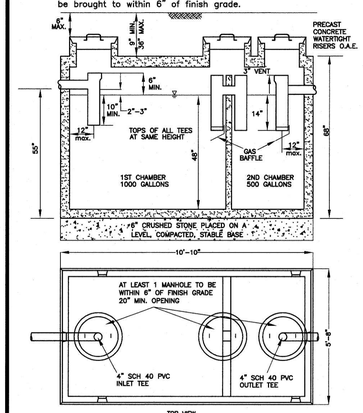
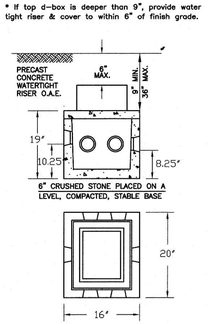
* If top tank is deeper than 9", all covers shall be brought to within 6" of finish grade.



MONOLITHIC
2-COMPARTMENT PRECAST CONCRETE
SEPTIC TANK - 1500 GALLONS

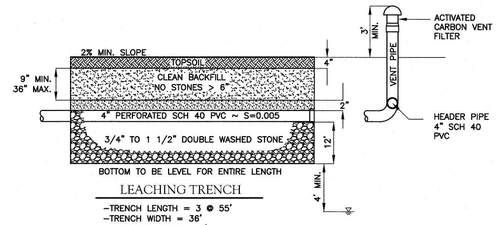
-TANK TO HAVE MANUFACTURERS Q/C SEAL
-WATERTIGHT CONSTRUCTION
-REQUIRED INLET & OUTLET TEES 6" FLOW LINE
-ALL PIPING TO BE 4" SCH 40 PVC

* If top d-box is deeper than 9", provide water tight riser & cover to within 6" of finish grade.



PRECAST CONCRETE
5 OUTLET
DISTRIBUTION BOX

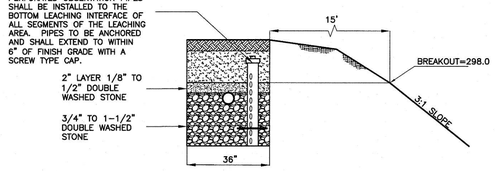
LAMARRE CONC. PRODUCTS, INC. MEDIUM SIZE D-BOX OR APPROVED EQUIVALENT
-WATERTIGHT COVER REQUIRED
-PROVIDE ONE OUTLET FOR EACH EFFLUENT DISTRIBUTION LINE
-OUTLET DISTRIBUTION LINES SHALL BE LEVEL FOR AT LEAST THE FIRST TWO FEET
-INVERT ELEVATIONS OF OUTLET LINES SHALL BE EQUAL
-AN INLET TEE MAY BE INSTALLED IN PLACE OF A BAFFLE (IF NEEDED)



LEACHING TRENCH

-TRENCH LENGTH = 3 @ 55'
-TRENCH WIDTH = 36'
-TRENCH SPACING = 9'
-PERFORATION ORIFICES 3/8" - 5/8"
-PIPE SLOPE = 0.005 ft/ft
-JOINTS TIGHT
-ENDCAP UNLESS VENTED

PERFORATED OBSERVATION PIPES SHALL BE INSTALLED TO THE BOTTOM LEACHING INTERFACE OF ALL SEGMENTS OF THE LEACHING AREA. PIPES TO BE ANCHORED AND SHALL EXTEND TO WITHIN 6" OF FINISH GRADE WITH A SCREW TYPE CAP.



TRENCH SECTION

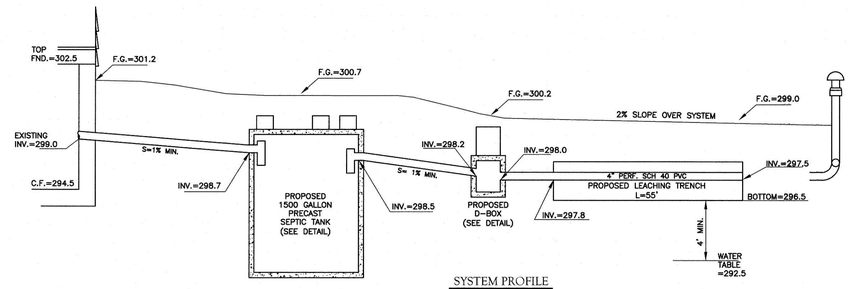
CONSTRUCTION NOTES:
-ALL PIPING TO BE 4" SCH 40 PVC UNLESS OTHERWISE NOTED.
-ALL PIPES JOINTS TO BE WATERTIGHT.
-BUILDING SEWER TO BE LAID ON COMPACTED FIRM BASE.
-ALL COMPONENTS SHALL BE MARKED WITH MAGNETIC MARKING TAPE PRIOR TO BACK FILLING.
-BACKFILL MUST BE SUFFICIENTLY COMPACTED TO PREVENT SETTLING.
-SOIL PLACED AS BACKFILL OVER THE SYSTEM MUST BE CLEAN AND FREE OF STONES >6". TAILINGS, CLAY OR SIMILAR MATERIALS ARE PROHIBITED.
-FINAL COVER OVER THE SYSTEM SHALL BE STABILIZED (LOAMED & SEEDED)

1) Town of Holliston Variances: none

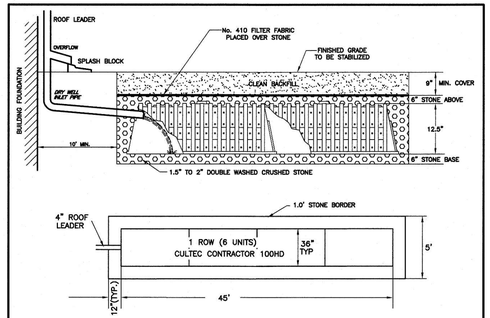
2) Local Upgrade Approvals: none

3) D.E.P. Variances: none.

4) Deed Restrictions Required: none



SYSTEM PROFILE
~N.T.S.~



CULTEC DRY WELL SYSTEM
FOR ROOF RUNOFF INFILTRATION
CULTEC CONTRACTOR 100HD
N.T.S.

DRAINAGE SYSTEM CALCULATIONS

PROPOSED ROOF AREA = 2000 S.F.

VOLUME REQUIRED FOR 1" OF RUNOFF OVER ROOF AREA:
2000 S.F. x 1" = 166.67 C.F.

DRAINAGE SYSTEM:
CULTEC CHAMBERS -- CONTRACTOR 100HD WITH STONE
TOTAL STORAGE WITH STONE = 28.81 C.F./UNIT

No. CULTEC CHAMBERS REQUIRED = 166.67 C.F./28.81 C.F./UNIT = 5.8 CHAMBERS

VOLUME PROVIDED:
1 SYSTEMS x 6 CHAMBERS/SYSTEM = 6 CHAMBERS
6 x 28.81 = 172.86 C.F.

PERCOLATION TEST RESULTS

TEST HOLE	DATE	DEPTH	RATE
(Old Lot 10) #1	5/23/01	46-64"	14 M.P.I.
(Old Lot 10) #2	5/23/01	46-64"	15 M.P.I.

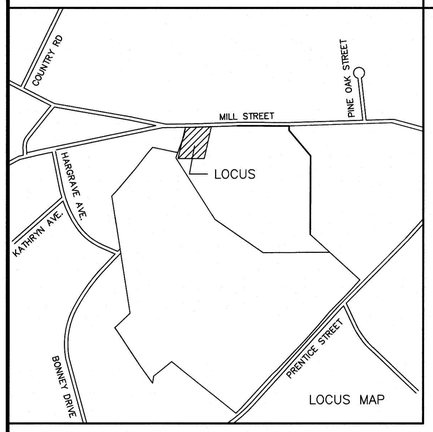
DEEP OBSERVATION HOLE LOGS

	HORIZ DEPTH	TEST #1 (Old Lot 10) DATE: 5/23/01 SOIL DESCRIPTION	ELEV.
REMOVE	0"	A SANDY LOAM 10YR3/2	297.4
	6"		296.9
	24"	Bw SANDY LOAM 10YR5/6	295.4
	84"	C1 Med 10% Gravel SANDY LOAM 2.5Y6/3	290.4
	144"	C2 LOAMY SAND Fine-Med 2.5Y5/4	285.4
	140"	GROUNDWATER OBSERVED	285.7
	84"	SOIL MOTTLING	290.4
		GROUNDWATER MONITORED	
	84"	ESTIMATED SEASONAL HIGH GROUNDWATER	290.4

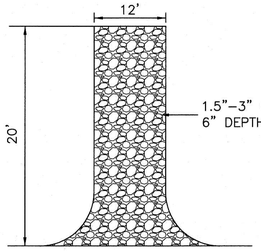
	HORIZ DEPTH	TEST #2 (Old Lot 10) DATE: 5/23/01 SOIL DESCRIPTION	ELEV.
REMOVE	0"	A SANDY LOAM 10YR3/2	296.5
	10"		295.7
	26"	Bw SANDY LOAM 10YR5/6	294.4
	140"	C1 SANDY LOAM 2.5Y5/4	294.9
	None	GROUNDWATER OBSERVED	
	48"	SOIL MOTTLING	292.5
		GROUNDWATER MONITORED	
		ESTIMATED SEASONAL HIGH GROUNDWATER	

CERTIFIED SOIL EVALUATOR : JOSEPH M. NIHILL
WITNESSED BY B.O.H. AGENT : NICOLE LETENDRE
DESIGN PERCOLATION RATE : 15 M.P.I.

SOIL CLASSIFICATION: CLASS II



LOCUS MAP



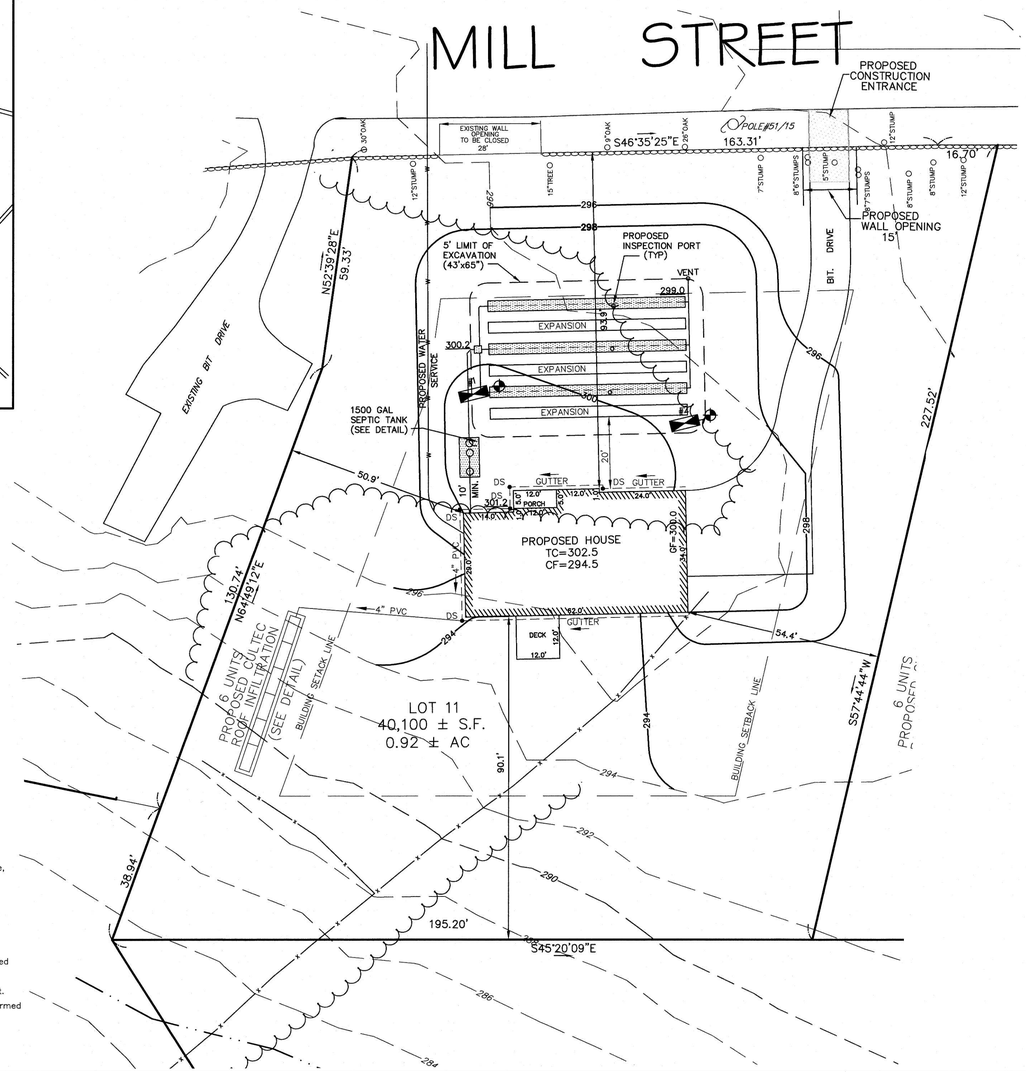
STREET

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

The contractor shall notify the design engineer and the local board of health before, during and after the installation of the septic system to coordinate the following inspections (at a minimum):

1) At **completion of intial excvation** for bottom inspection. Design engineer to perform a sieve analysis on Title 5 fill material (if required).
2) **Prior to backfilling**, at completion of the installation of system components. All system components and system requirements must be installed at time of inspection. All pipes must be backfilled to the crown of the pipe.
3) If dosing is proposed, design engineer shall perform a clear water flow test. Engineer needs access to control panel and breaker box. Test must be performed prior to backfilling of any components unless otherwise notified.
4) **After backfilling** system components for final grading.



ASSESSOR'S REFERENCE:

MAP 7, LOT 4-55

*NO GARBAGE GRINDER ALLOWED
NEW CONSTRUCTION

TYPE OF FACILITY SERVED

SINGLE FAMILY DWELLING - 4 BEDROOMS

DESIGN FLOW :

4 BEDROOMS x 110 GAL./DAY/BEDROOM = **440 G.P.D.**

SEPTIC TANK SIZING:

DESIGN FLOW x 200%

440 GAL. x 200% = 880 GALLONS

SEPTIC TANK PROPOSED: 1500 GALLON 2-COMPARTMENT

SYSTEM SIZING CALCULATIONS:

GARBAGE GRINDER: NO

DESIGN FLOW = 440 GPD

EFFLUENT LOADING RATE = 0.56 GPD/SF

(INCREASE AREA BY 50% IF GARBAGE GRINDER)

LEACHING AREA REQUIRED = 440 GPD/0.56 GPD/SF = **786 SF**

SYSTEM DESIGN

LEACHING TRENCHES - 3 @ 55'L x 36" W x 12"H

BOTTOM AREA: 3 x 55'L x 3'W = 495 S.F.

SIDEWALL AREA: 6 x 55' x 1'H = 330 S.F.

LEACHING AREA PROVIDED = **825 S.F.**

FLOW PROVIDED = 825 S.F. x 0.56 GAL./S.F. = **462 G.P.D.**

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

-NO PUBLIC WELLS WITHIN 400 FEET EXCEPT AS SHOWN.
-NO PRIVATE WELLS WITHIN 200 FEET EXCEPT AS SHOWN.
-NO WETLANDS, INLAND BANKS, OR SURFACE WATERS WITHIN 150 FEET EXCEPT AS SHOWN.
-NO SURFACE WATER SUPPLIES WITHIN 400 FEET EXCEPT AS SHOWN.
-NO SURFACE DRAINS EXCEPT AS SHOWN.
-NO SURFACE OR SUBSURFACE DRAINS WHICH INTERCEPT GROUND WATER EXCEPT AS SHOWN.
-LOCATION OF FLOODWAY SHOWN IF ANY.
-NO 100 YEAR FLOOD LIMIT, EXCEPT IF SHOWN.
-SITE IS NOT WITHIN A NITROGEN SENSITIVE AREA.

IT SHALL BE THE RESPONSIBILITY OF THE APPLICANT AND OR CONTRACTOR TO VERIFY LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. ALL UTILITIES WITHIN A BUILDING SHALL BE REVIEWED BY THE APPROPRIATE CONTRACTOR PRIOR TO THE COMMENCEMENT OF ANY INTERIOR OR EXTERIOR WORK. DIG SAFE IS TO BE NOTIFIED 72 BUSINESS HOURS IN ADVANCE OF CONSTRUCTION (1-888-344-7233)

ZONE	AG-RB	MIN. FRONTYARD	40'	MIN. SIDEYARD	30'	MIN. REARYARD	40'

Soil Evaluator Certification: I certify that I am currently approved by the D.E.P. 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 are accurate and in accordance with 310 CMR 15.100 through 15.107.

C.S.E. #1746

GENERAL CONSTRUCTION NOTES:
1. THE DETAILS SHOWN ARE GENERAL IN NATURE AND ARE NOT INTENDED TO SHOW EVERY POSSIBLE INSTALLATION REQUIREMENT. THE CONTRACTOR SHALL BE KNOWLEDGABLE IN THE REFERENCED CODES, INSTALLATION REQUIREMENTS AND PROVIDE NECESSARY LABOR, MATERIALS AND EQUIPMENT TO INSTALL A FUNCTIONAL SYSTEM.
2. COMPONENTS SHALL NOT TO BE BACKFILLED OR CONCEALED WITHOUT INSPECTION BY AND PERMISSION FROM BOARD OF HEALTH.
3. IT IS THE REPONSIBILITY OF THE APPLICANT TO OBTAIN THE SERVICES OF THE DESIGN ENGINEER TO PROVIDE PROPER INSPECTIONS FOR CERTIFICATIONS AND AS-BUILT PLANS.
4. INSTALLER REQUIRED TO PROVIDE PROPER CERTIFICATION.
5. LEACHING AREA TO BE FLAGGED FOR PROTECTION UNTIL CERTIFICATE OF COMPLIANCE IS OBTAINED.
6. NO STOCKPILING OF MATERIALS OVER SYSTEM.
7. NO TRAFFIC OR PARKING OVER SYSTEM.
8. BOTTOM AND SIDES OF EXCAVATION AREA SHALL BE SCARIFIED.
9. PLACEMENT OF FILL SHALL BE DONE BY STOCKPILING AT THE EDGE OF THE EXCAVATION AREA AND PUSHED OR CAST IN PLACE.
10. FILL SHALL NOT BE PLACED IN THE EXCAVATION AREA DURING RAIN OR SNOW STORM.
11. IF ANY FILL IS TO BE PLACED BELOW THE WATER TABLE, DEWATERING IS REQUIRED PRIOR TO PLACEMENT.

TO ENSURE THE PERFORMANCE OF THE SYSTEM, MAINTENANCE SHOULD BE PERFORMED ANNUALLY BY A LICENSED SEWAGE PUMPING CONTRACTOR.

GLM ENGINEERING CONSULTANTS, INC. WILL NOT BE RESPONSIBLE FOR THE PERFORMANCE OF THIS SYSTEM UNLESS CONSTRUCTED AND INSPECTED IN ACCORDANCE WITH THIS PLAN. INSPECTIONS TO BE DONE AFTER EXCAVATION FOR SYSTEM AND AFTER CONSTRUCTION, BUT PRIOR TO BACKFILLING. ANY ALTERATION MUST BE APPROVED IN WRITING BY GLM ENGINEERING CONSULTANTS, INC.

5' LIMIT OF EXCAVATION (43' x 65')
ALL TOPSOIL, SUBSOIL AND ANY DELETERIOUS MATERIAL MUST BE REMOVED FROM THE AREA OF THE SYSTEM AND OTHER DESIGNATED LIMITS AND FILLED WITH APPROVED, CLEAN, GRANULAR SAND. THE FILL SHALL NOT CONTAIN ANY MATERIAL LARGER THAN 2 INCHES AND BE GRADED SO NOT PRIOR TO BACKFILLING. ANY ALTERATION MUST BE APPROVED IN WRITING BY GLM ENGINEERING CONSULTANTS, INC.

5' LIMIT OF EXCAVATION (43' x 65')
ALL TOPSOIL, SUBSOIL AND ANY DELETERIOUS MATERIAL MUST BE REMOVED FROM THE AREA OF THE SYSTEM AND OTHER DESIGNATED LIMITS AND FILLED WITH APPROVED, CLEAN, GRANULAR SAND. THE FILL SHALL NOT CONTAIN ANY MATERIAL LARGER THAN 2 INCHES AND BE GRADED SO NOT MORE THAN 45% OF THE SAMPLE IS RETAINED IN A #4 SIEVE, OF THAT PASSING, 20% OR LESS SHALL PASS A #100 SIEVE AND 5% OR LESS SHALL PASS THE #200 SIEVE. NOT MORE THAN 90% SHALL BE RETAINED ON THE #50 SIEVE. SAMPLE FOR SIEVE ANALYSIS TO BE TAKEN FROM SAMPLE IN PLACE.

ALL CONSTRUCTION & COMPONENTS SHALL CONFORM TO THE LATEST REQUIREMENTS OF 310 CMR 15.000 TITLE 5 OF THE STATE ENVIRONMENTAL CODE AND THE TOWN OF HOLLISTON BOARD OF HEALTH REGULATIONS.

3/6/2021

3-6-2021

PROFESSIONAL CIVIL ENGINEER

BENCH MARK
(DATUM = N.G.V.D.)

BENCH MARK TO BE SET PRIOR TO CONSTRUCTION

PROPOSED SEWAGE DISPOSAL SYSTEM
LOT 11 - MILL STREET
HOLLISTON, MASSACHUSETTS

APPLICANT/OWNER:
Elite Home Builders LLC
1 Golden Court
Westborough, MA

DATE: AUGUST 22, 2019
REVISED: NOV. 20, 2019
JAN 26, 2021 NEW HOUSE
3/6/2021 DETAILS ADDED

GLM Engineering Consultants, Inc.
19 EXCHANGE STREET
HOLLISTON, MA 01746
P: 508-429-1100
F: 508-429-7160
www.GLMengineering.com

DES: RST | SCALE: 1" = 20' | JOB #7701 | SHEET #1 of 1

LOT 11 - MILL STREET