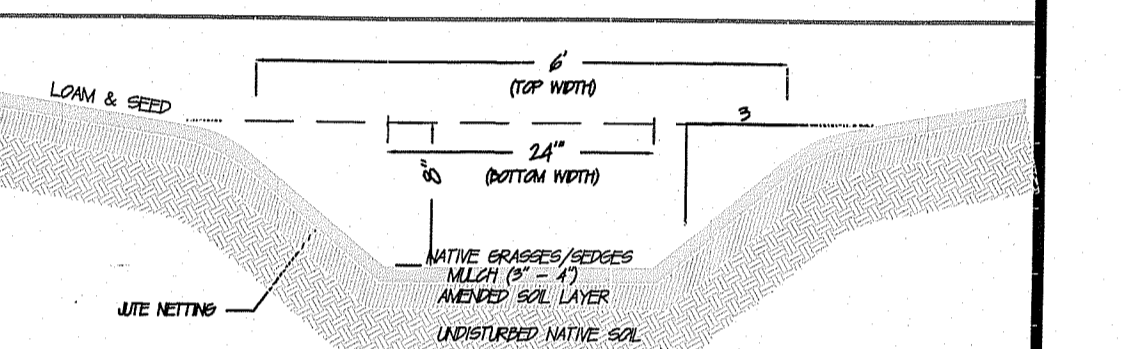


BUFFER RESTORATION SEQUENCE NOTES

- PRIOR TO CONSTRUCTION A LINE OF SOIL EROSION AND SEDIMENTATION CONTROLS (SECS) (E.G. SILT FENCE, STRIPD HAYBALES, FILTER/SILT SOCKS) WILL BE INSTALLED AT THE EDGE OF THE EXISTING WETLAND EDGE ADJACENT TO THE PROPOSED BUFFER RESTORATION AREA. THESE SECS WILL BE INSPECTED DAILY DURING CONSTRUCTION AND WHENEVER IT RAINS TO ENSURE THEY ARE MAINTAINED.
- THE BUFFER ZONE AREAS (PWI AND PWA) WILL BE ENHANCED WITH APPROXIMATELY 6 INCHES OF TOPSOIL HIGH IN ORGANIC MATTER.
- BUFFER ZONE AREAS PW1 AND PW2 WILL BE PLANTED WITH TREES AND SHRUBS IN THE FOLLOWING MANNER:
PW1 (APPROX 170 SF) WILL BE PLANTED WITH 17 TREES PLANTED 4-6 FEET AFTER PLANTING, AND 26 SHRUBS. TREES WILL CONSIST OF A COMBINATION OF RED MAPLE (ACER RUBRUM) AND RED OAK (QUERCUS RUBRA), AND SHRUBS WILL CONSIST OF A COMBINATION OF SHEET PEPPERBUSH (CLETRIA ALPINA), HERRING ALDERBERRY (VIGANUM CORNIBERUM) AND ARROW-WOOD (VIBURNUM PENTANUM).
PW2 (APPROX 105 SF) WILL BE PLANTED WITH 2 TREES PLANTED 4-6 FEET AFTER PLANTING, AND 3 SHRUBS. TREES WILL CONSIST OF A COMBINATION OF RED MAPLE (ACER RUBRUM), AND SHRUBS WILL CONSIST OF A COMBINATION OF SHEET PEPPERBUSH (CLETRIA ALPINA) AND ARROW-WOOD (VIBURNUM PENTANUM).
- AT THE COMPLETION OF THE BUFFER ZONE AREAS PW1 AND PW2 TREE AND SHRUB INSTALLATION, THESE AREAS WILL BE SEEDED WITH A CONSERVATION GRASS SEED MIXTURE, AND/OR A POLLINATOR SEED MIXTURE, AND BE ALLOWED TO REVEGETATE NATURALLY.
- AREA BZ1 WILL BE SEEDED WITH A CONSERVATION GRASS SEED MIXTURE, AND/OR A POLLINATOR SEED MIXTURE, AND BE ALLOWED TO REVEGETATE NATURALLY.
- FOLLOWING THE COMPLETION OF WORK DESCRIBED IN ITEMS 1 - 5 ABOVE, BUFFER ZONE MARKERS WILL BE INSTALLED AT THE LOP AS SHOWN ON THE SITE PLANS. THESE MARKERS WILL CONSIST OF A 1 X 4 PRESSURE TREATED POSTS.
- IF ANY PLANTINGS FAIL TO SURVIVE AT LEAST ONE (1) YEAR FROM THE TIME THEY HAVE BEEN PLANTED, THESE PLANTS WILL BE REPLACED UNTIL SUCH TIME THAT 30% SURVIVAL IS MAINTAINED OVER ONE YEAR.
- UPON STABILIZATION OF ALL DISTURBED AND RESTORED AREAS, ALL NON-PHOTOGRAPHABLE EROSION AND SEDIMENT CONTROLS MUST BE REMOVED FROM THE RESTORATION AREAS.
- ALL RESTORED BUFFER ZONE AREAS WILL BE ALLOWED TO REVERT TO A NATURAL WILD CONDITION. NO FUTURE CLEARING, MOWING, CUTTING, TRIMMING OR OTHER ALTERATIONS OR IMPROVEMENTS ARE AUTHORIZED IN ANY WETLAND AREA ON THE SUBJECT PROPERTY WITHOUT FIRST OBTAINING A VALID PERMIT FROM RDEM.

VEGETATED SWALE VOLUME REQUIRED
3,000 SF INTERVALS GRAVEL DRAINAGE CONTROL
DISTING SOILS - CATEGORY 6 - (ASSUMED SANDY)
FOR 8" DEEP RAIN GARDEN > 3,000 SF/1,000 SF X 80 SF
TOTAL SWALE AREA REQUIRED = 270 SF
TOTAL SWALE AREA PROVIDED = 200 SF



GRAVELED SWALE - CROSS SECTION

- STRIP ALL TOPSOIL FROM WITHIN PROPOSED CHANNEL WIDTH.
- IF NECESSARY, REPLACE WITH NEW LOAM (OR SCREENED NATIVE LOAM) TO DESIRED GRADES.
- PLACE SYNTHETIC FILTER FABRIC (ON COMPACTED) PREPARED SLOPE.
- IMPROVED PREPARED AREA TO CREATE A THICK MAT OF GRASS GRASS, RESEEDING AREAS AS NECESSARY.
- GRASS WITHIN FLAT PATH IS TO BE MAINTAINED AT 4" - 6" HEIGHT.

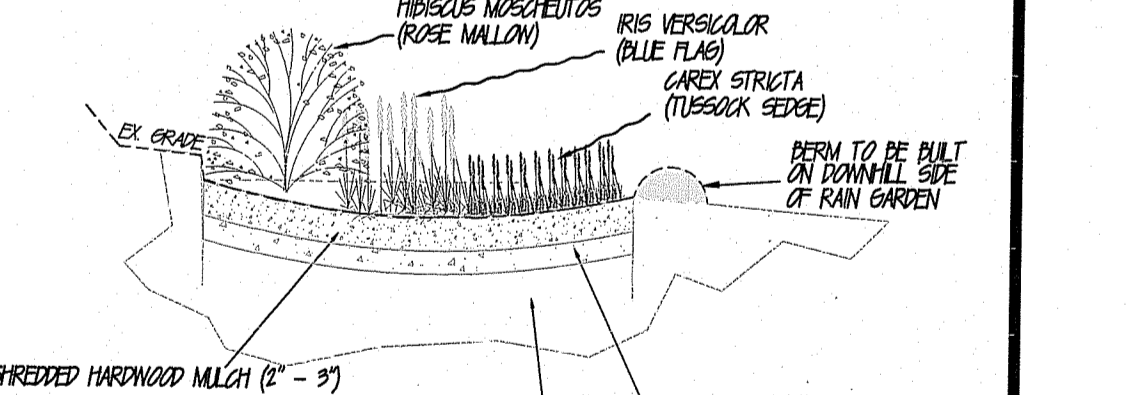
Maintenance

- Vegetated swales shall be inspected annually and should be inspected after large storm events.
- Flooded side slopes and channel bottoms shall be stabilized as necessary.
- If the surface of the dry swale becomes clogged to the point that standing water is observed on the surface 48 hours after precipitation events, the bottom shall be re-tilled or cultivated to break up any hard-packed sediment, and then reseeded.
- Vegetation in dry swales shall be moved as required to maintain minimum grass heights in the 4-6 inch range.
- Every five years, the channel bottom of dry swales should be scraped to remove sediment and to restore original cross section and infiltration rate, and should be seeded to restore ground cover, where necessary.

Table 5. Vegetated Swale Sizing Guidance

Drainage Area (in square feet)	Bottom surface Area (in square feet) for an 8 in. deep swale	Sandy Soils	Silty Soils
200	16	32	32
400	32	64	64
600	48	96	96
800	64	128	128
1000	80	160	160

RAIN GARDEN VOLUME REQUIRED
300 SF INTERVALS GRAVEL DRAINAGE CONTROL
DISTING SOILS - CATEGORY 6 - (ASSUMED SANDY)
FOR 8" DEEP RAIN GARDEN > 3,000 SF/1,000 SF X 80 SF
TOTAL RAINGARDEN AREA REQUIRED = 270 SF (FOR BUILDING)
TOTAL RAINGARDEN AREA PROVIDED = 200 SF



RAIN GARDEN SECTION A-A

NATIVE SOIL - SOILS THROUGHOUT THE SITE ARE IDENTIFIED AS "MEDIUM" & "LO" URBAN DEVELOPMENT.
NOTE: PROPOSED PLANTING SCHEDULE IS SUGGESTED ONLY AND MAY BE REVISED. LANDSCAPE ARCHITECT TO SPECIFY PLANTING SCHEME AT FINAL SUBMISSION.

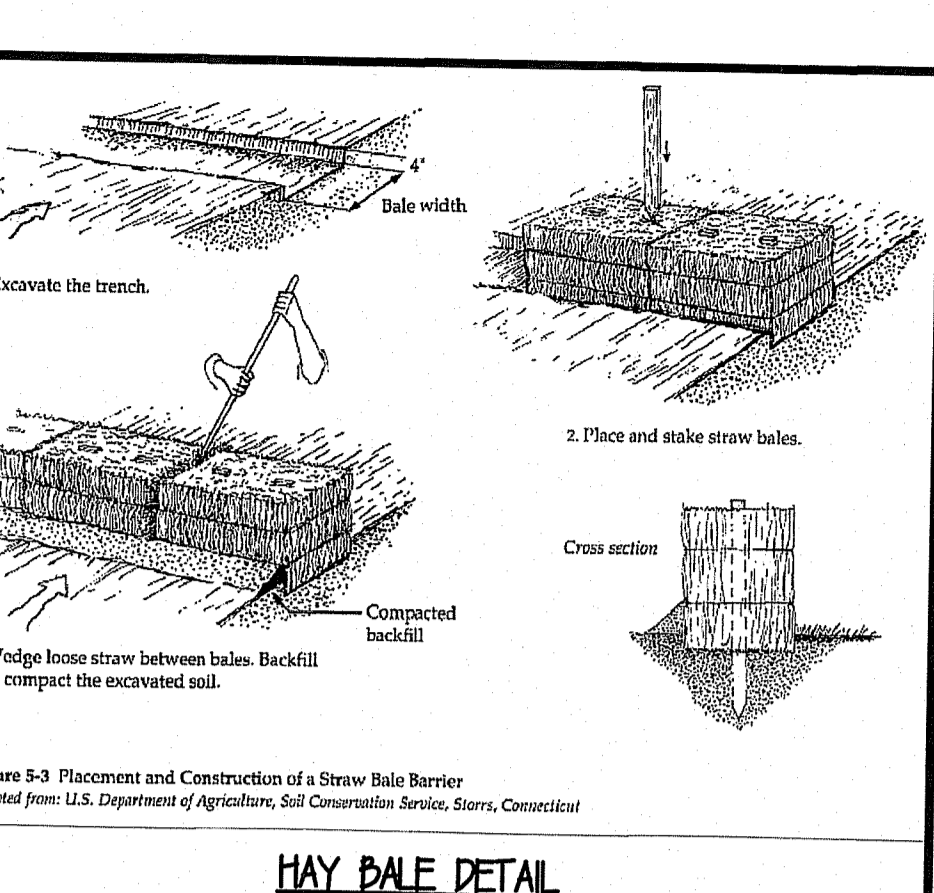
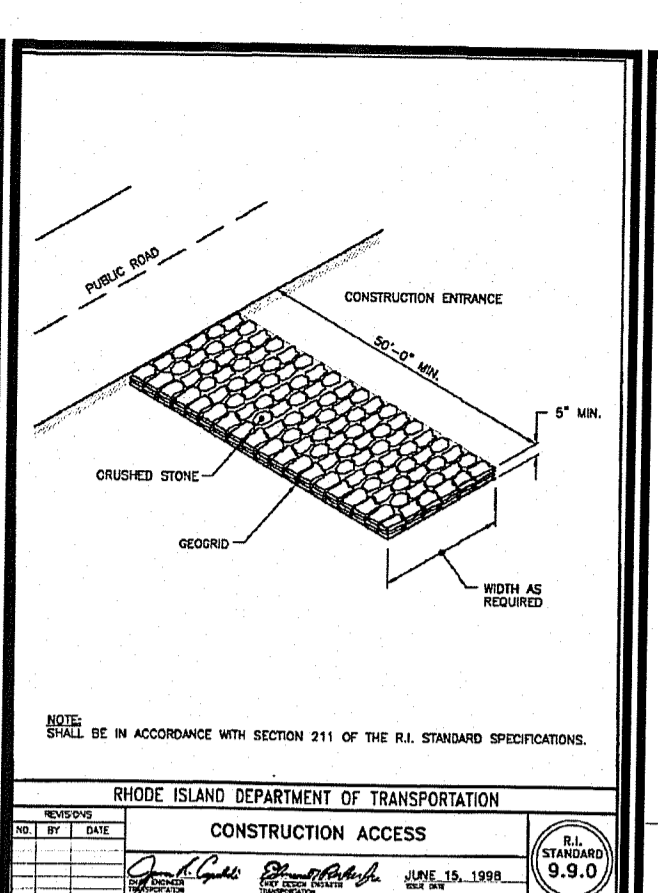
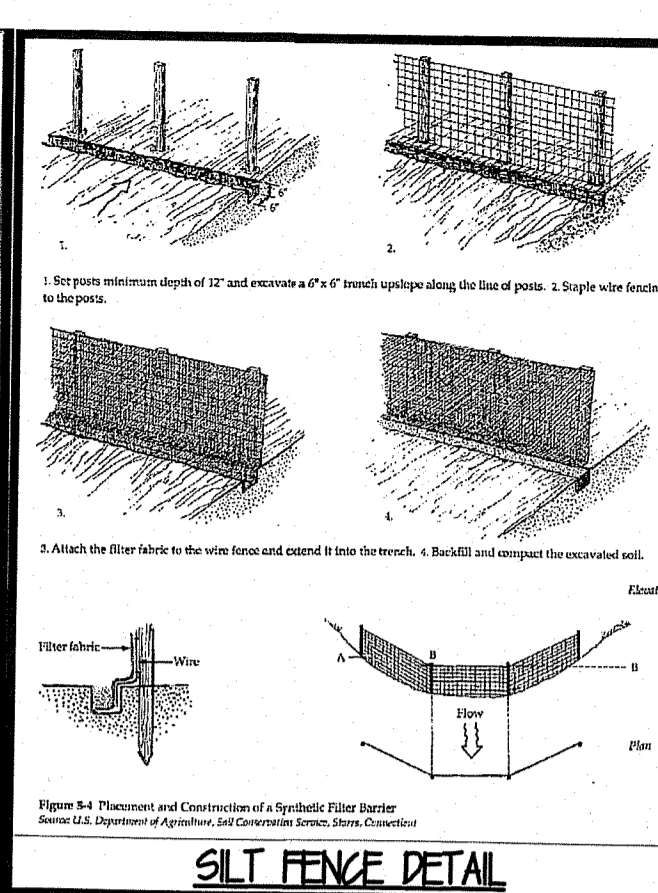
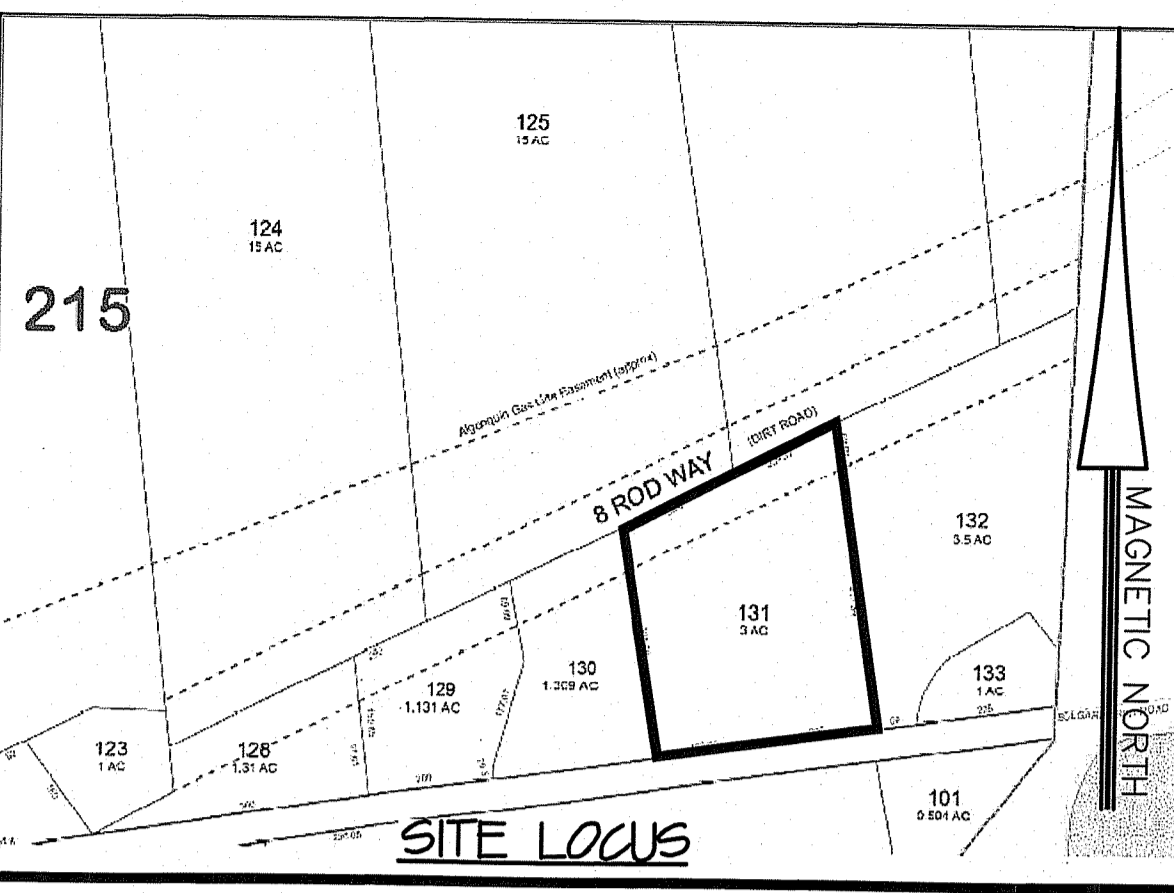
Maintenance

- Rain gardens shall be inspected following at least the first two precipitation events of at least 1.0 inch to ensure that the system is functioning properly. Thereafter, the rain garden shall be monitored and maintained to ensure proper functioning, plant growth and survival. Plants shall be replaced on an as-needed basis during the growing season.
- Stump removal shall be removed from the rain garden when the accumulation exceeds one inch, or when water ponds on the surface of the rain garden for more than 48 hours. The top two inches of mulch shall be removed and shall be replaced with fresh soil and mulch and not stack.
- Pruning or replacement of woody vegetation shall occur when dead or dying vegetation is observed.
- Soil erosion gullies shall be repaired when they occur.
- Fertilizer or pesticides shall not be applied to plants within rain gardens.
- Perennial plants and ground covers shall be replaced as necessary to maintain an adequate vegetated ground cover. Annual plants may also be used to maintain ground cover.

Tables 7. and 8. Rain Garden Sizing Guidance

Table 7. Rain Garden Surface Area in Sandy Soils (Sandy, Loamy Sands and Sandy Loams) (square feet)

Drainage Area (Square feet)	for 4 inch deep garden	for 6 inch deep garden	for 8 inch deep garden
100	19	15	8
200	38	30	16
300	57	45	24
400	76	60	32
500	95	75	40
600	114	90	48
700	133	105	56
800	152	120	64
900	171	135	72
1000	190	150	80



GENERAL EROSION CONTROL NOTES:

- SILT SOCKS OR SLOPES NOT REVEGETATED SHALL BE SEEDED AND PROTECTED WITH A FIBER MULCH. (MULCH FOR SLOPES > OR = 3%)
- DURING CONSTRUCTION THE CONTRACTOR AND/OR DEVELOPER SHALL BE RESPONSIBLE FOR MAINTAINING DRAINAGE AND STORM RUNOFF.
- SEDIMENTATION CONTROL DEVICES SHALL BE INSPECTED CLOSELY AND MAINTAINED PROMPTLY AFTER EACH AND EVERY STORM OCCURRENCE.
- ADDITIONAL EROSION CONTROL DEVICES SHALL BE LOCATED AS CONDITIONS WARRANT OR AS PRECISED BY TOWN OF TIVERTON DEPARTMENT OF PUBLIC WORKS.
- DEMOLISHED SLOPES SHALL NOT BE LEFT UNMAINTAINED OR EXPOSED FOR EXCESSIVE PERIODS OF TIME.
- ALL DISTURBED SLOPES, EITHER NEWLY CREATED OR EXPOSED PRIOR TO COMPLETION OF THE CONSTRUCTION SEASON.
- THE TOPSOIL SHALL HAVE A SANDY LOAM TEXTURE RELATIVELY FREE OF SUBSOIL MATERIALS, STONES, ROOTS, LUMPS OF SOIL, TREE LIMBS, TRASH OR CONSTRUCTION DEBRIS.
- ALL DISTURBED AREAS ARE TO BE PERMANENTLY STABILIZED WITH SEED MIX PRIOR TO COMPLETION OF PROJECT. SEED MIX AND APPLICATION RATES AS PER PLAN.
- AREAS EXPOSED FOR EXTENDED PERIODS OF TIME ARE TO BE COMPLETELY COVERED WITH TEMPORARY TREATMENTS. TEMPORARY TREATMENTS ARE TO CONSIST OF A HAY STRAW OR FIBER MULCH OR PROTECTIVE COVERS SUCH AS A MAT OR FIBER LING OVERLAP. THE FIBER MULCH NETTING OVERLAP PLANETS. THEY SHALL BE INCORPORATED INTO THE WORK AS WARRANTED OR AS ORDERED BY THE ENGINEER FOR ALL BANKS OR SLOPES > OR = 3%.
- HAY OR STRAW APPLICATIONS SHALL BE APPLIED AT THE RATE OF 100 LBS/ACRE.
- THE NORMAL ACCEPTABLE SEASONAL SEEDING DATES ARE APRIL 1ST - OCTOBER.

CONSTRUCTION SEQUENCE

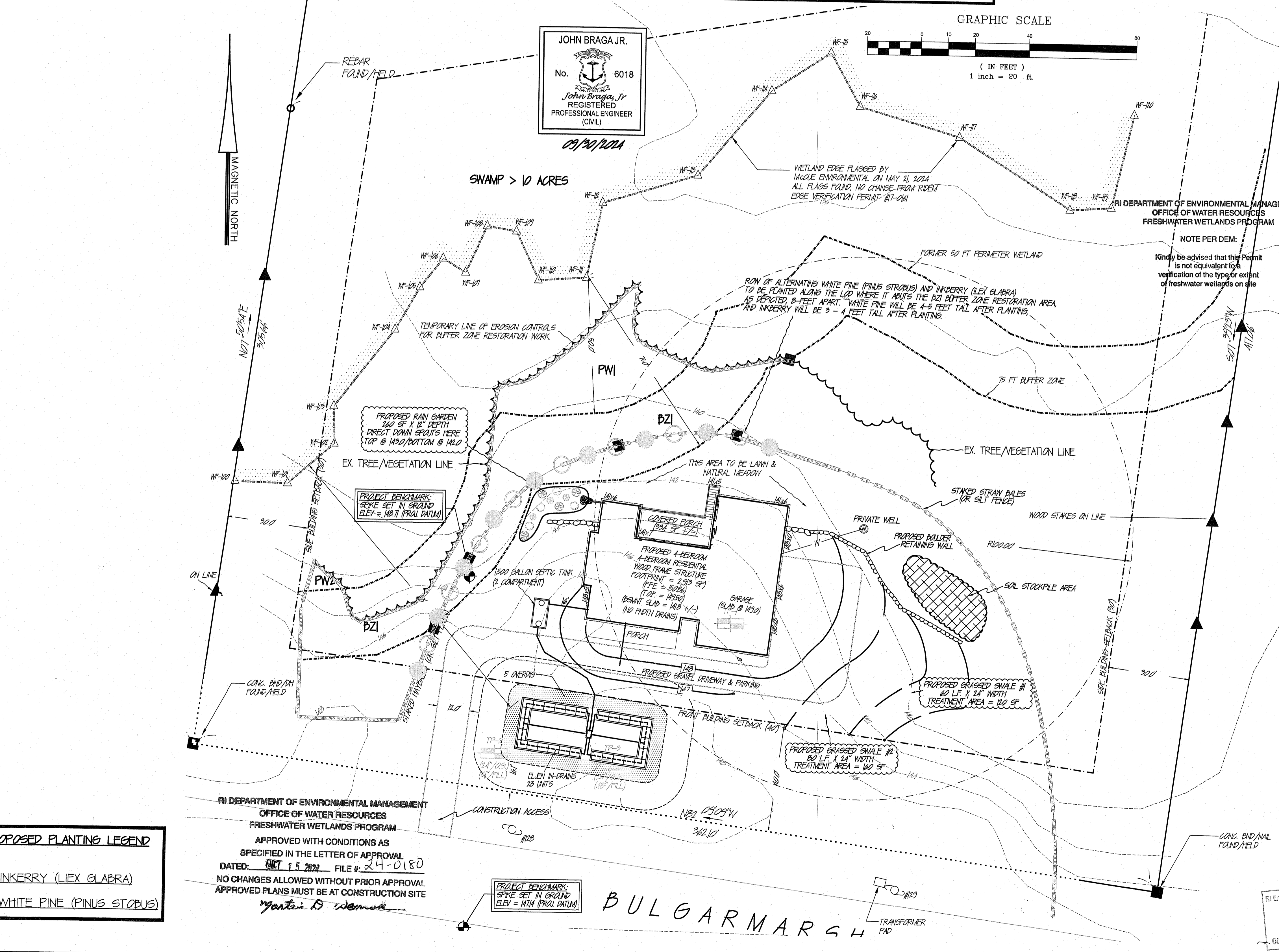
- PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR IS TO CONTACT THE TIVERTON DEPARTMENT OF PUBLIC WORKS.
- ALL EROSION CONTROL SYSTEMS AT THE SITE ARE TO BE INSTALLED PRIOR TO THE START OF CONSTRUCTION AND BE PROPERLY MAINTAINED UNTIL ALL DISTURBED AREAS ARE STABILIZED.
- UPON COMPLETION OF CONSTRUCTION AND PRIOR TO REMOVAL OF THE EROSION CONTROL DEVICES THE CONTRACTOR IS TO CONTACT THE TIVERTON DEPARTMENT OF PUBLIC WORKS FOR A FINAL INSPECTION.
- EROSION CONTROL SYSTEMS ARE TO MAINTAINED IN THE CONDITION SHOWN ON PLANS THROUGHOUT THE DURATION OF THE PROJECT. ANY DAMAGED EROSION CONTROL SYSTEMS MUST BE IMMEDIATELY REPAIRED.
- EROSION CONTROL DEVICES ARE TO REMAIN IN PLACE AFTER COMPLETION OF THE PROJECT UNTIL AFTER THE GRASS HAS BEEN CUT 3 TIMES.

SEED MIX

BY WEIGHT:

- 10% CLEMATIS TALL FESCUE
- 10% BROWN TETCH
- 10% RELIANT HARD FESCUE
- 10% NASSAU KENTUCKY BLUEGRASS
- 10% JAMES TOWN CHEVING FESCUE

APPLY AT THE RATE OF 30/1000 SQUARE FEET OR 224/LB/ACRE



ZONING DISTRICT: R-40

MINIMUM LOT SIZE: 40,000 SF

MINIMUM LOT FRONTAGE: 175 FT

MAXIMUM HEIGHT (PRINCIPAL): 35 FT

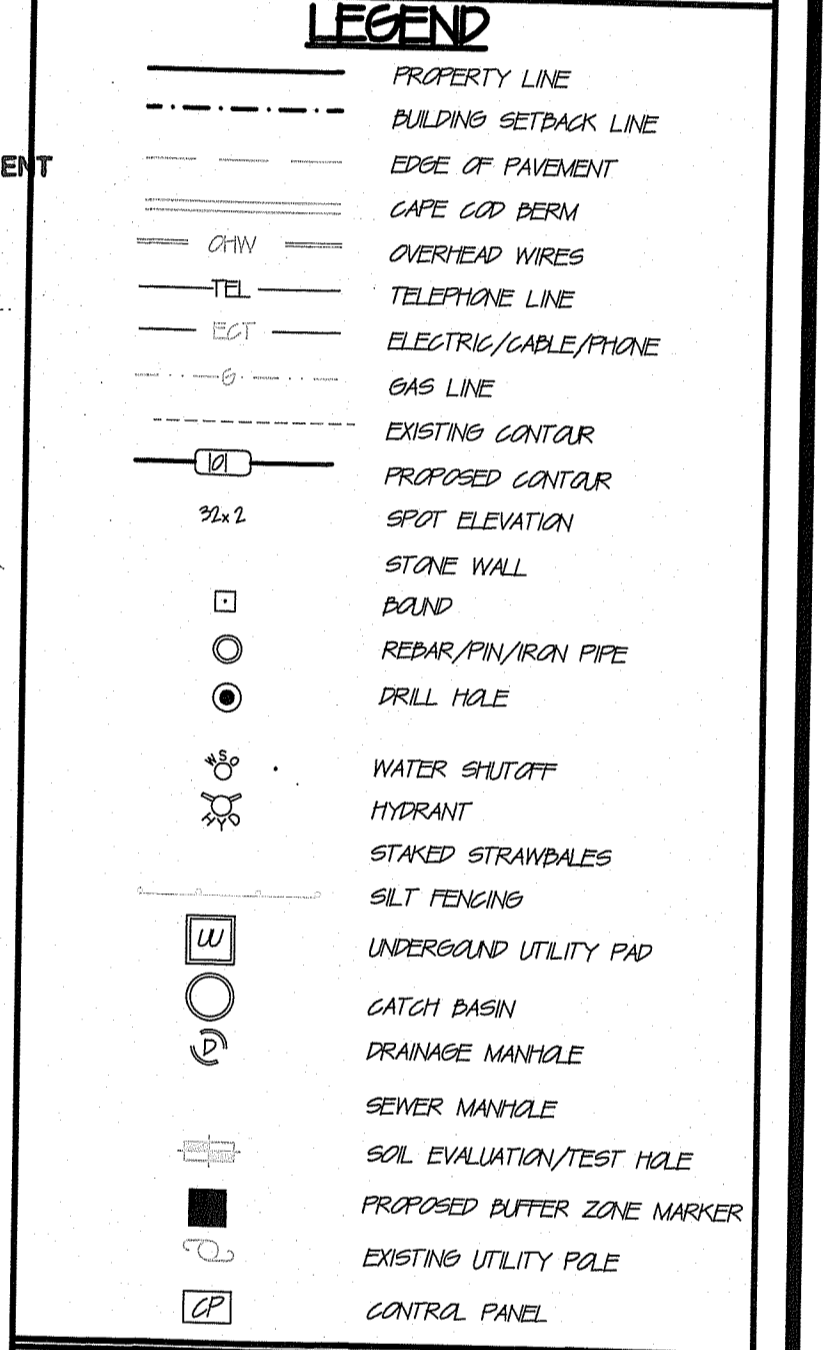
MAXIMUM HEIGHT (ACCESSORY): 20 FT

BUILDING SETBACKS (PRINCIPAL STRUCTURE)

- MINIMUM FRONT YARD: 40 FT
- MINIMUM SIDE YARD: 30 FT
- MINIMUM REAR YARD: 60 FT
- MAXIMUM LOT COVERAGE: 15%

BUILDING SETBACKS (ACCESSORY STRUCTURE)

- MINIMUM REAR YARD: 15 FT
- MINIMUM SIDE YARD: 30 FT



DRAWN BY: [Signature]

DATE: 01/04/2024

CHECKED BY: [Signature]

DRAWING NO.: ALMEIDA-2024

JOB NO.: 10025

SHEET: 1 OF 1

NO.	DATE	DESCRIPTION	BY
1	9/30/24	ADDRESS RDEM COMMENTS & APPLICANT'S REVISED SITE DESIGN REQUESTS	[Signature]

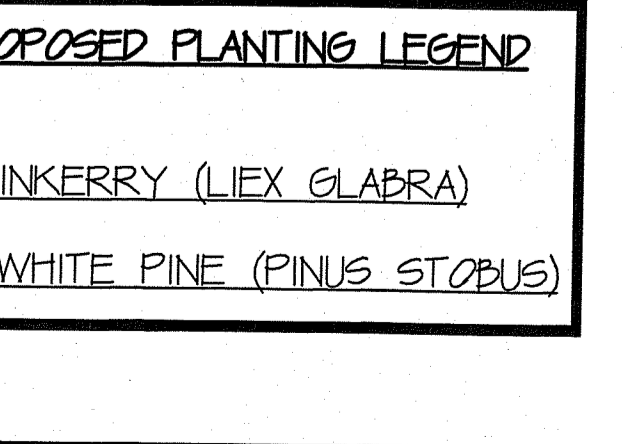
PROPOSED SITE PLAN FRESHWATER WETLANDS

PROJECT APPLICANT:
SERGIO & NICHOLE R. ALMEIDA
169 SHOVE STREET
TIVERTON, RI 02878

PROJECT LOCATION:
0 BULGARMARSH ROAD
TIVERTON, RI 02878
TAX ASSESSOR'S PLAT 215, LOT 131

JOHN BRAGA & ASSOCIATES, INC.
CIVIL ENGINEERS • LAND SURVEYORS
P.O. BOX 944
PORTSMOUTH, R.I. 02871-0919
PHONE (401) 683-0101

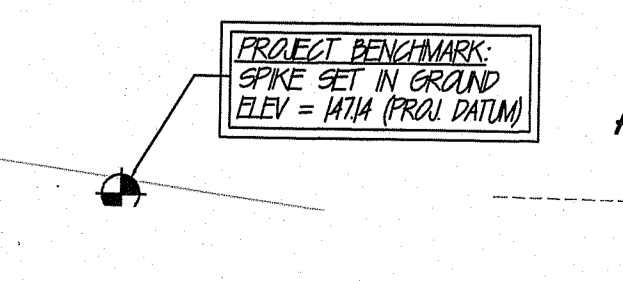
AP Environmental Management
JBA
R.I. Dept of Water Resources



RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM

APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL
DATED: OCT 15 2024 FILE #: 24-0180
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

martin D. Wemack



BULGARMARSH