



**TOWNSHIP  
OF  
LOWER MERION**  
MONTGOMERY COUNTY

**TOWNSHIP ENGINEER**

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LOWM 254.80

November 4, 2019

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

**Re: French International Development  
6 Bala Avenue and 23 W. City Avenue  
Tentative Sketch Plan Review**

Dear Mr. Leswing:

In accordance with your request for the above referenced submission, we have reviewed a plan dated 06-13-19, latest revision dated 10-18-19, prepared by Site Engineering Concept, LLC. We have also reviewed a Traffic Impact Assessment Study, dated 06-13-19, Prepared by McMahon Associates, In. We offer the following comments for your consideration:

**A. MAJOR ENGINEERING ISSUES**

- ❖ **Stormwater**—The rate control volume must be capable of draining in twenty-four (24) hours. Percolation testing must be performed. Also, proposed drainage patterns have not been clearly shown. In addition, due to the severe stormwater issues downgrade of the development on the west side, we have requested that the runoff volume from the property of 23 W. City Avenue which flows toward that direction be recharged for the 100 year storm.
- ❖ **Traffic**—The proposed driveway sight distance and vehicular maneuverability for access/egress and through the site must be verified to be adequate for all intended uses. Maneuverability diagrams must be submitted for review which document adequacy of the configuration of the development proposed. It has been requested to investigate striping a left turn lane for use at the proposed Bala Avenue entrance in order to improve efficiency of operation and orderly movement of vehicles.

With the resolution of the above major engineering issues and the remaining comments in this letter incorporated, we recommend that the Tentative Sketch Plan be approved.

**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. A detail shall be included on the plans that complies with township standards. The Township Arborist must approve the location of the tree protection fence if it is not indicated at the driplines. This shall be fully evaluated with the Preliminary Plan 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 121-4A(1b)2—As the property is located within the Non-watershed District, the five (5) year frequency storm must be controlled to the two (2) year predevelopment rate. For the ten (10) year through one hundred (100) year storms, rate shall be controlled to the peak discharges which occurred prior to development in the respective storm frequencies. This shall be fully evaluated with the Preliminary Plan submission.
4. Section 121-4B(2a)1, 121-15—The township code requires that the increased volume of stormwater generated by the proposed development for the twenty-five (25) year storm be recharged. Since the area downgrade of the 6 Bala Avenue property to the west has historically had severe issues with runoff, we request that the increased volume of runoff during the 100 year design storm be recharged.
5. Section 121-4E(2c)—Seepage beds installed for rate control shall be designed to empty the total design storm volume in twenty-four (24) hours or less. Calculations verifying this shall be submitted with the Preliminary Plans.
6. Section 121-4E(2f)—The seepage beds must contain a sediment trap accessible for maintenance. Details shall be submitted with the Preliminary Plans.
7. Section 121-4E(2i)—For any rate control seepage beds, soil permeability tests shall be performed to a depth adequate to demonstrate the functioning of the system. The location of the percolation tests shall be indicated on the plan the complete test report must be submitted for review. This shall be fully evaluated with the Preliminary Plans.
8. Section 121-6C—The limits of disturbance shall be clearly delineated on the plan. The amount of square feet of earth disturbance shall be listed. This shall be fully evaluated with the Preliminary Plans.

9. Section 121-6J—A sequence of construction activities shall be submitted. Installation of tree protection fence, erosion control, tree removal, temporary basin, seepage beds, and roof collection systems shall be listed. Any driveway or street pavement markings/signage shall be listed. Notification of the Township Engineer shall be listed in the sequence following installation of protective barriers and prior to earth disturbance. The demolition of the paving shall be listed. Notification of the Township Engineer for inspection shall be listed prior to installation of any seepage bed and storm piping. This shall be fully evaluated with the Preliminary Plan.
10. 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 plan.
11. Section 121-15—The runoff crossing to the adjacent properties during the construction phase of the project shall be managed so that the water quality/quantity does not adversely impact the adjacent properties. Diversion berms, stoned construction staging areas, and inlets/piping shall be noted to be provided as required and/or as directed by the township so as to ensure acceptable conditions during the construction phase. This shall be fully evaluated during the Preliminary Plan.
12. Section 133-15C—All driveways must be re-constructed to allow the sidewalk to cross at an even grade (i.e. no handicap ramps). This shall be verified at the Preliminary Plan submission.
13. Section 133-15F—Concrete aprons shall be shown and labeled at all driveway locations.
14. Section 135-16B(13), 121-15—The soil hydrologic classification shall use Type B soil in the analysis in order to present a conservative design.
15. Section 135-16B(14)—Proposed drainage patterns have not been clearly shown. Revised grading and introduction of inlets and storm sewers will impact drainage directions. Overflow locations from stormwater areas have not been provided. Areas to be controlled and those to be uncontrolled must be clearly indicated.
16. Section 135-16B(14), 121-4E(1b), 121-15—Discharge from any stormwater basin, seepage bed, or rain garden shall be converted from a concentrated flow to a sheet flow. The overflow shall be piped to a level spreader or bubble-up spreader for the outflow from the basin on the 6 Bala Ave property. The location of this spreader shall be noted to be field adjusted as required in order to maintain existing drainage patterns and conditions. For the basin on the 23 W. City Ave property, the outflow shall be connected to the closed storm sewer system in City Avenue. Details must be fully evaluated with the Preliminary Plan.
17. Section 135-16B(15)—Areas for during construction stormwater management have not been provided.

18. Section 135-16B(15), 121-4A(2)—Roof drains have not been shown to be directly connected to a stormwater facility. The location of the proposed collection system shall be shown. Details regarding the size, slope, and material of the conveyance lines shall be evaluated with the Preliminary Plan.
19. Section 135-17B(6)—The error of closure shall be provided and shall not be greater than 1:5,000.
20. Section 135-32—Concrete road control monuments shall be shown to be installed at the right-of-way at the intersection of each property line and at all changes in direction where feasible as determined by the Township Engineer.
21. 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.
22. 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.
23. Section 101-5C(26)—Portions of the walkways and driveway are shown to be constructed in slopes exceeding twenty-five (25%) percent. Steep slopes shall be shaded on the plan and a legend added. Waivers to applicable code provisions for disturbance/construction on steep slopes must be obtained.
24. 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.

### **C. ENGINEERING COMMENTS**

1. The location of the existing sanitary laterals shall be shown.
2. The location, size, material, and slope of the proposed sanitary lateral(s) shall be shown.
3. The location of the proposed utility services shall be provided. This must be indicated on the Preliminary Plan.
4. The existing sanitary sewer mains shall be shown to within 200' of the development.
5. All existing utility service locations shall be shown.
6. The actual sight distance triangles shall be shown for each driveway. The sight distance must meet the minimum safe stopping distance required by PaDOT Publication Title 67, Chapter 441. Calculations shall be provided as necessary. It shall be noted what improvements are necessary to be performed to achieve the required sight distance. The

Traffic Safety Unit of the Lower Merion Police Department must approve the final drive configuration. This shall be fully evaluated with the Preliminary Plan.

7. Erosion control measures shall be provided on the plan. Details that conform to township standards shall be shown. This shall be evaluated during the Preliminary Plan.
8. A soil stockpile location shall be provided. This shall be shown with the Preliminary Plans.
9. A note shall be added to the plan indicating that the Township Engineer shall be notified 48 hours prior to the installation of any seepage bed and prior to the start of earthmoving activities.
10. A Lighting Plan must be submitted and must be approved by the Director of Building and Planning.
11. A Planting Plan must be approved by the Planning Department and the Township Arborist. The removal of the street trees must be approved by the Township.
12. Full reveal and depressed curb details shall be provided with the Preliminary Plans.
13. Depressed curb and concrete apron shall be indicated at the driveway access locations. The length of depressed curb shall be dimensioned on the Plan. The radii at the aprons shall be dimensioned on the plan and demonstrated to be adequate. This shall be provided with the Preliminary Plans.
14. Curb and sidewalk shall be noted on the plan to be repaired/replaced at the direction of the township.
15. Details of the concrete apron and sidewalk shall be provided. Details must conform to township and ADA standards as applicable.
16. The location of all existing storm sewers shall be provided. The size, slope, and material of all storm sewers within two hundred (200') feet shall be indicated. This shall be fully provided with the Preliminary Plans.
17. The mean grade of the structures shall be calculated and shown on the plan. 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.
18. Stop bars, stop signs and centerline pavement markings shall be provided as required in order to provide safe and efficient movement of traffic. Double yellow marking shall be shown at the two-way access to Bala Ave. A single white line marking the drive lanes for queuing shall be shown on the one-way access drive from City Ave. All traffic control signage shall be provided on a "Signage and Pavement Marking" Plan. This shall be fully evaluated with the Preliminary Plan.

19. A stop bar and sign shall be shown at the end of the one-way access to the parking aisle. The stop bar and sign shall be shown four (4) feet from the proposed crosswalk. Two "Do Not Enter" signs shall be shown at this location.
20. The alternate driveway configuration does not provide the standard aisle width required for two-way, ninety (90°) degree parking stalls. If a reduced width is permitted in order to retain the bay window on the existing structure, we would request that the width of the drive past the window be increased to twenty-two (22') feet for a minimum length of fifty (50') feet from the cartway. The location of the adjacent walkway shall be shifted accordingly.
21. A paved turn-around area shall be provided at the back of the dead-end parking aisle to facilitate maneuverability of exiting vehicles when the lot is full. It shall be striped "No Parking".
22. An enclosure for the proposed dumpster area shall be provided. A detail shall be added to the plans. The enclosure must not interfere with the maneuverability/access to the adjacent parking spaces. This shall be evaluated with the Preliminary Plans.
23. Maneuverability diagrams must be submitted. Adequate turning radii for all required truck and passenger vehicle movements shall be documented. Fire truck access and maneuverability must be fully documented to be adequate if/as required by the Fire Marshal.
24. "No Parking by Order of the Fire Marshal" signs shall be added to the access aisles as directed by the Chief Fire Officer.
25. All pavement markings on City Ave and Bala Ave shall be shown to within 200' feet of the development.
26. All traffic signal pavement markings and equipment shall be shown on the plan for the Bala and City Ave intersection.
27. A revised traffic impact study shall be submitted with the Preliminary Plans that fully evaluates the proposed driveways considering the updated design and additional requested investigations. The levels of service shall be evaluated. The applicant shall contact the Township Engineer's office to discuss and develop the final assumptions that will be used in the revised analysis.
28. A PaDOT Highway Occupancy Permit is required for the proposed one-way access and signage modifications for the driveway from City Avenue and also for the adjusted/new driveway on Bala Avenue. The township shall be copied on all correspondence and communications with PaDOT regarding the permits.

29. The vehicle queue exhibit and the narrative in the Traffic Study indicate that buses will queue adjacent to parent passenger vehicles. This is referred in the study as "double stacking". This condition occurs on the entrance driveway from City Avenue. This condition results in students that are entering/exiting the busses to walk between queued passenger cars. Explanation must be provided regarding how adequate safety will be provided with this arrangement.
30. Although a left-turn lane on Bala Avenue for traffic entering the site driveway is not technically warranted, it appears that there is adequate width on Bala Avenue to provide a left-turn lane with re-striping alone. The installation of this may improve the safety of vehicles maneuvering in the area by creating a more efficient and orderly movement. The addition of a left-turn lane here shall be evaluated with the Preliminary Plans.
31. The Traffic Study indicated that there was a maximum queue of nine vehicles during the weekday afternoon peak traffic period. The analysis indicated that City Avenue was backed up and blocked the driveway 100% of the time during these peak periods. The study must be revised to clarify if cars were also stacked within the center turn lane for the northbound direction and the southbound through lane waiting to turn into the site. Any vehicles in these locations must also be counted as part of the queue and calculated into the stacking analysis.
32. Consideration shall be given to designating the Bala Avenue drive for one-way out operation during peak pick-up and drop-off times. If it can be properly arranged and performed, this would enable vehicles leaving the site to use the full width of the driveway for separate right and left turn movements. This shall be evaluated with the Preliminary Plans.
33. In accordance with the Zoning Hearing Order, a student drop-off and pick-up management plan must be submitted. It must address how adequate student safety and vehicle movement efficiency will be provided. This shall be provided with the Preliminary Plans.
34. The Transportation Impact Fee is required to be based on the increase in PM trip generation as measured from the ACT 209 document base conditions. This shall be fully evaluated with the Preliminary Plans. The traffic impact fee must be paid prior to issuance of a building permit.
35. A post development Traffic Study shall be conducted. It shall evaluate the vehicle queues on site. Any adjustments to the location of the start of the queue or staggering of class start and dismissal times shall be made as necessary in order to prevent unacceptable queuing from occurring that would interfere with traffic on City Ave or Bala Avenue.
36. All existing and proposed impervious surfaces shall be clearly tabulated/itemized on the Plan. This shall be fully evaluated with the Preliminary Plan.

37. Clarification of the manhole shown on the City Ave frontage near the proposed steps shall be provided. The use shall be labeled and any service lines associated with it shall be shown. This shall be provided with the Preliminary Plans.
38. The piping associated with the existing inlet near the drive access to City Avenue shall be fully shown
39. A detail of the 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.
40. The driveways and parking areas on the adjacent properties on City Avenue shall be shown on the plan.
41. 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,



Kevin J. Bowers, P.E.

**PENNONI ASSOCIATES**

Township Engineer

Cc: Robert E. Duncan, Assistant Township Manager  
Site Engineering Concepts, LLC.  
McMahon Associates, Inc.