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November 1, 2023
Project No. 220506

Kevin M. Leonard, PE
Principal Engineer
Northpoint Engineering, LLC
119 Storrs Street Suite 201
Concord, NH 03301

Subject: Response to 3rd Technical Review – Focused on Phase I upgrades for Phase II

Dear Mr. Leonard,

We are in receipt of your letter dated October 30, 2023 and offer the following comments.

General Comments

1. Final plans will require all professional stamps including wetland scientist, surveyor, and engineer.

Final plans will be stamped.

2. The Phase I plans being revised to reflect needed Phase II widening were originally formally approved by the Planning Board and recorded at the registry (Sheet 1). We believe the Planning Board needs to weigh in on their approval for the modified Phase I plans before construction is executed.

We have provided the planning board with the Phase I plan revisions and will provide the updated plans for the meeting Thursday November 2, 2023.

3. We understand that Horizons has approached the NHDOT District Engineer regarding the road widening as it relates to the NHDOT Driveway Permit. Based on correspondence we were forwarded NHDOT is requesting the following: a new application for the expanded use including Phase II improvements; a brief narrative with trip estimates and supporting plans; and drainage design that demonstrates no impact to state highway.

Clarification on what NHDOT said, there are no permit changes required for this Phase I work, the current driveway permit is all that is required. The new permit will be required as part of Phase II permitting process.

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4. The applicant has applied for an NHDES Alteration of Terrain (AoT) permit for the Phase II improvements and NHDES has advised that Phase I needs coverage under an Alteration of Terrain Permit too. Our understanding is a RFMI has been issued to the applicant and a response is pending.

Correct, response is pending.

5. The applicant should determine if they will require any additional or modified easements associated with the roadway widening proposed. The design engineer has been somewhat elusive to this idea and in recent email suggested they would be provided after construction. We would typically recommend that the plan have sufficient detail to clearly depict all necessary road grading and associated easements. From inspection of the plans, it seems like further encroachment may be occurring on Lot 1, Lot 2, and possibly onto Map 206 Lot 59 (Michael Lapage). Lot 59 is private property not owned by the developer and we are unaware of any slope easement rights that the developer might have.

The design needs to be developed to avoid impacts to Lot 59. As currently drawn, it appears that some encroachment may be occurring. Please provide clarity on plan.

There is no impact to lot 59, it is private property not owned by the developer. Easement areas have been depicted on the existing conditions sheet. Lot 1 has an existing drainage easement. Lot 2 has an existing slope easement. Lot 7 has an existing utility easement; this easement will be modified to add a slope easement and the Developer's attorney will provide the revised easement to the Town Attorney.

6. We have also been advised that the Phase II development will be part of the same homeowner's association as Phase I. This makes sense in the built condition, but we want to make sure that the existing Phase I Association Documents provide provisions for the inclusion of Phase II. My understanding is homes will be sold in the coming months bringing homeowners into the association and making the developer no longer the sole membership of the association. We expect that any required changes to the documents will need to be submitted for review by the Town's attorney.

All legal documents including the Association Documents will be provided by the Developer's Attorney for Town Attorney review.

Plan Comments

Existing Conditions

7. The submitted plan is reporting the existing conditions for Phase I. It is unclear if the following items are intended to be shown in their as-built location or if some layers are

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errantly turned on. Please clarify. Specifically, driveways, driveway culverts, water line, fire hydrant, etc. Note 5 suggests the data shown is based on survey from April 2020. If as-built data has been added please update note to report recent fieldwork. As-built features should be labeled as such if applicable.

Note 5 on the Existing Condition Sheet has been revised to reflect recent construction.

8. Sheet 1 of the original Phase I construction plans reported the footprint of the previously built gravel roads that at the time were being capped with 6" of crushed gravel. The recent existing conditions plan depicts a different footprint for the existing roads which is not centered on the roadway centerline. The discrepancy between existing gravel depictions is confusing and needs explanation.

The gravel road was built many years ago. It is wider than what was required and was not centered on the ROW. The existing gravel road is shown on the existing condition plan.

Sheet 1 of 9 (Site Plan)

9. Solar Spring Road label is on top of driveway culvert note.
Solar Spring label has been moved.
10. Additional line types & shading are being used to reflect the proposed edge of roadway selects and apparent full-box widening limits. These should be added to legend.
The legend has been revised.

We recommend that a table be provided that gives required widening widths in 10' station increments in addition to start and ending stations, so the contractor has detailed guidance tied to the roadway centerline of the improvements required.

For instance, something like this:

	<i>LT Full-Box Limits</i>		<i>RT Full-Box Limits</i>	
	End Offset	Start Offset	Start Offset	End Offset
STA 1+20	16'	13'	10'	16'

A table has been added for clarity to plan sheet 2.

11. Construction Note 2 refers to STATION 0+43.9. Elsewhere in plans 0+42.9 is referenced. Please clarify.
Construction Note 2 has been revised to Station 0+42.9.

Sheet 2 of 9 (Road Plans & Profiles)

12. As discussed in the field, the roadway selects at the entry of Solar Spring Road are estimated to be 18" deep based on previous random exploration of the roadway

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section by Northpoint's forensic investigation. It has been determined that the first 400' of Solar Spring Road needs to meet the more stringent road standard to accommodate the planned Phase II expansion. The Town requirement is 18" of gravel and 6" of crushed gravel. In order to provide this section, the entrance needs to be cut down 24" from the finish grades and brought back up with NHDOT approved materials. The plans do not currently specify this work or identify when the proposed road grade transitions to being 6" above existing grade. When this condition occurs the full-depth reconstruction of the roadway box is not necessary and the planned 6" of additional crushed gravel will be satisfactory. We estimate that this station is approximately STA 0+80 but ask that the design engineer specify. Once identified a full depth reconstruction from US Route 3 to that station will need to occur. This should be clearly specified on plans. Beyond that station the widening would occur as required and the entire road width would be capped with at least 6" of crushed gravel to achieve roadway design elevations.

I believe the road cross-section and profile show the depth of material required and the finish grade, and the only way to achieve this is to remove material to a depth of 24", replace the material with bank run and crushed gravel. Conversations with the contractor indicate his understanding of this requirement. However, in the interest of absolute clarity, a note has been added to the plans on sheet 2.

13. It would be helpful for the plans to approximate the location of the old waterline cut and cap that occurred as part of the directional drill water main connection effort. We note symbology that suggests this occurred close to the direction drill line connection but please label for confirmation.

Label has been added for the location of the "cut and cap" of the abandoned waterline.

14. Our understanding is the old watermain, at the proposed NHDOT driveway culvert that needs lowering, is still live surcharged from the other side of Route 3. Our recollection is the culvert is very close to the original water line connection pipe. Please clarify what the expectations are for this work. Is insulation required and/or is the plan to cut & cap the water line closer to Route 3 and remove it from the drainage pipe path?

We have no plans to do any additional work with the old watermain but will do whatever the public works director requires. The line is no longer in service, and we believe we completed the necessary work for that watermain last summer.

Sheet 3 of 9 (Utilities Plan)

15. Please address items 13 & 14 above on this plan.

Sheet 3 has also been updated to reflect comment 13 with the addition of location of cut and capped abandoned watermain.

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16. Three roadway cross-sections have been provided which generically provide the desired completed cross sections which are needed, but they do not clearly convey the construction steps to achieve the agreed upon work required. We have the following comments:

- a) Please provide NHDOT specification for gravel where applicable.
NHDOT reference for gravel has been added to each cross-section.
- b) Please provide full-depth reconstruction detail from STA 0+22 to STA TBD (where finish grade is 6" above existing grade at entrance (estimated to be STA 0+80, but needs design engineer confirmation)
The Cross Section for reconstruction of road from station 0+22 to station 0+75 has been added.
- c) Revise cross section beyond STA TBD to report improvements from STA TBD to STA 4+00 and clearly convey that crushed gravel (6" minimum) will cap existing roadbed. Detail should specify fine grading the existing road surface to at least 6" below finish grade and capping with crushed gravel to achieve design grades.
Construction note has been added to the Cross Section for station 0+75 to 4+00.
- d) Add a roadway box widening detail that specifies the expected construction when the roadway box needs to be widened. This should depict subgrade excavation and ditch relocation.
A Construction note has been added to cross section for box cut.
- e) Address comment 17 below on all cross sections.
Cross sections revised to 30" deep V-ditch.

17. We noted that the original Phase I plans specified a 30" deep V-ditch and the recent revised plans specify a 24" deep ditch with 2' flat bottom.

In accordance with Section 10.20 of the Subdivision Regulations all ditches shall be a minimum of 30" below final grade level. We recommend that the design be revised to meet this requirement. Please review roadway cross section and grass lined ditch details.

Proposed grading should be revised to reflect specifications.

Ditch detail and grading has been revised to reflect the 30" V-ditch.

Bonding & Construction Oversight

The road modifications to Phase I that are being caused by Phase II advancing are expanding the scope of work to complete Phase I. We agree with the developers approach to integrate these changes now. This will prevent the contractor having to revisit Phase I when Phase II advances.

We do want to point out that these scope changes are adding to the Phase I scope of work which would ordinarily increase the performance bond and construction monitoring escrow.

Given the progress to date we don't believe it is necessary to increase the financial surety / escrow as long as the original funds are still in the Town's possession.

Northpoint has been billing the Echo Lake Village Subdivision (Phase II) – NPE Project # 19071.3 for technical review of Phase I design changes triggered by Phase II being proposed.

Once construction advances Northpoint plans to bill Echo Lake Subdivision (Phase I) – NPE Project # 19071.1 for construction oversight.

Echo Lake Subdivision Phase I - Planning Board Approval

The original design plans were approved by the Planning Board and we believe they should be formally approved by the Planning Board again after all plan revisions are made. This should occur before construction for widening begins.

Sincerely,

A handwritten signature in cursive script that reads "Cathy Conway".

Cathy Furtek Conway, PE
VP Municipal Operations

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