

May 7, 2021

Mr. Mark Wolanski  
New Castle County Department of Land Use  
87 Reads Way  
New Castle, DE 19720

RE: Project No. 12392.CB (Duffield Associates, LLC)  
Application # 2020-0159-S  
Harmony at Hockessin Senior Living Facility  
2<sup>nd</sup> Construction Plan Report

Dear Mark:

Duffield Associates, LLC (Duffield) received the New Castle County Department of Land Use's (NCCDLU's) comments dated March 9, 2021 for the above-referenced project. We have prepared the following point-by-point response to your comments and are pleased to submit our responses in **BOLD** and *ITALICS*.

**PLANNING:**

1. There appears to be a GFA discrepancy. The purpose note proposes a 192,500 S.F. building while site data note #14 and the site plan show a 189,900 S.F. building. Please verify the correct square footage for the proposed building.

***Response:***     *The GFA has been corrected to reflect the correct square footage.*

2. Update the Board of Adjustment note (#22) to include the application number and to list the variances as they appear on the decision letter.

***Response:***     *The Board of Adjustment note has been updated.*

3. Provide the required riparian buffer area with dimensions (per Plan Requirement No. 49 from Appendix 1, Chapter 40 of the NCCC). Zone 1 and Zone 2 of the RBA will need to be properly delineated. The width of existing impervious area shall not count towards the RBA measurement.

***Response:***     *The required buffer has been shown.*

4. Please verify that the maximum illumination depicted on the lighting plan does not exceed 0.1 foot candle at the residential property line (per section 40.22.710 of the NCCC).

***Response:***     *All lighting fixtures have full cutoff shields to meet the 0.1 footcandle limit at the property line.*

5. Provide the required drainage code note (per Plan Requirement No. 84 from Appendix 1, Chapter 40 of the NCCC).  
**Response:** *The requested note has been added to the plans.*
6. Provide the required acreage for each stormwater facility on all subsequent plan sheets.  
**Response:** *Acreage has been added for each facility.*
7. Delineate on the record plan that the dumpster areas will be fully enclosed.  
**Response:** *A note has been added to the plans.*
8. Remove Site Data Notes #19 and #20 from the record plan.  
**Response:** *The notes have been removed.*
9. Remove road traffic data and traffic generation diagram from the record plan.  
**Response:** *Del DOT has requested these be added to the record plans.*
10. Provide certification of approval from DelDOT – transportation (per Section 40.31.114.C of the NCCC).  
**Response:** *The approval will be provided once obtained.*
11. Provide certification of approval from the Office of the State Fire Marshal (Per Section 40.31.114.C of the NCCC).  
**Response:** *The approval will be provided once obtained.*
12. Provide certification of approval from the water supplier (per Section 40.05.310 of the NCCC).  
**Response:** *The Water Capacity Certification is included in this submission and plan approval will be provided when obtained.*
13. Please note that a Land Development Improvement Agreement must be recorded prior to the recordation of this plan. Provide this office with a LDIA information sheet, with an accurate GFA total, to initiate the process (per Section 40.31.820 of the NCCC). The current LDIA Information Sheet on file references 200,000 S.F. of non-residential GFA.  
**Response:** *The LIDA has ben revised and is included with this submission.*
14. The landscape plan has been found acceptable subject to the approval of the construction plans by the Engineering Section.  
**Response:** *No Comment.*

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15. Provide a paper copy of all submission items for the Department file.

***Response: Will be provided.***

16. Please note, all current County taxes, school taxes and sewer service fees must be paid or not be delinquent at the time of application. Additionally, if payment for the aforementioned taxes becomes delinquent during the review process, no further processing of the application can occur.

***Response: Understood.***

17. Please note that Table 40.31.390 of the NCCC outlines the time limits for expiration of plan.

***Response: No Comment necessary.***

**Engineering:**

See attached memo for Engineering comments.

**Historic:**

N/A

**Mapping:**

N/A

**Transportation:**

N/A

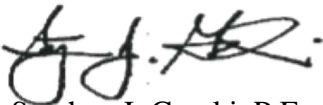
**Public Works:**

N/A

Please do not hesitate to contact us if you have any questions or comments regarding the above items. We appreciate your review of this project.

Sincerely,

DUFFIELD ASSOCIATES, LLC



Stephen J. Gorski, P.E.  
Sr. Project Manager

May 7, 2021

Mr. John Gysling, P.E.  
New Castle County Department of Land Use  
87 Reads Way  
New Castle, DE 19720

RE: Project No. 12392.CB (Duffield Associates, LLC)  
Application # 2020-0159-S  
Harmony at Hockessin Senior Living Facility  
Major Land Development Plan  
Engineering Comments

Dear John:

Duffield Associates, LLC (Duffield) is in receipt of CDA Engineering, Inc.'s (CDA's) March 8, 2021 review comments for the above-referenced project. We have prepared the following point-by-point response to your comments and are pleased to submit our responses in **BOLD** and *ITALICS*.

Record Plan

1. Clarify the Gross Floor Area referenced in the Purpose Note on the Record Plan as compared to Site Data..  
***Response: Purpose Note has been revised.***
2. Verify the total protected acreage for Precautionary Slopes listed in the Natural Resource table.  
***Response: The acreage has been verified.***
3. Provide consistent proposed sanitary sewer flows listed on Sheet 1 of the Record Plan and General Development Plans.  
***Response: The sewer flows (17,500 GPD) are now consistent through the plan sets.***
4. Provide a note on the plan requiring all retaining walls in excess of four (4) feet be designed and certified by a qualified professional engineer with all details and computations submitted to the Department building plan review section for review and permitting prior to start of construction.  
***Response: The Requested note has been added to sheet 1 (Note 25).***

5. Easements shall be provided in accordance with the requirements outlined in the NCCC Chapter 12 Section 12.05.006.B.6 for all proposed stormwater management facilities. Extend SWM easements to include the principal spillway outfall pipe, including riprap apron. Note the 15' minimum width of stormwater access and maintenance easements.

**Response:**        *The easements have been added to the plan in accordance with NCC Standards.*

General Development/Sediment & Stormwater Plan

1. Reference the NOI permit number in Note 10 on Sheet SWM-1.

**Response:**        *NOI permit number has been added.*

2. Clarify the LOD acreage listed in General Note 11 and as noted in the Pre- and Post-Bulk Plans.

**Response:**        *LOD acreage has been corrected in note 11.*

3. Expand Owner and Professional Certifications on Sheet SWM 1 to include language as stated in DNREC checklist.

**Response:**        *The Certifications have been revised to match the checklist.*

4. Show in plan view Sensitive Area Protection around sediment traps 1, 2, and 5 during pre-bulk stage and removed during post-bulk stage as stated in the sequence of construction.

**Response:**        *Sensitive Area Protection has been added to the Pre bulk plan.*

5. Show stockpile location on pre-bulk plan as identified in the sequence of construction.

**Response:**        *A stockpile area has been added.*

6. Site grading on post-bulk plan shall be for padding of the building. Remove proposed building shown on Post-Construction SWM plan.

**Response:**        *Post bulk plan (sheet SWM-2A) has been added.*

7. Pre-Construction Plan includes the construction of only sediment trap #3. Predevelopment drainage area plans indicate a much larger area drains to PST #3 in pre-bulk conditions than the 1.23 acres listed design data table. Provide design data for PST #3 when utilized as a stand-alone sediment trapping facility for the site and provide required storage volume.

**Response:**        *The area to PST#3 has been revised and design data updated accordingly.*

8. Provide details for how skimmer dewatering device for PST #1, #3, and #4 will attach to proposed outlet structure without a proposed orifice. Include installation of the skimmer device within the sequence of construction.

**Response:** *A note has been added to the skimmer detail stating the connection for #1, #3, and #4.*

9. Provide observation wells for SWM #1 per DNREC standards.

**Response:** *Observation wells have been added for SWM #1.*

10. Include within the sequence of construction to notify the person responsible for stormwater system construction review at least 3 days prior to start of construction.

**Response:** *This note has been added to the sequence of construction (Step 1).*

11. Clarify discrepancies between outfall pipe diameters for SWM Facilities #2 and #3 and design data for PST #2 and #3.

**Response:** *The outfall pipe sizes now match.*

12. Revise outlet structure detail for SWM #3 to show inflow pipe from SWM #2.

**Response:** *The structure detail has been revised.*

13. Revise the outlet structure detail for SWM #4 to remove reference to an underdrain, as none appear to be provided in plan view. Revised detail to also show outfall pipe from SWM #5.

**Response:** *The underdrain reference has been removed from the structure detail.*

14. Minimum width of Grass Filter Strip to be used as pre-treatment is 5'. Widen the 2' Filter Strip proposed for SWM #3 accordingly.

**Response:** *The grass filter strip has been widened to 5' for SWM #3.*

15. Revise O&M notes to reference 15' minimum access easement width.

**Response:** *The O&M notes have been revised.*

16. Provide DNREC standard details for proposed rock outlet protection and temporary swale/berm and provide required design data.

**Response:** *The requested details have been added to the plan set along with required design data.*

17. Provide cross sectional details of all open channels (swale adjacent to McGovern Road) and supporting calculations to demonstrate maximum flow depths, velocities, and design standards in accordance with NCCC Section 12.04.001. All points of discharge shall be evaluated in accordance with Tractive Force methodology.

**Response:** *The swale calculations have been provided for your review.*

18. Provide storm pipe and drainage inlet information on Grading and Drainage Plan.

**Response:** *The inlet call outs have been added to the Grading Plan.*

19. Provide necessary construction details for storm sewer structures, installation and restoration.

**Response:** *Structure details are shown on site utility detail sheets.*

20. Confirm ADA accessibility for proposed walk at southeast building corner entrance.

**Response:** *Spot grades have been added. ADA routes meet accessibility standards.*

21. Provide approval from DelDOT to construct conveyance system and associated structures and allow for discharge to right-of-way.

**Response:** *Will supply with approval once it is obtained.*

22. Provide sizing for rip rap outlet protection.

**Response:** *Sizing for the rip rap outlets is provided.*

23. Provide and specify slope protection for all slopes 3:1 or steeper.

**Response:** *Stabilization matting detail is on sheet SWM 5 and a note has been added to the plans referencing this detail.*

24. Confirm slopes on SWM facilities do not exceed 3:1 on interior or exterior slope.

**Response:** *Slopes are 3:1 or less for all SWM facilities.*

#### Stormwater Management Report

1. Revise the drainage area acreage and CN values on the Post-Development Drainage Area to be consistent with the calculations for Subareas 1, 1A, and 1B.

**Response:** *The Post Development Drainage Area map has been revised to be consistent with the computations.*

2. Revise discrepancy between the calculations for outfall pipe invert used in the R<sub>Pv</sub> (373.00) and C<sub>v</sub>/F<sub>v</sub> (372.00) storm events for SWM #1. Revise the discrepancy between the plans and calculations for outfall pipe slope.

**Response:**        *The outfall pipe has been revised in the R<sub>Pv</sub> calculations to match the C<sub>v</sub>/F<sub>v</sub> elevation.*

3. Based on the geotechnical results, field infiltration rates of 1.44 in/hr and 3.5 in/hr were reported within SWM #1. Revise the design to utilize the more restrictive field measured rate, with the applied factor of safety, as the current design utilizes the higher of the two field rates, or provide additional testing.

**Response:**        *The average of the two rates was implemented, with the factor of safety applied to achieve a design rate of 1.23 in./hr.*

4. Revise discrepancy between calculations for outfall pipe invert used in the R<sub>Pv</sub> (368.50) and C<sub>v</sub>/F<sub>v</sub> (367.50) storm events for SWM #2.

**Response:**        *The R<sub>Pv</sub> calculations have been revised to match the C<sub>v</sub>/F<sub>v</sub> elevation.*

5. R<sub>Pv</sub> storage volume entered into DURMM for SWM #2 is greater than the available storage provided within the facility. Revise the DURMM calculations to utilize the available storage measured up to the first spillway crest elevation.

**Response:**        *Revised to Elev 373 cumulative storage.*

6. Exfiltration device utilized in SWM #2 should be provided at the bottom of the bio-media and routed to the underdrain in device #3. As currently routed, no exfiltration is occurring through device #4.

**Response:**        *Exfiltration is now routed through device #1.*

7. Dynamic pond routing methodology shall be used, rather than free discharge, as SWM #2 discharges into the outlet for SWM #3. Revise routing to combine discharge from SWM #2 outfall pipe to connect to SWM #3 outlet structure, rather than to POA #1 as currently modeled.

**Response:**        *Revised to Dynamic and SWM #2 rerouted thru SWM #3 outfall as CB.*

8. R<sub>Pv</sub> storage volume entered into DURMM for SWM #3 is equivalent to the storage volume at 367.00. Revise DURMM input to be consistent with the storage volume provided at the top of structure at elevation 366.50.

**Response:**        *DURMM input revised to 366.5.*

9. Revise inlet and outlet elevations for outfall pipe in SWM #3, as they are reversed and result in a negative slope.

**Response:**        *Inlet and outlet elevations have been revised.*



10. Exfiltration device utilized in SWM #3 should be provided at the bottom of the bio-media and routed to the underdrain in device #3. As currently routed, no exfiltration is occurring through device #4.

**Response:** *Exfiltration limit lowered to bottom of media and thru Device 4.*

11. Revise discrepancy between calculations for top of outlet structure used in the R<sub>Pv</sub> (366.50) and C<sub>v</sub>/F<sub>v</sub> (367.00) storm events for SWM #3. Provide consistent input data for all storm events.

**Response:** *C<sub>v</sub>F<sub>v</sub> has been revised to 366.5.*

12. Revise discrepancy between underdrain diameter and invert elevation used in calculations and on plans for SWM #3.

**Response:** *HydroCAD has been revised to 4" to match plans.*

13. Field measured infiltration rate reported for SWM #4 is 1.44 in/hr. A design rate of 2.83 in/hr was used in the calculations. Revise the design to utilize the field measured infiltration rate, with applied factor of safety.

**Response:** *The infiltration rate for SWM#4 has been revised.*

14. Revise the routing for SWM #4. As currently modeled, no outflow or exfiltration is occurring in the R<sub>Pv</sub> storm events.

**Response:** *The model has been revised.*

15. Revise discrepancy between the plans and calculations for outfall pipe diameter for SWM #4.

**Response:** *The pipe has been revised to reflect the 18" pipe.*

16. Extend the pre- and post-development analysis for POA #1 to include the existing 15. RCP driveway crossing located at the northwest property corner to demonstrate adequate conveyance. The flow to the existing 15. RCP is the 18" outfall pipe from SWM #4, combined with the channel flow along McGovern Road.

**Response:** *We believe the POA #1 as proposed is adequately located at the property line projected. Due to pipe slope, the existing driveway culvert has no impact on the outfall.*

17. Revise discrepancy between bottom of bio-media elevation in the calculations (380.50) calculations and plans (381.50) for SWM #5. Revise DURMM calculations to be consistent with storage volume calculations when revised.

**Response:** *The plans have been revised to match the calculation elevation of 380.50.*

18. Revise discrepancy between the plans and calculations for outfall pipe diameter and slope for SWM #5.

**Response:**        *The calculations have been updated to match the plans.*

19. Revise routing to combine discharge from SWM #5 outfall pipe to connect to SWM #4 outlet structure, rather than free discharge condition to POA #1 as currently modeled.

**Response:**        *Revised as noted.*

20. Provide hydraulic calculations for all storm sewers. Storm sewer design requirements shall be in accordance with NCCC Section 12.04.003.

**Response:**        *Hydraulic calculations have been provided with this submission.*

21. Provide inundation plan for courtyard inlets to demonstrate ten-feet can be maintained between the building and area of inundation with storm sewer system assumed to be 50-percent blocked in accordance with the NCCC Section 12.04.001.E.

**Response:**        *An inundation analysis has been provided for the courtyard. Inundation area is more than 10 feet from building face in both cases.*

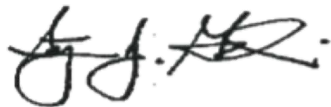
22. Provide calculations for rip rap outlet protection.

**Response:**        *Rip rap outlet sizing has been provided.*

Please do not hesitate to contact us if you have any questions or comments regarding the above items. We appreciate your review of this project.

Sincerely,

DUFFIELD ASSOCIATES, LLC



Stephen J. Gorski, P.E.  
Sr. Project Manager