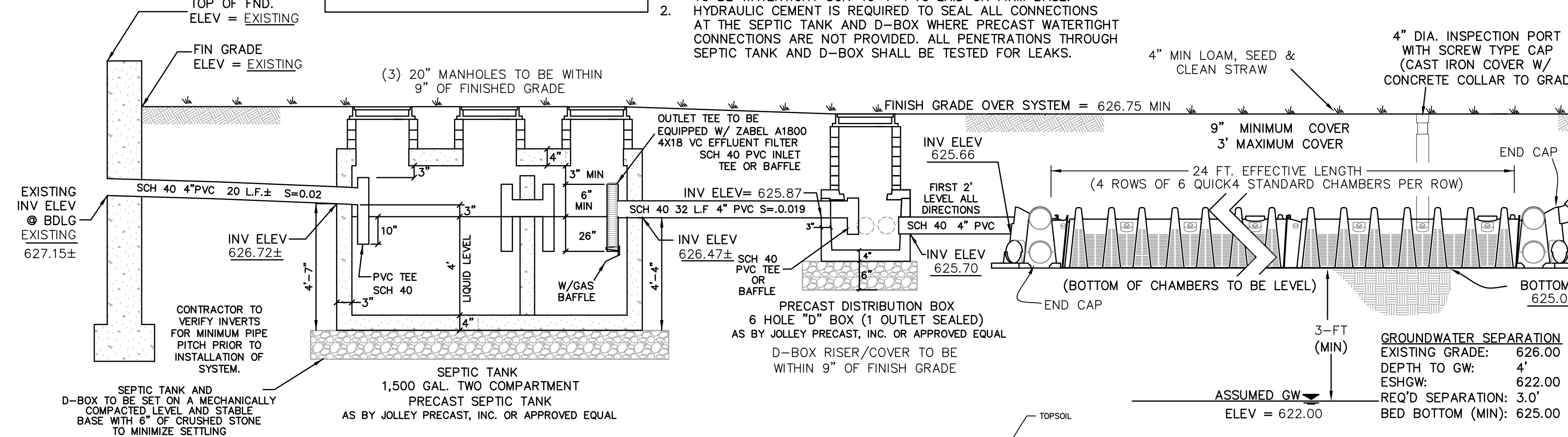


# DISPOSAL SYSTEM PROFILE

NOT TO SCALE

## NOTES:

1. ALL PIPE FROM FOUNDATION TO SOIL ABSORPTION SYSTEM TO BE WATERTIGHT SCH 40 4" PVC LAID ON FIRM BASE. HYDRAULIC CEMENT IS REQUIRED TO SEAL ALL CONNECTIONS AT THE SEPTIC TANK AND D-BOX WHERE PRECAST WATERTIGHT CONNECTIONS ARE NOT PROVIDED. ALL PENETRATIONS THROUGH SEPTIC TANK AND D-BOX SHALL BE TESTED FOR LEAKS.

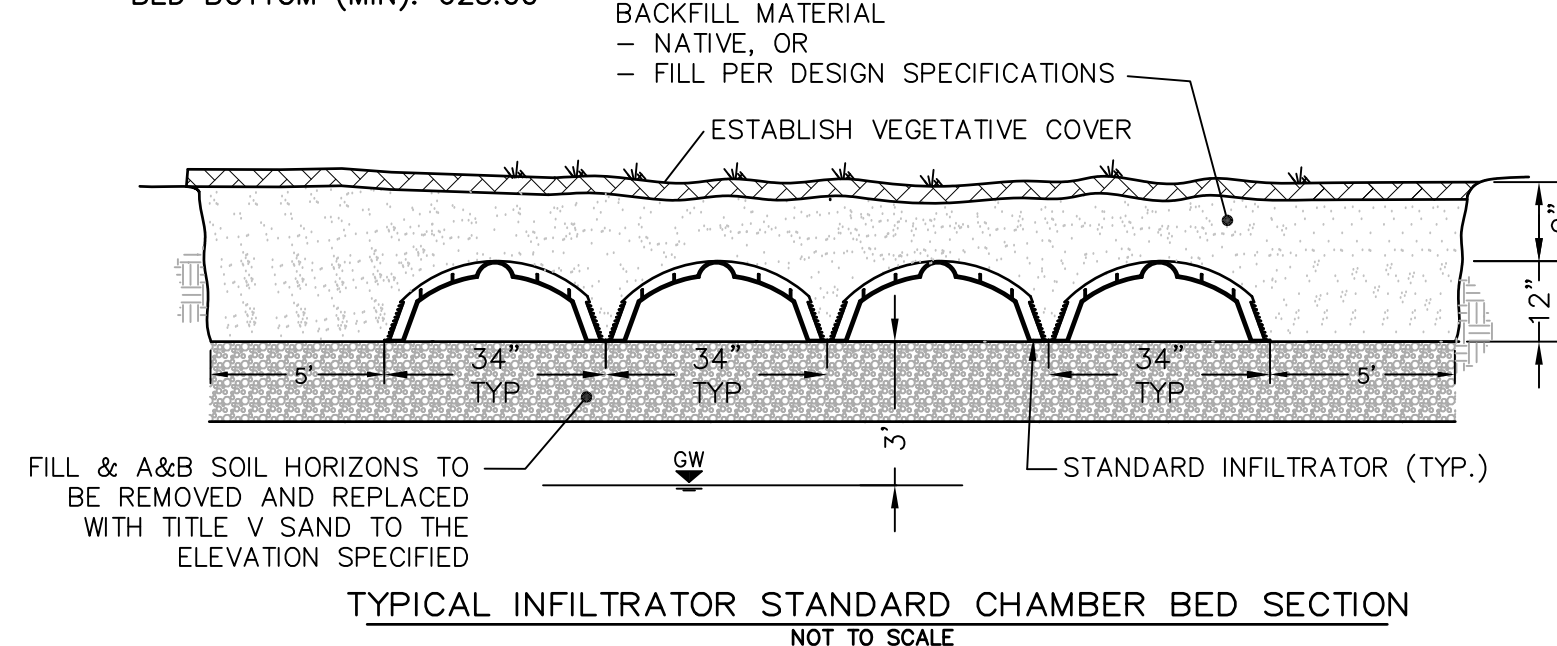
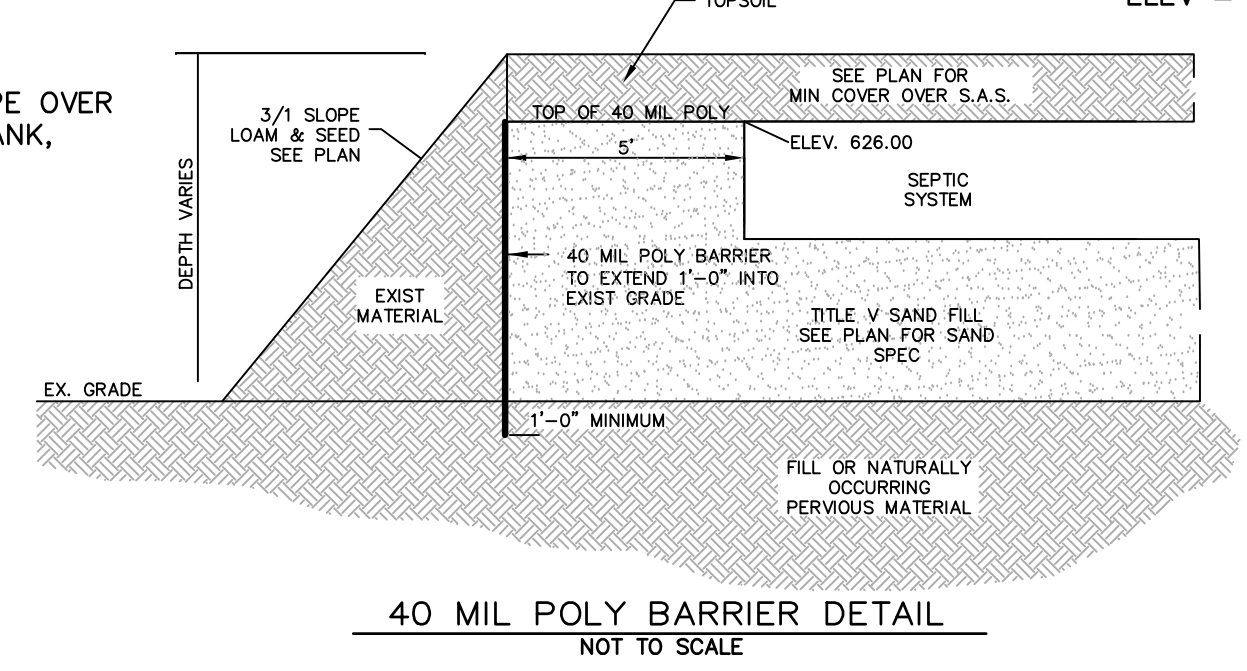


NOTE: IF AN EQUIVALENT FILTER IS CHOSEN BY THE INSTALLER IT MUST FIRST BE APPROVED BY THE DESIGN ENGINEER PRIOR TO INSTALLATION TO CONFIRM THE FILTER MEETS ALL DEP REQUIREMENTS

NOTE: ANY RISERS TO GRADE MUST BE SECURED AGAINST UNAUTHORIZED ACCESS

NOTE: OULLET FILTER TEE TO BE CLEANED AND INSPECTED OR REPLACED ANNUALLY.

NOTE: INSTALL MAGNETIC TAPE OVER ALL SYSTEM COMPONENTS, TANK, D-BOX, INFILTRATORS.



**LOCAL UPGRADE APPROVAL REQUESTS:**  
SAS OFFSET TO SEASONAL HIGH GROUNDWATER: 3'

**RECORD OWNER/APPLICANT:**  
73 E BAYLIES ROAD REALTY TRUST  
237 WEST MAIN STREET  
DUDLEY, MA 01571

**TAX MAP REFERENCES:**  
ASSESSORS MAP: 75 PARCEL: A-1

**DEED REFERENCES:**  
WORCESTER COUNTY REGISTRY OF DEEDS)  
LOCUS DEED:  
DEED BOOK 51667 PAGE 257  
PLAN BOOK 761, PLAN 107

**TITLE V SECTION 15.255 (3)**  
**SYSTEM IN FILL** [x] REQUIRED [ ] NOT REQUIRED  
IF ANY PORTION OF THE PROPOSED LEACHING AREA IS LOCATED ABOVE EXISTING GRADE OR WITHIN TOPSOIL, PEAT OR OTHER UNSUITABLE OR IMPERVIOUS SOIL LAYER, THEN THE PLACEMENT OF FILL IS REQUIRED. PRIOR TO THE PLACEMENT OF FILL, ALL UNSUITABLE OR IMPERVIOUS SOILS SHALL BE EXCAVATED AND SHALL EXTEND TO A MINIMUM OF FIVE FEET LATERALLY IN ALL DIRECTIONS BEYOND THE OUTER PERIMETER OF THE SOIL ABSORPTION SYSTEM, TO THE DEPTH OF NATURALLY OCCURRING PERVIOUS MATERIAL. FILL MATERIAL SHALL CONSIST OF SELECT, ON-SITE OR IMPORTED SOIL, CONSISTING OF CLEAN GRANULAR SAND, FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES. MIXTURES AND LAYERS OF DIFFERENT CLASSIFIED SOIL SHALL NOT BE USED. THE FILL SHALL NOT CONTAIN ANY MATERIAL LARGER THAN 2 INCHES. A SIEVE ANALYSIS USING A #4 SIEVE, SHALL BE PERFORMED ON A REPRESENTATIVE SAMPLE OF THE FILL UP TO 45% BY WEIGHT OF THE FILL SAMPLE MAY BE RETAINED ON THE #4 SIEVE. SIEVE ANALYSIS ALSO SHALL BE PERFORMED ON THE FRACTION OF FILL SAMPLE PASSING THE #4 SIEVE. SUCH ANALYSIS MUST DEMONSTRATE THAT THE MATERIAL MEETS EACH OF THE FOLLOWING SPECIFICATIONS:

SIEVE SIZE	EFFECTIVE PARTICLE SIZE	% THAT MUST PASS SIEVE
#4	4.75 mm	100%
#50	0.30 mm	10%-100%
#100	0.15 mm	0%-20%
#200	0.075 mm	0%-5%

NOTE: SAND SIEVE ANALYSIS AND COPY OF RECEIPTS FOR ALL WASHED/ DOUBLE WASHED STONE SHALL BE SUBMITTED TO THE LOCAL BOARD OF HEALTH PRIOR TO PLACEMENT OF SAND OR STONE WITHIN THE PROPOSED SYSTEM

**PLAN REFERENCE**

1. SITE EXISTING CONDITIONS, PROPERTY BOUNDARIES, AND TOPOGRAPHY BASED ON AN ON THE GROUND SURVEY CONDUCTED BY MCCLURE.
2. WORK DOES NOT APPEAR TO LIE WITHIN THE 100-YEAR FLOOD ZONE AS CONULATED. SITE DOES LIE WITHIN THE 100-YEAR FLOOD ZONE "ZONE A" ACCORDING TO FEMA FIRM MAP NO. 25027C0951E, EFFECTIVE JULY 4, 2011.
3. FLOOD ANALYSIS CALCS SHOW A FLOOD ELEVATION OF 614.96' DURING A 100 YEAR STORM EVENT AT THE E BAYLIES RD CULVERT. THE STREAM BED CALCULATION SHOWS A FLOOD DEPTH OF 3.59'. FLOW DURING A 100 YEAR STORM EVENT WAS MODELED AS 448 C.F.S. PER USGS STREAM STATS DATA.

**DIG-SAFE NOTE (1-888-344-7233):**

- 1) CONTRACTOR SHALL NOTIFY "DIG-SAFE" PRIOR TO ANY EXCAVATION @ 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO THE START OF ANY ON-SITE CONSTRUCTION ACTIVITIES.
- 2) ALL EXISTING SUBSURFACE UTILITIES (LOCATION & ELEVATION) TO BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION. CONTRACTOR IS TO VERIFY EXISTING INVERTS AND NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
- 3) CONTRACTOR SHALL NOT LEAVE ANY BOTTOM HOLE OR TRENCHING OPEN OVERNIGHT.
- 4) CONTACT DUDLEY BUILDING DEPARTMENT REGARDING TRENCH PERMIT PRIOR TO CONSTRUCTION.

TEST PIT DATA	
SOIL EVALUATOR: PETER ENGLE, P.E. SE14009	TEST PIT 1
WITNESSED BY: TOM PURCELL, BOH	TEST PIT 2
	3-23-20
	0"-48" FILL
	48"-56" Ap SANDY LOAM
	56"-64" Bw SANDY LOAM
	64"-106" C GF SANDY LOAM
	0"-6" Ap SANDY LOAM
	6"-18" Bw SANDY LOAM
	18"-84" C GF SANDY LOAM
	GROUND WATER ELEV (OBSERVED): N/A
	MOTTLING ELEV (OBSERVED): 48"
	DEPTH TO REFUSAL: N/A

PERCOLATION TEST DATA		SETBACKS	
SOIL EVALUATOR: PETER ENGLE P.E., SE14009	WITNESSED BY: TOM PURCELL, BOH	ZONE: A	AREA: 60,000 S.F.
		FRONTAGE: 175'	FRONT YARD: 30'
		PERC P-1	SIDE YARD: 15'
		24" x 16"	REAR YARD: 30'
		10 MPI	
		DESIGN RATE: 10 MPI	
		SOIL CLASSIFICATION: CLASS II	

**DESIGN CRITERIA**

TYPE OF ESTABLISHMENT: EXISTING FOUR (4) BEDROOM SINGLE FAMILY DWELLING

SEPTIC TANK CAPACITY: 1,500 GAL

DESIGN FLOW : 4 BEDROOMS x110 GPD = 440 GPD

LEACHING CAPACITY REQUIRED: (440 GPD)/(0.60 GPD/STF) = 734 SF\*

LEACHING AREA CALCULATIONS: (24) QUICK 4 STANDARD CHAMBERS IN (3) 8 CHAMBER ROW BED

HYDRAULIC CAPACITY PROVIDED: 24 X 4' X 4.72 S.F./L.F. = 453 S.F.±

453 S.F. / 734 S.F. = 0.61

(1.0-0.61)x100 = 39% REDUCTION

\*PER MA DEP STANDARD CONDITIONS FOR ALTERNATIVE SOIL ABSORPTION SYSTEMS WITH GENERAL USE CERTIFICATION AND/OR APPROVED REMEDIAL USE, SECTION II.9.g, UP TO 40% REDUCTION ALLOWED FOR INFILTRATORS

**NITROGEN LOADING**

LOT SIZE: 2.46± ACRES

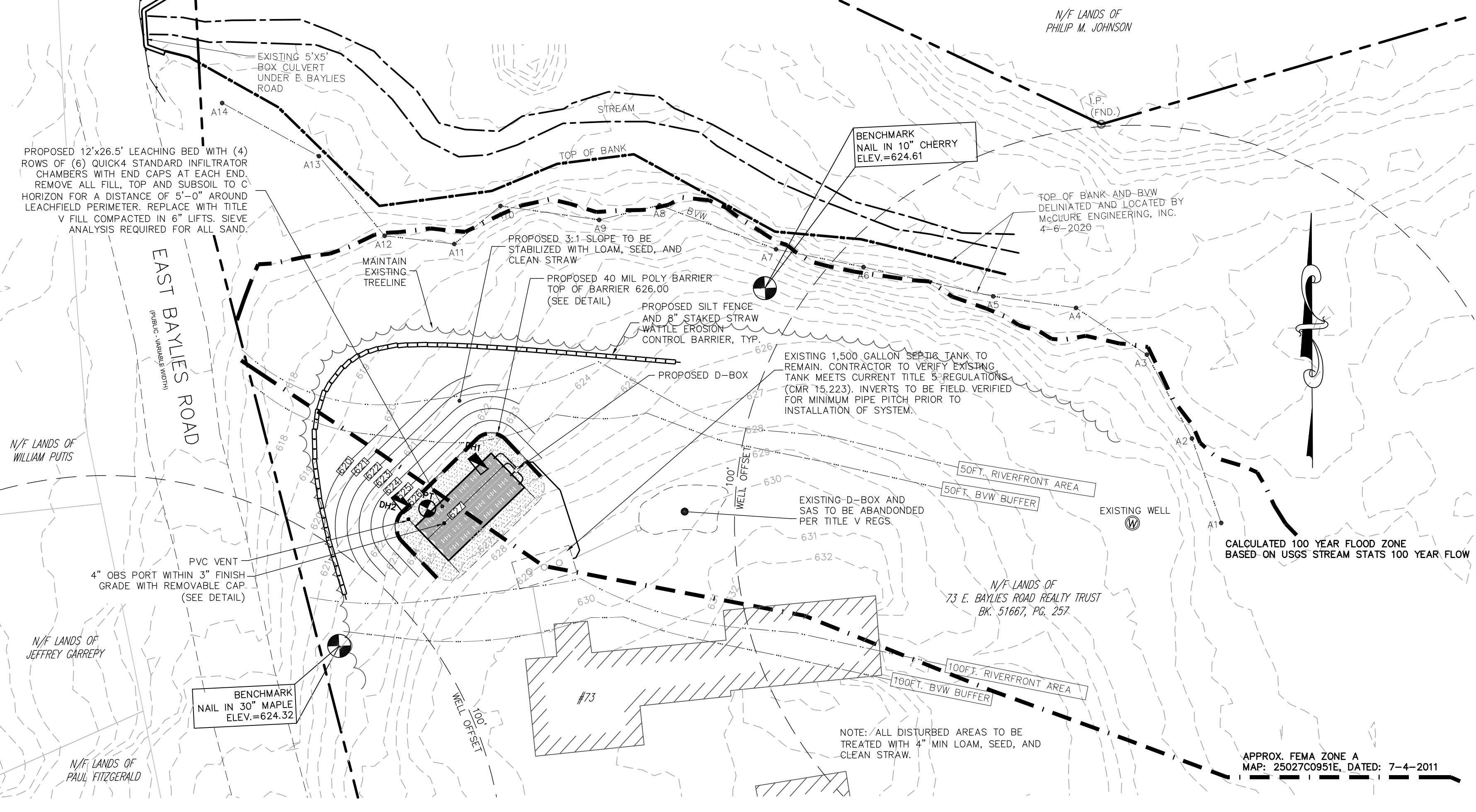
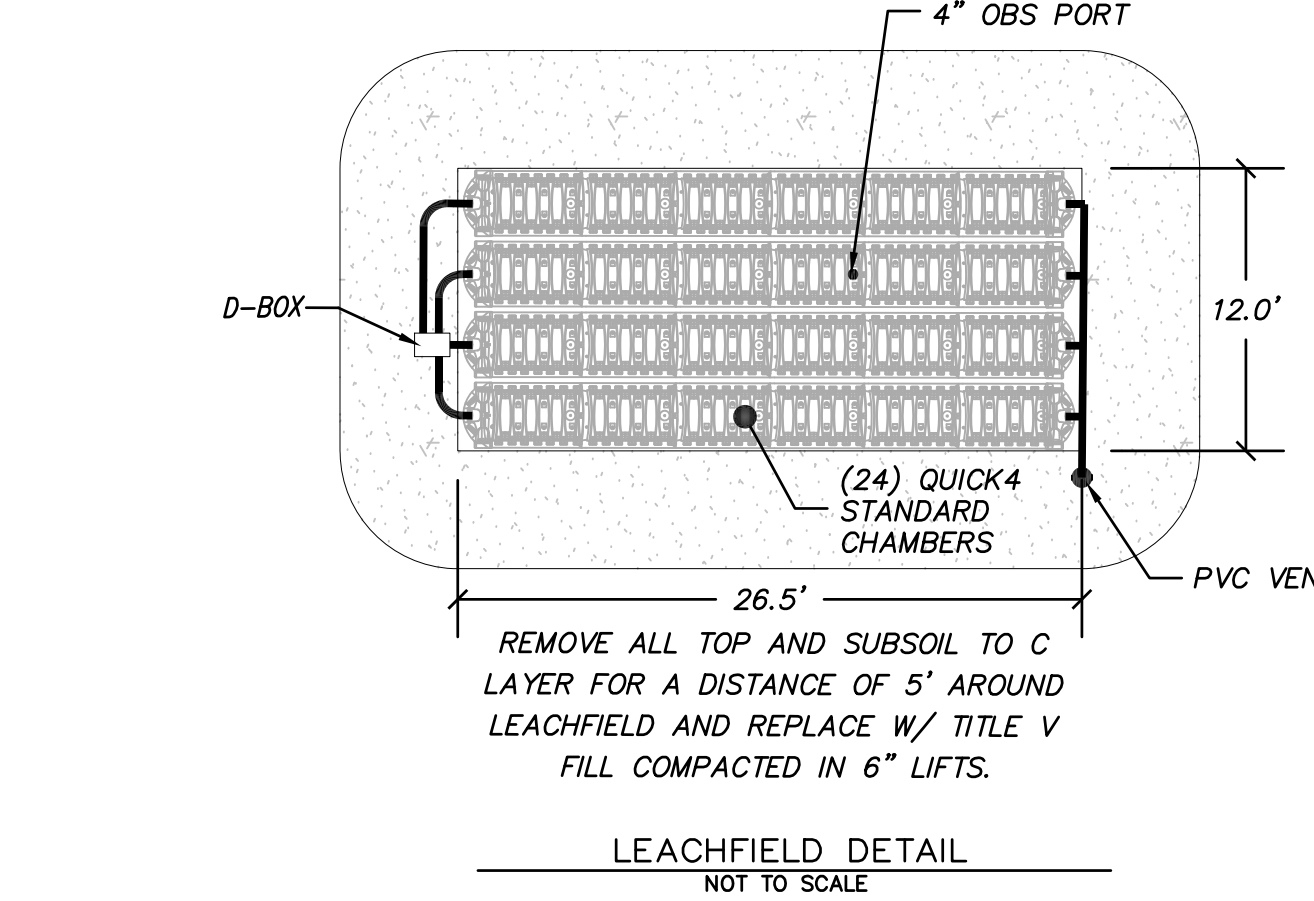
MAXIMUM FLOW ALLOWACE: 440 GPD X 2.46 ACRES = 1,082 GPD

PROPOSED FLOW: 440 GPD < 1,082 GPD

LOT DOES NOT REQUIRE NITROGEN SENSITIVE DESIGN

- GENERAL NOTES**
1. THIS PLAN IS TO BE UTILIZED ONLY FOR THE CONSTRUCTION OF THE SUBSURFACE INFILTRATION SYSTEM ILLUSTRATED HEREON.
  2. ALL CHANGES TO THIS PLAN MUST BE APPROVED BY THE TOWN OF CHARLTON
  3. ALL SITE WORK AND MATERIALS SHALL BE IN COMPLIANCE WITH TITLE 5 OF THE STATE ENVIRONMENTAL CODE AND THE TOWN OF CHARLTON BOARD OF HEALTH RULES AND REGULATIONS.
  5. ANY CONDITIONS DURING CONSTRUCTION THAT DIFFER FROM THOSE ENCOUNTERED DURING TESTING SHALL BE REPORTED TO THE ENGINEER OF RECORD AND THE LOCAL BOARD OF HEALTH IMMEDIATELY.
  6. FOR SYSTEMS CONSTRUCTED IN ALL UNSUITABLE OR IMPERVIOUS SOILS, IF ANY, MUST BE EXCAVATED AND REPLACED WITH A MINIMUM OF FIVE FEET LATERALLY IN ALL DIRECTIONS BEYOND THE OUTER PERIMETER OF THE SOIL ABSORPTION SYSTEM TO THE DEPTH OF NATURALLY OCCURRING PERVIOUS MATERIAL AS REQUIRED BY 310 CMR 15.240 AND REPLACED WITH FILL MATERIAL CONSISTING OF SELECT ON-SITE OR IMPORTED SOIL MATERIAL. THE FILL SHALL BE COMPRISED OF CLEAN GRANULAR SAND, BE FREE FROM ORGANIC MATTER AND DELETERIOUS SUBSTANCES, AND SHALL NOT CONTAIN REMEDIATION WASTE AS THAT TERM IS DEFINED IN 310 CMR 40.0000. MIXTURES AND LAYERS OF DIFFERENT CLASSES OF SOIL SHALL NOT BE USED. THE FILL SHALL NOT CONTAIN ANY MATERIAL LARGER THAN TWO INCHES. A SIEVE ANALYSIS, USING #4 SIEVE, SHALL BE PERFORMED ON A REPRESENTATIVE SAMPLE OF THE FILL. SUCH ANALYSIS MUST DEMONSTRATE THAT THE MATERIAL MEETS THE SPECIFICATIONS AS SET FORTH IN 310 CMR 15.255(3).
  7. PROPERTY LINES SHOWN ON THIS PLAN BASED ON DEED OF RECORD.
  8. OFFSETS ARE NOT TO BE USED FOR THE REPRODUCTION OF PROPERTY LINES.
  9. ALL VERTICAL ELEVATIONS BASED ON NAD 1988.
  10. NO GARBAGE DISPOSAL ALLOWED.
  11. ALL STRUCTURES AND TOP OF LEACHING LINES TO BE LINED WITH MAGNETIC TAPE FOR FUTURE LOCATION.
  12. HEAVY MACHINERY SHALL NOT BE PERMITTED TO PASS OVER THE LEACHING AREA.
  13. ALL CHANGES IN DIRECTION, INTERSECTIONS AND AT NO GREATER INTERVAL OF 100' OF SEPTIC PIPE SHALL BE FITTED WITH A CLEANOUT. CLEANOUT SHALL BE BROUGHT TO SURFACE.
  14. THE SEPTIC TANK SHALL BE INSPECTED AND PUMPED EVERY TWO YEARS.
  15. ALL EXISTING OR PROPOSED WELLS ARE SHOWN OR NOTED.
  16. THE PROPOSED WORK IS SUBJECT TO THE WETLANDS PROTECTION ACT.
  17. THE SITE DOES FALL WITHIN A FLOOD HAZARD ZONE, ZONE A, PER FEMA FLOOD MAP 25027C0951E DATED 07/04/2011.
  18. BENCHMARKS MUST BE SET PRIOR TO COMMENCEMENT OF ANY WORK.
  19. INSPECTIONS REQUIRED FOR AS-BUILT CERTIFICATION:
    - A. BOTTOM INSPECTION PRIOR TO THE INSTALLATION OF PERC SAND, 72 HOUR NOTICE REQ'D.
    - B. ALL COMPONENTS OF SEPTIC SYSTEM SHALL BE COMPLETE AND VISIBLE PRIOR TO REQUESTING A FINAL INSPECTION, 72 HOUR NOTICE REQUIRED.
    - C. FINAL COVER AND STABILIZATION INSPECT.
  20. THE INSTALLER SHALL LEAVE VERTICAL 4" PIPES AT THE END OF THE SYSTEM TO ALLOW FOR THE MEASUREMENT OF THE DEPTH OF STONE DURING INSPECTION.
  21. ALL SLOPING AND DISTURBED AREAS TO BE LOAMED, SEEDED, FERTILIZED AND MULCHED. STABILIZATION OF DISTURBED AREAS SHALL BE CHECKED THROUGHOUT CONSTRUCTION PHASE UNTIL VEGETATION IS ESTABLISHED AND REPAIRED AS NEEDED.
  22. ALL SOIL ABSORPTION SYSTEMS SHALL HAVE A MINIMUM OF ONE (1) INSPECTION PORT CONSISTING OF A FOUR (4) INCH PIPE PLACED VERTICALLY DOWN INTO THE STONE TO THE NATURALLY OCCURRING SOIL OR SAND FILL BELOW THE STONE. THE PIPE SHALL BE CAPPED WITH A SCREW TYPE CAP AND ACCESSIBLE TO WITHIN THREE (3) INCHES OF FINISH GRADE.

LEGEND			
□□□	SEPTIC TANK	D	DRAIN LINE
□□	DISTRIBUTION BOX	⊙	MANHOLE
---	EXISTING CONTOURS	B.M.	BENCHMARK
---	PROPOSED CONTOURS	⊙	TEST PIT LOCATION
---	SPOT GRADE	⊙	PERC TEST LOCATION
---	WATER LINE	⊙	PRIVATE WELL



**PETER C. ENGLE, P.E.**  
PROFESSIONAL ENGINEER  
MA LIC. NO. 53796

**McCLURE ENGINEERING, INC.**  
119 Worcester Road  
Charlton, MA 01507  
Tel: (508) 248-2005  
Fax: (508) 248-4887  
Email: peng@mcclureengineers.com

**SUBSURFACE SEWERAGE DISPOSAL SYSTEM REPAIR**  
LOCATED AT:  
73 EAST BAYLIES RD  
CHARLTON, MA 01507  
PREPARED FOR:  
COREY BROTE

REV	DATE	DESCRIPTION	MADE (APVD)

DRAWN BY: AB  
DATE: 5/12/20  
CHK BY: PE  
SCALE: 1"=20'  
PROJ. NO. 054-2139-L

**SEPTIC SYSTEM PLAN**

SHEET 1 OF 1