

Kathleen Colwell
Planning Division Director
Methuen Community Development Department
41 Pleasant Street
Methuen, MA 01844

June 30, 2022

Re: Definitive Subdivision Plan Guzman Lane
Civil Engineering Peer Review

Dear Ms. Colwell and Members of the 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 80 Hampstead Street. Eddy Guzman ("Applicant") submitted the following documents prepared by Andover Consultants, Inc; which were reviewed by TEC for conformance with the City of Methuen Zoning Ordinance and Subdivision Rules and Regulations, Massachusetts Stormwater Handbook, industry standards, and best management practices:

- Site Construction Plans for "Definitive Subdivision Plan Guzman Lane", 80 Hampstead Street Methuen, MA 01844, prepared by Andover Consultants, Inc; dated May 6, 2022.
- Stormwater Report, prepared by Andover Consultants, Inc; dated May 6, 2022.

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

Site Plan Review

1. It appears that the Abutter labels on Site Plans do not match the Abutter's list. The Applicant should clarify if the Site Plans should be updated.
2. The Site Plans should be updated to include a zoning table and labeled setbacks.
3. The applicant states this project, "is not required to meet the Massachusetts stormwater management standards". This is true for projects that do not discharge Stormwater that potentially affects Critical Areas. The Applicant should provide information on potential critical areas on site; it appears that a Potential Vernal Pool has been mapped at the property.
4. The Applicant should provide labels and information on all proposed and existing line-types and nomenclature.
5. The Applicant should provide a label and a detail for the proposed retaining wall.
6. The Lot 2 label is obstructed on the Grading and Drainage Plan. TEC recommends an update on Grading and Drainage Plan.
7. The proposed Subsurface Galley information is illegible on the Utility Plan. TEC recommends an updating the Structure Table.

8. The Applicant should show Utility line information including size, material, slope, etc. on the Site Plans.
9. Hay Bale and Silt Fence detail is shown but unmarked on Site Plans. TEC recommends an update on Grading and Drainage Plan.
10. Plugs and Anchors in the Detail plan are not present in the Site Plans. TEC recommends information on location be provided on Site Plans.
11. Outlet Riser in detail plan is not present in Site Plans. TEC recommends information on location be provided in the Site Plans.
12. Shea Pre Cast Stormwater Detail should be revised to show proposed height.
13. Access to the 5.2-acre Parcel "A" appears to be cut off after the subdivision. Please update how access will be maintained to this parcel, or if a frontage waiver will be requested.
14. The proposed wall appears to directly abut the wetlands. It would be difficult to construct a wall within that proximity of the wetland without direct impacts. TEC recommends providing more detail on the location of the base of the wall in relation to the erosion control barriers and existing wetland limits.
15. Per 5.2.3(2)a of the Methuen Subdivision rules and regulations, all pavement radii should be noted on the Plans.

Stormwater Management Review

16. TEC recommends updating page numbering on Stormwater report.
17. It is unclear how the stormwater routing in the cul-de-sac will operate. The outlet location for the roadside ditch from station 3+75 to 6+63.23 is not shown. The stormwater report call this a "detention swale with a 1.02 in/hr infiltration rate", however there is no test pit data in this area to support this rate or to ensure proper separation to seasonal high groundwater. It is also not clear how stormwater will be routed to both CB-1 and 2. TEC recommends a clearer grading plan for this area including spot elevations and outlet locations. TEC also recommends adding invert information at driveway culverts to help ensure proper pipe cover.
18. Concentrated flow entering basins 2 and 3 from the proposed roadside ditches have the potential to erode the banks where they enter the basin. TEC recommends energy dissipation or turn reinforcement in these areas. TEC also recommends showing the centerline of the roadside ditch along with locations and elevations of high points.
19. It appears that in a large 100-year storm, peak elevation would exceed the top of Basin 3. TEC recommends updating Grading and Drainage Plan, and Stormwater Report. Including the exfiltration rate in the HydroCAD model will likely show that this is not an issue.

20. Time of concentration used for existing Subcatchment EX1 is below the minimum recommendation of 6 minutes.
21. What material is proposed for the driveways? These areas do not seem to be accounted for in curve number calculations for the stormwater design.
22. The bottom of Basin #1 is shown as 137' in the plans and test pit 5 discovered the estimated seasonal high groundwater at 136'. This is less than the minimum allowable separation from an infiltration basin to ESHGW.
23. The bottom of Basin #2 is listed as 141' on the plans and 139' in the stormwater report. Please note that if the bottom is 139' as listed in the stormwater report there would not be adequate separation from the seasonal high groundwater table.
24. The bottom of Basin #3 is shown as 140' in the plans and test pit 1 discovered the estimated seasonal high groundwater at 138.1. This is less than the minimum allowable separation from an infiltration basin to ESHGW.
25. Per the Massachusetts Stormwater Handbook, infiltration basins require pretreatment to ensure adequate TSS removal. TEC recommends adding a sediment forebay or other pretreatment before discharging into the infiltration basins.
26. Drawdown calculations were not provided for any infiltration devices. Per the Massachusetts stormwater handbook, a maximum 72-hour drawdown time is required.
27. Infiltration basins do not include outlet structures, emergency spillways, adequate freeboard depth, or drawdown devices. TEC recommends adding these to the design.
28. TEC recommends adding the exfiltration rate to the HydroCAD model for ponds 2 & 3. This will likely help with reducing the required size of the basin.

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