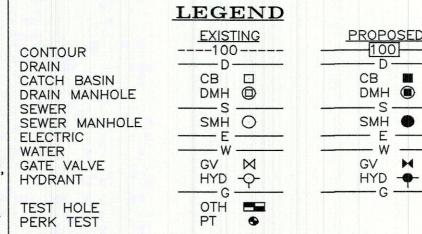
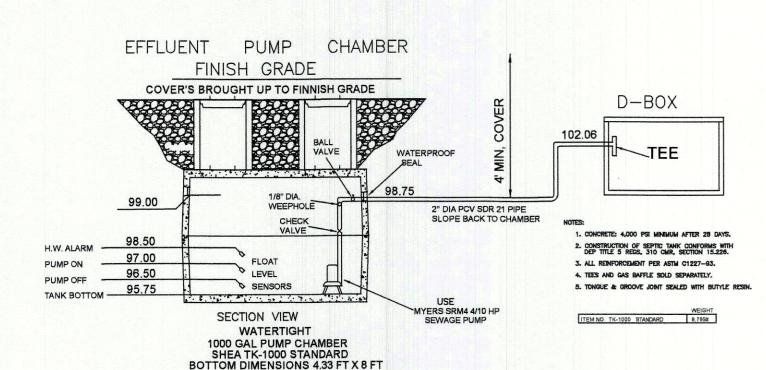


- 1. NO SYSTEM TO BE BACKFILLED OR CONCEALED WITHOUT THE REQUIRED INSPECTION BY THE BOARD OF HEALTH AND DESIGNER P.E.
- 2. AS BUILT AND CONSTRUCTION CERTIFICATION TO BE PREPARED BY DESIGN ENGINEER. 3. CERTIFICATION OF CONSTRUCTION REQUIRED BY THE INSTALLER.
- 4. SYSTEM SHALL BE STAKED AND FLAGGED FROM DATE OF INSTALLATION
- UNTIL CERTIFICATE OF COMPLIANCE IS ISSUED. 5. SITE IS IN A NITROGEN SENSITIVE AREA. THERE ARE NO PUBLIC WELLS WITHIN 400' OF SEPTIC SYSTEM.
- THERE ARE NO PRIVATE WELLS WITHIN 150' OF SEPTIC SYSTEM. 8. THERE ARE BORDERING VEGETATED WETLANDS WITHIN 100' OF
- SOIL ABSORPTION SYSTEM. 9. THERE ARE NO INLAND BANKS WITHIN 200' OF SOIL SAS SYSTEM 10. THERE ARE NO SURFACE WATERS WITHIN 200' OF SOIL SAS SYSTEM.
- 11. THERE ARE NO WETLANDS BORDERING SURFACE WATER SUPPLIES OR
- TRIBUTARIES WITHIN 200' OF SEPTIC SYSTEM. 12. THERE ARE NO OPEN, SURFACE, OR SUBSURFACE DRAINS WHICH
- INTERCEPT HIGH GROUND WATER WITHIN 50' OF SOIL SAS SYSTEM. 13. THERE ARE NO OTHER OPEN, SURFACE, OR SUBSURFACE DRAINS. 14. THERE ARE NO FOUNDATION DRAINS. 15. THERE ARE NO VERNAL POOLS WITHIN 200' OF SOIL SAS SYSTEM.
- 16. THERE ARE NO LEACHING CATCHBASINS OR DRY WELLS WITHIN 25' OF SOIL ABSORPTION SYSTEM.
- 17. THERE ARE NO REGULATORY FLOODWAYS 18. THERE IS NO 100 YEAR FLOOD LIMIT. 19. THERE ARE NO INDUSTRIAL CATEGORY OR OTHER PROHIBITED WASTEWATERS.
- 20. COMMERCIAL SYSTEMS ARE NOT SIZED FOR A GARBAGE GRINDER. 21. RESIDENTIAL SYSTEMS ARE NOT SIZED FOR GARBAGE GRINDERS. 22. GROUNDWATER ADJUSTMENT USED - WEEPING
- 23. FINISH GRADE TO BE DONE IN ACCORDANCE WITH THE PLAN. 24. ALL ELEVATIONS REFER TO ASSUMED. 25. FOR PROPER PERFORMANCE, THE SEPTIC TANK SHOULD BE
- PUMPED ANNUALLY. 26. ALL TOPSOIL, FILL, OR OTHER UNSUITABLE MATERIAL WITHIN 5' OF THE PROPOSED LEACHING AREA, WHICH LIES BELOW THE INVERT ELEVATION, MUST BE REMOVED AND REPLACED WITH GRAVEL IN COMPLIANCE WITH 310 CMR, TITLE 5, 15.255(3)
- IS REQUIRED 27. SOIL EVALUATOR -
- 28. LIMITING SOIL LAYER -29. MAGNETIC TAPE IS REQUIRED TO BE INSTALLED OVER TANK COVERS, GATE VALVE
- D-BOX, INSPECTION PORTS AND ALL SEPTIC LINES. 30. ONE 4" PVC OBSERVATION PIPE WITH A SCREW CAP IS TO BE INSTALLED WITHIN THE SAS AND SHALL BE SET AT A MAXIMUM OF 3" FROM FINISH GRADE.





NOTE: HIGH WATER ALARM SHALL CONSIST OF A RED LIGHT AND HORN TO BE MOUNTED WITHIN THE BUILDING, WIRED ON A SEPARATE ELECTRICAL CIRCUIT. PROVIDE ALARM TEST SWITCH. PROVIDE ALARM SILENCER SWITCH

SEPTIC PUMP DESIGN

SYSTEM [DATA	CALCULA	TIONS
		ELEVATION K PUMP ON R	46 gpm 102.06 97.00 2" INCHES
VELOCITY			
	FLOW VELOCITY		4.70 fps
HEAD LOS	SSES		
	PIPE LENGHT		97 feet
	PIPE C VALUE		130
	FRICTION LOSS MINOR LOSSES		5.08
		K-VALUE	LOSS(ft)
	check valve	2.5	0.86
	gate valve	0.19	0.13 0.10
	90 bend 45 bend	0.3 0.35	0.60
	exit	1	0.34
	Total:	4.34	2.03
HEAD LOS	SSES		
	RATE FLOW		46 gpm

FRICTION LOSS

MINOE LOSSES

STATIC HEAD

TOTAL HEAD LOSS

TOTAL DYNAMIC HEAD 12.2 feet

INSPECTION PORT DETAIL

5.08 feet

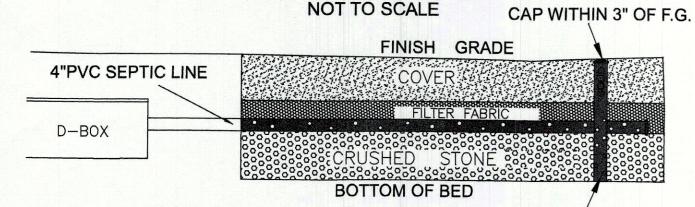
2.03 feet

7.11 feet

5.06 feet

INSPECTION PORT

4" PVC PERFORATED



Note: Title V abandonment (3) B & C shall apply to the existing tank.

Note: It is the responsibility of the licensed installer to abandon the tank and have the Board of Health witness said abandonment.

Title V 15.354 Abandonment of Systems

(1) Whenever the use of a system is disconnected following connection to a municipal or private sanitary sewer or following condemnation or demolition of a building served by the system, the system shall be considered abandoned and any further use of the system for any purpose shall be prohibited unless, after inspection, the approving authority determines the system is in compliance or can be brought into compliance with 310 CMR 15.000.

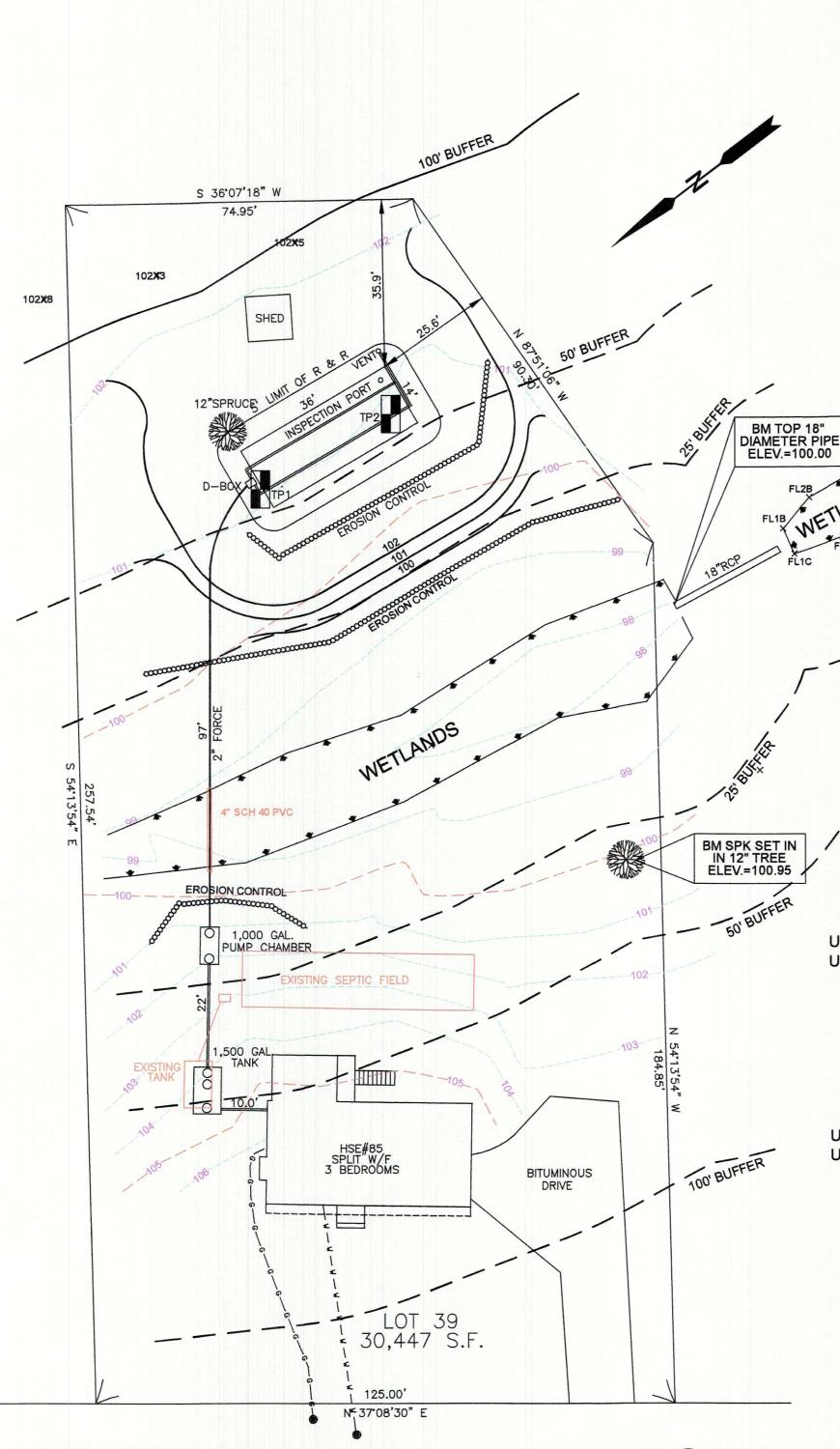
(2) Continued use of a septic tank where the tank is to become an integral part of a sanitary sewer system requires the prior written approval of the Department.

(3) The following procedure shall be used to abandon a system:

(a) The facility owner shall apply to the approving authority to abandon the existing system citing the reason(s) abandonment is necessary, and where connection to municipal or private sanitary sewer has been made, a copy of the sewer connection permit shall be submitted with the application:

(b) Upon receipt of the approving authority's written approval to abandon the system, the septic tank shall be pumped of its entire contents by a licensed septage hauler: and

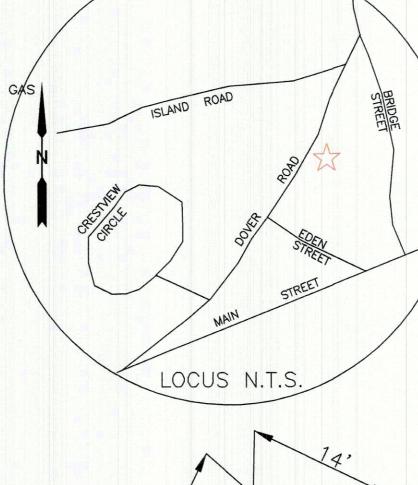
(c) The tank shall be excavated and removed from the site, or the bottom of the tank shall be opened or ruptured after being pumped of its contents so as to prevent retainage of water and the tank shall be completely filled with clean sand.

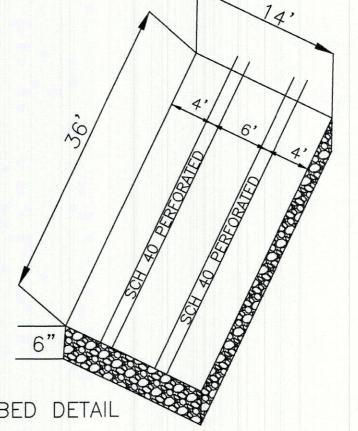


DOVER (60' WIDE COUNTY LAYOUT OF 1968) ROAD

NOTE: THE LICENSED SEPTIC INSTALLER SHALL REVIEW EXISTING PLUMBING IN THE BUILDING AND VERIFY THE ELEVATION OF THE OUTLET PIPE TO PROPOSED TANK PRIOR TO COMMENCEMENT OF THE INSTALLATION OF ANY SEPTIC COMPONENTS.

DMH (SMH • HYD -





BOUYANCY CALCULATIONS SEPTIC / PUMP TANK HIGH GROUD WATER IN AREA = 101.50 **BOTTOM OF TANK** = 97.55 TOTAL SUBMERGENCE = 3.95 FT.

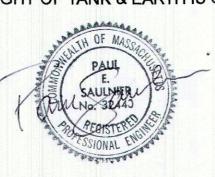
UPLIFT FORCE = SUBERGENCE X LENGHT X WIDTH X 62.4 LBS/C.F. UPLIFT FORCE = 3.95 X 10.50 X 5.67 X 62.4 = 14,674 LBS

SEPTIC TANK WEIGHT PER MANUFACTURER = 14,395 LBS EARTH COVER 7,871 LBS WEIGHT OF TANK & EARTH IS GREATER THAN UPLIFT FORCE

HIGH GROUD WATER IN AREA = 98.83 BOTTOM OF PUMP TANK = 95.75 TOTAL SUBMERGENCE = 3.08 FT.

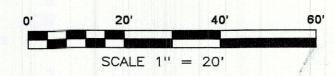
UPLIFT FORCE = SUBERGENCE X LENGHT X WIDTH X 62.4 LBS/C.F. UPLIFT FORCE = 3.08 X 8.00 X 4.33 X 62.4 = 6,657 LBS

SEPTIC TANK WEIGHT PER MANUFACTURER = 9,785 LBS EARTH COVER 2,694 LBS WEIGHT OF TANK & EARTH IS GREATER THAN UPLIFT FORCE



NOTE: REMOVE ALL, EXISTING SEPTIC TANK, PIPES, STONE AND MATERIAL TO VIRGIN GROUND, WITHIN THE PROPOSED SYSTEM. NOTE:

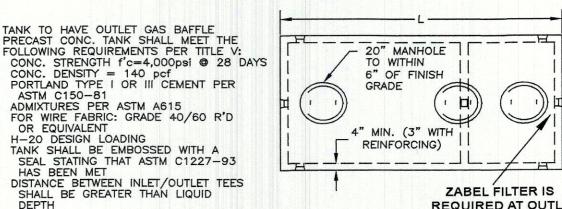
IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTORS TO VERIFY LOCATIONS AND **ELEVATIONS OF EXISTING UTILITIES PRIOR** TO COMMENCEMENT OF ANY CONSTRUCTION DIG SAFE IS TO BE NOTIFIED 72 WORKING HOURS IN ADVANCE OF CONSTRUCTION DIG SAFE 1-888-DIG-SAFE



SYSTEM DESIGN

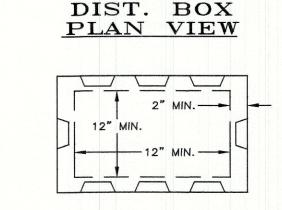
BEDROOMS: 3 DESIGN FLOW: 110 GPD x 3 BEDROOMS = 330 GPD SEPTIC TANK: 1,500 GAL PERC RATE: 8 MIN/IN GARBAGE GRINDER: NO PROPOSED SYSTEM: USE A 14' X 36' X 6" BED WITH SCH 40 PERFORATED PIPE. DESIGN CAPACITY: 330 GPD DIVIDED BY 0.66 LR = 500 S.F. (504 S.F. PROVIDED)

SEPTIC TANK PLAN VIEW



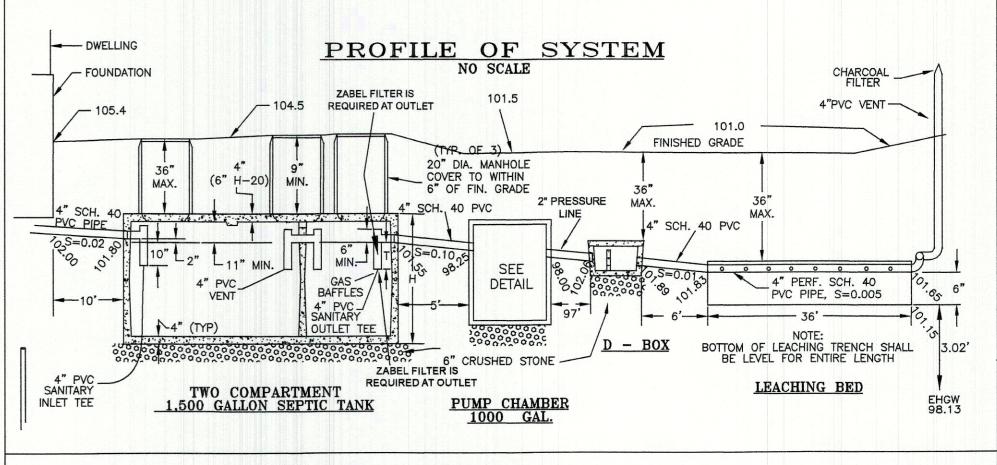
REQUIRED AT OUTLET SEPTIC TANK DIMENSION TABLE TANK VOL. A B D H(H-10)H(H-20) L T W

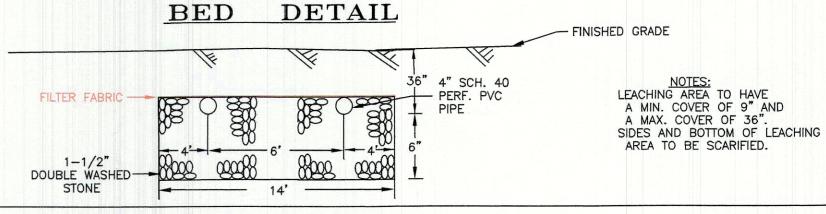
1,500 GAL. 1,000 GAL. 500 GAL. 4-4" 5'-8" 5'-10" 10'-6" 19" 5'-8"



D-BOX TO HAVE 5 OUTLETS 1 OUTLETS TO BE PLUGGED

ALL DISTRIBUTION BOX OUTLET PIPES SHALL ALL DISTRIBUTION BOX OUTLET PIPES SHALL BE
LEVEL FOR TWO FEET. ALL OUTLET PIPES SHALL
HAVE THE SAME INVERT ELEV. AT THE DIST. BOX.
IF INLET PIPE SLOPE EXCEEDS 0.08, PROVIDE
CONC. BAFFLE TO 1" ABOVE OUTLET INV. ELEV.
MIN. SUMP BELOW OUTLET INV. ELEV. = 6-INCHES
OUTLET INV. ELEV. SHALL BE AT LEAST 2-INCHES
BELOW THE INLET INV. ELEV.





SC	IL T	EST I	RESU	LTS !
OTH #1	DATE: 1	1/29/23	GROUND	101.0
SOIL HORIZONS	SOIL DEPTH	SOIL COLOR	SOIL TEXTURE	ELEVATION
Α	0"-10"	10YR3/3	SL	100.17
В	10"-22"	10Y5/6	SL	99.17
С	22"-84"	2.5Y5/4	LS	94.00
REDOX	45"			97.25
WEEPING	60"			96.00
		MARKS		

BREAKOUT ELEV. = 102.33, 15' AWAY AT A 3' TO 1' SLOPE.

EVALUATOR BI SSED BY JOH				
OTH #2	DATE: 1	1/29/23	GROUND	100.8
SOIL HORIZONS	SOIL DEPTH	SOIL COLOR	SOIL TEXTURE	ELEVATION
А	0"-10"	10YR3/3	SL	99.97
В	10"-25"	10Y5/6	SL	98.72
С	25"-84"	2.5Y5/4	LS	93.80
WEEPING & REDO	x 32"			98.13
	WAIVER	REQUEST		HELD

310 CMR 15.104/15.105 PERCOLATION TESTING: SOIL SAMPLE SENT TO LAB BECAUSE OF WATER IN PERC HOLE.

310 CMR 15.212 (1)(A) DEPTH TO GROUNDWATER: 3.02' IN LEU OF 4', WOULD NEED RETAINING WALL AROUND SYSTEM, WETLAND RESTRAINTS.

DEPTH RATE DATE BY INSP.

8 MIN/IN | 12/8/23 A.K. S.M.M

SCHEDULE OF ELEVATIONS	
p of Found. (T.C.) Existing 108.14	
sement Floor Existing 104.0	
vert of Pipe at Found Existing 102.00	_
vert at S. Tank Inlet 101.80	
vert at S. Tank Outlet 101.55	
vert at P. Chamber Inlet 99.00	
vert at P. Champer Outlet 98.75	
vert at D. Box Inlet 102.06	_
vert at D. Box Outlet 101.89	
vert at Leach. Lines (Beg.) 101.83	
vert at Leach Lines (End) 101.65	
evation of Trench Bottom 101.15	

NOTES ANY ALTERATIONS MUST BE APPROVED IN WRITING BY THE DESIGN ENGINEER. ANY CONDITIONS ENCOUNTERED DURING CONSTRUCTION DIFFERING FROM THOSE SHOWN OR REPORTED HEREON SHALL BE REPORTED TO THE DESIGN ENGINEER BEFORE CONSTRUCTION CONTINUES.

Finish Grade Over Leach Area (F.G.) 100.5 - 101.4

TEST HOLE INFORMATION SHOWN HERE ON IS LIMITED TO SOIL CONDITIONS FOUND AT THAT PARTICULAR LOCATION AND IS NOT TO BE CONSIDERED AN IMPLIED OR EXPRESS WARRANTY OF SOIL CONDITIONS BEYOND THE LIMITS OF SUCH TEST HOLES.

REVISION

PROPOSED SEWAGE DISPOSAL SYSTEM 85 DOVER ROAD MILLIS, MA. MAP 53 PARCEL 39

LOAMY SAND CLASS I

PERCOLATION RESULTS

YANKEE ENGINEERING & TESTING INC. (LAB)

COLONIAL ENGINEERING, INC. PO BOX 95 MEDWAY, MA. 02053 PH. 508-533-1644 FAX 508-533-1645

DATE: 12/27/23 SCALE: 1" = 20'OWNER: Kevin R. Foley ADDRESS: 85 Dover Road Millis, Ma. 02054

CERTIFICATE 209048