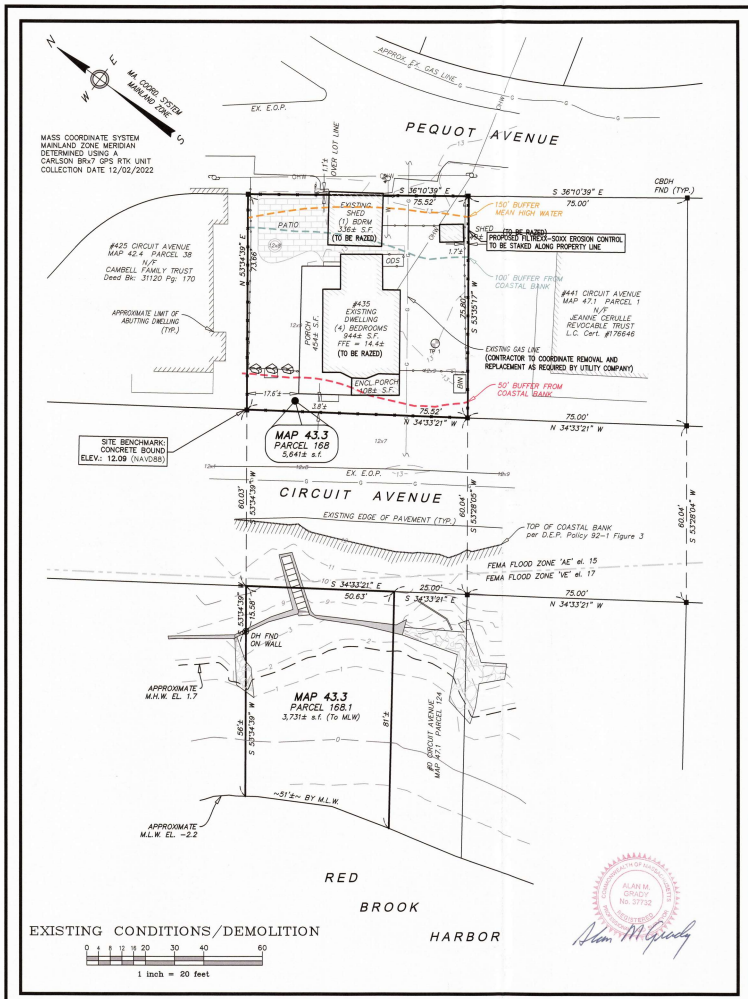
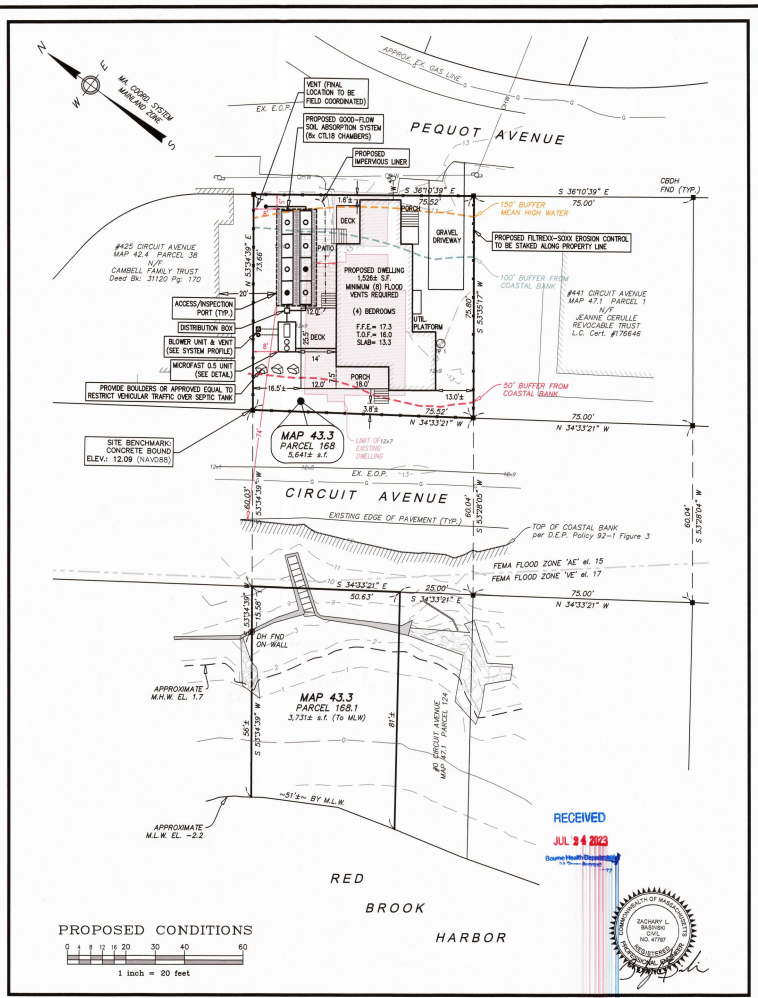




LOCAL UPGRADE APPROVAL WAIVERS & VARIANCE REQUESTS

IN ACCORDANCE WITH MA 310 15.00 (TITLE 5) AND LOCAL BOURNE BOARD OF HEALTH REGULATIONS, THE FOLLOWING VARIANCES ARE REQUESTED:

- 15.405(1)(a) – A 5' LOCAL UPGRADE APPROVAL WAIVER FROM FULL COMPLIANCE IS REQUESTED FOR A 5' SETBACK FROM A PROPERTY LINE (PEQUOT AVENUE) TO A SOIL ABSORPTION SYSTEM.
- 15.405(1)(a) – A 2' LOCAL UPGRADE APPROVAL WAIVER FROM FULL COMPLIANCE IS REQUESTED FOR A 8' SETBACK FROM A PROPERTY LINE (#425 CIRCUIT AVENUE) TO A SOIL ABSORPTION SYSTEM.
- 15.405(1)(a) – A 2' LOCAL UPGRADE APPROVAL WAIVER FROM FULL COMPLIANCE IS REQUESTED FOR A 8' SETBACK FROM A PROPERTY LINE (#425 CIRCUIT AVENUE) TO SEPTIC TANK.
- 15.405(1)(b) – A 3' LOCAL UPGRADE APPROVAL WAIVER FROM FULL COMPLIANCE IS REQUESTED FOR A 7' SETBACK FROM THE LOCUS FOUNDATION WALL (#435 CIRCUIT AVENUE) TO A SOIL ABSORPTION SYSTEM.
- A 76' LOCAL VARIANCE IS REQUESTED FROM THE BOURNE BOARD OF HEALTH REGULATIONS FOR A 74' SETBACK FROM A PROPOSED SOIL ABSORPTION SYSTEM TO THE TOP OF A COASTAL BANK.

ZONING REQUIREMENTS

ZONE: R-40

PRE-EXISTING NON-CONFORMING

SEE TABLE 2456 FOR NON-CONFORMING LOTS IN BOURNE ZONING BY LAWS.

ZONE: R-40	REQUIRED	EXISTING	PROPOSED
LOT AREA:	40,000 s.f.	9,372± s.f. (a)	9,372± s.f.(a)
FRONTAGE:	125'	SEE PLAN	SEE PLAN
FRONT YARD:	20'	SEE PLAN	SEE PLAN
SIDE YARD:	12'	1.7'± (NE)	13.0'±
REAR YARD:	12'	SEE PLAN	SEE PLAN
LOT COVERAGE:	25% (2,343 s.f.)	20.4% (1,913± s.f.)	22.9% (2,155± s.f.)
GROSS FLOOR AREA:	23% (2,155 s.f.)	30.2% (2,835± s.f.)	30.1% (2,826± s.f.)
BUILDING HEIGHT:	29' (b) (34')	25.8'±	<34'±

Notes:
(a) LOT AREA INCLUDES PARCELS 168 & 168.1
(b) INCREASE ALLOWABLE HEIGHT BY 5' FOR ROOF ELEMENTS HAVING A SLOPE OF 4" OR MORE PER FOOT (SEE SECTION 2500 footnote (a)

SOIL LOGS

TP NO. 1
GRD. EL. 13.0
GW. EL. NONE TO 2.7

0"	Ap SANDY LOAM 10YR 3/2	13.0
12"	Bw LOAMY SAND 10YR 5/8	12.0
48"	C MEDIUM SAND 2.5Y 6/4	9.0
124"	NO MOTTLES NO WATER	2.7

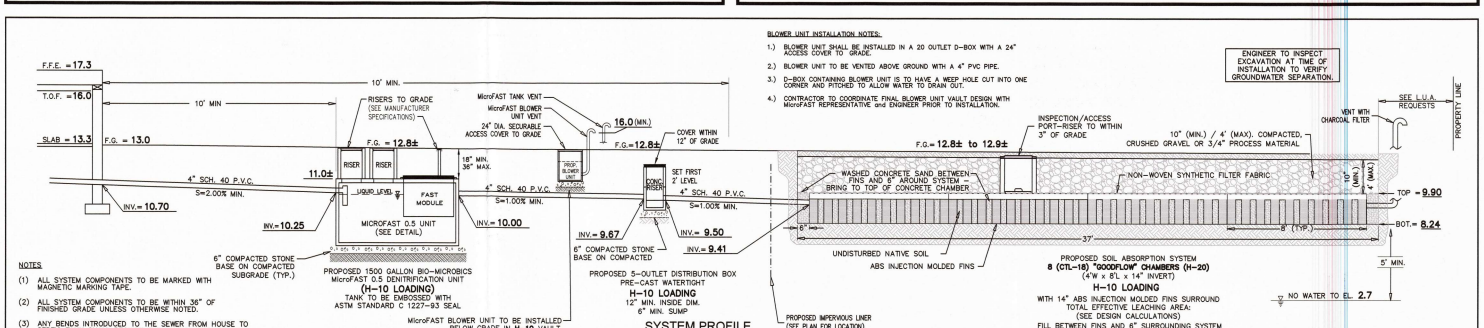
PERC

DATE PERFORMED:	DECEMBER 15, 2022
SOIL EVALUATOR:	ROBERT E. DEWAR, E.I.T. SE#14230
WITNESSED BY:	KAITY SHEA – B.O.H. INSPECTOR
PERC. RATE:	<2 MINUTES/INCH
SOIL CLASS:	CLASS I
MAX. GROUND WATER ELEV.:	2.7
METHOD OF DETERMINATION:	NO MOTTLES NO WATER

(SEE SOIL REPORT FOR MORE DETAILED DESCRIPTION)

EXCAVATION NOTE

THIS SYSTEM REQUIRES THE EXCAVATION OF ALL UNSUITABLE SOIL WITHIN 5' OF THE SOIL ABSORPTION SYSTEM. SOIL SHALL BE EXCAVATED TO THE EXISTING C MEDIUM SAND LAYER, APPROXIMATELY 48". ENGINEER TO CONFIRM SOIL DEPTH PRIOR TO INSTALLATION. THE EXCAVATION SHALL BE INSPECTED BY THE DESIGN ENGINEER PRIOR TO BACKFILLING. SOIL IS TO BE REPLACED WITH SAND CONFORMING TO 310 CMR SECTION 15.255. CONSTRUCTION IN FILL. CONTRACTOR IS RESPONSIBLE TO PROVIDE ENGINEER WITH SAND SAMPLE FOR SIEVE ANALYSIS.



NOTES

(1) ALL SYSTEM COMPONENTS TO BE MARKED WITH MAGNETIC MARKING TAPE.

(2) ALL SYSTEM COMPONENTS TO BE WITHIN 36" OF FINISHED GRADE UNLESS OTHERWISE NOTED.

(3) ANY BENDS INTRODUCED TO THE SEWER FROM HOUSE TO SEPTIC TANK SHALL REQUIRE THE INSTALLATION OF AN EXTERNAL CLEANOUT – CONSULT DESIGN ENGINEER.

BLOWER UNIT INSTALLATION NOTES:

1.) BLOWER UNIT SHALL BE INSTALLED IN A 20 OUTLET D-BOX WITH A 24" ACCESS COVER TO GRADE.

2.) BLOWER UNIT TO BE VENTED ABOVE GROUND WITH A 4" PVC PIPE.

3.) D-BOX CONTAINING BLOWER UNIT IS TO HAVE A WEEP HOLE CUT INTO ONE CORNER AND PITCHED TO ALLOW WATER TO DRAIN OUT.

4.) CONTRACTOR TO COORDINATE FINAL BLOWER UNIT VAULT DESIGN WITH MicroFAST REPRESENTATIVE and ENGINEER PRIOR TO INSTALLATION.

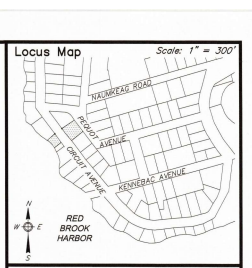
DESIGN CALCULATIONS

SOIL TEXTURAL CLASS:	CLASS I
PERC. RATE:	<2 MINUTES/INCH
NO. OF BEDROOMS:	4
DESIGN FLOW REQUIRED:	440 GPD
SEPTIC TANK REQUIRED:	1500 GALLONS
SEPTIC TANK PROVIDED:	1500 GALLON

LEACHING SYSTEM:
USE GOODFLOW CTL-18 CHAMBERS *GENERAL USE APPROVAL
(8) CTL-18 CONCRETE LEACHING CHAMBERS IN A (13.67') WIDE x (34) LONG BED

EFFECTIVE LEACHING: (BASED ON GENERAL USE APPROVAL)
(8 UNITS)(8 L.F./UNIT) = 64 L.F.

(10.57 S.F./L.F.)(64 L.F.) = 676 S.F. EFFECTIVE
LOADING RATE = 0.74 GPD/SF
FLOW PROVIDED: 500 GPD > 440 GPD REQUIRED



Notes

1. BENCHMARK: ELEVATION = 12.09 (NAVD88) CONCRETE BOUND
2. ALL CONSTRUCTION METHODS AND MATERIALS TO CONFORM TO TITLE 5 AND THE TOWN OF BOURNE BOARD OF HEALTH REGULATIONS.
3. ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC TAPE OR A COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED.
4. NO FIELD MODIFICATION TO THE SYSTEM SHALL BE MADE WITHOUT PRIOR WRITTEN APPROVAL OF THE DESIGN ENGINEER AND BOARD OF HEALTH.
5. ALL JOINTS AND COVERS TO BE WATERTIGHT.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ANY EXISTING UTILITIES.
7. A CERTIFICATE OF COMPLIANCE MUST BE OBTAINED PRIOR TO BACKFILLING SYSTEM.
8. OWNER:
   PAUL H. STENBERG, Jr. Trustee
   MADELINE K. STENBERG, Trustee
   THE SEVEN STENS TRUST
   435 CIRCUIT AVENUE
   BOURNE, MA 02559
9. DEED REFERENCE: Deed Bk: 35689 Pg: 73
10. PLAN REFERENCE: Plan Bk: 28 Pg: 1
    Plan Bk: 40 Pg: 113
    L.C. Plan #42838-A
11. THE DESIGN IS INTENDED TO MEET TITLE 5 AND OTHER APPLICABLE REQUIREMENTS. THIS PLAN DOES NOT GUARANTEE THAT THE SYSTEM WILL BE INSTALLED AS DESIGNED, NOR DOES THIS PLAN GUARANTEE THE OPERATION OF THE SYSTEM.
12. THIS SYSTEM IS NOT DESIGNED NOR INTENDED FOR USE WITH A GARBAGE GRINDER.
13. THE SYSTEM OWNER SHALL BE RESPONSIBLE TO PUMP THE SEPTIC TANK AT LEAST ONCE EVERY THREE YEARS.
14. LOCUS DOES NOT FALL WITHIN A ZONE II WELLHEAD PROTECTION AREA OR BOURNE WATER RESOURCE DISTRICT.
15. LOCUS DOES NOT FALL WITHIN AN NHESP ESTIMATED HABITAT OF RARE WILDLIFE AND PRIORITY HABITAT OF RARE SPECIES.
16. LOCUS DOES FALL WITHIN A SPECIAL FLOOD HAZARD ZONE "AE" (EL. 15) AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP No. 25001C-0492-J, dated 7/16/2014.
17. CONTRACTOR TO REFER TO ALL MANUFACTURER'S REQUIREMENTS AND SPECIFICATIONS FOR INSTALLATION OF THE MICROFAST UNIT AND GOOD-FLOW SOIL ABSORPTION SYSTEM.
18. RECORD PROPERTY OWNER IS TO FILE A NOTICE OF DEED RESTRICTION AT THE BARNSTABLE COUNTY REGISTRY OF DEEDS PRIOR TO THE INSTALLATION OF THE SYSTEM, INDICATING THE USE OF AN INNOVATIVE/ALTERNATIVE SEPTIC SYSTEM ON THE PROPERTY.
19. HOMEOWNER IS TO ESTABLISH AN OPERATION & MAINTENANCE PLAN WITH A COMPANY CERTIFIED SYSTEM OPERATOR FOR THE MICROFAST UNIT. ALL SYSTEM TESTING, MONITORING & REPORTING IS TO BE CONDUCTED IN ACCORDANCE TO THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) REMEDIAL USE PERMITS.
20. CONTRACTOR TO COORDINATE PLACEMENT OF ALL ALARM/CONTROL PANELS WITH THE HOMEOWNER & SYSTEM MANUFACTURERS PRIOR TO INSTALLATION.
21. CONTRACTOR TO COORDINATE FINAL LOCATION OF MicroFAST BLOWER UNIT AND VENT WITH OWNER. VENTS SHALL BE ELEVATED ABOVE DESIGN FLOOD ELEVATION.
22. SOIL CONDITIONS ENCOUNTERED DURING THE INSTALLATION OF THE PROPOSED SEPTIC SYSTEM MAY VARY FROM PREVIOUSLY OBSERVED CONDITIONS AT TEST PIT LOCATION. DESIGN ENGINEER SHALL BE CONTACTED IF DISCREPANCIES ARE FOUND.

Prepared By:
BRACKEN ENGINEERING, INC.
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PROPOSED SITE PLAN
IN BOURNE, MASSACHUSETTS

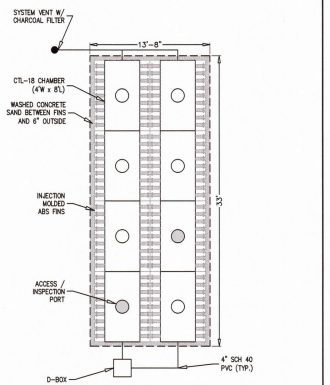
Prepared For:
THE SEVEN STENS TRUST
#435 CIRCUIT AVENUE
MAP 43.3 PARCEL 168

No.	Date	Revision Description	By
3	7/13/23	REVISE PER BOARD OF HEALTH COMMENTS	JPH
2	7/11/23	REVISE PER BOARD OF HEALTH COMMENTS	JPH
1	6/6/23	REVISE FOR ZBA & BOH SUBMISSIONS	JPH

Date: MAY 31, 2023 | Drawn: JPH/BEI | Checked: ZLB/AMG | Sheet: 1 of 2

DIG SAFE
Call: TOLL FREE
1-888-344-7233
1-888-DIG-SAFE
CALL 72 HOURS BEFORE YOU DIG

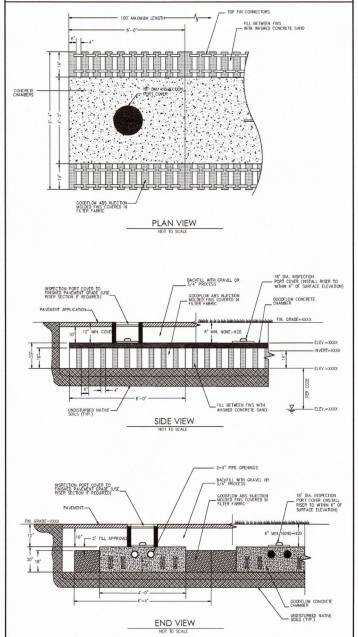
SYSTEM DETAIL



GOODFLOW INSTALLATION NOTES

1. FINS COME PREPARED WITH FILTER FABRIC ON ALL SIDES EXCEPT BOTTOM – THIS IS SEPARATE FROM THE FILTER FABRIC ON TOP OF THE SYSTEM PROVIDED BY THE INSTALLER.
2. MINIMUM OF 2" TITLE 5 SAND FROM THE TOP OF THE FINS TO THE TOP OF THE CHAMBER – CREATING A FLUSH SURFACE.
3. FILTER FABRIC IS PLACED ACROSS THE CONCRETE CHAMBER AND ON TOP OF THE 2" OF TITLE 5 SAND ATOP THE FINS. THE NON-WOVEN SYNTHETIC FILTER FABRIC SHALL HAVE ADEQUATE TENSILE STRENGTH TO PREVENT RIPPING DURING INSTALLATION AND BACKFILLING, ADEQUATE AIR PERMEABILITY TO ALLOW FREE PASSAGE OF GASES, AND ADEQUATE PARTICLE RETENTION TO PREVENT DOWNWARD MIGRATION OF SOIL PARTICLES.
4. MINIMUM OF 10" / MAXIMUM 4' BACKFILL WITH COMPACTED GRAVEL OR ¾" PROCESS MATERIAL WITH 2" OF FINISH SURFACE (PAVED) OR 4" OF LOAM & SEED.
5. FOR ORDERING, CONTACT GOODFLOW SOLUTIONS AT 203-869-2969.

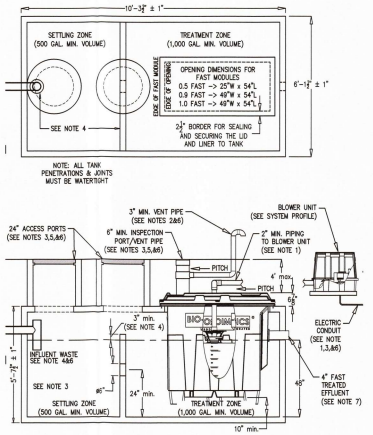
GOODFLOW CTL-18 DETAIL



MicroFAST 0.5 FAST UNIT

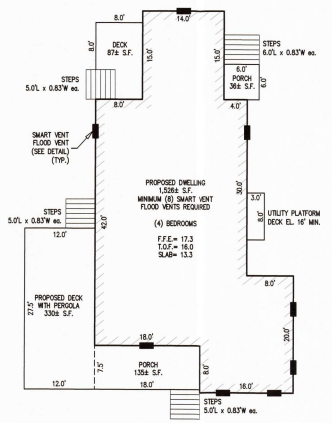
BIO-MICROBICS INCORPORATED

MicroFAST Notes:
1. Effluent piping for FASTs may not exceed 150FT total length and use a maximum of 4 elbows. For distances greater than 100FT, contact factory. Tanks may be located where flood/standing water is present, set in concrete base 24" X 18" X 2" minimum or underground as shown in system profile. Blower and vent piping to pitch back toward tank.
2. Vent to be located above finish grade or higher to avoid infiltration. Cap with vent grate w/at least 7.1 sq. in. open surface area. Secure with stainless steel screws or Run vent to desired location and cover opening with vent grate w/at least 7.1sq in. of open surface area. Secure with stainless steel screws. Vent piping must not allow excess moisture build up or back pressure.
3. All appurtenances to FASTs (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 in the event of choosing to use the pipe cap, then the baffle shall be at least 3" 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 FASTs must not impede or restrict free flow of effluent.
8. No more than 3 FT of fill may be placed over unit lid. (see system profile for tank depth).



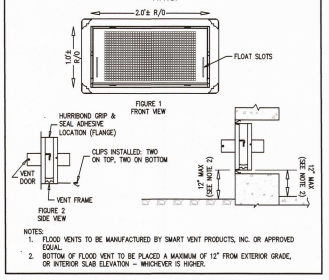
PROPOSED HOUSE DETAIL

SCALE: 1" = 10'



SMARTVENT DUAL FUNCTION FLOOD VENT DETAIL

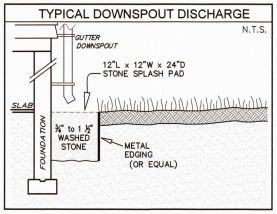
N.T.S.



NOTES:
1. FLOOD VENTS TO BE MANUFACTURED BY SMART VENT PRODUCTS, INC. OR APPROVED EQUAL.
2. BOTTOM OF FLOOD VENT TO BE PLACED A MAXIMUM OF 12" FROM EXTERIOR GRADE, OR INTERIOR SLAB ELEVATION – WHICHEVER IS HIGHER.

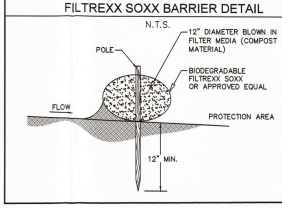
TYPICAL DOWNSPOUT DISCHARGE

N.T.S.



FILTREXX SOXX BARRIER DETAIL

N.T.S.



COMMONWEALTH OF MASSACHUSETTS
ZACHARY L. BASINSKI
CIVIL
NO. 47727
REGISTERED PROFESSIONAL ENGINEER

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PROPOSED SITE PLAN
IN BOURNE, MASSACHUSETTS

Prepared For:
THE SEVEN STENS TRUST
#435 CIRCUIT AVENUE
MAP 43.3 PARCEL 168

No.	Date	Revision Description	By
3	7/13/23	NO CHANGES	JPH
2	7/11/23	NO CHANGES	JPH
1	6/8/23	NO CHANGES	JPH

Date:	Drawn:	Checked:	Sheet:
MAY 31, 2023	JPH/BEI	ZLB/AMG	2 of 2

S:\Active Drawings\Boume\Circuit Ave\435 Circuit Avenue\435 Circuit Avenue - Redline