

Terri A. Guarino
Health Agent

TOWN OF BOURNE BOARD OF HEALTH

24 Perry Avenue
Buzzards Bay, MA 02532
www.townofbourne.com/health
Phone (508) 759-0600 ext. 1513
Fax (508) 759-0679



September 13, 2018

Mr. Zachary Basinski, P.E.
Bracken Engineering, Inc.
49 Herring Pond Road
Buzzards Bay, MA 02532

Dear Mr. Basinski:

At the duly posted public meeting on September 12, 2018, the Bourne Board of Health unanimously voted to approve variances from the Board of Health 150' Setback Regulations for the proposed alternative septic system at 2 Jefferson Road, Bourne, MA (map 23.4, parcels 9), owned by Arthur and Katherine Hallam. As illustrated on the Site Plan dated June 6, 2018 by Bracken Engineering, Inc., the proposed septic system requires the following variances:

- Reduction in setback distance for the soil absorption system to a salt marsh from 150 feet to 120 feet (a 30 ft' variance);
- Reduction in setback distance for the soil absorption system to a non-eroding, non-water dependent coastal bank from 150 feet to 21 feet (a 129' variance); and
- A 15 foot variance from the required 150 foot setback from the soil absorption system to the off-site bordering vegetated wetland.

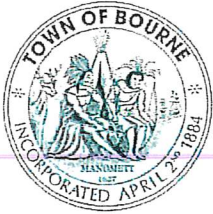
This approval was also based on the architectural drawings dated September 2014 by A.M. Michniewicz, indicating that there will be no increase in flow to the new system and the number of bedrooms will stay the same for the 3-bedroom dwelling and the 2-bedroom cottage. The Board felt as if these variances were in order where the proposed upgraded septic system will be comprised of a MicroFAST 0.9 de-nitrification unit and will provide pressure distribution to a BioDiffuser HC Chamber soil absorption field for pathogen and virus attenuation. This will replace two existing conventional Title 5 sewage disposal systems, and offer a substantial degree of environmental protection to the facility by adding advanced treatment.

This variance is valid for two years from the date of approval and contingent upon a five bedroom deed restriction and alternative septic disclosure notice recorded in the deed of the property, including any sub-properties. The Board of Health shall receive a copy of these recorded documents and an Operation and Maintenance Agreement prior to issuance of a disposal works construction permit. Please be advised that there are no implied approvals for future modifications/ additions/ renovations/ and/or repairs to the dwelling or sanitary sewage facility. Any such work may require another hearing before the Bourne Board of Health. It is understood that the owner(s) have familiarized themselves with the Bourne Board of Health I/A Septic System Regulations and specific testing requirements for the I/A technology. Should you have any questions, please do not hesitate to contact the Board of Health office at 508-759-0600 ext. 1513. Thank you.

Sincerely,

Terri Guarino, R.S.
Health Agent

C.C. Arthur & Katherine Hallam



Bourne Board of Health Application for Septic Variance Requests



In accordance with the established procedures of the Bourne Board of Health, this application for septic variances and waivers is relevant to requests for relief which have not been approved administratively and require approval at a public meeting. Please use the following application form for guidance on how to apply for variances and waivers which serve new construction, changes in use, or increases in flow to on-site sewage disposal systems with design flows of less than 10,000 gallons/ day.

RECEIVED

AUG 30 2018

Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02532

1. Facility Name and Address:

Owner's Name Arthur R. Hallam III & Katherine A. Hallam

Facility's Street Address 2 Jefferson Road

Owner's Telephone Number 337-502-1333

Owner's E-mail Address ahallam@lakecharlespilots.com

Owner's Mailing Address 2 Jefferson Road, Bourne, MA 02532

2. Applicant or Preparer's Name and Address (if different from above):

Preparer's Name Zachary L. Basinski, PE and Alan M. Grady, PLS

Company Bracken Engineering, Inc.

Telephone Number 508-833-0070

E-mail Address zac@brackeneng.com

Mailing Address 49 Herring Pond Road, Buzzards Bay

State/ Zip Code MA / 02532

3. Type of Facility (check all that apply):

Residential Commercial Institutional School Industrial

4. Describe Facility (i.e. single-family dwelling, 45 seat restaurant): _____
Single-family residence and cottage

5. Type of System Proposed (check all that apply): Conventional Title 5 I/A System

Pumped System Gravity System Pressure Dosed Other

6. Describe the proposed septic system components: Thirty (30) 16" Biodiffuser High Capacity Leaching Chambers. 1500 gal septic tank - MicroFast 0.9 unit, 1000 gal pump chamber

7. Design Flow per 310 CMR 15.203 (in gallons/ day):

Design flow of proposed system: 550 GPD

Total design flow of facility: 656 GPD

8. Enclose a letter of request for variances which makes reference to the specific provisions of Title 5 and the Board Bourne of Health Regulations for which a variance is sought. Please use this opportunity to demonstrate compliance with 310 CMR 15.410, and to justify the relevant facts and circumstances of the individual case. Note that with regard to variances for new construction, enforcement of the provision from which a variance is sought must be shown to deprive the applicant of substantially all beneficial use of the subject property in order to be manifestly unjust. Be sure to explain why full compliance with the applicable regulations is not feasible, and how a level of environmental protection that is at least equivalent to that provided under Title 5 and the Board of Health Regulations can be achieved without strict application of the regulations.

9. In order for this Application to be deemed complete, it must be accompanied by all of the following:

- Application Fees paid to the Town of Bourne.
- Letter of request (see samples)
- Six sets of complete plans and specifications. One with original stamp of design engineer.
- Nitrogen Loading Calculation Sheet(s)
- If abutter notification is required, one of each of the following must be submitted:
 - A copy of the certified list of abutters from the Assessor's Department
 - Sample letter for abutter notification postmarked 10 days prior to meeting date
 - Proof of certified mailing (receipts) meeting requirements of 310 CMR 15.405(2)
- Proposals for installation of Innovative/ Alternative systems must be accompanied by:
 - A copy of the Certification for Use including technology specific conditions
 - Draft disclosure notice for the I/A technology to be recorded in the deed
- Hydrogeologic data for all leaching facilities proposed within 100ft of a wetland/ watercourse
- Percentage of Increase Worksheet is required for waivers or increases in flow

10. Certification:

"I certify under penalty of law that this document and all attachments, to the best of my knowledge and belief, are true, accurate, and complete. I am aware that there may be significant consequences for submitting false information, including, but not limited to, penalties or fine and/or imprisonment for deliberate violations."

Facility Owner's Signature Arthur R. Hallam Date 8/30/18

Print Name Arthur R. Hallam III

Signature of Preparer [Signature] BRADLEY ENGINEERING Date 8/30/18

Print Name ZACHARY BARENSE

For Office Use Only

Completed Application Received: 8/31/18

Reviewed By: (Tg)

Hearing Date: 9/12/18 6PM

Permit #: 216-05 & 100-81

Circle all that apply: Approved 9/12/18 Continued Disapproved Other

Notes: No increase in flow proposed - I/A approved for Nitrogen reduction with pressure distribution is improvement to site

Main Office:

49 Herring Pond Road
Buzzards Bay, MA 02532
Tel (508) 833-0070
Fax (508) 833-2282



Nantucket Office:

19 Old South Road
Nantucket, MA 02554
Tel (508) 325-0044

August 29, 2018

Town of Bourne
Board of Health
24 Perry Avenue
Bourne, MA 02532

RE: 2 Jefferson Road, Map 23.4, Parcel 9

Dear Board Members:

Please accept this letter as a *Variance Request* to the Town of Bourne Board of Health Regulations for the above referenced project. The applicant proposes to construct a new sewage disposal system with advanced denitrification treatment in association with the razing and reconstruction of a cottage and renovations to an existing single-family dwelling at 2 Jefferson Road in Gray Gables. The parcel is currently occupied by a 3-bedroom dwelling and 2-bedroom guest cottage. There will be no increase in flow to the new system and the number of bedrooms will remain the same in both the dwelling and cottage.

The following variances from the Board of Health regulations are requested:

- Reduction in setback distance for the proposed soil absorption system area to a non-water dependent coastal bank from **150' to 21' (129' variance)**.
- Reduction in setback distance for the proposed soil absorption system area to a salt marsh from **150' to 120' (30' variance)**.
- Reduction in setback distance for the proposed soil absorption system area to a salt marsh from **150' to 135' (15' variance)**.

The subject coastal bank is a non-eroding/non-water dependent resource area regulated under the Massachusetts Wetland Protection Act as a flood prevention control measure. The closest water dependent resource area is the abutting salt marsh located to the north of the existing dwelling.

The proposed soil absorption system will be comprised of the MicroFAST de-nitrification unit and will provide pressure distribution to a BioDiffuser High Capacity Chamber soil absorption field.

The attached nitrogen loading calculations indicate there will be a decrease in nitrogen loading from 10.9 ppm to 5.4 ppm, or a 50.5% reduction with the use of the I/A system.

In closing and on behalf of the applicant, BEI would like to thank you for your time and consideration of this matter. Should you have any questions or require any further information regarding this project please call our office at 508-833-0070 or email the undersigned at zac@brackeneng.com.

Sincerely,

BRACKEN ENGINEERING, INC.

A handwritten signature in black ink, appearing to read 'Zachary L. Basinski', is written over a horizontal line.

Zachary L. Basinski, P.E.
Project Manager

Town of Bourne

Conservation Commission

Nitrogen Loading Calculation Sheet for Residential Housing

The following calculation sheet is based upon Technical Bulletin 91-001 issued by the Cape Cod Commission and deals with nitrate nitrogen (NO₃-N) Use the information from your PLAN OF RECORD to provide the following:

2 Jefferson Road (Existing Conditions)

Number of Bedrooms (Title 5 Definition)	=	5	Bedrooms
Lot Size (in square feet of upland areas)	=	27,762	sq.ft.
Impervious Surfaces;**roof area	=	2,347	sq.ft.
**Paved Area	=	567	sq.ft.
Natural Area = lot area minus all impervious surfaces	=	24,848	sq.ft.
Lawn Area in sq. ft.	=	11,200	sq.ft.
I/A System?	=	NO	

TITLE 5 FLOW = 110 GAL./ DAY PER BEDROOM

WASTEWATER FLOWS (NITROGEN LOAD & WATER LOAD)

Nitrogen from Title 5 design = 14,572 mg NO₃-N / day / bedroom

Water from Title 5 design = 416.3 H₂O / day / bedroom

1a) Number of bedrooms = 5 x 14,572 = 72860.00 mg. NO₃-N / day

1b) Number of bedrooms = 5 x 416 = 2080.00 L H₂O / day

Actual Nitrogen load = 6071.5 mg NO₃-N / day/ bedroom

Actual Water load = 173.5 L H₂O / day / bedroom

*Note: This assumes 2.5 people / unit average occupancy within the Town

2a) Number of bedrooms = 5 x 6071.5 = 30357.50 mg. NO₃-N / day

2b) Number of bedrooms = 5 x 173.5 = 867.50 L H₂O / day

IMPERVIOUS SURFACES (NITROGEN LOAD & WATER LOAD)

NO₃-N load number sq. ft. of roof surface X 0.19395 mg NO₃-N / sq. ft.

H₂O load number sq. ft. of roof surface X 0.2586 L / sq. ft.

3a) Roof surface = 2347 sq. ft. X 0.19395 = 455.20 mg NO₃-N

3b) Roof surface = 2347 sq. ft. X 0.2586 = 606.93 L H₂O / day

NO₃-N load number sq. ft. of paved surface X 0.388 mg / sq. ft.

H₂O load number sq. ft. of paved surface X 0.2586 L / sq. ft.

4a) NO₃-N = 567 sq. ft. paved surface X 0.388 mg / sq. ft. = 220.00 mg NO₃-N

4b) H₂O = 567 sq. ft. paved surface X 0.2586 L / sq. ft. = 146.63 L H₂O

LAWN NITROGEN LOADING = 0.933 mg / sq. ft. lawn surface

$$5) \text{ sq. ft. of lawn} = 11200 \times 0.933 = 10449.60 \text{ mg}$$

NATURAL AREA WATER LOADING

$$\text{Natural area} = \text{lot size} - \text{impervious surfaces} = 24848 \text{ sq. ft.}$$

$$6) \text{ Natural area} = 24848 \times \text{water recharge factor} = 3374.36 \text{ L}$$

(0.1358 L / sq. ft. for Bourne)

SUMMARY OF NITROGEN LOADING

Estimated Title 5 Nitrogen & Water Loading

7a) ADD the above NO₃N load

1a	(+)	3a	(+)	4a	(+)	5	
72860		455.20		220.00		10449.60	83984.80 mg NO ₃ -N / day

7b)

1b	(+)	3b	(+)	4b	(+)	6	
2080		606.93		146.63		3374.36	6207.92 L H ₂ O / day

$$7c) \text{ DIVIDE 7a by 7b} = \underline{13.5} \text{ ppm NO}_3\text{-N}^{*****}$$

Actual Nitrogen & Water Loading

8a) ADD the above NO₃N load:

2a	(+)	3a	(+)	4a	(+)	5	
30357.5		455.20		220.00		10449.60	<u>41482.30</u> mg NO ₃ -N / day

8b) ADD the above water (H₂O) load:

2b	(+)	3b	(+)	4b	(+)	6	
867.5		606.93		146.63		3374.36	<u>4995.42</u> L H ₂ O / day

$$8c) \text{ DIVIDE 8a by 8b} = \underline{8.3} \text{ ppm NO}_3\text{-N}^{*****}$$

$$\text{FINAL CALCULATION ADD 7c \& 8c (ppm)} = \underline{21.8} \text{ divide by 2} = \underline{10.9} \text{ ppm NO}_3\text{-N}$$

This is the actual nitrate nitrogen load for the project as designed. The target for coastal areas is 5 ppm nitrate nitrogen. Certain critical embayments may require a LOWER figure to prevent degradation.

*****If your nitrate nitrogen load exceeds the target limit **USE A SECOND CALCULATION SHEET TO SHOW ALTERNATIVES IN TRYING TO ACHIEVE THE 5 PPM NITRATE NITROGEN LEVEL*****

Town of Bourne

Conservation Commission

Nitrogen Loading Calculation Sheet for Residential Housing

The following calculation sheet is based upon Technical Bulletin 91-001 issued by the Cape Cod Commission and deals with nitrate nitrogen (NO₃-N) Use the information from your PLAN OF RECORD to provide the following:

2 Jefferson Road (Proposed Conditions)

Number of Bedrooms (Title 5 Definition)	=	5	Bedrooms
Lot Size (in square feet of upland areas)	=	27,762	sq.ft.
Impervious Surfaces;**roof area	=	2,709	sq.ft.
	**Paved Area =	567	sq.ft.
Natural Area = lot area minus all impervious surfaces	=	24,486	sq.ft.
Lawn Area in sq. ft.	=	11,200	sq.ft.
I/A System?	=	YES	

TITLE 5 FLOW = 110 GAL./ DAY PER BEDROOM

WASTEWATER FLOWS (NITROGEN LOAD & WATER LOAD)

Nitrogen from Title 5 design = 14,572 mg NO₃-N / day / bedroom

Water from Title 5 design = 416.3 H₂O / day / bedroom

1a) Number of bedrooms = 5 x 14,572 = 36430.00 mg. NO₃-N / day

1b) Number of bedrooms = 5 x 416 = 2080.00 L H₂O / day

Actual Nitrogen load = 6071.5 mg NO₃-N / day/ bedroom

Actual Water load = 173.5 L H₂O / day / bedroom

*Note: This assumes 2.5 people / unit average occupancy within the Town

2a) Number of bedrooms = 5 x 6071.5 = 15178.75 mg. NO₃-N / day

2b) Number of bedrooms = 5 x 173.5 = 867.50 L H₂O / day

IMPERVIOUS SURFACES (NITROGEN LOAD & WATER LOAD)

NO₃-N load number sq. ft. of roof surface X 0.19395 mg NO₃-N / sq. ft.

H₂O load number sq. ft. of roof surface X 0.2586 L / sq. ft.

3a) Roof surface = 2709 sq. ft. X 0.19395 = 262.71 mg NO₃-N

3b) Roof surface = 2709 sq. ft. X 0.2586 = 700.55 L H₂O / day

NO₃-N load number sq. ft. of paved surface X 0.388 mg / sq. ft.

H₂O load number sq. ft. of paved surface X 0.2586 L / sq. ft.

4a) NO₃-N = 567 sq. ft. paved surface X 0.388 mg / sq. ft. = 110.00 mg NO₃-N

4b) H₂O = 567 sq. ft. paved surface X 0.2586 L / sq. ft. = 146.63 L H₂O

LAWN NITROGEN LOADING = 0.933 mg / sq. ft. lawn surface

$$5) \text{ sq. ft. of lawn} = 11200 \times 0.933 = 5224.80 \text{ mg}$$

NATURAL AREA WATER LOADING

$$\text{Natural area} = \text{lot size} - \text{impervious surfaces} = 24486 \text{ sq. ft.}$$

$$6) \text{ Natural area} = 24486 \times \text{water recharge factor} = 3325.20 \text{ L}$$

(0.1358 L / sq. ft. for Bourne)

SUMMARY OF NITROGEN LOADING

Estimated Title 5 Nitrogen & Water Loading

7a) ADD the above NO₃N load

1a	(+)	3a	(+)	4a	(+)	5	
36430		262.71		110.00		5224.80	42027.50 mg NO ₃ -N / day

7b)

1b	(+)	3b	(+)	4b	(+)	6	
2080		700.55		146.63		3325.20	6252.37 L H ₂ O / day

$$7c) \text{ DIVIDE 7a by 7b} = \underline{6.7} \text{ ppm NO}_3\text{-N}^{*****}$$

Actual Nitrogen & Water Loading

8a) ADD the above NO₃N load:

2a	(+)	3a	(+)	4a	(+)	5	
15178.8		262.71		110.00		5224.80	<u>20776.25</u> mg NO ₃ -N / day

8b) ADD the above water (H₂O) load:

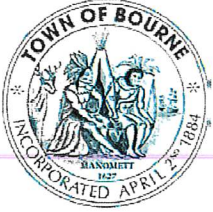
2b	(+)	3b	(+)	4b	(+)	6	
867.5		700.55		146.63		3325.2	<u>5039.87</u> L H ₂ O / day

$$8c) \text{ DIVIDE 8a by 8b} = \underline{4.1} \text{ ppm NO}_3\text{-N}^{*****}$$

$$\text{FINAL CALCULATION ADD 7c \& 8c (ppm)} = \underline{10.8} \text{ divide by 2} = \underline{5.4} \text{ ppm NO}_3\text{-N}$$

This is the actual nitrate nitrogen load for the project as designed. The target for coastal areas is 5 ppm nitrate nitrogen. Certain critical embayments may require a LOWER figure to prevent degradation.

*****If your nitrate nitrogen load exceeds the target limit **USE A SECOND CALCULATION SHEET TO SHOW ALTERNATIVES IN TRYING TO ACHIEVE THE 5 PPM NITRATE NITROGEN LEVEL** ***



TOWN OF BOURNE BOARD OF HEALTH

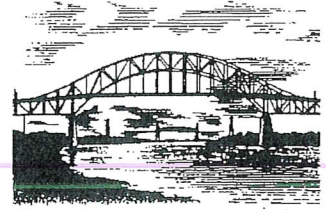
24 Perry Avenue

Buzzards Bay, MA 02532

www.townofbourne.com/health

Phone (508) 759-0600 ext. 1513

Fax (508) 759-0679



Terri A. Guarino, RS
Health Agent

Notice of Alternative Sewage Disposal System

M.G.L. c. 21A, § 13 and 310 CMR 15.0287(10)

DRAFT

ADDRESS OF PROPERTY SERVED BY ALTERNATIVE SYSTEM:

2 Jefferson Road, Bourne, MA

TITLE REFERENCE FOR PROPERTY SERVED BY ALTERNATIVE SYSTEM:

Deed recorded with the Barnstable Registry of Deeds in Book 21486, Page 213

NAME(S) AND ADDRESS OF OWNER OF PROPERTY SERVED BY ALTERNATIVE SYSTEM:

Arthur R. Hallam III and Katherine A. Hallam
2 Jefferson Road
Bourne, MA 02532

OWNER(S) DATE OF BIRTH: _____ E-MAIL ADDRESS: ahallam@lakecharlespilots.com

WHEREAS, Section 15.280 of Title 5 of the State Environmental Code (“Approval of Alternative Systems”), provides for the Massachusetts Department of Environmental Protection (the “Department”) to approve or certify, as appropriate, all proposals to construct, upgrade or replace on-site sewage disposal systems using alternative systems;

WHEREAS, owners and/or operators of approved or certified alternative systems are subject to general conditions, as specified in Section 15.287 of Title 5 of the State Environmental Code, 310 CMR 15.287, and may be subject to special conditions, as specified in the Department’s approvals or certifications; such general and special conditions potentially including, without limitation, requirements relating to the use of trained operators, periodic inspections, maintenance, sampling, reporting and/or recordkeeping;

WHEREAS, the owners and/or operators this alternative system acknowledges and agrees to comply with the provisions of all of the Bourne Board of Health Alternative Septic System Regulations and any other conditions for the existence of the system;

WHEREAS, Section 15.287(10) of Title 5 of the State Environmental Code, 310 CMR 15.287(10), requires that “prior to obtaining a Certificate of Compliance for installation of a new or upgraded system, the system owner shall record in the chain of title for the property served by the alternative system in the Registry of Deeds and/or Land Registration Office, as applicable, a Notice disclosing both the existence of the alternative on-site system and the Department’s approval of the system. The system owner shall also provide evidence of such recording to the Bourne Board of Health, and

WHEREAS, the Property is served by an alternative sewage disposal system.

NOW, THEREFORE, Notice of an alternative sewage disposal system is hereby given for the above-referenced Property, as follows:

1. Existence. An alternative system has been installed as a new or upgraded alternative sewage disposal system, on or adjacent to the Property, and serves the Property. The trade name and model number(s) of the alternative system are as follows:

Trade name of technology: MicroFast
Manufacturer Name: BioMicrobics, Inc.
Model number(s): 0.9 DeNitrification Unit

2. Approval/Certification. On 12/29/2010, revised 3/20/2015, the Department, pursuant to its authority under the section of Title 5 as specified below, approved or certified the technology used in the above referenced alternative system, under MassDEP Transmittal Number X232831.

- Approved for remedial use under 310 CMR 15.284
- Approved for piloting under 310 CMR 15.285
- Provisionally approved under 310 CMR 15.286
- Certified for general use under 310 CMR 15.288

A copy of the Department’s Approval/Certification is available from the Department in person or online at the Department’s website: <http://www.mass.gov/dep> .

****This Notice of Alternative Sewage Disposal System must be submitted to the Bourne Board of Health****

WITNESS the execution hereof under seal this _____ day of _____, 20____, made by the above-named Alternative System Owner(s).

Print Name(s): _____

COMMONWEALTH OF MASSACHUSETTS

_____, ss

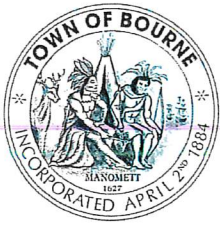
On this ____ day of _____, 20__, before me, the undersigned notary public, personally appeared _____, proved to me through satisfactory evidence of identification, which were _____, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that (he) (she) signed it voluntarily for its stated purpose.

(official signature and seal of notary)

Approved and Accepted By:

Terri A. Guarino, R.S.
Health Director
Town of Bourne

Date: _____



TOWN OF BOURNE BOARD OF HEALTH

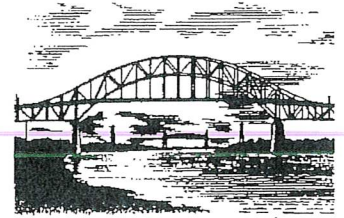
24 Perry Avenue

Buzzards Bay, MA 02532

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Phone (508) 759-0600 ext. 1513

Fax (508) 759-0600



Terri A. Guarino
Health Agent

GRANT OF TITLE 5 BEDROOM COUNT DEED RESTRICTION

This Grant of Title 5 Bedroom Count Deed Restriction is made as of _____ by Arthur R. Hallam, III and Katherine A. Hallam ("Grantors"), of Bourne, Barnstable County, MA, pursuant to M.G.L. c. 21A, §13 and 310 CMR 15.000 (collectively, "Title 5").

WITNESSETH

WHEREAS, Grantor, being the owner(s) in fee simple of that certain parcel of land located in Bourne, Barnstable County, Massachusetts, with the buildings and improvements thereon, pursuant to a deed from Peter G. Richter to Grantor, dated October 31, 2006, and recorded with Barnstable County Registry of Deeds in Book 21486, Page 213, said parcel of land being more particularly bounded and described in Exhibit A, attached hereto and made a part hereof, and being shown on a plan entitled, "Plan of Lot A to be Conveyed by Ernest R. and Doris M. Schofield in Gray Gables, Bourne, MA", dated April 22, 1971, prepared by Newell B. Snow, recorded with Barnstable County Registry of Deeds in Plan Book 247, Page 72 ("Property"); and

WHEREAS, Grantor desires to restrict the number of bedrooms, as the term bedroom is defined at 310 CMR 15.002 ("Bedroom") and the Board of Health regulation dated effective April 24, 1992 regarding bedroom definition, through the granting of this Title 5 Bedroom Count Deed Restriction;

NOW, THEREFORE, Grantor does hereby GRANT to the Town of Bourne of Barnstable County, Massachusetts, a municipal corporation located in Barnstable County, having a mailing address of 24 Perry Avenue, Buzzards Bay, Massachusetts, and acting by and through its Board of Health ("Local Approving Authority"), for nominal and nonmonetary consideration, the sufficiency and receipt of which are hereby acknowledged, with QUITCLAIM COVENANTS, a TITLE 5 BEDROOM COUNT DEED RESTRICTION ("Restriction") in, on, upon, through, over and under the Property.

Said Restriction operates to restrict the Property as follows:

1. Restriction. Grantor hereby restricts the total number of Bedrooms in, on, upon, through, over and under the Property to **Five Bedrooms**, such that at no time shall there exist more than **Five Bedrooms** in, on, upon, through, over and under said Property.

2. Severability. Grantor hereby agrees that, in the event that a court or other tribunal determines that any provision of this instrument is invalid or unenforceable:

- (i) That such provision shall be deemed automatically modified to conform to the requirements for validity and enforceability as determined by such court or tribunal; or

(ii) That any such provision, by its nature, cannot be so modified, shall be deemed deleted from this instrument as though it had never been included herein.

In either case, the remaining provisions of this instrument shall remain in full force and effect.

3. Enforcement. Grantor expressly acknowledges that a violation of the terms of this Restriction could result in the following:

(i) upon determination by a court of competent jurisdiction, in the issuance of criminal and civil penalties, and/or equitable remedies, including, but not limited to, injunctive relief, such injunctive relief could include the issuance of an order to modify or remove any improvements constructed upon the Property in violation of the terms of this Restriction; and

(ii) in the initiation of an enforcement action and/or assessment of penalties by the Bourne Board of Health and/or the Massachusetts Department of Environmental Protection, a duly constituted agency with a principal office located at One Winter Street, Boston, MA 02108 (DEP), to enforce the terms of this Restriction pursuant to Title 5; M.G.L. c.111, §§ 2C, 17, 31, 122, 123, 125, 127A-O, inclusive, and 129; and M.G.L. c. 83, §11.

4. Provisions to Run with the Land. The rights, liabilities, agreements and obligations created under this Restriction shall run with the Property and any portion thereof for the term of this Restriction. Grantor hereby covenants for [himself/herself/itself] and [his/her/its] executors, administrators, heirs, successors and assigns, to stand seized and to hold title to the Property and any portion thereof subject to this Restriction.

The rights granted to the Bourne Board of Health, its successors and assigns, do not provide, however, that a violation of this Restriction shall result in a forfeiture or reversion of Grantor's title to the Property.

5. Concurrence Presumed. It is agreed that:

(i) Grantor and all parties claiming by, through, or under Grantor agree to and shall be subject to the provisions of this Restriction; and

(ii) Grantor and all parties claiming by, through, or under Grantor, and their respective agents, contractors, sub-contractors and employees, agree that the Restriction herein established shall be adhered to and shall not be violated, and that their respective interests in the Property shall be subject to the provisions herein set forth.

6. Incorporation into Deeds, Mortgages, Leases, and Instruments of Transfer. Grantor hereby agrees to incorporate this Restriction, in full or by reference, into all deeds, easements, mortgages, leases, licenses, occupancy agreements or any other instrument of transfer by which an interest and/or a right to use the Property, or any portion thereof, is conveyed.

7. Recordation. Grantor shall record and/or register this Restriction with the appropriate Registry of Deeds and/or Land Registration Office within 30 days of receiving the approved Restriction from the Local Approving Authority. Grantor shall file with the Bourne Board of Health and the DEP a certified Registry copy of this Restriction as recorded and/or registered within 30 days of its date of recordation and/or registration.

8. Amendment and Release. This Restriction may be amended only upon the approval and acceptance of such amendment by the Local Approving Authority. Release of this Restriction shall be granted by the Local

Approving Authority upon (i) Grantor's request of such release; and (ii) the Property being connected to a municipal sewer system and the septic system serving the Property being abandoned in accordance with 310 CMR 15.354. Any such amendment or release shall be recorded and/or registered with the appropriate Registry of Deeds and/or Land Registration Office and a certified Registry copy of said amendment or release shall be filed with the Bourne Board of Health and the DEP within 30 days of its date of recordation and/or registration.

9. Term. This Restriction shall run in perpetuity and is intended to conform to M.G.L. c.184, §26, as amended.

10. Rights Reserved. This Restriction is granted to the Bourne Board of Health. It is expressly agreed that acceptance of this Restriction by the Bourne Board of Health shall not operate to bar, diminish, or in any way affect any legal or equitable right of the Bourne Board of Health or of DEP to issue any future order with respect to the Property or in any way affect any other claim, action, suit, cause of action, or demand which the Bourne Board of Health or DEP may have with respect thereto. Nor shall acceptance of the Restriction serve to impose any obligations, liabilities, or any other duties upon the Bourne Board of Health.

11. Effective Date. This Restriction shall become effective upon its recordation and/or registration with the appropriate Registry of Deeds and/or Land Registration Office.

12. No construction permits shall be issued for the Property until a certified Registry copy is submitted to the office of the Bourne Board of Health unless written approval is otherwise granted by the Board of Health.

WITNESS the execution hereof under seal this _____ day of _____, 2018.

Grantor

COMMONWEALTH OF MASSACHUSETTS

_____, ss _____, 2018

Then personally appeared the above-named _____ and acknowledged the foregoing instrument to be his/her free act and deed before me.

Notary Public:
My commission expires:

Approved and Accepted By:

Terri A. Guarino, R.S.
Health Director
Town of Bourne

Date: _____

EXHIBIT A

Beginning at a concrete bound marking the Northeasterly end of the Northeasterly line of Jefferson Road, a town way:

Thence South 47°08'30" West by said Northwesterly line of Jefferson Road, Thirty-nine and 77/100 (39.77) feet:

Thence North 12° 49'30" West by Lot 63 on a plan of Gray Gables Sub-division, about one hundred fifty-two and no/100 (152.00) feet to mean high water and in the same course, about seventy and no/100 (70.00) feet to mean low water;

Thence Northeasterly by mean low water about forty and no/100 (40.00) feet to other land now or formerly of Ernest R. Schofield et ux.:

Thence South 41° 00' East by other land now or formerly of Ernest R. Schofield et ux. about seventy and no/100 (70.00) feet to mean high water;

Thence South 61° 15'30" East by same, ninety-one and no/100 (91.00) feet to concrete bound;

Thence South 40° 58'40" East by same, one-hundred forty-seven and 36/100 (147.36) feet;

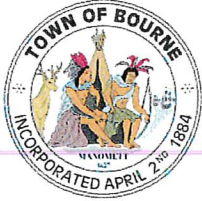
Thence South 46° 40'42" West by same, eighty-three and 50/100 (83.50) feet;

Thence North 73° 23'42" West eighty-five and 82/100 (85.82) feet;

Thence North 89° 15'30" West, twenty and no/100 (20.00) feet to a point in the Easterly line of the end of the aforesaid Jefferson Road;

Thence North 0° 08'30" East by the said the Easterly line of said Jefferson Road, fourteen and 69/100 (14.69) feet to the point of beginning. See plan recorded in Plan Book 247, Page 72.

Containing an area in that portion of said land lying above mean high water of about 28,430 square feet more or less, and being shown as Lot A on a plan entitled "Plan of Lot A to be Conveyed by Ernest R. and Doris M. Schofield in Gray Gables, Bourne" dated April 22, 1971, and drawn by Newell B. Snow, R.L.S., to be filed here within.



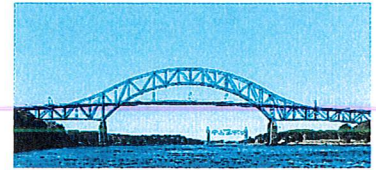
TOWN OF BOURNE

Board of Assessors

24 Perry Avenue

Buzzards Bay, MA 02532

(508) 759-0600 Ext. 1510 ♦ Fax (508) 759-8026



Anne Ekstrom, Chairman
Priscilla A. Koleshis, Clerk
Michael Leitzel, Member

August 22, 2018

Arthur R. Hallam, III
c/o Bracken Engineering, Inc.
49 Herring Pond Road
Buzzards Bay, MA 02532

Re: Abutters List for Map 23.4 Parcel 9
2 Jefferson Road

As required by the Bourne Board of Health, pursuant with section 310 CMR 15.411(1), this is to certify that the attached list of names and addresses constitutes all of the parties in interest as shown on the most recent tax list of the Town of Bourne.

Abutting properties are: Map 23.4 Parcels 8 & 10, Map 26.2 Parcel 44.
Your payment of \$10.00 has been received by the Bourne Assessor's Office.

Please be advised that this abutters list is only good for 30 days from the date on this letter. Expired abutters list can be recertified for an additional filing fee.

See enclosed for abutters mailing addresses.

Board of Assessors

*Anne Ekstrom
Priscilla Koleshis
Michael Leitzel*

List Enclosed

Report #24: Owner Listing Report
Fiscal Year 2019

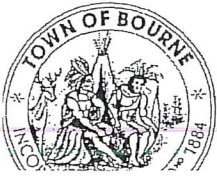
1 Abutters List
LIVE
Key IN 4811,4813,5463

Extract:
Database:
Filter:
Sort:

Bourne MA

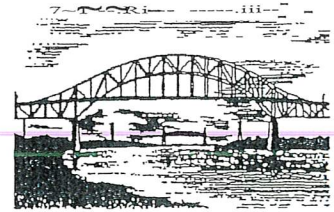
Key	Parcel ID	Owner	Location	LCI/CI	N	Bk-Pqt(Cert)/Dt	Mailing Street	Mailing City	ST	Zip Cd/Country
4811	23.4-8-0	SCHOFIELD ALLEN W TR 12 BELL ROAD NOMINEE TR	12 BELL RD	1090	N	28014/316 3/3/2014	5 SCHOFIELD RD	HOPKINTON	MA	01748
4813	23.4-10-0	SOARES JOSEPH M JR & ELIZABETH L TRS SOARES FAMILY TRUST	6 JEFFERSON RD	1010	N	26138/22 3/7/2012	6 JEFFERSON RD	BOURNE	MA	02532
5463	26.2-44-0	COCUZZO JOSEPH D TR OF THE COCUZZO FAMILY RLTY TRUST	78 THORNE RD	1010	N	15329/60.62 7/2/2002	24 CASTANO CT	NEEDHAM	MA	02494

Total Records 3



Terri Guarino, RS
Health Agent

TOWN OF BOURNE
BOARD OF HEALTH
24 Perry Avenue
Buzzards Bay, MA 02532
Phone (508) 759-0615 x513
Fax (508) 759-8026



CERTIFIED MAIL - abutter notification must be post marked 10 days prior to the date of the hearing

RE - NOTICE OF PUBLIC HEARING

Dear Abutter:

In accordance with Title 5, 310 CMR 15.411, you are hereby notified that

(Name of applicant) Arthur R. Hallam, III

has filed with the Town of Bourne Board of Health a request for a:

- Waiver to use the existing septic system
- Variance(s) to install a new septic system
- Variance(s) to install a new septic system with an alternative testing system
- Local Upgrade Approval to install a new septic system

The location of the property for this proposal is: 2 Jefferson Road, Map 23.4, Parcel 9

This hearing is scheduled for September 12, 2018 at 7pm in the lower conference room at the Town Hall. Information about the Public Hearing and/or copies of the septic design plans may be examined at the Bourne Board of Health located at 24 Perry Avenue, Buzzards Bay, MA 02532. The office hours for the Town Hall are Monday through Friday from 8:30 A.M. until 4:30 P.M.

Notice of this Public Hearing, including its date, time and place will be posted at the Town of Bourne Town Hall not less than 48 hours in advance of the hearing.

Sincerely,

Zachary L. Basinski, P.E.
Bracken Engineering, Inc.
Agent for the applicant

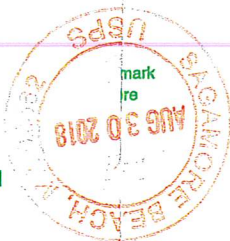
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Return Receipt Fee: \$ 2.75
Total Postage & Fees: \$ 6.67



Joseph D. Cocuzzo, Trustee
Cocuzzo Family Realty Trust
24 Castano Court
Needham, MA 02494

2 Jefferson Rd, Bourne - BOH

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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Allen W. Schofield, TR
12 Bell Road Nominee Trust
5 Schofield Road
Hopkinton, MA 01748

2 Jefferson Rd, Bourne - BOH

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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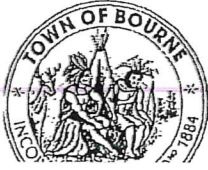
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Joseph M & Elizabeth L Soares, Jr
Soares Family Trust
6 Jefferson Road
Bourne, MA 02532

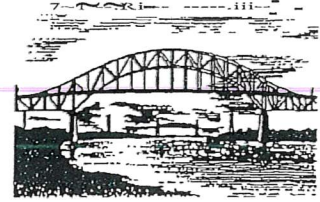
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Terri Guarino, RS
Health Agent

TOWN OF BOURNE
BOARD OF HEALTH
24 Perry Avenue
Buzzards Bay, MA 02532
Phone (508) 759-0615 x513
Fax (508) 759-8026



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RE - NOTICE OF PUBLIC HEARING **REVISION - TIME OF HEARING**

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Sincerely,

Zachary L. Basinski, P.E.
Bracken Engineering, Inc.
Agent for the applicant

RECEIVED

AUG 31 2018

Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02532

RECEIVED

AUG 31 2018

Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02532

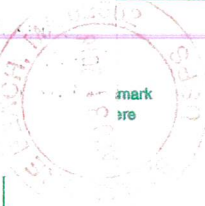
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Allen W. Schofield, TR
12 Bell Road Nominee Trust
5 Schofield Road
Hopkinton, MA 01748

2 Jefferson Rd, Bourne - BOH #2

See Reverse for Instructions

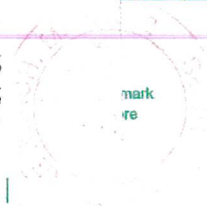
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Joseph M & Elizabeth L Soares, Jr.
Soares Family Trust
6 Jefferson Road
Bourne, MA 02532

2 Jefferson Rd, Bourne - NOI #2

See Reverse for Instructions

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Cocuzzo Family Realty Trust
24 Castano Court
Needham, MA 02494

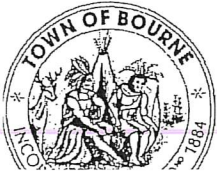
2 Jefferson Rd, Bourne - BOH #2

See Reverse for Instructions

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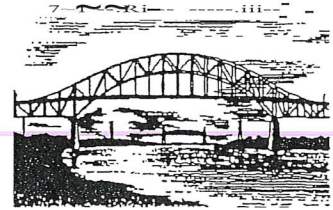
AUG 31 2018

Bourne Health Department
24 Perry Avenue
Buzzards Bay, MA 02532



Terri Guarino, RS
Health Agent

TOWN OF BOURNE
BOARD OF HEALTH
24 Perry Avenue
Buzzards Bay, MA 02532
Phone (508) 759-0615 x513
Fax (508) 759-8026



CERTIFIED MAIL - abutter notification must be post marked 10 days prior to the date of the hearing

RE - NOTICE OF PUBLIC HEARING REVISION - TIME OF HEARING

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RECEIVED

SEP 12 2018

Bourne Health Department
24 Perry Avenue
Buzzards Bay MA 02532

The location of the property for this proposal is: 2 Jefferson Road, Map 23.4, Parcel 9

This hearing is scheduled for September 12, 2018 at 6 p.m. in the lower conference room at the Town Hall. Information about the Public Hearing and/or copies of the septic design plans may be examined at the Bourne Board of Health located at 24 Perry Avenue, Buzzards Bay, MA 02532. The office hours for the Town Hall are Monday through Friday from 8:30 A.M. until 4:30 P.M.

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Sincerely,

Zachary L. Basinski, P.E.
Bracken Engineering, Inc.
Agent for the applicant

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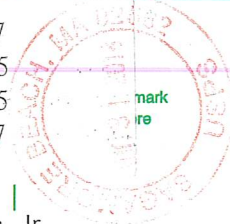
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24 Perry Avenue
Buzzards Bay, MA 02532

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Joseph D. Cocuzzo, Trustee
Cocuzzo Family Realty Trust
24 Castano Court
Needham, MA 02494
2 Jefferson Rd, Bourne - BOH #2

See Reverse for Instructions

Key: 4812

Town of Bourne - Fiscal Year 2018 Preliminary


10/16/2017

5:59 pm

SEQ # 4,924

CURRENT OWNER		PARCEL ID		LOCATION	
HALLAM ARTHUR R III ETUX		23-4-9-0		2 JEFFERSON RD	
KATHERINE A HALLAM		TRANSFER HISTORY		DOS T SALE PRICE BK-P/G (Cert)	
2 JEFFERSON RD					
BOURNE, MA 02532-5402					

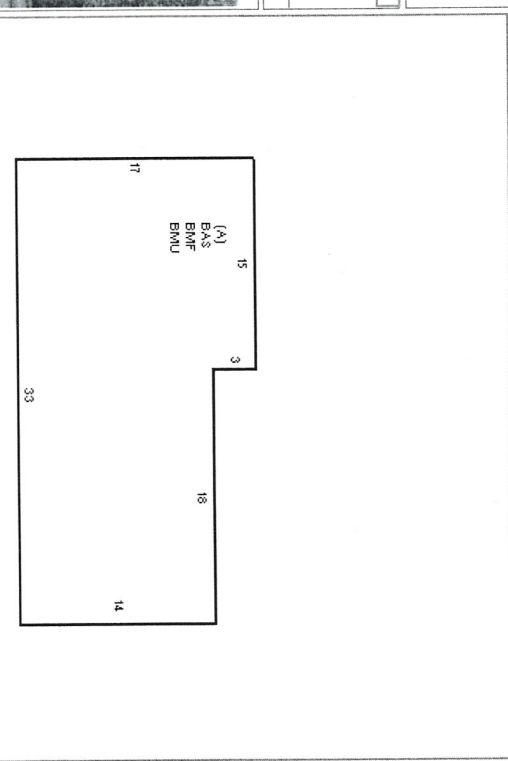
CD	T	AC/SF/UN	Nbhd	Init	N Index	ADJ BASE	SAF	Topo	Lpi	VC	CREDIT AMT	ADJ VALUE
TOTAL		ZONING		FRNT		ASSESSED		CURRENT		PREVIOUS		
						LAND BUILDING DETACHED OTHER		41,400				
						TOTAL						

TY	QUAL	COND	DIM/NOTE	YB	UNITS	ADJ PRICE	RCNLD
PHOTO 06/23/2017							
							
BLDG COMMENTS							

BUILDING MODEL	CD	ADJ	DESC	MEASURE LIST	6/23/2017	BC
STYLE	1	0.90	RESIDENTIAL RANCH (100%)	REVIEW	6/23/2017	BC
QUALITY	-	0.95	AVERAGE - (100%)			
FRAME	1	1.00	WOOD FRAME (100%)			BC

YEAR BLT	1937	SIZE ADJ	1,000	ELEMENT	CD	DESCRIPTION	ADJ
NET AREA	507	DETAIL ADJ	1,000	FOUNDATION	4	FLRMWALL(FULL)	1.00
\$NLA(RCN)	\$163	OVERALL	0.960	EXT COVER	1	WOOD SHINGLE	1.02
				ROOF SHAPE	1	GABLE	1.00
				ROOF COVER	1	ASPH/COMP SHN	1.00
				FLOOR COVER	2	SOFTWOOD	1.02
				INT. FINISH	1	PLASTER	1.00
				HEATING/COOLING	2	HOT WATER	1.02
				FUEL SOURCE	2	GAS	1.00
STORIES	1	ADJ	1.00				
ROOMS	4		1.00				
BEDROOMS	2		1.00				
BATHROOMS	1		1.00				
FIXTURES	5		1.00				
GARAGE CAPACITY	0		1.00				
% BSMT FINISH	100		1.00				
# OF HALF BATHS	0		1.00				
# OF UNITS	1		1.00				

CLASS	CLASS%	DESCRIPTION	BN ID	BN	CARD
1090	100	MULTIPLE DWELLING	2	2	2 of 2
PMT NO	PMT DT	DESC	AMOUNT	INSP	BY
	TY				1st %

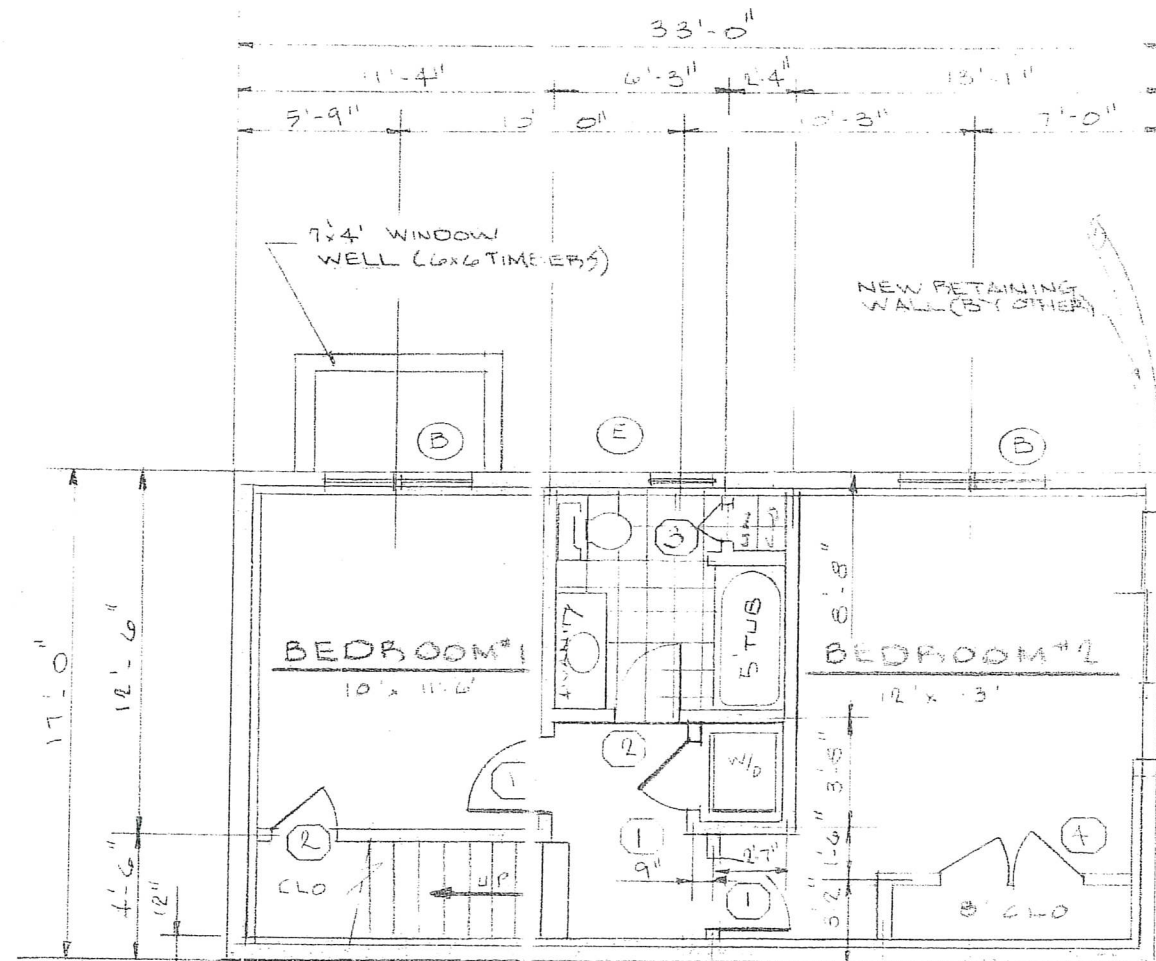


S	BAT	T	DESCRIPTION	UNITS	YB	ADJ PRICE	RCN
A	BMU	N	BSMT UNFINISHED	507		23.31	11,818
A	BWF	N	BSMT FINISH	507		22.12	11,215
A	BAS	L	BASE AREA	507		110.00	55,772
F-11	O	FPL	15 TOP	1	1937	4,057.50	4,058
TOTAL RCN							82,963
CONDITION ELEM				CD			
EXTERIOR				F			
INTERIOR				P			
KITCHEN				P			
BATHS				P			
HEAT				O			
ELECT				O			
EFF. YRAGE						1963 / 53	
COND						50 50 %	
FUNC						0 uc	
ECON						0	
DEPR						50 % GD	50
RCNLD							\$41,400

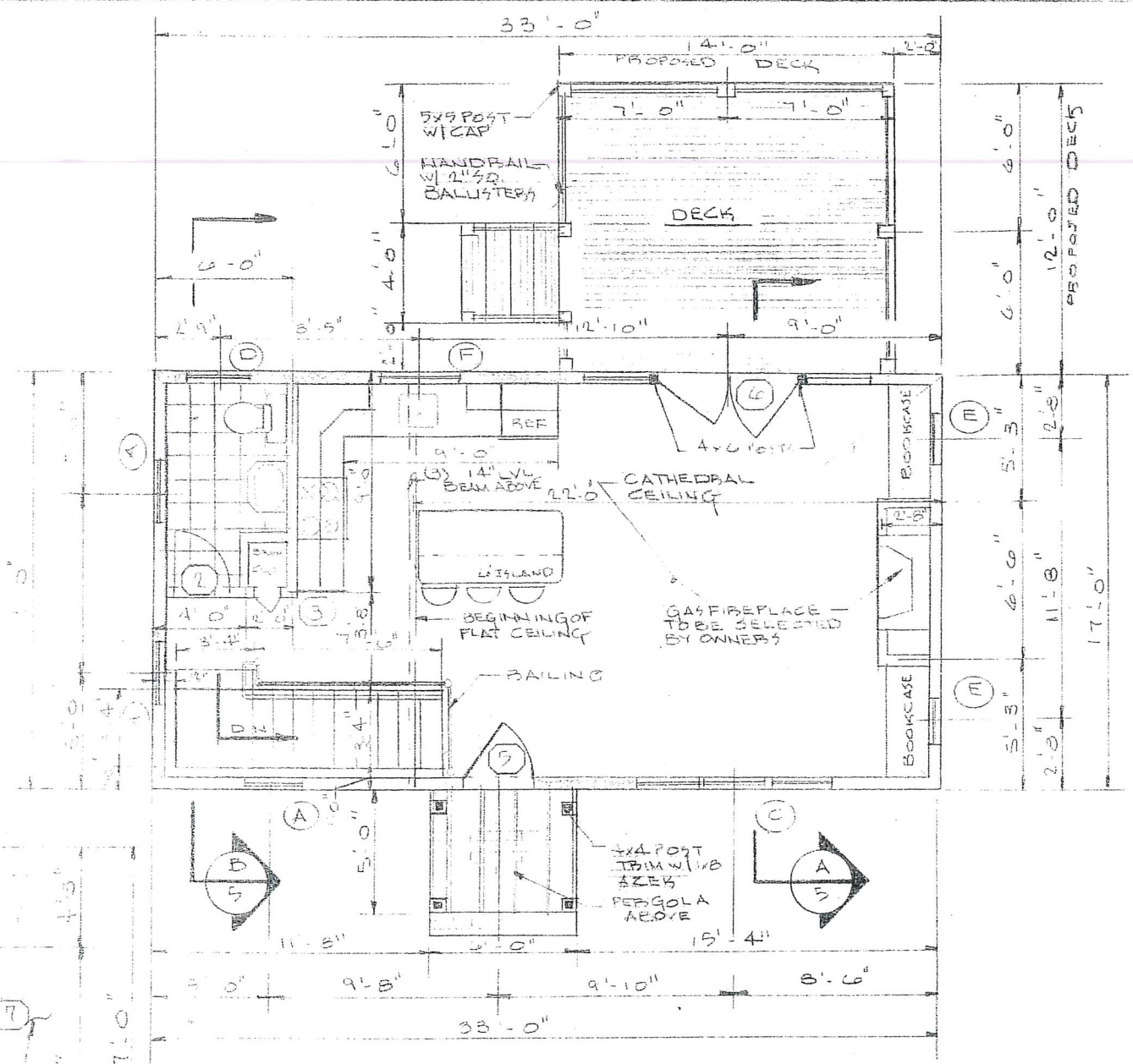
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AUG 30 2018

Bourne Health Departmen
24 Perry Avenue
Buzzards Bay, MA 02537



BASEMENT PLAN
SCALE 1/4" = 1'-0"

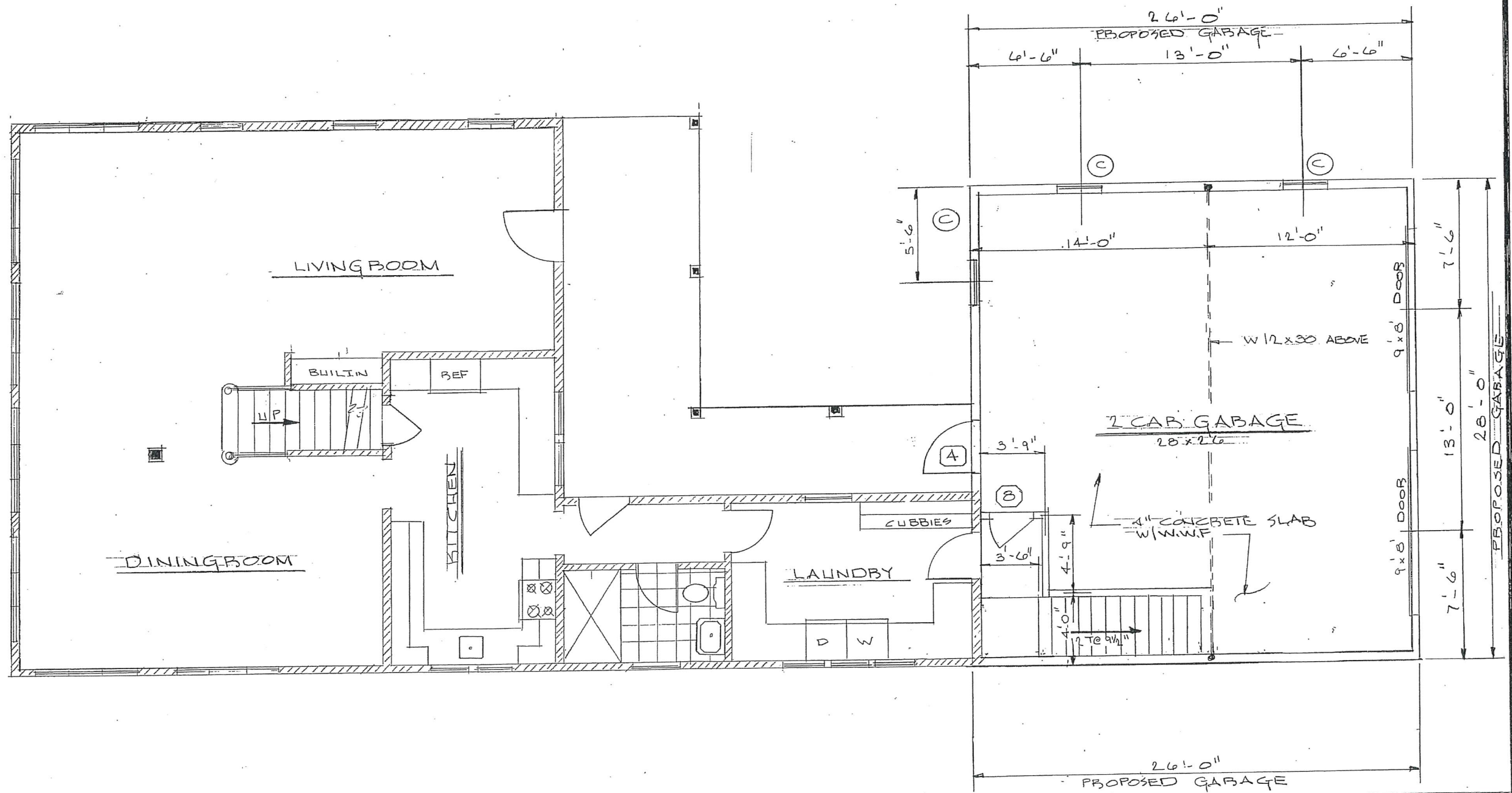


FIRST FLOOR PLAN
SCALE 1/4" = 1'-0"

NOTES

- 1. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE MASSACHUSETTS STATE BUILDING CODE AND ALL LOCAL TOWN CODES
- 2. ALL DIMENSIONS SHALL BE VERIFIED BY THE OWNER'S & THE GENERAL CONTRACTOR PRIOR TO THE START OF CONSTRUCTION

PROPOSED REBUILDING OF HALLAM COTTAGE 2 JEFFERSON ROAD BOURNE, MASSACHUSETTS	
FLOOR PLANS	
DRAWN BY: A.M. MICHNIEWICZ	DWG NO 3
DATE 9-2014	



NOTES

1. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE MASSACHUSETTS STATE BUILDING CODE AND ALL LOCAL TOWN CODES.

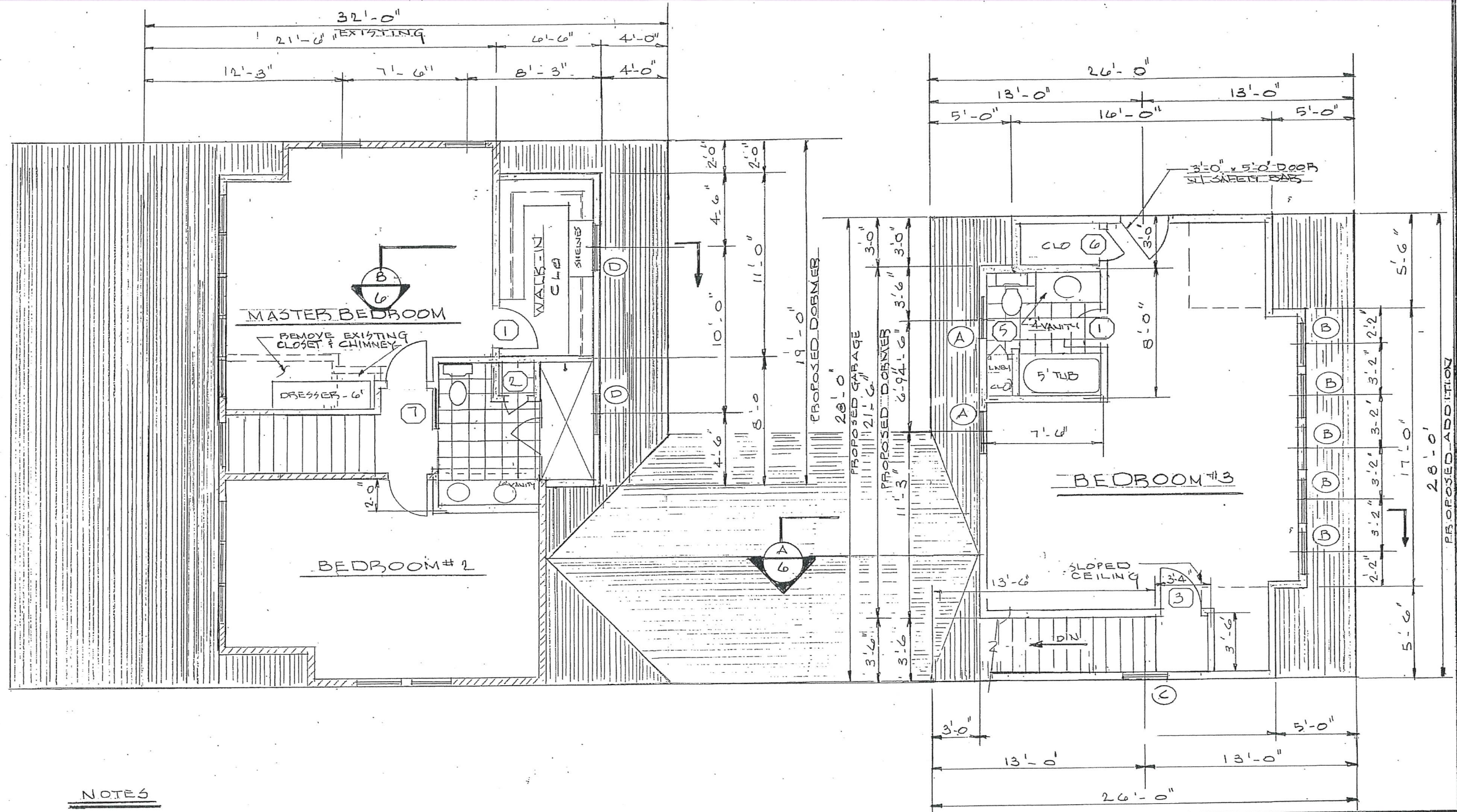
2. ALL DIMENSIONS SHALL BE VERIFIED BY THE OWNERS AND THE GENERAL CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.

3. INDICATES EXISTING
 INDICATES NEW CONSTRUCTION

FIRST FLOOR PLAN

SCALE 1/4" = 1'-0"

PROPOSED ADDITION TO THE HALLAM RESIDENCE 2 JEFFERSON ROAD BOURNE, MASSACHUSETTS	
FIRST FLOOR PLAN	
DRAWN BY A.M. MICHNIEWICZ	DWG. NO. 3
DATE 9-20-16,	



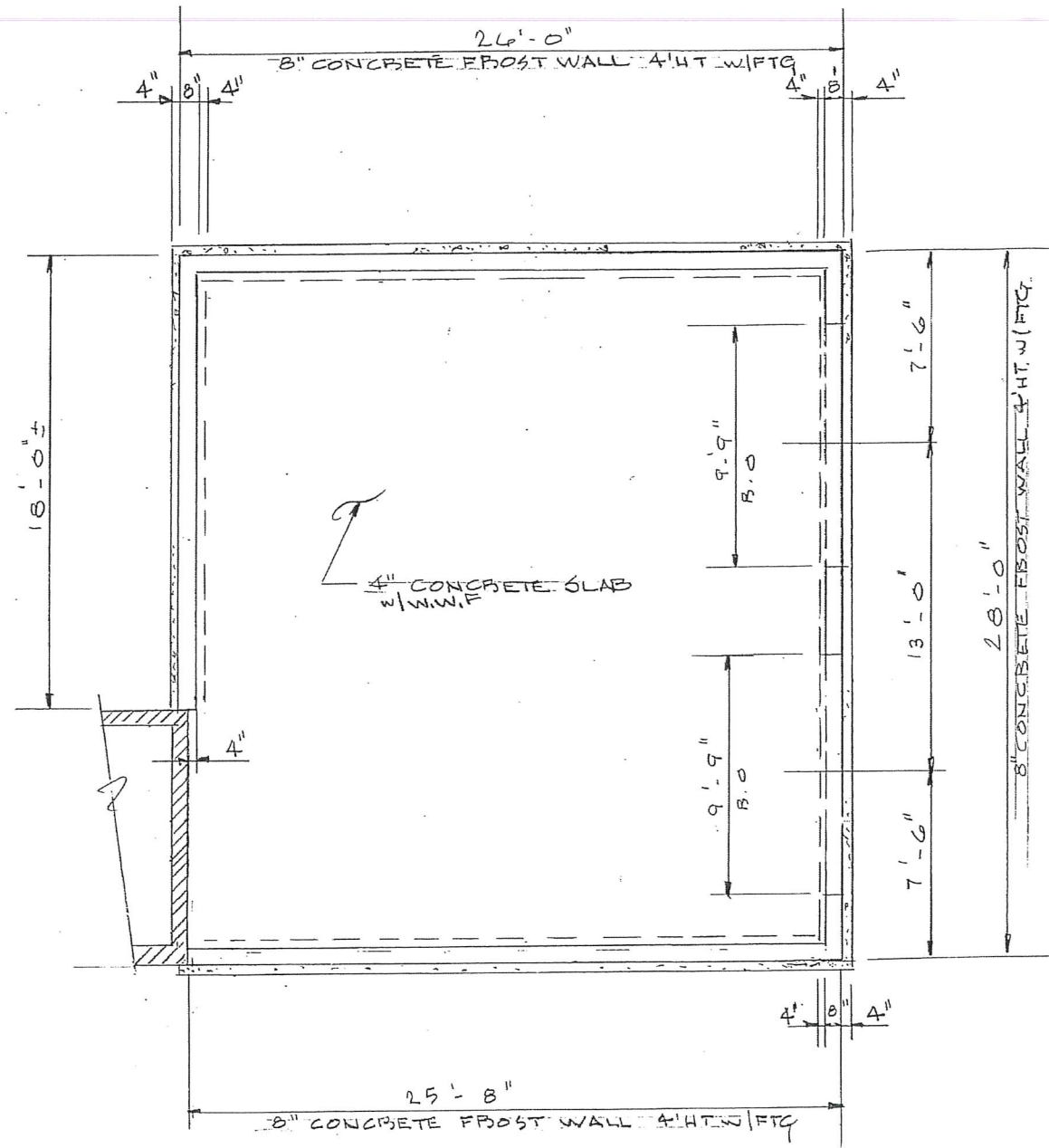
NOTES

1. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE MASSACHUSETTS STATE BUILDING CODE AND ALL LOCAL TOWN CODES.
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3. INDICATES EXISTING
 INDICATES NEW CONSTRUCTION

SECOND FLOOR PLAN

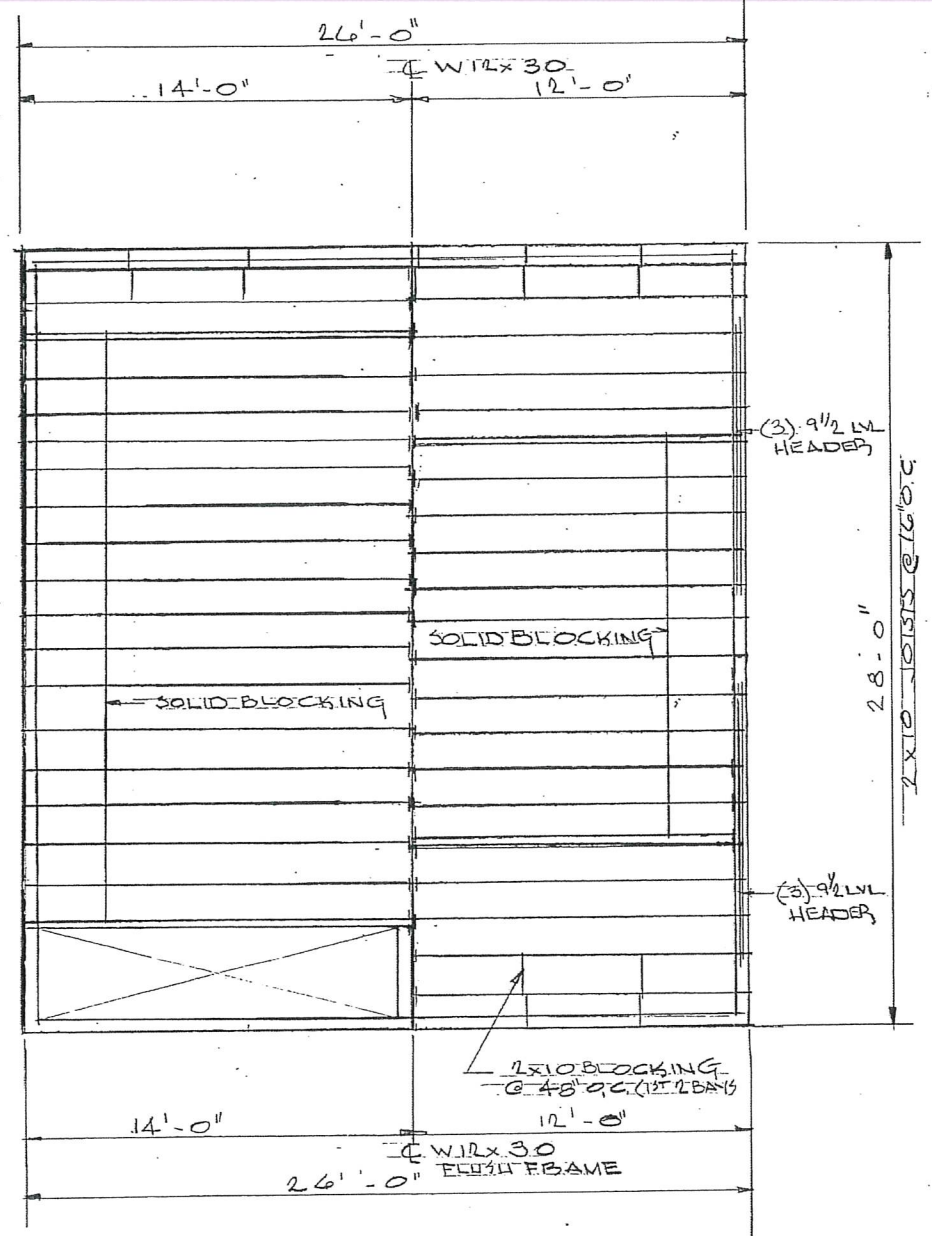
SCALE 1/4" = 1'-0"

PROPOSED ADDITIONS TO THE HALLAM RESIDENCE 2 JEFFERSON ROAD BOULNE, MASSACHUSETTS	
SECOND FLOOR PLAN	
DRAWN BY A.E. MICHNIEWICZ	DWG. NO. 4
DATE 9-2-2015	



FOUNDATION PLAN

SCALE: 1/4" = 1'-0"



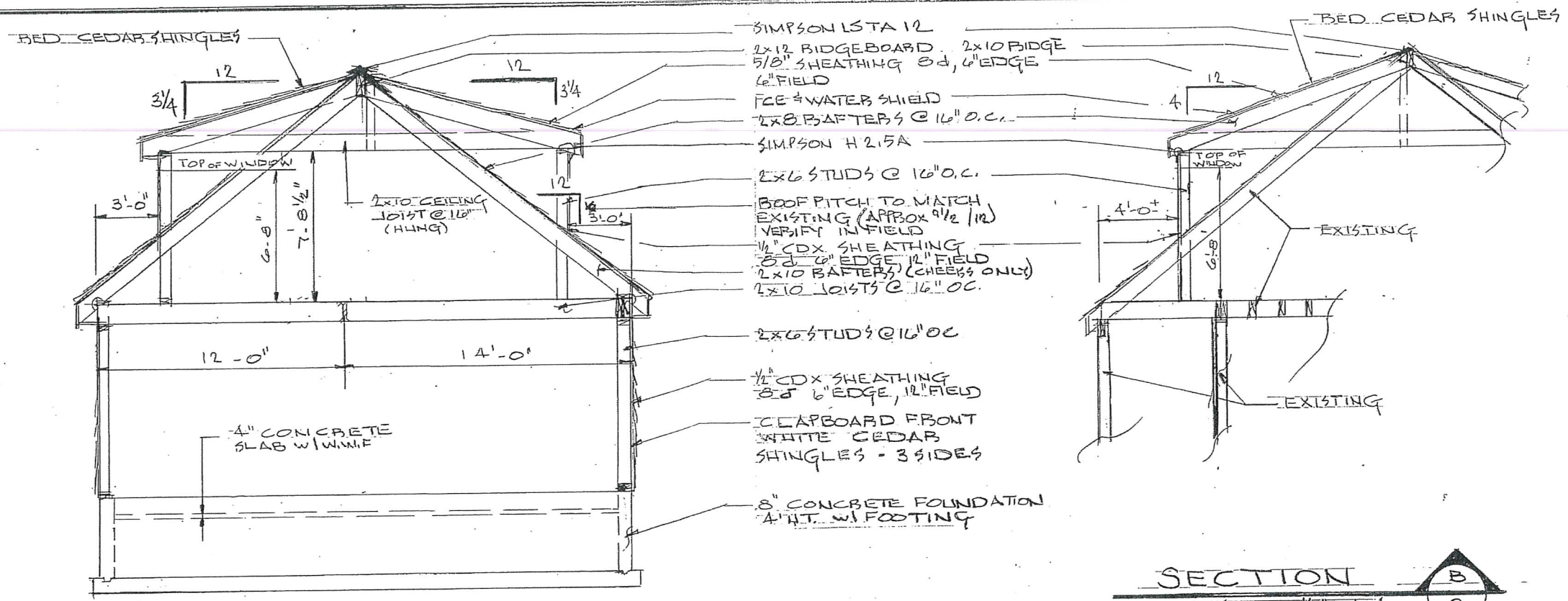
SECOND FLOOR FRAMING PLAN

SCALE: 1/4" = 1'-0"

NOTES

1. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE MASSACHUSETTS STATE BUILDING CODE AND ALL LOCAL TOWN CODES.
2. ALL DIMENSIONS SHALL BE VERIFIED BY THE OWNER AND THE GENERAL CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
3. ALL CONCRETE FOOTINGS SHALL BE FOUNDED ON UNDISTURBED SUITABLE SOIL.

PROPOSED ADDITION TO THE HALLAM RESIDENCE 2 JEFFERSON ROAD BOURNE, MASSACHUSETTS	
FOUNDATION & FRAMING	
DRAWN BY: A. M. MICHNIEWICZ	DWG NO. 5
DATE: 9-2016	



SECTION A
SCALE 1/4" = 1'-0"

SECTION B
SCALE 1/4" = 1'-0"

DOOR SCHEDULE					
CODE	QUAN	SIZE	TYPE	DESIGN	REMARKS
1	2	2-4 x 6-8	HINGED	6 PANEL	
2	1	1-6 x 6-8	HINGED	3 PANEL	
3	1	2-8 x 6-8	HINGED	6 PANEL	
4	1	2-8 x 6-8	HINGED	6LT 2PNL	
5	1	1-0 x 6-8	HINGED	3 PNL	
6	1	2-0 x 6-8	HINGED	6 PNL	
7	1	2-4 x 6-8	POCKET	6 PNL	
8	1	3-0 x 6-8	HINGED	6 PNL	FIBERGLASS

WINDOW SCHEDULE						
CODE	QUAN	GLASS SIZE	ROUGH OPNG	CATALOG NUMBER	U FACTOR	REMARKS
A	2	23" x 17 1/16"	2-6 1/8" x 3-8 7/8"	ANDERSEN TW2436	30	
B	5	26 1/16" x 21 1/8"	2-8" x 2-8"	ANDERSEN AX281	28	
C	4	23" x 21 1/16"	2-6 1/8" x 4-4 7/8"	ANDERSEN TW2442	30	1W SAFETY GLAZING
D	2	27 1/8" x 24"	2-8" x 2-4 7/8"	ANDERSEN AW281	28	VINYL INTERIOR

NOTES:
 1. 400 SERIES
 2. WHITE
 3. STORM SHUTTERS REQ

NOTES:
 1. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE MASSACHUSETTS STATE BUILDING CODE AND ALL LOCAL TOWN CODES.
 2. ALL DIMENSIONS SHALL BE VERIFIED BY THE OWNER'S GENERAL CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.

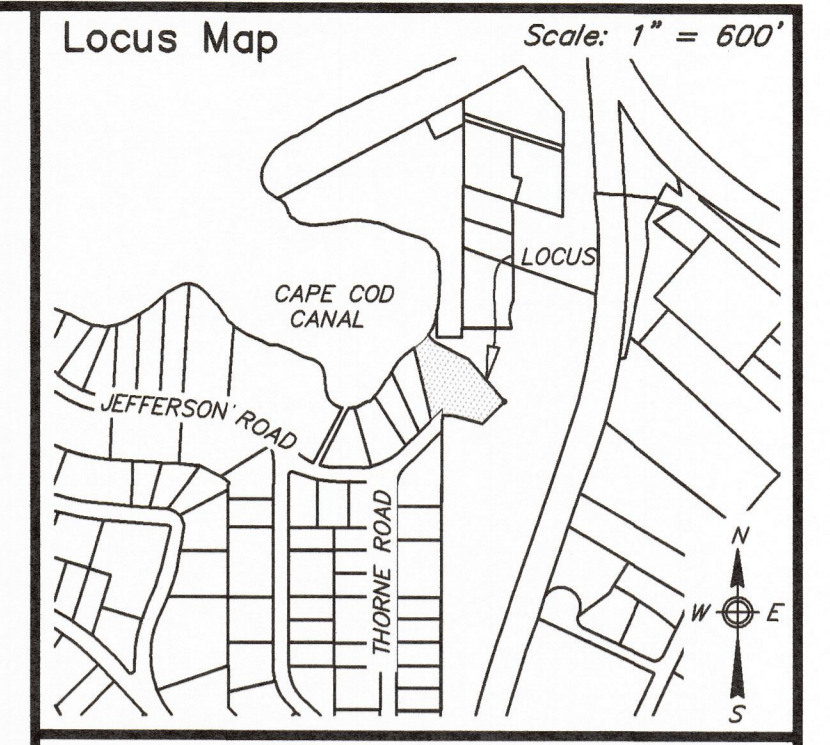
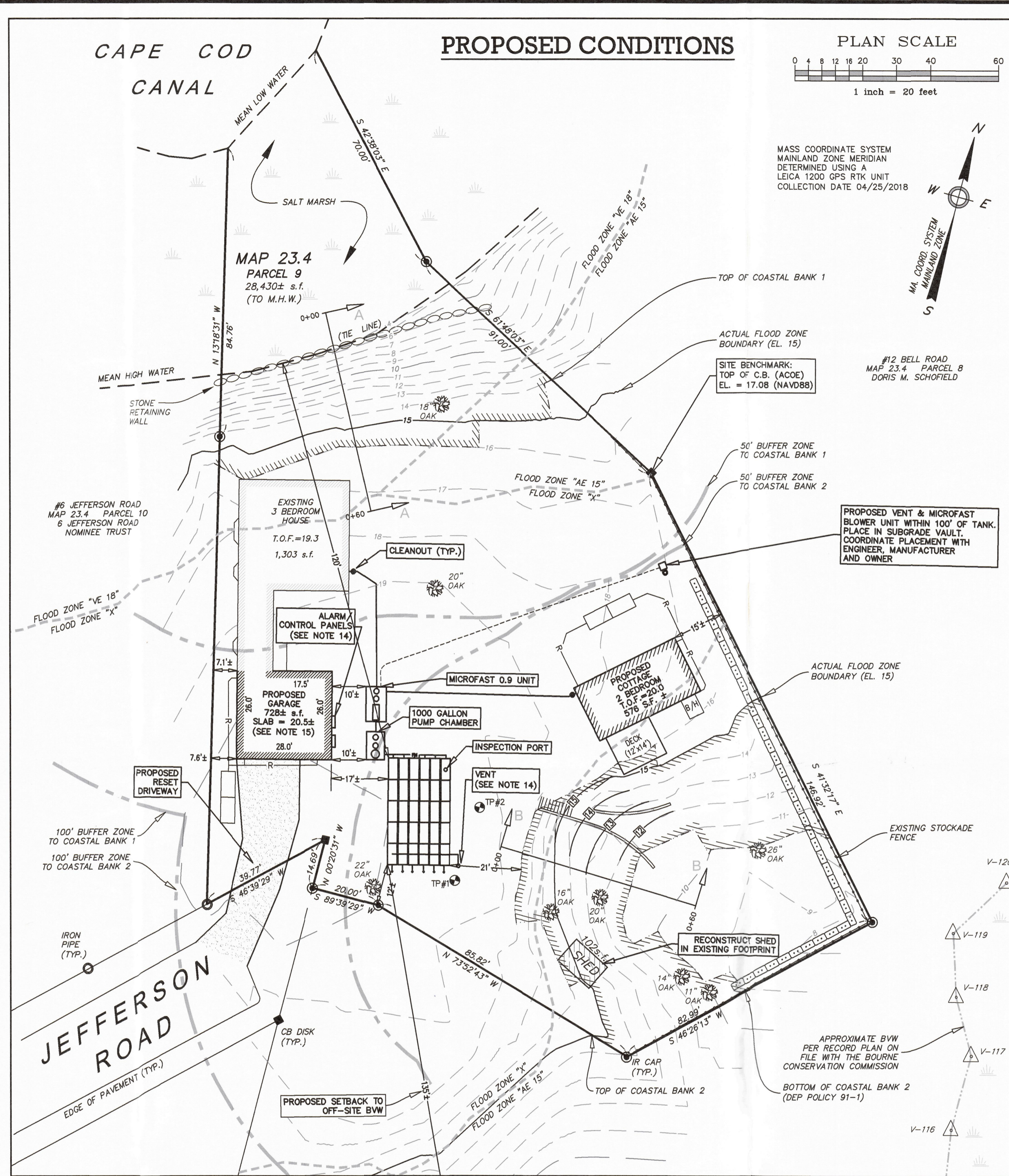
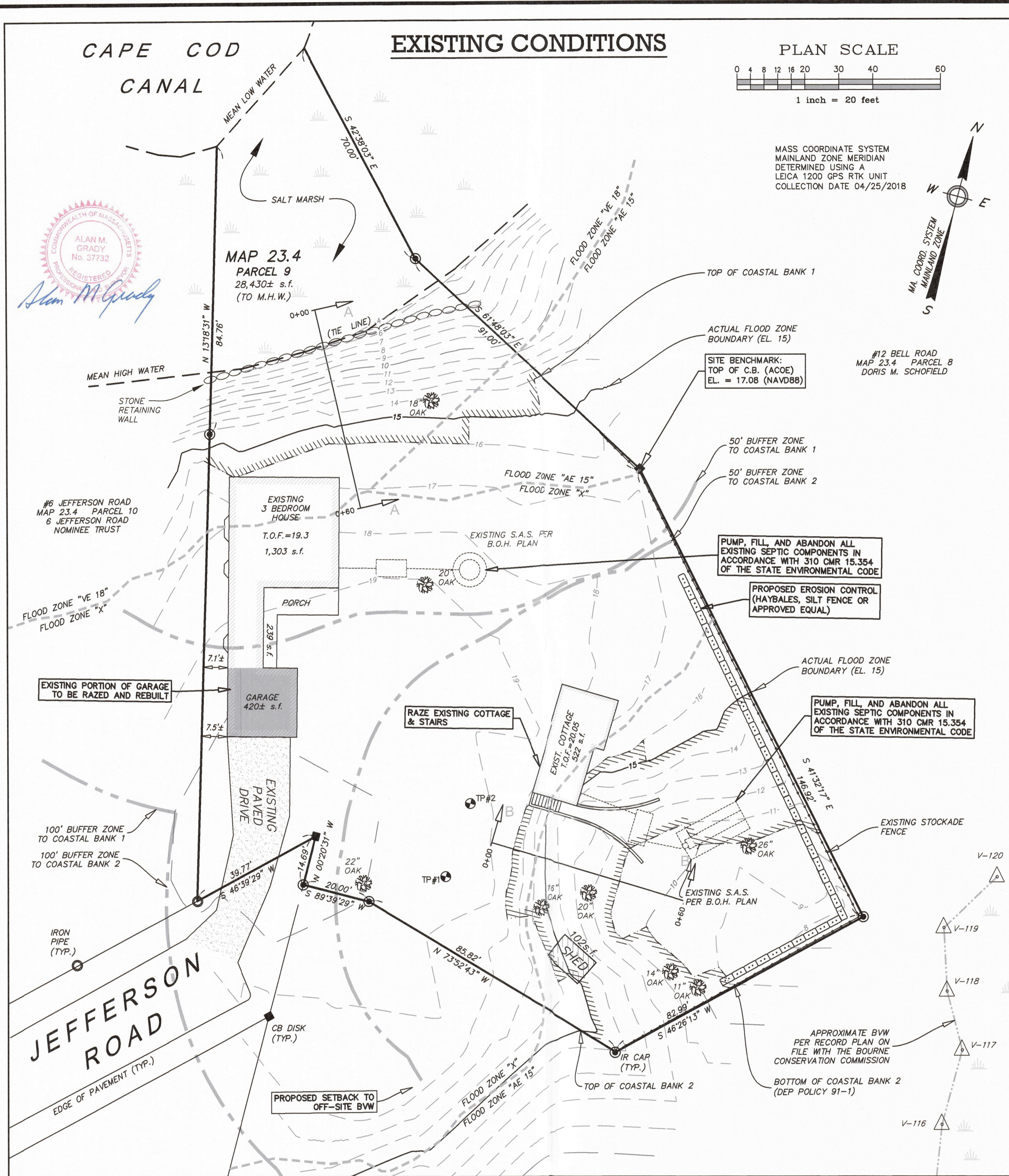
PROPOSED ADDITION TO THE
 HALLAM RESIDENCE
 2 JEFFERSON ROAD
 BOURNE, MASSACHUSETTS

SECTIONS & SCHEDULE

DRAWN BY
 A.M. MICHNIEWICZ

DATE
 9.20.16

OWNER
 6



- ### Notes
- LOCUS: #2 JEFFERSON ROAD MAP 23.4 PARCEL 9
 - OWNER: ARTHUR R. HALLUM, III & KATHERINE A. HALLUM #101 INVERNESS DRIVE LAKE CHARLES, LA 70605
 - DEED REF: Bk: 21486 Pg: 213
 - PLAN REF: Bk: 247 Pg: 72
 - BENCHMARK: ELEVATION = 17.08 (NAVD88) TOP OF CONCRETE BOUND (ACOE)
 - LOCUS PARTIALLY FALLS WITHIN FLOOD HAZARD ZONE "AE(EL.15)" AND "VE(EL.18)" AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP No. 25001C-0501-J dated 07/16/2014.
 - LOCUS DOES NOT FALL WITHIN THE NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM (NHESP) AREAS OF ESTIMATED HABITATS OF RARE WILDLIFE OR PRIORITY HABITATS OF RARE SPECIES.
 - ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE ONLY. CONTRACTOR TO CONTACT DIG-SAFE TO HAVE UTILITIES MARKED PRIOR TO CONSTRUCTION.
 - EXISTING CONDITIONS BASED ON FIELD SURVEY CONDUCTED BY THIS FIRM BETWEEN 09/2014 and 04/2018.
 - CONTRACTOR IS RESPONSIBLE TO REVIEW AND MAINTAIN A COPY OF ALL PERMITS ON SITE.
 - ALL ROOF RUNOFF TO BE CONVEYED TO DRYWELLS. CONTRACTOR TO VERIFY LOCATION IN FIELD.
 - CONTRACTOR TO STORE AND MAINTAIN AN ADDITIONAL 10% OF EROSION CONTROL BARRIER ON SITE FOR REPAIRS.
 - CONTRACTOR TO DISPOSE OF ALL CONSTRUCTION DEBRIS IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.
 - CONTRACTOR TO COORDINATE FINAL VENT LOCATION WITH OWNER
 - CONTRACTOR TO COORDINATE FINAL MICROFAST & PUMP CHAMBER CONTROL/ALARM PANEL LOCATIONS WITH ENGINEER & OWNER PRIOR TO PLACEMENT.
 - SEE ZBA SPECIAL PERMIT 2017-SP17 REGARDING APPROVED SETBACK.

PROPOSED SETBACKS

TANK	SOIL ABSORPTION SYSTEM
COASTAL BANK #1:	70'±
COASTAL BANK #2:	53'±
B.W.W.:	180'±
SALT MARSH:	98'±

NON-CONFORMING PRE-EXISTING ZONE-R-40 REQUIRED EXISTING PROPOSED

LOT AREA:	REQUIRED	EXISTING	PROPOSED
40,000 s.f.	28,430± s.f.	28,430± s.f.	28,430± s.f.
FRONT YARD:	20'	18.7'	33.3'
SIDE/REAR YARD:	12'	20.9'	13.0'
MAX. GROSS FLOOR AREA TO LOT AREA	20% (5,688 s.f. max.)	23.6% (7,802 s.f.)	20.0% (4,410 s.f.)
MAX. LOT COVERAGE:	20% (5,688 s.f. max.)	9.1% (2,586 s.f.)	13.2% (3,782 s.f.)
BUILDING HEIGHT:	35'	<35'	<35'

Notes:
(a) SEE TABLE 2458 FOR NON-CONFORMING LOTS IN BOURNE ZONING BY LAWS.
(b) AVERAGE EXISTING GRADE LINE CALCULATE AS EL. 18.2 (EX. HOUSE) EL. 16.7 (EX. COTTAGE)

Prepared By:

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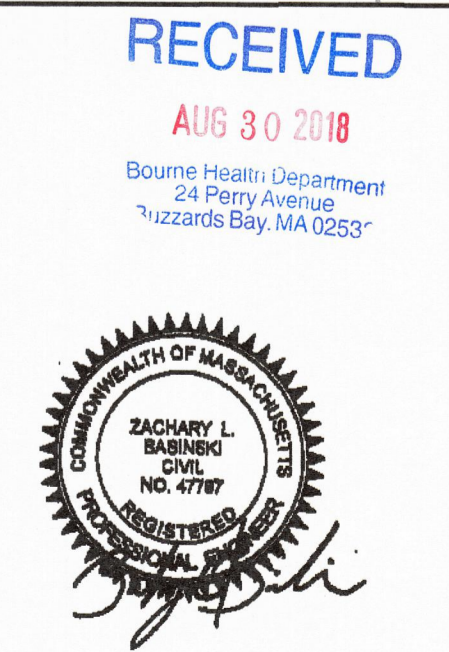
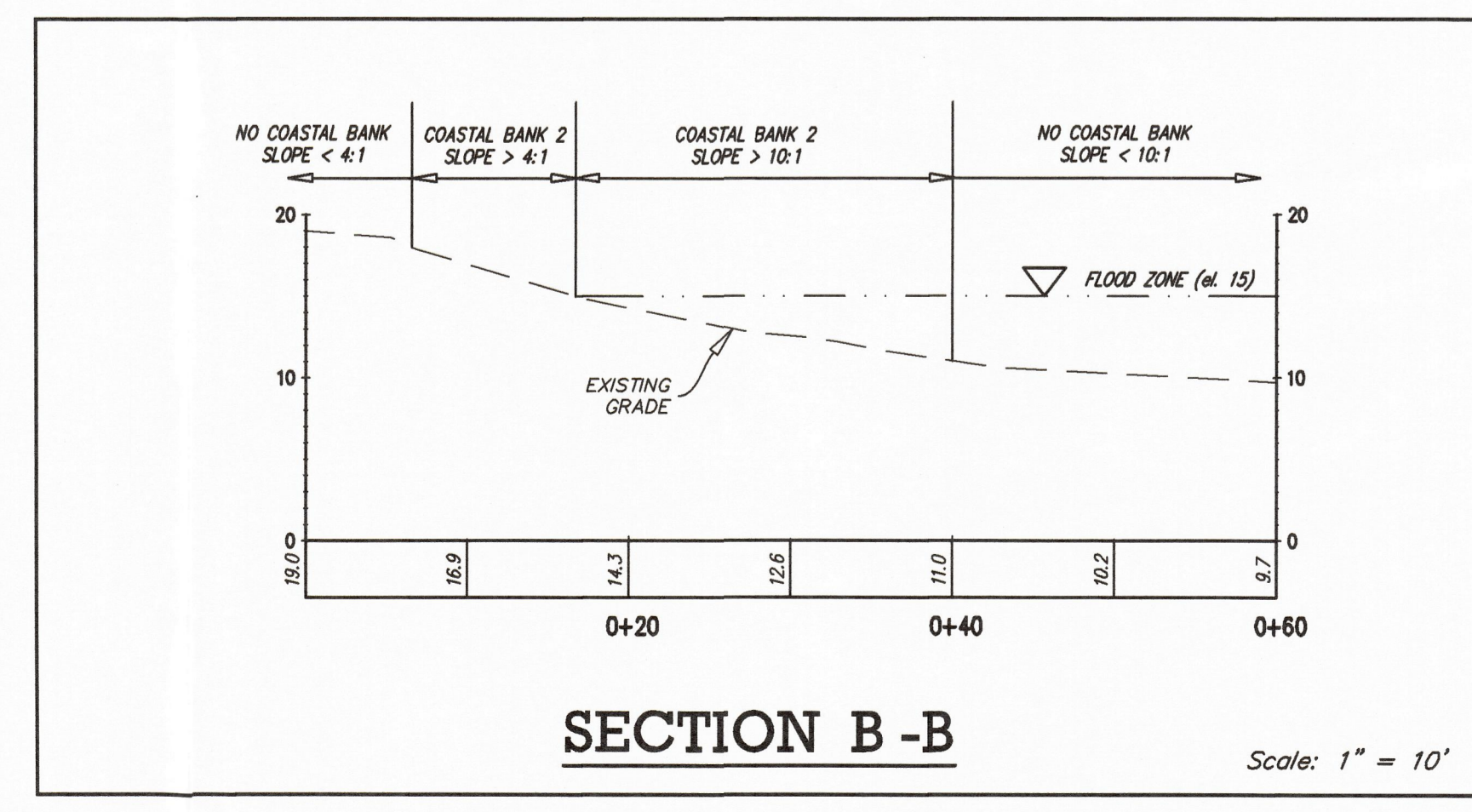
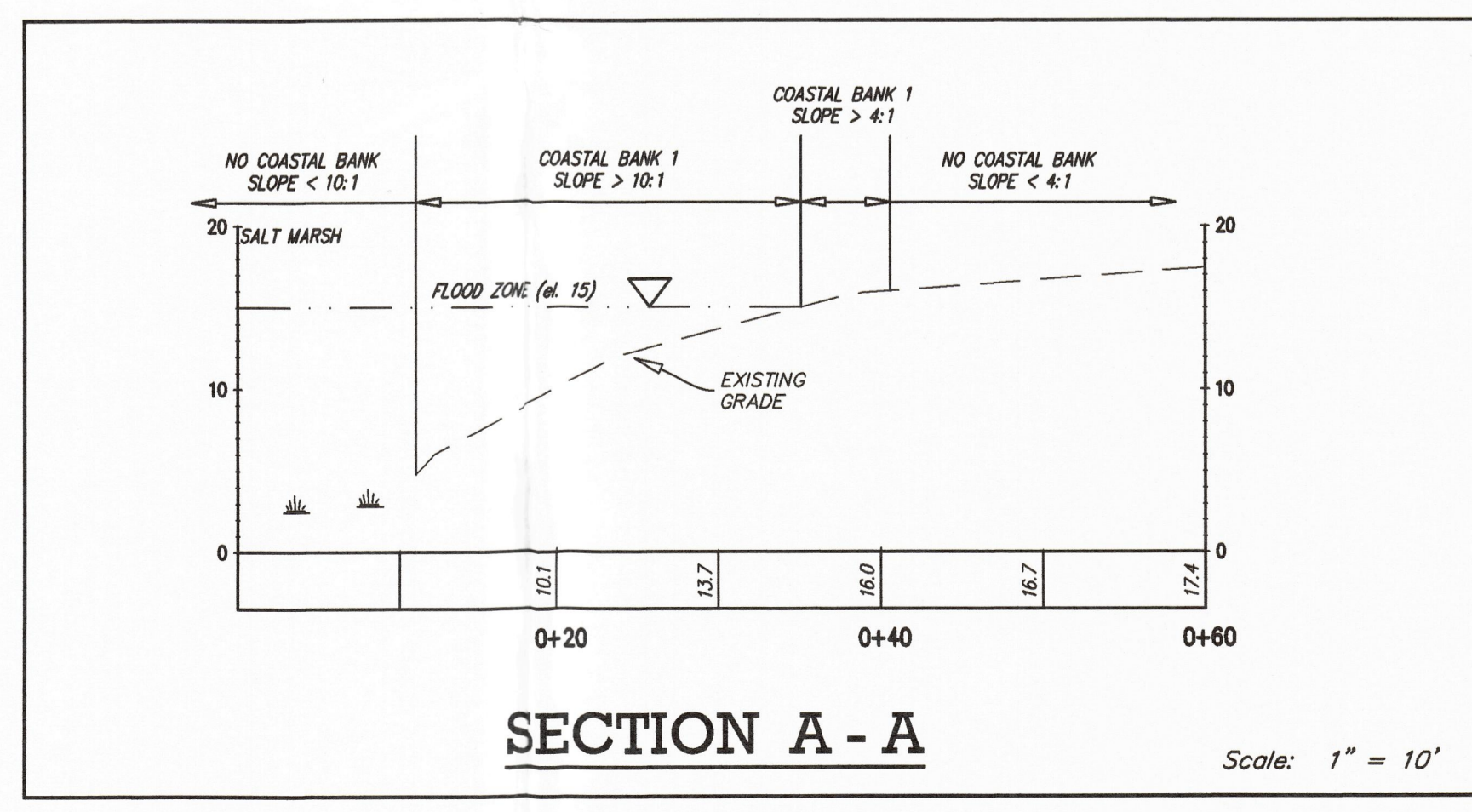
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(tel) 508.325.0044 (www.brackeneng.com)

PROPOSED SITE PLAN IN BOURNE, MASSACHUSETTS

Prepared For:
ARTHUR HALLUM #2 JEFFERSON ROAD MAP 23.4 PARCEL 9

No.	Date	Revision Description	By

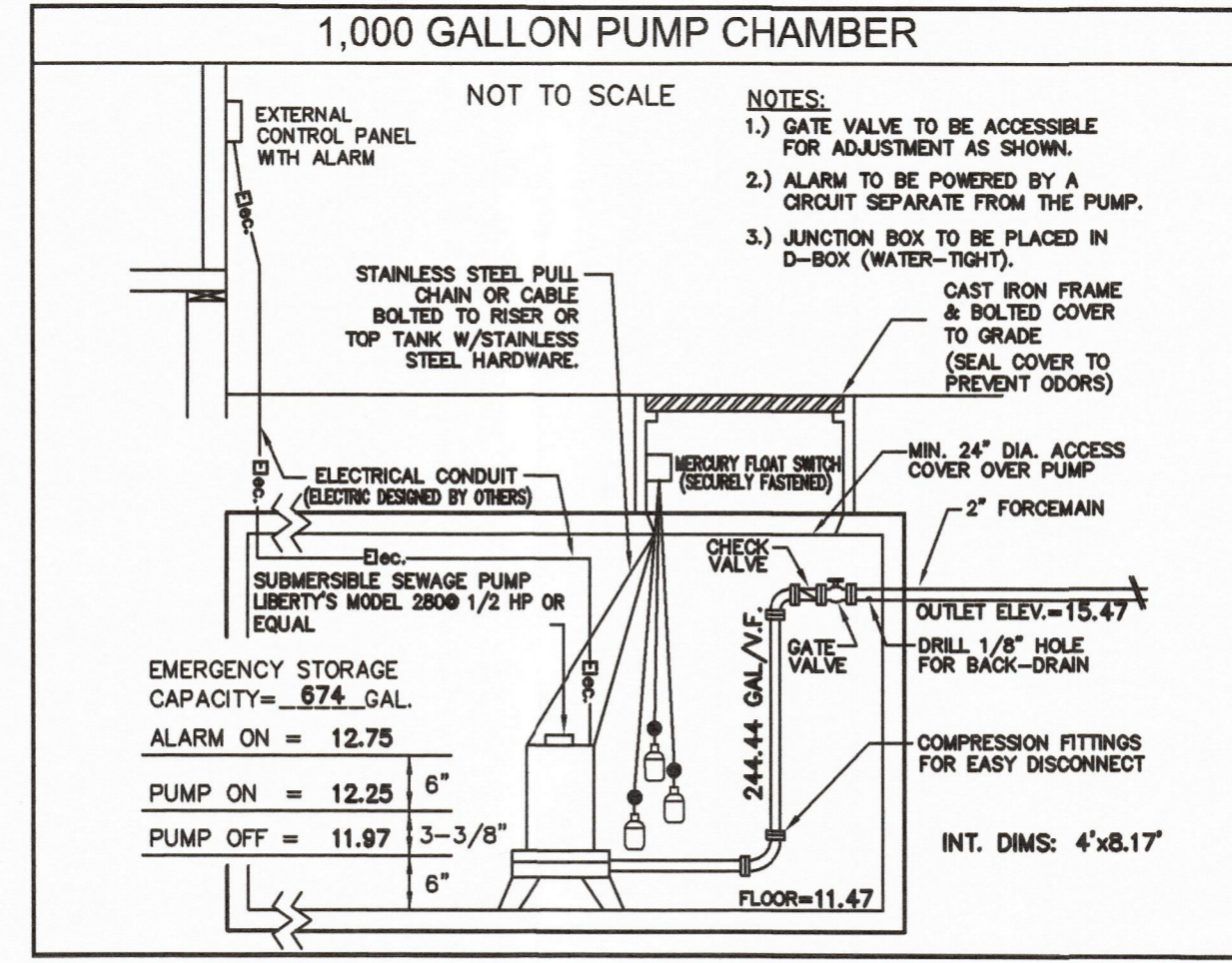
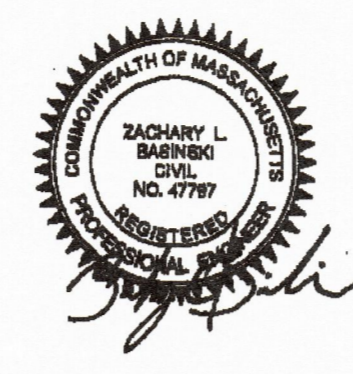
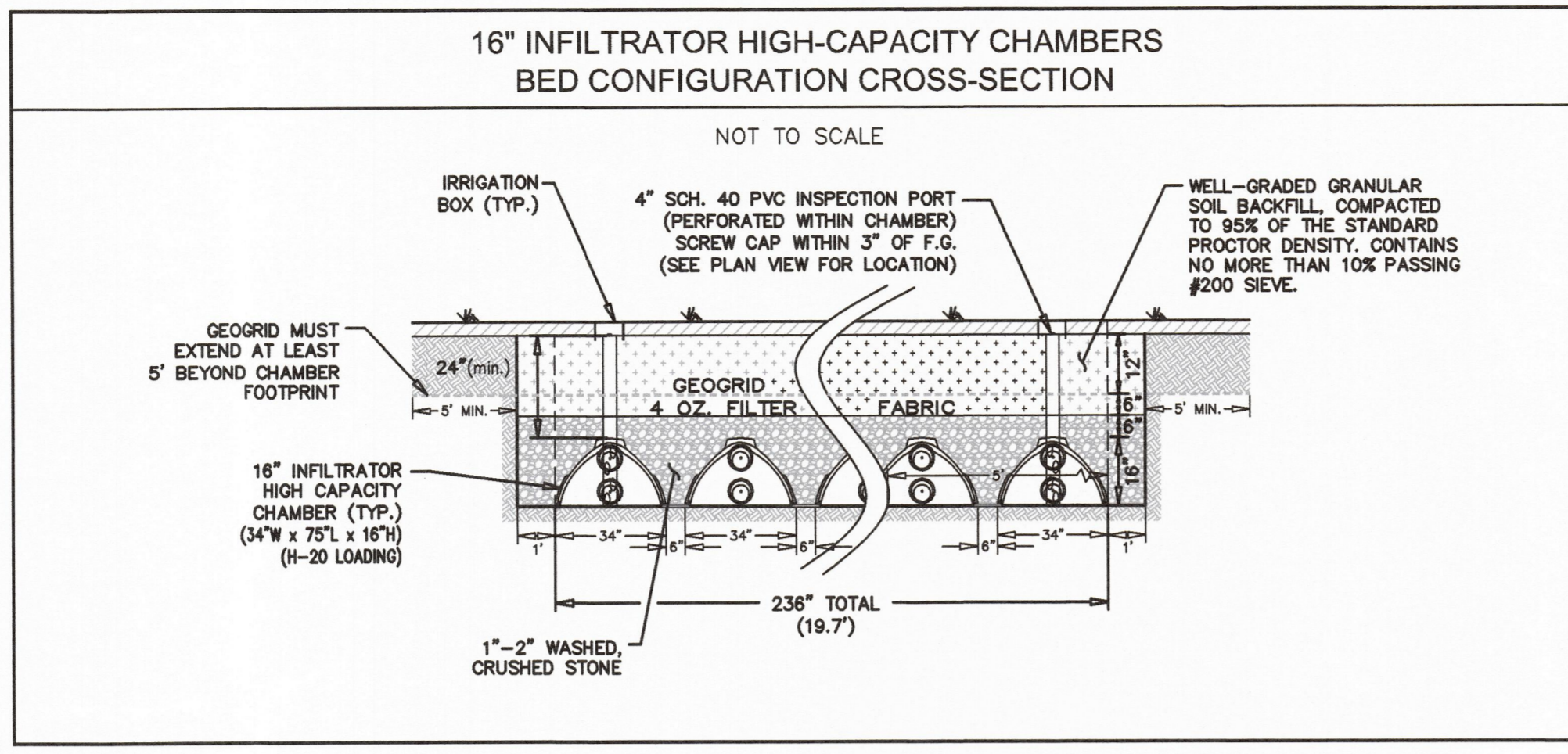
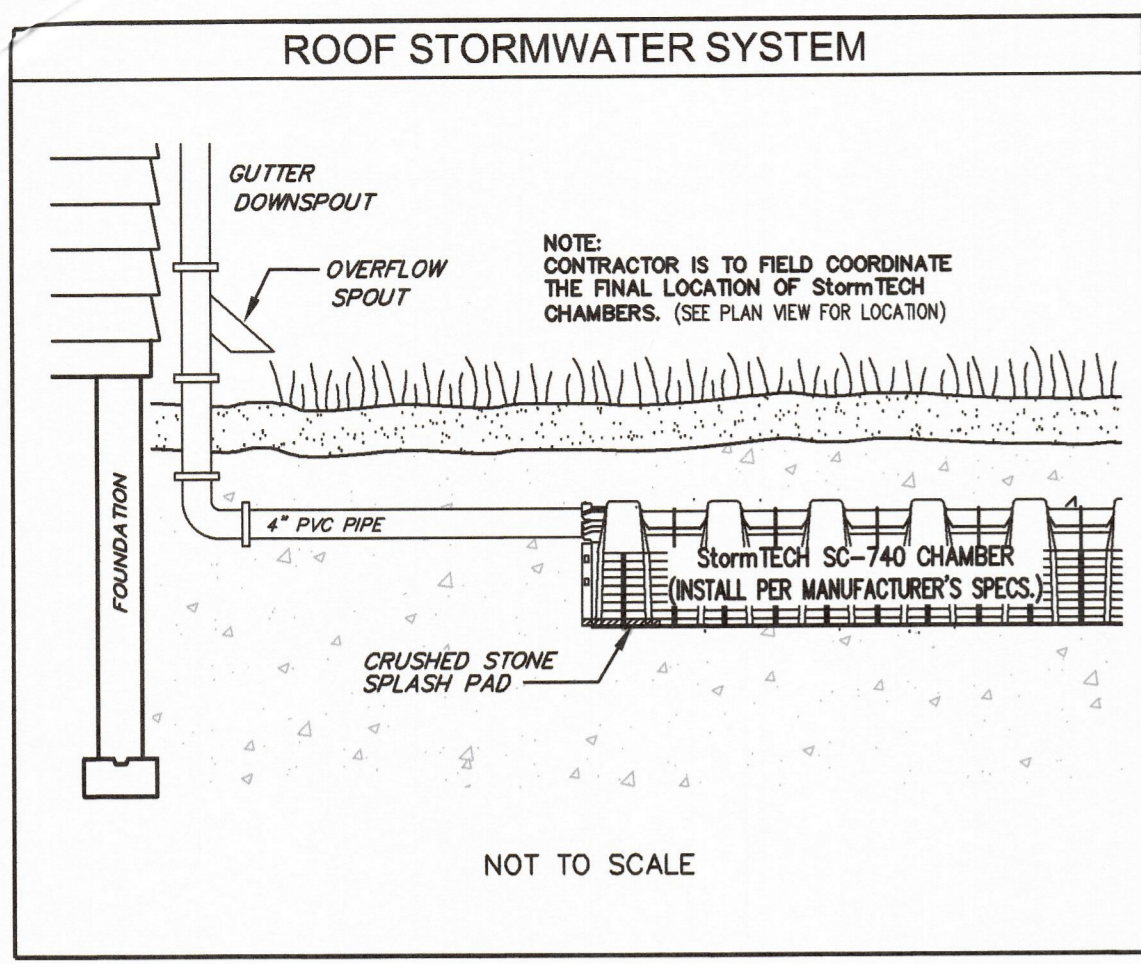
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Sheet: 1 of 2



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APPROVED
SEP 12 2018
Bourne Board of Health

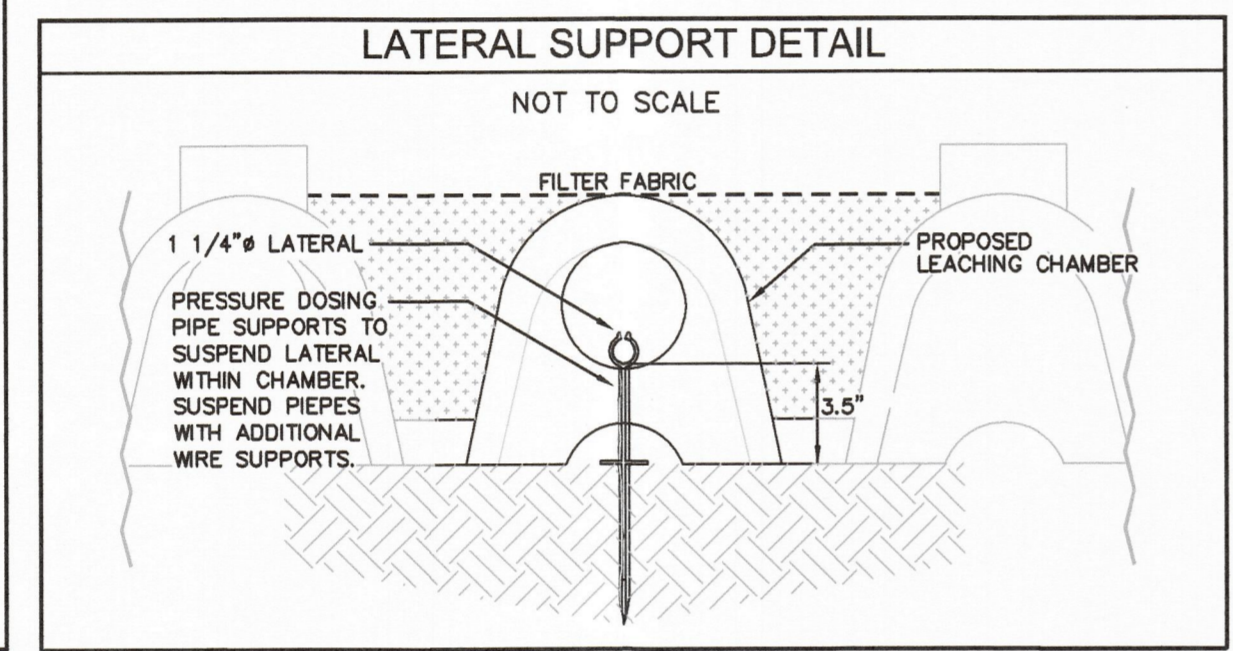
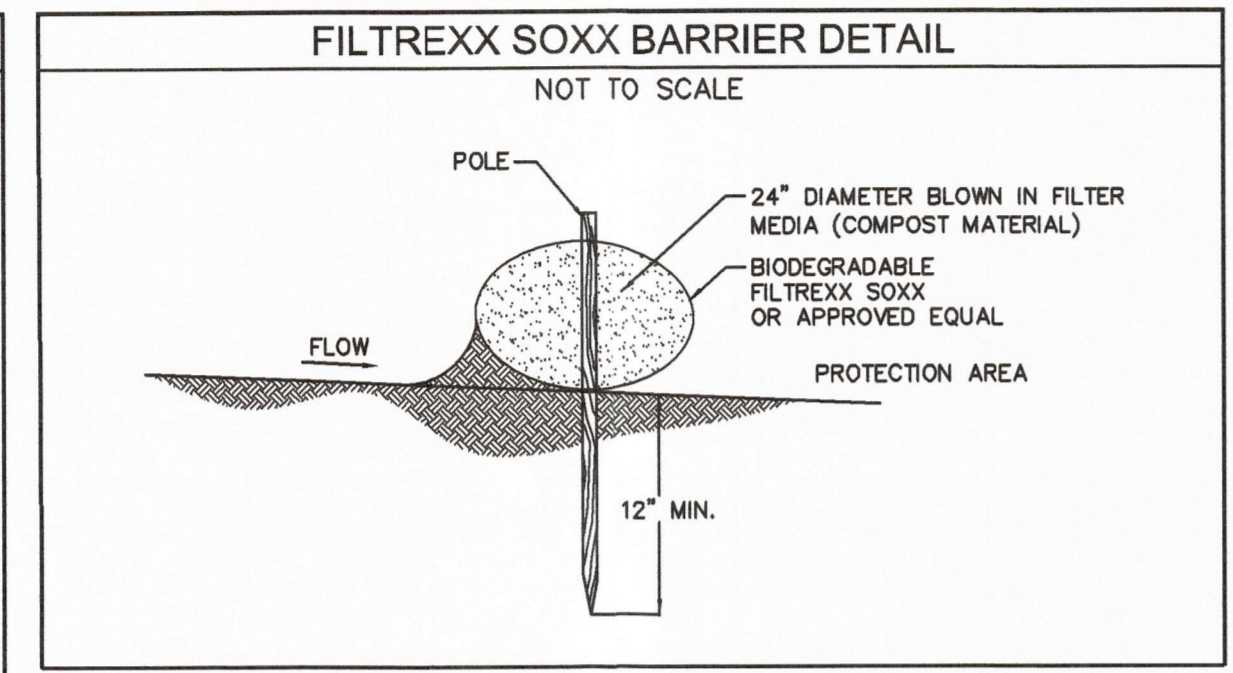


SOIL LOGS

TP NO.	1	2
GRD. EL.	19.4	19.4
GW. EL.	6.0	6.0
DEPTH	18.4	18.4
SOIL CLASS	CI SAND 2.5Y 5/6	CI SAND 2.5Y 5/6

DATE PERFORMED: OCTOBER 19, 2017
 SOIL EVALUATOR: ZACHARY L. BASINSKI, P.E.
 WITNESSED BY: TERRI GUARINO - AGENT
 PERC. RATE: < 5 MINUTES/INCH
 SOIL CLASS: CLASS I
 MAX. GROUND WATER ELEV.: NO GW FOUND
 METHOD OF DETERMINATION: N/A
 (SEE SOIL REPORT FOR MORE DETAILED DESCRIPTION)

EXCAVATION NOTE:
 THIS SYSTEM REQUIRES THE EXCAVATION OF ALL UNSUITABLE SOIL UNDERNEATH THE SOIL ABSORPTION SYSTEM DOWN TO THE EXISTING CI SAND LAYER. SOIL IS TO BE REPLACED WITH SAND CONFORMING TO 310 OMR SECTION 15.255, CONSTRUCTION IN FILL.



DESIGN CALCULATIONS

SOIL TEXTURAL CLASS: CLASS I
 PERC. RATE: < 2 MINUTES/INCH
 NO. OF BEDROOMS: 5
 DESIGN FLOW REQUIRED: 550 GPD
 SEPTIC TANK REQUIRED: 1500 GALLONS
 SEPTIC TANK PROVIDED: MicroFAST 0.9 unit

LEACHING SYSTEM:
 AGGREGATE FREE LEACHING BED:
 (30) 16" BioDiffuser HIGH CAPACITY LEACHING CHAMBERS

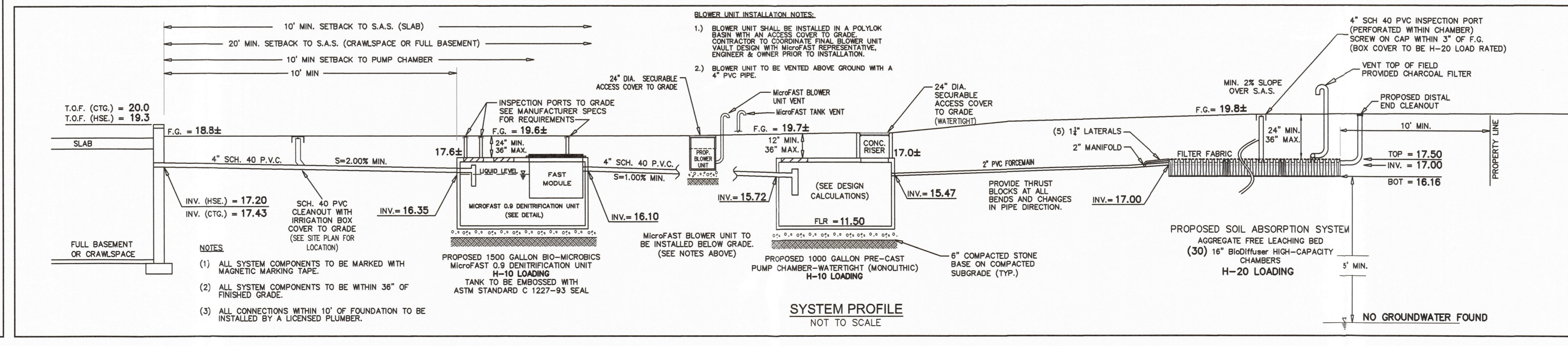
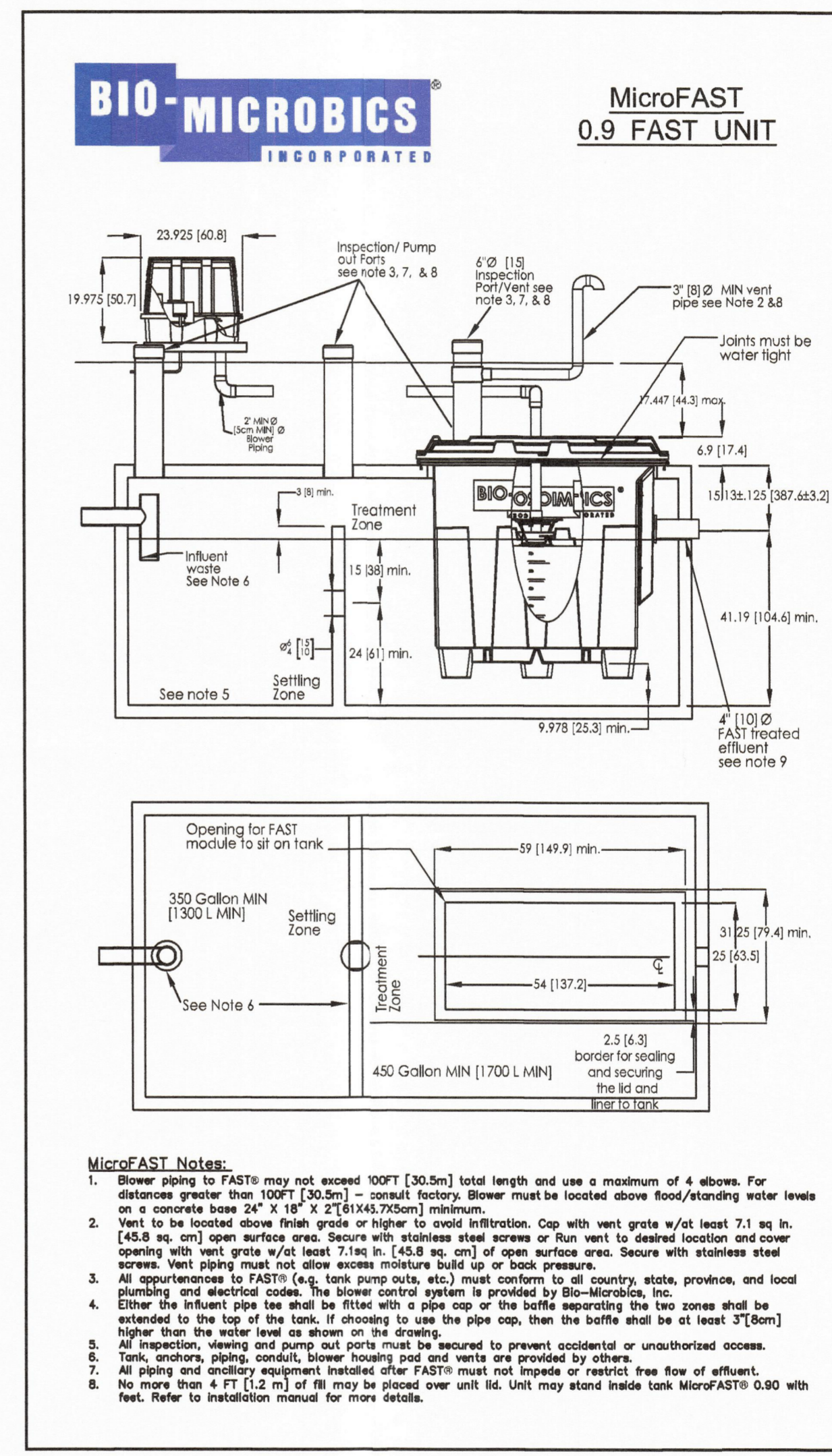
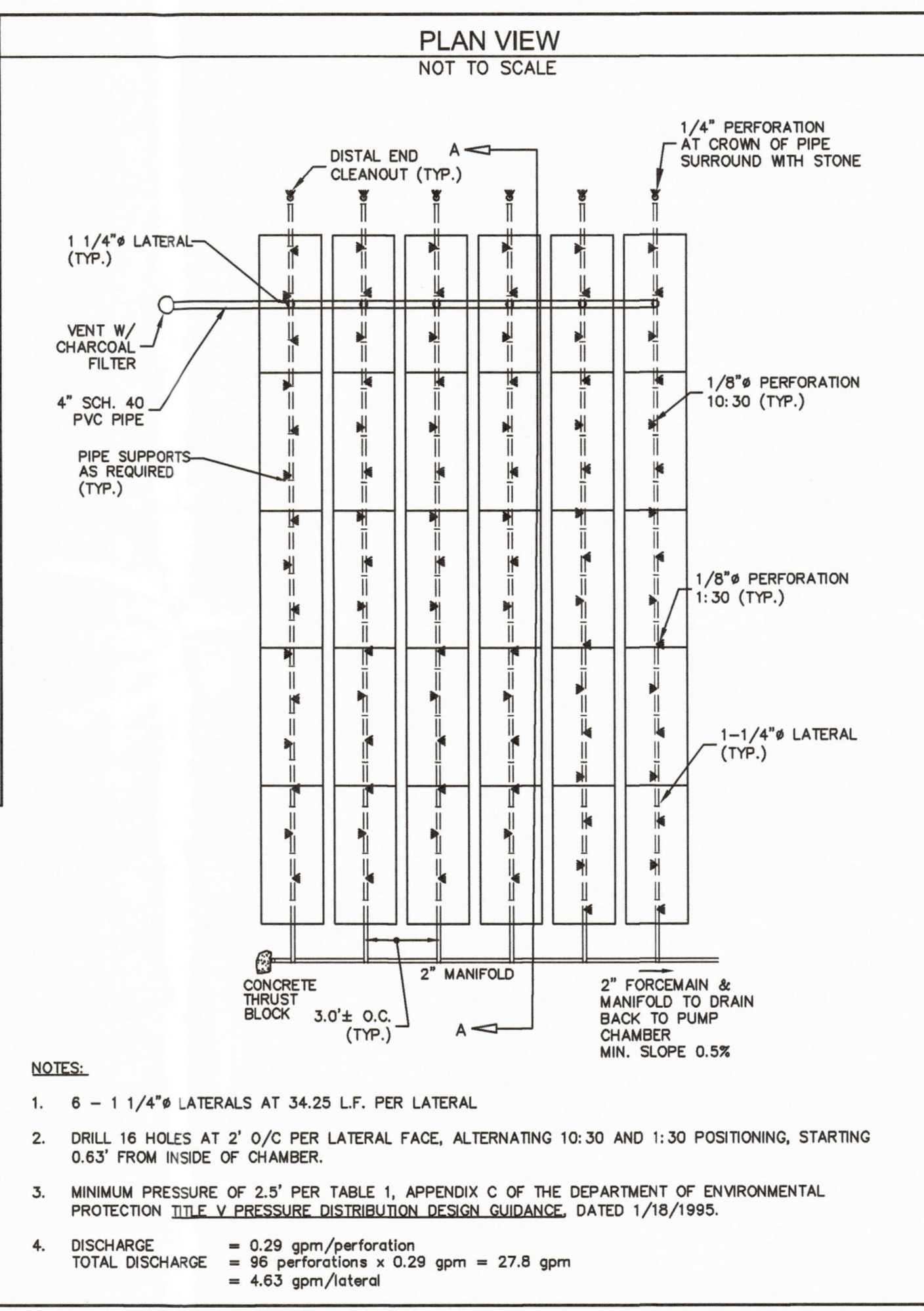
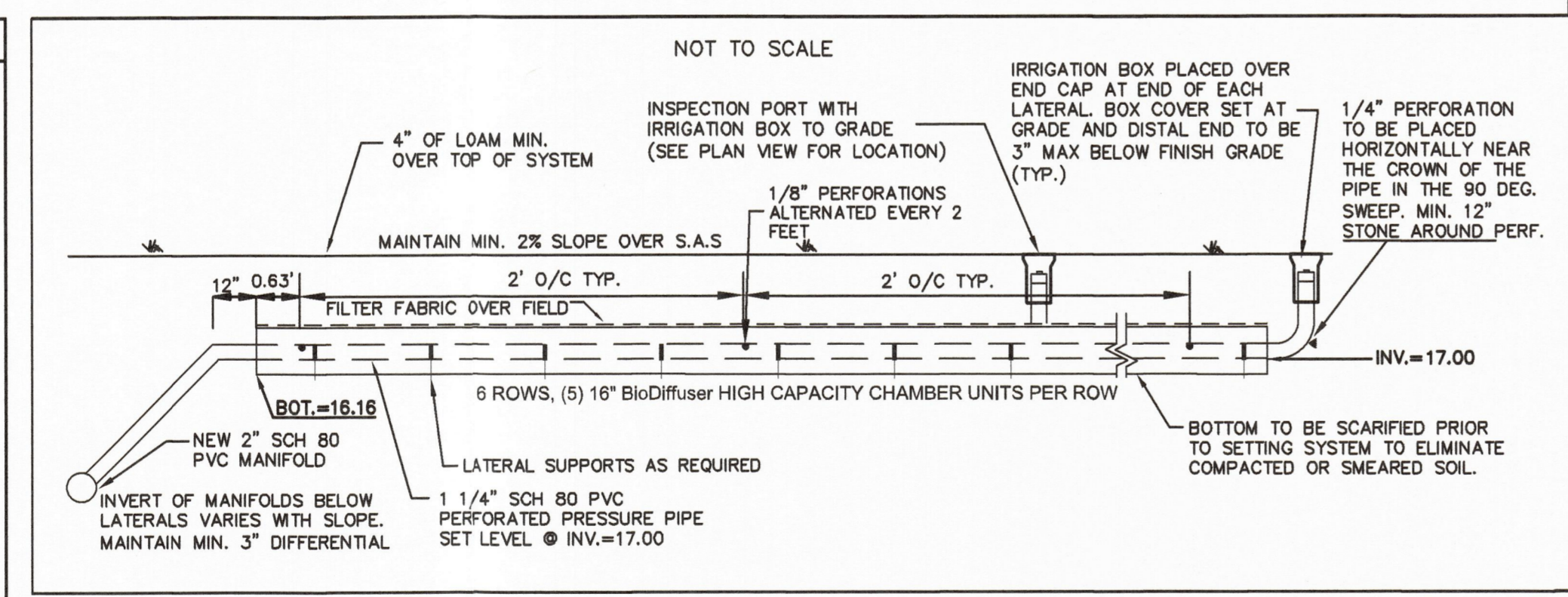
EFFECTIVE LEACHING: (BASED ON GENERAL USE APPROVAL)

(30 UNITS)(6.25 L.F./UNIT) = 187.5 L.F.
 (4.73 S.F./L.F.)(187.5 L.F.) = 886 S.F.
 EFFECTIVE LOADING RATE = 0.74 GPD/SF
 FLOW PROVIDED: 656 GPD > 550 GPD

PUMP DOSING CALCULATIONS:

- DETERMINE VOLUME OF EFFLUENT TO BE PUMPED TO WASTEFLOW DRIPLINES
 DAILY FLOW = 550 GALLONS
 NUMBER OF DOSES PER DAY = 8
 NUMBER OF GALLONS = 550/8 = 68.7 GALLONS DRAIN BACK VOLUME
- DISCHARGE RATE
 96 PERFORATIONS X 0.29 GPM/PERF @ 2.5" HEAD = 27.8 GPM
- TOTAL ON/OFF TIME BETWEEN DOSES
 24 HOURS/8 DOSES = 180 MINUTES
- DOSAGE TIME
 83.9 GALLONS/27.8 GPM = 3 MINUTES 1 SECOND
- TIMER SETTINGS
 ON: 3 MINUTES 1 SECONDS
 OFF: 176 MINUTES 59 SECONDS

NOTE: ACTUAL DOSING TIME TO BE DETERMINED FROM ACTUAL TIME PUMP TAKES TO FILL LATERALS.



GENERAL NOTES

- BENCHMARK: ELEVATION = 17.08 (NAVOD88) TOP OF CONCRETE BOUND (ACOE).
- ALL CONSTRUCTION METHODS AND MATERIALS TO CONFORM TO TITLE AND THE TOWN OF BOURNE BOARD OF HEALTH REGULATIONS.
- ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC TAPE OR A COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED.
- NO FIELD MODIFICATION TO THE SYSTEM SHALL BE MADE WITHOUT PRIOR WRITTEN APPROVAL OF THE DESIGN ENGINEER AND BOARD OF HEALTH.
- ALL JOINTS AND COVERS TO BE WATER-TIGHT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ANY EXISTING UTILITIES.
- A CERTIFICATE OF COMPLIANCE MUST BE OBTAINED PRIOR TO BACKFILLING SYSTEM.
- THE DESIGN IS INTENDED TO MEET TITLE V 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.
- THIS SYSTEM IS NOT DESIGNED NOR INTENDED FOR USE WITH A GARBAGE GRINDER.
- THE SYSTEM OWNER SHALL BE RESPONSIBLE TO PUMP THE SEPTIC TANK AT LEAST ONCE EVERY THREE YEARS.
- CONTRACTOR TO REFER TO ALL MANUFACTURER'S REQUIREMENTS AND SPECIFICATIONS FOR INSTALLATION OF THE MicroFAST 0.9 UNIT.
- THE 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.
- HOMEOWNER IS TO ESTABLISH AN OPERATION & MAINTENANCE PLAN WITH A COMPANY CERTIFIED SYSTEM OPERATOR FOR THE MicroFAST SYSTEM. ALL SYSTEM TESTING, MONITORING & REPORTING IS TO BE CONDUCTED IN ACCORDANCE TO THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) GENERAL USE PERMITS.
- CONTRACTOR TO COORDINATE PLACEMENT OF ALL ALARM PANELS, VENTS AND THE MicroFAST BLOWER UNIT WITH THE HOMEOWNER & SYSTEM MANUFACTURERS PRIOR TO INSTALLATION.

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PROPOSED SITE PLAN IN BOURNE, MASSACHUSETTS

Prepared For:

ARTHUR HALLUM #2 JEFFERSON ROAD MAP 23.4 PARCEL 9

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