



3107 Atlantic Avenue
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November 10, 2023

Chairman and Members of the Planning Board
John J. Hess, PE, PP, CME – Planning Board Engineering
West Orange Planning Board
66 Main Street
West orange, NJ 07052

**Re: APPLICATION No. PB 23-09
ESSEX COUNTY COUNTRY CLUB
AMENDED SITE PLAN REVIEW COMMENTS**

Dear Planning Board:

Below please find responses to the Engineering Review Memo from John Hess **in RED** for all items of the review memo dated October 16, 2023.

A. DESIGN COMMENTS

1. Based on our review, we find that the following items from the Township's Site Plan/Subdivision Checklist must be addressed:
 - a) Item #14 - *Affidavit of ownership. Item #14 requires Affidavit of Ownership per Map Filing Law for minor and major subdivision, which is not applicable. The Applicant has not applied for subdivision approval.*
 - b) Item #20 - *Copy and/or delineation of any existing or proposed deed restrictions or covenants. None exist and none are proposed.*
 - c) Item #23 - *List of required regulatory approvals or permits. Hudson-Essex-Passaic Soil Conservation District approval is required ("Soil Conservation District Approval"). Enclosed please find a copy of the Soil Conservation District Approval issued on September 19, 2023 for both the site plan improvements and the golf course grading upgrades.*
 - d) Item #33 - *Existing system of drainage of subject site and of any larger tract of basin of which it is a part. The site plans include the site grading and drainage patterns. The site is not tying into any offsite drainage structures/systems.*
 - e) Item #36 - *Proposed utility infrastructure plans, including sanitary sewer, water storm water management, telephone, electric and cable TV. Updated and included in site plan set.*



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- f) Item #45 - *Landscape plan & details prepared by a professional landscape architect. Landscaping and details included in the site plan set. The Applicant request a waiver from the requirement that the landscape plan be completed by a landscape architect.*
 - g) Item #52 - *Plans and legal documents for compliance with West Orange COAH Ordinances. The Applicant requests a waiver from submission of plans and legal documents for compliance with West Orange COAH Ordinances. The Applicant shall pay any required Statewide Non-Residential Development Fee pursuant to N.J.S.A. 40:55D-8.1, et seq., at the time of issuance of building permits in accordance with the West Orange COAH Ordinances.*
2. The Applicant has requested the following waivers:
- a) Item #13 - *Metes and bounds description showing dimensions, bearings, curve data, length of tangents, radii, arcs, chords and central angles for all centerlines and right- of-way, and centerline curves on streets.*
 - b) Item # 19 - *All proposed lot lines and area of lots in square feet.*
 - c) Item #28 - *All existing street, water courses, flood plains, wetlands or other environmentally sensitive areas on and within 200' of site.*
 - d) Item #29 - *Existing right-of-way and/or easements on and within 200' of tract.*
 - e) Item #32 - *Boundary, limits, nature and extent of wooded areas, specimen trees, and other significant physical features.*
 - f) Item #46 - *Solid waste management plan.*
 - g) To permit the submission of a boundary survey which is more than 5 years old.
3. The Applicant has submitted a List of Owners within 200 Feet of Block 151, Lots 1 & 49 whereas the property in question is Block 156, Lot 1. Therefore, it remains for the Applicant to submit a List of Owners within 200 ft of the property in question. *200-foot property owners list for Block 156, Lot 1 is enclosed.*
4. The Applicant should address the Board regarding their plans to provide make-ready electric vehicle parking spaces at the site. We note that Section 25-12.6 of the Land Use Regulations requires the installation of make-ready parking spaces for each application involving a parking lot which requires preliminary site plan approval. *See enclosed updated site plans showing 10 make ready spots to comply with ordinance although it is the Applicant's position that since it is applying for amended final site plan approval Section 25-12.6 is not applicable to the subject application.*



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5. It states in Variance Request #1 on sheet 1 that 240 parking spaces are proposed at the site. As stipulated in Table 208.2 in the Americans with Disabilities Act (ADA) Standards, a minimum of 7 accessible parking spaces are required at the site. In addition, Section 208.2.4 of the ADA Standards stipulates that for each 6 or fraction of 6 parking spaces, at least 1 shall be a van parking space. The plans must be revised to demonstrate that the required number of accessible parking spaces are provided. In addition, the proposed van accessible spaces must be identified. **The additional spaces are located in the upper parking lot by clubhouse. The revised site plans show the existing parking lot with the existing ADA parking spaces.**
6. It shows on sheet 2 that 5 existing trees are to be removed. As a result, the Applicant has applied to the Board for a tree removal permit. As stipulated in Section 25-27.5c, the Applicant must submit a qualified tree expert's report which addresses the factors and standards in Section 25-27.7. **The 4 trees are being removed to address the proposed site improvements. The Applicant requests a waiver on the tree expert report. Note the site plans have been revised to keep the 40" diameter tree in parking area.**
7. Demolition Note #13 on sheet 2 states that an abandoned fire hydrant is to be removed. The location of the abandoned fire hydrant must be shown. **This note was placed in an error. There is no hydrant. Note has been removed in the enclosed site plan set.**
8. Demolition Note #14 on sheet 2 states that a stand pipe is to be removed. The location of the stand pipe must be shown. **This note was placed in error. There is no standpipe. Note has been removed in the enclosed site plan set.**
9. Sheet 4 should be revised to dimension the width and depth of the proposed parking spaces and the width of the proposed drive aisles. **Revised in the enclosed site plan plans.**
10. Sheet 4 must be revised to show the radii of all proposed curved curbing. **Revised in the enclosed site plans.**
11. Sheet 4 must be revised to show the widths of the pavement widening areas and the widths of the stone paver walkways. In addition, the dimensions of the parking lot island sumps must be shown. **Revised in the enclosed site plans.**
12. It shows on sheet 4 that 3 handicap accessible parking spaces are proposed in the vicinity of the Pool House. We note that 2 of the handicap parking spaces are proposed on the northerly side of the parking lot approximately 80 ft from the Pool House. It is our recommendation that these spaces be located closer to the Pool House. **Location of the 2 handicap parking spaces proposed near the Pool House have been relocated as illustrated on the enclosed site plans as requested. These spaces are also utilized for the Tennis facilities.**
13. Sheet 4 must be revised to show the access aisles that are required for the



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handicap accessible parking spaces. In addition, the plans must be revised to show that an accessible route is provided between the handicap accessible parking spaces and the Pool House. **Revised in the enclosed site plans. Spaces have been selected to allow access to both the pool building as well as the tennis facilities.**

14. It shows on sheet 4 that the pavement entrance will be reconstructed using a 2" surface course of HMA 9.5M64 whereas the HMA Pavement Section Full Depth on sheet 14 shows the 2" surface course to be HMA 12.5M64. This discrepancy must be resolved. **Revised in the enclosed site plans.**
15. It shows on sheet 4 that concrete stairs with wing walls are proposed along the entrance drive adjacent to the Club House. Therefore, a detail of the concrete stairs with wing walls must be provided on the plans. **Concrete Stairs detail has been added to the enclosed site plans.**
16. It shows on sheet 4 that a new 1st hole tee box is proposed. Therefore, a detail of the 1st hole tee box must be provided on the plans. **1st Hole Tee Box information has been added to the enclosed site plans.**
17. Sheet 5 shows that the proposed Comfort Station will be set back 58 ft from the southerly property line. In addition, it will be located approximately 145 ft from the nearest existing residential dwelling. The Applicant should address the Board regarding how this location was selected and the anticipated impacts, if any, on the existing residential neighborhood to the south. The Applicant may wish to consider relocating the Comfort Station further from the existing residential dwellings. **Noted. Comfort Station has been placed in this location for safety reasons as it related to golf activity as well as per the recommendation of the golf course architect.**
18. Sheet 5 shows the utility extensions (water, electric and sewer) that are proposed to the Comfort Station. However, the utility extension information is incomplete. The plans must be revised to show the utilities extending to the point of connection to the existing systems. In addition, the water system extension must show the size and type of pipe while the sanitary sewer extension must show the size and type of pipe, the pipe slopes and the invert elevations at each cleanout. **Updated in the enclosed site plans. The Applicant intends to connect to water, sewer and electric on Old Indian Road. Sewer Lateral is 4" PVC, Water service is 1" HDPE.**
19. Sheet 5 should be revised to show the proposed grading in the vicinity of the Comfort Station. In addition, proposed spot grades must be shown at each corner of the building. **Revised in the enclosed site plans.**
20. Sheet 6 shows the utility extensions (water and electric) that are proposed to



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the Cart Barn. However, the utility extension information is incomplete. The plans must be revised to show the utilities extending to the point of connection to the existing systems. In addition, the water system extension must show the type of pipe. **Revised in the enclosed site plans.**

21. Sheet 6 shows that the building sewer lateral will be connected to the existing sanitary sewer to the north and east of the building. The size, type of pipe and invert elevation of the existing sewer must be shown. In addition, the invert elevations at each cleanout must be shown for the proposed sewer lateral. **Updated in the enclosed site plans.**
22. It shows on sheet 6 that the proposed grading on the southerly and easterly sides of the building will direct runoff to the sides of the building. The proposed grading must be revised to direct runoff away from the sides of the building. In addition, proposed spot grades must be shown at each corner of the building. **Revised in the enclosed site plans.**
23. It shows on sheet 6 that a pervious 8" concrete slab with welded wire reinforcement is proposed at the entrance to the cart barn. However, the Pervious Concrete Slab detail on sheet 14 specifies an 8" thick structural concrete slab. The detail must be revised to specify the use of pervious concrete. In addition, we question the use of welded wire reinforcement in pervious concrete. **Pervious Concrete has been removed from the project. Structural Concrete Slab detail in the enclosed site plans has been updated for clarity.**
24. Sheet 7 must be revised to label the 579 to 576 contours along the driveway on the easterly side of the parking lot. **Revised in the enclosed site plans.**
25. It shows on sheet 7 that the Applicant proposes to mill and overlay the existing parking lots. Therefore, a mill and overlay detail must be added to the plans. **Detail has been added in the enclosed site plans.**
26. Sheet 15 includes a Service Connection with Ford Meter Pit detail. Therefore, the plans must be revised to identify the locations where meter pits are proposed. We question if separate meters are proposed for the Cart barn and the Comfort Station or if the existing water system serving the site is already metered. **A new water service and meter is required for the comfort station. Proposed location of meter pit has been noted in the enclosed site plans. The cart barn will utilize the existing water service from the maintenance area.**
27. The Parking Island Sump Drain Detail on sheet 15 shows a 6" PVC pipe which is to drain to an existing inlet. Therefore, sheet 4 must be revised to show the proposed 6" PVC pipes and the inlets to which they are to be connected. **The overflow PVC Pipe in the parking islands have been removed from the project.**
28. The Cart Barn architectural plans show proposed recycling filtration equipment



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within the building. The purpose of the recycling filtration equipment must be clarified. Recycling equipment is for the golf cart washing system that is 100% recycled water.

B. LANDSCAPING AND LIGHTING

1. In accordance with Section 25-12.1 o., parking areas for thirty (30) or more spaces, one(1) tree plus ground level plantings shall be provided for every ten (10) parking stalls; whereas, no landscaping has been proposed. Thirty-Three parking spots are being added to the project. Sugar Maple trees have been added to the enclosed site plans for the additional parking spots.
2. It appears the Applicant is proposing to remove a 40" DBH tree to increase the parking by a few additional stalls. If the tree is in good condition, our office strongly recommends seeking out other alternatives for these additional spaces. As requested, the enclosed site plans have been revised to keep this tree.
3. The 'Parking Island Sump Drain Detail', sheet 15 of 16 depicts landscaping; however, none are proposed on the plans. This should be revised, for further review. Landscaping added to the enclosed site plans.
4. In accordance with Section 25-14.1 e., provision shall be made for the reduction in the intensity of illumination to the minimum needed for security purposes when the facility is not in operation; whereas timers and hours of operation have not been indicated. Current system is on photocell only and site is far from boundaries.
5. Proposed light fixtures depicted at the westerly parking lot are to be located within the pavement area. Also, it does not appear the entire area of the parking lot is proposed to be illuminated. This should all be reviewed and revised for an acceptable lighting plan. The lighting plan has been updated in the enclosed site plans.
6. Review and revise light fixture quantities, as graphics do not correspond to the proposed luminaire schedule. Lighting fixture types and locations have been updated in the enclosed site plans.
7. The Applicant has proposed a lighting plan that does not meet the 0.50 footcandle minimum required throughout the parking lot, in accordance with IES (Illuminating Engineering Society) standards. Parking lot areas meets 0.5fc requirement for parking areas, the entrance road lighting is included for driving guidance only.
8. Revise the plans to indicate the proposed color and finish for all light fixtures



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and poles. All lighting is black. Enclosed site plans have been updated to note this.

9. Provide the manufacturer's catalog cuts for all fixtures and poles. Include the isolux pattern details with a scale and graph. Additionally, provide the ordering information for the proposed light poles. Manufacturer's catalog cuts for fixtures and poles are enclosed.
10. Revise the 'Light Pole Foundation' detail, sheet 15 of 16, to indicate a concrete strength of 4,500 PSI. Currently, 4,000 PSI is indicated. Revised in the enclosed site plans.

C. DRAINAGE – Project has been submitted, reviewed and approved by Hudson-Essex-Passaic Soil Erosion District. Will update with SESC after review from the Township.

1. It shows on the plans that the area of disturbance will be greater than 2 acres. As a result, the project is classified as a Major Development which requires that the project be designed to meet the stormwater runoff quality, quantity and groundwater recharge standards using green infrastructure. Bio-retention basins and infiltration basins have been incorporated.
2. No soil investigation/analysis has been performed to determine the conditions of the soils on site in accordance with Chapter 12 of the current NJ Stormwater Best Management Practices (NJBMP) Manual. Accordingly, compliance with the applicable State and Township stormwater management requirements cannot be confirmed and it is unclear whether the proposed stormwater management system will function consistent with the analysis in the stormwater management report. At a minimum, the following soil investigations are required:
 - a. A minimum of two (2) soil profile test pits must be excavated within the infiltration area of any proposed infiltration BMP to determine the suitability and distribution of soil types and seasonal high-water table present at the location of the BMP.
 - b. At least one (1) test to establish the soil hydraulic conductivity must be conducted for each soil profile pit / boring.
 - c. All soil profile test pits and/or soil borings performed for the purpose of designing an infiltration BMP must extend to a minimum of eight (8) below the lowest elevation of the BMP. Soil investigation/analysis for all proposed BMPs will be completed and provided.
3. In accordance with Section 25-29.4.h of the Ordinance, whenever the stormwater management design includes one or more BMPs that will infiltrate stormwater into subsoil, the design engineer shall assess the hydraulic impact on the groundwater table and design the site, so as to avoid adverse hydraulic



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impacts. Additional groundwater mounding analysis should be provided for all proposed stormwater management features designed to infiltrate into the subsoil. **Groundwater mounding analysis for all proposed stormwater management features designed to infiltrate the subsoil have been provided in the enclosed Stormwater Management Report.**

4. In accordance with Section 25-29.4.1, if there is more than one drainage area, the groundwater recharge, stormwater runoff quality, and stormwater runoff quantity standards shall be met in each drainage area. As noted below, it appears that the runoff quantity standards are not met for PDA-2 and PDA-3. **The groundwater recharge analysis has been revised to include a separate analysis for each drainage area. Runoff quantity standards are met in each area, see enclosed Stormwater Management Report.**
5. In accordance with Section 25-29.4.q.2, to comply with the stormwater quality standards, an 80% total suspended solid (TSS) removal rate must be provided when a major development proposes a net increase of 0.25 acres or more of regulated motor vehicle surface. The stormwater management report indicates that there will be less than 0.25 acres increase in motor vehicle surface and that the stormwater quality requirements are not applicable to this development. Testimony should be provided to confirm same and detailed calculations should be provided to verify the increase in motor vehicle surface area. **Proposed impervious surfaces are shown on the site plans.**
6. In accordance with Section 25-29.4.r.2, post-construction peak runoff rates for the 2-, 10- and 100-year storm events shall be 50%, 75%, and 80%, respectively, of the pre- construction peak runoff rates. The stormwater runoff report appears to indicate that the post-construction peak runoff for PDA-2 and PDA-3 will exceed pre-construction peak runoff rates. Design modifications appear to be required. **The calculations for PDA-2 have been corrected to provide the required reduction of pre-construction runoff rates. As explained in the Stormwater Management Report, the proposed hydrograph for PDA-3 is less than the existing hydrograph at all points, and thus reduction factors are not required.**
7. In accordance with Section 25-29.5.a.4, in computing stormwater runoff from all design storms, the design engineer shall consider the relative stormwater runoff rates and/or volumes of pervious and impervious surfaces separately; peak runoffs shall then be hydraulically combined. The SWM report shall be revised to comply with same for the pre- and post-development conditions. **The SWM report enclosed has been revised to consider the runoff rates of pervious and impervious surfaces separately for pre- and post-development conditions.**



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8. It states in Section 3.0 of the Stormwater Management Report that "the pervious paving systems are designed for contributory areas less than 3x the area occupied by the pervious surface". However, the plans do not show any pervious pavement but show pervious concrete. This discrepancy must be resolved. **Pervious concrete has been removed from the project.**
9. In accordance with Chapter 9.2 of the BMP Manual, drywells may not be used to address the applicable water quantity requirements. Drywells are intended for small storm events; therefore, the drywell must have a storage volume no greater than the runoff volume generated by the Water Quality Design Storm (WQDS). **Drywells have been removed from the project.**
10. In accordance with Chapter 9.6 of the BMP Manual, pervious paving systems designed to provide stormwater runoff quantity control must also be designed with an outlet structure. It does not appear that an outlet structure is proposed at the pervious concrete area. Design modifications are required. **Pervious concrete has been removed from the project.**
11. In accordance with Chapter 9.7 of the BMP Manual, small-scale bioretention basins with underdrains may not include exfiltration in the routing calculations. The SWM report must be revised to comply with same as the routing calculations for the bioretention basins in the parking area include a 5 in./hr. exfiltration rate which is not permitted. **No BMPs utilize underdrains. The proposed overflow pipe has been removed from the project. The exfiltration rate used in our calculations has been reduced to 0.5 in/hr.**
12. In addition, bioretention basins with underdrains may not be used to address the applicable groundwater recharge requirements. The Applicant should confirm same. **Bio-retention basins proposed do not incorporate underdrains.**
13. Our office has concerns with the use of a 10 in/hr exfiltration rate within the stormwater analysis as no soil testing has been performed to substantiate the permeability of the existing soils. Additional permeability testing is required. **The exfiltration rate used in our calculations has been reduced to 0.5 in/hr. Permeability testing will be completed and provided.**
14. Verify the allowable and proposed post-development peak flow rate indicated in Section 4.2 of the SWM report. **The proposed post-development peak flow rate has been verified.**
15. Verify total drainage indicated for EDA-3 (Parking Lot) in the stormwater management report. **Total drainage indicated for EDA-3 has been verified.**
16. Verify slopes of Tc paths indicated in the SWM report and on the drainage area maps. **Tc paths indicated in the SWM report and the drainage area maps have been verified.**



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17. The drainage area maps should be renamed to be consistent with the hydrographs included in the SWM report. **Drainage area maps have been revised to be consistent with the hydrographs.**
18. Site-specific construction details of the pervious concrete, bioretention basins, drywells, etc. should be provided. The details should include detailed specifications (soil layer depth, weirs, filter fabric, stone depth, etc.) for each stormwater management feature; same should be consistent with the requirements outlined in the BMP Manual. **Pervious concrete and drywells have been removed from the project. Details for bio-retention basins and infiltration basins have been provided in the enclosed plans.**
19. The pond reports for the basins, drywells, and pervious concrete include outlet devices such as weirs and orifices which are not clearly identified on the plan. Site plan should be revised to clearly identify these outlets and the required site-specific construction details, noted above, should also include same, where necessary. **The site plan enclosed has been revised to identify location of the outlet pipe, and the outlet control structure proposed. Outlet control structure detail and Scour Hole detail for the outlet pipe have been added to the enclosed plans.**
20. The 'Pervious Concrete Slab' detail should be revised to include the specifications required for same which are outlined in the New Jersey Best Management Practice Manual. **Pervious concrete has been removed from the project.**
21. The invert elevations indicated for the various outlet devices in the SWM report should be consistent with the proposed conditions on site and the associated construction details. Check and revise as necessary. **Invert elevations indicated in the SWM report have been revised to reflect the proposed conditions shown in the enclosed site plans.**
22. At least one (1) inspection port should be provided at each drywell, pervious concrete area, and bioretention basins with underdrains. The inspection ports shall comply with the requirements outlined in the respective chapters for each stormwater management feature in the BMP Manual. **Drywells and pervious concrete have been removed from the project. Bio-retention basins proposed do not incorporate underdrains.**
23. Our office recommends that signage be provided at the pervious concrete areas to eliminate improper application of de-icing compounds, to prevent dumping of hazardous materials and eliminate the intrusions of vehicles exceeding the design-loading rate of the system. **Pervious concrete has been**



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removed from the project.

24. A construction detail for the perforated **HDPE** pipes (12" and 24") embedded in stone should be provided for review. **Perforated HDPE Pipes have been removed from the project.**
25. As stipulated in Section 25-29.10 of the Land Use Regulations, the design engineer shall prepare a maintenance plan for the stormwater management measures incorporated into the design of a major development. In addition, the maintenance plan and any future revisions shall be recorded upon the deed of record for each property on which the maintenance described in the maintenance plan must be undertaken. Prior to recording, the form of the deed must be approved by the Planning Board Attorney and our office. **Will comply.**

The Applicant is hereby advised that any revised plans or other documents submitted to the Board should be accompanied by a cover letter which addresses each of the comments in this review letter and also details any other changes that have been made to the plans as these may not be readily apparent.

If you have any questions, please call me at (973) 809-0264.

Sincerely,

Paul Calabrese, PE
Project Manager