



September 24, 2020

Avon Planning Board
65 East Main Street
Avon, MA 02322

Re: Response to Peer Review Comments
1 Kiddie Drive
Avon, MA

Cc: Town of Avon, Conservation Commission
Gregory Driscoll PE, Jacobs Driscoll Engineering, Inc
Frank Marinelli
Joey Karas

Dear Members of the Board:

On behalf of our client, Karas & Karas Glass, we are pleased to submit the following documents:

- Four (4) copies of this response to peer review comments letter
- Four (4) copies of the Site Development Plans, Sheets 1-8 prepared by Kelly Engineering Group, Inc. dated September 24, 2020
- One (1) copy of the Stormwater Management Report, by Kelly Engineering Group, Inc., Dated September 24, 2020
- Four (4) copies of the Plan to Accompany SWPPP, Sheets 1-2 prepared by Kelly Engineering Group, Inc., dated September 24, 2020
- Four (4) copies of the lighting specification from Boston Light Source

*All of the above referenced documents have also been electronically sent to Jacobs Driscoll Engineering, Inc.

The purpose of this letter is to address Departmental comments from Gregory Driscoll, PE of Jacobs Driscoll Engineering, Inc., dated September 15, 2020. The comments are in Italics and the response is in regular text.

Zoning By-Law Review

1. *By-law section 255-5.4.E(1): Please show the benchmark on the plan.*

Response: Two benchmarks have been provided on Sheet 2

2. *By-law section 255-5.4.E(3)(c)[6] Please provide soil borings data and show the test pits on the Grading Plan (Sheet 4) per this section and include in the stormwater/ drainage calculation.*

Response: Record Test pits have been provided. Locations have been provided on Sheet 4 and applicable logs provided within the stormwater report. Test pits A,B, & C are record test pits from the 2001 record site plans associated with the sewage disposal system on site. Test pits 1-5 were recently performed in August for project geotechnical, by Kevin M. Martin PE.

Test pits A,B & C show a sandy loam Group B parent material consistent with the NRCS soil survey of abutting areas as a majority of the site is classified as urban land.

Test Pits 1-5 show a depth of fill over glacial soil, consisting of fine-medium sand, some gravel, trace silt and little cobbles/boulders. Where the group D from the NRCS soil maps overlaps the disturbed areas

Group B has been used for the drainage calculations based on the test pits. The currently undisturbed wooded areas have been modeled as Group D.

Test Pits A, B, & C obtained from record plans show depths to ESHGW ranging from 5.5' to 7' below grade. Additionally test pits 1-5 by the Geotechnical Engineer found no groundwater are directly near the proposed recharge system. The closest pit (TP1) encountered fill from existing grade to elevation 209. This elevation is 5.5' below the bottom of the recharge system.

Additionally the wetland elevation is approximately elevation 207' adjacent to the proposed recharge system. The bottom of stone for the system is 214.5. 2' minimum separation to groundwater is not expected to be an issue and will be confirmed during construction.

3. *By-law section 255-5.4.E(3)(c)[7] Please provide this information either on the plans or in the Stormwater Report.*

Response: This information has been provided in this letter and noted on Sheet 3. Per Karas Glass the following will be stored on the site: Propane for fork lifts, cerium oxide and glass cleaner. All of these materials are stored per all applicable local and state regulations.

4. *By-law section 255-5.4.E(4)(b) Please provide the recharge calculations for the fifty-year storm in the Stormwater Report.*

Response: Per this section of the by law an analysis is required for the creation of any impervious surface greater than 15% of the lot or 2,500 square feet whichever is greater. The impervious threshold is an existing condition on the site and the proposed project will reduce impervious area on site by approximately 5,700 s.f. This will enhance groundwater recharge on the site. In addition a subsurface recharge system is proposed to provide 1" of dedicated recharge volume over the proposed roof area further enhancing recharge on site.

5. *By-law section 255-12.2.D(1) Please show the lighting information on Sheet 3.*

Response: Existing Lighting information is shown on Sheet 2 & 3. The proposed existing flood light style lighting mounted to the building will be replaced by downward facing LED lighting. The specification for the fixture is attached. 4 building mounted lights will be replaced in the area of the main parking lot and a new light is proposed in the loading area. The proposed lighting will provide for safe operation of the facility without creating offsite glare. All other existing nearby lighting is offsite on Kiddie Drive and Bodwell street and will remain.

It is noted there are no residential uses nearby.

6. *By-law section 255-12.2(3) Site Plan Specifications:*

(b) Please include the following on the existing conditions plan:

- *General soil types.*

Response: NRCS soil lines and labels have been added to Sheet 2.

(c) This plan was not included in the plan set received. A plan with either a GIS orthophoto or other aerial photo with the CAD line work overlaid should meet this requirement. The required plan could be included on the cover sheet if there is room.

Response: A 100 scale locus plan has been added to the Cover Sheet, showing all structures, uses, & parking within 300' of the property.

[1] [1] *Please provide the location of light poles showing the direction of outside lighting.*

Response: See response to 5. The lumen symbol depicts the direction.

7. *By-law section 255-12.2(4) Site Plan Review*

(c) Please provide the calculations for the stormwater recharge system.

Response: A reduction of impervious area of 5,700 s.f. will reduce peak runoff rates from the site at all design storms. Additionally the proposed subsurface recharge system will further reduce the peak runoff rates. This is confirmed within the attached stormwater report.

(c) Sheet 5: It appears that an existing storm drain is being connected to the new storm drain. Please confirm the source of stormwater in the existing system (only roof or combined with surface drainage), the slope of the existing pipe, the anticipated flow in the existing pipe, the size / slope of the proposed pipe, the anticipated flow in the new pipe.

Response: This line was shown to be abandoned per the record site plans from 2001. Notes are on the plan to verify that this line has been abandoned. Only 21,600 s.f. of impervious area is proposed to be received by the existing 12" PVC pipe which is capable of handling the generated flow based on the rational method and manning's for 25 storm year pipe sizing. 2.94 cfs is generated through system within for the 25 year storm. Mannings has been run assuming a pipe slope of 1% in the Stormwater Report.

(h) The only landscaping noted is "Loam & Seed", please expand to include a combination of trees, shrubs and ground covers.

Response: Additional trees and shrubs have been provided. Due to the location of the sewage disposal system underneath portions of the proposed landscaped islands, landscaping opportunities are limited.

Extensive existing landscaping outside of the limit of work will remain and be pruned as necessary and maintained. Over time and as necessary the applicant intends to invest in the property and continue to make landscaping improvements.

Plan Review Comments

8. *Sheet 3: Add dewatering and concrete washout areas to the plan and details on the detail sheet.*

Response: See Plan to Accompany SWPPP included with this response. The SWPPP document will be prepared once a contractor is chosen and will be provided to the Town for review. Given test pit information and site position relative to the wetlands, dewatering conditions are not anticipated.

9. *Sheet 3: Add soil stockpile locations on the plan with erosion control protection.*

Response: See response to 8

10. *Sheet 5: Add the groundwater elevation on the recharge system call-out.*

Response: Test pit data shows well drained material in test pit 1 until elevation 209. This exceeds 2' minimum separation to groundwater as the bottom of stone elevation is 214.5. ESHGW has been assigned at elevation 209. Conditions will be confirmed during construction.

Additionally the wetland elevation adjacent is 7' below the bottom of the system.

11. *Sheet 5: Add the piping from the manhole to the recharge system (expand the detail on Sheet 6), system dimensions, distance from the building and wetlands.*

Response: 3' of piping has been provided on Sheet 5. The system is located greater than 50' from the resource areas and is 10' from the building. Dimensions have been provided from the building.

12. *Sheet 5: Show & label the inspection ports on the recharge system*

Response: Inspection ports have been added.

13. *Sheet 5: Please provide a delineation of the drainage area to the recharge facility including the locations of existing & proposed roof downspouts. on the watershed plans are hard to discern.*

Response: See proposed drainage exhibit within stormwater report for existing and proposed watershed areas within the area of analysis. Proposed Downspout locations have also been shown on Sheet 5.

14. *Sheet 5: Call the 1,000 gallon tight tank out as an Industrial Wastewater Holding Tank (IWHT) on this plan. Show the location of the required IWHT sign on the building.*

Response: The label has been revised and sign has been provided on the building.

15. *Sheet 6: What is the inside diameter of the outlet control structure with the outlet weir inside a drain manhole? Is it large enough to accommodate the pipes and 6" wide weir?*

Response: Refer to note on detail. A 4' diameter manhole can accommodate these features. A note has been added for the precast company to confirm final clock angle schedules to accommodate 4' long 6" wide weir.

16. *Sheet 7: Revise the IWHT detail. Sprayed on epoxy is not acceptable for secondary containment. A second tank within an outer tank is required. The space between the tanks shall have an alarm sensor for detecting a breach of the inner tank. Add notes to reference the IWHT regulations 314 CMR 18.00. Note covers to be water tight. The engineer shall provide buoyancy calculations based on the groundwater elevations found on the site during the soil testing. Add a note for the audio and light alarm system to be located in a staffed location in the building and to coordinate the location with the Owner. Add a note regarding the certification requirements per 314 CMR 18.00 after the tank is installed. Provide flow calculations to demonstrate that 500% of the daily flow is contained within the inner containment tank per 314 CMR 18.08(1)(a)2.*

Response: The detail has been revised with the applicable notes.

Buoyancy calculations are typically prepared by the vendor with the shop drawing. A note has been added to be provided by the vendor. There are 2 existing tanks nearby with no known issues with groundwater.

The note has been added for the audio and light alarm system to be located in a staffed location in the building and to coordinate the location with the Owner.

A note requiring the certification has been provided.

There is no industrial wastewater flow rate anticipated to reach the trench drain. It is for compliance with the plumbing code and to collect minimal water droppings from vehicles and incidental floor cleaning .

17. *Sheet 7: Please update the details for the Recharge System to be specific to this application. Add the various design elevations and the groundwater elevation. Include the specific requirements for the removal of soil beneath the system.*

Response: The requested information is provided on Sheet 8.

Stormwater Management Report

18. *Soil testing, by an approved MA soil evaluator, is required for the design of any drainage system. The estimated seasonal high groundwater elevation must be established in order to design an infiltration system with the proper separation to the ESHGW. Furthermore, if the soils mapping does not establish a soil texture or hydraulic soils group, this must be established through soil testing.*

Response: See response to 2.

19. *Page 2 & Page 3: The information provided on the recharge system only indicates the available storage volume of the system and not the performance of the system.*

Response: The recharge system is sized to store a dedicated recharge volume of approximately 1” over the proposed roof area. The project results in a reduction of impervious area of 5,700 s.f. to the receiving wetland bounding the site, and will remove 24,600 s.f. of paved surfaces (converting some to building). This directly correlates with a reduction of peak runoff rates, enhanced recharge, and enhanced water quality which is consistent with industry standards for redevelopment projects similar in nature.

The stormwater report has been revised to include the modeling.

20. *Please update and address missing information on the MA DEP Checklist:*

- a) *Standard 3: Recharge (pages 4 & 5) – Provide the soil analysis and check all the applicable boxes.*

Response: Test pits and NRCS soil survey have been provided.

There is no required recharge volume as this is a redevelopment project and is reducing impervious area. Infiltration is improved over existing conditions by addition of pervious area and additionally the subsurface recharge system provided.

- b) *Standard 4: Water Quality - Need to complete this section and check all the applicable boxes.*

Response: Water Quality is being enhanced on site by the removal of 24,600 s.f. of pavement. The required water quality volume is reduced through the use of LID site design credits has been checked additionally. TSS is being reduced by about 24.6% on site through a reduction of paved area from 100,070 s.f. to 75,452 s.f..

21. *Provide the supporting calculations for the anticipated runoff to the system (2-yr, 10-yr, 25-yr, 50-yr and 100-yr events), routing through the system and the diversion weir, drawdown calculation.*

Response: Peak runoff summary is included within the stormwater report.

22. *While preparing the stormwater calculations, use the latest Northeast Regional Climate Center (NRCC) rainfall data for the Town of Avon, 2yr: 3.22” – 10yr: 4.86” – 25yr: 6.15” – 100yr: 8.80”.*

Response: NRCC values for the site have been applied. The precipitation values are included in the stormwater report.

23. *Provide MassGIS mapping figures for: USGS topo map, wetlands, Natural Heritage areas (estimated and priority habitats, PVP’s and CVP’s), surface water supply protection areas. Also a FIRMette map from FEMA and a soils map from NRCS. Please provide a color coded Web Soil Survey map of the project area by Hydrologic Soil Group. On the WSS site after selecting the Area of Interest, go to the Soil Data Explorer tab, then the Soil Properties and Qualities tab, then in the left side menu select Soil Qualities and Features, then select soil Hydrologic Soil Group, and View Rating. This will produce a color coded map per Hydrologic Soil Group which is easy for a review engineer to check.*

Response: The requested figures have been provided in the Stormwater Report.

We look forward to presenting this project to you at your next scheduled meeting. If you have any questions or desire any additional information regarding this matter, please do not hesitate to call our office.

Sincerely,

KELLY ENGINEERING GROUP, INC.

A handwritten signature in blue ink, appearing to read "Garrett Horsfall". The signature is fluid and cursive, with the first name "Garrett" and last name "Horsfall" clearly distinguishable.

Garrett Horsfall, Design Engineer