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Date: January 26, 2021

To: Steve Norcini, PE Township Engineer

From: Roger Phillips, PE

cc: Kevin W. Kochanski, RLA, CZO – Director of Community Development
Mary Eberle, Esq. – Grim, Biehn, and Thatcher
Damon Drummond, PE – Gilmore & Associates, Inc.
Patricia Sherwin – Radnor Township Engineering Department

RE: Eagle and Radnor Roads

Date Accepted: 10/06/2020
90 Day Review: 01/04/2021 extended to 02/26/2021

Gannett Fleming, Inc. has completed a review of the Preliminary Land Development Plan for the above referenced project for compliance with the Radnor Township Code. We have reviewed the plans based on a proposed zoning map revision that would convert this Parcel to R-2 from the current zoning designation of PI. The map revision must be approved by the Board of Commissioners prior to this plan moving forward in the approval process. The applicant is proposing to construct 20 single family homes on individual lots. The Plan was reviewed for conformance with Subdivision and Land Development, Zoning and other applicable codes of the Township of Radnor.

The applicant has indicated in a January 15, 2021 letter that the following waivers are being requested:

1. §255-12.A – To permit the land development application to proceed and be reviewed as a single preliminary/final land development plan.
2. §255-21.B(1)(n) – Existing principal buildings (and their respective uses) and driveways on the adjacent peripheral strip. Sewer lines, storm drains, culverts, bridges, utility easements, quarries, railroads and other significant man-made features within 500 feet of and within the site (this includes properties across streets) must be shown on the plans. A partial waiver is being requested to not provide the items which are not visible on aerial imagery (sewer lines, storm drains, easements, etc.)

Eagle and Radnor Roads

Plans Prepared By: Site Engineering Concepts, LLC
Dated: 09/15/2020 and last revised 01/19/2021

Gannett Fleming, Inc.

Sewage Facilities Planning

1. Final plan approval will not be granted until Planning Approval or a Planning Exemption is received from the PA DEP. The applicant has submitted the planning module application to the Township on January 13, 2021 for review. The note on the plans that indicates the applicant requests final plan approval conditioned on received planning module approval prior to the construction of the final six homes. This statement is incorrect. Plans may not be recorded, and construction may not commence until planning approval for the entire project is received from the PA DEP. This statement must be revised.

Zoning

1. §280-20-F – The applicant has provided a proposed impervious coverage chart. Additional information must be provided regarding the “other SF” column in the chart.
2. The aggregate side yard for Lot #17 is shown as 100.8 ft in the proposed zoning summary. We believe this is incorrect. The applicant must verify and revise.
3. The setbacks shown in the proposed zoning summary must be the most restrictive information. For example, Lot #5 has 2 front yard setbacks. One is 55.1 ft and the other is 45 ft. The table should indicate the 45 ft, not the 55.1 ft. This table should be revised.
4. §280-112 – There appears to be portion of the home on lot #1 located in the steep slope areas of greater than 20%. The applicant has indicated that these steep slope areas are man-made. Verification of the steep slopes being created by an approved Land Development Plan or Grading Permit must be provided.

Subdivision and Land Development

1. §255-20-B(1)(n) – Existing principal buildings (and their respective uses) and driveways on the adjacent peripheral strip. Sewer lines, storm drains, culverts, bridges, utility easements, quarries, railroads and other significant man-made features within 500 feet of and within the site (this includes properties across streets) must be shown on the plans. The applicant has requested a partial waiver from this requirement.
2. §255.27.C(4) – When a subdivision abuts or contains an existing street of inadequate right-of-way width, the Board of Commissioners may require the reservation or dedication of rights-of-way to conform with the required standards. Radnor Street Road is a Minor Collector, with a right-of-way requirement is 60 feet. The applicant has indicated on the plans that the existing right-of-way is 33 feet. Walnut Avenue is a local Road, with a right-

of-way requirement is 60 feet. The applicant has indicated on the plans that the existing right-of-way is 50 feet. A 25-foot half ROW from the existing cartway centerline is being provided along Radnor Street Road. The existing Walnut Ave ROW is currently sufficient for the type and usage of roadway.

3. §255.38.B – Street trees 2 ½ inches dbh at intervals of not more than 30 feet along both sides of new streets and along one or both sides of an existing street within the proposed subdivision or land development must be provided. The applicant has indicated that there is street frontage currently canopied by existing trees and not included in the calculations for the following: Radnor Street Road has 250 linear feet of canopied edge for the Northern stretch of the property and Eagle Road has adequate canopy for the entire length of the property.
4. §255.38.H – All street trees provided must be in accordance with this section. We note there are numerous trees shown on the planting schedule not in accordance with this section.
5. §255-40.C(2) – Access and circulation for fire-fighting and other emergency equipment, moving vans, fuel trucks, garbage collection, deliveries and snow removal shall be planned for efficient operation and convenience. The turning template should provide the information regarding the vehicle used.
6. §255-43.1.B(1) – For all residential subdivisions or land developments involving a total of four or more lots and/or dwelling units, a minimum of 1,440 square feet or suitable park and recreation land shall be provided per dwelling unit within such subdivision/land development, unless the developer agrees to a fee in lieu of \$3,307 per dwelling unit (existing or proposed).
7. §255-49 – Where appropriate, the developer shall install or cause to be installed, at the developer’s expense, metal or fiberglass pole streetlights serviced by underground conduit in accordance with a plan to be prepared by the developer’s engineer and approved by the Board of Commissioners. Three streetlights are being provided.
8. §255-54.B – The central water system should be designed with adequate capacity and appropriately spaced fire hydrants for fire-fighting purposes pursuant to the specification of the National Fire Protection Association. Review and approval by the Township Engineer and the Township Fire Marshall shall be required in order to ensure that adequate fire protection is provided. A fire hydrant is being provided at the end of the cul-de-sac per discussions with the fire department. The applicant is preparing a water extension plan for review and approval by Aqua and Township.

Stormwater

1. The proposed drainage area map on Sheet 14 of the plan set must be revised to clearly indicate the separate drainage areas used in the stormwater calculations (i.e. A1, A2, etc.). An increased scale is insufficient, as the plan is very busy and difficult to interpret where the boundaries of each individual drainage area are located. It may be helpful to provide a simplified map with many of the features turned off, similar to the Outfall Map provided in the PCSM report, or provide different colors for each proposed drainage area.
2. The Lot #1 infiltration bed appears to utilize the infiltration rate from test 1B (1.6 in/hr) but uses the test elevation from test 1A (350.0). If the test elevation from test 1A is to be used, then the infiltration rate from that test must also be used. Test 1B did not investigate below 353.5 so the rate of 1.6 in/hr cannot be used at the design elevation of 350.5. Revise the Proposed Infiltration Bed Dimensions table on Sheet 8 of the plan set and the Basin Volumes & Dewater Times per bed in the PCSM report to be consistent and utilize the correct test pit ID information.
3. Sheet 8 of the plan set indicates a bed bottom elevation of 376.5 for the Lot #6 infiltration bed and an associated test pit ID of SWB-6, but the test elevation for SWB-6 was 368.0. The bed bottom elevation is outside of the test strata per the borehole log in the soil report (364.0 through ~376.2). The bed bottom elevation must be within the test strata in order to utilize the infiltration rates and elevation. Revise accordingly.
4. The infiltration bed footprints for Lot #17 and #18 are inconsistent between the PCSM report and the plans. The Basin Footprints in the Basin Volumes & Dewater Times per bed in the PCSM report indicates a 2,418 sf footprint for Lot #17 but the Proposed Infiltration Bed Dimensions table on Sheet 8 of the plan set indicates a 63'x38' (2,394 sf) footprint, as does Sheet 7 of the plans. The Basin Footprints in the Basin Volumes & Dewater Times per bed in the PCSM report indicates a 1,898 sf footprint for Lot #18 but the Proposed Infiltration Bed Dimensions table on Sheet 8 of the plan set indicates a 73'x19' (1,387 sf) footprint, as does Sheet 7 of the plans. These inconsistencies must be revised.
5. The Mid-Lot Storm Main Profile on Sheet 9 of the plan set does not show Outfall A5. Revise the profile to show Outfall A5. The profile also indicates a rim elevation for PSTH-5 below the finished grade. Revise the structure to provide a logical rim elevation relative to the finished grade. The finished grading surrounding PSTH-5 is unclear. Revise the profile to clearly show the finished grading.

6. The pipe size for PP18 is listed as 8” on the Beechtree Storm Main Table but is listed as 12” on the Lot 17 & 18 Storm Main Profile. Revise this inconsistency.
7. The pipe size and downstream invert for PPR1C are listed as 15” and 381.98, respectively, on the Beechtree Storm Main Table but are listed as 8” and 383.77, respectively, on the Lot 17 & 18 Storm Main Profile. Revise these inconsistencies.
8. The pipe invert out elevation for PPR2 is listed as 381.81 on the Beechtree Storm Main Table but is listed as 383.75 on the Lot 17 & 18 Storm Main Profile. Revise this inconsistency.
9. The utility crossings on the Beechtree Storm Main Profile on Sheet 9 of the plans are inconsistent with the plans. The Utility Plan on Sheet 11 of the plan set appears to indicate the following utility crossings of the indicated storm pipes (in sequential order from upstream to downstream):
 - a. PP-R1B: communications main, underground electric main, gas main.
 - b. PP-R1C: Lot 15 water lateral, Lot 7 communications lateral, Lot 7 electrical lateral, Lot 7 gas lateral, Lot 15 sanitary lateral, Lot 14 water lateral, Lot 8 communications lateral, Lot 8 electrical lateral, Lot 8 gas lateral, Lot 8 water lateral, Lot 14 storm pipe from infiltration bed, Lot 14 & 17 sanitary lateral, Lot 17 water lateral, Lot 18 water lateral.
 - c. PP-R2: Lot 18 sanitary lateral.
 - d. PP-R3B: Lot 13 sanitary lateral, Lot 19 water lateral, Lot 12 water lateral, Lot 11 water lateral.
 - e. PP-R4: gas main, underground electric main, communications main, Lot 11 water lateral
 - f. The profile must be revised to accurately reflect these conditions that are shown on the plans. Be sure to include the entirety of Outfall A3 which appears to have been cut off during the latest revision to the plans.
10. The Mid-Lot Storm Main Profile on Sheet 9 of the plan set indicates a sanitary lateral crossing near PSTH-8 but there is no sanitary lateral shown on the plans at this location. Revise the profile to remove this crossing. Additionally, it appears that the sanitary main and water main crossings do not provide enough vertical separation. Revise the plans to provide a minimum of 18” vertical separation between the storm pipe and sanitary and water mains. The Mid-Lot Storm Main profile no longer shows Outfall A5. Revise the profile to include the outfall.

11. The Utility Plan on Sheet 11 of the plan set appears to indicate at least 8 utility crossings of storm pipe PP-18 but none are shown on the Lot 17 & 18 Storm Main Profile. The profile must be revised to show all utility crossings.
12. The utility crossings on the Walnut Storm Main Profile on Sheet 9 of the plans are inconsistent with the plans. The Utility Plan on Sheet 11 of the plan set appears to indicate the following utility crossings of the indicated storm pipes (in sequential order from upstream to downstream):
 - a. PP-R6: Lot 4 sanitary lateral, Lot 4 water lateral, Lot 4 gas lateral.
 - b. PP-R6B: Lot 3 water lateral, Lot 3 gas lateral, Lot 3 sanitary lateral.
 - c. PP-R7: Lot 2 water lateral, Lot 2 gas lateral, sanitary main PP-S6, water main, Lot 1 gas lateral, Lot 1 water lateral, existing 8" DIP sanitary main.
 - d. The profile must be revised to accurately reflect these conditions that are shown on the plans. Additionally, several of the utility crossings do not provide enough vertical separation. Revise the plans to provide a minimum of 18" vertical separation between the storm pipe and sanitary and water pipes.
13. The Walnut Storm Main Profile on Sheet 9 of the plan set still does not show the proposed grade. The storm pipe profiles must show the proposed grading. Revise the Walnut Storm Main Profile to show all proposed grades.
14. The Lot 17 & 18 Storm Main Profile on Sheet 9 of the plan set indicates rim/invert elevations for PSTH-18 and PI-R2 that are below finished grade. Revise these structures to provide logical rim/grate elevations relative to the finished grade.
15. Provide a profile for inlet PI-R1D and the pipe connecting to PI-R1C.
16. The Yard Inlet table on the Utility Plan on Sheet 9 of the plan set lists grade elevations for inlets PI-1A, PI-1B, PI-20A, and PI-20B that do not appear to agree with the grading. Revise the Yard Inlet table and/or the proposed grading accordingly.
17. It appears that the location of PI-14A was revised but the associated features were not. Revise the plans to reconfigure PP-15A and any other related features and ensure the identification callout is properly located.

Sanitary Sewer

1. The invert information must be verified for the sanitary sewer in Walnut Lane.

2. The finished grade is not shown on the sanitary sewer profile between MH PSAN5 to the existing MH of Walnut Avenue. This must be revised.
3. All utilities crossing the sanitary sewer must be shown on the sanitary sewer profile.
4. A sanitary sewer manhole detail must be shown on the plans.
5. The lateral for Lot#14 is appears to be connected to the lateral for Lot #17. This is not permitted and must be revised.
6. The water line and sanitary sewer lines must be a minimum of 10 feet horizontally. There is a note on the plan indicating this, but the lines are shown closer than 10 feet between MH PSAN4 to the existing MH on Walnut Avenue.

General

1. The patio for Lot 8 appears to be shown differently on the plans then on other lots. This must be revised to be consistent.
2. The applicant has indicated that all retaining walls will be less than 4 feet high. Any revisions to the size or locations of the individual structures will be addressed with the grading permits.
3. The applicant must appear before the Shade Tree Commission and gain approval prior to this plan being presented to the Board or Commissioners. The applicant was scheduled to be before the Shade Tree Commission on January 20, 2021.

If you have any questions or require any additional information, please contact me.

Very truly yours,

GANNETT FLEMING, INC.



Roger A. Phillips, P.E.
Senior Project Manager