

Ms. Kathleen Colwell
Planning Division Director
City of Methuen – Community Development Board
41 Pleasant Street
Methuen, Massachusetts 01844

November 2, 2021

Re: Engineering Peer Review
23 Hampstead Street – Methuen, Massachusetts

Dear Ms. Colwell:

On behalf of the City of Methuen, TEC, Inc. (TEC) reviewed documents as part of the civil engineering peer review for the proposed definitive subdivision located on 23 Hampstead Street in Methuen, Massachusetts. JR Builders Inc. (the “Applicant”) submitted the following documents which TEC reviewed for conformance with the City of Methuen Subdivision Rules and Regulations, Massachusetts Stormwater Handbook, and generally accepted industry standards:

- *Application for Approval of a Definitive Plan for 23 Hampstead Street in Methuen, MA*; prepared by JR Builders Inc.; Dated October 4, 2021
- *Definitive Subdivision Plan for 23 Hampstead Street in Methuen, MA*; prepared by Millennium Engineering, Inc; Dated October 5, 2021
- *Stormwater Management Report for the Definitive Subdivision Plan at 23 Hampstead Street, Methuen, MA*; prepared by Millennium Engineering, Inc; Dated October 4, 2021

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

Site Plan & Application – Definitive Subdivision Regulations

1. A discrepancy in the total lot area was noted in the Definitive Subdivision Application and Plans. The Application details a total lot area of 5.17 acres (as noted on the City of Methuen GIS), while the Definitive Subdivision Plans details a total site area of 4.87 acres.
2. As stated in Section 3.2.2.5 of the City of Methuen Subdivision Rules and Regulations (abbreviated further as MSRR), the proposed street name should be added to the plans.
3. TEC acknowledges the waivers requests in the Application and on Sheet 1 of the Definitive Subdivision Plans. TEC concurs with the terms of agreement for the two waivers (Sections 4.2.2.8 & 5.7.1) stated in the letter by Stephen J. Gagnon dated October 19, 2021. TEC also concurs with the statements regarding denial of the remaining two waivers based around the proposed water main.
4. The proposed outlet invert is drawn higher than the inlet pipes within DMH 1. The inverts for this structure should be adjusted to be in accordance with Section 4.3.3.7 of the MSSR.

5. Per Sections 4.3.3.6 & 4.4.2.3 of the MSSR, drainage and sewer pipe designs respectfully have specific design velocity requirements. The applicant should provide pipe flow calculations for both systems to prove this design meets these requirements.
6. TEC recommends that the sewer service connections be drawn in the profile view on the plan & profile. It appears that the sewer service from Lot 4 may be too low to tie into the sewer main at the proposed location.
7. The sewer service detail calls for a 6" service diameter, but the Plan & Profile call for a 4" service diameter.
8. Both CB 1 & 2 do not include the proposed use of gutter curb inlets. Per Section 5.3.8 of the MSSR, these catch basins should be revised to include gutter curb inlets.
9. Per Section 5.4.2.2 of the MSSR, all drainage pipes must be constructed of reinforced concrete. On Sheet 6 of the Definitive Subdivision Plan, the connection between CB 1, CB 2, and DMH 1 are detailed as 12" PVC. This should be revised to follow this Section.
10. The proposed rim to invert elevation for CB 1 is just under 3'. This invert should be revised to have at least 3' of separation per Section 5.4.3.4 of the MSSR.

Site Plan – General

11. The typical section calls for sloped granite curbing on both sides of the roadway. The Applicant should confirm that curbing is proposed around the full extents of the roadway, and TEC recommends adding a leader to call out the proposed curbing on the Plan.
12. The maximum building coverage and open area requirements should be added to the zoning table on Sheet 3 of the Definitive Subdivision Plans.
13. TEC recommends that a building square footage should be added on each proposed building.
14. There appears to be some existing vegetation at the rear corner of abutting lot 75-3. The plans should identify if this vegetation will be removed or a portion will remain. Location of individual trees may be required in this area in order to preserve the natural buffer.
15. It appears that the proposed tree line does not appropriately tie into the existing tree line at the south west property line of Lot 4.
16. TEC suggests the addition of proposed gas and electric connections to the proposed and existing dwelling(s) on Sheet 6 of the Definitive Subdivision Plans.
17. On Sheet 6 of the Definitive Subdivision Plans a few issues were noted regarding the proposed utility profile:
 - a. Pipe lengths of sewer pipes are labeled in inches, not feet.
 - b. The inverts into DMH 1 should be specified for each CB they connect to.
 - c. The invert out of CB 1 is labeled as an invert in.

18. On Sheet 7 of the Definitive Subdivision Plans a few issues were noted as listed below:
- d. Erosion Control barriers are proposed in front of the existing driveways for the existing dwelling. A gap should be provided if this dwelling will be occupied during construction.
 - e. Multiple areas of proposed grading cross the proposed silt sock line across the proposed lots. The silt sock positioning should be adjusted to provide a gap (3' recommended) between the work zone and the protected areas.
 - f. The proposed silt sock crosses directly over the proposed rip rap for the outlet of Outlet Structure 1.
19. A detail should be provided for the inlet structure placed on top of the proposed subsurface infiltration system.
20. On Sheet 9 of the Definitive Subdivision Plans, multiple details reference HDPE pipes, but none are referenced on the other sheets.

Stormwater Report

21. Upon adjustment of the proposed catch basin locations (as suggested in the letter by Stephen J. Gagnon dated October 19, 2021), the water quality calculations should be adjusted to include the additional impervious area leading to these catch basins.
22. TEC suggests the Water quality calculations and TSS removal calculations include information for the proposed subsurface infiltration system.
23. The contribution to TSS Removal from deep sump hooded catch basins should be added to the TSS removal calculations.
24. The estimated seasonal high water table near the proposed infiltration basin within proposed Lot 2 is less than 2' below the bottom of the proposed basin based on the provided Test Pit 21-9. A revision in design of the basin is required to meet the 2' minimum separation between the estimated seasonal high water table and the bottom of basin per Volume 2 Chapter 2 of the Massachusetts Stormwater Handbook. The ESHWT value on the Infiltration Basin Cross-Section on Sheet 9 of the Definitive Subdivision Plans should also be revised accordingly.

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