

SITE NOTES:

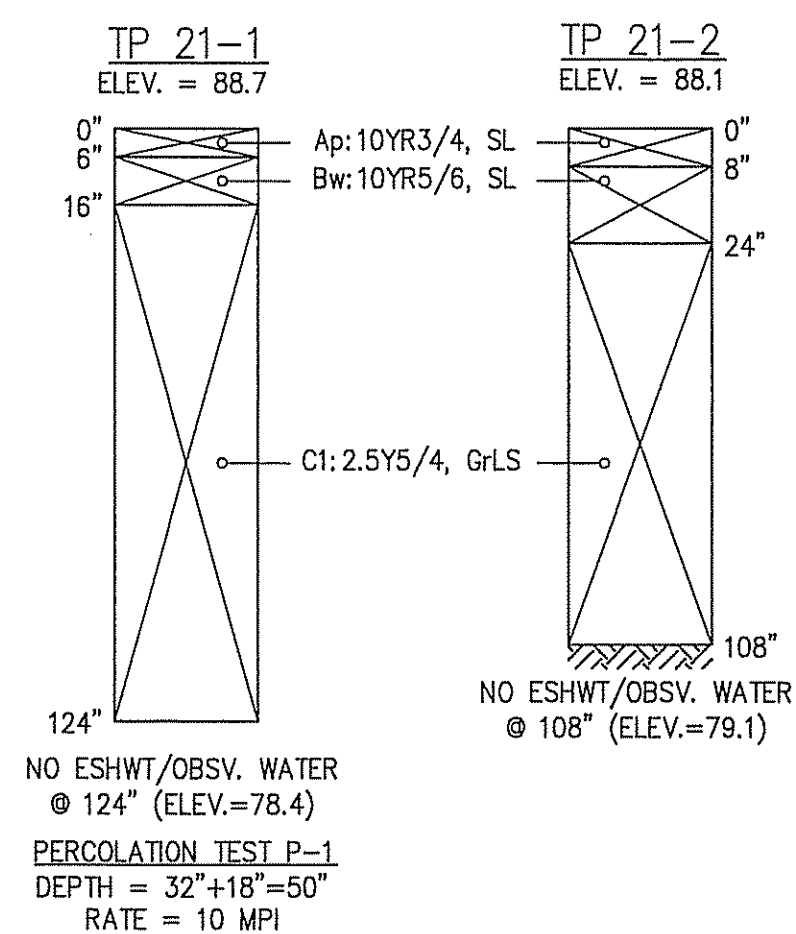
- RECORD OWNER: KINGS OAK PROPERTIES, LLC
24 OLD STAGE RD.
HAMPTON FALLS, NH 03844
BOOK 40295, PAGE 139
- RECORD PLANS: PROPERTY LINES COMPILED FROM RECORD PLANS, RECORD DEEDS, AND AN ON-THE-GROUND SURVEY.
- WETLANDS: WETLANDS DELINEATED BY DEROSA ENVIRONMENTAL CONSULTING, INC. 167 MAIN STREET, ROWLEY, MA. (978-948-7717) ON SEPTEMBER 23, 2021.
- WATER SUPPLY: THERE IS 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.
- 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-0264-F WITH EFFECTIVE DATE OF JULY 3, 2012.
- DATUM: ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD88).
- EXISTING CONDITIONS: EXISTING CONDITIONS DEPICTED HEREON IS THE RESULT OF AN ON-THE-GROUND INSTRUMENT SURVEY PERFORMED BY THE MORIN-CAMERON GROUP IN NOVEMBER 2021.

SEPTIC SYSTEM DESIGN DATA:

- BUILDING TYPE: SINGLE FAMILY DWELLING
- NO. OF BEDROOMS: 4 BEDROOMS
- DESIGN FLOW: 4 X 110 GPD/BEDROOM = 440 GPD
- DESIGN PERCOLATION RATE: CLASS II SOIL, 10 MPI, LTAR = 0.60 GPD/SF
- GARBAGE DISPOSAL: NOT DESIGNED FOR
- SEPTIC TANK DESIGN REQUIREMENT: USE 2-COMPARTMENT TANK:
MIN. 200% DESIGN FLOW (TITLE 5) FOR FIRST COMPARTMENT = 2 X 440 GPD = 880 GAL.
MIN. 100% DESIGN FLOW (TITLE 5) FOR SECOND COMPARTMENT = 440 GAL.
MIN. TANK REQUIREMENT = 1,320 GAL.
USE 1,500 GAL 2-COMPARTMENT (MONOLITHIC) SEPTIC TANK
- SOIL ABSORPTION SYSTEM REQUIREMENTS:
(440 GPD) / (0.60 GPD/SF) = 734 SF
REDUCTION FOR PRESBY ENVIRO-SEPTIC: (440/0.6) X (0.6) = 440 SF MIN
- PER DEP GENERAL USE CERTIFICATION FOR PRESBY ENVIRO-SEPTIC LEACHING SYSTEM TABLES UTILIZED IN THE FOLLOWING SECTION ARE FROM THE PRESBY ENVIRO-SEPTIC QUICK REFERENCE GUIDE.
 - DETERMINE LINEAR FEET OF PIPE
FROM TABLE A: 4 BEDROOM, PERC RATE = 10-13 MPI = 280 LF
 - DETERMINE PERCENTAGE OF SLOPE ON THE PROPOSED SYSTEM: 0-10%
 - DETERMINE MINIMUM CENTER TO CENTER SPACING:
FROM TABLE B: 0-10% SLOPE, PERC RATE = 1-10 MPI - 1.5' SPACING (MINIMUM)
 - DETERMINE PIPE LINE LAYOUT:
USE 25' PIPE LENGTH WITH 12 LATERALS = 300' OF PIPE TOTAL
CTR. TO CTR. SPACING OF 1.5'
OVERALL DIMENSIONS: 27' X 19.5' = 526 SF
 - CALCULATE MINIMUM SYSTEM SAND BED AREA:
FROM TABLE D: SOIL CLASS II, "4-BEDROOM", 10 MPI = 440 SF (MIN); AREA PROVIDED: 526 SF (OK)

SOIL LOGS TP 21-1 AND TP 21-2

DATE PERFORMED: 09/21/2021
PERFORMED BY: WILL SCHKUTA, SE #14030
WITNESSED BY: WENDY HANSBURY, TOPSFIELD HEALTH AGENT

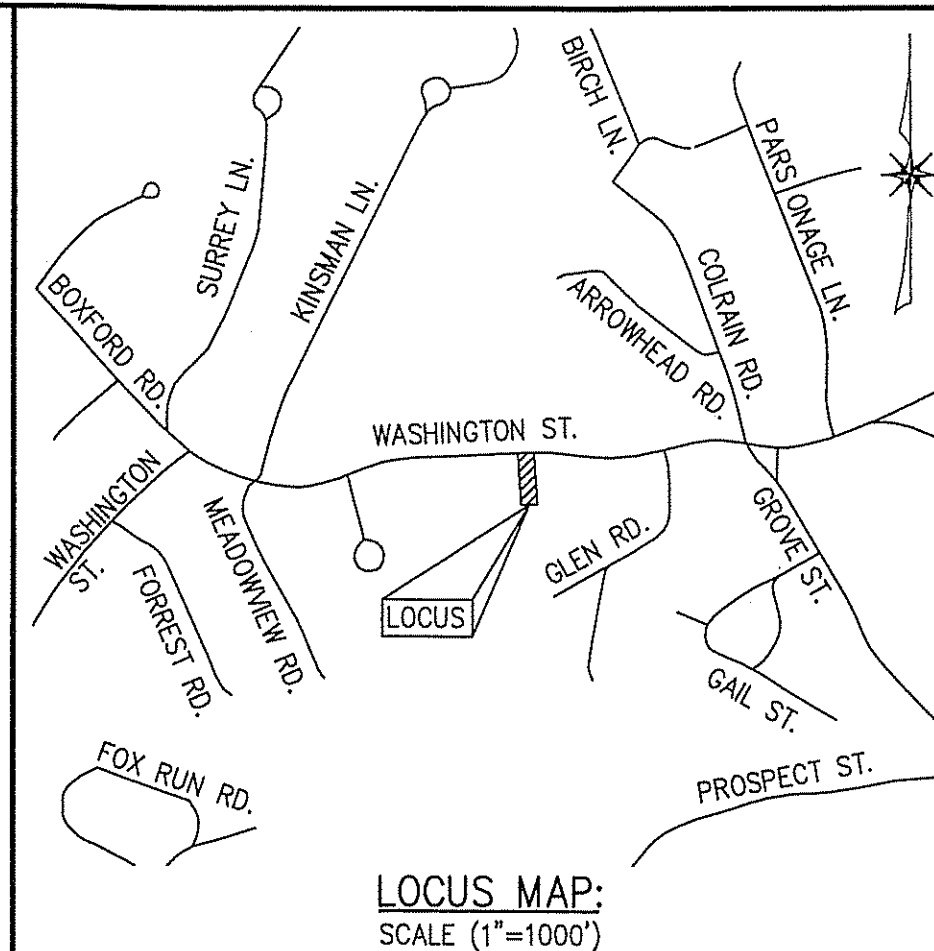


USE OF ALTERNATIVE TECHNOLOGY:

IN ACCORDANCE WITH DEP DOCUMENT "STANDARD CONDITIONS FOR ALTERNATIVE SOIL ABSORPTION SYSTEMS WITH GENERAL USE CERTIFICATION AND/OR APPROVED FOR REMEDIAL USE" REVISED MARCH 5, 2018 CONDITION II.18(C), I CERTIFY TO THE BEST OF MY KNOWLEDGE THAT THE PROPOSED DESIGN CONFORMS TO THE DEP APPROVAL, ANY PRESBY ENVIRO-SEPTIC LEACHING FACILITY DESIGN GUIDANCE, AND 310 CMR 15.000.

John M. Morin
DESIGN ENGINEER

2/22/2022
DATE



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 NOT DESIGNED FOR A GARBAGE GRINDER.
- THE SYSTEM SHALL BE VENTED IN ACCORDANCE WITH THE PRESBY ENVIRO-SEPTIC DESIGN MANUAL (SEE SLOPING VENT DETAIL).
- 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 AND WITH PRESBY FOR INSTALLATION OF THE ENVIRO-SEPTIC LEACHING FACILITY.
- THERE ARE NO KNOWN WELLS WITHIN 100 FEET OF THE PROPOSED SOIL ABSORPTION SYSTEM.
- DISPOSAL SYSTEM AREAS ARE TO BE RAKED (SCARIFIED) BEFORE INSTALLATION OF SAND. 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).
- THIS PLAN IS DESIGNED IN CONFORMANCE WITH THE 310 CMR 15.00 (TITLE 5) AND THE TOPSFIELD BOARD OF HEALTH SUPPLEMENTAL REGULATIONS TO 310 CMR 15.00.
- 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) OR ASTM C-33 SAND (SYSTEM SAND). 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.
- CONTRACTOR SHALL VERIFY THAT THE HIGH VENT THROUGH THE ROOF STACK SUPPLIES SUFFICIENT DRAFT. THE HIGH VENT MUST PROVIDE THE SAME CAPACITY AS THE LOW VENT. IF SUFFICIENT DRAFT IS NOT PRESENT, A HIGH VENT SHALL BE ADDED AND VENTED THROUGH THE DISTRIBUTION BOX. A MINIMUM OF A 10' DIFFERENTIAL IS REQUIRED BETWEEN THE HIGH VENT AND LOW VENT. NOTIFY DESIGN ENGINEER IF HIGH VENT THROUGH DISTRIBUTION BOX IS REQUIRED.

GROUNDWATER RECHARGE CALCULATIONS:

SOIL TYPE: HSG B (BASED ON NRCS SOIL RESOURCE REPORT)

REQUIRED RECHARGE TARGET DEPTH: 0.35"

REQUIRED RECHARGE VOLUME:

BUILDINGS:
EXISTING = 1,406 SF
PROPOSED = 1,464 SF
INCREASE = 58 SF

DRIVEWAY:
EXISTING = 680 SF
PROPOSED = 1,377 SF
INCREASE = 697 SF

WALKWAYS:
PROPOSED = 73 SF

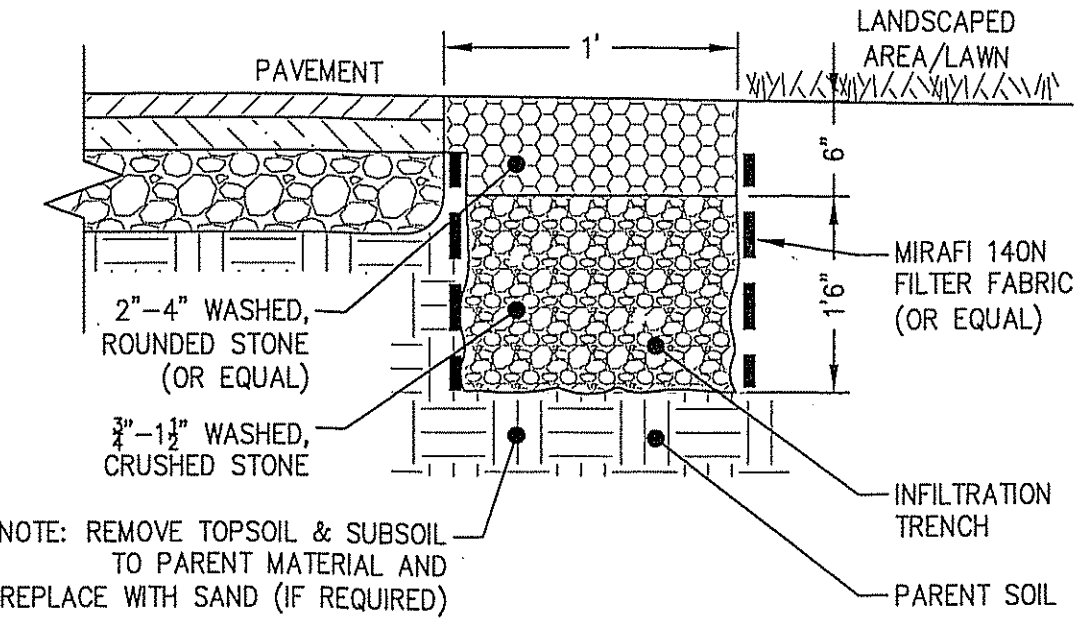
TOTAL INCREASE IN IMPERVIOUS AREA = 828 SF

V = 828 SF X 0.35" X 1'/12" = 25 CF

PROVIDED RECHARGE VOLUME:

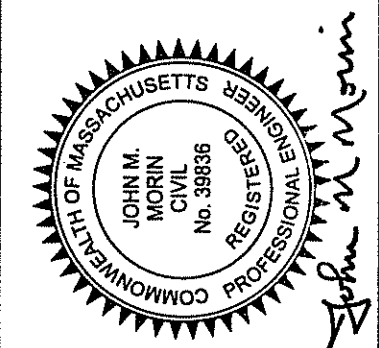
DRIVEWAY INFILTRATION TRENCH:
V = (1' X 2' X 38') X (0.4) = 30 CF

30 CF PROVIDED > 25 CF REQUIRED

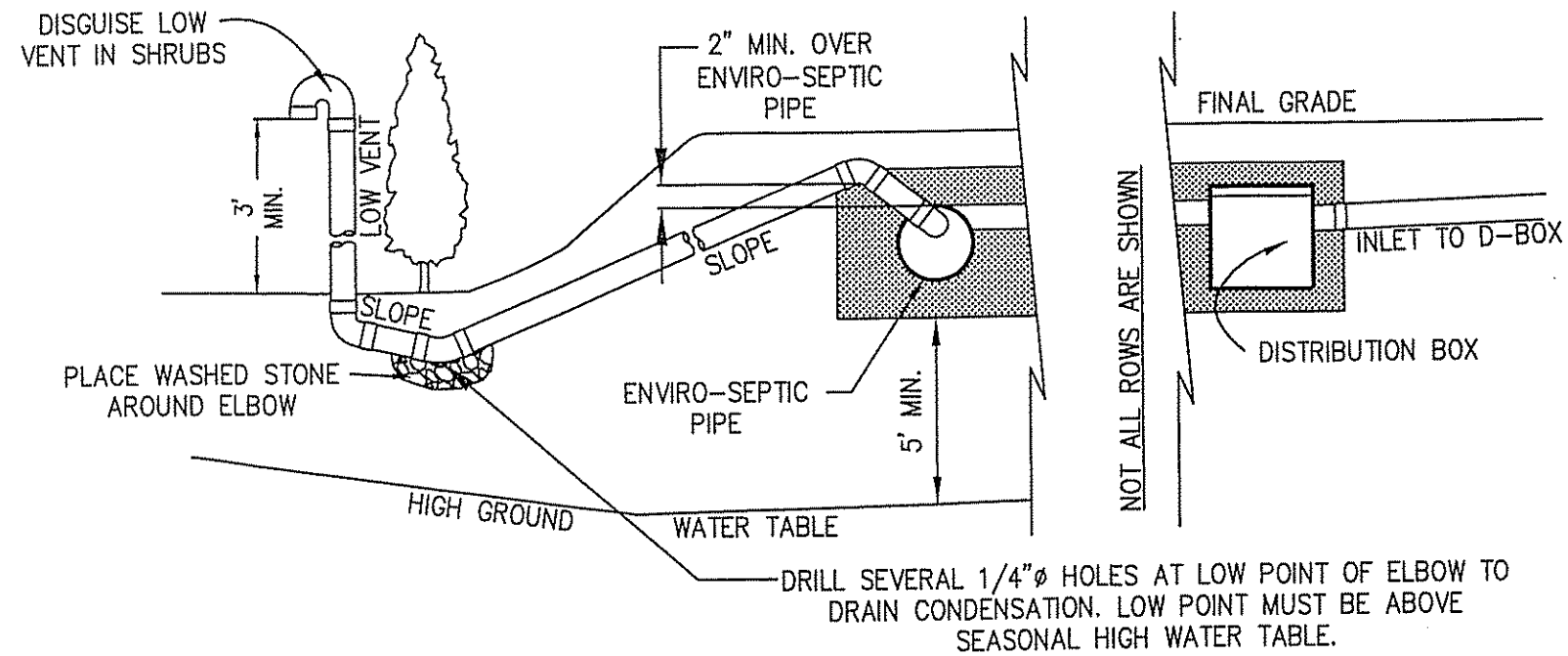


The Morin-Cameron GROUP, INC.

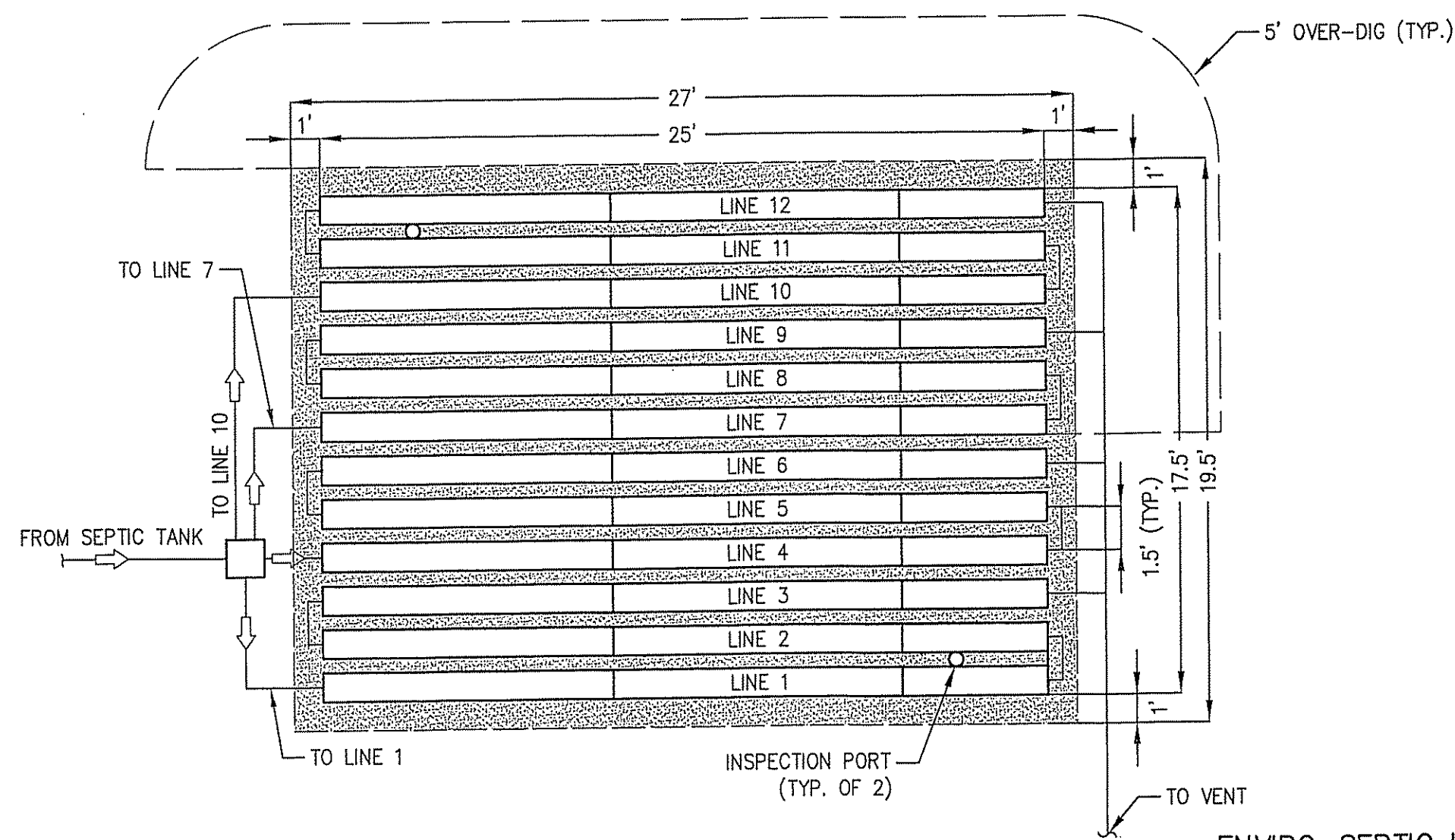
CIVIL ENGINEERS/ENVIRONMENTAL CONSULTANTS
LAND SURVEYORS/LAND USE PLANNERS
66 ELM STREET, DANVERS, MASSACHUSETTS 01923
P: 978-777-8586, W: WWW.MORINCAMERON.COM



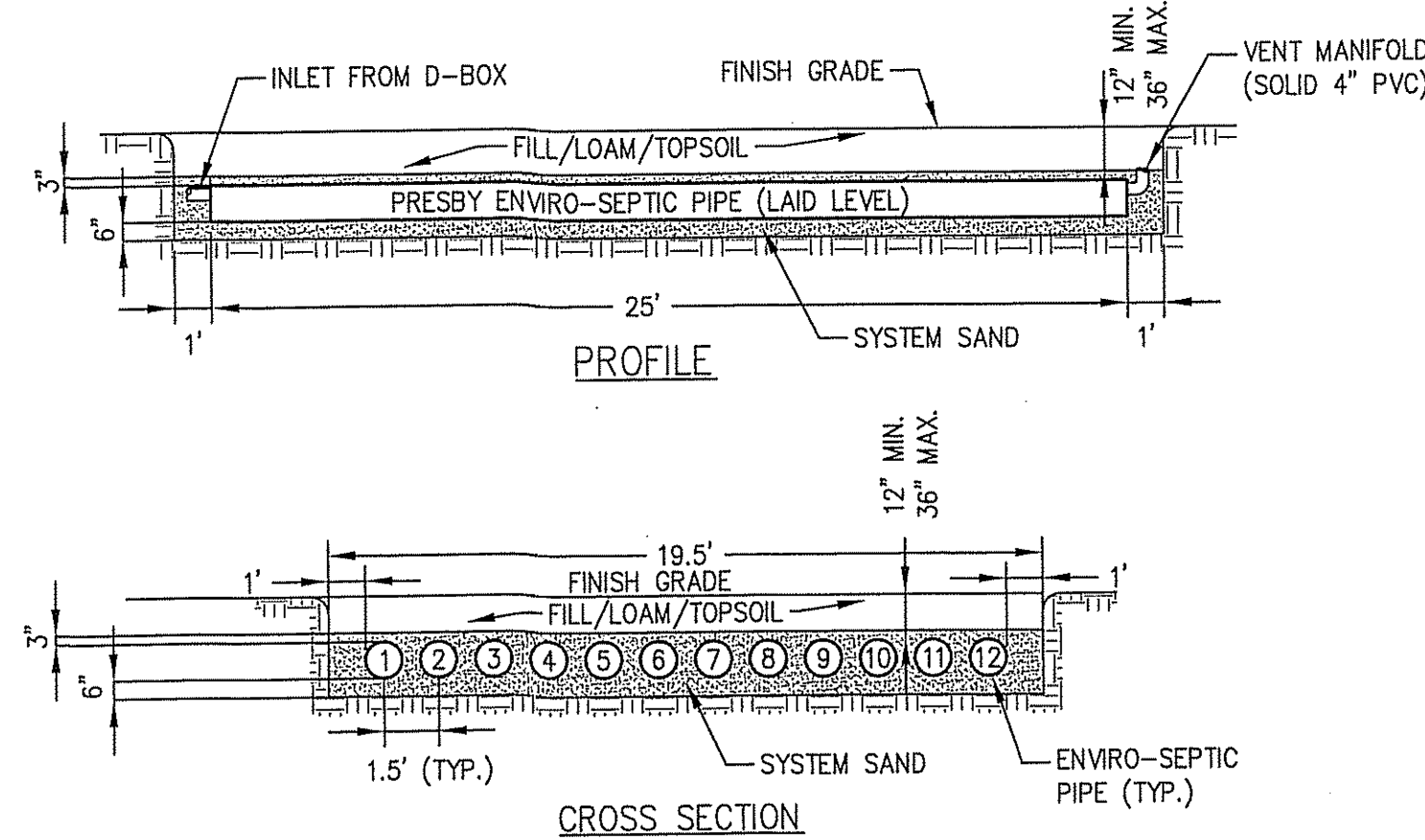
R E V I S I O N S		SURVEY BY: MCG	
NO.	DESCRIPTION	DATE	DRAFTED BY: CWB
			CHECKED BY: WAS/DJP
			APPROVED BY: JMM
			SCALE: AS NOTED
			DATE: FEBRUARY 22, 2022



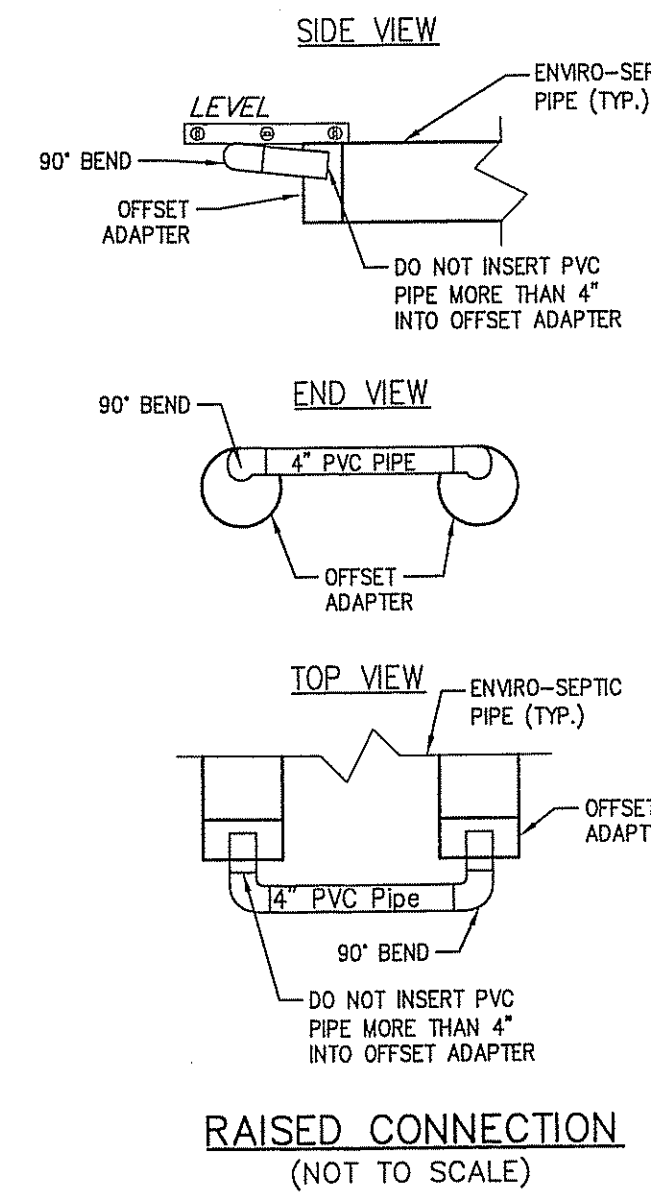
SLOPING VENT DETAIL
(NOT TO SCALE)



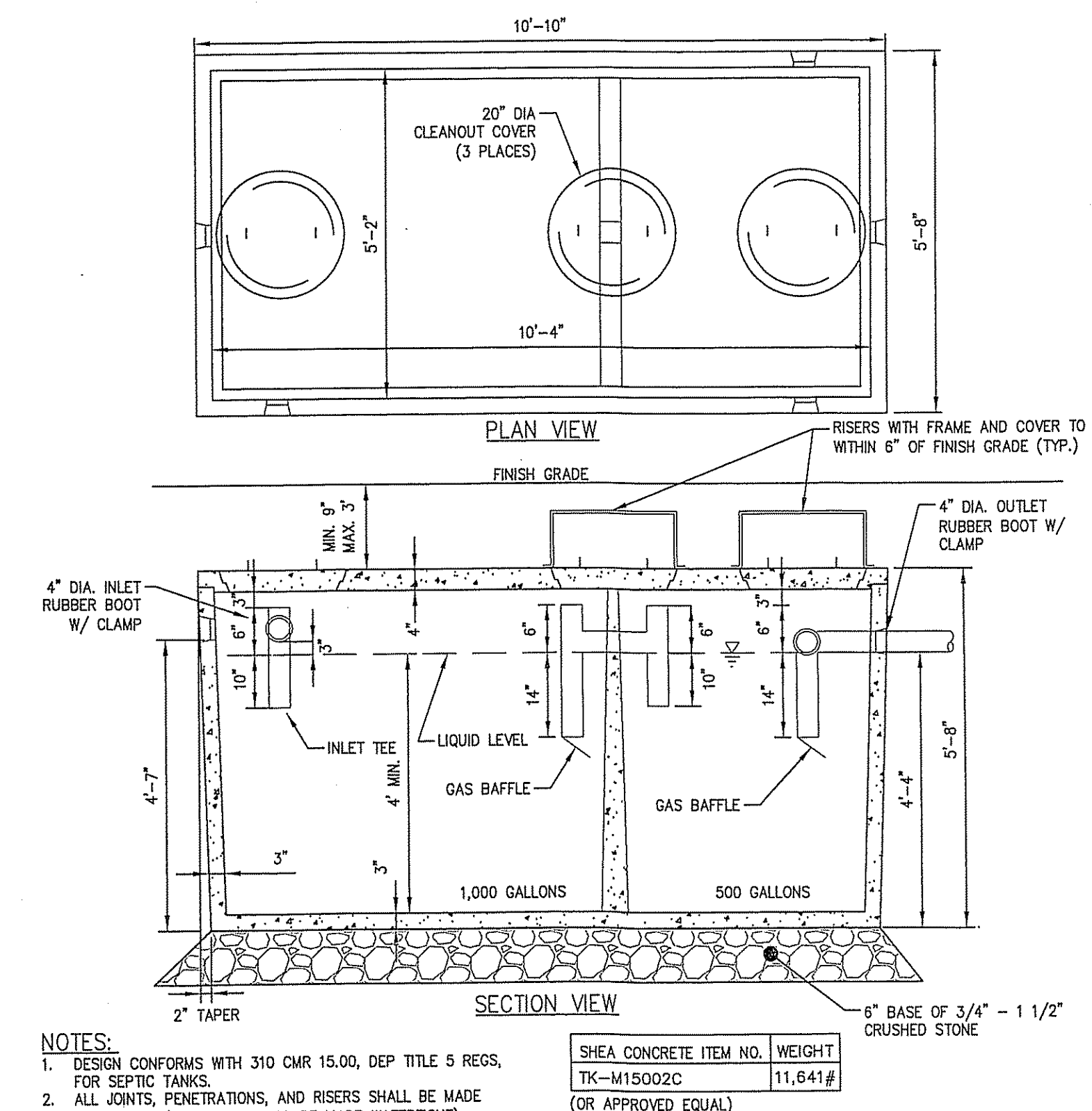
ENVIRO-SEPTIC LEACH BED
(NOT TO SCALE)



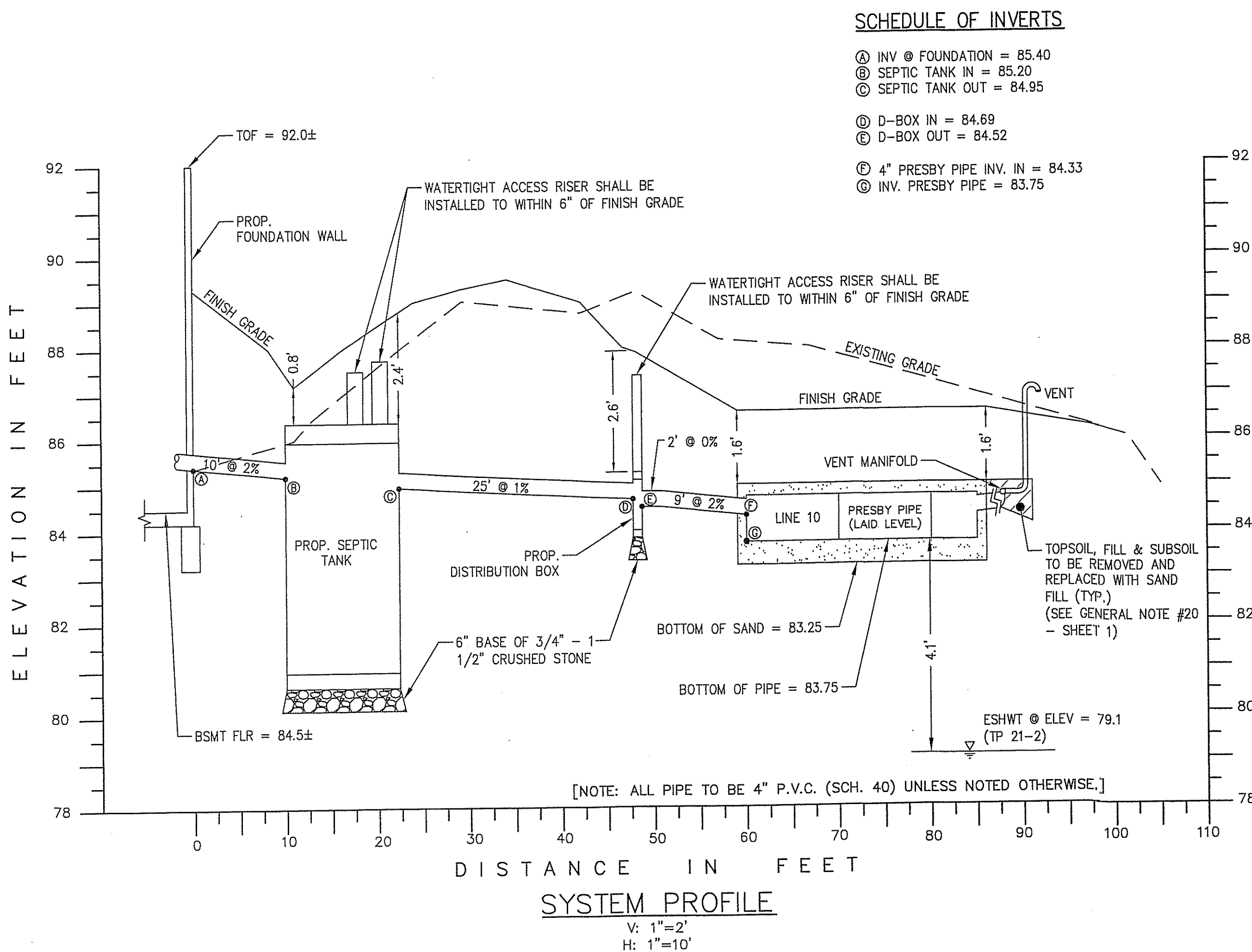
- NOTES:**
1. THE CONTRACTOR INSTALLING THE PRESBY ENVIRO-SEPTIC LEACHING SYSTEM SHALL BE CERTIFIED AND TRAINED BY PRESBY PRIOR TO SYSTEM INSTALLATION
 2. EXTEND 5' OVERDIG FROM EDGE OF SYSTEM SAND IF FILL IS ENCOUNTERED (SEE PLAN VIEW & SYSTEM PROFILE)



RAISED CONNECTION
(NOT TO SCALE)

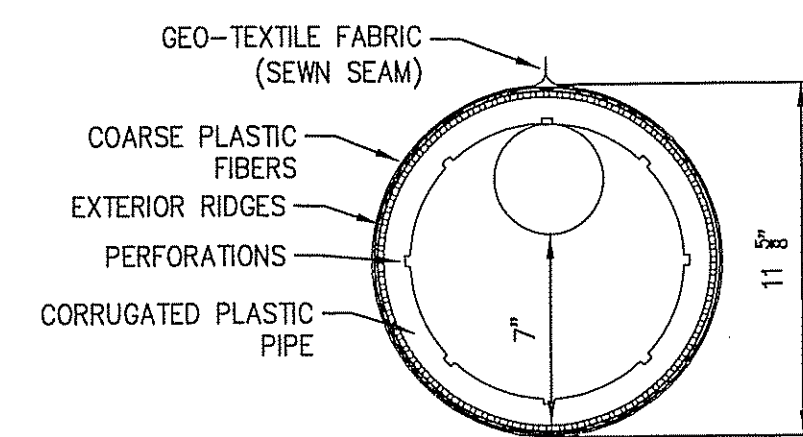


1,500 GALLON MONOLITHIC SEPTIC TANK (TWO COMPARTMENT)
(NOT TO SCALE)

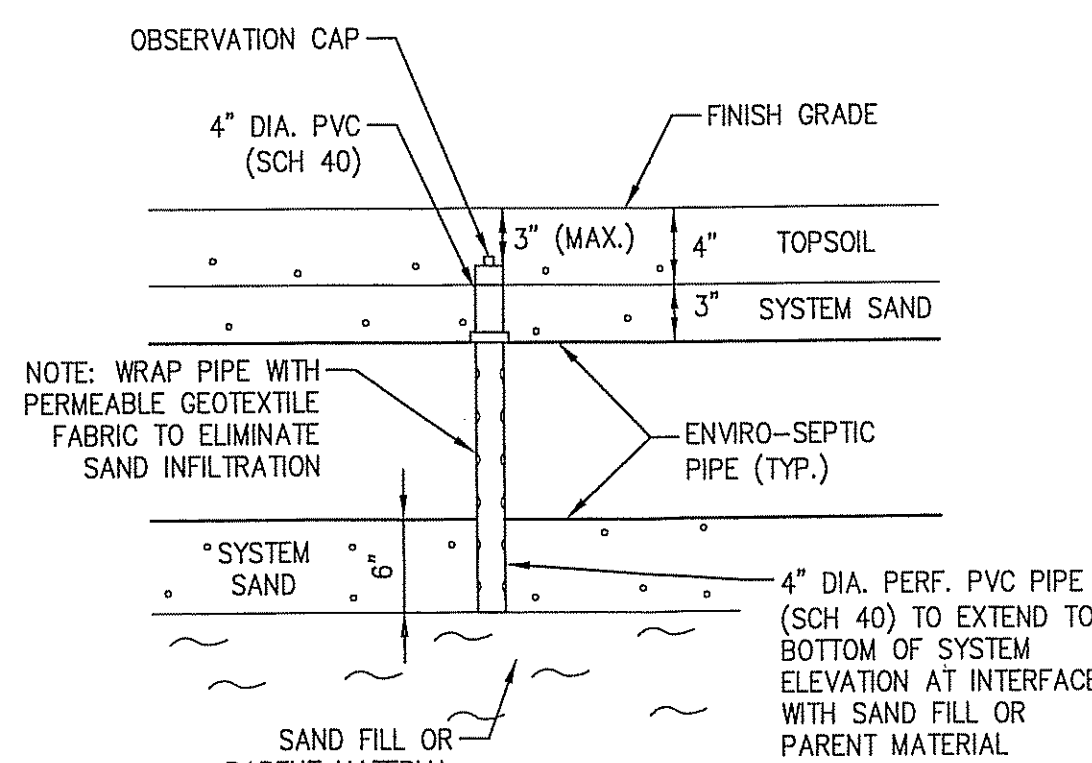


SCHEDULE OF INVERTS

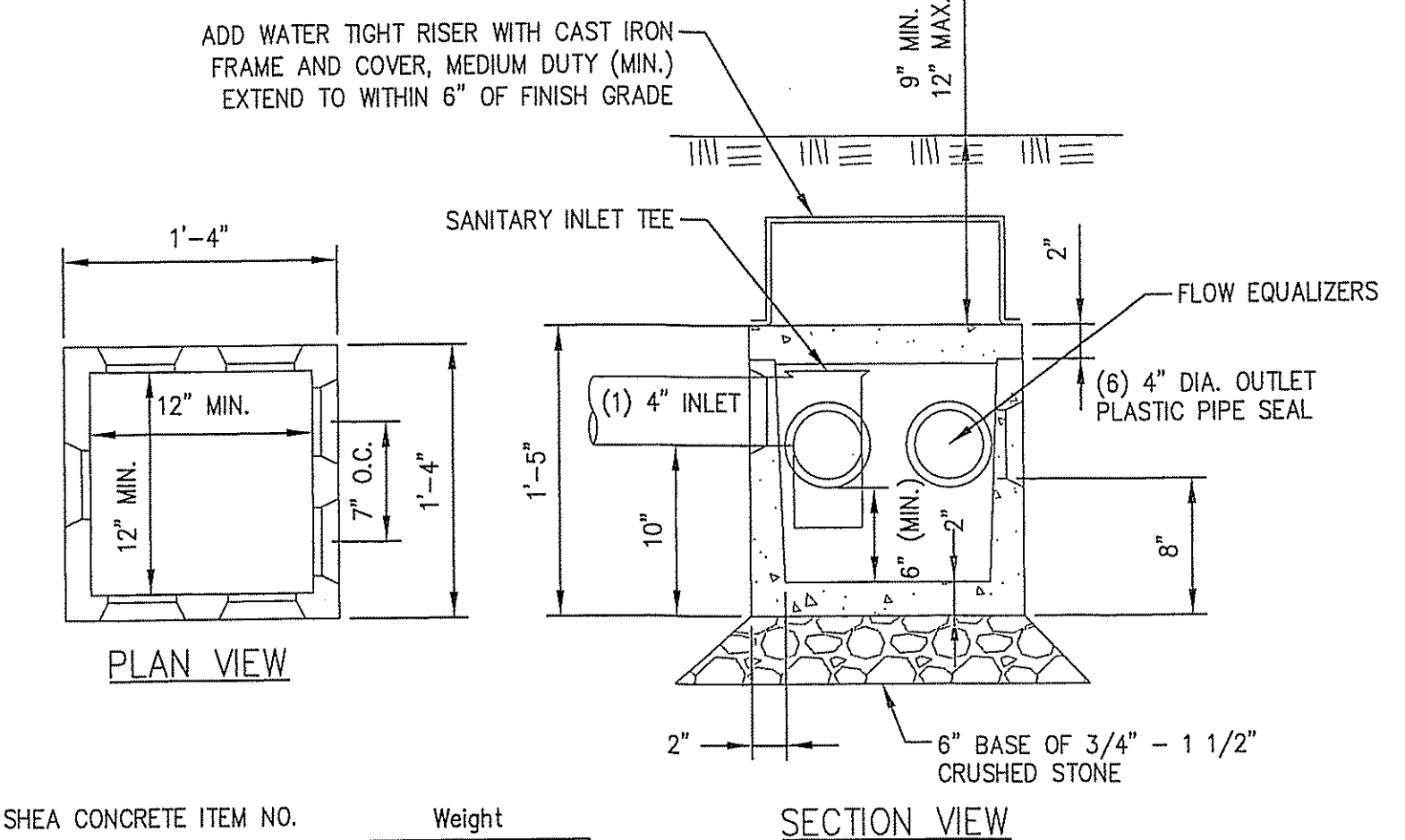
- Ⓐ INV @ FOUNDATION = 85.40
- Ⓑ SEPTIC TANK IN = 85.20
- Ⓒ SEPTIC TANK OUT = 84.95
- Ⓓ D-BOX IN = 84.69
- Ⓔ D-BOX OUT = 84.52
- Ⓕ 4\"/>



ENVIRO-SEPTIC LEACHING SYSTEM
(NOT TO SCALE)



INSPECTION PORT DETAIL
(NOT TO SCALE)



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

(OR APPROVED EQUAL)

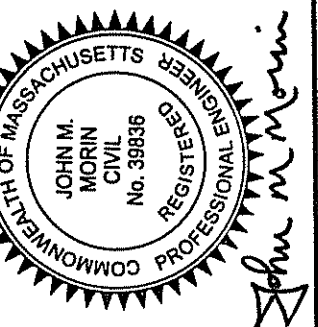
NOTES:

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

SAND REQUIREMENTS:

PRESBY ENVIRO-SEPTIC SYSTEM SAND:
ALL CONFIGURATIONS OF ENVIRO-SEPTIC REQUIRE A MINIMUM OF 6\"/>

TITLE 5 SURROUNDING SAND:
THE SURROUNDING "OVERDIG" SHALL BE EITHER SYSTEM SAND OR TITLE 5 FILL AS SPECIFIED IN 310 CMR 15.255(3).



SURVEY BY: MCG
DRAFTED BY: CWB
CHECKED BY: WAS/DJP
APPROVED BY: JMM
SCALE: AS NOTED
DATE: FEBRUARY 22, 2022

NO.	DESCRIPTION	DATE

SANITARY DISPOSAL SYSTEM REPAIR PLAN
IN
TOPSFIELD, MASSACHUSETTS
68 WASHINGTON STREET
PREPARED FOR
KINGS OAK PROPERTIES, LLC

DRAWING NO.
S - 4098
SHEET NO.
2 OF 2