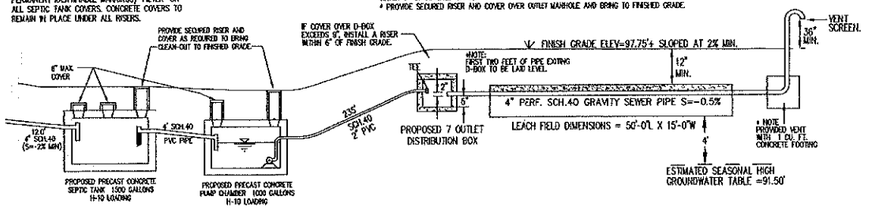
GNORRMAN @ YAHOO.COM

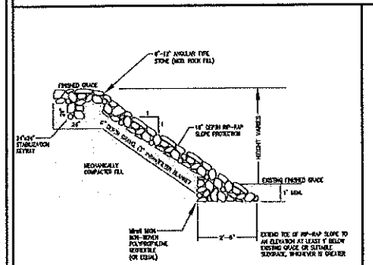
SEPTIC PROFILE

NOT TO SCALE

* NOTE
SET MIN. COVER TO GRADE AND CLEARLY NOTE (WITH NON-DEGRADABLE PAINT OR OTHER PERMANENT IDENTIFIABLE MARKINGS) "RISER" ON ALL SEPTIC TANK COVERS. CONCRETE COVERS TO REMAIN IN PLACE UNDER ALL RISERS.

NOTE:
* SEPTIC TANK, PUMP CHAMBER, AND DISTRIBUTION BOX SHALL BE PLACED ON A LEVEL, STABLE BASE COMPACTED BY A VIBRATORY TAMPER OR EQUAL.
* SCHEDULE 40 PIPE WILL BE USED FOR ALL PIPING, INCLUDING BLDG. SEWER, TEES, EFFLUENT LINES AND LEACH FIELD.
* MIN. 4'-0" ELEV. REQUIRED BETWEEN BOTTOM OF LEACH FIELD AND MAX GW. ELEV.
* THE SCHEDULE OF ELEVATIONS PROVIDED ON THIS PLAN HAVE BEEN CALCULATED BY USING THE COMPONENT LOCATIONS AS PROPOSED. IF THE COMPONENT LOCATIONS ARE VARIED IN THE FIELD, THE ELEVATIONS MUST BE ADJUSTED ACCORDINGLY IN ORDER TO PROVIDE REQUIRED MINIMUM PIPE SLOPES.
* PROVIDE RISERS AND COVERS OVER INLET AND CENTER ACCESS MANHOLES ON SEPTIC TANK AND BRING TO WITHIN 6" OF FINISHED GRADE.
* PROVIDE SECURED RISER AND COVER OVER OUTLET MANHOLE AND BRING TO FINISHED GRADE.

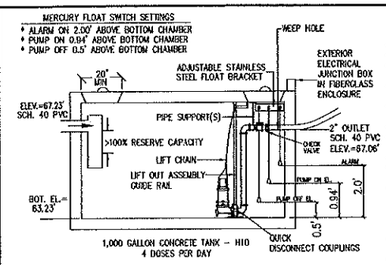




1:1 RIP-RAP SLOPE STABILIZATION

SCALE: NOT TO SCALE

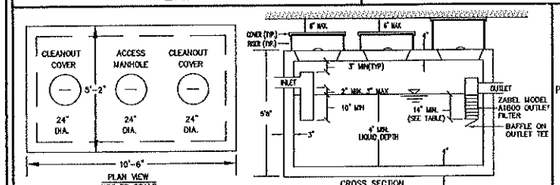
MERCURY FLOAT SWITCH SETTINGS
* ALARM ON 2.00' ABOVE BOTTOM CHAMBER
* PUMP ON 0.94' ABOVE BOTTOM CHAMBER
* PUMP OFF 0.5' ABOVE BOTTOM CHAMBER



TYPICAL PUMP CHAMBER

NOT TO SCALE

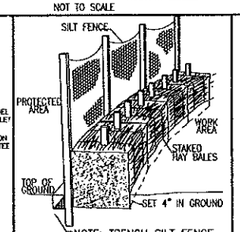
TOTAL SYSTEM HEAD = 31.9 FEET
TOTAL LENGTH OF FORCE MAIN = 235 FEET ±
* EJECTOR PUMP MUST NOT PUMP MORE THAN 10 GPM.
* PUMP SHALL BE A MYERS 1.0hp SEWAGE PUMP OR EQUAL
* DOSING FREQUENCY SHALL BE 4 TIMES PER DAY
* PROVIDE HANGER PIPE FOR PUMP REMOVAL
* PROVIDE 20" MIN. MANHOLE COVER/RISER TO GRADE OVER PUMP
* PROVIDE CHECK VALVE ON 2" OUTLET
* PROVIDE THE ELECTRIC RELAY IN WEATHERPROOF ENCLOSURE
* THE PUMP AND THE HIGH WATER ALARM SHALL BE WIRED ON SEPARATE CIRCUITS INSIDE THE HOUSE. ALL WIRING TO BE COMPLETED BY A LICENSED ELECTRICIAN AND INSPECTED BY THE WIRING INSPECTOR.
* THE PUMP ALARM MUST BE AUDIBLE, VISIBLE AND LOCATED IN A CONSPICUOUS AREA.
* PROVIDE ¼" DRAIN HOLE WITHIN 6" UPSTREAM OF CHECK VALVE.



LIQUID DEPTH IN SEPTIC TANK	DEPTH OF OUTLET TEE BELOW FLOW LINE
4 FEET	14 INCHES
5 FEET	19 INCHES
6 FEET	24 INCHES
7 FEET	29 INCHES
8 FEET	34 INCHES

TYPICAL 1500 GALLON SEPTIC TANK

NOT TO SCALE



NOTE: TRENCH SILT FENCE 6" FIRMLY INTO GROUND.

HAYBALE & SILTFENCE

NOT TO SCALE

DESIGN ELEVATIONS

TOP OF FOUNDATION	72.00'
PROPOSED INVERT AT HOUSE	67.75'
INVERT AT SEPTIC TANK INLET	67.50'
INVERT AT SEPTIC TANK OUTLET	67.25'
INVERT AT PUMP CHAMBER INLET	67.23'
INVERT AT PUMP CHAMBER OUTLET	67.06'
INVERT AT D-BOX INLET	96.45'
INVERT AT D-BOX OUTLETS	96.28'
INVERT AT BEGINNING OF FIELD	96.25'
INVERT AT END OF FIELD	96.00'
BOTTOM OF STONE/FIELD	95.50'
HIGH GROUND WATER = 94.00'-30"=	91.50'
FINISH GRADE OVER FIELD	97.75'±
FIELD BREAKOUT ELEVATION	96.75'

DESIGN COMPUTATIONS

DESIGN PERC RATE	= 10 MPI
SOIL CLASS	= CLASS II
LONG TERM ACCEPTANCE RATE (LT.A.R.)	= 0.60 G.P.D./S.F.
LENGTH OF FIELD (L)	= 50'-0"
WIDTH OF FIELD (W)	= 15'-0"

BOTTOM AREA OF FIELD:

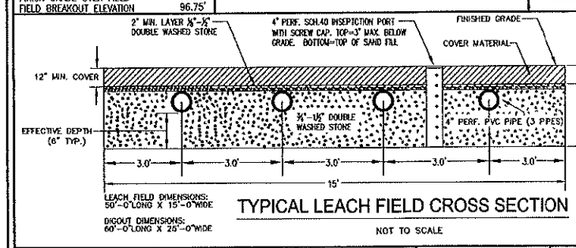
(L) x (W) X (LT.A.R.) = GAL.

50'-0" x 15'-0" x 0.6 = 450 G.P.D.

450 G.P.D. PROVIDED > 440 G.P.D. REQUIRED ~ O.K.

DESIGN CRITERIA

TYPE OF BUILDING	HOUSE
GARBAGE DISPOSAL	NOT ALLOWED
NUMBER OF BEDROOMS	4
ESTIMATED SEWAGE FLOW	440 G.P.D.
FIELD PERCOLATION RATE	10 MPI
LEACHING FIELD DIMENSIONS	50'-0"L X 15'-0"W
RESERVE FIELD DIMENSIONS	50'-0"L X 15'-0"W
LEACHING AREA REQ'D.	750 S.F.
TOTAL LEACHING AREA PROVIDED	733.33 S.F.



TYPICAL LEACH FIELD CROSS SECTION

NOT TO SCALE

EVALUATOR: WILLIAM A. COYLE, P.E. | WITNESS: BARLENE O'CONNOR, R.S. | DATE: 11-1-2009

DEEP HOLE #1

PERC TEST #1 RATE = 3 MPI

EL= 95.0'

SL 10'83/3	A 0-4"
SL 10'81/6	B 4-28"
SL 2.5'5/4	C 28-110"

MOTTLES @ 32"
NO WEEPING NO WATER
BOTTOM ELEV = 85.5'

DEEP HOLE #2

EL= 94.0'

SL 10'83/3	A 0-6"
SL 10'81/6	B 6-34"
SL 2.5'5/4	C 34-108"

MOTTLES @ 34"
WEEPING @ 96" NO WATER
BOTTOM ELEV = 83.67'

DEEP HOLE #3

PERC TEST #2 RATE = 10 MPI

EL= 91.5'

SL 10'83/3	A 0-4"
SL 10'81/8	B 4-32"
LS 2.5'5/4	C 32-108"

MOTTLES @ 36"
NO WEEPING NO WATER
BOTTOM ELEV = 80.92'

DEEP HOLE #4

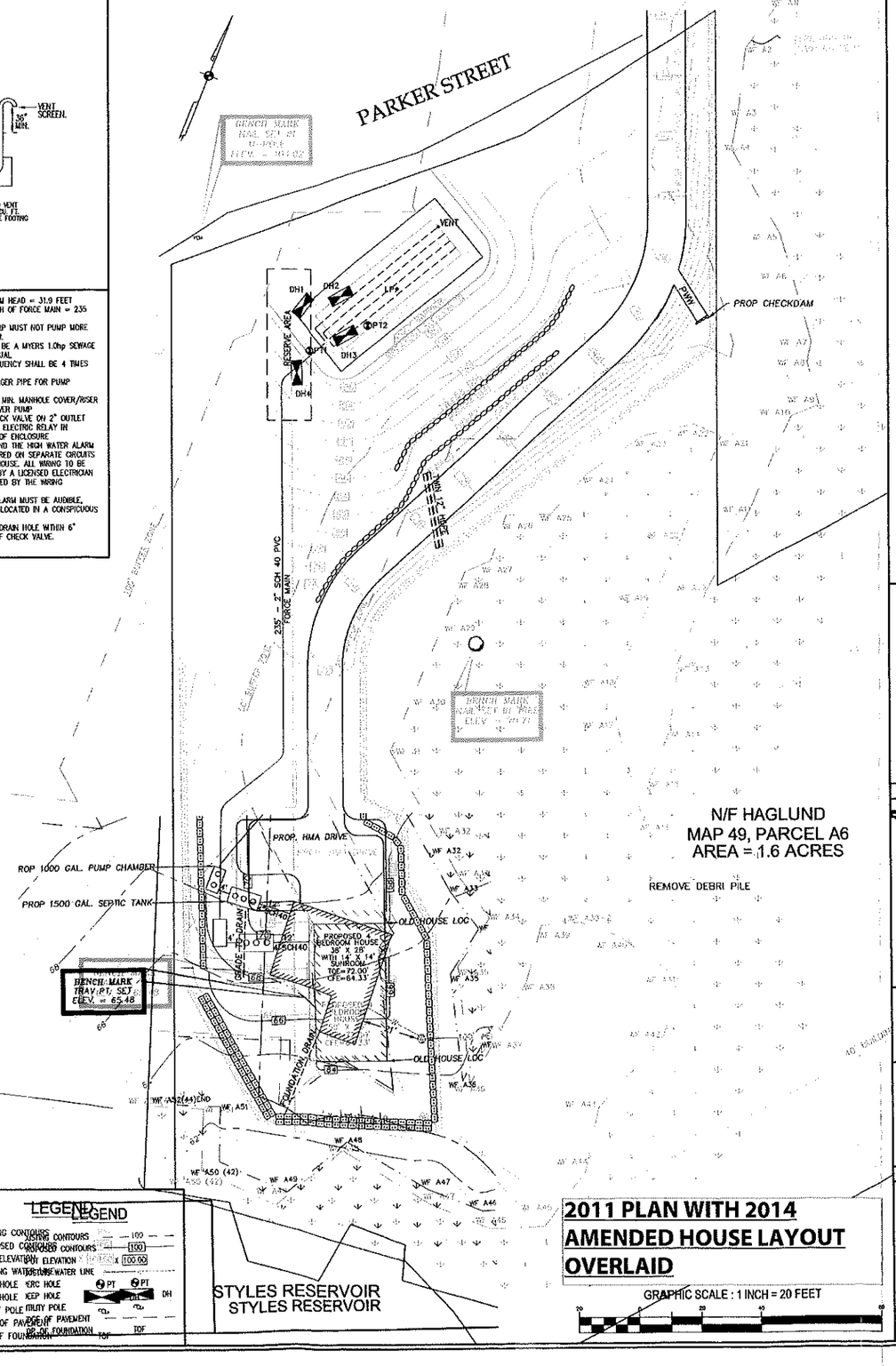
EL= 92.0'

SL 10'83/3	A 0-4"
SL 10'81/8	B 4-30"
SL 2.5'5/4	C 30-95"

MOTTLES @ 30"
NO WEEPING NO WATER
BOTTOM ELEV = 81.67'

SOIL EVALUATOR

I CERTIFY, IN OCTOBER 1996 I WAS 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.



LEGEND

EXISTING CONTOURS	100
PROPOSED CONTOURS	100
SPOT ELEVATION	X 100.00
EXISTING WATER LINE	W
PERC HOLE	PT
DEEP HOLE	DH
UTILITY POLE	UP
EDGE OF PAVEMENT	EOP
TOP OF FOUNDATION	TOF

2011 PLAN WITH 2014 AMENDED HOUSE LAYOUT OVERLAID

GRAPHIC SCALE : 1 INCH = 20 FEET

GENERAL NOTES

ALL MODIFICATIONS TO THIS PLAN MUST BE PRE-APPROVED IN WRITING BY THE DESIGN ENGINEER AND THE LOCAL BOARD OF HEALTH.

THE INSTALLER SHALL HAVE A CURRENT, VALID INSTALLER'S PERMIT ISSUED BY THE TOWN OF LEICESTER BOARD OF HEALTH PRIOR TO COMMENCING WITH ANY WORK SHOWN ON THIS PLAN.

THE INSTALLER SHALL PROVIDE THE BOH WITH A SIEVE ANALYSIS OF THE TITLE 5 SAND USED IN THE INSTALLATION, AND TRUCKING SLIPS FOR ALL SAND AND STONE QUANTITIES.

ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM WITH THE REQUIREMENTS OF THE LOCAL BOARD OF HEALTH AND THE STATE ENVIRONMENTAL CODE TITLE 5.

THE CONSTRUCTION OF PERMANENT STRUCTURES UPON THE DISPOSAL SYSTEM AND/OR RESERVE AREA IS NOT ALLOWED.

TO OBTAIN A CERTIFICATE OF COMPLIANCE, 3 INSPECTIONS WILL BE REQUIRED BY THE DESIGN ENGINEER AND THE BOH AGENT. 1. BOTTOM INSPECTION FOLLOWING THE EXCAVATION OF TOPSOIL & SUBSOIL, 2. FOLLOWING INSTALLATION OF THE SYSTEM COMPONENTS PRIOR TO BACKFILL, 3. FINAL GRADING. THE CONTRACTOR SHALL CONTACT COYLE ENGINEERING, INC. 72 HOURS PRIOR TO SCHEDULE AN INSPECTION.

MACHINERY THAT MAY CRUSH OR DISTURB THE PIPE SHALL NOT BE ALLOWED ON THE DISPOSAL AREA.

THIS SYSTEM WAS NOT DESIGNED TO FACILITATE A GARBAGE DISPOSAL.

TOPSOIL, SUBSOIL, PEAT, FILL, AND OTHER UNSUITABLE MATERIALS SHALL BE REMOVED FROM ALL AREAS WITHIN THE LEACHING FACILITY AND FOR A DISTANCE OF 5 FEET IN ALL DIRECTIONS THEREFROM.

WHERE A SEWAGE DISPOSAL SYSTEM IS TO BE CONSTRUCTED IN FILL, THE FILL SHALL BE PLACED AND COMPACTED IN 12 INCH LIFTS OR ALLOWED TO SETTLE FOR A MINIMUM OF ONE YEAR. THE FILL MATERIAL MUST CONFORM WITH THE REQUIREMENTS OF THE LOCAL BOARD OF HEALTH AND STATE ENVIRONMENTAL CODE TITLE V SECTION 15.255.

THE BASE FOR ALL TANKS AND THE D-BOX SHALL BE COMPACTED BY A VIBRATORY TAMPER OR EQUAL.

ALL INTERIOR PLUMBING SHALL BE CONNECTED TO THE PROPOSED SEPTIC SYSTEM WITH THE EXCEPTION OF WATER FILTRATION / SOFTENING / CONDITIONING SYSTEMS, AND THE BY-PRODUCTS AND/OR BACKWASH FROM SUCH.

THE SEPTIC TANK DISCHARGE TEE SHALL HAVE A *ZABEL-MODEL A1600* FILTER TEE INSTALLED PER MANUFACTURER REQUIREMENTS. A RISER AND COVER SHALL BE PROVIDED TO GRADE AT THE ACCESS MANHOLE ABOVE THE OUTLET FILTER TEE.

THE CONTRACTOR SHALL STAKE THE FOUR CORNERS OF THE SYSTEM TO FACILITATE THE FINAL GRADING INSPECTION.

ALL WELLS WITHIN 150 FEET OF THE PROPOSED SEPTIC SYSTEM ARE SHOWN OR NOTED.

ALL APPLICABLE STATE AND LOCAL PERMITS SHALL BE ACQUIRED PRIOR TO COMMENCING WITH ANY CONSTRUCTION ON SITE

HYDRAULIC CEMENT IS REQUIRED TO SEAL PIPE CONNECTIONS AT ALL TANKS AND AT THE DISTRIBUTION BOX.

PROPERTY LINES SHOWN ARE APPROXIMATE ONLY AND ARE BASED LIMITED RESEARCH AND SURVEY.

THE LOT SHOWN DOES NOT LIE WITHIN A FLOOD PLAIN AS SHOWN ON THE FLOOD INSURANCE RATE MAPS.

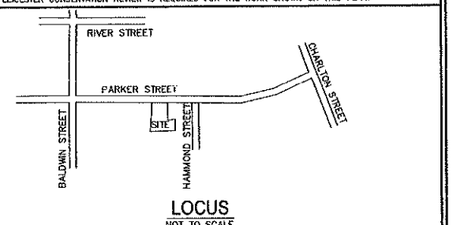
IF FILL MATERIAL OVER THE D-BOX EXCEEDS 9", A MANHOLE RISER TO WITHIN 6" OF GRADE SHALL BE PROVIDED.

A CERTIFICATE OF COMPLIANCE SHALL NOT BE ISSUED UNLESS THE LOAM AND SEED/HAYMULCH OR HYDROSEED HAVE BEEN APPLIED AND HAS GERMINATED AND STABILIZED THE DISTURBED AREAS.

COYLE ENGINEERING RECOMMENDS AN ANNUAL MAINTENANCE INSPECTION OF THE SYSTEM AND PUMPING OF THE SYSTEM IS RECOMMENDED EVERY TWO YEARS.

PER 310 CMR 15.221(12) ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC TAPE. THE MAGNETIC TAPE SHALL BE DEPTH RATED TO ENSURE EFFECTIVENESS TO DEPTHS PROPOSED ON THE PLAN.

TOWN OF LEICESTER CONSERVATION REVIEW IS REQUIRED FOR THE WORK SHOWN ON THIS PLAN.



LOCUS

NOT TO SCALE

REV.	REVISIONS PER LCC	4-12-11

COYLE ENGINEERING, INC.
PROFESSIONAL CIVIL ENGINEERS
19 SOUTH MAIN STREET
LEICESTER, MASSACHUSETTS 01524
PHONE : 508-892-9799 ~ FAX : 508-892-9775

PLAN OF SUBSURFACE SEWAGE SYSTEM DESIGN IN LEICESTER, MASSACHUSETTS

PREPARED FOR:	KNUTE HAGLUND
PROPERTY ADDRESS:	MAP 49, PARCEL A6 27 PARKER STREET LEICESTER, MA 01524
DATE:	JANUARY 17, 2011

FIELD: WAC/APL	DESIGNED BY: WAC	DRAWN BY: WAC	CHECKED BY: WAC	FIELD BOOK #: 45

APPLICANT:
KNUTE HAGLUND
18 CAULFIELD DRIVE
ENGLEWOOD, FL 34223

ENGINEER:
COYLE ENGINEERING, INC.
19 SOUTH MAIN STREET
LEICESTER, MA 01524

DIG SAFE 1-888-344-7233

WILLIAM A. COYLE, PE # 37450

SEPTIC DESIGN - NEW CONSTRUCTION | SHEET 1 OF 1