



January 28, 2021

**ATTN:** Fairhaven Planning Board and Conservation Commission  
Fairhaven Town Hall  
40 Center Street  
Fairhaven, MA 02719

**RE:** Lewis Landing - Response to Peer Review Comments  
Proposed Multi-Unit Residential Development  
Huttleston Avenue, Fairhaven, MA  
(CGC Job # 1974)

Dear Planning Board and Conservation Commission Members,

Prime Engineering is in receipt of the comment letter dated 1/29/2021 from GCG Associates Inc. We have reviewed these comments and offer the following in response along with revised plan set and additional revised submission materials enclosed. The original comments are provided in *italics* with responses in **bold**.

**General Plan and Development Comments**

1. *This is a vacant parcel located at the south side of Huttleston Avenue (U.S. Route 6) across street from New Boston Road as identified as Assessor's Map 31 Lots 115A & 117C. The parcel consists of 2.463+/- acres.*

**No response necessary.**

2. *The applicant has filed a Notice of Intent for a Multi-Unit Residential Development consists of four 3-unit buildings (total 12 dwelling units) and associated pavement 16 spaces 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.)*

**The applicant and engineer are aware of the SWPPP requirement and will follow all NPDES requirements before the start of construction.**

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.*

**All required permits will be filed with Fairhaven Board of Public Works prior to the start of construction.**



4. *The proposed multi-family site development in RC Zoning District 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.*

**No response necessary.**

5. *The project is located within Zone X, Area of Minimal Flood Hazard, (FIRM 25005C0413F, effective 7/7/2009), two series (A1- A-30 and B-1 to B-6) of wetland resource area were identified on the property and requires filing a Notice of Intent with the Fairhaven Conservation Commission and MassDEP.*

**No response necessary.**

6. *There is no NHESP estimated habitats of rare wildlife or rare species identified in the site vicinity per MassGIS.*

**No response necessary.**

#### **Plan Set**

*Cover Sheet: Planning Board waivers requested for stormwater management regulations are as follows. The applicant has requested waiver for “198-31.1(C)(2)(g)[6]. Requiring basin and ponds to have 4:1 side slopes and sediment forebays to have 3:1 side slopes.” The proposed pocket wetland does not fit the specified water quality BMPs design listed under 198-31.1(C)(4) (a), (b), and (c). This constructed pocket wetland is based on the Massachusetts Stormwater Handbook (MSH) Constructed Stormwater Wetlands BMP requirements. 198-31.1(C)(3)(d) allows “Other water quality BMPs may be approved, provided the pollutant removal rate meets or exceeds the requirements of Section 1 above.” Based on the MSH pollutant removal efficiencies, the constructed pocket wetland BMP meets the requirements of 198-31.1(A)(1) standards except for the flooding requirements, (additional clarification or calculations are needed, see detail comments below). MSH does not require a minimum side slope of a constructed wetland, since the wetland maintenance requirement is once every 10 years, the side slope is not critical. However, MSH does require sediment forebay to have a 3H:1V side slopes. The proposed forebay volume was sized by Fairhaven Stormwater standards (0.25” times the impervious area), which exceeded the MassDEP sediment forebay sizing (0.1” times the impervious area) requirements. The applicant has proposed 2:1 side slopes with one side with 4H:1V slope for access. There is room in the area to provide the required 3H:1V slope, if the Board deems necessary. The wetland sediment forebay requires maintenance cleaning once per year, (in comparison, a standard sediment forebay requires cleaning 4 times per year.) Therefore, granting this waiver should not have any adverse impact to the design. The forebay side slope 3H:1V is required under MSH, granting the forebay side slope waiver does not relieve the MassDEP’s authority to superseded Order of Conditions.*

**These comments will be addressed in the detailed comments below.**



### Drawing Sheet 1- Existing Conditions

1. *Plan shows three drain pipes (15" (capped) and 18" inlets and 18" outlet) connected to an on-site dilapidated drainage manhole (DMH) within the wetland resource area. The 15" drainpipe appears to collect Huttleston Avenue surface runoff through a pair of catch basins located in front of development site and two 18" drain lines enter and discharge to the DMH without a benefit of an easement. GCG recommends obtaining an easement to preserve the right of the existing drains. An easement should be required as part of the approval conditions. Fairhaven DPW should be notified during drainage installation to determine the condition of the 15" capped pipe and uncap if desired with the easement right.*

**The applicant is willing to grant an easement for this drainage infrastructure and coordinate with Fairhaven DPW as requested. A proposed 10' wide drainage easement is shown on sheet 2 site layout and landscaping for your review. We request that recording this easement be made a condition of approval.**

2. *Additional soil testing should be performed at the proposed infiltration chamber system location to determine soil conditions, ESHGW, and depth of excavation and/or replacing unsuitable material.*

**The two test holes provided show a ESHGW table at 60" below grounds surface with fill and muck present. We request, as a condition of approval, to do additional test holes while construction crew is mobilized onsite. The chamber system details will be fit with a note explaining the requirement of additional test pits. Further, a 2' minimum depth of septic sand meeting 310 CMR 15.255(3) will be required beneath all chamber systems. This 2' of septic sand can be increased based upon the test hole results if necessary. No credit was taken for this infiltration in modeling. Please refer to sheet 5 of 7 for the updated Cultec 330XLHD detail showing this information.**

### Drawing Sheet 2 – Site Layout and Landscaping Plan

1. *Trees and shrubs have been proposed along the constructed pocket wetland's and a 10' wide access path, which meets 198-31.1(C)(2)(g)[6] – "ten-feet wide bench" requirement. MSH requires a 15' wide maintenance access. The plants may require removal and replacement during the once in every 10-year wetland maintenance.*

**There is adequate access to the constructed pocket wetland through the gate along the site entrance and the access between the dumpster area and wooden guardrail. In the event that the vegetation needs to be removed and replanted to perform maintenance tasks this will occur.**



Drawing Sheet 3 – Grading and Utilities Plan

1. *MDEP – Standard Design Guideline for Shallow UIC Class V Injection Wells. The proposed roof drain chamber infiltration practices are considered UIC Class V Well by US EPA and required to comply with the MassDEP setback requirements. The proposed 6-unit chamber between building #2 and building #3 needs to be relocated northward outside the 50' BVW setback and 15' setback to downhill slope. Maintain the 10' building #3 foundation setback. The 18-units chamber system needs to be relocated to the east side of building #4 to meet 50' setback to "open, surface or subsurface drains which intercept seasonal high groundwater table," (proposed pocket wetland), 10' setback to water supply line and 15' setback to downhill slope (proposed pocket wetland side slope).*

**Proposed 6-unit chamber system between building 2 & 3 (Now UIS-B): This system has been moved north out of the 50' BVW setback and 15' from the downhill slope while continuing to maintain the 10' setback from building 3's foundation. Please refer to grading and utilities sheet.**

**The 18-units chamber system (Now UIS-C) has been relocated to allow for 50' setback to "open, surface or subsurface drains which intercept seasonal high groundwater table," (proposed pocket wetland; 10' setback to water supply line; and 15' setback to downhill slope. Please refer to the Grading and Utilities Plan.**

2. *MSH - Proposed infiltration basin is within the 50' BVW (surface water of the commonwealth) setback.*

**We request a waiver from this requirement.**



3. *MSH – 65% Rules. Require Minimum 65% of the total impervious area discharge to infiltration system. A minimum of 8,510 s.f. of pavement area (in addition to the roof areas) is required to discharge to infiltration basin. As the pocket wetland (receiving 16,717 s.f. of impervious area surface runoff) outflow discharges to two outlets, at least 50% of the outflow should be discharged to the infiltration basin to meet the 65% requirements to assure sufficient flow being discharged to the infiltration system.*

**The constructed pocket basin has 2 outlet control structures (OCS).**

- **OCS A – directs the first flush of the treated stormwater to the infiltration area (110) which has a primary function of meeting 65% rule along with the recharge requirements.**
- **OCS B - directs treated stormwater to the existing manhole and then offsite to the swale system on Brooke Street and eventually to Little Bay.**

**The lowest discharge point in both structures is a 1” diameter orifice at elevation 61.60. This means that 50% of the stormwater outflow from the 2-year storm leaving the pocket wetland is directed to the infiltration area and 50% is directed to the existing manhole. Therefore the 65% rule is met.**

4. *This project has been approved by the Conservation Commission. However, the proposed 30+/- feet of pocket wetland outlet pipe is in the BVW resource area and 25’ of pipe and portion the infiltration basin is located within the 25’ no disturb area. Conservation Commission approval is required.*

**After adequately addressing the Planning Boards comments this project will be presented to the Conservation Commission for approval. The disturbance within the 25’ no disturb area along with the section of shallow marsh will be discussed.**

5. *Verify top of pipe calculations, the 4” pipe appears to be closer to the street, which improved the separation between pipes.*

**The 4” pipe will pass over both existing pipes (18” and 15”). The 4” HDPE pipe is 40.5 linear feet and passes over the existing pipes at elevation of 61.32. The top of the 18” pipe is 59.54. This leaves 1.78’ of separation.**

6. *Re-sizing infiltration basin per pre- and post- rate and volume, see additional drainage report comments below.*

**The pond has been appropriately sized so peak flow and volume are controlled for the required storm events. Please refer to response to drainage report comments below.**



7. 198-31.1(C)(2)(l) - Fence enclosure for the stormwater basin may be required.

**We request a waiver from this requirement because we are providing adequate vegetative barrier around the pocket wetland.**

8. 198-31.1(C)(3) - Applicant should request a waiver for 198-31.1(C)(3), which also references to selection of (C)(4)(a) through (c) and inquire Board approval of the proposed pocket wetland under subsection (C)(3)(d). It is unclear this should require a waiver since it specified "other water quality BMPs may be approved" in its subsection (d). GCG recommends a waiver request to cover any disputes.

**On behalf of the applicant, Prime Engineering requests a waiver for section 198-31.1(C)(3) which also references to selection of (C)(4)(a) through (c). Prime Engineering request Planning Board approval of the proposed pocket wetland under subsection (C)(3)(d). The pocket wetland is MADEP approved BMP.**

9. Show drainage swale bottom width.

**A dimension for the drainage swale bottom width has been included on Please refer to grading and utilities sheet.**

10. Infiltration basin without tree clearing means the basin will not be maintained according to MDEP requirements. GCG recommends infiltration basin be cleared and finish with loam and seed. As required by MDEP, infiltration basin inspection for the health of the turf, and requires at least twice per year, mow the buffer area, side slopes and basin bottom.

**The infiltration basin will be cleared through the 61' contour then 4" loam and seed with New England Erosion Control/Restoration Mix for Detention Basins and Moist Sites by New England Wetland Plants Inc.**

#### Drawing Sheet 4 – Erosion Control Plan

1. Erosion control should be provided within the no disturb buffer and BVW for the 12" pocket wetland outlet pipe installation with Conservation Commission approval.

**The silt fence has been extended around the 12" pipe and existing manhole. Please refer to the erosion control plan.**

2. Additional erosion control may be required through NPDES and SWPPP prior to start of construction.

**We understand a SWPPP must be prepared and additional erosion control could be required through NPDES.**



#### Drawing Sheet 5 – Detail Sheet-1

1. *Pocket Wetland Outlet Control B Detail – Show 9” height (or show elevation) of the 24” wide outlet.*

**The Outlet Control B detail has been updated per this comment.**

2. *Orifice Plate Detail – show 24’W x 9”H structure wall opening above the orifice plate.*

**The Orifice Plate Detail has been updated per this comment.**

3. *Replace Outlet Control Structure A (proposed 9 outlets distribution box wrapped in filter fabric) with a standard drainage structure or concrete headwall with trash rack protection and set in the earth embankment.*

**This structure has been updated to a 4’ diameter flat top manhole.**

#### Drawing Sheet 6 – Detail sheet-2

1. *Schematic Cross Section of Storm Water Treatment System – revise the ‘3” orifice Inv = 61.00’ label to match the 1” orifice Inv = 61.60 (2 locations) design.*

**The cross-section detail has been updated with the correct inverts.**

#### Stormwater Report Comments

1. *Pre-development HydroCAD report 1.221 acres watershed appears missing an area of 0.275 acres. The post-development’s 1.500 has been verified to be correct.*

**The hydroCAD appendix has been updated.**

2. *Drainage report pages 5 and 6, Pre and Post runoff flow and volume comparison tables. Pre-development peak rate and volume columns do not match HydroCAD report. Revise table with item #1 correction.*

**The table and hydroCAD appendix have been updated and now match.**

3. *Clarify the roof drain chamber (model ponds 106, 107, and 108 wye volume, model used 2.5’ and 3’ diameter, the roof drain detail shown 6” diameter pipe.*

**Roof leader collection pipes have been updated to 12” HDPE. The outlet of the wye will remain at 6” along with the downspouts.**



4. 198-31.1(C)(2)(J)[4] - Infiltration area (Pond 110) should be modelled with pond surface area with CN 98.

**The infiltration area now modeled with an impervious bottom represented by node 101B.**

5. *Roof drain chamber systems and infiltration basin should be sized with draw down time not to exceed 72 hours to accommodate multiple storm events. Based on the Hydrologic Soil Group 'C' soil exfiltration rate, (Rawls 1982 per MDEP).*

**Infiltration was not modeled in hydroCAD in order to be conservative for flow and volume calculations. All roof drain chamber systems will have 2' minimum of septic sand placed beneath the stone layer. That being said the following calculations prove that these systems if full would drain in <72 hours.**

**UIS A & B (9 Cultect 330XLHD chambers)**

- Chamber Storage = 502.9 CF
- Field area = 394 SF
- Infiltration Rate for C soil = 0.27 in/hr = 0.0225 feet/hr
- $502.9\text{CF}/(394\text{SF} * 0.0225 \text{ ft/hr}) = 57 \text{ hours}$
- 57 hours < 72 hours therefore draw down time not to exceed 72 hours

**UIS C (18 Cultec 330XLHD chambers)**

- Chamber storage = 972.4 CF
- Field Area = 751 SF
- Infiltration Rate for C soil = 0.27 in/hr = 0.0225 feet/hr
- $972.4\text{CF}/(751\text{SF} * 0.0225 \text{ ft/hr}) = 58 \text{ hours}$
- 58 hours < 72 hours therefore draw down time not to exceed 72 hours

6. *As mentioned in the report and shown on soil test logs, the site consists of a layer of muck at 5' to 7' below surface. Approximately at the depth beneath the proposed chambers. Additional soil test pit should be performed during construction and witnessed by the engineer to verify ESHGW separation. All unsuitable material should be removed and replace with gravel and sand.*

**The two test holes provided show a ESHGW table at 60'' below grounds surface with fill and muck present. We request, as a condition of approval, to do additional test holes while construction crew is mobilized onsite. The chamber system details will be fit with a note explaining the requirement of additional test pits. Further, a 2' minimum depth of septic sand meeting 310 CMR 15.255(3) will be required beneath all chamber systems. This 2' of septic sand can be increased based upon the test hole results if necessary. No credit was taken for this infiltration in modeling. Please refer to sheet 5 of 7 for the updated Cultec 330XLHD detail showing this information.**





7. *Verify Constructed Pocket Wetland 4" and 12" outlet pipes length and adjust slope accordingly.*

**The length of the pipes and inverts have been checked and the plans match hydroCAD for both outlet pipes.**

**Operation and Maintenance (O&M) Plan Comments**

1. *Temporary Erosion Control should also follow the NPDES permit and SWPPP requirements.*

**The applicant and engineer are aware of the SWPPP requirement and will follow all NPDES requirements before the start of construction.**

2. *Long term O&M plan 4.0 should include:*
  - *Catch basin – inspect and clean grate and sump 4 times per year as required by MSH. This requirement seems excessive.*
  - *Wetland sediment forebay should be cleaned once a year.*
  - *Constructed Pocket Wetland should be inspected twice a year during both the growing and non-growing seasons for the first three years of construction, record observation per MSH Vol. 2, Ch. 2 Pg. 46. Cleaning out sediment in basin/wetland system once every 10 year.*
  - *Remove rain garden O&M, no longer applicable.*
  - *Inspect roof drain inlet (roof gutter system) at least twice a year, remove any debris that might clog the system.*
  - *Include mosquito controls, as necessary. (subsurface chambers meeting 72 hours draw down time and pocket wetland with properly maintained vegetation should not have mosquito breeding issues.)*
  - *Infiltration basin should be inspected twice per year per MSH Vol.2, Ch.2, Pg. 92, At least twice a year, mow the buffer area, side slopes, and basin bottom. Remove grass clippings and accumulated organic matter to prevent an impervious organic mat from forming.*

**The Long-term O&M Plan section 4.0 has been updated to include the feedback in this comment. Please refer to Appendix D of the Narrative and Stormwater Report.**

Please do not hesitate to contact my office if there are any further questions or comments on this response to comments letter or submission. Thank you for your help with this project.

*Sincerely,*

Steve Kohm PE  
**Prime Engineering, Inc.**