

October 18, 2022

WETLAND REPLICATION PLAN
315 and 319 Summer Street, Walpole

PURPOSE:
CONSTRUCTION DOCUMENT

PREPARED FOR:
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Wall Street Development Corporation
2 Warthin Circle
Norwood, MA 02062

All construction work discussed in this document shall be supervised by a qualified wetland scientist with a minimum of five years' experience.

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I. EXISTING BORDERING VEGETATED WETLANDS

The existing Bordering Vegetated Wetlands (BVW) to be impacted are located to the rear of 315 Summer Street in Walpole, MA. The BVW impact areas equate to 598 SF in size. The BVW impact areas are hydrologically connected to an unnamed intermittent stream just off the northeastern property boundary. The key features distinguishing the areas as BVW are the vegetation and the soil conditions present. Hydric soils are present within the top foot of soil surface, so wetland plants thrive in this environment. Dominant wetland indicator plants within these areas include red maple, American elm, yellow birch, spicebush, sweet pepperbush, cinnamon fern, and jewelweed. The BVW impact areas currently provide protection to the following interests: ground water supply, flood control, erosion control and sedimentation control, storm damage prevention, other water damage prevention, wildlife protection, plant or wildlife habitat, and the natural character or recreational values of the wetland resources. Wetland impacts are proposed between the following wetland flags:

- IS100 through IS104;
- IS1 through IS4;
- W1 through W4; and
- W15 through W23

II. WETLAND REPLICATION AREA

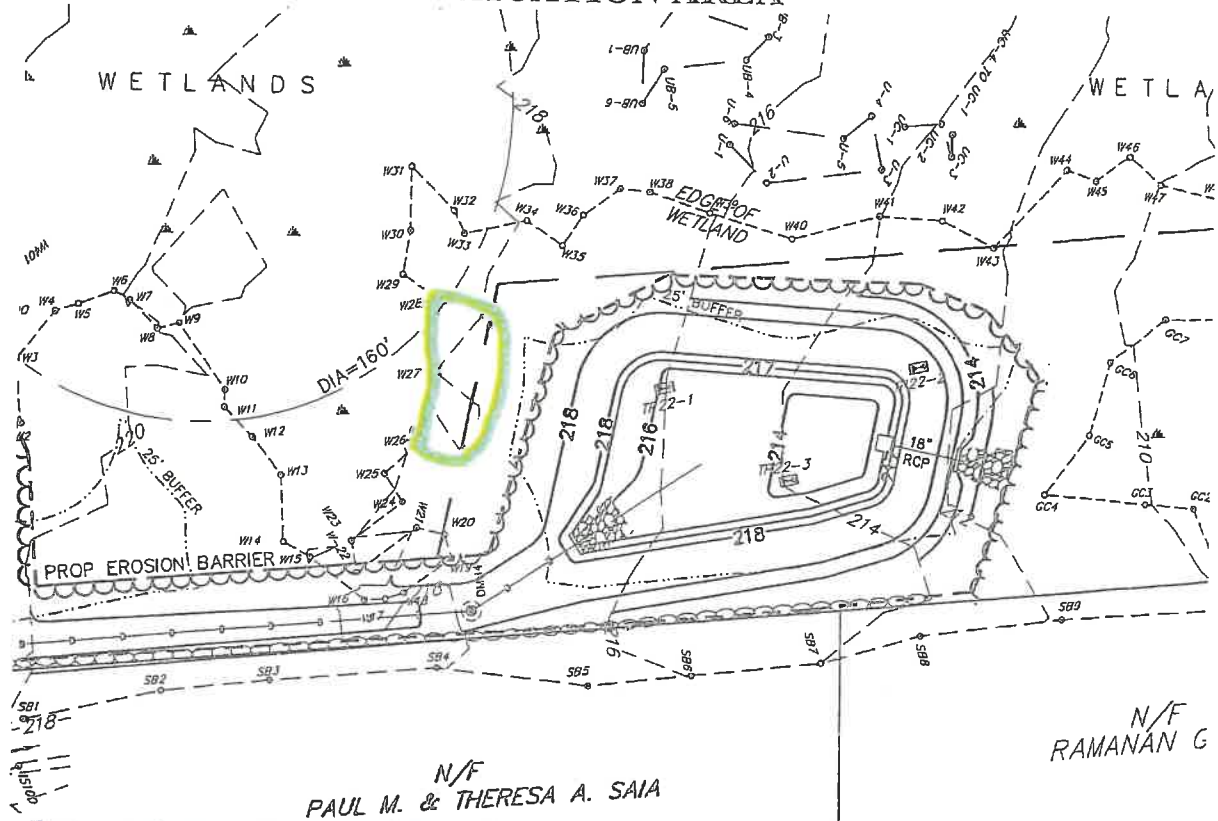


Figure 1. Proposed location of Bordering Vegetated Wetland Replication Area near wetland flags W25 - W28 to the south of the proposed drainage basin.

A. LOCATION:

As shown in Figure 1 above, the Bordering Vegetated Wetland Replication is proposed as an extension of the existing BVW near wetland flags W26 - W28, directly to the south of the proposed drainage basin. The size of the replicated area will be about 598 SF, the same size as the area lost. The location of the replication was selected for the following reasons:

- The area can easily be accessed from the cleared basin area. Due to the wide-spread tree spacing of the forest, machinery will be able to maneuver around the area with minimal impact. Natural re-vegetation will occur within the access area.
- The area within the forest was desirable for wetland replication due to the shade from surrounding large trees which will keep the wetland environment at a natural, cool temperature.
- The close proximity to the bordering vegetated wetland (BVW) will allow the replication area to blend into a similar landscape provided nearby. It is also in close proximity to one of the alteration areas.

- The BVW replication area will provide protection of the following benefits: ground water supply, flood control, erosion control and sedimentation control, storm damage prevention, other water damage prevention, prevention of pollution, wildlife protection, plant or wildlife habitat, and the natural character or recreational values of the wetland resources.
- Alternative areas were discussed in the Buffer Zone area around the proposed Warwick Road extension and stormwater drainage basin:
 - The areas to be filled for the Warwick Road extension is located off-site. Areas on the parcel that are still hydrologically connected to the BVW/intermittent stream system were considered.
 - It was found that there were several clusters of large-diameter oak and maple trees within Buffer Zone nearby Warwick Road and nearby the drainage basin which would not be suitable for removal.
 - The most suitable location Goddard determined was between wetlands flags W26 – W28 south of the proposed drainage basin as shown in Figure 1 on the previous page of this report. Replication in this area on-site will blend naturally with the adjacent BVW system and will not involve the removal of trees. All wetland impact areas will be mitigated in this 598 SF replication area.

B. GENERAL INSTALLATION PROCEDURES:

Supervision: All work within the replication area shall be supervised by a qualified wetland scientist. The wetland scientist shall submit qualification for approval by the Conservation Commission prior to the commencement of work that requires supervision. The supervisor shall submit monitoring reports to the Conservation Commission as described below. Reports shall contain details of all work performed and photographs of completed conditions.

Timing: Work shall take place ideally when the wetland impact area is not saturated. If necessary, a dewatering plan shall be approved by the Conservation Commission. The construction and installation of the replication area should be accomplished during the spring or fall growing seasons (between April 16 and May 31 or between September 16 and October 30). Planting during these periods is highly recommended. The replication area grading is advised not to commence unless the contractor can guarantee completion of the work within the replication area within the same season. The following steps may be completed congruently to ensure transplanted vegetation is immediately planted:

Step 1: Stake Limits of Work, Confirm Wetland Flags in Place & Install ECB

Stake out limits of work and confirm wetland flags are in place along the replication area. The access route shall be delineated by the erosion control barriers. Erosion control barriers shall then be installed in the form of staked siltation fence and mulch sock (or similar invasive-free barrier) placed at the limit of work for the replication area. These will remain in place and will be maintained until the areas are completely stabilized and then may be removed after approval of the Conservation Commission. The wetland scientist shall have the authority to require additional erosion control measures if deemed necessary.

Step 2a: Identify Shrubs, Woody Debris, and Boulders to be re-used in Replication Area

The wetland scientist shall identify and flag any native wetland shrubs within the wetland impact areas and replication area that may be dug up and stockpiled for use as additional plantings in the replication area. A few plant species that will likely be flagged include, but are not limited to: highbush blueberry and spicebush. Any flagged specimens shall be removed and carefully stockpiled in a designated area outside the replication area. Any large woody debris (rotting logs and tree stumps), moss covered boulders/rocks, ferns (hay scented fern and cinnamon fern), and other ground cover shall also be identified and flagged for stockpiling and subsequent addition to the replication area. Wetland trees that lie or stand along the edge of the replication area may be preserved at the discretion of the wetland scientist. Red maple saplings within the replication area should be preserved since they will be well suited for the replication area.

Step 2b: Remove Trees and Vegetation

Once the flagged trees, shrubs, and woody debris specimens have all been removed, stockpiled, or preserved, clear and remove all remaining vegetation within the replication area in preparation for excavation and grading.

Step 3: Excavation of Wetland Soils at the Wetland Impact areas

Prior to any soil excavation, a storage area for soil and leaf litter shall be prepared; soil shall not be stored in buffer zone. Topsoil, leaf litter, and subsoil shall be stockpiled separately. Wetland soils from the BVW area will be excavated and transported to the replication area. The soils immediately surrounding the BVW will also be transplanted to the replication area and will be placed along the inner border of the replication area to create a natural transition from wetland to upland soils.

Step 4: Excavation of Replication Area

An excavator or backhoe shall remove existing soils up to the edge of the proposed replication area boundary, to a depth at which redoximorphic features become visible in the C-horizon at the soil surface and at least one foot below proposed final grade, all of which shall be supervised and directed by the wetland scientist. Final grading will be determined in on site, but is anticipated to range from elevation 216 at the deepest desired depth and will elevate to 218 further upgradient. Topsoil and subsoil shall be removed from the area for re-use elsewhere in the project site or removed from the site. Subsoil of the C-horizon shall be loosened prior to Step 5 to ensure soils aren't compacted prior to topsoil placement.

Step 5: Final Grading of Replication Area

Upon removal of existing soils down to the proper depth (as determined by the wetland scientist), the organic soil from the BVW will be placed within the replication area. If soils from the impact area are not sufficient, supplemental soils shall be imported/sourced from composted organic materials and shall consist of a 50:50 mix of loam and organic material with an organic content between 12 and 20%. Topsoil shall be placed within the replication area to a depth 6-12" and even with the surrounding proposed elevation on design plan, to be determined by the supervising wetland scientist. Final grade shall be confirmed to be proper by the wetland scientist prior to plantings. Placement of soil shall be such that no equipment drives over or compacts placed soils. Final grading will result in micro relief of pits and mounds. Topography will create areas that pool and flood during heavy rain events and also see water near the surface during the wet season.

Step 6: Place Woody Debris and Boulders

Woody debris and moss-covered boulders shall be randomly placed throughout the replication area to provide cover for wildlife.

Step 7: Planting

Selected species, especially grasses and sedges, may be transplanted from the altered BVW into the replication area provided that the time of year and duration of plants' time out of soil is appropriate for survival of transplants. Precise citing of plants may be determined by the wetland scientist in the field prior to installation. All plantings (reference the planting list from section C) shall be distributed randomly throughout the area; trees spaced at 10-15' on center; shrubs spaced at 6-12' on center and herbaceous species 3' or less on center. Shrubs shall be planted in clumps of 3-4 of same species. As a rule, plants of the same species will be placed in groupings that more closely mimic natural conditions. Trees planted on mounds and shrubs and herbaceous cover in depressions. Stockpiled shrubs will be placed first. All other plantings will be removed from burlap sacks, wire cages and plastic containers prior to planting. Each plant will have its roots loosened prior to planting to encourage root growth away from the planting bulb. Leaf litter shall be spread throughout area if available. Wetland seed mix shall be scattered evenly by hand throughout the replication area. Once all work is complete an erosion control barrier will be installed to enclose the replication area on the access side of the replication area.

Step 8: As-built

Interim as-built plans, complete with one-foot contours, spot elevations, surface area, and cross sections of the replication area shall be prepared by a Registered Professional Land Surveyor of the Commonwealth and submitted to the Commission within 30 days of completion of final grading. The as-built plan will be submitted with an assessment of any differences between the as-built wetland replication area and the approved wetland replication design.

Step 9: Erosion Controls Removal

Once replication area is stable a request shall be submitted to the Conservation Commission to remove the erosion controls around wetland replication area. Upon approval of stabilization, erosion controls shall be removed promptly, and any significant disturbance shall be seeded with a wetland seed mix as specified in section C.

Step 10A: Replication Construction Report

Following the construction, the supervising wetland scientist shall provide a construction report to the Conservation Commission that includes photographs of the replication area under construction (including access) and at completion, soil characteristics (i.e. horizons, depths, texture, percent gravel and rock, organic matter, Munsell hue, value and chroma, consistence and evidence of hydrologic influence), and confirmation that plantings were installed correctly and correct seed mixes used. The report will also note any minor deviations from the plan that occurred.

Step 10B: Replication Monitoring

a. **Seasonal monitoring reports** shall be prepared for the replication area by a qualified wetland scientist for a period of 2 additional years after installation or every year until a COC is issued by

the Conservation Commission. This monitoring program will consist of early summer and early fall inspections and will include photographs and details about the vitality of the replication area. Monitoring reports shall be submitted to the Commission by November 15th of each year. Monitoring reports shall describe, using narratives, plans, and color photographs, the physical characteristics of the replication area with respect to stability, soil characteristics (i.e. horizons, depths, texture, percent gravel and rock, organic matter, Munsell hue, value and chroma, consistence and evidence of hydrologic influence), survival of vegetation and plant mortality, aerial extent and distribution, species diversity and vertical stratification (i.e. herb, shrub and tree layers). Invasive species will be documented if present, monitored and removed.

b. **At least 75% of the surface area** of the replication area shall be re-established with indigenous plant species within two growing seasons. If the replication area does not meet the 75% re-vegetation requirement by the end of the second growing season after installation, the Applicant shall submit a remediation plan to the Commission for approval that will achieve, under the supervision of a Wetland Specialist, replication goals. This plan must include an analysis of why the areas have not successfully re-vegetated and how the Applicant intends to resolve the problem.

C. PLANTING LIST:
Proposed Plantings for Replication Area (598 SF)

Common Name	Scientific Name	Number	Size
Trees (n= 3)*			
Red Maple (FAC)	<i>Acer rubrum</i>	1	4-5'
Yellow Birch (FAC)	<i>Betula alleghaniensis</i>	2	4-5'
Shrubs (n=8)*			
Sweet Pepperbush (FAC)	<i>Clethra alnifolia</i>	2	3 gal. pot
Highbush Blueberry (FACW)	<i>Vaccinium corymbosum</i>	3	3 gal. pot
Spicebush (FACW)	<i>Lindera benzoin</i>	3	3 gal. pot
Ground Cover (n=12)*			
Cinnamon Fern (FACW)	<i>Osmundastrum cinnamomea</i>	12	1 gal. pot
Seed Mix*			
New England Wetland Plants WETMIX or equivalent	Replication area	1	1 lbs

*Planting species and seed mixes may be substituted with Conservation Commission approval with similar native species with the same wetland indicator status if certain species are unavailable.

D. CONCLUSIONS

The BVW wetland impact will be mitigated by the construction of the 598 SF replication area. All local, state, and federal statutory interests and performance standards have been protected and will be met by the project as described above.

Sincerely,
 Goddard Consulting, LLC



Mitch Maslanka
 Wetland Scientist

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New England Wetmix (Wetland Seed Mix)

Botanical Name	Common Name	Indicator
<i>Carex vulpinoidea</i>	Fox Sedge	OBL
<i>Carex scoparia</i>	Blunt Broom Sedge	FACW
<i>Carex lurida</i>	Lurid Sedge	OBL
<i>Carex lupulina</i>	Hop Sedge	OBL
<i>Poa palustris</i>	Fowl Bluegrass	FACW
<i>Bidens frondosa</i>	Beggar Ticks	FACW
<i>Scirpus atrovirens</i>	Green Bulrush	OBL
<i>Asclepias incarnata</i>	Swamp Milkweed	OBL
<i>Carex crinita</i>	Fringed Sedge	OBL
<i>Vernonia noveboracensis</i>	New York Ironweed	FACW+
<i>Juncus effusus</i>	Soft Rush	FACW+
<i>Aster lateriflorus (Symphyotrichum lateriflorum)</i>	Starved/Calico Aster	FACW
<i>Iris versicolor</i>	Blue Flag	OBL
<i>Glyceria grandis</i>	American Mannagrass	OBL
<i>Mimulus ringens</i>	Square Stemmed Monkey Flower	OBL
<i>Eupatorium maculatum (Eutrochium maculatum)</i>	Spotted Joe Pye Weed	OBL

PRICE PER LB. \$135.00 MIN. QUANTITY 1 LBS. TOTAL: \$135.00


APPLY: 18 LBS/ACRE :2500 sq ft/lb

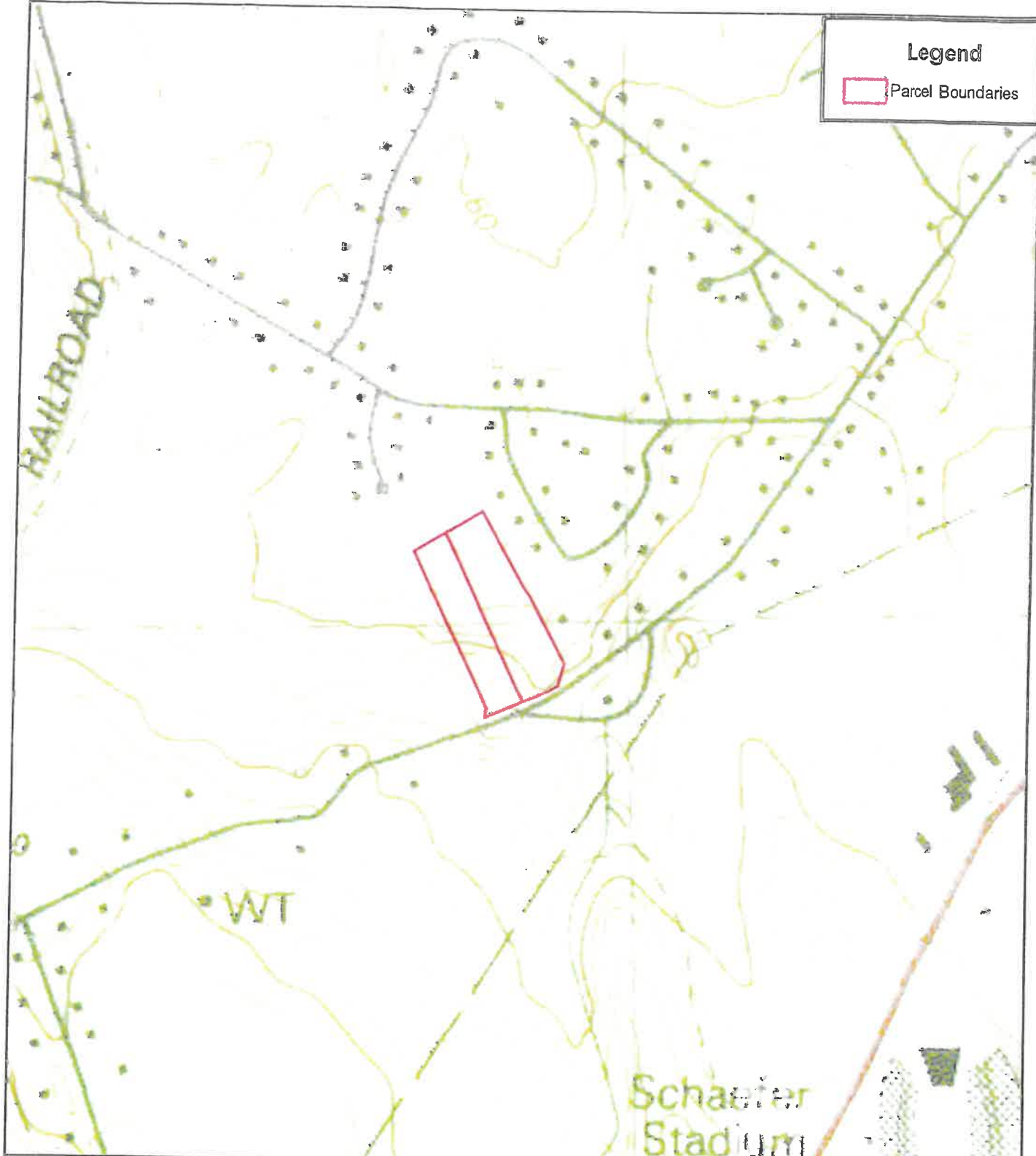
The New England Wetmix (Wetland Seed Mix) contains a wide variety of native seeds that are suitable for most wetland restoration sites that are not permanently flooded. All species are best suited to moist ground as found in most wet meadows, scrub shrub, or forested wetland restoration areas. The mix is well suited for detention basin borders and the bottom of detention basins not generally under standing water. The seeds will not germinate under inundated conditions. If planted during the fall months the seed mix will germinate the following spring. During the first season of growth several species will produce seeds while other species will produce seeds after the second growing season. Not all species will grow in all wetland situations. This mix is comprised of the wetland species most likely to grow in created/restored wetlands and should produce more than 75% ground cover in two full growing seasons.

The wetland seeds in this mix can be sown by hand, with a hand-held spreader, or hydro-seeded on large or hard to reach sites. Lightly rake to insure good seed-to-soil contact. Seeding can take place on frozen soil, as the freezing and thawing weather of late fall and late winter will work the seed into the soil. If spring conditions are drier than usual watering may be required. If sowing during the summer months supplemental watering will likely be required until germination. A light mulch of clean, weed free straw is recommended.

New England Wetland Plants, Inc. may modify seed mixes at any time depending upon seed availability. The design criteria and ecological function of the mix will remain unchanged. Price is \$/bulk pound, FOB warehouse, Plus SH and applicable taxes.

Legend


 Parcel Boundaries



USGS of Site Locus
 315 & 319 Summer St - Walpole, MA
 (Map: 56, Lot: 89-90)

N

10/9/2020

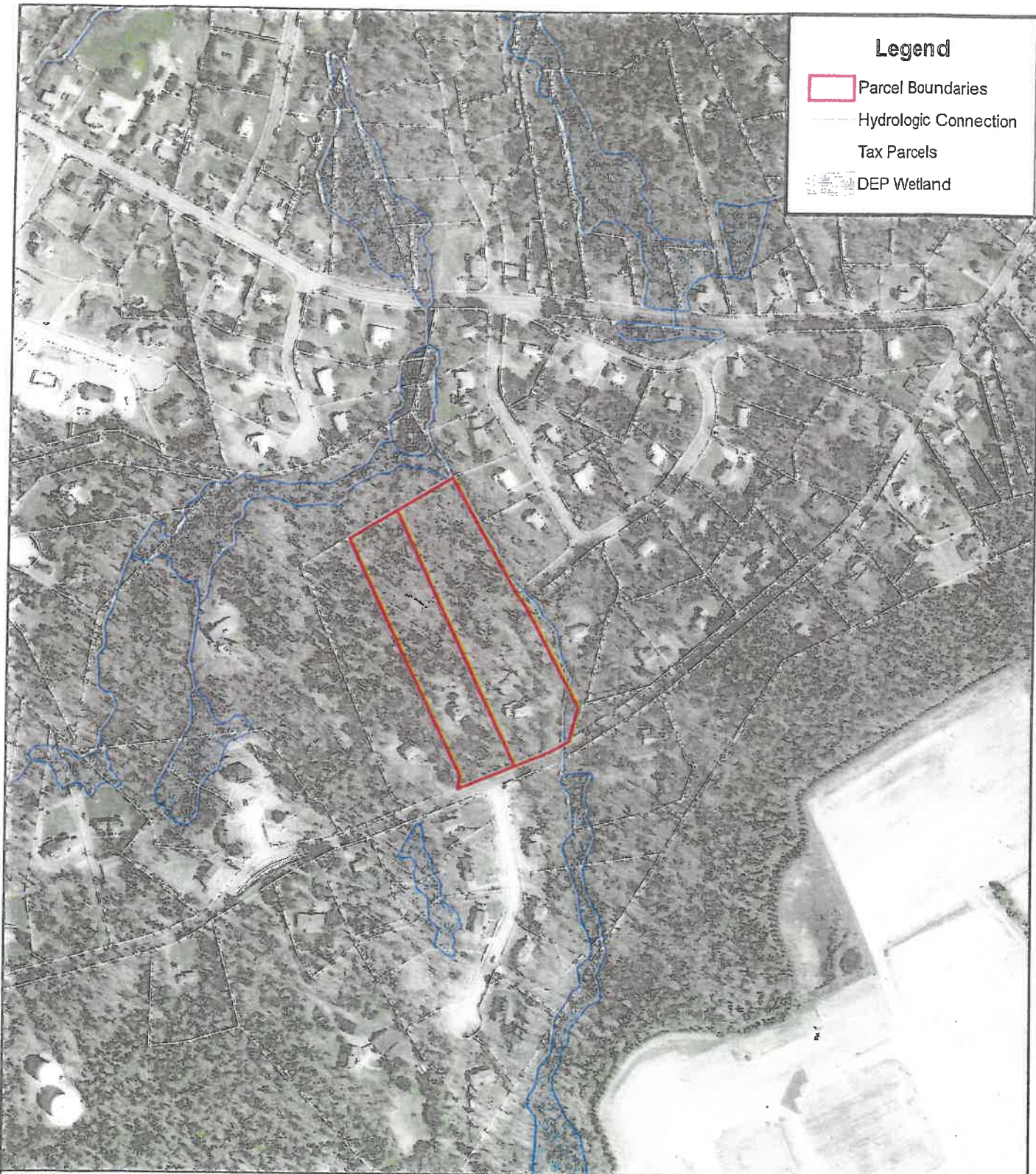
 Feet

0 300 600

1 inch = 600 feet

GIS Data Source: "Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, MassIT"





Legend

- Parcel Boundaries
- Hydrologic Connection
- Tax Parcels
- DEP Wetland

Orthoview of Site Locus
 315 & 319 Summer St - Walpole, MA
 (Map: 56, Lot: 89-90)



10/9/2020
 0 200 400 Feet
 1 inch = 400 feet

GIS Data Source: "Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, MassIT"

