Proposed Project Description
99 Andrew Street
Newton, Massachusetts

The Applicant proposes to add a 248 square-foot square foot addition with a 796 square-foot attached wood-framed deck onto the eastern side of the existing single-family home. Proposed construction activities will take place within Bordering Land Subject to Flooding (BLSF) and the Buffer Zone to Inland Bank. The closest distance to Bank is 30 feet. Existing grades are to remain unchanged. Nineteen helical piers set at grade with a six-inch square wooden post will support both the addition and deck. The deck is to be constructed so as to allow rainwater to pass freely between the decking allowing natural re-infiltration to groundwater. Construction of the new deck results in 6.45 cubic feet of flood storage displacement (See Floodplain Analysis below). The Applicant proposes to provide compensatory flood storage at no less than 110% of that displaced. Access to the construction site is by foot only via a right side fence gate. Only excavation required for the compensatory storage area will occur and will be accomplished utilizing hand tools. The helical piers will be set utilizing a hand-operated machine.

The construction location is currently comprised of an existing deck with associated stairs, support posts, concrete walk, and manicured lawn. The deck, stairs, and posts will be removed. Construction will require the removal of one twin, 12-inch diameter Japanese Red Maple *(Acer palmatum* var. *atr)*. The Applicant proposes to provide native shrub plantings to mitigate for lost habitat associated with the tree (See Habitat Evaluation below).

Erosion and sedimentation controls consisting of a silt sock or similar will be installed prior to the start of construction activities. The erosion and sedimentation controls will be properly maintained throughout the construction process and will remain in place until all disturbed soils have been stabilized and re-vegetated. The site will be kept clean and any trash or debris will be picked up before the end of each day.

Floodplain Analysis

The subject property is contained entirely within the 100-year flood zone to *South Meadow Brook*. Construction activities will result in the displacement of 6.45 cubic feet of flood storage. Removal of the existing structures accounts for 8.2 cubic feet of reclaimed flood storage.

Flood Displacement & Storage Calculations

Note: Elevation change from existing grade to the 100-year flood is 0.7 feet (8.8"). All construction materials are standard dimensional lumber.

Existing

Posts (3 at 4" x 4"):	4" x 4" x 8.8" x 3 = 45 cu" = 0.2 cu'
Stair treads (4 at 11W" x 48L"):	11" x 48" x .75" x 4 = 1,584 cu" = 1.0 cu'
Stair risers (3 at 7H" x 48L"):	7" x 48"x .75" x 3 = 756 cu" = 0.4 cu'

Stringers (4 at 33L" x 7.5H"):	33" x 7.5" x 1.5" x 4 = 1,485 cu" = 0.9 cu'
Total existing flood displacement:	**0.2 + 1.0 + 0.4 + 0.9 = 1.6 cu ft.**

Proposed

Posts (19 at 6" x 6"):	6" x 6" x 8.8" x 19 = 6,019 cu" = 4 cu'
Stair treads (3 a 11"W x 48"L):	11" x 48" x .75" x 3 = 1,188 cu" = 0.7 cu'
Stair risers (3 at 7.5"W x 48"L):	7.5" x 48" x .75" x 3 = 810 cu" = 0.5 cu'
Stair stringers (4 at 33"L x 7.5"W):	7.5" x 33" x 1.5" x 4 = 2,160 cu" = 1.25 cu'
Total proposed flood displacement:	**4 + 0.7 + 0.5 + 1.25 = 6.45 cu. ft.**
Net increase in flood displacement:	**6.45 – 1.6 = 4.85 cu. ft.**
Proposed compensatory flood storage:	**6.45 x 10% = 7.2 cu. ft.**

Habitat Analysis

Construction activities require the removal of one, twin 12-inch diameter Japanese Red Maple *(Acer palmatum* var. *atr)*. The Applicant proposes to mitigate for lost habitat utilizing native shrub plantings including, but not necessarily limited to Dwarf Shadbush *(Amelanchier spicata)*, Inkberry *(Ilex glabra)*, and Nannyberry *(Viburnum lentago)*.

Japanese Red Maple: Food source for squirrels and chipmunks, grouse, quail, and many songbirds. Provides nesting habitat for songbirds.[1]

Dwarf Shadbush *(Amelanchier spicata)*: Attracts woodpeckers, thrushes, catbirds, bluebirds, cardinals, robins, Brown Thrasher, Eastern Towhee, Cedar Waxwing, Baltimore Oriole, and a host of other songbirds that feed on its fruit. Spring blooms attract pollinators and other insects that, themselves, provide food for native songbirds. It will grow in a variety of habitats ranging from moist soils at the edge of wetlands (*A. canadensis*) to drier rocky hillsides and thickets (*A. arborea*). This shrub will grow in full sun to partial shade.[2]

Inkberry *(Ilex glabra)*: Attracts bees, butterflies, and other pollinators. Provides a food source for songbirds and small mammals.[3]

Viburnum: Nannyberry *(Viburnum lentago)*, Southern Arrowwood *(Viburnum dentatum)*: Provides food for Ruffed Grouse, Wild Turkey, Pileated Woodpecker, Robins, Brown Thrasher,

[1] https://www.arborday.org/trees/treeguide.

[2] https://www.ecolandscaping.org/05/designing-ecological-landscapes/native-plants/native-shrubs-to-consider-for-ecological-landscapes-in-the-northeast/.

[3] https://plants.ces.ncsu.edu/plants/ilex-glabra/.

Great Crested Flycatcher, Cedar Waxwing, Gray-cheeked, and Hermit Thrush. Grows in upland and wetland environments.[4]

Planting Methodology

1. Erosion and sedimentation controls will be placed around the construction area to demarcate the limit of disturbance and ensure against any encroachment into the planting area. The erosion and sedimentation controls will be properly maintained throughout the construction process and will remain in place until all disturbed soils have been stabilized and re-vegetated.

2. Plant material will be installed in accordance with specifications outlined in an approved planting schedule (see items #6, #7 & #8 below). If the planting process takes longer than one day, awaiting plants will be kept shaded and watered to minimize shock.

3. Planting will be accomplished by hand. If required, a tracked or rubber-tired excavator may be used for larger plant material.

4. If deemed necessary, the planting area will be mulched with a suitable compost material to a thickness sufficient to ensure the retention of moisture and soil stabilization.

5. Plant species include, but are not necessarily limited to the following:

Species	Size	Number/Density
Dwarf Shadbush *(Amelanchier spicata)*	2 gal.	3/individually
Inkberry *(Ilex glabra)*	2 gal.	3/individually
Southern Arrowwood *(Viburnum* dentatum*)*	2 gal.	3/individually
Nannyberry *(Viburnum lentago)*	2 gal.	3/individually

6. Special considerations:

   a. Availability of plant stock may be limited or may be shipped only when season and weather conditions allow for harvesting. The contractor should carefully plan restoration operations with the nursery(s) prior to beginning work.

   b. Seasonal considerations are critical to the long-term survival of the plant material. Planting should be completed as quickly as possible. Winter planting is not recommended. Mid-summer planting will require a regularly scheduled watering program.

   c. In the event that proposed plant species cannot be found at local nurseries then alternate species will be chosen.

[4] https://www.ecolandscaping.org/05/designing-ecological-landscapes/native-plants/native-shrubs-to-consider-for-ecological-landscapes-in-the-northeast/.

7. Proper planting techniques will be followed. These include but are not limited to the following:

    a. Holes will be dug at least one half times greater in diameter than the individual root balls if existing soil is suitable for planting.

    b. Holes will be dug at least twice the diameter and depth of the individual root balls and back filled with loam or a loam/peat moss mix if existing soil is unsuitable for planting.

8. A watering schedule will be maintained to help ensure planting success.

9. The plantings will be monitored on a timely basis over the subsequent two growing seasons to ensure at least 75% vegetation coverage. The monitor will contact both the Commission and the Applicant immediately if conditions exist that might adversely impact the health and vigor of the plantings.