

NOTE:
ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC MARKING TAPE OR A COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED.
(310 CMR 15.221(12))

EXISTING SEPTIC TANK SHALL BE PUMPED, CRUSHED & REMOVED, REPLACE WITH NEW 2000 GAL SEPTIC TANK (MONOLITHIC)(H-10 LOAD)(2 COMPARTMENT)
W/ 6" STONE BENEATH 3/4" - 1 1/2" CRUSHED STONE
9" MIN. COVER 36" MAX. COVER TANKS SHALL HAVE A MIN. COVER OF 9", TANKS BURIED GREATER THAN 9" SHALL BE EQUIPPED WITH RISERS ON ALL FINISHED GRADE WITH TANK TOP OPENINGS. (310 CMR 15.228(1))
WATERTIGHT JOINTS, MANHOLES BROUGHT TO FINAL GRADE SHALL BE SECURED TO PREVENT UNAUTHORIZED ACCESS.
(310 CMR 15.228(2))

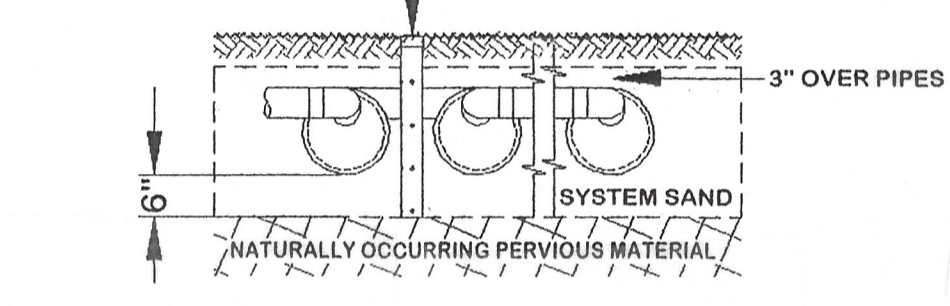
PROPOSED D-BOX/INLET TEE (9 OUTLET)
W/ 6" STONE BENEATH OUTLET LINES SHALL BE LEVEL FOR A 3/4" - 1 1/2" MINIMUM OF THE FIRST TWO FEET OF CRUSHED STONE THEIR LENGTH.
PROVIDE 9" OF COVER OVER D-BOX COVER IF EXCESS OF 9" THEN PROP A RISER TO WITHIN 6" OF FINISHED GRADE
(310CMR SEC 15.232(3)(F))

PROP. PRESBY ENVIRO-SEPTIC PIPES (8 CELLS)
8 LINES - 70.0'L - 12" (560'L.F. PIPE PROPOSED)
(1.50' O.C. SPACING) (SAND BED SIZE: 13.5'W x 72.0'L)

PROP. 4"PVC PERF SCH40 INSPECTION PORT (2)
TO BOTTOM OF SYS. SAND AND THREADED CAP WITHIN 3" OF FIN. GRADE. WRAP PIPE WITH PERMEABLE GEOTEXTILE FABRIC.

PROP SYSTEM VENT/SCREENED (4"PVC SCH40)
LOW VENT - 3' MIN ABOVE FINAL GRADE.
(SEE REMOTE VENT PIPING SLOPE DETAIL)

4"Ø PERFORATED INSPECTION PORT TO BOTTOM OF SYSTEM SAND AND THREADED CAP WITHIN 3" OF FINAL GRADE. WRAP PIPE WITH PERMEABLE GEOTEXTILE FABRIC TO ELIMINATE SAND INFILTRATION.



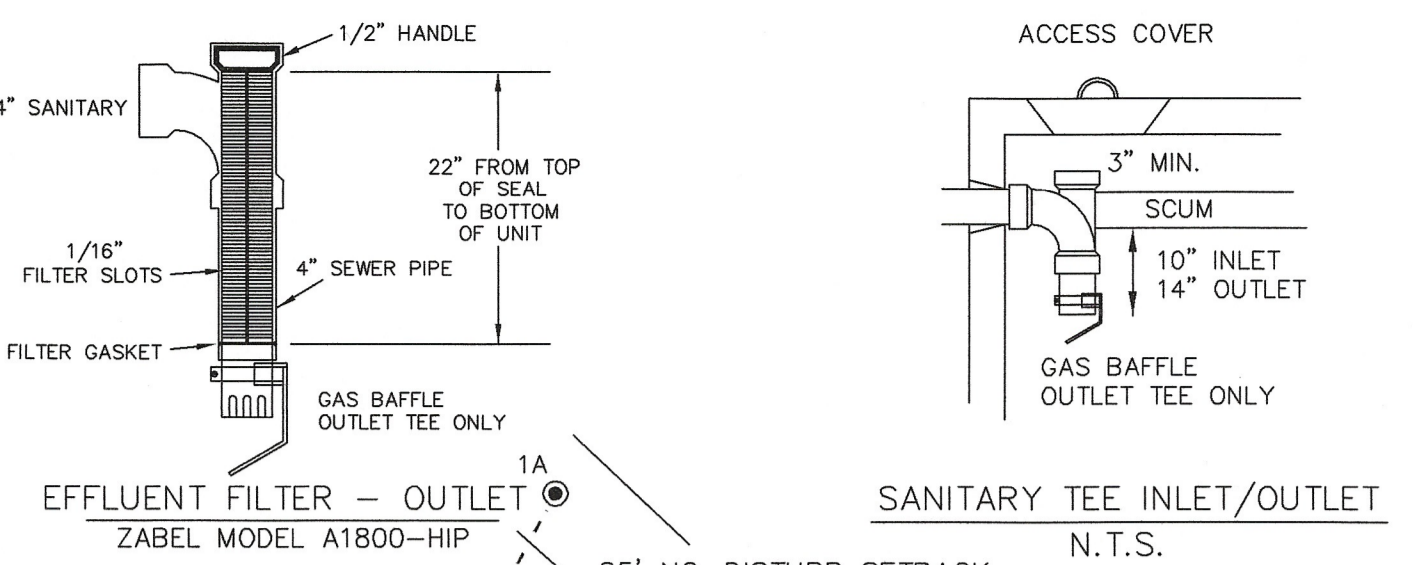
CERTIFICATIONS:
NO PART OF THIS SYSTEM IS WITHIN AN AREA NOTED BY D.E.P. AS AN ESTIMATED SETBACK AREA FOR TITLE 5.
NO PART OF THIS SYSTEM IS WITHIN 400 FEET OF PUBLIC AND SURFACE WATER SUPPLIES.
NO PART OF THIS SYSTEM IS WITHIN 200 FEET OF TRIBUTARIES TO PUBLIC AND SURFACE WATER SUPPLIES.
NO PART OF THIS SYSTEM IS WITHIN 150 FEET TO A PRIVATE WATER SUPPLY (WELL).
NO PART OF THIS SYSTEM IS WITHIN A NITROGEN SENSITIVE AREA AS DELINEATED BY D.E.P.
THIS PROPOSED SYSTEM IS NOT WITHIN 100' FEET OF A WETLAND RESOURCE AREA AS DEFINED BY 310 CMR 10.0, THE WETLAND PROTECTION ACT, AND CONFORM TO THE REQUIREMENTS OF TITLE 5.
NOTE:
1. SEPTIC TANK SHALL BE MONOLITHIC AND TESTED FOR WATER-TIGHTNESS.

GENERAL NOTES

- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR HORIZONTAL AND VERTICAL CONTROL OF ALL SYSTEM COMPONENTS.
- THIS PLAN IS TO SHOW THE DESIGN OF THE SUBSURFACE SEWAGE DISPOSAL SYSTEM ONLY. THE SYSTEM IS DESIGNED FOR FLOWS ESTIMATED UNDER DESIGN CRITERIA.
- SYSTEM IS DESIGNED TO ACCOMMODATE ONLY SANITARY SEWAGE ASSOCIATED WITH NORMAL DOMESTIC USAGE AND CONSISTING OF WATER-CARRIED PUTRESIBLE WASTE.
- THIS SYSTEM IS NOT DESIGNED FOR GARBAGE GRINDERS.
- THE SYSTEM SHALL BE VENTED THROUGH BUILDING PLUMBING AS REQUIRED BY BUILDING CODE.
- PROPERTY LINES AND BUILDING LOCATION ARE GRAPHIC ONLY. PROPERTY LINES NOT HAVING BEEN VERIFIED, NO REPRESENTATION OR CERTIFICATION AS TO THE ACCURACY OF THOSE SHOWN IS IMPLIED OR INTENDED. A BOUNDARY SURVEY BY A PROF. LAND SURVEYOR TO ESTABLISH LOT LINES ON THE GROUND MAY BE REQUIRED BY THE B.O.H. PRIOR TO CONSTRUCTION OF THE PROPOSED FACILITIES.
- PURSUANT TO LOCAL REGULATIONS, ALL PROPOSED BUILDING LOTS, BUILDINGS OR ADDITIONS SHALL COMPLY WITH THE ZONING BYLAWS.
- THE PLAN SHOWS ONLY THOSE FEATURES THAT WERE VISUALLY APPARENT ON DATE OF TOPOGRAPHY AND THE ABSENCE OF SUBSURFACE STRUCTURES, UTILITIES, ETC. IS NOT INTENDED OR IMPLIED.
- THE INSTALLER OF THIS SYSTEM MUST BE LICENSED BY THE LOCAL BOARD OF HEALTH.
- THERE ARE NO EXISTING WELLS WITHIN 100' OF THE PROPOSED SEWAGE DISPOSAL SYSTEM. SYSTEM TO BE STAKED IF WELLS LESS THAN 125'.
- DISPOSAL SYSTEM AREAS ARE TO BE RAKED (SCARIFIED) BEFORE INSTALLATION OF STONE. ALL STONES EXCEEDING 2 INCHES IN DIAMETER. ALL LOAM OR FOREIGN MATERIAL ENCOUNTERED DURING EXCAVATION ARE TO BE REMOVED FROM THE LEACHING AREA SURFACES.
- FINISHED SURFACE OF THE LEACHING AREA SHALL BE GRADED TO ASSURE WATER RUNOFF (2% MINIMUM SLOPE).
- ALL DISTURBED AREAS TO BE LOAMED, SEEDED, AND MAINTAINED TO PREVENT EROSION.
- THE SEPTIC TANK SHOULD BE PERIODICALLY INSPECTED AND MAINTAINED AND SHOULD BE PUMPED WHEN SLUDGE IN THE BOTTOM OF THE TANK EXCEEDS 1/4 OF THE DEPTH.
- ALTERNATE MANUFACTURERS FOR CONCRETE STRUCTURES AND EQUIPMENT SHOWN ON THESE PLANS MAY BE USED UPON THE WRITTEN APPROVAL OF THE DESIGN ENGINEER. ALTERNATE MANUFACTURERS WILL NOT BE USED IF THE USE OF THEIR EQUIPMENT REQUIRES DESIGN CHANGES.
- IF ANY PART OF THIS DESIGN IS TO BE ALTERED IN ANY WAY, THE DESIGN ENGINEER AS WELL AS THE APPROVING AUTHORITIES SHALL BE NOTIFIED IN WRITING BEFORE CONSTRUCTION.
- THE LOCAL BOARD OF HEALTH AGENT OR STATE INSPECTOR WILL CONDUCT PERIODIC INSPECTIONS AS NEEDED.
- A RESIDENT INSPECTOR FROM E.L.S., LLC SHALL BE ON SITE TO (A) INSPECT THE INSTALLATION OF ALL CONCRETE STRUCTURES PRIOR TO BEING BACKFILLED, (B) INSPECT THE BOTTOM OF THE LEACHING AREA AT THE TIME IT IS SCARIFIED, AND (C) INSPECT THE LEACH AREA PRIOR TO BEING BACKFILLED. E.L.S., LLC SHALL BE GIVEN AT LEAST 48 HOURS NOTICE BY THE GENERAL CONTRACTOR PRIOR TO THE COMMENCEMENT OF THE ABOVE CONSTRUCTION OPERATIONS.
- THESE PLANS AND SPECIFICATIONS ARE INTENDED TO BE EXPLANATORY OF THE WORK TO BE DONE AND OF EACH OTHER, BUT SHOULD ANY OMISSION, ERRORS, OR DISCREPANCIES APPEAR, THEY SHALL BE SUBJECT TO CORRECTION AND INTERPRETATION BY THE DESIGN ENGINEER THEREBY DEFINING AND FULFILLING THE INTENT OF THE PLANS.
- ALL UNSUITABLE MATERIAL UNDER AREA OF LEACHING SYSTEM AND 5' BEYOND SHALL BE REMOVED AND REPLACED WITH CLEAN FILL MEETING THE SPECIFICATIONS OF TITLE 5, 310 CMR 15.230(3).
- CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS IN THE FIELD. IF ANY DISCREPANCIES ARE FOUND BETWEEN EXISTING DIMENSIONS AND PLAN DIMENSIONS, CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY BEFORE PROCEEDING WITH ANY WORK.

SEPTIC TANK NOTE:

A GAS Baffle SHALL BE INSTALLED AT THE FIRST TANK COMPARTMENT OUTLET TEE AND A FILTER SHALL BE INSTALLED AT THE LAST TANK COMPARTMENT OUTLET TEE.
ALL INLETS AND OUTLETS OF THE PROPOSED TANK SHALL BE RUBBER BOOTED.
MIN. SEPTIC TANK CAPACITY REQUIRED:
825 x 200% = 1650 GALLONS
PROPOSE 2000 GALLON SEPTIC TANK

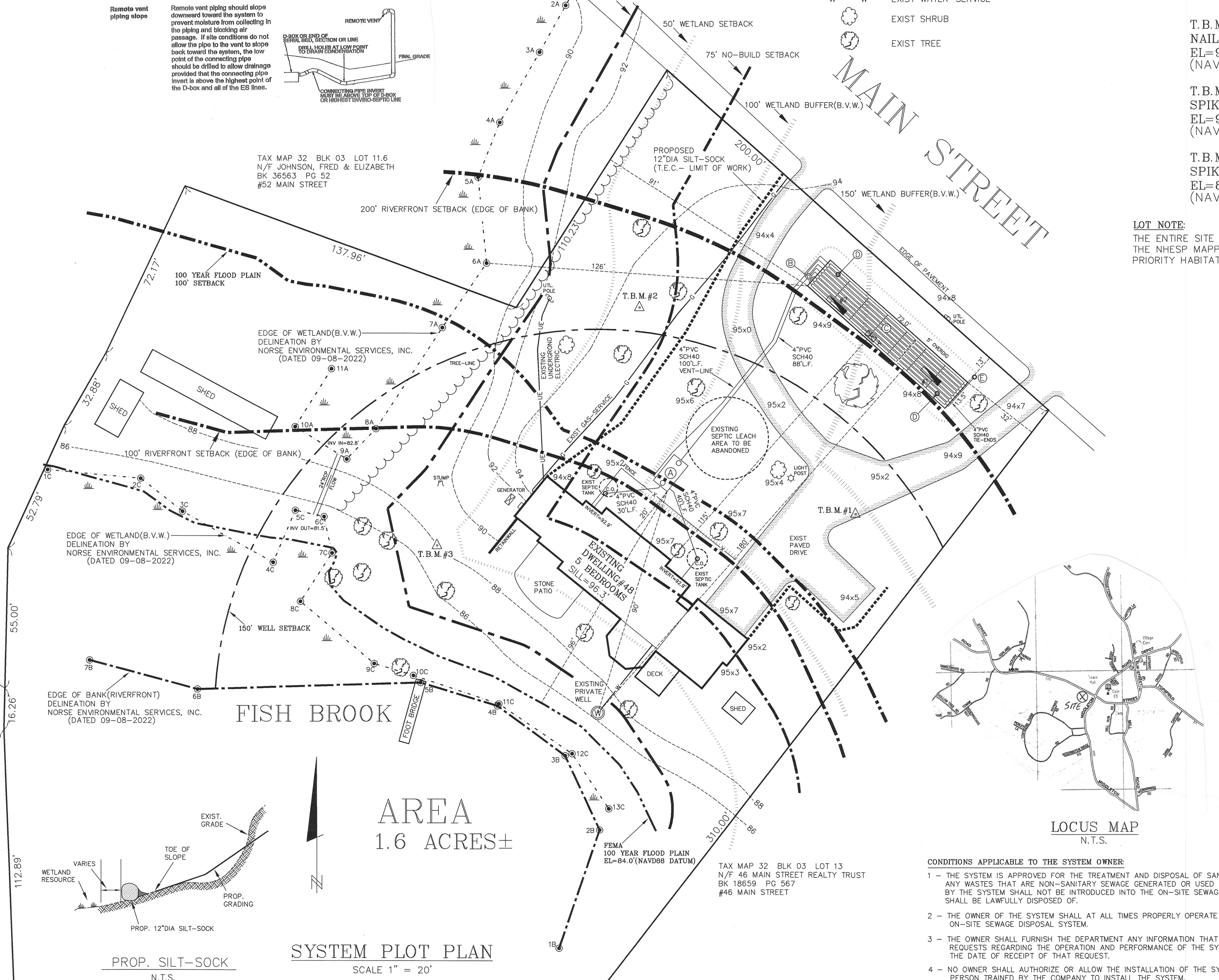


- LEGEND:**
- 100x0 SPOT ELEVATION
 - EXIST. CONTOUR
 - PROP. CONTOUR
 - EXISTING SOIL TEST LOCATION
 - EXISTING PERC. TEST LOCATION
 - EXIST WATER-SERVICE
 - EXIST SHRUB
 - EXIST TREE

THE INTENT OF THIS PLAN IS TO PROVIDE FULL COMPLIANCE WITH TITLE 5 OF THE STATE ENVIRONMENTAL CODE, AS AMENDED BY THE BOARD OF HEALTH, EXCEPT WHERE NOT POSSIBLE, AND NOTED IN THE FOLLOWING VARIANCE REQUESTS TO ACHIEVE MAXIMUM FEASIBLE COMPLIANCE.
VARIANCE REQUEST:
1 - S.A.S. SETBACK FROM WETLAND RESOURCE AREA FROM 150' REQUIRED TO 126' PROVIDED PRESBY ENVIRO SEPTIC TREATMENT SYSTEM. (LOCAL 201-9(E))
2 - SEPTIC LEACH AREA INSTALLED NO MORE THAN 36" BELOW FINISH GRADE TO 48" BELOW FINISH GRADE. (310 CMR 15.221(7)) (TO ACHIEVE A GRAVITY SYSTEM) (310 CMR 15.405(B))

- T.B.M.#1 NAIL(SET) EL=95.16' (NAVD88 DATUM)
- T.B.M.#2 SPIKE(SET) EL=94.71' (NAVD88 DATUM)
- T.B.M.#3 SPIKE(SET) EL=88.00' (NAVD88 DATUM)

LOT NOTE:
THE ENTIRE SITE IS LOCATED WITHIN THE NHESP MAPPING OF PRIORITY HABITAT - PH1999



AREA 1.6 ACRES±

SYSTEM PLOT PLAN

SCALE 1" = 20'

TAX MAP 32 BLK 03 LOT 11.3
N/F ESSEX COUNTY GREENBELT ASSOC.
BK 1619B PG 47
HAYNES ROAD

TAX MAP 32 BLK 03 LOT 13
N/F 46 MAIN STREET REALTY TRUST
BK 18659 PG 567
#46 MAIN STREET

- CONDITIONS APPLICABLE TO THE SYSTEM OWNER:**
- THE SYSTEM IS APPROVED FOR THE TREATMENT AND DISPOSAL OF SANITARY SEWAGE ONLY. ANY WASTES THAT ARE NON-SANITARY SEWAGE GENERATED OR USED AT THE FACILITY SERVED BY THE SYSTEM SHALL NOT BE INTRODUCED INTO THE ON-SITE SEWAGE DISPOSAL SYSTEM AND SHALL BE LAWFULLY DISPOSED OF.
 - THE OWNER OF THE SYSTEM SHALL AT ALL TIMES PROPERLY OPERATE AND MAINTAIN THE ON-SITE SEWAGE DISPOSAL SYSTEM.
 - THE OWNER SHALL FURNISH THE DEPARTMENT ANY INFORMATION THAT THE DEPARTMENT REQUESTS REGARDING THE OPERATION AND PERFORMANCE OF THE SYSTEM, WITHIN 21 DAYS OF THE DATE OF RECEIPT OF THAT REQUEST.
 - NO OWNER SHALL AUTHORIZE OR ALLOW THE INSTALLATION OF THE SYSTEM OTHER THAN BY A PERSON TRAINED BY THE COMPANY TO INSTALL THE SYSTEM.

REVISIONS:
12-21-2022

TRUSTEE: SHARON B. GLASS

OWNER: BRACKETT REALTY TRUST
TAX MAP 32 BLK 03 LOT 12
LOCUS DEED: BK 29126 PG 199

Engineering Land Services, LLC
P.O. BOX 41
WEST NEWBURY, MA 01985
TEL: 978-815-6744 & FAX: 978-462-6800
EMAIL: MASSPLSRG@AOL.COM

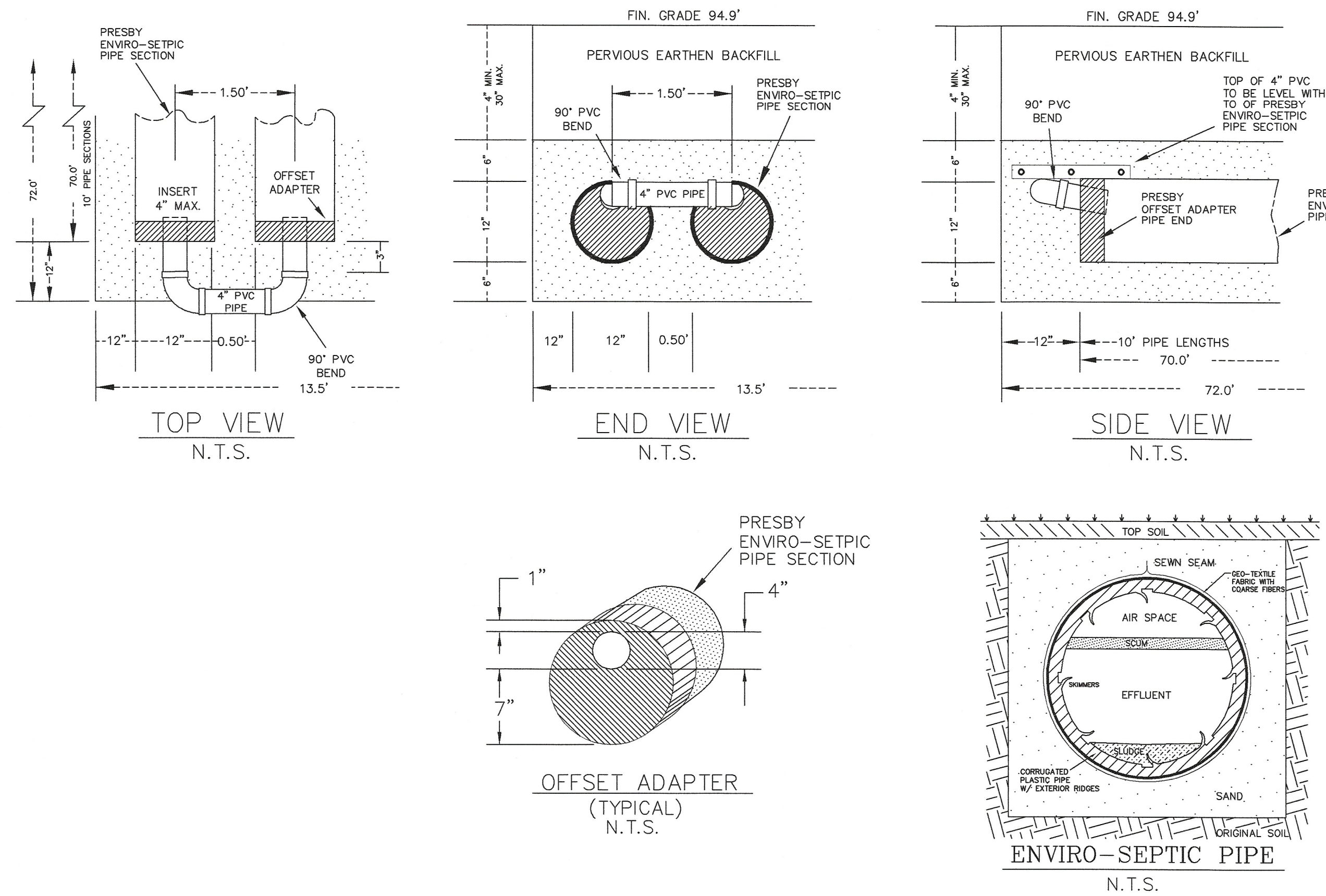
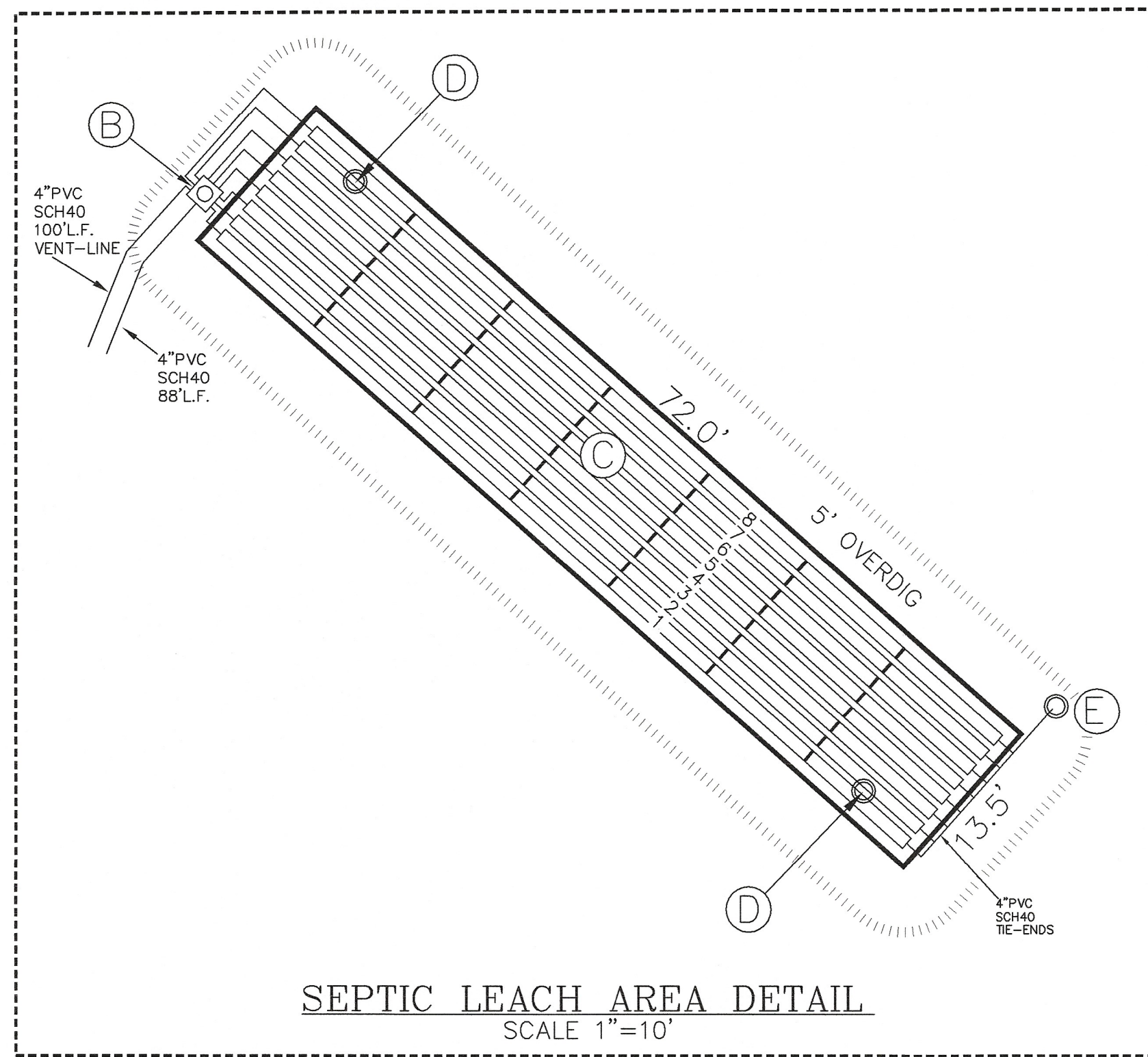
LOCATION: 48 MAIN STREET
BOXFORD, MA 01921

SANITARY DISPOSAL SYSTEM UPGRADE PLAN (REPAIR)

DRAWN: RMG
CHECKED: SWB
SCALE: 1"=20'
DATE: 10-04-2022
DWG No. 12122022

12/17/2022
DATE

SHEET No. 1 OF 3



I HEREBY CERTIFY THAT IN OCTOBER 1997, I HAVE PASSED THE EXAMINATION APPROVED BY THE D.E.P. AND THAT THE ABOVE ANALYSIS WAS PERFORMED BY ME CONSISTENT WITH THE REQUIRED TRAINING, EXPERTISE AND EXPERIENCE DESCRIBED IN CMR 15.017.

ROBERT M. GRASSO, P.L.S., SE#933 DATE 12-21-22

USDA - S.C.S. SOIL TYPES THE ENTIRE SITE IS MAPPED AS: MmA - MERRIMAC

DIMENSION TABLE:

PIPE SEPARATION = 0.50'
 LINE LENGTH = 70.0'
 PIPE CENTER O.C. = 1.50'
 BED WIDTH = 13.5'
 BED LENGTH = 72.0'

SOIL LOG

HEALTH AGENT: KENDELL LONGO
 SOIL EVALUATOR: ROBERT GRASSO
 DATE: 08-23-2022

TEST PIT #	ELEV	DESCRIPTION
01	94.8'	A - F.S.L. 10YR 3/2
	8'	BW - F.S.L. 10YR 4/6
	32'	C - M.C.S.G. 2.5Y 5/4
02	94.9'	A - F.S.L. 10YR 3/2
	9'	BW - F.S.L. 10YR 4/6
	33'	C - M.C.S.G. 2.5Y 5/4

WATER TABLE
 NONE OBSERVED
 ≥125" ESTIMATED 84.4'

PERCOLATION TESTS

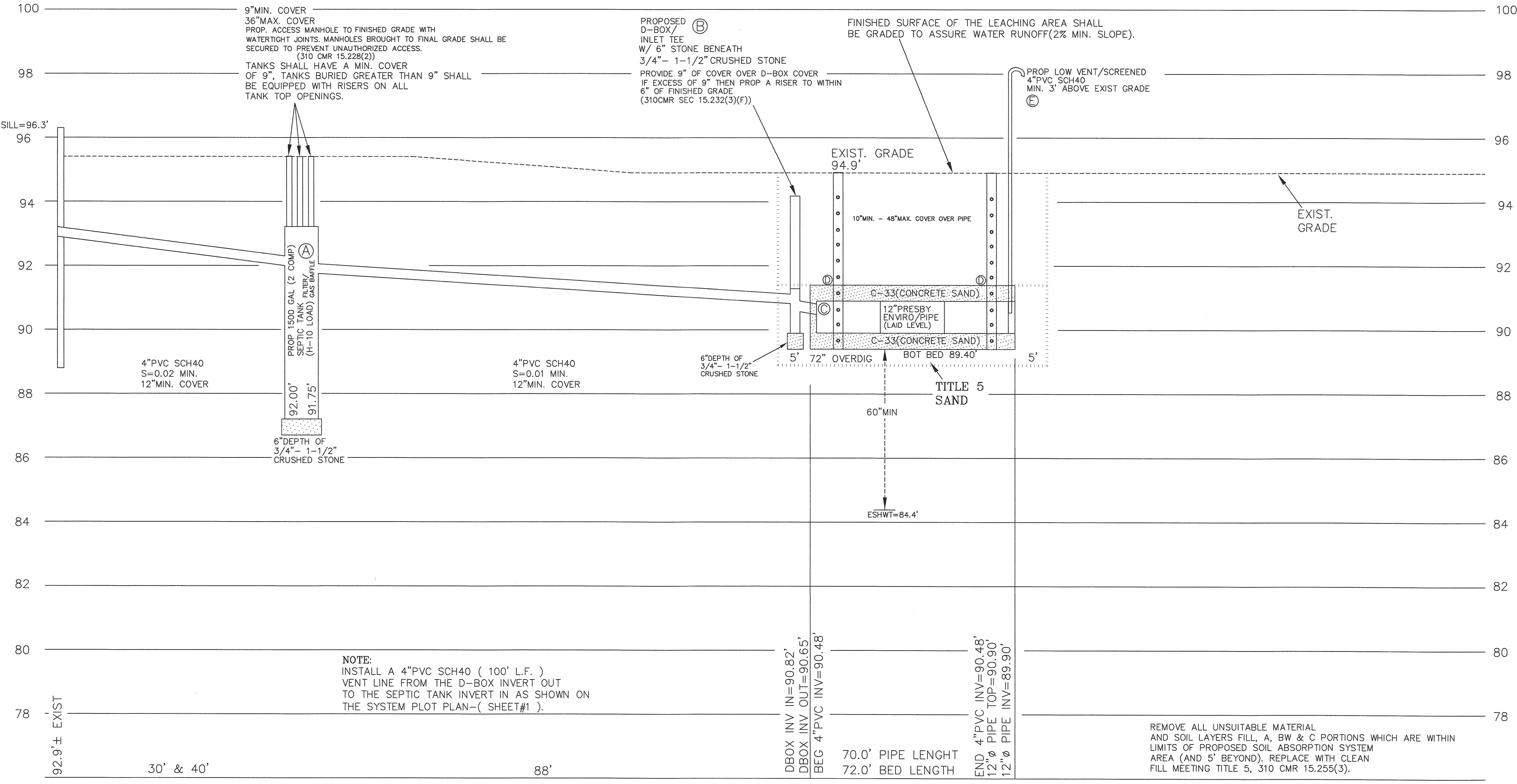
DATE: 08-23-2022

DEPTH	NO. HOLD	RATE
0"		
36"	A	
18"		

NO HOLD 12" - 9"
 NO HOLD 9" - 6"
 <2 MIN/INCH RATE

INVERT TABLE

ITEM	ELEVATION
AT BLDG	92.9' ± EXIST
TANK IN	92.00'
TANK OUT	91.75'
D-BOX IN	90.82'
D-BOX OUT	90.65'
BEG 4" PIPE	90.48'
END 4" PIPE	90.48'
TOP 12" PIPE	90.90'
12" PIPE INV	89.90'
BOTTOM BED	89.40'
GROUNDWATER	84.4'



DESIGN CRITERIA (<2 MIN/INCH)
 USE 0.74 GPD/S.F. - CL I (SAND)
 NUMBER OF BEDROOMS: 5 DESIGN FLOW: 165 GALLONS PER BEDROOM
 TOTAL No. ROOMS: 11
 TOTAL DAILY FLOW: 825 GPD. LEACHING AREA: 1115 S.F.
 MIN. 525' L.F. OF ENVIRO PIPE REQ'D. 669 S.F. - MIN. PRESBY BED SIZE
 MIN. 1.50' O.C. PIPE SPACING

NO GARBAGE GRINDER TO BE USED.

ACTUAL LEACHING AREA PROVIDED: 972 S.F.
 CALCULATED DAILY FLOW: SAND BED SIZE: 13.5'W x 72.0'L = 972 S.F.

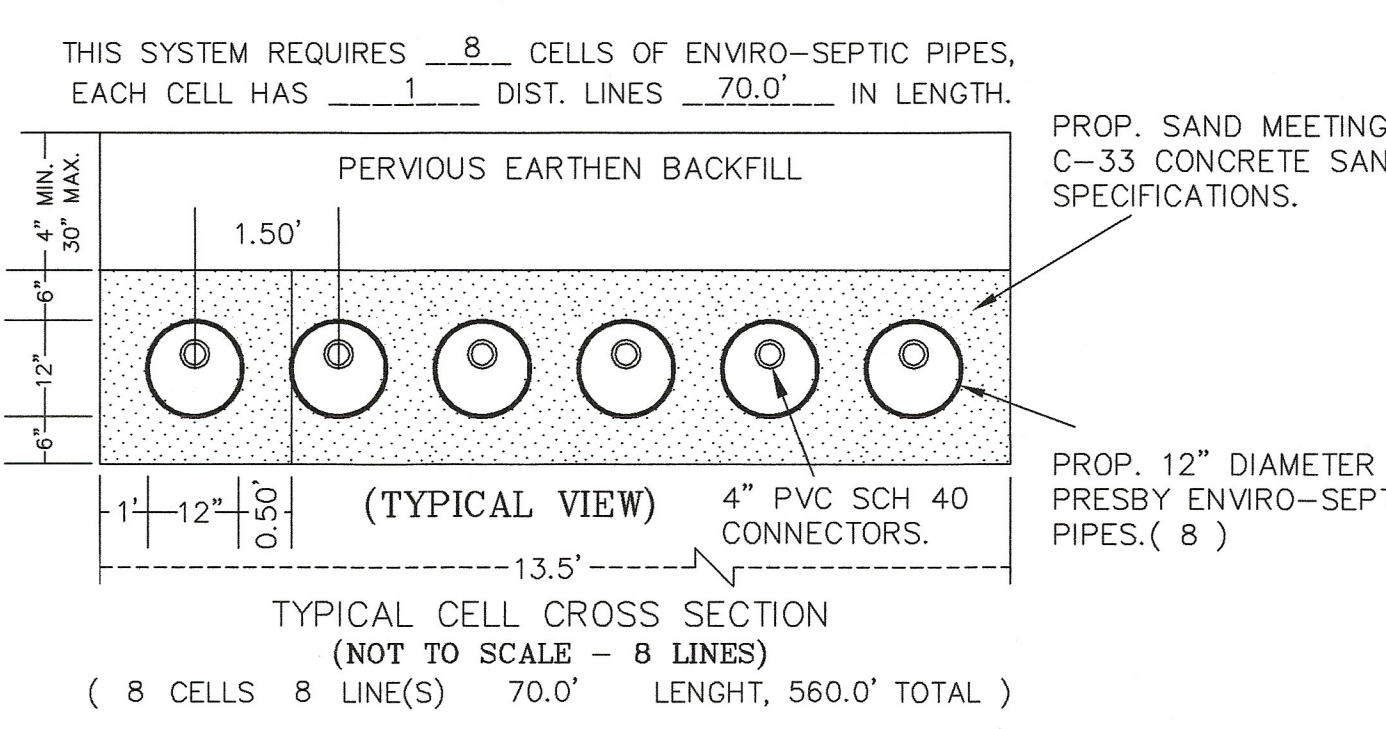
560' L.F. x 1.57 GAL/L.F. AT <2 MPI = 879 GPD ≥ 825 GPD REQ'D.
 8 LINES (70.0' - 1.50' O.C. + 1.0 SAND AROUND)

NOTES:

REMOVE ALL UNSUITABLE SOIL MATERIAL FOR A MINIMUM OF 5' ALL AROUND LEACH AREA AND (72") BELOW EXISTING GRADE, AND REPLACE WITH CLEAN FILL MEETING TITLE 5, 310 CMR 15.255(3).
 INSTALL FLOW LEVELERS AT DISTRIBUTION BOX OUTLETS. (GRAVITY ONLY) DIMENSIONS, DETAILS, AND SHAPE OF SEPTIC TANK AND DISTRIBUTION BOX WILL VARY SLIGHTLY WITH MANUFACTURER.

ALL UNITS SHALL CONFORM WITH THE REGULATIONS OF TITLE 5 OF THE MASSACHUSETTS ENVIRONMENTAL CODE, AND WITH ALL APPLICABLE LOCAL BOARD OF HEALTH REQUIREMENTS.

PRESBY ENVIRO-SEPTIC SYSTEM CANNOT BE USED WITH A PRESSURE DISTRIBUTION SYSTEM.



NOTE: SET TANK INVERTS TO MEET EXISTING BUILDING SEWER INVERT.

SYSTEM PROFILE
 SCALE: VER. 1" = 2'

NOTE: ALL OTHER GREYWATER PIPES SERVICING WASHERS, SINKS, ETC SHALL BE CONNECTED TO THE SEPTIC TANK.

REVISIONS:
 12-21-2022

DRAWN: RMG
CHECKED: SMB
SCALE: AS NOTED
DATE: 10-04-2022
DWG No.: 13-21-22

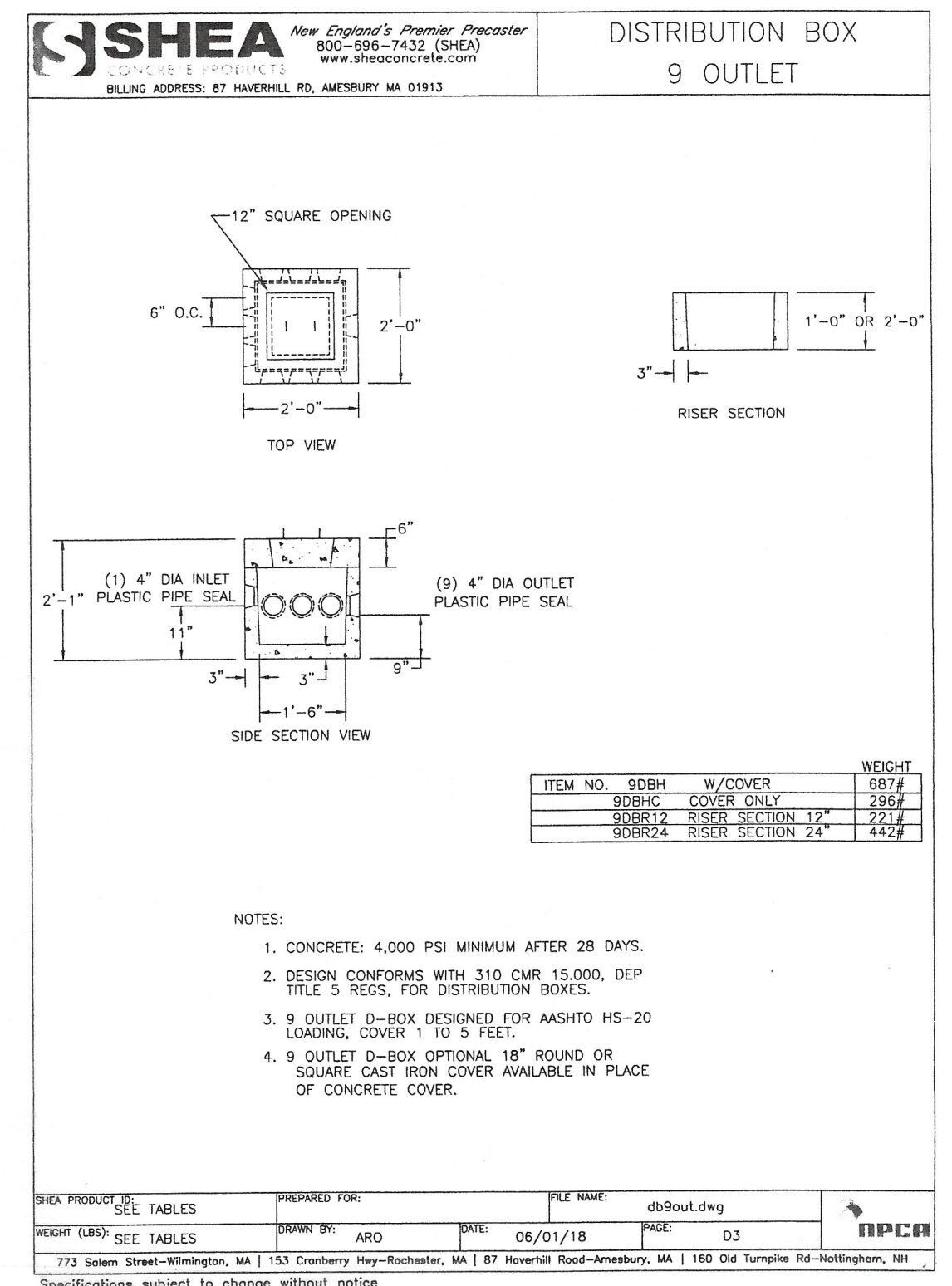
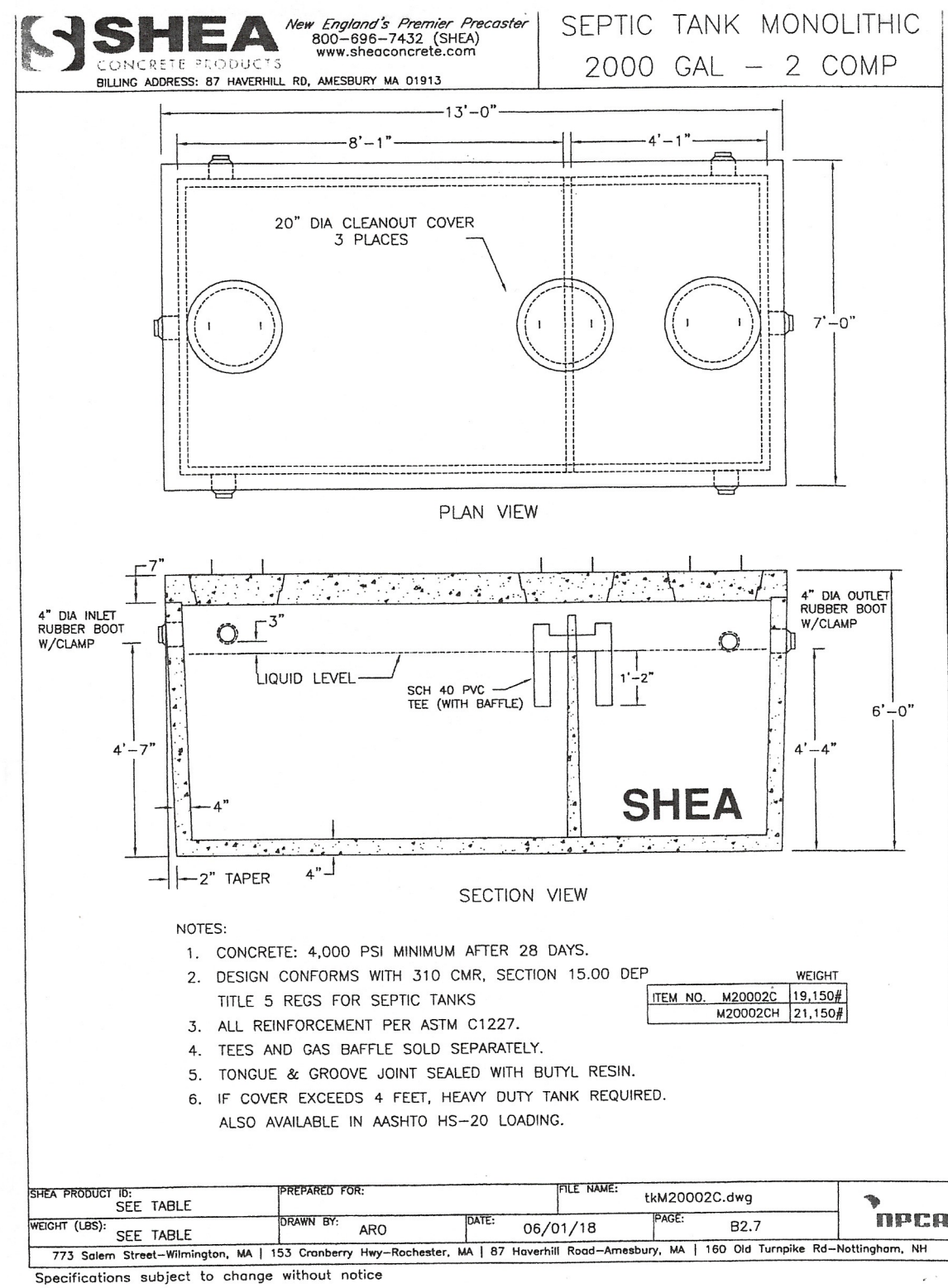
TRUSTEE: SHARON B. GLASS
OWNER: BRACKETT REALTY TRUST
 TAX MAP 32 BLK 03 LOT 12
 LOCUS DEED: BK 29126 PG 199
LOCATION: 48 MAIN STREET
 BOXFORD, MA 01921

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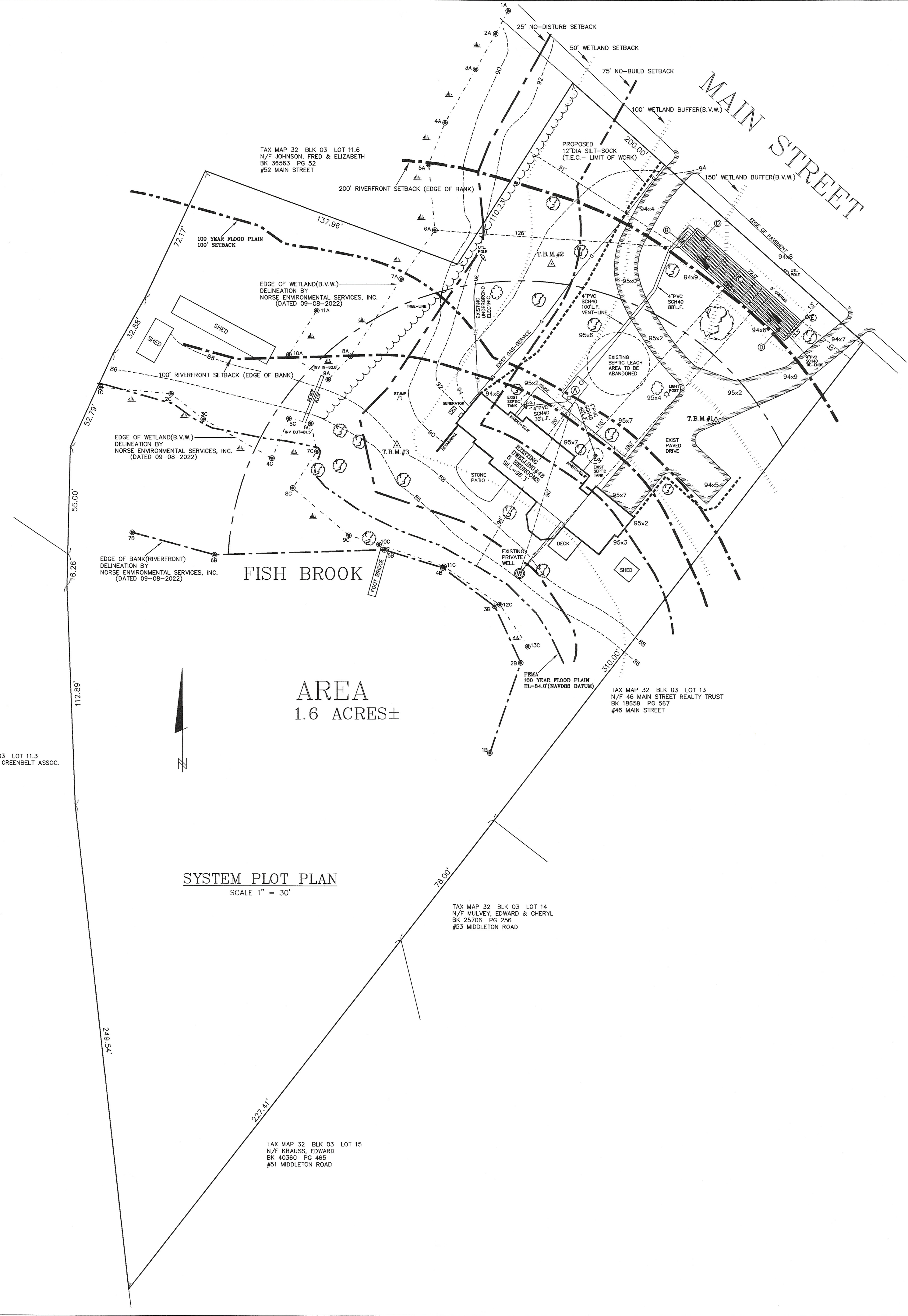
SANITARY DISPOSAL SYSTEM UPGRADE PLAN (REPAIR)

Professional Seals:
 ROBERT M. GRASSO, P.L.S., SE#933
 SHARON B. GLASS, LAND SURVEYOR, LICENSE # 13-21-22

SHEET No. 2 OF 3



TAX MAP 32 BLK 03 LOT 11.3
 N/F ESSEX COUNTY GREENBELT ASSOC.
 BK 16198 PG 47
 HAYNES ROAD



Engineering Land Services, LLC
 P.O. BOX 41
 WEST NEWBURY, MA 01985
 TEL: 978-815-6744 & FAX: 978-462-6800
 EMAIL: MASSPLSRG@AOL.COM

TRUSTEE: SHARON B. GLASS

OWNER: BRACKETT REALTY TRUST
 TAX MAP 32 BLK 03 LOT 12
 LOCUS DEED: BK 29126 PG 199

**LOCATION: 48 MAIN STREET
 BOXFORD, MA 01921**

**SANITARY DISPOSAL
 SYSTEM UPGRADE PLAN
 (REPAIR)**

REVISIONS:

12-21-2022	
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DRAWN: RMG
CHECKED: SWB
SCALE: AS NOTED
DATE: 10-04-2022
DWG No. 10000000000000000000

PROFESSIONAL SEAL:
 ROBERT M. GRASSO
 P.E. 019215
 LAND SURVEYOR
 12/21/22

DATE: 12/21/22

SHEET No. 3 OF 3