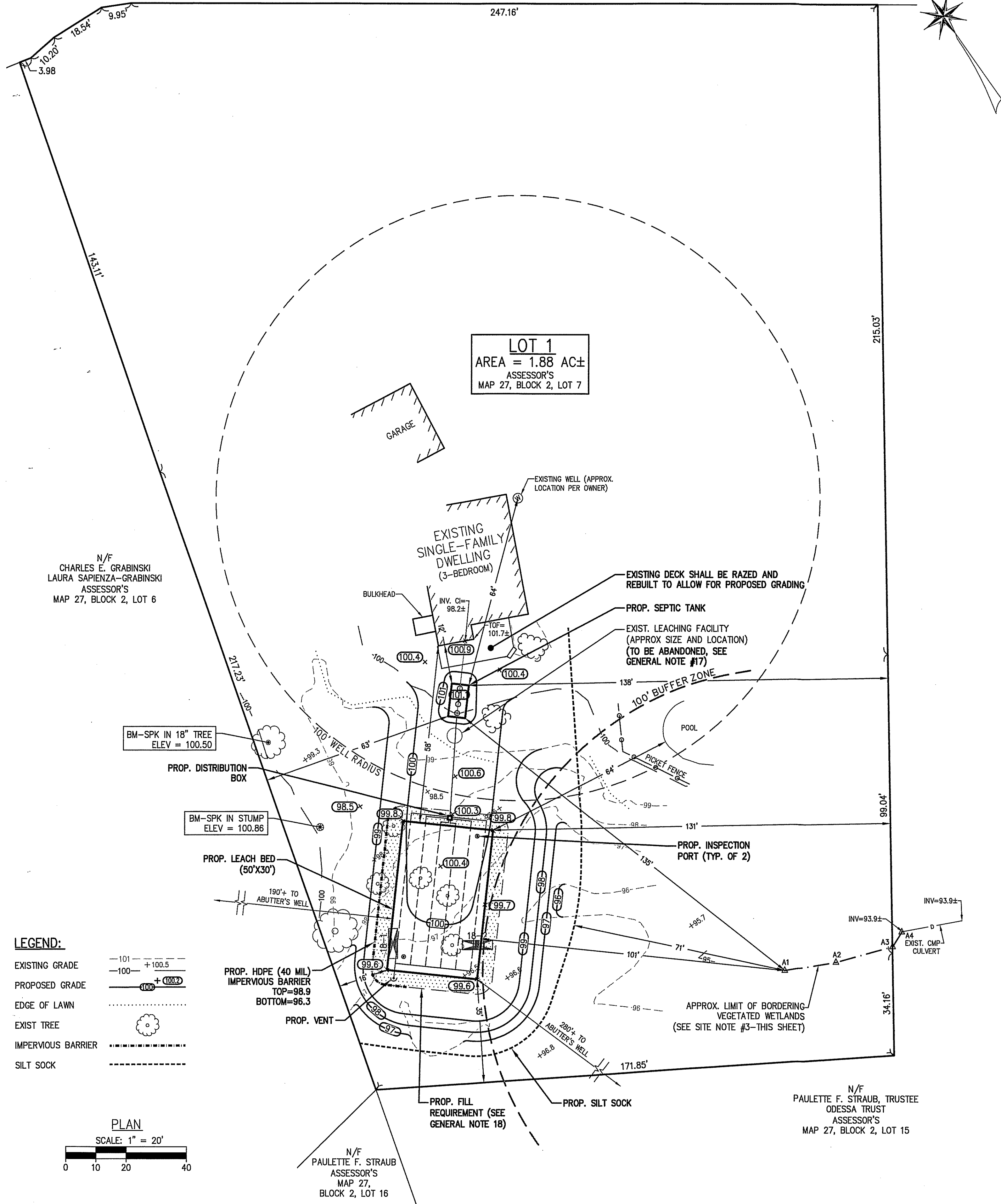


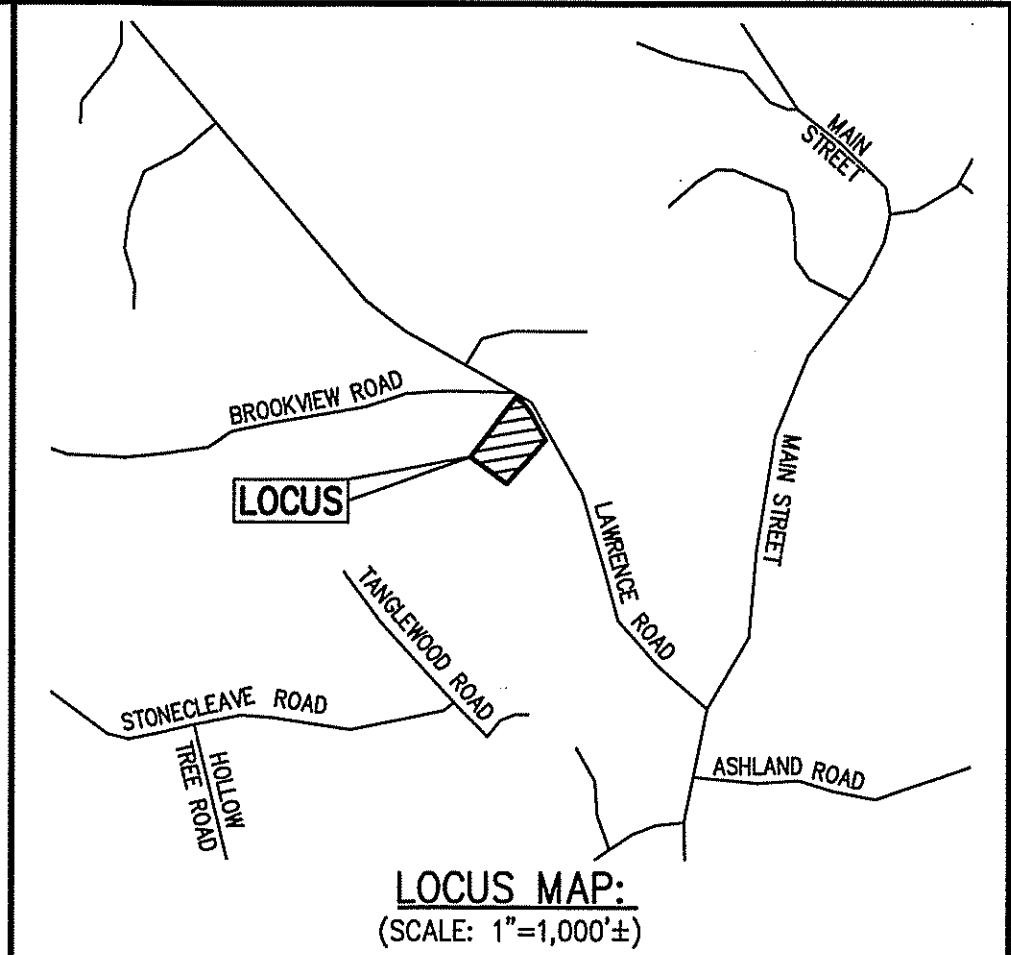
LAWRENCE ROAD

(PUBLIC - VARIABLE WIDTH)



SITE NOTES:

- RECORD OWNER: CHARLES M. PERKINS, TRUSTEE; GWENDOLEN E. PERKINS, TRUSTEE; CHARLES M. PERKINS 1998 TRUST; 32 LAWRENCE ROAD; BOXFORD, MA 01921; BOOK 31499, PAGE 72
- RECORD PLANS: PROPERTY LINE INFORMATION COMPILED FROM "PLAN OF PROPERTY FOR EARL W. & JOSEPHINE A. NEWTON, BOXFORD, MASS.," PREPARED BY ROBERT B. PARKHURST, SURVEYOR, DATED AUGUST, 1953, RECORDED WITH THE ESSEX REGISTRY OF DEEDS, PLAN BOOK 4379, PLAN 537.
- WETLANDS: WETLAND RESOURCE AREAS LOCATED BY FIELD SURVEY AND TAKEN FROM SKETCH PLAN SHOWING WETLAND RESOURCE DELINEATION CONDUCTED BY WETLAND PRESERVATION, INC. IN 2017.
- WATER SUPPLY: THERE ARE NO KNOWN DRINKING WATER SUPPLY ZONE II'S AND NO KNOWN INTERIM WELLHEAD PROTECTION ZONES ON THE SUBJECT PARCEL BASED ON THE DEPARTMENT OF ENVIRONMENTAL PROTECTION MAPS AND THE PARCEL IS NOT LOCATED WITHIN A NITROGEN SENSITIVE AREA.
- 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-0242-F WITH EFFECTIVE DATE OF JULY 3, 2012.
- DATUM: ELEVATION SHOWN HEREON ARE BASED ON AN ASSUMED DATUM.
- EXISTING CONDITIONS: EXISTING CONDITIONS INFORMATION OBTAINED FROM A FIELD SURVEY PERFORMED BY THE MORIN-CAMERON GROUP, INC. IN FEBRUARY 2019.



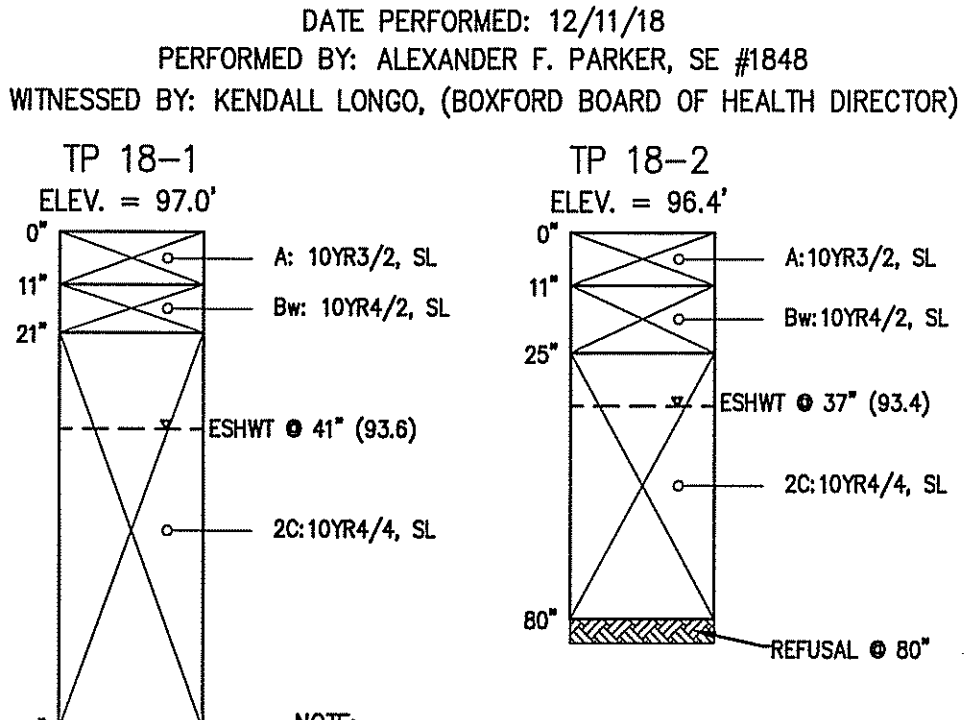
SEPTIC SYSTEM DESIGN DATA:

- BUILDING TYPE: SINGLE FAMILY DWELLING
- NO. OF BEDROOMS: 3 BEDROOMS
- DESIGN FLOW (TITLE 5): 3 X 110 GPD/BEDROOM = 330 GPD
- DESIGN PERCOLATION RATE: CLASS II SOIL (FROM SIEVE ANALYSIS), LTAR = 0.33 GPD/SF
- GARBAGE DISPOSAL: DESIGNED FOR, HOWEVER NOT RECOMMENDED BY DESIGN ENGINEER.
- SEPTIC TANK DESIGN REQUIREMENT: 2-COMPARTMENT SEPTIC REQUIRED FOR GRINDER
FIRST COMPARTMENT: 2 X 330 GPD = 660 GAL.
SECOND COMPARTMENT: 330 GPD = 330 GAL.
USE 1,500 GAL 2-COMPARTMENT (MONOLITHIC) SEPTIC TANK
- LEACH BED SIZE REQUIREMENT: (SYSTEM SHALL BE DESIGNED TO ACCOMMODATE A GARBAGE GRINDER PER BOXFORD BOH REGULATIONS)
SYSTEM AREA REQUIRED = 330 GAL/0.33 = 1,000 SF MIN.
INCREASE SYSTEM AREA BY 50% FOR GARBAGE GRINDER = 1.5 X 1,000 SF = 1,500 SF MIN.
- LEACH BED CAPACITY:
USE 50' X 30' = 1,500 SF X 0.33 GPD/SF = 495 GPD (OK)

GENERAL NOTES:

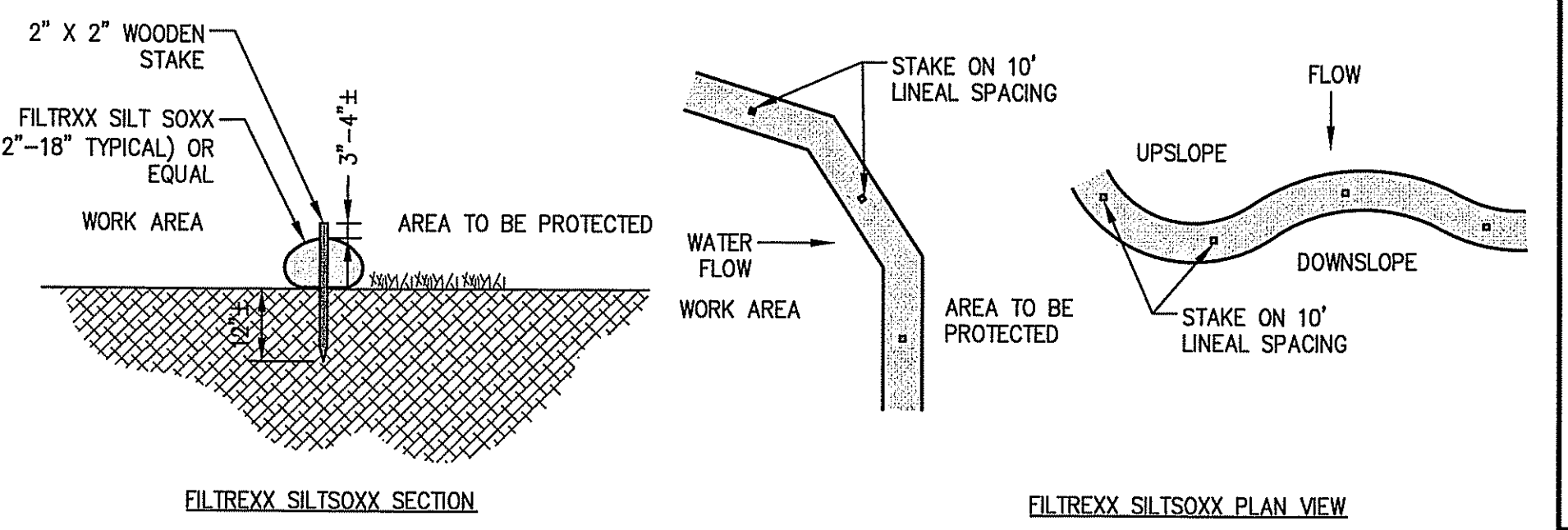
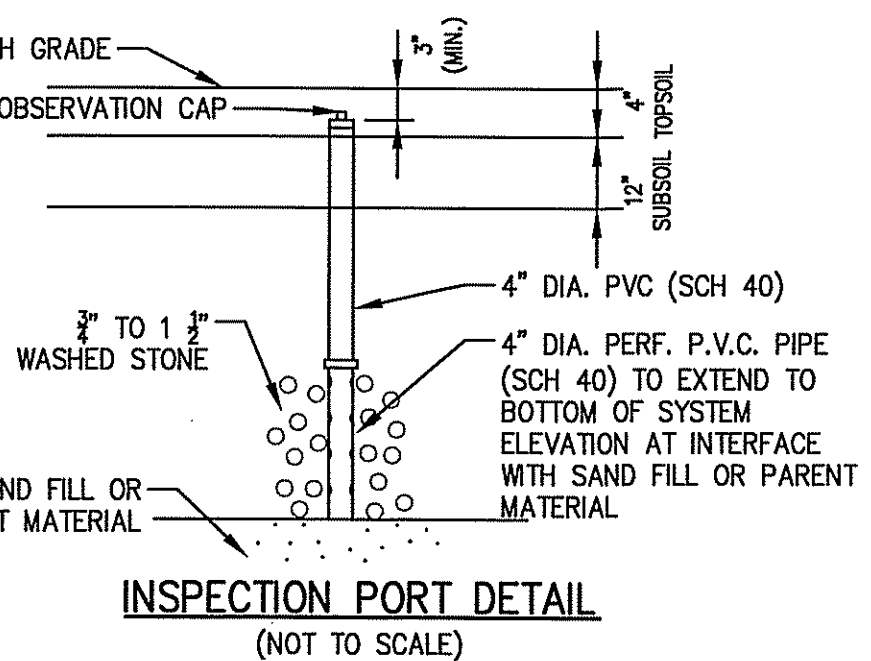
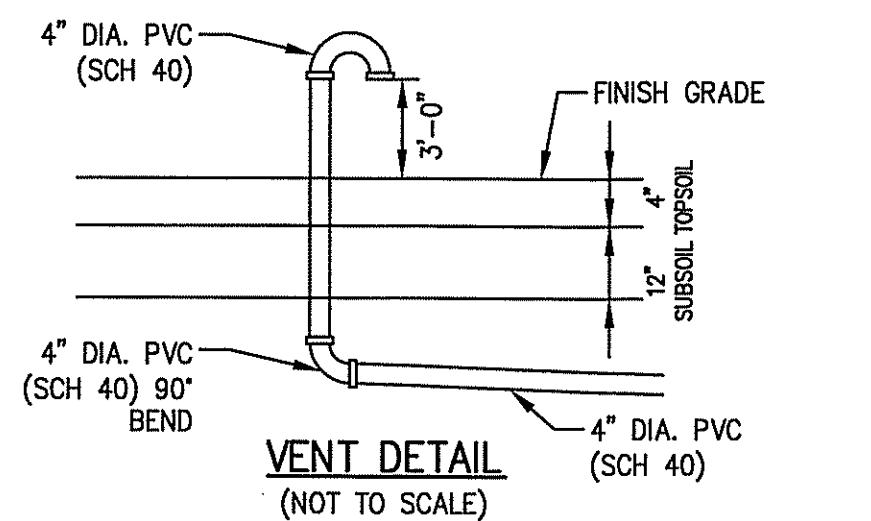
- CONTRACTOR SHALL VERIFY THAT ALL EXISTING PLUMBING, WITH THE EXCEPTION OF ANY FOUNDATION DRAINS OR WATER SOFTENERS, SHALL BE TIED INTO NEW SEPTIC SYSTEM.
- THIS PLAN IS TO SHOW THE DESIGN OF THE SUBSURFACE SEWAGE DISPOSAL SYSTEM ONLY. THE SYSTEM IS DESIGNED FOR FLOWS ESTIMATED UNDER DESIGN CRITERIA.
- SYSTEM IS DESIGNED ONLY TO ACCOMMODATE SANITARY SEWAGE ASSOCIATED WITH NORMAL DOMESTIC USAGE AND CONSISTING OF WATER-CARRIED PUTRESCIBLE WASTE.
- THE SYSTEM IS DESIGNED FOR A GARBAGE GRINDER. HOWEVER, IT IS NOT RECOMMENDED FOR USE BY THE DESIGN ENGINEER.
- THE PLAN SHOWS ONLY THOSE FEATURES THAT WERE VISUALLY APPARENT ON DATE OF THE TOPOGRAPHY.
- THE INSTALLER OF THIS SYSTEM MUST BE LICENSED BY THE LOCAL BOARD OF HEALTH FOR INSTALLATION OF THE LEACHING FACILITY.
- 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.
- 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 THE SLUDGE IN THE BOTTOM EXCEEDS 1/4 OF THE DEPTH.
- 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.
- NO CHANGES ARE TO BE MADE IN THE FIELD WITHOUT THE APPROVAL OF THE BOARD OF HEALTH OR ITS DESIGNEE AND THE DESIGN ENGINEER.
- 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.
- THE LOCAL BOARD OF HEALTH AGENT WILL CONDUCT PERIODIC INSPECTIONS AS NEEDED.
- 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 INSTALLATION.
- ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC MARKING TAPE IN ACCORDANCE WITH 310 CMR 15.221(12).
- EXISTING LEACH PIT SHALL BE ABANDONED AND PUMPED. THE PIT SHALL THEN BE CRUSHED AND REMOVED OR THE PIT SHALL BE COMPLETELY FILLED WITH CLEAN SAND OR OTHER SUITABLE MATERIAL APPROVED IN WRITING BY THE APPROVING AUTHORITY.
- FILL REQUIREMENT: REMOVE TOPSOIL AND SUBSOIL FOR A DISTANCE OF 5 FEET BEYOND THE LEACHING FACILITY. REPLACE WITH FILL AS SPECIFIED IN 310 CMR 15.000, "TITLE 5" SECTION 15.255 (3). FOR THE BOUNDARY OF THE SAND FILL REQUIREMENT, SEE PLAN VIEW, CROSS-HATCHED AREA ON SYSTEM PROFILE. A SIEVE ANALYSIS SHALL BE PERFORMED ON THE FILL MATERIAL TO BE USED. A COPY OF THE SIEVE ANALYSIS RESULTS SHALL BE SUBMITTED TO THE BOARD OF HEALTH.

SOIL LOGS

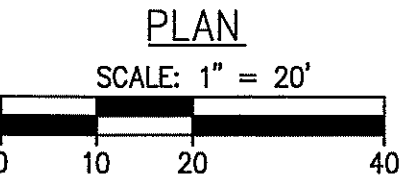


LOCAL UPGRADE APPROVAL:

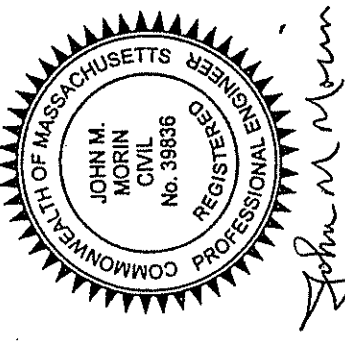
- 310 CMR 15.405(1)(i); USE OF A SIEVE ANALYSIS IN LIEU OF A PERCOLATION TEST: REQUIRED: 1 PERCOLATION TEST PER SYSTEM AREA PROVIDED: SIEVE ANALYSIS IN LIEU OF PERCOLATION TEST



- LEGEND:**
- EXISTING GRADE: -101
 - PROPOSED GRADE: -100
 - EDGE OF LAWN: ---
 - EXIST TREE: ○
 - IMPERVIOUS BARRIER: - - - - -
 - SILT SOCK: - - - - -



The Morin-Cameron GROUP, INC.
 CIVIL ENGINEERS | ENVIRONMENTAL CONSULTANTS
 LAND SURVEYORS | LAND USE PLANNERS
 85 ELM STREET, DANVERS, MASSACHUSETTS 01923
 P. 978-775-8886, F. 978-742-3488, W. WWW.MORIN-CAMERON.COM

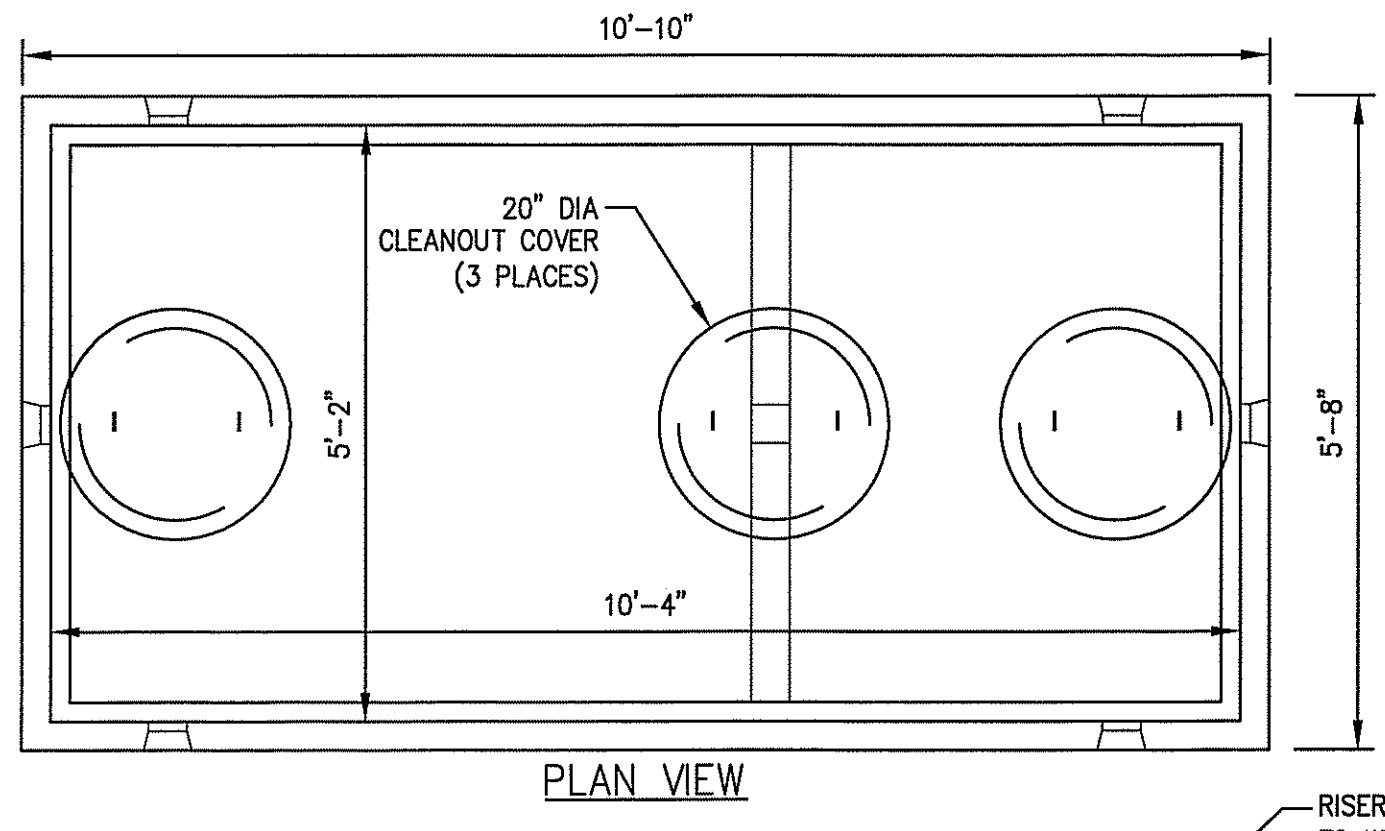


SURVEY BY: PM / SR
 DRAFTED BY: WAS / D/P
 CHECKED BY: JMM
 APPROVED BY: JMM
 SCALE: AS NOTED
 DATE: APRIL 10, 2019

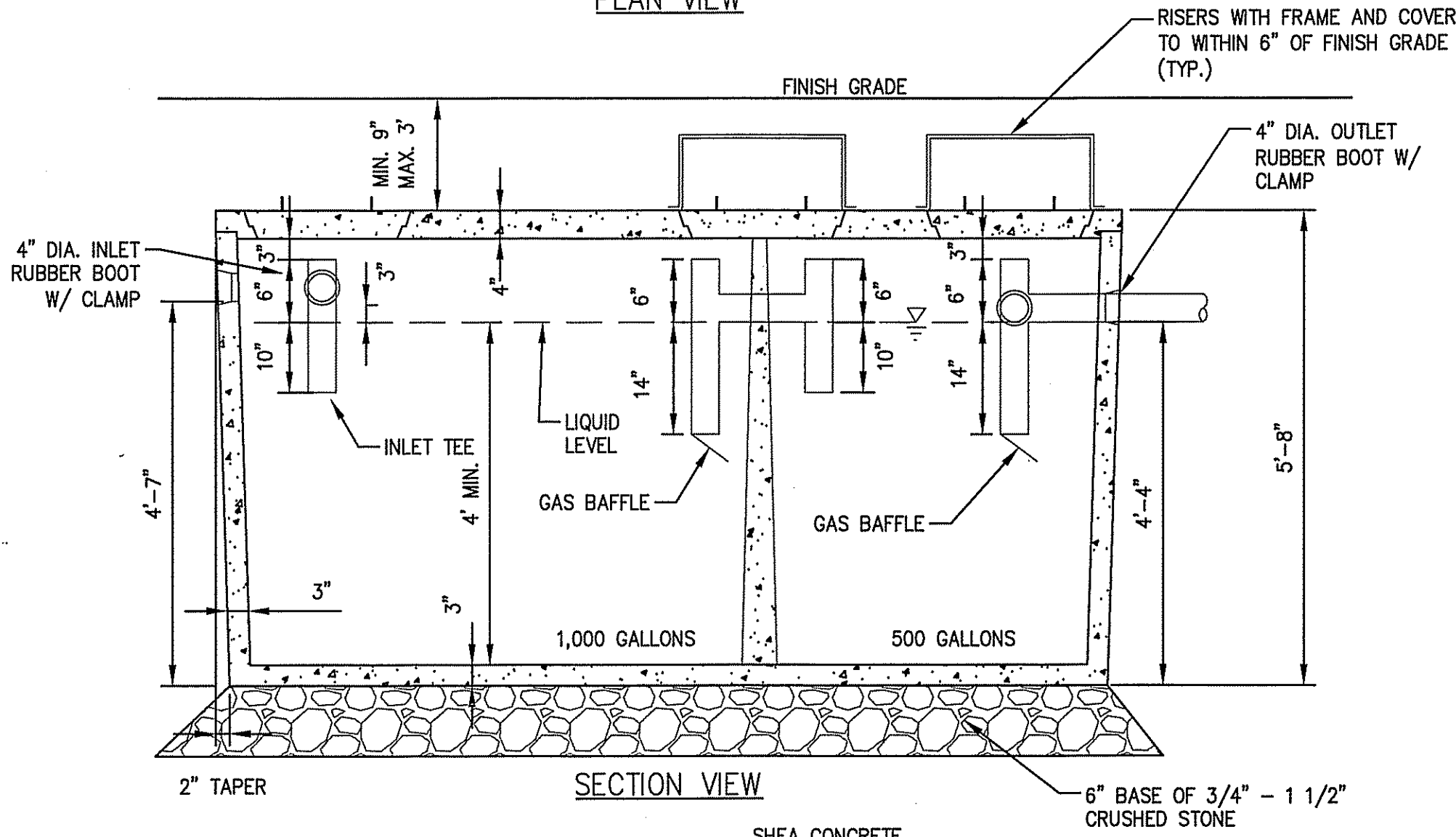
NO.	REVISIONS	DESCRIPTION	DATE

SANITARY DISPOSAL SYSTEM REPAIR PLAN
 BOXFORD, MASSACHUSETTS
 32 LAWRENCE ROAD
 (ASSESSOR'S MAP 27, BLOCK 2, LOT 7)
 PREPARED FOR:
CHARLES & GWENDOLEN PERKINS

DRAWING NO. **S - 3799**
 SHEET NO. **1 OF 2**



PLAN VIEW

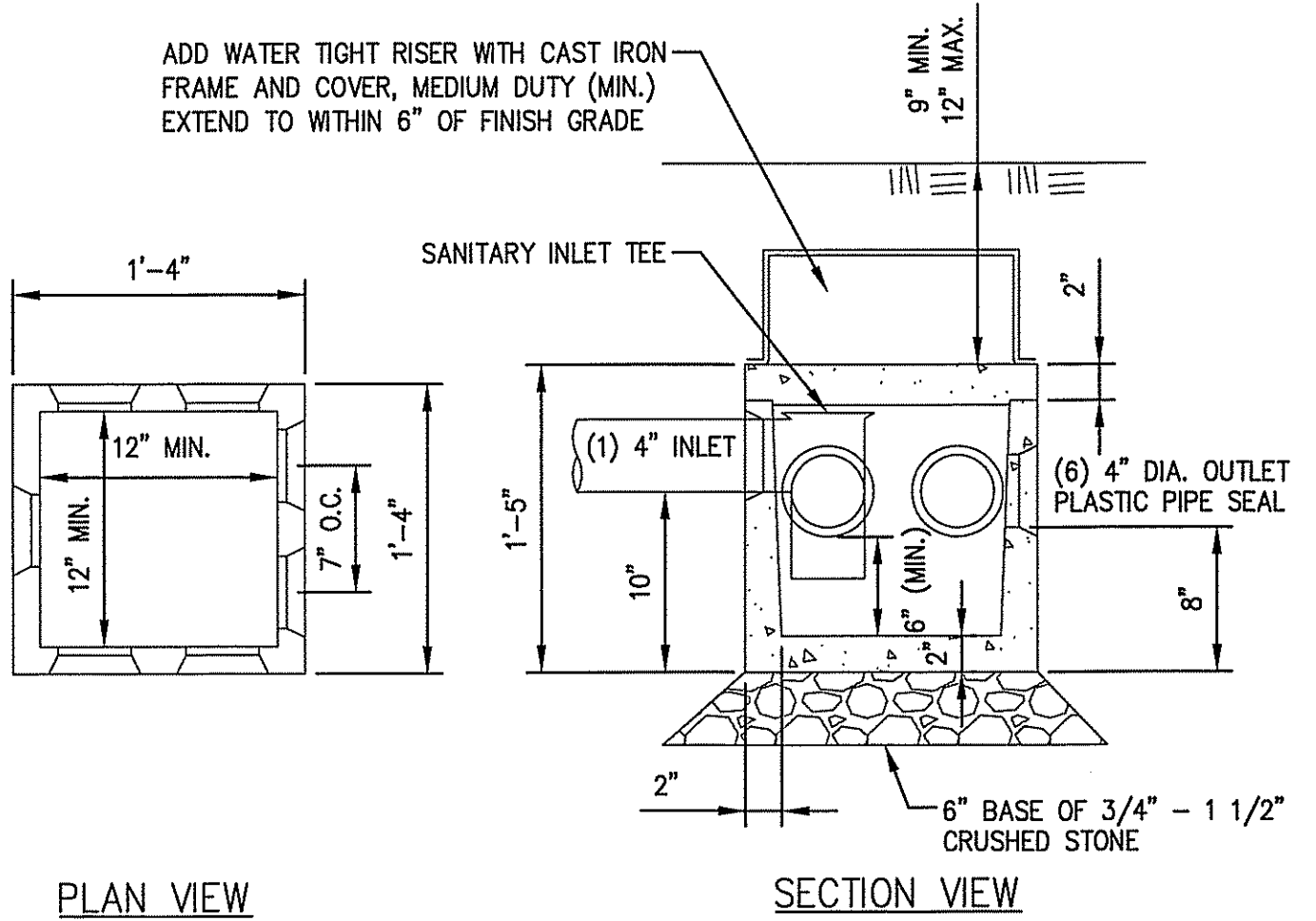


SECTION VIEW

- NOTES:
1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
 2. DESIGN CONFORMS WITH 310 CMR 15.00, DEP TITLE 5 REQS. FOR SEPTIC TANKS.
 3. ALL REINFORCEMENT PER ASTM C1227.
 4. TONGUE & GROOVE JOINT SEALED WITH BUTYL RESIN.
 5. TEES AND BAFFLES SOLD SEPARATELY.

SHEA CONCRETE ITEM NO.	WEIGHT
TK-M15002C	11,641#

1,500 GAL. 2-COMPARTMENT MONOLITHIC SEPTIC TANK
(NOT TO SCALE)



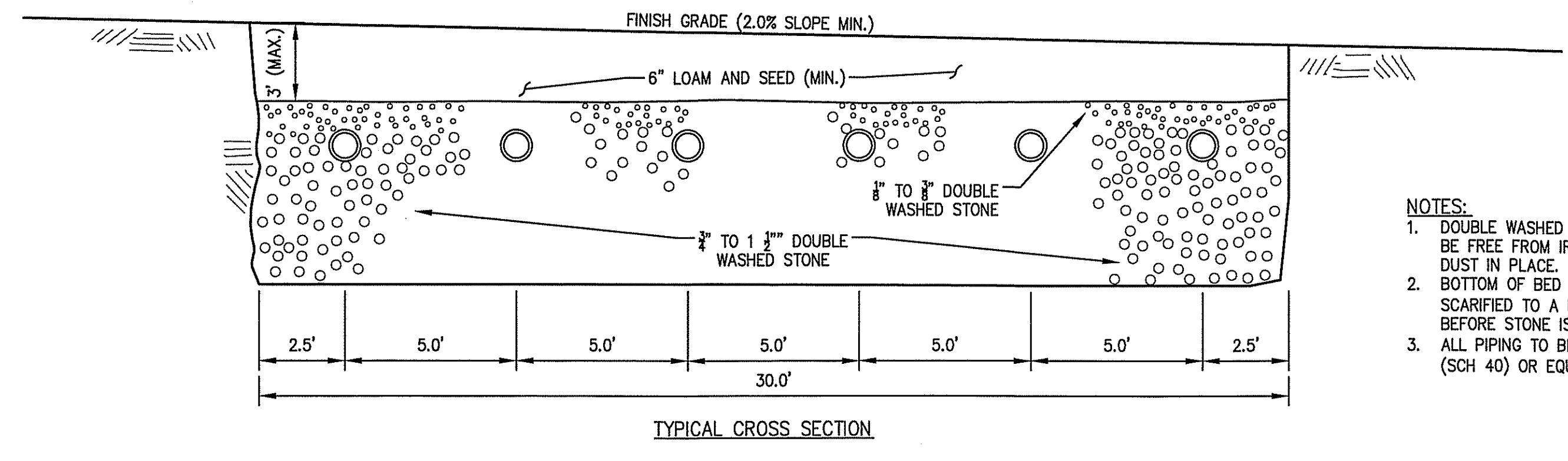
PLAN VIEW

SECTION VIEW

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

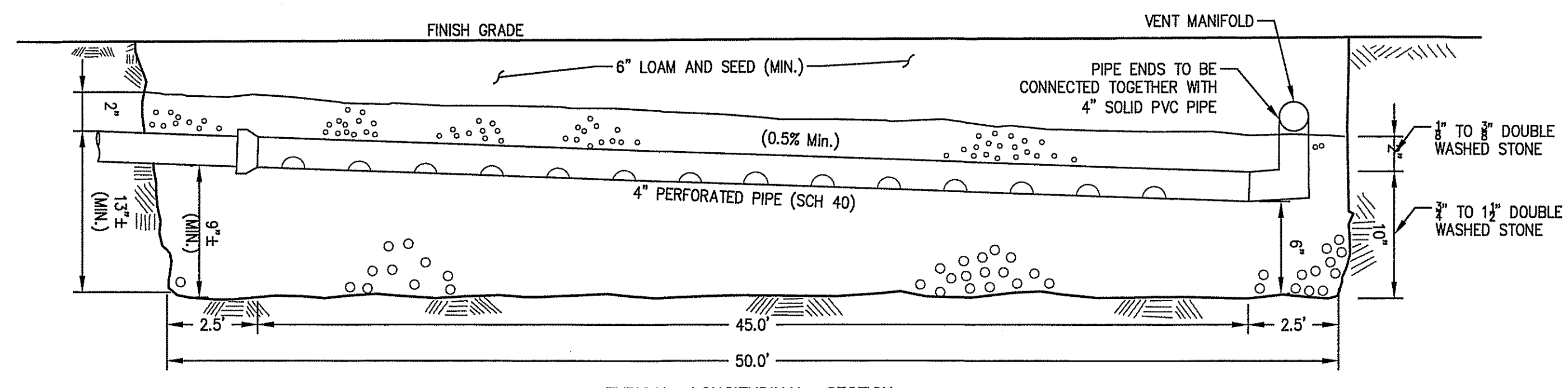
- NOTES:
1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS. TITLE 5 REQS. FOR DISTRIBUTION BOXES.
 2. DESIGN CONFORMS WITH 310 CMR 15.00, DEP

6-OUTLET DISTRIBUTION BOX:
(NOT TO SCALE)



TYPICAL CROSS SECTION

- 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 PLACED.
 3. ALL PIPING TO BE 4" PVC (SCH 40) OR EQUIVALENT.

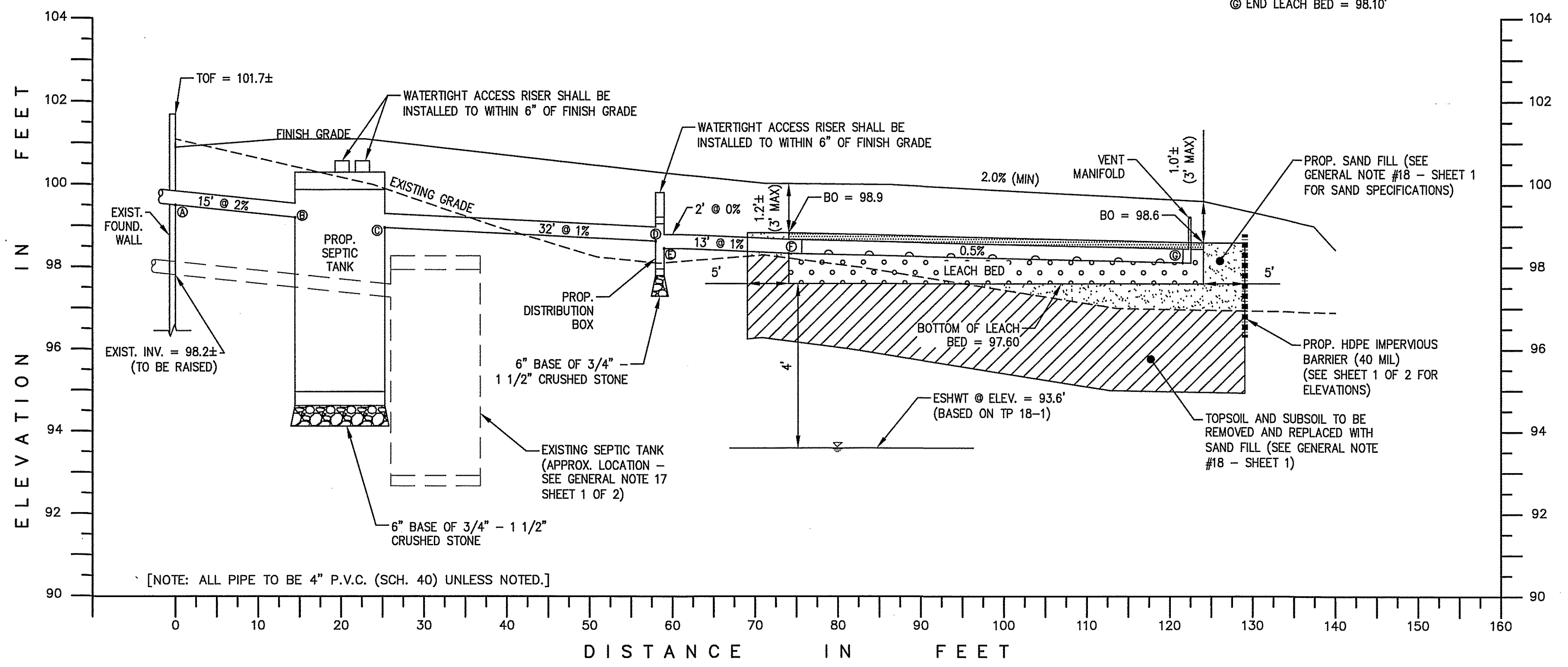


TYPICAL LONGITUDINAL SECTION

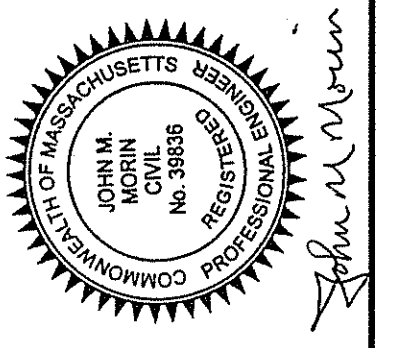
LEACH BED
(NOT TO SCALE)

SCHEDULE OF INVERTS

- ⊙ INV @ FOUNDATION = 99.51'
- ⊙ SEPTIC TANK IN = 99.21'
- ⊙ SEPTIC TANK OUT = 98.96'
- ⊙ D-BOX IN = 98.64'
- ⊙ D-BOX OUT = 98.47'
- ⊙ START LEACH BED = 98.34'
- ⊙ END LEACH BED = 98.10'



SYSTEM PROFILE
V: 1"=2'
H: 1"=10'



SURVEY BY: PM / SR
DRAFTED BY: WAS / D/P
CHECKED BY: JMM
APPROVED BY: JMM
SCALE: AS NOTED
DATE: APRIL 10, 2019

NO.	DESCRIPTION	DATE