



February 11, 2022

Attn: Mary Ellen Schloss
Planning & Community Development Department
Town of Weymouth
75 Middle Street
Weymouth, MA 01776

RE: Massapoag Street – Definitive Subdivision
Response to Engineering Divisions Review Comments

Dear Ms. Schloss and Members of the Commission,

This letter and supporting plan and stormwater report are being submitted in response to the review comments provided by the Weymouth Engineering Division (DPWED) on January 20, 2022 regarding the proposed Massapoag Street - Definitive Subdivision plan revision review. The following revised and supporting documents are enclosed:

- Enclosure 1: Definitive Subdivision Plans with revision date of 2/11/22 (under separate cover)
- Enclosure 2: Stormwater Analysis & Report, revised 2/11/22 (Under separate cover)

Original comments provided by DPWED on 12/10/2021 are indicated below in standard text with CDG's 1/14/22 response in *italic text*. DPWED's follow up comments from 1/20/2022 are indicated below in plain text, with CDG's current responses in **bold text**.

COMMENTS

1. It is Engineering's opinion the proposed subdivision on land extends into Braintree and requires Braintree Planning Board approval. According to Norfolk County Registry and Land Court records the existing parcels proposed to be subdivided extend to the stone wall located in Braintree and do not terminate at the Weymouth/Braintree town line as shown on the plan. The parcel or strip of land (located in Braintree) created by the proposed subdivision needs to be defined as a new parcel or parcels of land. Alternatively, the new parcels of land can be combined with Lots 4 and 5. Land Court Plan 23646J, LC Plan 36658A and Registry Plan No 323 of 1992 are attached for reference.

CDG Response: CDG has reviewed the land ownership in coordination with the Engineering Division and concur with Engineering's findings regarding ownership. The attached plan set, including the Lotting Plan have been revised accordingly.

DPWED: No further comment. **CDG Response: Acknowledged.**

2. We believe the Land Court plan No 24797A, Cert No 91484 and N/F Tedeschi references shown on the plan for the abutting property located in Braintree are incorrect. Based on Engineering Division research it is our understanding LC Plan No 23646J and N/F Braintree Real Estate Management Company, LLC are the correct references for the abutting property located in Braintree. All plans show the parcel line along the stone wall (and other lines), not the Town line.

CDG Response: CDG has reviewed the land ownership in coordination with the Engineering Division and concur with Engineering's findings regarding ownership. The attached plan set, including the Lotting Plan have been revised accordingly.

DPWED: No further comment. **CDG Response: Acknowledged.**

3. The bituminous concrete binder roadway surface, cape cod berm and utilities (water, sewer and drainage) located within the right-of-way have been constructed. The plan should clearly differentiate between existing and proposed. Revise the plan to show as-built locations for edge of pavement, water (main, services, curb boxes, hydrant, gate valves, etc.), sewer (main, services, sleeves, manholes, etc.) and drainage (pipe, catch basins, manholes, etc.). As-built information should also include pipe materials and sizes for all existing utilities.

CDG Response: Acknowledged. The Definitive Subdivision Plans have been revised to differentiate between proposed work and those elements that are now constructed. The revised plans show as-built locations for the edge of pavement, and utilities/drainage already constructed. We note that dashed lines were utilized on the Utility Plan to denote those sections of mains and services that are constructed vs. those that are proposed.

DPWED: Water services shown as dashed lines are not labelled with pipe material and size. Refer to additional DPWED Comment 23 below for Water Division water service specifications/ Three of the sewer services shown as dashed lines are also not labeled.

CDG Response: Acknowledged. The plans have been revised to label the water main as 8" Class 52 CLDI and the sewer services as 6" SDR35 or 8" SDR35. Please refer to the revised Utility Plan, Sheet C-5.

4. The results of pressure testing for installed water and sewer mains have not been provided to the DPW. Water mains have been chlorinated and lab results provided to the DPW are dated July 2020. Due to the amount of time that has passed since the water mains were chlorinated the Water Division will require the mains to be chlorinated and tested again. The results of all sewer and water main testing needs to be provided to and approved by the DPW prior to allowing any service connections.

CDG Response: Acknowledged. J.F. Price, the site contractor, will coordinate with DPW accordingly.

DPWED: No further comment. **CDG Response: Acknowledged.**

5. The site is located within a Watershed Protection District and shall be considered a critical area as defined under the DEP Stormwater Management Standards.

CDG Response: Acknowledged. The Stormwater Report and stormwater checklist shall be revised to acknowledge this. The project has been designed to provide the required 1" water quality volume treatment for discharges to Critical Areas accordingly.

DPWED: No further comment. **CDG Response: Acknowledged.**

6. This project does not qualify as a partial redevelopment project as stated in the Stormwater Report. Modifications to a previously approved definitive subdivision plan are proposed. Full compliance with Standards 1 – 4, 6, 8 – 10 will be required.

CDG Response: Acknowledged. The checklist was revised to identify the project as new construction. The project has been designed to fully comply with the new construction requirements.

DPWED: The Stormwater Checklist has not been revised to identify the project as new construction. Mix of new and redevelopment is checked under Standard 7.

CDG Response: Acknowledged. The stormwater checklist, standard 7 has been revised and is included in the revised Stormwater Report.

7. Scale shown on Sheet C-4 is incorrect. The plan view is drawn at a scale of 1"=30'.

CDG Response: Acknowledged. The scale has been corrected on the revised site plans, dated 1/11/22, enclosed with this letter.

DPWED: No further comment. **CDG Response: Acknowledged.**

8. The CDS water quality unit (DMH DMH4) is located too far from the roadway and the grading in the easement is too steep to be accessed for maintenance.

CDG Response: The CDS water quality unit has been removed from the proposed stormwater management system. The proposed water quality treatment is now provided via the Isolator Rows in the two proposed underground infiltration systems. Drainage Easements for maintenance access have been provided to both underground infiltration systems in the revise plans.

DPWED: ADS Stormtech Isolator Row design specifications include a manhole with a sump located at the ed of the row to provide access for maintenance. A manhole is not shown on

the plan adjacent to infiltration system UG2. The manhole must be accessible not only for removing sediment from the isolator by jetting, but also to vacuum sediment from the manhole sump. Manholes installed adjacent to UG1 and UG2 will not be accessible by vac truck due to steep (>10%) slopes. Water quality units located close to the street are recommended. A drop manhole is recommended adjacent to UG2 to reduce pipe slope and inflow velocities.

CDG Response: The ADS Stormtech Isolator Row is no longer proposed. CDS2015 water quality units are proposed near the roadway for convenient maintenance accessibility as requested. The CDS unit for UG-1 is proposed to be a Water Quality Catch Basin configuration. The CDS unit for UG-2 is proposed to be a manhole configuration.

9. Infiltration Basin 1 and 2 will not be accessible for maintenance due to the proposed retaining walls.

CDG Response: In the revised plans eliminate the two proposed open basins and now include two proposed subsurface infiltration systems with isolator rows. Access is provided to both through the lots with defined Drainage Easements for maintenance access.

DPWED: No further comment. **CDG Response: Acknowledged.**

10. An easement is required to access Infiltration Basin 2 from the roadway.

CDG Response: The revised design provides for improved access to both underground infiltration systems compared to the prior open basin designs. Drainage Easements are provided for defined maintenance access to both.

DPWED: No further comment. **CDG Response: Acknowledged.**

11. The excavation required to install DMH 1 and the 12" RCP will encroach onto private property located at 51 Massapoag. Obtain a temporary construction easement from 51 Massapoag or revise the location of DMH 1.

CDG Response: The location of DMH1 has been shifted to address this and the drainage pipe conveying runoff to the Infiltration System at the rear of Lot 1 has been shifted away from the abutting property. This also provides for a 20' wide drainage easement to run entirely within Lot 1. No excavation or encroachment onto the abutting property will be needed with the revised design.

DPWED: No further comment. **CDG Response: Acknowledged.**

12. Revise the plans to show drainage easements for the proposed grass swales located on Lots 2 – 6. The swales are essential to the functionality of the proposed stormwater management system and must be maintained, unaltered and unobstructed in perpetuity.

CDG Response: Acknowledged. The plans have been revised to show drainage easements along the proposed drainage swales. We note the swales were revised to accommodate the revised grading which accommodates the new underground infiltration system design rather than the prior open detention system design.

DPWED: The proposed grass swales are shown directly adjacent to proposed building foundations at several locations. A minimum setback of 10 feet between swale and foundation is recommended to prevent water damage to foundations. Provide additional information to demonstrate the proposed swales have the capacity to convey design flows without overtopping or eroding. If required, provide additional erosion protection (rip-rap, check dams, turf reinforcement matting, etc.). Revise the grassed swale detail to specify a suitable erosion control product to protect the swale surfaces from erosion while seed is being established.

CDG response: The proposed grass swales have been moved to at least 10ft from building foundations. Given the limited depth behind the houses on Lots 5 and 6, the design has been revised to incorporate stone infiltration trenches off of each of the four corners of the houses. Each trench is 20' long by 3' wide by 2' deep. These trenches have been designed to fully capture and infiltrate up through the 25-year storm event. However, for design purposes, the overall watershed analysis ignores the trenches and assumes all the runoff makes it to the main underground infiltration system UG-2.

The sizing of the trenches was determined utilizing the following assumptions and calculations:

- Total Roof Area = 2,100 sf +/-
- Roof Area per downspout = 525 sf +/-
- 25-Year Runoff Volume per downspout roof area = $525 \text{ sf} \times 6.27 \text{ in/hr} / 12 \text{ in/ft} = 274.3 \text{ CF}$
- Stone infiltration Trench dimensions of 20'L x 3'W x 2' D
- Bottom Trench Area Available for Infiltration = $3'W \times 20'L = 60 \text{ SF}$
- Trench Infiltration Capacity over 24-hr storm period = $60\text{sf} \times 24\text{hr} \times 2.41/\text{hr} / 12 \text{ in/ft} = 289.2 \text{ CF}$
- 289.2 CF capacity is greater than 274.3CF Generated in 25-year storm
- Therefore, infiltration trenches of 20'L x 3'W x 2'D Captures and Infiltrates more than the total 25-year storm capacity

A spreadsheet is enclosed in the revised Stormwater Report which calculates the capacity of the swales. There is a flow of 2.5CFS (the 100-year storm) draining to CB-A3. Using the Mannings equation, the flow from the 100-YR storm, and the proposed dimensions and

slope of the swale, the stormwater will rise to a depth of 0.5ft. See Section 4.6 of the revised Stormwater Report.

Jute netting is proposed at the swale surface to protect from erosion and while seed is being established. This has been added to the grass swale detail on Sheet C-8.1.

13. Engineering recommends the subdivision remain private and a homeowner's association be responsible for maintenance of the stormwater management system including catch basin, water quality units, infiltration basins and swales.

CDG Response: The Applicant concurs. The Applicant intends to create a Homeowners Association (HOA) that will be responsible will be for all stormwater management maintenance.

DPWED: No further comment. **CDG Response: Acknowledged.**

14. The copy of the HydroCAD analysis provided is illegible. A legible copy of the HydroCAD report is requested.

CDG Response: New HydroCAD calculations have been included in the revised Stormwater Report, enclosed with this letter and should be fully legible. If there is a compatibility issue with the pdfs provided, please let us know and we'll deliver separate files via a DropBox or OneDrive link accordingly.

DPWED: No further comment. **CDG Response: Acknowledged.**

15. Provide complete and signed Form 11 soil evaluation reports. Not all test pits logs provided state if water or no water was observed. Observations (mottles, weeping, standing water) related to determination of seasonal high groundwater should be included.

CDG Response: Additional test pits were performed in the areas of the proposed infiltration chambers. The test pit logs are enclosed in the revised stormwater report. Overall, the soils encountered at both proposed underground infiltration systems were favorable.

DPWED: No further comment. **CDG Response: Acknowledged.**

16. Proposed grading shown on the eastern side of Lot 1 will direct runoff onto property located at 51 Massapoag. Revise grading as needed to direct surface runoff from Lot 1 away from 51 Massapoag.

CDG Response: The grading has been revised on the eastern side of lot 1 to direct surface runoff away from Lot 1, and towards the north of the site to CB-A2, where the runoff will enter the underground infiltration chambers. The pool, patio and house were also shifted on

Lot 1 to accommodate a 20' wide drainage easement on Lot 1 for the piped conveyance from the catch basin in Massapoag Street to the underground infiltration system at the rear of Lot 1.

DPWED: No further comment. **CDG Response: Acknowledged.**

17. Portions of the Hydrant and Basin Emergency Spillway details shown on Sheet C-8.2 have been cut off. Revise the Spillway detail to specify actual elevations (Not Elev = A and Elev = B).

CDG Response: The basin emergency spillway detail has been removed from the plans because infiltration basins are no longer proposed. Underground infiltration chambers are proposed and these details have been added to Sheet C-8.2.

DPWED: No further comment. **CDG Response: Acknowledged.**

18. Provide a detail for the proposed infiltration basins. Any fill or unsuitable material located below the basin bottom shall be replaced with clean free draining granular fill to be specified by the engineer.

CDG Response: Infiltration basins are no longer proposed for stormwater management. Rather, new details for the ADS Stormtech Chambers systems are provided. The detail addresses excavation beneath the system to reach the parent material and any fill required must be free draining coarse sand/gravel. We also noted no vibratory compaction under the systems will be allowed.

DPWED: No further comment. **CDG Response: Acknowledged.**

19. DEP Stormwater Standards specify a minimum of 50 feet between infiltration basins and any slope greater than 15%. Infiltration Basins 1 is located approximately 35 feet from a 3:1 slope and Basin 2 is approximately 25 feet from a 15:1 slope. Revise the grading a needed to comply with DEP Standards.

CDG Response: Infiltration basins are no longer proposed and underground infiltration systems are now proposed instead.

DPWED: No further comment. **CDG Response: Acknowledged.**

20. Provide a comparison of existing and proposed runoff volumes for Points of Analysis 1 - 3.

CDG Response: Please refer to page 4 of the Stormwater Management Report Narrative. Separate tables are now provided for peak rates of runoff and discharge volumes

DPWED: No further comment. **CDG Response: Acknowledged.**

21. It is our understanding the applicant must file for a modification to the NPDES Construction General Permit.

CDG Response: We concur. Applicant will handle through their Site Contractor accordingly.

DPWED: No further comment. **CDG Response: Acknowledged.**

22. An updated Stormwater Checklist should be provided. The plan reference under the Illicit Discharge Compliance Statement is incorrect.

CDG Response: A new Stormwater checklist has been filled out, stamped and signed and is enclosed with the revised Stormwater Management Report. A revised illicit discharge statement is also enclosed with the revised Stormwater Management Report.

DPWED: No further comment. **CDG Response: Acknowledged.**

23. Sheet C-5 General notes:

- Note 6- Town of Plympton referenced, revise to Town of Weymouth and add approval of conservation commission required

CDG Response: The Town reference has been revised.

- Note 10- Town of Walpole referenced, revise to Town of Weymouth.

CDG Response: The Town reference has been revised.

- Note 12- Revise note to state sizes of domestic water services to be determined based on the Town of Weymouth Water Division specifications. Type K copper pipe is required from the main to the curb stop. For total service length up to 75 feet a 1-inch diameter pipe is required, distances between 75 feet and 150 feet a 1 ½ inch diameter pipe is required and for distances over 150 feet a 2-inch diameter pipe is required.

CDG Response: Note 12 has been revised to refer to the Town of Weymouth Water Division.

- Delete note 13.

CDG Response: Note 13 has been deleted.

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24. The plans specify a 5-inch orifice at the outlet control structure (OCS 2) for infiltration system UG 2. A 4.0-inch orifice was used in the HydroCAD calculations. Revise the plan to match the calculations.

CDG Response: The plans have been revised to specify a 4.0-inch orifice at outlet control structure 2 (OCS 2).

25. Specify top of weir elevations and the inlet pipe inverts and sizes for the outlet control structures OCS 1 and OCS 2.

CDG Response: Top of weir elevations and inlet pipe inverts and sizes for the outlet control structures OCS 1 and OCS 2 have been added to the respective details.

Should you have any questions or require any further information, please do not hesitate to contact Gabe Crocker, P.E. at gabecrocker@crockerdesigngroup.com or 781-919-0808. We look forward to presenting to the Board at the upcoming hearing on Tuesday January 25, 2021.

Sincerely,
Crocker Design Group LLC



Gabe Crocker P.E.
President