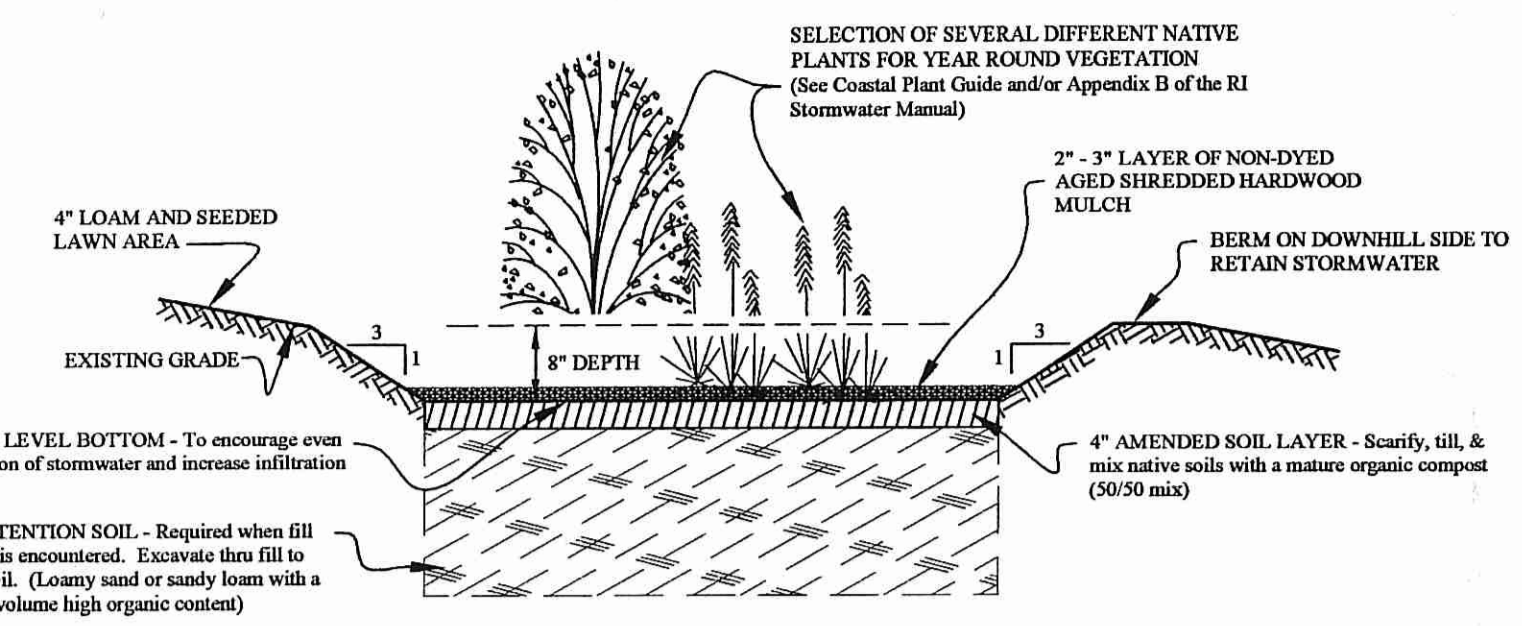


RAIN GARDEN REQUIREMENTS

Table 6. Required Elements for Rain Gardens on Single-Family Residential Lots

Location	Treatment	Vegetation	Construction	Maintenance
<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). 	<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. 	<ul style="list-style-type: none"> Select native plants for rain gardens using the Coastal Plant Guide (www.rsi.org/education/conservation/Plants/CoastalPlantGuide.htm) or Appendix B of the RI Stormwater Design and Installation Standards Manual. See example planting plans below. 	<ul style="list-style-type: none"> A crushed stone entrance should be installed at the inflow to prevent channeling. 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 severely compacted by construction activities (i.e. heavy machinery). If soil becomes severely compacted it may need to be tilled and amended to maintain proper drainage. 	<ul style="list-style-type: none"> Rain gardens shall be inspected following at least the first two precipitation events 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/erosion 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.



PROPOSED RAIN GARDEN SIZES

LOCATION	MIN. BOTTOM WIDTH	MIN. TOTAL LENGTH	REQUIRED BOTTOM AREA
Northwest Corner of Lot	5 ft.	16 ft.	80 sq. ft.
Northeast Corner of Lot	3 ft.	12 ft.	32 sq. ft.
Southeast Corner of Lot	2 ft.	16 ft.	32 sq. ft.

NOTES:
 1. THE CONSTRUCTION OF THE RAIN GARDEN SHALL FOLLOW THE STANDARDS IN THE RI STORMWATER MANAGEMENT GUIDANCE FOR INDIVIDUAL SINGLE FAMILY RESIDENTIAL LOT DEVELOPMENT & THE UNIVERSITY OF WISCONSIN PUBLICATION "RAIN GARDENS: A HOW-TO MANUAL FOR HOMEOWNERS".

RAIN GARDEN TYPICAL & DETAILS

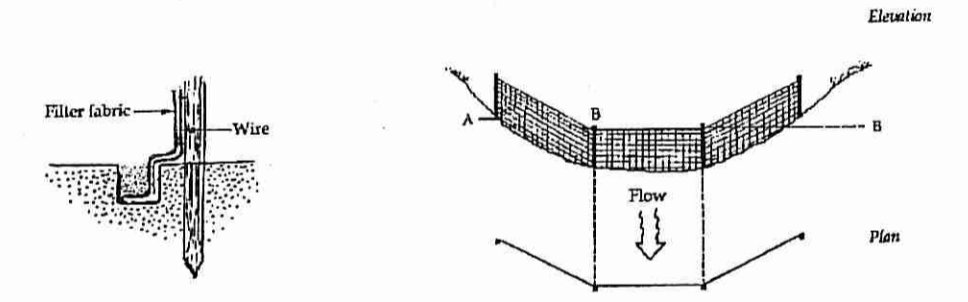
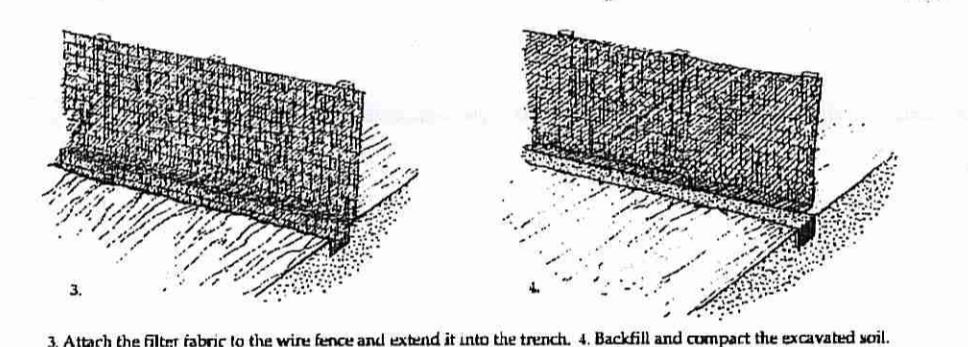
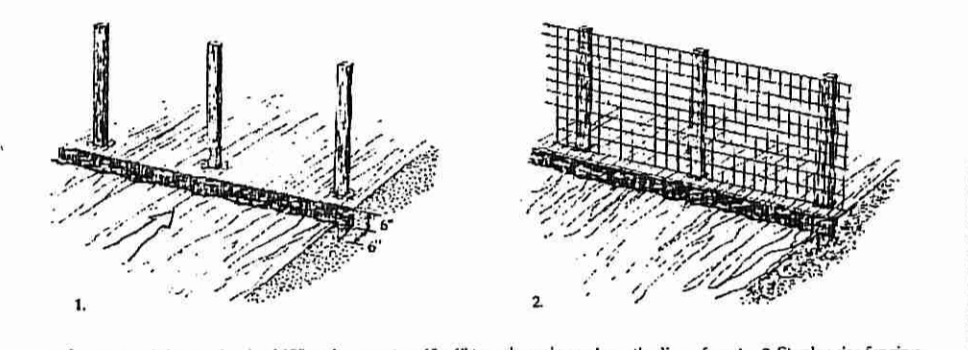
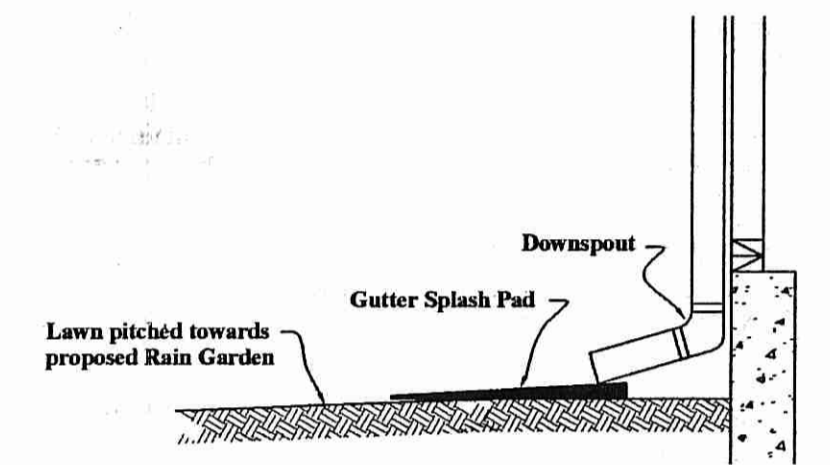
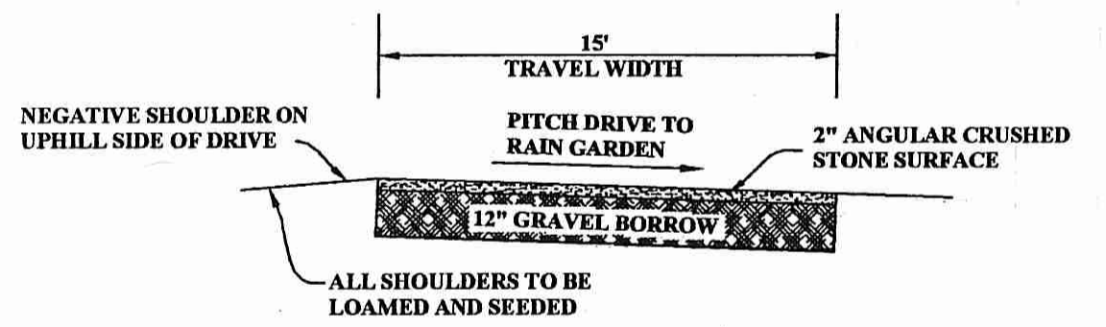


Figure 8-4 Placement and Construction of a Synthetic Fiber Barrier
 Source: U.S. Department of Agriculture, Soil Conservation Service, Stormwater



DOWNSPOUT SPLASH PAD TYPICAL



DRIVEWAY DETAIL

SEDIMENT & EROSION CONTROL:

1. PROPER EROSION & SEDIMENT CONTROL PRACTICES MUST BE IMPLEMENTED DURING ALL PHASES OF CONSTRUCTION AND UNTIL THE SITE IS SATISFACTORILY STABILIZED.
2. ALL CONTROL PRACTICES SHOULD BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE SOIL EROSION AND SEDIMENT CONTROL HANDBOOK.
3. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL. THE SILT FENCE BARRIERS SHALL BE CHECKED REGULARLY AND MAINTAINED THROUGHOUT ALL CONSTRUCTION PHASES.
4. ALL DISTURBED AREAS SHALL BE LOAMED, SEEDED, AND STABILIZED PRIOR TO THE REMOVAL OF THE SILT FENCE.
5. ALL STUMPS, BRUSH, WOOD FROM TREE CLEARING, RUBBLE, AND SPOIL MATERIAL SHALL BE REMOVED OFF-SITE AND DISPOSED OF AT A PROPER DISPOSAL SITE.
6. ROBERT JENSEN, OWNER OF LOT 175, AP 17, IS ASSIGNED THE RESPONSIBILITY FOR THE EROSION AND SEDIMENT CONTROL MEASURES AND INFORMING ALL PARTIES WORKING ON THE CONSTRUCTION SITE OF THE EROSION AND SEDIMENT CONTROL REQUIREMENTS AND OBJECTIVES. THE ABOVE NAMED PERSON SHALL NOTIFY RI DEM OF ANY TRANSFER OF THIS RESPONSIBILITY.

REFERENCES:

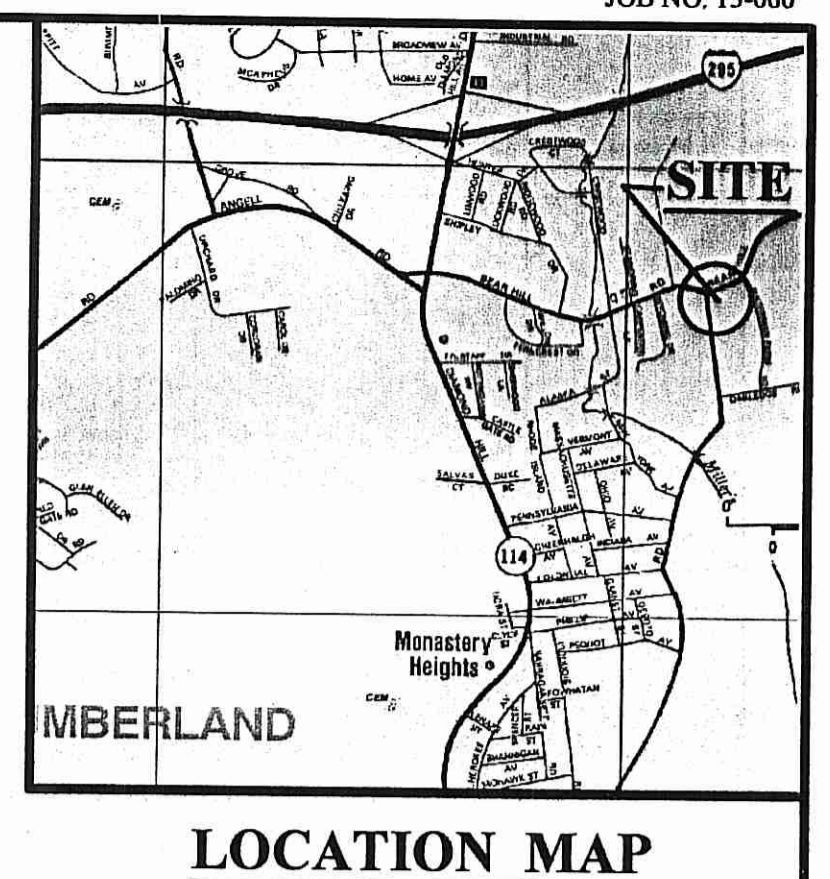
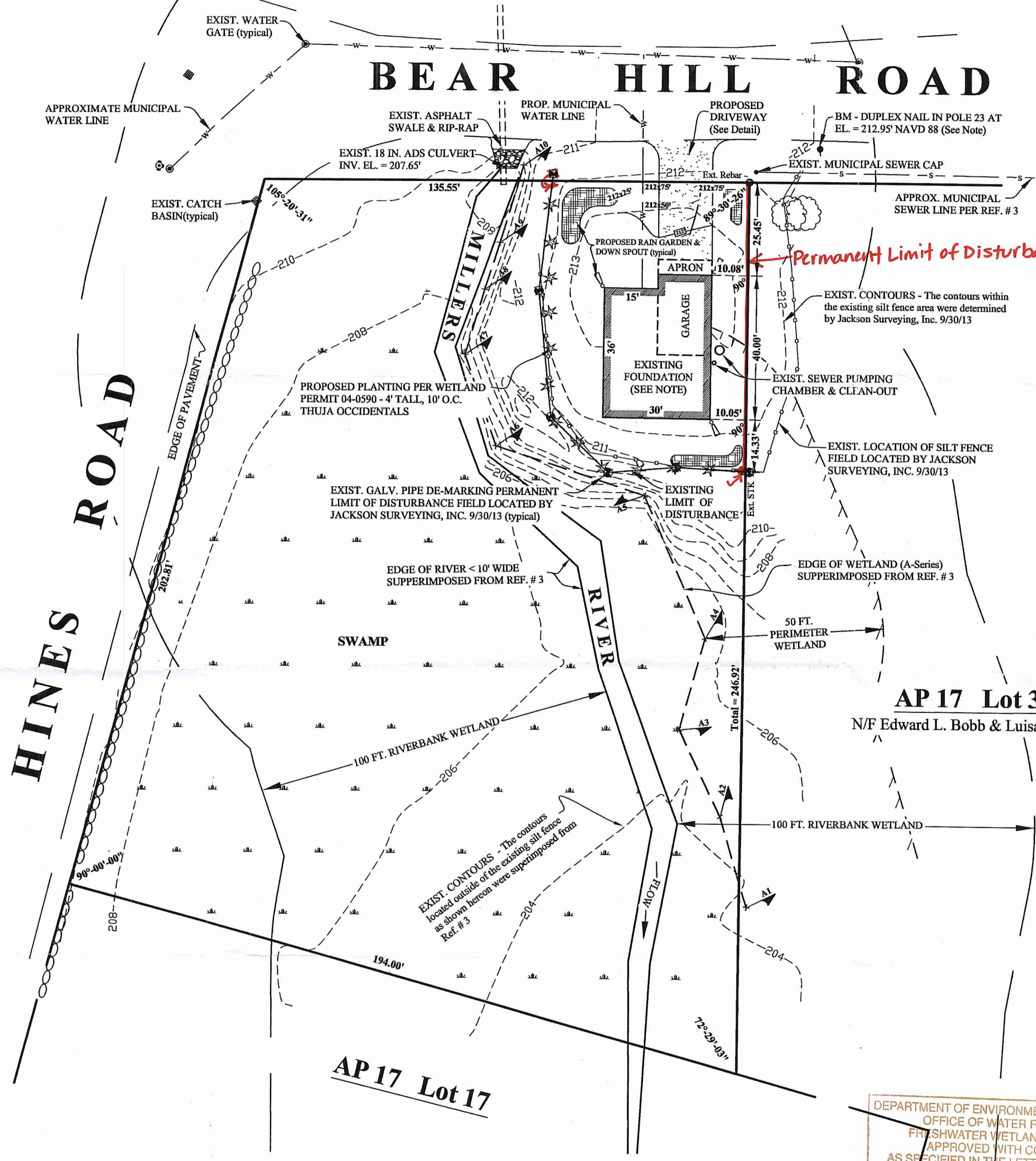
1. THE SUBJECT SITE WAS PREVIOUSLY APPROVED BY RI DEM FOR A WETLAND PERMIT ON JANUARY 26, 2007. SEE RI DEM WETLAND PERMIT NO. 04-0590.
2. PLAN ENTITLED: "Preliminary Site Plan, AP 17 Lot 175, Hines Road & Bear Hill Road, Cumberland, Rhode Island, Robert Jensen, 9 Old Jenckes Hill Road, Lincoln, Rhode Island 02865, Waterman Engineering Co., Date: Oct. 12, 2005, Revised 4/14/06, Scale: 1" = 30'."
3. PLAN ENTITLED: "Cumberland, RI, Site Plan for Robert Jensen, Class I Survey of A.P. 17 Lot 175, Hines Road, Bear Hill Road, by Marsh Surveying Inc., September 7, 2004, Scale: 1" = 40 ft., Revised 3/1/05."

NOTES:

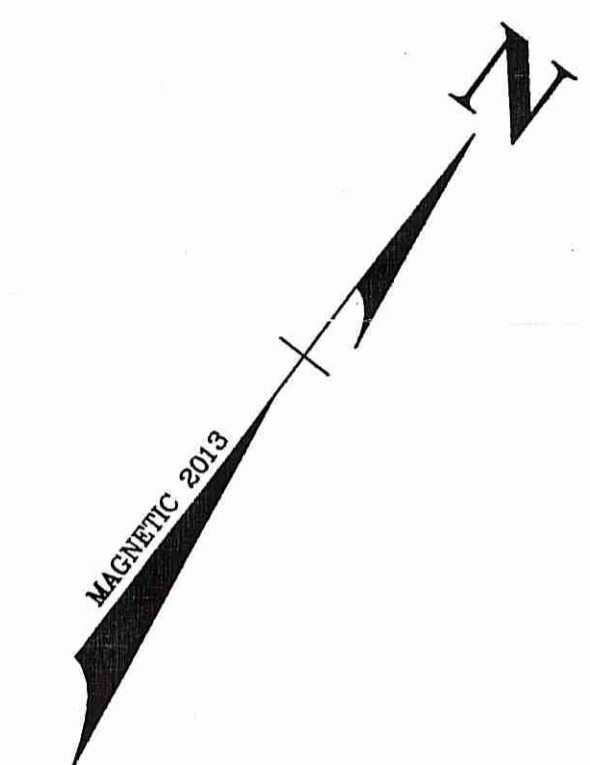
1. TOTAL AREA = 36,407 SQ. FT.
2. ZONING CLASSIFICATION IS A R-1 RESIDENTIAL ZONE. BUILDING SETBACKS ARE: FRONT = 20', SIDE = 10', REAR = 25'
3. THIS PARCEL IS LOCATED IN A "X" ZONE AS DESIGNATED ON THE FEMA FLOOD INSURANCE RATE MAPS. SEE COMMUNITY PANEL NO. 440016 0006B
4. THE BENCHMARK AS SHOWN HEREON WAS NOT FIELD VERIFIED BY JACKSON SURVEYING, INC. THE BENCHMARK WAS OBTAINED BY FIELD SURVEY BY MARSH SURVEYING INC. (See Reference #3)
5. THE PROPERTY LINES AS SHOWN HEREON DO NOT REPRESENT A BOUNDARY SURVEY. THE FIELD WORK TO INCLUDE LOCATION SURVEY AND TOPOGRAPHIC SURVEY PERFORMED BY JACKSON SURVEYING, INC. AS SHOWN HEREON WERE TIED TO SURVEY FIELD WORK BY MARSH SURVEYING INC. AS REFERENCED IN REFERENCE # 3.
6. THE EXISTING FOUNDATION WAS FIELD LOCATED BY JACKSON SURVEYING, INC. ON 9/30/13 AND WILL BE UTILIZED TO SUPPORT A SINGLE FAMILY RESIDENCE.
7. THE RESIDENTIAL IMPROVEMENTS WILL HAVE MINIMAL EFFECT ON THE DRAINAGE SYSTEM IN THIS AREA DURING THE 100 YR STORM EVENT DUE TO THE SMALL 4,354 SQ. FT. AREA OF FINAL DEVELOPED AREA FOR THIS LOT. LARGE STORM EVENTS THAT CANNOT BE STORED WITHIN THE PROPOSED RAIN GARDENS WILL FLOW OUT ONTO BEAR HILL ROAD AND WILL BE HANDLED BY THE TOWN DRAINAGE SYSTEM. THUS, THE FLOOD STORAGE CAPACITY OF THE SUBJECT WETLANDS WILL REMAIN AT CURRENT LEVELS. THE PROPOSED PROJECT DOES NOT RESULT IN THE DECREASE OF FLOOD STORAGE CAPACITY WITHIN ANY FRESHWATER WETLAND ON OR OFF SITE.

JACKSON SURVEYING, Inc.
 SURVEYING & ENGINEERING

P.O. BOX 454 CHARLESTOWN, RI 02813 PH: (401) 364-3130



LOCATION MAP



- LEGEND:**
- PROPOSED RAIN GARDEN
 - EXISTING REBAR
 - PROPOSED DOWNSPOUT LOCATION WITH SPLASH PAD
 - WETLAND FLAG SUPERIMPOSED FROM REF. #3
 - PROPOSED CONTOUR
 - PROPOSED TREE (Thuja Occidental)
 - EXISTING GALVANIZED IRON PIPE DEMARKING PERMANENT LIMIT OF DISTURBANCE
 - EXISTING STAKE
 - EXISTING UTILITY POLE
 - PROPOSED SPOT ELEVATION

permanent markers to be located on the subject property (if off-site as indicated).

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM
 APPROVED WITH CONDITIONS
 AS SPECIFIED IN THE LETTER OF APPROVAL
 DATED NOV 22 2013 FILE # 13-0188
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL.
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE.

Nancy Freeman

**SITE PLAN FOR
 RIDEM PRELIMINARY DETERMINATION
 LOT 175 of AP 17**
 IN THE TOWN OF
CUMBERLAND, RI
 PREPARED FOR
ROBERT JENSEN
 9 OLD JENCKES HILL ROAD LINCOLN, RI 02865
OCTOBER 2013
 SCALE: 1" = 20'

CHAREE M. JACKSON
 No. 9600
 REGISTERED PROFESSIONAL ENGINEER
 CIVIL

