



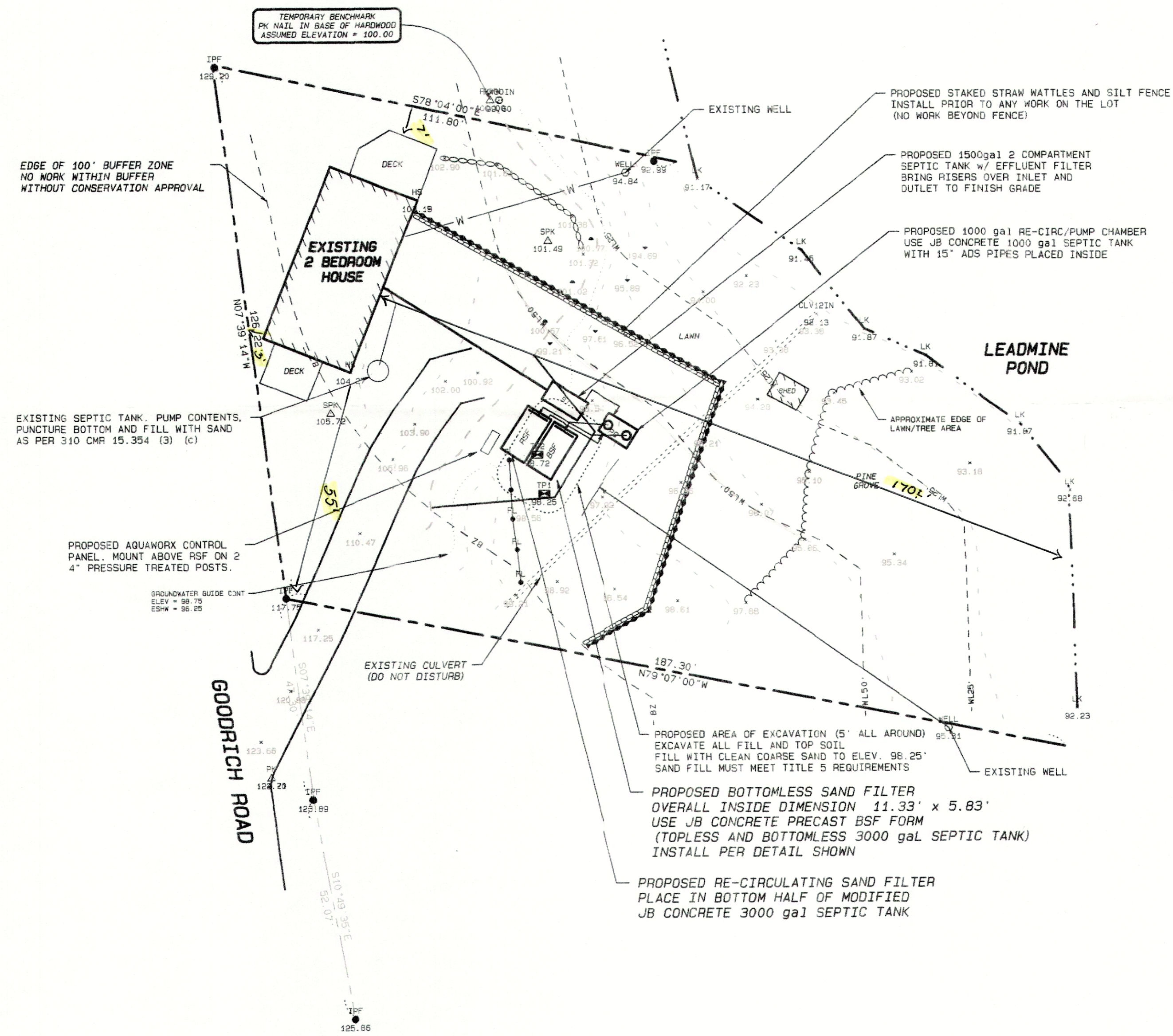
THIS SYSTEM UTILIZES A RECIRCULATING SAND FILTER (RSF) AND A BOTTOMLESS SAND FILTER (BSF).

THE BSF DESIGN IS BASED ON THE MA DEP BSF APPROVAL LETTER AND THE RHODE ISLAND DESIGN STANDARDS.

THE RSF DESIGN IS BASED ON THE MA DEP RSF GUIDANCE DOCUMENT.

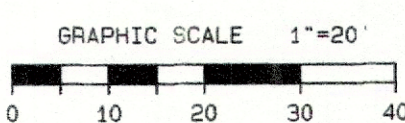
THE USE OF THIS SYSTEM EXCEEDS THE ENVIRONMENTAL PROTECTION OFFERED BY A CONVENTIONAL TITLE 5 SYSTEM.

THIS SYSTEM REQUIRES AN OPERATION AND MAINTENANCE CONTRACT FOR BOTH THE RSF SYSTEM AND THE BOTTOMLESS SAND FILTER LEACH FIELD. BOTH SYSTEMS NEED TO BE MAINTAINED FOR THE LIFE OF THE SYSTEM TO INSURE PROPER OPERATION.



**LEGEND**

PROPERTY LINE	---
DEEP HOLE TEST	PH1
PERC HOLE TEST	PH2
WELL	W
EXISTING CONTOURS	---
PROPOSED CONTOURS	---
EDGE OF WETLAND	---
HAYBALES	---
SILT FENCE	---
WATER LINE	---
WETLAND FLAG	WLF
TREE, SOFTWOOD	SW12IN
TREE, HARDWOOD	HW12IN



THIS SYSTEM REQUIRES THE FOLLOWING LOCAL UPGRADE APPROVALS TO TITLE 5 AND/OR LOCAL REGULATIONS:

- VARIANCE TO 310 CMR 15.211 (1) THE PROPOSED GAS DOES NOT MEET THE REQUIRED SETBACK FROM A WELL, 100 FEET REQUIRED, 55 FEET PROVIDED. (n/f OWNER)
- VARIANCE TO 310 CMR 15.240 (5) THE PROPOSED GAS IS DESIGNED FOR A 2 BEDROOM HOUSE, A CED RESTRICTION LIMITING USE TO TWO BEDROOMS IS REQUIRED.

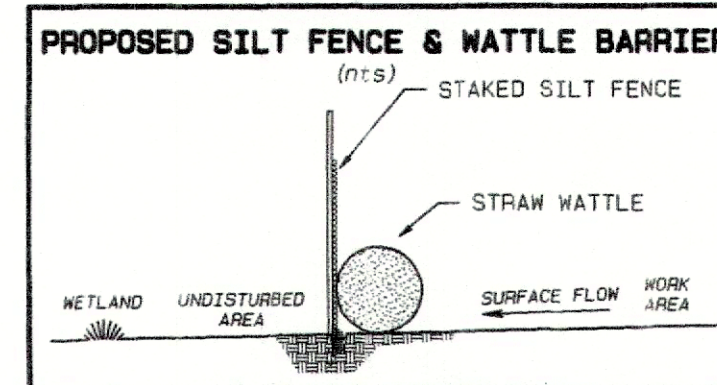
**PROXIMITY NOTE:**

THERE ARE NO PWS OR SEMI PWS SYSTEMS WITHIN 400 FEET OF THE PROPOSED LEACH FIELD  
THIS AREA IS NOT IN A NITROGEN SENSITIVE AREA AS MAPPED BY MASS GIS

**NOTE:**

MAGNETIC MARKER TAPE SHALL BE PLACED ON ALL SYSTEM COMPONENTS PRIOR TO BACK FILLING

**WETLAND PROTECTION MEASURES**  
nts



**WETLAND PROTECTION PLANS:**

- STAKED STRAW WATTLES AND SILT FENCE SHALL BE INSTALLED AS SHOWN ON THE PLAN. THEY SHALL BE INSPECTED BY THE LOCAL CONSERVATION COMMISSION, IF REQUIRED, BEFORE CONSTRUCTION.
- WITHIN THE 100' BUFFER ZONE ALL DISTURBING OF SOIL SHALL BE MINIMIZED.
- ALL DISTURBED AREAS SHALL BE LOAMED, SEEDED AND MULCHED AS SOON AS POSSIBLE.
- NO WORK OR STORAGE OF MATERIAL SHALL BE DOWN HILL OF THE STRAW WATTLES OR SILT FENCE.
- ANY DE-WATERING OF EXCAVATIONS, DRILLING OR DIGGING OF WELLS SHALL BE DONE IN A MANNER TO PREVENT SILTY WATER FROM RUNNING INTO THE WETLAND AND/OR THE LAKE.
- ALL NECESSARY PERMITS SHALL BE OBTAINED BEFORE WORK COMMENCES.
- OWNER AND CONTRACTOR SHALL ADHERE TO ANY ORDERS ISSUED BY THE LOCAL CONSERVATION COMMISSION.

CONSERVATION COMMISSION SHALL BE NOTIFIED AFTER EROSION CONTROL IS PUT IN PLACE AND PRIOR TO CONSTRUCTION

**DESIGN CALCULATIONS:**

DESIGN CRITERIA:  
2 BEDROOMS NO GARBAGE DISPOSAL

LOADING RATE: 0.74 gpd/ft<sup>2</sup>

DESIGN FLOW:  
(2 BR) (110 gpd/BR) = 220 gpd

SEPTIC TANK:  
REQUIRED: 1500 gal PROVIDED: 1500 gal

SOIL ABSORPTION SYSTEM:  
REQUIRED:  
(220 gpd) / (0.74 gpd/ft<sup>2</sup>) = 297 ft<sup>2</sup>

**RI BSF DESIGN CALCULATIONS:**

DESIGN CRITERIA:  
2 BEDROOMS

RI DESIGN FLOW: 115

RI TREATMENT CATEGORY: 1

RI SOIL CATEGORY: 3

RI BSF LOADING RATE: 3.5

DESIGN FLOW:  
(2 BR) (115 gpd/BR) = 230 gpd

BSF SIZE:  
REQUIRED:  
(230 gpd) / (3.5 gpd / gpd/ft<sup>2</sup>) = 65.7 ft<sup>2</sup>

PROVIDED:  
(1 ) BOX (es) (11.33 ft x 5.83 ft) = 66.1 ft<sup>2</sup>

**RSF DESIGN CALCULATIONS:**

DESIGN CRITERIA:  
2 BEDROOMS

TITLE 5 DESIGN FLOW: 110

DESIGN FLOW:  
(2 BR) (110 gpd/BR) = 220 gpd

RECIRCULATING SAND FILTER:  
DESIGN LOADING RATE:  
5 gpd / ft<sup>2</sup>

REQUIRED:  
(220 gpd) / (5 gpd / gpd/ft<sup>2</sup>) = 44 ft<sup>2</sup>

PROVIDED:  
(1 ) BOX (es) (11.33 ft x 5.83 ft) = 66.1 ft<sup>2</sup>

**SOIL TESTING RESULTS:**

PERCOLATION TEST:  
DATE OF TEST 15 JULY 2009  
SOIL EVALUATOR: MARK FARRELL WITNESS: ALYSSA RUSTECKI  
PERC RATE #1: PSAMD1 PERC RATE #2: - #D1

SOIL LOGS:

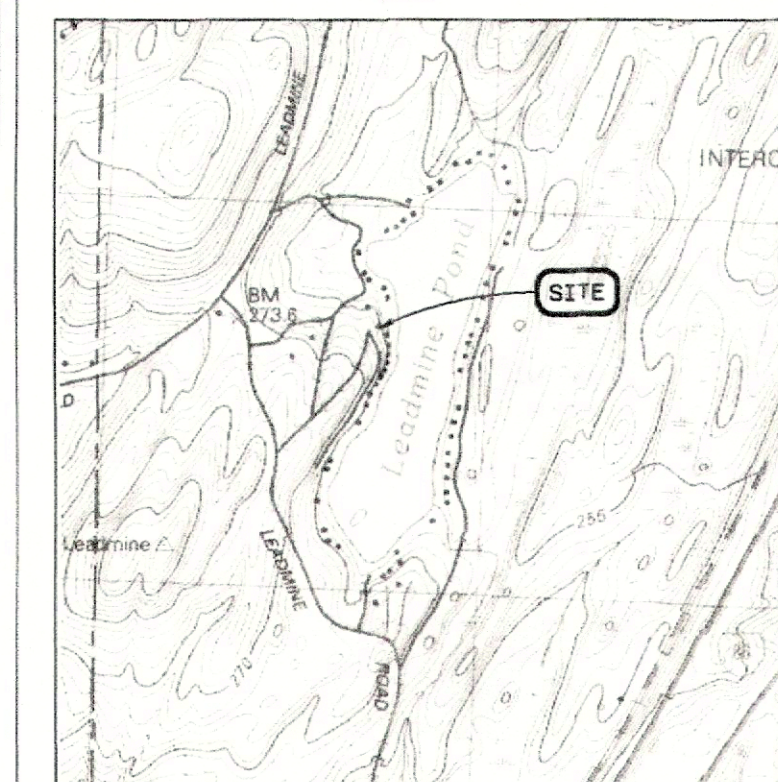
TP1 ELEVATION: 98.25' GH ELEVATION: 95.75'

DEPTH	HRZN	TEX	COLOR	MOTTLES/OTHER
0 - 30 in	FILL	-	-	-
30 - 37 in	0b	SL	5Y 2.5/1	-
37 - 50 in	Bg	LS	2.5Y 3/1	-
50 - 96 in	C	S	10YR 5/6	COMMON 7.5YR 4/6 @30in

TP2 ELEVATION: 98.72' GH ELEVATION: 96.22'

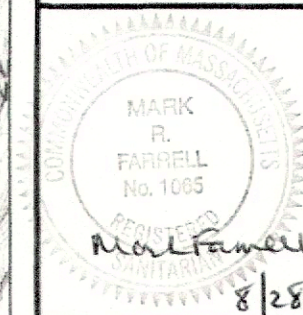
DEPTH	HRZN	TEX	COLOR	MOTTLES/OTHER
0 - 30 in	FILL	-	-	-
30 - 52 in	Bw	SL	5B7 3/0	-
52 - 102 in	C1	S	5Y 3/2	COMMON 10YR 5/8 @30in

**LOCUS MAP**  
(nts)



**STAKE OUT INFO**

300-912



**GREEN HILL ENGINEERING**  
WORKING TO PROTECT OUR WATER RESOURCES

PERC TESTS  
SEPTIC PLANS  
WETLAND DELINEATION  
TOPOGRAPHIC SURVEYS  
ENVIRONMENTAL CONSULTING

10 MAIN STREET  
STURBRIDGE, MA 01566  
508-347-5226

**PROPOSED SEPTIC SYSTEM**

MARY HARTPENCE  
20 GOODRICH ROAD  
STURBRIDGE MA  
13 AUGUST 2014

I CERTIFY THAT I AM CURRENTLY APPROVED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION PURSUANT TO 310 CMR 15.017 TO CONDUCT SOIL EVALUATIONS AND THAT THE ABOVE ANALYSIS HAS BEEN PERFORMED BY ME CONSISTENT WITH THE REQUIRED TRAINING, EXPERTISE, AND EXPERIENCE DESCRIBED IN 310 CMR 15.017. I FURTHER CERTIFY THAT THE RESULTS OF MY SOIL EVALUATION, AS INDICATED ON THE ATTACHED SOIL EVALUATION FORM, ARE ACCURATE AND IN ACCORDANCE WITH 310 CMR 15.100 THROUGH 15.107.

Signature Mark Farrell Date 8/28/14