**Joseph J. Serwatka, P.E.**

**Post Office Box 1016**

**North Andover, MA 01845**

**978-314-8731**

June 30, 2020

**01 October 2020 Response to Peer Review Comments**

**Please see responses to individual comments as similarly highlighted below.**

Martha L. Taylor, Town Planner

Town of Newbury

12 Kent Way

Byfield, MA 01922

Re: 23 Central Street

Site Plan & Special Permit

Peer Review Services

Dear Ms. Taylor:

I have received a site plan package (22 sheets dated 12/4/19, 12/12/19 & 4/29/20) for 23 Central Street, prepared by A. L. Prime Energy Consultant, Inc., Engineering Land Services, LLC, and Red Leonard Assoc.; Stormwater management plan and hydrocad reports dated 4/21/20 by A. L. Prime; emergency response plan dated 4/29/20 by A. L. Prime; site plan application dated 3/18/20. I have conducted a site visit, reviewed the submitted material, and offer the following comments:

Existing Conditions, sheet 1 and 2 of 2

1. Abutting lot 29 appears to shed runoff onto the subject parcel. The design engineer may need additional topography in order to adequately delineate the watershed.

**Additional survey work in to include additional topo as suggested was completed and added to the Existing Conditions plans.**

2. One catchbasin is depicted in Central Street, and one in Fruit Street. Manholes (i.e. DMH, SMH) are shown near the site, but no additional catchbasins. The engineer should verify whether there are any additional catchbasin structures

**The additional survey work included adding off site stormwater structures**

3. The Zoning Dimensional Data table lists the minimum frontage as 200 feet. The subject parcel appears to have 150.61 feet of frontage.

**This is correct. However, this non-conforming frontage condition pre-exists zoning and has been confirmed not to be an issue by Town Counsel as presented at September hearing.**

Site Layout, sheet C-1.0

1. Sloped granite curb and vertical granite curb are both labelled as “throughout” the site. The engineer should verify which is correct and provide the corresponding construction detail.

**It is intended that VGC will be installed throughout the site and erroneous references to sloped granite have been removed from the plans.**

2. The proposed parking spaces are faded back so as to be barely visible. The engineer should darken these features, similar to other proposed features. The engineer should also verify that grades in parking areas do not exceed 2 percent in any direction, as required.

**Parking space lines have been darkened, and per following items 3/4/5/6/7/8, all of these notations have been added to the plan(s) as suggested by the peer reviewer.**

3. All proposed parking spaces should have dimensions.

4. The type(s) of curbing around the building should be labelled and detailed as necessary.

5. Any sidewalks around the proposed building should be labelled and dimensioned.

6. Pavement/curb offsets to property lines should be provided on the plan.

7. Curb radii should be provided for all proposed curbing, but especially along the frontage where there appear to be a multitude of curves and angles.

8. Maneuvering aisle widths throughout the site should be provided, as is typical.

9. A “stormwater sediment tray” is labelled on the plan, but the closest detail appears to be a “level spreader” on sheet SD-2. The engineer should address, and provide sizing calculations for the sediment tray as described in the Policy.

**This structure has been removed as well as the detail on SD-2.**

10. A “1,000 SF bioretention area” is shown mostly within the Central Street right-of-way. Stormwater BMPs are typically situated on the applicant’s land, not town property. Also, I would not recommend any excavations so close to an existing hydrant and transite watermain. The Board/Town may want to direct the engineer to keep all stormwater BMPs on the subject parcel.

**This area is no longer depressed and no excavation proposed near hydrant or watermain (other than possible tie-in for new store service and raising of hydrant, if necessary)**

11. “Mountable pavement” is labelled at the entrance, but a detail has not been provided.

**Detail has been added**12. In addition to the bioretention area, a “stormwater retention area” is labelled at the rear of the site. The only detail for these appears to be on sheet SD-2, and is labelled “retention basins”. Retention basins do not appear to be a BMP listed in the Policy, so the engineer should provide some design reference. The closest BMP would appear to be an infiltration basin. In either case, the detail does not match bioretention area design criteria, and the soil media specified would not typically be used in an infiltration basin. The engineer should adequately address these issues.

**All surface infiltration areas have been removed**

13. A retaining wall is proposed along one side of the rear retention area that, to the best of my knowledge, is not waterproof. The engineer should address this issue.

**This wall has been removed**

14. The proposed drive-thru occupies one lane of access around the building, leaving one extra lane. The engineer should note whether one-way traffic flow is proposed in the remaining lane, and label any required signage/pavement markings.

**It is intended that the traffic is one way counter-clockwise around the store, pavement arrows have been added to the plan**

Grading, sheet C-2

1. Proposed grading extends onto abutting lot 25B along the north and west property lines. Easements may be required for this work once the ownership changes. The engineer should address this issue.

**The landowner that owns both the subject and abutting lots has agreed to provide an easement at the time that the property transfer is completed. A plan has been added to the set showing the easement and the easement outline has been added to several sheets in the set for reference.**

2. The proposed grading appears to redirect runoff from abutting lot 29 to a proposed low spot in Central Street, where it will apparently overflow across the easterly driveway and into the proposed bioretention area. The bioretention area then appears to have an overflow at elevation 57.55 (swale) which could direct runoff across the westerly driveway. The runoff rates will also tend to be greater than calculated, as the engineer has not quantified the amount of runoff contributed by the abutting lot. In either case, runoff should not be directed across driveways, and it could lead to icing conditions in the winter. The board may want the engineer to address these issues.

**Grading has been adjusted to eliminate water running across the driveways as described, including the addition of a catch basin in the landscape area east of and feeding into Stormceptor 2.**

3. In an effort to contain runoff in the two driveways, the engineer has created “speed bumps” and high/low spots that lead to excessively substantial grade changes in short distances. For instance, assuming an existing edge of pavement grade in Central Street of 56.5’ in line with CB3, the proposed grade rises 0.9’ in 6 feet, then down 0.4’ in 6 feet, before rising 2 feet in 25 feet. Some of the pavement grades end up being 10 percent or greater. If these grades are held, the engineer should verify that vehicle, especially low-bed trailers will not bottom out. Ideally, the grading should be revised to provide for more consistent, reduced slopes in both driveways.

**Grading has been revised and trench drains have been added to eliminate the need to channel water to a CB. Driveway grades do not exceed 8% and driveway profiles have been checked to confirm that grades changes will not cause issue with low vehicle overhang or center point bottom out.**

4. Top and bottom of wall elevations should be provided for the retaining wall at the rear of the site, as is typical. As mentioned previously, however, this wall is likely not waterproof and may not be suitable for use in a “retention” pond.

**This retaining wall has been removed**

5. The engineer should address whether the proposed grading at the rear of the site has been based on the preparation of the septic plan. One of the two primary leach areas is located over TP1 and TP2, where the estimated seasonal high groundwater (ESHGW) is 59.4 and 57.0 feet, respectively. Assuming the four foot separation, thickness of the leach area, 12” gravel and 4” of pavement, the finish grades over the leach area would be between 63 and 66 feet. Proposed grades are currently between 61.5 and 63 feet. The engineer should review this issue and revise the proposed grading if necessary.

**A detailed septic plan has not been prepared but finish grading was evaluated in accordance with the peer review comments. Grading throughout the rear of the site has been raised and is expected to accommodate septic system requirements.**

6. Relative to the proposed basin at the rear of the site, the engineer should label it according to the current BMPs listed in the Policy handbook. The plans, details and calculations have it listed as “bioretention” area and “retention” area, but it appears to act more like an infiltration basin. The Policy also requires 44% TSS removal prior to any infiltration in this basin, and that is not currently provided. Further, there are setback requirements for various BMPs to septic systems. The engineer should verify that the final design complies with required setbacks.

**The basin has been replaced with subsurface infiltration, fed by deep sump CB and oil/grit separator that provides 44% TSS removal.**

7. Catchbasins 1-3 likely cannot be built with the rim/invert information shown on the plans. CB1 has a 0.3’ difference between top of pipe and rim, CB2 has about 0.25’, and CB3 has about 0.7’. This assumes a typical 12” diameter outlet pipe from the catchbasin. The engineer should review these issues and make the necessary revisions.

**All drainage structure rims and inverts were evaluated and adjusted. New elevations are all listed on Sheet 2. This response also applies to following comment #8.**

8. The engineer should also review the grit separator invert data to verify that the elevations will work.

Utilities, sheet C-3

1. The plan shows overhead electric service with three new poles running along the easterly property line. The board may want the project to run this utility underground, as is typical.

**The proposed electrical service has been relocated UG and moved to avoid crossover of water service. The water and electric meter locations have been revised on the floor plan and building elevations.**

2. Existing and proposed invert information should be provided for the catchbasin being tied into on abutting lot 25B.

**Invert information has been added**

3. The basins at the front and rear of the site are labelled ‘bio retention area” but are called “retention” areas on other sheets, on the details and in the calculations. The engineer should label them based on the listed BMPs in the Policy.

**These areas have been removed. This response also applies to following comment #4.**

4. The Policy requires 44% TSS pretreatment prior to any infiltration, for the proposed site use. The two basins do not appear to comply with this standard. The engineer should address this issue.

5. The engineer should also address whether all of the infiltration BMPs comply with applicable setbacks, especially to the proposed septic system.

**The proposed subsurface infiltration BMPs comply with required setbacks.**

6. The recommended inspection/maintenance ports should be shown on the Rainstore3 systems. A detail should also be provided.

**One to three insp/maint ports have been added to each RS3 system and a detail has been added.**

7. Complete rim, invert and pipe data should be provided for all catchbasins and grit separators. Invert elevations into the Rainstore3 systems should also be provided.

**Grading Sheet C-2 now contains all this information.**

Erosion Control, sheet ER-1

1. Most of the erosion control line is located on abutting land, or in the Central Street right-of-way. Typically erosion controls are located along the limit of work/property lines to contain all work and potential erosion within the project site.

**Erosion control measures are shown at the limit of proposed work, including that work in the ROW in front of the site for new driveways and landscape center island and along the property lines for grading. The abutting landowner will grant an easement for grading and the sedimentation controls are all located inside that easement line.**

Landscape, sheet L-1

**A landscape architect has been engaged to provide a stamped plan that replaces the previous landscape plan and that addresses all below comments.**

1. The plan is neither stamped nor signed. The board may want to require that a landscape architect prepare, and sign, the plan.

2. The plan refers to sheet ER-1, Erosion Control, for seeding requirements in the retention areas, but sheet ER-1 has no such information. The engineer should address this issue.

3. The plan should address which areas will be mulched, and which areas will be turf grass.

4. The 48”-60” Arborvitae along the easterly property line may not be adequate to screen the abutter from noise and glare. The board may want the engineer to propose a denser/taller landscape screen in this area.

Lighting Plan, drawing no. RL-6493-S1

1. The board may want the existing residence on the abutting lot to the east to be depicted on the plan for reference. Additional measures (e.g. landscaping, fencing) may be necessary to minimize glare intrusion on the lot.

**Abutting structure has been added. Additional landscape has been added. The abutter has been consulted and is satisfied with the proposed screening and supportive of the project.**

2. The by-law appears to restrict lighting to no more than 10,000 lumens per fixture. The fixtures listed on the plan all appear to exceed this limit. The engineer should review this.

**The plan has been revised with new fixtures that do not exceed 10,000 lumens per fixture.**

Site Details, sheets SD-1 and SD-2

1. The “asphalt pavement” detail on sheet SD-1 has a 6” gravel base. Typically a 12” gravel base is used for roadways and parking lots, and a 6” base for sidewalks. The engineer may want to review this.

**Detail has been revised as suggested**

2. The ‘deep sump catch basin” detail on sheet SD-2 should specify a minimum 4’ sump to qualify for the TSS removal.

**Detail has been revised as suggested**

3. The “level spreader” detail on sheet SD-2 does not qualify for TSS removal, but can be used in conjunction with a qualifying BMP. The engineer should address this issue, and provide 44% TSS removal prior to runoff entering the rear basin.

**This structure has been removed along with the detail on SD-2.**

4. The “retention basins” detail on sheet SD-2 is not a listed BMP. The plans also label these basins as bio retention basins. The engineer should verify that whichever BMP is chosen complies with the Policy design guidelines and setbacks.

**These basins have all been removed and replaced with subsurface infiltration systems.**

Stormwater Management Plan

1. The TSS removal calculations on page 14 do not address the two “retention” or “bio retention” basins, which do not appear to have the required 44% TSS removal pretreatment. The engineer should address this issue.

**These basins have all been removed and replaced with subsurface infiltration systems.**

2. As mentioned previously, the watershed maps should be revised to account for offsite runoff flowing into the property.

**The watershed maps have been revised as suggested and now account for offsite runoff flowing onto the subject parcel from the abutting property to the east.**

Hydrocad Reports

1. The pre development Tc calculations should have a maximum sheet flow length of 50 feet, based on the regulations and common practice. The calculations have sheet flow lengths up to 183 feet. The engineer should revise the calculations accordingly.

**The HydroCAD pre and post development models have been revised to apply a Direct Entry Min Tc of 6 minutes for all sub-catchment areas.**

Should you have any questions concerning this review, please contact me at your convenience.

Sincerely,

Joseph J. Serwatka, P.E.

**Thank you for the opportunity to respond to these comments. I hope that we have satisfied all concerns but if any remain, or if revisions have caused any new concerns, please feel free to contact me at any time.**

**Sincerely,**

**Tony**

**Anthony Guba, P.E., A.L. Prime Energy**

[Anthony.Guba@ALPrime.com](mailto:Anthony.Guba@ALPrime.com)

**512-745-6400**