

JACKSON AVENUE

"WETLANDS" FLAGGED BY NATURAL RESOURCE SERVICES A3 INC. "ZERO SETBACK"

AP 16 LOT 753

VACANT LAND

AP 16 LOT 300

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM

REVIEWED SITE PLAN APPLICATION NO.: 21-012
DATED JUN - 3 2021

SEE LETTER OF SAME DATE

Nancy L. Freeman

CERTIFICATION:

THIS SURVEY HAS BEEN CONDUCTED AND THE PLAN HAS BEEN PREPARED PURSUANT TO SECTION 9 OF THE RULES AND REGULATIONS ADOPTED BY THE RHODE ISLAND STATE BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS ON NOVEMBER 25, 2015, AS FOLLOWS:

TYPE OF BOUNDARY SURVEY: LIMITED CONTENT BOUNDARY SURVEY FOR TOPO.
MEASUREMENT SPECIFICATION: CLASS IV VERTICAL

THE PURPOSE FOR THE CONDUCT OF THE SURVEY AND FOR THE PREPARATION OF THE PLAN IS AS FOLLOWS:
THE PURPOSE OF THIS SURVEY AND PLAN IS TO DESIGN A DWT IN JOHNSTON, R.I., WATERMAN AVENUE

BY: *John A. Tizouris* 12/23/20
JOHN A. TIZOURIS PLS #1941 CON # 4645 11/15/20
DATE 1/23/21

LEGEND

- 100--- EXISTING CONTOUR
- (100)- DESIGN CONTOUR
- SOIL EVALUATION TEST
- ⊙ LEDGE PROBE

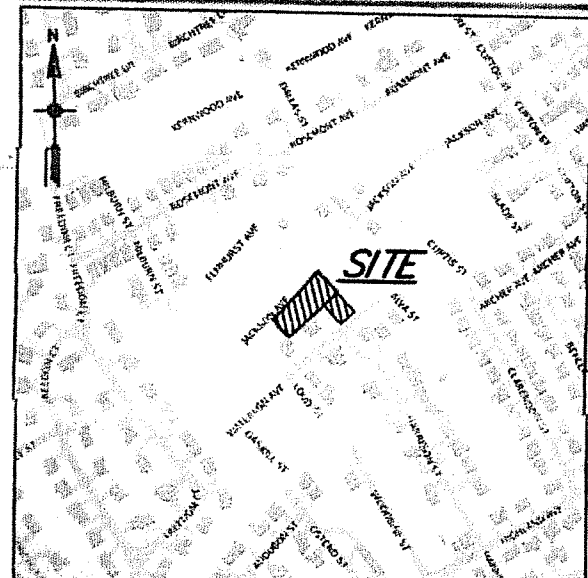
PROBE	DEPTH	BOTTOM ELEV.
TH-1	6'-4"	173.90
TH-2	8'-0"	171.20
P-1	5'-6"	175.70
P-2	7'-0"	173.20
P-3	4'-0"	178.25
P-4	6'-0"	173.00
P-5	7'-6"	172.60
P-6	4'-6"	176.60
P-7	5'-0"	176.00
P-8	5'-6"	176.25

UTILITY DISCLAIMER
LOCATION OF EXISTING ABOVE GROUND AND UNDERGROUND UTILITIES AND STRUCTURES INDICATED ARE APPROXIMATE ONLY, AND THOSE INDICATED ARE NOT NECESSARILY ALL WHICH MAY EXIST ON THE SITE. CONTRACTOR SHALL DETERMINE ACTUAL LOCATIONS OF ALL UTILITIES AND STRUCTURES ON THE PROJECT SITE, WHETHER THEY ARE INDICATED OR NOT. CONTRACTOR SHALL ASSUME THE RESPONSIBILITY FOR ANY DAMAGE TO THE UTILITY LINES, WHETHER SHOWN ON THE PLANS OR NOT, DURING WORK ON THE PROJECT.

APR 23 2021

BENCH MARK ON NAIL POLE #16 ASSUMED EL. 180.66

PROP. ELIEN IN-DRAIN SYSTEM W/CONC. SAND ALL AROUND & UNDER C33 ASTM. (18) UNITS (72) LIN. FT. (504) S.F. TOTAL



LOCUS MAP NOT TO SCALE

PROFESSIONAL LAND SURVEYOR
JOHN A. TIZOURIS
1949
D2066 CLASS II
REGISTERED 12/23/20

NO.	DATE	REVISION
2	1/23/21	ADD RAIN GARDEN
1	12/20	MOVE SEPTIC TANK
1	1/20	ORIG. ISSUE

SHEET 1 OF 2 SHEETS
CHECKED BY: J.T.

PREPARED FOR: **LOUIS CALCAGNI & SONS INC.**
(RAIN GARDEN DETAIL SHEET 1A)
D2066 CLASS II

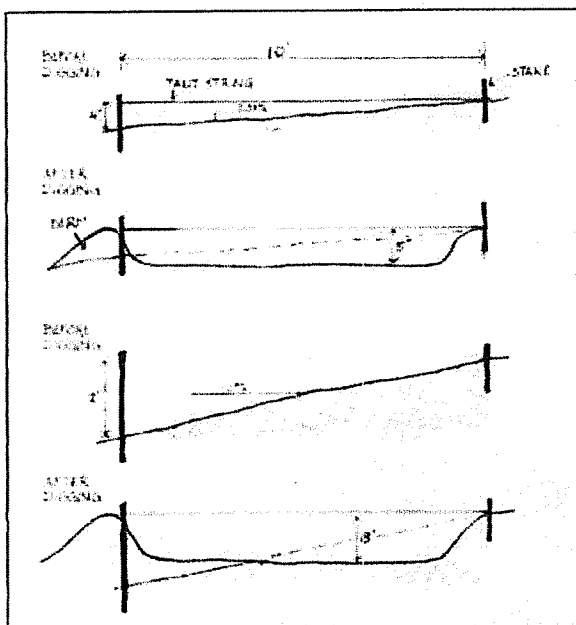
PROPOSED DWTs
JOHNSTON, R.I.
AP 16 LOT 754 & 245

PROFESSIONAL LAND SURVEYOR
JOHN A. TIZOURIS
7 SPRINGDALE AVE.
NO. PROVIDENCE, R.I. 02904
Tel. (401) 640-0341
SCALE: 1" = 20'

Rain Garden Installation

The best time to install a rain garden is in the spring, when digging will be easier and plants will be more likely to thrive. Be sure that the bottom of the rain garden is level and at the appropriate depth, and that you create a berm on the downhill side to retain stormwater (see Figure 3. below).

Figure 3. Digging the Rain Garden and Creating a Berm



Rain Garden Plant Selection

Plants that tend to do well in rain gardens are those that tolerate wet conditions, but also very dry conditions. Use the Rhode Island Coastal Plant Guide at www.uri.edu/cels/cemc/coastalPlants/CoastalPlantGuide.htm to select appropriate species (filter your selection for "Rain Garden") then create a planting plan to lay out where each plant will go. Below are two example planting plans for residential rain gardens, but feel free to create your own. To ensure proper functioning of the rain garden, your planting plan should include a minimum of three different plant species, including shrubs as well as herbaceous species. Additional guidance for plant selection can be found in Appendix B of the RI Stormwater Design and Installation Standards Manual or in the CRMC Coastal Buffer Zone Planting Guide at www.crmc.fl.gov/coastallandscapes/Coastal_Buffer_Planting_Guide.pdf. Submit your planting plan and a list of the species to be planted with your application.

PROPOSED DWELLING
 ROOF AREA 36' X 20' = 936 S.F.
 DRAINAGE AREA @ 1,000 S.F. X
 8" DEEP GARDEN = 80 S.F.
 7' X 15' = 105 S.F. PROVIDED
 (SEE PLAN SHEET # 1)

C. Rain Gardens

Rain Gardens are shallow depressions that are excavated, backfilled with amended soil, and planted to capture runoff and allow it to infiltrate into the ground below. Rain gardens can be planted with a variety of plants, and are similar to regular planting beds or landscaped areas, except that they are designed and sited to intercept and detain stormwater runoff. They are ideal for receiving larger volumes of runoff from downspouts or impervious areas such as driveways.

Table 6. Required Elements for Rain Gardens on Single-Family Residential Lots	
Location	<ul style="list-style-type: none"> ✓ Rain gardens should be located in areas with less than a 12% slope (i.e. a 12 foot drop over a horizontal distance of 100 feet or a 6 foot drop over a distance of 50 feet). ✓ Rain gardens should be located at least 10 ft from foundations to avoid basement seepage. ✓ Rain gardens should be located at least 15 ft from onsite wastewater treatment systems and at least 25 ft from private drinking water wells (see Table 5 for additional setbacks).
Treatment	<ul style="list-style-type: none"> ✓ The bottom of a rain garden should be level to encourage the even distribution of stormwater and increase infiltration capacity. ✓ Rain gardens should be 4 to 8 inches deep with a 2-4 inch amended soil layer and a 2-3 inch layer of non-dyed aged shredded hardwood mulch. ✓ The amended soil layer of a rain garden should be a 50/50 mixture of the excavated native soils and mature organic compost.
Vegetation	<ul style="list-style-type: none"> ✓ Select plants for rain gardens using the Coastal Plant Guide at www.uri.edu/cels/cemc/coastalPlants/CoastalPlantGuide.htm or Appendix B of the RI Stormwater Design and Installation Standards Manual. See example planting plans below. CHOICE BY OWNER FROM PLAN →
Construction	<ul style="list-style-type: none"> ✓ A crushed stone entrance should be installed at the inflow to prevent channelling. ✓ A berm to detain stormwater should be constructed along the downhill side of the rain garden, perpendicular to the slope of the lawn ✓ Be sure that the soil within the rain garden area does not become compacted by construction activities (i.e. heavy machinery). If soil becomes severely compacted it may need to be filled and amended to maintain proper drainage.
Maintenance	<ul style="list-style-type: none"> ✓ 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 assure proper functioning, plant growth and survival. Plants shall be replaced on an as-needed basis during the growing season. ✓ Silt/sediment 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 few inches of material shall be removed and shall be replaced with fresh soil mixture and mulch. ✓ 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.

Figure 4. Rain Garden Example - Planting Plan 1

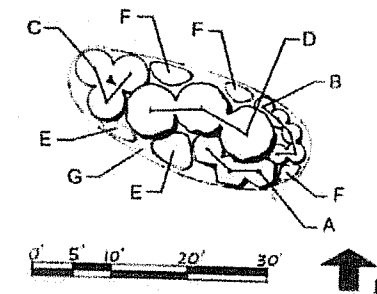
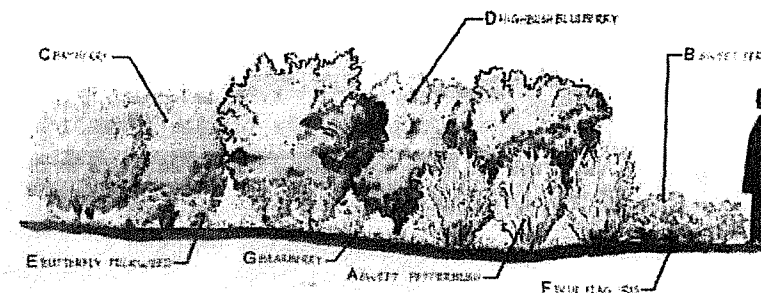
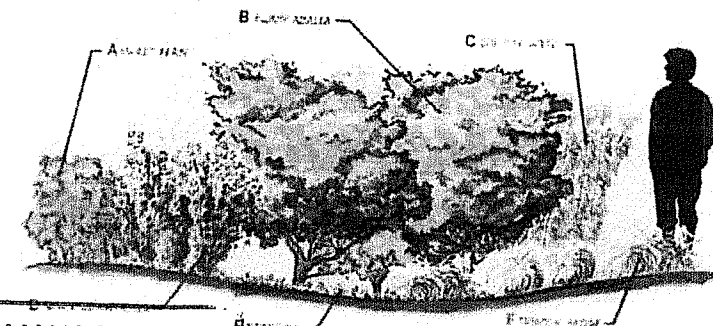
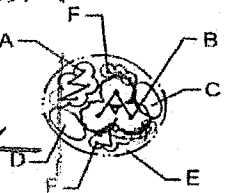


Figure 5. Rain Garden Example - Planting Plan 2



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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 DATED JUN - 3 2021
 SEE LETTER OF SAME DATE.



Environmental Management
 APR 23 2021
 Office of Water Resources

LOUIS CALCAGNI & SONS INC
 PROPOSED DWTS
 4016 LOTS 754 & 245
 JOHNSTON, R.I.

D4021
 D2066 CLASS IV

JOHN A. TZITZOURIS
 1941
 1/23/21
 PROFESSIONAL LAND SURVEYOR

RAIN GARDEN PLAN: - DETAIL SHEET -		
NO.	DATE	REVISION
	1/23/21	ORIG. ISSUE
SHEET 1A		
CHECKED BY: J.T.		

SHEET 1A