# Acheron <br> Engineering, Environmental \& Geologic Consultants 

www.AcheronEngineering.com

March 4, 2019
March 25, 2019 Revised
Amanda Lessard, Planner
Town of Windham
8 School Road
Windham, Maine 04062
RE: Response to Comments Final Major Subdivision Application Durant Homestead, Residential Subdivision.

Dear, Amanda
The purpose of this submittal is to address Town of Windham's review comments regarding the Durant Homestead, Final Major Subdivision Application. Comments were provided in an emails from Gorrill Palmer, dated February 14, 2019 and March 6, 2019. Below you will find comments provided by the Windham in italic font followed by a response by Matt Hancock Properties LLC in regular font.
I. Final Subdivision Plan (no sheet \#) - Open space areas should be labeled similar to the lot areas.

The Final Subdivision Plan, attached has bee revised to include labels for the open space areas that are similar to the lot labels.
2. Final Subdivision Plan (no sheet \#) - As noted by Jon Earle in previous review, percentage of developable land in open space (Note I2) appears to be incorrect. The denominator does not match the total open space area provided in Note II.

The area of land proposed in open space equals 40.37 acres as indicated in Note 11. This figure includes areas that are not developable (wetlands and slopes over 25\%). The developable area designated as open space equals 27.20 acres. This figure is the area designated as open space minus wetlands and slopes over $25 \%$ ( 40.37 acres -13.17 acres). Note 12, calculates the percentage of reserved open space within the full parcel. As mentioned above the developable area in open space is 27.20 and the developable area within the full parcel is 48.53 acres (same as net residential area), $(27.20 / 48.53)=56 \%$. Note 12 has been revised to clarify.
3. Final Subdivision Plan (no sheet \#) - Plan shall be stamped by a Maine Licensed Professional Engineer and Professional Land Surveyor.

The attached Final Subdivision Plan include the design engineer's stamp and signature.
4. Final Subdivision Plan (no sheet \#) - Granite Monuments shall be installed in accordance with Section 91 I.A.3(a).

The Final Subdivision Plan has been revised per Section 911.A.3(a).
5. Final Subdivision Plan (no sheet \#) - Some proposed well locations are within $100^{\prime} / 50^{\prime}$ of the proposed travel way. As stated in Section 9 II.B.I(c)(I)(iii), wells shall not be constructed within 100' downgradient of travelways or 50' uphill from travelways

Water supply wells have been revised to meet the requirement of Section 911.B.1(c)(1)(iii). To meet the requirement on Lots 1, 2, 3 and 5, wells have been relocated and do not meet the standard 100 foot separation from a subsurface disposal system found in the Maine Subsurface Disposal Rules or the Well Drillers and Pump Installers Rules. However, Table 7A of the Maine Subsurface Disposal Rules and Table 400.1 of the Well Drillers and Pump Installers Rules allows for a reduction in the setback between a private potable water supply and a disposal field with design flows less than $1,000 \mathrm{gpd}$, based on the depth of well casing or liner seal below ground level, and LPI approval. With assistance from the Windham LPI, the State of Maine Site Evaluator was consulted and it has been determined that the LPI can approve the reduction in the setback in this case. Therefore, Matt Hancock Properties officially withdraws its waiver request from the requirements found in Section 911.B.1(c)(1)(iii).

The following note has been added to the Final Subdivision Plan to support this change:
"LOTS 1, 2, 3 AND 5: LPI APPROVAL REQUIRED FOR A REDUCTION IN SETBACK BETWEEN THE LEACHFIELD AND THE DRILLED WELL, TO INCLUDE GREATER DEPTH OF WELL CASING OR LINER SEAL BELOW GROUND LEVEL, AS PER TABLE 7A IN SECTION 7 OF THE SUBSURFACE WASTEWATER DISPOSAL RULES (AS AMENDED AUGUST 03, 2015)."
6. Final Subdivision Plan (no sheet \#) - We recommend that the plan show all lot setbacks (front, side, rear).

The Final Subdivision Plan has been revised to show structures setbacks.
7. Final Subdivision Plan (no sheet \#) - We recommend that the plan include all space and bulk criteria for a cluster subdivision in a farm zone.

The space and bulk criteria for a cluster subdivision is included on the attached version of the Final Subdivision Plan.
8. Final Subdivision Plan (no sheet \#) - It should be noted that the proposed tree line does not appear to include the proposed lot development.

During the preliminary subdivision planning board review process, the Board approved a not showing the proposed tree line for the lots that are not regraded to meet stormwater standards. The basis for this approval is the Durant Homestead Stormwater Treatment Level Summary Table on Sheet C-5 which specifies the amount of impervious and developed area allowed on each lot. This table allows, the contractor, owner and inspectors to easily determine the limit of clearing and development for each lot in the field.
9. Final Subdivision Plan (no sheet \#) - As the stormwater system has been designed to accommodate the proposed impervious and developed areas, as shown on this plan, any changes to the proposed lot development areas may require revisions to the proposed stormwater treatment systems.

There are no changes to the lot development that will require revisions to the stormwater management plan.
at
10. Site Plan (C-6) - Construction entrance does not appear to be shown in the correct location.

The construction location has been relocated on sheet C-6 to the edge of pavement of Chute Road.

I I. Site Plan (C-6) - Building envelopes/setbacks should be revised to exclude any wetlands within the lots.

Site Plan C-6 and the Final Subdivision Plan have revised to include a setback line in the same location as the wetland boundaries within lots. In addition, a note has been added to plans that indicated wetlands are excluded from the building envelope.
12. Site Plan (C-9) - Plan scale exceeds maximum scale size allowed (I" $=50^{\prime}$ ), refer to Section 91 I.M.5(a)(2). A waiver should be requested if you want to maintain the current scale

Please see the attached waiver request.
13. Site Plan (C-9) - Underground electrical and transformers are not shown on plan.

Underground electrical and transformers are shown on the attached sheet C-2 and C-9. Sheet C-2 includes a note indicating that a utility easement must be established for each transformer location.
14. Profile Plan (C-IO) - Grade from Sta. $0+00$ to $0+60$ exceeds the maximum allowable slope at intersections ( $2 \%$ for $60^{\prime}$ ) as required in Appendix B, Table 3.

The road design has been revised to show a grade of $2 \%$ from station $0+00$ to $0+60$.
15. Profile Plan (C-10) - Sag curve at Sta. $5+50$ does not meet the required minimum $K$ value in the AASHTO green book ( 26 minimum for 25 mph design speed). Given that this road may be submitted for acceptance as a Town Public Road, we would recommend that this vertical curb be revised to meet AASHTO requirements. (February 14, 2019 Comment)

Is the road proposed to be private, or presented to the Town for public acceptance? If the applicant is seeking Town Acceptance for Penny Whistle Lane, the vertical alignment should meet the design controls in AASHTO Green Book (7th Edition). In addition, Maine Legislature Statue (2075) Title 29-A, Chapter 19, subchapter I 'Rules of the Road' prohibits speed limits of 15 mph on municipal roads except on roads on islands or dead end roads less than a $1 / 4$ mile in length. Therefore, the sag curve proposed at Sta. $5+50$ should be designed for a speed limit at least 20 mph . However, if Penny Whistle Lane is to remain private, the applicant shall provide 15 mph speed limit signs as described in the comment responses. The applicant is also
required to include the private road notation in Section $911 . M .5(a)(5)(v)$. (March 06, 2019 Comment)

The road has been presented to the board for public acceptance. The sag curve design at station 5+50 has been revised to have a "K" factor of 17.52 which will meet the AASHTO Green Book standard for a 20 mph speed limit. The speed limit sign detail has been revised to indicate a speed limit of 20 mph .
16. Typical Section (C-II) - Roadside ditching does not meet the depth requirements in Section 9II.M.5(b)(8)(iii)(c). (February 14, 2019 Comment)

The Typical Section on sheet C-I I has been revised to meet the required ditch depth. However, it does not appear that the grading plans were updated to match the typical section. We recommend that the grading plans be updated to match the typical road section to avoid confusion during construction. (March 06, 2019 Comment)

Typical Section on Sheet C-11 has been revised to show the ditching depth to meet the requirement of Section 911.M.5(b)(8)(iii)(c). Contours indicating the bottom of the road side ditches on all grading plans have been shifted 1-foot to match the typical section.
17. Sheet C-IO provides an approximate depth of bedrock along the proposed roadway (based on test pits). There are several sections where drilling/blasting will be required to get the bedrock below subgrade. To avoid potential subsurface water pockets, MaineDOT specifications call for shattering all rock to a depth of 4' below subgrade to eliminate water pockets (Section 203.05I). For example, excavating the bedrock to subgrade at SSTPI 4 (Sta. I8+80) could create a water pocket uphill at SSTPI8 (Sta. 20+80) where the bedrock was noted to be deeper. How does the design engineer plan to avoid subsurface water pockets? A note on the plan should be added to direct the contractor on this matter.

A note will be added to plans directing the contractor shatter all rock to a depth of 4-feet below subgrade when the construction of Penny Whistle Lane creates the potential for water pockets.

Please let me know if you have any questions or concerns
Sincerely,
Acheron


Kirk J. Ball, PE
Enclosure: Revised Final Subdivision Plan (5)
Plan Sheets C-2, C-6, C-9, C-10 and C-11 (5)

## Cc: Matt Hancock, MHP <br> David Fowler, MHP






box culvert desion notes:







$\frac{\text { ROAD CROSSING SECTION 1 } 1}{\text { SCAEAE HORZ } 10=10^{\circ}}$



ANCHOR INSTALLATION DETAL
$\frac{\text { STOP SIGN POST DETALL }}{\text { NOT To Scale }}$

- SEE sion mounting detall

$\frac{\text { SPEED LIMIT SIGN POST DETALL }}{\text { Not To scale }}$


