

J.M. O'Reilly & Associates, Inc.

Professional Engineering, Land Surveying & Environmental Services

Site Development • Property Line • Subdivision • Sanitary • Land Court • Environmental Permitting

December 28, 2022

Job # 8808A

Wellfleet Board of Health 220 West Main Street Wellfleet, MA 02667

New Dwelling: Board Review of Habitable Space Increase 117 Samoset Avenue Wellfleet, MA

Dear Board Members,

On behalf of our clients Beth Falk and Raul Marques-Pascual, J. M. O'REILLY & ASSOCIATES, INC. is requesting the Board of Health review and approve the new floor plans for a new dwelling for and new Variances for the PROPOSED NITROE sewage treatment system. The Site & Sewage Disposal System Plans dated 9/10/2021 and revised thru 12/23/2022 are attached.

The revisions include minor changes to the floor plan only in the entryway of the dwelling, a covered front porch, a set of stairs off the back deck and the NITROE Septic Treatment System (instead of the FAST as Proposed).

The following Variances are being Requested:

310 CMR 15.000 & Wellfleet Regulations 310 CMR 15.211 Setbacks & Section 600 (Wellfleet)

- 1. Soil Absorption System (S.A.S.) is not 10' from property line, South 8' variance requested 2' held,
- 2. S.A.S. is not 20' from Cellar Wall 5' held,

15' variance requested (Liner proposed)

- 3. Septic Tank not 50' From the Coastal Bank 41' held,
- 9' variance requested
- 4. NITROE Treatment Tank not 50' From the Coastal Bank 39' held,
 - 11' variance requested

5. S.A.S. is not 100' from locus well 56' held,

- 44' variance requested
- 6. S.A.S. not 100' from well on Parcel 106 67' held,

33' variance requested

1573 MAIN STREET, P.O. BOX 1773, BREWSTER, MA 02631 • PHONE: (508) 896-6601 • FAX: (508) 896-6602 WWW.JMOREILLYASSOC.COM

7. S.A.S. not 100' from well on Parcel 109 70' held,

30' variance requested

8. S.A.S. not 100' from Coastal Bank (Wellfleet Regulations)
56' held,
44' variance requested

301 CMR 15:248 Reserve Area

9. No reserve SAS Area shown (Not new Construction)
Removal & Replacement Requested

310R 15:255(5) Construction In-Fill

- 10. Five (5) foot lateral soil removal not proposed site constraints 2' held, 3' variance requested
- 11. S.A.S. Not designed at 100% Capacity for Three (3) Bedrooms:
 53% held,
 47% variance requested

A representative will be present at your public (or virtual) hearing on January 11, 2023 at 5:30 pm to review the proposed floor plans in greater detail. Please contact my office directly if you have any questions or need any additional information.

Very truly yours,

J. M. O'REILLY & ASSOCIATES, INC.

Matthew T. Farrell, EIT

Civil Engineer

Enc.: Variance Application Package

CC: John M. O'Reilly, P.E., P.L.S.

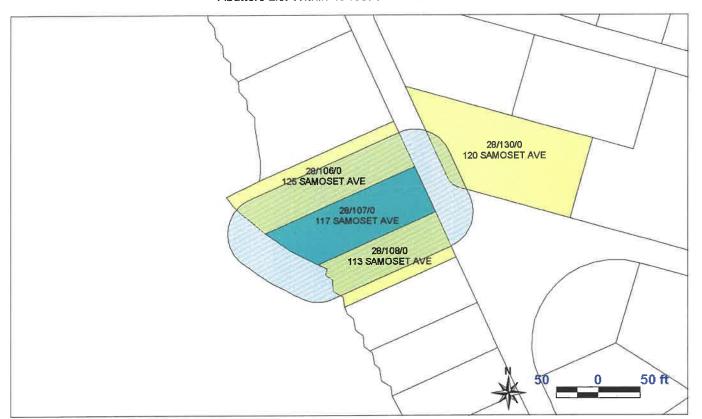
Beth Falk & Raul Marques-Pascal

MTF/ak

TOWN OF WELLFLEET, MA BOARD OF ASSESSORS 300 Main Street, MA 02667

- F

Abutters List Within 45 feet of Parcel 28/107/0



Key	Parcel ID	Owner	Location	Mailing Street	Mailing City	ST	ZipCd/Country
2678	28-106-0-R	POWERS FAMILY LLC	125 SAMOSET AVE	857 WORTHINGTON RIDGE	BERLIN	СТ	06037
2679	28-107-0-R	FALK ELIZABETH A TRUSTEE MARQUES-PASCUAL RAUL TRUSTEE	117 SAMOSET AVE	4 JOHN BENSON RD	LEXINGTON	MA	02420
2680	28-108-0-R	NEILAN BONNIE A	113 SAMOSET AVE	25 ARLINGTON ST	CAMBRIDGE	MA	02140
2701	28-130-0-R	MILLER MEREDITH B	120 SAMOSET AVE	PO BOX 1656	WELLFLEET	MA	02667

12/14/2022 Page 1

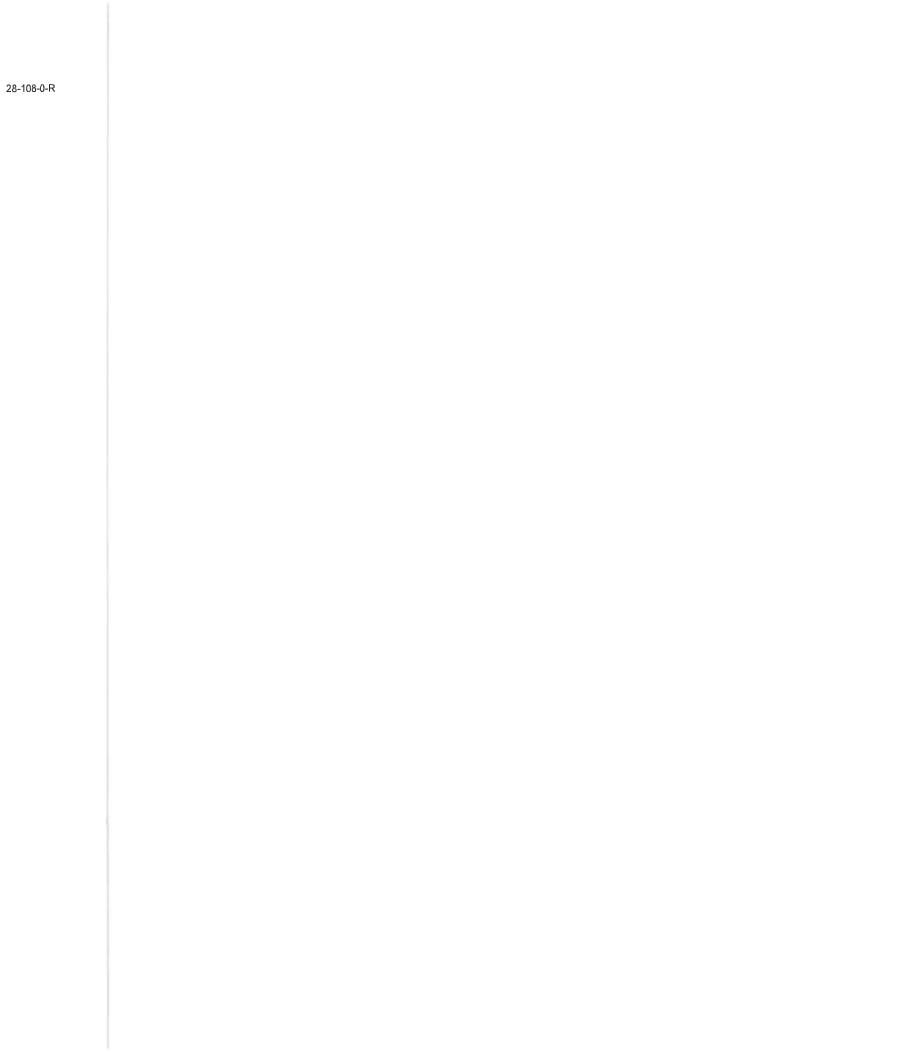
28-106-0-R 28-107-0-R 28-107

POWERS FAMILY LLC 857 WORTHINGTON RIDGE BERLIN, CT 06037 FALK ELIZABETH A TRUSTEE MARQUES-PASCUAL RAUL TRUSTEE 4 JOHN BENSON RD LEXINGTON, MA 02420

NEILAN BONNIE A 25 ARLINGTON ST CAMBRIDGE, MA 02140

28-130-0-R

MILLER MEREDITH B PO BOX 1656 WELLFLEET, MA 02667





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December 28, 2022

Job #8808A

To:

ABUTTERS

From: J. M. O'REILLY & ASSOCIATES, INC.

Re:

Board of Health Review: Increased habitable area

Falk-Marques Residence 117 Samoset Avenue

Wellfleet, MA

Assessors Map 28 / Parcel 107

Dear Abutters,

On behalf of our clients Beth Falk and Raul Marques-Pascual, J. M. O'REILLY & ASSOCIATES, INC. is requesting the Board of Health review and approve the new floor plans for a new dwelling and New Variances for a new Septic design including the NITROE by Kleantu, for the property as referenced.

310 CMR 15.000 & Wellfleet Regulations 310 CMR 15.211 Setbacks & Section 600 (Wellfleet)

Soil Absorption System (S.A.S.) is not 10' from property line, South
 2' held,
 8' variance requested

2. S.A.S. is not 20' from Cellar Wall

5' held,

15' variance requested (Liner proposed)

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41' held,

9' variance requested

4. NITROE Treatment Tank not 50' From the Coastal Bank

39' held,

11' variance requested

5. S.A.S. is not 100' from locus well

56' held,

44' variance requested

6. S.A.S. not 100' from well on Parcel 106

67' held,

33' variance requested

7. S.A.S. not 100' from well on Parcel 109

70' held,

30' variance requested

8. S.A.S. not 100' from Coastal Bank (Wellfleet Regulations)

56' held,

44' variance requested

EET

1573 MAIN STREET, P.O. Box 1773, Brewster, MA 02631 • Phone: (508) 896-6601 • Fax: (508) 896-6602 www.jmoreillyassoc.com

9. No reserve SAS Area shown (Not new Construction)
Removal & Replacement Requested

310 R 15:255(5) Construction In-Fill

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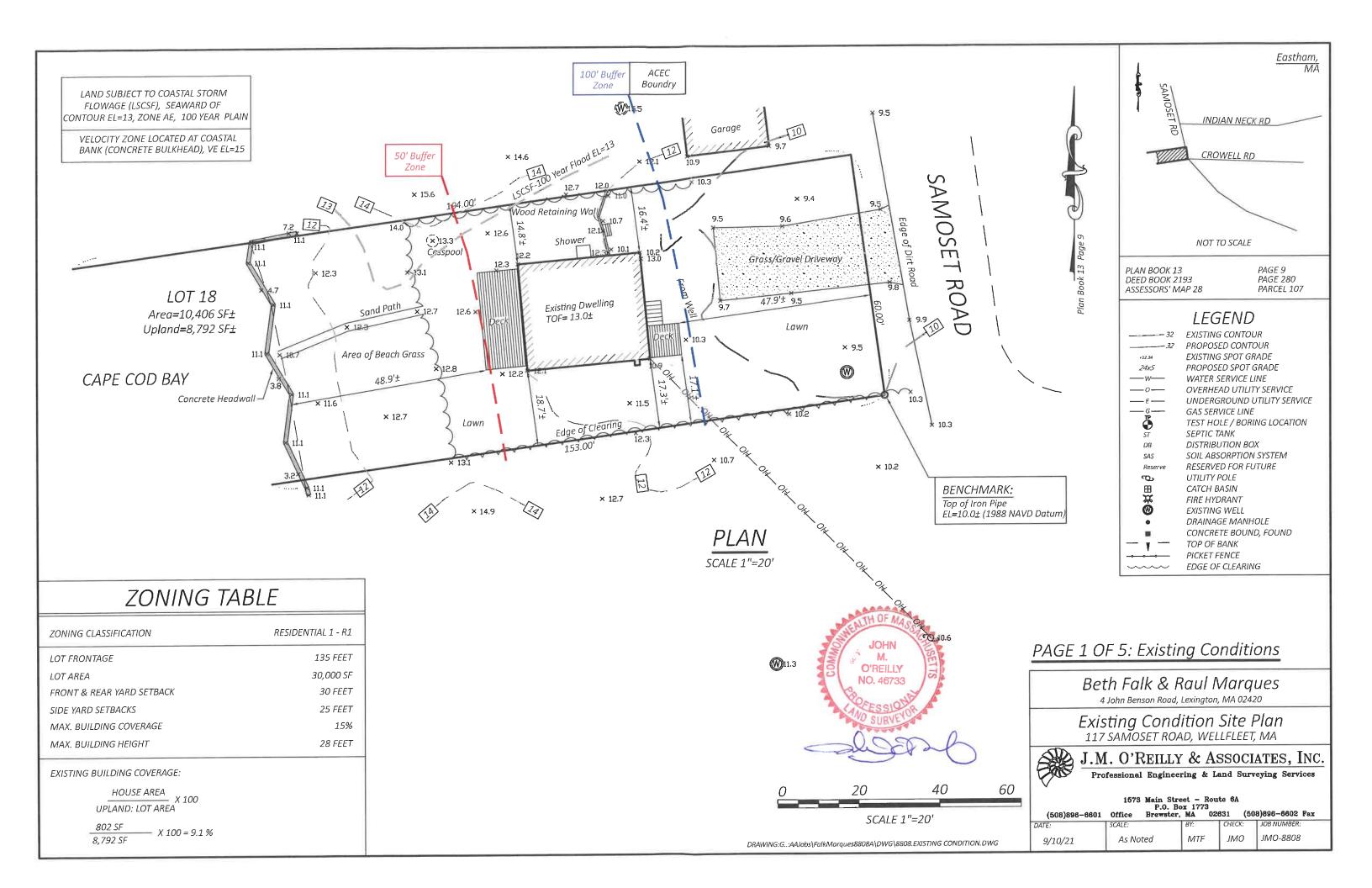
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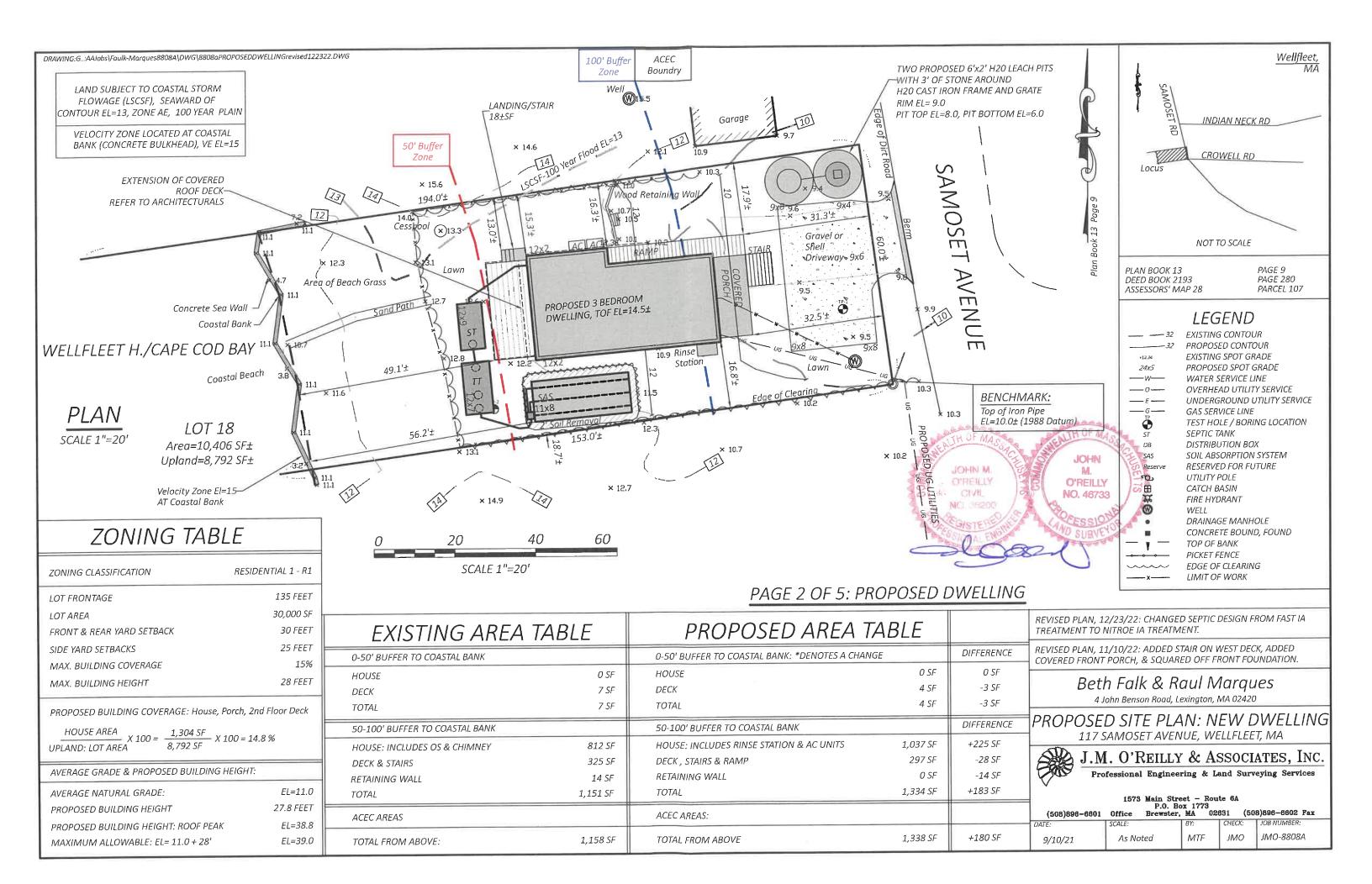
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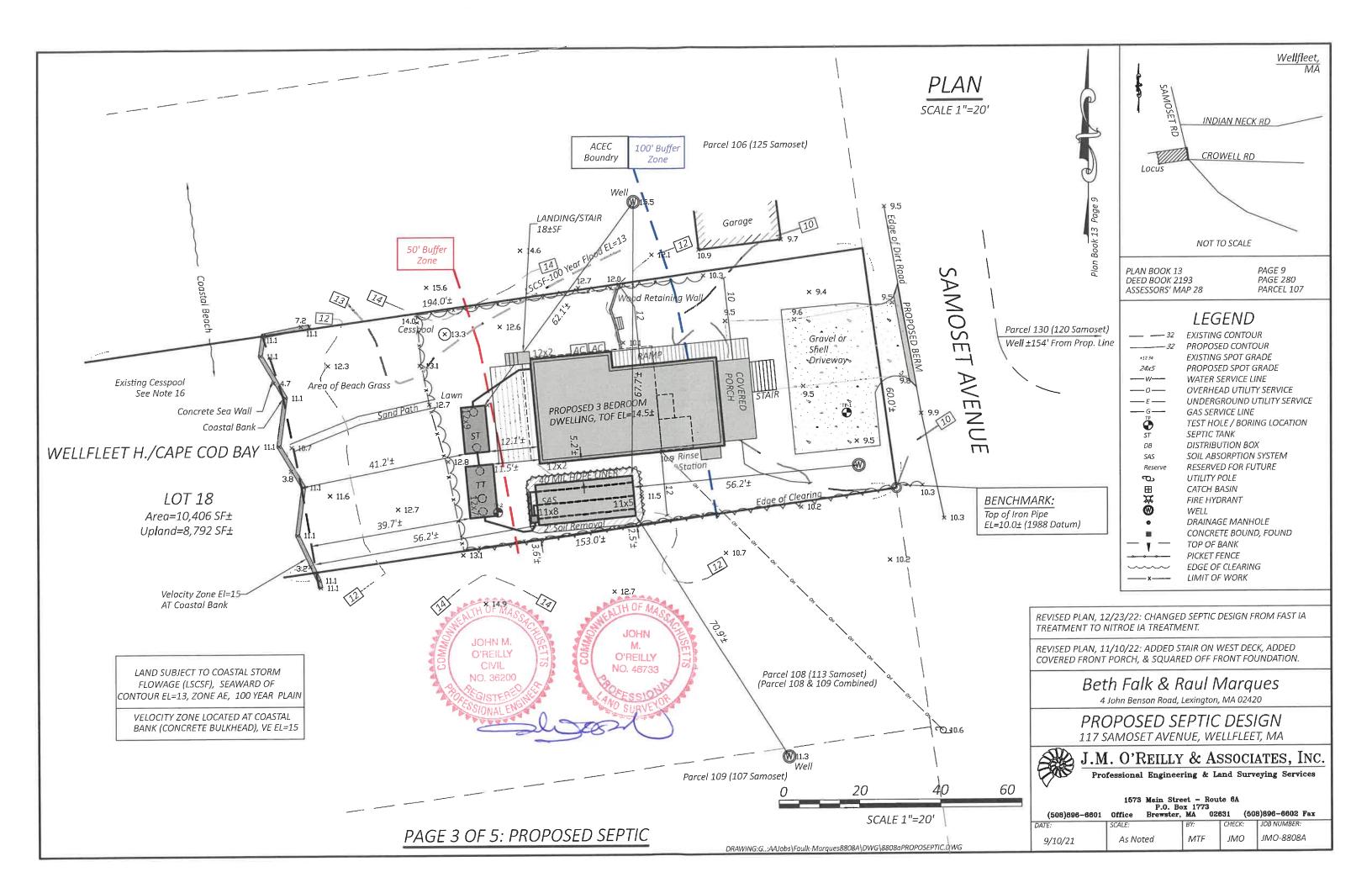
A public (or virtual) hearing will be held at The Council on Aging, 715 Old Kings Highway, Wellfleet, on January 11, 2023, at 5:30 pm to review the proposed variances in greater detail...Please contact the health department to confirm the Date and time of the hearing.

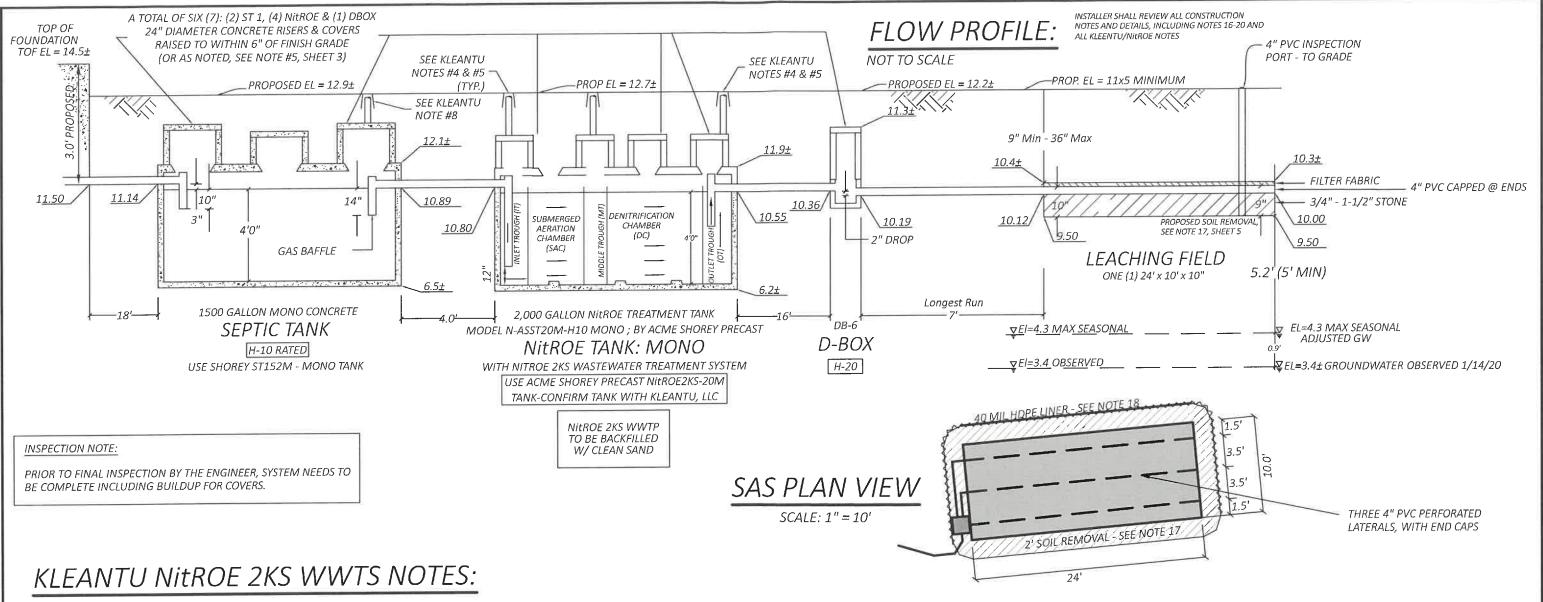
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Thank You.





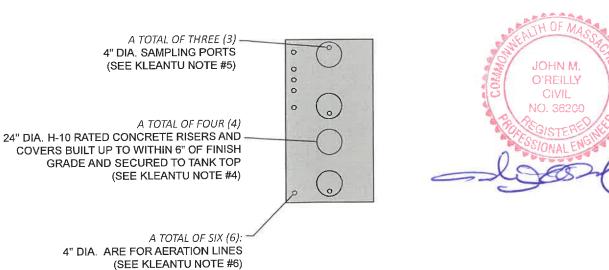




- 1.) ALL MEASUREMENTS FROM OUTSIDE EDGE OF TANK TOP
- 2.) CONFIRM ALL HOLE LOCATIONS PRIOR TO INSTALLATION.
- 3.) NITROE 2KS TANK TOP TO HAVE FOUR-24" AND MULTIPLE 4" HOLES WITH RISERS AND COVERS FOR MAINTENANCE AND SAMPLING.
- 4.) FOR THE 24" HOLES; PROVIDE 24" DIA. ADS PIPE (CORRUGATED) WITH POLYLOK (OR EQUIVALENT) COVER (OR EQUIVALENT CONCRETE RISER AND COVER) TO 6" BELOW GROUND SURFACE AND SECURE TO TANK TOP.
- 5.) INSTALL 4" DIA. PIPE (3" BELOW GROUND SURFACE) WITH FERNCO RUBBER CAP. INSTALL A 6" ROUND VALVE BOX AND COVER TO BE FLUSH WITH THE GROUND SURFACE.
- 6.) HOLES H5 THROUGH H10 ARE 4" DIAMETER HOLES FOR AERATION TUBING AND PULL CORDS. INSTALL 4" DIA. PIPE (6" BELOW GROUND SURFACE) WITH PVC CAP.
- 7.) FOR EXISTING SEPTIC TANK; PROVIDE 2" DIA. SAMPLING PIPE THAT IS CEMENTED OR ANCHORED TO THE TANK TOP AND EXTEND 2" BELOW THE TANK TOP AND BE POSITIONED 6-12" FROM THE EDGE OF THE OUTLET END OF THE SEPTIC TANK OR IN THE SEPTIC TANK CONCRETE OUTLET COVER. ON THE TOP SIDE OF THE SEPTIC TANK, THE 2" DIA. SAMPLING PIPE SHOULD EXTEND TO 2" BELOW THE GROUND SURFACE AND HAVE A 6" DIA. PLASTIC ROUND BOX AND COVER AT GROUND SURFACE

Nitroe 2KS WWTS TANK DETAIL

SCALE 1" = 10'



PAGE 4 OF 5: SEPTIC PROFILE & NOTES

REVISED PLAN, 12/23/22: CHANGED SEPTIC DESIGN FROM FAST IA TREATMENT TO NITROE IA TREATMENT.

REVISED PLAN, 11/10/22: ADDED STAIR ON WEST DECK, ADDED COVERED FRONT PORCH, & SQUARED OFF FRONT FOUNDATION.

Beth Falk & Raul Marques

4 John Benson Road, Lexington, MA 02420

PROPOSED SEPTIC DESIGN
117 SAMOSET AVENUE, WELLFLEET, MA



J.M. O'REILLY & ASSOCIATES, INC.

Professional Engineering & Land Surveying Services

1573 Main Street - Route 6A P.O. Box 1773

9/10/21 As Noted MTF JMO JMO-8808A

DRAWING:G..:AAJobs\Faulk-Marques8808A\DWG\8808aPROPOSEPTICrevised122322.DWG

GENERAL NOTES:

A.) NEITHER DRIVEWAYS NOR PARKING AREAS ARE ALLOWED OVER SEPTIC SYSTEM UNLESS H-20 COMPONENTS ARE USED.

B.) THE DESIGNER WILL NOT BE RESPONSIBLE FOR THE SYSTEM AS DESIGNED UN-LÈSS CONSTRUCTED AS SHOWN. ANY CHANGES SHALL BE APPROVED IN WRITING.

C.) CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UNDERGROUND AND OVERHEAD UTILITIES PRIOR TO COMMENCEMENT OF WORK.

CONSTRUCTION NOTES:

1.) ALL CONSTRUCTION SHALL CONFORM TO THE STATE ENVIRONMENTAL CODE, TITLE 5, AND THE REQUIREMENTS OF THE LOCAL BOARD OF HEALTH.

2.) SEPTIC TANK(S), GREASE TRAP(S), DOSING CHAMBER(S) AND DISTRIBUTION BOX(ES) SHALL BE SET ON A LEVEL STABLE BASE WHICH HAS BEEN MECHANICALLY COMPACTED, OR ON A 6 INCH CRUSHED STONE BASE.

3.) SEPTIC TANK(S) SHALL MEET ASTM STANDARD C1127-93 AND SHALL HAVE AT LEAST THREE 20" DIAMETER MANHOLES. THE MINIMUM DEPTH FROM THE BOT-TOM OF THE SEPTIC TANK TO THE FLOW LINE SHALL BE 48".

4.) SCHEDULE 40 PVC INLET AND OUTLET TEES SHALL EXTEND A MINIMUM OF 6" ABOVE THE FLOW LINE OF THE SEPTIC TANK AND SHALL BE INSTALLED ON THE CENTERLINE OF THE TANK DIRECTLY UNDER THE CLEANOUT MANHOLE.

5.) RAISE COVERS OF THE SEPTIC TANK AND DISTRIBUTION BOX WITH PRECAST CONCRETE WATER TIGHT RISERS OVER INLET AND OUTLET TEES TO WITHIN 6" OF FINISH GRADE, OR AS APPROVED BY THE LOCAL BOARD OF HEALTH AGENT.

6.) PIPING SHALL CONSIST OF 4" SCHEDULE 40 PVC OR EQUIVALENT. PIPE SHALL BE LAID ON A MINIMUM CONTINUOUS GRADE OF NOT LESS THAN 1%.

7.) DISTRIBUTION LINES FOR SOIL ABSORPTION SYSTEM (AS REQUIRED) SHALL BE 4" DIAMETER SCHEDULE 40 PVC LAID AT 0.005 FT/FT. LINE SHALL BE CAPPED AT END OR AS NOTED

8.) OUTLET PIPES FROM DISTRIBUTION BOX SHALL REMAIN LEVEL FOR AT LEAST 2' BEFORE PITCHING TO SOIL ABSORPTION SYSTEM. WATER TEST DISTRIBUTION BOX TO ASSURE EVEN DISTRIBUTION.

9.) DISTRIBUTION BOX SHALL HAVE A MINIMUM SUMP OF 6" MEASURED BELOW THE OUTLET INVERT.

10.) BASE AGGREGATE FOR THE LEACHING FACILITY SHALL CONSIST OF 3/4" TO 1-1/2" DOUBLE WASHED NATIVE STONE FREE OF IRON, FINES AND DUST AND SHALL BE INSTALLED BELOW THE CROWN OF THE DISTRIBUTION LINE TO THE BOTTOM OF THE SOIL ABSORPTION SYSTEM. BASE AGGREGATE SHALL BE COVERED WITH A 2" LAYER OF 1/8" TO 1/2" DOUBLE WASHED NATIVE STONE FREE OF IRON, FINES AND DUST.

11.) VENT SOIL ABSORPTION SYSTEM WHEN DISTRIBUTION LINES EXCEED 50 FEET; WHEN LOCATED EITHER IN WHOLE OR IN PART UNDER DRIVEWAYS, PARKING AREAS. TURNING AREAS OR OTHER IMPERVIOUS MATERIAL; OR WHEN PRESSURE DOSED.

12.) SOIL ABSORPTION SYSTEM SHALL BE COVERED WITH A MINIMUM OF 9" OF CLEAN MEDIUM SAND (EXCLUDING TOPSOIL).

13.) FINISH GRADE SHALL BE A MAXIMUM OF 36" OVER THE TOP OF ALL SYSTEM COMPONENTS, INCLUDING THE SEPTIC TANK, DISTRIBUTION BOX, DOSING CHAMBER AND SOIL ABSORPTION SYSTEM. SEPTIC TANKS SHALL HAVE A MINIMUM COVER

14.) FROM THE DATE OF INSTALLATION OF THE SOIL ABSORPTION SYSTEM UNTIL RECEIPT OF A CERTIFICATE OF COMPLIANCE, THE PERIMETER OF THE SOIL ABSORP-TION SYSTEM SHALL BE STAKED AND FLAGGED TO PREVENT THE USE OF SUCH AREA FOR ALL ACTIVITIES THAT MIGHT DAMAGE THE SYSTEM.

15.) THE BOARD OF HEALTH SHALL REQUIRE INSPECTION OF ALL CONSTRUCTION BY AN AGENT OF THE BOARD OF HEALTH (OR THE DESIGNER IF THIS SYSTEM RE-OUIRES A VARIANCE) AND MAY REQUIRE SUCH PERSON TO CERTIFY IN WRITING THAT ALL WORK HAS BEEN COMPLETED IN ACCORDANCE WITH THE TERMS OF THE PERMIT AND APPROVED PLANS. 48 HOURS ADVANCE NOTICE IS REQUESTED.

16.) EXISTING CESSPOOL TO BE PUMPED, FILLED WITH CLEAN SAND, AND ABANDONED

17.) SOIL REMOVAL: ALL A AND B LAYERS SHALL BE REMOVED DOWN TO THE CLEAN SAND LAYER, C1, FOR A LATERAL DISTANCE OF 2', AND REPLACED WITH CLEAN TITLE 5 SAND, COMPACTED TO MINIMIZE SETTLEMENT.

18.) INSTALL A 40 mil HDPE LINER FROM EL 10.5 TO EL 6.5 AS SHOWN ON PLAN VIEW AND SAS DETAIL, SHEET 4, 50 FEET LONG. NEW SLAB EL=10.5±.

SOIL TEST LOGS:

TFST HOLE 1: EL=9.5±

SOIL HORIZON	SOIL TEXTURE (USDA)		MOTTLING	OTHER
Cf	Fill	NA	NONE	
C1	Med./Coarse Sand	10YR 7/6		H20 STANDING @73" EL=3.4± - HOLD WORST CASE
	HORIZON Cf	HORIZON TEXTURE (USDA) Cf Fill	HÖRIZON TEXTURE (COLOR (MUNSELL) CF FIII NA	HORIZON TEXTURE (USDA)

TEST HOLE 2: EL=12.6±

	HORIZON T	SOIL TEXTURE (USDA)	SOIL COLOR (MUNSELL)	MOTTLING	OTHER
-10"	A I	Loamy Fine Sand	10YR 2/3	NONE	
.0-32"	B 1	Loamy Fine Sand	10YR 5/4	NONE	
32-102"	C1 /	Med./Coarse Sand	10YR 7/6	NONE	
102-120"	C2 1	Fine Sandy Loam	10YR 5/4	NONE	H20 STANDING @118"
20-140"	C3 /	Med./Coase Sand	10YR 5/6	NONE	EL=2.8±
.20-140"	C3 /	Med./Coase Sand	10YR 5/6	NONE	EL=2.8

PERCOLATION RATE: LESS THAN 2 MIN/INCH IN C1 LAYER (TP1) & C1 LAYER (TP2) WITNESSED BY: MATTHEW T. FARRELL, EIT, J.M.O'REILLY & ASSOCIATES, INC. DOUGLAS GUEY-LEE, AGENT, WELLFLEET HEALTH DEPARTMENT

USE A LOADING RATE OF 0.74 GPD/SF FOR SIZING OF SOIL ABSORPTION SYSTEM. DATE OF TESTING: 1/14/20

HIGH GROUNDWATER LEVEL CALCULATIONS:

EL=3.4 (73"=6.1')* Depth To Water Table (1/14/20): 73" = 6.1' TSW-89 Appropriate Index Well: Water Level Range Zone: A (1-2') Current Depth To Water Level For Index Well (12/19): 11.62' 0.9'*Water Level Adjustment: Estimated Depth To High Water: EL=4.3± (52")

*Worst Case Scenario for Water Elevation & Monthly Reading

SYSTEM DESIGN CALCULATIONS:

SEWAGE DESIGN FLOW: 3 BFDROOM DWELLING @ 110 GPD = 330 GPD

LEACHING CAPACITY REQUIRED:

3 BEDROOMS (MAX.) @ 110 GPD = 330 GPD REQUIRED

SEPTIC TANK CAPACITY REQUIRED: DAILY FLOW = 330 GPD @ 200% = 660 GAL. REQUIRED

SEPTIC TANK CAPACITY PROVIDED: 1500 GALLON SEPTIC TANK (MIN. ALLOWED)

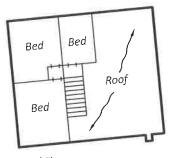
LEACHING CAPACITY PROVIDED:
ONE (1) 24.0' X 10.0' X 8" LEACHING FIELD CAN LEACH:

Vt= (24.0' X 10.0') X 0.74 GPD/SF= 177.6 GPD

177 GPD < 330 GPD REQUIRED (47% REDUCTION VARIANCE REQUESTED) NOTE: A GARBAGE DISPOSAL IS NOT PERMITTED WITH THIS DESIGN.

INSTALL:
ONE (1) - 2 COMPARTMENT 1500 GALLON MONO POUR SEPTIC TANK

ONE (1) - 24.0' x 10.0' x 10" LEACH FIELD
ONE (1) - KLEANTU - NITROE 2KS TREATMENT TANK, 2000 GALLON - MONO TANK
ONE (1) - H20 RATED DISTRIBUTION BOX, USE DB6, SIX OUTLET BOX



Second Floor

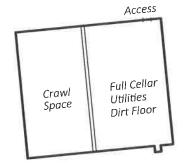


First Floor

JOHN M.

O'REILLY

NO. 36200



Basement

EXISTING FLOOR PLANS

NOT TO SCALE

DRAWING:G.::AAJobs\Faulk-Marques8808A\DWG\8808aPROPOSEPTICrevised122322.DWG

CONSERVATION NOTES:

1.) LIMIT OF WORK SHALL BE AS SHOWN. A ROW OF 9" ROUND STRAW WATTLES BACKED BY 24" CLOTH FILTER FABRIC, STAKED IN PLACE. LIMIT OF WORK SHALL BE CONSTRUCTED AND INSPECTED PRIOR TO ANY WORK ONSITE.

2.) ALL DISTURBED AREAS SHALL BE RE VEGETATED USING 6" TOPSOIL AND APPROPRIATE

VARIANCES REQUESTED

310 CMR 15.000 & WELLFLEET REGULATIONS

310 CMR 15.211 Setbacks & Section 600 (Wellfleet)

1.) Soil Absorption System (SAS) not 10' From Property Line, South 8' Variance 2' Held

2.) Soil Absorption System (SAS) not 20' From Cellar Wall 5' Held 15' Variance (Liner Proposed)

3.) Septic Tank Not 50' From Coastal Bank 9' Variance

41' Held 4.) NitROE TANK Not 50' From Coastal Bank 11' Variance 39' Held

5.) Soil Absorption System (SAS) Not 100' From LOCUS Well 56' Held 44' Variance

6.) SAS Not 100' From Well On Parcel 106 33' Variance 67' Held

7.) SAS Not 100' From Well On Parcel 109 30' Variance 70' Held

8.) SAS Not 100' Feet From Coastal Bank (Wellfleet Reg.s) 44' Variance 56' Held

301 CMR 15:248 Reserve Area

9.) No reserve SAS Area shown REMOVAL AND REPLACEMENT REQUESTED

310 CMR 15:255(5) Construction In Fill

10.) Five(5) Foot Lateral Soil Removal Not Proposed - Site Constaints 3' Variance

11.) Soil Absorption System Not Designed @ 100% Capacity 53% Held 47% Variance

PAGE 5 OF 5: PROPOSED SEPTIC NOTES

REVISED PLAN, 12/23/22: CHANGED SEPTIC DESIGN FROM FAST IA TREATMENT TO NITROE IA TREATMENT.

REVISED PLAN, 11/10/22: ADDED STAIR ON WEST DECK. ADDED COVERED FRONT PORCH, & SQUARED OFF FRONT FOUNDATION.

> Beth Falk & Raul Margues 4 John Benson Road, Lexington, MA 02420

> PROPOSED SEPTIC DESIGN 117 SAMOSET AVENUE, WELLFLEET, MA



J.M. O'REILLY & ASSOCIATES, INC.

Professional Engineering & Land Surveying Services

1573 Main Street - Route 6A

P.O. Box 1773 Brewster, MA 02631 (508)896-6602 Fax (508)896-6601 Office IOR NUMBER:

MTF JMO JMO-8808A As Noted 9/10/21

