



**TOWNSHIP
OF
LOWER MERION**
MONTGOMERY COUNTY

TOWNSHIP ENGINEER

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LOWM 260.07

February 24, 2020

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

**Re: Merion Elementary School- Temporary Classrooms
Preliminary Plan Review**

Dear Mr. Leswing:

In accordance with your request for the above referenced submission, we have reviewed a set of twelve (12) plans dated 01-24-20, latest revision dated 02-14-20, and associated stormwater management calculations dated 01-24-20, prepared by Chester Valley Engineers, Inc. We have also reviewed a Traffic Study dated 01-24-20, prepared by Traffic Planning and Design, Inc. We offer the following comments for your consideration:

A. MAJOR ENGINEERING ISSUES

- ❖ **Stormwater** – The basins as currently presented do not recharge the full increased volume of runoff for the twenty-five year storm as required by code considering the Modular Classroom impervious area. It has been requested to add an additional recharge facility downgrade of the modular building in order to provide the required volume control. In addition, there needs to be additional recharge volume provided in order to account for the amount of proposed impervious surface which exceeds the underlying allowable limit. The runoff from the area above the code allowable must be recharged for the 100 year storm event. The basins must be enlarged and calculations submitted to qualify the code requirements.

With the resolution of the above major engineering issues and the remaining comments in this letter incorporated, we recommend that the Preliminary 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. All required tree protection fence has not been clearly shown on the Erosion and Sediment Control Plan. If the tree protection fence is not shown at the driplines of all trees to remain, the Township Arborist must approve the location of the tree protection fence.

2. Section 101-6A(5)—No impervious cover shall be permitted within the driplines of trees to remain without approval from the Township Arborist. The Township Arborist must approve the location and extent of the parking area if any trees are impacted.
3. Section 101-6A(6)—Grade changes around the driplines of trees to be retained shall be minimized. Impacted trees shall be clearly identified on the plan. Treatment of the 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.
4. Section 101-6B(2)—If trenches for utilities and storm facilities are proposed within the driplines of trees, all disturbed roots must be cut as cleanly as possible. The trench must be backfilled as quickly as possible, avoiding compaction. Tree limbs must be cut back in proportion to the root area loss. This shall be noted on the plan and made a condition of permit issuance.
5. Section 121-4A(4)—The responsibility for the continued maintenance and operation of the detention basin and other facilities shall be the obligation of the property owner. This note shall be clearly indicated on the plan and made a condition of permit issuance.
6. Section 121-4B(2a)1—The increased volume of stormwater generated by the proposed development for the twenty five (25) year storm shall be recharged. Calculations documenting this shall be submitted. This has not been verified to have been provided for the modular Classroom area. With the current design, the volume of runoff will increase downgrade of the modular Classrooms for the duration of their installation.
7. Section 121-4B (2d) 2—In addition to the twenty-five (25) year recharge requirement, the calculations must demonstrate that the R_{ev} infiltration volume requirements have been met for all impervious surface shown on the site.
8. Section 121-4B(2d)3—The location of each infiltration test must be more clearly indicated on sheet 10 of the plans.
9. Section 121-4B(2d)5—The seepage bed must be demonstrated to empty the R_{ev} volume within four (4) days. Calculations clearly demonstrating this have not been submitted.
10. Section 121-4B(2d)6—The water quality volume (WQ_v) must be calculated and demonstrated to be sufficient for the design.
11. Section 121-4E(2f)—All seepage beds must contain a sediment trap accessible for maintenance. The present submission does not clearly include a sediment trap for all stormwater directed to recharge basins Nos. 100 and 200.
12. Section 121-4E(2i)—Seepage beds shall not receive runoff until the entire contributory area to the BMP has been stabilized. This shall be made a condition of permit issuance.

13. Section 121-4G—Landscaping of surface basin No. 300 will be required since the surface area is greater than 1,000 SF. A landscape plan must be submitted and it must be approved by the Planning Department.
14. Section 121-5A(2)—The maximum time of exposure for bare soil areas shall be twenty (20) days before stabilization measures are implemented. This shall be clearly noted on the plan and made a condition of permit issuance.
15. Section 121-5A(6)—Newly graded slopes of over twenty-five (25%) percent must be stabilized with sod or jute netting and seed. This shall be noted on the Grading Plan and those areas meeting this criterion clearly delineated with shading on the plan.
16. 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.
17. Section 121-6C—The limits of disturbance for each basin project area shall be clearly labeled with the amount of square feet of earth disturbance.
18. Section 121-6J—Additional detail is required in the sequence of construction activities. Installation of tree protection fence and connections to the existing storm sewer systems shall be listed.
19. Section 121-12—An NPDES Permit must be obtained from the Montgomery County Soil Conservation District prior to issuance of any permit.
20. Section 121-15 – The capacity of the existing storm sewer systems that will receive the connections of the basin outflows must be verified to be adequate to accommodate the proposed development for all design storms. Tailwater effects shall be considered as appropriate in the basin routing calculations.
21. Section 121-15, Section 121-4A – The current design of basin No. 200 indicates the outflow connected to an inlet which is then directed into an existing seepage bed. Lawn area currently flowing uncontrolled would now be developed and will be directed into the existing basin via the outflow of basin No. 200. It must be adequately documented in the stormwater calculations that this revision to the inflow hydrograph of the existing basin does not adversely impact the code required performance of the system.
22. Section 121-15 – Certifications that the existing basins are in good repair, have been properly maintained and are functioning as designed must be submitted to the Township prior to issuance of any permit.
23. Section 135-17B(6)—The error of closure shall be provided and shall not be greater than 1:5,000.
24. Section 135-17C(5)—The location, size, material, and slope of the proposed sanitary force main shall be shown. A separate permit and approval must be obtained for the ejector

system, tanks and force main from the Lower Merion Public Works Department and from Narberth Borough if/as required. The Township Engineer shall be copied on all correspondence.

25. Section 135-19B(8)—A pavement Marking and Signage Plan shall be provided. All existing and proposed traffic control signage and pavement markings shall be indicated and clearly labeled. Vehicle travel direction shall be provided for one-way aisles. The bus and parent queue areas shall be clearly indicated on the plan. Additional control traffic signage shall be shown if/as directed by the Township Engineer.
26. Section 135-19B(8)—Stop signs, stop bars and double-yellow centerline pavement markings shall be shown at all two way aisles in the proposed 62 space parking lot. These also shall be shown at the access/egress of the parking area to the loop drive.
27. Section 135-19B(8)—In order to provide a more efficient operation/use, the ninety-degree parking spaces on the one-way bus loop shall be revised to be angle parking.
28. Section 135-19B(8)—Handicap spaces and signage shall be clearly shown on the plan. The number of accessible spaces must be verified to be provided.
29. Section 135-19B(8)—Maneuverability diagrams shall be provided for bus, truck, passenger car and emergency vehicles if/as required.
30. Section 135-19B(8)—It is requested to investigate a designated pedestrian connection between the new parking area and the school building.
31. Section 135-40—A Planning Module or Exemption must be approved by Narberth Borough, the City of Philadelphia and the DEP prior to recording the Final Plan.
32. Section 155-141.5D—The recharge beds shall be increased in size to recharge the runoff from the 100-year event for the amount of impervious expansion accounted for under this code. Calculations shall be provided to document the volume.

C. ENGINEERING COMMENTS

1. The CMP riser pipe for basin No. 300 shall be more clearly further specified as aluminum or aluminized steel.
2. A fill material stockpile location shall be provided in addition to the topsoil stockpile presently provided. Notes shall be added regarding stabilization of the stockpiles.
3. A Lighting Plan must be submitted and approved by the Director of Building and Planning prior to recording the Final Plan.
4. The Planting Plan must be approved by the Planning Department and the Township Arborist prior to issuance of the permit/recording the Final Plan.

5. All existing inlets and other stormwater structures within the project area shall be numbered on the plan for reference.
6. The mean grade to be used for the Modular Classrooms shall be calculated and shown on the plan.
7. An itemized breakdown of existing and proposed impervious surface shall be provided on the plan.
8. The final number of required parking spaces must be approved by the Zoning Officer.
9. Additional protection against sedimentation shall be provided at the outflow structures for the temporary basins. The details shall be revised to include the additional measures and must be approved by the Township Engineer.
10. Grates and other stormwater structures that are indicated on the plan to be "sealed" or "filled with debris" must be opened, cleaned and verified to be functioning as designed. The invert elevations represented on the plan for these structures must be verified and any adjustments to the design or supporting calculations made as required.
11. Spot elevations shall be provided for the emergency spillway of basin No. 300. The elevation must be consistent with the calculations which demonstrate the basin has been designed with one-foot of freeboard above the maximum flow elevation.
12. The existing inlets that are proposed to receive the connections of the basin outflows shall be noted to be repaired/replaced as required or as directed by the Township.
13. 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
Chester Valley Engineers, Inc.
Traffic Planning and Design, Inc.
Lower Merion School District