● Soil & Wetland Studies
● Ecology ● Application Reviews
● Listed Species Surveys ● GPS
● Environmental Planning & Management
● Ecological Restoration & Habitat Mitigation
● Expert Testimony ● Permitting

January 22, 2021

Town of Andover
Inland Wetlands and Watercourses Commission
17 School Road
Andover, CT 06232

RE: ***26 Old Farms Road – Stream Crossing for Residential Development***

REMA Job #: 21-2357-FAR48

Dear Chair Lally and Commissioners:

At the request of the applicant, Mr. George Correia, REMA ECOLOGICAL SERVICES ("REMA") has been asked to review the plans for a wetland and intermittent stream crossing associated with the above-referenced residential development proposal, and specifically a review letter addressed to the Commission by herpetologist Mr. Hank Gruner, dated January 12th, 2021.

A visit to the subject site was conducted on January 16th, 2021, at the tail end of a precipitation event that totaled 1.19 inches at Bradley International Airport. The western of the two intermittent stream channels was running full at the time (i.e., bank to bank), which at the proposed crossing averaged roughly 2.5 feet in width (see attached annotated photos). Below the crossing both streams have a braided character as they enter a nearly flat forested wetland, with a sparse woody understory, and with a partially open canopy (canopy coverage: +/- 70%). Stream flows fan out through this wetland. Further south, flows reconstitute to one broader channel, as the slope becomes steeper. An additional stream joins from the south, a few hundred feet prior to discharge to the Hop River.

Mr. Gruner is correct in saying that wood turtle could use the wetland area, even though travel up from the Hop River, might not be ideal. However, the nearly level open canopy forested wetland, likely has a well developed herbaceous layer by late spring and early summer, affording opportunities for foraging by wood turtles, even though the property owner who has lived there for many decades had never seen or heard of wood turtles in that area, which had been used for many years for keeping horses, when it would dry out. Potential wood turtle use at the area of the proposed crossing or above it would be unlikely, as the grades pick up, and the quality of the habitat for foraging turtles is marginal, at best.

Mr. Gruner's concerns center around the potential for the natural hydraulic dynamics of the stream corridor to be altered, as stormwater is forced through the two proposed 36-inch diameter culverts. He notes that increased channelization of the watercourse could occur resulting in soil erosion and deposition within wetlands and downgradient aquatic habitats.

In speaking with Mr. Andrew Bushnell, the professional engineer that has drawn up the submitted plans, the proposed culverts are sized to safely pass the 100-year storm event stormwater runoff without overtopping the driveway. Typically, the storms of concern are those that occur more frequently, up to the 2-year storm. Based on my site visit, at the tail end of a significant storm, it is clear that these more frequent significant storms would be accommodated by the proposed culverts.

Moreover, even if some minimal enlargement of the channel took place downgradient of the proposed culverts, in this nearly level topography, this would be limited to a very short stream segment, and would not continue too far to the south. Flows velocities would quickly spread out and be dissipated in the broad, nearly level forested wetland, just as was observed on the day of inspection. In fact, the wetland below the proposed crossing is a depositional environment, as soil has been deposited here for a very long time, especially when the stream's watersheds had much less forest cover.

In my professional opinion, the proposed wetland and watercourse crossing will not have an adverse, long-term effect on the downgradient wetlands and watercourses, or the wildlife that utilize these habitats, including, potentially, the wood turtle.

Finally, in looking at the very low risk to regulated resources from the proposed crossing, and in analyzing the feasible and prudent alternatives, a bridge structure that would span the

regulated resources, would not only be prohibitively costly to serve one house, but would not be prudent, because the proposed wetland/watercourse impact does not rise to the level of a significant adverse impact, that would need to be further reduced. The crossing design is reasonable and takes into account the hydraulic characteristics of the two intermittent streams. This single driveway will also not impede the passage of wildlife associated with the wetland/watercourse corridor.

Respectfully submitted,

REMA ECOLOGICAL SERVICES, LLC

George T. Logan, MS, PWS, CSE
Professional Wetland Scientist, Registered Soil Scientist
Certified Senior Ecologist (ESA)

Attachments: Photos 1 to 5

VIA E- MAIL

Proposed Wetland/Watercourse Crossing from Pineridge Drive, Andover, CT
Photos taken on 1/16/2021, by REMA Ecological Services, LLC

Photo 1: Western intermittent stream; facing northerly.

Photo 2: Open canopy forested wetland below proposed crossing; facing southerly.

Proposed Wetland/Watercourse Crossing from Pineridge Drive, Andover, CT
Photos taken on 1/16/2021, by REMA Ecological Services, LLC

Photo 3: Open canopy forested wetland below proposed crossing; facing northerly.

Photo 4: Stream upgradient of confluence with Hop River; facing southerly.

Proposed Wetland/Watercourse Crossing from Pineridge Drive, Andover, CT
Photos taken on 1/16/2021, by REMA Ecological Services, LLC

Photo 5: Hop River at the confluence with watercourse associated with site; facing westerly (up river).