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December 12, 2022

Hingham Planning Board
210 Central Street
Hingham, MA 02043

Subject: **261 Gardner Street – Definitive Subdivision**

Dear Board Members:

This is to advise that we have reviewed the following documents pertaining to the proposed definitive subdivision at 261 Gardner Street:

- Definitive Subdivision Plan (16 sheets), revised December 7, 2022, prepared by Civil Design Group, LLC (CDG)
- Stormwater Management Report, revised December 2022, prepared by CDG
- Letter – List of Major Plan Changes from CDG, dated December 9, 2022, prepared by CDG

The documents have been prepared to address comments contained in our October 11 and November 16, 2022 letters to the Board as well as comments from Vanasse & Associates, Inc. and comments raised at the public hearing. Below are the comments from our October 11 letter in plain text, followed by the status of each at the time of the writing of our November 16 letter in *italic text*, followed by the current status of each in **bold text**.

Compliance with the Planning Board Rules and Regulations

1. We note that no waivers have been requested from the Planning Board Rules and Regulations. *Four waivers have been requested and are listed on Sheet 2 of the Definitive Subdivision Plan.* **Only one waiver is now being requested. That waiver is to allow for access to Lot 1 to remain from Gardner Street and not the proposed subdivision road.**
2. R&R §3.C.2(a) requires the vertical datum (NAVD 1988) and two permanent benchmarks to be shown on the plan. No benchmarks are shown on the plans and notes on Sheet 2 indicate that elevations are based on the datum reference used on the Existing Conditions plan. However, there is no datum referenced on the Existing Conditions plan (Sheet 3). *Two proposed bounds are specified to be permanent bench marks (Sheet 10). A note on Sheet 3 indicates that the “grades shown were calced using LiDAR data found. Note, to convert these grades to NAVD 1988, add 2.44’.” In CDG’s November 15 email, they state that “NAVD datum will be updated, we request this to be a condition to be met prior to issuance of building permit.” If the Board is comfortable with the datum being updated at a later date we recommend this be a condition of approval.* **We continue to recommend this be a condition of approval.**

3. R&R §3.C.2(l) requires that all existing street trees over one foot in diameter to be shown on the plans. Proposed size, type and species of proposed trees are also required to be shown on the plan. Proposed street trees and a ten foot wide street tree planting strip should be in accordance with R&R §5.B4. *Addressed – the plans have been updated to provide all of the information required by R&R §3.C.2(l) and §5.B4.*
4. R&R §4.B(2)(a) requires streets to provide access to all lots in the subdivision. Proposed Lot 1 would not be accessed by the proposed street. *A waiver has been requested from this requirement since the existing house on Lot 1 has an existing driveway off Gardner Street and the existing garage is aligned with the driveway. **As noted above, this is the one waiver that they have requested.***
5. R&R §4.B(3)(a) and Table 1 requires a twenty foot wide travel way and twelve inch Cape Cod berms on a Limited Residential Street. As noted above, the proposed travel way will be twenty-two feet wide with vertical granite curbing on each side. *A waiver has been requested to allow the street cross section as proposed. **It is our understanding that since the proposed cross section exceeds the minimum standards a waiver is not required.***
6. Table 1 also requires that the binder course of pavement be 3-inches thick and the sub-base gravel be 24-inches thick. The Typical Bituminous Pavement Detail on Sheet 13 shows 2.5-inches of binder and 12-inches of gravel sub-base. *Addressed – the detail has been updated to comply with Table 1 requirements.*
7. R&R §4.B(4)(b) requires sloped granite curbing around the inside island of a cul-de-sac turnaround. Vertical granite curbing is proposed. *Sloped granite curbing is now proposed around the inside island. We note that there are two catch basins located adjacent to the island which will require granite curb inlets per the R&R. The transition from sloped granite curbing to vertical curb inlets will be awkward even though transition curbs are proposed. **We continue to believe that the transition from sloped granite curbing to vertical curb inlets will be awkward. We assume that the reason for the sloped granite curbing around the center island is so that the curb is mountable in the event that a large vehicle runs over it. The vertical granite curb inlets would not be mountable.***
8. R&R §4.C(1) prohibits “retention or direct subsurface discharge of storm water.” The proposed stormwater system is designed to retain and infiltrate all runoff from impervious surfaces on site. We believe this to be a benefit, however, an emergency overflow connection from Subsurface Infiltration System SIS-1 (the system associated with the roadway collection system) to the municipal stormwater system in Gardener Street should be considered. Should an overflow be provided, we recommend a manhole with either an internal weir structure or the invert out of the manhole set above the 100-year storm peak elevation of 146.32. *A waiver has been requested to allow for the retention and direct subsurface discharge of stormwater. Mr. Randy Sylvester emailed Ms. Wentworth on October 24, 2022 stating that he does not support connecting to the municipal system. **The revised design has an open air basin so the waiver and concerns related to the subsurface system are no longer applicable. We note that there is an emergency***

overflow into the municipal stormwater system in Gardner Street. However, the calculations indicate that the proposed basin will fully infiltrate all runoff from all storms up to and including the 100-year event without overflow so discharge to the municipal system would be rare.

9. R&R §4.E requires that all stormwater management structures for detention and/or retention be open basins constructed of natural earth material with loam and seed surface. The proposed stormwater retention/infiltration structure is a subsurface structure. We note that via email sent to Ms. Wentworth on September 9, 2022, we suggested that the Applicant's engineer consider a rain garden in the center of the cul-de-sac with an overflow connection to the Town's drainage system. The Applicant's engineer responded to our email on September 14th advising that they would consider the suggestion but we did not receive any feedback as to why this option was ruled out. *In the response, CDG states that rain gardens are treatment devices and due to design limitations a rain garden in the center island would not provide sufficient volume to mitigate the increase in post-development runoff. A waiver has been requested to allow the subsurface infiltration system. In his October 24, 2022 email to Ms. Wentworth, Mr. Sylvester stated that the DPW does not maintain any subsurface drainage systems and that he would not support the Town taking the road (Town acceptance of the road as a public way). Should the Board approve the project, we recommend a condition that the road will be maintained as a private way in perpetuity. As noted above, an open air basin is now proposed so our comment is no longer applicable.*
10. The Water Service Approval letter from Weir River Water System indicates that there is adequate water supply for domestic use but R&R §4.L(6) also requires documentation that there will be a minimum of 1,000 gallons of water per minute at the proposed fire hydrant. Documentation should be provided to verify this. The Water Service Approval letter specifies that the hydrant is to be positioned off the outside of the cul-de-sac turnaround between Lots 3 and 4. The letter also requires that the connection to the existing water main in Gardner Street be a tee cut in with a three valve cluster. *The proposed water main connection to Gardner Street and the proposed hydrant location have been revised to comply with the Water Service Approval letter. In the November 15 email CDG states that the "Applicant will be conducting a hydrant flow test." Should the results of the flow test not be provided prior to the close of the public hearing, we recommend a condition requiring that the results be provided prior to the start of construction. We continue to recommend this condition.*
11. R&R §4.L(7)a. requires a ten foot wide electric easement around all Hingham Municipal Lighting Plant (HMLP) infrastructure. The Applicant should coordinate with HMLP as necessary and the easements should be shown on the definitive plan. *Addressed – proposed HMLP easements are shown on the revised plans.*
12. R&R §5.L1(4) requires HDPE drain pipe to have rubber gaskets. The Typical Drain & Sewer Trench Detail on Sheet 15 should specify rubber gaskets for the drain pipe. *Addressed – the detail has been revised to specify rubber gasket joints for drain and sewer pipe.*

13. R&R §5.L1(5); §5.R1(22) and §5.T3(6) require granite curb inlets at all catch basins. A detail of the curb inlets should be provided. *Addressed – a Typical Granite Curb Inlet Detail has been added to Sheet 14. Please see comment 7 above related to catch basins adjacent to the center island.*
14. R&R §5.R1(6) requires catch basins to be five feet in diameter and 8’-6” deep. The proposed catch basins are four foot diameter with a four foot sump, which is MassDOT and industry standard. *Addressed – the Typical Catch Basin Detail on Sheet 14 has been revised accordingly.*
15. R&R §5.Q1(1) requires drain manholes to have bricked inverts. This should be specified on the Typical Drain Manhole Detail on Sheet 14. *Addressed – the Typical Drain Manhole Detail has been revised accordingly.*
16. R&R §5.X1(1) requires frames on catch basins and drain manholes to be set in a full bed of mortar with a maximum of four and minimum of two courses of bricks for adjustment to finish grade. The catch basin and manhole details on Sheet 14 should be modified to comply with this requirement. *Addressed – the details on Sheet 14 have been revised accordingly.*
17. R&R §5.U3(3) requires the reveal of vertical granite curb to be 7-inches \pm $\frac{3}{4}$ inch. The Typical Vertical Granite Curb Detail on Sheet 13 should be revised to specify this. *Addressed – the Typical Vertical Granite Curb Detail has been revised accordingly.*
18. There should be a loam and seed detail and/or the typical cross-sections and details on Sheet 13 should specify a minimum of six inches of loam in accordance with R&R §5.A4(3). *Addressed – a Typical Loam and Seed Detail, specifying six inches of loam, has been added to Sheet 14.*
19. The Board should determine whether street lighting should be included in the subdivision (R&R §5.X3). *In the response, CDG states that “in lieu of street lighting, the Applicant proposes to add porch lighting at the front of each house.” The Board should determine whether this is acceptable or if some other form of lighting should be provided (i.e. driveway lanterns/light posts). **We defer to the Board for discussion.***
20. R&R §5.C4(1) requires granite Hingham Highway bounds to be set at all street intersections and at all points of change in direction or curvature of streets. R&R §5.C4(3) also requires at least one sideline of each lot be marked with a bound. A bound/monument detail should be shown on the plans. *Addressed – granite bounds are proposed at all points in change of direction along the right-of-way and at front lot corners between Lots 2, 3 and 4.*

General, Utilities, Stormwater & Erosion Control

1. The post-development drainage/ HydroCAD calculations are based on runoff from the entire roofs of the dwellings proposed on Lots 2, 3 and 4 being directed into the subsurface infiltration systems. This will require all downspouts to be piped into the

subsurface systems. Should the Board approve the project, we recommend a condition requiring that all downspouts be connected to the subsurface infiltration systems.

Recommend condition. **Recommend condition.**

2. We note that the overall site post-development analysis is based on proposed grading as shown on the plans, including lot development. There are low areas on the proposed lots that are modeled as retention/infiltration areas. These low areas will need to be maintained and proposed lot grading will need to be per plan to ensure that post development runoff is mitigated as proposed. *Should the Board approve the project, we recommend a condition that the post-development drainage patterns / grading shall match the proposed grading shown on the approved plan.* **Recommend condition.**
3. There are no test pits within Subsurface Infiltration System SIS-1, which is the large system located on the proposed drainage lot associated with roadway runoff. However, the eleven test pits excavated on site all show consistent sandy soil and seasonal high groundwater between elevation 139.5 and 142.1 and the design of SIS-1 is based on those parameters. However, the bottom of the system should be at El. 144.1 minimum (also SIS-2). Per the MassDEP Stormwater Standards, two test pits should be excavated within the footprint of the system. Based on the consistency of the soils and groundwater level we believe that the test pits can be done at the start of construction. *The bottom elevation of SIS-1 has been revised to be at El. 144.1 and in the response, CDG states that “confirmatory test pits will be performed within the SIS-1 footprint at time of construction.”* *Should the Board approve the project, we recommend a condition requiring the test pits at the beginning of construction.* **Recommend condition.**
4. Subsurface Infiltration System SIS-1 should have an inlet manifold to evenly distribute flow to each row of the system. Also, if an overflow is incorporated into the design as suggested above, there should be a manifold on the outlet end of the system. *Addressed – SIS-1 is now shown with an inlet manifold. Due to there not being an overflow connection to the municipal system, a manifold is not needed on the opposite end of the system.* **This system has been replaced with the open air basin.**
5. To allow for easier inspection and maintenance, we recommend that the inspection ports on the subsurface infiltration systems be a minimum of six inches diameter and that an inspection port be installed on each end chamber in each row of the systems (two on each row). *Addressed – the detail on Sheet 16 has been revised to specify six inch inspection ports and the inspection ports are shown on each end chamber in each row of the systems as recommended.*
6. The invert elevations of catch basins CB-3 and CB-4 are specified to be 145.2 on the plans and 145.0 in the Hydraflow Storm Sewer Inventory Report (pipe sizing calculations). *Addressed – the Hydraflow Storm Sewer Inventory Report has been updated to match the plans.*
7. The beehive grate detail included in the Typical Hydroworks HS4 Detail on Sheet 14 should be removed. *Addressed – the beehive grate detail has been removed from the detail.*

8. The Quarterly Stormwater Inspection Report attached to the Operation and Maintenance Plan (O&M) should include reporting information for the hydrodynamic separator.
Addressed – reporting information for the hydrodynamic separator is included in the O&M.
9. The O&M includes references to items typically associated with a commercial development site (dumpster enclosure, secondary containment for petroleum storage, designated snow storage areas, etc.). The O&M should be specific to this residential development. *Addressed – the O&M has been revised accordingly.*
10. The Definitive Plan, Sheet 10 of the plans set, is missing geometry for Lot 5 (drainage lot) and it does not differentiate between existing and proposed property lines. The plan should be updated to clearly show the lines of the proposed subdivision, including all easements. *Addressed – Sheet 10 has been revised accordingly (see mark-up plan attached to our November 14, 2022 email).* **Since property will be conveyed to the 265 Gardner Street property, we believe that the geometry for all of the 265 Gardner Street property lines should be shown on Sheet 10. The property that will be conveyed to 265 Gardner Street should be labeled “Parcel A” on Sheets 5 and 10.**
11. As noted in Mr. Silveira’s October 2, 2022 email to the Applicant, the method that frontage has been measured for each lot should be shown on the plans. *In the response, CDG explains how the frontage was calculated for each lot.* **We note that previous iterations of the plans had radii for the property lines at the street intersection but the radii have been removed from the revised plan. The Applicant should explain the reasoning for this change.**
12. The proposed erosion control barrier should be moved to the proposed limit of work line around the drainage lot. *Addressed – the proposed erosion control barrier has been revised accordingly.*
13. General Note 2 on Sheet 2 indicates that the area of the subdivision is 4.31 acres, yet Sheet 3, the Existing Conditions plan, indicates that the area of the subdivision is 4.05 acres. Clarification is needed. *Addressed – Note 2 on Sheet 2 now lists the area of the subdivision to be 4.05 acres.*
14. Grading & Drainage Note 11 on Sheet 2 refers to downspouts daylighting. As noted above, all downspouts should be connected to the subsurface infiltration systems. *Addressed – the note has been revised to specify that all downspouts are to be connected to the subsurface infiltration systems.*
15. Utility Notes 8 and 10 on Sheet 2 refer to sewer pipes and a common septic system, respectively, yet no sewer nor common septic system are proposed. *Addressed – the notes have been revised accordingly.*
16. Soil Erosion and Erosion Control Note 3 refers to construction “sequencing plans included herein,” yet there is no construction sequencing specified on the plans. *In the response, CDG states that “the construction of the proposed subdivision road is a single phase project, therefore, the reference to sequencing has been removed from the note.”*

17. To avoid confusion we recommend that references to “wattles” be changed to “silt socks” as wattles are typically associated with straw or hay, which the Conservation Commission does not allow. See Soil Erosion and Erosion Control Note 7. *Addressed – references to wattles have been changed as recommended.*

18. We note that there will be significant coordination required to maintain utility service to the dwelling at 265 Gardner Street. This is acknowledged by the Applicant’s team as this is noted on Sheet 4, the Demolition & Erosion Control Plan. We want to make sure the residents at 265 Gardner Street are aware of this as well. *Informational, no response required.*

Please give us a call should you have any question.



Very truly yours,

AMORY ENGINEERS, P.C.

By:

A handwritten signature in cursive script that reads "Patrick G. Brennan".

Patrick G. Brennan, P.E.

PGB