to adopt standards for housing affordability that are included in the Subdivision Code and the Zoning Code for the Village of Warwick. The County would be happy to provide technical assistance to the Village in creating these standards.

<u>Stormwater Management</u>—The proposed cluster development plan shows no stormwater management facilities, and is located on a very challenging site, with the steep slopes, wetlands, and stream. We recommend that the Village and the applicant work together to find a stormwater solution that treats the stormwater runoff from the residential development prior to its entry into the Class C trout stream onsite.

<u>Lead Agency Status</u>: We have no objection to the Village of Warwick assuming the role of Lead Agency for purposes of SEQR. We commend the Village for submitting this project to the County at the sketch plan phase of development; we welcome the opportunity to give input early in the process, in order to ensure that the project is the best possible result for the County, the municipality and the applicant.

<u>Public Services</u>: We advise the Village to ensure that sufficient capacity exists within the existing water and sewer systems to provide service to this project.

<u>Site Design and Annexation</u>: The proposed cluster arrangement of the 45 lots is reasonable and efficient; the open space contains the bulk of the features that should be protected, namely the steep slopes onsite

and the wetlands under the jurisdiction of the US Army Corps of Engineers surrounding the onsite Class CT stream. We advise the Village that Orange County supports the proposed annexation of 0.04 + - acres from the Town to the Village to ensure continuity of the onsite road.

<u>Future Road Connections</u>: The proposed homes are served by two entry and exit points, Onsite Road A onto Woodside Drive to the south, and Onsite Road B onto Locust Street to the east. This is likely sufficient for the level of development proposed by this application. We advise the Village and the applicant to record an easement between the cul-de-sac at the southeast end of Road C and the edge of the property, in the event that future development in the area makes it advisable to extend this road out to Woodside Drive. The applicant may wish to consider a similar easement for future road extension between the culs-de-sac at the northwest ends of Roads C and D and the north property line.

County Recommendation: Local Determination

Date: September 12, 2017 **Prepared by:** Megan Tennermann, AICP, Planner

David Church, AICP Commissioner of Planning

As per NYS General Municipal Law 239-m & n, within 30 days of municipal final action on the above referred project, the referring board must file a report of the final action taken with the County Planning Department. For such filing, please use the final action report form attached to this review or available online at <u>www.orangecountygov.com/planning</u>.



November 9, 2017

Village of Warwick Planning Board 77 Main Street Warwick, NY 10990

- Att: George Aulen, Chairman
- Re: Village View Cluster Subdivision L&G #1802.40

Dear Mr. Aulen and Planning Board Members:

We have reviewed the following information submitted for the Village View Cluster project:

- Letter dated 11/2/17 from Kirk Rother, P.E.
- Full EAF, Part 1, revised 6/16/17
- Draft Scope for the preparation of a Draft Environmental Impact Statement, dated 5/4/17
- 4-Step Design Process Plan, dated 10/5/17
- Sketch Subdivision Plan, revised 10/5/17
- Sketch Road Profiles, dated 10/5/17
- Review letter from the Orange County Department of Planning, dated 9/12/17.

We provide the following review comments:

- 1. Cluster subdivision requirements are included in Section 145-29 of the Village code. Robert Dickover provided a memo to the Board on 5/11/17 describing the cluster subdivision procedures.
- 2. The cluster plan submitted includes 45 lots. The Village View plan that has received preliminary approval includes 28 lots. In my opinion, the 28-lot plan can serve as the yield plan described in 145-29.D.
- 3. The plan involves construction on two properties located in the Town of Warwick, outside the Village: 31-1-85.2 and 42-1-4.2. The affected properties should be clearly identified on the application forms and on the plans. The current plan indicates that Lot 42-1-4.2 is to be annexed to the Village. This will affect the acreage calculations shown on the plan and on the EAF. Section B of the EAF should be revised to show that the proposed annexation will require the approval of both the Village Board and the Town Board.
- 4. A four-step design plan has been provided to demonstrate the cluster plan's efforts to preserve environmentally sensitive areas.

- 5. The layout of the sketch cluster plan has been modified to show lots with a reduced lot width. The amount of proposed open space has been increased, and the overall road length has been reduced slightly. The number of lots, 45, has not changed.
- 6. A preliminary grading plan of the roadways, and profiles, have been provided. It appears that Lots 15 through 21 will pose significant grading challenges.
- 7. What is meant by "temporary" with regard to the turnaround easement shown for Road D?
- 8. The possibility of reducing the proposed road width (35 feet) should be discussed.
- 9. The Orange County Department of Planning advises that the Planning Board should work with the Village Board to adopt standards for housing affordability.
- 10. The applicant requests that the Planning Board finalize the scoping process so that the work on preparing a Draft Environmental Impact Statement can begin.

Sincerely,

Mail 6 BA

Lehman & Getz, P.C., Village Engineers David A. Getz, P.E.

cc: Robert J. Dickover via email <Robert.Dickover@DDDBLaw.Com>

Dickover, Donnelly & Donovan, LLP Attorneys And Counselors At Law

David A. Donovan Michael H. Donnelly Robert J. Dickover 28 Bruen Place P.O. Box 610 Goshen, NY 10924 Phone (845) 294-9447 dickover@ddlliplaw.com Fax (845) 294-6553 (Not for Service of Process)

Successor Law Firm To: Alexander Appelbaum, P.C., Florida, N.Y. (1915-1988) Ludmerer & Vurno, Esqs., Warwick, N.Y.

December 11, 2017

George Aulen, Chairman Village Planning Board Village of Warwick 77 Main Street Warwick, NY 10990 (*via fax* 987-1215)

RE: Village View Cluster Subdivision

Dear Chairman Aulen:

I have provided a previous memorandum on this Cluster plan for the Board and will not repeat those comments. I now offer the following observations primarily directed to the draft scope for the DEIS:

As to the Environmental Review Procedure

<u>Authorization</u>: The Planning Board (PB) is authorized to modify applicable zoning provisions as to lot size, width, etc. subject to the <u>purposes</u>, standards and procedures so as to accommodate a cluster development. (145-29.B "Authorization") A reference to the "purpose" provision of the ordinance shows:

145-29.A. "Purposes" - The following regulations are intended to apply to land existing within the Village and residentially zoned. Land which is annexed into the Annexation District (AD) shall be subject to Section 27 herein. A subdivision is considered a cluster development when lots and dwelling units are clustered closer together than otherwise permissible in a conventional subdivision and where open space is created on the remainder of the property. Cluster developments are authorized under § 7-738 of New York State Village Law, are encouraged, and where appropriate required, herein. The purposes of residential cluster developments are as follows:

1. To provide greater economy, efficiency and convenience in the siting of services and infrastructure, including the opportunity to reduce road lengths, utility runs, and the amount of paving required;

2. To conserve important unique and sensitive natural features such as steep

slopes, floodplains, stream corridors, and wetlands by permanently setting them aside from development;

3. To provide multiple options for landowners to minimize impacts on environmental resources and natural or cultural features such as mature woodlands, hedgerows and tree lines, critical wildlife habitats, historic buildings and sites, and fieldstone walls;

4. To create neighborhoods with a traditional Village character as discussed in the Village's Comprehensive Plan;

5. To provide for a balanced range of lot sizes, building densities, and housing choices to accommodate a variety of age and income groups and residential preferences, so that Warwick's population diversity may be maintained;

6. To implement policies to conserve a variety of irreplaceable and environmentally sensitive resource lands as set forth in the Village Comprehensive Plan, including provisions to create a greenway trail system and other areas for active or passive recreational use for the benefit of present and future residents;

7. To conserve scenic views;

8. To promote development in harmony with the goals and objectives of the Village Comprehensive Plan; and

9. To mitigate identified environmental impacts under the State Environmental Quality Review Act (SEQR).

<u>The Proposed Scope for DEIS:</u> It is respectfully submitted that the Applicant should address within the DEIS how this proposed cluster plan meets the "purposes" of the code section. In particular how this proposed plan fulfills the purposes set forth in No's 1, 2, 3, 6, 7, and 9 as above referenced.

By addressing these items in the DEIS and FEIS the Board should then be in a position to review the purposes provision and make a determination as to whether the goals of the cluster regulations are met by the present cluster plan.

It may be appropriate to include in the Scope for the DEIS how the applicant will address the permanent protection of the open space areas by either conservation easement, fee simple dedication to the Village, homeowners association, or other. (145-29.K)

Aside from the foregoing I believe the Scope is appropriate subject to further comments from the Board members and consultants.

Respectfully,

Robert J. Dickover, Esq. Attorney for the Planning Board



December 11, 2017

Village of Warwick Planning Board 77 Main Street Warwick, NY 10990

- Att: George Aulen, Chairman
- Re: Village View Cluster Subdivision L&G #1802.40

Dear Mr. Aulen and Planning Board Members:

We have reviewed the following information submitted for the Village View Cluster project:

- Full EAF, Part 1, revised 12/6/17
- Draft Scope for the preparation of a Draft Environmental Impact Statement, dated 5/4/17.

We provide the following comments:

- The NYSDEC states that "the primary goals of scoping are to focus the EIS on potentially significant adverse impacts and to eliminate consideration of those impacts that are irrelevant or nonsignificant." Mr. Rother has submitted a draft scoping document for the Board's use. In Part IV of the draft document, the following major topics are included:
 - A. Soils, Topography and Geology
 - B. Ground and Surface Water Resources
 - C. Wastewater Management
 - D. Water Supply
 - E. Stormwater Management & Flooding
 - F. Flora and Fauna
 - G. Traffic
 - H. Land Use and Zoning
 - I. School Services
 - J. Fiscal Impact
 - K. Cultural Resources.
- 2. Robert Dickover provided a memo to the Board on 12/11/17 in which he recommends that the applicant should discuss within the DEIS how the proposed cluster plan meets the purposes listed in the zoning ordinance and how permanent protection of open space areas will be achieved. I concur with these recommendations.
- 3. Part 1 of the Full EAF has been revised in response to our previous comments.

Sincerely,

Lehman & Getz, P.C., Village Engineers David A. Getz, P.E.

cc: Robert J. Dickover via email <Robert.Dickover@DDDBLaw.Com>

KIRK ROTHER, P.E.

CONSULTING ENGINEER, PLLC

5 SAINT STEPHENS LANE Phone (845) 988-0620 Fax (845) 988-1628 WARWICK, NY 10990

Email krother@kirkrother.com

January 31, 2018

George Aulen, Chairman Village of Warwick Planning Board 77 Main Street Warwick, NY 10990

Re: Village View Estates Cluster Subdivision Project #04170.0

Dear Chairman Aulen:

In reference to the above, enclosed please find the following:

9 - Revised Scoping Document

The Scoping Document has been revised per input received from the Village Planning Board and their consultants. The specific revisions are summarized as follows:

- Section III (C) Project Description: Revised to indicate that the description of the action shall include a discussion of how the project is in keeping with the "purposes" of Cluster Subdivision as set forth in Section 145-29(A) of the Village Code. It also now indicates that the proposed means of permanently protecting the Open Space shall be discussed.
- Section IV (G) Traffic: The intersection of Crescent Avenue and Grand Street has been added as an intersection to be studied.
- Section IV (H) Land Use and Zoning: A discussion of the annexation of land between the Town of Warwick and the Village of Warwick has been added.
- Section IV (J) Fiscal Impact: A discussion of the fiscal impacts as relates to Affordable Housing has been added.

We trust the above adequately addresses the revisions requested by the Board.

Respectfully,

We Theke

Kirk Rother, P.E.

Enclosures Cc: Client

KIRK ROTHER, P.E.

CONSULTING ENGINEER, PLLC

5 SAINT STEPHENS LANE Phone (845) 988-0620 Fax (845) 988-1628 WARWICK, NY 10990

Email krother@kirkrother.com

January 31, 2018

George Aulen, Chairman Village of Warwick Planning Board 77 Main Street Warwick, NY 10990

> *Re: Village View Estates Project #04170.0*

Dear Chairman Aulen:

Kindly let this letter serve to request an additional 90 day extension of preliminary approval for the Village View Estates 28 lot subdivision.

As the Board is aware, the applicant continues to pursue a Cluster Subdivision on this parcel. While the cluster subdivision application plays its course the applicant wishes to preserve the existing preliminary approval that is in effect.

Should you have any questions, or require any additional materials, please feel free to contact this office.

Respectfully,

The Thete

Kirk Rother, P.E.

cc: Client Jay Myrow, Esq.

Dickover, Donnelly & Donovan, LLP Attorneys And Counselors At Law

David A. Donovan Michael H. Donnelly Robert J. Dickover 28 Bruen Place P.O. Box 610 Goshen, NY 10924 Phone (845) 294-9447 dickover@dddllplaw.com Fax (845) 294-6553 (Not for Service of Process)

Successor Law Firm To: Alexander Appelbaum, P.C., Florida, N.Y. (1915-1988) Ludmerer & Vurno, Esqs., Warwick, N.Y.

February 2, 2018

George Aulen, Chairman Village Planning Board Village of Warwick 77 Main Street Warwick, NY 10990 (*via email*)

RE: Village View Cluster Subdivision

Dear Chairman Aulen:

In an effort to assist the Board with the Village View cluster subdivision application I offer the following notes:

DEIS Scoping Session

The matter is presently scheduled for a public hearing on the scoping document for the draft EIS.

Within the applicant's submission is a note that the open area ownership is a matter for discussion with the Board. In an attempt to assist the Board with this issue I make note of the Village Zoning Ordinance provisions that address the open space requirements and the form of ownership which is allowed for under the Code. Those provisions are attached as an endnote. ^a

Cluster Subdivision Open Space Ownership

I note that the ordinance provides that a conservation easement is the preferred method of protecting the open space and that ownership shall be titled to a private organization subject to caveats. Notwithstanding the provision that ownership shall be in a privat organization the ordinance provides for other means of ownership either individually or in combination, including a provision providing for (a) Open space trails being offered for dedication to the Village; (b) Fee simple dedication to the Village; and (c) a Homeowners' Association.

I further note that there is provision for "Non-common private ownership." The required open space land may be included within one or more large "conservancy lots" provided the open space is permanently restricted from future development.

Finally, there is provision for "other instruments, such as deed restriction acceptable to the Village Attorney" which may also be used to protect open space as may be proposed by the applicant.

Respectfully,

Robert J. Dickover, Esq. Attorney for the Planning Board

^a The Open Space Requirements

145-29.F. Dimensional Standards. The Planning Board shall have the discretion to modify the applicable bulk and dimensional standards from that which is required in a conventional subdivision except that lots shall maintain the following minimum standards:

1. Minimum required open space: In all zoning districts, a cluster development must preserve twenty percent (20%) of the tract's developed acreage as open space land. Parking areas and roads shall not be included in the calculation of the minimum required open space.

G. Open space standards:

 The required open space land may consist of a combination of Primary Conservation Areas and Secondary Conservation Areas as described above. The proposed subdivision design shall strictly minimize disturbance of these environmentally sensitive areas. Primary Conservation Areas shall be included in the required open space area to the greatest extent practical. The applicant shall also demonstrate that such features will be protected by the proposed subdivision plan. Secondary Conservation Areas include special features of the property that would ordinarily be overlooked or ignored during the design process such as significant habitat areas, mature forests, historic structures and sites and archeological sensitive areas. Secondary Conservation Areas shall be included in the required open space area to the greatest extent practical such that protecting these resources will, in the judgment of the Planning Board, achieve the purposes of this section.
Open space lands shall be laid out in general accordance with the Village Comprehensive Plan to better enable an interconnected network of open space.

3. A recreational fee in lieu of land, as set forth in the Village's fee schedule, shall be imposed to accommodate the foreseeable recreational needs of the proposed subdivision's residents. Upon the recommendation of the Planning Board and where the Village Board of Trustees deems it appropriate for land to be deeded for recreational purposes, up to ten percent (10%) of the total acreage may be subject to the Village's recreational land dedication requirement. Typically, this acreage will be used to provide potential connections within the Village's long-range trail network. 5. Open space land should generally remain undivided and connect to areas of adjacent open space where applicable.

6. No portion of any house lot may be used for meeting the minimum required open space land unless encumbered with a conservation restriction.

J. Permanent protection of open space. Conservation easements are the preferred method to protect open space under Article 49 of the New York State Environmental Conservation Law. In all

cases, the permanent preservation of such open space shall be legally assured to the satisfaction of the Planning Board and Village Attorney and the Village Board shall be granted third party enforcement rights to enforce the terms of the conservation restriction. The following regulations shall apply:

1. If a conservation easements is proposed, the conservation easement shall be titled to a private conservation organization provided that:

a. The conservation organization is acceptable to the Village and is a bona fide conservation organization as defined in Article 49 of the New York State Environmental Conservation Law; b. The conveyance contains appropriate provisions for proper reverter or retransfer in the event that the conservation organization becomes unwilling or unable to continue carrying out its functions; and

c. A maintenance agreement acceptable to the Village is established between the owner and the conservation organization to insure perpetual maintenance of the open space.

2. The conservation restriction shall permanently restrict the open space from future subdivision, shall define the range of permitted activities, and shall give the Village the ability to enforce these restrictions. Under no circumstances shall any development be permitted in the open space at any time, except for the following uses:

a. Conservation of open land in its natural state (for example, woodland, fallow field, or managed meadow). The clearing of woodland shall generally be prohibited, except as necessary to create trails and active recreation facilities. The determination of necessity shall lie with the Planning Board.

b. Game preserve, wildlife sanctuary, or other similar conservation use.

c. Woodlots, arboreta, agriculture and silviculture in keeping with established standards for best management practices, selective harvesting, and sustained-yield forestry.

d. Neighborhood open space uses such as village greens, commons, picnic areas, community gardens, trails, and similar low-impact passive recreational uses Village of Warwick Zoning Law specifically excluding motorized off-road vehicles, rifle ranges, and other uses similar in character and potential impact as determined by the Planning Board.

e. Active non-commercial recreation areas, such as playing fields, playgrounds, and courts, provided such areas do not consume more than half of the minimum required open space land or five acres, whichever is less. Playing fields, playgrounds, and courts shall not be located within 150 feet of abutting properties nor shall such facilities be equipped with lighting. Parking facilities for the same shall also be permitted, and they shall generally be gravel-surfaced, unlighted, properly drained, provide safe ingress and egress, and contain no more than ten parking spaces. Such recreation uses may be a public park or recreation area owned and operated by a public or private nonprofit agency, but shall not include storage of materials, trucking or repair facilities, or private or municipal sanitary landfills.

f. Stormwater detention areas designed, landscaped, and available for use as an integral part of the open space area.

g. Easements for drainage; access, sewer or water lines, or other public purposes.

h. Underground utility rights-of-way. Above ground utility and street rights-of-way may traverse conservation areas but shall not count toward the minimum required open space land.

K. Ownership of open space land and common facilities. The following methods may be used, either individually or in combination, for ownership of open space land (exclusive of its conservation easement) and common facilities. Open space trails may be initially offered for dedication to the Village. Open space land and common facilities shall not be transferred to another entity except for transfer to another method of ownership permitted under this section. Ownership methods shall conform to the following:

1. Fee simple dedication to the Village. The Village may, but shall not be required to, accept any portion of the open space land and common facilities, provided that:

a. There is no substantial cost of acquisition to the Village; and

b. The Village agrees to and has access to maintain such facilities; and

c. Such facilities shall be accessible for public use.

2. Homeowners" Association. Open space land and common facilities may be held in common ownership by a homeowners" association, subject to all of the provisions for homeowners" associations set forth in New York State regulations. In addition, the following regulations shall be met:

a. The applicant shall provide the Village with a description of the organization of the proposed association, including its by-laws, and all documents governing ownership, maintenance, and use restrictions for common facilities.

b. The proposed association shall be established by the owner or applicant and shall be operating (with financial subsidization by the owner or applicant, if necessary) before the sale of any dwelling units in the development.

c. Membership in the association shall be mandatory for each property owner within the subdivision and successive owners in title with voting rights of one vote per lot or Village of Warwick unit, and the subdivider's control, therefore, passing to the individual lot/unit owners on sale of the majority of the lots or units.

d. The association shall be responsible for liability insurance, local taxes and maintenance of open space land, recreational facilities and other commonly held facilities.

e. The by-laws shall confer legal authority on the association to place a lien on the real property of any member who falls delinquent in his or her dues. Such dues shall be paid with the accrued interest before the lien may be lifted.

f. Written notice of any proposed transfer of common facilities by the association or the assumption of maintenance for common facilities must be given to all members of the association and to the Village no less than thirty (30) days prior to such event.

g. The association shall have adequate resources to administer, maintain, and operate such common facilities.

3. Non-common private ownership. The required open space land may be included within one or more large "conservancy lots" provided the open space is permanently restricted from future development.

4. Other instruments, such as deed restriction acceptable to the Village Attorney, may also be used to protect open space as may be proposed by the applicant.

L. Maintenance. Unless otherwise agreed to by the Village Board, the cost and responsibility of maintaining common open space and facilities shall be borne by the homeowners" association, conservation organization, private owner, or, in the case of open space and facilities deeded to the Village, the municipality.

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March 8, 2018

Village of Warwick Planning Board 77 Main Street Warwick, NY 10990

- Att: George Aulen, Chairman
- Re: Village View Cluster Subdivision L&G #1802.40

Dear Mr. Aulen and Planning Board Members:

Kirk Rother has submitted a set of preliminary subdivision plans for review. The set includes 15 sheets and is dated March 1, 2018. In his cover letter, Mr. Rother indicates that the applicant would like to discuss several aspects of the project.

ARRANGEMENT OF ROADS AND LOTS

The road layout has been modified to eliminate a cul-de-sac that was previously shown. The number of lots remains the same, 45. The amount of proposed open space appears to be very similar to the amount shown on the previous plan. The area of disturbance on adjacent Town property has been increased. The representative house footprint has been changed to a more narrow shape.

The Board should evaluate the proposed layout with respect to the objectives of the cluster subdivision process.

What is the applicant's intent with regard to providing affordable housing?

ROAD WIDTH AND SIDEWALKS

- Section 120-14.A of the Village's subdivision code specifies that local roads shall have a minimum right-of-way width of 50 feet and a minimum pavement width of 35 feet. The Village's <u>Minimum Specifications for Roads</u> includes a typical road cross section, showing a 30-foot pavement width, with sidewalks on both sides.
- The Village has modified these requirements in the past. In Warwick Grove, for example, most of the roads are 24 feet wide. The exceptions are Hudson Street (28 feet wide), Longhouse Road (22 feet wide), and several short one-way roads (18 feet wide). Sidewalks were approved on both sides of the road in some locations, and on one side in other locations.
- The Village View cluster plans show a proposed right-of-way width of 50 feet and a road width of 26 feet. The applicant would like to discuss the locations of sidewalks.

CUL-DE-SAC DESIGN

- The Village View cluster cul-de-sac includes a pavement radius of 50 feet and a right-of-way radius of 60 feet. The layout complies with the Village's subdivision code requirements.
- The applicant would like to discuss the construction of an island within the cul-de-sac. We defer to the Village DPW supervisor on this issue.

GENERAL

We will provide additional comments on stormwater, utilities, and other aspects of the project in the future.

Sincerely,

)ail h Dop

Lehman & Getz, P.C., Village Engineers David A. Getz, P.E.

cc: Robert J. Dickover via email <Robert.Dickover@DDDBLaw.Com>

Dickover, Donnelly & Donovan, LLP Attorneys And Counselors At Law

David A. Donovan Michael H. Donnelly Robert J. Dickover 28 Bruen Place P.O. Box 610 Goshen, NY 10924 Phone (845) 294-9447 dickover@ddllplaw.com Fax (845) 294-6553 (Not for Service of Process)

Successor Law Firm To: Alexander Appelbaum, P.C., Florida, N.Y. (1915-1988) Ludmerer & Vurno, Esqs., Warwick, N.Y.

April 12, 2018

George Aulen, Chairman Village Planning Board Village of Warwick 77 Main Street Warwick, NY 10990 (*via email to: planning@villageofwarwick.org*)

RE: Village View Cluster Subdivision DEIS

Dear Chairman Aulen:

In an effort to assist the Board with the Village View cluster subdivision DEIS as prepared and now presented for the Board's review I offer the following comments:

Status of Application

- This is an application for a new and different subdivision than that previously granted conditional subdivision approval by the Board on July 17, 2008. Since that time extensions of the approval have been granted by the Planning Board in recognition, in part, of the challenging climate of the real estate market since then.
- At this time the applicant seeks a new and different subdivision plan utilizing the cluster subdivision regulations adopted by the Village on December 8, 2015. At the same time the applicant seeks to maintain its existing approval while pursuing the new cluster plan. The Board has continued to grant extensions to the previous plan while the present cluster plan is being reviewed.
- On February 15, 2018 a public scoping session was held by the Board and a draft scoping document was accepted that evening. The applicant has now prepared on behalf of the Board a Draft Environmental Impact Statement (DEIS) which is presented for the Board's review before being finalized for adoption by the Board.
- The comments within this memorandum will address the contents of the DEIS as presented.

The proposed DEIS

[Page numbers refer to the page number of the proposed DEIS as presented]

- P. 1. Para. B: should refer to the buffer along the "tributary stream to the Wawayanda Creek"
- P. 3. Para. C first line: Query whether this action will require add: "review" before word "permits, or, delete the reference to Orange County Department of Planning for 239 review. This is neither a permit nor approving agency.

Add, to the Planning Board approval "site plan approval"

Query: SHPPO permit as the last item?

- P.5.3. 2nd Para.: Query the statement that "additional buffering from residential activity". Is this accurate?
- P.5.3: Query the "fair share contribution to the Robin Brae pump station. How much might be needed to accommodate the additional burden on the station.
- P.6. first Para: amend to reflect acceptance of dedication by the Village Board.
- P.6.5. Last sentence: Discuss "easements to benefit of the Village will allow for maintenance as described in the SWPPP" Maintenance by whom? What entity is to own the bio-retention areas?
- P.7 2nd Para: Wetlands and streams set aside to be dedicated as open space. Discuss form of entity to own the open space. The village code speaks to the types of entities. This should be discussed and decided before going to much further. A decision requires input from the Village Board. The open space requirements are set forth in an endnote to this memorandum and should be fully reviewed and discussed. ^a (See Endnote No. 1)
- P.7.7. 1st Para. Suggest that the number of trips generated by the 28-lot subdivision be added to the paragraph for comparison purposes.

Last Para. Add that sidewalks are to be included throughout the project if that is the decision of the Board.

• P.8.1: Query whether the statement that the buffer is larger on the cluster plan than that on the 28-lot plan.

Locust Road should be changed to Street.

- P.8.2: Query the statement that the cluster plan provides opportunities for walking and cycling to the Village center. The Cluster plan does not encourage walking or biking any more than the 28-lot plan. Suggest that it be explained or deleted.
- P.28 Unavoidable impacts, etc.: Query when the capacity of both systems were analyzed. Should the analysis be updated and brought current?
- P.30 Table II-F-1: Query whether the reference to Orange County Department of Planning for 239 review should be removed. This is neither a permit nor approving agency.
- P. 37, 2nd Para. Consider rewording the "surrounded by a federally protected, etc." phrase. Query whether the stream is "surrounded."?
- P.60.d: First line consider deleting statement that the Subdivision "has been granted waivers". Query the accuracy of the statement.
- P.60.e: Query the statement made in the last sentence.

- P.61 1st Para. 3rd bullet item: Query how residents would be advised of potential future development and continuation of Road D?
- P. 62.1: Query the "20 percent" Is that the correct percentage?
- P.63.3: Explain why the proposed open space is "preferable" to the 28-lot plan.
- P. 63. And 5: Query the statements that follow the criteria.
- P.64.6: Query the statements that follow the criteria.
- P.65 1st Para.: Consider a statement about the form of ownership of the open space.
- P.84.4: Query whether the cluster plan encourages biking and walking any more than the 28-lot plan?

Respectfully,

Robert J. Dickover, Esq. Attorney for the Planning Board

a. The conservation organization is acceptable to the Village and is a bona fide conservation organization as defined in Article 49 of the New York State Environmental Conservation Law;

b. The conveyance contains appropriate provisions for proper reverter or retransfer in the event that the conservation organization becomes unwilling or unable to continue carrying out its functions; and

c. A maintenance agreement acceptable to the Village is established between the owner and the conservation organization to insure perpetual maintenance of the open space.

2. The conservation restriction shall permanently restrict the open space from future subdivision, shall define the range of permitted activities, and shall give the Village the ability to enforce these restrictions. Under no circumstances shall any development be permitted in the open space at any time, except for the following uses: a. Conservation of open land in its natural state (for example, woodland, fallow field, or managed meadow). The clearing of woodland shall generally be prohibited, except as necessary to create trails and active recreation facilities. The determination of necessity shall lie with the Planning Board.

b. Game preserve, wildlife sanctuary, or other similar conservation use.c. Woodlots, arboreta, agriculture and silviculture in keeping with established standards for best management practices, selective harvesting, and sustained-yield forestry.

d. Neighborhood open space uses such as village greens, commons, picnic areas, community gardens, trails, and similar low-impact passive recreational uses specifically excluding motorized off-road vehicles, rifle ranges, and other uses similar in character and potential impact as determined by the Planning Board. e. Active non-commercial recreation areas, such as playing fields, playgrounds, and courts, provided such areas do not consume more than half of the minimum required open space land or five acres, whichever is less. Playing fields, playgrounds, and courts shall not be located within 150 feet of abutting properties nor shall such facilities be equipped with lighting. Parking facilities for the same

^a 1. If a conservation easements is proposed, the conservation easement shall be titled to a private conservation organization provided that:
shall also be permitted, and they shall generally be gravel-surfaced, unlighted, properly drained, provide safe ingress and egress, and contain no more than ten parking spaces. Such recreation uses may be a public park or recreation area owned and operated by a public or private nonprofit agency, but shall not include storage of materials, trucking or repair facilities, or private or municipal sanitary landfills. f. Stormwater detention areas designed, landscaped, and available for use as an integral part of the open space area.

g. Easements for drainage; access, sewer or water lines, or other public purposes. h. Underground utility rights-of-way. Above ground utility and street rights-of-way may traverse conservation areas but shall not count toward the minimum required open space land.

K. Ownership of open space land and common facilities. The following methods may be used, either individually or in combination, for ownership of open space land (exclusive of its conservation easement) and common facilities. Open space trails may be initially offered for dedication to the Village. Open space land and common facilities shall not be transferred to another entity except for transfer to another method of ownership permitted under this section. Ownership methods shall conform to the following:

1. Fee simple dedication to the Village. The Village may, but shall not be required to, accept any portion of the open space land and common facilities, provided that:

a. There is no substantial cost of acquisition to the Village; and

b. The Village agrees to and has access to maintain such facilities; and

c. Such facilities shall be accessible for public use.

2. Homeowners" Association. Open space land and common facilities may be held in common ownership by a homeowners" association, subject to all of the provisions for homeowners" associations set forth in New York State regulations. In addition, the following regulations shall be met:

a. The applicant shall provide the Village with a description of the organization of the proposed association, including its by-laws, and all documents governing ownership, maintenance, and use restrictions for common facilities.

b. The proposed association shall be established by the owner or applicant and shall be operating (with financial subsidization by the owner or applicant, if necessary) before the sale of any dwelling units in the development.

c. Membership in the association shall be mandatory for each property owner within the subdivision and successive owners in title with voting rights of one vote per lot or unit, and the subdivider's control, therefore, passing to the individual lot/unit owners on sale of the majority of the lots or units.

d. The association shall be responsible for liability insurance, local taxes and maintenance of open space land, recreational facilities and other commonly held facilities.

e. The by-laws shall confer legal authority on the association to place a lien on the real property of any member who falls delinquent in his or her dues. Such dues shall be paid with the accrued interest before the lien may be lifted.

f. Written notice of any proposed transfer of common facilities by the association or the assumption of maintenance for common facilities must be given to all members of the association and to the Village no less than thirty (30) days prior to such event. g. The association shall have adequate resources to administer, maintain, and operate such common facilities.

3. Non-common private ownership. The required open space land may be included within one or more large "conservancy lots" provided the open space is permanently restricted from future development.

4. Other instruments, such as deed restriction acceptable to the Village Attorney, may also be used to protect open space as may be proposed by the applicant.

L. Maintenance. Unless otherwise agreed to by the Village Board, the cost and responsibility of maintaining common open space and facilities shall be borne by the homeowners^{ee} association, conservation organization, private owner, or, in the case of open space and facilities deeded to the Village, the municipality.



April 12, 2018

Village of Warwick Planning Board 77 Main Street Warwick, NY 10990

- Att: George Aulen, Chairman
- Re: Village View Cluster Subdivision L&G #1802.40

Dear Mr. Aulen and Planning Board Members:

On April 5, 2018, Kirk Rother submitted a Draft Environmental Impact Statement and a set of preliminary subdivision plans for the Village View Cluster Subdivision. The plans are dated April 4, 2018. The hard copy of the DEIS is undated, but the electronic version is dated April 4, 2018.

We provide the following review comments:

DRAFT ENVIRONMENTAL IMPACT STATEMENT

- 1. The entity that will own, maintain, and protect the proposed open space areas needs to be identified and discussed. We recommend that physical features, such as fences or hedges, be provided along residential property lines that abut open space areas.
- 2. The proposed phasing of the project, and the 5-acre limit of disturbance restrictions, should be discussed in Section II-C, Project Description.
- 3. The issue of affordable housing has not been adequately addressed.
- 4. The proposed annexation should be discussed in Section III-H, Land Use and Zoning.
- 5. On page 70, a statement is made that Primary Conservation Area is located entirely within the conservation easement areas, with the exception of the small area needed to establish road crossings. The statement is not accurate; there are some areas within proposed roads and lots that have existing slopes in excess of 25 percent.
- 6. The discussion of house lot standards should include all requirements from Section 145-29.H, i.e. that house lots shall not encroach upon Primary Conservation Areas.
- 7. The SWPPP mentions a "letter of no impact" from SHPO. The letter should be provided, and mentioned in Section III-K, Cultural Resources.
- 8. A plan should be provided that clearly shows the limits of tree removal. In their 9/26/17 letter, the NYSDEC states that if over 10 acres of tree clearing is proposed, additional review will be required. The letter also states that due to potential impacts to bat habitat, tree

removal must take place between October 1 to March 31. This should be addressed in the DEIS and on the subdivision plans.

- 9. The impact on Village taxes should be clarified. The numbers provided on pages 8, 11, and 29 do not appear to be consistent. Village taxes should be included in the tables provided on pages 78 and 79.
- 10. The water supply section should include a discussion of water pressures and available flows. A water booster pump station is shown on the plans.
- 11. Further discussion is needed with the Village regarding potential impacts on the wastewater pump station located on Robin Brae Drive.
- 12. We recommend that the correspondence provided in Appendix B be arranged in chronological order. A review letter prepared by our office on 5/10/17 should be included.
- 13. SWPPP:
 - a. Water quality and runoff reduction calculations have not been finalized.
 - b. Additional calculations are required for the channel protection volume analysis.
 - c. Design calculations should be provided for the 60-inch culvert at the proposed road crossing.
 - d. The proposed stream diversion and mitigation measures should be mentioned in Section 6.
 - e. The phasing of the project should be mentioned, with the 5-acre limit of disturbance.
 - f. The report mentions a concrete truck washout station, but none is shown on the plan.
 - g. Figure III-E-2: The proposed drainage patterns uphill of the cul-de-sac appear to be inconsistent with the grading shown on the subdivision plans.
 - h. The analysis point (AP) should be shown on the drainage area maps. Soil types should also be included on a plan that shows the layout of the proposed project. The north arrow should be corrected on the drainage area maps.
 - i. The Notice of Intent must be completed once the designs are finalized.
- 14. We have attached a pdf file showing minor corrections and typographical errors that we have noted.

PRELIMINARY SUBDIVISION PLANS (15 SHEETS)

We have performed a brief review of the subdivision plans. We will provide additional comments in the future after the site visit (scheduled for April 14) and further review. We provide the following comments at this time:

- 1. Driveways are shown to be 8 feet in width, which is less than typically provided for residential purposes.
- 2. Proposed grading should be shown at locations where swales are proposed.
- 3. A profile should be provided for the proposed 60-inch culvert. Is a natural stream bottom proposed? Protection for the banks of the diversion ditch should be specified.
- 4. Inverts and other design information should be provided for the structures on Sheets 11 and 12.
- 5. The plans should show the existing farm building to be removed.
- 6. Runoff from all new impervious surfaces must be directed to stormwater management measures. Clarify at Lots 8-12, 31-33, and 45.
- 7. Stop signs should be shown.
- 8. Landscaping and lighting information should be provided.

Sincerely,

Mail h BA

Lehman & Getz, P.C., Village Engineers David A. Getz, P.E.

cc: Robert J. Dickover via email <Robert.Dickover@DDDBLaw.Com>

Dickover, Donnelly & Donovan, LLP Attorneys And Counselors At Law

David A. Donovan Michael H. Donnelly Robert J. Dickover 28 Bruen Place P.O. Box 610 Goshen, NY 10924 Phone (845) 294-9447 dickover@ddllplaw.com Fax (845) 294-6553 (Not for Service of Process)

Successor Law Firm To: Alexander Appelbaum, P.C., Florida, N.Y. (1915-1988) Ludmerer & Vurno, Esqs., Warwick, N.Y.

May 16, 2018

George Aulen, Chairman Village Planning Board Village of Warwick 77 Main Street Warwick, NY 10990 (via email to: planning@villageofwarwick.org)

RE: Village View Cluster Subdivision DEIS

Dear Chairman Aulen:

In an effort to assist the Board with the Village View cluster subdivision DEIS as prepared and now presented for the Board's review I offer the following comments:

Status of Application

• The Board has preliminarily reviewed the first draft of the DEIS. The applicant has submitted a revised version thereof. These comments are upon the revised version of the DEIS as presented.

The proposed DEIS

[Page numbers refer to the page number of the proposed DEIS as presented]

- P.5.3: Query the "fair share contribution to the Robin Brae pump station. How much might be needed to accommodate the additional burden on the station. It is my opinion that the "fair share" contribution to the "needed" Robin Brae pump station improvements, if there be such, be analyzed and addressed in the DEIS.
- P.5-6. Storm Water Management Flooding and Flora and Fauna. In this and other areas of the DEIS there is a phrase used which should be clarified. Here it is stated that "Easements to the benefit of the Village will allow for maintenance as described in the SWPPP." This language here and elsewhere should be amended to reflect that it is and will not be the responsibility of the Village to maintain these areas. Rather, the Village will be granted an easement for the purposes of access and egress to provide maintenance

and repair in the event that the HOA fails to do so. Or similar language. [Also at P.21, Item 4 "easements"]

- P.8. Item 8.c.: Query the statement that the "by providing more compact lots that will provide a better community experience for the residents and reduce sprawl". The Board is reminded that the DEIS is a statement that belongs to the Board. Does the Board agree with this statement?
- P.10 Item 4: correct reference to 24-lot to 28-lot.
- P.15 Item B. Correct the zoning district reference from R-1 to "R".
- P.22 Item C.1. Correct the zoning district reference from R-1 to "R".
- P.28 3rd Para. Correct spelling of "on" to "one".
- P.47. On the issue of removal of the trees in the area of Locust Street. Should the Board consider a "do not remove" note for trees of significance? Have trees of significance been identified on the Plan?
- P.60 Item e: this provision has been changed and now states "we recommended that the potential continuation of Road A to future development be made clear to would-be residents of *Village View* and Road A." This needs to be revised. Perhaps as follows: "the potential continuation of Road A to future development should be made clear to would-be residents of *Village View* by way of a recitation in all deeds for lots in the subdivision" or similar.

Respectfully,

Robert J. Dickover, Esq. Attorney for the Planning Board



Hudson Valley Planning & Preservation 26 Laura Road, Monroe, NY 10950 (845)893-0134 Fax (845) 230-8749 Hudsonvalleyplanning.com

May 30, 2018

Village of Warwick Planning Board 77 Main Street Warwick, NY 10990

Attention: George Aulen, Chairman

Re: Village View Cluster

Dear Mr. Aulen and Planning Board Members:

The consultants to the Planning Board offered comments on the DEIS submitted on April 9th, 2018 by email, as well as discussions with the Board Members at the last Planning Board meeting on April 19th, 2018 concerning the Affordable Housing components. The purpose of this letter is to address the comments made and/or provide the locations of where changes were made in the DEIS to respond to the comments. In the digital version of the DEIS, I've highlighted sections that were changed to make it easier for the reviewers to find requested revisions.

The Planning Board Engineer, Dave Getz, P.E., offered "minor corrections" to the DEIS, which were discussed with me shortly before the meeting. He did not issue a memo. The requested changes are as follows:

1. Mr. Getz noted that a new water report had been issued and changes were needed in the DEIS to update the average daily GPD. We changed both sections (I and III) where this number was mention to reflect the current 2017 water report and updated references.

2. We discussed the differences in the Tables in the Fiscal Impact Sections in terms of current taxes paid and tax estimates, in terms of Warwick Village taxes. The property,

as vacant property is currently exempt from Village General fund taxes, and the GEIS has been changed to clarify this fact.

3. We discussed the changes needed to satisfy the Alternative with Affordable Housing with him prior to the meeting, and final discussions occurred at the meeting.

The following Comments were offered by Robert Dickover, Esq. and responded to in the document.

• P.5.3: Query the "fair share contribution to the Robin Brae pump station. How much might be needed to accommodate the additional burden on the station. It is my opinion that the "fair share" contribution to the "needed" Robin Brae pump station improvements, if there be such, be analyzed and addressed in the DEIS.

Response: We added narrative to Section III-C to indicate that the Robin Brae pump has been recently replaced, and continues to have design issues that will need resolution. In addition, the Village Engineer is currently exploring different design issues, and once a final cost is decided, than the applicant or new home owners would be subject to paying their fair share of the costs of the improvements, depending on the timing of the improvements and when cost estimates would be available.

• P.5-6. Storm Water Management Flooding and Flora and Fauna. In this and other areas of the DEIS there is a phrase used which should be clarified. Here it is stated that "Easements to the benefit of the Village will allow for maintenance as described in the SWPPP." This language here and elsewhere should be amended to reflect that it is and will not be the responsibility of the Village to maintain these areas. Rather, the Village will be granted an easement for the purposes of access and egress to provide maintenance and repair in the event that the HOA fails to do so. Or similar language. [Also at P.21, Item 4 "easements"]

Response: Changed as requested to clarify the responsibly of maintenance.

• P.8. Item 8.c.: Query the statement that the "by providing more compact lots that will provide a better community experience for the residents and reduce sprawl". The Board is reminded that the DEIS is a statement that belongs to the Board. Does the Board agree with this statement?

Response: Phrase was removed.

- P.10 Item 4: correct reference to 24-lot to 28-lot.
- P.15 Item B. Correct the zoning district reference from R-1 to "R".
- P.22 Item C.1. Correct the zoning district reference from R-1 to "R".

Response: Changes made to the three items above as requested.

• P.28 3rd Para. Correct spelling of "on" to "one".

Response: I could not find the change, but we can make this minor change prior to issuance of the DEIS.

• P.47. On the issue of removal of the trees in the area of Locust Street. Should the Board consider a "do not remove" note for trees of significance? Have trees of significance been identified on the Plan?

Response: It is my understanding that the Board has not determined that trees in the area of Locust Street to be "trees of significance," and many would have been removed with the Road Widening.

• P.60 Item e: this provision has been changed and now states "we recommended that the potential continuation of Road A to future development be made clear to would-be residents of *Village View* and Road A." This needs to be revised. Perhaps as follows: "the potential continuation of Road A to future development should be made clear to would-be residents of *Village View* by way of a recitation in all deeds for lots in the subdivision" or similar.

Response: We added a phase to indicate that the new residents would be appropriately notified of the continuation of the road.



Advance PDF Highlighted copy for your review

Robert J. Dickover <Robert.Dickover@dddllplaw.com> To: Susan Roth <susanrothaicp@gmail.com>, Kirk Rother <krother@kirkrother.com> Cc: Dave Getz <Getz@lehmangetz.com>, "gaulen@optonline.com" <gaulen@optonline.com

Susan/Kirk:

P. 11 & 83 change "town" of Warwick to "Village" of Warwick

P. 11 says 48 units. Table I-E-1 says 51 units.

P. 22: with respect to the Village's easement for maintenance-there should be a statement with respect to the HOA and homeowners being charged the cost of such maintenance should the village be called upon to perform such and to have the costs thereof added to homeowners tax bill. A general statement when it first appears in the DEIS will suffice but it needs to be in there somewhere.

P. 40: The language with respect to the "fair share" should be reviewed carefully by the Board members. I suggest that before adoption it be reviewed by the Village Attorney. I have forwarded the proposed text to Mr. Gaba and solicited his comments.

Rob Dickover

Robert J. Dickover, Esq. Dickover, Donnelly & Donovan, LLP 28 Bruen Place P.O. Box 610 Goshen, New York 10924 Ph: (845) 294-9447 Fax: (845) 294-6553 robert.dickover@dddllplaw.com

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Wed, Jun 6, 2018 at 2:28 PM

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Appendix C

Minutes from Planning Board Meeting dated 2-15-2018 (Cited in this DEIS)

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CHAIRMAN: GEORGE AULEN MEMBERS: WILLIAM OLSEN, JAMES PATTERSON & JESSE GALLO Alternate: RAEY WEBSTER

VILLAGE OF WARWICK PLANNING BOARD MEETING FEBRUARY 15, 2018

The monthly meeting of the Village of Warwick Planning Board was held on Thursday, February 15, 2018. Present were: George Aulen, Bill Olsen, Jim Patterson, Jesse Gallo, Village Engineer, David Getz and Planning Board attorney, Robert Dickover. Others present were: John Christison, John Cappello, Ross Winglovitz, John McGloin, John Johansen, Michael Cuzzo, Robert Silber, Kirk Rother, Keith Woodward, Ron Charlton, Robert Schluter, David Griegs, Barry Cheney, Jim Neujahr, Patrick Gallagher and others.

A MOTION was made by Bill Olsen, seconded by Jim Patterson and carried to accept the minutes of the January 18, 2018 Planning Board meeting. (4 Ayes)

16 ELM STREET

SITE PLAN APPROVAL

16 ELM ST. LLC

Mr. Getz – The applicant has submitted cost estimates for the privacy fence and the Spruce trees to be used for screening the neighboring properties and we found those proposed costs to be reasonable. I would like to change one of the comments; it was pointed out to me by the Planning Board attorney, that the fence does not need to be bonded. In my comment, I mentioned that there should be a Performance Bond for the fence and the Spruce trees should be covered with a Maintenance Bond. The fence can be considered and treated as a condition of Certificate of Occupancy so I believe that is a better way to handle it.

PUBLIC HEARING

VILLAGE VIEW

SCOPING DOCUMENT

Mr. Aulen read the public hearing notice.

Mr. Getz – A couple of minor changes were made for the January 15, 2018 version. I believe affordable housing was added and under the traffic section I believe an intersection was included. Are there any other changes?

Mr. Rother – Mr. Dickover had requested that we include a description of how the proposed development fits in keeping with the purposes of Cluster subdivisions, so we included that in Section 3C. Our traffic consultant actually brought up the fact that we had Woodside and Grand as an intersection to be studied but we did not have Crescent and Grand as an intersection and he suggested that we add it, which we did. The Board also asked that we include a discussion of the sliver of land to be annexed from the Town to the Village and to add a discussion of fiscal impacts as it relates to Affordable Housing brought up by the County Planning Dept. so, we have added those 4 things.

Mr. Dickover – I do not have anything to add. I sent a memo on the issue of the land ownership for the open area but that is going to be discussed in the Scoping Document.

Mr.Olsen – That is in the Scoping Document?

Mr. Dickover – It is mentioned in the document now and it will be included in the Draft EIS. Mr. Olsen – What about consideration of the property that is in the Town, should that be included?

Mr. Dickover – I think they have added that.

Mr. Olsen – Where?

Mr. Dickover – They make reference to it in the Jan. 31^{st} letter in section 4H – Land Use & Zoning – the discussion of the annexation of the land between the Town & Village has been added.

Mr. Olsen – Will it also be discussed if it is not annexed and gets developed as a Town property? Mr. Rother – I do not know if I have it specifically listed in the Scoping Document as such. I certainly can add it and as went through the process with the 28 lots that were approved we actually did prepare a sketch of what could be built in the Town so we certainly can include that. Mr. Dickover – It is still part of your plan, you have some up grading retention up there that you are going to have to address.

Mr. Rother – There are 70 contiguous acres in the Town and we had a sketch that showed about 20 single family homes on that and we can include that in the DEIS.

Mr. Aulen - You already have approval for those retention basins from the Town.

Mr. Rother – Yes, we had but it will have to be amended because we are changing them a little bit.

Mr. Olsen – I just want them to be sure and address how the preserve open space actually functions as an open space particularly for wildlife and how it is prevented from being encroached by the neighbors. That always happens particularly on small pieces like this.

Mr. Aulen – Do you think you will have problems getting that small sliver annexed into the Village?

Mr. Rother – I don't know, it is an unusual projection and we are proposing to cross it with the road.

Mr. Aulen – The least you would have to do is to get an agreement from the Town, some sort of maintenance agreement between the Town and the Village if you can not annex the property. Mr. Rother – On the latest layout I added this house, I took away from another area in the subdivision so we create more contiguous open space along the stream and steep slopes and it just seemed a nice site for a home. If that gets to be too complicated we will probably just put it back.

Mr. Dickover – If you are not able to annex that house would be in the Town so you would have to take that application to the Town of Warwick.

Mr. Olsen – How much acreage is that little pocket?

Mr. Rother – The road piece is less than one-tenth of an acre and the other is probably onequarter of an acre.

Mr. Dickover – Are you creating that as a separate building lot wholly within the Town or partially in the Village?

Mr. Rother – With this lot I would propose to be a separate lot on land annexed into the Village. Mr. Dickover – And if you can't...

Mr. Rother – I will take it out and put it back where it was.

Mr. Dickover – So for purposes of the Draft EIS, you speak about it both ways and as your application progresses you will resolve the annexation question one way or another. If it doesn't get annexed, the house would either have to come off because you can't approve it so you would need to show it as proposed building lot and not approved for building purposes.

Mr. Rother – We are not getting additional density by doing this, it is just makes for a better plan.

A MOTION was made by Jim Patterson, seconded by Jesse Gallo and carried to close the public portion of the hearing. (4 Ayes)

A MOTION was made by Jesse Gallo, seconded by Jim Patterson and carried to approve the Scoping Document conditional upon no comments within the next 10 days. (4 Ayes)

VILLAGE VIEW	EXT. OF SUBDIVISION APPROVAL	VILLAGE VIEW
--------------	------------------------------	--------------

The Board reviewed the letter submitted from the applicant requesting a 90 day extension.

A MOTION was made by Jim Patterson, seconded by Bill Olsen and carried to grant an extension to extend subdivision approval until May 18, 2018. (4 Ayes)

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Appendix D

Soils Testing from 2006 DEIS

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KIRK ROTHER, P.E.

CONSULTING ENGINEER, PLLC

206 PI	NE ISLAND TURNFIKE	
Phone	(845) 988-0620	
Fax	(845) 988-1628	

WARWICK, NY 10990 Email kirk@optonline.net



To:	Leslie Dotson	From:	Kirk Rother	
Fax #:	294-5754	Date:	11/1/2006	
Phone #:		Pages:	3 Total	
Re:	Lands of Village View Job #: 04170.0	Ce:		

Comments:

Deep Test Pit Results for 7-06-06

If you have received this facsimile in error, or if any portion is illegible, please contact this office immediately.

DEEP TEST PIT RESULTS

VILLAGE VIEW WARWICK PROJECT # 04170 07/06/06

PIT #: 1

- 00" 12" TOPSOIL
- 12" 28" SILT LOAM W/SAND & GRAVEL
- 28" 65" SAND & GRAVELLY SILT LOAM W/SHALE FRAGS COBBLES

65" - 84" CLAY LOAM

GW SEEPAGE @ 32" NO BEDROCK

PIT #:2

- 86"
- 00" 08" TOPSOIL
- 08" 36" SILT LOAM W/ SAND & GRAVEL & CLAY
- 36" 86" GRAVELLY SAND W/SILT & CLAY
 - FEW COBBLES NO BEDROCK NO SEEPAGE

PIT #: 3

- 84"
- 00" 07" TOPSOIL
- 07" 24" SILT LOAM W/CLAY, SAND & GRAVEL
- 24" 84" CLAY LOAM W/ SAND AND GRAVEL
 - MOTTLING "24" FEW COBBLES NO BEDROCK NO SEEPAGE
- PIT #: 4

96"

- 00" 08" TOPSOIL
- 08" 32" SILT LOAM W/SAND, GRAVEL & CLAY
- 32" 96" CLAY SILTY LOAM W/ SAND & GRAVEL AND SHELL FRAGS MOTTLING @ 42" FEW COBBLES NO BEDROCK LIGHT SEEPAGE

PIT #: 5

88"

- 00" 08" TOPSOIL
- 08" 25" SILT LOAM W/ CLAY, SAND & GRAVEL
- 25" 88" CLAY LOAM W/ SAND & GRAVEL
 - MOTTLING AT 24" FEW COBBLES NO BEDROCK LIGHT SEEPAGE @ 36"

DEEP TEST PIT RESULTS CONTINUED

VILLAGE VIEW WARWICK **PROJECT #04170** 07/06/06

PIT #: 6			
91"	T00000-		
06" - 30"	SIL TY LOAM W/ GRAVEL & CAND		
30" - 91"	CLAY LOAM W/ SAND & GRAVEL AN	ND SHELL	
	MOTTLING AT 24" FEW COBBLES	NO BEDROCK	NO SEEPAGE
DIT #. 7			

PII #: 7 96"

90			
00" - 06"	TOPSOIL		
06" - 30"	SILT LOAM W/ CLAY, SAND & GRAV	FI	
30" - 96"	SANDY AND GRAVEL CLAY LOAM		
	MOTTLING AT 24" FEW COBBLES	NO BEDROCK	LIG

LIGHT SEEPAGE

PIT #: 8

84"

00" - 06"	TOPSOIL
00 - 00	TOPSOIL
manufactory with a fillence.	

- 06" 24" SILT LOAM W/ GRAVEL & SAND
- 24" 84" CLAY LOAM W/ SAND & GRAVEL

MOTTLING AT 36" FEW COBBLES	NO BEDROCK	LIGHT SEEPAGE
-----------------------------	------------	---------------

FIT #: 9

89"

00" - 06" TOPSOIL

- 06" 32" SILT LOAM W/SAND & GRAVEL W/CLAY
- CLAY LOAM W/SAND, GRAVEL & SHELL FRAGS 32" - 89" MOTTLING NONE FEW COBBLES NO BEDROCK NO SEEPAGE



Appendix E

Wetland Jurisdictional Letter and SWPPP for Valley View 45 Lot Cluster Subdivision

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DEPARTMENT OF THE ARMY



NEW YORK DISTRICT, CORPS OF ENGINEERS JACOB K. JAVITS FEDERAL BUILDING NEW YORK, N.Y. 10278-0090

REPLY TO ATTENTION OF: Regulatory Branch APR 1 7 2006

SUBJECT: Permit Application Number 2005-00166-YS by Robert Silber

Robert G. Torgersen Landscape Architecture and Environmental Sciences 3 Main Drive Nanuet, New York 10954

Dear Mr. Torgersen:

On November 15, 2004, the New York District Corps of Engineers received a request for a Department of the Army jurisdictional determination for the above referenced project. This request was made by Robert G. Torgersen Landscape Architecture and Environmental Sciences, as consultant for Robert Silber. The site consists of approximately 21.8 acres, in the Hudson River watershed, located on Locust Street in the Village of Warwick, Orange County, New York. The proposed project would involve the construction of a residential subdivision.

In the letter received on November 15, 2004, your office submitted a proposed delineation of the extent of waters of the United States within the subject property. A site inspection was conducted by a representative of this office on August 3, 2005, in which it was agreed that changes would be made to the delineation and that the modified delineation would be submitted to this office. On October 28, 2005, this office received the modified delineation.

Based on the material submitted and the observations of the representative of this office during the site visit, this site has been determined to contain jurisdictional waters of the United States based on: the presence of wetlands determined by the occurrence of hydrophytic vegetation, hydric soils and wetland hydrology according to criteria established in the 1987 "Corps of Engineers Wetlands Delineation Manual," Technical Report Y-87-1 that are either adjacent to or part of a tributary system; and the presence of a defined water body (e.g. stream channel, lake, pond, river, etc.) which is part of a tributary system.

These jurisdictional waters of the United States are shown on the drawing entitled "Village View Village of Warwick, Orange County, New York Sec. 201, Blk. 1, Lots 1.1, 1.2, 1.3 & 2 Federal Wetlands Map", prepared by Kirk Rother, P.E., dated November 2, 2004, and last revised October 14, 2005. This drawing indicates that there is one (1) principal wetland area on the project site which is part of a tributary system, and is considered to be waters of the United States. The wetland (flag numbers 1 through 62) is located along the eastern portion of the property and is approximately 0.85 acres within the subject property. These wetlands are considered to be above the headwaters.

This determination regarding the delineation shall be considered valid for a period of five years from the date of this letter unless new information warrants revision of the determination before the expiration date.

This letter contains an approved jurisdictional determination for your subject site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed is a combined Notification of Appeal Process (NAP) and Request For Appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the North Atlantic Division Office at the following address:

James W. Haggerty, Regulatory Appeals Review Officer North Atlantic Division, U.S. Army Engineer Division Fort Hamilton Military Community General Lee Avenue, Building 301 Brooklyn, New York 11252-6700

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Park 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by **JUN 19 2006**. It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this letter.

This delineation/determination has been conducted to identify the limits of the Corps Clean Water Act jurisdiction for the particular site identified in this request. This delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

It is strongly recommended that the development of the site be carried out in such a manner as to avoid as much as possible the discharge of dredged or fill material into the delineated waters of the United States. If the activities proposed for the site involve such discharges, authorization from this office may be necessary prior to the initiation of the proposed work. The extent of such discharge of fill will determine the level of authorization that would be required.

2

If any questions should arise concerning this matter, please contact Brian A. Orzel, of my staff, at (917) 790-8413.

Sincerely,

lunes

George Nieves Chief, Western Permits Section

Enclosures

cf: NYSDEC - Region 3 Village of Warwick

DISTRICT OFFICE: FILE NUMBER:

NEW YORK DISTRICT (CENAN) 2005-00166

PROJECT LOCATION INFORMATION:

State:

New York

Orange County: Center coordinates of site (latitude/longitude): lat:41-16-18.4080 lon:74-21-30.6720 Approximate size of area (parcel) reviewed, including uplands: 21.8 acres. Name of nearest waterway: Unnamed Tributary to Wawayanda Creek HUDSON RIVER - YONKERS TO POUGHKEEPSIE Name of watershed:

JURISDICTIONAL DETERMINATION

Completed:	Desktop determination	[]	Date:
	Site visit(s)	[X]	Date(s): August 3, 2005

Jurisdictional Determination (JD):

- [] Preliminary JD Based on available information, [] there appear to be (or) [] there appear to be no "waters of the United States" and/or "navigable waters of the United States" on the project site. A preliminary JD is not appealable (Reference 33 CFR part 331).
- [X] Approved JD An approved JD is an appealable action (Reference 33 CFR part 331). Check all that apply:
 - [] There are "navigable waters of the United States" (as defined by 33 CFR part 329 and associated guidance) within the reviewed area. Approximate size of jurisdictional area:
 - [X] There are "waters of the United States" (as defined by 33 CFR part 328 and associated guidance) within the reviewed area. Approximate size of jurisdictional area: 0.85 acres.
 - [] There are "isolated, non-navigable, intra-state waters or wetlands" within the reviewed area. [] Decision supported by SWANCC/Migratory Bird Rule Information Sheet for Determination of No Jurisdiction.

BASIS OF JURISDICTIONAL DETERMINATION:

A. Waters defined under 33 CFR part 329 as "navigable waters of the United States":

[] The presence of waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

B. Waters defined under 33 CFR part 328.3(a) as "waters of the United States":

- [] (1) The presence of waters, which are currently used, or were used in the past, or may be susceptible to use in
- interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.
- [] (2) The presence of interstate waters including interstate wetlands¹.
- [] (3) The presence of other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats,
- sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate commerce including any such waters (check all that apply): [] (i) which are or could be used by interstate or foreign travelers for recreational or other purposes.

 - [] (ii) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce. [] (iii) which are or could be used for industrial purposes by industries in interstate commerce.
- [] (4) Impoundments of waters otherwise defined as waters of the US. [X] (5) The presence of a tributary to a water identified in (1) - (4) above.
- [] (6) The presence of territorial seas. [X] (7) The presence of wetlands adjacent² to other waters of the US, except for those wetlands adjacent to other wetlands.

Rationale for the Basis of Jurisdictional Determination (applies to any boxes checked above). If the jurisdictional water or wetland is not itself a navigable water of the United States, describe connection(s) to the downstream navigable waters. If B(1) or B(3) is used as the Basis of Jurisdiction, document navigability and/or interstate commerce connection (i.e., discuss site conditions, including why the waterbody is navigable and/or how the destruction of the waterbody could affect interstate or foreign commerce). If B(2, 4, 5 or 6) is used as the Basis of Jurisdiction, document the rationale used to make the determination. If B(7) is used as the Basis of Jurisdiction, document the rationale used to make adjacency determination: Wetlands associated with unnamed tributary to Wawayanda Creek, which flows to the Wallkill River, which flows to Rondout Creek, which flows to the Hudson River, which is navigable.

2

[] tidal gages [] other:

[] oil or scum line along shore objects[] fine shell or debris deposits (foreshore)

[] physical markings/characteristics

Lateral Extent of Jurisdiction: (Reference: 33 CFR parts 328 and 329) [X] Ordinary High Water Mark indicated by: [] High Tide Line indicated by:

- [X] Ordinary High Water Mark indicated by:[X] clear, natural line impressed on the bank
 - [X] the presence of litter and debris
 - [X] changes in the character of soil
 - [A] changes in the character of soli
 - [X] destruction of terrestrial vegetation
 - [] shelving
 - [] other:
- [] Mean High Water Mark indicated by:
 - [] survey to available datum; [] physical markings; [] vegetation lines/changes in vegetation types.
- [X] Wetland boundaries, as shown on the attached wetland delineation map and/or in a delineation report prepared by:

Basis For Not Asserting Jurisdiction:

[] The reviewed area consists entirely of uplands.

- [] Unable to confirm the presence of waters in 33 CFR part 328(a)(1, 2, or 4-7).
- [] Headquarters declined to approve jurisdiction on the basis of 33 CFR part 328.3(a)(3).
- [] The Corps has made a case-specific determination that the following waters present on the site are not Waters of the United States:
 - [] Waste treatment systems, including treatment ponds or lagoons, pursuant to 33 CFR part 328.3.
 - [] Artificially irrigated areas, which would revert to upland if the irrigation ceased.
 - [] Artificial lakes and ponds created by excavating and/or diking dry land to collect and
 - retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing.
 - [] Artificial reflecting or swimming pools or other small ornamental bodies of water created
 - by excavating and/or diking dry land to retain water for primarily aesthetic reasons.
 - [] Water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States found at 33 CFR 328.3(a).
 - [] Isolated, intrastate wetland with no nexus to interstate commerce.
 - [] Prior converted cropland, as determined by the Natural Resources Conservation Service. Explain rationale:
 - [] Non-tidal drainage or irrigation ditches excavated on dry land. Explain rationale:
 - [] Other (explain):

DATA REVIEWED FOR JURISDICTIONAL DETERMINATION (mark all that apply):

[X] Maps, plans, plots or plat submitted by or on behalf of the applicant.

[X] Data sheets prepared/submitted by or on behalf of the applicant.

- [] This office concurs with the delineation report, dated , prepared by (company):
- [] This office does not concur with the delineation report, dated , prepared by (company):
- [] Data sheets prepared by the Corps.
- [] Corps' navigable waters' studies:
- [] U.S. Geological Survey Hydrologic Atlas:
- [X] U.S. Geological Survey 7.5 Minute Topographic maps: Warwick, NY
- [] U.S. Geological Survey 7.5 Minute Historic quadrangles:
- [] U.S. Geological Survey 15 Minute Historic quadrangles:
- [X] USDA Natural Resources Conservation Service Soil Survey: Orange County, NY
- [X] National wetlands inventory maps: Warwick, NY
- [X] State/Local wetland inventory maps: Warwick, NY
- [] FEMA/FIRM maps (Map Name & Date):
- [] 100-year Floodplain Elevation is: (NGVD)
- [] Aerial Photographs (Name & Date):
- [X] Other photographs (Date):
- [] Advanced Identification Wetland maps:
- [X] Site visit/determination conducted on: August 3, 2005
- [] Applicable/supporting case law:
- [] Other information (please specify):

¹Wetlands are identified and delineated using the methods and criteria established in the Corps Wetland Delineation Manual (87 Manual) (i.e., occurrence of hydrophytic vegetation, hydric soils and wetland hydrology).

²The term "adjacent" means bordering, contiguous, or neighboring. Wetlands separated from other waters of the U.S. by man-made dikes or barriers, natural river berms, beach dunes, and the like are also adjacent.



DEPARTMENT OF THE ARMY NEW YORK DISTRICT, CORPS OF ENGINEERS JACOB K. JAVITS FEDERAL BUILDING 26 FEDERAL PLAZA NEW YORK, NEW YORK 10278-0090

FEB 1 4 2018

Regulatory Branch

SUBJECT: Permit Application Number NAN-2018-00204-WOR by Robert Silber

Peter Torgersen Environmental Sciences 110 Town Line Road Pearl River, New York 10965

Dear Mr. Torgersen:

On November 6, 2017, the New York District of the U.S. Army Corps of Engineers (USACE) received a request for a Department of the Army jurisdictional determination for the above referenced project. The site consists of approximately 20.3 acres, in the Rondout Creek watershed, located at the intersection of Locust Street and Woodside Drive in the Village of Warwick, Orange County, New York. The proposed project would involve the construction of a residential subdivision to be known as Village View.

In the letter received on November 6, 2017, your office submitted a proposed delineation of the extent of waters of the United States within the subject property. The USACE concurs with the delineation report prepared by Peter Torgersen Environmental Sciences, and dated October 21, 2017.

Based on the material submitted, this site has been determined to contain jurisdictional waters of the United States based on: the presence of wetlands determined by the occurrence of hydrophytic vegetation, hydric soils and wetland hydrology according to criteria established in the 1987 "Corps of Engineers Wetlands Delineation Manual," Technical Report Y-87-1 that are either adjacent to or part of a tributary system; and the presence of a defined water body (e.g. stream channel, lake, pond, river, etc.) which is part of a tributary system.

These jurisdictional waters of the United States are shown on the drawing entitled "Village View Village of Warwick, Orange County, New York Sec. 201, Blk. 1, Lots 1.1, 1.2, 1.3 & 2 Federal Wetlands Map", prepared by Kirk Rother, P.E., dated October 4, 2004, and last revised September 13, 2017. This drawing indicates that there is one (1) principal wetland area on the project site which is part of a tributary system, and is considered to be waters of the United States. The wetland (Wetland A) is located along the eastern portion of the property and is approximately 1.07 acres within the subject property. This determination regarding the delineation shall be considered valid for a period of five years from the date of this letter unless new information warrants revision of the determination before the expiration date.

This determination was documented using the Approved Jurisdictional Determination Form, promulgated by the Corps of Engineers in June 2007. A copy of that document is enclosed with this letter, and will be posted on the New York District website at:

http://www.nan.usace.army.mil/Missions/Regulatory/JurisdictionalDeterminations/Recentures/LurisdictionalDeterminations.aspx

This delineation/determination has been conducted to identify the limits of the Corps Clean Water Act jurisdiction for the particular site identified in this request. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed is a combined Notification of Appeal Process (NAP) and Request For Appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the North Atlantic Division Office at the following address:

James W. Haggerty, Regulatory Program Manager, CENAD-PD-OR North Atlantic Division, U.S. Army Engineer Division Fort Hamilton Military Community General Lee Avenue, Building 301 Brooklyn, New York 11252-6700

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Park 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by <u>APR 1 5 2018</u>. It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this letter.

This delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

It is strongly recommended that the development of the site be carried out in such a manner as to avoid as much as possible the discharge of dredged or fill material into the delineated waters of the United States. If the activities proposed for the site involve such discharges, authorization from this office may be necessary prior to the initiation of the proposed work. The extent of such discharge of fill will determine the level of authorization that would be required.

In order for us to better serve you, please complete our Customer Service Survey located at <u>http://www.nan.usace.army.mil/Missions/Regulatory/CustomerSurvey.aspx</u>.

If any questions should arise concerning this matter, please contact Brian A. Orzel, of my staff, at (917) 790-8413.

Sincerely,

Rosita Miranda Chief, Western Section

Enclosures



Stormwater Pollution Prevention Plan

Village View Cluster Subdivision

Village of Warwick Orange County, NY

Revised May 2018 March 2018

> Kirk Rother, PE, PLLC 5 Saint Stephens Lane Warwick, NY 10990

Summary

This Storm Water Pollution Prevention Plan (SWPPP) is prepared for a project known as Village View, a proposed 45 lot cluster subdivision of approximately 21 acres of land situated on the west side of Locust Street and north side of Woodside Drive within the Village of Warwick. The subject property is identified as Section 201, Block 1, Lots 1.1, 1.2, 1.3, and 2 on current Village of Warwick Tax Maps and lies entirely within the Village of Warwick "R1" Zoning District. The objective of the SWPPP is to minimize potential impacts to the water shed from the development. A full storm water analysis has been performed in accordance with New York State SPDES Permit GP-0-15-002 requirements. Erosion and sediment control, storm water quantity management, run-off reduction features and storm water quality control measures will be implemented in conformance with the NYS Stormwater Design Manual, (Jan. 2015 ed.), the NYS Standards for Erosion and Sediment Control, (Nov. 2016 ed.), and SPDES permit criteria. A pre and post developed hydrologic analysis has been completed. This SWPPP narrative and associated Appendices, together with the drainage system and erosion control engineered drawings that have been prepared for the project, constitute the contract documents necessary for coverage under the SPDES Permit. With proper implementation and maintenance of the best management practices that have been chosen for the Village View duplex development project, all SPDES Permit criteria will be met and potential impacts to downstream and off-site properties will be mitigated to the greatest extent practical.
Property and Contact Information

Property Address:

Corner of Woodside Drive and Locust Street Village View Warwick, NY 10990

Coordinates:

Latitude: 41.272 Longitude:-74.360

Owner:

Village View Estates LLC. C/o Robert Silber 4 Fosse Court Airmont, NY, 10952

Developer:

Village View Estates LLC. C/o Robert Silber 4 Fosse Court Airmont, NY, 10952 845-222-1812 silberconstruction@gmail.com

Engineer:

Kirk Rother, PE, Consulting Engineer, PLLC Kirk Rother, PE 5 Saint Stephens Lane Warwick, NY 10990 845-988-0620 <u>krother@kirkrother.com</u>

NYS DEC Region: Region 3

NYS DEC Spill Hotline: 800-457-7362 or 631-444-0320 (Region 3 spill office)

Underground Utilities:

Dig Safely NY Dial 811

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Appendix B	USDA Soils Information; FEMA Map; NWI Map; NYS DEC Environmental. Resource Map
Appendix C	Water quality and Run off reduction calculation spreadsheets; Bio-retention worksheets; Channel Protection Volume Calculations; Swale Sizing Calculations
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Village View Cluster Subdivision Village of Warwick Orange County, New York

Contractor's Certification Statement

To be signed by all Contractors and Sub-Contractors performing any site work that involves

ground disturbance.

I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for storm water discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I am aware that there are significant penalties for submitting false information that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations.

Contractor's Name
Contractor's Address
Responsible Agent's Name (Print)
Responsible Agent's Title
Responsible Agent's Signature
Date
List SWPPP Components Contractor is responsible for.

Provide additional Contractor Certification Sheets if more than one contractor will be involved in ground disturbance.

Section 1 – Introduction and Document Requirements

This Storm Water Pollution Prevention Plan is prepared for a project known as Village View, a proposed single family residential cluster development situated on approximately 21 acres of land lying within the "R-1" zoning district in the Village of Warwick, Orange County, New York. The project lies on the east west side of Woodside Drive and the south side of Locust Street and is identified as Section 201, Block 1, Lots 1.1, 1.2, 1.3 and 2 and Section 31, Block 2, Lot 85.2 on current Village of Warwick tax maps. The project's purpose is to serve the demand for residential housing in the Village of Warwick and surrounding area. The proposed improvements have been designed utilizing the Village of Warwick Cluster Subdivision provisions as set forth in the Zoning section of the Village of Warwick Code.

This SWPPP will help to minimize potential impacts to the water shed from the development. Potential impacts include soil erosion during site construction and the introduction of pollutants such as garbage, construction debris, chemicals and sediments from roof tops, roadways, construction equipment and people. The storm water management plan also addresses potential downstream impacts, such as flooding and channel erosion, caused by the conversion of natural, vegetated areas to impervious surfaces which results in increased rates of run-off.

Stormwater quantity management, run-off reduction, storm water quality control measures and erosion control measures will be implemented in conformance with the NYS Stormwater Design Manual, (Jan. 2015 ed.), the NYS Standards for Erosion and Sediment Control, (Nov. 2016 ed.), and SPDES permit GP-0-15-002 criteria. A copy of the SPDES Permit and associated Permit Forms can be found in Appendix A of this report.

Planned improvements include the construction of 45 single family residential structures with associated access roads, driveways and sidewalks. Also included will be improvements to the Village's water and sewer infrastructure to extend those services into the site. A system of storm water management features will also be constructed. A more detailed project description can be found in Section 2 of this report.

The 21 acre site lies entirely within the Wawayanda Creek watershed and ultimately to the Lower Hudson River Basin. The site is currently vacant land and the property is almost entirely wooded. An existing unnamed Class C(T) tributary to Wawayanda Creek originates

on the site with areas of federally regulated wetlands flanking the watercourse. There are no flood plains or impaired waters present on the site. A more detailed description of existing site hydrology can be found in Section 3 of this report with associated regulatory mapping and supporting information located in Appendix B.

Stormwater Management is to be accomplished via an open and closed storm drain infrastructure. The conveyance mechanisms will convey storm water runoff towards multiple run-off reduction-water quality practices. Attenuation of peak run off rates to 10% below the existing peak run-off rates, as required by Village of Warwick Zoning, will be accomplished by means of multiple dry type detention ponds. Upon treatment for water quality and detention of peak flow rates, storm water run-off will continue its existing course of drainage. Additional description of run-off reduction measures and water quality volume can be found in Section 4 of this report with supporting maps and worksheets included in Appendix C. A more detailed description of storm water quantity control, including a pre and post developed hydrologic analysis, can be found in Section 5 of this report. The supporting HydroCAD model based on TR-20 methodology can be found in Appendix D.

Erosion control will be accomplished via means of temporary and permanent erosion control measures. Erosion control features will be implemented prior to the start of construction activities. Construction shall be performed in phases with no more than five acres of the site disturbed at any one time. The design and placement of the erosion control practices can be found on the Erosion Control Plan sheets of the Village View drawings with associated construction details being found on in the Erosion Control Details sheets. A more detailed discussion of erosion and sediment control can be found in Section 6 of this report with Erosion Control Checklists and a sample Construction Site Logbook located in Appendix E. Maintenance of erosion control plan is a general Sequence of Construction which will be followed by the Developer.

A Notice of Intent Form (NOI) will be completed and filed with the New York State Department of Environmental Conservation to obtain coverage under the SPDES Permit. The Village of Warwick is not an MS4 Community and therefore does not require the filing of an MS4 Acceptance Form. The NOI must be submitted to the NYS DEC at least five days prior to commencing construction. A copy of the NOI can be found in Appendix A. All contractors and subcontractors involved in activities which will result in site disturbance, or effect storm water runoff, shall familiarize themselves with both this written SWPPP and the water quality, quantity and erosion control measures shown on the approved Site Plan. Said parties shall attest to their familiarity with the storm water documents by signing of the written certification found at the beginning of this report.

A copy of the approved Site Plan, this written Storm Water Pollution Prevention Plan report, signed Contractor Certification Statement, completed Notice of Intent and Department of Environmental Conservation acknowledgement letter with Permit number shall be kept at the construction site. All Maintenance Inspection Checklists and Construction Site Log Book, samples of which can be found in Appendix E, shall also be kept at the construction site and made available for review by regulatory agencies. Upon completion of construction activities, and full vegetative stabilization of the built site, a Notice of Termination Form shall be filed with the New York State Department of Environmental Conservation to terminate the SPDES Permit.

By implementing the above best management practices, storm water quality and quantity objectives will meet or exceed those required by the New York State SPDES Permit for general construction activities. Reducing the rate of run-off to 10% below existing conditions will also satisfy the storm water run-off objectives set forth by the Village of Warwick.

Section 2 – Project Description

The Village View Cluster Subdivision lies on approximately 21 acres of land situated on the west side of Locust Street at the intersection with Woodside Drive. The project will consist of 45 single family residential Lots with associated improvements. Access to the site will be by means of a looped access roadway which will provide two points of access: one from Woodside Drive and the other from Locust Street. The roadway is proposed to be constructed to Village of Warwick standards and have a pavement width of 26 feet with a 6" curb and four foot wide sidewalk on one side of the street. The total length of roadway is found to be approximately 2,950 linear feet. Off street parking will be provided on each of the single family lots with the lots designed to accommodate driveways with garages in the rear of the house. On street parking will also be permitted on one side of the street. The total new impervious are is computed to be 6.3 acres, or roughly 30% of the site.

Sanitary sewer will be accomplished by means of connection to the municipal sewer system which fronts the property in Woodside Drive. Drinking water will be accomplished by means of connection to the municipal water system which is also present at the site.

Section 3 – Site Hydrology

Village View lies entirely within the Wawayanda Creek water shed which is part of the Wallkill River Sub Basin and ultimately tributary to the Lower Hudson River drainage basin. The site and lands upstream of it are the headwaters of an unnamed Class C tributary, identified as Index #H139-13-61-9-21-1, which flows to the south under Woodside Drive via an eight foot wide by four foot high reinforced concrete box culvert. For the purposes of storm water quantity, this box culvert was taken as the point of analysis. The analysis point is identified as AP on the pre and post developed drainage basin maps which can be found in Appendix F. The stream continues is course to the south and east to eventually be piped under NYS Route 17A before discharging into Wawayanda Creek.

The site is currently vacant land and is entirely brush and woodland with the exception of the stream and associated wetlands which lye parallel to the stream edge. The Federal Jurisdictional wetlands and stream sit in the northern portions of the property, adjacent to Locust Street. The wetlands have been delineated by Robert Torgersen, LA and a jurisdictional determination received from the US Army Corps of Engineers. Vegetation on the property is taken to be in good hydrologic condition.

The highest elevations of the site lie at approximate elevation 820 feet in the western extremities with the lowest extremities being at approximately 630 feet where the stream discharges under Woodside Drive. The site can be generally described as moderately sloping with the majority of the terrain being sloped at 10% to 15%. A few pockets of steeper slopes are spread throughout the site with steep slopes also being found adjacent to Locust Ave.

The project is not tributary to a Total Maximum Daily Load (TMDL) watershed or 303d impaired water body. There are no flood areas or floodplains on the property based on a review of FEMA mapping. Soils on the site were found to be predominantly Mardin type soil of Hydrologic Soil Group D. Copies of the State and Federal Wetland Inventory maps, together with FEMA and USDA soil mapping, can be found in Appendix B.

A review of the CRIS Portal through the NYS Office of Parks, Recreation and Historic Preservation indicates the site is in an archeologically sensitive area. A Phase 1A/1B Archeological assessment, and a Phase II assessment, has been conducted as a part of a prior subdivision proposal and a letter of No Impact issued from the NYS Office of Parks, Recreation and Historic Preservation.

The site and immediate upstream areas make up the headwaters of the on-site stream. The total area of the watershed tributary to the Woodside Drive culvert was found to be approximately 71.7 acres. A pre developed drainage area map can be found in Appendix F.

Section 4 – Run-off Reduction and Storm Water Quality

Water quality objectives for Village View are based on the 90% rule as set forth in Chapter 4 - Unified Sizing Criteria in the *NYS Stormwater Design Manual*. The specific goal set forth by the Manual is to capture and treat run-off from 90% of the 24 hour rainfall events that can be expected to occur at the site. The volume of water to be treated is directly proportional to both the area that is tributary to the practice and the amount of impervious cover. The 90th Percentile – 24 hour Rainfall value for the Village View Development is found to be 1.42 inches. The resultant water quality volume, or WQv, as computed using the Unified Sizing Criteria is found to be 29,533 cubic feet.

Runoff Reduction is a component of the water quality objectives associated with land development. Reducing run-off encourages the recharge of groundwater and reduces the volume of run-off to levels as close to pre-developed as practical. Run-off reduction is accomplished by infiltrating runoff where feasible and by minimizing concentrated flow from the site. Minimizing concentrated flows is accomplished by preserving naturally vegetated areas and providing treatment in a distributed manner utilizing multiple, interspersed practices near the impervious source of the run-off. Doing so allows for the capture and treatment of runoff before it reaches the drainage collection system.

The Runoff Reduction objective set forth by the Design Manual is to reduce 100% of the computed water quality volume. To do so requires infiltration. If site constraints, such as poor soils, high groundwater or shallow bedrock prelude the use of infiltration practices, a minimum Runoff Reduction volume, or RRv as set forth in Chapter 4 of the Manual, must still be met. Multiple methods of meeting the RRv value are available.

The soils found on the Village View site, being comprised entirely of hydrologic soil D, have low inflation rates. The presence of mottling in test pits performed at the site also reveals seasonal high groundwater. These conditions are supported by the USDA soil descriptions found in Appendix B. The poor infiltration capacity of the soils present at the site, combined with the presence of seasonal high groundwater, precludes reduction of 100% of the water quality volume for the Village View development project. The minimum RRv will be met, however, by using storm water management practices with runoff reduction capacity, namely bio-retention and disconnection of impervious areas by directing run off through vegetated areas. The minimum RRv value for the proposed Village View cluster development is computed to be 5,426 cubic feet.

Computations associated with water quality volume, minimum run-off reduction volume, area reduction credits, tree planting credits and bio-retention sizing can be found in Appendix C. The net result is that Village View project will exceed the minimum water quality volume objectives set forth by the Unified Sizing Criteria.

Section 5 – Detention and Storm Water Quantity

An integral part of the storm water pollution prevention plan calls for the attenuation of peak runoff flow rates to pre-developed levels. Doing so mitigates against the adverse impacts caused by the conversion of natural areas to impervious surfaces and the increased speed at which rain water sheds these areas. Attenuation of peak flow rates is accomplished by detaining storm water run-off in a pond or reservoir to be released slowly over an extended period of time. As a baseline for comparison of post developed runoff to pre-developed levels, the project is modeled in the pre-developed condition.

Detention is proposed for Village View that will limit peak post-developed flow rates to 10% below pre-developed levels. A TR-20 Hydrologic Analysis has been performed for the 1-, 10-, and 100-year storm events and attenuation of the peak discharge rates for the aforementioned storms will satisfy SPDES permit requirements for Channel Protection (Cpv), Over bank Flood Control (Qp) and Extreme Flood Control (Qf).

A hydrologic analysis has been performed for the Village View site utilizing HydroCAD storm water modeling software. HydroCAD methodology is based on the National Resources

Conservation Service (NRCS - formerly SCS) TR-20 watershed analysis model. To compute the analysis the amount of rainfall that can be expected for a given storm event, together with the distribution of that rainfall over a given time interval, must be determined. The Northeast Regional Climate Center (NRCC), in collaboration with Cornell University and the National Resource Conservation Service, publishes an interactive Web Tool for extreme precipitation analysis. The Web Tool provides site specific rainfall data based on a projects geographic location. The NYS Department of Environmental Conservation encourages the use of NRCC data when possible.

Rainfall values for the Clovewood site as taken from the NRCC Web Tool are summarized in the following table:

Table 1 - 24 Hour Rainfall Values					
Storm Frequency Rainfall (in.)					
1 year	2.64				
10 year	4.80				
25 year	6.04				
100 year	8.57				

Based on the forgoing, and utilizing the pre-developed drainage catchment data depicted on the Pre-developed Drainage Basin Map found in Appendix F, a pre-developed hydrologic model was prepared. Resulting pre-developed peak flow rates for the 1-, 10-, and 100-year storm events are summarized as follows:

Table 2 - Pre-Developed Runoff Calculations							
Basin # Area CN TC Q peak Q peak Q peak							
Analysis Point #	(Ac.)		(min.)	1 Yr. (cfs)	10 Yr.(cfs)	100 Yr. (cfs)	
Basin 1 - AP1	71.7	78	23.0	44.4	135	312	

With the above data in place, the post developed site condition was subsequently modeled. Due to the addition of the proposed site improvements, and the corresponding drainage collection system, the post developed sub area is segregated into five sub catchments, as compared to the single catchment that makes up the pre developed area. Though segregated into five areas, as dictated by the storm water management feature to which each of the areas is tributary, the sum of the acreage of the five sub catchments remains the same as that which is delineated in the predeveloped model: approximately 71.7 acres. A map of the post developed sub catchment areas can be found in Appendix F. A table summarizing the Post Developed catchments follows:

Table 3 - Post-Developed Runoff Calculations							
Basin #	Area	CN	TC	Q peak	Q peak	Q peak	
Analysis Point #	(Ac.)		(min.)	1 Yr. (cfs)	10 Yr.(cfs)	100 Yr. (cfs)	
Basin 1A	13.2	77	19.5	8.1	26	61	
Basin 1B	14.3	77	20.4	8.7	27	64	
Basin 1C	21.0	79	16.4	16	47	107	
Basin 1D	20.5	85	13.4	24	59	122	
Basin 1E	2.7	81	10.7	2.7	7.5	16	

To accurately analyze the impacts of the development, a comparison of the pre and post developed peak flow rates at the analysis point must be made. A table summarizing of the pre-and post-developed peak flow rates at the culvert discharging under Woodside Drive follows:

Table 4 - Comparison of Pre- & Post-Developed Peak Flow Rates							
Storm Event	1 Year (cfs)	10 Year (cfs)	100 Year (cfs)				
Analysis Point #1							
Pre-Developed	44.4	135	313				
Post-Developed	38.0	106	279				
Difference	- 6.4	- 29	- 34				

As can be seen, post developed peak flow rates at the culvert under Woodside Drive are more than 10% below the pre-developed levels for all storms analyzed. Attenuation of the peak discharge rates for the aforementioned storms will satisfy SPDES permit requirements for Channel Protection (Cpv), Over bank Flood Control (Qp) and Extreme Flood Control (Qf)

as well as the Village of Warwick drainage requirements. The pre and post developed HydroCAD model for the 1-, 10- and 100- year storm events can be found in Appendix D.

Section 6 – Erosion and Sediment Control

Proposed erosion control measures will be in accordance with a publication entitled *New York State Standards and Specifications for Erosion and Sediment Control (Nov. 2016 ed.).* Erosion control will accomplished by means of temporary and permanent measures with the timing of the installation of said measures to be in accordance with the construction sequence found on the Erosion Control Plan sheet of the approved drawings.

Temporary erosion control measures will include a stabilized construction entrance, silt fence, temporary sediment trap, temporary diversion swales, stone check dams, inlet protection, mulching, land grading and temporary topsoil stockpiling, seeding and haying. Areas to be disturbed shall have the area of disturbance delineated. Areas to remain undisturbed shall be protected with a perimeter construction fence, or snow fence. Activities resulting in site disturbance will be phased so as to keep the area disturbed at any one time under five acres.

Upon completion of clearing and grubbing activities, topsoil shall be stripped and temporary topsoil stockpiles created in locations out of the way of construction and any run off water course. Stockpiles shall be surrounded with silt fence and immediately stabilized with seed and hay per the temporary seeding schedule shown on the Erosion Control Plan. Temporary seeding shall be placed in all areas that are expected to remain disturbed for a period of 14 days. Dust control by means of spraying water shall be incorporated as necessary. The locations of the specific erosion control practices to be implemented, with associated construction details, are depicted on the Erosion Control Plan.

Chemicals, grease, oils and other potentially hazardous materials shall be kept in a designated, locked containment vessel on site. The contractor shall maintain an employee trained in spill response. The NYS DEC spill response phone number, located at the front of this report, shall be kept handy. Waste concrete from concrete trucks shall be washed out in the designated concrete wash out area.

Erosion control measures associated with the stream crossing shall be per the plan sheet entitled "North Culvert in the Class Ct Stream". Measures include the installation of a sandbag coffer dam, temporary diversion swale, and a pump discharge area comprised of a gravel diaphragm and undisturbed vegetative filter area. Stream crossing work shall be performed during periods of low flow.

Permanent erosion control measures include grass lined waterways, permanent seeding and landscaping, land grading, mulching, and slope stabilization. Slope stabilization will be accomplished utilizing rolled erosion control matting in all areas of slopes of two horizontal to one vertical or steeper.

Erosion control measures shall be routinely inspected daily by a "*Trained Contractor*" to be employed by the excavation company. A thorough review and report by a "*Qualified Inspector*" must be performed at least once every seven days. The definition of a Trained Contractor and Qualified Inspector can be found in the SPDES Permit located in Appendix A. Inspection logs identifying the site conditions, impacts to adjacent properties or water bodies, and any defects in erosion control measures, together with photographs of the site, shall be prepared by the Qualified Inspector. Defects identified shall be reported to the project owner in a timely manner of one day or less. Corrections shall be made immediately.

This SWPPP narrative and all weekly inspection logs shall be kept at the project site in a mailbox clearly labeled with the letters "DEC" and made available for review by the Regulatory Agency having jurisdiction. Maintenance of erosion control measures will be the responsibility of the project sponsor. Included in the erosion control plan is a general sequence of construction as follows.

Section 7 – General Construction Sequence

- 1. Obtain necessary approvals and permits from Municipal and Regulatory agencies.
- 2. Pre-construction meeting with applicable Regulatory agencies. Submittal of Notice of Intent.
- 3. Contractors shall sign "Contractor's Certification Statement". Install on site mailbox for SPDES related documents and label with the letters "DEC".

- 4. Delineation of limits of clearing and disturbance. Trees to be saved shall be protected with perimeter fence.
- 5. Install stabilized construction entrances at beginning of proposed access road.
- 6. Install silt fence down-gradient of work area.
- 7. Excavate temporary sediment trap. Install temporary diversion swales, culverts and rip rap outlets as shown on the Erosion Control Plan.
- 8. Perform clearing and grubbing activities. Site disturbance shall not exceed beyond the disturbance limit line. Areas which will remain disturbed for a period of more than 14 days shall be stabilized with rye grass in accordance with the Temporary Seeding Schedule shown on the Erosion Control Plan.
- 9. Strip and stockpile topsoil, stabilize with rye grass seed and perimeter silt fence.
- 10. Perform mass earth work. Complete rough-grading of roads and parking lots and building pads. Fine grade and stabilize all embankments upon completion of rough grading.
- 11. Begin installation of drainage infrastructure. Install utilities within roadway. Areas to remain disturbed for a period of more than 14 days shall be seeded with temporary seed.
- 12. Install roadway sub-base. Pave roadway with base course if feasible.
- Restore compacted soils as needed by deep ripping. Complete fine-grading of disturbed areas and embankments, amend soils as required. Seed and stabilize with mulch, jute netting or hydro seed.
- 14. Review final storm water infrastructure improvement checklists. Construct storm water management appurtenances to permanent size and geometry. Remove any trapped sediment and fines and discard off-site.
- 15. Complete surfacing of roadways.
- 16. Upon final grading, stabilization of drainage channels and establishment of permanent vegetation, remove erosion control measures beginning at the most upstream points and then work downstream.
- 17. Perform any fine-grading and seeding as required. Maintain and repair vegetative cover as required. Maintain and repair wash-outs as required and after each storm event until all erosion control and water quality treatment measures are fully established.
- 18. Build out individual lots.
- 19. Repair and reshape storm water management areas to final design.
- 20. Complete final inspection and submit Notice of Termination (NOT) Form.

Section 8 – Operation and Maintenance

The storm water management infrastructure will be maintained by the Village of Warwick Department of Public Works. Annual maintenance shall include repair of vegetation and soil in areas of wash-outs, cleaning of sediment and debris from catch basins and detention ponds and annual re-mulching, re-plantings as necessary and removal of litter and debris from bio-retention areas. Easements to the benefit of the Village of Warwick will be created to facilitate maintenance.

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Appendix A

Notice of Intent Form; Notice of Termination Form; SPDES Permit GP 0-15-002

NOTICE OF INTENT



New York State Department of Environmental Conservation

Division of Water

625 Broadway, 4th Floor



Albany, New York 12233-3505

Stormwater Discharges Associated with <u>Construction Activity</u> Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-15-002 All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

-IMPORTANT-

RETURN THIS FORM TO THE ADDRESS ABOVE

OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information							
Owner/Operator (Compan	y Name/Priv	vate Owner	Name/Municipali	ty Name)			
Owner/Operator Contact	Person Las	st Name (NC	OT CONSULTANT)				
Owner/Operator Contact	. Person Fi	rst Name					
Owner/Operator Mailing	Address						
City							
State Zip							
Phone (Owner/Operator) Fax (Owner/Operator) - -							
<pre>Email (Owner/Operator)</pre>							
FED TAX ID	_ (not requ	ired for in	ndividuals)				

Project Site Informa	htion					
Project/Site Name						
Street Address (NOT P.O. BOX)						
Side of Street						
O NOFTH O South O East O west						
City/Town/Village (THAT ISSUES BUILDING PERMIT)						
State Zip County	DEC Region					
Name of Nearest Cross Street						
Distance to Nearest Cross Street (Feet) Project In Relation to Cross Street						
	○ North ○ South ○ East ○ West					
Mar Man Numberg	Mar Man Numberg					
Section-Block-Parcel	Tax map Numbers					

1. Provide the Geographic Coordinates for the project site in NYTM Units. To do this you **must** go to the NYSDEC Stormwater Interactive Map on the DEC website at:

www.dec.ny.gov/imsmaps/stormwater/viewer.htm

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located your project site, go to the tool boxes on the top and choose "i"(identify). Then click on the center of your site and a new window containing the X, Y coordinates in UTM will pop up. Transcribe these coordinates into the boxes below. For problems with the interactive map use the help function.

Х	Coc	rdi	nate	es (Eas	ting	J)

Y Coordinates				(N	orth	ning)

2. What is the nature of this construction project?	
○ New Construction	
\bigcirc Redevelopment with increase in impervious area	
\bigcirc Redevelopment with no increase in impervious area	

3. Sei SEi	lect the predominant land use for both pr LECT ONLY ONE CHOICE FOR EACH	re and post development conditions.
	Pre-Development Existing Land Use	Post-Development Future Land Use
\bigcirc	FOREST	○ SINGLE FAMILY HOME Number of Lots
0	PASTURE/OPEN LAND	○ SINGLE FAMILY SUBDIVISION
\bigcirc	CULTIVATED LAND	○ TOWN HOME RESIDENTIAL
0	SINGLE FAMILY HOME	○ MULTIFAMILY RESIDENTIAL
\bigcirc	SINGLE FAMILY SUBDIVISION	○ INSTITUTIONAL/SCHOOL
0	TOWN HOME RESIDENTIAL	○ INDUSTRIAL
\bigcirc 1	MULTIFAMILY RESIDENTIAL	○ COMMERCIAL
\bigcirc	INSTITUTIONAL/SCHOOL	○ MUNICIPAL
\bigcirc	INDUSTRIAL	○ ROAD/HIGHWAY
\bigcirc	COMMERCIAL	○ RECREATIONAL/SPORTS FIELD
0	ROAD/HIGHWAY	○ BIKE PATH/TRAIL
0	RECREATIONAL/SPORTS FIELD	○ LINEAR UTILITY (water, sewer, gas, etc.)
0	BIKE PATH/TRAIL	○ PARKING LOT
0	LINEAR UTILITY	○ CLEARING/GRADING ONLY
0	PARKING LOT	\bigcirc DEMOLITION, NO REDEVELOPMENT
0	OTHER	○ WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
		OTHER
I		

*Note: for gas well drilling, non-high volume hydraulic fractured wells only

4.	In accordance with the larger com enter the total project site area existing impervious area to be di activities); and the future imper disturbed area. (Round to the nea	mon plan of development or sale, ; the total area to be disturbed sturbed (for redevelopment vious area constructed within th rest tenth of an acre.)	l; le
	Total Site Total Area To Area Be Disturbed . .	Existing Impervious Area To Be Disturbed	Future Impervious Area Within Disturbed Area
5.	Do you plan to disturb more than	5 acres of soil at any one time?	? O¥es ONO
6.	Indicate the percentage of each H	Hydrologic Soil Group(HSG) at the	e site.
_	A B	с р 2 %	8
7.	Is this a phased project?		○¥es ○No
8.	Enter the planned start and end dates of the disturbance activities.	Start Date End / / -	Date

9. Id dis	entify the scharge.	nearest	surfac	e wa	aterb	ody	7(i0	es)	to	wh	icł	n co	onst	ru	cti	lon	S	ite	e r	un	off	W	ill	
Name	-																							
																							-	
9a.	Type of wat	terbody	identi	fied	l in	Que	sti	Lon	9?															
⊖ We	etland / Sta	ate Juri	sdictio	on O	n Si	te	(An	swe	r 9	b)														
\bigcirc We	etland / Sta	ate Juri	sdictio	on O	ff S	ite																		
\bigcirc We	etland / Fed	deral Ju	irisdict	ion	On	Sit	е (Ans	wer	91	c)													
\bigcirc We	etland / Fed	deral Ju	irisdict	ion	Off	Si	te																	
⊖st	cream / Cree	ek On Si	lte																					
⊖st	cream / Cree	ek Off S	Site																					
\bigcirc Ri	iver On Site	9																						
\bigcirc Ri	iver Off Sit	ce							9b	•	Нc	W W	as	the	9 W	ret	la	nd	id	en	tif	ie	d?	
⊖La	ake On Site									C) Re	egul	ato	ory	Ma	ap								
\bigcirc La	ake Off Site	9								C) De	elir	eat	ed	by	, C	on	sul	lta	int				
0 Ot	cher Type On	n Site								C) De	elir	leat	ed	by	γA	rm	уC	Cor	ps	of	Е	ngiı	neer
O Ot	cher Type Of	f Site								C	Ot	her	: (i	de	nti	Lfy)							
10.	Has the sur 303(d) segn	rface wa ment in	aterbod Append	y(ie ix E	es) i Cof	n q GP-	ues 0-1	stic L5-0	on 9 02?) b	een	id	ent	ifi	Led	l a	s a	a		0	Yes	5	O N	0
11.	Is this pro Appendix C	oject lo of GP-0	ocated 0-15-00	in o 2?	one o	ft	he	Wat	ers	he	ds	ide	nti	fie	ed	in				0	Yes	5	O N	ο
12.	Is the prog areas assoc waters? If no, skip	ject loo ciated v p quest:	cated i with AA ion 13.	n on and	le of AA-	th S c	le W las	vate ssif	ersh iec	ied I										0	Yes	5	() N	0
13.	Does this o	construe	ction a	ctiv	vity	dis	tur	b l	and	l w	ith	no	hac	<u>م</u> -	G					<u> </u>			_ 	

 existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey? If Yes, what is the acreage to be disturbed?	⊖ ¥es	○ No

14.	Will the project disturb so	ils within a State		
	regulated wetland or the pr	otected 100 foot adjacent	\bigcirc Yes	\bigcirc No
	area?			

64	03	089	820

15.	Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)?
16.	What is the name of the municipality/entity that owns the separate storm sewer system?
17.	Does any runoff from the site enter a sewer classified \bigcirc Yes \bigcirc No \bigcirc Unknown as a Combined Sewer?
18.	Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? \bigcirc Yes \bigcirc No
19.	Is this property owned by a state authority, state agency, O Yes O No federal government or local government?
20.	Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup O Yes O No Agreement, etc.)
21.	Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS O Yes O No Standards and Specifications for Erosion and Sediment Control (aka Blue Book)?
22.	Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Ores Oregonality Control practices/techniques)? If No, skip questions 23 and 27-39.
23.	Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS O Yes O No Stormwater Management Design Manual?

<pre>24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by: Professional Engineer (P.E.) Soil and Water Conservation District (SWCD) Registered Landscape Architect (R.L.A) Certified Professional in Erosion and Sediment Control (CPESC) Owner/Operator Other SWPPP Preparer SWPPP Preparer Contact Name (Last, Space, First) Mailing Address City City</pre>					_																																5	82	398	108	251	0		
<pre> Professional Engineer (P.E.) Soil and Water Conservation District (SWCD) Registered Landscape Architect (R.L.A) Certified Professional in Erosion and Sediment Control (CPESC) Owner/Operator Other SWPPP Preparer SWPPP Preparer SWPPP Preparer Address Addres Addres</pre>								у:	b	ed	re	pa	eŗ	pr	5	as	٧	Р)	PF	SW	(an	Pl	on	cio	ent	ev	Pr	n	io	lut	ol	C P	tei	wa	rmw	or	St	е	Th		4.	2	/
<pre> Soil and Water Conservation District (SWCD) Registered Landscape Architect (R.L.A) Certified Professional in Erosion and Sediment Control (CPESC) Owner/Operator Other Deter Deter</pre>)	Е.	(P.	r	nee	gir	Eng	1	nal	Lor	si	es	of	Pr	С		
<pre> Registered Landscape Architect (R.L.A) Certified Professional in Erosion and Sediment Control (CPESC) Owner/Operator Other SWPPP Preparer SWPPP Preparer Contact Name (Last, Space, First) Locole Contact Name (</pre>)	CD	(SV	t	ic	tr	is	D	on	ati	rv	nse	Cor	er (te	Wat	ł	ınd	a)il	Sc	С		
<pre> Certified Professional in Erosion and Sediment Control (CPESC) Owner/Operator Other SWPPP Preparer Contact Name (Last, Space, First) Aailing Address City City City City City City City City</pre>)	. A)	.L	(R	t	ec	it	rch	A :	ape	sca	nd	La	d I	red	er	st	gi	Re	О		
Owner/Operator Other SWPPP Preparer SWPPP Preparer Contact Name (Last, Space, First) Aailing Address City)	SC	ES	CP	((1	ro	1t:	Co	: (nt	me	di	Se	nd	a	on	si	ro	E	in	al	ion	ssi	fe	ro	Pı	ed	ie	if	ert	Ce	С		
Other SWPPP Preparer Swppp Preparer Contact Name (Last, Space, First) Image: Space state st																																		r	to	rat	pei	′0p	r/	me	Oħ	С		
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SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-15-002. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Fi	rst	t M	lam	e									MI
La	st	Na	ame										
	Si	gna	atu	re	-		 	 	 	 -		· · · ·	7
													Date

25.

	practices been prepared?	
26.	Select all of the erosion and sediment contremployed on the project site:	ol practices that will be
	Temporary Structural	Vegetative Measures
	\bigcirc Check Dams	\bigcirc Brush Matting
	\bigcirc Construction Road Stabilization	\bigcirc Dune Stabilization
	○ Dust Control	\bigcirc Grassed Waterway
	\bigcirc Earth Dike	\bigcirc Mulching
	\bigcirc Level Spreader	\bigcirc Protecting Vegetation
	○ Perimeter Dike/Swale	\bigcirc Recreation Area Improvement
	\bigcirc Pipe Slope Drain	\bigcirc Seeding
	\bigcirc Portable Sediment Tank	○ Sodding
	\bigcirc Rock Dam	\bigcirc Straw/Hay Bale Dike
	\bigcirc Sediment Basin	\bigcirc Streambank Protection
	\bigcirc Sediment Traps	\bigcirc Temporary Swale
	\bigcirc Silt Fence	\bigcirc Topsoiling
	\bigcirc Stabilized Construction Entrance	\bigcirc Vegetating Waterways
	○ Storm Drain Inlet Protection	Permanent Structural
	C Straw/hay bare bike	🔿 Debris Basin
	Tomporary Stormdrain Diversion	\bigcirc Diversion
		\bigcirc Grade Stabilization Structure
	O Turbidity Curtain	\bigcirc Land Grading
	Water bars	○ Lined Waterway (Rock)
		○ Paved Channel (Concrete)
	Biotechnical	\bigcirc Paved Flume
	O Bruch Matting	\bigcirc Retaining Wall
	⊖ Brush Matting	\bigcirc Riprap Slope Protection
		\bigcirc Rock Outlet Protection
0+ን	ner.	\bigcirc Streambank Protection

Has a construction sequence schedule for the planned management

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Post-construction Stormwater Management Practice (SMP) Requirements

<u>Important</u>: Completion of Questions 27-39 is not required if response to Question 22 is No.

- 27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.
 - \bigcirc Preservation of Undisturbed Areas
 - **O Preservation of Buffers**
 - Reduction of Clearing and Grading
 - O Locating Development in Less Sensitive Areas
 - \bigcirc Roadway Reduction
 - \bigcirc Sidewalk Reduction
 - \bigcirc Driveway Reduction
 - \bigcirc Cul-de-sac Reduction
 - Building Footprint Reduction
 - Parking Reduction
- 27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).
 - All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).
 - O Compacted areas were considered as impervious cover when calculating the WQv Required, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.
- 28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

Tota	L WQv	Requ	ire	d
				acre-feet

29. Identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required(#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

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Table 1 -	Runoff Reduction (RR) Techniques
	and Standard Stormwater Management
	Practices (SMPs)

Area (acres) Impervious Area(acres)		Total C	Contributing	g	Total C	ont	ril	outing
Conservation of Natural Areas (RR-1) and/or Sheetflow to Riparian Buffers/Filters Strips (RR-2) and/or Tree Planting/Tree Pit (RR-3) and/or Disconnection of Rooftop Runoff (RR-4) and/or RR Techniques (Volume Reduction) Vegetated Swale (RR-5) Rain Garden (RR-6) Stormwater Planter (RR-7) Rain Barrel/Cistern (RR-8) Green Roof (RR-10) Standard SMPs with RRv Capacity Infiltration Basin (I-2) Bioretention (F-5) Dry Swale (0-1)	RR Techniques (Area Reduction)	Area	a (acres)	In	perviou	5 A	rea	(acres)
Conservation of Natural Areas (NR-1) and/or Sheetflow to Riparian Buffers/Filters Strips (RR-2) and/or Tree Planting/Tree Pit (RR-3) and/or Disconnection of Rooftop Runoff (RR-4) and/or Vegetated Swale (RR-5)	$\bigcirc \text{Conservation of Natural Areas (PP-1)}$			and/or	-			
Sheetflow to Riparian Buffers/Filters Strips (RR-2) and/or and/or Tree Planting/Tree Pit (RR-3) and/or and/or Disconnection of Rooftop Runoff (RR-4) and/or and/or RR Techniques (Volume Reduction) and/or and/or Vegetated Swale (RR-5) i i Rain Garden (RR-6) i i Stormwater Planter (RR-7) i i Rain Barrel/Cistern (RR-8) i i Green Roof (RR-10) i i Standard SMPs with RRv Capacity i i Infiltration Basin (I-2) i i Dry Well (I-3) i i i Discond Infiltration System (I-4) i i i Dry Swale (0-1) i i i i	Conservation of Matural Areas (MA-1)	•						
O Tree Planting/Tree Pit (RR-3)	○ Sheetflow to Riparian Buffers/Filters Strips (RR-2)	•		and/or	r	-		
Disconnection of Rooftop Runoff (RR-4) RR Techniques (Volume Reduction) Vegetated Swale (RR-5) Rain Garden (RR-6) Stormwater Planter (RR-7) Rain Barrel/Cistern (RR-8) Porous Pavement (RR-9) Green Roof (RR-10) Standard SMPs with RRv Capacity Infiltration Trench (I-1) Infiltration Basin (I-2) Dry Well (I-3) Underground Infiltration System (I-4) Dry Swale (0-1)	\bigcirc Tree Planting/Tree Pit (RR-3)	•		and/or	r			
RR Techniques (Volume Reduction) . ○ Vegetated Swale (RR-5) . ○ Rain Garden (RR-6) . ○ Stormwater Planter (RR-7) . ○ Rain Barrel/Cistern (RR-8) . ○ Porous Pavement (RR-9) . ○ Green Roof (RR-10) . Standard SMPs with RRv Capacity . ○ Infiltration Trench (I-1) . ○ Dry Well (I-3) . ○ Underground Infiltration System (I-4) . ○ Dry Swale (0-1) .	\bigcirc Disconnection of Rooftop Runoff (RR-4)	••		and/or	r			
O Vegetated Swale (RR-5) • Rain Garden (RR-6) • Stormwater Planter (RR-7) • Rain Barrel/Cistern (RR-8) • Porous Pavement (RR-9) • Green Roof (RR-10) • Standard SMPs with RRv Capacity • Infiltration Trench (I-1) • Infiltration Basin (I-2) • Dry Well (I-3) • Bioretention (F-5) • Dry Swale (0-1) •	RR Techniques (Volume Reduction)					-		
Rain Garden (RR-6) • Stormwater Planter (RR-7) • Rain Barrel/Cistern (RR-8) • Porous Pavement (RR-9) • Green Roof (RR-10) • Standard SMPs with RRv Capacity • Infiltration Trench (I-1) • Dry Well (I-3) • Bioretention (F-5) • Dry Swale (0-1) •	\bigcirc Vegetated Swale (RR-5) \cdots	••••	•••••	••••	•	_ •		
Stormwater Planter (RR-7) . Rain Barrel/Cistern (RR-8) . Porous Pavement (RR-9) . Green Roof (RR-10) . Standard SMPs with RRv Capacity . Infiltration Trench (I-1) . Dry Well (I-3) . Underground Infiltration System (I-4) . Dry Swale (0-1) .	\bigcirc Rain Garden (RR-6)		•••••••					
Rain Barrel/Cistern (RR-8) Porous Pavement (RR-9) Green Roof (RR-10) Standard SMPs with RRv Capacity Infiltration Trench (I-1) Infiltration Basin (I-2) Dry Well (I-3) Underground Infiltration System (I-4) Bioretention (F-5) Dry Swale (0-1)	\bigcirc Stormwater Planter (RR-7)		•••••					
OPorous Pavement (RR-9) O Green Roof (RR-10) Standard SMPs with RRv Capacity O Infiltration Trench (I-1) O Infiltration Basin (I-2) O Dry Well (I-3) O Underground Infiltration System (I-4) O Bioretention (F-5) O Dry Swale (0-1)	\bigcirc Rain Barrel/Cistern (RR-8)							
Green Roof (RR-10) . Standard SMPs with RRv Capacity Infiltration Trench (I-1) Infiltration Basin (I-2) Dry Well (I-3) Underground Infiltration System (I-4) Bioretention (F-5) Dry Swale (0-1)	○ Porous Pavement (RR-9)			•••••				
Standard SMPs with RRv Capacity Infiltration Trench (I-1) Infiltration Basin (I-2) Dry Well (I-3) Underground Infiltration System (I-4) Bioretention (F-5) Dry Swale (0-1)	○ Green Roof (RR-10)			••••		-		
Infiltration Trench (I-1) · Infiltration Basin (I-2) · Dry Well (I-3) · Underground Infiltration System (I-4) · Bioretention (F-5) · Dry Swale (0-1) ·	Standard SMPs with RRv Capacity							
Infiltration Basin (I-2) · Dry Well (I-3) · Underground Infiltration System (I-4) · Bioretention (F-5) · Dry Swale (0-1) ·	\bigcirc Infiltration Trench (I-1) ······							
Ory Well (I-3) • Ounderground Infiltration System (I-4) • Bioretention (F-5) • Ory Swale (0-1) •	○ Infiltration Basin (I-2) ·····							
O Underground Infiltration System (I-4) • O Bioretention (F-5) • O Dry Swale (0-1) •	○ Dry Well (I-3)							
O Bioretention (F-5) · O Dry Swale (0-1) ·	\bigcirc Underground Infiltration System (I-4)					-		
○ Bioretention (F-5) ······ ○ Dry Swale (0-1) ·····	· · · · · · · · · · · · · · · · · · ·							
○ Dry Swale (0-1) ····································	\bigcirc Bioretention (F-5) \cdots	•••••	•••••	••••		- •		
	\bigcirc Dry Swale (0-1) \cdots	••••	•••••	••••		•		
Standard SMPs	Standard SMPs					י ך		

O Micropool Extended Detention (P-1)		
○ Wet Pond (P-2) · · · · · · · · · · · · · · · · · · ·		
O Wet Extended Detention (P-3) ·····		
O Multiple Pond System (P-4)		
○ Pocket Pond (P-5) ·····		
O Surface Sand Filter (F-1) ·····		
○ Underground Sand Filter (F-2) ·····		
○ Perimeter Sand Filter (F-3) ·····		
○ Organic Filter (F-4)		
○ Shallow Wetland (W-1)		
○ Extended Detention Wetland (W-2)		
○ Pond/Wetland System (W-3)		
○ Pocket Wetland (W-4)		
○ Wet Swale (0-2)	_	

Table 2 - Alternative SMPs (DO NOT INCLUDE PRACTICES BE: USED FOR PRETREATMENT ONLY)	ING
Alternative SMP	Total Contributing
	Impervious Area(acres)
○ Hydrodynamic	
○Wet Vault	····
O Media Filter	
○ Other	
provide the name and manufacturer of the Alternative SMPs (i.e	2.
Name Name	
Manufacturer	
WQv required and total WQv provided for the project.	
30. Indicate the Total RRv provided by the RR techniques (Ar Standard SMPs with RRv capacity identified in question 2	ea/Volume Reduction) and 9.
30. Indicate the Total RRv provided by the RR techniques (Ar Standard SMPs with RRv capacity identified in question 2 Total RRv provided 	rea/Volume Reduction) and
 30. Indicate the Total RRv provided by the RR techniques (Ar Standard SMPs with RRv capacity identified in question 2 Total RRv providedacre-feet 31. Is the Total RRv provided (#30) greater than or equal to total WQv required (#28). 	o the
 30. Indicate the Total RRv provided by the RR techniques (Ar Standard SMPs with RRv capacity identified in question 2 Total RRv provided acre-feet 31. Is the Total RRv provided (#30) greater than or equal to total WQv required (#28). If Yes, go to question 36. If No, go to question 32.	o the
 30. Indicate the Total RRv provided by the RR techniques (Ar Standard SMPs with RRv capacity identified in question 2 Total RRv provided	o the • Yes • No
 30. Indicate the Total RRv provided by the RR techniques (Ar Standard SMPs with RRv capacity identified in question 2 Total RRv provided	o the

32a.	Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?	○ ¥es	\bigcirc No
	<pre>Minimum RRv Required (#32)? If Yes, go to question 33. Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP. If No, sizing criteria has not been met, so NOI can not be processed SWPPP propagare must modify design to meet sizing</pre>	U Yes	0 No
_	processed. SWPPP preparer must modify design to meet sizing criteria.		

33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total <u>impervious</u> area that contributes runoff to each practice selected.

Note: Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29. WQv Provided acre-feet Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRv provided by the practice. (See Table 3.5 in Design Manual) 34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a). Is the sum of the RRv provided (#30) and the WQv provided 35. (#33a) greater than or equal to the total WQv required (#28)? 🔿 No 🔾 Yes If Yes, go to question 36. If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria. 36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable. **CPv** Provided **CPv** Required acre-feet acre-feet 36a. The need to provide channel protection has been waived because: ○ Site discharges directly to tidal waters or a fifth order or larger stream. \bigcirc Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

Total Overbank Flood Control Criteria (Qp)

Pre-Development CFS	Post-development CFS
Total Extreme Flood Control	l Criteria (Qf)
Pre-Development	Post-development
CFS	CFS

37a.	The need to meet the Qp and Qf criteria has been waived because:
	\bigcirc Site discharges directly to tidal waters
	or a fifth order or larger stream.
	\bigcirc Downstream analysis reveals that the Qp and Qf
	controls are not required

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been O Yes O No developed?

If Yes, Identify the entity responsible for the long term Operation and Maintenance

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required(#28). (See question 32a) This space can also be used for other pertinent project information.

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 Air Pollution Control Coastal Erosion Hazardous Waste Long Island Wells Mined Land Reclamation Solid Waste Navigable Waters Protection / Article 15 Water Quality Certificate Dam Safety Water Supply Freshwater Wetlands/Article 24 Tidal Wetlands Wild, Scenic and Recreational Rivers Stream Bed or Bank Protection / Article 15 Endangered or Threatened Species(Incidental Take Permit) Individual SPDES SPDES Multi-Sector GP Other None 	40.	Identify other DEC permits, existing and new, that are required for this project/facility.
 Coastal Erosion Hazardous Waste Long Island Wells Mined Land Reclamation Solid Waste Navigable Waters Protection / Article 15 Water Quality Certificate Dam Safety Water Supply Freshwater Wetlands/Article 24 Tidal Wetlands Wild, Scenic and Recreational Rivers Stream Bed or Bank Protection / Article 15 Endangered or Threatened Species(Incidental Take Permit) Individual SPDES SPDES Multi-Sector GP Other Other None 		\bigcirc Air Pollution Control
 Hazardous Waste Long Island Wells Mined Land Reclamation Solid Waste Navigable Waters Protection / Article 15 Water Quality Certificate Dam Safety Water Supply Freshwater Wetlands/Article 24 Tidal Wetlands Wild, Scenic and Recreational Rivers Stream Bed or Bank Protection / Article 15 Endangered or Threatened Species(Incidental Take Permit) Individual SPDES SPDES Multi-Sector GP Other Other None 		○ Coastal Erosion
 Long Island Wells Mined Land Reclamation Solid Waste Navigable Waters Protection / Article 15 Water Quality Certificate Dam Safety Water Supply Freshwater Wetlands/Article 24 Tidal Wetlands Wild, Scenic and Recreational Rivers Stream Bed or Bank Protection / Article 15 Endangered or Threatened Species(Incidental Take Permit) Individual SPDES SPDES Multi-Sector GP Other Other Other 		\bigcirc Hazardous Waste
 Mined Land Reclamation Solid Waste Navigable Waters Protection / Article 15 Water Quality Certificate Dam Safety Water Supply Freshwater Wetlands/Article 24 Tidal Wetlands Wild, Scenic and Recreational Rivers Stream Bed or Bank Protection / Article 15 Endangered or Threatened Species(Incidental Take Permit) Individual SPDES SPDES Multi-Sector GP Other Other Individual SPDES None 		\bigcirc Long Island Wells
 Solid Waste Navigable Waters Protection / Article 15 Water Quality Certificate Dam Safety Water Supply Freshwater Wetlands/Article 24 Tidal Wetlands Wild, Scenic and Recreational Rivers Stream Bed or Bank Protection / Article 15 Endangered or Threatened Species(Incidental Take Permit) Individual SPDES SPDES Multi-Sector GP Other Other None 		\bigcirc Mined Land Reclamation
 Navigable Waters Protection / Article 15 Water Quality Certificate Dam Safety Water Supply Freshwater Wetlands/Article 24 Tidal Wetlands Wild, Scenic and Recreational Rivers Stream Bed or Bank Protection / Article 15 Endangered or Threatened Species(Incidental Take Permit) Individual SPDES SPDES Multi-Sector GP Other Other None 		\bigcirc Solid Waste
 Water Quality Certificate Dam Safety Water Supply Freshwater Wetlands/Article 24 Tidal Wetlands Wild, Scenic and Recreational Rivers Stream Bed or Bank Protection / Article 15 Endangered or Threatened Species(Incidental Take Permit) Individual SPDES SPDES Multi-Sector GP Other Other Other 		\bigcirc Navigable Waters Protection / Article 15
 Dam Safety Water Supply Freshwater Wetlands/Article 24 Tidal Wetlands Wild, Scenic and Recreational Rivers Stream Bed or Bank Protection / Article 15 Endangered or Threatened Species(Incidental Take Permit) Individual SPDES SPDES Multi-Sector GP Other Other Other Other 		\bigcirc Water Quality Certificate
 Water Supply Freshwater Wetlands/Article 24 Tidal Wetlands Wild, Scenic and Recreational Rivers Stream Bed or Bank Protection / Article 15 Endangered or Threatened Species(Incidental Take Permit) Individual SPDES SPDES Multi-Sector GP Other Other None 		○ Dam Safety
 Freshwater Wetlands/Article 24 Tidal Wetlands Wild, Scenic and Recreational Rivers Stream Bed or Bank Protection / Article 15 Endangered or Threatened Species(Incidental Take Permit) Individual SPDES SPDES Multi-Sector GP Other Other None 		○ Water Supply
 Tidal Wetlands Wild, Scenic and Recreational Rivers Stream Bed or Bank Protection / Article 15 Endangered or Threatened Species(Incidental Take Permit) Individual SPDES SPDES Multi-Sector GP Other Other None 		\bigcirc Freshwater Wetlands/Article 24
 Wild, Scenic and Recreational Rivers Stream Bed or Bank Protection / Article 15 Endangered or Threatened Species(Incidental Take Permit) Individual SPDES SPDES Multi-Sector GP Other Other None 		\bigcirc Tidal Wetlands
 Stream Bed or Bank Protection / Article 15 Endangered or Threatened Species(Incidental Take Permit) Individual SPDES SPDES Multi-Sector GP Other Other None 		\bigcirc Wild, Scenic and Recreational Rivers
 Endangered or Threatened Species(Incidental Take Permit) Individual SPDES SPDES Multi-Sector GP Other Other None 		\bigcirc Stream Bed or Bank Protection / Article 15
 Individual SPDES SPDES Multi-Sector GP Other None 		\bigcirc Endangered or Threatened Species(Incidental Take Permit)
<pre>O SPDES Multi-Sector GP</pre> O Other Onne		\bigcirc Individual SPDES
O Other		○ SPDES Multi-Sector GP
○ None		○ 0ther
		○ None

41.	Does this project require a US Army Corps of Engineers Wetland Permit? If Yes, Indicate Size of Impact.	○ ¥es	O No
42.	Is this project subject to the requirements of a regulated, traditional land use control MS4? (If No, skip question 43)	() Yes	() No
43.	Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI?	⊖ ¥es	O No
44.	If this NOI is being submitted for the purpose of continuing or trans coverage under a general permit for stormwater runoff from constructi activities, please indicate the former SPDES number assigned.	ferring on	

Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Print First Name	MI
Print Last Name	
Owner/Operator Signature	
	Date

New York State Department of Environmental Conservation Division of Water 625 Broadway, 4th Floor Albany, New York 12233-3505 *(NOTE: Submit completed form to address above)* NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity							
Please indicate your permit identification number: NY	R						
I. Owner or Operator Information							
1. Owner/Operator Name:							
2. Street Address:							
3. City/State/Zip:							
4. Contact Person:	4a.Telephone:						
4b. Contact Person E-Mail:							
II. Project Site Information							
5. Project/Site Name:							
6. Street Address:							
7. City/Zip:							
8. County:							
III. Reason for Termination							
9a. □ All disturbed areas have achieved final stabilization in acco SWPPP. *Date final stabilization completed (month/year):	ordance with the general permit and						
9b. □ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR							
9c. □ Other (Explain on Page 2)							
IV. Final Site Information:							
10a. Did this construction activity require the development of a S stormwater management practices? \Box yes \Box no (If no	WPPP that includes post-construction , go to question 10f.)						
10b. Have all post-construction stormwater management practic constructed? □ yes □ no (If no, explain on Page 2)	es included in the final SWPPP been)						
10c. Identify the entity responsible for long-term operation and m	naintenance of practice(s)?						

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NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? □ yes □ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

□ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.

□ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).

□ For post-construction stormwater management practices that are privately owned, a mechanism is in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the owner or operator's deed of record.

□ For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university or hospital), government agency or authority, or public utility; policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area?

(acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? $\hfill\square$ yes $\hfill\square$ no

(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation: (Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:

Title/Position:

Signature:

Date:

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

 VII. Qualified Inspector Certification - Final Stabilization:

 I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version

of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:

Title/Position:

Signature:

Date:

Date:

VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:

Title/Position:

Signature:

IX. Owner or Operator Certification

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name: Title/Position: Signature: Date:

(NYS DEC Notice of Termination - January 2015)
Full Text of SPDES Permit will be added to final document.

To reduce paper consumption the text of the SPDES Permit can be found at https://www.dec.ny.gov/docs/water_pdf/gp015002.pdf

Appendix B

NRCS Soils Information; FEMA Map; NWI Map; NYS DEC Environmental Resource Map



United States Department of Agriculture

NRCS

Natural Resources Conservation Service A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Orange County, New York

Village View



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/? cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



Γ

MAP INFORMATION The soil surveys that comprise your AOI were mapped at 1:15,800.	Warning: Soil Map may not be valid at this scale. Enlargement of maps beyond the scale of mapping can ca misunderstanding of the detail of mapping and accuracy o line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more de scale.	Please rely on the bar scale on each map sheet for map measurements. Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)	Maps from the Web Soil Survey are based on the Web Mer projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such a Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.	This product is generated from the USDA-NRCS certified of the version date(s) listed below. Soil Survey Area: Orange County, New York Survey Area Data: Version 18, Oct 8, 2017	Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.	Date(s) aerial images were photographed: Oct 7, 2013—I 2017	The orthophoto or other base map on which the soil lines w compiled and digitized probably differs from the backgroun imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.
Area of Interest (AOI) Area o	 Soil Map Unit Polygons Soil Map Unit Polygons Soil Map Unit Lines Soil Map Unit Points Special Point Features Blowout Streams and Canals 	Borrow Pit Transportation K Clay Spot K Closed Depression K Gravel Pit K US Routes K Major Roads	Lava Flow Lava Flow Background Marsh or swamp Mine or Quarry	 Miscellaneous Water Perennial Water Rock Outcrop Saline Spot 	 Sandy Spot Severely Eroded Spot 	 Sinkhole Slide or Slip 	Sodic Spot

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ab	Alden silt loam	4.8	23.2%
FAC	Farmington silt loam, sloping	0.0	0.0%
MdB	Mardin gravelly silt loam, 3 to 8 percent slopes	6.8	32.8%
MdC	Mardin gravelly silt loam, 8 to 15 percent slopes	9.1	44.0%
Totals for Area of Interest		20.6	100.0%

Map Unit Legend

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Orange County, New York

Ab—Alden silt loam

Map Unit Setting

National map unit symbol: 9vtc Elevation: 300 to 1,500 feet Mean annual precipitation: 42 to 52 inches Mean annual air temperature: 46 to 52 degrees F Frost-free period: 135 to 215 days Farmland classification: Not prime farmland

Map Unit Composition

Alden and similar soils: 80 percent Minor components: 20 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Alden

Setting

Landform: Depressions Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope Down-slope shape: Concave Across-slope shape: Concave Parent material: A silty mantle of local deposition overlying loamy till

Typical profile

H1 - 0 to 9 inches: silt loam H2 - 9 to 36 inches: silt loam H3 - 36 to 60 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 1 percent
Available water storage in profile: High (about 9.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 5w Hydrologic Soil Group: C/D Hydric soil rating: Yes

Minor Components

Canandaigua

Percent of map unit: 5 percent Landform: Depressions Hydric soil rating: Yes

Carlisle

Percent of map unit: 5 percent Landform: Marshes, swamps Hydric soil rating: Yes

Erie

Percent of map unit: 5 percent Landform: Depressions Hydric soil rating: No

Wayland

Percent of map unit: 5 percent Landform: Flood plains Hydric soil rating: Yes

FAC—Farmington silt loam, sloping

Map Unit Setting

National map unit symbol: 9vvc Elevation: 100 to 900 feet Mean annual precipitation: 42 to 52 inches Mean annual air temperature: 46 to 52 degrees F Frost-free period: 135 to 215 days Farmland classification: Not prime farmland

Map Unit Composition

Farmington and similar soils: 75 percent *Minor components:* 25 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Farmington

Setting

Landform: Benches, ridges, till plains Landform position (two-dimensional): Shoulder Landform position (three-dimensional): Crest Down-slope shape: Convex Across-slope shape: Convex Parent material: Loamy till or congeliturbate derived from limestone, dolomite, shale, and sandstone, and in many places mixed with wind and water deposits

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 19 inches: silt loam
H3 - 19 to 23 inches: unweathered bedrock

Properties and qualities

Slope: 8 to 15 percent Depth to restrictive feature: 10 to 20 inches to lithic bedrock Natural drainage class: Somewhat excessively drained Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4e Hydrologic Soil Group: D Hydric soil rating: No

Minor Components

Arnot

Percent of map unit: 5 percent Hydric soil rating: No

Mardin

Percent of map unit: 5 percent Hydric soil rating: No

Nassau

Percent of map unit: 5 percent Hydric soil rating: No

Pittsfield

Percent of map unit: 5 percent Hydric soil rating: No

Rock outcrop

Percent of map unit: 5 percent Hydric soil rating: Unranked

MdB—Mardin gravelly silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2v30j Elevation: 330 to 2,460 feet Mean annual precipitation: 31 to 70 inches Mean annual air temperature: 39 to 52 degrees F Frost-free period: 105 to 180 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Mardin and similar soils: 85 percent Minor components: 15 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mardin

Setting

Landform: Hills, mountains Landform position (two-dimensional): Summit, shoulder Landform position (three-dimensional): Interfluve, side slope Down-slope shape: Convex Across-slope shape: Convex Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: gravelly silt loam Bw - 8 to 15 inches: gravelly silt loam E - 15 to 20 inches: gravelly silt loam Bx - 20 to 72 inches: gravelly silt loam

Properties and qualities

Slope: 3 to 8 percent
Percent of area covered with surface fragments: 0.0 percent
Depth to restrictive feature: 14 to 26 inches to fragipan
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 13 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2w Hydrologic Soil Group: D Hydric soil rating: No

Minor Components

Bath

Percent of map unit: 5 percent Landform: Hills, mountains Landform position (two-dimensional): Backslope, shoulder Landform position (three-dimensional): Interfluve, side slope Down-slope shape: Concave Across-slope shape: Linear Hydric soil rating: No

Volusia

Percent of map unit: 5 percent Landform: Hills, mountains Landform position (two-dimensional): Footslope, summit Landform position (three-dimensional): Base slope, interfluve, side slope Down-slope shape: Concave Across-slope shape: Linear Hydric soil rating: No

Lordstown

Percent of map unit: 5 percent *Landform:* Hills, mountains

Custom Soil Resource Report

Landform position (two-dimensional): Summit, shoulder Landform position (three-dimensional): Mountaintop, interfluve, crest Down-slope shape: Convex Across-slope shape: Convex Hydric soil rating: No

MdC—Mardin gravelly silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2v30l Elevation: 330 to 2,460 feet Mean annual precipitation: 31 to 70 inches Mean annual air temperature: 39 to 52 degrees F Frost-free period: 105 to 180 days Farmland classification: Farmland of statewide importance

Map Unit Composition

Mardin and similar soils: 85 percent Minor components: 15 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mardin

Setting

Landform: Hills, mountains Landform position (two-dimensional): Shoulder, backslope Landform position (three-dimensional): Interfluve, side slope Down-slope shape: Linear Across-slope shape: Linear Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: gravelly silt loam *Bw - 8 to 15 inches:* gravelly silt loam *E - 15 to 20 inches:* gravelly silt loam *Bx - 20 to 72 inches:* gravelly silt loam

Properties and qualities

Slope: 8 to 15 percent
Percent of area covered with surface fragments: 0.0 percent
Depth to restrictive feature: 14 to 26 inches to fragipan
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 13 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e Hydrologic Soil Group: D Hydric soil rating: No

Minor Components

Volusia

Percent of map unit: 5 percent Landform: Hills, mountains Landform position (two-dimensional): Footslope, summit Landform position (three-dimensional): Base slope, interfluve, side slope Down-slope shape: Concave Across-slope shape: Linear Hydric soil rating: No

Bath

Percent of map unit: 5 percent Landform: Hills, mountains Landform position (two-dimensional): Backslope Landform position (three-dimensional): Nose slope, side slope Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: No

Lordstown

Percent of map unit: 5 percent Landform: Hills, mountains Landform position (two-dimensional): Backslope Landform position (three-dimensional): Mountainflank, side slope, nose slope Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: No

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National Flood Hazard Layer FIRMette





reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or

become superseded by new data over time.

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

74°21'18.28"W

Alidous 41°16'6.49" ss, GNI is, AeroGRID, IGN, and the GIS Ea Source: Esri, DigitelGlobe, Geo DS, USDA, USGS, AenoGRID, I 1:6,000 Feet

2,000

1,500

1,000

500

250

. Flood ha Bx AREA OF MINIMAL

W"47.55'15°4'W

41°16'33.53"N





Village View NWI map



National Wetlands Inventory (NWI) This page was produced by the NWI mapper

Riverine

Freshwater Pond

Estuarine and Marine Wetland

Appendix C

Water Quality and Run off Reduction Calculation Spreadsheets; Bio-Retention Worksheets; Channel Protection Volume Calculations; Swale Sizing Calculations Version 1.8 Last Updated: 11/09/2015

Is this project subject to Chapter 10 of the NYS Design Manual (i.e. WQv is equal to post-

development 1 year runoff volume)?.....

No

Design Point: Village View Manually enter P, Total Area and Impervious Cover. P= 1.42 inch **Breakdown of Subcatchments** Percent WQv Catchment **Total Area Impervious** Area Impervious Description Rv (ft^3) (Acres) Number (Acres) % 9.40 Area 1 3.30 35% 0.37 17,732 1 2 3.00 1.30 43% 0.44 6,804 Area 2 1.33 0.50 38% 0.39 Area 3 3 2,662 4 0.28 0.12 43% 0.44 629 Area 4 5 0.13 0.06 46% 0.47 312 Area 5 6 0.68 0.25 37% 0.38 1,335 Area 6 0.05 0.01 7 20% 0.23 59 Area 7 8 9 10 Subtotal (1-30) 14.87 37% 29,533 Subtotal 1 5.54 0.39 Total 14.87 5.54 37% 0.39 29,533 **Initial WQv**

Identify Runoff Reduction Techniques By Area					
Technique	Total Contributing Area	Contributing Impervious Area	Notes		
	(Acre)	(Acre)			
Conservation of Natural Areas	0.00	0.00	minimum 10,000 sf		
Riparian Buffers	0.41	0.18	maximum contributing length 75 feet to 150 feet		
Filter Strips	0.73	0.26			
Tree Planting	0.00	0.00	<i>Up to 100 sf directly connected impervious area may be subtracted per tree</i>		
Total	1.14	0.44			

Recalculate WQv after application of Area Reduction Techniques							
	Total Area Impervious Area (Acres) (Acres)		Percent Impervious %	Runoff Coefficient Rv	WQv (ft ³)		
"< <initial td="" wqv"<=""><td>14.87</td><td>5.54</td><td>37%</td><td>0.39</td><td>29,533</td></initial>	14.87	5.54	37%	0.39	29,533		
Subtract Area	-1.14	-0.44					
WQv adjusted after Area Reductions	13.73	5.10	37%	0.38	27,198		
Disconnection of Rooftops		0.37					
Adjusted WQv after Area Reduction and Rooftop Disconnect	13.73	4.73	34%	0.36	25,482		
WQv reduced by Area Reduction techniques					4,052		

Total Water Quality Volume Calculation WQv(acre-feet) = [(P)(Rv)(A)] /12

All Subcatchments							
Catchment	Total Area	Impervious Cover	Percent Impervious	Runoff Coefficient	WQv	Description	
	(Acres)	(Acres)	%	Rv	(ft ³)		
1	9.40	3.30	0.35	0.37	17731.82	Area 1	
2	3.00	1.30	0.43	0.44	6,804	Area 2	
3	1.33	0.50	0.38	0.39	2662.35	Area 3	
4	0.28	0.12	0.43	0.44	628.86	Area 4	
5	0.13	0.06	0.46	0.47	311.85	Area 5	
6	0.68	0.25	0.37	0.38	1335.04	Area 6	
7	0.05	0.01	0.20	0.23	59.28	Area 7	
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

Runoff Reduction Volume and Treated volumes						
	Runoff Reduction Techiques/Standard SMPs		Total Contributing Area	Total Contributing Impervious Area	WQv Reduced (RRv)	WQv Treated
			(acres)	(acres)	cf	cf
	Conservation of Natural Areas	RR-1	0.00	0.00		
tion	Sheetflow to Riparian Buffers/Filter Strips	RR-2	1.14	0.44		
quc	Tree Planting/Tree Pit	RR-3	0.00	0.00		
Red	Disconnection of Rooftop Runoff	RR-4		0.37		
me	Vegetated Swale	RR-5	0.00	0.00	0	
olui	Rain Garden	RR-6	0.00	0.00	0	
<u>ک</u>	Stormwater Planter	RR-7	0.00	0.00	0	
Area	Rain Barrel/Cistern	RR-8	0.00	0.00	0	
4	Porous Pavement	RR-9	0.00	0.00	0	
	Green Roof (Intensive & Extensive)	RR-10	0.00	0.00	0	
	Infiltration Trench	I-1	0.00	0.00	0	0
Ps ity	Infiltration Basin	I-2	0.00	0.00	0	0
SM	Dry Well	I-3	0.00	0.00	0	0
Ca	Underground Infiltration System	I-4				
Standa w/RRv	Bioretention & Infiltration Bioretention	F-5	12.40	4.23	8366	14453
	Dry swale	0-1	0.00	0.00	0	0
	Micropool Extended Detention (P-1)	P-1				
	Wet Pond (P-2)	P-2				
	Wet Extended Detention (P-3)	P-3				
	Multiple Pond system (P-4)	P-4				
6	Pocket Pond (p-5)	P-5				
ЧЬ	Surface Sand filter (F-1)	F-1				
d SI	Underground Sand filter (F-2)	F-2				
dan	Perimeter Sand Filter (F-3)	F-3				
tan	Organic Filter (F-4	F-4				
S	Shallow Wetland (W-1)	W-1				
	Extended Detention Wetland (W-2	W-2				
	Pond/Wetland System (W-3)	W-3				
	Pocket Wetland (W-4)	W-4				
	Wet Swale (O-2)	0-2				
	Totals by Area Reduction	\rightarrow	1.14	0.81	4052	
	Totals by Volume Reduction	\rightarrow	0.00	0.00	0	
	Totals by Standard SMP w/RRV	\rightarrow	12.40	4.23	8366	14453
	Totals by Standard SMP	\rightarrow	0.00	0.00		0
Т	otals (Area + Volume + all SMPs)	\rightarrow	13.54	5.04	12,418	14,453
	Impervious Cover V	error				

Minimum RRv

Enter the Soils Da	ta for the site	
Soil Group	Acres	S
А		55%
В		40%
С		30%
D	14.80	20%
Total Area	14.8	
Calculate the Min	imum RRv	
S =	0.20	
Impervious =	5.54	acre
Precipitation	1.42	in
Rv	0.95	
Minimum RRv	5,426	ft3
	0.12	af

Planning

Practice	Description	Application
Preservation of Undisturbed Areas	Delineate and place into permanent conservation undisturbed forests, native vegetated areas, riparian corridors, wetlands, and natural terrain.	Considered & Applied
Preservation of Buffers	Define, delineate and preserve naturally vegetated buffers along perennial streams, rivers, shorelines and wetlands.	Considered & Applied
Reduction of Clearing and Grading	Limit clearing and grading to the minimum amount needed for roads, driveways, foundations, utilities and stormwater management facilities.	Considered & Applied
Locating Development in Less Sensitive Areas	Avoid sensitive resource areas such as floodplains, steep slopes, erodible soils, wetlands, mature forests and critical habitats by locating development to fit the terrain in areas that will create the least impact.	Considered & Applied
Open Space Design	Use clustering, conservation design or open space design to reduce impervious cover, preserve more open space and protect water resources.	Considered & Applied
Soil Restoration	Restore the original properties and porosity of the soil by deep till and amendment with compost to reduce the generation of runoff and enhance the runoff reduction performance of post construction practices.	Considered & Applied
Roadway Reduction	Minimize roadway widths and lengths to reduce site impervious area	Considered & Applied
Sidewalk Reduction	Minimize sidewalk lengths and widths to reduce site impervious area	Considered & Applied
Driveway Reduction	Minimize driveway lengths and widths to reduce site impervious area	Considered & Not Applied
Cul-de-sac Reduction	Minimize the number of cul-de-sacs and incorporate landscaped areas to reduce their impervious cover.	Considered & Not Applied
Building Footprint Reduction	Reduce the impervious footprint of residences and commercial buildings by using alternate or taller buildings while maintaining the same floor to area ratio.	N/A
Parking Reduction	Reduce imperviousness on parking lots by eliminating unneeded spaces, providing compact car spaces and efficient parking lanes, minimizing stall dimensions, using porous pavement surfaces in overflow parking areas, and using multi-storied parking decks where appropriate.	N/A

Bioretention Worksheet

(For use on HSG C or D Soils with underdrains) Af=WQv*(df)/[k*(hf+df)(tf)]

k

- Af Required Surface Area (ft2)
- *WQv* Water Quality Volume (ft3)
- *df* Depth of the Soil Medium (feet)
- *hf* Average height of water above the planter bed
- *tf* Volume Through the Filter Media (days)

The hydraulic conductivity [ft/day], can be varied depending on the properties of the soil media. Some reported conductivity values are: **Sand** - 3.5 ft/day (City of Austin 1988); **Peat** - 2.0 ft/day (Galli 1990); **Leaf Compost** - 8.7 ft/day (Claytor and Schueler, 1996); **Bioretention Soil** (0.5 ft/day (Claytor &

Design Point:	Village View						
	Enter	Site Data For	Drainage Are	a to be ⁻	Treated by	Practice	
Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft ³)	Precipitation (in)	Description
1	9.40	3.30	0.35	0.37	17731.82	1.42	Area 1
Enter Imperviou by Disconnection	s Area Reduced n of Rooftops	0.30	32%	0.34	16,340	< <wqv ac<br="" after="">Disconnected R</wqv>	ljusting for ooftops
Enter the portic routed to this p	on of the WQv th ractice.	nat is not redu	ced for all pra	ctices	0	ft ³	
			Soil Inform	ation			
Soil Group D							
Soil Infiltration	Rate	0.00	in/hour	Okay			
Using Underdrains? Yes Okay							
Calculate the Minimum Filter Area							
				V	/alue	Units	Notes
	WQv			16,340		ft ³	
Enter Depth of Soil Media		df	2.5		ft	2.5-4 ft	
Enter H	Hydraulic Conduc	ctivity	k	0.5		ft/day	
Enter Ave	erage Height of I	Ponding	hf	0.5		ft	6 inches max.
E	nter Filter Time		tf		2	days	
Re	quired Filter Are	a	Af	1	3617	ft ²	
		Determi	ne Actual Bio	-Retenti	ion Area		
Filter Width		70	ft				
Filter Length		182	ft				
Filter Area		12740	ft ²				
Actual Volume	Provided	15288	ft ³				
		Dete	ermine Runof	f Reduc	tion	-	
Is the Bioretent another practic	ion contributing e?	flow to	No	Select	t Practice		
RRv		6,115					
RRv applied		6,115	ft ³	This is 40% of the storage provided or WQv whichever is less.			ed or WQv
Volume Treated	b	10,225	ft ³	<i>This is the portion of the WQv that is not reduced in the practice.</i>			
Volume Directe	d	0	ft ³	This vo	lume is dire	ected another p	ractice
Sizing √		Error		Check to be sure Area provided $\geq Af$			

Bioretention Worksheet

(For use on HSG C or D Soils with underdrains) Af=WQv*(df)/[k*(hf+df)(tf)]

k

- Af Required Surface Area (ft2)
- *WQv* Water Quality Volume (ft3)

Design Point: Village View

- *df* Depth of the Soil Medium (feet)
- *hf* Average height of water above the planter bed
- *tf* Volume Through the Filter Media (days)

The hydraulic conductivity [ft/day], can be varied depending on the properties of the soil media. Some reported conductivity values are: **Sand** - 3.5 ft/day (City of Austin 1988); **Peat** - 2.0 ft/day (Galli 1990); **Leaf Compost** - 8.7 ft/day (Claytor and Schueler, 1996); **Bioretention Soil** (0.5 ft/day (Claytor & Schueler, 1996)

Enter Site Data For Drainage Area to be Treated by Practice							
Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft ³)	Precipitation (in)	Description
2	3.00	1.30	0.43	0.44	6804.07	1.42	Area 2
Enter Imperviou by Disconnection	s Area Reduced n of Rooftops	0.07	41%	0.42	6,479	< <wqv ac<br="" after="">Disconnected R</wqv>	ljusting for ooftops
Enter the portion routed to this p	on of the WQv th ractice.	nat is not redu	ced for all pra	ctices	0	ft ³	
	Soil Information						
Soil Group		D					
Soil Infiltration	Rate	0.00	in/hour	Okay			
Using Underdra	iins?	Yes	Okay				
Calculate the Minimum Filter Area							
				V	'alue	Units	Notes
	WQv			6	,479	ft ³	
Enter	Depth of Soil M	edia	df		2.5	ft	2.5-4 ft
Enter H	Hydraulic Conduc	ctivity	k		0.5	ft/day	
Enter Ave	erage Height of I	Ponding	hf	0.5		ft	6 inches max.
E	inter Filter Time		tf		2	days	
Re	quired Filter Are	a	Af	5	399	ft ²	
		Determi	ne Actual Bio	-Retenti	on Area		
Filter Width		35	ft				
Filter Length		134	ft				
Filter Area		4690	ft ²				
Actual Volume	Provided	5628	ft ³				
		Dete	ermine Runof	f Reduct	tion		
Is the Bioretent another practic	ion contributing e?	flow to	No	Select	t Practice		
RRv		2,251					
RRv applied		2,251	ft ³	This is 40% of the storage provided or WQv whichever is less.			ed or WQv
Volume Treated	d	4,228	ft ³	This is the portion of the WQv that is not reduced in the practice.			t is not reduced in
Volume Directe	d	0	ft ³	This vo	lume is dire	ected another p	ractice
Sizing √		Error		Check to be sure Area provided $\geq Af$			

Bioretention Worksheet

Total RRv Applied	8,366.40
Total Area	12.40
Total Impervious Area	4.23
Total Volume Treated	14,453.01
Rooftop Disconnect Impervious Area Total	0.37

Disconnection of Roof Tops

Design Point:	Village View									
Enter Site Data For Drainage Area to be Treated by Practice										
Catchment Number	nt Impervious Area To Be Disconnected (Acres)					Description				
1	1 0.30					Disconnection of Rooftops				
Design Elements										
Is another area based practice applied to this area?			No							
Soil Type			D							
Has an evaluation by licensed or certified professional determined if soil enhancement & spreading device needed to provide sheet flowover grass surfaces?			Yes	Y/N	required for C or D soils.					
Hotspot Area?			No							
Length of flow path from Impervious Surfaces				ft	75 feet maximum					
Distance of downspouts from impervious areas			15	ft	>10 feet					
Contributing Area of Rooftop to Downspout			500	sf	Okay					
Contributing Area of Rooftop			500	sf	500 sf maximum. Up to 2000 sf with suitable flow dispersion technique					
Method of flow dispersion			Splash		required If area to downspout >500 sf					
Flow length thru vegetated channel, swale or filter			15	ft	vegetated area must be equal to or greater than the length of contributing impervious					
Slope of vegetated area receiving flow		5	%	Average slope ≤5%						
Will overflow occur to undesignated Areas?		No								
Are All Criteria in Section 5.3.5 met?			Yes							
Area Reduction Adjustments										
Subtract			0.30	Acres from the Total Impervious Area of Sub- catchment Number		1				

Disconnection of Roof Tops

Design Point:	Village View										
Enter Site Data For Drainage Area to be Treated by Practice											
Catchment Number	nber Impervious Area To Be Disconnected (Acres)					Description					
3	3 0.07					Disconnection of Rooftops					
Design Elements											
Is another area based practice applied to this area?			No								
Soil Type			D								
Has an evaluation by licensed or certified professional determined if soil enhancement & spreading device needed to provide sheet flowover grass surfaces?			Yes	Y/N	required for C or D soils.						
Hotspot Area?			No								
Length of flow path from Impervious Surfaces			14	ft	75 feet maximum						
Distance of downspouts from impervious areas			15	ft	>10 feet						
Contributing Area of Rooftop to Downspout			500	sf	Okay						
Contributing Area of Rooftop		500	sf	500 sf maximum. Up to 2000 sf with suitable flow dispersion technique							
Method of flow dispersion					required If area to downspout >500 sf						
Flow length thru vegetated channel, swale or filter		15	ft	vegetated area must be equal to or greater than the length of contributing impervious							
Slope of vegetated area receiving flow		5	%	Average slope ≤5%							
Will overflow occur to undesignated Areas?		No									
Are All Criteria in Section 5.3.5 met?			Yes								
Area Reduction Adjustments											
Subtract		0.07	Acres from the Total Impervious Area of Sub- catchment Number		3						
VILLAGE VIEW

CLUSTER SUBDIVISION Pond 1A Village of Warwick, NY Orange County

Channel Protection Volume Calculation

Curve Number for Drainage Basin tributary to SMP = 77

Initial Abstraction (Ia) = [(200/CN)-2] Ia = [(200/77)-2] = [2.60-2] = **0.60**

1 Year Rainfall in inches (P) = 2.9 inches for Orange County Ia/P = 0.60/2.9 = 0.21

Time of Concentration (Tc) = 0.33 hours

Using the above Data and Exhibit 4-III from TR-55 Unit peak discharge (qu) for SCS Type III rainfall distribution Unit Peak Discharge = (qu) = 440 csm/in Using a (qu) of 440 csm/in the Ratio of Outflow to Inflow (qo/qi) = 0.040 qo/qi = 0.040

Channel Protection Storage Volume (Vs) / Volume of Runoff in Inches (Vr) = Vs / Vr = $0.683 - 1.43(qo/qi) + 1.64(qo/qi)^2 - 0.804(qo/qi)^3 =$ Vs / Vr = $0.683 - 1.43(0.04) + 1.64(0.04)^2 - 0.804(0.04)^3 =$ Vs / Vr = 0.683 - 1.43(0.04) + 1.64(0.0016) - 0.804(0.00064) = Vs / Vr = 0.683 - 0.0572 + 0.00262 - 0.0005 = Vs / Vr = 0.628

Vs = (Vs/Vr) (Post Developed Runoff in inches) (1/12) (Total Drainage Area in Acres) Vs = (0.628) (0.83") (1/12) (13.2 ac.)Vs = 0.5734 a.f. = 24,975 c.f.

Channel Protection Volume Required = 24,975 c.f. Channel Protection Volume Required = 25,615 c.f.

VILLAGE VIEW

CLUSTER SUBDIVISION Pond 1B

Village of Warwick, NY Orange County

Channel Protection Volume Calculation

Curve Number for Drainage Basin tributary to SMP = 77

Initial Abstraction (Ia) = [(200/CN)-2] Ia = [(200/77)-2] = [2.60-2] = **0.60**

1 Year Rainfall in inches (P) = 2.9 inches for Orange County Ia/P = 0.60/2.9 = 0.21

Time of Concentration (Tc) = 0.34 hours

Using the above Data and Exhibit 4-III from TR-55 Unit peak discharge (qu) for SCS Type III rainfall distribution Unit Peak Discharge = (qu) = 440 csm/in Using a (qu) of 440 csm/in the Ratio of Outflow to Inflow (qo/qi) = 0.040 qo/qi = 0.040

Channel Protection Storage Volume (Vs) / Volume of Runoff in Inches (Vr) = Vs / Vr = $0.683 - 1.43(qo/qi) + 1.64(qo/qi)^2 - 0.804(qo/qi)^3 =$ Vs / Vr = $0.683 - 1.43(0.04) + 1.64(0.04)^2 - 0.804(0.04)^3 =$ Vs / Vr = 0.683 - 1.43(0.04) + 1.64(0.0016) - 0.804(0.00064) = Vs / Vr = 0.683 - 0.0572 + 0.00262 - 0.0005 = Vs / Vr = 0.628

Vs = (Vs/Vr) (Post Developed Runoff in inches) (1/12) (Total Drainage Area in Acres) Vs = (0.628) (0.83") (1/12) (13.9 ac.) Vs = 0.6038 a.f. = 26,300 c.f.

Channel Protection Volume Required = 26,300 c.f. Channel Protection Volume Required = 27,748 c.f.

Village View Village of Warwick, Orange County, NY SEC. 201, BLK. 1, LOTS 1.1, 1.2, 1.3 & 2.

DIVERSION SWALE TO POND 1B

Channel Calculator

Given Input Data:

Shape	Trapezoidal
Solving for	Depth of Flow
Flowrate	61.0000 cfs
Slope	0.0900 ft/ft
Manning's n	0.0300
Height	2.0000 ft
Bottom width	2.0000 ft
Left slope	0.5000 ft/ft (V/H)
Right slope	0.5000 ft/ft (V/H)

Depth	1.1830 ft
Velocity	11.8096 fps
Full Flowrate	189.6108 cfs
Flow area	5.1653 ft2
Flow perimeter	7.2908 ft
Hydraulic radius	0.7085 ft
Top width	6.7322 ft
Area	12.0000 ft2
Perimeter	10.9443 ft
Percent full	59.1524 %

<u>Village View</u> Village of Warwick, Orange County, NY

SEC. 201, BLK. 1, LOTS 1.1, 1.2, 1.3 & 2.

DIVERSION SWALE TO POND 1A

Channel Calculator

Given Input Data:

Shape	Trapezoidal
Solving for	Depth of Flow
Flowrate	63.0000 cfs
Slope	0.0250 ft/ft
Manning's n	0.0300
Height	2.0000 ft
Bottom width	2.0000 ft
Left slope	0.5000 ft/ft (V/H)
Right slope	0.5000 ft/ft (V/H)

Depth	1.6223 ft
Velocity	7.4047 fps
Full Flowrate	99.9336 cfs
Flow area	8.5082 ft2
Flow perimeter	9.2551 ft
Hydraulic radius	0.9193 ft
Top width	8.4891 ft
Area	12.0000 ft2
Perimeter	10.9443 ft
Percent full	

Village View

Village of Warwick, Orange County, NY

SEC. 201, BLK. 1, LOTS 1.1, 1.2, 1.3 & 2.

DIVERSION SWALE B

Channel Calculator

Given Input Data:

Shape	Trapezoidal
Solving for	Depth of Flow
Flowrate	10.0000 cfs
Slope	0.0500 ft/ft
Manning's n	0.0300
Height	1.5000 ft
Bottom width	1.0000 ft
Left slope	0.5000 ft/ft (V/H)
Right slope	0.5000 ft/ft (V/H)

Depth	0.6931 ft
Velocity	6.0470 fps
Full Flowrate	56.2340 cfs
Flow area	1.6537 ft2
Flow perimeter	4.0994 ft
Hydraulic radius	0.4034 ft
Top width	3.7722 ft
Area	6.0000 ft2
Perimeter	7.7082 ft
Percent full	46.2038 %

Village View

Village of Warwick, Orange County, NY SEC. 201, BLK. 1, LOTS 1.1, 1.2, 1.3 & 2.

DIVERSION SWALE A

Channel Calculator

Given Input Data:

Shape	Trapezoidal
Solving for	Depth of Flow
Flowrate	52.0000 cfs
Slope	0.1500 ft/ft
Manning's n	0.0300
Height	2.0000 ft
Bottom width	2.0000 ft
Left slope	0.5000 ft/ft (V/H)
Right slope	0.5000 ft/ft (V/H)

Depth	0.9670 ft
Velocity	13.6697 fps
Full Flowrate	244.7864 cfs
Flow area	3.8040 ft2
Flow perimeter	6.3245 ft
Hydraulic radius	0.6015 ft
Top width	5.8679 ft
Area	12.0000 ft2
Perimeter	10.9443 ft
Percent full	48.3488 %

Village View Village of Warwick, Orange County, NY SEC. 201, BLK. 1, LOTS 1.1, 1.2, 1.3 & 2.

60" HDPE CULVERT

Manning Pipe Calculator

Given Input Data:

Shape	Circular
Solving for	Depth of Flow
Diameter	5.0000 ft
Flowrate	130.2100 cfs
Slope	0.0600 ft/ft
Manning's n	0.0300

Depth	2.4142 ft
Area	19.6350 ft2
Wetted Area	9.3886 ft2
Wetted Perimeter	7.6824 ft
Perimeter	15.7080 ft
Velocity	13.8690 fps
Hydraulic Radius	1.2221 ft
Percent Full	48.2841 %
Full flow Flowrate	276.4456 cfs
Full flow velocity	14.0793 fps
-	-

Appendix D

TR-20 HydroCAD Model



Type III 24-hr 1-Year Rainfall=2.64"

Page 2

Time span=5.00-48.00 hrs, dt=0.05 hrs, 861 points Runoff by SCS TR-20 method, UH=SCS, Weighted-CN Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment B1: BASIN 1

Runoff Area=71.650 ac 2.23% Impervious Runoff Depth=0.88" Flow Length=2,673' Tc=23.0 min CN=78 Runoff=44.41 cfs 5.255 af

Reach AP1: A.P. 1

Inflow=44.41 cfs 5.255 af Outflow=44.41 cfs 5.255 af

Total Runoff Area = 71.650 ac Runoff Volume = 5.255 af Average Runoff Depth = 0.88" 97.77% Pervious = 70.050 ac 2.23% Impervious = 1.600 ac

Page 3

Summary for Subcatchment B1: BASIN 1

Runoff = 44.41 cfs @ 12.35 hrs, Volume= 5.255 af, Depth= 0.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs Type III 24-hr 1-Year Rainfall=2.64"

_	Area	(ac) C	N Des	cription		
	3.	500 8	30 >75	% Grass c	over, Good,	HSG D
	66.	550	77 Woo	ods, Good,	HSG D	
*	1.	600 9	98 Imp	ervious sui	faces	
	71.	650	78 Wei	ghted Aver	age	
	70.	050	97.7	7% Pervio	us Area	
	1.	600	2.23	3% Impervi	ous Area	
	Тс	Length	Slope	Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	17.5	100	0.0300	0.10		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 3.50"
	4.1	1,383	0.1200	5.58		Shallow Concentrated Flow,
						Unpaved Kv= 16.1 fps
	1.4	1,190	0.0600	14.10	178.34	Trap/Vee/Rect Channel Flow,
_						Bot.W=5.50' D=2.30' n= 0.030
	23.0	2,673	Total			

Subcatchment B1: BASIN 1



Summary for Reach AP1: A.P. 1

Inflow A	rea =	71.650 ac,	2.23% Impervious, Inflow	Depth = 0.88"	for 1-Year event
Inflow	=	44.41 cfs @	12.35 hrs, Volume=	5.255 af	
Outflow	=	44.41 cfs @	12.35 hrs, Volume=	5.255 af, Atte	en= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs

Reach AP1: A.P. 1



Page 4

Type III 24-hr 10-Year Rainfall=4.80"

Page 5

Time span=5.00-48.00 hrs, dt=0.05 hrs, 861 points Runoff by SCS TR-20 method, UH=SCS, Weighted-CN Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

> Runoff Area=71.650 ac 2.23% Impervious Runoff Depth=2.54" Flow Length=2,673' Tc=23.0 min CN=78 Runoff=135.40 cfs 15.182 af

> > Inflow=135.40 cfs 15.182 af Outflow=135.40 cfs 15.182 af

Reach AP1: A.P. 1

Subcatchment B1: BASIN 1

Total Runoff Area = 71.650 ac Runoff Volume = 15.182 af Average Runoff Depth = 2.54" 97.77% Pervious = 70.050 ac 2.23% Impervious = 1.600 ac

Page 6

Summary for Subcatchment B1: BASIN 1

Runoff = 135.40 cfs @ 12.32 hrs, Volume= 15.182 af, Depth= 2.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs Type III 24-hr 10-Year Rainfall=4.80"

_	Area	(ac) C	N De	scription		
	3.	500	80 >7	5% Grass c	over, Good,	HSG D
	66.	550	77 Wo	ods, Good,	HSG D	
*	1.	600	98 lm	pervious su	rfaces	
	71.	650 [·]	78 We	eighted Ave	rage	
	70.	050	97	77% Pervic	ous Area	
1.600 2.23% Impervious Area					ious Area	
	Тс	Length	Slop	e Velocity	Capacity	Description
_	(min)	(feet)	(ft/fl) (ft/sec)	(cfs)	
	17.5	100	0.030	0.10		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 3.50"
	4.1	1,383	0.120) 5.58		Shallow Concentrated Flow,
						Unpaved Kv= 16.1 fps
	1.4	1,190	0.060) 14.10	178.34	Trap/Vee/Rect Channel Flow,
_						Bot.W=5.50' D=2.30' n= 0.030
	23.0	2,673	Total			

Subcatchment B1: BASIN 1



Page 7

Summary for Reach AP1: A.P. 1

Inflow /	Area	a =	71.650 ac,	2.23% Impervious,	Inflow Depth = 2.	54" for 10-Year event
Inflow		=	135.40 cfs @	12.32 hrs, Volume	= 15.182 af	
Outflov	N	=	135.40 cfs @	12.32 hrs, Volume	= 15.182 af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs



Reach AP1: A.P. 1

Type III 24-hr 100-Year Rainfall=8.57"

Page 8

Time span=5.00-48.00 hrs, dt=0.05 hrs, 861 points Runoff by SCS TR-20 method, UH=SCS, Weighted-CN Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

> Runoff Area=71.650 ac 2.23% Impervious Runoff Depth=5.92" Flow Length=2,673' Tc=23.0 min CN=78 Runoff=312.62 cfs 35.348 af

> > Inflow=312.62 cfs 35.348 af Outflow=312.62 cfs 35.348 af

Reach AP1: A.P. 1

Subcatchment B1: BASIN 1

Total Runoff Area = 71.650 ac Runoff Volume = 35.348 af Average Runoff Depth = 5.92" 97.77% Pervious = 70.050 ac 2.23% Impervious = 1.600 ac

Page 9

Summary for Subcatchment B1: BASIN 1

Runoff = 312.62 cfs @ 12.31 hrs, Volume= 35.348 af, Depth= 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs Type III 24-hr 100-Year Rainfall=8.57"

_	Area	(ac) C	N Des	cription		
	3.	500 8	30 >75	% Grass c	over, Good,	HSG D
	66.	550	77 Woo	ods, Good,	HSG D	
*	1.	600 9	98 Imp	ervious su	rfaces	
	71.	650	78 Wei	ghted Aver	rage	
	70.	050	97.7	7% Pervio	ous Area	
1.600 2.23% Impervious Area					ous Area	
	Tc	Length	Slope	Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	17.5	100	0.0300	0.10		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 3.50"
	4.1	1,383	0.1200	5.58		Shallow Concentrated Flow,
						Unpaved Kv= 16.1 fps
	1.4	1,190	0.0600	14.10	178.34	Trap/Vee/Rect Channel Flow,
_						Bot.W=5.50' D=2.30' n= 0.030
	23.0	2,673	Total			

Subcatchment B1: BASIN 1



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Summary for Reach AP1: A.P. 1

Inflow A	Area	=	71.650 ac,	2.23% Impervious,	Inflow Depth = 5.9	92" for 100-Year event
Inflow	:	=	312.62 cfs @	12.31 hrs, Volume	= 35.348 af	
Outflow	v :	=	312.62 cfs @	12.31 hrs, Volume	= 35.348 af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-48.00 hrs, dt= 0.05 hrs

Reach AP1: A.P. 1





Area Listing (all nodes)

Area	CN	Description	
(acres)		(subcatchment-numbers)	
6.770	98	(1D, 1E)	
15.400	80	>75% Grass cover, Good, HSG D (1A, 1B, 1C, 1D, 1E)	
1.160	98	Impervious Surfaces (1C)	
12.600	77	Woods, D, Good (1A)	
35.690	77	Woods, Good, HSG D (1B, 1C, 1D, 1E)	
71.620	80	TOTAL AREA	

Soil Listing (all nodes)

Area	Soil	Subcatchment
(acres)	Group	Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
51.090	HSG D	1A, 1B, 1C, 1D, 1E
20.530	Other	1A, 1C, 1D, 1E
71.620		TOTAL AREA

SILBER_POST2

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e Solutions LLC F

 HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	6.770	6.770		1D, 1E
0.000	0.000	0.000	15.400	0.000	15.400	>75% Grass cover, Good	1A, 1B,
							1C, 1D,
							1E
0.000	0.000	0.000	0.000	1.160	1.160	Impervious Surfaces	1C
0.000	0.000	0.000	0.000	12.600	12.600	Woods, D, Good	1A
0.000	0.000	0.000	35.690	0.000	35.690	Woods, Good	1B, 1C,
							1D, 1E
0.000	0.000	0.000	51.090	20.530	71.620	TOTAL AREA	

Ground Covers (all nodes)

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4

PΒ

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744.00

747.00

0.0

Line# Node In-Invert Out-Invert Length Slope n Diam/Width Height Inside-Fill (feet) (feet) (feet) (ft/ft) Number (inches) (inches) (inches) 8P 692.00 686.00 50.0 0.1200 0.027 60.0 0.0 18.0 1 2 14P 674.00 646.00 240.0 0.1167 0.012 36.0 0.0 0.0 3 PA 725.00 724.00 74.0 0.0135 0.012 30.0 0.0 0.0

30.0

0.1000

0.012

30.0

0.0

Pipe Listing (all nodes)

Time span=5.00-60.00 hrs, dt=0.05 hrs, 1101 points Runoff by SCS TR-20 method, UH=SCS, Weighted-CN Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: BASIN ²	IARunoff Area=13.200 ac0.00% ImperviousRunoff Depth=0.83"Flow Length=1,400'Tc=19.5 minCN=77Runoff=8.14 cfs0.912 af
Subcatchment1B: BASIN	IB Runoff Area=14.300 ac 0.00% Impervious Runoff Depth=0.83" Flow Length=1,000' Tc=20.4 min CN=77 Runoff=8.67 cfs 0.989 af
Subcatchment1C: BASIN	IC Runoff Area=21.000 ac 5.52% Impervious Runoff Depth=0.93" Flow Length=1,580' Tc=16.4 min CN=79 Runoff=15.96 cfs 1.632 af
Subcatchment1D: Basin1	D Runoff Area=20.450 ac 31.54% Impervious Runoff Depth=1.29" Flow Length=1,440' Tc=13.4 min CN=85 Runoff=24.12 cfs 2.200 af
Subcatchment1E: Basin1	E Runoff Area=2.670 ac 11.99% Impervious Runoff Depth=1.04" Flow Length=360' Tc=10.7 min CN=81 Runoff=2.70 cfs 0.232 af
Reach 2R: stream bed	Avg. Flow Depth=0.45' Max Vel=6.11 fps Inflow=16.05 cfs 2.604 af =0.030 L=1,080.0' S=0.0528 '/' Capacity=176.54 cfs Outflow=15.70 cfs 2.604 af
Reach 5R: Stream Bed	Avg. Flow Depth=0.46' Max Vel=6.65 fps Inflow=17.72 cfs 3.740 af n=0.030 L=116.0' S=0.0603 '/' Capacity=237.01 cfs Outflow=17.60 cfs 3.740 af
Reach 7R: Swale	Avg. Flow Depth=0.10' Max Vel=1.80 fps Inflow=0.39 cfs 0.973 af n=0.035 L=320.0' S=0.0406 '/' Capacity=70.49 cfs Outflow=0.39 cfs 0.973 af
Reach 15R: SWALE	Avg. Flow Depth=0.06' Max Vel=2.38 fps Inflow=0.40 cfs 0.904 af n=0.030 L=360.0' S=0.1111 '/' Capacity=181.78 cfs Outflow=0.40 cfs 0.904 af
Reach 16R: GRASS	Avg. Flow Depth=0.05' Max Vel=1.84 fps Inflow=0.39 cfs 0.973 af n=0.030 L=300.0' S=0.1267 '/' Capacity=56.44 cfs Outflow=0.39 cfs 0.972 af
Reach AP1: Analysis Point	Inflow=37.94 cfs 5.940 af Outflow=37.94 cfs 5.940 af
Pond 8P: PIPE 60.0" Round C	Peak Elev=694.61' Inflow=16.05 cfs 2.604 af ulvert w/ 18.0" inside fill n=0.027 L=50.0' S=0.1200 '/' Outflow=16.05 cfs 2.604 af
Pond 14P: PIPE	Peak Elev=674.62' Inflow=2.81 cfs 1.136 af 36.0" Round Culvert n=0.012 L=240.0' S=0.1167 '/' Outflow=2.81 cfs 1.136 af
Pond PA: Pond 1A	Peak Elev=729.01' Storage=25,615 cf Inflow=8.14 cfs 0.912 af Outflow=0.40 cfs 0.904 af
Pond PB: Pond 1B	Peak Elev=750.85' Storage=28,666 cf Inflow=8.67 cfs 0.989 af Outflow=0.39 cfs 0.973 af
Total Burnaff	Area = 74 620 as Bunoff Volume = 5 065 of Average Bunoff Donth = 4 00

Total Runoff Area = 71.620 ac Runoff Volume = 5.965 af Average Runoff Depth = 1.00" 88.93% Pervious = 63.690 ac 11.07% Impervious = 7.930 ac

Summary for Subcatchment 1A: BASIN 1A

Runoff = 8.14 cfs @ 12.30 hrs, Volume= 0.912 af, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type III 24-hr 1-Year Rainfall=2.64"

	Area	(ac)	CN	Desc	cription		
*	12.	600	77	Woo	ds, D, Goo	bd	
_	0.	600	80	>75%	% Grass co	over, Good,	, HSG D
	13.	200	77	Weig	phted Aver	age	
	13.	200		100.	00% Pervi	ous Area	
	Tc (min)	Length (feet	ן)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
_	15.6	100) 0	.0400	0.11		Sheet Flow.
	3.4	1,040) ()	.1000	5.09		Woods: Light underbrush n= 0.400 P2= 3.50" Shallow Concentrated Flow,
	0.5	260	0	.1200	8.37	25.12	Channel Flow, Area= 3.0 sf Perim= 8.8' r= 0.34' n= 0.030
	19.5	1,400) Т	otal			

Subcatchment 1A: BASIN 1A



Summary for Subcatchment 1B: BASIN 1B

Runoff = 8.67 cfs @ 12.31 hrs, Volume= 0.989 af, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type III 24-hr 1-Year Rainfall=2.64"

_	Area	(ac) (CN Des	scription		
	13.	600	77 Wo	ods, Good,	HSG D	
	0.	700	80 >75	5% Grass c	over, Good	, HSG D
	14.	300	77 We	ighted Avei	rage	
	14.	300	100	.00% Pervi	ious Area	
	Тс	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	17.5	100	0.0300	0.10		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 3.50"
	2.9	900	0.1000	5.09		Shallow Concentrated Flow,
_						Unpaved Kv= 16.1 fps
	20 4	1 000	Total			

20.4 1,000 Total

Subcatchment 1B: BASIN 1B



Summary for Subcatchment 1C: BASIN 1C

Runoff = 15.96 cfs @ 12.24 hrs, Volume= 1.632 af, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type III 24-hr 1-Year Rainfall=2.64"

	Area	(ac) C	N Des	cription		
	3.	150	30 >75°	% Grass co	over, Good	, HSG D
	16.	690	77 Woo	ds, Good,	HSG D	
*	1.	160	98 Impe	ervious Su	faces	
	21.	000	79 Weig	ghted Aver	age	
	19.	840	94.4	8% Pervio	us Area	
	1.	160	5.52	% Impervi	ous Area	
	Тс	Length	Slope	Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	11.8	100	0.0800	0.14		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 3.50"
	3.9	1,250	0.1100	5.34		Shallow Concentrated Flow,
						Unpaved Kv= 16.1 fps
	0.7	230	0.0500	5.88	7.06	Trap/Vee/Rect Channel Flow,
						Bot.W=1.50' D=0.80' n= 0.030

16.4 1,580 Total

Subcatchment 1C: BASIN 1C



Summary for Subcatchment 1D: Basin 1D

Runoff = 24.12 cfs @ 12.19 hrs, Volume= 2.200 af, Depth= 1.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type III 24-hr 1-Year Rainfall=2.64"

	Area	(ac) (CN Des	cription		
*	6.	450	98			
	4.	200	77 Woo	ods, Good,	HSG D	
	9.	800	80 >75	% Grass co	over, Good	, HSG D
	20.	450	85 Wei	ghted Aver	age	
14.000		68.4	6% Pervio	us Area		
	6.450		31.5	54% Imperv	/ious Area	
	_		~		a <i>u</i>	— • • •
	IC	Length	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	10.8	100	0.1000	0.15		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 3.50"
	1.8	660	0.1500	6.24		Shallow Concentrated Flow,
						Unpaved Kv= 16.1 fps
	0.8	680	0.0600	13.38	147.17	Trap/Vee/Rect Channel Flow,
						Bot.W=5.50' D=2.00' n= 0.030
			— / ·			

13.4 1,440 Total

Subcatchment 1D: Basin 1D



Summary for Subcatchment 1E: Basin 1E

2.70 cfs @ 12.16 hrs, Volume= 0.232 af, Depth= 1.04" Runoff =

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type III 24-hr 1-Year Rainfall=2.64"

	Area	(ac)	CN	Desc	cription		
*	0.	320	98				
	1.	200	77	Woo	ds, Good,	HSG D	
	1.	150	80	>75%	6 Grass co	over, Good,	HSG D
	2.	670	81	Weig	hted Aver	age	
	2.	350		88.0	1% Pervio	us Area	
	0.	320		11.99	9% Imperv	vious Area	
	_						
	Tc	Length	ງ ເ	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	10.0	100) ().	.1200	0.17		Sheet Flow,
							Woods: Light underbrush n= 0.400 P2= 3.50"
	0.7	260) ().	.1500	6.24		Shallow Concentrated Flow,
							Unpaved Kv= 16.1 fps
	10.7	360) Т	otal			

Subcatchment 1E: Basin 1E



Summary for Reach 2R: stream bed

 Inflow Area =
 35.300 ac,
 3.29% Impervious, Inflow Depth >
 0.89" for 1-Year event

 Inflow =
 16.05 cfs @
 12.24 hrs, Volume=
 2.604 af

 Outflow =
 15.70 cfs @
 12.33 hrs, Volume=
 2.604 af, Atten= 2%, Lag= 5.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Max. Velocity= 6.11 fps, Min. Travel Time= 2.9 min Avg. Velocity = 1.50 fps, Avg. Travel Time= 12.0 min

Peak Storage= 2,771 cf @ 12.28 hrs Average Depth at Peak Storage= 0.45' Bank-Full Depth= 2.00' Flow Area= 13.0 sf, Capacity= 176.54 cfs

5.50' x 2.00' deep channel, n= 0.030 Side Slope Z-value= 0.5 '/' Top Width= 7.50' Length= 1,080.0' Slope= 0.0528 '/' Inlet Invert= 694.00', Outlet Invert= 637.00'



Reach 2R: stream bed



Summary for Reach 5R: Stream Bed

 Inflow Area =
 51.170 ac,
 2.89% Impervious, Inflow Depth >
 0.88" for
 1-Year event

 Inflow =
 17.72 cfs @
 12.32 hrs, Volume=
 3.740 af

 Outflow =
 17.60 cfs @
 12.33 hrs, Volume=
 3.740 af, Atten= 1%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Max. Velocity= 6.65 fps, Min. Travel Time= 0.3 min Avg. Velocity = 1.86 fps, Avg. Travel Time= 1.0 min

Peak Storage= 308 cf @ 12.32 hrs Average Depth at Peak Storage= 0.46' Bank-Full Depth= 2.30' Flow Area= 15.3 sf, Capacity= 237.01 cfs

5.50' x 2.30' deep channel, n= 0.030 Side Slope Z-value= 0.5 '/' Top Width= 7.80' Length= 116.0' Slope= 0.0603 '/' Inlet Invert= 637.00', Outlet Invert= 630.00'



Reach 5R: Stream Bed



Summary for Reach 7R: Swale

 Inflow Area =
 14.300 ac,
 0.00% Impervious,
 Inflow Depth >
 0.82"
 for
 1-Year event

 Inflow =
 0.39 cfs @
 18.17 hrs,
 Volume=
 0.973 af

 Outflow =
 0.39 cfs @
 18.25 hrs,
 Volume=
 0.973 af,
 Atten= 0%,
 Lag= 4.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Max. Velocity= 1.80 fps, Min. Travel Time= 3.0 min Avg. Velocity = 1.42 fps, Avg. Travel Time= 3.8 min

Peak Storage= 70 cf @ 18.20 hrs Average Depth at Peak Storage= 0.10' Bank-Full Depth= 2.00' Flow Area= 8.0 sf, Capacity= 70.49 cfs

2.00' x 2.00' deep channel, n= 0.035 Side Slope Z-value= 1.0 '/' Top Width= 6.00' Length= 320.0' Slope= 0.0406 '/' Inlet Invert= 743.00', Outlet Invert= 730.00'



Reach 7R: Swale



Summary for Reach 15R: SWALE

 Inflow Area =
 13.200 ac,
 0.00% Impervious,
 Inflow Depth >
 0.82"
 for
 1-Year event

 Inflow =
 0.40 cfs @
 17.79 hrs,
 Volume=
 0.904 af

 Outflow =
 0.40 cfs @
 17.86 hrs,
 Volume=
 0.904 af,
 Atten= 0%,
 Lag= 4.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Max. Velocity= 2.38 fps, Min. Travel Time= 2.5 min Avg. Velocity = 1.85 fps, Avg. Travel Time= 3.2 min

Peak Storage= 61 cf @ 17.81 hrs Average Depth at Peak Storage= 0.06' Bank-Full Depth= 2.00' Flow Area= 10.0 sf, Capacity= 181.78 cfs

3.00' x 2.00' deep channel, n= 0.030 Side Slope Z-value= 1.0 '/' Top Width= 7.00' Length= 360.0' Slope= 0.1111 '/' Inlet Invert= 720.00', Outlet Invert= 680.00'



Reach 15R: SWALE



Summary for Reach 16R: GRASS



Summary for Reach AP1: Analysis Point

Inflow A	Area =	71.620 ac, 1	11.07% Impervious,	Inflow Depth > 1.	00" for 1-Year event
Inflow	=	37.94 cfs @	12.24 hrs, Volume	= 5.940 af	
Outflow	v =	37.94 cfs @	12.24 hrs, Volume	= 5.940 af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

Reach AP1: Analysis Point



Summary for Pond 8P: PIPE

 Inflow Area =
 35.300 ac, 3.29% Impervious, Inflow Depth > 0.89" for 1-Year event

 Inflow =
 16.05 cfs @
 12.24 hrs, Volume=
 2.604 af

 Outflow =
 16.05 cfs @
 12.24 hrs, Volume=
 2.604 af, Atten= 0%, Lag= 0.0 min

 Primary =
 16.05 cfs @
 12.24 hrs, Volume=
 2.604 af

Routing by Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Peak Elev= 694.61' @ 12.24 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	693.50'	60.0" Round Culvert w/ 18.0" inside fill L= 50.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 692.00' / 686.00' S= 0.1200 '/' Cc= 0.900 n= 0.027, Flow Area= 14.68 sf

Primary OutFlow Max=15.98 cfs @ 12.24 hrs HW=694.61' (Free Discharge) —1=Culvert (Inlet Controls 15.98 cfs @ 2.96 fps)



Pond 8P: PIPE
Summary for Pond 14P: PIPE

 Inflow Area =
 15.870 ac, 2.02% Impervious, Inflow Depth > 0.86" for 1-Year event

 Inflow =
 2.81 cfs @
 12.16 hrs, Volume=
 1.136 af

 Outflow =
 2.81 cfs @
 12.16 hrs, Volume=
 1.136 af, Atten= 0%, Lag= 0.0 min

 Primary =
 2.81 cfs @
 12.16 hrs, Volume=
 1.136 af

Routing by Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Peak Elev= 674.62' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	674.00'	36.0" Round Culvert L= 240.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 674.00' / 646.00' S= 0.1167 '/' Cc= 0.900 n= 0.012, Flow Area= 7.07 sf

Primary OutFlow Max=2.77 cfs @ 12.16 hrs HW=674.61' (Free Discharge) -1=Culvert (Inlet Controls 2.77 cfs @ 2.67 fps)



Pond 14P: PIPE

Summary for Pond PA: Pond 1A

Inflow Area Inflow Outflow Primary	a = = = =	13.200 ac, 0 8.14 cfs @ 0.40 cfs @ 0.40 cfs @	0.00% Impervio 12.30 hrs, Volu 17.79 hrs, Volu 17.79 hrs, Volu	us, Inflow Depth ume= 0.9° ume= 0.90 ume= 0.90	= 0.83" 2 af)4 af, Atte)4 af	for 1-Ye en= 95%,	ear event Lag= 329.4 min
Routing by Peak Elev	/ Stor-Ind = 729.01	l method, Time ' @ 17.79 hrs	e Span= 5.00-6 Surf.Area= 10	60.00 hrs, dt= 0.05 0,901 sf Storage	hrs = 25,615 (cf	
Plug-Flow Center-of-	detentior Mass det	n time= 795.0 time= 789.6	min calculated min (1,666.1 -	for 0.904 af (99% 876.5)	of inflow))	
Volume	Inve	rt Avail.St	orage Storag	e Description			
#1	726.00	0' 66,2	220 cf Custo	m Stage Data (Pr	ismatic)∟	isted belo	w (Recalc)
Elevation	S	Surf.Area	Inc.Store	Cum.Store			
(feet)		(sq-ft)	(cubic-feet)	(cubic-feet)			
726.00		6,270	0	0			
728.00		9,190	15,460	15,460			
730.00		12,575	21,765	37,225			
732.00		16,420	28,995	66,220			
Device F	Routing	Invert	Outlet Devic	es			
#1 Primary 725.00' 30.0" Round Culvert L= 74.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 725.00' / 724.00' S= 0.0135 '/ Construction of the second sec				0 5'/' Cc= 0.900 nd Contraction(s)			
#4 C	Device 1	731.50'	0.5' Crest Height 36.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads				

Primary OutFlow Max=0.40 cfs @ 17.79 hrs HW=729.01' (Free Discharge) **1=Culvert** (Passes 0.40 cfs of 39.27 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.40 cfs @ 8.18 fps)

-3=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

-4=Orifice/Grate (Controls 0.00 cfs)

Pond PA: Pond 1A



Summary for Pond PB: Pond 1B

Inflow Are Inflow Outflow Primary	ea = = = =	14.300 ac, 0 8.67 cfs @ 0.39 cfs @ 0.39 cfs @	0.00% Imperviou 12.31 hrs, Volui 18.17 hrs, Volui 18.17 hrs, Volui	ıs, Inflow Depth = me= 0.98 me= 0.97 me= 0.97	 0.83" 9 af 3 af, Atter 3 af 	for 1-Ye n= 95%,	ar event Lag= 351.4 min
Routing b Peak Elev	y Stor-Inc /= 750.85	l method, Time ' @ 18.17 hrs	e Span= 5.00-60 Surf.Area= 13).00 hrs, dt= 0.05 ,079 sf Storage=	hrs • 28,666 cf	f	
Plug-Flow Center-of	/ detention -Mass def	n time= 895.0 t. time= 887.3	min calculated f min (1,764.7 - 8	or 0.972 af (98% 877.3)	of inflow)		
Volume	Inve	<u>rt Avail.St</u>	orage Storage	Description			
#1	748.00	D' 81,2	200 cf Custon	n Stage Data (Pri	ismatic)Li	sted belo	w (Recalc)
Elevation (feet)	n (Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)			
748.00)	7.100	0	0			
750.00)	11.200	18.300	18.300			
752.00)	15.600	26,800	45,100			
754.00)	20,500	36,100	81,200			
Device	Routing	Invert	Outlet Device	S			
#1 Primary 747.00'		30.0" Round L= 30.0' CP Inlet / Outlet n= 0.012, Flo	30.0" Round Culvert L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 747.00' / 744.00' S= 0.1000 '/' Cc= 0.900 n= 0.012 Flow Area= 4.91 sf				
#2	Device 1	748.00'	3.0" Vert. Or	ifice/Grate C= ().600		
#3	Device 1	750.85'	85' 1.8' long Sharp-Crested Rectangular Weir 2 End Cor			nd Contraction(s)	
#4	Device 1	753.50'	54.0" x 36.0" Limited to we	54.0" x 36.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads			

Primary OutFlow Max=0.39 cfs @ 18.17 hrs HW=750.85' (Free Discharge) **1=Culvert** (Passes 0.39 cfs of 38.14 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.39 cfs @ 7.95 fps)

-3=Sharp-Crested Rectangular Weir (Weir Controls 0.00 cfs @ 0.20 fps)

-4=Orifice/Grate (Controls 0.00 cfs)

Pond PB: Pond 1B



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Time span=5.00-60.00 hrs, dt=0.05 hrs, 1101 points Runoff by SCS TR-20 method, UH=SCS, Weighted-CN Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: BASI	N 1ARunoff Area=13.200 ac0.00% ImperviousRunoff Depth=2.46"Flow Length=1,400'Tc=19.5 minCN=77Runoff=25.79 cfs2.702 af
Subcatchment1B: BASI	N1BRunoff Area=14.300 ac0.00% ImperviousRunoff Depth=2.46"Flow Length=1,000'Tc=20.4 minCN=77Runoff=27.36 cfs2.927 af
Subcatchment1C: BASI	N1CRunoff Area=21.000 ac5.52% ImperviousRunoff Depth=2.63"Flow Length=1,580'Tc=16.4 minCN=79Runoff=47.00 cfs4.603 af
Subcatchment1D: Basin	1D Runoff Area=20.450 ac31.54% ImperviousRunoff Depth=3.18"Flow Length=1,440'Tc=13.4 minCN=85Runoff=59.34 cfs5.426 af
Subcatchment1E: Basin	1E Runoff Area=2.670 ac11.99% ImperviousRunoff Depth=2.81"Flow Length=360'Tc=10.7 minCN=81Runoff=7.45 cfs0.625 af
Reach 2R: stream bed	Avg. Flow Depth=0.88' Max Vel=8.98 fps Inflow=47.31 cfs 7.510 af n=0.030 L=1,080.0' S=0.0528 '/' Capacity=176.54 cfs Outflow=46.47 cfs 7.509 af
Reach 5R: Stream Bed	Avg. Flow Depth=0.92' Max Vel=9.79 fps Inflow=53.43 cfs 10.826 af n=0.030 L=116.0' S=0.0603 '/' Capacity=237.01 cfs Outflow=53.39 cfs 10.825 af
Reach 7R: Swale	Avg. Flow Depth=0.78' Max Vel=5.51 fps Inflow=12.03 cfs 2.908 af n=0.035 L=320.0' S=0.0406 '/' Capacity=70.49 cfs Outflow=12.00 cfs 2.907 af
Reach 15R: SWALE	Avg. Flow Depth=0.45' Max Vel=8.40 fps Inflow=13.07 cfs 2.691 af n=0.030 L=360.0' S=0.1111 '/' Capacity=181.78 cfs Outflow=13.03 cfs 2.691 af
Reach 16R: GRASS	Avg. Flow Depth=0.24' Max Vel=5.25 fps Inflow=12.00 cfs 2.907 af n=0.030 L=300.0' S=0.1267 '/' Capacity=56.44 cfs Outflow=11.96 cfs 2.907 af
Reach AP1: Analysis Poi	Inflow=105.82 cfs 16.251 af Outflow=105.82 cfs 16.251 af
Pond 8P: PIPE 60.0" Round	Peak Elev=695.78' Inflow=47.31 cfs 7.510 af I Culvert w/ 18.0" inside fill n=0.027 L=50.0' S=0.1200 '/' Outflow=47.31 cfs 7.510 af
Pond 14P: PIPE	Peak Elev=675.50' Inflow=14.79 cfs 3.316 af 36.0" Round Culvert n=0.012 L=240.0' S=0.1167 '/' Outflow=14.79 cfs 3.316 af
Pond PA: Pond 1A	Peak Elev=730.46' Storage=43,146 cf Inflow=25.79 cfs 2.702 af Outflow=13.07 cfs 2.691 af
Pond PB: Pond 1B	Peak Elev=752.29' Storage=49,714 cf Inflow=27.36 cfs 2.927 af Outflow=12.03 cfs 2.908 af
Total Runoff	Area = 71 620 ac_Runoff Volume = 16 283 af_Average Runoff Depth = 2 73

al Runoff Area = 71.620 ac Runoff Volume = 16.283 af Average Runoff Depth = 2.73" 88.93% Pervious = 63.690 ac 11.07% Impervious = 7.930 ac

Summary for Subcatchment 1A: BASIN 1A

Runoff = 25.79 cfs @ 12.27 hrs, Volume= 2.702 af, Depth= 2.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type III 24-hr 10-Year Rainfall=4.80"

	Area	(ac) (CN Des	cription		
*	12.	600	77 Wo	ods, D, Goo	bc	
_	0.	600	80 >75	% Grass co	over, Good	, HSG D
	13.	200	77 Wei	ghted Aver	age	
	13.	200	100	.00% Pervi	ous Area	
	-				o	
	IC (mim)	Length	Slope	Velocity	Capacity	Description
_	(min)	(leel)	(1711)	(It/sec)	(CIS)	
	15.6	100	0.0400	0.11		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 3.50"
	3.4	1,040	0.1000	5.09		Shallow Concentrated Flow,
						Unpaved Kv= 16.1 fps
	0.5	260	0.1200	8.37	25.12	Channel Flow,
_						Area= 3.0 sf Perim= 8.8' r= 0.34' n= 0.030
	10.5	1 400	Total			

Subcatchment 1A: BASIN 1A



Summary for Subcatchment 1B: BASIN 1B

Runoff = 27.36 cfs @ 12.29 hrs, Volume= 2.927 af, Depth= 2.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type III 24-hr 10-Year Rainfall=4.80"

_	Area	(ac) (CN Des	cription		
	13.	600	77 Woo	ods, Good,	HSG D	
	0.	700	80 >75	% Grass co	over, Good,	, HSG D
	14.	300	77 Wei	ghted Aver	age	
	14.	300	100	.00% Pervi	ous Area	
	Тс	Length	Slope	Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	17.5	100	0.0300	0.10		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 3.50"
	2.9	900	0.1000	5.09		Shallow Concentrated Flow,
_						Unpaved Kv= 16.1 fps
	20 4	1 000	Total			

20.4 1,000 Total

Subcatchment 1B: BASIN 1B



Summary for Subcatchment 1C: BASIN 1C

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47.00 cfs @ 12.23 hrs, Volume= 4.603 af, Depth= 2.63" Runoff =

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type III 24-hr 10-Year Rainfall=4.80"

	Area	(ac) C	N Dese	cription		
	3.	150 8	30 >759	% Grass co	over, Good	, HSG D
	16.	690	77 Woo	ds, Good,	HSG D	
*	1.	160 9	98 Impe	ervious Su	rfaces	
	21.	000	79 Weig	ghted Aver	age	
	19.	840	94.4	8% Pervio	us Area	
	1.160		5.52	% Impervi	ous Area	
	Тс	Length	Slope	Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	11.8	100	0.0800	0.14		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 3.50"
	3.9	1,250	0.1100	5.34		Shallow Concentrated Flow,
						Unpaved Kv= 16.1 fps
	0.7	230	0.0500	5.88	7.06	Trap/Vee/Rect Channel Flow,
_						Bot.W=1.50' D=0.80' n= 0.030

16.4 1,580 Total

Subcatchment 1C: BASIN 1C



Summary for Subcatchment 1D: Basin 1D

Runoff = 59.34 cfs @ 12.18 hrs, Volume= 5.426 af, Depth= 3.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type III 24-hr 10-Year Rainfall=4.80"

	Area	(ac) (CN Des	cription			
*	6.	450	98				
	4.	200	77 Woo	ods, Good,	HSG D		
	9.	800	80 >75	>75% Grass cover, Good, HSG D			
	20.	450	85 Wei	ghted Aver	age		
14.000		68.4	68.46% Pervious Area				
	6.	450	31.5	4% Imper	ious Area		
	Та	ما المربع من الم	Olana	\/_l;	O an a situ	Description	
	IC (min)	Length			Capacity	Description	
	(11111)	(leet)		(Il/Sec)	(015)		
	10.8	100	0.1000	0.15		Sheet Flow,	
						Woods: Light underbrush n= 0.400 P2= 3.50"	
	1.8	660	0.1500	6.24		Shallow Concentrated Flow,	
						Unpaved Kv= 16.1 fps	
	0.8	680	0.0600	13.38	147.17	Trap/Vee/Rect Channel Flow,	
						Bot.W=5.50' D=2.00' n= 0.030	
	40.4		— · ·				

13.4 1,440 Total

Subcatchment 1D: Basin 1D



Summary for Subcatchment 1E: Basin 1E

Runoff = 7.45 cfs @ 12.15 hrs, Volume= 0.625 af, Depth= 2.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type III 24-hr 10-Year Rainfall=4.80"

	Area	(ac)	CN	Desc	ription		
*	0.	320	98				
	1.	200	77	Woo	ds, Good,	HSG D	
	1.	150	80	>75%	6 Grass co	over, Good,	HSG D
	2.	670	81	Weig	hted Aver	age	
	2.	350		88.0	1% Pervio	us Area	
	0.	320		11.99	9% Imperv	vious Area	
	_						
	Tc	Length	n S	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	10.0	100) 0.	1200	0.17		Sheet Flow,
							Woods: Light underbrush n= 0.400 P2= 3.50"
	0.7	260) 0.	1500	6.24		Shallow Concentrated Flow,
							Unpaved Kv= 16.1 fps
	10.7	360) То	otal			

Subcatchment 1E: Basin 1E



Summary for Reach 2R: stream bed

 Inflow Area =
 35.300 ac,
 3.29% Impervious, Inflow Depth >
 2.55" for 10-Year event

 Inflow =
 47.31 cfs @
 12.23 hrs, Volume=
 7.510 af

 Outflow =
 46.47 cfs @
 12.29 hrs, Volume=
 7.509 af, Atten= 2%, Lag= 3.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Max. Velocity= 8.98 fps, Min. Travel Time= 2.0 min Avg. Velocity = 1.88 fps, Avg. Travel Time= 9.6 min

Peak Storage= 5,656 cf @ 12.26 hrs Average Depth at Peak Storage= 0.88' Bank-Full Depth= 2.00' Flow Area= 13.0 sf, Capacity= 176.54 cfs

5.50' x 2.00' deep channel, n= 0.030 Side Slope Z-value= 0.5 '/' Top Width= 7.50' Length= 1,080.0' Slope= 0.0528 '/' Inlet Invert= 694.00', Outlet Invert= 637.00'



Reach 2R: stream bed



Summary for Reach 5R: Stream Bed

 Inflow Area =
 51.170 ac,
 2.89% Impervious, Inflow Depth >
 2.54" for 10-Year event

 Inflow =
 53.43 cfs @
 12.32 hrs, Volume=
 10.826 af

 Outflow =
 53.39 cfs @
 12.32 hrs, Volume=
 10.825 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Max. Velocity= 9.79 fps, Min. Travel Time= 0.2 min Avg. Velocity = 2.32 fps, Avg. Travel Time= 0.8 min

Peak Storage= 633 cf @ 12.32 hrs Average Depth at Peak Storage= 0.92' Bank-Full Depth= 2.30' Flow Area= 15.3 sf, Capacity= 237.01 cfs

5.50' x 2.30' deep channel, n= 0.030 Side Slope Z-value= 0.5 '/' Top Width= 7.80' Length= 116.0' Slope= 0.0603 '/' Inlet Invert= 637.00', Outlet Invert= 630.00'



Reach 5R: Stream Bed



Summary for Reach 7R: Swale

 Inflow Area =
 14.300 ac,
 0.00% Impervious, Inflow Depth >
 2.44" for 10-Year event

 Inflow =
 12.03 cfs @
 12.69 hrs, Volume=
 2.908 af

 Outflow =
 12.00 cfs @
 12.72 hrs, Volume=
 2.907 af, Atten= 0%, Lag= 1.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Max. Velocity= 5.51 fps, Min. Travel Time= 1.0 min Avg. Velocity = 1.74 fps, Avg. Travel Time= 3.1 min

Peak Storage= 698 cf @ 12.70 hrs Average Depth at Peak Storage= 0.78' Bank-Full Depth= 2.00' Flow Area= 8.0 sf, Capacity= 70.49 cfs

2.00' x 2.00' deep channel, n= 0.035 Side Slope Z-value= 1.0 '/' Top Width= 6.00' Length= 320.0' Slope= 0.0406 '/' Inlet Invert= 743.00', Outlet Invert= 730.00'



Reach 7R: Swale



Summary for Reach 15R: SWALE

 Inflow Area =
 13.200 ac,
 0.00% Impervious, Inflow Depth >
 2.45" for 10-Year event

 Inflow =
 13.07 cfs @
 12.62 hrs, Volume=
 2.691 af

 Outflow =
 13.03 cfs @
 12.64 hrs, Volume=
 2.691 af, Atten= 0%, Lag= 1.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Max. Velocity= 8.40 fps, Min. Travel Time= 0.7 min Avg. Velocity = 2.27 fps, Avg. Travel Time= 2.6 min

Peak Storage= 559 cf @ 12.62 hrs Average Depth at Peak Storage= 0.45' Bank-Full Depth= 2.00' Flow Area= 10.0 sf, Capacity= 181.78 cfs

3.00' x 2.00' deep channel, n= 0.030 Side Slope Z-value= 1.0 '/' Top Width= 7.00' Length= 360.0' Slope= 0.1111 '/' Inlet Invert= 720.00', Outlet Invert= 680.00'



Reach 15R: SWALE



Summary for Reach 16R: GRASS

 Inflow Area =
 14.300 ac,
 0.00% Impervious, Inflow Depth >
 2.44" for 10-Year event

 Inflow =
 12.00 cfs @
 12.72 hrs, Volume=
 2.907 af

 Outflow =
 11.96 cfs @
 12.74 hrs, Volume=
 2.907 af, Atten= 0%, Lag= 1.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Max. Velocity= 5.25 fps, Min. Travel Time= 1.0 min Avg. Velocity = 1.79 fps, Avg. Travel Time= 2.8 min

Peak Storage= 684 cf @ 12.73 hrs Average Depth at Peak Storage= 0.24' Bank-Full Depth= 0.50' Flow Area= 6.7 sf, Capacity= 56.44 cfs

20.00' x 0.50' deep Parabolic Channel, n= 0.030 Length= 300.0' Slope= 0.1267 '/' Inlet Invert= 730.00', Outlet Invert= 692.00'



Reach 16R: GRASS



Summary for Reach AP1: Analysis Point

Inflow A	Area =	71.620 ac, 1	11.07% Impervious,	Inflow Depth > 2.	72" for 10-Year event
Inflow	=	105.82 cfs @	12.22 hrs, Volume	= 16.251 af	
Outflow	/ =	105.82 cfs @	12.22 hrs, Volume	= 16.251 af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

Reach AP1: Analysis Point



Summary for Pond 8P: PIPE

 Inflow Area =
 35.300 ac, 3.29% Impervious, Inflow Depth > 2.55" for 10-Year event

 Inflow =
 47.31 cfs @
 12.23 hrs, Volume=
 7.510 af

 Outflow =
 47.31 cfs @
 12.23 hrs, Volume=
 7.510 af, Atten= 0%, Lag= 0.0 min

 Primary =
 47.31 cfs @
 12.23 hrs, Volume=
 7.510 af

Routing by Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Peak Elev= 695.78' @ 12.23 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	693.50'	60.0" Round Culvert w/ 18.0" inside fill L= 50.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 692.00' / 686.00' S= 0.1200 '/' Cc= 0.900 n= 0.027, Flow Area= 14.68 sf

Primary OutFlow Max=46.88 cfs @ 12.23 hrs HW=695.77' (Free Discharge) -1=Culvert (Inlet Controls 46.88 cfs @ 4.30 fps)



Pond 8P: PIPE

Summary for Pond 14P: PIPE

 Inflow Area =
 15.870 ac,
 2.02% Impervious, Inflow Depth >
 2.51" for 10-Year event

 Inflow =
 14.79 cfs @
 12.59 hrs, Volume=
 3.316 af

 Outflow =
 14.79 cfs @
 12.59 hrs, Volume=
 3.316 af, Atten= 0%, Lag= 0.0 min

 Primary =
 14.79 cfs @
 12.59 hrs, Volume=
 3.316 af

Routing by Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Peak Elev= 675.50' @ 12.59 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	674.00'	36.0" Round Culvert L= 240.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 674.00' / 646.00' S= 0.1167 '/' Cc= 0.900 n= 0.012, Flow Area= 7.07 sf

Primary OutFlow Max=14.77 cfs @ 12.59 hrs HW=675.50' (Free Discharge) -1=Culvert (Inlet Controls 14.77 cfs @ 4.17 fps)



Pond 14P: PIPE

Summary for Pond PA: Pond 1A

Inflow A	Area =	13.200 ac,	0.00% Impervious,	Inflow Depth = 2	2.46" for	10-Year event
Inflow	=	25.79 cfs @	12.27 hrs, Volume	= 2.702 a	af	
Outflov	v =	13.07 cfs @	12.62 hrs, Volume	= 2.691 a	af, Atten= 4	9%, Lag= 20.6 min
Primar	y =	13.07 cfs @	12.62 hrs, Volume	= 2.691 a	af	-

Routing by Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Peak Elev= 730.46' @ 12.62 hrs Surf.Area= 13,450 sf Storage= 43,146 cf

Plug-Flow detention time= 341.4 min calculated for 2.689 af (100% of inflow) Center-of-Mass det. time= 340.5 min (1,184.7 - 844.1)

Volume	Inve	rt Avail.Sto	rage S	Storage	Description	
#1	726.0	0' 66,2	20 cf C	Custom	Stage Data (P	rismatic)Listed below (Recalc)
Elevatio	n	Surf.Area	Inc.S	Store	Cum.Store	
(fee	et)	(sq-ft)	(cubic-f	feet)	(cubic-feet)	
726.0)0	6,270		0	0	
728.0	00	9,190	15,	,460	15,460	
730.0	00	12,575	21,	,765	37,225	
732.0	00	16,420	28,	,995	66,220	
Device	Routing	Invert	Outlet	Devices	3	
#1	Primary	725.00'	30.0'' L= 74. Inlet / 0 n= 0.0	Round 0' CPF Outlet Ir 12, Flor	Culvert P, square edge I nvert= 725.00' / w Area= 4.91 sf	neadwall, Ke= 0.500 724.00' S= 0.0135 '/' Cc= 0.900
#2	Device 1	726.00'	3.0" V	ert. Ori	fice/Grate C=	0.600
#3	Device 1	729.05'	2.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 0.5' Crest Height			
#4	Device 1	731.50'	36.0" x Limited	x 24.0" d to weii	Horiz. Orifice/C	Grate C= 0.600 ads

Primary OutFlow Max=13.03 cfs @ 12.62 hrs HW=730.45' (Free Discharge)

-1=Culvert (Passes 13.03 cfs of 48.45 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.49 cfs @ 10.02 fps)

-3=Sharp-Crested Rectangular Weir (Weir Controls 12.54 cfs @ 5.20 fps)

-4=Orifice/Grate (Controls 0.00 cfs)

Pond PA: Pond 1A



Summary for Pond PB: Pond 1B

Inflow Area	= 14	4.300 ac,	0.00% In	npervious	, Inflow De	pth =	2.46"	for	10-Y	ear e	vent	
Inflow :	= 27	7.36 cfs @) 12.29 hr	s, Volum	e=	2.927 a	af					
Outflow :	= 12	2.03 cfs @) 12.69 hr	s, Volum	e=	2.908	af, Atte	en= 50	6%,	Lag=	23.9 min	
Primary :	= 12	2.03 cfs @) 12.69 hr	s, Volum	e=	2.908	af					
Routing by Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Peak Elev= 752.29' @ 12.69 hrs Surf.Area= 16,309 sf Storage= 49,714 cf												
Plug-Flow d Center-of-M	letention	time= 373	3.6 min calo	culated for	r 2.908 af (99% of	inflow)					
				214.0 0-	+0.0)							
Volume	Invert	Avail	.Storage	Storage [Description							
Volume #1	Invert 748.00'	Avail	<u>.Storage</u> 31,200 cf	Storage [Custom	Description Stage Data	a (Prisr	natic)L	isted	belov	w (Re	ecalc)	
Volume #1 Elevation	<u>Invert</u> 748.00' Si	<u>Avail</u> 8 urf.Area	.Storage 31,200 cf Inc.	Storage [Custom Store	Description Stage Data Cum.Sto	a (Prisr ore	natic)Li	isted	belo	w (Re	ecalc)	
Volume #1 Elevation (feet)	<u>Invert</u> 748.00' Si	Avail Evail Avail 8 4 4 8 4 8 4 8 4 8 4 8 4 8 8 8 8 8 8	<u>Storage</u> 31,200 cf Inc. (cubic	Storage [Custom : Store -feet)	Description Stage Data Cum.Sto (cubic-fe	a (Prisr ore <u>et)</u>	natic)L	isted	belo	w (Re	ecalc)	
Volume #1 Elevation (feet) 748.00	<u>Invert</u> 748.00' Si	Avail Eurf.Area (sq-ft) 7,100	<u>Storage</u> 31,200 cf Inc. (cubic	Storage [Custom Store -feet) 0	Description Stage Data Cum.Sto (cubic-fe	a (Prisr ore <u>et)</u> 0	natic)L	isted	belo	w (Re	ecalc)	
Volume #1 Elevation (feet) 748.00 750.00	<u>Invert</u> 748.00' Si	<u>Avail</u> 8 urf.Area (sq-ft) 7,100 11,200	<u>Storage</u> 31,200 cf Inc. (cubic	Storage [Custom Store -feet) 0 3,300	Description Stage Data Cum.Sto (cubic-fe 18,3	a (Prisr ore <u>et)</u> 0 500	natic)L	isted	belo	w (Re	ecalc)	
Volume #1 Elevation (feet) 748.00 750.00 752.00	<u>Invert</u> 748.00' Si	<u>Avail</u> 8 urf.Area (sq-ft) 7,100 11,200 15,600	<u>.Storage</u> 31,200 cf Inc. (cubic 11	<u>Storage [</u> Custom : Store -feet) 0 3,300 5,800	Description Stage Data Cum.Sto (cubic-fe 18,3 45,1	a (Prisr ore <u>et)</u> 0 000 00	natic)L	isted	belo	w (Re	ecalc)	

Device	Routing	Invert	Outlet Devices
#1	Primary	747.00'	30.0" Round Culvert
	2		L= 30.0' CPP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 747.00' / 744.00' S= 0.1000 '/' Cc= 0.900
			n= 0.012, Flow Area= 4.91 sf
#2	Device 1	748.00'	3.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	750.85'	1.8' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
			0.5' Crest Height
#4	Device 1	753.50'	54.0" x 36.0" Horiz. Orifice/Grate C= 0.600
			Limited to weir flow at low heads

Primary OutFlow Max=12.00 cfs @ 12.69 hrs HW=752.29' (Free Discharge) **1=Culvert** (Passes 12.00 cfs of 47.49 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.48 cfs @ 9.82 fps)

-3=Sharp-Crested Rectangular Weir (Weir Controls 11.52 cfs @ 5.30 fps)

-4=Orifice/Grate (Controls 0.00 cfs)

Pond PB: Pond 1B



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Type III 24-hr100-Year Rainfall=8.57"Printed 6/7/2018ons LLCPage 42

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Time span=5.00-60.00 hrs, dt=0.05 hrs, 1101 points Runoff by SCS TR-20 method, UH=SCS, Weighted-CN Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: BASIN1A	Runoff Area=13.200 ac 0.00% Impervious Runoff Depth=5.80" Flow Length=1,400' Tc=19.5 min CN=77 Runoff=60.58 cfs 6.380 af
Subcatchment1B: BASIN1B	Runoff Area=14.300 ac 0.00% Impervious Runoff Depth=5.80" Flow Length=1,000' Tc=20.4 min CN=77 Runoff=64.27 cfs 6.911 af
Subcatchment1C: BASIN1C	Runoff Area=21.000 ac 5.52% Impervious Runoff Depth=6.04" Flow Length=1,580' Tc=16.4 min CN=79 Runoff=107.02 cfs 10.571 af
Subcatchment1D: Basin1D	Runoff Area=20.450 ac 31.54% Impervious Runoff Depth>6.76" Flow Length=1,440' Tc=13.4 min CN=85 Runoff=122.35 cfs 11.517 af
Subcatchment1E: Basin1E	Runoff Area=2.670 ac 11.99% Impervious Runoff Depth>6.28" Flow Length=360' Tc=10.7 min CN=81 Runoff=16.31 cfs 1.398 af
Reach 2R: stream bed n=0.030 L=1	Avg. Flow Depth=1.66' Max Vel=12.39 fps Inflow=130.21 cfs 17.461 af ,080.0' S=0.0528 '/' Capacity=176.54 cfs Outflow=129.33 cfs 17.459 af
Reach 5R: Stream Bed n=0.030 L:	Avg. Flow Depth=1.99' Max Vel=14.47 fps Inflow=186.65 cfs 25.225 af =116.0' S=0.0603 '/' Capacity=237.01 cfs Outflow=186.57 cfs 25.225 af
Reach 7R: Swale n=0.035	Avg. Flow Depth=1.73' Max Vel=8.17 fps Inflow=52.89 cfs 6.890 af L=320.0' S=0.0406 '/' Capacity=70.49 cfs Outflow=52.38 cfs 6.890 af
Reach 15R: SWALE n=0.030	Avg. Flow Depth=1.00' Max Vel=12.87 fps Inflow=51.80 cfs 6.368 af L=360.0' S=0.1111 '/' Capacity=181.78 cfs Outflow=51.60 cfs 6.368 af
Reach 16R: GRASS n=0.030	Avg. Flow Depth=0.48' Max Vel=8.27 fps Inflow=52.38 cfs 6.890 af L=300.0' S=0.1267 '/' Capacity=56.44 cfs Outflow=52.18 cfs 6.889 af
Reach AP1: Analysis Point	Inflow=279.15 cfs 36.743 af Outflow=279.15 cfs 36.743 af
Pond 8P: PIPE 60.0" Round Culvert w/ 18	Peak Elev=699.46' Inflow=130.21 cfs 17.461 af .0" inside fill n=0.027 L=50.0' S=0.1200 '/' Outflow=130.21 cfs 17.461 af
Pond 14P: PIPE 36.0" F	Peak Elev=678.54' Inflow=59.36 cfs 7.766 af cound Culvert n=0.012 L=240.0' S=0.1167 '/' Outflow=59.36 cfs 7.766 af
Pond PA: Pond 1A	Peak Elev=731.99' Storage=66,052 cf Inflow=60.58 cfs 6.380 af Outflow=51.80 cfs 6.368 af
Pond PB: Pond 1B	Peak Elev=753.96' Storage=80,326 cf Inflow=64.27 cfs 6.911 af Outflow=52.89 cfs 6.890 af
Total Punoff Area - 71	620 ac Runoff Volume = 36 777 af Average Runoff Donth - 6 16

Total Runoff Area = 71.620 ac Runoff Volume = 36.777 af Average Runoff Depth = 6.16" 88.93% Pervious = 63.690 ac 11.07% Impervious = 7.930 ac

Summary for Subcatchment 1A: BASIN 1A

Runoff = 60.58 cfs @ 12.26 hrs, Volume= 6.380 af, Depth= 5.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type III 24-hr 100-Year Rainfall=8.57"

	Area	(ac)	CN	Desc	cription		
*	12.	600	77	Woo	ds, D, Goo	bd	
	0.	600	80	>75%	6 Grass co	over, Good,	HSG D
	13.	200	77	Weig	hted Aver	age	
	13.	200		100.	00% Pervi	ous Area	
	Tc	Length	1 8	Slope	Velocity	Capacity	Description
_	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)	
	15.6	100	0.	0400	0.11		Sheet Flow,
							Woods: Light underbrush n= 0.400 P2= 3.50"
	3.4	1,040	0.	1000	5.09		Shallow Concentrated Flow,
							Unpaved Kv= 16.1 fps
	0.5	260	0.	1200	8.37	25.12	Channel Flow,
_							Area= 3.0 sf Perim= 8.8' r= 0.34' n= 0.030
	19.5	1,400) T	otal			

Subcatchment 1A: BASIN 1A



Summary for Subcatchment 1B: BASIN 1B

Runoff = 64.27 cfs @ 12.28 hrs, Volume= 6.911 af, Depth= 5.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type III 24-hr 100-Year Rainfall=8.57"

_	Area	(ac) (CN Des	cription		
	13.	600	77 Woo	ods, Good,	HSG D	
	0.	700	80 >75	% Grass co	over, Good,	, HSG D
	14.	300	77 Wei	ghted Aver	age	
	14.	300	100	.00% Pervi	ous Area	
	Тс	Length	Slope	Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	17.5	100	0.0300	0.10		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 3.50"
	2.9	900	0.1000	5.09		Shallow Concentrated Flow,
_						Unpaved Kv= 16.1 fps
	20 4	1 000	Total			

20.4 1,000 Total

Subcatchment 1B: BASIN 1B



Summary for Subcatchment 1C: BASIN 1C

Runoff = 107.02 cfs @ 12.22 hrs, Volume= 10.571 af, Depth= 6.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type III 24-hr 100-Year Rainfall=8.57"

_	Area	(ac) (N Des	cription		
	3.	150	30 >75	% Grass co	over, Good	, HSG D
	16.	690	77 Woo	ds, Good,	HSG D	
*	1.	160	98 Impe	ervious Su	faces	
	21.	000	79 Wei	ghted Aver	age	
	19.840 94.48% Pervious Area					
	1.160 5.52% Impervious Area					
	Тс	Length	Slope	Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	11.8	100	0.0800	0.14		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 3.50"
	3.9	1,250	0.1100	5.34		Shallow Concentrated Flow,
						Unpaved Kv= 16.1 fps
	0.7	230	0.0500	5.88	7.06	Trap/Vee/Rect Channel Flow,
_						Bot.W=1.50' D=0.80' n= 0.030

16.4 1,580 Total

Subcatchment 1C: BASIN 1C



Summary for Subcatchment 1D: Basin 1D

Runoff = 122.35 cfs @ 12.18 hrs, Volume= 11.517 af, Depth> 6.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type III 24-hr 100-Year Rainfall=8.57"

	Area	(ac) (CN Des	cription		
*	6.	450	98			
	4.	200	77 Woo	ds, Good,	HSG D	
	9.	800	80 >75	% Grass co	over, Good	, HSG D
	20.	450	85 Wei	ghted Aver	age	
14.000		68.4	6% Pervio	us Area		
	6.	450	31.5	4% Imperv	vious Area	
	Та	ما به مربقا	Olana	\/_l!	O an a situ	Description
	IC (min)	(foot)				Description
_		(ieel)			(05)	
	10.8	100	0.1000	0.15		Sheet Flow,
						Woods: Light underbrush n= 0.400 P2= 3.50"
	1.8	660	0.1500	6.24		Shallow Concentrated Flow,
						Unpaved Kv= 16.1 fps
	0.8	680	0.0600	13.38	147.17	Trap/Vee/Rect Channel Flow,
						Bot.W=5.50' D=2.00' n= 0.030

13.4 1,440 Total

Subcatchment 1D: Basin 1D



Summary for Subcatchment 1E: Basin 1E

Runoff = 16.31 cfs @ 12.15 hrs, Volume= 1.398 af, Depth> 6.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Type III 24-hr 100-Year Rainfall=8.57"

	Area	(ac)	CN	Desc	ription		
*	0.	320	98				
	1.	200	77	Woo	ds, Good,	HSG D	
	1.	150	80	>75%	6 Grass co	over, Good	, HSG D
	2.	670	81	Weig	hted Aver	age	
	2.	350		88.0	1% Pervio	us Area	
0.320 11.99% Imj			9% Imperv	vious Area			
	Тс	Length	n S	Slope	Velocity	Capacity	Description
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	10.0	100) ().	1200	0.17		Sheet Flow,
							Woods: Light underbrush n= 0.400 P2= 3.50"
	0.7	260) ().	1500	6.24		Shallow Concentrated Flow,
_							Unpaved Kv= 16.1 fps
	10.7	360) Т	otal			

Subcatchment 1E: Basin 1E



Summary for Reach 2R: stream bed

 Inflow Area =
 35.300 ac,
 3.29% Impervious, Inflow Depth >
 5.94" for 100-Year event

 Inflow =
 130.21 cfs @
 12.26 hrs, Volume=
 17.461 af

 Outflow =
 129.33 cfs @
 12.31 hrs, Volume=
 17.459 af, Atten= 1%, Lag= 3.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Max. Velocity= 12.39 fps, Min. Travel Time= 1.5 min Avg. Velocity = 2.26 fps, Avg. Travel Time= 8.0 min

Peak Storage= 11,330 cf @ 12.27 hrs Average Depth at Peak Storage= 1.66' Bank-Full Depth= 2.00' Flow Area= 13.0 sf, Capacity= 176.54 cfs

5.50' x 2.00' deep channel, n= 0.030 Side Slope Z-value= 0.5 '/' Top Width= 7.50' Length= 1,080.0' Slope= 0.0528 '/' Inlet Invert= 694.00', Outlet Invert= 637.00'



Reach 2R: stream bed



Type III 24-hr 100-Year Rainfall=8.57" Printed 6/7/2018 ons LLC Page 49

Summary for Reach 5R: Stream Bed

 Inflow Area =
 51.170 ac,
 2.89% Impervious, Inflow Depth >
 5.92" for 100-Year event

 Inflow =
 186.65 cfs @
 12.36 hrs, Volume=
 25.225 af

 Outflow =
 186.57 cfs @
 12.36 hrs, Volume=
 25.225 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Max. Velocity= 14.47 fps, Min. Travel Time= 0.1 min Avg. Velocity = 2.76 fps, Avg. Travel Time= 0.7 min

Peak Storage= 1,496 cf @ 12.36 hrs Average Depth at Peak Storage= 1.99' Bank-Full Depth= 2.30' Flow Area= 15.3 sf, Capacity= 237.01 cfs

5.50' x 2.30' deep channel, n= 0.030 Side Slope Z-value= 0.5 '/' Top Width= 7.80' Length= 116.0' Slope= 0.0603 '/' Inlet Invert= 637.00', Outlet Invert= 630.00'



Reach 5R: Stream Bed



Summary for Reach 7R: Swale

 Inflow Area =
 14.300 ac,
 0.00% Impervious, Inflow Depth >
 5.78" for 100-Year event

 Inflow =
 52.89 cfs @
 12.42 hrs, Volume=
 6.890 af

 Outflow =
 52.38 cfs @
 12.45 hrs, Volume=
 6.890 af, Atten= 1%, Lag= 1.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Max. Velocity= 8.17 fps, Min. Travel Time= 0.7 min Avg. Velocity = 1.97 fps, Avg. Travel Time= 2.7 min

Peak Storage= 2,059 cf @ 12.43 hrs Average Depth at Peak Storage= 1.73' Bank-Full Depth= 2.00' Flow Area= 8.0 sf, Capacity= 70.49 cfs

2.00' x 2.00' deep channel, n= 0.035 Side Slope Z-value= 1.0 '/' Top Width= 6.00' Length= 320.0' Slope= 0.0406 '/' Inlet Invert= 743.00', Outlet Invert= 730.00'



Reach 7R: Swale



Summary for Reach 15R: SWALE

 Inflow Area =
 13.200 ac,
 0.00% Impervious,
 Inflow Depth >
 5.79"
 for
 100-Year event

 Inflow =
 51.80 cfs @
 12.39 hrs,
 Volume=
 6.368 af

 Outflow =
 51.60 cfs @
 12.40 hrs,
 Volume=
 6.368 af,
 Atten= 0%,
 Lag= 1.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Max. Velocity= 12.87 fps, Min. Travel Time= 0.5 min Avg. Velocity = 2.61 fps, Avg. Travel Time= 2.3 min

Peak Storage= 1,448 cf @ 12.39 hrs Average Depth at Peak Storage= 1.00' Bank-Full Depth= 2.00' Flow Area= 10.0 sf, Capacity= 181.78 cfs

3.00' x 2.00' deep channel, n= 0.030 Side Slope Z-value= 1.0 '/' Top Width= 7.00' Length= 360.0' Slope= 0.1111 '/' Inlet Invert= 720.00', Outlet Invert= 680.00'



Reach 15R: SWALE



Summary for Reach 16R: GRASS

 Inflow Area =
 14.300 ac,
 0.00% Impervious,
 Inflow Depth >
 5.78"
 for
 100-Year event

 Inflow =
 52.38 cfs @
 12.45 hrs,
 Volume=
 6.890 af

 Outflow =
 52.18 cfs @
 12.47 hrs,
 Volume=
 6.889 af,
 Atten= 0%,
 Lag= 1.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Max. Velocity= 8.27 fps, Min. Travel Time= 0.6 min Avg. Velocity = 2.00 fps, Avg. Travel Time= 2.5 min

Peak Storage= 1,900 cf @ 12.45 hrs Average Depth at Peak Storage= 0.48' Bank-Full Depth= 0.50' Flow Area= 6.7 sf, Capacity= 56.44 cfs

20.00' x 0.50' deep Parabolic Channel, n= 0.030 Length= 300.0' Slope= 0.1267 '/' Inlet Invert= 730.00', Outlet Invert= 692.00'



Summary for Reach AP1: Analysis Point

Inflow A	Area =	71.620 ac, 1	11.07% Impervious,	Inflow Depth > 6.	16" for 100-Year event
Inflow	=	279.15 cfs @	12.26 hrs, Volume	= 36.743 af	
Outflow	v =	279.15 cfs @	12.26 hrs, Volume	= 36.743 af,	Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

Hydrograph Inflow Outflow 279 15 cfs 300 279.15 cfs Inflow Area=71.620 ac 280 260 240 220 200 180 Flow (cfs) 160 140 120 100 80 60 40 20 0 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 6 8 Time (hours)

Reach AP1: Analysis Point

Summary for Pond 8P: PIPE

 Inflow Area =
 35.300 ac, 3.29% Impervious, Inflow Depth > 5.94" for 100-Year event

 Inflow =
 130.21 cfs @
 12.26 hrs, Volume=
 17.461 af

 Outflow =
 130.21 cfs @
 12.26 hrs, Volume=
 17.461 af, Atten= 0%, Lag= 0.0 min

 Primary =
 130.21 cfs @
 12.26 hrs, Volume=
 17.461 af

Routing by Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Peak Elev= 699.46' @ 12.26 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	693.50'	60.0" Round Culvert w/ 18.0" inside fill L= 50.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 692.00' / 686.00' S= 0.1200 '/' Cc= 0.900 n= 0.027, Flow Area= 14.68 sf

Primary OutFlow Max=129.75 cfs @ 12.26 hrs HW=699.42' (Free Discharge) -1=Culvert (Inlet Controls 129.75 cfs @ 8.84 fps)



Pond 8P: PIPE
Summary for Pond 14P: PIPE

 Inflow Area =
 15.870 ac,
 2.02% Impervious, Inflow Depth >
 5.87" for 100-Year event

 Inflow =
 59.36 cfs @
 12.38 hrs, Volume=
 7.766 af

 Outflow =
 59.36 cfs @
 12.38 hrs, Volume=
 7.766 af, Atten= 0%, Lag= 0.0 min

 Primary =
 59.36 cfs @
 12.38 hrs, Volume=
 7.766 af

Routing by Stor-Ind method, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs Peak Elev= 678.54' @ 12.38 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	674.00'	36.0" Round Culvert L= 240.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 674.00' / 646.00' S= 0.1167 '/' Cc= 0.900 n= 0.012, Flow Area= 7.07 sf

Primary OutFlow Max=59.03 cfs @ 12.38 hrs HW=678.51' (Free Discharge) -1=Culvert (Inlet Controls 59.03 cfs @ 8.35 fps)



Pond 14P: PIPE

Summary for Pond PA: Pond 1A

Inflow Ar Inflow Outflow Primary	ea = = = =	13.200 ac, 0 60.58 cfs @ 1 51.80 cfs @ 1 51.80 cfs @ 1	.00% Impervic 2.26 hrs, Vol 2.39 hrs, Vol 2.39 hrs, Vol	ous, Inflow Depth ume= 6.3 ume= 6.3 ume= 6.3	= 5.80" 80 af 68 af, Att 68 af	for 100 ten= 14%,	-Year event , Lag= 7.3 min
Routing I Peak Ele	by Stor-In ev= 731.9	id method, Time 9' @ 12.39 hrs	e Span= 5.00- Surf.Area= 1	30.00 hrs, dt= 0.09 6,400 sf Storage	5 hrs = 66,052	cf	
Plug-Flov Center-o	w detentio f-Mass de	on time= 166.1 et. time= 166.7	min calculatec min (986.2 - 8	l for 6.363 af (100 }19.6)	% of inflov	w)	
Volume	Inv	ert Avail.Sto	orage Storag	Je Description			
#1	726.0	00' 66,2	20 cf Custo	m Stage Data (P	rismatic)I	Listed belo	ow (Recalc)
-		0 ()					
Elevatio	n	Surf.Area	Inc.Store	Cum.Store			
(fee	t)	(sq-ft)	(cubic-feet)	(cubic-feet)			
726.0	0	6,270	0	0			
728.0	0	9,190	15,460	15,460			
730.0	0	12,575	21,765	37,225			
732.0	0	16,420	28,995	66,220			
Device	Routing	Invert	Outlet Devic	ces			
#1	Primary	725.00'	30.0" Round Culvert L= 74.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 725.00' / 724.00' S= 0.0135 '/' Cc= 0.900				
#2	Device 1	726 00'	3 0" Vert C)rifice/Grate C=	0.600		
#3	Device 1	729.05	2.0' long Sl	harp-Crested Red	ctangular	Weir 2 F	nd Contraction(s)
		120.00	0.5' Crest H	leight	stangului		
#4	Device 1	731.50'	36.0" x 24.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads				

Primary OutFlow Max=51.50 cfs @ 12.39 hrs HW=731.98' (Free Discharge) **1=Culvert** (Passes 51.50 cfs of 56.60 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.57 cfs @ 11.66 fps)

-3=Sharp-Crested Rectangular Weir (Weir Controls 39.90 cfs @ 9.62 fps)

-4=Orifice/Grate (Weir Controls 11.03 cfs @ 2.28 fps)

Pond PA: Pond 1A



Summary for Pond PB: Pond 1B

Inflow Are Inflow Outflow Primary	ea = = = =	14.300 ac, 0 64.27 cfs @ 1 52.89 cfs @ 1 52.89 cfs @ 1	.00% Imperv 2.28 hrs, Vo 2.42 hrs, Vo 2.42 hrs, Vo	rious, Inflow Depth blume= 6.9 blume= 6.89 blume= 6.89	= 5.80" 1 af 90 af, Atter 90 af	for 100-` n= 18%,	Year event Lag= 8.8 min
Routing b Peak Elev	oy Stor-In v= 753.90	d method, Time 6' @ 12.42 hrs	e Span= 5.00 Surf.Area=	0-60.00 hrs, dt= 0.05 20,395 sf Storage	5 hrs = 80,326 cf	F	
Plug-Flov Center-of	v detentic -Mass de	on time= 184.1 et. time= 182.1	min calculate min (1,002.	ed for 6.890 af (100 5 - 820.4)	% of inflow))	
Volume	Inve	ert Avail.Sto	orage Stora	age Description			
#1	748.0)0' 81,2	200 cf Cus	tom Stage Data (Pr	ismatic)Lis	sted belov	w (Recalc)
Elevatior (feet	ר י)	Surf.Area	Inc.Store	cum.Store			
7/8 00	<u>)</u>]	7 100	(000101000)				
750.00	ן ר	11 200	18 300	18 300			
752.00	ן ר	15,600	26,800	45 100			
754.00)	20,500	36 100	81 200			
		20,000	00,100	01,200			
Device	Routing	Invert	Outlet Dev	vices			
#1	Primary	747.00'	30.0" Round Culvert L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 747.00' / 744.00' S= 0.1000 '/' Cc= 0.900 n= 0.012 Flow Area= 4.91 sf				
#2	Device 1	748.00'	3.0" Vert.	3 0" Vert Orifice/Grate C= 0.600			
#3	Device 1	750.85'	1.8' long 3	1.8' Iong Sharp-Crested Rectangular Weir 2 End Contraction(s)			
#4	Device 1	753.50'	54.0" x 36.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads				

Primary OutFlow Max=52.35 cfs @ 12.42 hrs HW=753.95' (Free Discharge) **1=Culvert** (Passes 52.35 cfs of 56.42 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.57 cfs @ 11.62 fps)

-3=Sharp-Crested Rectangular Weir (Weir Controls 37.02 cfs @ 10.12 fps)

-4=Orifice/Grate (Weir Controls 14.76 cfs @ 2.19 fps)

Pond PB: Pond 1B



Appendix E

Construction and Maintenance Inspection Checklists; Sample Construction Site Inspection and Maintenance Log Book

Stormwater/Wetland Pond Construction Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

CONSTRUCTION SEQUENCE	Satisfactory/ Unsatisfactory	Comments
Pre-Construction/Materials and Equipment		
Pre-construction meeting		
Pipe and appurtenances on-site prior to construction and dimensions checked		
1. Material (including protective coating, if specified)		
2. Diameter		
3. Dimensions of metal riser or pre-cast concrete outlet structure		
4. Required dimensions between water control structures (orifices, weirs, etc.) are in accordance with approved plans		
5. Barrel stub for prefabricated pipe structures at proper angle for design barrel slope		
6. Number and dimensions of prefabricated anti-seep collars		
7. Watertight connectors and gaskets		
8. Outlet drain valve		
Project benchmark near pond site		
Equipment for temporary de-watering		

		Satisfactory/ Unsatisfactory	Comments		
2.	. Subgrade Preparation				
Are ve	ea beneath embankment stripped of all getation, topsoil, and organic matter				
3.	Pipe Spillway Installation				
Me	thod of installation detailed on plans				
A.	Bed preparation				
	Installation trench excavated with specified side slopes				
	Stable, uniform, dry subgrade of relatively impervious material (If subgrade is wet, contractor shall have defined steps before proceeding with installation)				
	Invert at proper elevation and grade				
В.	Pipe placement				
	Metal / plastic pipe				
	1. Watertight connectors and gaskets properly installed				
	2. Anti-seep collars properly spaced and having watertight connections to pipe				
	3. Backfill placed and tamped by hand under "haunches" of pipe				
	4. Remaining backfill placed in max. 8 inch lifts using small power tamping equipment until 2 feet cover over pipe is reached				

CONSTRUCTION SEQUENCE		Satisfactory/ Unsatisfactory	Comments
3. Pipe Spillway Installation			
Concrete pipe			
 Pipe set on blocks or co pouring of low cradle 	ncrete slab for		
Pipe installed with rubbe with no spalling in gasket in	r gasket joints terface area		
Excavation for lower hall collar(s) with reinforcing ster	f of anti-seep el set		
 Entire area where anti-se come in contact with pipe c mastic or other approved was 	eep collar(s) will oated with aterproof sealant		
 Low cradle and bottom h collar installed as monolithin approved mix 	nalf of anti-seep c pour and of an		
Upper half of anti-seep of with reinforcing steel set	collar(s) formed		
 Concrete for collar of an and vibrated into place (pro freezing while curing, if nec 	approved mix tected from essary)		
 Forms stripped and colla honeycomb prior to backfilli necessary. 	ar inspected for ng. Parge if		
C. Backfilling			
Fill placed in maximum 8 inch li	fts		
Backfill taken minimum 2 feet a seep collar elevation before trav heavy equipment	bove top of anti- versing with		

CONSTRUCTION SEQUENCE		Satisfactory/ Unsatisfactory	Comments
4.	Riser / Outlet Structure Installation	•	
Ris	er located within embankment		
Α.	Metal riser		
	Riser base excavated or formed on stable subgrade to design dimensions		
	Set on blocks to design elevations and plumbed		
	Reinforcing bars placed at right angles and projecting into sides of riser		
	Concrete poured so as to fill inside of riser to invert of barrel		
В.	Pre-cast concrete structure		
	Dry and stable subgrade		
	Riser base set to design elevation		
	If more than one section, no spalling in gasket interface area; gasket or approved caulking material placed securely		
	Watertight and structurally sound collar or gasket joint where structure connects to pipe spillway		
C.	Poured concrete structure		
	Footing excavated or formed on stable subgrade, to design dimensions with reinforcing steel set		
	Structure formed to design dimensions, with reinforcing steel set as per plan		
	Concrete of an approved mix and vibrated into place (protected from freezing while curing, if necessary)		
	Forms stripped & inspected for "honeycomb" prior to backfilling; parge if necessary		

CONSTRUCTION SEQUENCE	Satisfactory/ Unsatisfactory	Comments		
5. Embankment Construction				
Fill material				
Compaction				
Embankment				
1. Fill placed in specified lifts and compacted with appropriate equipment				
Constructed to design cross-section, side slopes and top width				
3. Constructed to design elevation plus allowance for settlement				
6. Impounded Area Construction				
Excavated / graded to design contours and side slopes				
Inlet pipes have adequate outfall protection				
Forebay(s)				
Pond benches				
7. Earth Emergency Spillway Construction				
Spillway located in cut or structurally stabilized with riprap, gabions, concrete, etc.				
Excavated to proper cross-section, side slopes and bottom width				
Entrance channel, crest, and exit channel constructed to design grades and elevations				

CONSTRUCTION SEQUENCE	Satisfactory / Unsatisfactory	Comments				
8. Outlet Protection	8. Outlet Protection					
A. End section		-				
Securely in place and properly backfilled						
B. Endwall		-				
Footing excavated or formed on stable subgrade, to design dimensions and reinforcing steel set, if specified						
Endwall formed to design dimensions with reinforcing steel set as per plan						
Concrete of an approved mix and vibrated into place (protected from freezing, if necessary)						
Forms stripped and structure inspected for "honeycomb" prior to backfilling; parge if necessary						
C. Riprap apron / channel						
Apron / channel excavated to design cross- section with proper transition to existing ground						
Filter fabric in place						
Stone sized as per plan and uniformly place at the thickness specified						
9. Vegetative Stabilization						
Approved seed mixture or sod						
Proper surface preparation and required soil amendments						
Excelsior mat or other stabilization, as per plan						

CONSTRUCTION SEQUENCE	Satisfactory/ Unsatisfactory	Comments
10. Miscellaneous		
Drain for ponds having a permanent pool		
Trash rack / anti-vortex device secured to outlet structure		
Trash protection for low flow pipes, orifices, etc.		
Fencing (when required)		
Access road		
Set aside for clean-out maintenance		
11. Stormwater Wetlands		
Adequate water balance		
Variety of depth zones present		
Approved pondscaping plan in place Reinforcement budget for additional plantings		
Plants and materials ordered 6 months prior to construction		
Construction planned to allow for adequate planting and establishment of plant community (April-June planting window)		
Wetland buffer area preserved to maximum extent possible		

Comments:



Actions to be Taken:

Bioretention Construction Inspection Checklist

Project: Location: Site Status:

Date:

Time:

Inspector:

CONSTRUCTION SEQUENCE	Satisfactory/ Unsatisfactory	Comments
1. Pre-Construction		
Pre-construction meeting		
Runoff diverted		
Facility area cleared		
If designed as exfilter, soil testing for permeability		
Facility location staked out		
2. Excavation		
Size and location		
Lateral slopes completely level		
If designed as exfilter, ensure that excavation does not compact susoils.		
Longitudinal slopes within design range		

CONSTRUCTION SEQUENCE	SATISFACTORY / UNSATISFACTORY	Comments	
3. Structural Components			
Stone diaphragm installed correctly			
Outlets installed correctly			
Underdrain			
Pretreatment devices installed			
Soil bed composition and texture			
4. Vegetation			
Complies with planting specs			
Topsoil adequate in composition and placement			
Adequate erosion control measures in place			
5. Final Inspection			
Dimensions			
Proper stone diaphragm			
Proper outlet			
Soil/ filter bed permeability testing			
Effective stand of vegetation and stabilization			
Construction generated sediments removed			
Contributing watershed stabilized before flow is diverted to the practice			

Comments:

Actions to be Taken:		
Actions to be Taken:		

Open Channel System Construction Inspection Checklist

Project: Location: Site Status:

Date:

Time:

Inspector:

CONSTRUCTION SEQUENCE	SATISFACTORY / UNSATISFACTORY	Сомментя	
1. Pre-Construction			
Pre-construction meeting			
Runoff diverted			
Facility location staked out			
2. Excavation			
Size and location			
Side slope stable			
Soil permeability			
Groundwater / bedrock			
Lateral slopes completely level			
Longitudinal slopes within design range			
Excavation does not compact subsoils			
3. Check dams			
Dimensions			
Spacing			
Materials			

CONSTRUCTION SEQUENCE	SATISFACTORY / UNSATISFACTORY	Comments	
4. Structural Components			
Underdrain installed correctly			
Inflow installed correctly			
Pretreatment devices installed			
5. Vegetation			
Complies with planting specifications			
Topsoil adequate in composition and placement			
Adequate erosion control measures in place			
6. Final inspection			
Dimensions			
Check dams			
Proper outlet			
Effective stand of vegetation and stabilization			
Contributing watershed stabilized before flow is routed to the factility			

Comments:



Stormwater Pond/Wetland Operation, Maintenance and Management Inspection Checklist

Project Location:	
Site Status:	
Date:	
Time:	
Inspector:	

Maintenance Item	Satisfactory/ Unsatisfactory	Comments	
1. Embankment and emergency spillway (Annual, After Major Storms)			
1. Vegetation and ground cover adequate			
2. Embankment erosion			
3. Animal burrows			
4. Unauthorized planting			
5. Cracking, bulging, or sliding of dam			
a. Upstream face			
b. Downstream face			
c. At or beyond toe			
downstream			
upstream			
d. Emergency spillway			
6.Pond, toe & chimney drains clear and functioning			
7.Seeps/leaks on downstream face			
8.Slope protection or riprap failure			
9. Vertical/horizontal alignment of top of dam "As-Built"			

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
10. Emergency spillway clear of obstructions and debris		
11. Other (specify)		
2. Riser and principal spillway (Annual)		
Type: Reinforced concrete Corrugated pipe Masonry 1. Low flow orifice obstructed		
 Low flow trash rack. a. Debris removal necessary 		
b. Corrosion control		
3. Weir trash rack maintenance a. Debris removal necessary		
b. corrosion control		
4. Excessive sediment accumulation insider riser		
5. Concrete/masonry condition riser and barrels a. cracks or displacement		
b. Minor spalling (<1")		
c. Major spalling (rebars exposed)		
d. Joint failures		
e. Water tightness		
6. Metal pipe condition		
7. Control valve a. Operational/exercised		
b. Chained and locked		
8. Pond drain valve a. Operational/exercised		
b. Chained and locked		
9. Outfall channels functioning		
10. Other (specify)		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
3. Permanent Pool (Wet Ponds) (monthly)		
1. Undesirable vegetative growth		
2. Floating or floatable debris removal required		
3. Visible pollution		
4. Shoreline problem		
5. Other (specify)		
4. Sediment Forebays		
1.Sedimentation noted		
2. Sediment cleanout when depth < 50% design depth		
5. Dry Pond Areas		
1. Vegetation adequate		
2. Undesirable vegetative growth		
3. Undesirable woody vegetation		
4. Low flow channels clear of obstructions		
5. Standing water or wet spots		
6. Sediment and / or trash accumulation		
7. Other (specify)		
6. Condition of Outfalls (Annual , After Major Storms)		
1. Riprap failures		
2. Slope erosion		
3. Storm drain pipes		
4.Endwalls / Headwalls		
5. Other (specify)		
7. Other (Monthly)		
1. Encroachment on pond, wetland or easement area		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
2. Complaints from residents		
3.Aesthetics a. Grass growing required		
b. Graffiti removal needed		
c. Other (specify)		
4. Conditions of maintenance access routes.		
5. Signs of hydrocarbon build-up		
6. Any public hazards (specify)		
8. Wetland Vegetation (Annual)		
 Vegetation healthy and growing Wetland maintaining 50% surface area coverage of wetland plants after the second growing season. (If unsatisfactory, reinforcement plantings needed) 		
 2. Dominant wetland plants: Survival of desired wetland plant species Distribution according to landscaping plan? 3. Evidence of invasive species 		
4. Maintenance of adequate water depths for desired wetland plant species		
5. Harvesting of emergent plantings needed		
6. Have sediment accumulations reduced pool volume significantly or are plants "choked" with sediment		
7. Eutrophication level of the wetland.		
8. Other (specify)		

Comments:

Actions to be Taken:

Bioretention Operation, Maintenance and Management Inspection Checklist

Project: Location: Site Status:

Date:

Time:

Inspector:

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	Comments		
1. Debris Cleanout (Monthly)				
Bioretention and contributing areas clean of debris				
No dumping of yard wastes into practice				
Litter (branches, etc.) have been removed				
2. Vegetation (Monthly)				
Plant height not less than design water depth				
Fertilized per specifications				
Plant composition according to approved plans				
No placement of inappropriate plants				
Grass height not greater than 6 inches				
No evidence of erosion				
3. Check Dams/Energy Dissipaters/Sumps (Annual, After Major Storms)				
No evidence of sediment buildup				

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	Comments	
Sumps should not be more than 50% full of sediment			
No evidence of erosion at downstream toe of drop structure			
4. Dewatering (Monthly)			
Dewaters between storms			
No evidence of standing water			
5. Sediment Deposition (Annual)			
Swale clean of sediments			
Sediments should not be > 20% of swale design depth			
6. Outlet/Overflow Spillway (Annual, After Major Storms)			
Good condition, no need for repair			
No evidence of erosion			
No evidence of any blockages			
7. Integrity of Filter Bed (Annual)			
Filter bed has not been blocked or filled inappropriately			

Comments:

Actions to be Taken:

Open Channel Operation, Maintenance, and Management Inspection Checklist

Project: Location: Site Status:		
Date:		
Time:		
Inspector:		
MAINTENANCE ITEM	SATISFACTORY/ UNSATISFACTORY	Comments
1. Debris Cleanout (Monthly)		
Contributing areas clean of debris		
2. Check Dams or Energy Dissipators	s (Annual, After M	lajor Storms)
No evidence of flow going around structures		
No evidence of erosion at downstream toe		
Soil permeability		
Groundwater / bedrock		
3. Vegetation (Monthly)		
Mowing done when needed		
Minimum mowing depth not exceeded		
No evidence of erosion		
Fertilized per specification		
4. Dewatering (Monthly)		
Dewaters between storms		

MAINTENANCE ITEM	Satisfactory/ Unsatisfactory	Comments	
5. Sediment deposition (Annual)			
Clean of sediment			
6. Outlet/Overflow Spillway (Annual)			
Good condition, no need for repairs			
No evidence of erosion			

Comments:

Actions to be Taken:

CONSTRUCTION SITE INSPECTION AND MAINTENANCE LOG BOOK

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR CONSTRUCTION ACTIVITIES

SAMPLE CONSTRUCTION SITE LOG BOOK

Table of Contents

- I. Pre-Construction Meeting Documents
 - a. Preamble to Site Assessment and Inspections
 - b. Pre-Construction Site Assessment Checklist

II. Construction Duration Inspections

- a. Directions
- b. Modification to the SWPPP

I. PRE-CONSTRUCTION MEETING DOCUMENTS

Project Name	
Permit No.	Date of Authorization
Name of Operator	
Prime Contractor	

a. Preamble to Site Assessment and Inspections

The Following Information To Be Read By All Person's Involved in The Construction of Stormwater Related Activities:

The Operator agrees to have a qualified inspector¹ conduct an assessment of the site prior to the commencement of construction² and certify in this inspection report that the appropriate erosion and sediment controls described in the SWPPP have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction.

Prior to the commencement of construction, the Operator shall certify in this site logbook that the SWPPP has been prepared in accordance with the State's standards and meets all Federal, State and local erosion and sediment control requirements. A preconstruction meeting should be held to review all of the SWPPP requirements with construction personnel.

When construction starts, site inspections shall be conducted by the qualified inspector at least every 7 calendar days. The Operator shall maintain a record of all inspection reports in this site logbook. The site logbook shall be maintained on site and be made available to the permitting authorities upon request.

Prior to filing the Notice of Termination or the end of permit term, the Operator shall have a qualified inspector perform a final site inspection. The qualified inspector shall certify that the site has undergone final stabilization³ using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed. In addition, the Operator must identify and certify that all permanent structures described in the SWPPP have been constructed and provide the owner(s) with an operation and maintenance plan that ensures the structure(s) continuously functions as designed.

1 Refer to "Qualified Inspector" inspection requirements in the current SPDES General Permit for Stormwater Discharges from Construction Activity for complete list of inspection requirements.

3 "Final stabilization" means that all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of eighty (80) percent has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.

^{2 &}quot;Commencement of construction" means the initial removal of vegetation and disturbance of soils associated with clearing, grading or excavating activities or other construction activities.

b. Pre-construction Site Assessment Checklist (NOTE: Provide comments below as necessary)

1. Notice of Intent, SWPPP, and Contractors Certification:

Yes No NA

- [] [] Has a Notice of Intent been filed with the NYS Department of Conservation?
- [] [] Is the SWPPP on-site? Where?
- [] [] Is the Plan current? What is the latest revision date?
- [] [] Is a copy of the NOI (with brief description) onsite? Where?
- [] [] Have all contractors involved with stormwater related activities signed a contractor's certification?

2. Resource Protection

Yes No NA

- [] [] Are construction limits clearly flagged or fenced?
- [] [] Important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips, especially in perimeter areas, have been flagged for protection.
- [] [] Creek crossings installed prior to land-disturbing activity, including clearing and blasting.
- 3. Surface Water Protection

Yes No NA

- [] [] Clean stormwater runoff has been diverted from areas to be disturbed.
- [] [] Bodies of water located either on site or in the vicinity of the site have been identified and protected.
- [] [] Appropriate practices to protect on-site or downstream surface water are installed.
- [] [] Are clearing and grading operations divided into areas <5 acres?

4. Stabilized Construction Access

Yes No NA

- [] [] A temporary construction entrance to capture mud and debris from construction vehicles before they enter the public highway has been installed.
- [] [] Other access areas (entrances, construction routes, equipment parking areas) are stabilized immediately as work takes place with gravel or other cover.
- [] [] [] Sediment tracked onto public streets is removed or cleaned on a regular basis.
- 5. Sediment Controls

Yes No NA

- [] [] Silt fence material and installation comply with the standard drawing and specifications.
- [] [] Silt fences are installed at appropriate spacing intervals
- [] [] Sediment/detention basin was installed as first land disturbing activity.
- [] [] [] Sediment traps and barriers are installed.

6. Pollution Prevention for Waste and Hazardous Materials

Yes No NA

- [] [] The Operator or designated representative has been assigned to implement the spill prevention avoidance and response plan.
- [] [] The plan is contained in the SWPPP on page
- [] [] Appropriate materials to control spills are onsite. Where?

II. CONSTRUCTION DURATION INSPECTIONS

a. Directions:

Inspection Forms will be filled out during the entire construction phase of the project.

Required Elements:

- 1) On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period;
- 2) Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization;
- 3) Indicate all disturbed site areas that have not undergone active site work during the previous 14-day period;
- 4) Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of sediment storage volume (for example, 10 percent, 20 percent, 50 percent);
- 5) Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water; and
- 6) Immediately report to the Operator any deficiencies that are identified with the implementation of the SWPPP.

CONSTRUCTION DURATION INSPECTIONS	Page 1 of
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SITE PLAN/SKETCH

Inspector (print name)

Date of Inspection

Qualified Inspector (print name)

Qualified Inspector Signature

The above signed acknowledges that, to the best of his/her knowledge, all information provided on the forms is accurate and complete.

CONSTRUCTION DURATION INSPECTIONS

Maintaining Water Quality

Yes No NA

- [] [] Is there an increase in turbidity causing a substantial visible contrast to natural conditions at the outfalls?
- [] [] Is there residue from oil and floating substances, visible oil film, or globules or grease at the outfalls?
- [] [] All disturbance is within the limits of the approved plans.
- [] [] Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

Housekeeping

1. General Site Conditions

Yes No NA

- [] [] [] Is construction site litter, debris and spoils appropriately managed?
- [] [] [] Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?
- [] [] [] Is construction impacting the adjacent property?
- [] [] [] Is dust adequately controlled?

2. Temporary Stream Crossing

Yes No NA

- [] [] Maximum diameter pipes necessary to span creek without dredging are installed.
- [] [] Installed non-woven geotextile fabric beneath approaches.
- [] [] Is fill composed of aggregate (no earth or soil)?
- [] [] Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.
- 3. Stabilized Construction Access

Yes No NA

- [] [] [] Stone is clean enough to effectively remove mud from vehicles.
- [] [] Installed per standards and specifications?
- [] [] Does all traffic use the stabilized entrance to enter and leave site?
- [] [] Is adequate drainage provided to prevent ponding at entrance?

Runoff Control Practices

1. Excavation Dewatering

Yes No NA

- [] [] Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
- [] [] Clean water from upstream pool is being pumped to the downstream pool.
- [] [] Sediment laden water from work area is being discharged to a silt-trapping device.
- [] [] Constructed upstream berm with one-foot minimum freeboard.
Runoff Control Practices (continued)

2. Flow Spreader

Yes No NA

- [] [] [] Installed per plan.
- [] [] Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.
- [] [] Flow sheets out of level spreader without erosion on downstream edge.

3. Interceptor Dikes and Swales

Yes No NA

- [] [] [] Installed per plan with minimum side slopes 2H:1V or flatter.
- [] [] Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
- [] [] Sediment-laden runoff directed to sediment trapping structure

4. Stone Check Dam

Yes No NA

- [] [] [] Is channel stable? (flow is not eroding soil underneath or around the structure).
- [] [] Check is in good condition (rocks in place and no permanent pools behind the structure).
- [] [] Has accumulated sediment been removed?.

5. Rock Outlet Protection

Yes No NA

- [] [] [] Installed per plan.
- [] [] Installed concurrently with pipe installation.

Soil Stabilization

1. Topsoil and Spoil Stockpiles

Yes No NA

- [] [] [] Stockpiles are stabilized with vegetation and/or mulch.
- [] [] [] Sediment control is installed at the toe of the slope.

2. Revegetation

Yes No NA

- [] [] [] Temporary seedings and mulch have been applied to idle areas.
- [] [] 4 inches minimum of topsoil has been applied under permanent seedings

Sediment Control Practices

1. Silt Fence and Linear Barriers

Yes No NA

- [] [] [] Installed on Contour, 10 feet from toe of slope (not across conveyance channels).
- [] [] Joints constructed by wrapping the two ends together for continuous support.
- [] [] Fabric buried 6 inches minimum.
- [] [] Posts are stable, fabric is tight and without rips or frayed areas.

Sediment accumulation is ___% of design capacity.

CONSTRUCTION DURATION INSPECTIONS

Page 4 of _____

Sediment Control Practices (continued)

2. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated; Filter Sock or Manufactured practices)

Yes No NA

- [] [] Installed concrete blocks lengthwise so open ends face outward, not upward.
- [] [] Placed wire screen between No. 3 crushed stone and concrete blocks.
- [] [] Drainage area is 1acre or less.
- [] [] Excavated area is 900 cubic feet.
- [] [] Excavated side slopes should be 2:1.
- [] [] 2" x 4" frame is constructed and structurally sound.
- [] [] Posts 3-foot maximum spacing between posts.
- [] [] Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at max 8-inch spacing.
- [] [] Posts are stable, fabric is tight and without rips or frayed areas.
- [] [] [] Manufactured insert fabric is free of tears and punctures.
- [] [] Filter Sock is not torn or flattened and fill material is contained within the mesh sock.

Sediment accumulation ____% of design capacity.

3. Temporary Sediment Trap

Yes No NA

- [] [] Outlet structure is constructed per the approved plan or drawing.
- [] [] [] Geotextile fabric has been placed beneath rock fill.
- [] [] [] Sediment trap slopes and disturbed areas are stabilized.

Sediment accumulation is ___% of design capacity.

4. Temporary Sediment Basin

Yes No NA

- [] [] Basin and outlet structure constructed per the approved plan.
- [] [] Basin side slopes are stabilized with seed/mulch.
- [] [] Drainage structure flushed and basin surface restored upon removal of sediment basin facility.
- [] [] Sediment basin dewatering pool is dewatering at appropriate rate.

Sediment accumulation is ___% of design capacity.

<u>Note</u>: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design. All practices shall be maintained in accordance with their respective standards.

Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

CONSTRUCTION DURATION INSPECTIONS

b. Modifications to the SWPPP (To be completed as described below)

The Operator shall amend the SWPPP whenever:

- 1. There is a significant change in design, construction, operation, or maintenance which may have a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the SWPPP; or
- 2. The SWPPP proves to be ineffective in:
 - a. Eliminating or significantly minimizing pollutants from sources identified in the SWPPP and as required by this permit; or
 - b. Achieving the general objectives of controlling pollutants in stormwater discharges from permitted construction activity; and
- 3. Additionally, the SWPPP shall be amended to identify any new contractor or subcontractor that will implement any measure of the SWPPP.

Modification & Reason:

Appendix F

WQv Areas Maps; Pre and Post Developed Drainage Basin Map

WATER QUALITY TABLE

W.Q. AREA #7 SOTAL AREA = $0.05 \pm AC$. PROP. IMP. AREA = $0.03 \pm AC$.

REA IA & IB

1

POND 1

AYe

W:Q. AREA #6. TOTAL AREA = 0:68± AC. PROP. IMP. AREA = 0.25± AC.

W-Q. AREA #1 TRIBUTATE AREA TO BIORELENTION AREA LA & HE TOTAL AREA = 29 + AC PROPOSED IMPERVIOUS AREA = 3,3 + AC

. 3

WATER OUALITY	AREA COLOR	TOTAL TRIBUTARY	PROPOSED IMPERVIOUS	PROPOSED WATER OUALITY
AREA #	COLOR	AREA (AC.)	AREA (AC.)	PRACTICE
1		9.40	3.30	BIORETENTION / STREET TREES
2		3.00	1.30	BIORETENTION / STREET TREES
3		1.33	0.50	UNDISTURBED VEGETATIVE FILTER STRIP
4		0.28	0.12	RIPARIAN BUFFER
5		0.13	0.06	RIPARIAN BUFFER
6		0.68	0.25	UNDISTURBED VEGETATIVE FILTER STRIP
7		0.05	.003	UNDISTURBED VEGETATIVE FILTER STRIP

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ELEC EXISTING PROPERTY LINE PROPOSED PROPERTY LINE MINIMUM SETBACK LINE EXISTING WETLANDS LINE EXISTING WITH FENCE EXISTING WITH FENCE EXISTING OVER HEAD UTILITIES USDA SOILS BOUNDARY EXISTING EDGE OF PAVEMENT PROPOSED SILT FENCE PROPOSED SILT FENCE PROPOSED SWALE _____



1 OF 1



BIORETENTION AREA 2

W O AREA #5 TOTAL AREA = 0.15+ AC TMP, AREA = 605

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Appendix F

Flora and Fauna

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HERITAGE RANKS

APPENDIX A: HERITAGE PROGRAM ELEMENT RANKS

Explanation of ranks and codes used in Natural Heritage database reports.

Each element has a global and state rank as determined by NY Natural Heritage. These ranks carry no legal weight but are believed to accurately reflect the relative rarity given of the element. The global rank reflects the rarity of the element throughout the world and the state rank reflects the rarity within New York State. The global rank for communities is estimate of the rarity of the state type throughout its range. Infraspecific taxa are also assigned a taxon rank to reflect the infraspecific taxon's rank throughout the world. For species, the Taxon or T-ranks (T1 - T5) are defined like the global ranks (G1 - G5), but the T-rank *only* refers to the rarity of the subspecific taxon of the species.

GLOBAL RANK

- G1 = Critically imperiled globally because of extreme rarity (5 or fewer occurrences), or very few remaining acres, or miles of stream) or especially vulnerable to extinction because of some factor of its biology and/or ecology.
- G2 = Imperiled globally because of rarity (6 20 occurrences, or few remaining acres, or miles of stream) or very vulnerable to extinction throughout its range because of other factors.
- G3 = Either rare and local throughout its range (21 to 100 occurrences), or found locally (even abundantly at some of its locations) in a restricted range (*e.g.*, a physiographic region), or vulnerable to extinction throughout its range because of other factors.
- G4 = Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.
- G5 = Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.
- GH = Historically known, with the expectation that it might be rediscovered.
- GX = Species believed to be extinct.
- GU = Status unknown.

STATE RANK

- S1 = Typically 5 or fewer occurrences, very few remaining individuals (for species), acres, or miles of stream, or some factor of its biology and/or ecology making it especially vulnerable in New York State.
- S2 = Typically 6 to 20 occurrences, few remaining individuals (for species), acres, or miles of stream, or factors demonstrably making it very vulnerable in New York State.
- S3 = Typically 21 to 100 occurrences, limited acreage, or miles of stream in New York State.
- S4 = Apparently secure in New York State.
- S5 = Demonstrably secure in New York State.
- SH = Historically known from New York State, but not seen in the past 20 years.
- SX = Apparently extirpated from New York State.
- SE = Non-native species, not native to New York State.
- SR = State report only, no verified specimens (for species) known from New York State.
- SU = Status unknown.

TAXON RANK (for species)

- T1 T5 = indicates a rank assigned to a subspecies following the Global Rank definitions above.
- Q = indicates a question exists whether or not the taxon is a good taxonomic entity.
- ? = indicates a question exists about the rank.

3. Flooding and Stormwater Management Issues Downgradient of Site, Proposed Mitigation

While there are no flooding issues on the site itself, there are existing drainage problems downstream, where the existing water flows create drainage problems in existing occupied residential lots. For that reason, the proposed stormwater management plan incorporates detention facilities that exceed the requirements of the law. With the project, with the incorporated twin detention basins, the peak post-development drainage flows will be reduced by 12.7% from current peak flows in the 1-year storm event, and reduced by 11.4% over current peak flows in the 10-year storm event. It would be slightly reduced in the 100-year storm event. Thus, the project will not only avoid exacerbating any downstream drainage problems, it will significantly help to relieve them by virtue of the detention basins incorporated in the plans.

4. Compliance with Phase II Stormwater Regulations

A Stormwater Pollution Protection Plan has been prepared for the site and is incorporated within Appendix E of this document. That appendix incorporates the water quality volume calculations for the three sub-catchment areas within the site, showing that the wet pond volumes exceed the minimum that is required.

I. Vegetation

1. Existing Conditions

a) Woody and Herbaceous species; Threatened, Endangered or Rare Plant Species on or within 100 feet of Site; Characterize Typical Plants Expected or Observed On-site

Ecological communities present on the site have been mapped in the following exhibit. Site mapping is a result of site visits carried out at multiple dates in April and September of 2005. The mapping and the habitat descriptions focus primarily on the site itself, which is in the Village of Warwick, but the wooded habitat to the west is also addressed, both generally and to the extent that it influences the site within the Village. The area of the site that is proposed to be used for detention purposes, immediately north of the Village line, falls within the same habitat classification as the adjoining land within the Village.

Using Reschke's classification system for classifying and describing ecological communities, the bulk of the site would be characterized as Successional Shrubland. (Rank:G4, S4) This ecological community is found on sites that have been cleared for farming, as in the case of this property, or other purposes such as logging, and no longer maintained. This community includes at least 50% of shrub cover, including gray dogwood, eastern red cedar, raspberries, and the invasive multiflora rose. In the case of this site, a vast and nearly impenetrable thicket dominated by multiflora rose populates the center of the site, with a scattering of red cedar and gray dogwood. This ecological community extends northward into the Town of Warwick to encompass the areas outside of the wetland proposed to be used for drainage detention purposes.

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A small area of Successional Old Field (rank G4, S4) exists at the lower part of the site. This ecological community is dominated by forbs and grasses and contains less than 50% shrubs, on sites that have been cleared for farming. This is the first stage in succession after a cleared site is no longer being regularly mowed, and it is a short-lived community that succeeds to a shrubland and eventually to a woodland or forested community. In the case of this site, it contains common cinquefoil, ragweed, Queen Anne's lace, a mix of goldenrods including tall and rough goldenrod, and calico aster, English and common plantain, Virginia knotweed, spotted knapweed, quackgrass and other common forbs. There are scattered black walnut trees, all less than 6 inches dbh present in this area.

An area of Successional Southern Hardwood Forest (rank G5 S5) exists on the upper west part of the site, continuing west into the Town. The Successional Southern Hardwood Forest is described as a hardwood or mixed woodland on sites that have been cleared or disturbed, and is a broadly defined community dominated by light-requiring species that are adapted to establish themselves following disturbance. In the case of this site it is co-dominated by red maple and red cedar. Reschke reports that shrub layer and groundlayer dominants may include species that area characteristic of the old field community, or species that occurred prior to disturbance. In the case of this site, the successional forest has a sparse groundlayer dominated by invasive garlic mustard, and the shrub layer is limited to pole stage growth of the dominant trees.

Exhibit 16 View of Successional Forest West of Site in Town of Warwick



The stone wall separating the Village from the Town lands includes a notable population of trees. These hedgerow trees are older and larger than the adjacent

Exhibit 17 Ecological Communities on the Site



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woodland and contain a more diverse mix of species. Some of the hedgerow trees have grown around the barbed wire fencing.

There is a small area of Successional Southern Hardwood Forest at the lower end of the site by Woodside Drive. This area is more diverse than the woodland in the Town of Warwick and contains white oak, sugar maple, and cherry along with red maple, with most trees ranging from 3 to 4 inches dbh, but containing some larger specimens between 12 and 18 inches.

The wetland on the site that is associated with the stream is classified as Shallow Emergent Marsh (rank G5 S5). The stream itself may be a perennial stream, with water depths ranging from six inches to fourteen inches, and the marsh community includes the saturated lands associated with the stream. Dominant vegetation in the upper part of the marsh includes a mix of sedges and herbs such as curled mint, wild iris, smartweed, yellow nutsedge, tall meadowrue, beggar ticks, soft rush, and yellow-green sedge. In the lower part of the marsh the conditions are more degraded and the vegetation is dominated by purple loosestrife.



Exhibit 18 View of Stream in Lower Portion of Site - Successional Forest

The area of the site between Locust Street and the wetland is a distinct ecological community transitional between the Successional Shrubland and the road. It is beginning to succeed to woodland in the manner of Successional Forest, but it is clearly influenced by the roadway. Reschke has no classification that fits this exactly, for although it is clearly a terrestrial cultural community (that is, one which is influenced by man-made elements/activities), it does not precisely fit into the nearest category of "Mowed roadside/pathway" nor "Herbicide-sprayed roadside/pathway", as it does not appear that the habitat is influenced by mowing or spraying due to its steepness and inaccessibility. This area also contains the remains of former farm structures such as silos and other platforms and walls. Roadside pathway communities, whether maintained or not, are narrow strips of vegetation along the side of the road, typically dominated by grasses, sedges and rushes or forbs, vines and low shrubs. Street trees are cultural features, but additional tree growth is also beginning to become established in this area. In the case of this site, there are large, individual old trees lining the west side of Locust Street ranging from 33 inches in diameter to 56 inches. The bulk of these are white ash, though one is a sugar maple, two are black walnut, and one is a white oak. Some of the large streetside trees have suffered crown dieback and have lost numerous branches. The presence of stumps of comparable street trees indicates that others had been removed due to ill health or hazard. There is an understory of white ash shrubs, sugar maple, and other young trees, poison ivy, and a ground layer that includes an abundance of common ragweed, with pokeweed, wild lettuces, common groundsel, common sowthistle, and toadflax. On the east side of Locust Street, there are developed residential lots; and while there are street trees on these lots, they are considerably younger than on the west side, and in better condition.



Exhibit 19 Roadside View Looking West into Site

No threatened, endangered or rare plant species were expected or observed onsite, nor were the ecological communities found at the site rare or in limited representation within the state and region.

Table 8	Observed	Plant S	pecies	List
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Botanical Name	Common Name	
Tree and Shrub Species		
Acer rubrum	Red Maple	
Acer saccarum	Sugar Maple	
Betula papyrifera	White Birch	
Carpinus caroliniana	Ironwood	
Carya tomentosa	Mockernut Hickory	
Catalpa bignonioides	Catalpa	
Cornus racemosa	Gray Dogwood	
Fraxinus americana	White Ash	
Juglans nigra	Black Walnut	
Juniperus virginiana	Red Cedar	
Lonicera tatarica	Tararian Honeysuckle ^a	
Pinus strobus	White Pine	
Prunus serotina	Black Cherry	
Pyrus coronaria	American Grabapple	
Quercus alba	White Oak	
Quercus rubra	Northern Red Oak	
Rosa multiflora	Multiflora Rose	
Rubus odoratus	Raspberry	
Tilia Americana	American Basswood	
Viburnum lentago	Nannyberry	
Virburnum recognitum	Northern Arrowwood	
Herbaceous Vegetation		
Agropyron repens	Quackgrass	
Agrostis alba	Redtop	
Aliaria officianalis	Garlic Mustard ^a	
Allium vineale	Field garlic	
Ambrosia artimesiifolia	Common Ragweed	
Arisaeama atrorubens	Jack in the Pulpit	
Aster lateriflorus	Calico aster	

Botanical Name	Common Name
Aster vimineus	Small White Aster
Berteroa incana	Hoary Alyssum ^a
Bidens frondosa	Beggar-ticks
Brassica nigra	Black Mustard ^a
Carex Iurida	Yellow-green Sedge
Cassia hebecarpa	Wild Senna
Centaurea maculosa	Spotted Knapweeda
Circium discolor	Field Thistle
Cyperus esculenta	Yellow Nutsedge
Dauca carota	Queen Anne's Lace ^a
Digitaria sanguinalis	Crabgrass
Erigeron annuus	Daisy Fleabane
Geranium maculatum	Wild Geranium
Hypochoeris radicata	Cat's Ear ^a
Iris versicolor	Blue Flag (Wild Iris)
Juncus effusus	Soft Rush
Latuca spp	Wild Lettuce
Linaria vulgaris	Toadflax (Butter & Eggs) ^a
Lythrum salicaria	Purple Loosestrife ^a
Malva neglecta	Common Mallow ^a
Melilotus alba	White Sweet Clover ^a
Menispermum canadense	Canada Moonseed
Mentha crisa	Curled Mint ^a
Oxalis europa	Wood sorrel
Phytolacca Americana	Pokeweed
Plantago lanceolata	English Plantain ^a
Plantago major	Common Plantain ^a
Polygala paucifolia	Fringed Polygala
Polygonum persicaria	Smartweed ^a (Lady's Thumb)
Potentilla simplex	Common Cinquefoil
Rumex crispus	Curly Dock ^a
Senecio aureus	Golden Ragwort

Botanical Name	Common Name	
Senecio vulgaris	Common Groundsel ^a	
Solidago altissima	Tall Goldenrod	
Solidago rugosa	Rough Goldenrod	
Sonchus oleraceus	Common Sowthistle ^a	
Thalictrum polygamum	Tall Meadowrue	
Tovara virginiana	Virginia Knotweed	
Tussilago farfara	Coltsfoot	
Vines		v
Panax quinquefolia	Virginia Creeper	
Rhus toxicodendron	Poison Ivy	
Vitis labrusca	Fox Grape	
Ferns		
Thelypteris novoborascense	New York fern ^p	

a = alien

p= protected native plant

The only plant observed on the site that is incorporated in the New York State Protected Native Plant list was New York fern. All ferns in New York except for Sensitive Fern, Bracken Fern, and Hay-scented Fern are on the protected plant list New York fern was found in the woods west of the site. It must also be noted that the New York State Protected Native Plant list is not, and should not be mistaken for, a rare plant list, though some rarities are protected by it. It was intended to protect plants that should be protected from commercial exploitation or indiscriminate gathering from private land without permission of the property owner.

b) Species abundance, location, approximate age/size and condition

As noted above, the bulk of the site that is proposed to be developed would be characterized as Successional Shrubland, and this area of the site was dominated by a nearly impenetrable thicket of multiflora rose. Because this species spreads easily, and adventitious roots take hold wherever a cane touches the ground and is left undisturbed, it can grow to create a living fence, which is what exists in the center of the site. The fringes of this invasive rose thicket are set about with an almost equally impenetrable thicket of mature gray dogwood shrub ranging between 8 and 12 feet tall.

A small area of Successional Southern Hardwood Forest (rank G5 S5) exists on the upper west part of the site closer to the wooded areas. This same vegetative community exists on the west side of the stone wall in the Town. It is described as a hardwood or mixed woodland on formerly cleared sites, and is a broadly defined community dominated by light-requiring species following disturbance. In the case of this site it is dominated by red maple and red cedar, predominately under 8 inches in diameter at breast height, with dense cover of dogwood at the western edge. Another small area of Successional Southern Hardwood Forest exists along the site's Woodside Drive frontage, on both sides of the stream.

Two sample plots were conducted of the wooded area west of the stone wall in the Town of Warwick. Sample plots were 40 foot squares.

Sample plot 1						
Tree species	Trunk diameter at breast height (dbh), notes					
**************************************	1-4"	>4-8"	>8-12"	>12"		
Red maple	12 healthy 1 declining 4 dead	8 healthy 1 declining	3 healthy	1 26 ½" declining (trunk rot)		
Red oak	2 healthy	8 healthy				
Shrub layer		absent				
Herbaceous layer		Sparse Garlic mustard, very sparse grasses				
Sample plot 2						
	1-4"	>4-8"	>8-12"	>12"		
Red maple	13 healthy	12 healthy				
Red oak			1 healthy			
Red cedar 10 dead		2 dead 6 declining				
Shrub layer		absent				
Herbaceous layer		Misc. grasses				

able 5 Sample Flots of Wooded Alea West of one	Table	9	Sample	Plots	of	Wooded	Area	West	of	Site
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Existing large street trees on the west side of Locust Street were mapped and evaluated as to condition. Because these trees are large, and constitute such a notable site feature, and because they will clearly be affected by the road widening, they warranted special attention. The following exhibit maps these trees, and the following table shows their condition.

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Vigor (Class)	Crown	Dead Branches	Trunk
1. Poor (C)	Suppressed (Open Silhouette)	Many large dead limbs in crown, large branch stubs	Visible rot at branch collar
2. Good (A)	Dominant (Dense Silhouette)	Occasional dead branches in crown	No visible rot
3. Good (A)	Dominant (Dense Silhouette)	Occasional dead branches in crown	No visible rot
4. Good (A)	Dominant (Intermediate Silhouette)	Occasional dead branches in crown, few large dead limbs	No visible rot
5. Good (A)	Dominant (Intermediate Silhouette)	Occasional dead branches in crown, few large dead limbs	No visible rot
6. Good (A)	Dominant (Intermediate Silhouette)	Occasional dead branches in crown, few large dead limbs	No visible rot
7. Poor (C)	Suppressed (Open Silhouette)	Right large leader dead, left leader dying	Visible rot
8. Fair (B)	Co-dominant (Intermediate Sillhouette)	Many large dead branches and tips	No visible rot
9. Fair (B)	Co-dominant (Intermediate Sillhouette)	Many large dead branches	No visible rot
10. Fair (B)	Co-dominant (Dense Lower Crown)	Main upper trunk dead	Much rot
11.Good (A)	Dominant (Dense Silhouette)	Occasional dead branches	No visible rot

Table 10	Locust Stree	et Large Street	Tree Evaluation
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The street trees along Locust Street would be estimated at between 60 to over 90 years of age. Trees grown in the open exhibit different growth patterns than trees grown in more dense conditions. It can be difficult to estimate the age of trees grown in forested conditions, but the bulk of the trees in the successional woodland area within the Town west of the site are estimated at less than 50 years old. Of course, the town line hedgerow trees are of a comparable age with the Locust Street street trees. The farm use of the site was abandoned less than fifty years ago.

c) Value to wildlife. (Identify if native species).

The Successional Shrubland has a high value to songbirds and small rodents, as it is a productive source of berries as well as cover. Of the plants within the Successional Shrubland ecological community, the multiflora rose is not only nonnative, but it is highly invasive. Other characteristic shrubs within this association, such as the dogwood and red cedar are native and provide the same value to wildlife.

The small area of Successional Old Field exists in the area between the existing developed yards on the south and the Successional Shrubland on the north. The presence of this ecological community may be influenced by the presence of black walnut trees measuring 8 ½ inches dbh spaced at ten to sixteen foot intervals controlling vegetation and sustaining an active squirrel population. This area



contains spotted knapweed, goldenrod and other forbs, approximately 50% native vegetation. This area provides a value to wildlife both as a passageway between the woods and stream for larger mammals such as deer, and as habitat for insects and small mammals.

The Successional Southern Hardwood Forest is a later stage of succession as Successional Shrubland develops into hardwood forest. This open mixed hardwood and coniferous woodland area is dominated by red maple and red cedar less than 8 inches in diameter with dense cover of 8 to 12-foot tall gray dogwood at the western edge. The area provides value to wildlife in both food and cover for birds and small mammals.

d) Screening vegetation.

The site is closest to other developed residential lots primarily on the south and east. On the south, the site is closest near the rear of the existing residential lots fronting on Woodside Drive and across the corner of Woodside Drive west of its intersection with Locust Street. There is a wooded hedgerow on the west, and a 50-foot wooded wedge of land that is located within the Town screening and separating the site from the rear yards of the lots on Woodside Drive.

The existing tree cover directly adjacent to the west side of Locust Street is overmature and lacks extensive lower branching, though other vegetative cover below this area helps provide screening. Existing developed lots opposite the site maintain street trees and other vegetation in their front yards, and this helps to screen views of the site.

The wooded area at the lower portion of the site, north of Woodside Drive, helps to screen views of the site from Woodside Drive. Lot 29 will be constructed here, fronting on Woodside Drive, but the area between the stream and Locust Street will primarily be left undisturbed.

2. Impacts

The widening improvements to Locust Street will result in the clearing of all of the large trees that are currently within the road right of way. However, as noted in the tree evaluation table (see Table 10 and Exhibit 18), at least half of these trees are in a state of decline, and of those that are in good condition, the trees display dead branches at the crown. As noted from the presence of existing large stumps within the Locust Street ROW, there were clearly additional large trees (primarily ash) present which have already needed to be removed, presumably as they presented a public safety hazard along the existing roadway. The visual impact associated with removing these trees needs to be weighed against the safety benefits of widening the street and improving its surface, as well as the safety benefits of removing potentially hazardous trees.

The plans show a clean water diversion swale around the site to the west of the stone wall. The swale is noted as an "existing swale", as there is currently a roughly defined swale already in existence at this location. The plans incorporate a swale detail

that is intended to be constructed only if needed, based on the presence and function of the existing swale.

a) Modifications to existing Vegetative Patterns.

Clearing, grading and construction on the site will result in clearing the majority of the site's existing vegetation, as 17.48 acres of the 20.3-acre site will be disturbed. The areas that will be left undisturbed, except where specifically identified, include the strip of land between the wetland and Locust Street widenings, except for the road crossings for roads A and B, and the land at the fringes of the site. The resulting site will be more open, with the elimination of the trees and shrubs at the center of the site. The finished site will be converted to a suburban development with residential yards and tree-lined streets.

b) Fertilizer & Pesticide Impacts.

The effect of potential fertilizer use has been considered in the drainage calculations for future pollutant loading conditions. With respect to potential pesticide impacts, it cannot be predicted in advance whether individual homeowners will choose to pursue a highly cultivated, treated lawn. When applied in accordance with the manufacturer's guidelines, typical lawn and garden chemicals would not be expected to have a significant harmful impact on wetlands or water quality. Lots 27 and 28 are closest to the wetland and lots 26 and 29 are also in close proximity.

c) Changes in Habitat Value & Extent of Native Cover vs. Introduced Species

The existing site cover maintains a habitat value particularly for songbirds, regardless of the dominance of invasive multiflora rose. In the view of the project sponsor, it cannot be considered a harmful impact to eliminate the multiflora rose from the site, as it is not a native species. The habitat value of the entire site will change with its clearance and development for residential lots. Although the completed residential subdivision will contain some retained vegetation, primarily at the western and southern fringes of the site, and in the strip of land between the Locust Street widening and the stream, and although the project will include stabilized lawn plantings, water quality pond plantings, street trees and residential lot plantings, it will not be as productive a habitat as undeveloped land. However, the significance of this change must be evaluated in the context of the site itself, which is located within a Village, in a serviced area that is planned for development.

d) Need for Screening Vegetation

The proposed development is a residential community that is permitted in the zoning and consistent with the surrounding zoning districts and land uses. Therefore, there is no need for screening vegetation as might be called for in the case of a commercial or institutional use, where loading areas or large parking areas are involved.

3. Mitigation Measures.

a) Landscape Plan

Street tree plantings of a mix of red oak and red maple, or some other mix of species as may be prescribed by the Village, will be made at intervals of 40-foot on center along the new roadways. The stormwater quality basins (plan sheet 9) incorporate native tree, shrub, grass and sedge plantings appropriate to five different hydrologic regimes, and the site will be stabilized. It must be noted that individual residential lot owners will choose their own landscape plans; and that these can be changed over a period of time.

b) Use of native Vegetation to reduce Fertilizer/Pesticide needs

Native vegetation has been proposed both for street tree plantings as well as for stormwater quality basins. The street trees are proposed to be a mix of red oak and red maple, 2 ½ inch caliper, planted at intervals of 40-feet on center; but the species choice and mix can be changed prior to final plan approval at the direction of the Village. The plans incorporate native species in the stormwater management basins as well.

c) Other

Depending on the Village's preference, the existing mature hedgerow trees at the stub of Road A can be removed or allowed to remain until such time as the road is further extended. Because there are no drainage features or driveways near the stonewall/hedgerow, there is no need to clear and pave within the road right of way fully to the stone wall, and to remove large trees, unless the Village calls for this.

J. Wildlife

1. Existing Conditions.

a) Identify Resident & Migratory Species, On-site Threatened, Rare, Endangered or Nuisance Species

(1) Classify On-site Wildlife Communities.

On-site wildlife communities are an integral part of the terrestrial or aquatic habitat that they occupy. Therefore, the same classification system that applies to the site's vegetative communities also applies to its wildlife. Using Reschke's classification system for classifying and describing ecological communities, the bulk of the site would be characterized as Successional Shrubland. This ecological community is found on sites that have been cleared for farming, as in the case of this property, or other purposes such as logging. This community includes at least 50% of shrub cover, including gray dogwood, eastern red cedar, raspberries, and the invasive multiflora rose.

(2) Characterize Animals Expected or Observed on Site

Data were obtained from the current New York State Breeding Bird Atlas (2000-2005) for the site. The NYS Breeding Bird Atlas is a compilation of ornithological reporting from multiple sources within ten different ornithological regions of the state. Data is reported for blocks that measure 5x5 kilometers, or 3x3 miles. The site is located in Block 5456B, which reported a current total of 76 species. Of this reported total, the Atlas indicates that 35 species were confirmed, 23 are probable, and 18 are possible. Species that were actually observed or were considered probable on the Village View site over a period of several site visits in April, June, and October are indicated in the following table. This study considered not only the land within the Village, but also observed in the adjoining lands to the west and north within the Town.

NY State Bree	eding Bird Atlas 2000-200	5 Block 5465 B
Common Name	Scientific Name	New York Legal Status
		Destacted
Great Blue Heron	Ardea herodias	Protected
Green Heron	Butorides virescens	Protected
Black Vulture	Coragyps atratus	Protected
Turkey Vulture	Cathartes aura	Protected
Canada Goose	Branta Canadensis	Game Species
Mallard Duck	Anas platyrhynchos	Game Species
Sharp-shinned Hawk	Accipiter striatus	Protected – Special Concern
Cooper's Hawk	Accipiter cooperii	Protected – Special Concern
Red-tailed Hawk	Buteo jamaicensis	Protected
Wild Turkev ¹	Meleagris gallopavo	Game species
Killdeer	Charadrius vociferous	Protected
American Woodcock	Scolopax minor	Game Species
Rock Pigeon	Columba livia	Unprotected
Mourning Dove	Zenaida macroura	Protected
Eastern Screech Owl	Scolopax minor	Protected
Great Horned Owl	Megascops asio	Protected
Chimney Swift	Chaetura pelagica	Protected
Ruby-throated Hummingbird	Archilochus colubris	Protected
Red-bellied Woodpecker	Melanerpes carolinus	Protected
Downy Woodpecker	Picoides pubescens	Protected
Hairy Woodpecker ¹	Picoides villosus	Protected
Northern Flicker ¹	Colaptes auratus	Protected
Pileated Woodpecker	Dryocopus pileatus	Protected
Eastern Wood Pewee	Contopus virens	Protected
Alder Elycatcher	Empidonax alnorum	Protected
Willow Elycatcher	Empidonax trailii	Protected
Least Elycatcher	Empidonax minimus	Protected
Eastern Phoebe	Savornis phoebe	Protected
Great Crested Elycatcher	Mviarchus crinitus	Protected
Eastern Kingbird	Tvrannus tvrannus	Protected

Table 11 Breeding Bird Atlas Data

NY State Breed	NY State Breeding Bird Atlas 2000-2005 Block 5465 B		
Common Name	Scientific Name	New York Legal Status	
Warbling Vireo	Vireo gilvus	Protected	
Red-eved Vireo	Vireo olivaceus	Protected	
Blue Jav ¹	Cvanocitta cristata	Protected	
American Crow ¹	Cornus Brachyrhynchos	Game species	
Fish Crow	Corvus ossifragus	Protected	
Tree Swallow	Tachycineta bicolor	Protected	
Northern Rough-winged Swallow	Stelaidoptervx serripennis	Protected	
Barn Swallow	Hirundo rustica	Protected	
Black Canned Chickadee ¹	Poecile atricapillus	Protected	
Tuffed Titmouse1	Baeolophus bicolor	Protected	
White Breasted Nuthatch	Sitta carolinensis	Protected	
Carolina Wren	Thrvothorus Iudovicianus	Protected	
House Wren	Troglodytes aedon	Protected	
Fastern Bluebird	Silaia sialis	Protected	
Veen	Catharus fuscescens	Protected	
Wood Thrush	Hylochichla mustelina	Protected	
American Pohin ¹	Turdus migratorius	Protected	
Crev Cathird ¹	Dumetella carlinensis	Protected	
Gray Calbird	Mimus polyalottos	Protected	
Furancen Starling	Sturnus vulgaris	Unprotected	
European Stanning	Bombycilla cedrorum	Protected	
Cedar Waxwing	Vermiyora pinus	Protected	
Blue-winged Warbler	Vermivora pinus x V	Protected	
Brewster's Warbier	Crysoptera	1 10100101	
Yellow Warbler ¹	Dendroica petechia	Protected	
Black and White Warbler	Mniotilta varia	Protected	
Ovenbird	Seiurus aurocapilla	Protected	
Common Vellowthroat	Geothlypis trichas	Protected	
Scarlet Tanager	Piranga olivacea	Protected	
Eastern Towhee	Pipilo ervthrophthalmus	Protected	
Chipping Sparrow	Spizella passerine	Protected	
Field Sparrow ¹	Spizella pusilla	Protected	
Savannah Sparrow	Passervulus sandwichensis	Protected	
Song Sparrow ¹	Melospiza melodia	Protected	
Swamp Sparrow	Melospiza Georgiana	Protected	
Northern Cardinal	Cardinalis cardinalis	Protected	
Rose-breasted Grosbeak	Pheucticus Iodovicianus	Protected	
Indigo Bunting	Passerina cyanea	Protected	
Red-winged Blackbird	Agelaius phoeniceus	Protected	
Fastern Meadowlark	Sturnelia magna	Protected	
Common Grackle ¹	Quiscalus guiscula	Protected	
Brown Headed Cowbird	Molothrus ater	Protected	
Biltimore Oriole	Icterus galbula	Protected	
House Finch	Carpodacus mexicanus	Protected	
American Goldfinch	Carduelis tristis	Protected	
	Passer domesticus	Unprotected	
nouse spanow	1 door donrootodo	· · ·	

1 = observed on or adjacent to the site during one or more site visits

Not all of the birds listed in the current Breeding Bird Atlas would be expected to occur on the site. It must be noted that the Atlas blocks are quite large (3x3 miles), and thus they incorporate a variety of different habitats. Some birds have very extensive ranges, and may only be occasional visitors, and some listed birds would not be found in or around the site at all. Habitat change is a constant, even in the absence of manmade disturbances. For example, deer overbrowsing can seriously affect understory plant growth and thereby not only affect plant populations but also bird habitat. And the spread of non-native, invasive species such as garlic mustard and purple loosestrife affect the quality and productivity of bird habitat.

The listing of species as "protected" in the Atlas does not imply rarity, but simply refers to their management status under New York State laws. Game species are permitted to be harvested in accordance with rules established by the state, but protected species are not allowed to be taken. Unprotected species may be taken in any season, though a permit may be required. Species of special concern are subject to additional protection. Of the two species of special concern incorporated in the current Breeding Bird Atlas, neither was observed by sight or sound to be on or near the site during any site visit. It is possible that these hawks and other aerial predators make use of the site, as there is an abundance of small prey birds, but the Village portion of the site is in any case not suitable for breeding habitat for either accipeter, and the wooded portion within the Town is unlikely to be large enough nor free enough from disturbance to these birds to be used for breeding purposes.

The site habitat within the Village provides excellent food and cover for small songbirds, which are expected to breed on the site. The flickers and woodpeckers inhabit the wooded areas located outside the Village, and these also enjoy good breeding conditions. Because the wooded areas in the Town do suffer from heavy deer browse and are also proximate to existing Village lots where domestic animals would be expected to frequent the woodlot, species such as ovenbird or wood thrush would not be expected. Many of the listed bird species, such as house sparrow, house finch, grackle and others are well adapted to urban/suburban conditions and thrive in close proximity to humans.

Amphibians that were either observed or expected on or near the site include American toad (adult) and Wood frog (adult). Probable reptiles and amphibians that might be expected on the site are listed below:

Common Name	Scientific Name	
American Toad ¹	Bufo americanus	
Black Bat Snake	Elaphe obsolete obsolete	
Eastern Garter Snake	Thamnophis sirtalis	
Fowler's Toad	Bufo woodhousei	
Five-lined Skink	Eumeces fasciatus	
Northern Black Racer	Coluber constrictor	
Northern Grey Tree Frog	Hyla versicolor	

Table 12 Expected or Observed Reptiles and Amphibians

Northern Two Lined Salamander	Eurycea bislineata
Red Spotted Newt	Notophthalmus viridescens
Slimy Salamander	Plethedon glutinosus
Spring peeper	Hyla crucifer
Wood Frog ¹	Rana sylvatica

1 = observed on or adjacent to the site during one or more site visits

Fish were not observed to be present in the stream on the site.

Mammals that were either observed or expected on or near the site include deer. As noted above, the site shows substantial evidence of deer overbrowsing in the wooded areas of the Town. Observed or probable mammalian species that might be expected on the site are listed below:

Common Name	Scientific Name
Deer Mouse	Promyscus maniculatus
Eastern Chipmunk ¹	Tamias striatus
Eastern Gray Squirrel ¹	Sciurus carolinensis
Eastern Cottontail Rabbit	Sylvilagus floridanus
Eastern Coyote	Canis latrans
House mouse	Mus musculus
Little Brown Bat	Myotis lucifugus
Meadow Vole	Microtus pennsylvanica
Opossum	Didelphis virginiana
Raccoon	Procyon lotor
Red Fox	Vulpes vulpes
Shrews (various)	Sorex spp
Starnose mole	Condylura cristata
Striped Skunk	Mephitis mephitis
White Tailed Deer ¹	Odocoilius virginiana
White-footed Mouse	Peromyscus leucopus
Woodchuck ¹	Marmax marmota

Table 13 Expected or Observed Mammalian Species

1 = observed on or adjacent to the site during one or more site visits

Special consideration was given to the possibility of the Indiana bat (Myotis sodalis) being on or near the site. Two different endangered species requests were sent to NYS DEC (see Correspondence) and the second, more recent request indicated the possibility of the Indiana bat being in the site vicinity. It is considered unlikely that this site provides suitable summer habitat for maternity colonies of Indiana bat, either within the Village portion or the adjoining lands within the Town. The wooded lands lack large trees with loose bark such as shagbark hickory or black locust as would be suitable for this species roosting needs during summer. There is no question that the site does not harbor a winter hibernaculum for Indiana bats, which seek out caves and abandoned mine shafts.

2. Impacts.

a) Loss of habitat

Virtually the entire site, or 17.48 acres out of 20.3 acres, will be disturbed during construction, either for clearing, road construction, construction of the stormwater management basins, or for the lots. A small area of woodland between the stream and the Locust/Woodside intersection will be left undisturbed. The existing successional shrubland will be eliminated. This will create a temporary disturbance, as the small mammals and songbirds dominating the site will relocate to other areas during construction. However, the replacement vegetation and the new residential yards are expected to provide congenial habitat once the site vegetation becomes established. As noted above, the wildlife that is currently found on the site is generally well adapted to human contact and tolerant of disturbed habitats.

This is particularly true of the birds and small mammals currently within the Village component of the site. Because there is a large reservoir of undeveloped land adjacent to the site within the Town, with comparable shrubland existing on the land north of the site within the Town, it is not expected to create a significant harmful impact on the site's existing wildlife in the short or long term.

b) Change of Habitat, increase in Nuisance Species

The site is already well populated with invasive plants. One of the dominant plants in the successional shrub area is the ubiquitous multiflora rose, which is well adapted to be spread both vegetatively and by the seeds dispersed by birds. The sponsor considers that it will be an improvement to the site to eliminate the invasive shrub growth and to replace it with vegetation comparable to other nearby Village lots, which will still provide food and shelter suited to the fauna currently on the site.

c) Degradation of Wetlands and Watercourses

The incorporation of siltation and erosion control measures during construction will minimize the possibility for degradation of wetlands and water courses, outside of the direct disturbances that are part of the plan.

3. Mitigation Measures

The incorporation of siltation and erosion control measures during construction will minimize the possibility for degradation of wetlands and water courses, outside of the minor direct disturbances that are part of the plan. A Stormwater Pollution Prevention Plan has been prepared and is an integral part of the plans.

It is preferable for land clearing to take place outside of nesting season, ideally in late winter, in order to minimize disturbance to breeding thicket birds.

Street tree plantings and stormwater management pond plantings are provided for, and will help to re-establish the site with native plant materials. The pond planting

schedule is set forth on Sheet 9 of the subdivision plans. The plans incorporate cattail, hardstem and softstem bulrushes in the shallow water benches, cattail, switchgrass and various sedges in the shoreline fringe, and switchgrass, silky dogwood, and sycamore in the riparian fringe zone. The upland slopes will be established with permanent seeding measures as set forth on sheet 10 of the subdivision plans. This plan sets forth a list of different seeding mixtures and application rates for different purposes, such as planting moderate to steep slopes and low maintenance areas, lawns, droughty areas, and both shady dry and shady wet sites.

K. Traffic and Transportation:

- 1. Existing Conditions.
 - a) Existing Road Network

Access to the site comes from New York State Route 17A, Locust Street, Grand Street, Woodside Drive and Crescent Avenue. These roads are shown in the following Traffic Figure 1 and described as follows:

- NYS Route 17A is a two-lane state highway which extends from NYS Route 17 in the Village of Goshen and continues in a southerly direction through the Town of Goshen and the Village of Florida where it operates as a combined Route with NYS Route 94. NYS Route 17A continues into the Town of Warwick and the Village of Warwick. In the Village of Warwick, the speed limit is 30 mph and the roadway generally consists of one lane in each direction. In the study area, Locust Street and Grand Street both intersect with NYS Route 17A at "stop" sign controlled "T" intersections.
- Locust Street is a two lane roadway which originates at a "stop" sign controlled "T" intersection with NYS Route 17A. Continuing west, Locust Street intersects with Elizabeth Street, Woodside Drive, and Valley View Circle within the Village before continuing as Sleepy Valley Road in the Town of Warwick.
- Grand Street is a two-lane roadway which originates at a "stop" sign controlled "T" intersection with NYS Route 17A. Located in the vicinity of this intersection is Saint Anthony's Community Hospital. Grand Street continues in a westerly direction intersecting with Woodside Drive and Crescent Avenue which provides access to other residential areas. Continuing west, Grand Street continues as Pine Island Turnpike (County Route 1B).
- Woodside Drive is a two-lane Village road which intersects with Locust Street at a "stop" sign controlled intersection; the Locust Street southbound approach is controlled by a "yield" sign, and the Locust Street

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Appendix G

Traffic Study Appendix

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APPENDIX G-1 Site Plan Analyzed for Traffic Study

Village View Subdivision Village of Warwick, New York This side of the page left intentionally blank.


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Appendix G-2 Turning Movement Counts

Village View Subdivision Village of Warwick, New York This side of the page left intentionally blank.



www.TSTData.com 184 Baker Rd

Warwick, NY Locust Street @ Woodside Drive Thursday, February 1, 2018 Location: 41 270888, -74,358962

Coatesville, Pennsylvania, United States 19320 610-466-1469 Serving Transportation Professionals Since 1995

Count Name: LOCUST STREET @ WOODSIDE DR Site Code: 02 Start Date: 02/01/2018 Page No: 1

Turning Movement Data

	1	I	LOCUST ST Westbound	Г			9 1010 w	OODSIDE I		u			LOCUST S	r r		1
Start Time	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App Total	Left	Thru	U-Turn	Peds	App. Total	Int, Total
7:00 AM	3	2	0	0	5	0	3	0	0	3	5	1	0	0	6	14
7:15 AM	2	0	0	0	2	0	1	0	0	1	1	4	0	0	5	8
7:30 AM	2	3	0	0	5	1	3	0	0	4	6	0	0	0	6	15
7:45 AM	1	2	0	0	3	0	2	0	0	2	2	0	0	0	2	7
Hourly Total	8	7	0	0	15	1	9	0	0	10	14	5	0	0	19	44
8:00 AM	2	3	0	0	5	0	2	0	0	2	11	0	0	0	11	18
8:15 AM	3	5	0	0	8	0	3	0	0	3	4	2	0	0	6	17
8:30 AM	1	1	0	0	2	1	1	0	0	2	4	3	0	0	7	11
8:45 AM	2	2	0	0	4	0	6	0	0	6	4	1	0	0	5	15
Hourly Total	8	11	0	0	19	1	12	0	0	13	23	6	0	0	29	61
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-			120	4	1.2		-				-			1.6	
Hourty Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	1	6	0	0	7	2	3	0	0	5	4	0	0	0	4	16
4:15 PM	7	8	0	0	15	2	0	0	0	2	8	1	0	0	9	26
4:30 PM	4	5	0	0	9	1	3	0	0	4	1	2	0	0	3	16
4:45 PM	4	6	0	0	10	2	5	0	0	7	1	2	0	0	3	20
Hourly Total	16	25	0	0	41	7	11	0	0	18	14	5	0	0	19	78
5:00 PM	8	9	0	0	17	5	4	0	0	9	2	2	0	0	4	30
5:15 PM	0	7	0	0	7	5	2	0	0	7	5	1	0	0	6	20
5:30 PM	10	4	0	0	14	0	1	0	1	1	7	0	0	0	7	22
5:45 PM	1	4	0	0	5	2	1	0	0	3	3	2	0	0	5	13
Hourly Total	19	24	0	0	43	12	8	0	1	20	17	5	0	0	22	85
Grand Total	51	67	0	0	118	21	40	0	1	61	68	21	0	0	89	268
Approach %	43.2	56.8	0.0	-		34.4	65 6	0.0	-		76.4	23 6	0.0			
Total %	19.0	25.0	0.0		44 0	7.8	14.9	0.0	4	22.8	25.4	7.8	00	14	33.2	12
Lights	47	63	0		110	20	38	0	100	58	68	21	0		89	257
% Lights	92.2	94.0		2	93.2	95.2	95.0	-	i den	95.1	100.0	100.0			100.0	95.9
Buses	4	2	0	~	6	0	0	0		0	0	0	0	2	0	6
% Buses	7.8	3.0			5.1	0.0	0.0	16	1.00	0.0	0.0	0.0			0,0	2.2
Trucks	0	2	0	12	2	1	2	0	-	3	0	0	0	4	0	5
% Trucks	0.0	3.0			1.7	4.8	5.0		- 21	4.9	0,0	0.0	-	÷	0.0	1.9
Bicycles on Crosswalk				0					0	3			1.	0	5	+
% Bicycles on Crosswalk		•		3		-	- 14		0.0		- 9	÷		4		
Pedestrians				0		5			1			+		0		
% Pedestrians	1	14		÷	×				100 0						*	

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Appendix H

Section 145-29 Residential Cluster Development from Village of Warwick Zoning Code This side of the page left intentionally blank.

TND developers remain responsible for ensuring that water and sewer service needs of the TND-O are adequate and shall construct needed facilities.

- b. Other arrangements which will provide for or reduce the cost of public services and facilities such as childcare, health care, elder services, disabled services, recreation, transportation or water conservation.
- c. Provisions of housing needs for diverse population groups. Special consideration may be given to the scheduling of developments that include attached units or apartments.
- d. Commitments already made in the development schedules for approved developments.
- e. Site design, which responds to, incorporates, and protects natural features such as vegetation, topography, watercourses and views, or which is designed to respond to the character of the neighborhood.

M. Ownership/Maintenance

- 1. Developments within a Traditional Neighborhood Design District may be in either single or multiple ownership. Units and/or lots may be leased or owned separately.
- 2. At the time of submission of a detailed Site Plan to the Planning Board for approval, the applicant shall be required to prepare and submit a written program for the maintenance of any commonly owned area, including open space and recreation areas, walkways, driveways, parking areas and other common utilities and facilities. This program shall fix the responsibility for the maintenance program on either the landlord or a home association, or a combination thereof, and shall demonstrate, to the satisfaction of the Planning Board and the Village Attorney, how such responsibility will be legally bound and enforceable. If authorized and approved by the Village Board, community areas may be dedicated to the Village by the applicant.
- 3. In the case of multiple ownership of land or buildings, including single-family homes and condominium or cooperative ownership of apartments or townhouses, a homeowners' association shall be formed. Membership in this association shall be required for all owners of dwelling units within the development, and the association shall be responsible for the maintenance program. Where the development is a combination of multiple ownership and leased units, the landlord shall be a member of the homeowners' association with maintenance responsibilities proportional to the number of units which he or she owns.

145-29 Residential Cluster Development.

A. Purposes. The following regulations are intended to apply to land existing within the Village and residentially zoned. Land which is annexed into the Annexation District (AD)

shall be subject to Section 27 herein. A subdivision is considered a cluster development when lots and dwelling units are clustered closer together than otherwise permissible in a conventional subdivision and where open space is created on the remainder of the property. Cluster developments are authorized under § 7-738 of New York State Village Law, are encouraged, and where appropriate required, herein. The purposes of residential cluster developments are as follows:

- 1. To provide greater economy, efficiency and convenience in the siting of services and infrastructure, including the opportunity to reduce road lengths, utility runs, and the amount of paving required;
- 2. To conserve important unique and sensitive natural features such as steep slopes, floodplains, stream corridors, and wetlands by permanently setting them aside from development;
- 3. To provide multiple options for landowners to minimize impacts on environmental resources and natural or cultural features such as mature woodlands, hedgerows and tree lines, critical wildlife habitats, historic buildings and sites, and fieldstone walls;
- 4. To create neighborhoods with a traditional Village character as discussed in the Village's Comprehensive Plan;
- 5. To provide for a balanced range of lot sizes, building densities, and housing choices to accommodate a variety of age and income groups and residential preferences, so that Warwick's population diversity may be maintained;
- 6. To implement policies to conserve a variety of irreplaceable and environmentally sensitive resource lands as set forth in the Village Comprehensive Plan, including provisions to create a greenway trail system and other areas for active or passive recreational use for the benefit of present and future residents;
- 7. To conserve scenic views;
- 8. To promote development in harmony with the goals and objectives of the Village Comprehensive Plan; and
- 9. To mitigate identified environmental impacts under the State Environmental Quality Review Act (SEQR).
- **B.** Authorization. Authorization is hereby granted to the Planning Board to modify applicable provisions of this Zoning Law as to lot size, lot width, depth, yard, and other applicable requirements of the Zoning Law, Subdivision Regulations and Street Specifications, as well as type of residential use, subject to the purposes, standards and procedures contained herein, so as to accommodate Cluster Developments. Prior to filing a formal application for approval of a subdivision, the applicant shall participate in a pre-application conference. The applicant shall make a deposit, in accordance with the Village's Fee Schedule, sufficient to cover the pre-application expenses required for review by the Village's professional engineer, planner and attorney.

The Planning Board may require clustering where it finds any one (1) of the following elements present, as determined through review of an Existing Resources Map and Site

Analysis Plan as described herein, justifying conservation of natural, cultural or historic resources, scenic features, or preservation of neighborhood character.

- 1. Slopes: slopes of fifteen percent (15%) or greater on twenty-five percent (25%) or more of the property.
- 2. Water resources: wetlands, aquifer and aquifer recharge areas, municipal water supply watershed areas, flood-prone areas as shown on Federal Emergency Management Agency maps, or New York State Protected Streams.
- 3. Agricultural lands: lands within 2,000 feet of a New York State certified Agricultural District.
- 4. Important Environmental Areas. Lands within or contiguous to areas identified by the Metropolitan Conservation Alliance in the Southern Wallkill Biodiversity Plan (available for the Office of the Village Clerk), areas identified as a Critical Environmental Area designated pursuant to Article 8 of the Environmental Conservation Law or other areas identified by a government agency as important for conservation purposes.
- 5. Designated open space areas: lands contiguous to publicly owned or designated open space areas or privately owned designated natural areas.
- 6. Historic structures and sites: historic structures or areas of national, state or local importance.
- 7. Scenic Viewsheds and Special Features: sites bordering designated State, County, Village or Village Scenic Roads, or other special features identified in the Village Comprehensive Plan.
- 8. Trails: existing trails, bikeways, and pedestrian routes of Village, Town, County or State significance.
- 9. Recreation: lakes, ponds or other significant recreational areas, or opportunities or sites designated in the Village Comprehensive Plan.
- 10. Applicant Request: on lands where the applicant has requested approval of a Cluster Development.

The Planning Board shall require cluster development where it finds any one (1) of the following elements present:

- Significant natural areas and features: areas with rare vegetation, significant habitats, or habitats of endangered, threatened or special concern species as determined by the New York Department of Environmental Conservation (Natural Heritage Program) or the Metropolitan Conservation Alliance's Southern Wallkill Biodiversity Plan, mature forests over 100 years old, locally important vegetation (such as trees over 24" in diameter at breast height), or unique natural or geological formations.
- 2. Gateway locations as identified in the Village Comprehensive Plan.

C. Permitted, accessory and special permit uses:

Village of Warwick Zoning Law

- Permitted, accessory and special permit uses within a cluster development shall be the same as those otherwise allowed in the zoning district in which the development is located. As an alternative to single-family detached dwellings, two-family, townhouse and multi-family units are also permitted in cluster developments provided common areas are in common or cooperative ownership and subject to review by the Village Attorney. A maximum of 10% of the total number of proposed units may be apartments. A maximum of 25% of the total number of proposed units may be townhouses or twofamily units.
- 2. Open space land as defined in § 145-29.J.
- **D. Density.** Density shall initially be established based on the permitted number of dwelling units that would be permitted if the land were subdivided into lots fully conforming to the minimum lot size and density requirements of this chapter applicable to the district or districts in which such land is situated and conforming to all other requirements of the Village of Warwick Code. To determine density, the applicant shall submit a Yield Plan, designed so that no waivers from any provision of the Village of Warwick Code shall be necessary and meeting the following requirements:
 - 1. Yield Plans shall be prepared as a conceptual sketch plan in accordance with the minimum lot sizes and other development standards for the Zoning district involved.
 - 2. Yield plans shall show proposed lots, streets, rights-of-way, and other pertinent features.
 - 3. The yield subdivision plans shall be realistic and must not show potential house sites or streets in areas that would not ordinarily be legally permitted in a conventional subdivision. All minimum front, side and rear yard requirements must be satisfied by measurement wholly on dry land, except to the extent which may be permitted by any other section of this Zoning Law.
 - 4. Once initial density is established, the total number of permitted dwelling units may be increased to the maximum number of units that will fit on a parcel while maintaining all setbacks required herein and maintaining a minimum lot area of 10,000 square feet. Additional units over the number which was established by the Yield Plan shall be subject to a Special Use Permit of the Village Board and shall be subject to a fee established by the Village Board as provided in the Village Schedule of Fees. All payments shall be made prior to the signing of the final subdivision plat.
- E. Cluster development design process. The following steps shall constitute the design process for a cluster subdivision:
 - 1. Sketch Plan. A Sketch Plan shall be submitted by the applicant as a diagrammatic basis for informal discussions with the Planning Board regarding the design of a proposed subdivision or land development. The purpose of a sketch plan is to facilitate an expedient review of proposed new subdivisions in conformance with the Village Zoning Law and Comprehensive Plan. Sketch Plan submission is a way to help applicants and Planning Board members develop a better understanding of the property and to help establish an overall design approach that respects its special or noteworthy features and to

establish the density permitted under the Zoning Law. To provide a full understanding of the site's potential and to facilitate the most effective exchange with the Planning Board, the Sketch Plan shall include the information listed below.

a. The information required by the Village Subdivision Regulations;

b. 100-year floodplain limits, and approximate location of State and/or Federal wetlands, if any;

c. Topographical and physical features, including existing structures, wooded areas, hedgerows and other significant vegetation, steep slopes (over 15%), soil types, ponds, streams within two hundred (200) feet of the tract, and existing rights-of-way and easements;

d. Schematic layout indicating a general concept for land conservation and development ("bubble" format is acceptable for this delineation of conservation areas); and

e. In the case of land development plans, proposed general layout, including building locations, parking lots, and open spaces.

f. Site Context Map. A map showing the location of the proposed subdivision within its neighborhood context shall be submitted. For all sites, such maps shall be at a scale not less than 1"= 1000', and shall show the relationship of the subject property to natural and man-made features existing within 2,000 feet of the site. The features that shall be shown on Site Context Maps include topography and streams (from USGS maps), State and/or Federal wetlands, woodlands over one-half acre in area (from aerial photographs), ridgelines, public roads and trails, utility easements and rights of way, public land, and land protected under conservation easements.

- 2. Cluster plan documents. A preliminary Cluster development plan shall consist of and be prepared in accordance with the following requirements, which are designed to supplement and, where appropriate, replace the requirements of the Village of Warwick Subdivision Regulations:
 - a. Preliminary Plan. The submission requirements for a Preliminary Plan include the requirements for Sketch Plans listed in § 145-29.E(1) above;
 - b. The submission requirements of the Subdivision Regulations, and;
 - c. Existing Resources and Site Analysis Plan. For all Cluster developments (except those in which all proposed lots are to be ten or more acres in area), an Existing Resource Plan shall be prepared to provide the developer and the Planning Board with a comprehensive analysis of existing conditions, on the proposed development site.

The Planning Board shall review the Plan to assess its accuracy and thoroughness. Unless otherwise specified by the Planning Board, such plans shall be prepared at the scale of 1"=100' or 1"=200', whichever would fit best on a single standard size sheet. The following information shall be included in this Plan:

(1) Topography, the contour lines of which shall be at two-foot intervals, determined by photogrammetry (although 10-foot intervals are permissible beyond the parcel boundaries, interpolated from published USGS maps). Slopes greater than fifteen

February 17, 2009

percent (15%) shall be clearly indicated. Topography for major subdivisions shall be prepared by a professional land surveyor or professional engineer from an actual field survey of the site or from stereoscopic aerial photography and shall be coordinated with official USGS benchmarks.

- (2) The location and delineation of ponds, streams, and natural drainage swales as well as the 100-year floodplains and wetlands, as defined by the State of New York and the US Army Corps of Engineers.
- (3) Vegetative cover conditions on the property according to general cover type including cultivated land, permanent grass land, old field, hedgerow, woodland and wetland, isolated trees with a caliper in excess of twelve (12) inches, the actual canopy line of existing trees and woodlands. Vegetative types shall be described by plant community, relative age and condition.
- (4) Soil series and types, as mapped by the U.S. Department of Agriculture, Natural Resources Conservation Service in the Orange County Soil Survey.
- (5) Ridge lines and watershed boundaries shall be identified, if any exist.
- (6) Public roads, public parks, public forests, and other designated open space areas within 1,000 feet of the project site from which the project site may be visible.
- (7) Geologic formations on the proposed development parcel, based on available published information or more detailed data obtained by the applicant.
- (8) The location and dimensions of all existing streets, roads, buildings, utilities and other man-made improvements on the property.
- (9) Locations of all historically significant sites or structures on the tract and on any abutting tract.
- (10) Locations of trails that have been in public use (pedestrian, equestrian, bicycle, etc.) or proposed in the Village Comprehensive Plan within 500 feet of the site.
- (11) All easements and other encumbrances of property which are or have been filed of record with the Orange County Clerk's Office shall be shown on the plan.

3. Four-Step Design Process for Cluster Developments. All sketch plans shall include Step 1 of the four step design process. All preliminary plans shall include documentation of a four-step design process in determining the layout of proposed open space lands, house sites, streets and lot lines, as described below.



Figure 11a. Primary Conservation Areas

a. Step 1: Delineation of Open Space Lands. Proposed open space lands shall be designated using the Existing Resources Plan as a base map and the Subdivision Regulations, dealing with Resource Conservation and Greenway Delineation Standards. The Village's Comprehensive Plan shall also be considered. Primary Conservation Areas shall be delineated comprising floodplains, wetlands and slopes over twenty-five percent (25%) as shown by example on Figure 11a. Secondary Conservation Areas shall be delineated comprising mature forested areas, significant habitat areas and historic or archeological sensitive sites. The applicant shall prioritize natural and cultural resources on the tract in terms of their highest to least suitability for inclusion in the proposed open space, in consultation with the Planning Board after a site inspection, to create a prioritized list of resources to be conserved.

On the basis of those priorities and practical considerations given to the tract's configuration, its context in relation to resource areas on adjoining and neighboring properties, and the applicant's subdivision objectives, Secondary Conservation Areas shall also be delineated in Step 1 and may be used to meet the minimum area percentage requirements for open space lands. Calculations shall be provided indicating the applicant's compliance with the acreage requirements for open space areas on the tract. The result is shown on Figure 11b, potential development areas.



Figure 11b. Potential Development Areas

b. Step 2: Location of House Sites. Potential house sites shall be tentatively located (see Figure 12), using the proposed open space lands as a base map as well as other relevant data on the Existing Resources and Site Analysis Plan such as topography and soils. Dwelling units should generally be located not closer than 100 feet from Primary Conservation Areas and 50 feet from Secondary Conservation Areas, taking into consideration the potential negative impacts of residential development on such areas as well as the potential positive benefits of such locations to provide attractive views and visual settings for residences.



Figure 12. House Sites

- c. Step 3: Alignment of Streets. Upon designating the house sites, a street plan shall be designed to provide vehicular access to each house, complying with the standards identified herein and bearing a logical relationship to topographic conditions as illustrated in Figure 13. Impacts of the street plan on proposed open space lands shall be minimized, particularly with respect to crossing environmentally sensitive areas such as wetlands and traversing slopes exceeding 15%. Existing and future street connections are encouraged to eliminate the number of new cul-de-sacs to be maintained by the Village and to facilitate access to and from homes in different parts of the tract and adjoining parcels. Cul-de-sacs are appropriate only when they support greater open space conservation or provide pedestrian linkages.
- d. Step 4: Drawing In the Lot Lines. Upon completion of the preceding three steps, lot lines are drawn as required to delineate the boundaries of individual residential lots see Figure 14.



Figure 13. Aligning Streets and Trails



Figure 14. Drawing the Lot Lines

e. Where traditional streetscapes and "terminal vistas" are of great importance, Steps Two and Three may be reversed, so that streets and squares are located during the second step, and house sites are located immediately thereafter. The first step is to identify open space lands, including both Primary and Secondary Conservation Areas. **F. Dimensional Standards.** The Planning Board shall have the discretion to modify the applicable bulk and dimensional standards from that which is required in a conventional subdivision except that lots shall maintain the following minimum standards:

1. Minimum required open space: In all zoning districts, a cluster development must preserve twenty percent (20%) of the tract's developed acreage as open space land. Parking areas and roads shall not be included in the calculation of the minimum required open space.

2. Minimum lot width at building line: 50 feet.

3. Yard regulations: the builder or developer is urged to consider variations in the principal building position and orientation, but shall observe the following minimum standards:

Front Yard: 15 feet

Rear Yard: 25 feet

Side Yard: 10 feet separation for principal buildings.

4. Maximum Impervious coverage. No more than thirty five (35%) of any lot shall be covered with impervious surface.

5. Minimum lot size. The minimum lot size shall be ten thousand (10,000) square feet per single-family unit. Attached or townhouse style units shall be condominium, cooperative, or other acceptable ownership options. A minimum of 5,000 square feet per attached two-family, or apartment unit shall be provided.

G. Open space standards:

- 1. The required open space land may consist of a combination of Primary Conservation Areas and Secondary Conservation Areas as described above. The proposed subdivision design shall strictly minimize disturbance of these environmentally sensitive areas. Primary Conservation Areas shall be included in the required open space area to the greatest extent practical. The applicant shall also demonstrate that such features will be protected by the proposed subdivision plan. Secondary Conservation Areas include special features of the property that would ordinarily be overlooked or ignored during the design process such as significant habitat areas, mature forests, historic structures and sites and archeological sensitive areas. Secondary Conservation Areas shall be included in the required open space area to the greatest extent practical such that protecting these resources will, in the judgment of the Planning Board, achieve the purposes of this section.
- 2. Open space lands shall be laid out in general accordance with the Village Comprehensive Plan to better enable an interconnected network of open space.
- 3. A recreational fee in lieu of land, as set forth in the Village's fee schedule, shall be imposed to accommodate the foreseeable recreational needs of the proposed subdivision's residents. Upon the recommendation of the Planning Board and where the Village Board of Trustees deems it appropriate for land to be deeded for

recreational purposes, up to ten percent (10%) of the total acreage may be subject to the Village's recreational land dedication requirement. Typically, this acreage will be used to provide potential connections within the Village's long-range trail network.

- 4. Active agricultural land with farm buildings may be used to meet the minimum required open space land when part of a parent parcel. Access to open space land used for agriculture may be appropriately restricted for public safety and to prevent interference with agricultural operations. Land used for agricultural purposes shall be buffered from residential uses, either bordering or within the tract, by a minimum setback of at least 75 feet and if practical three hundred (300) feet deep. No clearing of trees or understory growth shall be permitted in this setback (except as may be necessary for street or trail construction). Where this buffer is unwooded, the Planning Board may require vegetative screening to be planted, or that it be managed to encourage natural forest succession through "no-mow" policies and the periodic removal of invasive alien plant and tree species.
- 5. Open space land should generally remain undivided and connect to areas of adjacent open space where applicable.
- 6. No portion of any house lot may be used for meeting the minimum required open space land unless encumbered with a conservation restriction.
- **H.** House lot standards. Development areas for the location of house lots include the necessary building envelope for each dwelling unit, constituting the remaining lands of the tract outside of the designated open space areas. House lots shall be designed in accordance with the following standards:
 - 1. House lots shall not encroach upon Primary Conservation Areas and their layout shall respect Secondary Conservation Areas.
 - 2. All new dwellings shall meet the following setback requirements to the greatest extent practicable:
 - a. From agricultural lands either bordering or within the tract 75 feet
 - b. From buildings or barnyards housing livestock 300 feet
 - c. From active recreation areas such as courts or playing fields (not including tot lots) 150 feet

3. House lots shall, to the greatest extent practical, be accessed from interior streets, rather than from roads bordering the tract.

4. Dwellings should be generally orientated towards the street. Front setbacks should be similar to those in surrounding existing neighborhoods, but in no case should exceed 40 feet unless specifically authorized by the Planning Board.

5. Maximum lot development coverage shall remain that which is required for the particular use in the zone as shown the Table of Bulk Requirements in Section 145-41.

I. Streets and driveways.

- 1. Proposed streets shall meet the Village Street Specifications, unless access arrangements have been made in accordance with § 7-732 of New York State Village Law. New intersections with existing public roads shall be minimized. Although two access ways into and out of subdivisions containing twenty (20) or more dwellings are generally required for safety, proposals for more than two entrances onto public roads shall be discouraged if they would unnecessarily disrupt traffic flow or unduly impact the environment. Regardless of the street design employed, the applicant shall demonstrate and the Planning Board shall find that emergency services access is adequate for the number of dwellings proposed.
- 2. Straight segments connected by 90 degree and 135 degree bends are preferred.
- 3. The use of reverse curves should be considered for local access streets in Cluster developments in conjunction with long horizontal curve radii (at least 250 feet) and where traffic speeds will not exceed 25 mph.
- 4. Sidewalks shall be required on proposed streets and shall tie into the existing sidewalk system of the Village where applicable. Street trees shall be required in accordance with Chapter 131 of the Village Code. Depending upon the open or wooded character of the parcel the Planning Board may waive street tree requirements.
- J. Permanent protection of open space. Conservation easements are the preferred method to protect open space under Article 49 of the New York State Environmental Conservation Law. In all cases, the permanent preservation of such open space shall be legally assured to the satisfaction of the Planning Board and Village Attorney and the Village Board shall be granted third party enforcement rights to enforce the terms of the conservation restriction. The following regulations shall apply:

1. If a conservation easements is proposed, the conservation easement shall be titled to a private conservation organization provided that:

a. The conservation organization is acceptable to the Village and is a bona fide conservation organization as defined in Article 49 of the New York State Environmental Conservation Law;

b. The conveyance contains appropriate provisions for proper reverter or retransfer in the event that the conservation organization becomes unwilling or unable to continue carrying out its functions; and

c. A maintenance agreement acceptable to the Village is established between the owner and the conservation organization to insure perpetual maintenance of the open space.

- 2. The conservation restriction shall permanently restrict the open space from future subdivision, shall define the range of permitted activities, and shall give the Village the ability to enforce these restrictions. Under no circumstances shall any development be permitted in the open space at any time, except for the following uses:
 - a. Conservation of open land in its natural state (for example, woodland, fallow field, or managed meadow). The clearing of woodland shall generally be prohibited, except as

necessary to create trails and active recreation facilities. The determination of necessity shall lie with the Planning Board.

- b. Game preserve, wildlife sanctuary, or other similar conservation use.
- c. Woodlots, arboreta, agriculture and silviculture in keeping with established standards for best management practices, selective harvesting, and sustained-yield forestry.
- d. Neighborhood open space uses such as village greens, commons, picnic areas, community gardens, trails, and similar low-impact passive recreational uses specifically excluding motorized off-road vehicles, rifle ranges, and other uses similar in character and potential impact as determined by the Planning Board.
- e. Active non-commercial recreation areas, such as playing fields, playgrounds, and courts, provided such areas do not consume more than half of the minimum required open space land or five acres, whichever is less. Playing fields, playgrounds, and courts shall not be located within 150 feet of abutting properties nor shall such facilities be equipped with lighting. Parking facilities for the same shall also be permitted, and they shall generally be gravel-surfaced, unlighted, properly drained, provide safe ingress and egress, and contain no more than ten parking spaces. Such recreation uses may be a public park or recreation area owned and operated by a public or private nonprofit agency, but shall not include storage of materials, trucking or repair facilities, or private or municipal sanitary landfills.
- f. Stormwater detention areas designed, landscaped, and available for use as an integral part of the open space area.
- g. Easements for drainage; access, sewer or water lines, or other public purposes.
- h. Underground utility rights-of-way. Above ground utility and street rights-of-way may traverse conservation areas but shall not count toward the minimum required open space land.
- K. Ownership of open space land and common facilities. The following methods may be used, either individually or in combination, for ownership of open space land (exclusive of its conservation easement) and common facilities. Open space trails may be initially offered for dedication to the Village. Open space land and common facilities shall not be transferred to another entity except for transfer to another method of ownership permitted under this section. Ownership methods shall conform to the following:
 - 1. Fee simple dedication to the Village. The Village may, but shall not be required to, accept any portion of the open space land and common facilities, provided that:
 - a. There is no substantial cost of acquisition to the Village; and
 - b. The Village agrees to and has access to maintain such facilities; and
 - c. Such facilities shall be accessible for public use.
 - 2. Homeowners" Association. Open space land and common facilities may be held in common ownership by a homeowners" association, subject to all of the provisions for

homeowners" associations set forth in New York State regulations. In addition, the following regulations shall be met:

a. The applicant shall provide the Village with a description of the organization of the proposed association, including its by-laws, and all documents governing ownership, maintenance, and use restrictions for common facilities.

b. The proposed association shall be established by the owner or applicant and shall be operating (with financial subsidization by the owner or applicant, if necessary) before the sale of any dwelling units in the development.

c. Membership in the association shall be mandatory for each property owner within the subdivision and successive owners in title with voting rights of one vote per lot or unit, and the subdivider's control, therefore, passing to the individual lot/unit owners on sale of the majority of the lots or units.

d. The association shall be responsible for liability insurance, local taxes and maintenance of open space land, recreational facilities and other commonly held facilities.

e. The by-laws shall confer legal authority on the association to place a lien on the real property of any member who falls delinquent in his or her dues. Such dues shall be paid with the accrued interest before the lien may be lifted.

f. Written notice of any proposed transfer of common facilities by the association or the assumption of maintenance for common facilities must be given to all members of the association and to the Village no less than thirty (30) days prior to such event.

g. The association shall have adequate resources to administer, maintain, and operate such common facilities.

- 3. Non-common private ownership. The required open space land may be included within one or more large "conservancy lots" provided the open space is permanently restricted from future development.
- 4. Other instruments, such as deed restriction acceptable to the Village Attorney, may also be used to protect open space as may be proposed by the applicant.

L. Maintenance. Unless otherwise agreed to by the Village Board, the cost and responsibility of maintaining common open space and facilities shall be borne by the homeowners" association, conservation organization, private owner, or, in the case of open space and facilities deeded to the Village, the municipality.

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Appendix I

Phase II Archeological Study for Valley View Property

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MANAGEMENT SUMMARY

PR#: not known

Involved agencies: Town of Warwick

Phase: Phase II

Location: Village of Warwick Town of Warwick Orange County

Site/Survey Area: At Feature 5: Length: about 51 feet (15.5 meters) north-south Width: about 19.5 feet (5.9m) east-west.

Surveyed area: Length: about 110 feet (33.5m) north-south Width: about 40 (12.1m) east-west. Acres Surveyed: .11 acres (.044 hectares) -actual Site size: 60 ft. (18.2m) north-south by 40ft. (12.1m) east-west or .06 acres(.024h)

USGS: Warwick, NY

<u>Survey overview:</u> ST no. & interval: 35 ST's at 10 ft. (3m) intervals TU no. & size: 6 one meter square TU's Size of freshly plowed area: na Surface survey transect interval: 10ft (3m)

Results:

FT 5 not eligible (artifact mixing, mottled soils) FT 4 not eligible (no artifacts associated)

Results of Architectural Survey: No. Of buildings/structures/cemeteries in project area: 2 (FT's 5 & 4) No. Of buildings/structures/cemeteries adjacent to project area: 1 (across road) No. Of previously determined NR listed or eligible buildings/structures/cemeteries/districts: none

No. Of identified eligible buildings/structures/cemeteries/districts: none

Authors:

Alfred G. Cammisa, M.A./RPA, Thomas Amorosi, PhD, Felicia Cammisa, B.A., Joseph Diamond, PhD, and Alexander Padilla, B.A.

Date of Report: Report completed June, 2007

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INTRODUCTION

Between January 25 and May 16, 2007, TRACKER-Archaeology Services, Inc. conducted a Phase II intensive testing investigation at the Feature 5 Site for the proposed Village View subdivision in Warwick Village, Town of Warwick, Orange County, New York. The purpose of the Phase II investigation was to interpret the site and to determine its significance for inclusion to State or National Historic Registers. Further, the Phase II intensive testing would demarcate any activity areas and feature potential by the inclusion of close interval shovel testing and exploratory excavation units.

Previous work on the project area included a Phase IA documentary study and IB archaeological survey, completed April 2005 as part of a larger property. The Phase IB encountered 5 features. Features 1 and 5 were dry laid stone foundations, likely from the nineteenth century. Features 2 and 3 were cement, likely twentieth century items. Feature 4 was a stone foundation/wall with metal rings and chain close to FT 5. Recommendations were made to conduct a Phase II intensive testing at FT's 1 and 5 if they were to be adversely impacted (Cammisa 2005).

The Feature 5 historic Site is located adjacent to the west side of Locust Road and the east side of a stream and associated wetlands.

The entire property is approximately 25 acres, inclusive with wetlands and includes the FT 5 site, about.06 acres. The property as a whole is bounded on the east by Locust Street, on the south by Woodside Drive and private property, and on the remaining sides by private property. Feature 5 is specifically situated at the northeast corner of the property adjacent to Locust Street and FT 4. Since FT 4 was adjacent to FT 5, FT 4 was included in the Phase II work.

The Phase II investigation was completed by TRACKER-Archaeology Services, Inc. of Monroe, New York. Historic map acquisition, and all deed and census acquisition and explanation was conducted by Curtin Archaeological Consulting, Inc. Field work was conducted by Alfred Cammisa, R.P.A., Principal Investigator, Alexander Padilla, B.A. field director, Jean Cascardi, B.A., crew chief, and field technician, Jonathan Hanna, B.A. Artifact analysis by Joseph Diamond, PhD (glass, ceramic, metal, etc.), and Thomas Amorosi PhD (faunal). Report preparation was by Alfred Cammisa, Thomas Amorosi, Felicia Cammisa, B.A., Joseph Diamond, and Alexander Padilla. The work was performed for Garling Associates of Goshen, New York.

BACKGROUND RESEARCH

Environmental Setting

Geology:

The study area is located in the southeast portion of New York State in the south part of Orange County. This region of New York lies within the Ridge and Valley Physiographic Province. This province, also known as the Newer Appalachians, extends from Lake Champlain to Alabama. It passes as a narrow lowland belt between the New England Uplands (Taconic Mountains and Hudson Highlands) to the east and the Appalachian Plateau (Catskill and Shawangunk Mountains) and Adirondack Mountains to the west. The characteristic topography is a succession of parallel valleys and ridges trending roughly in a northeasterly direction. This is a region of sedimentary rocks which were easily eroded and subjected to folding or bedding of the rock layers (Schuberth 1968: cover map, 16-18; Isachsen et al 2000: 4, 53-54; New York-New Jersey Trail Conference 1998: cover map).

Soils and Topography:

Soils in the study area consist of:

Name	Soil Horizon Depth in(cm)	Color	Texture Inclusion	Slope %	Drainage	Landform
Mardin	Ap 0-8 (0- 20cm) B 8-15 (-38)	10YR4/3 10YR5/6	GrSiLo	0-8 & 8-15	well	glacial till
Alden	Ap 0-9 (0-23) B 9-19 (-48)	10YR5/1 10YR4/1	SiLo	0-3	poor	glacial till

(Olsson 1981: map #87, pgs. 12-13, 37-38, 84-85, 95).

Feature 5 itself is located on Mardin soils, however, the remainder of this site, which includes the artifact distribution around the feature, extends from Mardin to Alden soils.

The elevation on the property ranges from approximately 640 to 814 feet above mean sea level. The Feature 5 site is situated between 688 to 696 feet in elevation. Topography is steep sloped with terrain running downhill into wetlands.

Hydrology

An intermittent tributary of the Wawayanda Creek flows south along the eastern edge of the property, adjacent to the FT 5 historic site.

Wawayanda Creek flows south into the Pochuck Creek which flows north into the Wallkill River which flows north into the Hudson River.

Vegetation

The predominant forest community in this area was probably the Oak Hickory. This

forest is a nut producing forest with acorns and hickory nuts usually an obvious part of the leaf litter on the forest floor. The Oak Hickory Forest intermingles with virtually all other forest types. The northern extension of this forest community was also originally called the Oak-Chestnut forest, before the historic Chestnut blight (Kricher 1988:38, 57-60).

Prior to the intensive utilization of the area by Euro-American populations, the primary vegetation cover in the surrounding area probably consisted of northern red oak, black oak, scarlet oak, white oak, chestnut oak, pignut hickory, mockernut hickory, bitternut hickory, American chestnut, flowering dogwood, sassafras, hophornbeam, hackberry, and green hawthorn. The underbrush may have consisted of mountain laurel, highbush blueberry, lowbush blueberry, early lowbush blueberry, mapleleaf viburnum, and deerberry (Kricher 1988:57-60).

At the time of the Phase II investigations, the area surrounding FT 5 was wooded with white oak, sugar maple, gray birch, and other vegetation. FT 5 was covered with a cement slab/cap and the adjacent wetland area was grassy.

Historic Setting

Eighteenth Century

The early settlers in Warwick were mainly English by way of Connecticut, Massachusetts, and Long island (Eager 1847:422).

The Waoraneck Munsees living in Warwick had a large settlement a few hundred yards from the old Welling farm on Route 94 (Kings Highway). This group was known locally, or their village was known locally as the Mistucky. It was recorded that these Indians had an apple orchard. Their chief/headman was called Chuckhass in the early eighteenth century. Chuckhass was one of the twelve chiefs signing the Wawayanda Patent to release their territory (Hull 1996:9-10, 13; Ruttenber and Clarke 1881:568; Sanford 1903:427).

Most of the Village of Warwick is situated within land bought by Col. Beardsley from Benjamin Aske about 1746. He built a grist mill on Wawayanda Creek (also known as Warwick Creek) (Ruttenber 1888:577).

One of the earliest settlers in town was Daniel Burt who settled in 1746 on land north of the village to Bellvale. He lived in the forests for several years before selling his land to Thomas Welling (the same farm which had the Mistucky village on it) (Eager 1847:422).

Although Warwick Village was known as a locality since about 1719-1720, it was not settled until about 1764 when Daniel Burt built a house on his new property along Longhouse Creek. Francis Baird also built a stone tavern at this time. Between 1764 and 1776 the Town's population grew swiftly. The village was surrounded by a rich farming community (Ruttenber 1888:577; Eager 1847:425; Hull 1996:30-31).

Many of the Connecticut settlers were Baptists. In 1764 the Elder James Benedict, also originally from Connecticut, was asked to come to Warwick to preach. In 1765 Benedict came again to preach for the members of Warwick and this time he stayed. The Warwick Baptists organized in 1766. At this time meetings were held in members houses, including Daniel Burt. The members numbered 18 (Eager 1847:436; Ruttenber 1888:582; Hull 1996:68; Sayer 1998:93).

Nineteenth Century

The 1805 Warwick Valley map depicts the project property along Sleepy Valley Road/Locust Street. A structure is nearby but not on, or adjacent to, the

property to the north belonging to Joseph Benedict. Also, the Andrew Ackerman house is directly across the road (Figure 3).

In 1810 the Town's population increased to 3958 individuals with 30 houses and two churches. During 1810 to 1812, the Town witnessed a considerable amount of new church construction. In 1810 a new Baptist church was needed for the increase in the congregation (Ruttenber 1888:582; Hull 1996:31, 69).

The 1850 Sydney shows the study area along Sleepy Valley Road/Locust Street. The creek is also depicted. No structures are seen on, or adjacent to the property although the W. Penny house (formerly Ackerman) is across the road. The former Benedict house is no longer north of the project parcel, but rather, a J. Benedict Jr. building is across the road north of Penny's (Figure 4).

The backbone of Warwick's small industries, which had grown steadily since the last century, was based on its many mills located on fast running creeks, such as Wawayanda, Longhouse and Pochuck. The mills help cord wool, grind grain, and saw timber. The farming was largely dairy. However, orchards also produced apples and peaches, and onions, hay, and potatoes were also grown. Between 1862 to 1918 the milk boom was especially a boom to the farms in town. Mining was also conducted for iron ore at Sterling Mine/Iron Works. Other minerals mined were granite, mica, white and blue limestone (Hull 1996:145, 150, 162-163; Sanford 1903:431).

The 1863 Farm map shows the project area belonging to William Penny (56 acres). Penny's house is across Locust Street (Figure 5). Feature 5 is not depicted.

The 1875 Beers atlas now depicts Woodside Drive. A structure is on, or adjacent to, the study area and belongs to W.A. Benedict at the intersection of Woodside and Locust. The old Penny house across the street appears to be owned by J. Fitzgerald. This is part of the old Expense Lot(Figure 6).

Twentieth Century

The 1908 U.S.G.S. depicts the above mentioned Benedict structure adjacent to, the property and the old Penny building across Locust Street (Sleepy Valley Road) (Figure 7).

A deed search has turned up the following past owners of farm and FT 5. This appears to be the chain of ownership:

Date	Grantor	Grantee	Acreage	Sale Price	Deed liber:page
May 1 1788	John Delancey, John Zabriski and Robert Morris	David D. Ackerman	135	88 pounds, 17 shillings and sixpence	D:343
August 22 1839	John Ackerman	Stephen Vandervoort	62.5	Agreement	68:381

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September 4 1841	John E. Phillips (Master of Chancery)	John Ackerman	62.5	\$4,015.00	71:455
October 29 1841	James Benedict Jr. And Isabella his wife	William Penny	50	\$3,626.00	127:139
May 6 1861	James Benedict Jr. and Isabel his wife	William Penny	32 rods	\$25.00	207:47
April 1 1858	Charles L. And Julia A. Morehouse	William Penny	6.87	\$384.72	207:48
April 1 1871	William Penny and Phoebe his wife	James S. Fitzgerald	57.87	\$10,000.00	233:11
March 23 1921	Executors for Annie Fitzgerald	George Ryan	57.87	\$5750.00	609:445
June 3 1922	George and Elizabeth C. Ryan	May M. Wood	57.87	\$6000.00	622:46
June 3 1922	May M. Wood	George and Elizabeth C. Ryan	57.87	\$6000.00	622:48
September 6 1947	George and Elizabeth Ryan	Clifford Smith	24	\$100.00	1058:600
May 1 1953	Elizabeth Ryan	Jacob G. Pennings and Johanna B. Pennings		φ. 	1266:49
May 17 1968	Jacob G. and Johanna B. Pennings	Kurt and Mathilde Diedrich		\$1.00	1803:445
March 19 1971	Kurt and Mathilde Diedrich	Dirk J. and John Vander Sterre	5.18	\$1.00	1868:1106

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November 9 1972	Jacob G. and Johanna B. Pennings	John and Dirk J. Vander Sterre	57.25	\$1.00	1925:323
September 10 1984	Warwick Home Builders Inc.	Ralph Freddolino	-	\$10.00	2296:465
September 4 2001	Ralph Freddolino	Village View Estates LLC.		\$10.00	5633:41

Deed Tracking for Village View:

In the latter part of the 18th century the King of England was granting 1,000 acre tracts to noblemen, army officers and land speculators (Baldwin 2005:1). A deed linked to the project area was recorded in the Orange County Clerk's Office in 1788 and named the owner of the parcel on which the current project area is located as David D. Ackerman(OCC DB D:343). John Delancey, John Zabriski and Robert Morris(most likely land speculators) sold a 135 acre parcel located in Orange County to David D. Ackerman for 88 pounds, 17 shillings and sixpence. Due to a discrepancy of dates between the date of the deed(1775) and the date the deed recorded(1788), it is not clear which year this deed was written. However, it was most likely written before the conclusion of the Revolutionary War because the King of England is mentioned a number of times within the document. According to the deed, certain items from the land are reserved for "our Sovereign Lord the King, his heirs and successors forever," including "mines of gold and silver and also all white and other sort of pine trees fit for masts of the growth of 24 inches diameter and upwards at 12 inches from the earth for masts for the Royal Navy to have and to hold ... (OCC DB D:343) ." As evidenced here, although the deed was recorded in the Orange County Clerk's Office in 1788 it was most likely written earlier, as this is standard language in Colonial era deeds.

Sometime between 1788 and 1839, David D. Ackerman died and the land passed into the hands of his son, John Ackerman. Although the deed could not be found for this transaction the land was most likely either sold to John Ackerman by his father or left to him in David Ackerman's will. On August 22, 1839, John Ackerman made a lease agreement with Stephen Vandervoort to run the farm for the term of nine years and seven months (OCC DB 68:381). There must have been a problem with this agreement because two years later John Ackerman was named as the grantee buying this land back at public sale. There may have been a mortgage held on part of the land by James Benedict Jr. at this time because he was named as the complainant in the case, which was heard by John E. Phillips, Master of Chancery. John E. Phillips names John Ackerman as the full owner of the public sale, presumably nullifying the original lease agreement with Stephen Vandervoort.

In October of 1841, James Benedict Jr. Sells a portion of the Ackerman farm to William Penny. It is unclear how James Benedict Jr. acquired the land from John Ackerman but the deed states explicitly that it refers to "a part of the land of which David Ackerman deceased died seized and likewise being a part of the land recently deeded by John E. Phillips a Master in Chancery to John Ackerman and since by the said John Ackerman to James Benedict Junior (OCC DB 127:139). In this deed, William Penny purchased 50 acres of land for \$3,626.00 from James

Benedict Jr. and his wife Isabella. It should be noted here that William Penny's wife Phoebe was the daughter of James Benedict Jr. William Penny continues to own the parcel for approximately thirty years. In 1858, he adds to his parcel by purchasing and additional 6.87 acres from Charles L. and Julia A. Morehouse(owners of a neighboring farm)(OCC DB 207:48). Again, in 1861 he increases his land by purchasing 32 rods of land from James Benedict Jr. and his wife Isabella(OCC DB 207:47). These sub-parcels added together contains 57.87 acres of land.

On April 1, 1871, William and Phoebe Penny sold their 57.87 acre farm to James S. Fitzgerald for \$10,000.00(OCC DB 233:11). James S. Fitzgerald and his wife Anna continue to own the farm for approximately fifty years. Sometime before 1910, James S. Fitzgerald died and left the parcel to his wife Anna who continues to operate the farm. In 1921 the executors of Anna Fitzgerald's Will sold the farm to George and Elizabeth Ryan(OCC DB 609:445). The following year George and Elizabeth sold the farm to May M. Wood and on the same day May M. Wood sold the exact same parcel back to the Ryans for the same exact amount of money(OCC DB 622:48). It is unclear why this transaction took place.

George and Elizabeth Ryan owned and operated the farm into the late 1940's, when they began selling off pieces of the parcel. In 1947, the Ryans sold 24 acres of land to Clifford Smith(OCC DB 1058:600). On May 2, 1953, Elizabeth Ryan sold the rest of the parcel to Jacob G. and Johanna B. Pennings(OCC DB 1266:49). The Pennings owned the parcel until 1968 when they sold a piece (5.18 acres) of the land to Kurt and Mathilde Diedrich(OCC DB 1803:445). The Diedrichs sold the land in 1971 to Dirk J. Vander Sterre(OCC DB 1868:1106). In 1972, Jacob G. and Johanna B. Pennings sold the remaining piece of the parcel to John and Dirk J. Vander Sterre(OCC DB 1925:323). This made the Vander Sterre's owners of the 62.43 acre parcel. It appears that the Vander Sterre's were owners of Warwick Home Builders, Inc., since the grantors of the land are listed as this company in the subsequent deed. Warwick Home Builders, Inc., sold the land in 1984 to Ralph Freddolino(OCC DB 2296:465). Freddolino held the land until 2001 when he sold the parcel to Village View Estates, LLC, the current owner.

Year	Head of Household	Number of Males	Number of Females
1840	John Ackerman	2 White Males	5 White Females
1850	Wm. Penny	3 White Males Wm. 38, farmer James A., 7 Gileon Butterfly, 16, laborer	2 White Females Phebe, 34 Clarice A., 5
1855	Wm. Penny	2 White Males Wm., 42, farmer James A., 12	3 White Females Phebe A., 39 Catherine, 12 Ellenor R., 9

Census information is described below:

1860	Wm. Penny	2 White Males Wm., 47, farmer James A., 17	<u>3 White Females</u> Phebe A., 44 Catherine, 17 Ellenor., 14
1865	William Penny	<u>3 White Males</u> Wm., 47 farmer James A., 21 Charles Grey, 11, servant	<u>3 White Females</u> Phebe A., 48 Katherine, 21 Eleanor A. VanOstrand, 19
1870	William Penny	<u>3 White Males</u> William, 52 farmer James A., 21 Charles Grey, 11, servant	3 White Females Phebe A., 55 Ella VanOstrand, 24 Myra VanOstrand, 3 Phebe VanOstrand, 1
e		64	<u>1 Black Female</u> Fanny Jackson, 19, Domestic Servant
1875	James S. Fitzgerald	<u>4 White Males</u> James S., 44 farmer Joseph, 9 George, 5 James S. Monroe, 21 at Cornell University	3 White Females Anna M., 36 Ada, 13 Malinda White, 60, Servant
1880	James S. Fitzgerald	<u>3 White Males</u> James S., 49, farmer Joseph J., 14 George M., 10	<u>3 White Females</u> Annie M., 41 Adelaide, 18 Melinda White, 67, housemaid
1900	James Fitzgerald	3 White Males James S., 59, farmer Peter Venerx, 39, farm laborer George, 31, farm laborer	<u>1 White Female</u> Annie M., 59
1910	Anna Fitzgerald	<u>1 White Male</u> George, 41	<u>1 White Female</u> Anna, 71, farm operator
1930	George Ryan	2 White Males George, 46, Dairy Farmer Eric Sanford, 23, farm laborer	<u>3 White Females</u> Elizabeth, 45 Helen, 18 Mary, 13
Census Information for Village View Project

The deed record shows that David D. Ackerman purchased land in Warwick as early as 1788. However, the earliest year the Ackermans could be found in the census living in the town of Warwick is in 1830. The Federal Census of 1830 shows John Ackerman, son of David D. Ackerman, as head of household in Warwick. Due to the limited information recorded in the early censuses, we do not know that much about this family. There were seven white males in the household and seven white females. The John Ackerman family is also recorded in the 1840 census as living in Warwick. During this year there were two white males and five white females living in the house.

William Penny owned the farm at the time of the 1850 Federal Census. Penny is listed as a farmer with real estate valued at \$4,000.00. There are three white males and two white females living in the household at the time this census was recorded. William Penny continued to own the farm for quite a while. In 1855 he was listed in the State Census as the head of household for his family, including two white males and three white females. In this census his house is recorded as being made of stone but in the 1865 census it is listed as a wood frame house. Penny may have constructed a new house on his property between 1855 and 1860. The Federal Census of 1860 shows the same people living on the farm as were there in 1855. There are two white males and three white females and William Penny's real estate has grown in value to \$5,600.00. In the 1865 State Census there are three white males and three white females living in William Penny's household. In 1870 William Penny is still the owner of the farm in Warwick. There are now three white males, three white females and one black female in Penny's household. His real estate value now stands at \$10,000.00.

By the time the 1875 census is taken there is a new owner of the farm. James S. Fitzgerald purchased the farm from William Penny in 1871. The 1875 census shows seven people living in the Fitzgerald household including four white males and three white females and records James S. Fitzgerald as a farmer. The 1880 Federal Census also records James S. Fitzgerald as the head of household for this farm. There are three white males and three white females living in the house at this time and James is listed as a farmer once again.

There was no information from the 1885 State Census available at the Orange County Clerk's Office, nor was there any information from the 1892 State Census. The next census year from which information was available was 1900(the 1890 Federal Census for the majority of the U.S. was lost in a fire). The 1900 Federal Census shows that James S. Fitzgerald is still the head of household on this farm in Warwick. James is still listed as a farmer and there are now only three white males and one white female living in the household, one of which is a boarder working as a farm laborer.

As of the 1910 Federal Census James S. Fitzgerald had died and had left his farm to his wife, Anna M. Fitzgerald. Anna is listed as head of household in this census and her occupation is recorded as farm operator. There are only two people listed as living in the household at this time, Anna herself and her son George.

It is unclear whether anyone lived on the parcel in 1920. While Anna Fitzgerald was still the owner, the farm was sold by the executor of her will in 1921. The farm was sold to George Ryan and at the time of the 1930 Federal Census, he was still the head of household for this farm. In 1930 there were five people recorded as living in the Ryan household, two white males and three white females. George Ryan listed his occupation as a dairy farmer on this census. While no further census information has been released, the Ryan family continued

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to own the farm into the 1940's.

(Partial) Censu	s Agricultural	Schedule	Estimates	for	Farm	Value,	Stock	&	Crops:
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Census Agricultural Data	1855	1864	1865	1874	1875
Improved acres	50		56		57
Unimproved Acres	10				
Farm Value	3500		5000		10000
Total Value of Farm Implements/Machinery	150		300		600
Total Value of Gross Sales from farm					1425
Acres plowed	12	10	12	8	12
Grasslands Pasture (ac)	28	28	29	29	25
Grasslands Meadow (ac)	10	18	25	20	20
Grass seed (b)	3				1000
Value of Stock	675		1130		1
Horses	3				
Cows	10				
Heifer Cows	1	1	1		
Milk cows	9	11	12		12
Bulls	4				
Cattle killed for Beef	1			1	31
Sheep	13				
Sheep shorn	13				
Pigs	5		- C		
Butter lbs.	720	100			
Wool(lbs)	40				
Poultry Value (\$)	5				
Eggs (\$)	10				
Winter Wheat (b)	2	20		87	
Wheat (ac)	1	2	2		
Rye (b)	75			24	

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Rye (ac)	6				
Corn (b)	80		1		
Corn (ac)	6				
Oats (b)	25				70
Oats (ac)	1			3	2
Potatoes (b)	10	20			
Potatoes (ac)	1-2	1	1-2		
Apples (b)	1			250	
Apples (trees)					75
Hay (tons)	15		20		30
Winter Rye (ac)		3			
Winter Rye (b)		50			
Indian Corn (ac)		4	6	4	
Indian Corn (b)		200		200	
Gallons of Milk Sold		3600			

Agricultural Information for the Penny/Fitzgerald Farm:

Information was collected about this farm from the 1855, 1865 and 1875 Agricultural Schedules recorded in the State Census of those years. In 1855 William Penny owned the farm, which was valued at \$3,500.00. Penny had 50 improved acres and 10 unimproved acres. Some of the livestock owned by Penny included 3 horses, 10 cows, 4 bulls, 13 sheep and 5 pigs. 720 pounds of butter and 40 pounds of wool were produced. Some of the crops cultivated on the farm were winter wheat, rye, corn, oats and potatoes.

In 1865 William Penny was still the owner of this farm. The value of the farm had risen from \$3500.00 in 1855 to \$5000 in 1865. Improved acres increased to 56. The only livestock listed in 1865 are 12 milk cows and 1 heifer calf. 100lbs of butter was produced as well as 3,600 gallons of milk sold. The crops grown include winter wheat, potatoes, winter rye and Indian corn.

In 1875 the owner of the farm was James S. Fitzgerald. The value of th farm had doubled over ten years, from \$5,000.00 in 1865 to \$10,000.00 in 1875. The value of the farm implements and machinery was \$600 and the value of buildings not including dwellings was recorded at \$2,000.00. The majority of farm production seems consistent with the agricultural schedules from the previous years. The livestock remains steady with 12 milk cows listed and no other animals. Crops planted include winter wheat, rye, oats and Indian corn. One addition to the farm is the growing of apples. 75 apple trees produced 250 bushels of apples this year whereas there had been no mention of apples in previous agricultural schedules.

Throughout the three agricultural schedules examined, the amount of acreage as well as the livestock and crops grown seem to stay relatively constant from 1855

to 1875. This was not a very large farm and seems to possibly have concentrated on milking cows for subsistence. Although the agricultural census was not available for the 1930 census, George Ryan, owner of the farm in 1930, recorded his occupation in the census as a dairy farmer, confirming that the milk cows were the most important part of the farm.

Research Issues

-What is the temporal affiliation of this site? Diagnostic ceramic, glass or other artifact types from intact feature or stratigraphic deposits can solve this question.

-What activities are present on the Feature 5 Historic Site and what was its associated function? Identifying artifacts and associated tasks will answer this question.

-What, if any, intrasite patterns can be established? Spatial analysis of the site, by identifying and interpreting activity areas, such as artifact concentrations and features by stratum, will answer this.

-What were the land use patterns of the farm? Artifacts types, literature research, and spatial analysis could assist with this question.

-Can site seasonality be determined? Flotable features could possibly identify seasonality.

-How does this site fit into the local and/or regional settlement patterns? A comparison of other sites and/or local history in the vicinity will provide insight here.

-Is the Feature 5 Historic Site eligible for nomination to the National or State Registers of Historic Places? Criteria needed to assist in this determination include:

1) Site integrity, including the depth and extent of undisturbed soil horizons and the presence or absence of cultural features and the degree of natural and/or human disturbance to those features.

2) Cultural components/affiliations and time range present.

3) Vertical (stratigraphy) and horizontal (spatial) distribution of the archaeological remains.

4) Site interpretation should demonstrate any uniqueness or significance in a local or regional context.

FIELD METHODS

Phase II field methods consisted of the excavation of both additional close guarter surface reconnaissance and test units (TU's).

Preparatory Work

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The cement cap which covered the stone foundation was removed by mechanical means with an archaeologist monitoring the work.

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Shovel Testing

Shovel testing was conducted at 10 foot (3m) intervals through the foundation feature and around it conditions permitting. Shovel testing continued to the north and south until transect encountered 2 "negative" ST's. Shovel testing was extended to include the area by FT 4. Shovel testing to the east was constrained due to the adjacent road (Locust Street) and associated rubble. Shovel testing was conducted to the west and stopped either with 2 "negative" ST's or physical conditions such as wetland areas or large dirt and rubble piles.

<u>Test Units</u>

Test units were placed primarily in areas of highest archaeological potential (artifact concentration) and feature potential. To a lesser degree, TU's were also placed in areas of lower potential. This was conducted to confirm, or not, the smaller artifact and feature potential as well as to offer some site variability across the landscape. A TU was placed within the feature and another adjacent to the outside feature (stone) wall.

Test units measured 1 meter square. They were dug by natural stratigraphy. Excavation ceased at 10 cm. into culturally sterile subsoil. In addition, a 1.5 to 2 foot manual bucket auger was taken at the completion of certain TU's to inspect for any buried horizons.

Excavation of the 1 meter square TU's was accomplished manually with the use of shovel and trowels. Shovel technique utilized was the horizontal "skimming" method. Soil horizon interfaces or any potential features were troweled in an attempt to uncover cultural feature stains (post molds, etc.). Elevations of stratigraphy were recorded with the use of a line level which was placed at 10 cm. above ground surface, usually in the southwest corner unless slope dictated a higher corner.

Pre-printed ST field forms were completed for all ST's. Notes for TU's were transcribed on pre-printed TU field forms. These were completed for each TU and level. Notes and sketches were also recorded in a field journal. Photographs were taken of stratigraphically profiled TU walls, environmental information and general work in progress.

Soils were screened through a 1/4 inch wire mesh and analyzed for artifacts. Excavated soils were subjected to 100% screening. Stratigraphic profiles were mapped for TU's. All artifacts were bagged by TU and level, provenienced, and returned to the laboratory for processing and analysis.

Test units were mapped in with assistance of a military compass, Brunton Pocket Transit, and a 15 meter/50 foot measuring tape.

FIELD RESULTS

During the course of the Phase II intensive testing at the FT 5 Site , 35 close guarter shovel tests at 3 meter intervals and 6 TU's were excavated.

Phase II close quarter shovel testing confirmed the following:

-A small amount of European-American artifacts were recovered in 5 ST's immediately outside FT 5, either adjacent to it and/or slightly downslope from it.

-Portions of the interior of FT 5 appeared to have been stripped.

-Shovel testing by FT 4, which was close to FT 5, recovered no artifacts at all.

Stratigraphy

Stratigraphic information is taken from TU's.

-Level 1, A/O horizon: generally 1 to 16 cm thick of rootmat and humus. This level was absent in two TU's, TU 3 inside the feature and TU 6 outside adjacent to the stone wall of the feature.

-Level 2, redeposited/reformed A horizon, generally 5 to 17 cm. thick of 10YR3/2 very dark grey brown silty loam. Often this color is mottled with 10YR 4/2 dark grey brown silty loam. Some amount of this layer is probably redeposited soils from inside FT 2 (which was stripped of topsoil).

-Arbitrary Level 2b was a continuation of Level 2.

-Level 3, A horizon, generally 9 to 34 cm. thick of 10YR5/3 brown silty loam to gravelly silty loam. Often this is mottled with 10YR5/4 yellow brown or 10YR5/2 grey brown silty loam.

-Arbitrary level 3 b was a continuation of level 3.

-Level 5 was a gravelly fill layer found only in TU 3 which was within the foundation feature (FT 5). It measured 3 to 11 cm. thick.

-Level 4, B horizon. Excavations usually stopped at the top of the subsoil. Subsoils was only excavated into at TU 3, which was inside the foundation feature. This was to make sure that the subsoil was really subsoil and not fill.

Test Units

Test units were judgementally and systematically placed. TU's were placed within FT 5 to determine structure function, along the outside wall of FT 5, to look for a builders trench, and where artifacts were recovered during Phase II shovel testing, possibly indicating historic activity areas.

However, TU 3, excavated within the FT 5 recovered no artifacts, and TU 6 excavated along the outside wall of the feature did not encounter a builder trench.

Features

-Feature 5, consisting of a dry laid stone foundation, was the focus of these investigations. It appears to have been largely devoid of historic artifacts. Within the stone feature itself, the sparse artifacts recovered included some small brick fragments, a wire nail, a bit of coal ash, and plastic. No artifacts were recovered in the one meter square test unit and parts of the interior of the feature appear to have been stripped of topsoil.

Rocks from this feature were local shale and sandstone. The cement slab which had covered the feature (mechanically removed during the Phase II) had a steel pipe protruding from it.

-Feature 4, situated about 12 feet southeast of FT 5, consisted of a dry laid stone wall, partly under the current paved Locust Street. Large metal rings are spaced along the stone wall about 2 to 3 feet above the ground. According to a local farmer, this may have been a fattening-up area for calves, otherwise known as a veal station. Animals would be tied to the stone wall to limit their movement for the fattening-up process. No artifacts were recovered in front of this feature. The feature probably once extended east, into and under Locust Street.

Rocks from this feature included shale, slate, sandstone, and quartzite. The metal rings protruding from the stone wall are attached by a chain from inside the wall.

LABORATORY METHODS

Processing

Artifacts recovered and retained during the Phase II intensive testing and field work were transferred to TRACKER-Archaeology Services' laboratory in Monroe, New York. The artifacts were cleaned, dried, if necessary, sorted according to type and rebagged.

The inventory was organized by TU and level and other descriptive variables. In addition, large artifact collections were organized separately by category (ie. ceramic, glass, etc.) and described by TU, level, and other variables.

The archaeological remains were also identified utilizing a modified version of the National Park Service Material Cultural Data Base Taxonomy. Artifacts were indexed according to "function" and minimally included: functional group, artifact class, morphology, material, comments, and date or date range.

<u>Glass Analysis</u> by Joseph Diamond

The base characteristics of a bottle relate to the mold type, the time period, manufacturing technique, and the function of the vessel. Early bottles have blownpipe pontil scars(P), solid iron bar pontil scars(GP), and sand pontil scars(SP), while table glass usually displays a solid pontil scar or a shallow ground out and then finished pontil scar(FP). Later bottles(post-1857 in general) are not pontiled because the bottle was taken off the pipe with the aid of a snap case(S) rather than a pontil rod.

Cross section is simply the shape of the bottle when viewed from the base. Bottles from Feature 2 display square(S), rectangular®, oval(O), multi-sided (MS), and circular©.

TPQ or terminus post quem is the inception date of a temporally diagnostic attribute. For example, in 1821, Henry Ricketts of Bristol Glass works in England patented a three-part mold with dip-mold body(Jones 1983). This patent and invention allows us to date bottles with three-piece mold lines to after 1821. It also assumes that the archaeological context in which it was found also post-dates 1821.

The glass was laid out on white paper and sorted by glass color, diagnostic features and then by individual vessel.

<u>Archaeofauna</u> by Thomas Amorosi

The methodology used in this report follow those established in Amorosi (1996) and have been successfully applied in a number of CRM and Research projects by the author for Mid to Lower Hudson and Long Island areas (Amorosi 2007a&b, 2006ac, 2004a&b, 2003a&b). Socionomic aging parameters follow Amorosi (1989), Ruscillo (2006) and Wilson et al. (1982) for dental eruption and epiphyseal union. The osteometric protocol used here is von den Driesch (1976) for the measurement of all identified species. Bone weathering data follows a modified

protocol first established by Behrensmeyer (1978).

LABORATORY RESULTS

Phase II investigations of the FT 5 Site resulted in the recovery of 261 European-American artifacts. Most of the artifacts were mixed historic with modern (mid-late 20^{th} century). The exact type of artifact and its location are listed in appendix 4.

Date Ranges by Level

10000

Level	Known Date Range	Interpretation
1	1840-mid 20 th century, most from 20 th century	modern/mixed
2 (2a)	post 1820 to mid 20 th century, most 20th century	modern/mixed
2b (arbitrary level)	1840-1940	mixed
3 (3a)	post 1820 to mid 20 th century	mixed
3b (arbitrary level)	post 1820 to 1850	historic level

Artifacts by Group from Level 3b:

Level 3b was only encountered in 2 TU's (TU's 2 & 6). Only 18 identifiable artifacts were recovered from level 3b. All the diagnostic (historic) artifacts were from TU 2. They belonged to the following group functions:

Kitchen	Faunal	Architectural	Furniture	Arms	
13	4	1	0	0	

Clothing	Personal	Smoking	Activities
0 2.4	0	0	0

Artifacts per TU:

Τ.υ.	Count	Groups Represented
1	47	Kitchen, Faunal, Architectural,
2	123	Kitchen, Faunal, Architectural, Clothing
3	0	0
4	5	Kitchen, Architectural

5	29	Kitchen, Faunal, Architectural, Activities
6	35	Kitchen, Faunal, Architectural, Clothing,

<u>Faunal Analysis</u> by Thomas Amorosi

PROBLEMS IN QUANTIFICATION:

It has been well established that the stochastic effects of small sample size often preclude making any paleoeconomic reconstruction (cf. Amorosi et al. 1996, Grayson 1984). This is especially true of the Phase II Locust Archaeofauna, which has only 17 bone fragments. At best only a set of impressionistic observations can be made at this time.

In looking over Table 2, the assemblage is predominantly composed of adult aged mammalian domestic bovids, cattle and caprines (sheep/goats). While the ideal economic farm ratio of 1 cow:2 caprines immediately comes to mind (cf. Amorosi 1996, Landon 1996), the reader should be very wary of this interpretation. One animal that is missing in this collection is the domestic pig. If a Phase III excavation is conducted, more than likely this bovid ratio will change as pig remains will likely predominate the mammalian domestics.

There are three other trace species in this collection. The wood chuck and domestic cat remains are probably intrusive and are not the result of any economic activity. Only one bird species is noted for this assemblage. The domestic chicken, which is also represented by adult remains.

TAPHONOMY FROM THE LABORATORY TABLE

Two taphonomic signals were tracked within this assemblage, the degree of weathering of the periosteum (the upper or most exterior surface on a bone) and the degree of bone fragmentation. Because of the severely small sample size of this collection, there is no consistent pattern to note (these data can be found in Tables 2 - 3).

Table 6. Distribution of the Phase II Locust Archaeofauna in Excavation Units

laxon	TU1 Lv2	TU2 Lv1	TUZ Lv2	TU2 Lv3b	TU5 Lv3a	TU6Lv3a
M. monax			1			
B. taurus						1
Ovis/Capra	1		1			
F. catus		1				
LTM	2			4	2	
MTM			1			
G. gallus	1	2.4				2

Test Units

Note: LTM = Large Terrestrial Mammal & MTM = Medium Terrestrial Mammal

CULTURAL INTERPRETATIONS

The Feature 5 Site appears to consist of a nineteenth century agricultural outbuilding which was apparently refurbished during the middle twentieth century. The artifacts on site are a mix of nineteenth century through late twentieth century items. Most of the artifacts were recovered in mottled soils. Feature 4, adjacent to FT 5, appears to have been an agricultural station, perhaps for fattening up animals by chaining them to limit their movement.

Activities on site include (mixed 19th-late 20th century): -Food eating as evidenced by faunal remains (bone).

-Kitchen related activities such as food preparation/serving/storage, and drinking (including alcoholic), as evidenced by ceramics from bowls, pharmaceutical, cups, plates, platters, saucers glass from wine/liquor bottles, beer, fruit jar, and soda bottles.

-Architectural activities as evidenced by nails, bolts, brick fragments, window glass, sewer pipe, lightbulb, and washers,

-Furniture as evidenced by 1 probable candle base

-Clothing as evidenced by 3 buckles

-Activities as evidenced by 2 farm related artifacts, a horseshoe and harness belt

Spatial analysis of the site:

Feature 5 is situated along the west side of Locust Street (Sleepy Valley Road), about only 15 feet from the current road and only 60 feet or so west of wetlands. This appears to be an improbable location to put a dwelling. The terrain slopes down sharply from the road to the wetlands and stream. Feature 5 is situated on the only level ground along the road in this area. In fact, the terrain may have very well been slightly altered to provide a level place to build the feature. Soils within FT 5 appear to have been stripped or filled in certain sections which may have been part of the terrain leveling. The nineteenth century road was not as likely so wide as today or oriented in its current alignment. It is probable that both Feature 5 and FT 4, which is partly under Locust Road, were very close to the road, but not quite so close as today.

Feature 5 is also located adjacent to FT 4. Feature 4 appears to have been an agricultural related feature such as a veal station.

Spatial analysis of artifacts and/or artifact concentrations on this site proves impossible due to the mixing of historic nineteenth century artifacts with middle to late twentieth century artifacts.

However, only 2 artifacts recovered on site were farm related, a horseshoe from TU 5 and a harness strap from ST 24. Most of the historic, nineteenth century artifacts were kitchen related. There were also domesticated cattle, caprine and chicken remains on site. The architectural and activity (farm related) artifacts appear to be under represented for a barn, or work place, structure. However, considering its narrow location between wetlands and road and proximity to an agricultural station (FT 4), it does appear that FT 5 was an agricultural outbuilding. Perhaps it also housed day laborers during the nineteenth century. The actual farm dwelling appears to have been across the road according to early maps.

Prior to the Phase II field work, a cement cap covered the top of FT 5. The cement cap was taken off during the Phase II field work. Shovel tests 2 through 11 were excavated within FT 5, after the cement cap was removed. A small amount of discarded items were recovered, including 2 brick fragments, coal ash, a wire nail and plastic. The cement cap itself as well as the inclusion of a wire nail and plastic underlying it appears to indicate that the cap was put on during the twentieth century. It is most probable that the cement cap was actually used as a "new" floor at that time. Feature 5 received a "home improvement" probably in the middle twentieth century. Orangeburg sewer pipe was recovered on site and a metal pipe had originally protruded from the cement cap in FT 5 prior to its removal. Orangeburg was used during the 1950's to 1970's. The piping was also part a middle twentieth century improvement which likely occurred about the same time as the cement floor.

The middle twentieth century improvements to FT 5 also likely coincided with the other concrete structures on the Village View property. Feature 2 is a concrete wall, FT 3 consists of 2 concrete circular foundations, probable silos (Cammisa 2005).

During the late twentieth century it appears that FT 5 was either partially utilized or visited by teenagers or young party goers as evidenced by the beer and soda bottles on site dating to this time period.

Stratigraphically:

Soils on site were largely mottled indicating some sort of earth moving or disturbance for some distance around the feature. The only seemingly intact strata with diagnostic historic artifacts and no modern intrusions appears to have been level 3b found only in TU's 2 and 6. Only 18 artifacts were recovered from this layer with date ranges that were largely inconclusive.

CONCLUSIONS AND RECOMMENDATIONS

Phase II investigations of the FT 5 Site resulted in the recovery of 261 European-American artifacts. Most of the artifacts were mixed historic with modern (mid-late 20th century) and encountered largely in mottled soils.

The Feature 5 Site appears to consist of a nineteenth century agricultural outbuilding which was apparently refurbished during the middle twentieth century. The artifacts on site are a mix of nineteenth century through late twentieth century items. Most of the artifacts were recovered in mottled soils. Feature 4, adjacent to FT 5 appears to have been an agricultural station, perhaps for fattening up farm animals for which no artifacts were found in close association.

A site is eligible for nomination to the National Register of Historic Places if it meets one or more of the following criteria (as set forth in 9 NYCRR 427 and 428 or CRF 800):

A) Associated with events that have made a significant contribution to the broad patterns of our history;

B) Associated with the lives of persons significant in our past;

C) Embodies the distinctive characteristics of a type, period, or method of construction, or represents a significant and distinguishable entity whose components may lack individual distinctions; or

D) Has yielded, or may be likely to yield, information important in prehistory or history.

In our opinion, Feature 5, has not yielded, and will likely not yield, any lifeways information important to history of farming operations and/or family lifeways in nineteenth century Warwick or the region.

Despite 3 meter shovel testing and 6 Test Units excavated across the small historic FT 5 Site, dating of FT 5 proved difficult. No builders trench was encountered, artifacts on site were mixed nineteenth century through late twentieth century, soils were usually mottled from some apparent earth moving in the past. A few historic artifacts were recovered from a seemingly intact strata but were too few and the date ranges not conclusive. These reasons and the fact that the ownership of the farm changed hands numerous times during the nineteenth century also make it difficult to determine who built or utilized Feature 5.

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1933 Warwick Valley in 1805. Elizabeth Van Duzer.

APPENDIX 1

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Photo 1

FT 5 with cement cap

Photo 2 FT 5 with cement cap removed. TU 3 in progress.

Photo 3 Nearby FT 4. To immdediate left is FT 5. Locust Road is in background.

Photo 4 Looking west away from Locust Road at wetlands adjacent to FT 5 site



Photo 5 Looking at TU 3 inside of FT 5

and the second



adjacent to wetlands

Photo 7 Looking at TU 6 along outside wall of FT 5

APPENDIX 2

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Sector Sector

SHOVEL TESTS

<u>STP</u> 1	$\frac{LV}{2}$	Depth(cm) 0-34	<u>Texture</u> SiLo	<u>Color</u> 10YR3/2	<u>Hor.</u> A	<u>Comments</u> NCM
275	3	34-impeded by	y rocks.			*
2	2 3	0-37 37-impeded by	SiLo y rocks.	10YR3/2	А	wire nail, brick
3	2	0-24	SiLo	10YR3/2	А	NCM
	3	24-34	SiLo	10YR5/8	В	NCM
4	2	0-23	SiLo	10YR3/2	A	brick, coal ash
	3	23-33	SiLo	10YR5/8	В	NCM
5	2	0-17	SiLo	10YR3/2	А	NCM
14	3	17-27	SiLo	10YR5/8	В	NCM
6	1	0-5	rootmat, leaves, humus		A/O	NCM
	2	5-36	SiLo	10YR3/2	A	NCM
÷)	3	36-46	SiLo	10YR5/8	В	NCM
7	2	0.15	Site	10002/2	۸	NCM
1	2	0-15	SILO	101KJ/2 10VD5/9	P	NCM
	3	15-32	511.0	101 KJ/0	d	New
8	3	0-37	SiLo	10YR5/8	В	NCM
9	3	0-32	SiLo	10YR5/8	В	NCM
10	2	0-40	SiLo	10YR3/2	А	NCM
	3	40-impeded by	y rocks.			
11	3	0-36	SiLo	10YR5/8	В	plastic
12	1	0-4	rootmat, leaves, humus	1. 1.	A/O	NCM
223	2	4-19	SiLo	10YR3/2	A	NCM (
	3	19-impeded by	y rocks.			
13	1	0-4	rootmat, leaves, humus		A/O	NCM
	2	4-23	SiLo	10YR3/2	A	window glass, brick
	3	23-34	SiLo	10YR5/8	В	NCM
14	1	0-9	rootmat, leaves, humus		A/O	NCM
	2	9-34	SiLo	10YR3/2	A	NCM
	3	34-46	SiLo	10YR5/8	В	NCM
15	1	0-6	rootmat, leaves, humus		A/O	NCM
	2	6-33	SiLo	10YR3/2	A	metal
	3	33-impeded b	by rocks.			
16	1	0-5	rootmat, leaves, humus		A/O	NCM
	2	5-37	SiLo	10YR3/2	A	NCM
	3	37-impeded b	y rocks.			

oy 1

Sector Sector

ALC: NOT
							8: 3
		25					
					· · ·		
			8				
		877					
1	17	1	0-6	rootmat,leaves,humus		A/O	NCM
	22	2	6-38	SiLo	10YR3/2	Α	orangeburg
		3	38-49	SiLo	10YR5/8	В	NCM
	18	1	0-7	rootmat, leaves, humus		A/O	NCM
		2	7-26	SiLo	10YR3/2	Α	nail, windowglass,
2							metal,
		3	26-65,rock	SiLo	10YR5/8	В	NCM
1	19	1	0-7	rootmat, leaves, humus		A/O	NCM
		2	7-26	SiLo	10YR3/2-4/2	A	orangeburg
		3	26-38	SiLo	10YR5/8	В	NCM
2	20	1	0-5	rootmat, leaves, humus	**	A/O	NCM
		2	5-24	SiLo	10YR3/2-4/2	Α	paper
	Ξs.	3	24-36	SiLo	10YR5/8	В	NCM
	122						
1	21	1	0-7	rootmat, leaves, humus	+1 ¹²	A/O	NCM
		2	7-28	SiLo	10YR4/2	А	green glass, metal
					i and a second second second		dec. glass
		3	28-40	SiLo	10YR5/8	B	NCM
1	22	1	0-4	rootmat, leaves, humus		A/O	NCM
		2	-4-28	SiLo	10YR4/2	А	foil,brick
		3	28-38	SiLo	10YR5/8	В	NCM
		-		- 1 - 1			
2	23	1	0-5	rootmat, leaves, humus		A/O	NCM
		2	5-15	SiLo	10YR3/2-4/2	A ·	window glass
0		3	15-27.water	SiLo	10YR5/8	В	NCM
- x	0	R					
2	24	1	0-9	rootmat, leaves, humus		A/O	NCM
		2	9-27	SiLo	10YR3/2-4/2	Α	brick, leather
	26	3	27-38	SiLo	10YR5/8	В	NCM
	25	1	0-3	rootmat, leaves, humus		A/O	NCM
		2	3-36	SiLo	10YR4/2	A	bottle glass, unident.metal
	8 .2	3	36-47	SiLo	10YR5/8	В	NCM
				С			500 - 500 March
	26	1	0-6	rootmat, leaves, humus		A/O	NCM
		2	6-25	SiLo	10YR5/4	Α	NCM
		3	25-37	SiLo	10YR5/8	В	NCM
							×.
	27	1	0-7	rootmat, leaves, humus		A/O	NCM
		2	7-26	SiLo	10YR5/4	Α	melted plastic
	0.00	3	26-37	SiLo	10YR5/8	В	NCM
		-mitton					
	28	1	0-5	rootmat, leaves, humus		A/O	NCM
		2	5-25	SiLo	10YR5/4	А	NCM
		3	25-impeded by	rocks.			
						御	
	29	1	0-7	rootmat,leaves,humus		A/O	NCM
±1		2	7-27	SiLo	10YR5/4	Α	NCM
		ĩ	27-37	SiLo	10YR5/8	В	NCM
		2		7. · · · · · · · · · · · · · · · · · · ·			

30	2	0-50	SiLo	10YR3/2-4/2-5/4	A		window glass
	3	50-60	SiLo	10YR5/8	В		NCM
31	1	0-7	rootmat, leaves, humus		A/O		NCM
	2	7-36	SiLo	10YR3/2-4/2-5/4	A		NCM
	3	36-46	SiLo	10YR5/8	В		NCM
09.1				2 C			
32	1	0-3	rootmat, leaves, humus		A/O		NCM
	2	3-30	SiLo	10YR3/2-4/2	A		window glass
	3	30-41	SiLo	10YR5/8	В		NCM
33	. 4	0-10	Fill	10YR4/2-3/2-5/4	ł		NCM
55	2	10-17	SiLo	10YR3/2	A		NCM
	3	17-30	SiLo	10YR5/8	В		NCM
34	- 1	0-7	rootmat.leaves.humus		A/O		NCM
	2	7-25	SiLo	10YR3/2-4/2	Α		window glass
	3	25-38	SiLo	10YR5/8	В		NCM
35	1	0-12	rootmat.leaves.humus		A/O		NCM .
	2	12-42	SiLo	10YR4/2-3/2	Α		window glass
	3	42-52	SiLo	10YR5/8	В	^а ж	NCM

TEST UNITS

ĖU	LV	NE	SE	CENT	NW	SW	TEXTURE	COLOR	HOR
1	1	10-16	14-18	21-24	31-33	30-32	Rootmat, humus		A/O
F	2	16-27	18-28	24-35	33-42	32-42	SiLo*	10YR3/2-4/2	A
	3A	27-51	28-50	35-54	42-62	42-61	GrSiLo	10YR5/3-5/4	A2
	3B	51-67	50-66	54-73	62-71	61-70	GrSiLo	10YR5/3-5/4	A2
Notes	*=coal &	ash inclu	sions in r	north secti	ion of TU	J		2	
2	1	9-21	10-16	20-21	23-24	23-26	Rootmat, humus		A/O
-	2	21-26	16-28	21-28	24-31	26-33	SiLo	10YR3/2-4/2	Α
	3A	26-46	28-48	28-48	31-47	33-53	SiLo,rocky	10YR5/3-5/2	A2
	3B	46-65	48-65	48-67	47-69	53-68	SiLo	10YR5/3	A2
3	5	13-24	17-20	13-23	17-24	10-14	gravel fill	10YR3/2	fill
	2	24-27	20-26	23-33	24-41	14-42	SiLo	10YR3/2-4/2	A
	4	27-37	26-36	33-43	41-51	42-52	SiLo	10YR5/6	В
4	1	14-21	18-20	23-29	36-38	32-37	Rootmat, humus		A/O
2	2	21-31	20-30	29-34	38-39	37-40	wetSiLo	10YR3/2-4/2	Α
	3	31-40	30-42	34-47	39-53	40-51	wetSiLo	10YR5/3-5/4	A2
5	1	11-19	0-16	10-23	22-32	18-25	Rootmat, humus		A/O
2	2	19-36	16-39	23-39	32-39	25-42	SiLo, ash & coal	10YR3/2	A w/fill
	3A	36-62	39-59	39-60	39-62	42-62	GrSiLo	10YR5/3	A2

Anna Const

C. Starten

6	2A	17-29	3-20	13-35	32-39	24-37	Rocky overb	urden 10YR3/2-4/3	A?
	2B	29-48	20-32	35-45	39-50	37-42	GrSiLo	10YR4/2-4/3	A
	3A	48-68	32-66	45-68	50-67	42-65	GrSiLo	10YR5/3	A2*
	3B	68-88	66-80	68-84	67-86	65-82	GrSiLo	10YR5/3	A2*

? A horizon with rocky overburden *rocks likely from foundation wall

APPENDIX 3

ALC: NOT

A CONTRACTOR

Table of Map Documented Structures

Location	Мар	On, or Adjacent to Study Area (dwelling (not FT 5)	Owner	Eco-niche	Comments
across Locust St.	1805	adjacent & across the road	Joseph benedict & Andrew Ackerman	farming community	Fig. 3
across Locust St.	1850	across the road	W. Penny	farming community	Fig. 4
across Locust St.	1863	across Locust St.	Wm. Penny	farming community	Fig. 5
southwest corner of Locust and Woodside	1875	on or adjacent	W.A. Benedict with J. Fitzgerald across Locust St.	farming community	Fig. 6
same as above	1908	adjacent & across Locust St.	na	same as above	Fig. 7

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APPENDIX 4

VILLAGEVIEW

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VILLAGEVIEW	COMMENT	orangeburg sewerpipe	iron ring	liron staple			beer/soda, green/aqua	bent iron unident	aqua window glass	clear unident bottle glass	pressed glass base prob. for candle	strawbery diamond pattern amethyst	leather&iron belt/strap/harness	large terrestrial mammal, vert	Ovis/Capra, femer	gallus gallus, coracoid	orangeburg sewerpipe	iron washer	wire nails (spikes)	wire nails	iron unident	machine cut nails	crown bottle cap	whiteware sherd	unident nails	nut w/ washer	unident metal	mocha pearlware	tableware/perfume safflower/cornflower blue	cat scapula	bolts with nuts	bolt	wire nail/spike	valve nandle	unident metal	iron lamp tiligree	wire nail	mc nails	window glass	clear bolt glass (fruit jar?)	plain whiteware	luster dec red earthenware	medium terrestrial mammal, long bone	Ovis/Capra, femer	Marmota monax, mandible
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Page 1

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VILLAGEVIEW	COMMENT	wire nail amher heer 1970's GeneseeCreamAle Pilsener	amber beer, modern	green beer/soda	aqua window glass	cieal volue itags aroon milicalone toblouroro/coltechator ato	green miikgiass tapieware/salisnaker,etc ironstone or whiteware	wire nail/spike	mc nails	iron staple	unident metal	iron belt buckle	iron bail prob. for milk bottle, lightning	leather scraps	Genesee Cream Ale	olive green wine/liquor	Jackfield type red earthenware	unident nails	mc nails	large terrestrial mammal, long bone	Jackfield type red earthenware	brick	blue transferprint whiteware	undecwhiteware	purple/pink transferprint whiteware	undec whiteware	purple transferprint whiteware	clear lead glazed redware	mc nails	Genesee Cream Ale	/-up green beer/soda	amber beer base, prob. Budwiser	crock w/ Albany slip interior	porcelain insulator trag.	ring washer for int galvanized pipe	unident nails	bent iron spike	horseshoe	mc nails	crock w/Albany slip interior	unident nails		snell eage whiteware porcelain
	MOR	0	5			4535			8	0	,	10										15																4					
	MAT	28 78	78	78	/8/	0/	0/	28	28	28	28	28	28	15	78	78	ო	28	28	17	ო	69	4	4	4	4	4	ო	28	8/	8/	18	2	-	28	28	28	28	28	40	28	4 •	4 ←
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	Page 3	CT	1.00	3.00	3.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	3.00	1.00	1.00	1.00	1.00	1.00	3.00	2.00	1.00
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	VILLAGEVIEW	COMMENT	flow blue pearlware	clear lead glazed redware	large terrestrial mammal, cranial, 2 longboi honev/condiment hottle (modern)	Iclear bottle frag	porcelain frag	wire nails	aluminum bottle cap	shell edge whiteware	luster dec red earthenware	green milkglass	copper buckle	wire nail	leather strap scraps	pharmacy bottle ARM STRONG, WT&Co	clear pharmacy, w/ screw top	stainless steel ring	clear jelly glass	Bos taurus, coronoid process	whiteware	grey salt glaze stoneware	clear red glaze redware	Jackfield type red earthenware	slag	porcelain insulator frag	iron belt buckle	wire nail	unident iron	large clear bottle	clear jelly glass
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APPENDIX 5

Locust Site

1.3

No. 11

Phase II

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Table 1. Species Diversity for the Phase II Locust Site

	NISP	% Total NISP	
Class Mammalia			
Order Rodentia			
Family Aplodontidae			
Marmota monax – Woodchuck	1	12.5%	
Order Artiodactula	34		
Family Boyidae			
Bos taurus - Domestic Cattle			
Ovis/Capra - Domestic Caprines (Sheep/Ge	oat)2		
Note: Sheep and goat osteological distinction	ons are difficult to	assign. None of the standard	
species distinctions (cf. Boessneck 1969) w	vere noted for these	materials and the higher gen	us
level taxonomic designation is used here.			
Order Carnivora			
Falin estus Domestic Cat	1	12.5%	
Felis calus - Domestic Cal			
Class Aves			
Order Gallliformes		at	
Family Tetraonidae			
Gallus gallus - Domestic Chicken	3		
en R			
	8		

Note: The abbreviation NISP refer to the Number of Identified Specimens per taxon.

Phase II

Locust Site

Table 2. Mammalian Remains from the Phase II Locust Site Assigned to Size Class.

Medium Terrestrial Mammal.....1.1.1%

9

Note: The abbreviation TNF refers to the Total Number of Fragments.

Assemblage Breakdown

U1.	70
8	47
9	53
	8 9

17

NISP Counts	CT.	%
Mammals	5	62.5
Diada		37.5
Birds		

8

Domestic Mammalian Counts	CT.	%
Cottle	1	33.3
Caprines (Sheep/Goat)	2	66.7

Locust Site

Table 3. Degree of Weathering Stages for the Phase II Locust Site. The modified weathering stages listed below follow those described by Behrensmeyer (1978).

Stage	CT.	%
B0-1	4	23.5
B1		
B1-2	6	35.3
B3-4	4	23.5

Phase II

Locust Site

Table 4. Bone Fragmentation Sorted by Size Class from the Phase II Locust Site.

Size of Fragment	CT.	%
Size of Flagment	1	.5.9
0.25"	1	23.5
0.75"		5.9
1.25"	1 Л	23.5
1.50"		
1.75"	l 1	5 0
2.00"	1	117
2.25"		
2.50"	1, 1	
3.00"		
3.75"	l	

Locust Site

Phase II

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Table 5. Osteometric Data for the Phase II Locust Site Archaeofauna. All measurements follow the protocol established by Von Den Driesch (1976) and are in millimeters (mm).

Ovis/Capra

Femoral shaft, MAR, Sd - 18.80mm., CD - 69.00mm.

Felis catus

Right scapula, MAR, GLP - 16.34mm., SLC - 14.91mm.

Gallus gallus

10 N.

Left coracoid, AR, BF - 13.91mm., Bb - 18.40mm. Right distal humerus, AR, Bd - 15.60mm. Humeral shaft, AR, SC - 7.06mm. Phase II

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Locust Site

Table 7. Inventory of the Phase II Locust Site Faunal Remains.

The aging abbreviations used in this inventory are:

1. YAR - Young adult age range.

2. MAR - Mature adult age range.

3. AR - Adult age range.

TU. 1, LV 2.

Large Terrestrial Mammal - Two vertebrae fragments. Ovis/Capra - One distal femoral shaft (MAR). Gallus gallus - One left coracoid (AR).

TU. 2, LV. 1

Felis catus - One right scapula, scapula has a perimorten radial impact puncture on the medial body (YAR-MAR).

TU. 2, LV. 2

Medium Terrestrial Mammal - One long bone shaft fragment.

Ovis/Capra - One femoral shaft (MAR) ... Marmota monax - One left anterior and corpus of mandible, all cheekteeth are missing (post depoitional loss - MAR).

TU. 2, LV. 3b

Large Terrestrial Mammal - Four long bone shaft fragments.

TU. 5, LV. 3A

Large Terrestrial Mammal - One cranial fragment and 2 long bone haft fragments.

TU. 6, LV. 3A

Bos taurus - One right coronoid process (MAR). Gallus gallus - One right distal humerus (A), 1 humeral shaft (AR).

APPENDIX 6

1

in the second



NEW YORK STATE HISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM NYS OFFICE OF PARKS, RECREATION & HISTORIC PRESERVATION (518) 237-8643

For Office Use OnlySite Identifier_	
Project Identifier Ft 5-Village View	·
	Date 6-12-07
Your Name Alfred Cammisa	Phone (845) 783-4082
Address 62 Pickerel Rd	Phone (845)
Monroe, NY 10950	L Comitore
Organization (if any) TRACKER-Archa	aeology Services
1. SITE IDENTIFIER(S) FT 5	Our of the following: CITY
2. COUNTY Orange	TOWNSHIP Warwick
	DICORPORATED VILLAGE
	INCORPORATED VIEDATED
UNINCORPO	RATED VILLAGE OK HINNED
	1444/0.1000/c (21)
3. PRESENT OWNER Crown Construction	
Address <u>Airmont, NY</u>	
4. SITE DESCRIPTION (camplete Superstructure: complete Foundation: above <u>x</u> Structural subdivisions aj Buried traces detected List construction materials (b	partial collapsed not evident _x below (ground level) not evident pparentOnly surface traces visible be as specific as possible):
Stone foundation	
Grounds Under cultivation Never cultivated Soil Drainage: excellent Distance to nearest water fro Elevation:700	Sustaining erosion x_Woodland Upland Previously cultivated Floodplain Pastureland good fair poor Adjacent to wetlands
 5. Site Investigation (append additional Surface date (s) <u>2005</u> Collection Subsurface date(s) <u>4-17-07 to 4-2</u> Testing: shovel <u>x</u> corno. units <u>35</u> 	al sheets, if necessary): Site map (submit with form*) 4-07 ing other unit size (Submit plan of units with form*)

no. of units ____ 6 Excavation: unit size <u>1m</u> (Submit plan of units with form*)

* Submission should be 8 1/2" by 11", if feasible

Investigator Alfred Cammisa

Manuscript or published report (s) (reference fully):

Phase II Archaeological Intensive Testing at the Feature 5 Site for the proposed Village View subdivision Village of Warwick, Town of Warwick Orange County, New York

Present repository of materials _____ TRACKER

Site inventory: 6. a. Date constructed or occupation period 19th century

b. Previous owners, if known _____ See deeds in report (poss. Ackerman, Penny, Fitzgerald)

c. Modifications, if known Cement floor, metal pipe, orangeburg sewer pipe (append additional sheets, if necessary)

Site documentation (append additional sheets, if necessary): 7.

- a. Historic map references Feature 5 not on maps
 - 1) Name_____ Date _____ Source _____ Present location of original, if known 2) Name_____ Date _____ Source _____
 - Present location of original, if known ____

b. Representation in existing photography

 1) Photo date ______
 Where located ______

 2) Photo date ______
 Where located ______

c. Primary and secondary source of documentation (reference fully)

d. Persons with memory of site

130113 with memory of one	5 C
1) Name	Address
2) Name	Address

List of material remains other than those used in construction (be as specific as possible in 8. identifying object and material):

stone foundation, square nails

If prehistoric materials are evident, check here and fill out prehistoric site form.

Map References: Map or maps showing exact location and extent of site must accompany this 9. form and be identified by source and date. Keep this submission to 81/2" x 11", if possible.

USGS 71/2 Minute Series Quad. Name Warwick, NY For Office Use Only--UTM Coordinates _____

Photography (optional for environmental impact survey): Please submit a 5"x7" black and white 10. print(s) showing the current state of the site. Provide a label for the print(s) on a separate sheet.

Appendix K

Current U.S. Census Data

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U U.S. Census Bureau



DP05

ACS DEMOGRAPHIC AND HOUSING ESTIMATES

2012-2016 American Community Survey 5-Year Estimates

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Data and Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Tell us what you think. Provide feedback to help make American Community Survey data more useful for you.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities and towns and estimates of housing units for states and counties.

Subject	Warwick village, New York			
	Estimate	Margin of Error	Percent	Percent Margin of Error
SEX AND AGE				
Total population	6,777	+/-31	6,777	(X)
Male	3,088	+/-181	45.6%	+/-2.7
Female	3,689	+/-184	54.4%	+/-2.7
Under 5 years	266	+/-100	3.9%	+/-1.5
5 to 9 years	332	+/-116	4.9%	+/-1.7
10 to 14 years	383	+/-176	5.7%	+/-2.6
15 to 19 years	634	+/-170	9.4%	+/-2.5
20 to 24 years	310	+/-132	4.6%	+/-1.9
25 to 34 years	433	+/-177	6.4%	+/-2.6
35 to 44 years	711	+/-173	10.5%	+/-2.6
45 to 54 years	954	+/-202	14.1%	+/-3.0
55 to 59 years	472	+/-132	7.0%	+/-1.9
60 to 64 years	486	+/-167	7.2%	+/-2.5
65 to 74 years	831	+/-175	12.3%	+/-2.6
75 to 84 years	498	+/-144	7.3%	+/-2.1
85 years and over	467	+/-191	6.9%	+/-2.8
Median age (years)	47.9	+/-3.7	(X)	(X)
18 years and over	5,363	+/-170	79.1%	+/-2.5
21 years and over	5,162	+/-236	76.2%	+/-3.5
62 years and over	2,109	+/-232	31.1%	+/-3.4
65 years and over	1,796	+/-192	26.5%	+/-2.8
18 years and over	5,363	+/-170	5,363	(X)
Male	2,342	+/-179	43.7%	+/-2.9
Female	3,021	+/-176	56.3%	+/-2.9
65 years and over	1,796	+/-192	1,796	(X)
Male	606	+/-131	33.7%	+/-6.3

Subject	Warwick village, New York			
	Estimate	Margin of Error	Percent	Percent Margin of
Female	1,190	+/-167	66.3%	+/-6.3
RACE				
Total population	6,777	+/-31	6,777	(X)
One race	6,712	+/-69	99.0%	+/-0.8
Two or more races	65	+/-57	1.0%	+/-0.8
One race	6,712	+/-69	99.0%	+/-0.8
White	6,123	+/-300	90.3%	+/-4.4
Black or African American	240	+/-222	3.5%	+/-3.3
American Indian and Alaska Native	149	+/-204	2.2%	+/-3.0
Cherokee tribal grouping	0	+/-16	0.0%	+/-0.4
Chippewa tribal grouping	0	+/-16	0.0%	+/-0.4
Navajo tribal grouping	0	+/-16	0.0%	+/-0.4
Sioux tribal grouping	0	+/-16	0.0%	+/-0.4
Asian	59	+/-92	0.9%	+/-1.4
Asian Indian	0	+/-16	0.0%	+/-0.4
Chinese	0	+/-16	0.0%	+/-0.4
Filipino	59	+/-92	0.9%	+/-1.4
Japanese	0	+/-16	0.0%	+/-0.4
Korean	0	+/-16	0.0%	+/-0.4
Vietnamese	0	+/-16	0.0%	+/-0.4
Other Asian	0	+/-16	0.0%	+/-0.4
Native Hawaiian and Other Pacific Islander	0	+/-16	0.0%	+/-0.4
	0	+/-16	0.0%	+/-0.4
	0	+/-16	0.0%	+/-0.4
Sallioali Other Desifie Jelender	0	+/-16	0.0%	+/-0.4
	0	+/-16	0.0%	+/-0.4
	141	+/-154	2.1%	+/-2.3
White and Black or African American	65	+/-57	1.0%	+/-0.8
White and American Indian and Alacka Nativa	1/	+/-26	0.3%	+/-0.4
White and Anien	18	+/-25	0.3%	+/-0.4
Plack or African American and American Indian and	0	+/-16	0.0%	+/-0.4
Alaska Native	0	+/-16	0.0%	+/-0.4
Race alone or in combination with one or more other				
races Total population	6 777	+/-31	6 777	(X)
White	6 158	+/-283	90.9%	(^)
Black or African American	287	+/-200	30.3 %	+/-4.1
American Indian and Alaska Native	167	+/-228	4.2 %	+/-3.4
Asian	89	+/-220	1.3%	+/-3.4
Native Hawaiian and Other Pacific Islander	0	+/-16	0.0%	+/-0.4
Some other race	141	+/-154	2.1%	+/-2.3
	171	17 104	2.170	17 2.0
HISPANIC OR LATINO AND RACE				
Total population	6 777	+/-31	6 777	(X)
Hispanic or Latino (of any race)	439	+/-224	6.5%	+/-3.3
Mexican	0	+/-16	0.0%	+/-0.4
Puerto Rican	290	+/-180	4.3%	+/-2.6
Cuban	71	+/-67	1.0%	+/-1.0
Other Hispanic or Latino	78	+/-100	1.2%	+/-1.5
Not Hispanic or Latino	6.338	+/-224	93.5%	+/-3.3
White alone	5.894	+/-306	87.0%	+/-4.5
Black or African American alone	171	+/-180	2.5%	+/-2.7
American Indian and Alaska Native alone	149	+/-204	2.2%	+/-3.0
Asian alone	59	+/-92	0.9%	+/-1.4
Native Hawaiian and Other Pacific Islander alone	0	+/-16	0.0%	+/-0.4
	Ũ			

Subject	Warwick village, New York			
	Estimate	Margin of Error	Percent	Percent Margin of Error
Some other race alone	0	+/-16	0.0%	+/-0.4
Two or more races	65	+/-57	1.0%	+/-0.8
Two races including Some other race	0	+/-16	0.0%	+/-0.4
Two races excluding Some other race, and Three or more races	65	+/-57	1.0%	+/-0.8
Total housing units	2,960	+/-169	(X)	(X)
CITIZEN, VOTING AGE POPULATION				
Citizen, 18 and over population	5,321	+/-167	5,321	(X)
Male	2,315	+/-180	43.5%	+/-2.9
Female	3,006	+/-175	56.5%	+/-2.9

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

For more information on understanding race and Hispanic origin data, please see the Census 2010 Brief entitled, Overview of Race and Hispanic Origin: 2010, issued March 2011. (pdf format)

While the 2012-2016 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural population, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

Explanation of Symbols:

1. An ^{***} entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.

2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.

3. An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.

4. An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.

5. An '***' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.

6. An Intervention of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.

7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.

8. An '(X)' means that the estimate is not applicable or not available.