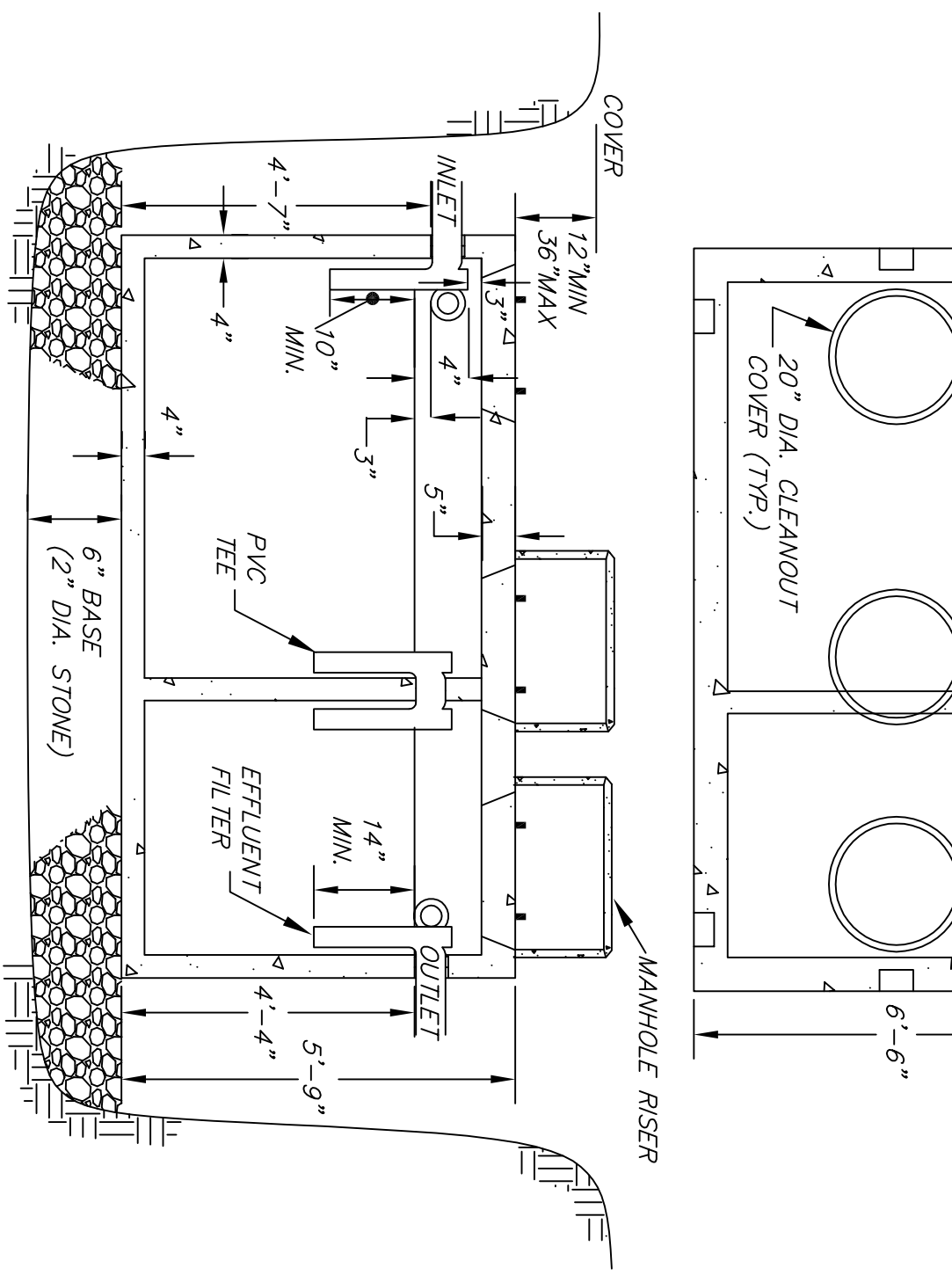
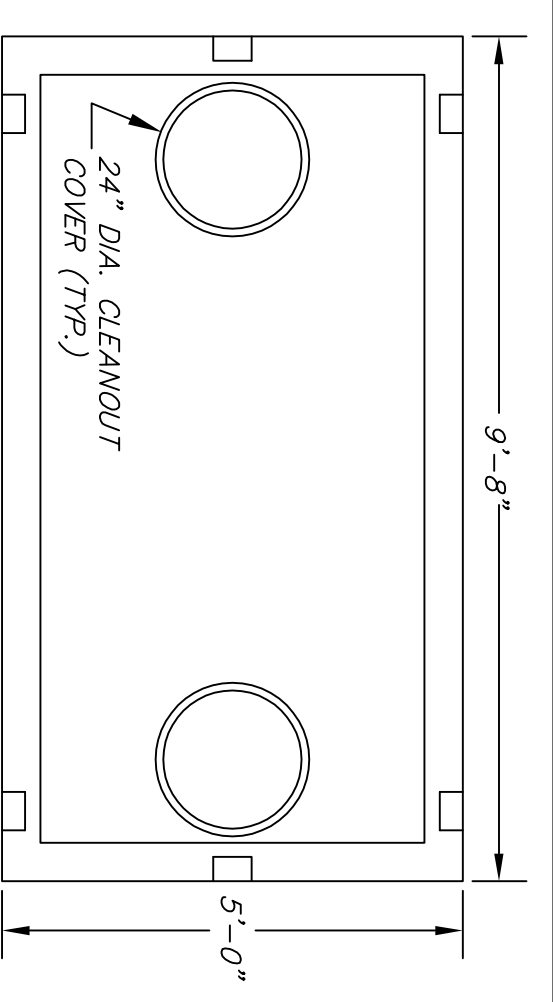


SEPTIC TANK REQUIREMENTS

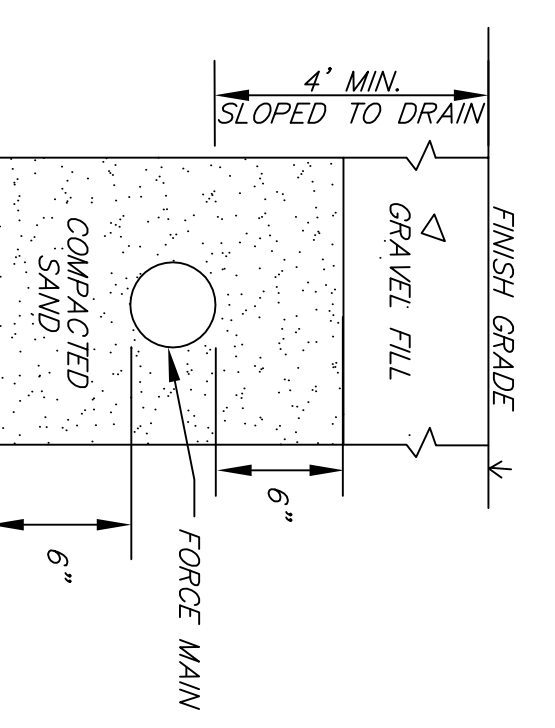
- 1) FIRST COMPARTMENT: 1100 GALLONS
- 2) SECOND COMPARTMENT: 550 GALLONS
- 3) PROVIDED: 2 COMP 2000 GALLON MONOLITHIC SEPTIC TANK



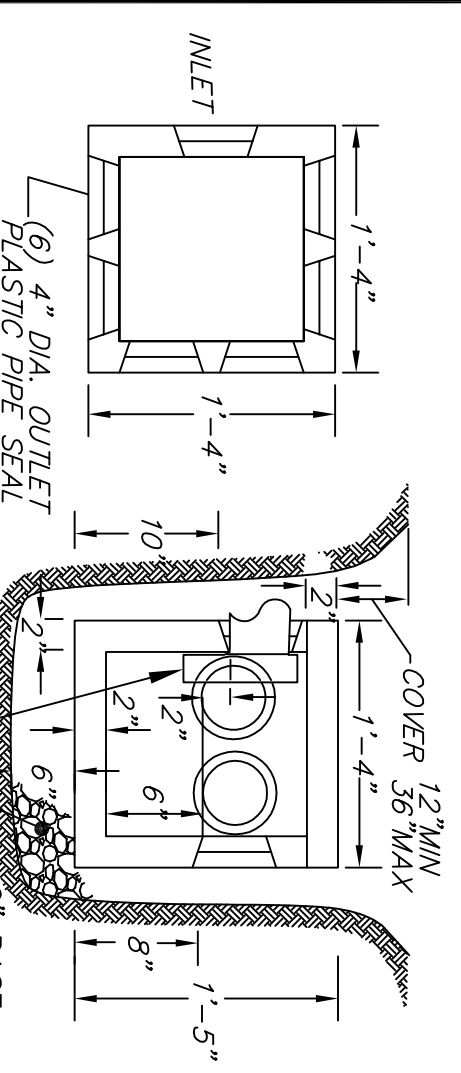
- NOTES:**
- 1) TANK SHALL BE WATER-TIGHT THROUGH MANUFACTURER'S SPECIFICATIONS AND WARRANTY.
 - 2) TANK SHALL BE SET LEVEL AND TRUE TO GRADE ON A LEVEL BASE WHICH HAS BEEN MECHANICALLY COMPACTED.
 - 3) TANK SHALL BE EMBOSSED WITH A SEAL STATING THAT ASTM STANDARD C 1227-93 HAS BEEN MET.
 - 4) THE CENTER & OUTLET TEE SHALL BE EQUIPPED WITH AN EFFLUENT FILTER.
 - 5) THE INLET & OUTLET COVERS SHALL HAVE A RISER TO FINISH GRADE.
 - 6) THE CENTER COVER SHALL HAVE A RISER TO WITHIN 6" OF FINISH GRADE.
 - 6) SECURE COVERS TO PREVENT UNAUTHORIZED ACCESS.

2000 GALLON MONOLITHIC SEPTIC TANK

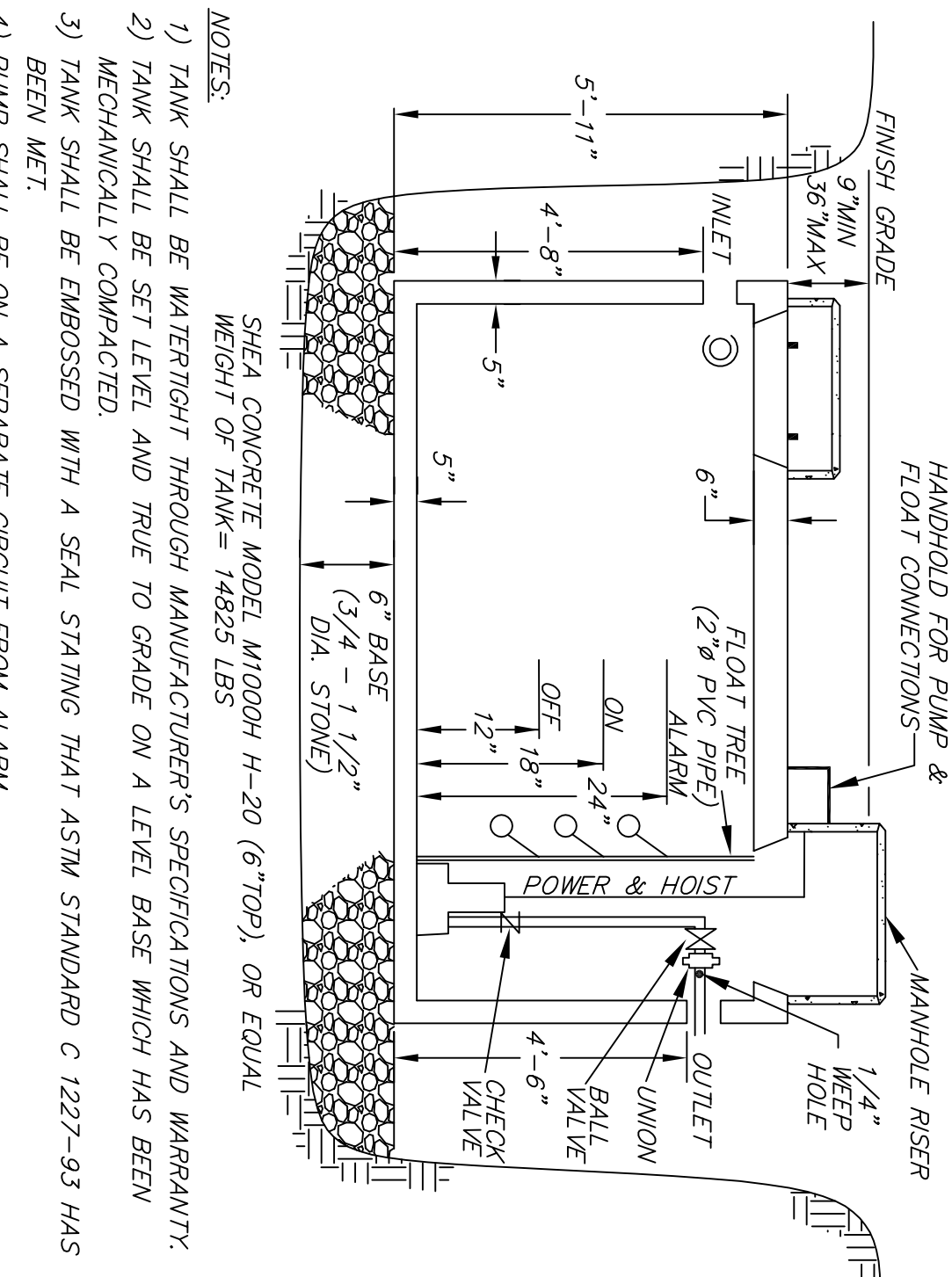
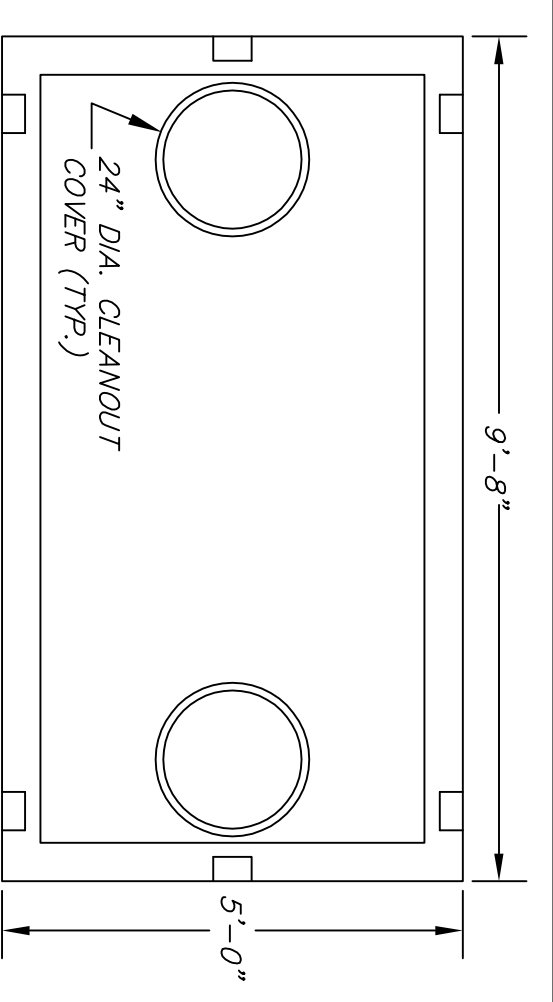
310 CMR 15.223 - 15.228 (NOT TO SCALE)



- 1) TRENCH SHALL BE PLACED IN UNDISTURBED SUBGRADE OR COMPACTED TO 95% PER ASTM D-1557
- FORCE MAIN TRENCH**
- 310 CMR 15.221(6) (NOT TO SCALE)



- 1) DBOX SHALL BE WATER-TIGHT THROUGH MANUFACTURER'S SPECIFICATIONS AND WARRANTY.
- 2) SPEED-LIFTERS SHALL NOT BE INSTALLED IN OUTLET PIPES.
- 3) OUTLET PIPES SHALL BE LEVEL FOR THE FIRST TWO FEET (MIN).
- 4) OUTLET PIPES SHALL BE CEMENTED TO DBOX USING HYDRAULIC CEMENT
- DISTRIBUTION BOX (6-OUTLET)**
- 310 CMR 15.232 (NOT TO SCALE)



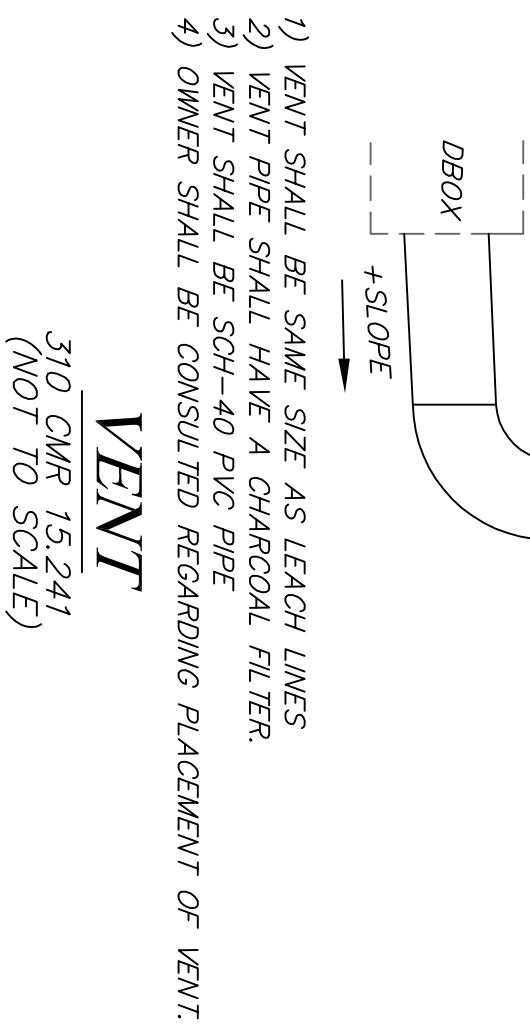
- NOTES:**
- 1) TANK SHALL BE WATER-TIGHT THROUGH MANUFACTURER'S SPECIFICATIONS AND WARRANTY.
 - 2) TANK SHALL BE SET LEVEL AND TRUE TO GRADE ON A LEVEL BASE WHICH HAS BEEN MECHANICALLY COMPACTED.
 - 3) TANK SHALL BE EMBOSSED WITH A SEAL STATING THAT ASTM STANDARD C 1227-93 HAS BEEN MET.
 - 4) PUMP SHALL BE ON A SEPARATE CIRCUIT FROM ALARM.
 - 5) ALARM AND PUMP CONTROLS SHALL BE ACCESSIBLE TO LIVING UNIT.
 - 6) PUMP AND FLOAT CONNECTIONS SHALL BE PLACED IN A HANDHOLD ADJACENT TO THE OUTLET MANHOLE RISER.
 - 7) MANHOLE RISERS REQUIRED: WITHIN 6" OF GRADE FOR INLET AND TO-GRADE FOR OUTLET.
 - 8) SECURE COVERS AT-GRADE TO PREVENT UNAUTHORIZED ACCESS.

1000 GALLON MONOLITHIC PUMP CHAMBER

310 CMR 15.231 (NOT TO SCALE)

BUOYANCY CALCULATIONS:

2000 GALLON SEPTIC TANK		1000 GALLON MONOLITHIC 2-COMPARTMENT TANK	
FINISH GRADE	106.00	FINISH GRADE	107.00
MANHOLE GRADE	106.00	ESHOW	103.20
ESHOW	103.20	INLET INVERT	104.00
INLET INVERT	104.00	TOP	105.17
TOP	105.17	BOTTOM	99.42
BOTTOM	99.42		
BALLAST WEIGHT	0	LBBS	0
WEIGHT OF SOILS	6845	LBBS	9441
WEIGHT OF TANK	1985	LBBS	1463
WEIGHT OF DISPLACED WATER	1985	LBBS	1251
NET FORCES**	6830	LBBS	11715
FACTOR OF SAFETY:	1.38		1.93



- 1) VENT SHALL BE SAME SIZE AS LEACH LINES
- 2) VENT PIPE SHALL HAVE A CHARCOAL FILTER.
- 3) VENT SHALL BE SCH-40 PVC PIPE
- 4) OWNER SHALL BE CONSULTED REGARDING PLACEMENT OF VENT.

VENT

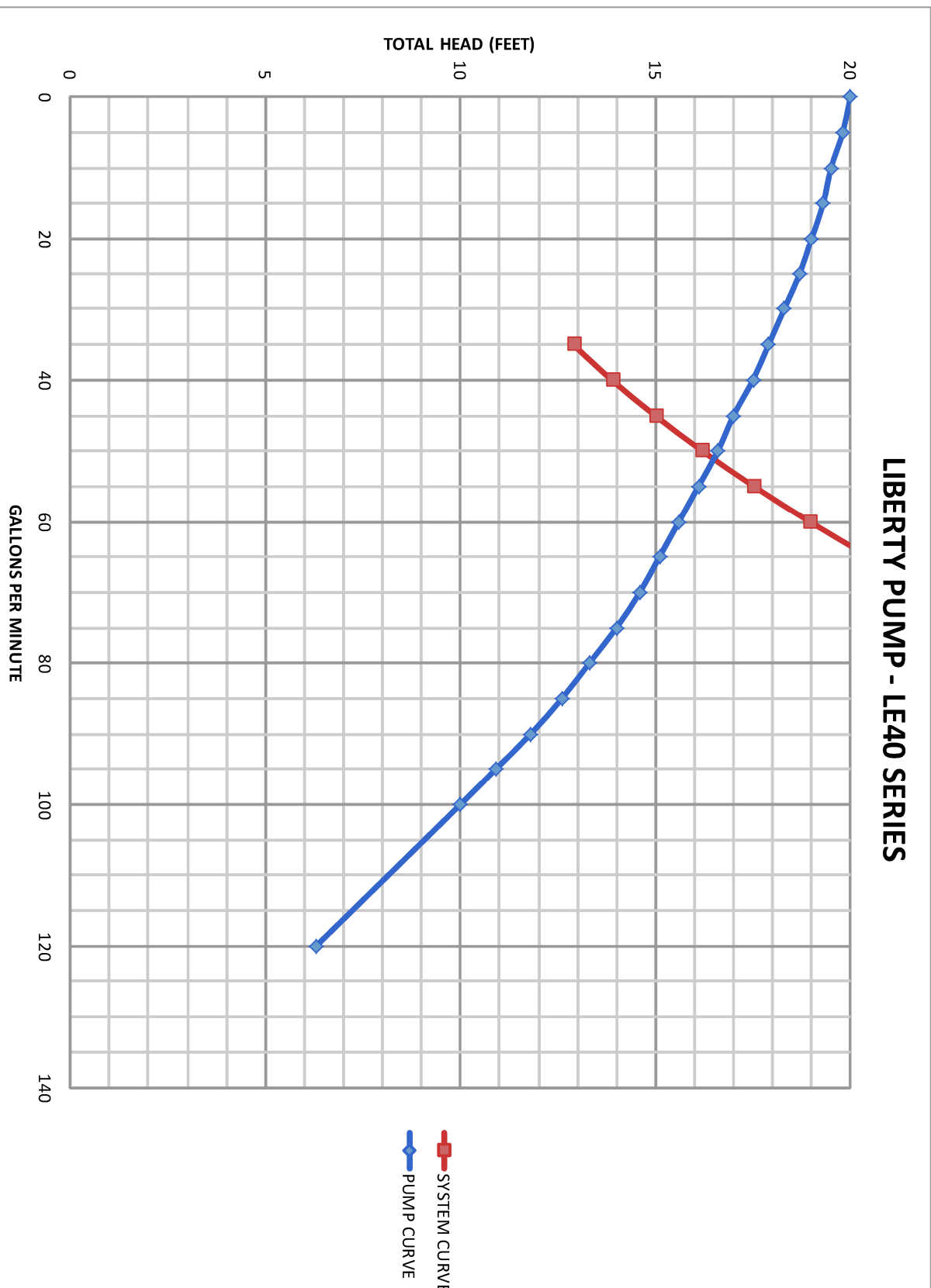
310 CMR 15.241 (NOT TO SCALE)

SYSTEM CURVE

Q	FRIC	H	HT	H ₁	H ₂	TDH
0	3.18	2.05	3.24	9.35	13.88	13.88
35	3.80	2.56	3.54	9.35	13.88	13.88
45	4.05	3.26	5.64	9.35	14.89	14.89
50	4.51	3.96	6.85	9.35	16.20	16.20
55	4.96	4.73	8.18	9.35	17.53	17.53
60	5.41	5.55	9.61	9.35	18.96	18.96
65	5.88	6.44	11.14	9.35	20.49	20.49

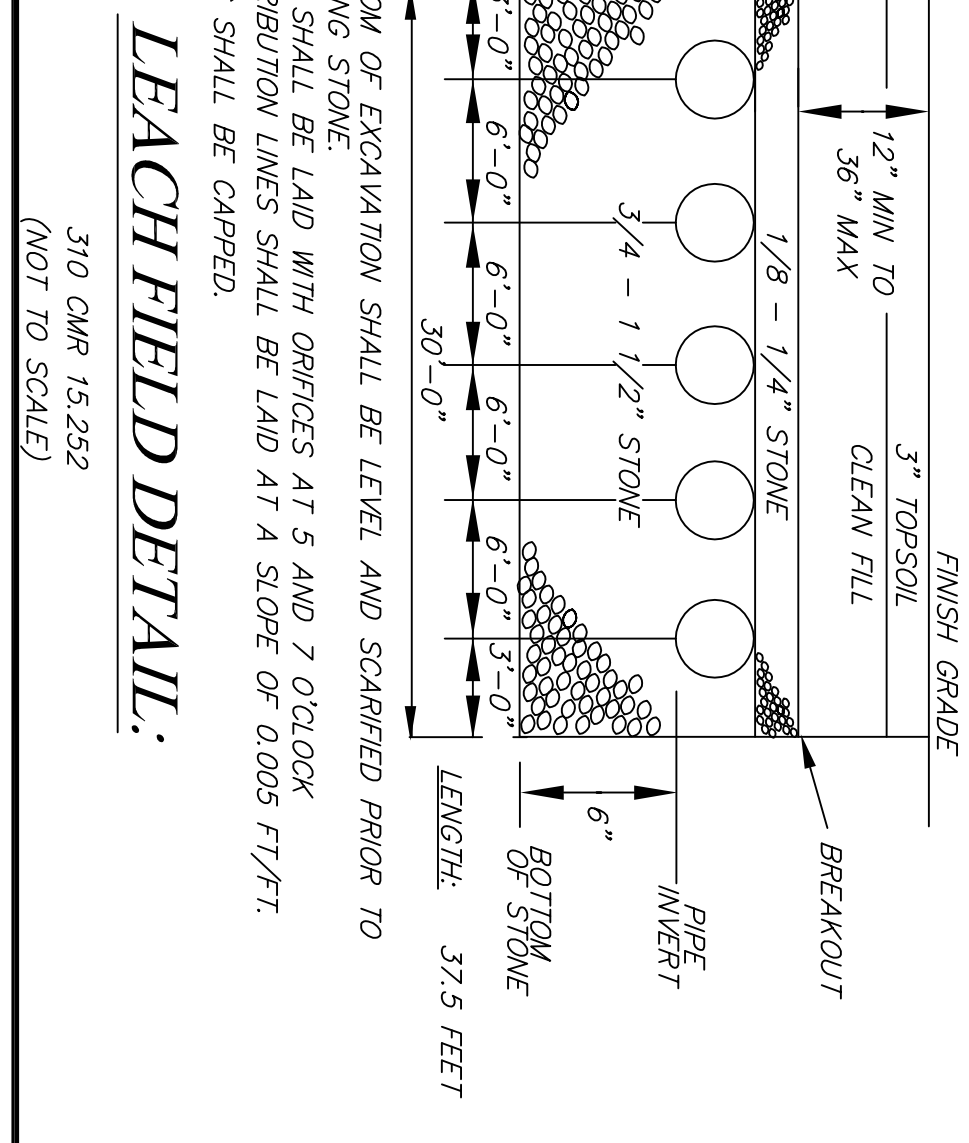
OPERATING POINT

HEAD	16.5	FT
FLOW RATE	51	GPM
TIME ON	27	MINUTES



- PUMP ACCESSORIES:**
- MANUFACTURER: LIBERTY PUMPS
 - CONTROL PANEL: LIBERTY SAL24=3
 - ALARM: INCLUDED
 - PHASES: 04
 - FULL AMPS: 12
 - DISCHARGE: 2"
- PILOT-DUTY FLOAT SWITCHES**
- NO. REQUIRED: 3
- PLUMBING ACCESSORIES:**
- CONTROL PANEL: LIBERTY SAL24=3
 - ALARM: INCLUDED
 - PHASES: 04
 - FULL AMPS: 12
 - DISCHARGE: 2"

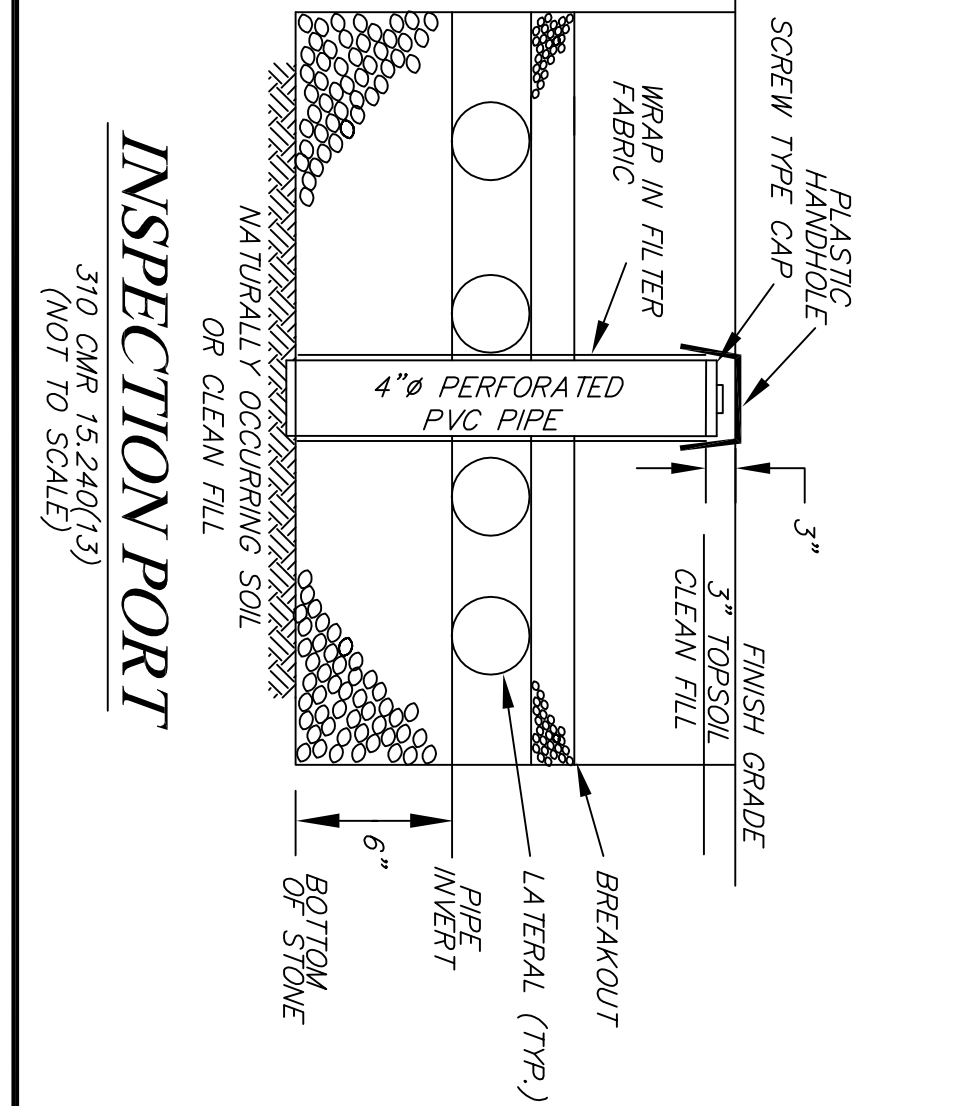
- NOTES:**
1. THIS PLAN IS INTENDED ONLY FOR THE CONSTRUCTION OF A SEPTIC SYSTEM TO SERVE THE SITE. NO OTHER USE OF THIS PLAN IS AUTHORIZED. PROPERTY LINES SHOWN HERE-ON ARE APPROXIMATE AND INTENDED ONLY TO SHOW THAT MINIMUM SETBACKS HAVE BEEN MET. NO BOUNDARY SURVEY WAS PERFORMED IN PREPARATION OF THIS PLAN.
 2. CONTRACTOR SHALL NOTIFY DISH AT 1-888-DIG-SAFE (888-231-7233) AT LEAST 72 HOURS PRIOR TO COMMENCING CONSTRUCTION.
 3. CONTRACTOR SHALL MAKE THEMSELVES AWARE OF ALL CONSTRUCTION REQUIREMENTS ASSOCIATED WITH THE JOB.
 4. ANY AND ALL REVISIONS TO THE APPROVED PLAN SHALL BE APPROVED BY THE DESIGN ENGINEER AND THE APPROPRIATE TOWN REPRESENTATIVE.
 5. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROJECT WITH RESPECT TO SAFETY METHODS. CONSTRUCTION METHODS AND SUPERVISION OF WORKERS FOR THE PROJECT AND SHALL BE A LICENSED SEPTIC INSTALLER IN THE TOWN IN WHICH THE SEPTIC SYSTEM IS BEING INSTALLED.
 6. DESIGN ENGINEER SHALL VERIFY LOCATION AND ELEVATION OF BENCHMARKS PRIOR TO CONSTRUCTION.
 7. CONTRACTOR SHALL CONFIRM THAT THE DESIGN PLAN DETAILS ARE CONSISTENT WITH THE CURRENT MANUFACTURER'S SPECIFICATIONS.
 8. APPROVAL OF THE SEPTIC DESIGN, ISSUANCE OF A DISPOSAL SYSTEM CONSTRUCTION PERMIT AND SEPTIC SYSTEM WITH LOCAL SANITATION SATISFACTORY.
 9. ALL WORK SHALL COMPLY WITH 310CMR15.000 AND LOCAL BOARD OF HEALTH REGULATION, UNLESS VARIANCES/WAIVERS HAVE BEEN APPROVED.
 10. ALL WORK OUTSIDE OF THE BUILDING THAT IS LESS THAN 10 FEET FROM THE OUTSIDE FACE OF THE BUILDING SHALL CONFORM TO 246B02.02. THE STAKE PLUMBING CODE.
 11. SUPPLIES AND GREATER THAN 200 FEET FROM ANY TRIBUTARY TO A SURFACE WATER SUPPLY.
 12. THE EXISTING WELL IS TO BE RELOCATED. THERE ARE NO OTHER KNOWN WELLS WITHIN 100 FEET OF THE SOIL ABSORPTION SYSTEM OR WITHIN 50 FEET OF THE SOIL ABSORPTION SYSTEM OR WITHIN 50 FEET OF ANY SEPTIC COMPONENTS.
 13. ALL SEPTIC COMPONENTS SHALL BE MARKED WITH MAGNETIC MARKING TAPE OR A COMPARABLE METHOD AS SPECIFIED BY THE MANUFACTURER.
 14. SITE COMPLETS WITH 310CMR15.214. NITROGEN LOADING LIMITATIONS.
 15. FILL MATERIAL FOR SYSTEMS CONSTRUCTED IN FILL SHALL CONSIST OF ASTM C-33 SAND ACCORDING TO 310CMR15.259(3).
 16. CONTRACTOR SHALL REMOVE A & B SOIL HORIZON(S) AND OTHER DELETERIOUS MATERIAL WITHIN 5 FT OF SOIL ABSORPTION SYSTEM AND REPLACE WITH ASTM C-33 SAND UP TO BREAKOUT ELEVATION.
 17. CONTRACTOR SHALL BE BOUND BY ALL LOCAL AND STATE REGULATIONS REGARDING HEALTH AND ENVIRONMENTAL PROTECTION.
 18. CONTRACTOR SHALL BE BOUND BY ALL LOCAL AND STATE REGULATIONS REGARDING HEALTH AND ENVIRONMENTAL PROTECTION.
 19. CONTRACTOR SHALL BE BOUND BY ALL LOCAL AND STATE REGULATIONS REGARDING HEALTH AND ENVIRONMENTAL PROTECTION.
 20. CONTRACTOR SHALL BE BOUND BY ALL LOCAL AND STATE REGULATIONS REGARDING HEALTH AND ENVIRONMENTAL PROTECTION.
 21. CONTRACTOR SHALL BE BOUND BY ALL LOCAL AND STATE REGULATIONS REGARDING HEALTH AND ENVIRONMENTAL PROTECTION.
 22. THERE ARE FRESHWATER WELLS WITHIN 100 FEET OF THE SEPTIC SYSTEM. THIS PLAN SHALL ACCORDINGLY A NOTICE OF INTENT FILED WITH THE LOCAL CONSERVATION COMMISSION AND THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION.
 23. CONTRACTOR SHALL BE BOUND BY ALL LOCAL AND STATE REGULATIONS REGARDING HEALTH AND ENVIRONMENTAL PROTECTION.
 24. CONTRACTOR SHALL BE BOUND BY ALL LOCAL AND STATE REGULATIONS REGARDING HEALTH AND ENVIRONMENTAL PROTECTION.
 25. THE EXISTING SEPTIC SYSTEM SHALL BE EITHER CRUSHED AND FILLED WITH CLEAN FILL OR REMOVED, AS PER 310CMR15.00.



- 1) BOTTOM OF EXCAVATION SHALL BE LEVEL AND SCARIFIED PRIOR TO PLACING STONE.
- 2) PIPE SHALL BE LAID WITH ORIFICES AT 5 AND 7 O'CLOCK.
- 3) DISTRIBUTION LINES SHALL BE LAID AT A SLOPE OF 0.005 FT./FT.
- 4) ENDS SHALL BE CAPPED.

LEACH FIELD DETAIL:

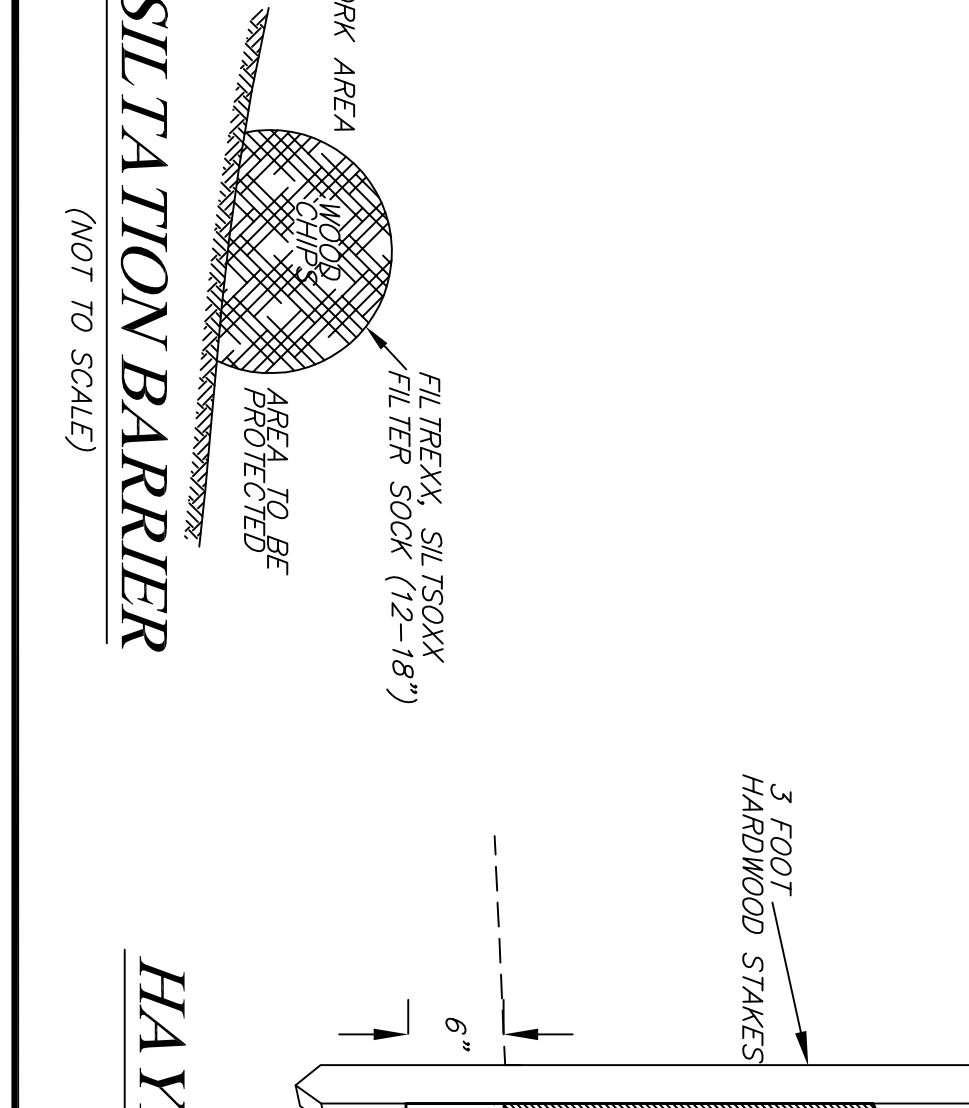
310 CMR 15.252 (NOT TO SCALE)



- 1) VENT SHALL BE SAME SIZE AS LEACH LINES
- 2) VENT PIPE SHALL HAVE A CHARCOAL FILTER.
- 3) VENT SHALL BE SCH-40 PVC PIPE
- 4) OWNER SHALL BE CONSULTED REGARDING PLACEMENT OF VENT.

INSPECTION PORT

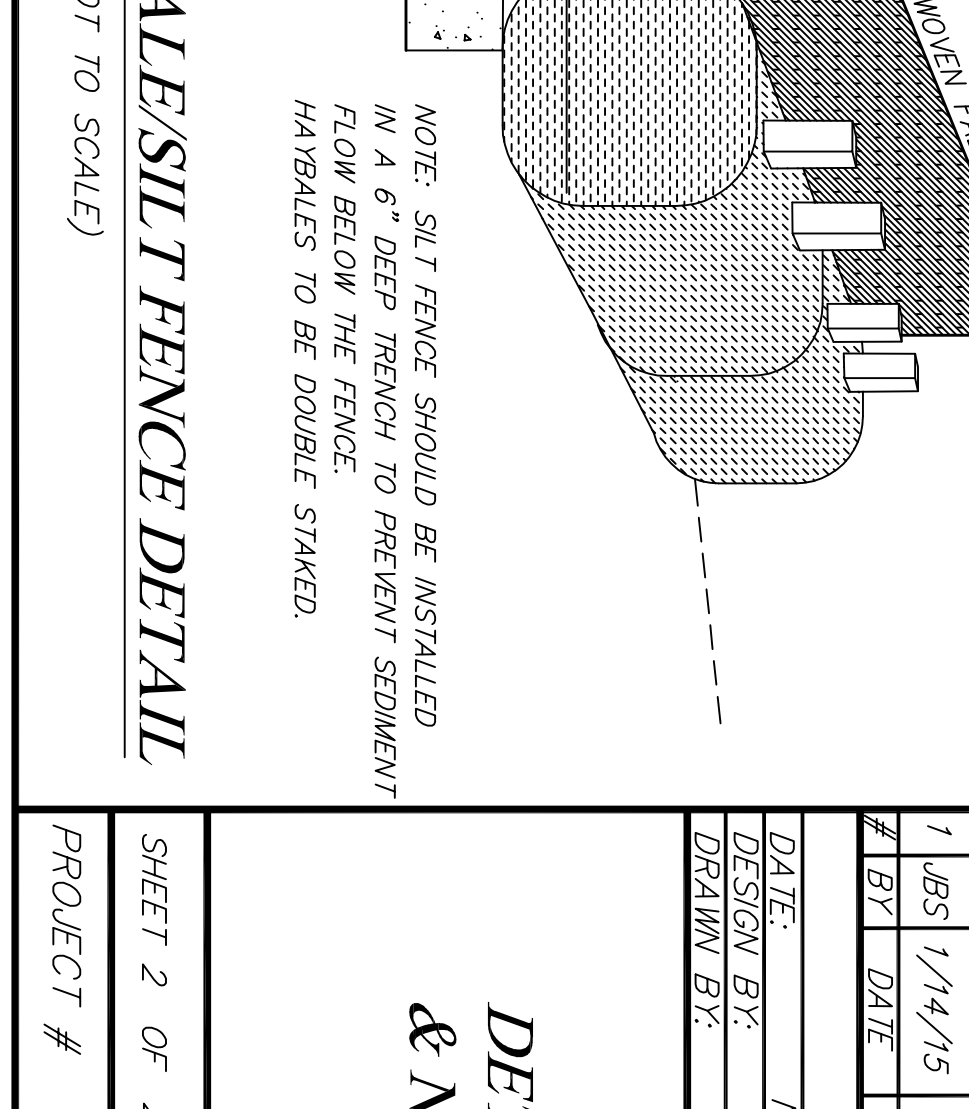
310 CMR 15.240(13) (NOT TO SCALE)



- NOTE: SILT FENCE SHOULD BE INSTALLED IN A 6" DEEP TRENCH TO PREVENT SEDIMENT FLOW BELOW THE FENCE. HARBALS TO BE DOUBLE STAKED.

SILTATION BARRIER

310 CMR 15.240(13) (NOT TO SCALE)



- NOTE: SILT FENCE SHOULD BE INSTALLED IN A 6" DEEP TRENCH TO PREVENT SEDIMENT FLOW BELOW THE FENCE. HARBALS TO BE DOUBLE STAKED.

HAYBALE/SILT FENCE DETAIL

310 CMR 15.241 (NOT TO SCALE)

SUBSURFACE SEWAGE DISPOSAL SYSTEM UPGRADE

15 LANTERN LANE
BOXFORD, MA

REGISTRY INFORMATION:

DEED:
BOOK NO.: 33419
PAGE NO.: 165

ASSESSORS INFORMATION:

MAP: 28
BLOCK: 02
LOT: 06

PREPARED FOR:

EDWARD F. SULLIVAN
15 LANTERN LANE
BOXFORD, MA

SCANLAN ENGINEERING LLC
FO BOX 906-DEERINGTON, MA 01833

PHONE: (978) 372-3440
FAX: (978) 891-3888
EMAIL: info@scanlanengineering.com
WEB: www.scanlanengineering.com

#	BY	DATE	REVISIONS TO PLANS
1	JBS	1/14/15	CONS COMM FILING

DETAILS & NOTES

DATE	DESIGN BY	DRAWN BY
NOVEMBER 24, 2014	JBS	JBS

SHEET 2 OF 2
SCALE: 1" = 20'
PROJECT # 0634