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August 18, 2020

Mr. Ryan Clapp  
Conservation Agent  
Holliston Conservation Commission  
703 Washington Street  
Holliston, MA 01746

**Re: Stormwater Design Engineering Peer Review  
"Triangle Farm" Definitive Open Space Subdivision Mill Street, Holliston MA  
CMG ID 2020-164**

Dear Ryan,

CMG is providing this letter report detailing our engineering peer review of the stormwater management system design for the "Triangle Farm" Definitive Open Space Subdivision in Holliston, MA. The project is located on an approximately 12.4 +/- Acre currently undeveloped parcel identified as Parcel 55.1 & 55.2 (the "Site"). The project Applicant, *Murch Prentice Realty Trust* is proposing to construct a seven (7) Lot Single-Family Residential Subdivision, access road, and associated stormwater management structures within an Agricultural – Residential District B.

CMG is in receipt of the following documents:

- Site Plans entitled "Definitive Open Space Subdivision "Triangle Farm", A 7 Lot Single Family Residential Subdivision Holliston MA" prepared by GLM Engineering Consultants, Inc., date 6/15/2020.
- "Stormwater Management Report" for Triangle Farm Project Holliston MA prepared by GLM Engineering Consultants, Inc., date 6/15/2020.

CMG provides the following technical comments for the Conservation Commission's consideration:

**General Engineering & Drainage Design Comments**

1. The proposed contours should be clearly labelled along the front portion of the property.

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2. All subcatchment, reaches, ponds, and links, should be clearly labeled on the pre and post development plans consistent with the stormwater calculations. A legend should be provided.
3. Time of Concentration flow path lengths and slopes should be labeled on the pre and post development drainage plans, consistent with the calculations.
4. NRCS Soil type and boundaries should be shown on the pre and post development drainage maps.
5. Proposed foundation drain and outlets should be shown on the grading & drainage plan.
6. Subdrains should be provided along all cut sections of roadway and shown on the plans.
7. The invert elevation for DMH 7 in the Manning's Equation Table should be 282.10 (282.40 is shown).
8. Catch Basin #8, located at the end of the cul-de-sac should be designed as a double grate catch basin based on the proposed 25-year design flow.
9. The top of berm elevation should be labelled as 283.00 on the Grading and Drainage Plan (264.6 is shown).

**Stormwater Standard 1:** *No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or water of the Commonwealth.*

10. Rip-rap apron sizing calculations for all pipe surface outlets and details must be provided for the 100-year storm event.
11. Rip-rap apron size and dimensions should be noted on the Grading & Drainage Plan.

**Stormwater Standard 2:** *Stormwater management systems shall be designed so that post development peak discharge rates do not exceed pre-development peak discharge rates.*

12. Impervious roof areas should be included within the proposed watershed areas for the Post Developed Runoff Drainage Area subcatchments.
13. The proposed drywells do meet the design criteria for the required recharge volume, however, larger storms > 0.25 in. of runoff will most likely discharge from the proposed overflow pipe. It is not necessary to model the roof drain drywells unless they are to be used to mitigate peak off-site flow.
14. Pre-development and post-development total watershed areas differ by approximately 12,173 +/- s.f. These areas should be equivalent.
15. No flood plain mapping or FEMA plan reference is provided.

**Stormwater Standard 3:** *Loss of annual recharge of groundwater shall be eliminated or minimized.*

16. Test Pit and soil boring information from 1997 ~ 2001 is provided as Appendix F of the Stormwater Management Report. The test pit data provided is consistent with the mapped NRCS soil types. However, CMG recommends the Conservation Commission consider requiring confirmatory soil testing within the limits of the infiltration basin and all proposed drywell locations prior to construction to verify current on-site soil conditions.

17. An infiltration rate of 0.27 in/hr is used for the proposed detention basin, however, no supporting information is noted in the report. If the Rawls Rate for a type C soil is to be used, a copy of the Rawls Rate Table and description of the soil classification should be included in the stormwater report
18. Infiltration rate of 27.0 in/hr is used for the proposed roof drain drywell in the HydroCAD model. This appears to be an error as 0.27 in/h is used for Stormwater Basin 1.
19. The location of the proposed roof drain overflow downspouts are not shown on the plan. These locations are necessary to determine the flow path of the drywell overflow discharge.
20. Stormwater Basin emergency overflow weir and drain basin outlet structure grate (Elev=282.0) should be modeled as a secondary outlet in HydroCAD or the spillway elevations adjusted as the 100-year peak elevation is slightly higher at 282.06.
21. A low flow underdrain is required on the proposed drainage basin outlet structure. The outlet structure will also require safety grates in accordance with the Holliston Planning Board Rules and Regulations.
22. The proposed maintenance berm for Basin #1 measures approximately 8' wide along the perimeter of the drainage basin on the Grading & Drainage Plan. Maintenance berm must be minimum 10' width.

**Stormwater Standard 4:** *Stormwater management systems shall be designed to remove 80% of the average annual post construction load of Total Suspended Solids (TSS).*

23. Proposed roadway Station 0+00 to 1+00 will discharge to the Mill Street gutter line without adequate treatment. Applicant's engineer must provide BMPs to provide adequate TSS removal treatment.
24. A drainage easement will most likely be necessary across Lot 4 to direct treated stormwater from the first 100 ft. of roadway towards the southeast corner of the property in a similar manner to existing conditions.
25. Stage-storage-volume table for Basin 1 should be included in the report to confirm the water quality volume.

**Stormwater Standard 5:** *Land uses with higher potential pollutant loads (LUHPPL), source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable.*

26. Not applicable – Site is not a LUHPPL.

**Stormwater Standard 6:** *Stormwater discharges within a Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area.*

27. Current MassGIS mapping shows a portion of the Site is within a Zone II watershed protection area which is considered a "critical area". It appears the proposed stormwater design takes this into account, however, this should be noted in the report and Stormwater Checklist to document compliance with this standard.

**Stormwater Standard 7:** *Redevelopment Projects*

28. Not Applicable – Site is not a redevelopment project.

**Stormwater Standard 8: *Construction period erosion and sedimentation control***

29. The Site is > 1 Acre therefore an EPA NPDES Construction General Permit (CGP) registration and SWPPP is required to be submitted prior to construction. CMG recommends the Conservation Commission make this a condition of approval.
30. CMG recommends additional erosion control barrier along the front portion of Lot 1 to deter any sediment from entering the Mill Street right-of-way.
31. Erosion Control Maintenance Note #2 (from Erosion Control Sheet), should be revised to include supplemental "strawbales" instead of haybales.

**Stormwater Standard 9: *Long term operation and maintenance plan***

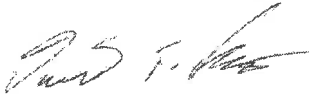
32. A plan showing the location of all stormwater BMPs maintenance access areas must be provided within the Long Term O&M Plan.
33. Operation and maintenance log form should list the individual BMPs and inspection and maintenance frequency.
34. Catch basin inspection frequency should be listed as four (4) times/year.

**Stormwater Standard 10: *Illicit discharges***

35. An illicit discharge compliance statement is included within long term operation and maintenance plan. CMG recommends a signed copy of this statement be submitted to the Commission prior to construction.

If you have any questions or need additional information please contact me at (508) 864-6802.

Sincerely,  
CMG ENVIRONMENTAL, INC.



David T. Faist, PE  
Principal Engineer – Engineering Services