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December 18, 2018

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MARPL 00156

Joseph Romano, Director of Code Enforcement
Marple Township
227 S. Sproul Road
Broomall, PA 19008

**RE: Preliminary Plan – 2nd Submission
Sproul Road Development, LLC. – Residences at Marple Preserve**

Dear Mr. Romano:

As requested, we have reviewed the following, prepared by Arna Engineering, Inc., in connection with the referenced project:

- *“Residences at Marple Preserve – Preliminary Major Subdivision and Land Development,”* (50 sheets) dated June 12, 2018, last revised November 1, 2018.
- *“Post-Construction Stormwater Management Report - Residences at Marple Preserve,”* dated June 12, 2018, last revised November 1, 2018.
- *“Conditional Use Narrative Report - Residences at Marple Preserve,”* dated November 1, 2018.
- *“Residences at Marple Preserve – Waiver Request Letter,”* dated November 1, 2018.

The applicant, Sproul Road Developers LLC, proposes to develop a portion of the 213.33-acre site bounded by Sproul Road, Reed Road, Interstate Route 476, and the Cardinal O’Hara property (folio no. 25-00-01275-00). The property is split by three zoning districts: INS – Institutional, RC – Residential, and RB - Residential. The proposed development is designed to comply with the Cluster Development Overlay District requirements in the RB and RC Residential Districts. The revised plan includes a total of 228 residential units as follows: forty-four (42) single family detached units and twelve (12) two-family units (twins) in the RB District; and, one-hundred-twelve (112) single family detached units, sixty-two (62) two-family units, and a clubhouse in the RC District. A total of 75.50 acres of permanent open space is reserved in both zoning districts. With the exception of the existing Don Guanella facility, the property is predominantly woodlands. Branches of Whetstone Run, a tributary to Darby Creek, traverse the property; a FEMA established floodplain is attributed to Whetstone Run along Reed Road. The existing Don Guanella buildings are served by public water and sewer and the applicant is anticipating public services for the proposed development.

The applicant has requested waivers for the following Subdivision Ordinance requirements:

- §265-26.B(1) to allow 50-foot road center-line radii in lieu of the required 150-foot center-line radii.
- §265-28.A to allow street intersections at 45° in lieu of the required minimum 60°.

The applicant has requested authorization for the following Conditional Uses:

- §300-62.E(5) to allow for the construction of accessory structures to a permitted use in areas of very steep slopes.
- §300-62.E(6) to allow for individual driveways accessory to single-family detached dwellings in areas of very steep slopes.
- §300-62.F(2) to allow the construction of single-family detached dwellings in areas of steep slopes.
- §300-62.F(4) to allow the construction of stormwater management facilities in areas of steep slopes.
- §300-62.F(5) to allow the construction of roads, driveways, and parking lots in areas of steep slopes.
- §300-62.F(6) to allow the construction of central sanitary sewer systems in areas of steep slopes.
- §300-62.F(7) to allow for accessory uses and structures in areas of steep slopes.

We offer the following comments; new comments are in *italics*:

ZONING

1. The subdivision of the tract into lots may occur only for financial purposes and not to permit individual lots to be treated as independent parcels for separate land development at a future time. (§300-8) The subject tract includes land fronting Sproul Road that is zoned INS – Institutional. A subdivision is required to establish the parent tract for the proposed cluster residential development; and, a note added to the record plan restricting the parent tract from subdivision for future development.

The applicant has indicated the property will be subdivided to allow for the proposed residential development and future use of the institutionally zoned portion of the existing tract. A Subdivision Plan is required that includes the necessary Preliminary/Final Plan components and design standards consistent with §265 – Subdivision of Land.

The district boundaries between RB-Residential, RC-Residential, and INS-Institutional zones are to reference the Marple Township Zoning Map, in lieu of the approximate boundary noted on the recorded plan of the property, prepared by Catania Engineering. Subdivision lines are to follow district boundaries (§300-17.A).

2. The proposed development shall be serviced by public sanitary sewers acceptable to the Board of Commissioners and subject to the approval of the Pennsylvania Department of Environmental Protection. (§300-32.B(4)) The tract is located entirely within the Radnor-Haverford-Marple (RHM) Sewer Authority service area. The applicant proposes to split sewage flow from the proposed development between RHM and the Central Delaware County Authority (CDCA) using three (3) pump stations. The Township's Act 537 Plan currently requires sewage flow from the property to be completely conveyed to RHM without the use of a pump station.

3. The Board of Commissioners is authorized to grant conditional uses for single-family detached dwellings, stormwater management facilities, roads, and sanitary sewer systems within steep slopes, provided the application meets the standards for conditional use approval and subject to recommendations of the Planning Commission and Township Engineer. (§300-62.F) The following are located within steep slope areas:

DWELLING UNITS	STORMWATER MANAGEMENT	ROADS	SANITARY SEWER
SFD1	SWF2	Road A	Pump Station 2
SFD89	SWF4	Road D	Pump Station 3
SFD90	SWF5	Road F	
SFD102	SWF7		
	SWF8		
	SWF9		
	SWF10		
	SWF12		
	SWF15		

A Conditional Use Narrative was submitted to fulfill the requirements of §300-62.I - Steep slope protection, Application procedures for conditional uses or variances. We offer the following comments regarding the request for conditional use approval to allow disturbance of steep and very steep slopes:

- a. *Contrary to the Narrative and plan note #10 on sheet 34 of 50, according to the U.S. Geologic Survey - Soil Survey, the site soils are susceptible to erosion and compaction, presenting development limitations for residential buildings, road construction, excavations, and stormwater management. The applicant should address resolutions for the reported soil limitations.*
- b. *The property is located within the Wissahickon geologic formation, which is characteristic of a permeable sandy layer in the upper weathered bedrock. Construction of stormwater management infiltration basins, concentrating water below grade; and, installation of retaining walls and earthen berms, adding a static load to subsurface soils may influence groundwater movement and build up, with a potential impact on slope stability. The applicant should address the construction methods necessary to prevent adverse impacts from groundwater accumulation for the stormwater management facilities, retaining walls and earthen berms.*
- c. *Stormwater management basin discharge pipes for several proposed facilities are located at the top of a slope, some of which are steep and/or very steep. Methods and means to protect slopes from erosion are required for areas downstream of point-source discharges from the proposed stormwater management facilities, or a downstream analysis provided to verify maintenance of slope stability. Sedimentation within receiving streams from the potentially eroded slopes could lead to lower stream water quality, alteration of the streambed resulting in flooding on adjacent properties.*
- d. *The provided site photos indicate eroded streambanks, incised streams, and sediment deposits are present on the site. Information is to be provided on how further erosion will be prevented.*
- e. *A PNFI search for the property identifies potential impacts for Hickory Shad (*Alosa mediocris*), reported by the PA Fish and Boat Commission and an avoidance measure per*

the US Fish and Wildlife Service restricting tree cutting and earth disturbance to only be conducted between October 1 and March 31 to protect the Indiana Bat. Due to the results of the PNDI search and possible impacts to other natural resources noted by the previous comments, an Environmental Impact Statement or Assessment should be submitted to resolve potential conflicts associated with proposed development activities.

- f. The applicant proposes the installation of approximately 7,800 linear feet of retaining walls to allow for construction of stormwater management facilities, roads, stream crossings, and single family dwellings. The retaining walls are to be maintained by a Homeowners Association; therefore, a maintenance and inspection schedule is necessary, and estimated maintenance costs should be established to program funds as part of resident association fees.*
 - g. Units 73, 74, 123 through 127, pump station #2, and stormwater management facility #15 require a 28-foot high tiered retaining wall, toeing into a steep slope. Alternatively, units should be removed to reduce the need for retaining walls and limit unnecessary encroachment into the steep slopes for the residential development and stormwater facility construction.*
 - h. The limits of disturbance follow the face of retaining walls; however, access to and construction of the walls typically require disturbance beyond the retaining wall. The disturbance limits should be adjusted, and amount of slope disturbance updated accordingly.*
 - i. Confirmation of sanitary sewer service is required from both CDCA and RHM; otherwise a community or on-lot treatment facilities are necessary, which may be limited due to the slopes within the undeveloped portion of the site.*
 - j. Residential homes are proposed to be constructed less than 20 feet from the retaining walls (SFD-1, 23, 24, 74, 75, 76, 89, 90, 102, 124, 125, 144, PS-1, PS-2, PS-3 and the clubhouse). The applicant should provide greater separation to avoid loading from the house foundations on the retaining walls and address safety concerns. Building foundations typically need to be embedded into native soils, unless alternate designs are utilized. Deep foundations may require further excavation into and protection for steep slope areas.*
 - k. The Narrative's distinction between natural and man-made steep and very steep slopes is irrelevant; since, the Township regulations for slope protection are the same regardless of how the slopes were established.*
4. The applicant has elected to develop the site using the Cluster Development Overlay District standards, requiring 60% open space in the underlying RB-Residential and 40% open space in the underlying RC-Residential zoning districts (§300-32). The required open space area is to meet the following standards in accordance with §300-32.B(3):

- a. Permanent open space areas shall be designed as a continuous system of open space. (§300-18.G(4)) The proposed stormwater management basins are located in the proposed open space areas; however, Marple Township has not accepted dedication of stormwater management facilities for other similar developments. The stormwater management basins, including the required access easement from the roadway, are to be located outside the areas proposed as open space and cohesive open space areas provided.

Half of the trailhead parking lot along Road E is identified outside of the open space area. Please clarify.

- b. Permanent open space shall be provided with safe and convenient access to the residentially developed area; capable of accommodating pedestrian, bicycle, and maintenance vehicle traffic. The permanent open space shall contain appropriate access improvements and shall be provided with adequate parking areas. (§300-18.G(5))

Pedestrian accommodations (sidewalk, curb ramps, crosswalks, etc.) are required to provide access from the residential development to the proposed 1.26-acre active open space area adjacent to proposed Road A and G.

- c. Permanent open space shall predominantly consist of natural environmental features and may contain walking, biking, equestrian trails, and active recreations facilities occupying up to 25% of the open space area. (§300-18.G(6)) The applicant should demonstrate that trails and recreation facilities can be provided within the proposed open space.

Per Note #17 on plan sheet 5 of 50, the approximant location of the existing walking trails on the tract have been added to the plans; however, the proposed development will require the partial removal of existing trails. In addition to the proposed new trails connecting the proposed development trail heads and parking lots, the applicant should reestablish continuous trail connections within the proposed development and to the tract perimeter.

- d. An ownership and maintenance agreement for the permanent open space will need to be established in accordance with §300-18.I.

5. Grading or regrading of lands, and the construction of retaining walls (§300-60.I.(6)); culverts §300-60.I.(4); and, paved roads (§300-60.I.(5)), approved by the Pennsylvania Department of Environmental Protection within the floodplain may be granted as a conditional use by the Board of Commissioners. The Applicant is proposing two (2) roadways, two (2) culverts and associated grading that may be located within a floodplain that has yet to be shown on the plans, whether from FEMA maps or appropriate hydraulic calculations. If conditional use approval is required, it shall adhere to the requirements in §300-60.J.

The provided limits of disturbance, while containing the proposed improvements, does not account for disturbance necessary for the construction of the proposed stream crossings, abutments, retaining walls, or incidental grading, necessary for construction.

6. No person or organization without first obtaining a required permit in accordance with §300-63 shall remove trees from the property with a trunk measuring more than 12 inches in diameter. Any tree removed to construct proposed improvements shall be replaced with two (2) new trees with trunks not less than three (3) inches in diameter. (§300-63.F) A table of all trees to be removed or relocated from the site is to be provided; and, demonstrate compliance with the procedures and conditions for removal or relocation of trees per §300-63.D.

An inventory of all existing trees 12 inches in diameter or greater within the limits of disturbance is required, and a table provided quantifying the number of trees to be removed and required number of replacement trees to be provided.

7. Parking calculations are to be provided for the proposed residential units and clubhouse in accordance with §300-84, and a loading/unloading area provided per §300-86 for the clubhouse.

The minimum required number of parking spaces for the residential development, 2 per unit, appears to be provided; however, the amount of provided parking indicated in the Parking Summary Table is overstated. One vehicle per garage and one vehicle per driveway should be

used in lieu of the proposed two vehicles per driveway and two per garage. Additionally, in accordance with §108-3.B(5), the maximum grade for a driveway within 20 feet of the right-of-way shall not exceed 4%, be closer than 5 feet from a side line, or have a curb cut greater than 15 feet.

8. The permitted impervious coverage on the underlying RC zoning district portion of the tract is 25%. The proposed plan indicates 24.99% impervious coverage, allowing no future impervious coverage within the development.

The proposed impervious coverage within the RC zoning district has been revised to 24.62%; however, should plan modifications to address comments require additional impervious coverage, a reduction in the number of lots may be necessary to maintain compliance.

SUBDIVISION AND LAND DEVELOPMENT

9. The following Preliminary Plan requirements are to be provided:
 - a. Existing natural features, including the FEMA floodplain located along the northern portion of the tract. (§265-9.B(9))

Information provided on the ALTA survey is to be included in the Preliminary Plan set.

10. The proposed sanitary sewer force main located along Reed Road, Sproul Road, and Crum Creek Road appears to be located outside of the rights-of-way. Easement agreements may be required with the affected property owners.

The applicant has acknowledged that easements are required for the proposed sewer main. The requirement to obtain the easement is to be noted on the Final Plan to be recorded.

11. The applicant has requested a waiver from the requirement that minor roads have a minimum horizontal curve of 150 feet to allow a 50-foot curve. (§265-26.B(1)) The curve, located along the street frontage of proposed lot SFD 51 may not provide sufficient sight distance for vehicles traveling along Road D or exiting driveways located near the curve.

The Engineers response letter indicates the curve in proposed Road C was revised to provide a radius of 65 feet, however the plan indicates a radius of 60 feet.

12. When feasible, intersections with major traffic streets shall be located not less than 800 feet apart, measured from center line to center line. (§265-28.D) The proposed intersection of Road A with Reed Road is located approximately 590 feet from the intersection of Reed Road and Red Hill Road. The intersection should be relocated to provide the required separation.

Review of the pending Transportation Impact Study for the development is necessary to verify suitability of the location and geometric design for the proposed access road.

13. Clear-sight triangles of 75 feet measured along street centerlines from their point of junction shall be provided at all intersections, and no building or obstruction shall be permitted within such sight triangles. (§265-28.A) The clear sight triangles depicted on the plans do not correctly designate the clear sight triangle areas, measuring 37.5 feet from the centerline intersections and approximately 50 feet from the street that is perpendicular to the intersecting street. Please verify and make the appropriate revisions. Additionally, a clear-sight triangle is to be provided for the proposed intersection of Road A and Reed Road.

Clear site triangles are to be provided for all intersections and driveways, including the trail head parking lots and the site access to Sproul Road.

14. The proposed development includes 232 new residential housing units, adding nearly 2,200-weekday vehicle trips per day and a peak of approximately 230 vehicle trips per hour. A traffic study is required to be submitted for the proposed development. (§265-2)

A traffic study scoping application has been submitted to PennDOT. The applicant is to comply with the comments provided by PennDOT in the preparation of the traffic study; and, include pedestrian connectivity to the surrounding residential and commercial developments.

15. The plan indicates access to the site via a new intersection with Reed Road; however, the proposed number of units and need to maintain emergency access requires a minimum of 2 entrances into the development. (§265-23.A)

The applicant has proposed a right-in, right-out driveway to Sproul Road through the Don Guanella property, a paver driveway connection to the Cardinal O'Hara parking lot, and a paver driveway connection to Reed Road. An easement is required to maintain access through the adjoining properties and the suitability of the slopes and access to Reed Road is to be verified by the Fire Marshal.

16. Depressed curbs and aprons are required for the proposed stormwater basin access driveways.

STORMWATER MANAGEMENT

17. The applicant has indicated that the proposed stormwater management basins are intended to function as infiltration basins. Additional information should be submitted, including infiltration test results and further plan details, to verify that groundwater recharge and water quality volume requirements have been satisfied. (§257-14, §257-14.C(2), §257-15)

Infiltration test results, conducted at the proposed bottom of bed elevation, and basin details are to be submitted for review. Additional information should be provided to verify that the proposed infiltration basins are to be excavated to existing grade and not constructed in fill.

18. Conveyance facilities to or discharging from stormwater management facilities shall be designed to convey the design flow for the maximum storm event. (§257-19.D) Calculations should be submitted verifying that the proposed storm sewers can convey the 100-year storm without bypass, particularly those immediately upstream of stormwater facilities (i.e. CB-9.8 and CB-9.9).

The inlet calculations provided indicate bypass during the 100-year storm for inlets throughout the system including, but not limited to, inlets CB-5.2, CB-5.36, CB-6.2, and CB-7.2. Calculations are required to verify that runoff for the 100-year design storm is captured without bypass (§257-19.D). Additionally, the inlet calculations and proposed grading along Road I indicate bypass conditions onto Sproul Road from inlets CB-5.57 and CB5.58, which is subject to PennDOT review and approval.

19. Stormwater drainage channel design, stability calculations, and details are required to be submitted. (§257-21.D(3))

Additional information regarding the proposed lining for each channel, as well as associated calculations, is to be provided.

20. A permit, issued by the Department of Environmental Protection, will be required for the two (2) proposed stream encroachments required for the construction of Road A.

21. The grading for the stormwater channel located behind proposed lots SFD 56 to 60 does not provide the uniform channel section required to convey runoff to the stormwater management basin.

Channel design calculations are to be provided for this channel.

22. The stormwater management details are to be updated in agreement with the design calculations.

Elevations specified on the plans are to be consistent with the calculations (for example: outlet structures OCS-6 and OCS-9, emergency spillway for Basin #7, and top of grate elevation for inlet CB-8.2).

23. *Storm sewer pipe capacities are to be capable of conveying peak runoff rates for the 25-year design storm; and, the hydraulic grade line (HGL) is not to exceed the top of grate elevation for the 100-year design storm. For example: flow in the storm sewer from CB-10.16 to the basin is greater than the pipe capacity and the HGL exceeds the top of grate.*

24. *Regarding the post-development drainage area map, the following information should be provided:*

- a. *Areas indicated as “undetained” in the calculations should be identified on the plan.*
- b. *Clarification should be provided as to whether the areas tributary to the proposed swales are included in their respective basin drainage areas.*

25. *Additional detail is necessary for the proposed key trenches associated with the earthen berms. The key trench should extend into existing consolidated soil.*

26. *The linings for each proposed emergency spillway should be extended to the downstream toe of the basin slope.*

27. *A trench drain detail has been provided, but does not appear to be identified on the plan.*

28. *Pretreatment is required prior to discharge into an infiltration facility (§257-13B.2(a)). Snouts should be specified for inlets upstream of each basin and sediment forebays provided in each stormwater basin, consistent with the PA DEP BMP Design Manual.*

29. *Overland relief is to be provided to verify that runoff from the houses (or portions of houses) is conveyed to the designated stormwater management basin, should the gutters overflow.*

30. *Swale #2 is to be labeled on the plans.*

GENERAL

31. The plans, including the layout of streets and location of fire hydrants, should be reviewed by the Fire Marshal.

32. An access plan is to be provided for the largest anticipated vehicles, such as a ladder truck, trash truck, etc., that will serve the development to ensure these vehicles can maneuver the roads and have access to all dwelling units without encroaching curbs or other structures.

Turning templates have been provided for a trash truck. Fire apparatus templates are to be provided, including for the proposed emergency access roads.

33. The applicant should indicate if a Homeowners Association will be established for the proposed development and if any of the proposed improvements would be offered for dedication.

The applicant has indicated the open space will be offered for dedication to Marple Township and a Homeowners Association will be established for the remainder of the development. Ownership and maintenance responsibilities for common areas and amenities are to be included on the Final Plans to be recorded.

34. Information should be provided regarding the intended use of the proposed clubhouse including if it will be open to the public and if a restaurant or other food service will be provided.

The applicant has indicated the proposed clubhouse will be used solely for the development residents and will not contain a restaurant. This condition is to be added as a note on the Final Plan to be recorded.

35. The limit of disturbance includes wetland areas; therefore, the Applicant is required to obtain necessary permitting with PA DEP, which may include a jurisdictional determination.

36. This project is proposing to disturb more than one (1) acre; therefore, a NPDES permit will be required to be obtained prior to approval for recording of the plans. The permit and approved plans shall be provided to the Township for their files.

37. A stream crossing permit will be required for road crossings and utilities from PA DEP prior to construction and approval for recording of the plans.

38. The Applicant shall obtain will-serve letters for sewer and water.

39. *Plan note #10 on sheet 34 of 50 is to be revised to reference the Delaware County Conservation District.*

If you have any questions or concerns, please feel free to contact the undersigned.

Sincerely,



Joseph A. Mastronardo, PE
Senior Engineer
PENNONI ASSOCIATES INC.
Township Engineer

JAM/epj

cc: Anthony Hamaday, Township Manager
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