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October 4, 2019

Dudley Planning Board
71 West Main Street
Dudley, MA 01571

Subject: **263 West Main Street**
Major Site Plan Review

To the Board:

Please find this response letter to Graves Engineering Inc. review dated April 29, 2020. The original comment is shown for clarity and our response comment is in italics.

Zoning Bylaw

1. GEI understands that the proposed use of the site is being addressed by the Town's zoning enforcement officer and the Planning Board. (§2.03.02) *No further comment*

2. The plans need to include the names and street numbers of the abutting properties. (§5.04.04.A.2) *Abutting property information now shown.*

3. GEI has no issue with the plans' use of one-foot topographic contours. (§5.04.04.A.5) *No further comment*

4. The plans need to show the location(s) of driveway(s) within two hundred feet of the site. (§5.04.04.A.7) *Driveways within two hundred feet have been shown on the plan.*

5. The plans need to include the approximate location of buildings within two hundred feet of the site. (§5.04.04.A.9) *The approximate location of the buildings within two hundred feet have been shown.*

6. GEI respectfully defers to the Planning Board whether traffic information needs to be submitted. GEI has no knowledge of the expected number of vehicle trips per day or per hour. (§5.04.04.A.12) *No further comment*

7. GEI respectfully defers to the Fire Department whether a fire hydrant and associated water line are required, and if so, the hydrant's location. Currently, no utilities are proposed. (§5.04.04.A.15) *No further comment*

8. The location(s) of proposed signs, if any, need to be shown on the plans. GEI understands that the Planning Board or Building Inspector will review any business sign applications. (§5.04.04.A.18) *The existing business sign shown on the northwest corner of the site is to remain as is.*

9. The Planning Board may wish to inquire of the applicant whether the site development will include a solid waste storage container (aka dumpster). If so, the container and accompanying screening need to be shown on the plans. (§5.04.04.A.19) *There are currently 2 dumpsters located within the rear of the existing building and are proposed to remain. These containers are not visible from the street.*

Hydrology and MassDEP Stormwater Management

10. GEI reviewed the hydrology computations and found them to be in order except as noted in the following comment. *No further comment*

11. In the hydrology model for Pond 1P there are two devices that are inconsistent with the plans. Device #4 models an eighteen-inch orifice at elevation 585-feet whereas the plans show a twelve-inch orifice. Likewise, Device #6 models a twelve-inch culvert at elevation 585-feet whereas the plans show an eighteen-inch outlet. The information needs to be consistent. *These details have been revised on the plans.*

12. Compliance with MassDEP Stormwater Handbook and Standards is reasonable except as noted in the three following comments *No further comment*

13. Soil testing data needs to be provided to demonstrate that the required groundwater offset will be satisfied for the bioretention area. *Soil testing will be done*

14. The Stormwater Checklist needs to be revised. Under Standard 5, the use of an exterior fleet storage area is considered a Land Use with Higher Potential Pollutant Loads (LUHPPLs). *The stormwater checklist has been updated.*

15. There needs to be at least one-foot of freeboard as measured from the 100-year peak water surface elevations or the spillways (whichever is higher) to the tops of the berms at the detention basin and the bioretention area. As shown on the plans, the detention basin will only have one-half foot of freeboard and a note on Sheet S-1 calls for a bioretention spillway at elevation 582.80, which appears to be a typographic error. From the hydrology computations, there will be even less freeboard as measured from the peak 100-year water surfaces. *There is one foot of freeboard shown in the detention basin, the peak elevation during the 100-yr storm is 587.65 and the berm elevation is 588.65. There is one foot of freeboard within the bioretention area, the peak elevation during the 100-yr storm is 582.00 and the top of the berm is 583.00.*

16. To protect the detention basin's dewatering pipe from clogging with sediment and to make sediment removal easier, the design engineer should consider providing sediment forebays (could be in the form of stone berms) near the riprap swales' discharge points to the detention basin. *Crushed stone sediment forebays have been added.*

17. Pipe sizing (e.g. Rational Method calculations) need to be submitted to demonstrate that the proposed drainage pipes will have adequate hydraulic capacity. *Pipe sizing calculations have been provided within the stormwater drainage analysis report.*

General Engineering Comments

18. A note on Sheet S-1 states that the bottom of the bioretention area is proposed to be elevation 581.00 but the lowest proposed topographic contour is elevation 582. Spot elevations or a 581 contour need to be added to show the extent of grading at elevation 581. *A 581 contour has been added.*

19. For the benefit of the contractor, the plans (perhaps Sheet S-1) need to show the limits of riprap at the swales, especially near the detention basin. The riprap should be brought down the 3H:1V slope and should extend far enough onto the detention basin floor to protect the floor from scouring. *Rip rap hatching has been shown within the swales for clarity.*

20. A 1H:1V slope is proposed at the southwest corner of the site. The slope will be at the existing fence line and could compromise the integrity of the fence by removing soil that is needed for fence stability. Furthermore, the proposed 600-foot topographic contour was drawn in part between the fence and the property line, signifying excavation under the fence. The proposed grading in this area should be reconsidered to protect the fence. *Rip rap hatching has been shown within the 1:1 slope area and the 600-ft contour has been regraded to prevent damage to existing fencing.*

21. Construction details need to be provided for the catch basins and the drain manholes. *Both the catch basin and drainage manhole details have been shown.*

22. A construction detail needs to be provided for the pavement and pavement base cross-section. *Details for pavement and base cross-section have been shown.*

General Comments

23. On Sheet S-1, a note on the left side of the sheet states that there will be a total of 496 parking spaces. The plans were drawn such that 488 parking spaces are proposed; the four eastern-most groups of parking spaces have 68 spaces each instead of 70 spaces as noted on Sheet S-1. *The parking space calculations have been updated.*

24. For the benefit of the contractor, on Sheet D-1 the leaders for the orifices in the "Outlet Control Structure Detail" should indicate that the elevations given are for the inverts. *Invert information has been updated on the outlet control structure detail.*

Respectfully submitted,

DC Engineering & Survey, Inc.
Jason Dubois, P.E.