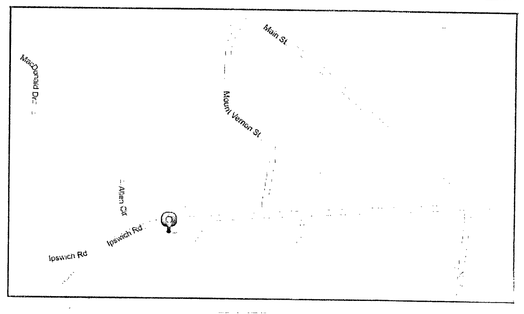
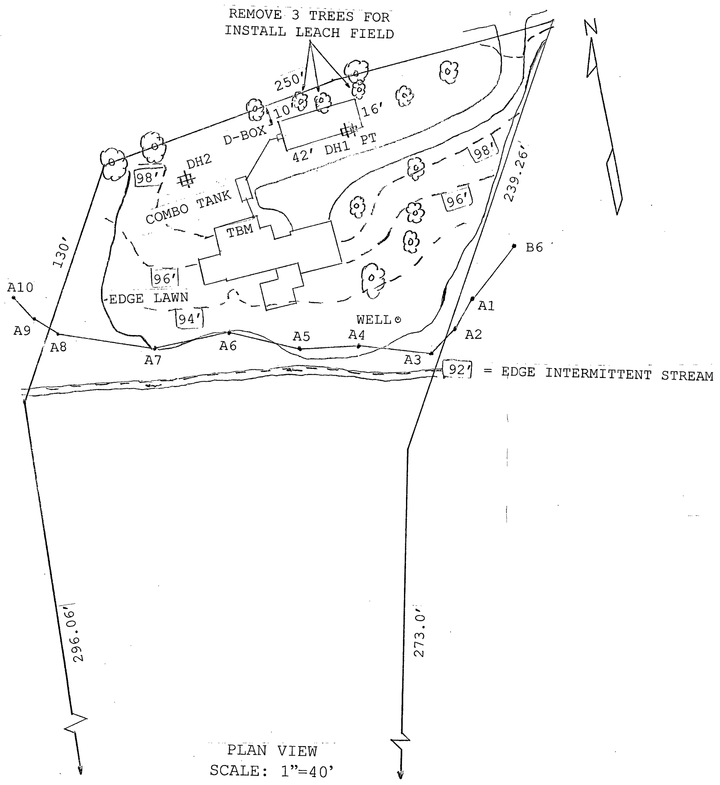
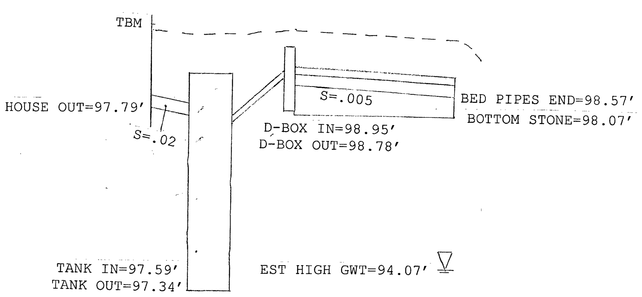


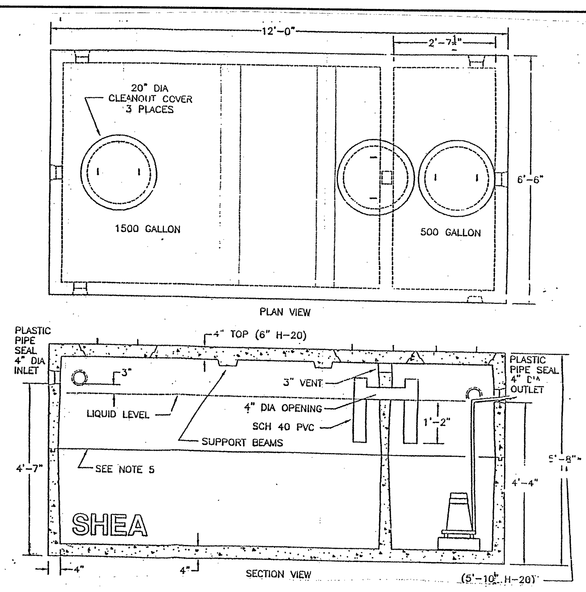
LOCUS



PLAN VIEW
SCALE: 1"=40'

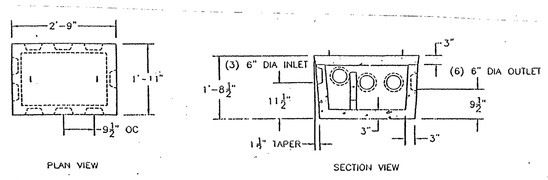


SYSTEM PROFILE
SCALE: 1"=20' HOR. 1"=2' VERT.



AN ACCESS MANHOLE COVER SHALL BE PROVIDED FOR EACH CLEANOUT COVER TO WITHIN 6 INCHES OF FINAL GRADE

COMBINATION TANK
1500 SEPTIC/500 PC
SHEA MODEL TK-COMBO STANDARD OR EQUAL
SCALE: ½"=1'

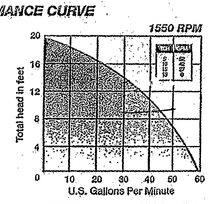


DISTRIBUTION BOX
SHEA 6 OUTLET BAFFLE BOX OR EQUAL
SCALE: ½"=1'

BED SECTION
SCALE: 1"=2'

MODELS	HP	VOLTS	PHASE	AMPS	DISCHARGE	AUTOMATIC	IMPELLER
LE31M	1/3	115	1	10.5	1-1/2" FNPT	NO	VORTEX
LE31A	1/3	115	1	10.5	1-1/2" FNPT	YES	VORTEX

PERFORMANCE CURVE



PUMP DATA
LIBERTY LE-30 SERIES PUMP (OR EQUAL)

DESIGN DATA:
LTAR, CLASS I SOIL, <5 MIN./INCH=0.74 GPD/SQ. FT
DWELLING IS 2 BEDROOM, BUT DESIGN FOR 3 BEDROOM SO NOT DEED RESTRICTION.
DESIGN FLOW, TITLE V DESIGN FLOW =3 BEDROOMS X 110 GPD/BEDROOM=330 GPD
SYSTEM REQUIREMENT, PER BOXFORD REGULATIONS OF 165 GPD/BR =3 X 165/0.74 =669 SQ FT AREA PROVIDED, 42' x 16'=672 SQ. FT

DEEP HOLES AND PERCOLATION TEST WERE PERFORMED ON 5/7/15 BY JOHN PETTIS, P.E., CERTIFIED SOIL EVALUATOR (FALL 1996) AND WITNESSED BY KENDELL LONGO, DIRECTOR OF PUBLIC HEALTH, TOWN OF BOXFORD.

PUMP CHAMBER:

500 GALLONS/48" DEPTH IN SECOND COMPARTMENT= 10.42 GAL/INCH

BACKFLOW=26' x 3.14 $(1/12)^2$ x 7.48 =4.25 GALLONS
MIN. DEPTH BELOW PUMP OFF=4.25 GAL/10.42 GAL/INCH=0.41" (USE 4")
MINIMUM DOSE=330 GPD/4 DOSES = 82.5 GALLONS
MINIMUM DISTANCE BETWEEN SWITCHES=82.5 GAL/10.42 GAL/INCH=7.9" (USE 9")
USE 3" DISTANCE BETWEEN PUMP ON AND ALARM

TANK BOTTOM (INSIDE) = 97.54' - 4' = 93.54'
93.54' + 0.33' = 93.87' **PUMP OFF**
93.87' + 0.75' = 94.62' **PUMP ON**
94.62' + 0.25' = 94.87' **ALARM ON**

STORAGE ABOVE ALARM LEVEL:
(2.67'/4') X 500 GALLONS + 10.42 GAL/INCH X 4 X 3" =459 GALLONS > 330 GALLONS TITLE V DESIGN O.K.

STATIC HEAD = 98.95'-93.87'=5.08'
NETWORK LOSS(NL) = 1.31 x (Hd=2.5') = 3.28
EQUIVALENT LENGTH DELIVERY PIPE: 2" PVC=26', 1 45 DEG ELBOW=2.5', 1 90 DEG ELBOW=5',
TOTAL=33.5'

GPM	Hf/100'	Hf(INCLUDE NL)	TDH
30	1.54	3.80	8.88
40	2.62	4.16	9.24
50	3.98	4.61	9.69

REQUIRED VARIANCES FROM BOXFORD REGULATIONS:
1. ALLOW LEACHING AREA WITHIN 150' OF AN EXISTING WELL, BUT GREATER THAN 100' PER TITLE V.
2. ALLOW LEACHING AREA WITHIN 150' OF A WETLAND, BUT GREATER THAN 100' PER TITLE V.

NOTES:

1. PROPERTY IS IDENTIFIED AS #526 IPSWICH RD, MAP 13 BLOCK 1 LOT 4/1. LOT LAYOUT PER DEED (BOOK 6628, PAGE 725), EXISTING DISPOSAL SYSTEM PLAN (1976) AND MEASUREMENTS MADE FOR THIS PLAN.
2. TEMPORARY BENCH MARK: BOTTOM OF SIDING ABOVE OUTLET PIPE (SEE PLAN VIEW), ELEVATION 100.0' (ASSUMED).
3. EXISTING SEPTIC TANK SHALL BE REMOVED AND LEACHING AREAS REMOVED AS REQUIRED (NOTE LOCATIONS ARE APPROXIMATE).
4. ALL WORK, MATERIALS, AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF 310 CMR 15.000. MINIMUM SCHEDULE 40 PVC PIPE SHALL BE USED. ACCESS MANHOLE COVER SHALL BE PLACED AS INDICATED ON THE PROFILE VIEW.
5. THE A AND B LAYERS SHALL BE REMOVED WITHIN A 5-FOOT HORIZONTAL DISTANCE OF THE SOIL ABSORPTION SYSTEM. REPLACEMENT SHALL BE WITH SOIL MEETING THE REQUIREMENTS OF 310 CMR 15.255 (3).
6. THE SYSTEM IS NOT DESIGNED FOR A GARBAGE DISPOSAL.
7. THE SYSTEM SHOULD PERIODICALLY BE INSPECTED, MAINTAINED AND PUMPED WHEN SLUDGE EXCEEDS ¼ OF THE DEPTH (APPROX. EVERY TWO YEARS).
8. MAGNETIC TAPE TO BE INSTALLED OVER ALL SYSTEM COMPONENTS.
9. WETLAND FLAGGING PERFORMED 6/9/15 BY PETTIS ENGINEERING (A SERIES). PREEXISTING FLAG 6B BY OTHERS FOR ADJACENT PARCEL.

DEEP HOLE RESULTS:

DH1: G.S. ELEV.=99.07'

0-8"	Ap	SL	10YR3/3
8-22"	B	LS	10YR4/4
22-41"	C1	LS	10YR6/4
41-126"	C2	S	10YR7/4

MOTTLING@60" 7.5YR6/8
WEEP@100"

DH2: G.S. ELEV.=98.86''

0-11"	Ap	SL	10YR3/2
11-21"	Fill		
21-28"	Aburied	SL	10YR3/1
28-31"	B	LS	10YR4/6
31-120"	C	S	10YR5/6

MOTTLING@58" 7.5YR5/8
WEEP@84"

PERCOLATION TEST RESULTS:
PT1: G.S. ELEV.=99.07'
DEPTH 18"/18"

START PRE-SOAK:	12:41
END PRE-SOAK:	12:56
TIME AT 12":	12:56
TIME AT 9":	1:01
TIME AT 6":	1:09
TIME 9" TO 6":	8
RATE (MIN/INCH):	3

SANITARY SUBSURFACE DISPOSAL SYSTEM

PETTIS ENGINEERING
15 Cedarcrest Lane
Bradford, MA 01835
(978) 995-1538

JOHN N. PETTIS, III CIVIL No. 38528 REGISTERED PROFESSIONAL ENGINEER
6/10/15

APPLICANT: MICHAEL FICHERA
ADDRESS: 526 IPSWICH RD
BOXFORD, MA