



**TOWNSHIP
OF
LOWER MERION**
MONTGOMERY COUNTY

TOWNSHIP ENGINEER

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LOWM 248.73

January 25, 2019

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

**Re: 108 Glenn Road, 39-41 E. Montgomery Avenue Development
Preliminary Plan Review**

Dear Mr. Leswing:

In accordance with your request for the above referenced submission, we have reviewed a set of twenty three (23) plans dated 11-30-18, latest revision dated 01-17-19, and associated stormwater management calculations dated 11-30-18, prepared by Momenee, Inc. We have also reviewed a Traffic Impact Study, dated 11-29-18, prepared by Traffic Planning and Design, Inc. We offer the following comments for your consideration:

A. MAJOR ENGINEERING ISSUES

- ❖ **Stormwater** – The proposed amount of impervious surface is reduced from that presently on the existing lots which will reduce the amount of runoff generated. In addition to this improvement, since the principal buildings on the lots are being removed, the stormwater rate and volume controls must be provided to further reduce the runoff to below that which would be generated by an existing meadow ground cover addition. The present submission exceeds this criterion. The proposed conveyance pipe through the adjoining property will also provide the means to move the water past the immediate downgrade properties creating significantly improved stormwater runoff conditions. However, since the site is being totally disturbed, the sequence and details of how it will be controlled during the construction phase have been requested to be further clarified. Some additional inlet and grading adjustments have also been requested that will improve the runoff collection design.
- ❖ **Traffic** – We have requested some additional pavement markings and signage be added to clarify the proposed turn restrictions. We have also requested that left turns from eastbound Montgomery Avenue be prohibited into the proposed Montgomery Avenue access drive. We have also requested an adjustment to the acute angle that the exit drive to Montgomery Ave makes with the cartway in order to provide a better viewing angle for drivers exiting the site from this drive. We have requested that a post development study of the studied signalized intersections be made, that they be evaluated for timing optimization and that the timings be adjusted if/as directed by the Township and permitted by PennDOT.

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 101-5C(2b)—The building and portions of the site grading are shown in areas of man-made steep slopes. A waiver to this code section must be obtained for the construction as presently depicted. We support granting a waiver to this code section due to the minor nature of the disturbance to the steep slopes.
2. 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. Since the tree protection fence has not been shown at the driplines of all trees to remain, the Township Arborist must approve the location of the tree protection fence shown on the plan.
3. 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 drive access if the impacted trees are scheduled to remain.
4. 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.
5. Section 101-6A(8)—Should any trees not scheduled or permitted to be removed be irreparably damaged during construction and die within eighteen (18) months of the conclusion of construction activities, those trees will be required to be replaced in accordance with the provision of Section 101-9A(2). Escrow shall be posted to guarantee the survival of the impacted trees until the allotted time has expired.
6. Section 101-6B(2)—Since trenches for 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.
7. Section 121-4A, 121-6D—Sufficient documentation shall be provided with the calculations that demonstrates that the outflow hydrograph for Temporary Basin No. 1.3 has been routed through Temporary Basin No. 1.1 for storm events occurring during construction. Details and supporting information regarding the pump and the discharge location shall be provided.
8. Section 121-4A(1)—During construction stormwater management controls shall be clearly addressed in the calculations that cover all phases of construction. It must be clearly documented that the worst cover condition has been analyzed in the calculations.
9. Section 121-4E(2d)—Permanent Basin No. 1.1 shall note a minimum separation to the basement wall of the structure of ten (10') feet. The minimum distance shall be dimensioned on the plan.

10. Section 121-4E(2f)—All seepage beds must contain a sediment trap accessible for maintenance. The present submission does not include a sediment trap for all stormwater directed to the basin. The runoff from the trench drain adjacent to the garage access enters Basin No. 1.1 without first passing through a sediment trap. A sediment trap shall be provided for this basin inflow.
11. Section 121-4E(4)—The description provided on the plans by the design engineer of how the permanent stormwater control facilities will be operated and maintained shall be presented in recordable form as a covenant running with the land and must be approved by the Township Solicitor prior to recording. The responsibility for maintenance of the piping from manhole No. 1 to inlet No. 2A, which will be located on the property of 103 St Georges Road, shall be the responsibility of the applicant and shall be clearly stated as such in the covenant.
12. Section 121-4F(2a)—The size of the storm sewers shown connected from the existing open mouth inlets on St. Georges Road into storm Manhole No. 3 shall be increased to fifteen (15") inch diameter in order to satisfy the minimum pipe size requirements of this code section.
13. 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.
14. 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 all graded areas meeting this criterion clearly delineated with shading on the plan. Currently, the area disturbed for the installation of the outflow pipe from storm manhole No. 1 to inlet No. 2A has not been indicated to be stabilized properly.
15. Section 121-6B—The certification attesting to the completeness of the design and compliance with Chapter 121 of the Lower Merion Code shall be signed on the Post Construction Stormwater Management Plan.
16. Section 121-6C—The amount of square feet of earth disturbance shall be clearly listed for the construction activities.
17. Section 121-6D—Drainage area maps for all inlets and rainwater collection pipes shall be provided.
18. 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 also be clearly noted on the plan.
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 runoff crossing to the adjacent properties during the construction phase of the project shall be managed so that the water quality/quantity impact is minimized to the adjacent properties. Diversion berms, stoned construction staging areas, and inlets/piping

shall be noted to be provided as required or as directed by the township so as to ensure acceptable conditions during the construction phase.

21. Section 121-15 – An additional type C inlet is requested to be added at the northern interior curb line just upgrade of the garage entrance. The added inlet will function to increase the collection capacity of the stormwater design. It can also function as the requested sediment trap for the trench drain conveyance if a sump is provided at the bottom of the inlet box.
22. Section 135-19B(8)— The actual sight distance provided shall be shown for each exit driveway. The sight triangle shall be shown for the Glenn Road access and the distance to the left shall be listed for the right-out only drive exit to Montgomery Ave. The sight distance must meet the desirable sight distance as specified by PennDOT.
23. Section 135-19B(8)—A double yellow line, stop bar and stop sign shall be shown at the exit aisle of the garage to the exterior parking area.
24. Section 135-19B(8)—Right-turn arrow and “Only” pavement markings shall be shown on the plan at the exit drive aisle to Glenn Road.
25. Section 135-19B(8)—Fire truck maneuverability diagrams shall be provided if directed by the Fire Marshal in order to demonstrate the adequacy of the design. The proposed lay-out and driveway access dimensions must be approved by the Fire Marshal prior to recording the Final Plan.
26. Section 135-19B(8)—Due to the proposed configuration of the entrance drive from Montgomery Avenue, a “No Left Turn” restriction is requested to be provided for eastbound traffic into the drive. Signage and documentation related to the codification shall be provided for the requested restriction. The final location of the sign must be approved by the Township.
27. Section 135-19B(8)—As currently shown on the plans, the angle that the exit drive to Montgomery Avenue makes with the cartway is very acute. It is therefore recommended to increase the angle in order to provide better visibility for exiting drivers.
28. 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. Iron pins or other survey monumentation shall be permitted if concrete monuments cannot be installed. Approval from the Township Engineer is required for the substitution.
29. Section 135-27C(1)—The ultimate right-of-way for Glenn Road is fifty (50') feet. The additional five (5') feet of right-of-way shall be shown and the parking area revised to be outside the requested new right-of-way. The additional right-of-way is requested to be offered for dedication to the township.
30. Section 135-19B(8)—Design protection must be provided for pedestrians crossing the proposed utility work via the public sidewalk on Montgomery Avenue during construction.

31. Section 135-19B(8) – A post development study of the signalized intersections that were included in the traffic study shall be made. The intersections shall be evaluated for signal timing optimization and the timings shall be adjusted if required and as directed by the Township. PennDOT must review and approve any change to the signal plans.
32. 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.
33. Section 135-41.1(A)—Adequate water supply must be documented for the subdivision. A letter from Aqua Pennsylvania must be submitted certifying adequate supply for the additional properties.
34. Section 128-6B – The Shade Tree Commission must approve the removal of the trees shown to be cut down in the right of way. Replacement trees shall be provided if/as directed. The number, size, species and location of any required replacement trees shall be as directed by the Shade Tree Commission.

C. ENGINEERING COMMENTS

1. All CMP shall be further specified as aluminum or aluminized steel.
2. Calculations must be provided for retaining wall clear heights exceeding four (4') feet.
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 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. Spot elevations shall be added to the plan to clarify grading.
6. The existing open mouth Inlets on St Georges Road and other stormwater structures in the project area shall be numbered on the plan for reference.
7. The depressed concrete curb and stamped concrete apron shall be clearly labeled at the proposed driveways on Montgomery Ave.
8. Depressed granite curb and concrete apron shall be indicated at the new driveway access location on Glenn Road. The length of depressed curb at all driveways for the development shall be dimensioned on the plan.
9. Details of the stamped concrete apron shall be provided. Details must conform to township standards.

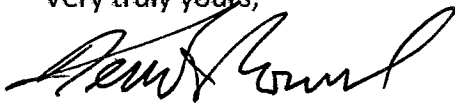
10. The sequence of construction activities shall be revised to provide additional detail/clarification. The installation of the erosion control measures shall clearly note that those required for the storm sewer extension to and within St. Georges Road are to be installed initially in the construction sequence.
11. The construction sequence shall note that the storm sewer extension in St. Georges Road shall be installed and made operational prior to the start of any site demolition.
12. The area for site demolition necessary for the installation of temporary basin Nos. 1.1 and 1.2 and the associated conveyance piping shall be clearly delineated on the plan and be labeled "Demolition Phase 1". The remaining area of demolition shall be labeled "Demolition Phase 2" and shall be clearly stated in the sequence when it will be performed.
13. Approval from the Township Engineer must be listed in the construction sequence to be obtained prior to the conversion of Temporary Basin No. 1.1 to Permanent Basin No. 1.1.
14. The approval of the Township Engineer must be obtained prior to the removal of any sediment control measures. This shall be clearly stated in the construction sequence.
15. Clarification shall be provided in the construction sequence that diversion berms 1 through 6 and Inlet Nos. 1, 2 and 3 are to be installed in step number 10 .
16. Due to the width of the access aisle from Glenn Road, a crown is requested to be designed into the paving lay out. This will reduce the length of sheet flow and therefore the opportunity to develop icing on the drive. The crown will also function to better direct runoff from the drive into the requested type C inlet at the curb.
17. Inlet No. 1A shall be noted to be field located in order to provide the optimal location relative to the nearby driveway access locations to St. Georges Road.
18. Details and specifications for the dewatering pump and back-up generator shall be provided for the use of the basement area as Temporary Basin No. 1.3 . The location of the pump discharge shall be clearly noted on the plan. The equipment must be reviewed and approved by the township engineer prior to issuance of any grading permit.
19. A detail for the mountable curb island shown at the Glenn Road drive access shall be provided. It shall be clearly labeled on the plan view.
20. The location of the amended soils noted in the plan view shall be clearly shown and labeled on the details for seepage bed No. 1.1.
21. Dimensions of the over-all size of the anti-seep collars shall be provided on the detail. The location of each collar shall be clearly indicated on the plan view and be placed at the appropriate interval for the soil conditions.
22. Details for the stamped concrete crosswalk/cartway treatment across Glenn Road shall be provided and must be approved by the Public Works Department prior to installation.

Handicap ramps shall be shown and indicated to be provided/adjusted if/as required in order to be compliant with ADA standards.

23. The location of the 4" perforated PVC underground garage roof drainage collection piping noted in the detail shall be shown in the plan view. The location for connection to the stormwater collection system shall be provided.
24. Metes and Bounds shall be provided for the storm sewer easement on 103 St. Georges Road. The easement documents must be reviewed and approved by the Township Solicitor. The easement must be recorded prior to or contemporaneously with the Final Plan.
25. The piping constructed within the right-of-way of St. Georges Road shall be offered for dedication to the Township once installed, inspected and verified to be in compliance with all Township codes, standards and specifications. The required documentation and maintenance escrow shall be submitted prior to acceptance of dedication.
26. Calculations shall be provided which qualify the size/capacity of all proposed stormwater collection structures and conveyance lines proposed with this application. This shall be performed and the designs approved by the Township Engineer prior to issuance of any permits.
27. The integrity of the receiving sewer downgrade of Storm Manhole No. 3 shall be documented. Video of the pipe demonstrating structural adequacy shall be provided. The pipe shall be noted to be repaired/replaced as required or as directed by the Township.
28. 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
Momenee, Inc.
Traffic Planning and Design, Inc.