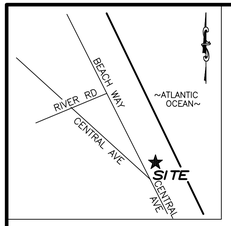


VICINITY MAP
NO SCALE

DIG SAFE
MA – RI – ME – NH – VT
CALL TOLL FREE
1-888-344-7233
UTILITIES UNDERGROUND PLANT DAMAGE PREVENTION SYSTEM

ATLANTIC OCEAN

MEAN LOW WATER

LIMIT OF NHESP ESTIMATED HABITATS OF RARE WILDLIFE

69-1-8
10,000± S.F.

"HUMAROCK BEACH"

69-1-7
N/F
MICHAEL P. & JILL M. MCEVOY
CERT. #129181

N 75°19'05" E
200'±

S 75°19'05" W
200'±

69-1-9
N/F
MARK P. & KAREN M. PERFETTI
CERT.# 103292

17.0±

17.0±

Concrete Patio / Seawall

Existing 2 Bedroom Single Family Dwelling

EM

PROP. CLEANOUT

PROP. WATER SERVICE TO BE SLEEVED AS DIRECTED BY SCITUATE WATER DEPARTMENT

PROP. 1,500 GAL. SEPTIC TANK

PROP. INSP. PORT

PROP. STONE BED COMPRISED OF 3/4" – 1 1/2" DOUBLE WASHED STONE

PROP. DIST. BOX

PROP. 1 ROW OF 5 INFILTRATOR ARC36 HIGH CAPACITY HEAVY DUTY LEACHING CHAMBERS

PROPERTY LINES TO BE STAKED BY PROFESSIONAL LAND SURVEYOR PRIOR TO CONSTRUCTION

CONVENTIONAL SAS LAYOUT 12' x 25' (NOT TO BE CONSTRUCTED)

Deck

Approx. Exist. Water Main

Post

50.00'

N 14°41'55" W

APPROX. EXIST. CESSPOOL TO BE LOCATED, PUMPED, CRUSHED, AND REMOVED

Edge of Pavement

CENTRAL AVENUE

BENCHMARK
MAG NAIL
EL=7.47(NAVD88)

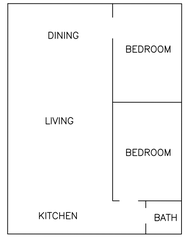
SEPTIC LAYOUT
10' 0 5' 10'
SCALE: 1" = 10'

SOIL TEST DATA

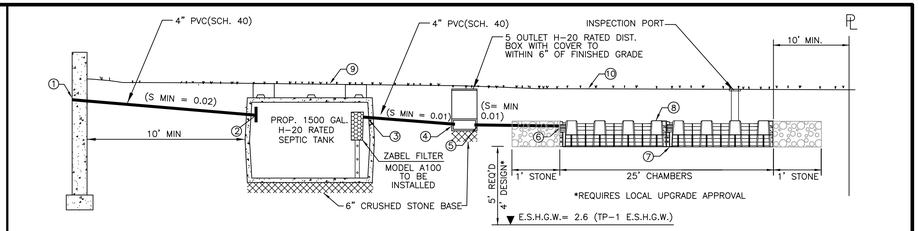
SOIL TESTING AND EVALUATION BY: PAUL G. GUNN, SE#14392
SOIL TESTING WITNESSED BY: RALPH H. COLE, P.L.S.
DATE: JUNE 16, 2020

TP-1 APPROX. GRADE EL. 8.4
C HORIZON
MEDIUM/COARSE SAND
2.5Y 5/4
EL. 0.4
96"

WEEPING OBSERVED: 70" (EL. 2.6)
MOTTLING OBSERVED: NONE
PERC. RATE: <2 MPI @ 18–36"
ESHGW: 70" (EL. 2.6)



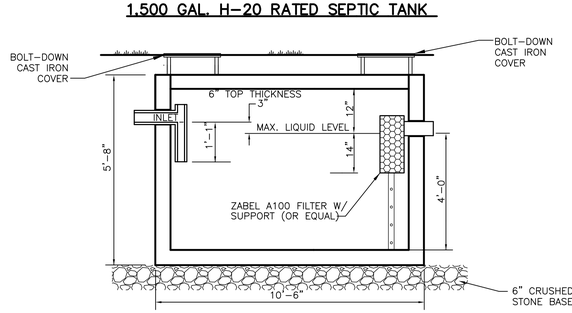
FLOOR PLAN
NOT TO SCALE



SCHEDULE OF ELEVATIONS

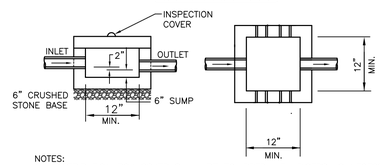
1. INV. OF PIPE AT FOUNDATION = 8.2± (CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION)	6. INV. OF 4" PIPE AT CHAMBER INLET = 7.48
2. INV. OF PIPE AT SEPTIC TANK INLET = 8.01	7. BOTTOM OF CHAMBER = 6.60
3. INV. OF PIPE AT SEPTIC TANK OUTLET = 7.76	8. TOP OF CHAMBER (BREAKOUT) = 7.90
4. INV. OF PIPE AT DIST. BOX INLET = 7.71	9. FINISHED GRADE OVER SEPTIC TANK = 9.5 (MIN) – 11.8(MAX)
5. INV. OF PIPE AT DIST. BOX OUTLET = 7.54	10. FINISHED GRADE OVER LEACHING CHAMBERS = 8.9(MIN) – 10.9(MAX)

1,500 GAL. H-20 RATED SEPTIC TANK



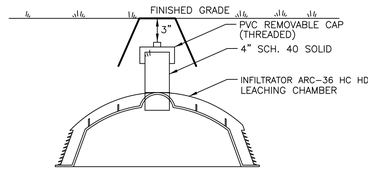
1. THE SEPTIC TANK INLET AND OUTLET COVERS SHALL BE EXTENDED TO FINISHED GRADE WITH BOLT DOWN CAST IRON COVERS.
2. ALL PIPE CONNECTION AND CONSTRUCTION JOINTS SHALL BE SEALED WITH HYDRAULIC CEMENT.
3. SEPTIC TANK SHALL BE INSTALLED ON A LEVEL 6" CRUSHED STONE BASE.
4. OUTLET SHALL BE EQUIPPED WITH A ZABEL A100 EFFLUENT FILTER (OR APPROVED EQUAL).

5 OUTLET, H20 RATED DISTRIBUTION BOX



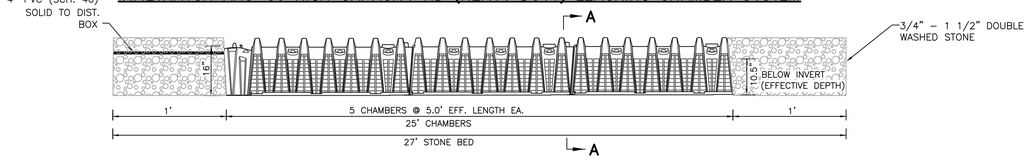
NOTES:
1. DISTRIBUTION BOX COVER SHALL BE EQUIPPED WITH RISERS AS NECESSARY TO BRING THE COVER TO WITHIN 6" OF FINISHED GRADE.
2. ALL PIPE CONNECTION AND CONSTRUCTION JOINTS SHALL BE SEALED WITH HYDRAULIC CEMENT.
3. DISTRIBUTION BOX TO BE INSTALLED ON A LEVEL 6" CRUSHED STONE BASE.
4. THE FIRST 2 FT. OF PIPE EXITING THE DISTRIBUTION BOX SHALL BE INSTALLED LEVEL.

INSPECTION PORT

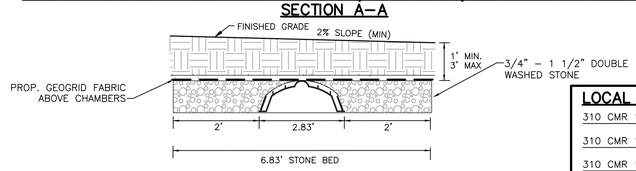


*CONTRACTOR TO PROVIDE TWO INSPECTION PORTS

INFILTRATOR ARC-36 HIGH CAPACITY HD (HEAVY DUTY) LEACHING CHAMBER SYSTEM



INFILTRATOR ARC 36 HIGH CAPACITY HD (HEAVY DUTY) LEACHING CHAMBERS SECTION A–A



NOTES :
1.) BACKFILL CHAMBERS WITH 3/4" – 1 1/2" DOUBLE WASHED STONE TO THE TOP OF THE CHAMBER.
3.) DO NOT BACKFILL WITH ANY STONES 3" OR LARGER AGAINST CHAMBERS.
4.) CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

LOCAL UPGRADE APPROVAL REQUESTS

310 CMR 15.405(a):	TO ALLOW A REDUCTION FROM 10' (REQ'D) TO 5' (PROP.) BETWEEN THE PROPERTY LINE AND THE SEPTIC TANK.
310 CMR 15.405(b):	TO ALLOW A REDUCTION FROM 10' (REQ'D) TO 5' (PROP.) BETWEEN THE FOUNDATION AND THE SEPTIC TANK.
310 CMR 15.405(b):	TO ALLOW A REDUCTION FROM 20' (REQ'D) TO 9.6' (PROP.) BETWEEN THE FOUNDATION AND THE SAS.
310 CMR 15.405(c):	TO ALLOW AN 18% SIZE REDUCTION OF THE SAS. A SIZE REDUCTION IS ALLOWABLE FOR UP TO 25%.
310 CMR 15.405(g):	TO ALLOW A REDUCTION FROM 10' (REQ'D) TO 4' (PROP.) BETWEEN THE WATER SERVICE AND THE SAS.
310 CMR 15.405(h):	TO ALLOW A REDUCTION FROM 5' (REQ'D) TO 4' (PROP.) BETWEEN GROUNDWATER AND THE BOTTOM OF THE SAS.

DESIGN DATA

1. BUILDING TYPE: RESIDENTIAL
2. NO. OF BEDROOMS: 2 (DEED RESTRICTION REQUIRED)
3. DESIGN FLOW: 2 BEDROOMS x 110 G.P.D./BED = 220 G.P.D.
4. DESIGN PERCOLATION RATE: <2 MPI (TP-1)
5. GARBAGE DISPOSAL: NO
6. SEPTIC TANK DESIGN REQUIREMENT: 200% DESIGN FLOW
   220 X 2 = 440 GAL. (USE 1500 GAL. SEPTIC TANK)
7. LEACH AREA REQUIREMENTS GALLONS/SQ. FT. (CLASS I SOILS)
   BOTTOM: 0.74 GAL./S.F. SIDE: 0.74 GAL./S.F.
8. TOTAL LEACH AREA REQUIRED:
   TITLE 5: 220 GPD / (0.74 GPD/S.F.) = 297.3 S.F.
   PROVIDED: 1 TRENCH OF 5 INFILTRATOR ARC-36 HC HD LEACHING CHAMBERS WITH STONE
   EFFECTIVE AREA: BOTTOM: 6.83' x 27' = 184.4 S.F.
   SIDE: (27' + 6.83') x 2 x (10.5" / 12) = 59.2 S.F.
   TOTAL: 184.4 + 59.2 = 243.6 S.F.
   SAS SIZE REDUCTION: 243.6 / 297.3 = 0.82
   18% SIZE REDUCTION REQUESTED (25% ALLOWED)

GENERAL NOTES

1. SEPTIC SYSTEM INSTALLATION CONTRACTORS SHALL BE LICENSED BY THE BOARD OF HEALTH AND MUST COMPLY WITH ALL REQUIREMENTS OF THE BOARD OF HEALTH DISPOSAL WORKS CONSTRUCTION PERMIT AND ANY CONDITIONS, IF ISSUED BY THE CONSERVATION COMMISSION.
2. ALL CONSTRUCTION MUST COMPLY WITH TITLE 5 OF THE STATE ENVIRONMENTAL CODE 310 CMR 15 & THE ANY LOCAL BOARD OF HEALTH SUPPLEMENTAL REGULATIONS.
3. THERE SHALL BE NO CHANGES MADE IN THIS PLAN WITHOUT THE WRITTEN PERMISSION OF THE BOARD OF HEALTH AND DESIGN ENGINEER.
4. ANY CHANGE IN SITE CONDITIONS, DISCREPANCIES, ERRORS OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF MORSE ENGINEERING PRIOR TO THE COMMENCEMENT OF WORK.
5. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH TITLE 5 (310 CMR 15) AND THE LOCAL BOARD OF HEALTH REQUIREMENTS TO THE FULLEST EXTENT PRACTICABLE. NO GUARANTEE TO THE SYSTEMS PERFORMANCE IS EXPRESSED OR IMPLIED.
6. SOIL TEST DATA SHOWN IS LIMITED TO THE CONDITIONS EXISTING AT THE SUBJECT TEST PIT LOCATION ONLY. IF DIFFERENT SOIL CONDITIONS ARE FOUND IN THE AREA OF THE PROPOSED SOIL ABSORPTION SYSTEM THEY SHALL BE BROUGHT TO THE ATTENTION OF MORSE ENGINEERING IMMEDIATELY.
7. THE CONTRACTOR SHALL NOTIFY DIGSAFE PRIOR TO ANY EXCAVATION AT THE SUBJECT PROPERTY. IT IS SPECIFICALLY CAUTIONED THAT THE SUBSURFACE UTILITIES SHOWN ARE APPROXIMATE ONLY AND HAVE BEEN COMPILED FROM AVAILABLE RECORDS AND OBSERVABLE SITE FEATURES. UTILITIES OTHER THAN THOSE SHOWN MAY BE PRESENT AT THIS LOCATION.
8. THIS PLAN HAS BEEN PREPARED SPECIFICALLY AS A SEPTIC SYSTEM DESIGN AND IS NOT TO BE USED TO ESTABLISH PROPERTY LINES OR BUILDING SETBACKS. PROPERTY LINES AND BUILDING LOCATIONS ARE GRAPHIC ONLY, PROPERTY LINES NOT HAVING BEEN VERIFIED. NO REPRESENTATION OR CERTIFICATION AS TO THE ACCURACY OF THOSE SHOWN IS IMPLIED.
9. CONTRACTOR TO VERIFY AND ENSURE THAT ALL INTERIOR PLUMBING IS DIRECTED INTO PROPOSED SEPTIC SYSTEM. ANY VARIATIONS FROM THE DESIGN AS SHOWN SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER.

CONSTRUCTION NOTES

1. CONTRACTOR SHALL COORDINATE INSPECTION TIMES WITH THE LOCAL BOARD OF HEALTH AND DESIGN ENGINEER 24–HOURS IN ADVANCE OF THE FOLLOWING INSPECTIONS:
   1. AFTER EXCAVATION OF ALL UNSUITABLE MATERIAL FROM SOIL ABSORPTION AREA.
   2. PRIOR TO COVERING THE CONSTRUCTED SYSTEM.
   3. AFTER SYSTEM BACKFILL AND FINAL GRADING.
2. ALL CONSTRUCTION MUST COMPLY WITH TITLE 5 OF THE STATE ENVIRONMENTAL CODE 310 CMR 15 & THE ANY LOCAL BOARD OF HEALTH SUPPLEMENTAL REGULATIONS.
3. ALL TIGHT–JOINT PLUMBING SHALL BE CONSTRUCTED OF SCH. 40 PVC PIPE WITH CLEANED AND CEMENTED FITTINGS, UNLESS OTHERWISE NOTED.
4. ALL PRECAST/PIPE CONSTRUCTION JOINTS AND FITTINGS SHALL BE MADE WATERTIGHT BY PARGING WITH HYDRAULIC CEMENT.
5. THE CONTRACTOR SHALL PROVIDE A SIEVE ANALYSIS OF THE TITLE 5 PERC SAND UTILIZED FOR FILL TO VERIFY THAT IT MEETS THE REQUIREMENTS OF 310 CMR 15.255(3). TITLE 5 SAND FILL SHALL COMPLY WITH THE FOLLOWING:

SIEVE SIZE	PARTICLE SIZE
#4	4.75 mm
#50	0.30 mm
#100	0.15 mm
#200	0.075 mm

6. THE CONTRACTOR SHALL PREVENT ANY HEAVY CONSTRUCTION MACHINERY AND/OR TRUCKS FROM DRIVING OVER THE PROPOSED SOIL ABSORPTION SYSTEM LOCATION UNTIL FINISHED GRADE IS ESTABLISHED.
7. THE CONTRACTOR SHALL INSTALL MAGNETIC TAPE OVER SYSTEM PIPING & COMPONENTS
8. THE DESIGN ENGINEER SHALL CERTIFY AND PREPARE AN "AS–BUILT" PLAN FOR SUBMITTAL TO THE BOARD OF HEALTH UPON SEPTIC SYSTEM COMPLETION.
9. ALL DISTURBED AREAS SHALL BE RESTORED WITH 4" LOAM & SEED POST CONSTRUCTION.
10. CONTRACTOR SHALL ABANDON EXISTING SEPTIC COMPONENTS IN ACCORDANCE WITH 310 CMR SEC. 15.354 OF TITLE 5 AND LOCAL REGULATIONS BY PUMPING DRY, CRUSHING AND ABANDONING

SITE NOTES

1. LOCUS DOES NOT LIE WITHIN A DEP DESIGNATED ZONE II RESOURCE AREA.
2. LOCUS LIES ON A BARRIER BEACH RESOURCE AREA.
3. PROPERTY LINE DATA WAS OBTAINED FROM LOCUS DEED (CERT. #115964) AND RECORD PLANS ON FILE AT THE PLYMOUTH COUNTY REGISTRY OF DEEDS.
4. THERE WERE NO ACTIVE/POTABLE WELLS OBSERVED WITHIN 100' OF THE PROPOSED SYSTEM.
5. LOCUS LIES IN FEMA FLOOD ZONE "VE" (EL. 18) AS SHOWN ON FEMA COMMUNITY MAP PANEL 25023C 0137K DATED NOVEMBER 4, 2016.

DEED RESTRICTION REQUIRED
CONTRACTOR TO BE INFILTRATOR CERTIFIED

COMMONWEALTH OF MASSACHUSETTS
GREGORY J. MORSE
CIVIL
No.47105
REGISTERED PROFESSIONAL ENGINEER

PREPARED BY:
MORSE ENGINEERING CO., INC.
10 NEW DRIFTWAY
SUITE 303
SCITUATE, MA 02066
T: 781-545-0895

PROJECT: SEPTIC SYSTEM DESIGN PLAN 296 CENTRAL AVENUE ASSESSOR'S PARCEL: 69-1-8 SCITUATE, MASSACHUSETTS	DESIGN: JDG CHECK: GJM JOB NO: 20–232
PREPARED FOR: LINDA BARICH P.O. BOX 24 HUMAROCK, MA 02047	DATE: 6/23/2020 REV: –
PLAN TITLE: SEPTIC SYSTEM DESIGN PLAN	SHEET: 1

Y:\00–PROJECT FILES\2020 PROJECTS\20–232\CAD\20–232.DWG