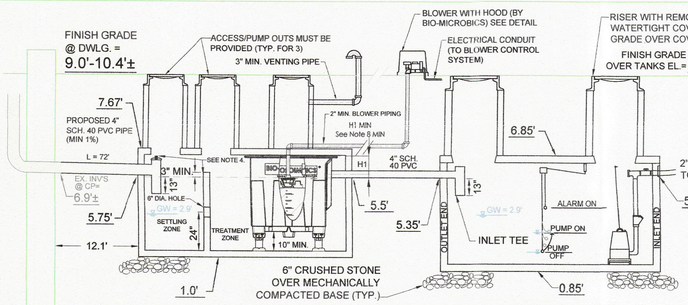


1500 GALLON SEPTIC TANK (H-20) — LENGTH 11'-6" WIDTH 6'-0" DEPTH 6'-8"

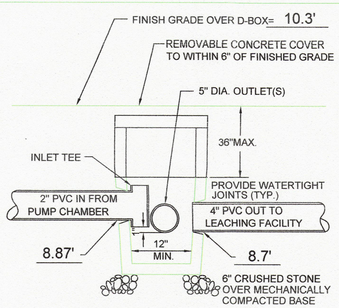
1000 GALLON PUMP CHAMBER (H-20) — LENGTH 7'-8" WIDTH 6'-0" DEPTH 6'-0"

BOTH TANKS SHALL BE WATERPROOF, WATERTIGHT AND BE INSTALLED ON A LEVEL STABLE BASE

DIMENSION AS PER
ACME PRECAST CO, INC.
FALMOUTH, MA
(508) 548-9607

1500 GALLON INTERNAL MOUNT (H-20) "FAST TANK" W/ MICROFAST 0.5 & PROPOSED 1000 GALLON MONOLITHIC PUMP CHAMBER (H-20)

NOT TO SCALE

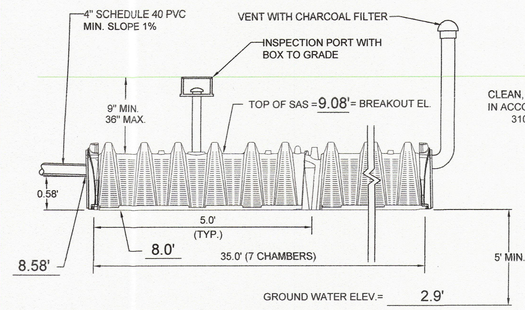


5 OUTLET DISTRIBUTION BOX TO BE INSTALLED ON A LEVEL STABLE BASE. FIRST TWO FEET OF OUTLET PIPES TO BE LAID LEVEL.

CROSS SECTION VIEW

DISTRIBUTION BOX DETAIL

NOT TO SCALE



CHAMBER PROFILE VIEW

CHAMBER END VIEW

ARC 36 STANDARD CHAMBER DETAILS

NOT TO SCALE

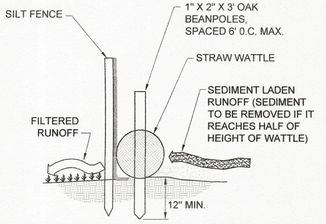
GENERAL NOTES

1. UNLESS OTHERWISE NOTED, ALL SYSTEM COMPONENTS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH TITLE 5 OF THE STATE ENVIRONMENTAL CODE AND ANY APPLICABLE LOCAL RULES.
2. ANY CHANGES TO THIS PLAN MUST BE APPROVED BY THE BOARD OF HEALTH AND THE DESIGN ENGINEER.
3. 4" SCHEDULE 40 PVC PIPE WITH WATER TIGHT JOINTS SHALL BE USED IN DISPOSAL SYSTEM UNLESS OTHERWISE NOTED.
4. TO PREVENT BREAKOUT, THE PROPOSED FINISH GRADE SHALL NOT BE LESS THAN ELEVATION = 9.08' FOR A DISTANCE OF 15' AROUND THE PERIMETER OF THE SAS. UNLESS A 40 MIL GEOMEMBRANE LINER IS PLACE AT LEAST FIVE FEET FROM S.A.S. AND THE TOP OF THE LINER IS NOT LESS THAN THE BREAKOUT ELEVATION.
5. SLOPE ALL SOLID PIPE AT 1.0% MINIMUM.
6. THIS SYSTEM IS NOT DESIGNED FOR A GARBAGE DISPOSAL.
7. LOCAL BOARD OF HEALTH AND DESIGN ENGINEER TO BE NOTIFIED PRIOR TO BACK FILLING WHEN SYSTEM IS NEARLY COMPLETE AND READY FOR INSPECTION. SYSTEM IS NOT TO BE BACK FILLED WITHOUT FIRST OBTAINING APPROVAL FROM BOARD OF HEALTH AND DESIGN ENGINEER.
8. ELEVATIONS BASED ON ACTUAL DATUM OF 10.3' NAVD 88 OBTAINED FROM A NAIL SET IN A TREE AS SHOWN ON PLAN.
9. CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION THROUGH DIG-SAFE AT LEAST 72 HOURS PRIOR TO COMMENCING WORK ON SITE AT 1-888-DIG-SAFE AND ANY OTHER APPLICABLE AGENCIES. REPORT ANY DISCREPANCIES TO THE DESIGN ENGINEER.
10. ALL JOINTS WHERE PIPE ENTERS AND EXITS CONCRETE STRUCTURES SHALL BE MADE WATERTIGHT.
11. NO DETERMINATION HAS BEEN MADE AS TO COMPLIANCE WITH DEEDED OR ZONING REGULATIONS. OWNER/APPLICANT IS TO OBTAIN SUCH DETERMINATION FROM APPROPRIATE AUTHORITY.
12. ALL SEPTIC SYSTEM COMPONENTS SHALL WITHSTAND H-10 LOADING UNLESS LOCATED UNDER PAVEMENT, DRIVES OR TRAVELED WAYS IN WHICH CASE THEY SHALL WITHSTAND H-20 LOADING.
13. DOUBLE WASHED CRUSHED STONE SHALL BE FREE OF ALL DIRT, DUST AND FINES.
14. WHERE REQUIRED, CONTRACTOR SHALL REMOVE ALL LOAM, SUBSOIL AND UNSUITABLE MATERIAL IN AREA BENEATH AND FOR 5 FT. ON ALL SIDES OF LEACHING FACILITY. REPLACE ALL UNSUITABLE MATERIAL WITH CLEAN COARSE SAND FREE FROM CLAY, FINES OR OTHER UNSUITABLE MATERIAL IN ACCORDANCE WITH 310 CMR 15.255(3).
15. CONTRACTOR SHALL NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES FOUND IN SITE CONDITIONS FROM THOSE SHOWN PRIOR TO CONTINUATION OF WORK.
16. PROPOSED PROJECT IS LOCATED WITHIN:
    ASSESSORS MAP # 43.3 LOT # 157
    FLOOD ZONE AE 15/VE 16 AS SHOWN ON PANEL # 25001C0492J
17. OWNER OF RECORD: FRANK W. MUSCHE, JR.
    ADDRESS: 203 CAMINO REAL, HOWEY IN THE HILLS, FL 34737
18. DEED REFERENCE: DEED BOOK 9495, PAGE 148
    PLAN REFERENCE: PLAN BOOK 28, PAGE 1
19. A 4" PERFORATED SCH. 40 PVC PIPE SHALL BE PLACED IN A VERTICAL POSITION TO A DEPTH OF THE BOTTOM OF THE SAS AND EXTEND TO WITHIN 3" OF FINISH GRADE. A REMOVABLE THREADED CAP SHALL BE PLACED ON THE TOP TO ALLOW FOR INSPECTIONS.
20. PROPERTY LINE INFORMATION IS ONLY APPROXIMATE. THIS PLAN IS TO BE USED ONLY FOR SEPTIC SYSTEM UPGRADE. JC ENGINEERING WILL NOT ASSUME ANY LIABILITY FOR USES OF THIS PLAN OTHER THAN ITS INTENDED PURPOSE.

NOTES:

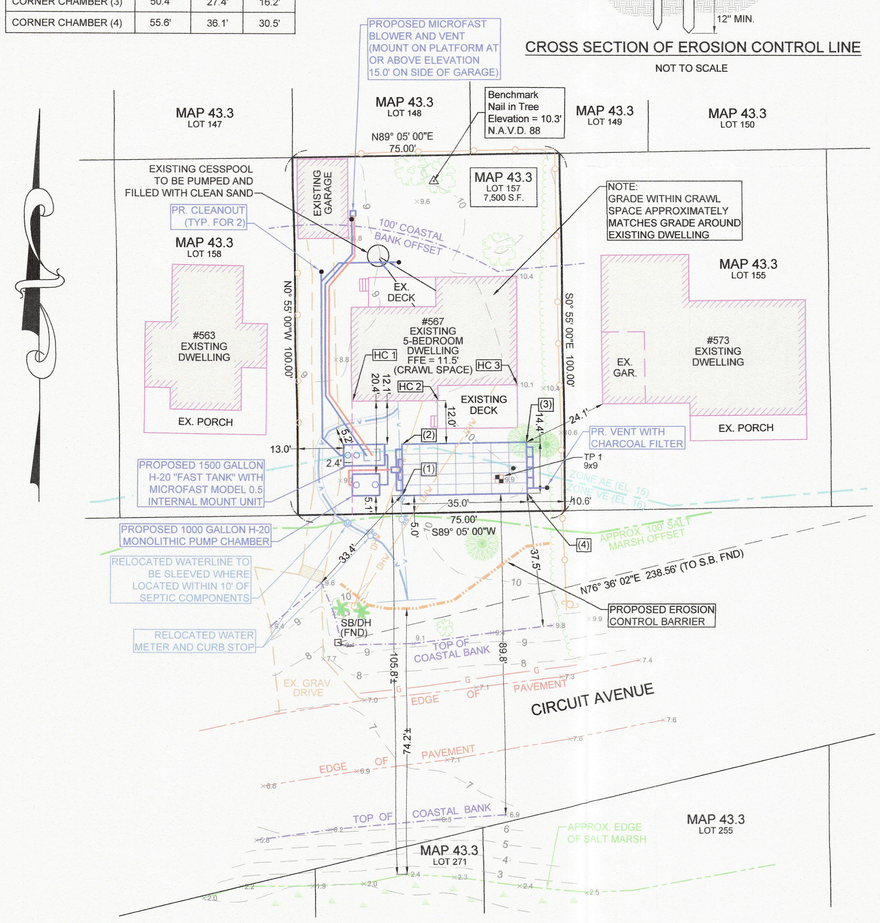
1. MAGNETIC MARKING TAPE SHALL BE PLACED ALONG THE TOP EDGE OF EACH SYSTEM COMPONENT.
2. ENTIRE PARCEL IS NOT LOCATED WITHIN A DEP APPROVED ZONE II.
3. ENTIRE PARCEL IS NOT LOCATED WITHIN A WATER RESOURCE DISTRICT AS DEFINED ON THE TOWN OF BOURNE ZONING MAP.

DESCRIPTION	HC 1	HC 2	HC 3
CORNER CHAMBER (1)	30.0'	28.4'	44.6'
CORNER CHAMBER (2)	18.5'	15.9'	36.4'
CORNER CHAMBER (3)	50.4'	27.4'	16.2'
CORNER CHAMBER (4)	55.6'	36.1'	30.5'



CROSS SECTION OF EROSION CONTROL LINE

NOT TO SCALE



SITE PLAN

SCALE: 1" = 20'

MICROFAST NOTES

(1) BLOWER PIPING TO FAST® MAY NOT EXCEED 100 FT [30.5M] TOTAL LENGTH AND USE 4 ELBOWS MAXIMUM. FOR DISTANCES GREATER THAN 100 FT [30.5M] - CONSULT FACTORY. BLOWER MUST BE LOCATED ABOVE FLOOD/STANDING WATER LEVELS ON A CONCRETE BASE.

(2) VENT TO BE LOCATED ABOVE FINISH GRADE OR HIGHER TO AVOID V2 SQ IN. OF OPEN INFILTRATION. CAP WITH VENT GRATE WITH AT LEAST SURFACE AREA. SECURE WITH STAINLESS STEEL SCREWS (SEE SHEET 3 OF 3 FAST DETAILS.)
OR
RUN VENT TO DESIRED LOCATION AND COVER OPENING WITH VENT V2 SQ IN. OF OPEN SURFACE AREA. SECURE WITH GRATE WITH AT LEAST STAINLESS STEEL SCREWS. VENT PIPING MUST NOT ALLOW EXCESS MOISTURE BUILD UP OR BACK PRESSURE.

(3) ALL APPURTENANCES TO FAST® (E.G. TANK PUMP OUTS, ETC.) MUST CONFORM TO ALL COUNTRY, STATE, PROVINCE, AND LOCAL PLUMBING AND ELECTRICAL CODES. THE BLOWER CONTROL SYSTEM IS PROVIDED BY BIO-MICROBICS, INC.

(4) EITHER THE INFLUENT PIPE TEE SHALL BE FITTED WITH A PIPE CAP OR THE BAFFLE SEPARATING THE TWO ZONES SHALL BE EXTENDED TO THE TOP OF THE TANK. IF CHOOSING TO USE THE PIPE CAP; DRILL A 1/4" [0.6CM] VENT HOLE IN THE CAP AND THE BAFFLE SHALL BE AT LEAST 3"[8] HIGHER THAN THE WATER LEVEL AS SHOWN ON THE DRAWING.

(5) ALL INSPECTION, VIEWING AND PUMP OUT PORTS MUST BE SECURED TO PREVENT ACCIDENTAL OR UNAUTHORIZED ACCESS

(6) TANK, ANCHORS, PIPING, CONDUIT, BLOWER HOUSING PAD AND VENTS ARE PROVIDED BY OTHERS.

(7) ALL PIPING AND ANCILLARY EQUIPMENT INSTALLED AFTER FAST® MUST NOT IMPEDE OR RESTRICT FREE FLOW OF EFFLUENT.

(8) H1 MIN HEIGHT MAY BE REDUCED, CONSULT FACTORY AND REFERENCE "SHORT-FASTMODULE-PROCEDURE.PDF."

(9) STANDARD HEIGHT OF INTERNAL MOUNT MICROFAST UNIT MAY BE SHORTENED TO ALLOW PLACEMENT IN A LOW PROFILE "FAST TANK" AS SUPPLIED BY ACME PRECAST CO., INC. OR APPROVED EQUAL. REFER TO BIOMICROBICS FOR MODIFYING THE MICROFAST UNIT. MAXIMUM REDUCTION IN HEIGHT ABOVE WATER LINE FOR MODEL 0.5 IS 9 INCHES.

REQUEST FOR LOCAL UPGRADE APPROVALS

IN ACCORDANCE WITH 310 CMR 15.401-15.405, THE FOLLOWING LOCAL UPGRADE APPROVALS ARE REQUESTED FROM 310 CMR 15.211:

(1.) A 4.9' WAIVER (10.0' - 5.1') FOR THE SETBACK FROM THE PROPOSED PUMP CHAMBER TO THE FRONT PROPERTY LINE.

(2.) A 5.0' WAIVER (10.0' - 5.0') FOR THE SETBACK FROM THE PROPOSED LEACHING FACILITY TO THE FRONT PROPERTY LINE

(3.) AN 8.0' WAIVER (20.0' - 12.0') FOR THE SETBACK FROM THE PROPOSED LEACHING FACILITY TO THE CRAWL SPACE.

(4.) A 4.8' WAIVER (10.0' - 5.2') FOR THE SETBACK FROM THE PROPOSED WATERLINE TO THE PROPOSED SEPTIC TANK.

REQUEST FOR LOCAL VARIANCES

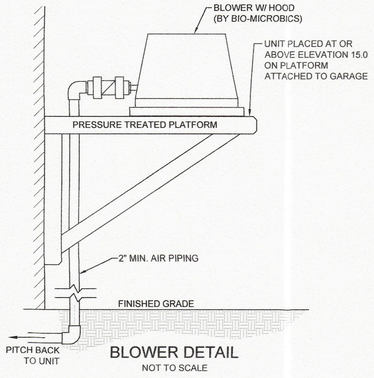
(1.) A 44.2' VARIANCE (150.0' - 105.8') FOR THE SETBACK FROM THE PROPOSED LEACHING FACILITY TO THE EDGE OF SALT MARSH.

(2.) A 116.6' VARIANCE (150.0' - 33.4') FOR THE SETBACK FROM THE PROPOSED LEACHING FACILITY TO THE NEAREST COASTAL BANK.

BUOYANCY CALCULATIONS

SEPTIC TANK
HIGH GROUNDWATER EL.= 2.9' BOTTOM OF SEPTIC TANK EL. = 1.0'
WATER DISPLACED = (2.9' - 1.0') x 11.5' x 6.0' = 131 C.F.
WEIGHT OF DISPLACED WATER = 131 C.F. x 62.4 LB/C.F. = 8,180 LBS.
WEIGHT OF SEPTIC TANK = 27,500 LBS. 27,500 > 8,180 LBS. (ACCEPTABLE)

PUMP CHAMBER
HIGH GROUNDWATER EL.= 2.9' BOTTOM OF PUMP CHAMBER EL. = 0.85'
WATER DISPLACED = (2.9' - 0.85') x 7.67' x 6.0' = 94.3 C.F.
WEIGHT OF DISPLACED WATER = 94.3 C.F. x 62.4 LB/C.F. = 5,890 LBS.
WEIGHT OF CHAMBER = 16,500 LBS. 16,500 LBS. > 5,890 LBS. (ACCEPTABLE)



BLOWER DETAIL

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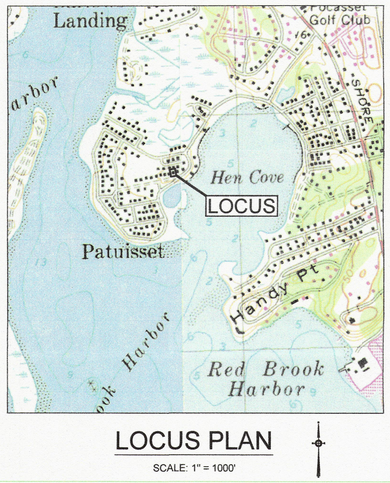
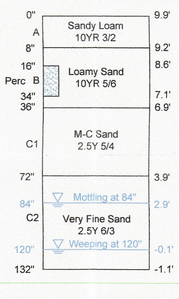


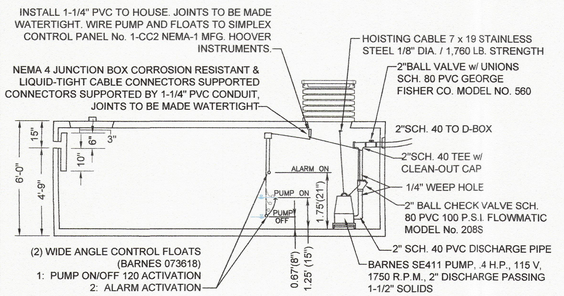
LOCUS PLAN

SCALE: 1" = 1000'

TEST PIT DATA

INSPECTOR: Terri Guarino
SOIL EVALUATOR: Bradley M. Bertolo
DATE: December 14, 2020
TEST PIT #: 1
ELEV TOP = 9.9'
ELEV WATER = 2.9'
PERC RATE = < 2 MIN/IN
DEPTH OF PERC = 16"-34"
TEXTURAL CLASS: 1





1000 GALLON MONOLITHIC PUMP CHAMBER

DESIGN DATA

NUMBER OF BEDROOMS 5
DESIGN FLOW 110 GAL/DAY/BEDROOM
TOTAL DESIGN FLOW 550 GAL/DAY
DESIGN FLOW X 200 % = 1100 GAL/DAY

USE PROPOSED 1500 GALLON SEPTIC TANK

INSTALL (35) ARC36 STANDARD CHAMBERS

SYSTEM CAPACITY
(TOTAL LENGTH) (4.80 SF/LF*) (.74 GPD/SQ.FT.) = GPD
(175') (4.80 SF/LF*) (.74 GAL/SQ.FT.) = 621.6 GAL/DAY

TOTALS:
TOTAL NUMBER OF CHAMBERS: 35
TOTAL LEACHING AREA: 840 SQ.FT.
TOTAL LEACHING CAPACITY: 621.6 GAL./DAY

DOSING & STORAGE REQUIREMENTS

DESIGN FLOW: 550 GPD
DOSING REQUIRED: 4 CYCLE / DAY
550 GPD/4 = 137.5 GAL/CYCLE

DISTANCE REQUIRED BETWEEN PUMP ON AND PUMP OFF FLOATS:
137.5 GAL/CYCLE ÷ 250 GAL/FT = 0.55 FT/CYCLE
(USE 0.58' TO PROVIDE FOR BACKFLOW)

STORAGE REQUIRED ABOVE WORKING LEVEL: 550 GAL.
STORAGE PROVIDED ABOVE WORKING LEVEL: 562.5 GAL.

*NOTE:
EFFECTIVE LEACHING AREA OF 4.80 SF/LF OBTAINED FROM THE "CERTIFICATE FOR GENERAL USE " ISSUED JUNE 12, 2015 BY THE COMMONWEALTH OF MASSACHUSETTS EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS, DEPARTMENT OF ENVIRONMENTAL PROTECTION, TRANSMITTAL NUMBER: X264258.

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING WATERLINE
- PROPOSED SLEEVED WATERLINE
- EXISTING OVERHEAD UTILITIES
- TEST PIT LOCATION
- PROPOSED 1500 GALLON SEPTIC TANK (H-20) WITH MICROFAST INSERT
- PROPOSED 1000 GALLON PUMP CHAMBER (H-20)
- 4" SOLID SCHEDULE 40 PVC PIPE
- 2" SOLID SCHEDULE 40 PVC PIPE
- DISTRIBUTION BOX
- ARC 36 STANDARD CHAMBER

REV.	DATE	BY	APP'D.	DESCRIPTION

RECEIVED
JAN 22 2021
Bourne Health Department
24 Perry Avenue
Buzzards Bay MA 02532

PROPOSED SEPTIC SYSTEM UPGRADE

PREPARED FOR:
FRANK W. MUSCHE, JR.

LOCATED AT
567 CIRCUIT AVENUE
BOURNE, MA

SCALE: 1 INCH = 20 FT. DATE: JANUARY 6, 2021
0 10 20 40 80 FEET

JOHN L. CHURCHILL JR CIVIL No. 41807 REGISTERED PROFESSIONAL ENGINEER

PREPARED BY:
JC ENGINEERING, INC.
2854 CRANBERRY HIGHWAY
EAST WAREHAM, MA 02538
508.273.0377

Drawn By: BMB | Designed By: BMB | Checked By: JLC | JOB No. 5401