GODDARD CONSULTING
Strategic Ecological Consulting

Wetland Replication Planting Plan

for

Blackstone Street Improvements
(Map 62, Parcels 1 & 5; Map 66, Parcel 1)
Bellingham, MA 02019

DATE:
April 14, 2025

ADDRESSED TO:
Bellingham Conservation Commission
10 Mechanic Street
Bellingham, MA 02019

PREPARED BY:
Goddard Consulting LLC
291 Main Street, Suite 8
Northborough, MA 01532

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

A. EXISTING CONDITIONS

The Project Site is known as Blackstone Street in Bellingham, MA (Map 62, Parcels 1 & 5; Map 66, Parcel 11). The Project Site consists of approximately 214-acres of mixed forested wetlands and uplands (Reference Figure 1). The site is bisected by two gas easements and an existing gravel road connecting Blackstone Street to Bellingham Road. The existing gravel road crosses a large Bordering Vegetated Wetland (BVW) system with an internal stream channel south of the existing roadway.

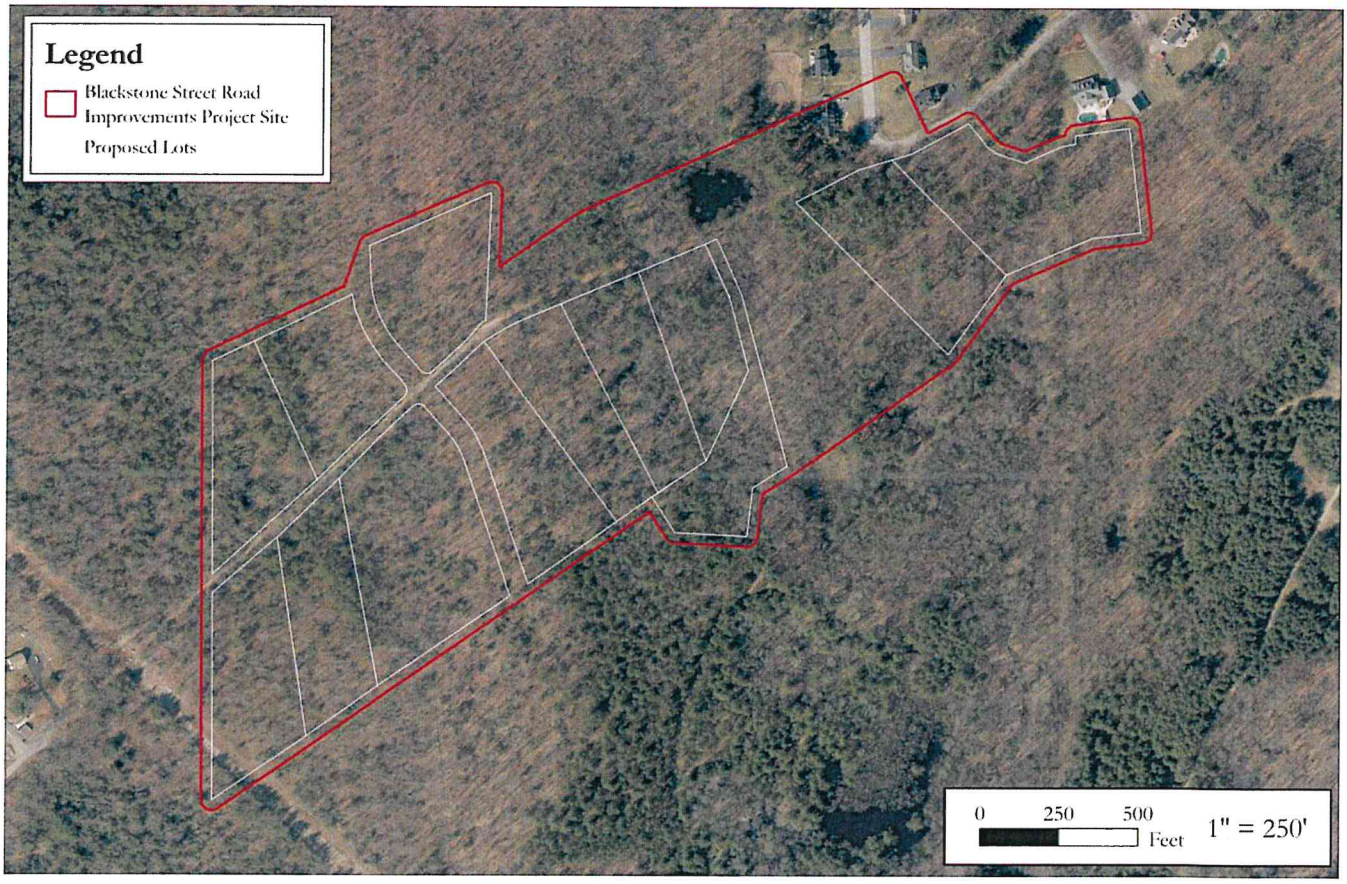


Figure 1. Existing conditions of the Project Site, including the proposed lots adjacent to the gravel roadway.

Multiple wetland resource areas are located with the Project Site. Bordering Vegetated Wetland (BVW) totaling approximately 3.7-acres (±159,688 sf) was flagged with two wetland flag series consisting of series GCA, GCB and GCC (Reference Figure 2). The BVW exists mainly in the eastern portions of the site. A mapped perennial stream, known as Quick Stream, flows south of the existing gravel roadway and discharges into Lake Hiawatha south of the locus site. In January 2025, the Bellingham Conservation Commission issued a negative determination stating the stream does not meet the criteria for perennial status. Therefore, Quick Stream does not have a 200-foot Riverfront Area and only has a jurisdictional bank with an associated 100-foot Buffer Zone. The bank of the intermittent stream was not flagged due to the channel's presence within the flagged BVW. Three town-jurisdictional Isolated Vegetated Wetlands (IVWs) were flagged along the southeastern boundary of the Project Site. The IVWs were flagged with wetland flag series GCF, GCG, and GCI. One potential vernal pool was identified and flagged within the BVW of the easternmost proposed lot (Lot 1). The northern boundary of the potential vernal pool was flagged with flag series GCVP1 – GCVP10. According to the Bellingham Wetlands Bylaw, this potential vernal pool has a town-jurisdictional 50-foot No Disturb Zone.

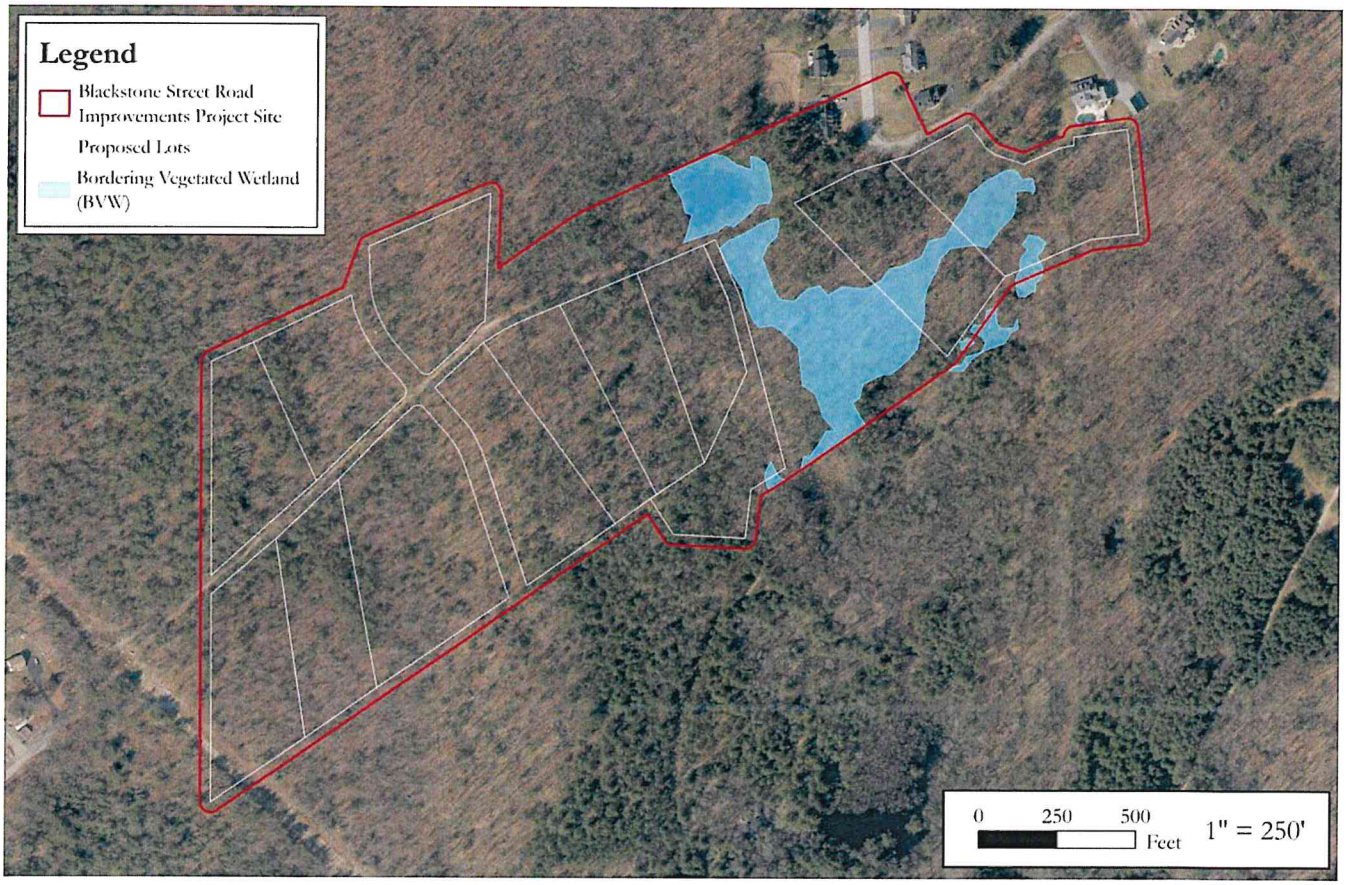


Figure 2. Existing conditions of the Project Site, including the proposed lots adjacent to the gravel roadway and the flagged Bordering Vegetated Wetlands and Isolated Vegetated Wetlands.

The existing gravel road is proposed to be improved for future development. These improvements will result in a small amount of wetland impacts adjacent to the existing gravel roadway. The proposed wetland impact area is dominated by wetland vegetation consisting of Red Maple, Eastern White Pine, Common Winterberry, Sweet Pepperbush, Fox Grape, and Skunk Cabbage (Reference Photos 1 – 4).

Photo 1. A photo (facing south) of the proposed location of the improved wetland crossing (north of existing gravel road).

Photo 2. A photo (facing south) of the proposed location of the improved wetland crossing (south of existing gravel road).

Photo 3. A photo (facing north) of the proposed location of the improved wetland crossing (south of existing gravel road).

Photo 4. A photo (facing west) of the existing location of the gravel roadway & the adjacent wetland within the area of the proposed improvements.

According to the MassGIS data layers for NHESP, the Project Site is located within both Estimated Habitat of Rare Wildlife / Priority Habitat of Rare Species. No potential or certified vernal pools are mapped within the Project Site. No Outstanding Resource Waters (ORW) are mapped within the site. The property does not fall within a jurisdictional FEMA floodplain and the site is not located in an Area of Critical Environmental Concern (ACEC).

B. PROPOSED CONDITIONS

The proposed project will be comprised of the improvement of the existing gravel road, known as Blackstone Street, and the addition of ten lots. The proposed improved roadway will be paved and widened to 22-feet in width. The roadway will be lined with modified Cape Cod berm curbing. The western end of the improved road will conclude with a cul-de-sac within Lot 9. Two infiltration basins are proposed south of the improved stretch of Blackstone Street.

At the proposed wetland crossing, a box culvert with a height of 2 feet, a width of 10 feet, and a length of 27 feet is proposed underneath the improved roadway. A retaining wall extending approximately 337 LF is proposed north of the improved roadway. Grading with a concrete wing wall is proposed south of the improved roadway. The widening of the roadway will result in 442 sf of wetland impact north of the existing gravel roadway, and 1,860 sf of wetland impact south of the existing gravel roadway. In total, 2,302 sf of wetland alteration is proposed adjacent to the roadway.

To mitigate for these impacts, wetland replication at a 2:1 ratio will be provided adjacent to flags GCC5 to GCC13. The proposed area of wetland replication will be approximately 4,604 sf in area. Twenty trees and forty-six shrubs will be planted within the limit of the replication area. Shrub and tree quantities have been selected based on DEP spacing guidelines. The selected species include existing wetland vegetation and additional species to diversify and increase the habitat value of the replication area. The proposed trees species include Red Maple/*Acer rubrum* (FAC), Yellow Birch/*Betula alleghaniensis* (FAC), Black Tupelo/*Nyssa sylvatica* (FAC), and Swamp White Oak/*Quercus bicolor* (FACW). The proposed shrub species include Highbush Blueberry/*Vaccinium corymbosum* (FACW), Silky Dogwood/*Cornus amomum* (FACW), Northern Spicebush/*Lindera benzoin* (FACW), Common Winterberry/*Ilex verticillata* (FACW), Sweet Pepperbush/*Clethra alnifolia* (FAC), and Speckled Alder/*Alnus incana* (FACW). Additionally, a wetland seed mix is proposed within the entire limit of the replication area.

Please reference the attached Proposed Wetland Replication Plan, Proposed Wetland Replication Planting Plan, and Proposed Wetland Grading Plan for additional details.

C. GENERAL INSTALLATION PROCEDURES

Supervision: All work within the replication areas shall be supervised by a qualified wetland scientist. The supervisor shall submit monitoring reports to the Bellingham Conservation Commission as described below. The reports shall contain details of all work performed and photographs of completed conditions.

Timing: The installation of the plantings should be accomplished during the spring or fall growing seasons (between April 16 and May 31 or between September 16 and October 30).

Stake Limits of Work: Prior to planting, the limits of work will be staked, and wetland flags confirmed. Erosion control barriers shall be installed along the limits of work for the replication area. These will remain in place until the replication areas have stabilized, and approval is received from the Bellingham Conservation Commission. The wetland scientist shall have the authority to require additional erosion control measures if deemed necessary.

Identify Plants in Replication & BVW Impact Area: The wetland scientist shall identify, and flag native species found within the replication and the BVW impact areas that may be dug up and stockpiled for use as additional plantings.

Excavation: A storage area for soil and leaf litter from the BVW impact area will be prepared prior to excavation, outside of any resource areas or buffer zone. Wetland soil from the impact zone will be excavated and transported to the replication area. The upland soils immediately surrounding the BVW impact area will be transplanted to the edges of the replication area to create a natural transition. Large trees should be avoided when excavating.

An excavator or backhoe will remove existing soils in the entirety of the soils in the replication zone, to a depth at which redoximorphic features become visible in the C-horizon at the soil's surface and at least one foot below the proposed final grade. This removal will be supervised and directed by the wetland scientist. Topsoil and subsoil shall be removed from the area to either be reused or removed from the site. Subsoil of the C-horizon will be loosened prior to final grading to ensure the soils aren't compacted before topsoil placement.

Once existing soils have been removed to the proper depth determined by the wetland scientist, the organic soils from the BVW impact areas will be placed into the replication zone. If the soil from the impact area is not sufficient, supplemental soil shall be imported and 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 of 6-12", to be determined by the wetland scientist. Placement of the soil shall be such that no equipment drives over or compacts the placed soil. Final grading will mimic topography with areas of pooling and flooding during heavy rain events, and surface water during wetter seasons.

Planting: Plantings will be installed according to the plan. The precise siting of plants may be determined by the wetland scientist or landscaper in the field prior to installation. All plantings (Reference the planting list in Section D) shall be distributed randomly throughout the area with trees spaced at 12-15' on center, shrubs spaced at 8-10' on center, and herbaceous species 3' or less on center. Shrubs shall be placed in clumps of 3-4 of the same species. Same species will be placed in groupings that more closely mimic natural conditions. All plantings will be removed from burlap sacks, wire cages, and plastic containers prior to planting. Trees will be planted on mounds, while shrubs and herbaceous species will be planted in depressions. Each plant will have its roots loosened prior to planting to encourage root growth away from the planting bulb. Plants will be adequately watered immediately following planting. Leaf litter will be spread throughout the area if it is available. Any significant disturbances shall be seeded with a wetland seed mix as specified in the Planting List Table in Section D.

Replication Monitoring

a. **Seasonal monitoring reports** shall be prepared for the enhancement areas by a qualified wetland scientist for a period of 3 additional years after installation or every year until a COC is issued by the Bellingham 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 enhancement area. Monitoring reports shall be submitted to the Commission by the end of each year. Monitoring reports shall describe, using narratives, plans, and color photographs, the physical characteristics of the enhancement area with respect to

stability, survival of vegetation and plant mortality, aerial extent and distribution, species diversity and vertical stratification (i.e., herb, shrub, and tree layers).

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 enhancement 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 enhancement goals, under the supervision of a Wetland Scientist. This plan must include an analysis of why the areas have not successfully re-vegetated and how the applicant intends to resolve the problem.

D. PLANTING LIST

Wetland Replication Area (±4,604 SF)			
Common Name	**Scientific Name**	**Number**	**Size**
Trees (20)*			
Red Maple (FAC)	*Acer rubrum*	6	4-5'
Yellow Birch (FAC)	*Betula alleghaniensis*	6	4-5'
Black Tupelo (FAC)	*Nyssa sylvatica*	4	4-5'
Swamp White Oak (FACW)	*Quercus bicolor*	4	4-5'

Common Name	**Scientific Name**	**Number**	**Size**
Shrubs (46)*			
Highbush Blueberry (FACW)	*Vaccinium corymbosum*	9	1 or 2 gal. pots
Silky Dogwood (FACW)	*Cornus amomum*	6	1 or 2 gal. pots
Northern Spicebush (FACW)	*Lindera benzoin*	6	1 or 2 gal. pots
Common Winterberry (FACW)	*Ilex verticillata*	9	1 or 2 gal. pots
Sweet Pepperbush (FAC)	*Clethra alnifolia*	9	1 or 2 gal. pots
Speckled Alder (FACW)	*Alnus incana*	6	1 or 2 gal. pots
Seed Mix			
New England Wetland Plants WETMIX or equivalent*			2 lbs.

*Species selection dependent on nursery availability.

E. CONCLUSION

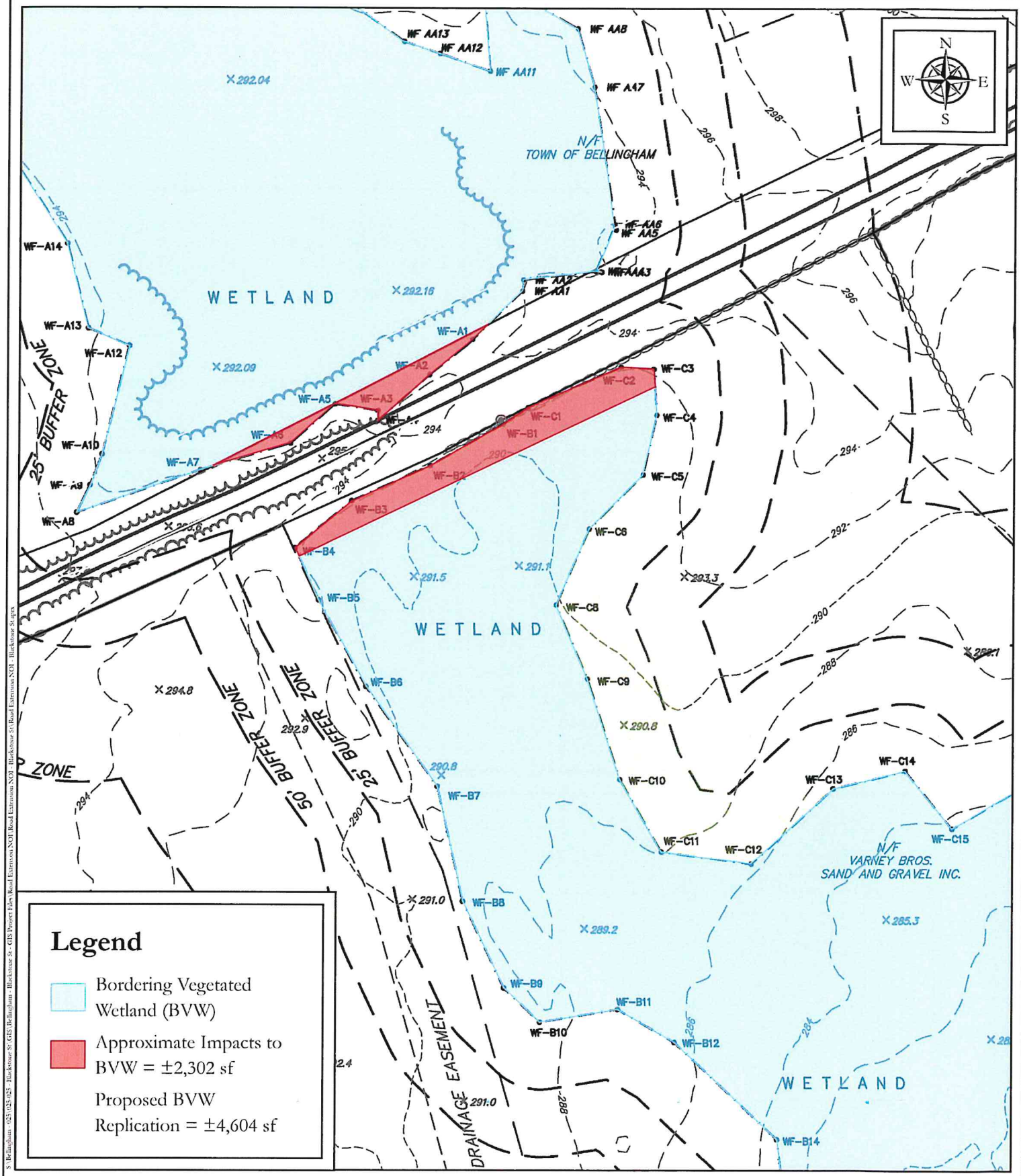
This mitigation will enhance the Bordering Vegetated Wetlands over current conditions and will improve the functions and values of the BVW. All local, state, and federal statutory interests and performance standards have been protected and will be met by the project, as described above.

Sincerely,

Goddard Consulting, LLC

Tom Schutz, WPIT
Wetland Scientist

Kristina McEvoy
Wetland Scientist



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Strategic Ecological Consulting

Date: 03/27/2025

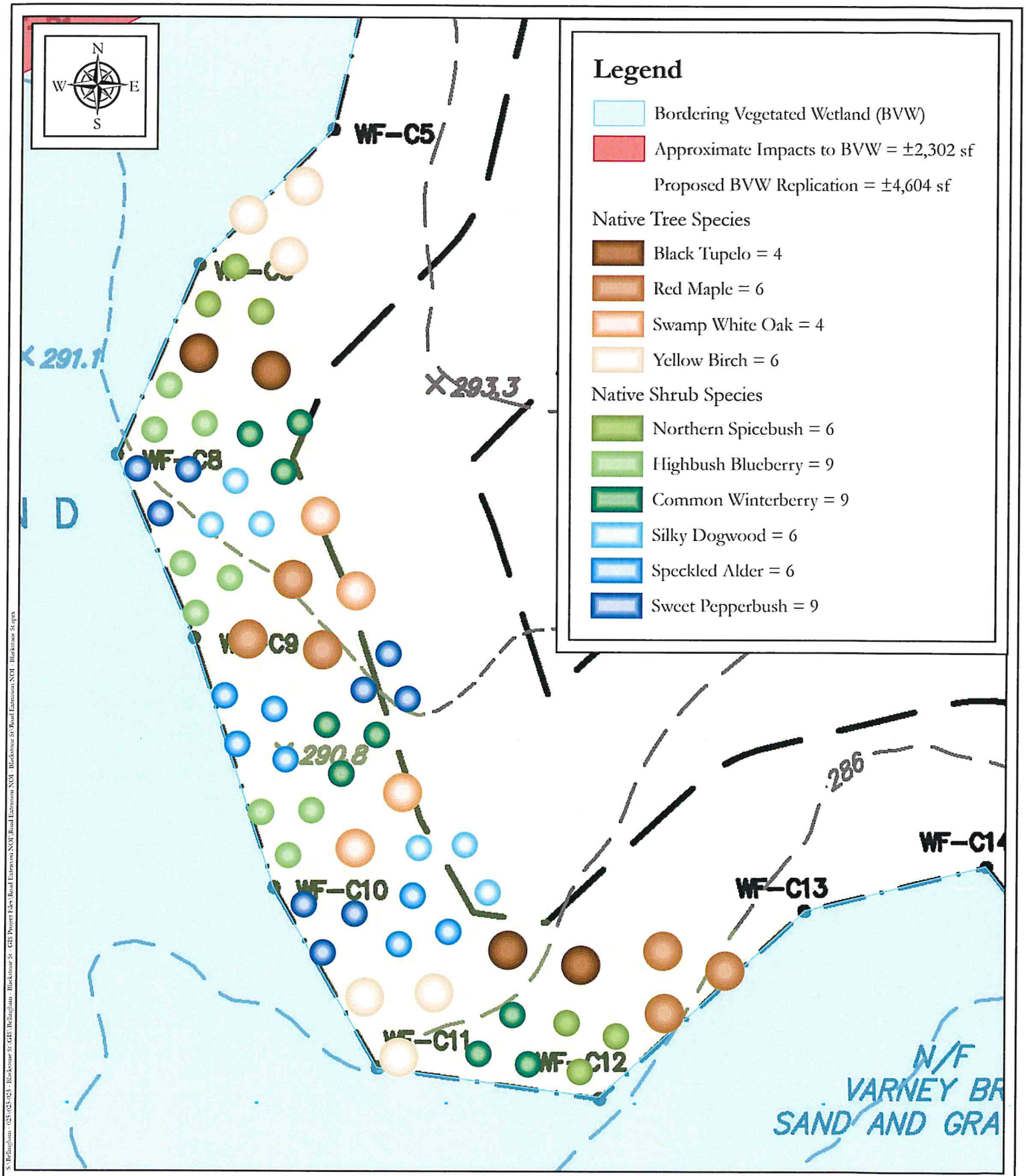
Proposed Wetland Replication Plan

Blackstone Street
Bellingham, MA 02019

0 25 50 Feet 1" = 50'

71.4935467°W, 42.0658667°N

Parcel ID: 62-01



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Proposed Wetland Replication Planting Plan

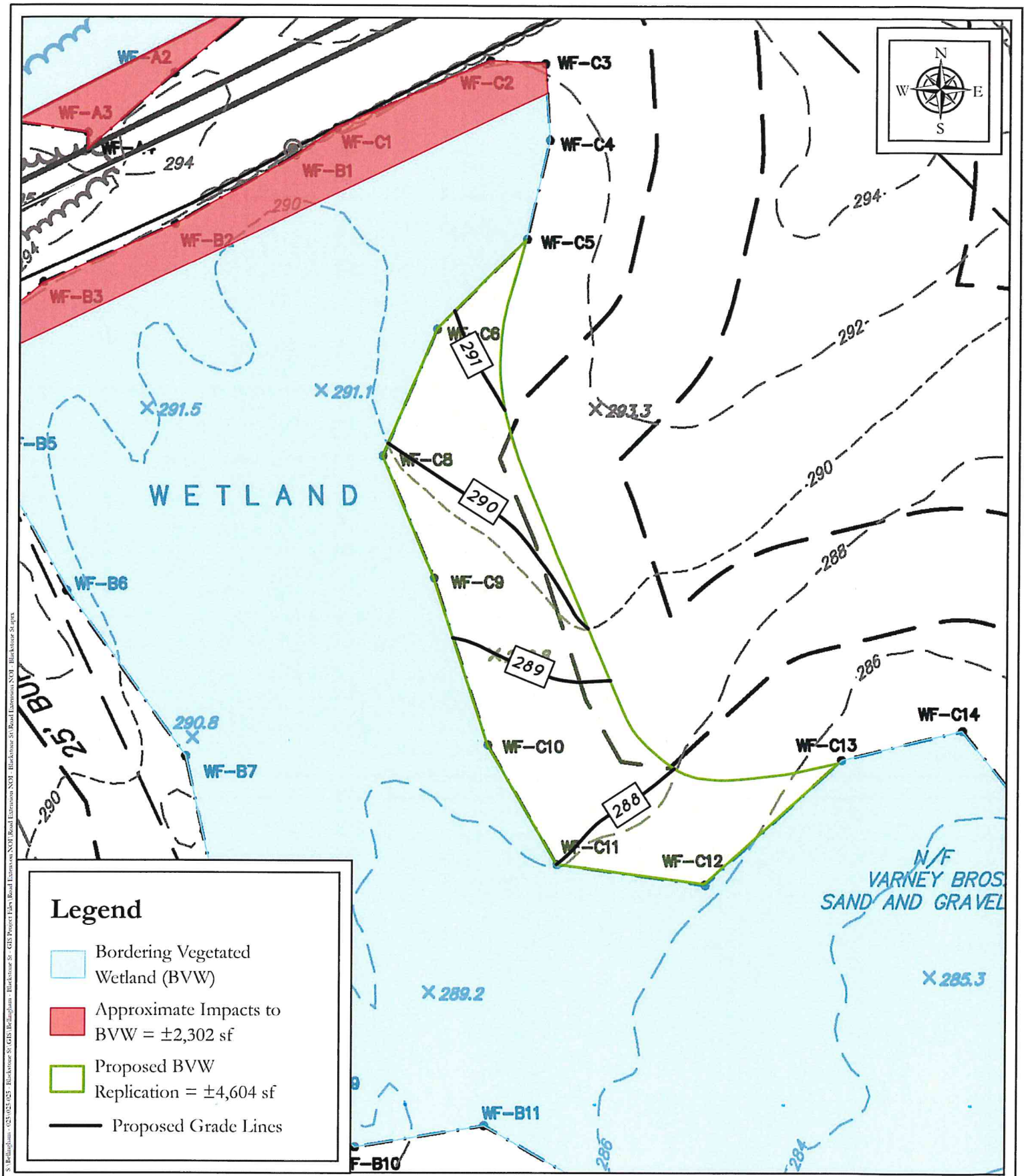
Blackstone Street
Bellingham, MA 02019

Date: 03/27/2025

0 10 20 Feet 1" = 20'

71.49326°W, 42.065791°N

Parcel ID: 62-01



Legend

- Bordering Vegetated Wetland (BVW)
- Approximate Impacts to BVW = ±2,302 sf
- Proposed BVW Replication = ±4,604 sf
- Proposed Grade Lines

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Proposed Wetland Grading Plan

Blackstone Street
Bellingham, MA 02019

0 15 30 Feet 1" = 30'

71.4933757°W, 42.0657609°N

Parcel ID: 62-01

Date: 03/27/2025

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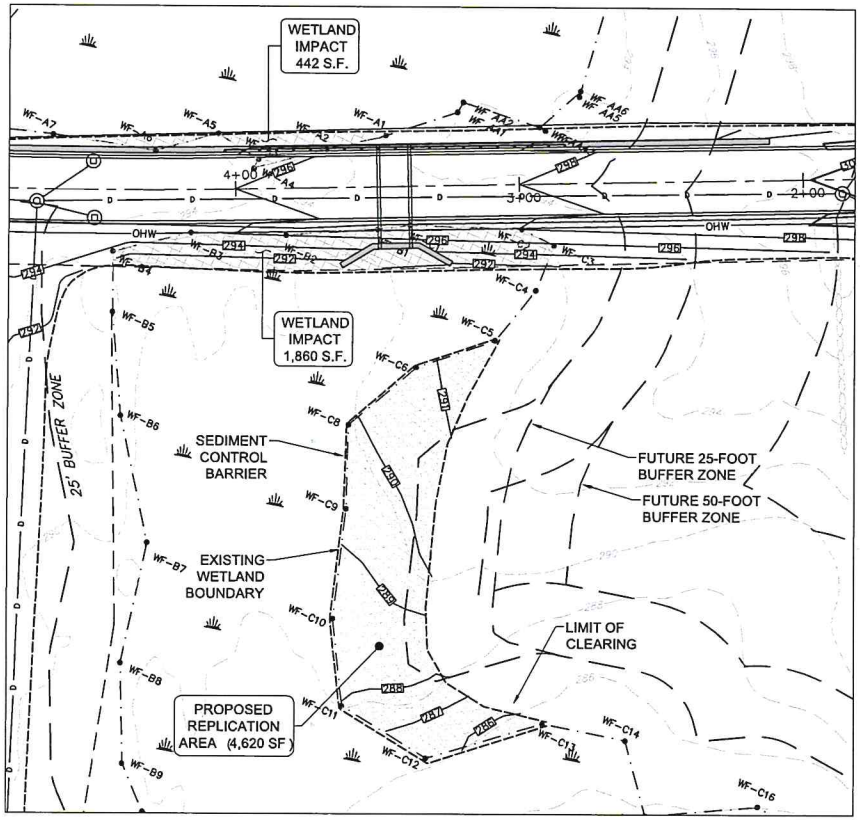
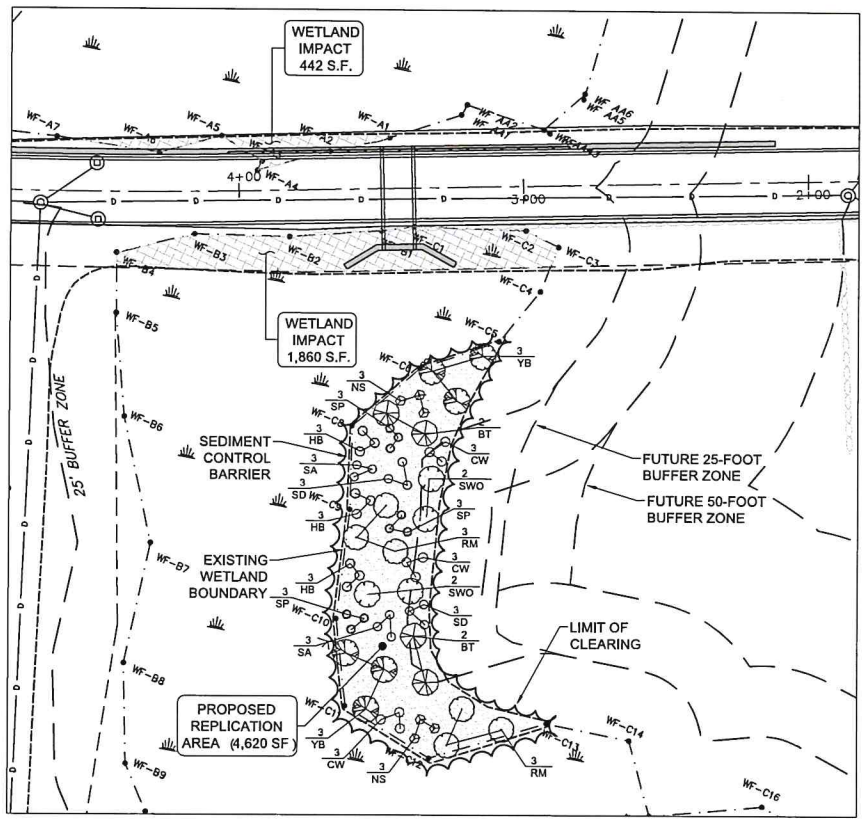
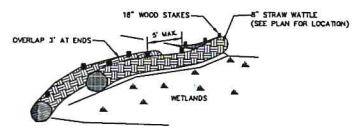


PROPOSED REPLICATION AREA GRADING
1"=30'

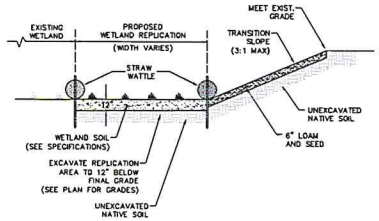


PROPOSED REPLICATION AREA PLANTING
1"=30'



NOTE:
1. MAINTENANCE SHALL BE PERFORMED AS NEEDED THROUGHOUT CONSTRUCTION PERIOD.
2. BARRIER LOCATION SHALL BE MARKED UNDER THE DIRECTION OF A REGISTERED LAND SURVEYOR AND INSTALLED PRIOR TO ANY CONSTRUCTION, INCLUDING TREE CUTTING.

REPLICATION AREA SEDIMENT CONTROL BARRIER
NOT TO SCALE



WETLAND REPLICATION AREA SECTION A–A
NOT TO SCALE

REPLICATION AREA PLANTING SCHEDULE

ABR.	COMMON NAME	LATIN NAME	SIZE	QUANTITY
	NATIVE TREES:			
BT	BLACK TUPELO	NYSSA SYLVATICA	1.5"–2" CAL.	4
RM	RED MAPLE	ACER RUBRUM	1.5"–2" CAL.	6
SWO	SWAMP WHITE OAK	QUERCUS BICOLOR	1.5"–2" CAL.	4
YB	YELLOW BIRCH	BETULA ALLEGHANIENSIS	1.5"–2" CAL.	6
	NATIVE SHRUBS:			
NS	NORTHERN SPICEBUSH	LINDERA BENZOIN	2'–4' HT.	6
HB	HIGHBUSH BLUEBERRY	VACCINIUM CORYMBOSUM	2'–4' HT.	9
CW	COMMON WINTERBERRY	ILLEX VERTICILLATA	2'–4' HT.	9
SD	SILKY DOGWOOD	CORNUS AMOMUM	2'–4' HT.	6
SA	SPECKLED ALDER	ALNUS REGOSA	2'–4' HT.	6
SP	SWEET PEPPERBUSH	CLETHRA ALNIFOLIA	2'–4' HT.	9

OWNERS:
Varney Bros Sand and Gravel, Inc.
79 Hartford Street
Bellingham, MA 02019

SAK II Realty Trust
202 Elm Street
Blackstone, MA 01504

APPLICANT:
Wall Street Development Corp.
P.O. Box 272
Westwood, MA 02090

TITLE:
WETLAND REPLICATION AREA
for
Blackstone Street Improvements
Bellingham, MA

DRAFT NOT FOR CONSTRUCTION 4-14-2025
PROFESSIONAL ENGINEER

PREPARED BY:
ALLEN ENGINEERING & ASSOCIATES
Civil Engineers - Surveyors
Land Development Consultants
140 Hartford Avenue East
Hopedale, Ma 01747
(508) 381-3212 - www.allen-ea.com

SCALE: 1"=20 FEET
0 20 40 60

DATE: February 14, 2025

REVISIONS

#	DATE	DESCRIPTION	INIT

JOB NO: 00454
SHEET: C-12