

SITE NOTES:

1. RECORD OWNER: ANDRZEJ P. & ALEKSANRA W. KOCIA
0 APPLETON LANE
BOXFORD, MA 01921
BOOK 3506B, PAGE 122
2. RECORD PLANS: PROPERTY LINE INFORMATION COMPILED FROM "DEFINITIVE PLAN BOXFORD, MASS." PREPARED BY "HAYES ENGINEERING INC.", DATED "OCTOBER 6, 1982" RECORDED WITH THE ESSEX REGISTRY OF DEEDS, PLAN BOOK 189 PLAN 22.
3. WETLANDS: WETLANDS DELINEATED BY DEROSA ENVIRONMENTAL CONSULTING, INC. 167 MAIN STREET, ROWLEY, MA. (978-948-7717) ON OCTOBER 20, 2020.
4. WATER SUPPLY: THERE IS NO KNOWN DRINKING WATER SUPPLY ZONE IT'S AND NO KNOWN INTERIM WELLHEAD PROTECTION ZONES ON THE SUBJECT PARCEL BASED ON THE DEPARTMENT OF ENVIRONMENTAL PROTECTION MAPS.
5. FLOOD PLAIN: THE AREA OF WORK ON THE PROPERTY IS SITUATED IN A ZONE 'X' AS ILLUSTRATED ON THE MOST RECENT FLOOD INSURANCE RATE MAP PANEL 25009C-0234-F WITH EFFECTIVE DATE OF JULY 3, 2012.
6. DATUM: ELEVATIONS SHOWN HEREON ARE BASED ON AN ASSUMED VERTICAL DATUM.
7. EXISTING CONDITIONS: EXISTING CONDITIONS INFORMATION OBTAINED FROM A FIELD SURVEY PERFORMED BY THE MORIN-CAMERON GROUP, INC. IN NOVEMBER 2020.

SEPTIC SYSTEM DESIGN DATA:

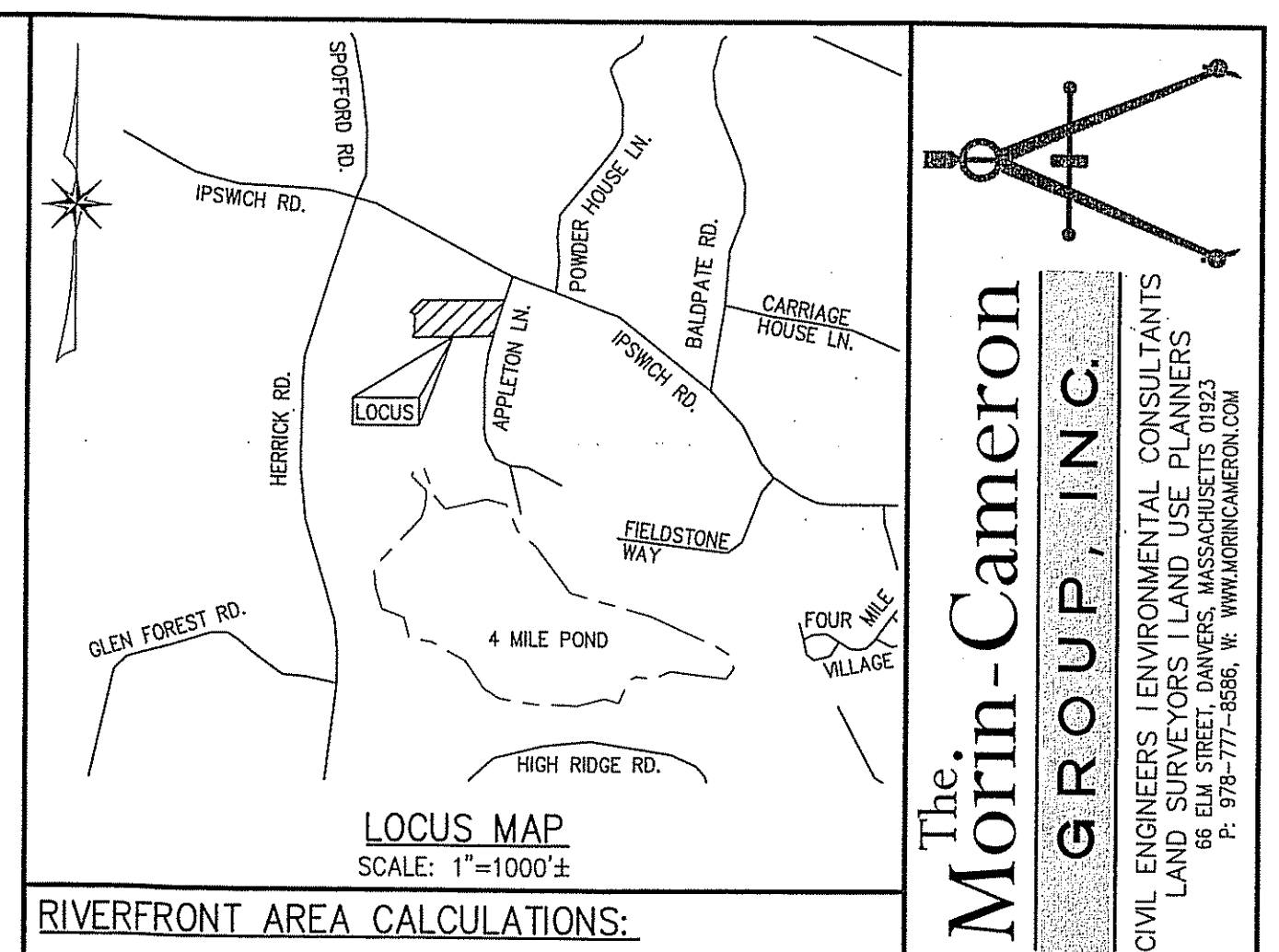
1. BUILDING TYPE: SINGLE FAMILY DWELLING
2. NO. OF BEDROOMS: 5 BEDROOMS
3. DESIGN FLOW (TITLE 5): 5 X 110 GPD/BEDROOM = 550 GPD
4. DESIGN PERCOLATION RATE: CLASS I SOIL, 2 MPI, LTAR = 0.74 GPD/SF
5. SOIL ABSORPTION REQUIREMENTS: (SYSTEM SHALL BE DESIGNED TO ACCOMMODATE A GARBAGE GRINDER PER BOXFORD BOH REGULATIONS) $(550\text{ GPD} \times 1.5) / (0.74\text{ GPD/SF}) = 1,115\text{ SF (REQUIRED)}$
6. SEPTIC TANK DESIGN REQUIREMENT: USE 2-COMPARTMENT SEPTIC TANK
FIRST COMPARTMENT: 2 X 550 GPD = 1,100 GAL.
SECOND COMPARTMENT: 1 X 550 GPD = 550 GAL.
TOTAL VOLUME REQUIRED: 1,650 GAL.
USE 2,000 GAL 2-COMPARTMENT (MONOLITHIC) SEPTIC TANK
7. LEACH TRENCH SIZE REQUIREMENT:
BOTTOM AREA = 0.74 GAL/SF X 3 SF/LF = 2.22 GAL/LF
SIDEWALL AREA = 0.74 GAL/SF X (2X2) SF/LF = 2.96 GAL/LF
TOTAL GALLONS PER LINEAR FOOT = 5.18 GAL/LF

REQUIRED LENGTH OF TRENCH = $(550 \times 1.5) / 5.18 = 159.3\text{ LINEAR FEET (USE 160 LF)}$
USE 2 TRENCHES: 80' LONG, 3' WIDE, 2' DEEP

TOTAL BOTTOM & SIDEWALL AREA = $[(2' \times 3' \times 2) \times 80'] \times 2 = 1,120\text{ SF}$
TOTAL LEACH TRENCH SYSTEM CAPACITY = 1,120 SF X 0.74 GAL/SF = 828 GAL. (825 GAL. REQUIRED)

GENERAL NOTES:

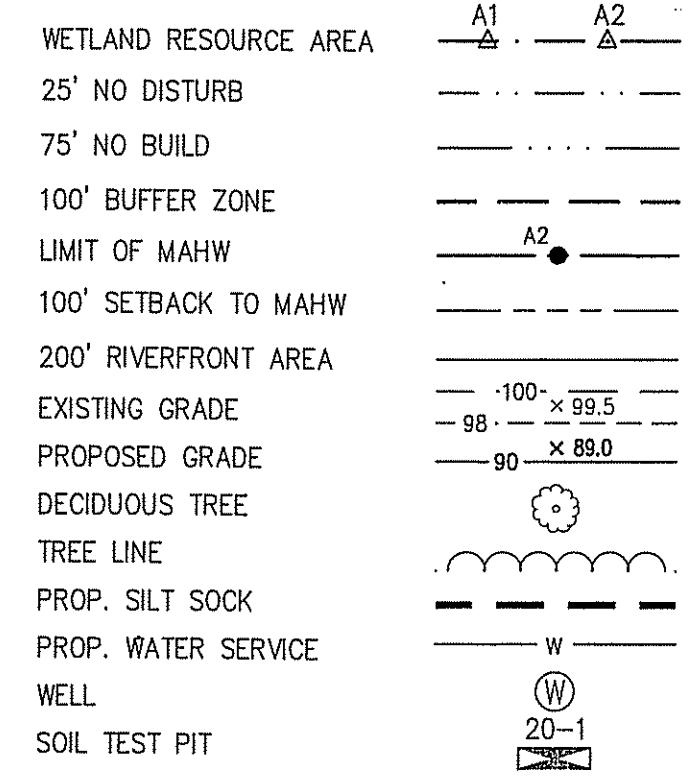
1. THE MORIN-CAMERON GROUP SHALL PROVIDE HORIZONTAL CONTROL FOR ALL SYSTEM COMPONENTS PRIOR TO CONSTRUCTION.
2. THIS PLAN IS TO SHOW THE DESIGN OF THE SUBSURFACE SEWAGE DISPOSAL SYSTEM ONLY. THE SYSTEM IS DESIGNED FOR FLOWS ESTIMATED UNDER DESIGN CRITERIA.
3. SYSTEM IS DESIGNED ONLY TO ACCOMMODATE SANITARY SEWAGE ASSOCIATED WITH NORMAL DOMESTIC USAGE AND CONSISTING OF WATER-CARRIED PUTRESCIBLE WASTE.
4. THE SYSTEM IS DESIGNED FOR A GARBAGE GRINDER, HOWEVER ONE IS NOT RECOMMENDED BY THE DESIGN ENGINEER.
5. THE PLAN SHOWS ONLY THOSE FEATURES THAT WERE VISUALLY APPARENT ON DATE OF THE TOPOGRAPHY.
6. THE INSTALLER OF THIS SYSTEM MUST BE LICENSED BY THE LOCAL BOARD OF HEALTH FOR INSTALLATION OF THE LEACHING FACILITY.
7. THERE ARE NO KNOWN POTABLE WELLS WITHIN 150 FEET OF THE PROPOSED LEACHING FACILITY.
8. DISPOSAL SYSTEM AREAS ARE TO BE RAKED (SCARIFIED) BEFORE INSTALLATION OF STONE. ALL STONES EXCEEDING 2 INCHES IN EXCAVATION ARE TO BE REMOVED FROM THE LEACHING AREA BED.
9. FINISHED SURFACE OF THE LEACHING AREA SHALL BE GRADED TO ASSURE WATER RUNOFF (2% MINIMUM SLOPE).
10. ALL DISTURBED AREAS TO BE LOAMED, SEEDED, AND MAINTAINED TO PREVENT EROSION.
11. THE SEPTIC TANK SHOULD BE PERIODICALLY INSPECTED AND MAINTAINED AND SHOULD BE PUMPED WHEN THE SLUDGE IN THE BOTTOM EXCEEDS 1/4 OF THE DEPTH.
12. ALTERNATE MANUFACTURES FOR CONCRETE STRUCTURES AND EQUIPMENT SHOWN ON THESE PLANS MAY BE USED UPON THE WRITTEN APPROVAL OF THE DESIGN ENGINEER. ALTERNATE MANUFACTURES WILL NOT BE USED IF THE USE OF THEIR EQUIPMENT REQUIRES DESIGN CHANGES.
13. NO CHANGES ARE TO BE MADE IN THE FIELD WITHOUT THE APPROVAL OF THE BOARD OF HEALTH OR ITS DESIGNEE AND THE DESIGN ENGINEER.
14. ALL WORK IS TO COMPLY WITH THE COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION AGENCY STATE SANITARY CODE, TITLE 5 AND ANY LOCAL BOARD OF HEALTH SUPPLEMENTARY REGULATIONS.
15. THE LOCAL BOARD OF HEALTH AGENT WILL CONDUCT PERIODIC INSPECTIONS AS NEEDED.
16. 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. THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER OF ANY DISCREPANCIES PRIOR TO INSTALLATIONS.
17. ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC MARKING TAPE IN ACCORDANCE WITH 310 CMR 15.221(12).
18. THE PROPOSED PROJECT IS NOT LOCATED WITHIN A NITROGEN SENSITIVE AREA BASED ON THE DEPARTMENT OF ENVIRONMENTAL PROTECTION MAPS.
19. UNDERGROUND UTILITY INFORMATION AND LOCATIONS WERE NOT AVAILABLE AT THE TIME OF SURVEY. LOCATIONS OF ALL UTILITIES SHOULD BE CONFIRMED WITH THE UTILITY PROVIDED PRIOR TO THE COMMENCEMENT OF ANY SITE WORK. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES.
20. EXISTING SEPTIC INFORMATION FOR 282 IPSWICH ROAD TAKEN FROM A TITLE V INSPECTION REPORT BY DEAN LUSCOMB II & SONS DATED JUNE 2, 2015.



RIVERFRONT AREA CALCULATIONS:

- TOTAL RIVERFRONT AREA ON LOT = 41,173 SF ±
- TOTAL RIVERFRONT AREA DISTURBANCE = 800 SF ±
- % RIVERFRONT AREA DISTURBANCE = 1.9%

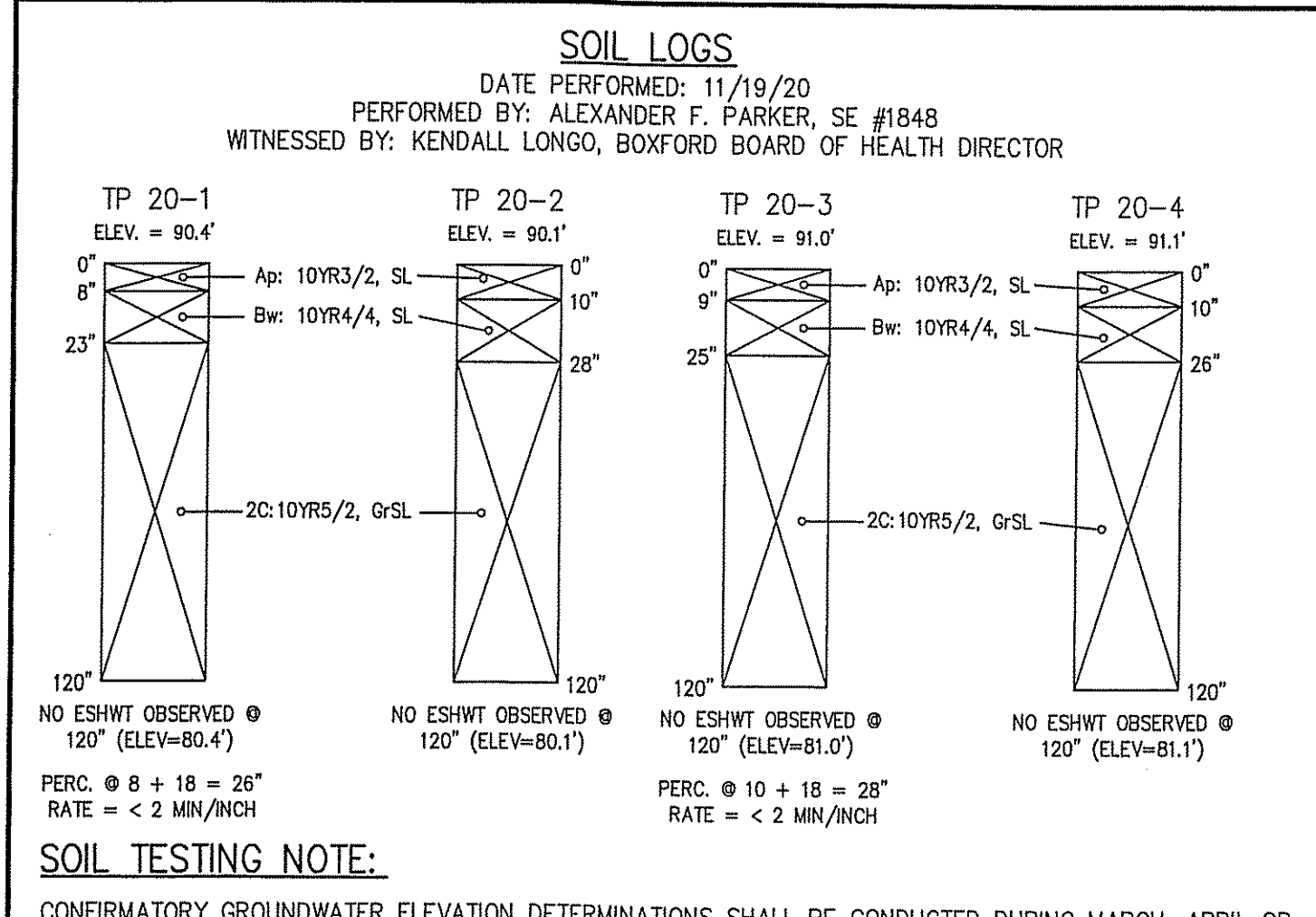
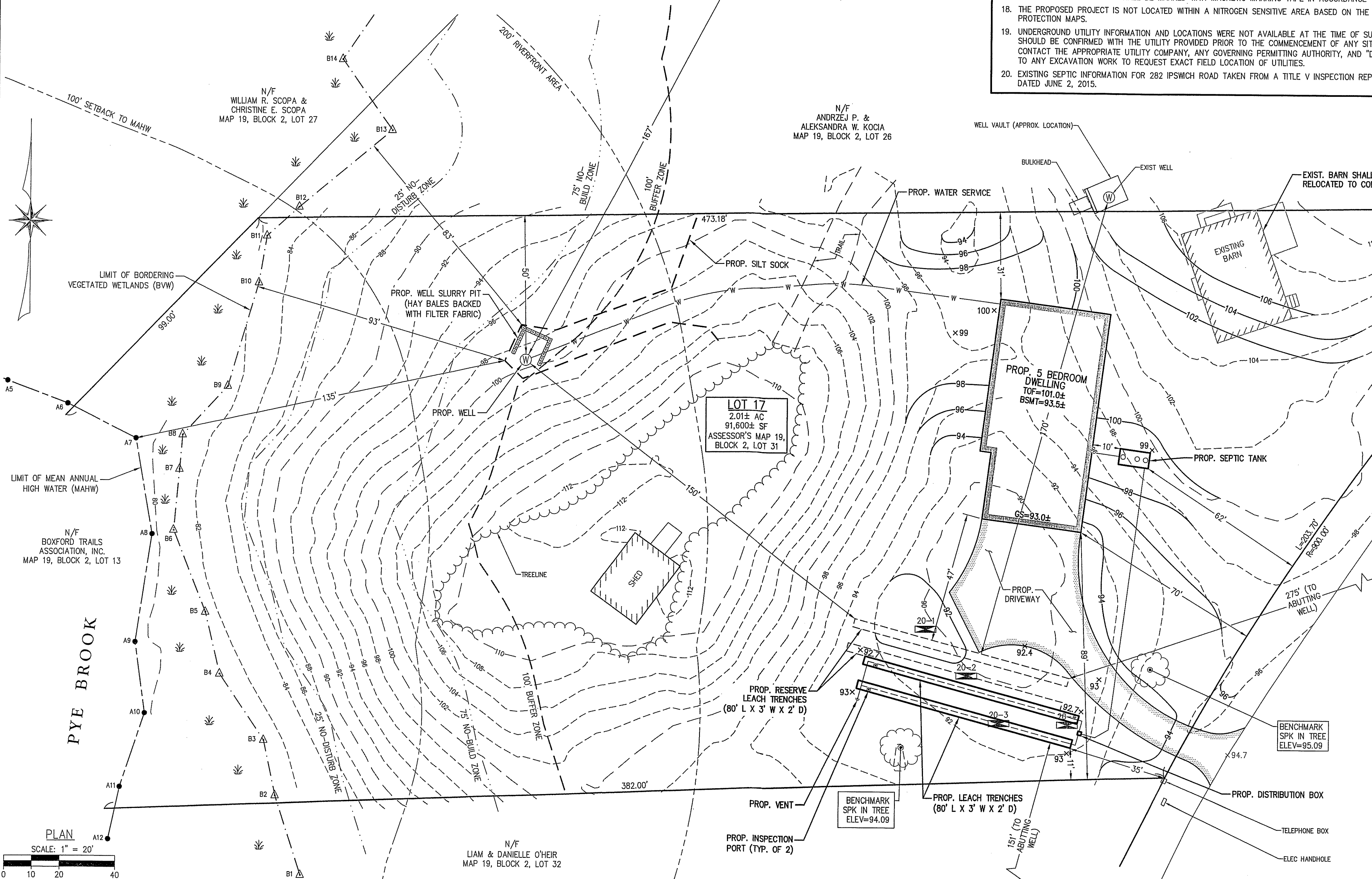
LEGEND:



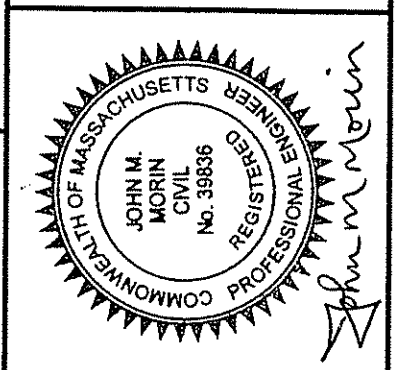
ABBREVIATIONS:

AC	APPROX	ACRES
BIT	BITUMINOUS	APPROXIMATE
BVW	BORDERING VEGETATED WETLAND	BITUMINOUS
BSMT	BASMENT	BORDERING VEGETATED WETLAND
CONC	CONCRETE	BASMENT
DIA	DIAMETER	CONCRETE
ELEV	ELEVATION	DIAMETER
ESHWT	ESTIMATED SEASONAL HIGH WATER TABLE	ELEVATION
EXIST	EXISTING	ESTIMATED SEASONAL HIGH WATER TABLE
FND	FOUNDATION	EXISTING
FT	FOOT	FOUNDATION
GS	GARAGE SLAB	FOOT
INV	INVERT	GARAGE SLAB
L	LENGTH	INVERT
MAHW	MEAN ANNUAL HIGH WATER	LENGTH
MAX	MAXIMUM	MEAN ANNUAL HIGH WATER
MIN	MINIMUM	MAXIMUM
N/F	NOW OR FORMERLY	MINIMUM
PERF	PERFORATED	NOW OR FORMERLY
PROP	PROPOSED	PERFORATED
PSI	POUNDS PER SQUARE INCH	PROPOSED
PVC	POLYVINYL CHLORIDE	POUNDS PER SQUARE INCH
R	RADIUS	POLYVINYL CHLORIDE
SF	SQUARE FEET	RADIUS
SPK	SPIKE	SQUARE FEET
TOP	TOP OF FOUNDATION	SPIKE
TYP	TYPICAL	TOP OF FOUNDATION
WF	WETLAND FLAG	TYPICAL

APPLETON LANE
(PUBLIC-VARIABLE WIDTH)



The Morin-Cameron GROUP, INC.
CIVIL ENGINEERS ENVIRONMENTAL CONSULTANTS
LAND SURVEYORS LAND USE PLANNERS
P. 978-777-8596 W. WWW.MORINCAMERON.COM

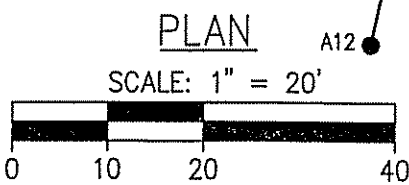


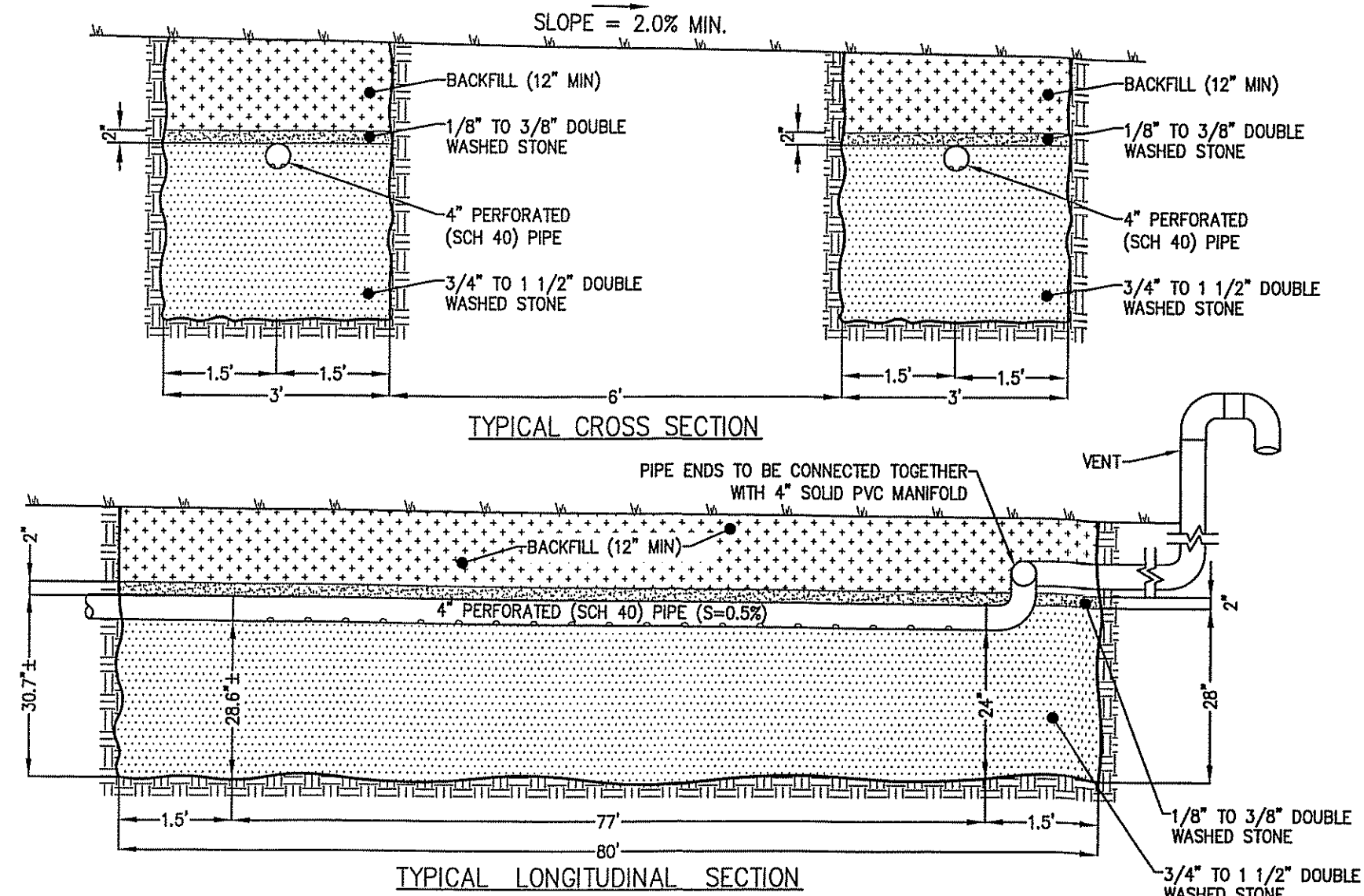
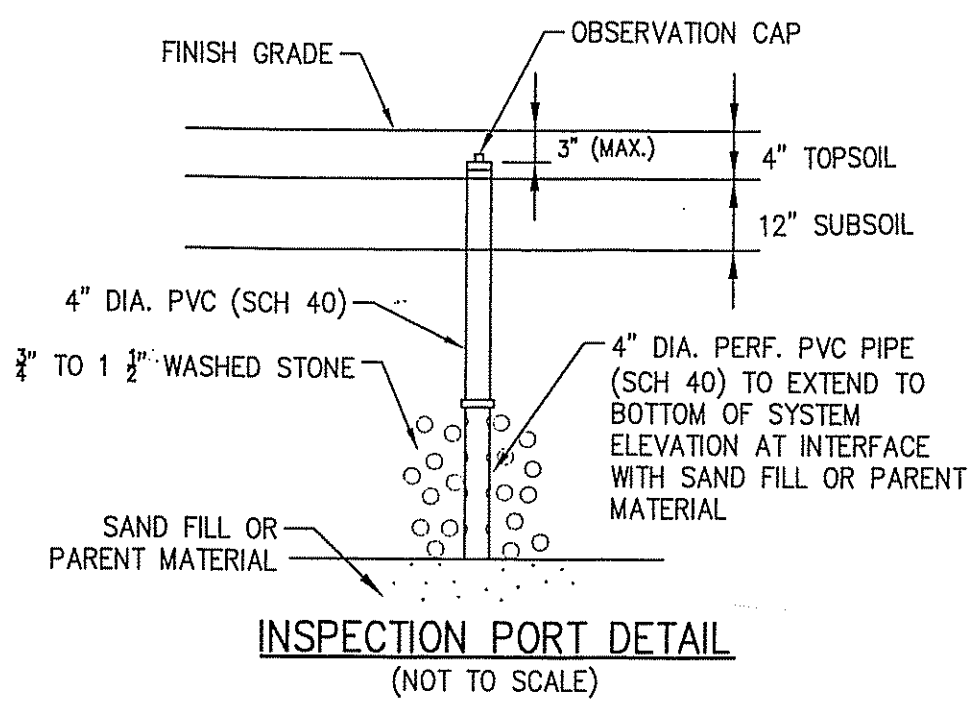
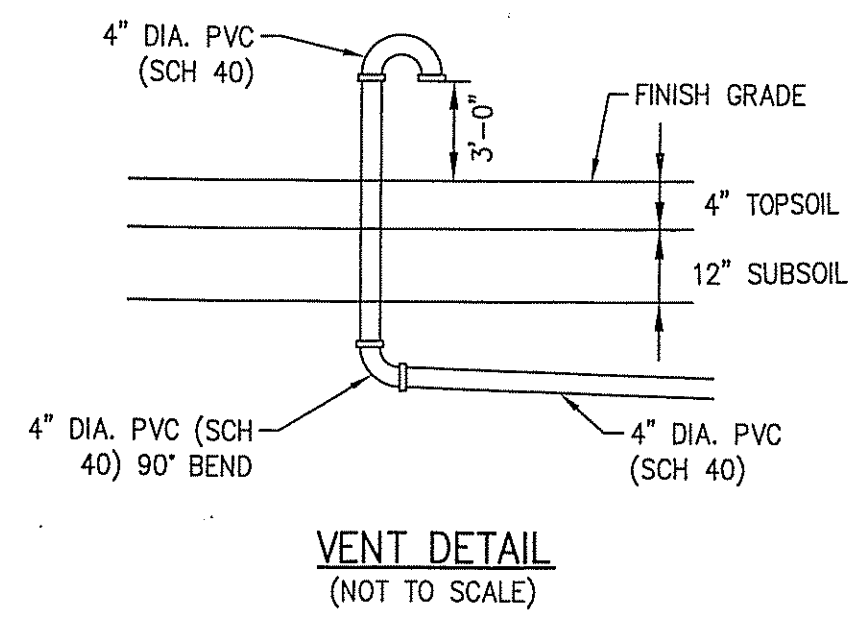
SURVEY BY: PM/SR
DRAFTED BY: CMB
CHECKED BY: DJP
APPROVED BY: JMM
SCALE: AS NOTED
DATE: MARCH 11, 2021

NO.	DESCRIPTION	DATE

SANITARY DISPOSAL SYSTEM PLAN
PREPARED FOR:
ANDRZEJ KOCIA
LOT 17 - 0 APPLETON LANE
BOXFORD, MASSACHUSETTS

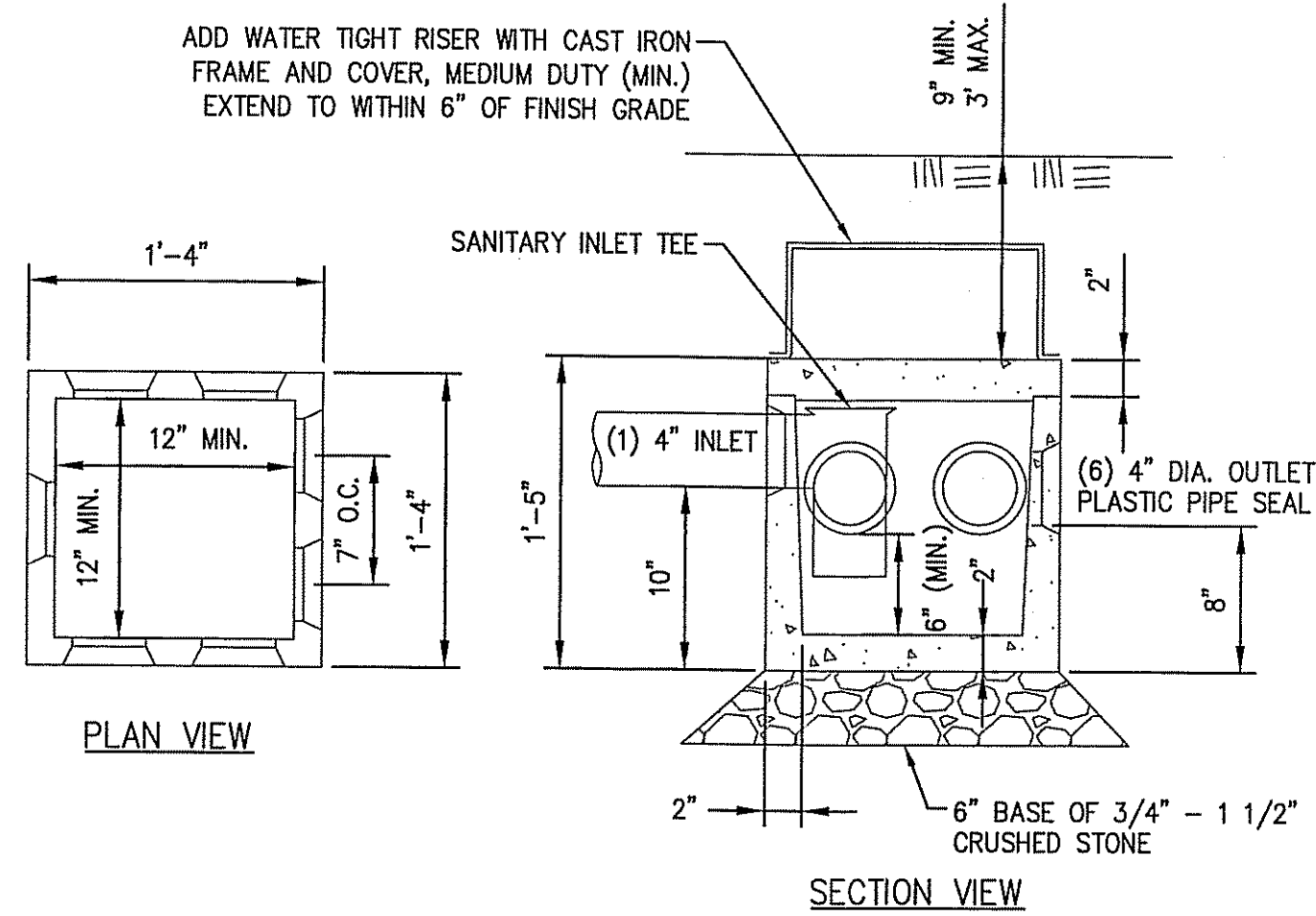
DRAWING NO. **S - 4018**
SHEET NO. **1 OF 2**





NOTES:
 1. DOUBLE WASHED STONE SHALL BE FREE FROM IRONS, FINES & DUST IN PLACE.
 2. BOTTOM OF BED SHALL BE SCARIFIED TO A DEPTH OF 6" BEFORE STONE IS PLACE.

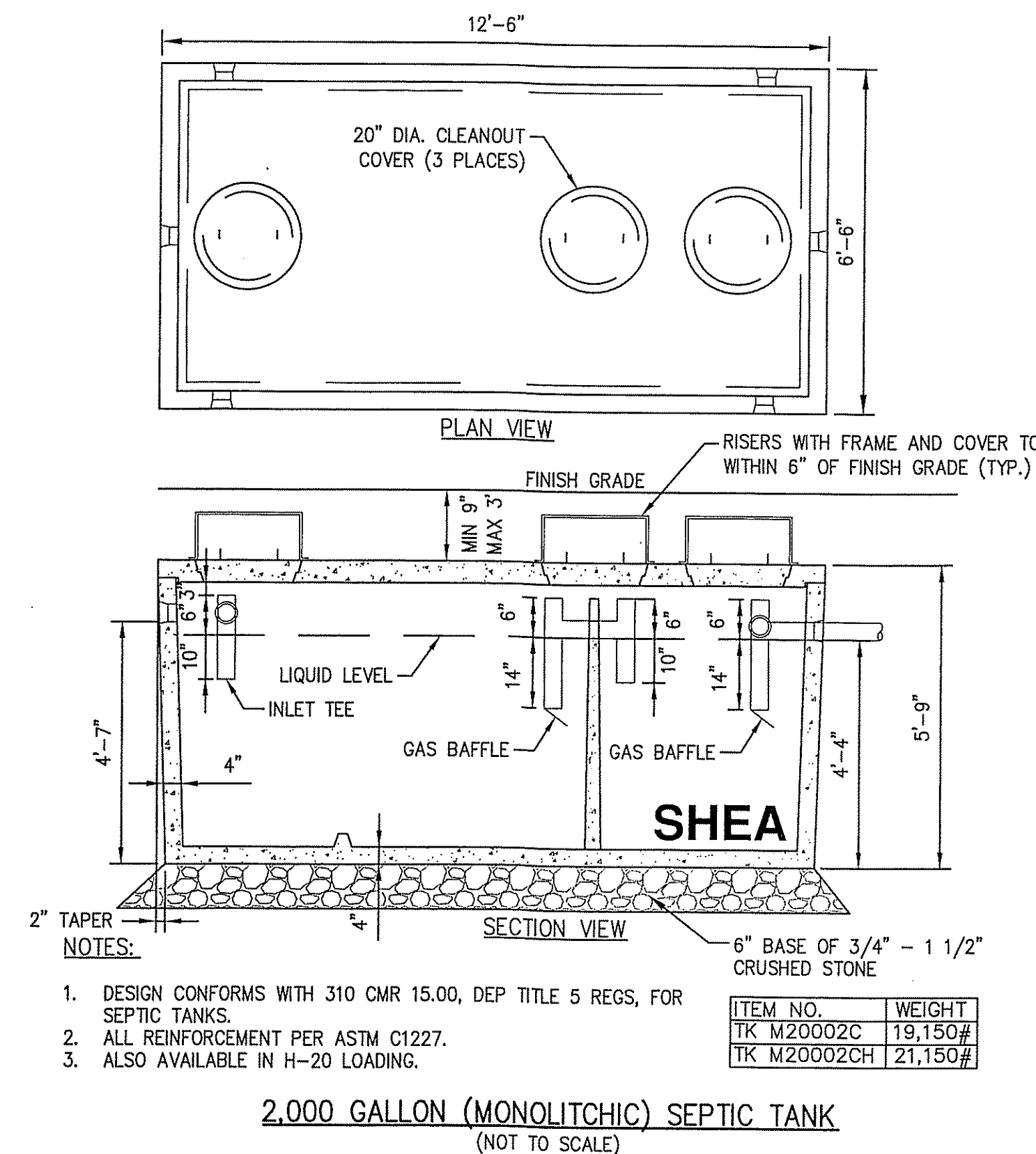
LEACH TRENCH
(NOT TO SCALE)



SHEA CONCRETE ITEM NO.	WEIGHT
B-6DB W/COVER	226#
B-6DBC COVER ONLY	45#

NOTES:
 1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS, TITLE 5 REGS, FOR DISTRIBUTION BOXES.
 2. DESIGN CONFORMS WITH 310 CMR 15.000, DEP (OR APPROVED EQUAL)

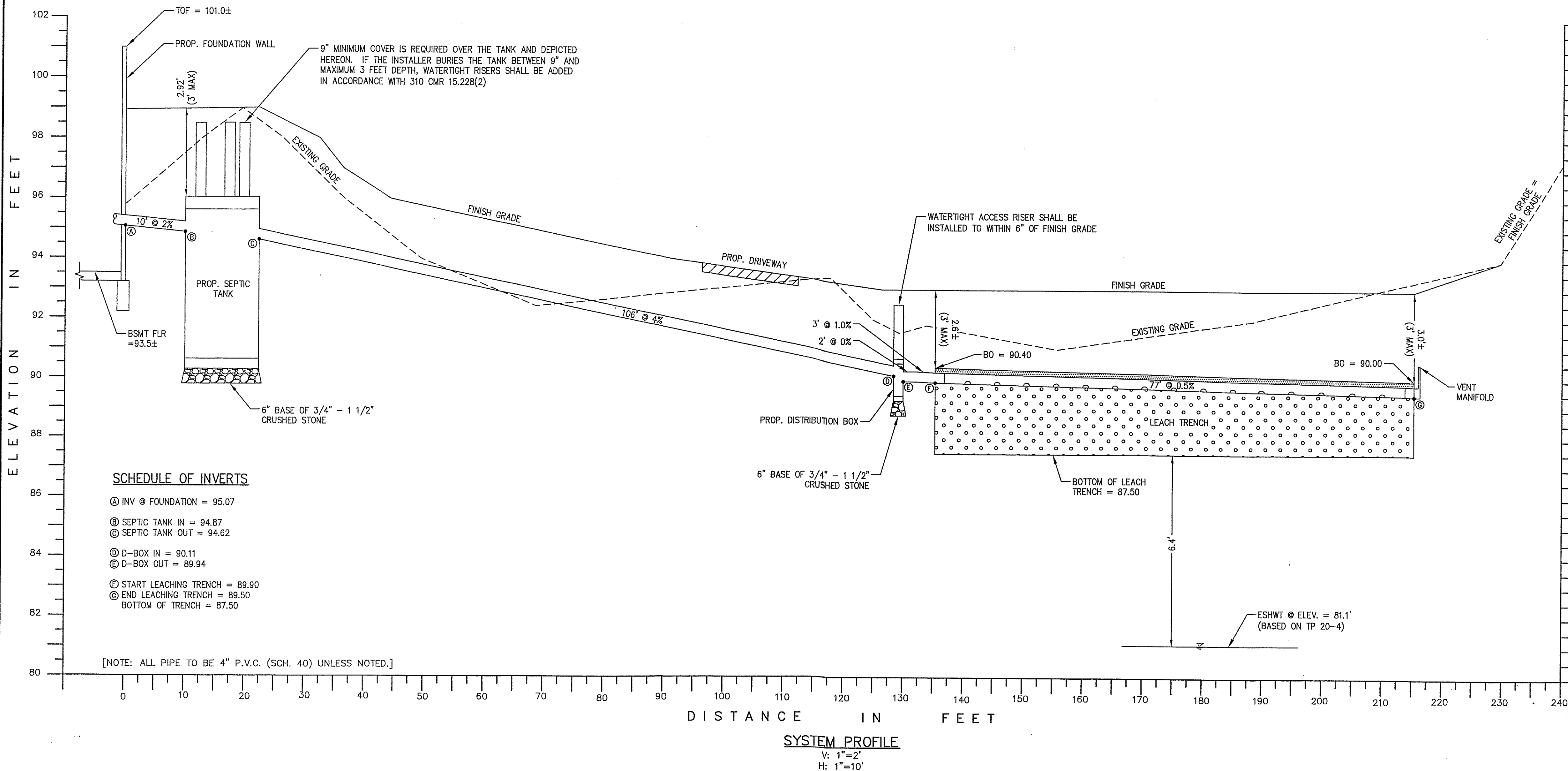
6-OUTLET DISTRIBUTION BOX:
(NOT TO SCALE)



NOTES:
 1. DESIGN CONFORMS WITH 310 CMR 15.000, DEP TITLE 5 REGS, FOR SEPTIC TANKS.
 2. ALL REINFORCEMENT PER ASTM C1227.
 3. ALSO AVAILABLE IN H-20 LOADING.

2,000 GALLON (MONOLITHIC) SEPTIC TANK
(NOT TO SCALE)

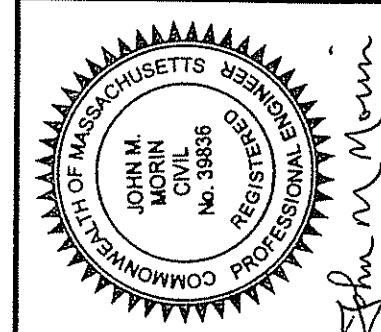
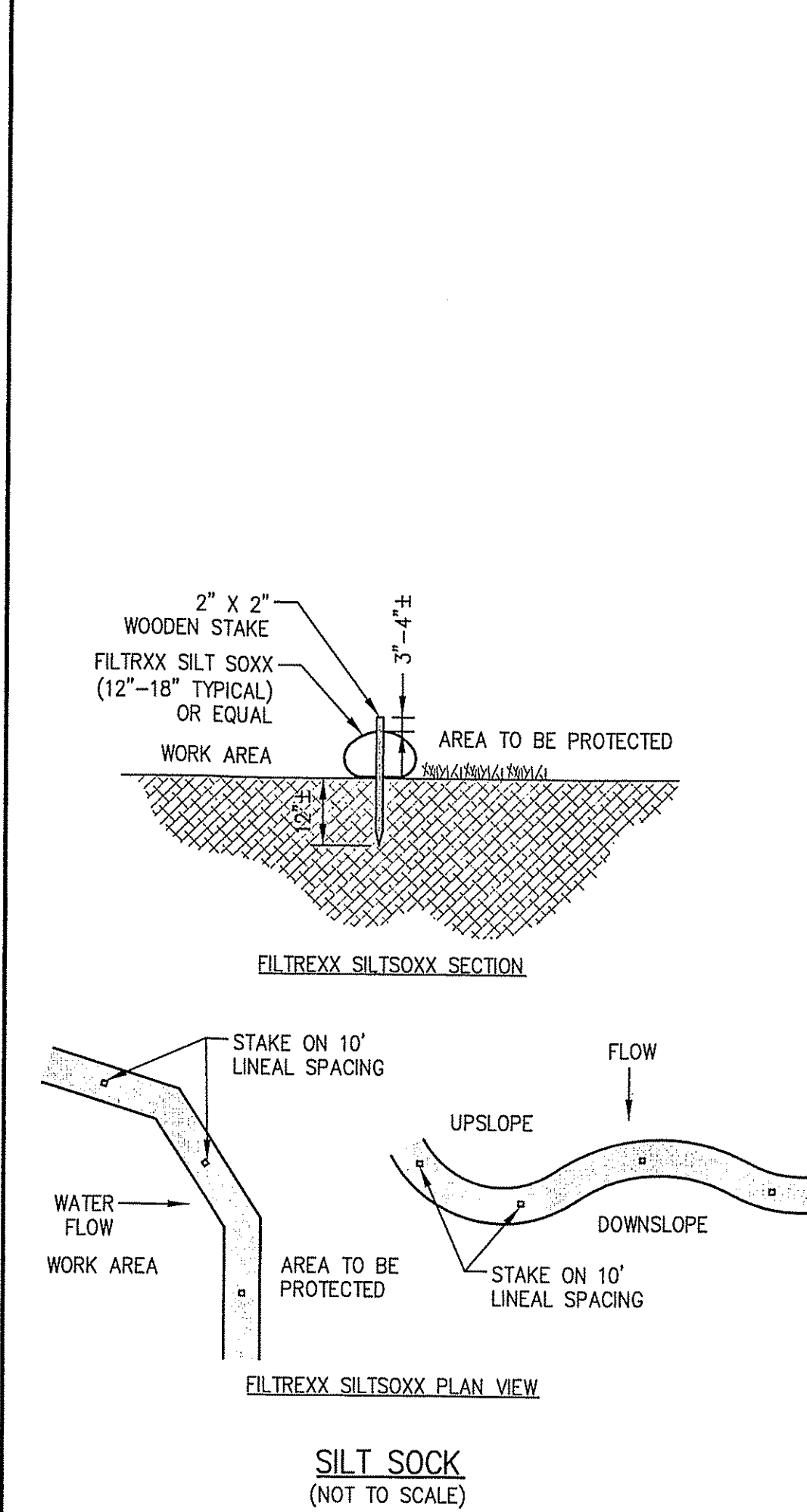
ITEM NO.	WEIGHT
TK M20002C	19,150#
TK M20002CH	21,150#



SCHEDULE OF INVERTS

- Ⓐ INV @ FOUNDATION = 95.07
- Ⓑ SEPTIC TANK IN = 94.87
- Ⓒ SEPTIC TANK OUT = 94.62
- Ⓓ D-BOX IN = 90.11
- Ⓔ D-BOX OUT = 89.94
- Ⓕ START LEACHING TRENCH = 89.90
- Ⓖ END LEACHING TRENCH = 89.50
- Ⓗ BOTTOM OF TRENCH = 87.50

[NOTE: ALL PIPE TO BE 4" P.V.C. (SCH. 40) UNLESS NOTED.]



SURVEY BY: PM/SR
 DRAFTED BY: CWB
 CHECKED BY: DJP
 APPROVED BY: JMM
 SCALE: AS NOTED
 DATE: MARCH 11, 2021

NO.	REVISIONS	DATE

SANITARY DISPOSAL SYSTEM PLAN
 PREPARED FOR:
ANDRZEJ KOCIA
 LOT 17 - 0 APPLETON LANE
 BOXFORD, MASSACHUSETTS