



# Caron Environmental Consulting, LLC

Wetlands • Forestry • Permitting • Habitat Studies

## Wetland Zone Restoration Sequence

30 Warren Street

Littleton, MA

### General:

1. In the event of conflicts with this plan the requirements of the Littleton Conservation Commission shall be followed.
2. The measures in this plan need to be conducted in coordination with the drainage mitigation measures being developed by Foresite Engineering.
3. Wetland restoration shall take place within the disturbed area covering an area of approximately 2,400 s.f.
4. Buffer zone restoration shall take place to restore to fully vegetated lawn the areas between the wetland line and the house.
5. All materials required to implement this plan shall be on-site to ensure that the work can proceed as efficiently as possible.
6. If the specified plants are not available substitution with other native wetland species shall be allowable, with the prior approval of the preparer of this plan.

### Wetland Restoration:

1. Remove all invasives species from the area. In this area the invasive plants should be removed by pulling or excavation if necessary.
2. Cut up the debris from the large, wind-damaged white pine. The entirety of the debris may be removed from the site. Alternatively, the smaller debris, i.e. limbs may be piled to provide wildlife habitat, and the larger sections of the trunk may be dispersed in the wooded area to provide coarse woody debris cover for wildlife.
3. In order to ensure that the stone-filled trench does not lower the water table in the wetland, while at the same time minimizing additional work in the wetland, at the treeline to the north a four-foot section of the stone shall be removed. This area should then be filled with compacted soil. Some of the fill that needs to be removed should be suitable for this purpose.
4. Cover the remainder of the stone-filled trench with three inches of loam and seed with New England Wetland Plant's *New England Wetmix*, or approved equal.
5. Already this growing season the areas to the rear of the stone-filled trench have become almost completely vegetated with herbaceous wetland vegetation, despite the thin layer of fill in that area. Accordingly, it is recommended that no extensive work be done in this area. The only recommendation is to cultivate any remaining bare patches to alleviate any surface compaction,

and to then seed those areas with New England Wetland Plant's *New England Wetmix*, or approved equal.

6. The establishment of wetland vegetation on the house side of the stone-filled trench has not been significant. Accordingly, the emplaced fill in this area shall be removed using a small excavator and/or by hand. The fill should be removed down to the natural soil surface that was covered. The area is to then be seeded with New England Wetland Plant's *New England Wetmix*, or approved equal.
7. Any areas of fill, in the buffer zone between the house and the wetland, should be removed, and the area surfaced with two to three inches of loam and seeded with a shade-tolerant lawn seed mix.
8. Plant a row of shrubs along the wetland line between Flags 2 and 4, to provide for a visual demarcation of the edge of wetlands. The line of shrubs shall consist of 20 shrubs with a minimum height of 24 inches at the time of planting. The shrub plantings shall consist of a mix of Winterberry, Highbush Blueberry and Arrow-wood.
9. Landscape, with native species, any other altered, historically landscaped areas within 50 feet of the wetlands.

**Monitoring and Long-term Maintenance:**

1. The property owner shall monitor the restored area for invasive species for a minimum of two growing seasons, and shall remove any invasive species that are found. At the owner's discretion this may be continued into the future. It appears in particular that purple loosestrife and Morrow's honeysuckle may try to establish in the area.
2. Due to the close proximity to the house, any tree species that become established in the area may be removed by cutting or pulling when they are seedlings or small saplings. All native shrub and herbaceous vegetation shall be allowed to develop naturally.
3. The existing wooded foot path to the sheds on the rear of the site may be left in place, and maintained as necessary without expanding its footprint.
4. The traditionally lawn and landscaped areas may continue to be used and maintained as they have been since the house was originally constructed. It is recommended that any new landscaping utilize native species.