

Ms. Kathleen Colwell
Planning Division Director
Department of Economic and Community Development
41 Pleasant Street
Methuen, MA 01844

August 26, 2022

Re: 46 Old Ferry Road, Methuen, MA
Civil Engineering Peer Review

Dear Ms. Colwell and Members of the Planning Board:

On behalf of the City of Methuen, TEC, Inc. reviewed documents as part of the civil engineering peer review for the project proposed at 46 Old Ferry Road. Triple G, LLC ("Applicant") submitted the following documents prepared by Fieldstone Land Consultants, PLLC ("Fieldstone"), which were reviewed by TEC for conformance with the City of Methuen Zoning Ordinance, Massachusetts Stormwater Handbook, and industry standards and best management practices:

- Site Construction Plans for "Pie Hill Warehousing", 46 Old Ferry Road, Methuen, MA 01844, prepared by Fieldstone, dated April 4, 2022; revised August 3, 2022.
- Stormwater Management Report, prepared by Fieldstone, dated April 4, 2022; revised; August 4, 2022.
- Revised Traffic Assessment, prepared by Vanasse & Associates, Inc., dated April 1, 2022
- Pie Hill Warehousing Noise Review, prepared by Cross-Spectrum Acoustics, dated July 11, 2022.

For consistency, the original comment numbers have been retained from the most recent TEC Peer Review letter on May 20, 2022. The Applicant's responses to the comments are shown as **bold**; TEC's responses are shown as *italic*. To limit unnecessary duplication, comments that were previously addressed by the Applicant have been removed from the letter.

Upon review of the documents and plans, TEC has compiled the following comments for the Board's consideration:

Site Plan Review

3. An adequate buffer has not been provided between the project and the existing residential property at Lots 1008-79-11A and 1008-79-11F. TEC recommends updating the Site Plans to show a 60-foot buffer from the property line in conformance with Section VI-B (12.a) of the Zoning Ordinance.

Fieldstone: The location of the site drive has been revised to maximize the buffering to residential properties. The design now provides a minimum of a 30' natural buffer to adjacent residential properties with a stockade fence and additional landscaping to provide the best buffer possible. The existing gas mains and other site features require the site drive to be located where it is currently proposed. We are actively working on the final design for the screening and landscaping with the City, abutting

property owners and the Community Development Board.

TEC: Comment not resolved. TEC acknowledged the revision of the site drive, and additional complications. In conformance with Section VI-B (12.a) a 60-foot buffer from the property is still recommended. TEC ultimately defers to the Community Development Board for approval of the site drive location.

Fieldstone: Fieldstone is working with the Community Development Board on this topic.

TEC: TEC defers to the Community Development Board on the approval of the site drive location. No further response required.

4. The Site Plans call out “Snow Storage” with no delineation of areas. TEC recommends updating the Site Layout to include delineated areas for snow storage.

Fieldstone: The snow storage areas are delineated showing intended areas for storage.

TEC: Comment not resolved. TEC notes snow storage area above proposed concrete pad on SP-1 is not delineated. TEC recommends this area be delineated showing intended areas for snow storage.

Fieldstone: Snow storage area above the concrete pad has been delineated.

TEC: Comment addressed.

7. Multiple drainage structure labels on the Grading and Drainage Plans reference connections to numerous structures that do not match structure shown. For example:

1. CB4 is proposed to DMH8 when it is shown to be routed to DMH6
2. DMH6 is proposed to DMH9 when it is shown to be routed to DMH5
3. CB3 is proposed to DMH8 when it is shown to be routed to DMH2

Fieldstone: The structure labels on sheet GR-1 and GR-2 have been revised. CB4 is proposed to DMH6, DMH6 is proposed to DMH5, and CB3 is proposed to DMH2 along with other changes.

TEC: Comment not resolved. CB-6 is proposed to DMH-7 when it is shown to be routed to DMH-8. DMH-7 is proposed to DMH-6 when it is shown to be routed to DMH-5. Based on the structure label for DMH-6, an invert in is detailed from DMH-7. DMH-7 is not shown being connected to DMH-6. TEC recommends the applicant revise GR-2 drainage plan.

Fieldstone: Sheet GR2 has been revised with labels accurately describing what is shown.

TEC: CB3 references a connection to DMH2 although it is shown being connected to DMH3. TEC recommends that this plan revision be considered as a condition of approval.

9. There is limited lighting proposed along the access driveway. TEC recommends that the Applicant update the Site Plans to provide light along the entire length of the access driveway.

Fieldstone: The proposed lighting has been designed to be as minimal as possible while still providing enough light to illuminate the drive and meet safety standards. The purpose of this is to minimize lighting to be sensitive to adjacent properties. There is also no pedestrian access that would require additional lights along the drive. We believe

the design addresses all safety concerns and addresses the minimum lighting requirements for site operations while finding good balance for the neighbors.

TEC: Comment not resolved. TEC acknowledges lighting sensitivity for adjacent properties.

TEC continues to recommend the Applicant update the Site Plans to provide light along the entire length of the access driveway for safety. TEC ultimately defers to the City of Methuen planning and development board for approval of lighting plan along the access drive.

Fieldstone: Fieldstone is working with the City on this topic.

TEC: TEC defers to the City of Methuen Planning and Development Board for approval of the lighting along the access drive. No Further Response Required.

Stormwater Management Review

16. The Proposed weir for P14: SC-740 chambers is 5.6' above the bottom elevation of the pond. Given use of SC-740 "which use 6 in. of stone and 2.5' chamber height" the weir is positioned 2.1' above the top of the system. TEC does not recommend designing the lowest outlet above the top of the basin. Typically, underground systems are designed to keep the peak water elevation below the top of the basin.

Fieldstone: The primary outlet is a 12" culvert out of DMH2 at an elevation of 237.0, which is the 1' below the top of the 2.5' system. This outlet allows for the peak elevation of both the 2 year and 10-year storm within the top of the system. The weir 5.6' above the pond is modeled to represent overflow in larger storms.

TEC: Comment not resolved. The primary outlet is an 18" culvert instead of a 12" culvert, as stated in HydroCAD calculations. The primary outlet elevations in HydroCAD do not match those on-site plans. The applicant should update the HydroCAD calculations to reflect intended pipe sizing, and to revise elevations of the 18" culvert.

Fieldstone: Revisions per City engineer require a primary outlet of 24" to reduce peak elevations in the 100 year storm. This is shown in HydroCAD, & sheets DT-7 & GR-2.

TEC: Comment addressed.

21. Multiple proposed drainage structures show rim and invert information that do not match the site plans.

Fieldstone: Rim elevations for structures have been added to the HydroCAD model.

TEC: Comment not resolved. Multiple structures on the HydroCAD model do not have rim elevations.

Fieldstone: Rim elevations are included for structures flowing to OP1, some of which were missed in the last revision.

TEC: Comment addressed. See TEC response to Comment #7. No further response required.

23. Based on the information from "TP21B" and proposed basin contours, the proposed top of basin "approximately 160" is 3' below the Estimated Seasonal High Water Table. The applicant should address how groundwater will be handled.

Fieldstone: The proposed stormwater basin is a wet basin, and is intended to have a permanent pool depth of 3'.

TEC: Comment not resolved. Wet basins 1 and 2 show no prevention methods for groundwater exfil or infiltration. TEC recommends exfil or infiltration methods be provided. TEC also recommends construction details of both wet basins to be included in the site plans.

Fieldstone: A Solmax 30 mil PVC liner is specified in the Wet basin detail on sheet DT-2.

TEC: Comment addressed.

Massachusetts Stormwater Standards

27. To be in full compliance with Stormwater standard 3 the Applicant should provide:

- c) A Mounding Analysis for all infiltration BMPs within 4-feet of seasonal high groundwater.

Fieldstone: The infiltration BMP's are located in areas where ground water is believed to be well below the systems. We have enclosed a geotechnical report which shows that groundwater was not encountered in any of the borings. Additional test pits have also been performed and our soil scientists have clarified the test pit results for this project.

This information can be found in our revised stormwater management report.

TEC: Comment not addressed. Portions of the bottom of the proposed chamber system on the south side of the site is above the existing ground surface. TEC recommends including a specification on what type of soils will be used for fill.

Fieldstone: A sand specification for ASTM C33 sand is detailed on sheet DT-7.

TEC: Comment addressed.

29. The Applicant should confirm the proposed use of the building. It is unclear if the project would be considered a LUHPPL under Standard 5. If the building is proposed as general "industrial" use, then it would be considered a LUHPPL and will need to provide a stormwater system that meets the higher standard.

Fieldstone: The proposed building use is a warehouse use. A warehouse is not considered a Land Use with Higher Potential Pollutant Loads (LUHPPL). There will be no vehicle maintenance on site, no heavy equipment stored on site, no storage of hazardous materials, and there anticipated to be only 278 vehicle trips per day.

TEC: The Applicant should confirm that the proposed use will be limited to warehousing only. Industrial uses are allowed within the "IL" zoning district, however, those uses would qualify the site as a LUHPPL with higher level of stormwater treatment requirements. TEC agrees that a warehouse does not qualify as a LUHPPL. If only warehousing is proposed as a use, TEC would recommend that the Community Development Board include a condition of approval limiting other industrial uses at the property.

TEC: TEC received no response on this comment in the most recent submission package provided by Fieldstone dated August 4, 2022. TEC continues to recommend the Community Development Board incorporate limiting other industrial uses at the property in the conditions of approval.

New Comments - 7/19/2022

35. Building size shown in plan view (147,840 square feet) differs from what is in the general notes and parking calculations (150,976 square feet), please clarify.

Fieldstone: The building was revised to 147,840 square feet to increase buffering. The parking note is updated.

TEC: Comment partially resolved. The building size in plan view (147,840 square feet) still differs what is in the general notes (150,976 square feet). The Applicant should update sheet MP-1. TEC recommends that this plan revision be included as a condition of approval.

36. Location and extents of retaining walls on plans is unclear. The legend on SP-1 and SP-2 denotes two different linetypes as retaining walls and the width of the lines used in the plan view appears to vary in width for each wall. For example, the wall along the entrance road is difficult to distinguish from the linetype used for stormwater pipe (not included in legend). TEC recommends clearly indicating the retaining walls on the SP sheets and providing additional elevation information on the GR sheets.

Fieldstone: The legend on sheets SP-1 & 2 has been revised and the line type condensed for easier differentiation.

TEC: Comment addressed.

37. TEC recommends showing the location of both underground stormwater systems on the SP sheets and giving each one a unique designation to avoid confusion. Additionally, TEC recommends correcting the product name from Stormceptor, a hydrodynamic separation device, to StormTech, the underground chamber product.

Fieldstone: The location of chambers are shown on site plan sheets as StormTech Chamber system 1 and Stormtech chamber system 2.

TEC: Comment addressed.

38. TEC recommends creating specific details from DMH-3 and DMH-10 showing rim, invert, and interior weir elevations.

Fieldstone: DMH3 & 10 are detailed on sheet GR-2. This includes rims, inverts in, and out. There are no interior weirs, the outlets will be standard pipes of 24" diameter

TEC: Comment addressed.

39. Callouts for DMH-10 and DMH-11 do not point to any structure, please correct callout location and ensure proper rim elevations.

Fieldstone: The leaders have been revised to point to the corresponding manhole.

TEC: Comment addressed.

40. TEC recommends correcting DMH number callouts on the StormTech detail sheets.

Fieldstone: DMH numbers have been revised on sheet DT-7, StormTech Details.

TEC: Comment addressed.

41. TEC recommends the Applicant correct numbering for DH10 on the Test Pit Surface Elevations table on GR-1 and GR-2.

Fieldstone: Numbering for DH10 has been revised accordingly.

TEC: Comment addressed.

42. Volume #3 for pond P14 in the Hydrocad analysis does not appear to reflect contours shown on GR-2. TEC recommends the Applicant revise the contours on GR-2, and include a BMP map and detail.

Fieldstone: Volume 3 for stormtech chamber system 2 (P14) was originally intended to depict overflow through catch basins onto the pavement. The runoff now does not exceed the chambers and volume #3 has been removed.

TEC: Comment not resolved. Volume #3 is still included in the calculation and provides a significant portion of the 100-yr storage volume. Furthermore, the infiltration calculation for this pond is using the surface area from volumes 1, 3, and 4 combined for the discarded flowrate. Currently the HydroCAD model is using a 48,485 sf surface area for infiltration with a system with dimensions of 49'x410'(20,090 sf). One would expect a maximum discarded flowrate of <0.5cfs with the 1.0 in/hr infiltration rate used. TEC recommends eliminating Volume #3(or at least correcting the areas based on proposed grading) and including Volume 4 in Volume 1A by deselecting the "use typical spacing" option in the chamber wizard and adding the extra foot of stone to the stone base value. This should eliminate the issue of double counting the infiltration area.

43. The location for volume #3 for pond P16 in the HydroCAD analysis is unclear. Please clarify on the plans where this additional volume is stored.

Fieldstone: . Volume #3 in pond P16 (Stormtech Chamber 1) is 1' of additional stone below the system in addition to the 6" minimum. This is noted on sheet DT-7.

TEC: Comment resolved. TEC notes that the responses to this and comment 42 have likely been reversed as P16 in the HydroCAD model corresponds to chamber system #2 which has had volume #3 removed and appears to be modeled correctly now.

44. TEC recommends the Applicant revise "Proposed Stormceptor Chamber System" callout location on MG-1.

Fieldstone: Callouts have been revised and state "Proposed Stormtech Chamber System".

TEC: Comment addressed.

45. Pavement sections for the site entrance and parking lot are unclear. A 2.5" binder and 1.5" wearing course are specified along with a callout for 3.5" bituminous concrete. Please clarify if a total 7.5" is to be used or if the bituminous concrete callout is intended to be a total and should read 4".

Fieldstone: The callout is intended to be a total , the details have been revised to state 4.0".

TEC: Comment Addressed.

46. Multiple proposed drainage structures (catch basins, drain manholes, subsurface infiltration chambers, etc.) show peak elevations during 100-year storm events well above proposed rim and inlet elevations. The applicant should revise their stormwater modeling to prevent peak elevations from exceeding the "top" of proposed drainage structures in order to correctly size downstream BMPs.

Fieldstone: Structures have been revised to convey the 100 year storm without over topping.

TEC: Comment partially resolved. TEC notes that structures CB-1, DMH-7, CB-5, and CB-4 continue to show exceedances during the 100-yr storm event, but the depth and duration of

the exceedance will likely have an insignificant impact on BMP sizing. No further updates are required to address this comment.

47. *The location of the rectangular weir, Device #3 for pond 14, is not clear on-site plans. TEC recommends a callout for the rectangular weir on site plans and BMP map.*

Fieldstone: The chamber system has been revised and no longer requires a weir, which has been removed.

TEC: Comment addressed. TEC acknowledges the removal of the rectangular weir from the HydroCAD calculations.

48. *TEC recommends close coordination with owner of utility poles on-site. Plans depict grading on top of and several site features directly abutting power pole locations.*

Fieldstone: Fieldstone is working with the City and have submitted plans to the necessary parties.

TEC: TEC defers to Community Development Board to monitor and approve of utility coordination. Comment addressed. No further response required.

Please do not hesitate to contact me directly if you have any questions concerning our comments at 978-794-1792. Thank you for your consideration.

Sincerely,
TEC, Inc.
“**The Engineering Corporation**”



Peter F. Ellison, PE
Director of Strategic Land Planning