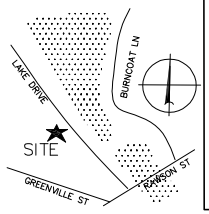
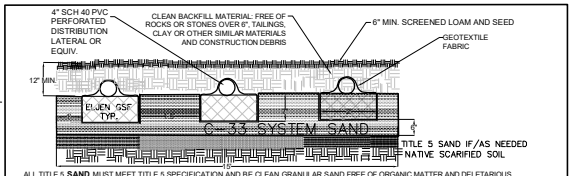
LEICESTER



LOCUS

SAS DETAIL



ALL TITLE 5 **SAND** MUST MEET TITLE 5 SPECIFICATION AND BE CLEAN GRANULAR SAND FREE OF ORGANIC MATTER AND DELETARIOUS SUBSTANCES.

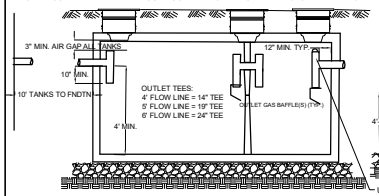
ALL **SYSTEM SPECIFIED SAND FOR ELJEN GFS UNITS** THE SAND UNDER BETWEEN AND AROUND THE PERIMITER OF THE GFS UNITS MUST MEET ***ASTM C-33 SPECIFICATIONS***, WITH LESS THAN 10 % PASSING A #100 SIEVE AND LESS THAN 5 % PASSING A #200 SIEVE PER ELJEN CORPORATION AND MASS DEP APPROVAL.

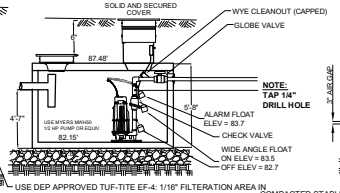
PR. SYSTEM SCHEMATICS

PROPOSED 2 COMP. 1,500 G. CONC. SEPTIC TANK PR. 1,000 G. MONOLITHIC CONC. PUMP CHAMBER CONCRETE DISTRIBUTION BOX SOIL ABSORPTION SYSTEM

MANHOLES AND RISERS 20" MIN. WATERTIGHT RISERS/MANHOLE COVERS. PROVIDE OUTLET RISER WITH SECURE COVER AT GRADE OR WITHIN 6" OF FINISHED GRADE

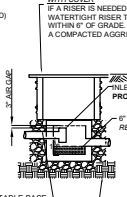
CALCULATIONS BASED ON 4" WALL SHEA CONC. TANK, VERIFY WITH ENGINEER WEIGHTS AND DIMENSIONS IF OTHER (EQUIV.) MANFCTRR TANK IS USED





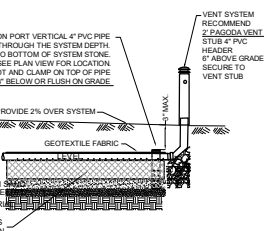
USE DEP APPROVED TUF-TITE EF-4: 1/16" FILTERATION AREA IN OUTLET TEE, A1800 ZABEL FILTER OR EQUIV.

TOP OF BOX WITHIN 9" OR RISER WITH COVER
IF A RISER IS NEEDED SET A WATERTIGHT RISER TO GRADE OR WITHIN 6" OF GRADE. SET LEVEL ON A COMPACTED AGGREGATE BASE.



COMPACTED STABLE BASE UNDER RISER

NATIVE SOIL OR COMPACTED CLEAN FILL OVER NATIVE SOIL



ELJEN GEOTEXTILE SAND FILTER UNITS BED CONFIGURATION

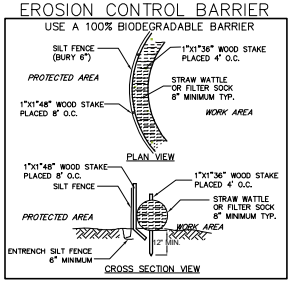
APPLY MAGNETIC TAPE OVER BURIED PIPES AND COMPONENTS

MANHOLES AND RISERS
SEPTICTANK AND PUMP CHAMBER
20" MIN. WATERTIGHT RISERS/MANHOLE COVERS. PROVIDE INLET RISER ON S.T. AND OUTLET RISERS ON S.T. AND P.C. OUTLETS. SET FLUSH AT GRADE.
MATERIALS: USE CI OR CONCRETE, SECURE COVERS/RISERS OR EQUIVALENT

P.C. EMERGENCY CAPACITY ABOVE ALARM LEVEL IS 729 GALLONS > 24 HOUR VOLUME OF 220 GALLON

EROSION CONTROL BARRIER

USE A 100% BIODEGRADABLE BARRIER



CONSERVATION/DEP WETLANDS
1. WORK WITHIN 100' OF A WATER BODY

AREA OF LOT 11,525 S.F.
APPROX. AREA OF DISTURBANCE 11,000 S.F.

PROPOSED ECB
SILT FENCE + WATTLE
AND LIMIT OF WORK
AREA HAS TEMP. EARTHEN BERM
THIS WILL BE BROUGHT BACK
TO ORIGINAL GRADE

SOIL EVALUATION DATA & PERC TEST

SOIL EVALUATOR: JASON DUBOIS
WITNESSED BY: JUVE VAN ARSDALEN
DATE: 10/11/2017
APPLICANT: ARTHUR BLOOMQUIST

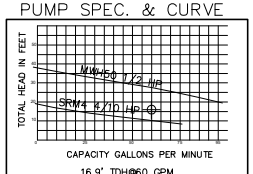
TEST PIT # 1	TEST PIT # 2
0"-3" A SL 10YR 3/2 3"-26" B SL 10YR 5/6 26"-74" C SL 2.5Y 5/4	0"-4" A SL 10YR 3/2 4"-24" B SL 10YR 5/6 24"-76" C SL 2.5Y 5/4
REDOX @ 48"	REDOX @ 48"
GROUND WATER ELEV (OBSERVED) N/A	GROUND WATER ELEV (OBSERVED) N/A
MOTTLING ELEV (OBSERVED) 48"	MOTTLING ELEV (OBSERVED) 48"
REFUSAL ELEV N/A	REFUSAL ELEV N/A

PERCOLATION TEST DATA

SOIL EVALUATOR: JASON DUBOIS
WITNESSED BY: JUVE VAN ARSDALEN
DATE: 10/11/2017

	1	2
DEPTH:	36"	
FIELD RATE:	16 MPI	
DESIGN RATE:	20 MPI	
SOIL CLASSIFICATION:	2	
L.T.A.R.	0.53	

PUMP SPEC. & CURVE

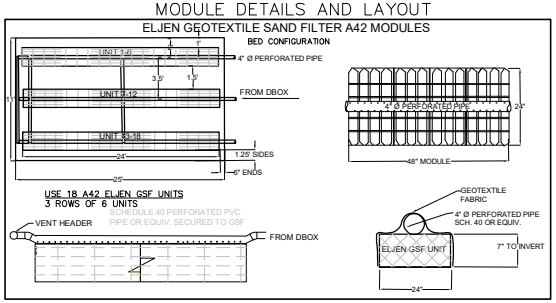


16.9' TDH@60 GPM

USE MYERS MWH50 1/2HP PUMP OR EQUIV.
2" SPHERICAL SOLIDS HANDLING
0.50 HP, 115V, 1 PHASE

MODULE DETAILS AND LAYOUT

ELJEN GEOTEXTILE SAND FILTER A42 MODULES

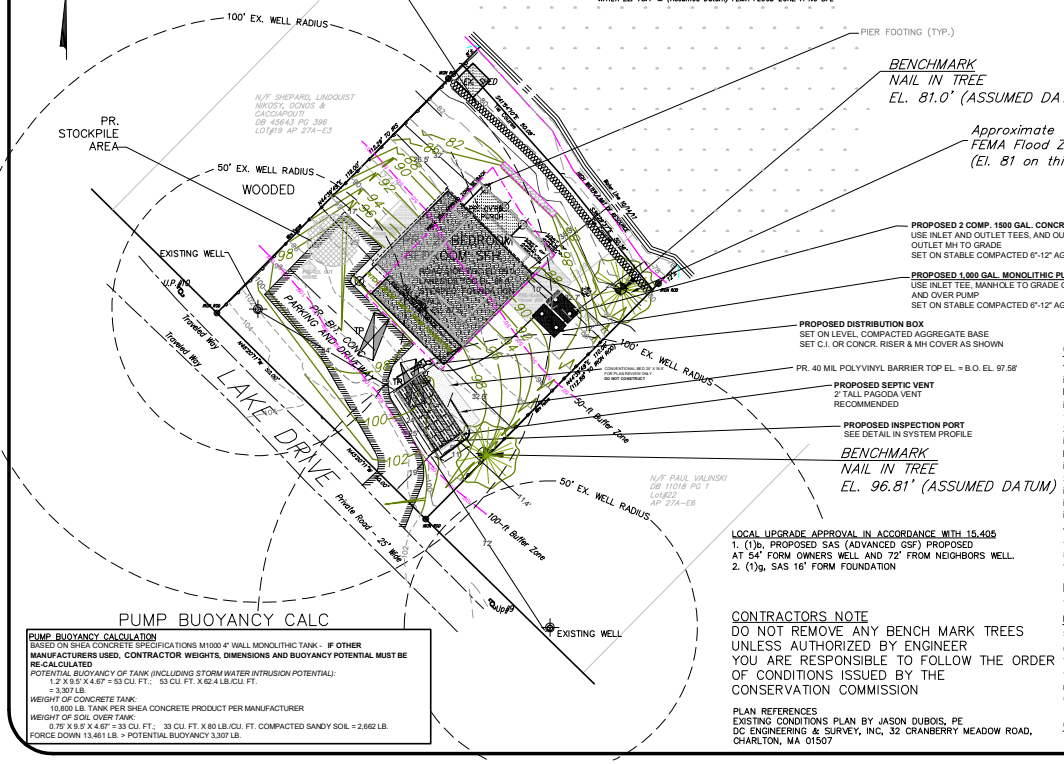


LOT #20 AND LOT #21
OWNED BY TERESA & MAREK KOPEK
FORMERLY ARTHUR & CYNTHIA BLOOMQUIST
DB 52582 PG 211, AP 27A-E4 AND DB 52582 PG 214 AP 27A-E5, RESPECTIVELY

COMBINED LOT SIZE 11,525 S.F.

BURNCOAT POND

WATER EL. 75.4' ± (Assumed Datum) FEMA FLOOD ZONE A NO BFE



LOCAL UPGRADE APPROVAL IN ACCORDANCE WITH 15.405
1. (1)b, PROPOSED SAS (ADVANCED GSF) PROPOSED AT 54' FORM OWNERS WELL AND 72' FROM NEIGHBORS WELL.
2. (1)g, SAS 16' FORM FOUNDATION

CONTRACTORS NOTE
DO NOT REMOVE ANY BENCH MARK TREES UNLESS AUTHORIZED BY ENGINEER
YOU ARE RESPONSIBLE TO FOLLOW THE ORDER OF CONDITIONS ISSUED BY THE CONSERVATION COMMISSION

PLAN REFERENCES
EXISTING CONDITIONS PLAN BY JASON DUBOIS, PE
DC ENGINEERING & SURVEY, INC, 32 CRANBERRY MEADOW ROAD, CHARLTON, MA 01507

SCHEDULE OF ELEVATIONS

LOCATION	ELEVATION	FIN. GRADE
FOUNDATION INVERT OUT	87.0	
SEPTIC TANK INVERT IN	86.8	88.6 MIN. 90.8 MAX.
SEPTIC TANK INVERT OUT	86.6	
PUMP CHAMBER INVERT IN	86.4	88.2 MIN. 90.4 MAX.
PUMP CHAMBER INVERT OUT	86.2	
DISTRIBUTION BOX INVERT IN	97.5	99.1 MIN.; 101.3 MAX.
DISTRIBUTION BOX INVERT OUT	97.3	
HIGHEST CONTOUR AT SAS	98.0	98.1 MIN.; 100.1 MAX
PIPE INVERT/TOP OF UNIT (UNITS ARE LEVEL)	97.08	
BOTTOM OF ELJEN UNIT	96.5	
BOTTOM OF C33 SAND	96.0	
ESTIMATED SEASONAL HIGH WATER	94.0	
BREAKOUT AT 15'	97.58	

SIZING CALC'S

AVERAGE DAILY FLOW
2 BEDROOMS @ 110 GPD = 220 GPD
This design does not allow for the use of a garbage grinder OR water filtration backwash/discharge connection.
SEPTIC TANK SIZE
220 GPD x 200 % = 440 gal. MIN. T5 REQR'S 1,500 GAL.
DISTRIBUTION AREA **ELJEN GEOTEXTILE SAND FILTER UNITS**
DESIGN LOADING RATE (LTAR) = 0.53 GPD/SF CLASS II
220 G.P.D./0.53 GAL. = 415 SF X 60 % = 250 SF MIN. REQ'D
GSF A42 BED CONFIGURATION MIN. 8 MODULES/BEDROOM
16 MIN. (20.04 SF/MODULE)
USE 18 UNITS X 4 + 1 = 73 L.F.
BED (3 ROWS OF 6) ROW LENGTH 6 X 4 + 1 = 25'/ROW
BED WIDTH 250 SF/25 = 9.8 MIN.
3.5' SPACING AND 2' LATERAL TO EDGE
1' SIDE EXT. SAND BED/ 0.5' END EXT. SAND BED
SNAD BED SIZE = 25' X 11'

GENERAL NOTES

1. REGULATIONS
i. This design is in accordance with the latest edition of Commonwealth of Massachusetts regulations 310 CMR 15.000 Title 5, of the State Environmental Code and the requirements of the local Board of Health, unless noted.
ii. The contractor is responsible to know the regulations comply with them and with all inspections and material requirements of Title 5 and have a valid installer's license.
2. CHANGES
i. **Variation from this plan shall be made only with the review and approval from the Engineer** and BOH. CONTRACTOR IS REQUIRED TO FOLLOW THE PLAN AND TO MAINTAIN COMPLIANCE WITH REQUIREMENTS OF 310 CMR 15.000 TITLE 5.
ii. The Design Engineer is to be notified of any discrepancies.
3. EXCAVATION & BACKFILLING
i. In excavation of the disposal system distribution area care must be taken to not compact or smear the bottom or sides of the excavation.
ii. All work should be done in favorable weather conditions, but in NO case shall fill or stone be placed on wet, smeared or frozen soils.
iii. It is the responsibility of the contractor to contact DIG SAFE before operating machinery on this property.
4.GENERAL NOTES
All known wells and wetlands and water courses within 100' of the septic system are shown or noted.
5. INSPECTIONS
The **CONTRACTOR shall notify the Engineer and the local Board of Health** at least 24 HOURS PRIOR TO STARTING and to coordinate the following inspections (unless otherwise notified):
1) At completion of the SAS excavation **2) completion of component installation. All pipes and components must be VISIBLE, magnetic tape in place AND BREAKOUT GRADING IN PLACE** and 3) after backfilling system and components with final grade, with loam and stabilization complete.
6. WARRANTY
The Design Engineers warranty is that the system is designed according to Title 5 and Local Board of Health regulations unless otherwise noted, which would require a variance or local upgrade approval. The intent of this plan is for the septic system design proposal only (which may or may not include the siting of a well). No certification is made with regard to zoning, property line, structure placement or location or retaining walls. Owner is responsible for all permit aquisitions, RLS or PE requirements or certifications and variance or local upgrade requests.

GARBAGE GRINDERS/DISPOSALS ARE PROHIBITTED TO DISCHARGE TO THIS SYSTEM

PUMP BUOYANCY CALC

PUMP BUOYANCY CALCULATION
BASED ON SHEA CONCRETE SPECIFICATIONS M1000 4' WALL MONOLITHIC TANK - **IF OTHER MANUFACTURERS USED, CONTRACTOR WEIGHTS, DIMENSIONS AND BUOYANCY POTENTIAL MUST BE RE-CALCULATED**
POTENTIAL BUOYANCY OF TANK (INCLUDING STORM WATER INTRUSION POTENTIAL):
1.2' X 9.5' X 4.67' = 53 CU. FT.; 53 CU. FT. X 62.4 LB./CU. FT.
= 3,307 LB.
WEIGHT OF CONCRETE TANK:
10,800 LB. TANK PER SHEA CONCRETE PRODUCT PER MANUFACTURER
WEIGHT OF SOIL OVER TANK:
0.75' X 9.5' X 4.67' = 33 CU. FT.; 33 CU. FT. X 80 LB./CU. FT. COMPACTED SANDY SOIL = 2,662 LB.
FORCE DOWN 13,461 LB. > POTENTIAL BUOYANCY 3,307 LB.

APPLICANT
TERESA KOPEC
PO BOX 70534
WORCESTER, MA 01607

CONTACT
TERESA KOPEC
508-335-1238

EX. 2 BEDROOM SFH
ASSESSOR MAP 27A PARCELS E4 & E5
20-22 LAKE DRIVE
LEICESTER, MASSACHUSETTS
PROPOSED SEPTIC REPAIR
SITE PLAN

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info@clearwater-env.com

ELIZABETH DUPRE, CIVIL ENGINEER, RS#1210

SCALE 1"=20'
UNLESS OTHERWISE NOTED

DATE: AUGUST 12, 2022

DRAWN BY:	CHECKED BY:	APPROVED BY:
ED-SDD	SDD-ED	ED

DATE	REVISION

20-22 LAKE DRIVE

SHEET: 1 OF 1