TETRA TECH

August 7, 2020

Ms. Susan E. Affleck-Childs
Medway Planning and Economic Development Coordinator
Medway Town Hall
155 Village Street
Medway, MA 02053

Re: Harmony Village
Site Plan and Multifamily Special Permit Review
218-220 Main Street
Medway, Massachusetts

Dear Ms. Affleck-Childs:

Tetra Tech (TT) has performed a review of the proposed Site Plan for the above-mentioned Project at the request of the Town of Medway Planning and Economic Development Board (PEDB). The proposed Project is located at 218-220 Main Street in Medway, MA. The Project includes rehabilitation of two existing dwellings at the site and five additional residential units (one triplex and one duplex) in the rear of the property along with additional parking, stormwater infrastructure and appurtenant utilities to serve the proposed development.

TT is in receipt of the following materials:

- A plan (Plans) set titled "Site Development Plans, Harmony Estates, Multifamily Housing Development", dated June 9, 2020, prepared by Meridian Associates, Inc. (MAI).
- A stormwater report (Report) titled “Stormwater Management Report, Park Place Way, 218-220 Main Street, Medway, Massachusetts”, dated June 10, 2020, prepared by MAI.
- An Application for Major Site Plan Approval, dated June 4, 2020, prepared by MAI.
- A Land Disturbance Permit Application, dated June 4, 2020, prepared by MAI.
- A Multifamily Housing Special Permit Application, dated, June 4, 2020, prepared by MAI.
- Waiver Request forms, dated February 18, 2020, prepared by MAI.
- A Project Narrative, dated June 11, 2020, prepared by MAI.
- A Certified Abutters List.
- A letter summarizing sewer flow calculations, dated May 12, 2020, prepared by MAI.
- A wetland letter summarizing inspections performed for potential wetland resources, dated February 14, 2020, prepared by Goddard Consulting, LLC (GCL).
- A letter containing additional information as requested by the Town of Medway PEDB, dated June 29, 2020, prepared by MAI.

The Plans and accompanying materials were reviewed for conformance with Chapter 200 of the Town of Medway PEDB Rules and Regulations (Regulations) last amended October 8, 2019, Massachusetts Department of Environmental Protection’s (MA DEP) Stormwater Standards (Standards) and appurtenant Stormwater Handbook (Handbook) last amended February 2008, Town of Medway Article 26 – Stormwater and Land Disturbance Bylaw (Stormwater Bylaw) and good engineering practice. Review of the project for zoning related matters is being conducted by a separate consultant and is excluded from this review.

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SITE PLAN REVIEW

1. The Applicant shall provide earthwork volume calculations to confirm extent of import/export for the project. (Ch. 200 §204-3.I and J)
2. A list of waivers and signature block for Board endorsement has not been included on the Cover Sheet of the Plans. (Ch. 200 §204-5.A)
3. Site Context Sheet showing streets within two thousand feet of the perimeter of the site not provided. (Ch. 200 §204-5.B.1)
4. The Applicant has provided lot lines with dimensions. However, property line bearings have not been provided and should be shown. (Ch. 200 §204-5.B.3)
5. Elevations, renderings, floor plans for the proposed dwellings have not been provided. The Applicant has requested a waiver from this Regulation. (Ch. 200 §204-5.D.9-11)
6. Sight distances have not been provided on the Plans. (Ch. 200 §204-5.D.16)
7. Confirm with Medway Fire Department if hydrants are required and if the proposed emergency access is sufficient for the size and scope of this Project. A fire truck turning template is included on Sheet C-3 (Ch. 200 §204-5.D.18)
8. It does not appear the Applicant has considered the use of Low Impact Development (LID) techniques in the design of the Project. (Ch. 200 §207-5.B)
9. The Applicant has not provided earthwork calculations on the Plans to determine extent of earth fill/removal for the Project. (Ch. 200 §207-8)
10. Sidewalks have not been provided throughout the development. (Ch. 200 §207-9)
11. The Applicant is proposing bituminous berm at the entrance radii, the Regulations require vertical granite curbing or other material as approved by the PEDB. (Ch. 200 §207-11.A.4)
12. The proposed driveway is located within 15 feet of the northeast lot corner of the abutting property at 222 Main Street. Proposed driveways shall be setback from all property boundaries a minimum of 15 feet. (Ch. 200 §207-11.A.13)
13. The proposed driveway entrance is approximately 4% which does not meet the 2% maximum required slope for the first 25 feet of the driveway. (Ch. 200 §207-11.A.14)
14. Stormwater downgradient from DCB-01 will discharge to Main Street and is prohibited. (Ch. 200 §207-11.A.15)
15. The Applicant is proposing bituminous berm throughout the development. Vertical granite curb is required by the Regulations. (Ch. 200 §207-11.B.2)
16. Proposed drive aisles are 22 feet wide which does not meet the minimum 24-foot width required by the Regulations. (Ch. 200 §207-11.B.3)
17. The Applicant has not proposed any sidewalks or ways for pedestrians to circulate about the site other than using the proposed drive aisles. (Ch. 200 §207-11.B.5)
18. The Applicant shall confirm the emergency access and turnaround area provided on the Plans meets the requirements of the Medway Fire Department. (Ch. 200 §207-11.B.8)

19. The proposed Cultec Systems do not appear to be designed with inspection ports which are critical to proper inspection and maintenance procedures for the systems. (Ch. 200 §207-14.D)
20. It does not appear a well has been proposed at the site. It must be noted that the public water supply system shall not be used to irrigate the site. (Ch. 200 §207-15.A)
21. The Applicant shall confirm method for solid waste removal for the development. (Ch. 200 §207-17)
22. The Applicant has not supplied a photometric plan for the proposed lighting at the site. Lighting details shall also be provided and shall meet the requirements of Section 7.1.2 of the Medway Zoning Bylaw. (Ch. 200 §207-18.A)
23. The proposed Landscape Plan does not provide adequate landscaped buffer as required by the Regulations. Buffers shall be a minimum 15 feet around the entire site. (Ch. 200 §207-19.B.2)
24. The proposed Landscape Plan does not address landscaping around the proposed at-grade basin. (Ch. 200 §207-19.E)
25. It appears three 30-inch trees (two hardwood) will be removed as part of the development and will require necessary replacement. However, the Regulations are unclear as to the scope of the proposed replacement. (Ch. 200 §207-19.H)
26. It does not appear adequate snow storage areas are proposed at the site. The applicant shall provide accommodations in the site Operation and Maintenance Plan for off-site removal of snow to ensure the site remains in a safe condition during snow emergencies. (Ch. 200 §207-21)

STORMWATER REVIEW

MA DEP Stormwater Standards/Handbook

27. It appears portions of abutting properties may run-on to the property (from GIS contour data) and be directed to the proposed at-grade infiltration basin. All areas of run-on shall be included in the analysis to ensure basins are properly sized to accommodate their actual catchments and are accurately modeled in the analysis for pre- and post-development rates of runoff. (Standard 2)
28. The existing and proposed study areas do not match in the HydroCAD analysis. These areas should match to ensure pre- vs. post-development runoff rates are properly analyzed. (Standard 2)
29. Test pits have not been provided for DW-1 and DW-4 subsurface drywells. This information is required to determine soil texture/type and groundwater elevation below the systems. We recommend the test pits be conducted during the review process to ensure feasibility of the proposed design. (Standard 3)
30. The bottom of the at-grade infiltration basin is located within the Ap soil layer (uppermost soil horizon) as documented in Test Pit #1 log information. We anticipate the Ap horizon layer (Sandy Loam, Hydrologic Soil Group (HSG) B Soil) along with the Bw horizon layer (Sandy Loam, HSG B Soil) will be stripped down to the C horizon layer (Loamy Sand, HSG A Soil) during site preparation. As a result, the basin area will have to be filled to achieve final grades which should be detailed in the Plans. A basin cross-section should also be included in the standard details. (Standard 3)
31. The exfiltration rate (Rawl's rate) used in the HydroCAD analysis for the at-grade infiltration basin is 1.02 inches per hour (in/hr). This is consistent with an HSG B soil type which coincides with the Bw layer mentioned in Comment 30 that we anticipate will be stripped during site preparation. We believe the basin will be installed over the C horizon layer which is an HSG A "Loamy Sand" soil type with associated 2.41

in/hr Rawl's rate. Exfiltration rates greater than 2.4 in/hr require additional pretreatment prior to discharge to the Infiltration Best Management Practice (BMP) which may be applicable in this situation. The proposed design includes the necessary pre-treatment BMP's (Deep Sump Hooded Catch Basin and Sediment Forebay) but it is unclear if the proposed forebay is considered in the overall surface area for exfiltration in the basin model. The forebay shall not exfiltrate if being used for pre-treatment in rapidly infiltration soils. The Applicant shall confirm proposed construction process for the basin and pre-treatment BMP's. (Standard 3)

32. Proposed stormwater infrastructure is not capturing all impervious cover at the site and therefore a Capture Area Adjustment is required to adjust required recharge volume for the Project. (Standard 3)
33. The Total Suspended Solids (TSS) removal spreadsheet is incorrectly calculated. Catch basins receive 25% TSS removal rate and the combination of a sediment forebay and infiltration basin receive 80% TSS removal rate. The sediment forebay may only be separated when calculating 44% pretreatment prior to discharge to an infiltration BMP. However, this does not materially affect the calculations but should be revised for the record. Additionally, a separate calculation sheet shall be provided to show 44% TSS removal rate prior to discharge to an infiltration BMP. (Standard 4)
34. The Applicant did not provide a Long-Term Pollution Prevention Plan. (Standard 4)
35. Information included in the Stormwater Report and Land Disturbance Permit Application is inconsistent on whether the site will require a United Stated Environmental Protection Agency (US EPA) National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Construction Activities (CGP). The "Report Summary" section in the Stormwater Report states one is not required but the description of the ten stormwater standards at the end of the document state the site will disturb approximately 1.05 acres which would require the permit. Additionally, the Land Disturbance Permit Application states approximately 40,000 square feet (sf) of the site will be disturbed which would not require the permit. The Applicant shall confirm expected disturbance limit and coordinate information on all documents. (Standard 8)
36. The Applicant did not provide a Long-Term Operation and Maintenance (O&M) Plan. (Standard 9)
37. The Applicant did not provide an Illicit Discharge Compliance Statement. (Standard 10)
38. The southern edge of DW-3 and the northwest corner of DW-4 are located within 10 feet of the property line. Infiltration BMP's shall not be located within 10 feet of property boundaries. (Vol. 1, Ch. 1, Pg. 8, Table RR)
39. The proposed at-grade infiltration basin has no traditional emergency outlet, monitoring well or drawdown device included in the design as required in the Handbook. It appears proposed DCB-01 is designed as the emergency outlet which will surcharge in larger events and discharge overflow to Main Street. We do not recommend this approach as it will not allow runoff to be captured during the discharge which effectively lowers the basin freeboard. Additionally, the inverts included in the device routing in the model do not match information on the plan. DCB-01 rim elevation is 230.8 on the plan but 229.8 in the outlet description in the model. We are uncertain if Device 2 is required since discharge will not begin until the basin reaches the rim elevation of DCB-01 (Primary Orifice) which will fully submerge the 12" culvert. The Primary Orifice is also incorrect as it is a double catch basin which is a 24" x 48" grate. The 231.00 contour data shall also be included in the basin geometry for consistency between the plan and the model. (Vol. 2, Ch. 2, Pg. 91)
40. The top of the proposed at-grade infiltration basin berm is approximately 2 feet in width which poses risk of embankment failure when basin is in brimful condition. (Vol. 2, Ch. 2, Pg. 91)

Town Stormwater Management and Land Disturbance Bylaw (Article 26)

41. The areas around the existing dwellings are proposed for loam and seed and landscaping. We would consider this a disturbance and should be included within the limit of work and disturbance area calculations for the site. (§26.5.1)
42. We anticipate the at-grade infiltration basin will be one of the first items at the site to be constructed which will require extensive protection to limit sedimentation during construction. Additionally, this area and all other erosion controls shall be designed to mitigate a 100-year event as required and proof of such shall be provided. (§26.7.2.c)
43. Earthwork volumes shall be shown on the Erosion and Sediment Control Plan (ESCP). (§26.7.3.e)
44. Area within the limit of work shall be shown on the ESCP. (§26.7.3.i)
45. Construction phasing narrative shall be provided on the ESCP. (§26.7.3.j)
46. We anticipate run-on from adjacent properties will flow into the site and measures shall be installed to prevent stormwater from entering disturbed areas to the maximum extent practicable. (§26.7.3.k)
47. A description of construction and waste materials expected on-site as well as their storage and maintenance shall be included in a Plan. We recommend the Applicant add a section to the stormwater report related to the Land Disturbance Permit and a narrative describing compliance with its specific requirements. (§26.7.3.o)
48. The Applicant shall provide calculations that the proposed plan removes 50% of Total Phosphorus from the development. (§26.8.3.c.2.b)
49. The Applicant did not provide a Long-Term O&M Plan. (§26.8.5)

GENERAL COMMENTS

50. The Applicant shall confirm with the Medway Building Department if the proposed 2" water service is sufficient to serve the proposed dwellings.
51. It is unclear if the dwellings will have basements. If so, we anticipate the need for foundation drains which should be shown on the Plans and properly managed.
52. The Applicant should add a name for the at-grade infiltration basin for ease of review and consistency with the analysis.
53. A swale is proposed behind Unit 4 which should be detailed in the grading.

These comments are offered as guides for use during the Town's review and additional comments may be generated during the course of review. The Applicant shall be advised that any absence of comment shall not relieve them of the responsibility to comply with all applicable local, state and federal regulations for the Project. If you have any questions or comments, please feel free to contact us at (508) 786-2200.

Very truly yours,

Steven M. Bouley, PE
Senior Project Engineer

Bradley M. Picard, EIT
Civil Engineer

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