

May 27, 2021

Lynne D. Sweet  
LDS Consulting Group, LLC  
170 Worcester Street, Suite 206  
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**Re: Wetland and Vernal Pool Inspection Report  
Apple Hill Estates - 31 Hunting Lane, Sherborn, MA**

## 1. Introduction

On April 30, 2021 I performed an inspection and vernal pool survey within a small, isolated depression located to the east of the existing dwelling at 31 Hunting Lane in Sherborn (Figure 1).

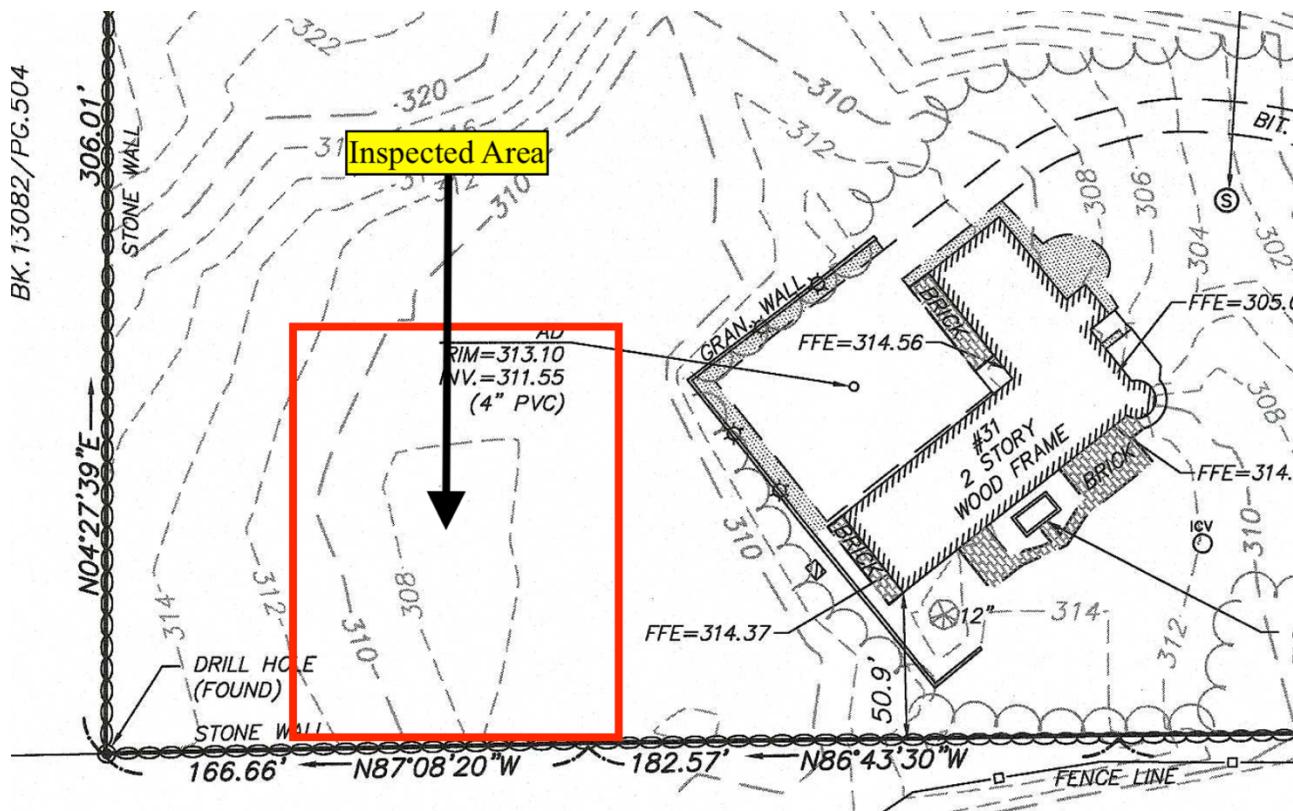


Figure 1 - Area surveyed for vernal pool habitat.

## **2. Methods**

I searched throughout the extent of standing water, using polarized glasses for enhanced visual scanning and a dip net to sample for insects and amphibian larvae. On the 4/31/21 survey date, egg masses of common obligate indicator species (spotted salamander and wood frog) would have been easily detectable if present. Wood frog egg masses typically hatch by late April, so wood frog tadpoles would have been detectable if present.

The inspection and survey took place the morning after a significant rainfall event, so the depression was flooded with clear water, up to four inches deep. Photos 1-3 show the depression as observed on 4/31/21.



*Photo 1 – Southern half of flooded depression, facing south (4/31/21).*



Photo 2 - Northern half of flooded depression, facing southwest (4/31/21).



Photo 3 - Close-up view of clear water in flooded depression on 4/31/21

### **3. Observations**

- The pond had shallow standing water, ranging from approximately 1-4 inches deep, on the morning after a significant rain event.
- The depression is not mapped as a “Potential Vernal Pool” on the NHESP GIS layer.
- I did not observe any evidence of breeding by obligate species (fairy shrimp, wood frogs or spotted salamander).
- I did not observe any other amphibians or their eggs or larvae.
- I did not observe any aquatic invertebrate that are commonly encountered in vernal pools, such as fingernail clams, amphibious snails, predaceous diving beetle larvae, dragonfly and damselfly larvae, etc.
- Volume calculations of the basin were prepared by Allen & Major (Figure 2). The volume of the basin when flooded was calculated to be 0.008 acre-feet or 360 cubic feet at a depth of 0.3 feet.

### **4. Regulatory Context**

#### **4.1 Vernal Pool**

In order to determine whether a wetland meets the State criteria for being considered a certifiable vernal pool, I followed the procedures outlined in the Mass. Division of Fisheries & Wildlife “*Guidelines for the Certification of Vernal Pool Habitat*” document from 2009 (hereafter “the NHESP Guidelines”). According to the NHESP Guidelines, a vernal pool can be certified if the appropriate biological and physical criteria are present using either the “Obligate Species Method” or the “Facultative Amphibian Species Method.”

For the Obligate Species Method, in the case of “physical criteria,” a “pool with no permanently flowing outlet” must be documented. In the case of “biological criteria,” there must be evidence of breeding by one or more “obligate” indicator species, including wood frogs, mole salamanders (*Ambystoma sp.*) or fairy shrimp. If a vernal pool is to be certified by the presence of amphibian egg masses, there must be at least five egg masses present (it can be a combination of multiple species). With fairy shrimp, no minimum number of individuals is required.

For the Facultative Amphibian Species Method, in the case of “physical criteria,” a “pool with no permanently flowing outlet” **and** “evidence that there is no established, reproducing fish population (i.e. photo of the pool dry)” must be documented. In the case of “biological criteria,” there must be evidence of breeding by **two or more** “facultative” indicator species, including spring peeper, gray treefrog, American toad or Fowler’s toad.

The Sherborn Wetland Regulations does not identify “vernal pool” as a resource area subject to jurisdiction of the Wetlands Bylaw. The Wetlands Regulations (Section 2) provide the following definition of vernal pool:

*Vernal pool. A confined basin or depression which, at least in most years, holds water for a minimum of two continuous months during the spring or summer or both, and which is free of adult fish populations. A confined basin or depression occurring in an existing lawn, garden, landscaped area, driveway, cultivated field, or open grazed meadow is not considered a vernal pool.*

#### 4.2 Isolated Land Subject to Flooding

The Wetlands Protection Act Regulations (310 CMR 10.57) define Isolated Land Subject to Flooding (ILSF) as follows:

*Isolated Land Subject to Flooding is an isolated depression or closed basin without an inlet or an outlet. It is an area which at least once a year confines standing water to a volume of at least ¼ acre-feet and to an average depth of at least six inches.*

The Sherborn Wetland Regulations define ILSF as follows:

*Isolated Land Subject to Flooding. An isolated depression or closed basin without an inlet or an outlet. It is an area which at least once a year confines standing water to a volume of at least 1/4 acre-feet and to an average depth of at least 4 inches.*

The calculated volume of the basin does not meet either of these definitions, therefore the basin is not a jurisdictional ILSF under the WPA or Wetland Bylaw.

#### 5. Conclusions

Based on my observations, I conclude that the basin area does not contain the necessary “biological” criteria for certification as a vernal pool under the Mass. Division of Fisheries & Wildlife “*Guidelines for the Certification of Vernal Pool Habitat*” document (hereafter “the NHESP Guidelines”). Based on my observations, and evidence provided by the owner that the depression likely does not hold water for two consecutive months in the spring and/or summer, I also determined that the depression does not meet the definition of “vernal pool” under the Sherborn Wetland Regulations.

If there are any questions concerning this submission, please do not hesitate to contact us.

Sincerely,

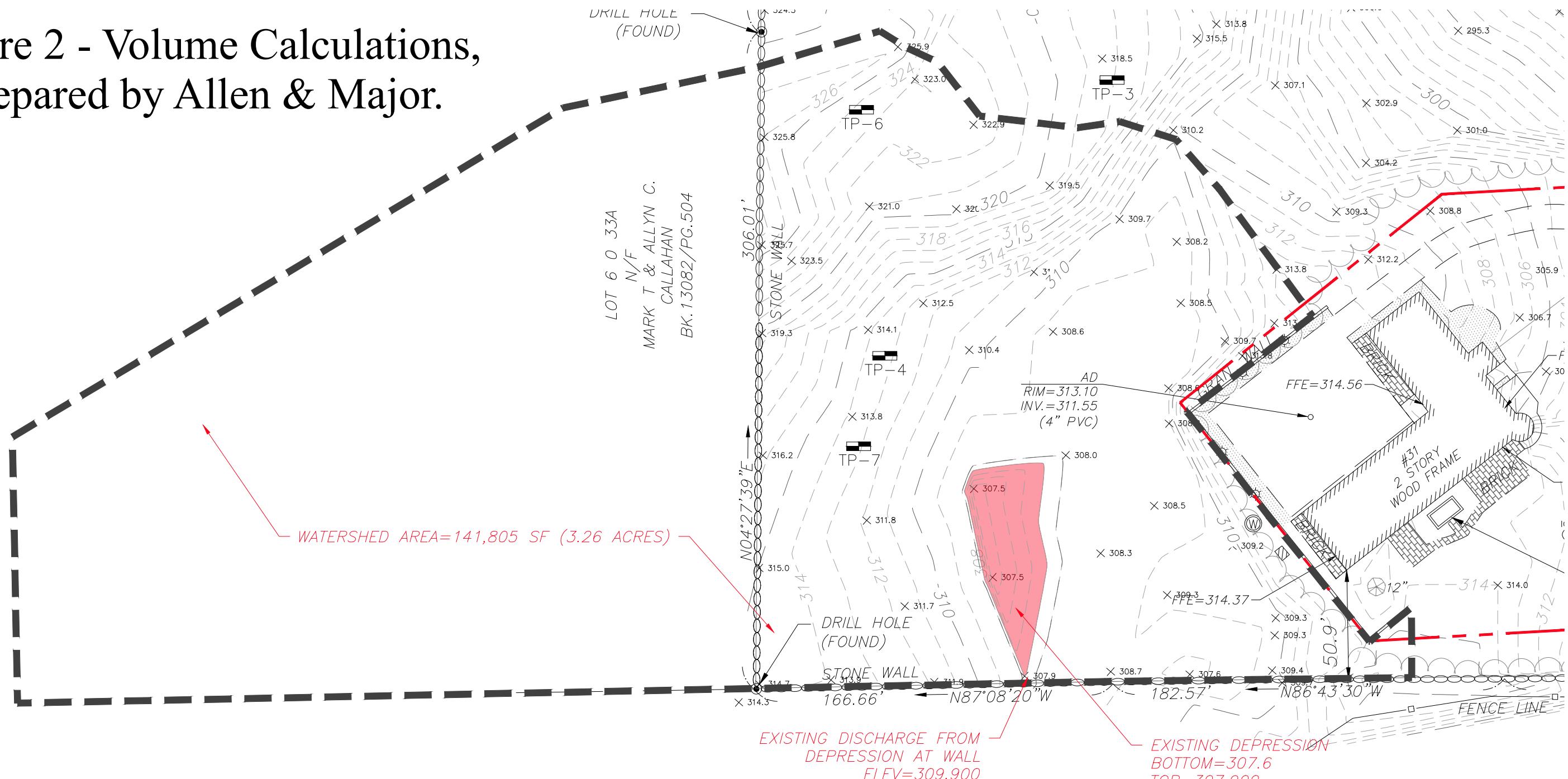
Goddard Consulting, LLC

by

A handwritten signature in black ink that reads "Dan Wells". The signature is fluid and cursive, with "Dan" on the top line and "Wells" on the bottom line.

Dan Wells, M.S.  
Senior Wildlife Biologist & Wetland Scientist

# Figure 2 - Volume Calculations, prepared by Allen & Major.



## Summary for Pond 1P: Existing Depression

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.	Storage	Storage	Description
#1	307.60'	0.008	af	Custom Stage Data (Irregular)	Listed below (Recalc)
Elevation	Surf.Area	Perim.	Inc.Store	Cum.Store	Wet.Area
(feet)	(acres)	(feet)	(acre-feet)	(acre-feet)	(acres)
307.60	0.006	111.221	0.000	0.000	0.006
307.70	0.019	153.490	0.001	0.001	0.026
307.80	0.035	195.662	0.003	0.004	0.053
307.90	0.054	234.904	0.004	0.008	0.084

## Summary for Pond 1P: Existing Depression

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.	Storage	Description	
#1	307.60'	360 cf	Custom Stage Data (Irregular)	Listed below (Recalc)	
Elevation (feet)	Surf. Area (sq-ft)	Perim. (feet)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)	Wet. Area (sq-ft)
307.60	261.360	111.221	0	0	261.360
307.70	827.640	153.490	52	52	1,151.856
307.80	1,524.600	195.662	116	168	2,323.720
307.90	2,352.240	234.904	192	360	3,668.455