

July 23, 2020

Mr. Jim Hogue, Village Planner
Village of Long Grove
3110 Old McHenry Road
Long Grove, Illinois 60047

Via Email: dlothspeich@longgroveil.gov

Re: Proposed Philip Estates Residential Subdivision
Southeast of Cuba Road and Deerwood Drive
Preliminary Engineering Review #1

Dear Mr. Lothspeich:

Our office has completed a preliminary / conceptual review of the revised preliminary documents submitted for the proposed Philip Estates residential subdivision, located southeast of Cuba Road and Deerwood Drive. This is Review #1 of the plan for the proposed 19 lots. The following were received by our office on July 2, 2020 via email:

- Preliminary Engineering Plans, prepared by Cross Engineering & Associates, Inc., dated March 11, 2020
- Plat of Subdivision, prepared by Edward J. Molloy & Associates, last revised March 10, 2020
- Preliminary Traffic Study, prepared by KLOA, dated May 20, 2019
- Preliminary Landscape Plan, prepared by Allen L. Kracower & Associates, Inc., dated March 9, 2020
- Preliminary PUD Plan, prepared by Cross Engineering & Associates, Inc., dated March 11, 2020
- Preliminary Stormwater Management Summary, prepared by Cross Engineering & Associates, Inc., dated March 2020

This subdivision was previously approved in 2007 as a 12 lot subdivision. This application increases the number of lots to 19 and re-plats the subdivision. Based on our review of the documents, we offer the following comments that need to be addressed prior to preliminary approval of the plans:

General Comments

1. The watermain and sanitary sewer connections flow into the systems in the Glenstone Subdivision. The applicant states that easements are negotiated and approved with Glenstone. The applicant shall provide these documents for the Village files.
2. The sanitary sewer, both the new and the existing in Glenstone Subdivision, is under the jurisdiction of the Lake County Public Works Department. The applicant shall advise if there has been a pre-application / conceptual meeting with their office. The Village shall be copied on any correspondence with the Lake County Public Works Department and invited to any meetings.
3. A truck turn exhibit should be included in the next submittal, which shows the largest fire truck maneuvering through the site.
4. Please see the attached Wetland Review by the Village's wetland consultant, Christopher B. Burke Engineering Ltd., dated July 14, 2020.
5. The exhibit showing the proposed conservancy easements needs to be updated for this subdivision and should show the topographic wetness index on it. This exhibit will be used to evaluate the location of the easements.
6. A preliminary long-term stormwater maintenance plan should be submitted with the next submittal.
7. Our review did not include a review of the Preliminary Landscape Plan.

Preliminary Plat of Subdivision Comments

Our review is based on Village Code Section 6-3-2: PRELIMINARY PLAT

8. Please add a location map. Item 6-3-2-B-9

9. The surveyor needs to show the existing wetland buffer areas and make notes as to the restrictions as shown on Canterbury Park Subdivision noted above.
10. The width of the private roads needs to be labeled.
11. If utilities are to be allowed within the private roads, then a note needs to be added that matches what is stated in the provisions.
12. The "PUBLIC UTILITY EASEMENT PROVISIONS" do not state the location of the easements. There is a "PUBLIC UTILITY EASEMENT" shown as "HEREBY GRANTED" along the front of all lots plus the side lot line between 13/14. Please add the words to the provisions that will designate the location of these easements.
13. "DRAINAGE AND DETENTION EASEMENT PROVISIONS" are on this plat; however, there are no notes on any lot showing "DRAINAGE AND/OR DETENTION EASEMENTS" being granted. The provisions only show exclusions. Please add the words that will designate the location of these easements.
14. A note is found on the plat (both sheets) "THIS DRAWING HAS BEEN PREPARED FOR PRO-FORMA PURPOSES ONLY AND IS BASED STRICTLY ON OUR CALCULATION OF THE BOUNDARY SHOWN ON THE FINAL PLAT OF SUBDIVISION OF CANTERBURY PARK PUD, RECORDED DECEMBER 22, 2009 AS DOCUMENT 6553804." The final plat will need to show record and measured dimensions of the exterior boundary and all monuments used to establish said boundary.
15. All easement granted on Canterbury Park Subdivision noted above need to be abrogated. Also, all utility companies need to sign off that they have no facilities with the existing easements and will allow them to be abrogated. This can be done on the final plat of subdivision.
16. When the Final Subdivision Plat is prepared please add all certificate that are required by Village Code Section 6-5-B.

Preliminary Traffic Impact Study Comments

17. KLOA followed the ITE guidelines and their analysis is reasonable for trips generated, trip distribution, traffic assignments, capacity analyses.
18. The proposed traffic does not meet the Illinois DOT Bureau of Design and Environment thresholds for separate left and right turn lanes on Cuba Road.
19. The sight distance seems reasonable at the site access.
20. The maintenance of the emergency access drive should be specifically documented in the site documents. Common issues are overgrown vegetation, lost lock keys to gate, rusted gate locks, etc.

Preliminary Engineering Comments

21. The source and date of the topography should be confirmed and noted on the plans. An onsite topographic survey will be needed for this development and should be completed for preliminary engineering approval.
22. The proposed path cross section and width need to be added to the engineering plans. We recommend that all paths have a minimum width of 6-feet.
23. The roadways should be a minimum of 22-feet wide to match other rural cross section roads in the Village. In addition, the roadway stone aggregate base thickness should be increased to 11."
24. Please add a cross section of the emergency access drive.
25. Please add the cross section of the proposed public sidewalk.
26. The proposed ditches are "v" shaped and need to be revised to include a 2-foot wide flat bottom. In addition, please label the sideslopes with a maximum slope of 4:1. The detail needs to be revised to reflect these revisions.
27. The maximum allowable slopes are 4:1. Please label the slopes on Lots 5-7 and adjust as needed.
28. The preliminary storm sewer sizes need to be shown on the plans.
29. A lift station is proposed that will be sized for future development. Exhibits and flow calculations for the future service area need to be provided.

30. The applicant shall provide a water system model to confirm the proposed size (6") and pressures are adequate.
31. We recommend the watermain be looped within the subdivision to improve overall flow and water quality.
32. The existing aerial utilities along Cuba Road should be shown on the plans. Do they conflict with the proposed path?

Preliminary Stormwater Management Comments

33. The current Lake County Watershed Development Ordinance (WDO), which has been adopted by the Village, and proposed amendments (including Bulletin 75 Rainfall Data Table) should be utilized for design.
34. The proposed detention sizing is based on Appendix K, which is no longer applicable since Bulletin 75 Rainfall data is required for detention sizing. Since the proposed detention basins are interconnected and discharging to a Zone AE floodplain / floodway, it is recommended an updated stormwater model be developed at this stage to account for basin interconnection and tailwater (such as PondPack or XPSWMM), which will impact the footprint and depth of the proposed basins.
35. All offsite roadway improvements must be accounted for in the detention volume calculations and new impervious directed to the proposed basins.
36. The proposed HWL of Detention Basin 3 is higher than the inverts of the adjacent culverts, which will result in ponding in the ditches. It is not recommended that the detention basin HWL encroach into the ditches. Any surcharged standing water must be contained in a stormwater easement and the surrounding area meet freeboard requirements.
37. The following comments pertain to existing depressions and BFE's:
 - a. The source of all BFE's must be identified in the report and source material provided.
 - b. A BFE, reflective of the updated Bulletin 75 data, must be reviewed and approved by SMC for the existing depression by Stormwater Basin 1.
 - c. BFE's with <20 acres tributary must be established and can be reviewed and approved by the Village, including the depression by Stormwater Basin 3.
 - d. Existing depressional storage volume shall be maintained per Section 501.05. In addition;
 - i. If they have volumes greater than 0.75 ac-ft, they will need to be compensated for based on floodplain requirements.
 - ii. Portions of the existing depressions for Stormwater Basins 1 and 3 may be located outside of the development boundaries. Per Section 704.03 of the WDO, Hydraulically equivalent compensatory storage requirements for development activity in a non-riverine Regulatory Floodplain, that is located partially on-site, with more than 10% of the BFE surface area located on-site, shall be at least equal to 1.2 times the volume of Regulatory Floodplain storage lost or displaced. Such compensation areas shall be designed to access the required volume.
38. Please enhance the narrative to describe the existing drainage patterns of the site, including how the depressions and wetlands outlet, how drain tiles impact the drainage patterns of the site, the receiving downstream areas, proposed overland flow route paths, etc. All concentrated stormwater discharges must be conveyed into a maintainable outlet with adequate downstream stormwater capacity and will not result in increased flood and drainage hazard. (502.03).
39. On the Existing Conditions and Proposed Conditions Exhibits provided in the stormwater report, identifying labels should be created for the tributary areas.
40. Please submit cross-section views for the stormwater management system showing existing and proposed conditions including principal dimensions of the work, existing and proposed elevations, proposed slopes, normal water and calculated base flood elevations, vegetation type, and overland flow depth and path. Please indicate on the engineering drawings if the detention basins are to be wetland bottom, dry, or wet.
41. Detention Basin 1 has a proposed HWL that encroaches onto the adjacent property. All stormwater management facilities must be located onsite and within a dedicated stormwater management easement.

42. A path is proposed to be constructed along the western side of Basin 1. All paths should be located above outside of the basin HWL's.
43. The proposed adjacent grades of homes near detention basins must meet the flood protection elevation requirements outlined in Section 507.02.
44. Per 506.01.C, the following comments pertain to drain tiles:
 - a. There are multiple drain tile lines draining directly into the proposed detention basins. These lines should be intercepted and diverted around the basins with pipes of equivalent size. (506.01.C.4)
 - b. Observation structures, or similar maintenance and inspection access structures, shall be installed within the development at suitable points of ingress or egress. (506.01.C.2)
 - c. The applicant shall notify adjoining downstream property owners in writing of any proposed stormwater facility outlet location and design. The development design shall utilize, where practical and approved by the Enforcement Officer, outflow locations that have an existing tile leaving the development site. A subsurface connection to the tile shall be constructed as a low flow outlet. A surface outlet shall be designed for the development site outflows based on the assumption the downstream tile will cease to function. (506.01.C.3)
 - d. Recorded deed or plat restrictions shall be provided for all existing and replaced drain tiles within the ownership parcel which are part of the stormwater management system. (506.01.C.7)
45. Per Section 508, onstream detention with a detention volume safety factor shall be provided for the offsite flow tributary to the proposed basins, and the allowable release rate should consider both compensatory storage and the DVSF. The detention volume safety factor and overflow weir sizing must account for tributary areas from existing drain tiles directed to the proposed basins.
46. While calculations were not provided for overland flow routes, the design engineer should consider ditch capacity and overland flow paths between the proposed lots for the 100-year event during preliminary engineering as it will impact grading and foundation elevations. Freeboard requirements must be met per Section 506.03.

The following are items to consider for final engineering, as they may impact the grading and design of the site:

47. Documents outlined in Sections 400 and 401 will be required as part of the final engineering submittal
48. Calculations and sizes for the storm sewer system was not provided in this submittal, therefore the design of the system could not be evaluated. The storm sewer shall meet the requirements outlined in Section 506.01 of the WDO.
49. RVR and Water Quality requirements will be required per Sections 503 and 504.
50. Per Section 507.01, the top of the impounding detention structure shall be a minimum of one (1) foot above the design high water level within the emergency overflow structure based on the critical duration base flow. The 1-foot freeboard of the is to be measured from the top of the water flowing through the weir.
51. As part of the final, post-construction acceptance, all existing drain tiles that remain will need to be cleaned and televised.

Additional comments may follow upon review of preliminary engineering plans. If you have any questions regarding the above, please do not hesitate to call me at 847-821-6231 or email me at gperry@gha-engineers.com.

Sincerely,
Gewalt Hamilton Associates, Inc.



Geoffrey L. Perry, P.E.,
Village Engineer

Encl. Wetland Review #1 from Christopher B. Burke Engineering Ltd., dated July 14, 2020

cc (via email): Mr. David Lothspeich, Village Manager – Village of Long Grove
Ms. Jodi McCarthy, P.E., CFM – Gewalt Hamilton Associates, Inc.

Memorandum

July 14, 2020

Subject: Philip Estates Subdivision, Cuba Road, Long Grove, Lake County, IL
Wetland/Buffer Review #1
(CBBEL Project Number 150180.LG022)

To: Geoff Perry – Gewalt Hamilton

From: Jedd Anderson, PWS, CWS#12 - CBBEL

Wetland and Buffer Review # 1

Based on our review the of the provided documentation the following are outstanding.

§1000.02 Wetland Delineation Report

We completed a review of the provided Midwest Ecological Wetland Delineation Report, dated May 20, 2017. The provided wetland delineation report is more than 3-years old and consequently must be updated. The wetland boundaries should be reflagged, and the delineated wetland boundaries confirmed, and the updated boundaries surveyed and added to the engineering plans.

The provided document is also incomplete. In the southwest quadrant of the site is a potential wetland area that was identified as non-wetland. The wetland delineation exhibit indicates data points taken within the suspect area, but the data forms were not provided. A review of several aerial photos was completed. Nearly every photo indicates wetland signatures in the area in question. Additionally, the suspect area is mapped as containing hydric soil and field tile.

We strongly recommend that prior to the wetland boundaries being surveyed, that a field meeting be set up to allow me to evaluate to confirm the delineated wetlands, including the area in question mentioned above. The area in question is proposed to be converted into an onsite detention pond, and confirmation of the wetland boundaries will be critical to the development.

Following the wetland boundary confirmation. The applicant is recommended to obtain a Corps of Engineers Jurisdictional Determination to determine if the Corps will regulate the onsite wetland(s).

Once the regulatory status of the onsite wetland(s) is known, the applicant is recommended to submit a Wetland and Buffer Submittal, prepared in accordance with the Lake County Watershed Development Ordinance addressing proposed wetland and buffer impacts and specific Ordinance requirements.