



**TOWNSHIP
OF
LOWER MERION**

MONTGOMERY COUNTY

TOWNSHIP ENGINEER

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LOWM 248.40

October 26, 2018

Christopher Leswing, Director of Building and Planning
Township of Lower Merion
75 East Lancaster Avenue
Ardmore, PA 19003

**Re: 211 Belmont Avenue
LCB Senior Living Development
Preliminary Plan Review**

Dear Mr. Leswing:

In accordance with your request for the above referenced submission, we have reviewed a set of twenty-five (25) plans dated 08-10-18, latest revision dated 10-18-18 and associated stormwater management calculations dated 08-10-18 prepared by Bohler Engineering, Inc. We have also reviewed a traffic study dated 06-28-17, latest revision dated 08-10-18, prepared by McMahon Associates, Inc. We offer the following comments for your consideration:

A. MAJOR ENGINEERING ISSUES

- ❖ **Traffic/Future Improvements**—The Township, as the local sponsor to a PaDot project, is currently proposing improvements to the roadways on the frontage of this property. The current development plan is not compatible with the current roadway design submitted to PaDot for their approval. In order for them to be compatible, revisions to the township design must be made and approval from PaDot obtained for the changes. The proposed land development improvements must be coordinated with the township's final improvement plans. Also, a left turn lane from Rock Hill Road into the site is recommended for this location. We have requested that the left turn lane be shown as an alternate design that would be constructed if it is determined to be practical to install it if requested by PaDot. The crosswalk shown at the site driveway intersection has also been requested to be moved away from the driveways and closer to Belmont Ave in order to be on the section of Rock Hill Road with less curve and to reduce the potential for confusion at the CVS and site driveways.
- ❖ **Stormwater**—No temporary stormwater controls for the during construction condition have been provided. This is a requirement of the township code. Also, the percolation rates obtained will not permit the basin rate control volumes to empty in the required twenty-four (24) hours. In addition, the required recharge volume has not been provided.

The increase in runoff volume from a meadow ground cover condition for the twenty-five (25) year design storm must be recharged as dead storage in the stormwater basins.

- ❖ **Steep Slopes**—The driveway is shown within steep slopes. The existing drive location does not require disturbance to the steep slopes and appears feasible to be used. Relief from the township code requiring the use of the area that does not require steep slope disturbance has been requested. We support relief from that code section since the proposed location better aligns with the driveway across Rock Hill Road and facilitates the recommended left turn lane.

With the resolution of the above major engineering issues and the remaining comments in this letter addressed, we recommend approval of the Preliminary Plan.

B. ORDINANCE REQUIREMENTS

1. Section 101-6A(1)—All woody vegetation to be retained within twenty-five (25') feet of a building site or disturbed area shall be protected from equipment damage by fencing placed at the driplines. The location of the fence shall be provided. The Township Arborist must approve the location of the tree protection fence if it is not indicated at the driplines. This has not been provided in the present submission.
2. Section 101-6A(6)—Grade changes around the driplines of trees to be retained shall be minimized. Impacted trees to remain shall be clearly identified. Treatment of any impacted trees prior to construction to protect the root system shall be performed if/as directed by the Township Arborist. The Township Arborist must also approve the procedure. This shall be evaluated with the Preliminary Plan.
3. Section 101-14A(3g)—All vegetative cover information relative to this code section shall be provided. The principal species of dominant and co-dominant shrub understory have not been clearly provided. All specimen species of twenty (20") inches dbh and larger have not been clearly shown on the plan.
4. Section 121-4E(2d)—The distance from the stormwater facilities and the structure shall be dimensioned on the plan. Adequate separation between the system and footings shall be provided. A minimum separation distance of ten (10') feet is required to be between seepage bed no. 1 and the underground basement parking.
5. Section 121-4E(2d)—The seepage bed details shall be modified to note a minimum twelve (12") inches of cover.
6. Section 121-4E(2c)—Seepage beds shall be designed to empty the total design storm rate control volume in twenty-four (24) hours or less. Calculations verifying this have not been included in the stormwater analysis.

7. Section 121-4E(2f)—The requested seepage beds must contain a sediment trap accessible for maintenance. The details shall be revised to clearly indicate sediment traps on all inflow to the seepage beds.
8. Section 121-4E(2i)—The location of all percolation tests which document the inability of the soil to recharge shall be clearly indicated on the development plans. There appears to be the ability to recharge additional volume using a different basin design.
9. Section 121-4E(2j)—The size and number of perforations per linear foot of pipe shall be included in the seepage bed detail. Perforations shall not be less than five-sixteenths (5/16") inch in diameter and provide an opening area not less than three and thirty-one hundredth (3.31) square inches per square foot of pipe surface. The size and number for the thirty-six (36") inch pipe shown for the seepage beds must be provided.
10. Section 121-4F(3)—Profiles must be provided for all sections of pipe with diameters of fifteen (15") inches or greater. Several pipe sections meeting this criterion have not been provided.
11. Section 121-6B—Certification attesting to the completeness of the design and compliance with Chapter 121 of the Lower Merion Code shall be included and signed on the plans.
12. Section 121-6H—The location, size, and species of trees on the property within twenty-five (25') feet of disturbance shall be included on the plan.
13. Section 121-6J— Additional detail is required in the sequence of construction activities. The demolition of the building and existing paving shall be listed. Removal of sediment barriers shall be performed only after concurrence of the Township Engineer. This shall be clearly noted in the sequence.
14. Section 121-10—No grading changes shall be shown within three (3') feet of the property line in order to ensure transition to the grading on the adjoining property. This shall be clearly noted on the Grading and Utility Plan.
15. Section 121-12—An NPDES Permit must be obtained from the Montgomery County Soil Conservation District prior to issuance of any permits.
16. Section 135-16B(15), section 121-4A—Temporary stormwater management controls for the "during construction" condition have not been provided. The design calculations and location of the required "during construction" temporary facility must be provided in order to verify that code required controls are feasible.
17. Section 135-17C(2d)—A driveway profile shall be provided since the grade of the drive exceeds ten (10%) percent.

18. Section 135-19B(1), Section 135-17(5) - The location of all existing sanitary sewers and storm sewers shall be provided. The size, slope, and material of all sewers within two hundred (200') feet shall be indicated.
19. Section 135-19B(8) - Stop bars and double-yellow centerline pavement markings shall be provided for the garage area in order to provide safe and efficient movement of traffic. All traffic control signage and pavement markings shall be provided on a "Signage and Pavement Marking" Plan and include the garage area.
20. Section 135-19B(8) - A left turn lane into the site is recommended to be provided for traffic entering the site from Rock Hill Road. This is not shown on the current plan. We request that an "Alternate Design" of the entrance showing a left turn be provided. The lane would be required to be installed if it is demonstrated to be practical and required by PaDot.
21. Section 135-19B(8) - The location of the crosswalk and pedestrian warning beacon is requested to be shifted away from the driveway intersection in order to provide a less confusing and therefore safer condition. Proper pedestrian crossing signage shall be provided and shown on the plan. Details shall be provided on the plans.
22. Section 135-19B(8) - Maneuverability diagrams must be submitted for passenger vehicle movements. Parking spaces without adequate maneuverability cannot count toward the required parking. Fire truck access and maneuverability must be approved by the Fire Marshal.
23. Section 135-40—A Planning Module or Exemption must be approved by the City of Philadelphia and the DEP prior to recording the Final Plan.
24. Section 135-41.1(A)—Adequate water supply must be documented for the development. A letter from Aqua Pennsylvania must be submitted certifying adequate supply for the additional demand. This shall be submitted with the Preliminary Plan.
25. Section 101-5C(26)—Portions of the structure walls and drives are shown to be constructed in slopes exceeding twenty-five (25%) percent. Waivers to applicable code provisions for disturbance/construction on steep slopes must be obtained.
26. Section 155-167.7(B)—Wooded lot calculations shall be provided on the plans. The total number of trees removed/impacted by the development shall be indicated.
27. Section 155-206B—The driveway is shown to be constructed in steep slopes. There is another location that does not require the disturbance that has not been used. Relief from this code section must be obtained if/as required. The applicant has submitted test data indicating that the steep slope areas are previously disturbed and should be classified as man-made.. They have therefore requested relief. We support the relief from this code section if/as required since the proposed drive location aligns better with the existing drive across Rock Hill Road and facilitates construction of the recommended left turn lane into the site.

C. ENGINEERING COMMENTS

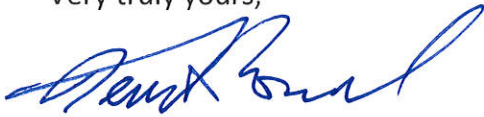
1. The location of the existing sanitary laterals shall be clearly shown.
2. A fill material stockpile location shall be provided.
3. The PA One Call serial number shall be provided.
4. The location of any proposed gas service shall be provided from the structure to the mains. All utility mains shall be shown on the property frontage.
5. Details for the bridge over the flume shall be provided. Calculations shall be provided that document the capacity for delivery, service and emergency vehicles.
6. Top and bottom of curb elevations shall be provided along the proposed driveway.
7. An observation port shall be provided to the bottom of the seepage bed stone. It shall be shown in a plan view detail.
8. The Traffic Safety Unit of the Lower Merion Police Department must approve the final drive configuration.
9. A Lighting Plan must be submitted and must be approved by the Director of Building and Planning.
10. A Planting Plan must be approved by the Planning Department and the Township Arborist.
11. All inlets in non-paved areas shall be shown to be graded in a twelve (12") inch sump condition in order to increase the efficiency of runoff collection. This shall include the temporary grading condition. Spot elevations shall be added to the plan to clarify grading.
12. AASHTO No. 1 stone shall be shown in the seepage bed details. Geotextile material shall be indicated to surround the entire seepage bed.
13. The architectural plans must be coordinated with and must comply with the grading proposed with this application. This shall be fully evaluated with the Preliminary Plans.
14. The project is located in the area of the township's planned corridor improvement project. That project may result in the need for additional right-of-way. The proposed development must be coordinated with the township design of the roadway, including the curb, sidewalk, and stormwater design.
15. A more detailed tabulation of impervious surface on the property before and after the development shall be provided.

16. A detail of any proposed retaining walls shall be provided. Calculations must be provided for wall clear heights exceeding four (4') feet or for walls with equivalent surcharge loading if/as applicable. A Certification by a civil engineer of the condition of the existing retaining walls to remain shall be provided. Any recommended improvements/repairs shall be made a condition of the permit issue.
17. The stone proposed to be placed adjacent to the wire basket vault design for stormwater basin no. 1 does not provide an adequate means to distribute runoff through the stone and make full utilization of the stone void volume. A network of distribution pipes shall be designed below the lowest orifice elevation. Also, the design consisting of multiple layers of smaller than the standard aggregate size is problematic. A basic assumption of the analysis is that there is free flow of water through the voids in the stone. This is less true with the design proposed. Any stone used in the design for a rate control facility shall use AASHTO No. 1 stone.
18. A full plan view detail is required for Basin No. 1. Dimensions shall be included that are sufficient for verification of the design, construction of the facility and inspection for compliance with the design.
19. Additional detail is required for the concrete slab top of Basin No. 1. The size and spacing of the steel reinforcement shall be provided. The cover/clearance dimensions shall be provided on the detail. The reinforcing around the access structure must be further specified/clarified on the detail. Structural calculations qualifying the design shall be submitted. Anticipated maximum loading shall be used in the structural qualification.
20. The bearing width for the slab for Basin No. 1 indicates a reference to Table 2 and to "Primary Reinforcement" geogrid lengths in a Table 1. These tables have not been included on the detail plan for Basin No. 1 and shall be provided.
21. The liner system for Basin No. 1 is referenced on a section detail as Detail A, however, Detail A is not clearly provided on the plans. The line system must be clearly specified/detailed on the plans.
22. Additional data points shall be provided for the stage/storage input parameters for Basin No. 1 in order to more accurately represent the stage/discharge characteristics used to generate the basin outflow hydrograph.
23. A profile of the 6" PVC sewer line indicating applicable manhole information shall be provided. Inverts for inflow and outflow of the manhole structures shall be adjusted to provide a 2' drop across the structure. The distance of the lateral to the property line shall be dimensioned on the plan.
24. The detail for the concrete apron shall be revised to be fully consistent with the township standard.

25. New depressed curb shall be dimensioned on the plan.
26. Depressed concrete curb to be raised to full reveal shall be dimensioned on the plan.
27. Concrete curb shall be noted to be repaired/replaced as directed by the township.
28. Feasibility for the design of an emergency vehicle connection drive to Belmont Avenue shall be provided.
29. A Highway Occupancy Permit (HOP) is required from PaDOT for the new driveway. The township would request that they be copied on all correspondence and be invited to attend all meetings with the department for this development.
30. A copy of the revised plan shall be submitted with any changes highlighted. A letter shall also be provided with the revised plan indicating how each requested revision has been addressed in the re-submission.

Please advise if we may be of further assistance in this matter.

Very truly yours,

A handwritten signature in blue ink, appearing to read "Kevin Bowers", is written over a horizontal line.

Kevin J. Bowers, P.E.

PENNONI ASSOCIATES

Township Engineer

Cc: Robert E. Duncan, Assistant Township Manager
Bohler Associates, Inc.
McMahon Associates, Inc.