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November 25, 2019

Ms. Whitney McClees,  
Conservation Agent and Sustainability Coordinator  
Conservation Commission  
Town Hall  
40 Center Street  
Fairhaven, MA 02719

RE: Proposed Auto Dealership, Fairhaven, MA.  
Notice of Intent / Site Plan  
250 Bridge Street.

Dear Ms. McClees:

GCG Associates, Inc. has reviewed the following information for the 250 Bridge Street, proposed auto dealership site plan in Fairhaven, MA with respect to stormwater and stormwater related requirements under 310 CMR 10.00 Wetlands Protection Act Regulations.

Plan References: Proposed Auto Dealership, 250 Bridge Street, Fairhaven, MA prepared by Prime Engineering, Inc. dated April 27, 2015, last revised October 31, 2019 consists of:

- 1 – Title Sheet
- 2 – Existing Conditions Plan
- 3 – Site Layout Plan
- 4 – Grading and Drainage Plan
- 5 – Utilities Plan
- 6 – Lighting Plan
- 7 – Landscaping Plan
- 8 – Site Details
- 9 – Vehicle Movement Plan.

Documents: WPA Form 3 – Notice of Intent package prepared by Prime Engineering, Inc. cover letter dated November 08, 2019

Based upon our review of the above information, we offer the following general comments and comments with respect to compliance with Town Bylaws: Chapters 192 – Wetlands; 194 - Stormwater Management, Illicit Discharge, Soil Erosion, Sediment Control By-Law; 198-31.1 –

Zoning - Stormwater Management and 310 CMR 10.00 Wetlands Protection. The numerical section of the regulations is referenced at the beginning of each comment unless it is a general comment.

## **GENERAL PLAN AND DEVELOPMENT COMMENTS**

The following are general comments with respect to the plans and development of the project.

1. This is a partially developed lot located at the northwest side of Bridge Street and Route 240 intersection, as identified as Assessor's Map 36 Lot 15. The parcel consists of 5.35+/- acres. The site was improved with an existing pavement driveway approximately 23'+/- wide by 350'+/- length connecting Bridge Street to Lot 15C, where an existing auto dealership uses.
2. The applicant has filed a Notice of Intent for a commercial site plan development for auto dealership uses, the project calls for a single storage building for automobile show room, office, vehicles maintenance uses, and associated pavement parking lot and utilities. The proposed work area is over 1 acre and requires filing an US EPA - NPDES permit and associated SWPPP. (NPDES NOI shall be filed 14 days prior to construction start.)
3. The proposed work limit also exceeds the Land Disturbance Permit (Chapter 194) threshold and requires filing a permit with the Fairhaven Board of Public Works.
4. The proposed Auto Sale and Services (Auto Dealership) is permitted by right in the Industrial Zone. This site development requires a Planning Board Special Permit approval per Chapter 198-29. Which requires site design in compliance with Chapter 198-31.1 Stormwater management standards. Hence, stormwater management design is being reviewed to meet 198-31.1 requirements.
5. The project is located within Zone X, Area of Minimal Flood Hazard, (FIRM 25005C0394G, effective 7/16/2014), four series (A, Y, Z, and HS) of wetland resource area were identified on the property and requires to file a Notice of Intent with the Fairhaven Conservation Commission and MassDEP.
6. There is no NHESP estimated habitats of rare wildlife or rare species identified in the site vicinity per MassGIS.

## **PLAN SET**

Drawing Sheet 1 - Title Sheet.

1. *Plan note #2. A variation is requested to Stormwater Management – Section 198-31.1. A(1)(a)[2], to allow the increase in volume of runoff due to the D soil and near surface ground water. This is a local regulation requirement only and is not regulated by MassDEP. 198-31.1.C(2)(k)[1], requires the volume control shall be by infiltration; [2] requires infiltration areas shall be located in areas with a Hydrologic Soil Group (HSG) of A, B, or C. The subject site is entirely located within HSG 'D' soil per NRCS soil survey. Therefore, infiltration is impractical and without the waiver, the site would be un-developable.*
2. *Plan note #3. A variation is requested to Stormwater Management – Section 198-31.1. B(2)(a)[h]&[i], to not provide soil logs since the infiltration is not proposed due to the D soil and near surface ground water. GCG recommends deep hole tests be performed at the proposed pocket wetland location to determine the seasonal high ground water (ESHGW) elevation and verify the available storage volume (above the ESHGW) and available water table to support the wetland vegetation. Soil deep hole test should also*

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be performed at the rain garden #1 culvert outlet location to assure the pipe invert are not submerged below ESHGW.

3. *Plan note #4. A variation is requested to Stormwater Management – Section 198-31.1. C(2)(g)[6], to allow the side slopes to be 2:1 to minimize impacts to wetland.* This requirement is regulated by the local regulation as well as the State regulations. The local regulation requires a 4:1 grade or approved by the Conservation Commission. The regulation also requires a 10' wide bench at 0% slope surround any permanent pool. The Massachusetts Stormwater Handbook (MSH) requires the sediment forebay side slope not steeper than 3:1. And requires a 15' wide maintenance path surrounding the constructed wetland. The proposed plan shown a 1:1 slope along the west side of sediment forebays and pocket wetland. GCG recommends providing a 3:1 minimum slope along the sediment forebays to meet MDEP requirements. Constructed wetland should maintain a minimum of 2:1 side slope with a 10' wide top bench for maintenance access. The proposed rain gardens could utilize the paved drive aisle for maintenance access. Granting a waiver for the State required access path width does not relieve the developer to future actions imposed by MDEP. Alternative would be reducing the proposed pavement area to meet the local and MDEP requirements.
4. *Plan note #5. A variation is requested to Stormwater Management – Section 198-31.1.C(3), to allow the low impact development (LID) design meet the bmp requirements, as requested by the conservation commission.* This requirement is regulated by the local regulation. The proposed pocket wetland basin and rain gardens BMPs could meet the MSH stormwater management standards. See additional comments regarding the BMPs below.

#### Drawing Sheet -2 – Existing Conditions Plan.

1. Wetland delineation line as shown requires Conservation Commission approval.
2. Plan shown depression contours (47) along four rip-rap patches on the west side of existing paved driveway, and a rip-rap weir east of wet flag A32. It appears existing driveway runoff was designed to drain into the depressions through rip-rap patches for retention and overflow through the westerly rip-rap weir onto the west wetland. The pre-development drainage calculations should include this ponding element or based on the previous calculations.
3. There is an existing catch basin located at the south side of wet flag A30. The two connected catch basin rim, inverts and outlet should be identified on the plan. The proposed rain garden #1 outlet pipes are located within 10' of the catch basin and may cause interference with the catch basin's function.

#### Drawing Sheet 3 – Site Layout and Landscaping Plan.

1. The easterly parking lot edge of pavement should have a curb/berm to direct surface runoff to the two catch basins and forebays for treatments.
2. Access path openings should be provided for the constructed wetland and forebays maintenance.
3. Snow storage areas should be called out on the plan, snow should be stored outside the stormwater BMPs.

#### Drawing Sheet 4 – Grading and Utilities Plan

1. Plan should identify the portion of roof area drains to rain garden. Calculations shown only drop off vehicle roof area drains to rain garden. Roof drain pipe sizing calculations should be provided.
2. Curb or berm should be installed along the easterly edge of pavement to assure surface runoff be treated by the deep sump hooded catch basin and sediment forebay.
3. Curb or berm should be installed along the Bridge Street access between the high point 47.20 to rain garden #1 crushed stone berm.
4. Provide rip-rap protection at the rain garden #1 spillway and pipe outfalls.
5. The proposed three feet wide grass strip does not meet grass filter strip pretreatment requirements, filter strip length should be sizing per MSH Vol.2, Ch.2, Pg. 26.
6. Please identify the circular object next to the southeast forebay.
7. MSH requires side slopes of sediment forebay no steeper than 3:1 (MSH Vol.2, Ch.2, Pg. 15), and requires a minimum width of 15 feet access for maintenance. (MSH Vol.2, Ch.2 , Pg.45).
8. 198-31.1(C)(2)(g)[6] – requires basins/ponds designed for stormwater runoff control shall have side slopes at a no steeper than a 4H to 1V grade. And a ten-foot wide bench surround any permanent pool. 1:1 and 2:1 side slopes proposed, Applicant is seeking a various, see Cover sheet comment #3.
9. 198-31.1(C)(2)(k) - Forebays [1][b] requires forebays to be sized to contain 0.25 inches per impervious acre of contributing drainage and [d] requires forebay be four feet deep. Volume calculations per each forebay should be included in the report.
10. 198-31.1(C)(4)(a)[2] – requires 48-hour detention time for the water quality (198-31.1(A)(1)(b) - First Flush = (1.25”), see 198-33 Definitions) storm. This regulation should be included in the variance seeking Section 198-31.1.C(3), see Cover Sheet comments #4. The regulation would require the pocket wetland to provide the 1.25” storage volume for treatments.
11. 198-31.1(C)(4)(a)[1 & 6] – requires establishment of, and the methodology with which to maintain, wetland vegetation on the bottom of the basin. GCG recommends soil testing to determine the ESHGW, see Cover Sheet comment #2.
12. MSH Vol.2, Ch.2, Pg. 45 - requires constructed stormwater wetland to have an emergency spillway capable of bypassing runoff from large storms without damage to the impounding structure. Emergency spillway sizing calculations should be provided based on the brimful conditions.
13. MSH Vol.2, Ch.2, Pg. 45 – requires an access for maintenance.
14. Pipe(s) length and slope should be labeled.
15. Provide pre-treatment in front of rain gardens per SMH Vol. 2, Ch.2, Pg. 25.
16. Rain garden soil layer should be Engineered Soil Mix for Bioretention Systems Designed to Exfiltrate, MSH Vol.2, Ch.2, Pg.26.
17. Pocket wetland area component (percentage calculations based on MSH Vol. 2., Ch.2, Pg.43) should be provided and shown on the plan.
18. Site erosion control plan should be included, at a minimum, silt sack and silt fence/wattle/haybale should be installed during construction, existing pavement could be utilized for construction exit with inspection and sweeping operation.

#### Drawing Sheet 5 – Site Utilities Plan

1. Subject to Planning Board review and approval.

#### Drawing Sheet 6 – Lighting Plan

1. Subject to Planning Board review and approval.

#### Drawing Sheet 7 – Landscape Plan

Constructed Pocket Wetland planting should be specified on this plan.

#### Drawing Sheet 8 – Details

1. Please verify the 18" HDPE outlet pipe shown on the Headwall with orifice plate detail.
2. Erosion control device, silt sack, wattle etc. should be included in the details sheet.

#### Drawing Sheet 9 – Vehicle Movement Plan

1. Is there a function of the two-way driveway located north of the dumpster? The Vehicle movement plan shown no use of this driveway. Can it be eliminated for lawn area or snow storage?

### **STORMWATER REPORT COMMENTS**

1. MSH Vol.2, Ch.3, Pg. 1 Checklist for Redevelopment projects – Only the existing paved driveway is considered re-development, and all other new impervious area needs to meet all MSH standards.
2. The existing paved driveway appears to be treated with rip-rap swales/pads and retention (depression at contours 47) BMPs along the west side of the pavement. Previous calculations or existing retention/ponding conditions should be included in the pre-development flow calculations.
3. The proposed layout/use appears to equip with vehicle maintenance and repair bays, and possible storage of petroleum product and may considered as fleet storage area. (applicant should verify our assumptions). Therefore, it is considered Land Uses with Higher Potential Pollutant Loads (LUHPPL). MSH Vol.1, Ch.1, Pg.14. Therefore, the vegetated filter strip, MSH Vol.1, Ch.1, Pg.14. and constructed wetland, Vol.2, Ch.2, Pg.36 and rain gardens, V Vol.2, Ch.2, Pg.23 should be lined and sealed for LUHPPL uses.
4. Forebays [1][b] requires forebays be sized to contain 0.25 inches per impervious acre of contributing drainage, please provide calculations. There were some calculations included in the page after the Drainage Summary table. However, the copy was very light and not readable. Please provide a clean copy.
5. 198-31.1(A)(1)(b) - requires treatment of the Water quality (First Flush = (1.25" of entire impervious area on site), see First Flush definition for calculation formula (198-33). This regulation could be complied with the 1.25" volume storage within the wetland basin.
6. 198-31.1(A)(1)(a)[2] - No increase will be allowed in the volume of runoff off of the site up to the ten-year, twenty-four-hour design storm. The proposed drainage calculations shown increase of runoff volume during 2-year and 10-year storm events. The pre-development and post-development 10-year storm runoff volumes (combined DP-1 and DP-2) were 0.525 a.f. and 0.854 a.f., respectively, The applicant has requested a waiver, see Cover Sheet comment #1.
7. 198-31.1(C)(2)(n)[1-7] – storm drainage system capacity should be calculated based on 25-year storm event. Catch basin inlet and drain pipe capacity calculations should be provided.

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8. Both proposed Rain Gardens requires pre-treatment to qualify for 90% TSS removal.
9. 198-31.1(C)(4)(a)[2] - provide water quality volume (First Flush) 24 hour detention volume.
10. The post-development HydroCAD report did not include the 25-year and 100-year events and GCG was unable to verify the capacity of the drainage design. Freeboard and emergency spillway sizing calculations should also be provided.
11. MSH standard 3 requires 0.1" groundwater recharge volume over proposed HSG 'D' impervious area. The site is entirely in HGS 'D' soil and recharge is impossible and non-suitable in HSG 'D' soil. MSH calls for "maximum extent practicable" for ground water recharge in this situation. Therefore, the proposed without recharge volume is acceptable for this site.

#### **OPERATIONAL AND MAINTENANCE (O&M) PROGRAM COMMENTS**

1. Temporary Erosion Control should include catch basin silt sack erosion silt fence/wattle type of control.
2. Snow storage area should be identified on the plan, since both sides of the development are bounded by BMPs. Snow storage areas should not be in the BMPs.
3. Long term O&M plan catch basin should be inspected and cleaned 4 times per year. Stormceptor is not part of the BMPs proposed. Grass/vegetated filter strip, rain garden, sediment forebays and constructed (pocket) wetland should be included in the O&M plan.
4. O&M plan should provide a signature block for responsible party/operator signature.
5. O&M plan should include estimated annual operation budget and long-term O&M (sample) log.

Summary:

The proposed layout has maximized the site and unable to provide the required drainage mitigation with the required side slopes and maintenance access.

If you have any questions regarding this matter, please contact our office.

Respectfully Submitted,  
GCG Associates

*Anthony Ma*

Anthony C. Ma, P.E.  
Senior Project Engineer

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