LEGACY ENGINEERING

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December 23, 2020

Conservation Commission
Town Offices
703 Washington Street
Holliston, MA 01746

Ref: 45 Washington Street
Notice of Intent

Dear Members of the Board:

I am writing to respond to comments received from CMG Environmental dated December 7, 2020 and various comments from town officials. Please find enclosed the following;

- An invasive species removal and management plan;
- A copy of the revised Stormwater report; and
- Two copies of a revised site plan.

We offer the following responses to CMG Environmental's comments for the Board's consideration:

GENERAL ENGINEERING AND DRAINAGE DESIGN CONSIDERATIONS:

1. *Comment: Snow storage areas should be noted on the layout plan along with proper signage to clearly identify these areas.*
   Response: Snow storage has been moved to the layout plan. And signs have been added in areas of bulk storage.

2. *Comment: CMG recommends an adequate snow shelf with guard rail or fencing along the full length of each of the two infiltration basins adjacent to Site pavement areas to prevent snow storage within the stormwater basins.*
   Response: A guard rail and 3-foot snow shelf has been added around each basin, along with signage warning not to store snow in stormwater basins. These changes are reflected on sheets C-3 and C-4.

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Stormwater Standard 1

3. *Comment: The Stormwater Report adequately documents compliance with this standard.*
   Response: No response required.

Stormwater Standard 2

4. *Comment: A portion of the site is located within a FEMA 100-year Flood Zone A with no defined flood elevation. The proposed stormwater basin construction will slightly lower the existing grades and reduce some pavement areas within this zone. CMG recommends cut and fill volumes be provided for work within the flood zone to document there is no increase to existing fill areas within this zone.*
   Response: A cut-fill calculation has been added to sheet C-4 for areas within the Flood Zone.

5. *Comment: Hydrology calculations should be revised to use a 5-minute minimum time of concentration (Tc) for both existing and proposed conditions.*
   Response: The minimum Tc has been changed to 5 minutes.

6. *Comment: The design of Basin #1 does not provide 1 ft. of freeboard during the 100-year storm event. CMG recommends the design 100-year flood elevations also be listed on the schedule of Dimension and Elevations provided on sheet C-8.*
   Response: The depth of Basin #1 has been increased and now provides 1 foot of freeboard. The 100-year flood elevations have been added to the detail on sheet C-8.

7. *Comment: A 10ft. wide maintenance berm is not provided surrounding each infiltration basin. CMG recommends Applicant's engineer verify there is adequate access from the site's parking area for routine maintenance of the two (2) proposed infiltration basins.*
   Response: The basins are small and shallow, making both access and maintenance easy without providing a 10-foot wide access berm. Access ramps and openings in the now included guard rails have been provided for both basins as shown on sheet C-4. Both basins are readily accessible from the adjacent parking areas.

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Stormwater Standard 3

8. *Comment: The Stormwater Report adequately documents compliance with this standard.*
   Response: No response required.

Stormwater Standard 4

9. *Comment: Forebays are noted but not shown on the Grading and Utilities Plan C-4. Grading Plan should match the detail shown on Sheet C-8.*
   Response: A sediment forebay is proposed for Basin #1 and is now shown on sheet C-4.

10. *Comment: Sediment forebay sizing calculation must be provided to document compliance with this standard.*
    Response: Sediment forebay sizing calculations are provided under the Standard 4 section of the stormwater report.

Stormwater Standard 5

11. *Comment: Not applicable, Site is not a LUHPPL.*
    Response: No response required.

Stormwater Standard 6

12. *Comment: The Stormwater Report adequately documents compliance with this standard.*
    Response: No response required.

Stormwater Standard 7

13. *Comment: The Stormwater Report adequately documents compliance with this standard.*
    Response: No response required.

Stormwater Standard 8

14. *Comment: The site is > 1 Acre and therefore an EPA NPDES Construction General Permit (CGP) registration. An adequate SWPPP is provided within the Stormwater Report. CMG recommends the Conservation Commission make submission of the CGP registration prior to construction a condition of approval.*
    Response: No response required.

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15. *Comment: Erosion control (compost sock) diameter is not specified on the detail shown on Sheet C-8. CMG recommends a minimum 12" diameter compost sock be specified.*
    Response: Diameter is now specified for the compost sock detail on sheet C-8.

16. *Comment: CMG recommends Mirafi 700x Filter Fabric or approved equal to be specified for geotextile fabric beneath stone on construction entrance detail.*
    Response: Note #3 on sheet C-8 has been added to the construction entrance detail as requested.

Stormwater Standard 9

17. *Comment: The Stormwater Report adequately documents compliance with this standard.*
    Response: No response required.

Stormwater Standard 10

18. *Comment: An illicit Discharge Statement is provided as Attachment C of the Stormwater Report. CMG recommends the Conservation Commission require this same statement be provided on the final construction "as-built" plan prior to issuance of a Certificate of compliance as a condition of approval.*
    Response: No response required.

MASS DEP COMMENTS:

We offer the following responses to the Mass DEP comments dated 11/3/2020 for the Board's consideration:

Comment: Proposed infiltration basin #1 is located within 50ft of the adjacent resource areas. Applicant should demonstrate compliance with the design criteria for infiltration basins contained in Volume 2 Chapter 2 Massachusetts Storm Water Handbook, including setbacks from surface waters of the Commonwealth. While it appears that proposed work within BLSF will occur within limits of existing disturbance and will only lead to an increase in storage capacity on the property it is recommended that the applicant establish a flood elevation for the site in order to accurately quantify impact to BLSF resource.

Response: The water infiltrating portion of Infiltration Basin #1 has been moved outside of the 50-foot wetland buffer. A cut-fill calculation has been added to sheet C-4

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demonstrating that there is no net increase in ground elevation within the Zone A flood plain area.

CONSERVATION AGENT COMMENTS:

We offer the following responses to the Conservation Agent's comments dated 11/5/2020 for the Board's consideration:

1. *Comment: Existing tree line is written on the plan, but there is no symbol or line associated with it.*
   Response: The tree line has been darkened on the plan and additional labels provided to clarify.

2. *Comment: The entire limit of the existing chain link fence is not shown. The fence currently extends in the buffer zone on the western side of the lot. Is there a plan for the fence to be rebuilt/repaired?*
   Response: The existing fence has been extended on the existing conditions sheet C-1. The fence is proposed to be removed where it sits on the applicant's property. The western end of the fence does not sit on property owned by the applicant and will be left as-is.

3. *Comment: The wetland flags are largely missing or in unreadable condition. As a general condition in an Order of Conditions these flags have to be replaced and kept in readable condition.*
   Response: Existing conditions note #5 has been added to sheet C-1 regarding this.

4. *Comment: I noticed a lot of bittersweet, Japanese knotweed, multiflora rose, and autumn olive onsite. Particularly, there was a lot of bittersweet, with their berries blown into the paved area. With construction going on so close, this is a prime opportunity for these plants to overwhelm the area. A boilerplate condition in an Order of Conditions in Holliston is to remove all invasive species encountered onsite and dispose of them properly. It would be worthwhile to have a plan to address them (cutting, painting with herbicides, etc.) Anything we can do to stop the spread, even localized, is worthwhile in the Commission's view.*
   Response: Landscaping note #6 has been added to the landscaping plan sheet C-5 regarding this. A narrative removal plan is attached.

5. *Comment: Silt fence/erosion controls should wrap around the stockpile area to avoid sedimentation into the street. The stockpiles are located outside of Conservation jurisdiction but good practice.*
   Response: Refer to Erosion Control Note #2 on sheet C-2.

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6. *Comment: Any specs on erosion controls? Otherwise it's left to the applicant's discretion, but I find it better to have something prescribed on a plan. (Comment addressed on later sheet)*
   Response: Erosion control details can be found on sheet C-8.

7. *Comment: Will this result in an increase in square footage of impervious surface within the Commission's jurisdiction? Will the parking lot be repaved? It wasn't in great condition during the site visit earlier today.*
   Response: This redevelopment will result in a decrease in impervious surfaces within the Commission's jurisdiction by 3,030 s.f. The entire parking lot will be repaved.

8. *Comment: Concerned about encroachment into the 50' NDZ, even if it's limited to areas previously disturbed. Is it possible to shrink the number of display spaces, perhaps 18 to 14, relocated the entrance ~20' to the right and use some of that area for the detention basin, making it shorter and wider? DEP also expresses concerns with meeting the stormwater standards, and compliance with the standards should be demonstrated.*
   Response: Stormwater Basin #1 has been redesigned based on several comments, which eliminates all paving in the 50' NDZ except for a very small corner near Stormwater Basin #2. The net change represents a substantial improvement in the 50' NDZ as compared to existing conditions.

9. *Comment: Norway spruce is invasive – do not use. Better to use a native species. Blue spruce may also be invasive – USDA has no information on its status in Massachusetts. Good alternatives are white spruce (Picea glauca), northern white cedar (Thuja occidentalis) balsam fir (Abies balsamea), red pine (Pinus resinosa) or white pine (Pinus strobus). Not exhaustive of a list for native evergreens, but options to explore.*
   Response: The note has been revised to eliminate Norway spruce and blue spruce and has been replaced with white spruce, northern white cedar, and balsam fir. Note #7 has been added to sheet C-5 requiring all plant species to be approved by the Conservation Agent.

10. *Comment: Shade trees and shrubs should be of a native variety as well. No details given on species.*
    Response: Specified species for shade trees have been added to sheet C-5. Landscaping note #8 has been added to Sheet C-5 requiring the use of native species.

11. *Comment: Native plantings are required as a boilerplate condition in an Order of Conditions in Holliston.*
    Response: See response above.

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12. *Comment: Generally, using salt as a deicer close to the wetlands is not preferred. If there was another alternative, or even if the areas paved within the 100' buffer zone were used as snow storage that would be better.*

    Response: Per the O&M, deicing chemical application will be as little as possible while provide a safe environment for vehicular operation and function.

13. *Comment: Since there is proposed encroachment into the 50' NDZ, this is where I'd usually request some sort of mitigation be shown. However, there does not seem to be any onsite space for this. Having a formal plan to address invasive species, now and in the future, is also a valid mitigation option. While removal of invasive is expected, it's still a good idea to offer it.*

    Response: A written plan for invasive species removal is attached.

14. *Comment: Installation of wetland markers would be appreciated. With this proposed use of the property, there is significant potential for dumping, snow storage, leakage etc. going into the buffer zones and wetlands.*

    Response: Wetland markers have been added to the plans on sheet C-4.

15. *Comment: Other sheets label the area to the left (west) of the building as a landscape area, but I don't see any proposed plantings in that area.*

    Response: The area will be grassed.

16. *Comment: Erosion control specs provided here. Given the nature of the project, and that there is proposed encroachment in the 50' NDZ, I recommend a combination compost sock/silt fence rather than just the compost sock for redundancies in the event of a breach.*

    Response: A silt fence detail has been added to Sheet C-8. Sheet C-2 has been updated to call for the compost sock silt/fence where the limit of work is within 100' of wetlands.

17. *Comment: There is proposed alteration of BLSF. It's not fill as is usual, but parts of the detention basin #1 and some paving are within FEMA Zone A, the 100-year floodplain. This amount of disturbance needs to be quantified. DEP agrees in their comments.*

    Response: A cut-fill calculation has been added to sheet C-4 for areas within the Flood Zone demonstrating that there is no loss of potential flood storage, although we are of the view that these areas are unlikely to flood given their elevation relative to the wetland elevation.

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Yours Truly,

LEGACY ENGINEERING LLC

Digitally signed by Daniel J. Merrikin, P.E.
Date: 2020.12.23 14:55:56 -05'00'

Daniel J. Merrikin, P.E.
President

cc: File
Dave Faist – CMG: A copy of the plans and stormwater report

Invasive Plant Control
45 Washington Street
Holliston, Massachusetts

Invasive species identified on the site include Oriental Bittersweet *(Celastrus orbiculatus)*, Multiflora Rose *(Rosa multiflora)*, Japanese Knotweed *(Polygonum cuspidatum)*, and Autumn Olive *(Eleaegnus umbellata)*

Oriental Bittersweet *(Celastrus orbiculatus)*[1]

Primary methodologies: Manual/mechanical techniques, chemical, combination treatments, post-treatment management.

- Manual/Mechanical: For light infestations, vines can be pulled or dug out by the roots and removed from the area. Fruiting vines should be bagged and landfilled. Cutting the vines without removing the roots or chemically treating the stems will stimulate regrowth. This method can be used in any season but preferably before the vines have fruited.

- **Chemical**: Paint freshly cut stems with an appropriate systemic herbicide. Spraying: Apply an appropriate foliar herbicide after the first hard frost in the fall or in early spring while most native plants are dormant but bittersweet is actively photosynthesizing. Sites should be monitored after treatment for regrowth.

- **Combination**: Cut the vines low to the ground and apply an appropriate herbicide to the cut stumps. Treat in winter, early spring or fall, preferably when native plants are dormant and will be unaffected. Vines can also be cut and a foliar spray used later on the re-sprouts.

- **Post treatment management**: Regular surveys of affected areas and re-treatment where necessary.

Multiflora Rose *(Rosa multiflora)*[2]

Primary methodologies: Manual/mechanical techniques, chemical and combination treatments, post-treatment management.

- Manual/Mechanical: Mechanical and chemical methods are currently the most widely used methods for managing multiflora rose. In high quality natural communities, cutting of individual plants is preferred to site mowing to minimize habitat disturbance. Pulling or removing individual plants by hand is effective when plants are small. Special care should be taken to ensure that all roots are removed to prevent re-sprouting. If plants develop from severed roots these should be removed as well.

[1] Forest Invasive Plants Resource Center. https://www.na.fs.fed.us/spfo/invasiveplants/factsheets/pdf/oriental-bittersweet.pdf.

[2] Natural Resources Conservation Service. Pest Management – Invasive Plant Control, Multiflora Rose. Conservation Practice Job Sheet NH-314. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_014999.pdf.

Cutting is appropriate for small initial populations and for environmentally sensitive areas where herbicides cannot be used. Repeated cutting will control the spread, but will not eradicate it. Stems should be cut at least once per growing season as close to ground level as possible. For disturbed areas containing large populations of multiflora rose, mowing can provide partial control, by restricting top growth and spread. Mowing three to six times a year can be effective. The objective of a mowing program is to clear the existing vegetation and reduce the reproductive capacity of the below ground portions of the plant.

- Chemical & Combination Treatments: Paint freshly cut stems with an appropriate systemic herbicide. Spraying: Spray the foliage in the spring with an appropriate foliar herbicide. Control programs must be monitored and followed up if necessary by repeated herbicide application or used in conjunction with other control methods such as mowing or hand cutting with individual stem treatments.

- **Post treatment management**: Regular surveys of affected areas and re-treatment where necessary.

Japanese Knotweed *(Polygonum cuspidatum)* [3]

Primary methodologies: Manual/mechanical techniques, chemical and combination treatments, post-treatment management.

- Manual/Mechanical: Mechanical controls are effective for small initial populations or in environmentally sensitive areas where herbicides cannot be used and include grubbing or pulling seedlings, rhizomes, mature plants, and repeated clipping. Manual control takes special precautions because any live plant part 1/2 inch or larger may sprout. Plant parts must be disposed of properly and must not be allowed to enter waterways. Stems and roots must be contained or dried with little or no soil contact or they may sprout. Do not compost plant parts.

  Digging or pulling (uprooting) will eliminate a portion of the root system but not all. Pull the root crown and as much root as possible. Each time new sprouts are seen (look after a week and at least 20 feet from the plant) uproot them and get as much root as possible. This method is only feasible on very small patches. Because disturbed, open soil can support rapid invasion by other invasive species, managers must monitor their efforts at least once per year and repeat control measures as needed. Limit soil disturbance whenever possible.

  Hand cutting, mowing or other methods must be applied every 2-3 weeks from April through August. Cutting should continue after August but less frequently. Prevent plants from exceeding 6 inches in height. Again, dispose of plant parts properly or they will sprout. Covering with heavy plastics and geotextile fabrics has had some success but is costly and requires pulling, cutting or herbicide treatment near the edges. Cut stems to the ground surface and then cover the stand being sure to extend coverage at least 10 feet beyond the

[3] Natural Resources Conservation service. Pest Management – Invasive Plant Control, Japanese Knotweed. Conservation Practice Job Sheet MN-797. https://efotg.sc.egov.usda.gov/references/public/MN/797JapaneseKnotweed.pdf.

farthest stems. Weigh down the edges and monitor for sprouts. Leave the cover in place for at least two growing seasons.

The treatments will need to continue for at least three years but probably much longer depending on the size of the patch. Manual control of knotweed is best suited to ecologically sensitive areas and isolated small patches where there is a commitment to avoid herbicide use.

- **Chemical & Combination Treatments**: Herbicide applications to knotweed must be carefully planned and implemented as the stands are typically near surface waters. Methods include spraying, wicking, injecting, and pouring. Integrating control techniques, such as cutting in the spring and applying herbicide in late summer may be a good alternative for the site.

    1. **Foliar Treatment**: The best time to foliar spray is when the plants are 3-6 feet tall. Follow up treatments will be required later in the growing season. Foliar applications appear to be a reasonably efficient approach (1 to 4 treatments over two seasons) to obtain control over small and medium size knotweed patches. Larger patches will often require treatment over several years and combinations of manual and chemical control methods. Do not cut down treated plants for at least a full growing season.

    2. **Cut Stem Treatment**: Use this method in areas where plants are established within or around non-target plants or where vines have grown into the canopy. Cut the live stem about 2 inches above ground level (between the lowest nodes). Immediately apply an appropriate herbicide to the cross-section of the stem. A subsequent foliar application of glyphosate may be require for controlling new seedlings and re-sprouts.

- Disposal: Stem and root fragments as small as 1⁄2 inch can sprout so special care must be taken to contain the plant parts when using manual control. Do not allow plant parts to enter waterways during control. Limit soil contact when drying the plant parts. Small plants may be hung in trees to prevent re-rooting.

    - Cut stems may be piled on a raised platform, brush pile or tarp for drying. Do not compost plant materials as they may sprout and then spread. Piles may be burned. Do not remove soil or plant material from the site unless being disposed of in a landfill.

- **Post treatment management**: Regular surveys of affected areas and re-treatment where necessary.

Autumn-Olive *(Eleaegnus umbellata)*[4]

Primary methodologies: Manual/mechanical techniques, chemical, combination treatments, post-treatment management.

[4] Natural Resources Conservation service. Pest Management – Invasive Plant Control, Autumn Olive. Conservation Practice Job Sheet NH-595. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1081635.pdf.

The best method of controlling these species is to prevent them from becoming established. Plants should be removed as soon as possible if they are found newly colonizing an area. Small plants and seedlings can be hand-pulled, especially when the soil is moist. Herbicide treatment is probably the best method for eradicating larger, well-established plants, as cutting only stimulates sprouting and leads to thicker growth.

- **Manual/Mechanical**: Seedlings and sprouts can be pulled by hand when the soil is moist enough to insure removal of the root system. Root fragments may re-sprout if left in the ground. Cut trees at ground level with power or manual saw. Cutting is most effective after trees have begun to flower, but before they produce seeds. Because autumn olive spreads by suckering, re-sprouts are common after cutting. Cutting is an initial control measure and success will require either herbicide application or repeated cutting.

- **Chemical**: Methodologies include foliar, cut stem, and basal treatments.

    1. **Foliar Treatment**: Foliar applications may be adequate for small patches; Glyphosate, Triclorypr and Dicamba have all been used with positive results. The recommended dilution of glyphosate in this case is a 1% to 2% solution.[5] Research has shown that the best time for this application is in late August or September when the plant is actively trans-locating materials to the roots. Dicambra should be applied in late June at a rate of 4 lbs/gal (2 qt./100 gal/acre) with a surfactant. This prescription provided 90% total kill and severely retarded the growth of surviving stems the following year.[6]

    2. **Cut Stem Treatment**: Cut stem treatment is accomplished by cutting the main stem of the plant and then painting the herbicide on the stump. Glyphosate is effective and commonly used. A 10- 20% dilution is recommended for painting on stumps

    3. **Basal Treatment**: Reports have demonstrated that basal applications (stem injections) in March, of Triclopyr alone or in combination with 2,4-D provided excellent control of Autumn Olive even at very low concentrations (down to 1% Triclopyr in diesel oil).[7]

Important Note: Mention of specific herbicide products in this document does not constitute an endorsement or specific recommendation. These products are mentioned specifically in control literature used to create this document. Any application of chemical treatments should be done by or under the direct supervision of a licensed applicator.

[5] Kuhns L. J. 1986. Controlling Autumn Olive with herbicides. Proc 40th Ann. Meet. N. E. Weed Sci.Soc.

[6] See footnote 5.

[7] See footnote 5.