



100 GROVE ST. | WORCESTER, MA 01605

March 8, 2021

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**Subject: 130 & 134 Worcester Street
Special Permit and Site Plan Review**

Dear Chris:

We received the following documents on March 1, 2021:

- Correspondence from WDA Design Group to Town of Grafton Municipal Center dated February 26, 2021, re: 130 & 134 Worcester Street Special Permit and Site Plan Review.
- Plans entitled Special Permit Submission for Discern'd Cannabis Purveyors, Inc., 130 & 134 Worcester Street dated January 8, 2021 and last revised February 26, 2021, prepared by WDA Design Group for Discern'd Cannabis Purveyors, Inc. (11 sheets)
- Bound document entitled Stormwater Management Report for Application for Stormwater Permit, 130 & 134 Worcester Street Grafton, MA 01536 dated February 2021, prepared by WDA Design Group for Mr. Fawaz El Khoury.

Graves Engineering, Inc. (GEI) has been requested to review and comment on the plans' and supporting documents' conformance with applicable "Grafton Zoning By-Law" amended through October 21, 2019; Massachusetts Department of Environmental Protection (MassDEP) Stormwater Handbook and standard engineering practices.

This letter is a follow-up to our previous review letters dated February 8, 2021 and February 22, 2021. For clarity, comments from our previous letters are *italicized* and our latest comments to the design engineer's responses are depicted in **bold**. For brevity, comments previously addressed by the design engineer and acknowledged by GEI have been omitted. Previous comment numbering has been maintained.

Our comments follow:

Zoning By-Law

10. *GEI will comment on the extent of ground water recharge once sufficient stormwater management documentation is submitted. (§7.5.D)*

February 22, 2021:

Based upon runoff volume information gleaned from in the hydrology computations, GEI has no issues relative to the proposed development replicating pre-development ground water recharge conditions. However, stormwater quality at the discharge point into each of the two infiltration systems needs to be further addressed. Sheet C3.00 appears to show an isolator

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row (by hatching) for the subsurface infiltration system. If so, then a construction detail needs to be provided for the isolator row. Also, to comply with §V.B.5.h(x) of the Town of Grafton's Wetlands Regulations, 80% total suspended solids (TSS) removal needs to be achieved before stormwater is discharged into the infiltrating rows of the subsurface system or to the open infiltration basin. As currently proposed, stormwater discharged to the infiltrating rows of the subsurface system will have received 44% TSS removal (via catch basins and the isolator row, if proposed) and stormwater discharged to the open infiltration basin will have received 25% TSS removal (via the catch basin).

Acknowledged. The engineer has confirmed that an isolator row is present in the subsurface infiltration basin and a construction detail has been added, and a proprietary stormwater treatment unit was added to each treatment train to achieve 80% TSS removal prior to stormwater being discharge to the infiltration BMP's.

Hydrology & MassDEP Stormwater Management

13. *The plans were lacking information pertaining to the outlet control structures of the three stormwater impoundments (e.g. orifice diameters, orifice elevations, weir elevations); GEI could not confirm the modeling of the outlet control structures in the hydrology computations. This information needs to be provided on the plans.*

February 22, 2021:

The construction details for the outlet control structure on Sheet C3.00 and the underground infiltration system on Sheet C5.01 need to be coordinated with the hydrology model. On Sheet C3.00, the outlet control structure drawing shows one orifice and the data table could be misinterpreted as proposing a diameter between two inches and five inches; the hydrology computations modeled two five-inch orifices. As for the underground infiltration system, the hydrology computations modeled two six-inch orifices that are not shown on Sheet C3.00 nor the construction detail on Sheet C5.01.

Acknowledged. The construction detail for the outlet control structure on Sheet C3.00 has been revised to be consistent with the hydrology computations, and a table of elevation and outlet control structure information for the subsurface infiltration system (INF-01) was added to Sheet C5.03.

15. *The design engineer needs to submit documentation to demonstrate compliance with the MassDEP Stormwater Management Standards.*

February 22, 2021:

Documentation was submitted; specific comments are presented herein.

GEI has no issues relative to compliance with the MassDEP Stormwater Standards.

19. *If the intent is for water to infiltrate into the ground from all three stormwater management structures (two basins and one underground system) then the word "Detention" needs to be replaced with "Infiltration" within their titles for consistency with the MassDEP Stormwater Handbook.*

February 22, 2021:

The open stormwater basin was designed as and will function as an infiltration basin and therefore needs to be identified as an infiltration basin instead of a detention basin.

Acknowledged. The Stormwater Management Report has been revised so that the open stormwater basin is properly identified as an infiltration basin instead of a detention basin.

General Engineering Comments

23. *There needs to be more information added to C3.00 regarding the handicap accessible parking to ensure compliance with Massachusetts Architectural Access Board (e.g. spot elevations). The slope within handicap parking and loading spaces must not be greater than 2% in any direction. Based on the current spot elevations provided, the slope within the staff handicap parking space and loading area is 4.5% between spot elevations 344.69 and 344.15.*

February 22, 2021:

The plans were revised, and additional spot elevations were provided. However, the access aisle at the southeastern side of the building will have a slope of 2.5% between the 349.28 and 349.00 spot elevations.

Acknowledged. The grading at the access aisle has been revised so that the slopes comply with MAAB requirements.

26. *On Sheet C3.00, all proposed drainage structures including manholes, catch basins, flared ends, and area drains need to be labeled and the rim and pipe invert elevations need to be provided for each structure. All proposed drainage pipes also need to be labeled, and the diameter, slope and material of each pipe needs to be provided.*

February 22, 2021:

The plans were revised to include the necessary information. The Structure Table on Sheet C3.00 shows the pipe invert elevation for FES-02 at the same elevation as the invert at the outlet control structure; there should be some pitch on the pipe instead.

Acknowledged. DMH-03 was added and the elevations were revised.

Additional Comments, February 22, 2021

39. *In the Stormwater Checklist under Standard 3: Recharge, there is a box checked stating the site is comprised solely of C and D soils and/or bedrock at the land surface. According to the USGS, soil groupings are A and B soils; the checklist needs to be revised.*

Acknowledged. The Stormwater Checklist has been revised so that the box stating that "Recharge BMPs have been sized to infiltrate the Required Recharge Volume" has been checked instead.

40. *In the Total Suspended Solids (TSS) Removal Calculations Worksheet for "Outlet FES-02" the Grass Channel and Extended Dry Detention Basin are not appropriate for this treatment train – a grass channel is not proposed, and the basin will function as an infiltration basin. Also, the 10% TSS removal credit for the street sweep requires a sweeping schedule that is more aggressive than the annual sweeping listed in the long term operation and maintenance plan; the street sweeping credit should be deleted unless the sweeping schedule is revised to follow Table SS1 in Volume 2, Chapter 1, Page 9 of the MassDEP Stormwater Handbook.*

Acknowledged. The TSS Removal Calculations Worksheet was revised and is in order.

41. *On Sheet C3.00, in the "Pipe Table" Pipe – (6) is shown to be a concrete pipe whereas the other pipes are shown to be high-density polyethylene (HDPE). The engineer should clarify if "concrete pipe" is a typographical error.*

Acknowledged. The plastic pipe was revised from "HDPE" (high-density polyethylene) to "CPE" (corrugated polyethylene), which are two references to the same pipe

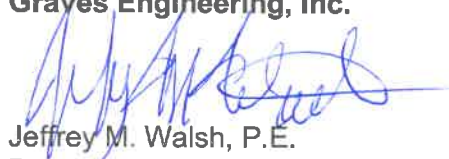
material, and reinforced concrete pipe is proposed at two locations. GEI has no issue with the design engineer's intent for pipe materials.

Additional Comments, March 8, 2021

42. GEI superimposed a vehicle turning template representing the Grafton Tower over Sheet C2.00. GEI understands the dimensions of the Grafton Tower to be: 18.16-foot wheelbase from the front axle to the middle of the dual rear axles, 7.08-foot front overhang (from center of the front axle), 17.20-foot rear overhang (from middle of the dual rear axles), overall length is 42.45 feet, and the vehicle is capable of a 45° cramp angle. We found the thirty-foot curb radii at both entrances is sufficient for the vehicle to enter the site without "swinging" into opposing Worcester Street traffic. GEI also found that the vehicle could gain access to the rear of the building from either entrance without encroaching on the passenger vehicle parking spaces.

We trust this letter addresses your review requirements. Feel free to contact this office if you have any questions or comments.

Very truly yours,
Graves Engineering, Inc.



Jeffrey M. Walsh, P.E.
Principal

cc: Carolyn Burke, RLA; WDA Design Group
Stephen Charest; Grafton Fire Department
Bruce Spinney; Discern'd Cannabis