

Lawrence J. Marcik, Jr., P.E.
130 Blatchly Ave.
Southington, CT 06489

October 3, 2022

Southington Planning and Zoning Commission
196 North Main Street
Southington, CT 06489

Attn: Robert Hammersley, Chair

Re: Public Hearing – AA Denorfia Building & Development, LLC, Special Permit Application to construct an active adult development in the ARCHZ zone with a private road, public sewer, water, utilities, storm drainage and other necessary improvements. Property at 570 Meriden Waterbury Turnpike. Zone-ARCHZ. (SPU#666)

Dear Mr. Hammersley,

I am a property owner located at 130 Blatchley Avenue in Southington, CT. I am one of the downstream property owners who will be impacted by the proposed upstream active adult development. The impacts I am concerned about are from the proposed storm drainage system (the proposed detention pond and the additional volume of stormwater). I would like to discuss a little bit of history regarding the town's stormwater drainage system adjacent to my property. Over the past few years there has been a drainage problem with the adjacent town's drainage system. There were improvements made by the town a few years ago on the property of No. 113 Blatchley Avenue (installation of a large drainage pipe 24" diameter in addition to the existing smaller pipe), which resulted in water boiling up out of one of the town's catch basins on town's property adjacent to my house during most storm events. This stormwater that boiled up out of the catch basin would then flow down hill off the town's property and crossing my back yard causing erosion problems. Every time I repaired the erosion in my back yard, it would come back because of the failing town's drainage system. After notifying the town of the problem and waiting about a year or so, the town recently added an additional storm drainage outlet pipe, which hopefully solved the problem. In addition, to the water problem mentioned above, we had been dealing with very dirty water (very high turbidity) after a rainfall, most likely caused by the construction practices of the upstream existing housing development project.

I am now concerned we have a new development proposed which is going to impact my neighbors and I again. I am not against development but the development must be properly designed, properly constructed, and monitored during construction. I am a Professional Civil Engineer with over 30 years of experience, who practices in the field.

I have reviewed the revised site plans SPR & SPU Proposed Plan dated September 1, 2022 revised September 26, 2022 and a Stormwater Management Report dated July 15, 2022 which I found on the town's website and I have the following comments:

1. Sheet S1 "Property & Topographic Survey Map" addresses the 113 Blatchley Avenue Property but should also be continued across the street to the end of the town's drainage system, the design engineer needs to determine if his design does not impact the downstream natural open channel. This channel has deeply eroded from past changes in the development of the upstream watershed and that erosion should not get worse due to the proposed development. As engineers we know detention basin does reduce stormwater flow rates, but we also know it doesn't address flow volume. The flows rates downstream are going to be much longer due to the change in watershed from woods to development (roofs pavement, etc). This change in flow volume will produce additional erosion downstream of the town's outlet pipes (beyond the existing riprap outlet protection).
2. On Sheet S1 not all easement on property 113 are shown. Planning Department Comments with Responses dated September 26, 2022 by Harry E. Cole & Son stated in response to Comment No. 6. Is there a drainage easement for the pipe existing the pond (over private properties)? Response: Ongoing communication between the applicant and neighboring property owners is taking place a proposed easement has been shown on the plans. There is a partial easement shown on house No. 113 on Sheet C1, I don't see one for the pond's emergency spillway and no easement shown on house No. 113 for the pipe system to the town drainage system on Blatchley Avenue. These drainage easements should be shown and worked out with the property owners before this P&Z submission, if they don't have them worked out; the proposed drainage system may need to be significantly revised.
3. Sheet C2 indicates the detention pond is up to 8' high (elevation from lowest existing grade at the embankment toe to the proposed elevation at the top of embankment). If this pond were to fail, it would cause significant damage downstream and most likely to the basement (garage under) at house No. 113, town road, and possibly houses 130 & 114. Because of this risk, this detention pond dam (embankment dam design) with its proposed specifications needs to be submitted to Connecticut Department of Energy and Environmental Protection - Dam Safety Section for their review, comments and approval. This detention pond may fall under their jurisdiction and may be considered as a dam-regulated structure.
4. Sheet C2 indicates an emergency overflow channel from the detention pond is located over property of house No. 113 Blatchley Avenue. Typically, in good detention basin design practice overflow spillway should be designed in natural soils and not in the proposed embankment fills. The reason for this is to minimize possible failure of this emergency channel in the fill embankment. This emergency

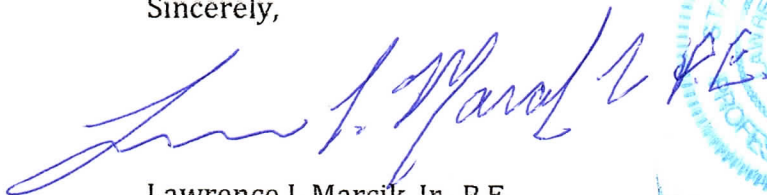
channel stops at the town roadway (Blatchley Avenue) what happens to the water at that point? The design engineer needs to perform analyses to determine what happens to the water during the operation of this emergency channel.

5. Sheet C2 also indicates that there are back-to-back large detention basins from the existing development and proposed development. The design engineer need to perform an analysis to determine if the upper detention basin were to fail, what impact it will have on the proposed detention basin. If it causes failure to the proposed basin what impact will it have downstream?
6. Sheet DB1 has a “Detention Basin Embankment Detail” this detail shows “compacted imperious embankment” but no specifications for the earthen material to be used and no compaction requirements. The same holds for the “compacted earth pervious embankment”, no specifications for the earth material to be used and no compaction requirements. The detail reference a level spreader, there is no level spreader proposed. The detail shows anti-seep collar, these were used to prevent seepage along the pipe, they have been found to fail so what are used today are filter diaphragms (see Association of State Dam Safety Officials documents). The Detail indicates a “Woven Geotextile Fabric Liner” not sure what this is for but could cause issues within the embankment/pipe.
7. Sheet DB1 has an “Outlet Control Structure Detail” the outlet structure indicates a grate. Grates are good for safety but bad because they get clogged. If they get clogged in a significant storm event, the emergency spillway becomes the only way for water can leave the pond. If grates are to be used, there has to be a regular maintenance program to make sure they stay working as design.
8. Sheet DB1 has a plan view of the detention pond, the sheet does show the “Access Drive Detail” but does not show it on the plan view. How does one maintain the detention pond and outlet structure with no access drive? Additionally, the plan view does not show a fence around the detention pond. This should be considered for safety, the upper detention basin has one.
9. Given the high risk of the detention pond if it was to fail, a Professional Engineer (P.E.) licensed in Connecticut with experience in earthwork related construction needs to monitor the detention pond construction. This will involve reviewing of material submittals, subgrade inspection, compaction testing and other related quality control measures. Once the work is completed, the P.E. shall submit a letter stating the detention basin was constructed as designed.
10. Stormwater Management Report dated July 15, 2022 was reviewed and have just a few comments:
 - In a brief review of the report, the report uses generally accepted practices in the engineering field.

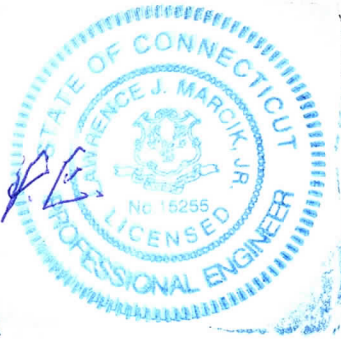
- On the Pre and Post Development Summary Table, all post peak flow rates are less than existing flow rates except the 50 and 100-year storms which are 8.3 cfs and 14.79 cfs more than existing flow rates.
- I am a little confused on the Emergency Spillway Channel Report, the design is for 13 cfs, it should be 31.56 cfs if the outlet ports get clogged.
- With the "Town of Southington Required Top in Place of Trash Rack " this will change the 14 feet crest length in the Pond Report to something less. How will you address this changed in the report submitted?
- No computations are included regarding the town's drainage system outlets going into the natural eroded channel and no computations on how the emergency spillway channel gets into the town drainage system. These computations should be submitted for review and comments.

I hope these comments will aid in the P&Z Commission in approving this development with minimal impact to the downstream neighbors. Again, I am not objecting to the development, my only goal is to make sure the development is designed and constructed to a standard that would reduce risk to downstream neighbors. If you have any questions with the above information, please contact me.

Sincerely,



Lawrence J. Marcik, Jr., P.E.
130 Blatchly Avenue



Cc: file, James Grappone, P.E. Assistant Town Engineer