



5 Railroad Street, Newmarket, NH 03857 • Ph 603-659-4979 • Fax 603-659-4627 • www.horizonsengineering.com

July 8, 2021

Michael Behrendt Durham Town Planner Town of Durham 8 Newmarket Rd. Durham, NH 03824

## RE: Michael and Marti Mulhern 91 Bagdad Road proposal for subdivision and conditional use permit.

Dear Michael;

This letter is being provided to explain the design changes to the subject project. The changes to the plans are as follows:

- 1. Road design revisions:
  - a. Vertical alignment at the intersection with Gerrish Road and the second wetland crossing. This design change was done to improve the road design parameters and to help reduce the construction costs especially at the second crossing.
  - b. Horizontal alignment between stations 12+00 and 14+00. This design change was done to improve the curvature of the road centerline to improve the maneuverability for larger vehicles and emergency vehicles and reduce the buffer impacts.
  - c. The loop road width was widened by 2'. The new design is 18' paved and 2'gravel shoulders on each side. This design change was done to improve maneuverability.
- Redesign the conveyance and treatment swale on the south side of the road between stations 2+50 and 4+00. This design change was required to match the new road grading in this area. The swale is the same length as the original design.
- 3. Grading changes at the Kelley driveway. This design change is required to match the road design changes at this location. This extended grading provides for a safer driveway access to this lot.
- 4. The number of units has been increased by 3 to a total of 18 new units. This increase is being done due to the extensive costs of permitting and the rising construction costs since the beginning of the project.
- 5. The stormwater detention pond at the intersection of the loop road has been reconfigured due to the redesign and addition of the unit layout.
- 6. The landscaping and walking path have been revised to incorporate the new unit layout.
- 7. The septic tank layout and force main location has been redesigned to work better with the new unit layout.

## Horizons Engineering, Inc.

In summary, these minor design changes provide for a better layout for vehicle access and possibly reduce the construction costs. In addition, adding the 3 units reduces the overall costs of the units and the future maintenance costs over the life span.

If you need additional information, please do not hesitate to contact me.

Sincerely;

Michael N. Saurt

Michael J. Sievert VP Structural Engineering

Cc: Marti Mulhern

Horizons Engineering, Inc.