



A FULL-SERVICE CIVIL ENGINEERING FIRM

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February 10, 2022
C-97110-0001

TO: Mt. Lebanon Commission

FROM: The Gateway Engineers, Inc.
Daniel S. Deiseroth, P.E., Municipal Engineer

A handwritten signature in blue ink, appearing to be "D. Deiseroth", written over a faint circular stamp or seal.

SUBJECT: Preliminary Land Development Plan Review

PLAN TITLE: 50 Moffett Street

MADE BY: PVE
Waterfront Corporate Park 111
Suite 101
2000 Georgetown Drive
Sewickley, PA 15143

MADE FOR: Craft Pittsburgh USA, Inc.
301 Grant Street
Pittsburgh, AP 15219

DATE OF PLAN: September 17, 2021
Revised: January 25, 2022

STATUS: The site is located at 50 Moffett Street in the R-3 Low Density Mixed Residential District. The plan proposes 9 townhouse buildings comprising of 41 dwelling units with access road, parking and associated site improvements.

Our office including civil, stormwater, traffic, structural and geotechnical engineers have reviewed all or parts of the following plans and materials:

- Land development application and checklist dated September 13, 2021
- Drawing set titled "50 Moffett Street Preliminary Land Development Plan", prepared by PVE and revision dated January 25, 2022.
- Drawing titled "Condominium Plat", prepared by PVE and revision dated November 24, 2021
- Architectural renderings and elevations prepared by Indovina Associates and dated December 23, 2021

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- Drawings titled “Retaining Wall Design” plans, prepared by PVE and revision dated December 29, 2021
- Post-construction Stormwater Management Report, prepared by PVE and revision dated January 25, 2022
- Infiltration Testing Report prepared by PS&R and dated June 30, 2021
- Geotechnical Investigation prepared by PS&R and revision dated December 29, 2021
- Response letter to Gateway’s comments prepared by PS&R and dated October 29, 2021
- Retaining Wall Calculations revision dated December 29, 2021
- Moffett Street Traffic Impact Observation Report prepared by Stahl Sheaffer Engineering and dated September 14, 2021
- Response letter to Gateway’s comments prepared by PVE and dated January 25, 2022
- Drawings titled “20’ Storm Utility Easement” plans, prepared by PVE and dated November 19, 2021

At this time, preliminary approval from the Planning Board is being sought for the land development outlined in the application. The following are our comments with respect to the applicable sections of Chapters VI, XIII, XVI, and XX of the Mt. Lebanon Code.

A. Chapter XX, Part 7- Design Guidelines and Standards

1. The architectural elevations have been provided which outline building materials including roofing, windows, brick and James Hardie Smooth Medium Density Fiber Cement Vertical Board and Batten Siding.
Response: *No comment necessary.*
Comment Addressed
2. Architectural elevations do not show measurements to the mean of the roof, as required by the Zoning Ordinance. Measurements to the mean of the roof must be shown in order to verify compliance with the area and bulk regulations in Section 204.6.
Response: *Dimensions to the mean roof elevation have been added to the elevations shown on Sheet No. AC 2.01 and AC 2.02 Site Elevations.*
Comment: The mean roof elevation was added to the plans but additional information is needed to determine if the calculation is correct based on the municipal zoning ordinance.
Response: *The stamped drawings provided at the previous submission indicate the mean roof elevation for each of the 3 types of units via the elevation marker on the left side of the group elevations. Within each group, there is a single unit type. As such, the marker provided is intended to illustrate the mean roof of each unit in a simplified manner, ie not replicating repetitive information. The calculation would not change for each subsequent unit within each group as the stepping between the units is a result of the*

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consistent slope of exterior grade at both the upper and lower levels of the units. However, in order to be clear for each unit, the attached updated elevations of each group indicate the average grade plane and subsequent mean roof elevation for each unit via the east and west site elevations for the property.

Comment Addressed

3. A narrative has been provided that indicates compliance with this the Design Guidelines in the 11-23-21 PVE response letter.

Response: *No comment necessary.*

Comment Addressed

4. **New Comment:** The calculation of allowable floor area ratio presented in the 12-24-2021 Planning Board presentation is incorrect. It appears that proposed units exceed the allowable when the calculation is corrected.

Response: *A revised average FAR calculation was included in the public hearing documentation presented at the Planning Board presentation. The previous calculation utilized the information for 'living area' as provided on the Allegheny County Tax Assessment website. The area included in this designation does not include basement square footage. Per the Mt Lebanon zoning code, FAR shall include basement area. As such, utilizing the floor plan dimensional information provided by the County website, the total relevant areas for each of the 7 applicable residential units adjacent to the site were recalculated to define the overall average area of these units. This average was then increased by 145% per the ordinance to provide the maximum square footage permitted. This area was then compared to the (3) unit types to ensure compliance. The following calculation was included:*

24 Moffett	2,070sf
20 Moffett	2,198sf
16 Moffett	2,198sf
12 Moffett	2,480sf
55 Moffett	2,126sf
59 Moffett	2,977sf
63 Moffett	2,278sf
Average	2,332sf
145% Average	$2,332sf \times 1.45 = 3,381sf \text{ max}$
Type A	2,673sf
Type B	2,871sf
Type C	2,996sf

Comment Addressed

B. Chapter XX, Part 8 Requirements Applying to All Districts

1. A Landscaping Plan has been submitted. All proposed plantings must be included on the list of approved plants in Part XV, Appendix I. It appears only the Acer Ginnala is on the approved plant list; a revision or a request for modification must be submitted in

writing for the plants not included on the approved list.

Response: *We have selected deciduous and evergreen trees per the approved planting list in Part XV, Appendix I of the Zoning Ordinance. The Planning Board requested screening at the northern and southern end of the proposed road and turnaround areas to shield adjacent properties. This is not a requirement of the Zoning Ordinance, but the applicant is proposing screening in these areas as shown on the revised Sheet C-1100 Landscape Plan. Ornamental grasses are proposed for screening in areas above retaining walls so their roots will not impact the walls.*

Comment Addressed

C. Chapter XVI, Part 4 Review Procedure for Major Subdivisions

The Planning Board clauses state Township instead of Municipality; this must be revised on all sheets.

Response: *The clause has been revised to state Municipality on all sheets.*

Comment Addressed

D. Chapter XVI, Part 5 Review Procedure for Land Developments

1. The roadway stationing shown suggests there will be two roads, please revise for continuous stationing along Road A.

Response: *We have revised the road stationing to be one continuous stationing.*

Comment Addressed

2. All easements must be shown and labeled on the plan with dimensions and purpose.

Response: *We anticipate that there will only be easements needed for electric, cable and gas. These easements will be prepared and recorded after the utility companies complete their designs.*

Comment: Proof of the recorded easement must be submitted to the Municipality.

Response: *The Condominium will have all the required utility easements within the common areas and portions of the units. Upon final design with each utility and determining whether facilities will be a) privately owned within the condominium property, b) utility owned within the property within a designated easement recorded specifically for each utility, or c) utility owned within the condominium property provided for under a general utility easement under the Condominium declaration, This would be a Condition of any approval, as well as the individual utilities. Proof of future utility easements cannot be provided until they are designed by the utility companies as noted above and copies of the recorded easements will be provided to Mt. Lebanon upon receipt.*

Comment: The comment should remain until it is addressed.

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3. The Allegheny County recording clauses for Planning Board, Commissioners, Municipal Engineer and Recorder of Deeds must be included on all detail sheets in addition to the sheets where it is already shown.

Response: *The recording clauses have been added to the detail sheets.*

Comment Addressed

E. Chapter XVI, Part 7 Required Improvements

1. A road name must be given to Road A and the name must be approved by the Municipality; private roads should be a Lane.

Response: *The application has selected Ward Lane as the proposed name of the private roadway within the development. The proposed road name has been added to the plans.*

Comment Addressed

2. A photometric plan has been submitted indicating the locations for the street lighting.

Response: *No comment necessary.*

Comment Addressed

F. Chapter XVI, Part 8 Design Standards

1. The requirements of Section 809 Stormwater Conveyance and Management and Section 810 Storm Sewers and Design Facilities must be met. The following are my comments pertaining to the stormwater system:

- a. All lateral and mainline crossings must be added to the storm and sanitary profiles to verify clearances.

Response: *All lateral crossings have been added to the profiles.*

Comment Addressed

- b. Storm sewer lateral sizes, materials, and slopes must be provided.

Response: *A typical note has been added to the Stormwater Plan identifying the lateral size, material, and minimum slope.*

Comment Addressed

- c. The lateral for unit 6-23 is conflicting with San M-2.

Response: *The storm lateral has been adjusted to provide clearance around sanitary manhole M-2.*

Comment Addressed

- d. The storm sewer profiles must be reviewed. Various pieces of information, but not limited to, proposed ground profiles, structures, and adequate cover in multiple places, are lacking from multiple profiles.

Response: *The sewer profiles have been corrected.*

Comment Addressed

G. Chapter XIII, Part 3 Stormwater Management

1. Since the existing stormwater management facility is to be removed, the pre-development curve number areas were revised to account for development prior to the installation of the existing stormwater facility, but only from a rate perspective. However, the PA BMP worksheets remain unchanged. The BMP worksheets must be revised to be consistent with the pre-development curve numbers so that the correct stormwater volume can be managed due to removal of the existing facility.

Response: *The PA BMP volume worksheets are conservatively revised to reflect the ground conditions of +15 years ago when the ordinance only requires 5 years.*

Comment Addressed

2. Access easements must be shown for maintenance of the proposed stormwater management facility. How will STM M-1 through STM M-3 be accessed for future maintenance?

Response: *The storm line and manholes can be accessed through the existing public sanitary sewer easement and proposed private access easement at the south end of the property. The grading and retaining wall on the north end have been adjusted as well to allow access to the east side of the proposed retaining wall.*

Comment Addressed

3. The full extent of existing offsite access easement on Asbury must be shown to the property line.

Response: *An easement Exhibit has been prepared and is currently under review by the property owner. The easement is shown to the property line.*

Comment: The easement must still be obtained. No evidence has been provided from the property owner that they are in agreement to granting the easement to date.

Response: *The existing stormwater management system for 50 Moffett Street, the proposed development, currently drains to the existing stormwater pipe that is located and discharges on the Asbury Heights property. The same company owns the Asbury Heights and 50 Moffett Street property, as well as the stormwater system and discharge pipes. The purpose for the stormwater easement on the Asbury Height's property is to provide future access to maintain the existing storm pipe if needed after the 50 Moffett Street property is purchased by the Applicant. A draft of the easement and agreement has been provided to Mt. Lebanon. The easement agreement will not be recorded until Mt. Lebanon approves the proposed Land Development Application and the Applicant purchases the property and would be a condition of any approval. The owner of Asbury Heights, will provide confirmation that they will enter into this easement under separate cover.*

Comment: The comment should remain until it is addressed.

4. The post construction stormwater report must be signed and sealed by the design professional.

Response: *The revised stormwater report is signed and sealed.*

Comment Addressed

5. Stormwater conveyance calculations indicating adequate pipe capacity must be provided. The legend for the conveyance calculations is being cut off and must be revised to show the full system. The rainfall intensities are inconsistent amongst pipe segments and must be revised to be consistent. In addition, line segments 16 through 21 indicate that the hydraulic grade line is exiting the stormwater system, this needs to be reviewed and revised as necessary.

Response: *The summary page was revised to clearly depict all information. We note that all pipes are designed to carry the 100 year storm. The rainfall intensities are inconsistent since the time of concentration in the system increases with the travel time in pipe is added.*

Comment: A portion of the comment has been addressed; however various segments contained in the stormwater conveyance calculations have ground elevations inputted as 0ft. In addition, the hydraulic grade line for various segments of storm sewer is exiting the system based on the inputted ground / Rim elevation. The calculations must be reviewed and revised as necessary.

Response: *An elevation was inserted for the cleanout elevations. We note that all pipes are sized to convey the 100 year storm and all HGLs are under the proposed grade line.*

Comment: Addressed

6. A standard Operation and Maintenance (O&M) Agreement covering the proposed stormwater facility as required by Section 326 must be executed at the time of final approval.

Response: *Acknowledged.*

Comment: The comment should remain until it is addressed.

7. Evidence of the legal approval to connect into the adjacent stormwater system must be provided. A note stating the requirement for access must be added to the storm sewer plan sheet, C-500.

Response: *The proposed easement has been labeled and added to Sheet C-500. A copy of the recorded easement will be provided upon receipt.*

Comment: Proof of the recorded easement must be submitted to the Municipality.

No evidence has been provided from the property owner that they are in agreement to granting the easement to date.

Response: *Same as Item 3. above; The existing stormwater management system for 50 Moffett Street, the proposed development, currently drains to the existing stormwater pipe that is located and discharges on the Asbury Heights property. The same company owns the Asbury Heights and 50 Moffett Street property, as well as the stormwater system and discharge pipes. The purpose for the stormwater easement on the Asbury Height's property is to provide future access to maintain the existing storm pipe if needed after the 50 Moffett Street property is purchased by the Applicant. A draft of the*

easement and agreement has been provided to Mt. Lebanon. The easement agreement will not be recorded until Mt. Lebanon approves the proposed Land Development Application and the Applicant purchases the property and would be a condition of any approval.

Comment: The comment should remain until it is addressed.

8. If soils are assumed to be C in the post development condition, it must be clarified why that assumption is not carried through to the PA BMP worksheets as well for volume calculations.

Response: *We have removed the conservative assumption of the soils types changing from B to C so that all worksheets correspond. The soil classification has been revised to be consistent throughout the report and PA BMP worksheets.*

Comment Addressed

9. The post development Hydraflow composite curve numbers are inconsistent with the post development curve number summaries provided on pages 8 and 9 and must be revised to be consistent.

Response: *The Hydraflow composite curve numbers have been revised to be consistent in the report and calculations.*

Comment Addressed

10. The gray shaded area is along the eastern property line within the Asbury Place property must be clarified.

Response: *The gray shaded area is the proposed private 20' wide storm utility easement located on Asbury Height's property. The easement will include the existing stormwater pipes and structures that currently discharge the stormwater from the existing underground stormwater detention facility and the new proposed stormwater facility located on the proposed development property. Also note that UPMC owns both Asbury Heights and 50 Moffett Street; therefore, obtaining this easement will not be an issue.*

Comment: Proof of the recorded easement must be submitted to the Municipality.

Response: *Same as Item 3. above; The existing stormwater management system for 50 Moffett*

Street, the proposed development, currently drains to the existing stormwater pipe that is located and discharges on the Asbury Heights property. The same company owns the Asbury Heights and 50 Moffett Street property, as well as the stormwater system and discharge pipes. The purpose for the stormwater easement on the Asbury Height's property is to provide future access to maintain the existing storm pipe if needed after the 50 Moffett Street property is purchased by the Applicant. A draft of the easement and agreement has been provided to Mt. Lebanon. The easement agreement will not be recorded until Mt. Lebanon approves the proposed Land Development Application and the Applicant purchases the property and would be a condition of any approval.

Comment: The comment should remain until it is addressed.

11. **Comment:** Dewatering calculations have been omitted from the report and must be provided.

Response: *Additional dewatering calculations are provided for the required events. Including the 1" volume increase over the additional impervious area.*

Comment addressed

12. **Comment:** The wet pond routing start elevation provided on hydrograph 7 is inconsistent with elevations provided in the details. This must be corrected.

Response: *The wet pond elevation is at 1149.0 which is the invert of the low flow orifice.*

Comment addressed

13. **Comment:** The Hydrograph pond report must be provided to confirm modeling is consistent with design provided on the plans.

Response: *The hydrograph pond report was not revised from the previous design however it was omitted from the report by mistake. A Hydrograph pond report will be provided to verify the design as requested.*

Comment addressed

14. **Comment:** All design worksheets associated with the MRC design, including but not limited to the Managed Release Concept (MRC) Design Summary must be provided.

Response: *The requested MRC Design Summary was added to the appendix of the narrative.*

Comment addressed

15. **Comment:** Volume controls are required per the ordinance, section 315. A narrative describing how this section of the ordinance has been met must be provided within the stormwater management report. Specifically, section 315.1.(1) and section 315.1.(2).

Response: *The required infiltration and geotechnical testing was performed and the existing soils do not permit infiltration. Therefore, per PA DEP the MRC method was utilized to treat both rate and volume requirements for the proposed development.*

Please see pages 9 & 10 for additional information. We would like to note that due to the requirements / design standards of the MRC Method that the facility is larger than if it was an infiltration facility.

The MRC requirements:

- *Do not allow the for the volume infiltrated to be subtracted out from the post development hydrographs,*
- *Require the 2 year post development discharge to be less than the 1 year pre development storm discharge rate.*
- *Restricts the 1.2" / 2 hour storm event to a discharge rate of 0.02 cfs. This short higher intensity storm aligns more with the storms we've been experiencing in our current climate and including this requirement is a benefit the downstream properties and watershed.*

Comment addressed, PA DEP approval of this method must be provided for final approval. Any revisions to the current design must be re-submitted for review.

16. **Comment:** Statements addressing section 313.7.(3) and section 313.8 must be added to the stormwater report narrative.

Response: *Green Infrastructure and non-structural BMPs were utilized in the PCSM design. However, they were not included in the narrative since the proposed MRC Facility meets the required NPDES and Mount Lebanon Stormwater Requirements. To eliminate any confusion on what Green Infrastructure and Non-structural BMPs were provided are listed on Page 9 & 10 of the narrative.*

Comment addressed

17. **Comment:** PA DEP Approval must be provided for the use of the MRC design and must be forwarded upon receipt. Any revisions to the stormwater management design due to comments from the Allegheny Conservation District or PA DEP must be submitted for review.

Response: *We've completed the initial pre-application meeting and submission with the Conservation District in which they were made aware of the proposed MRC Design. The NPDES approval will be forwarded when obtained. If any revisions are required to the plans / calculations during the NPDES review process they will be provided for review.*

Comment: The comment should remain until it is addressed.

18. **New Comment:** The MRC BMP Design Values Worksheet indicates an impervious drainage area of 1.9 acres. 1.6 acres is quantified in other areas of the report.

19. **New Comment:** Values provided on the MRC summary table on page 11 of the narrative do not match the MRC BMP Design Values Worksheet and must be revised to be consistent.

20. **New Comment:** Page 15 of the narrative states that "317: There are environmental features located on the site and therefore this section is not applicable." Please clarify.

21. **New Comment:** The dewatering calculations only show the MRC facility dewatering to approximately elevation 1050.50. The upturned elbow orifice location is at elevation 1149. Clarification or revised calculations must be provided to prove that the facility dewateres within the required time frame.

H. Chapter VI, Grading

The following comments pertain to the Retaining Wall Design plans:

1. A retaining wall detail must be added to the land development plan.

Response: *We have added the retaining wall plans and details to the Land Development Document Plan Set by adding the sheet names/numbers to the Title Sheet and including the drawings and details at the end of the plan set.*

Comment Addressed

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2. The wall design must be signed and sealed by the professional engineer preparing it.

Response: *The wall design was signed and sealed by a professional engineer.*

Comment Addressed

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3. All walls exceeding 4 ft. must have a safety fence along the top of the retaining wall. The fencing must be metal chain link fence of at least 4 ft. in height and not to exceed 6 ft.

Response: *The Municipal Engineer and board, have agreed with the applicant at the December 21st Planning Board Meeting that the chain-link fence can be substituted with a decorative metal railing / fall protection as depicted on the plan, and is attached to the top of the retaining wall. A fence post attachment detail has been provided on the retaining wall detail sheet.*

Comment Addressed

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4. There are no design calculations submitted with the wall drawings. The calculations need to be sealed by a registered engineer in the Commonwealth of Pennsylvania.

Response: *Signed and sealed Design calculations were submitted. Updated signed and sealed Design Calculation have been provided with the revised submission.*

Comment Addressed

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5. There are several places on the plans where stormwater piping passes under the wall and fairly close behind the wall. There are also manholes shown behind the wall. There will be a definite conflict with the soil reinforcement for the wall and the potential for complications due to leaking piping is a concern. It may be in the best interest of the project to adjust the location and alignment of the stormwater collection system to take the piping and manholes out of the wall location.

Response: *There are only two (2) location where a proposes stormwater pipe crosses under a proposed retaining wall. There is only one (1) manhole behind the proposed retaining wall (MH-3). Redi-Rock provides a detail for installing stormwater pipes within their geogrid. This detail has been provided on the retaining wall detail sheet. Watertight pipes will be used in lieu of soil tight pipes for the proposed stormwater pipes behind the retaining wall to prevent any water leakage.*

Comment Addressed

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6. If the piping that passes under the wall needs to remain, it should be protected from potential collapse or crushing by a reinforced concrete section to spread the load of the wall out beyond the limits of the pipe (i.e., a bridge over the pipe).

Response: *PVE reviewed this comment with Gateway Engineers and they agreed that a Class V Reinforced Concrete Pipe with full depth stone back fill would be sufficient to handle the loads from the retaining wall. The pipe below DB-11 has +12" of stone backfill over the pipe which is more sufficient to carry the wall load which is less than 4' tall in this location. The full depth stone back fill is noted on the storm pipes crossing beneath retaining walls on Sheet C-500. The pipe below STM MH-3 is designed with a concrete encasement and wall penetration. See retaining wall profiles and plans for details.*

Comment Addressed

7. The same issue of interference is present with the proposed fence posts installation.

Response: *The fence will be installed on top of the retaining wall as shown in the wall cross sections shown on Sheet S-101 RR Wall Sections. The fence posts are to be imbedded 3'-6" in the retaining wall block and grouted.*

Comment Addressed

8. There is no elevation or profile of the retaining wall provided. The profile should show the locations where stormwater piping passes beneath the wall, the applied bearing pressure beneath the wall at significant changes in height, the length of the geogrid for each design case selected and the type. It should also show the layering of the geogrid on the face of the wall.

Response: *Elevations of the proposed retaining wall are included in the revised submission. The location of where the proposed stormwater pipes cross under the wall are shown on the profiles. Wall bearing pressures are provided in the retaining wall calculations. The length of the geogrid is shown on the retaining wall cross sections. The layering of the geogrid is shown on the retaining wall detail sheet.*

Comment Addressed

9. Global stability of the walls should be included in the calculations.

Response: *Global stability check is included in signed and sealed Design Calculations.*

Comment Addressed

10. The block type should be shown on the plans.

Response: *Redi-Rock Block type is shown on the plans.*

Comment Addressed

11. Specific wall construction details (e.g. geogrid connections, geogrid layout details, corners, obstruction considerations, standard block shape and type, etc.) should be included in the construction drawing set.

Response: *Redi-Rock retaining wall detail have been provided on Sheet S-102 Sections and Details.*

Comment Addressed

12. Access for maintenance of the wall and other utilities below the wall must be provided.

Response: *The retaining wall can be accessed from the top of the wall by access between the proposed townhomes. The bottom of the wall can be accessed through the existing sanitary sewer easement on the south side of the site and at the north side of the site along unit 5-19.*

Comment Addressed

13. The plan drawing shows a storm drain behind the wall, but the cross-sections do not include it. The piping will influence the construction considering the geogrid proposed for the reinforced zone. No note or reference is made to the presence of the piping in the design calculations. A worst-case scenario of a pipe break and inundation of the fill should be considered and at least commented on.

Response: *The proposed stormwater pipe has been added to the retaining wall cross section. A Redi-Rock Detail that provides instructions for installing stormwater pipe within their geogrid has been added to the retaining wall detail sheet. Watertight*

stormwater pipe will also be used along the back of the retaining wall to prevent any water leakage. Also, the reinforced zone of the wall shall consist of #57 porous stone; therefore, temporary water inundation is not a considered design case.

Comment Addressed

14. Two wall types are shown Redi Rock and Allan Block. They are slightly different as the block sizes are different. They will behave differently and only one set of calculations was provided for the Redi Rock system. Allan Block has their own calculation package that should be submitted also if the system is to be used.

Response: *The constructed wall shall be a Redi-Rock MSE Retaining Wall and the design drawings only show this wall type. Signed and sealed Design Calculations for the Redi-Rock Wall type have been provided and will be revised to address other comments as noted.*

Comment Addressed

15. The geotechnical report gives design parameters for the wall. It recommends a soil friction angle of 26 degrees and does not give a value for soil cohesion. The design calculations include a cohesion strength value of 275 psf. This should be removed, or the geotechnical engineer should be allowed to review determine if it is acceptable.

Response: *Per the revised Geotechnical Report dated 12-15-2021, the reinforced portion of soil behind the retaining wall is now recommended to consist of #57 crushed aggregate with a unit weight of 110 pcf and a friction angle of 38 degrees. A cohesion value of 0 psf for this reinforced soil will now be used based on their updated recommendations and will be reflected in the revised calculations.*

Comment Addressed

16. The bearing capacity factor of safety for the wall design was set in the program at > 1.0 . The current state of practice recommends a factor of safety in bearing as > 1.5 . Again, my preference is to have a safety factor against bearing failure of > 2.0 .

Response: *Per the revised geotechnical report dated 12-15-2021, the allowable bearing capacity for the wall is 2,500 psf which includes a factor of safety of 1.6, for an ultimate bearing capacity of 4,000 psf. As indicated in PVE's current signed and sealed calculations, the maximum stress at the bottom of the footing for the tallest portion of the wall is 1,929 psf. This results in a factor of safety of 2.07, thus achieving the recommended value specified by the reviewer. However, these calculations will be updated as noted previously with regards to revised Geotechnical Report, and we will also include the ultimate bearing capacity and resulting Safety Factors.*

Comment Addressed

17. The calculations also include a concrete bearing pad for the wall to sit on. The drawings show a compacted gravel (2A) leveling pad which will perform differently than the design.

Response: *Drawings indicate a concrete bearing pad.*

Comment Addressed

18. The specifications do not differentiate between Redi Rock and Allan Block. If either system is acceptable the specs should state this and include specific sections relative to each system referenced.

Response: *Specifications for Redi-Rock MSE block have been provided.*

Comment Addressed

I. Geotechnical

The Geotechnical Exploration Report, dated April 30, 2021, second revision dated October 29, 2021, third revision dated December 29, 2021, prepared by Pennsylvania Soil and Rock, Inc. (PS&R) for the proposed residential development at 50 Moffett Street was reviewed. The second revision dated October 29, 2021 was not submitted to the Municipality with the land development package but was sent directly to Gateway Engineers by email. The third revision dated December 29, 2021 was submitted to the municipality. However, the December 29, 2021 submission did not include the Infiltration Testing Report that had been previously submitted. All submissions to the Municipality must be full and complete copies of the report. Presented below are several comments and questions to be addressed:

1. The elevations on the borings on the logs and sections do not match those on the summary table. This should be rectified.

Response: *The elevations have been revised to match.*

Comment Addressed

2. PS&R stated that the geogrid for the retaining wall will encroach within five feet of the rear walls of adjacent structures. Further, an option they recommend to eliminate imposing loads on the geogrid behind the retaining wall is to support the rear walls of the structures on drilled piers. There were no specific recommendations presented for the piers (bearing material, bearing capacity, etc.). In addition, if the drilled piers are to extend to bedrock, PS&R should discuss the impact of differential settlement if a structure is partially supported on bedrock and partially supported on soil.

Response: *Drilled piers is not an option that will be utilized for the construction of the residential buildings. A typical schematic detail of the foundation is shown on S-102. The final design of the building foundations will be included in the architecture and structural drawings submitted for the building permit.*

Comment Addressed

3. PS&R recommends removing all existing fill below the retaining wall foundation, but did not state what material should be exposed at the bottom of the excavation, and what the consistency or relative density of that material should be. The residual soil is soft to medium or loose to a depth of as much as 15 feet. Further, should the over excavation also include the reinforced zone behind the retaining wall?

Response: *PS&R added the following language to Section 7.0, Retaining Wall section of the report. The recommended bearing capacity has a factor of safety of 2 built into the recommended value.*

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Comment: This response does not address the original comment. This must still be addressed.

Response: *Once a section of the retaining wall foundation excavation is complete, the Geotechnical Engineer, or their appointed representative, should verify that the foundation soil meets the compaction criteria and bearing capacity presented in the Geotech Report. Additional compactive effort may be required if the compaction criteria is not met at the foundation grade. If the bearing capacity criteria is not met, the excavation should extend deeper until the bearing capacity criteria is met, with the excavation brought up to grade with engineered fill compacted to 100 percent of the Standard Proctor Density.*

Comment: This response does not address the original questions.

- a. **What type of material should be exposed at the bottom of the excavation, and what should be the consistency or the relative density of that material?**
 - b. **Will the over excavation for the retaining wall foundation include the reinforced zone behind the retaining wall?**
4. A note must be added to the plan that full-time site geotechnical inspections during the site work will be provided to confirm that the recommendations of PS&R are properly implemented, and at the completion of the work the geotechnical inspector will provide a summary letter indicating the same.

Response: *A note has been added to Sheet C-400 Grading Plan.*

Comment Addressed

J. Traffic

1. A separate review of the traffic impacts was completed by Michael J. Haberman, P.E. the Municipal Traffic Engineer.

Response: *We have received and reviewed the Preliminary Land Development Traffic Impact Review Letter prepared by Gateway Engineers dated December 14, 2021. The letter states that the proposed development will not have an impact on the school drop-off or pick-up operations and the plans submitted properly reflect the mitigation to address proper safety at the site access intersection with Moffett Street.*

2. **Comment:** The turning templates submitted, sheet C-301, show the design vehicles driving over curbs in certain areas. Please revise to demonstrate that these vehicles can access the site, turn around, and exit the site without encroaching on curbs and/or sidewalks.

Response: *The perimeter lines shown on the truck turning templates represent the bumper over hangs and not the wheels of the vehicle; therefore, the trucks are not driving over any of the curbs or sidewalks along the private roadway. The turnaround area for the fire truck was designed with grass pavers, since it will hopefully not be used often. The use of grass pavers is a better alternative than using pervious pavement such as asphalt, which would increase stormwater runoff. Mountable curbs are proposed*

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along both sides of the proposed private roadway and the fire truck turnaround area. The mountable curbs meet the Mt. Lebanon detail specifications and can be used for residential driveway entrances and access to the grass paver area. The Fire Chief of Mt. Lebanon has reviewed our plans and approved the location of the proposed fire hydrant and fire truck turning area per their letter dated 1-24-2022.

Comment Addressed

General Comments

1. All requirements of Section 505 of the Subdivision and Land Development Ordinance must be met for consideration of final approval.

Response: *Acknowledged.*

Comment: **Final plans will be reviewed upon submission.**

Response: *This is a Preliminary Application Submission and should comply with Sections 502, 503 and 504 of the Subdivision and Land Development Ordinance.*

Comment: **The comment should remain until it is addressed.**

2. Draft association documents must be provided for review by the Municipal Solicitor.

Response: *Draft Association Documents have been provided with this submission.*

Comment: **No draft Association Documents were included with this submission and must still be provided.**

Response: *A draft of the Condominium Documents are included with this submission.*

Comment Addressed

3. The Municipality may have additional comments.

The plan has been reviewed for conformance to Municipality Ordinance standards only. The review is based on surveys and plans prepared by others and assume this information is correct and valid as submitted.

cc: Keith McGill, Municipal Manager
Ian McMeans, Assistant Municipal Manager/Municipal Planner
Rodney Sarver, Chief Inspector
Mt. Lebanon Planning Board
Phil Weis, Municipal Solicitor
Dave Hager, PVE
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