Creative
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May 25, 2021

To:

Richard Novak, Chair
Zoning Board of Appeals
Town of Sherborn

cc: Daryl Beardsley, Sherborn Board of Health
Neil Kessler, Sherborn Conservation Commission
Jeanne Guthrie
Brian Moore, Sherborn Groundwater Protection Committee
Craig D. Mills
Paul Bochicchio

Re: 40B Applications: 41 North Main Street and 31 Hunting Lane ("Pine Residences" & "Apple Hill Estates")

Dear Mr. Chairman and Board members:

On behalf of the Hunting Lane Neighbors Group, I would like one more time to bring to your attention a couple of issues related to the referenced project.

1. **Environmental Law Compliance.** The Masshousing eligibility letter dated April 30, 2020, clearly stated that
"*Based on MassHousing's consideration of comments received from the Municipality, and its site and design review, the following issues should be addressed in your application to the local Zoning Bard of Appeals ("ZBA") for a Comprehensive Permit and fully explored in the public hearing process prior to submission of your application for Final Approval under the program:*
   - *Development of the Site will require compliance with all state and federal environmental laws, regulations and standards applicable to existing conditions and to the proposed use related to wetland protection, stormwater management, wastewater collection and treatment, hazardous waste safety, and public water supply. The Applicant* ***should expect that the Municipality will require evidence of such compliance prior to the issuance of a building permit for the Project.***

   ….."
   As we brought to your attention in our May 6, 2021 letter and by many abutters at the public hearing that a good size of water impoundment exits as witnessed by us at the project site overlapping partially with the proposed onsite wastewater treatment soil absorption area (leaching area). The abutters had also testified at the hearing that the water body occurs every year and last a few months into June. We provided the Board a letter of concern at the May 6, 2021 meeting that the area might be a vernal pool and may have a significant adverse impact on both upgradient and downgradient state regulated wetlands. The Board voted at the May 6, 2021 public hearing to hire a third-party peer review to check the area to determine whether the water impoundment area is a certifiable vernal pool or other resource area that is under the state and/or

federal environmental laws. We believe that the Board has the authority to deny the project for lacking adequate information if this issue **cannot** be "fully explored". The impact of the area with large wastewater disposal is significant and irreparable on potential protected resources and on the abutting properties' drinking water and wastewater treatment function. It is a significant public safety issue not to explore to the full extent.

Photo: The impoundment of water in the proposed leaching area at 31 Hunting lane view from west at 51 Hunting Lane on April 29, 2021

2. **Public Water Supply Concern**. As we detailed the reasons and echoed by the town peer review hydrogeologist, the bedrock wells that will be used to support such a large development in the downtown area with a relatively dense development condition depending on both onsite well and wastewater disposal is an unprecedented public safety risk on the existing residents and business. We have requested that the Board should consider a strong and solid safety mitigation measures condition in the approval for water supply impact on abutting properties so future damage can be mitigated with certainty. ***The following case may shed some light on why I recommend the above.***
   It happened in the past two years a long time used drinking water well ran from normal to dry in about a year in the same area of the project. The owners (Jo and Paul Sagar) of 51 North Main Street bought this house and moved in on June 22, 2017. They have a 350-ft bedrock well and was tested with 7 gpm yield at 2 hour pumping testing in April 2017 before they purchased the house by a well driller. The house has been there for decades. After they moved in, they had normal water supply until late summer when the well pump run out. They changed the well pump in October 2017. Since then, they had normal water supply from the well for their normal daily use until Spring 2019. They started to feel low water pressure and have to wait between two showers to get enough water. The situation deteriorated

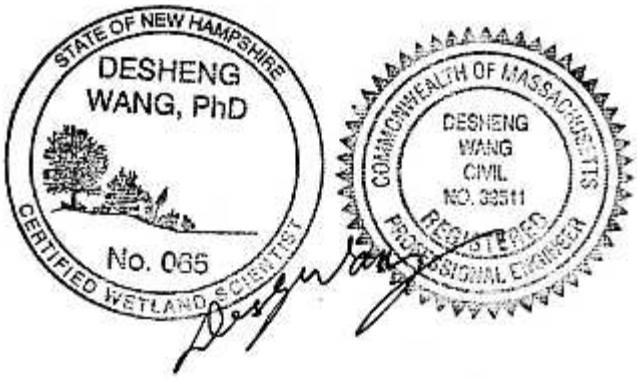
quickly in 2020 and they faced intermittent water supply and they had to call in a well driller to check it out. The driller checked the rate of the well, it dropped to 0.01 gpm. They had to drill a new well with a depth of 800 ft. At the same time, a 12-unit condo project was under construction at 59 N Main Street and according to the Sagar, the condo had 5-6 units sold and people moved in in 2019. There are two drinking water wells at 59 N Main to serve the 12 units of condos. The deep new well at 51 N Main is just a house lot away and in August 2020 was only tested with 1 gpm at the time of drilling and after hydrofracturing, the well barely made to 4 gpm. While many factors may be counted for a well yield when the well geometry and depth is fixed, it will fall into three major factors: 1) aquifer transmissivity, which affects the instant yield; 2) the aquifer storage, which impacts the long-term production of the well; 3) the recharge of the well head area, which is the ultimate sustainability of the well. As the well at 51 N Main ran dry in merely about 1 year without noticeable change of the pattern of water use as the owner can recall, the general recharge area in the well head zone assumed no change, the likely cause of the well run-dry would likely be additional water withdrawal by other wells from the shared aquifer, which has limited storage to sustain the increased use. Under a limited recharge condition and aquifer storage, the total long term sustainable water supply is fixed. If the water use exceeded this long-term sustainable supply, people will suffer water shortage and dry well condition. **Therefore, it is especially important for a large water use project to provide a thorough comprehensive investigation to show the approving authority that they can assure their own water supply is sustainable and at the same time they will not impact the people using the same water source negatively.** While this is easier to say then to do, some basic things can be done. The direct water pumping is one but how can we assure that the pumping is not and will not impact the other wells is not a quick short time testing. The overall water budget and water supply study will be needed to understand the situation holistically. While it is hard and unrealistic to ask an individual homeowner to do such a study when their use and land area ratio is low, a large-scale project in a relatively small land area, it should be a must to do. As we pointed out in our April 15, 2021 letter report, the under-review project at 41 N Main Street and 31 Hunting Lane is way larger than what has been constructed in the area, which will increase home units by about 150% more than doubled in the same watershed with a land area of about 17% of the watershed area. The likelihood of impact on abutting water supply is extremely high as we illustrated in the above ongoing case. If the project is to be approved, it is the Board's responsibility and power to require a "fully explored" study of the obviously concerning issues and construct prorated stringent conditions with reasonable to scale financial mechanism to replace existing abutting wells after fully explored investigation to show unlikely negative impact on existing homes and businesses. Therefore, the water wells proposed shall be conditioned to "fully explored" level to make sure there will be no impact on the abutting wells. We acknowledge and appreciate your effort facing this challenge situation to the Board. We hope and believe that you will have a great wisdom and many needed skills that you will live up to the challenge to protect entrusted public safety and interests by the town's residents.

3. **Long-term Sustainability in water supply and on-site wastewater disposal.** As we elaborated in our previous two reports and above, a long-term water budget analysis in the area will be a reasonable requirement and necessary to be fully explored in order to understand and assure that the public safety and adequate drinking water is warranted that can be done during the DEP standard water supply and wastewater treatment and disposal approval process. You do not want to have another resident to experience the same issue at 51 N Main Street.

Attached are some summary table and figures from my previous report for easy reference.

If you have any questions, please feel free to contact us.

Sincerely,
Creative Land & Water Engineering, LLC
By



Desheng Wang, Ph.D., P.E., CWS
Sr. Hydraulic Engineer and
Certified Wetland Scientist

Summary of the Project sites and vicinity watershed

31 Hunting lane

Tax Parcel: 11-0-3C (16.93 ac), 11-0-02 (4.88 ac), 11-0-3B (8 ac, well)
Most of land of 11-0-03C is in M.G.L. c. 61B (open space and recreation)

Area:	29.81	acres	support sewage flow:	3570.94	gpd	
	8	acres	for well yied (21.81 acres are used for development)			
Designed for:	28	units	Sewage flow:	9240	gpd	
			Drinking water flow:	9240	gpd	
Masshousing approval			4/30/2020	two years		
			28	units	7 units	affordable
			84	brms	168 people	
			12 Dulexes, one triplex, one existing single-family house			

41 N. Main Street

Tax Parcel: 11-0-41
Zoning: RA

Area:	6.25	acres	support sewage flow:	748.69	gpd	
Designed for:	60	units of apts	Sewage flow	11880	gpd	
			Drinking water flow:	11880	gpd	
Offsite area	4.88	acres	to support water and wastewater need			
Masshousing approval			4/30/2020	two years		
			60	units	15 units	affordable
			108	brms	216 people	
			12 one-brm,36 two-brm, 8 three-brm			

Total	Land area:	36.06	acres	17% total wshd
	Total home units:	88	units	
	Total bedrooms:	192	brms	384 people
	Title 5 support flow (W+S)	4319.63	gpd	
	Design flow	21120	gpd	
		4.89	times of allowed	

Well	2	on Parcel 8 ac 11-0-3B	
Zone I	250	ft	
IWHP	880	ft	
To wetland	42	ft, approx.	
To 23 Hunting	250	ft	

Watershed	Indian Brook	pernential river	Drawndown impact
	9360023	sf	215 acres
Public water supply	8		
Existing homes/small business	50	units	In watershed

Bedrock	Mafic rock	Silurian and ordovician volcanic and granitic rocks
Aquifer	very low yield	
	Soils:	

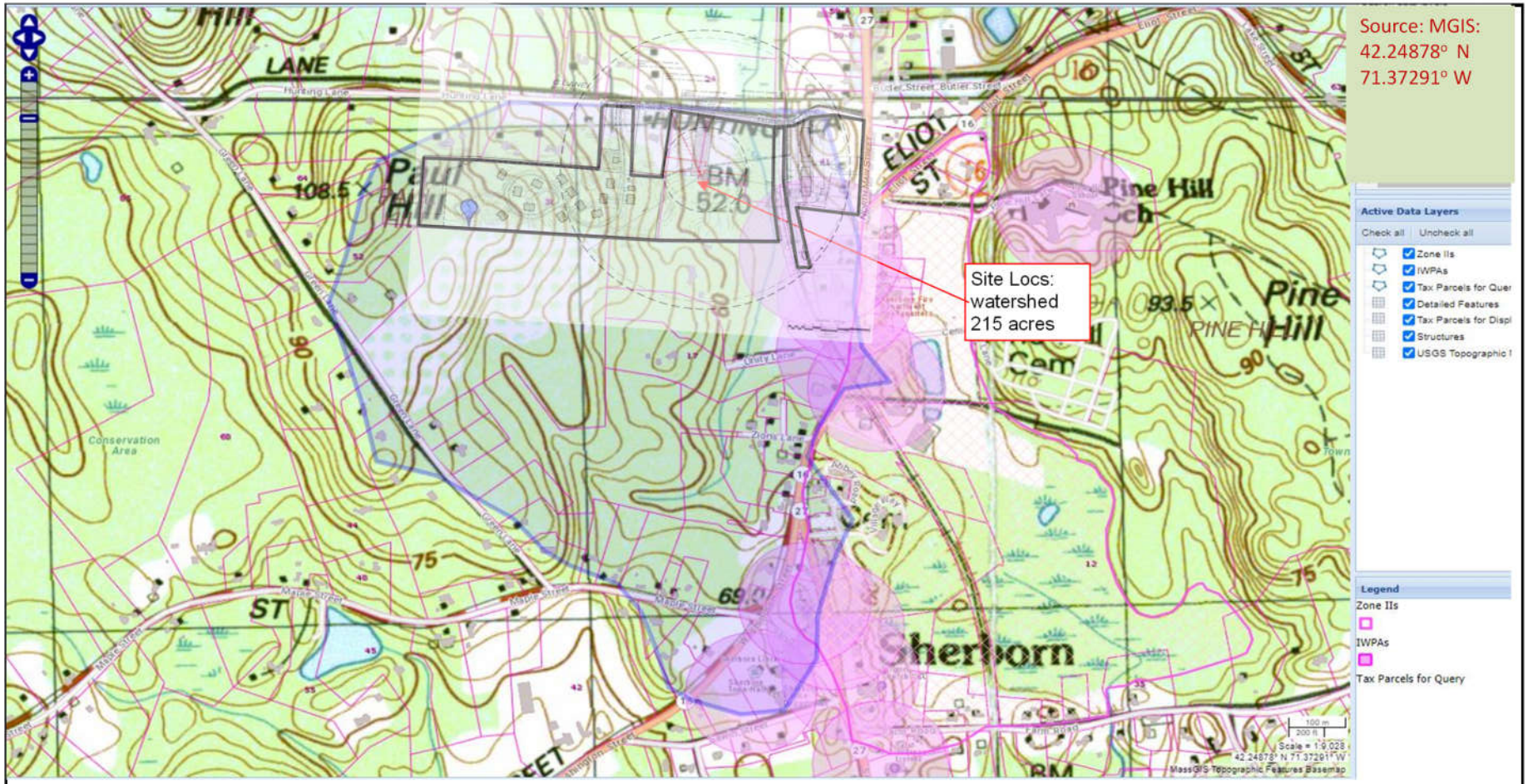


Figure 1.

USGS Site Locus and watershed plan
31 Hunting Lane and 41 N Main Street, Sherborn, MA

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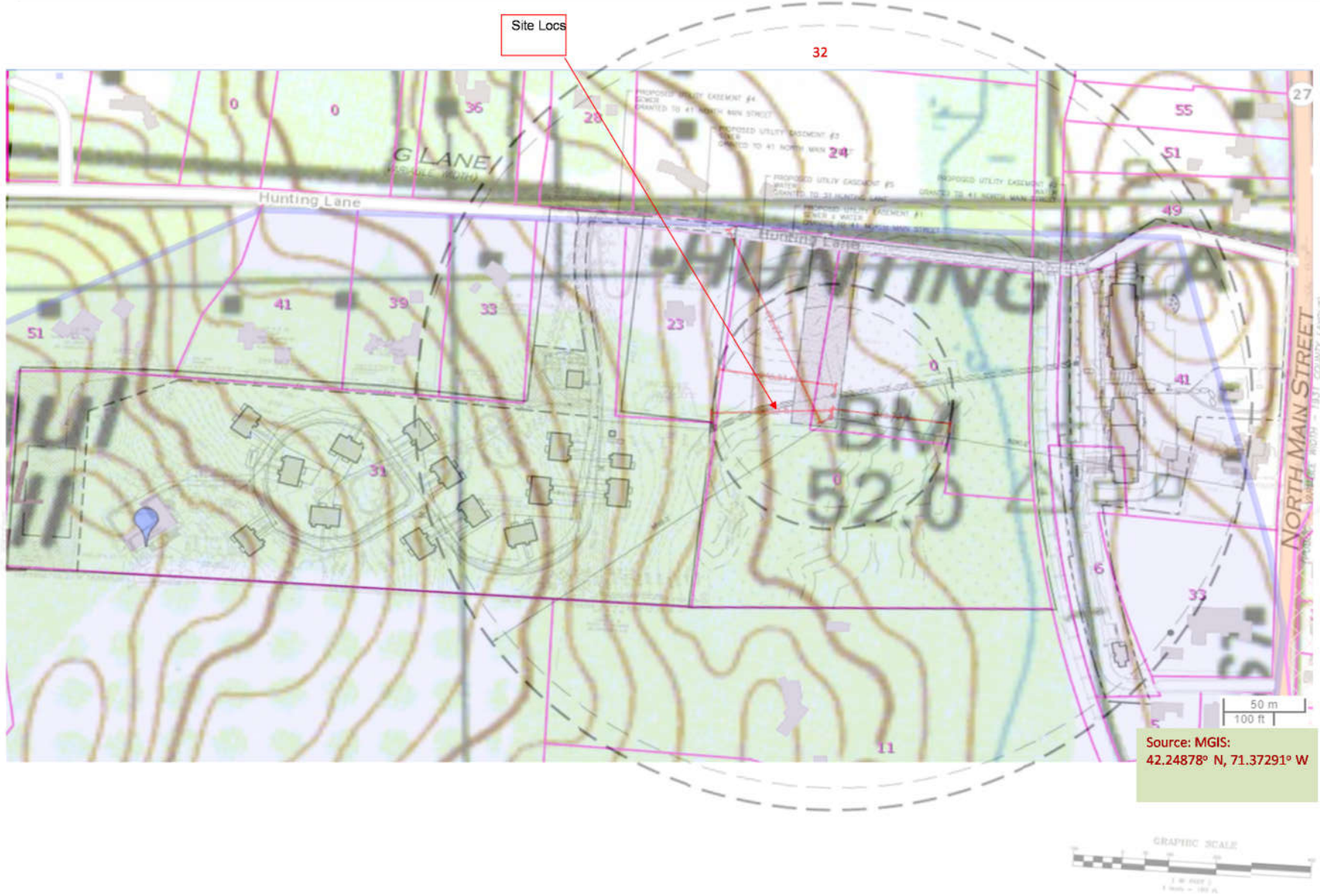

Figure 2.

Enlarged USGS Site Locus & Project site overlay
31 Hunting Lane and 41 N Main Street, Sherborn, MA

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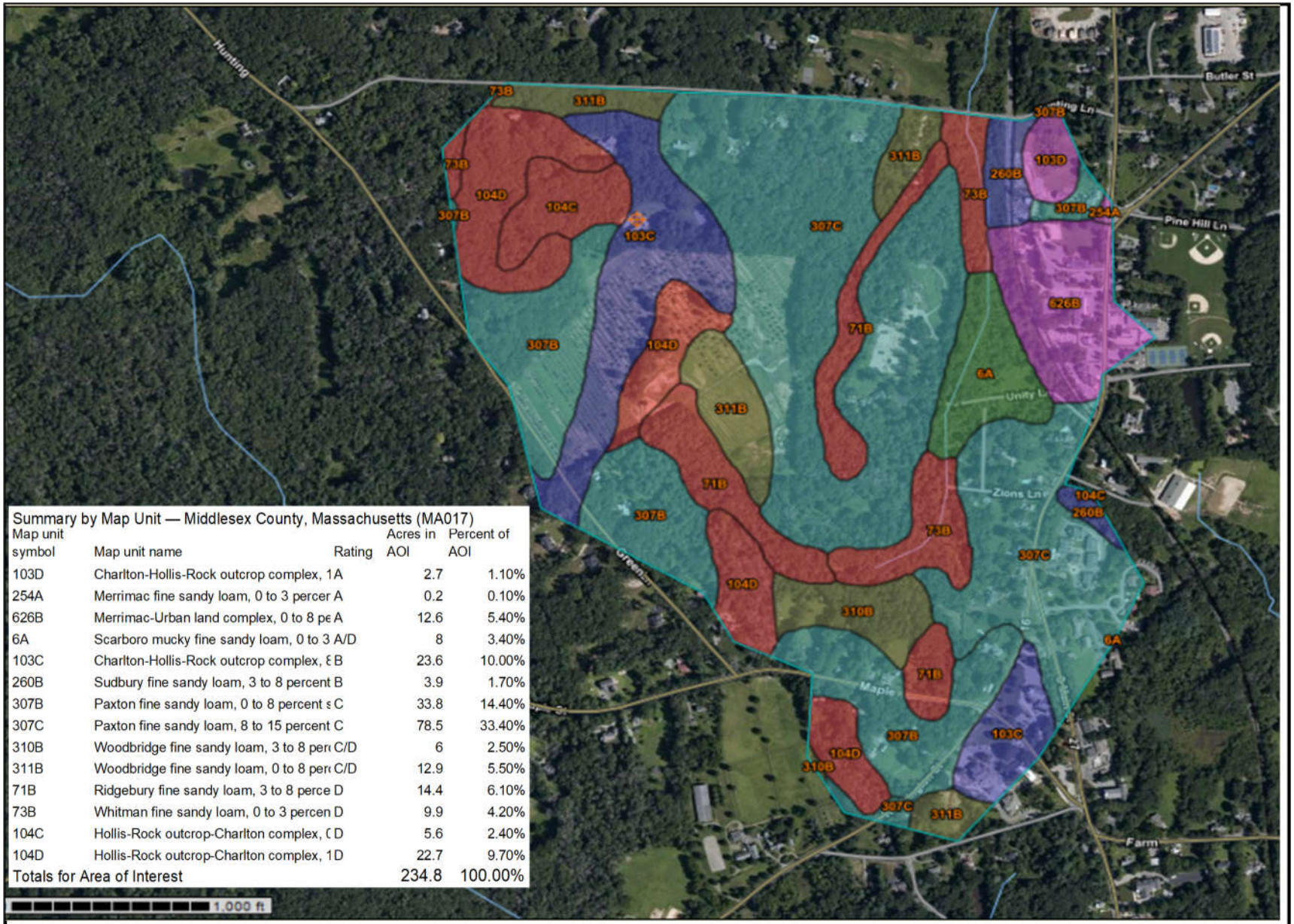

Summary by Map Unit — Middlesex County, Massachusetts (MA017)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
103D	Charlton-Hollis-Rock outcrop complex, 1	A	2.7	1.10%
254A	Merrimac fine sandy loam, 0 to 3 percer	A	0.2	0.10%
626B	Merrimac-Urban land complex, 0 to 8 pe	A	12.6	5.40%
6A	Scarboro mucky fine sandy loam, 0 to 3	A/D	8	3.40%
103C	Charlton-Hollis-Rock outcrop complex, 8	B	23.6	10.00%
260B	Sudbury fine sandy loam, 3 to 8 percent	B	3.9	1.70%
307B	Paxton fine sandy loam, 0 to 8 percent s	C	33.8	14.40%
307C	Paxton fine sandy loam, 8 to 15 percent	C	78.5	33.40%
310B	Woodbridge fine sandy loam, 3 to 8 per	C/D	6	2.50%
311B	Woodbridge fine sandy loam, 0 to 8 per	C/D	12.9	5.50%
71B	Ridgebury fine sandy loam, 3 to 8 perce	D	14.4	6.10%
73B	Whitman fine sandy loam, 0 to 3 percen	D	9.9	4.20%
104C	Hollis-Rock outcrop-Charlton complex, 0	D	5.6	2.40%
104D	Hollis-Rock outcrop-Charlton complex, 1	D	22.7	9.70%
Totals for Area of Interest			234.8	100.00%

Figure 3. NRCS Soil Map
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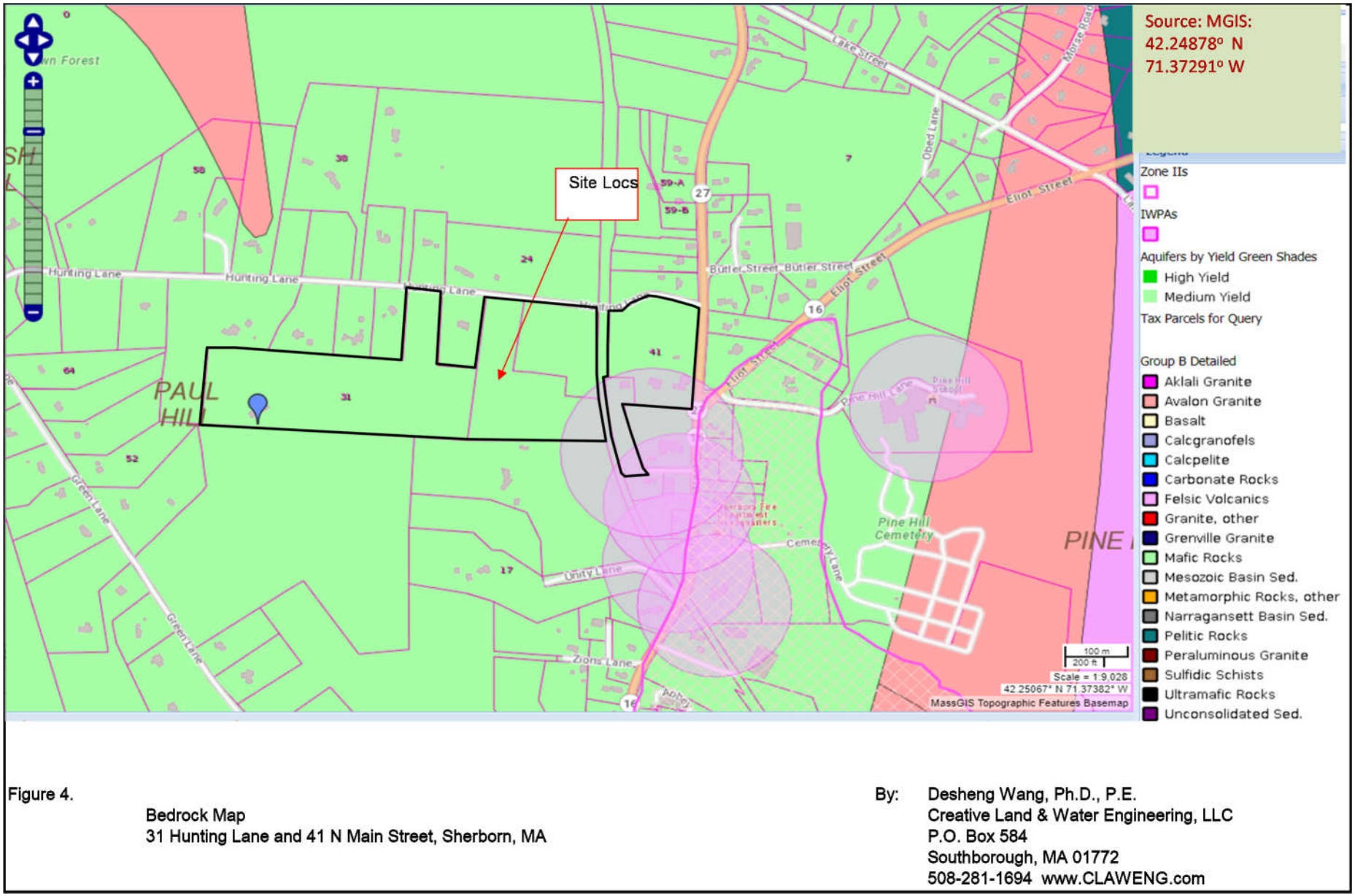

Figure 4.

Bedrock Map
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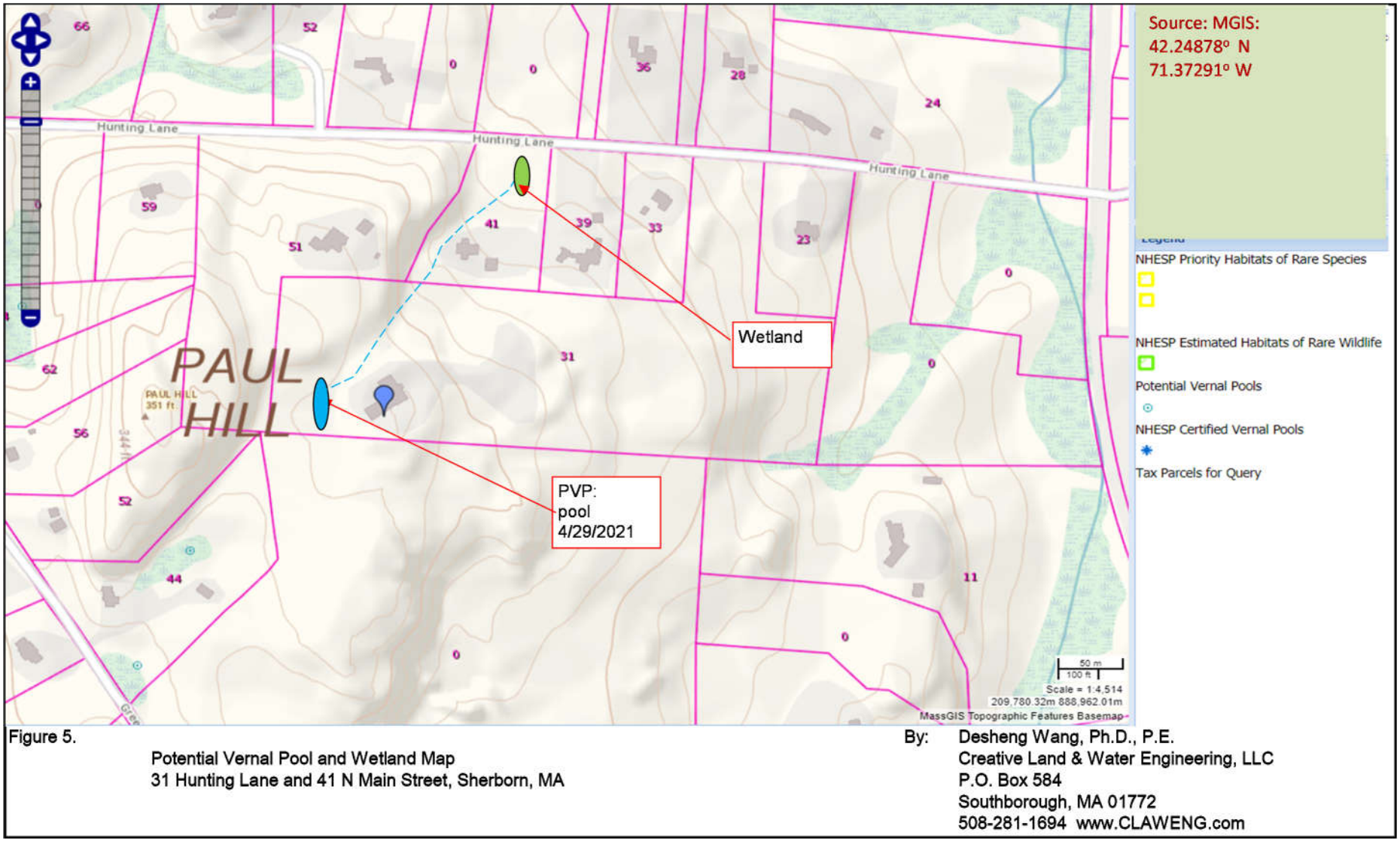

Figure 5.

Potential Vernal Pool and Wetland Map
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