



September 29, 2022

Email/Hand Delivery

Bourne Conservation Commission
24 Perry Avenue
Buzzards Bay, MA 02532

**Re: NOI - DEP File #007-2208
176 Scraggy Neck Road
Map 51, Parcel 1
Bourne, Massachusetts**

[LEC File #: BrE\21-224.01]

Dear Members of the Commission:

On behalf of the Applicant, The Long Point Trust (Stephen and Marybeth Bisson, Trustees), LEC Environmental Consultants, Inc., (LEC) is submitting additional information to supplement the previously filed Notice of Intent Application to demolish the existing dwelling and construct a new dwelling with associated appurtenances, including driveway updates, attached garage, decks, patio, upgraded septic system, utilities, regrading, stormwater management, lawn/landscaping, and restoration/mitigation plantings on the above-referenced subject parcel. Proposed new construction occurs within Land Subject to Coastal Storm Flowage (LSCSF) and the 100-foot Buffer Zone to Salt Marsh and Coastal Bank. Proposed restoration occurs within the 100-foot Buffer Zone, LSCSF, and on Coastal Bank.

The project has been further revised to address feedback received by the Commission during the September 1, 2022 Public Hearing.

Project updates are depicted on the site plans (*Existing Conditions Plan, Proposed Conditions Plan, and Septic Details*) prepared by Bracken Engineering, Inc., last revised on September 26, 2022. Specifically:

- 1) The proposed dwelling footprint has been further reduced in size. Cumulatively, the dwelling has been reduced by 399± square feet in comparison to the originally submitted site plans, dated May 16, 2022.
- 2) The proposed dwelling footprint has been rotated/shifted to further reduce the structural area within the 50-foot Buffer Zone and increase the separation of the closest top of Coastal Bank to proposed garage (on slab) to 20 feet in comparison to 7 feet on the original site plans.
- 3) The proposed Limit of Work has been reduced south of the driveway and garage to preserve more trees within the Buffer Zone to the Coastal Bank. An 18 inch boulder wall is now proposed immediately south of the driveway.
- 4) Proposed fill has been reduced to 172± cubic yards from the 326± cubic yards associated with the prior submittal.

LEC Environmental Consultants, Inc.					www.lectenvironmental.com
12 Resnik Road Suite 1 Plymouth, MA 02360 508.746.9491	380 Lowell Street Suite 101 Wakefield, MA 01880 781.245.2500	100 Grove Street Suite 302 Worcester, MA 01605 508.753.3077	P.O. Box 590 Rindge, NH 03461 603.899.6726	680 Warren Avenue Suite 3 East Providence, RI 02914 401.685.3109	
PLYMOUTH, MA	WAKEFIELD, MA	WORCESTER, MA	RINDGE, NH	EAST PROVIDENCE, RI	



The *Proposed Site Exhibit*, prepared by Bracken Engineering, Inc., dated September 26, 2022, depicts the trees proposed to be removed within the Limit of Work. A total of nineteen (19) trees are proposed to be removed, fifteen (15) oaks (6-19" dbh) and five (5) pines (6-9" dbh). Only five trees are at 12 inch dbh or greater.

The revised *Restoration/Revegetation Plan*, prepared by LEC, dated September 28, 2022, accompanies this submission. The restoration/revegetation planting area totals 5,825± square feet, including existing lawn/driveway areas north of the proposed dwelling within LSCSF and partially on the Coastal Bank and existing house footprint (4,675 ± square feet of restoration). The 1,150± square feet of regraded area south of the dwelling will also be revegetated. The restoration/mitigation planting area consist of a diverse mix of trees, shrubs, and groundcover to enhance species diversity, vegetative cover, and wildlife habitat. Proposed species include eastern red cedar, black oak, eastern white pine, tupelo, highbush blueberry, bayberry, beach plum, and arrowwood. A total of nineteen (19) trees are proposed and one hundred twenty-four (124) shrubs. The southerly restoration/revegetation planting area includes eastern white pine saplings to additionally function for vegetative screening purposes to the southerly abutter. A New England Conservation/Wildlife Mix and Coastal Salt Tolerant Mix are proposed throughout. All planting areas will be monitored for three years to ensure successful establishment. Annual monitoring reports will be submitted to the Commission documenting vegetative health and any recommendations.

The proposed plantings will enhance, stabilize, and restore conditions within the 100-foot Buffer Zone, LSCSF, and on the Coastal Bank (266± square feet). The revegetation measures will serve to create a continuous and expanded vegetated buffer upgradient of the westerly, primary Coastal Bank (#2) and downgradient Salt Marsh system. The vegetated buffer will serve to attenuate runoff on slopes within the Limit of Work that are less than 10:1. The proposed erosion and sedimentation controls installed along the Limit of Work will protect the downgradient Coastal Bank and Salt Marsh during construction. Post-construction, runoff from the dwelling will be directed to drywells and subsurface infiltration system installed within well-drained soils and will not be directed downgradient towards the Coastal Bank.

As further described within the NOI Application, the proposed project has been designed in compliance with the performance standards outlined in the *Massachusetts Wetlands Protection Act Regulations* (310 CMR 10.00). The Bourne *Wetland Protection Bylaw* (Article 3.7) and *Wetlands Regulations* do not stipulate additional performance standards for proposed work within LSCSF or the 100-foot Buffer Zone to Salt Marsh and Coastal Bank. The *Bylaw* states that *no habitat dwelling or accessories thereto or roadway/driveway shall be allowed any closer than 50' from the boundary of a Wetland Resource Area unless permitted under this bylaw*. The proposed project will not adversely affect Wetland Resource Area Values. Specifically, the project will not adversely affect the downgradient Coastal Bank's ability to provide storm damage prevention and flood control functions. Additionally, the proposed project will not destroy any portion of the Salt Marsh and will not have an adverse effect on the productivity of the Salt Marsh. The proposed structure will be located 76± linear feet from the Salt Marsh, in comparison to 27± linear feet under existing conditions with 6± square feet of deck overhanging the top of the Coastal Bank



(986± square feet of structure within the 50-foot Coastal Bank Buffer Zone). The new I/A septic system will be located greater than 50 feet from the top of a Coastal Bank and 100 feet from the closest Salt Marsh, in comparison to the existing cesspool located at the top of the Coastal Bank and 31± linear feet from the Salt Marsh, respectively.

A September 29, 2022 letter from Stan Humphries, Coastal Geologist at Environmental Consulting & Restoration, LLC also accompanies this submission.

In summary, the proposed project will provide a significant improvement over existing conditions by implementing a comprehensive revegetation/restoration planting effort; abandoning the cesspool and replacing it with an I/A septic system located more landward; increasing structural setbacks to the westerly, primary Coastal Bank and downgradient Salt Marsh; and restoring Coastal Bank.

Thank you for your consideration of this supplemental information. We look forward to discussing the project further at the October 6, 2022 Public Hearing. If you have any questions or require additional information, please do not hesitate to contact me.

Sincerely,

LEC Environmental Consultants, Inc.

A handwritten signature in black ink that reads "Brian T. Madden".

Brian T. Madden
Senior Wildlife/Wetland Scientist

Attachments

cc: DEP SERO; The Long Point Trust; Glenn Wood, Esq.; Bracken Engineering, Inc.; ECR

Attachment A

ECR Letter, Dated September 29, 2022



September 29, 2022

Bourne Conservation Commission
24 Perry Ave
Buzzards Bay MA 02532

**RE: Supplemental Information for Notice of Intent
176 Scraggy Neck Road
Bourne, MA 02532**

Dear Members of the Conservation Commission:

Please accept this letter as a response to the August 31, 2022 letter submitted by Scott Horsley. The purpose of this letter is to further characterize the three Coastal Banks that have been delineated on the site plan dated 9/26/22 and request the Commission to consider the differences in functionality of the banks, in particular, whether the project has any adverse effects within the 50-foot Buffer Zone of Coastal Bank #3.

Environmental Consulting and Restoration, LLC. was retained by Bracken Engineering, Inc. to review updated modifications to the NOI application from LEC, recent plan revisions and opposition comments. This project review is based on my training and experience over the past 45+ years in coastal geomorphology and floodplain management.

The project area is virtually surrounded by two Coastal Banks. One is located offsite to the east of the site which borders on Red Brook Harbor (Coastal Bank #1). The second bank is located on the west side of the property which borders on Salt Marsh (Coastal Bank #2). Together, these banks are over 1,000 feet in length, 40-50 feet wide and average 8-10 feet in height. Both banks function as vertical buffers to stormwaters and are significant to flood control and storm damage prevention, as presumed.

The third Coastal Bank is a fragmented, finger-like projection that is less than 300 feet in length, 15 feet in width and 1-4 feet in height (Coastal Bank #3). Located within the upland of the property (51,482 sf), it only occupies approximately 10% of the site. While meeting the state definition of an upper Coastal Bank (DEP Policy 92-1, Figure 5), Coastal Bank #3 does not provide the same functions relative to the other two banks. Flooding from the 100-year coastal storm may inundate the area in which it is located, but the bank does not control flooding. In addition, since it is not located adjacent to the Harbor or Salt Marsh, it cannot provide eroded sediment to these coastal resources and, therefore, is less likely to be significant to storm damage prevention.

In the Preamble to Coastal Bank 310 CMR 10.30(1) phrases like *protecting structures of coastal wetlands landward of them from storm damage and flooding...* and *increase the danger to structures at the top of the bank...* are stated. There are no structures, existing or proposed, in which Coastal Bank #3 would protect. Also stated in the Preamble, *Coastal banks, because of their height and stability, may act* (emphasis added) *as a buffer or natural wall, which protects upland areas from storm damage and flooding.* Coastal Bank #3 is not a natural wall, but rather, a minor change in slope on the west side of the access road.

The characterization of the three Coastal Banks located within the project area, as provided above, shows they differ in their function and significance to the interests of storm damage and flood control. The two banks that surround the project area have the height and provide the stability that the regulations presume them to have. However, Coastal Bank #3 is very different.

There are no activities proposed within the bank and none of the activities proposed within the 50-foot buffer will have an adverse effect on the limited functions it provides. With the setbacks and mitigation proposed for the other two Coastal Banks, we believe the project can be approved with conditions under the local Bylaw and the state WPA.

Upon review of this Supplemental Information, please contact me at (617) 543-1654 or stan@ecrwetlands.com with any questions or requests for additional information.

Sincerely,
Environmental Consulting & Restoration, LLC

Stan Humphries

Stan Humphries
Coastal Geologist

Attachment B

LEC Restoration Plan, Dated September 29, 2022

NOTES

THE LIMITS OF THE RESTORATION AREA SHALL BE STAKED IN THE FIELD PRIOR TO CONSTRUCTION AND ACCURATELY LOCATED BY A PLS.
 THIS RESTORATION/MITIGATION PLANTING PLAN IS INTENDED SOLELY FOR THE PURPOSE OF IMPLEMENTING THIS PLANTING PLAN.
 EROSION CONTROLS SHALL BE INSTALLED AT THE LIMIT OF WORK, AS DEPICTED ON THE PLANS.
 IF TOPSOIL IS ABSENT, APPROXIMATELY 4-6 INCHES OF TOPSOIL (50/50 LEAF COMPOST AND LOAM MIXTURE) SHALL BE ESTABLISHED WITHIN THE RESTORATION AREA.
 ALL PLANTINGS SHALL BE NATIVE VARIETIES WITH NO LANDSCAPE CULTIVARS PROPOSED.
 SPECIFIC PLACEMENT OF SHRUBS AND TREES WITHIN THE PLANTING AREA ARE APPROXIMATE AND MAY BE ADJUSTED IN THE FIELD.
 IF NECESSARY, ANY REQUIRED SUBSTITUTE NATIVE PLANTS SHALL BE REVIEWED BY A WETLAND SCIENTIST PRIOR TO INSTALLATION.
 PLANTING IN THE EARLY SPRING OR DURING THE FALL IS RECOMMENDED.
 IMPLEMENTATION OF A WATERING SCHEDULE IN THE FIRST GROWING SEASON FOR THE PLANTINGS IS RECOMMENDED TO ENSURE ESTABLISHMENT.
 A ONE TIME APPLICATION OF LEAF COMPOST MULCH SHALL BE APPLIED TO THE DRIP LINE OF THE INSTALLED TREES AND SHRUBS IN THE PLANTING AREA.
 THE PROPOSED NATIVE SEED MIX SHALL BE APPLIED ACCORDING TO THE SUPPLIERS INSTRUCTIONS.
 THE NATIVE SEED MIX SHALL BE LIGHTLY RAKED INTO THE SURFACE AND APPLIED ACCORDING TO THE SUPPLIERS INSTRUCTIONS.
 A LIGHT COATING OF WEED FREE STRAW MAY BE PLACED ON THE SURFACE OF THE RESTORATION AREA FOLLOWING SEED APPLICATION.

WATERING NOTES

A DEEP SOAKING IS RECOMMENDED THE SAME DAY AS PLANTS ARE INSTALLED.
 FOR THE FIRST MONTH AFTER PLANT INSTALLATION, A DEEP WATERING IS RECOMMENDED APPROXIMATELY TWICE A WEEK DEPENDING ON FREQUENCY OF RAIN EVENTS AND TIME OF SEASON.
 GENERAL SUGGESTED WATERING FREQUENCY AFTER FIRST MONTH AND DURING THE FIRST GROWING SEASON: A DEEP SOAKING OF THE ROOT ZONE ONCE A WEEK.
 AN ADEQUATE REPLACEMENT RAIN EVENT IS APPROXIMATELY A MINIMUM OF A HALF INCH OF RAINFALL.
 WATERING IS RECOMMENDED IN THE EARLY MORNING HOURS.
 A DEEP SOAKING MEANS INCLUDING THE SOAKING OF THE ENTIRE ROOT BALL AND THE IMMEDIATE SURROUNDING SOIL.
 A REDUCTION IN THE FREQUENCY OF WATERING IS RECOMMENDED AFTER THE FIRST YEAR.
 RESUME WATERING PROGRAM AS NECESSARY DURING SECOND GROWING SEASON WHEN PERIODS OF DROUGHT OR DURING EXTENDED DRY PERIODS.
 THE ABOVE SHALL ONLY BE APPLIED IN ACCORDANCE WITH LOCAL WATERING REQUIREMENTS/REGULATIONS.

MITIGATION AREA SEED MIXES

50% New England Conservation and Wildlife Mix & New England Salt Tolerant Grass Mix

NEW ENGLAND CONSERVATION/WILDLIFE MIX
(FROM NEW ENGLAND WETLAND PLANTS)

SPECIES: Virginia Wild Rye (*Elymus virginicus*), Little Bluestem (*Schizachyrium scoparium*), Big Bluestem (*Andropogon gerardi*), Red Fescue (*Festuca rubra*), Switch Grass (*Panicum virgatum*), Partridge Pea (*Chamaecrista fasciculata*), Panicledleaf Tick Trefoil (*Desmodium paniculatum*), Indian Grass (*Sorghastrum nutans*), Blue Vervain (*Verbena hastata*), Butterfly Milkweed (*Asclepias tuberosa*), Black Eyed Susan (*Rudbeckia hirta*), Common Sneezeweed (*Helenium autumnale*), Heath Aster (*Aster pilosus/Symphotrichum pilosum*), Early Goldenrod (*Solidago juncea*), Upland Bentgrass (*Agrostis perennans*).

NEW ENGLAND SALT TOLERANT GRASS MIX
(FROM NEW ENGLAND WETLAND PLANTS)

SPECIES: Canada Wild Rye (*Elymus canadensis*), Red Fescue (*Festuca rubra*), Atlantic Coastal Panic Grass (*Panicum amarum*), Big Bluestem (*Andropogon gerardi*), Indian Grass (*Sorghastrum nutans*), Switch Grass (*Panicum virgatum*), Path Rush (*Juncus tenuis*).

Restoration/Mitigation Planting Plan

176 Scraggy Neck Road
 Bourne, MA

9-28-22

PREPARED BY:

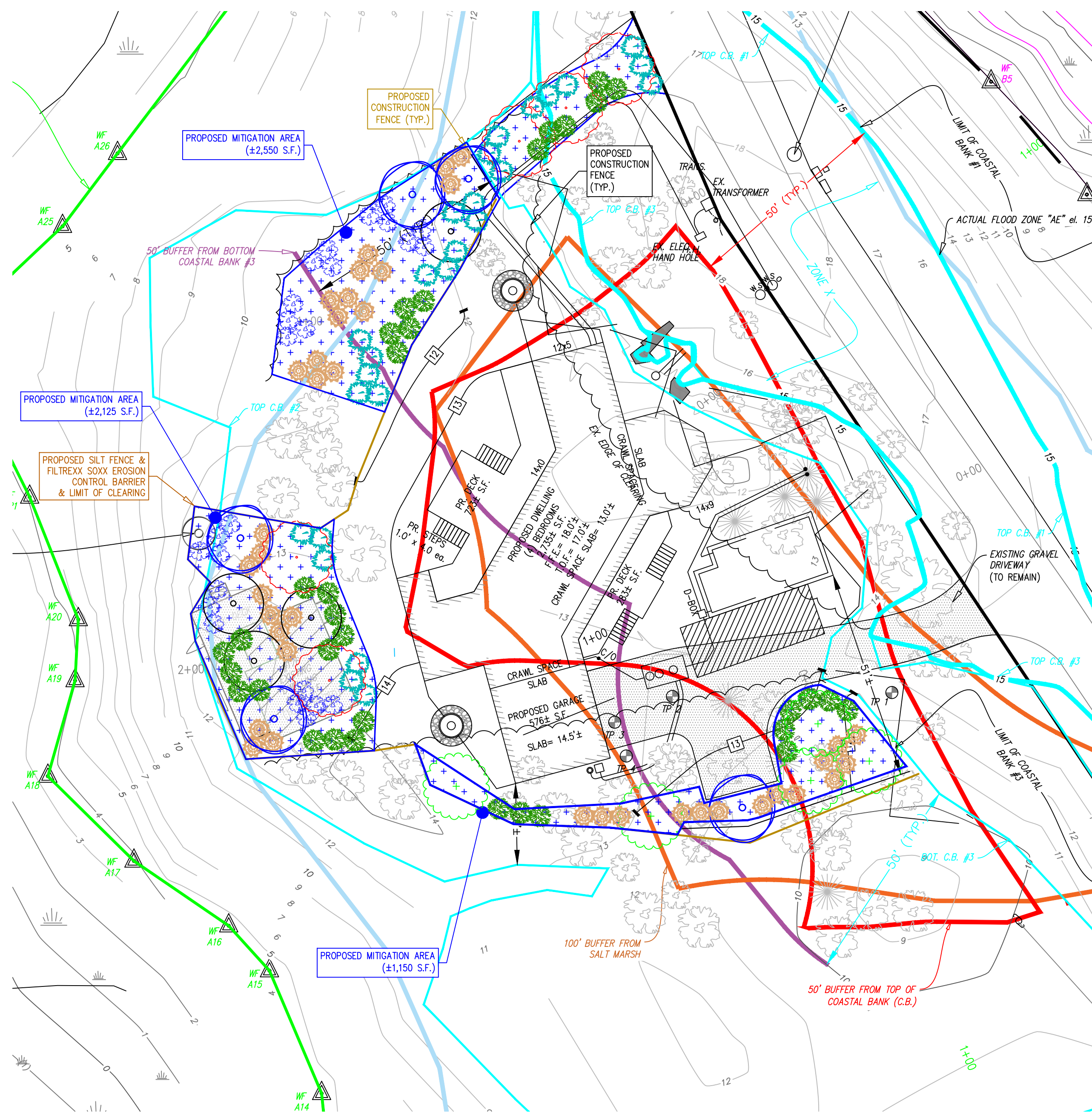
LEC
 Environmental Consultants, Inc.

12 Resnik Road
 Suite 1
 Plymouth, MA 02360
 508.746.9491
 508.746.9492 fax
 email: southlec@leceenvironmental.com
 www.leceenvironmental.com

WETLANDS WILDLIFE WATERWAYS

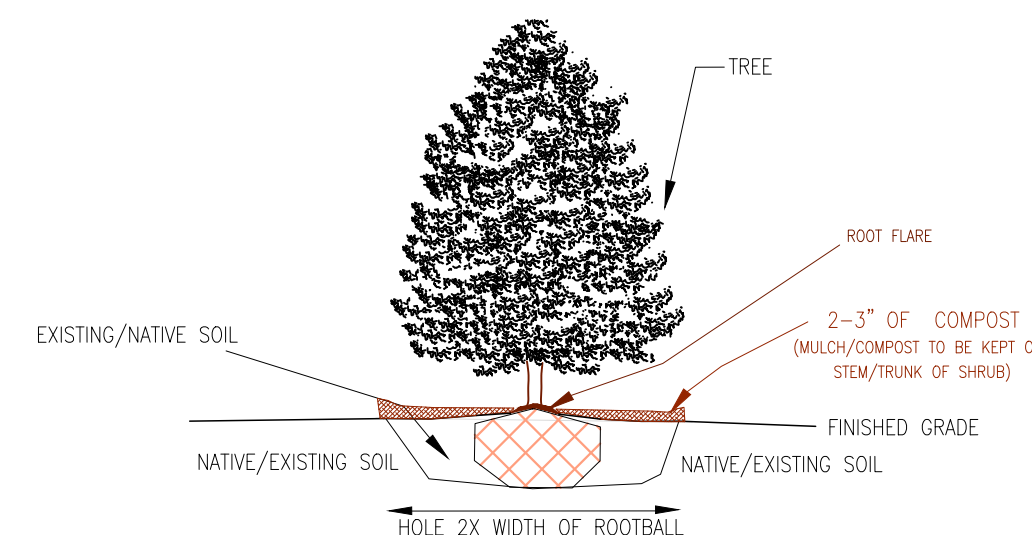
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LEC File: BrE\21-224



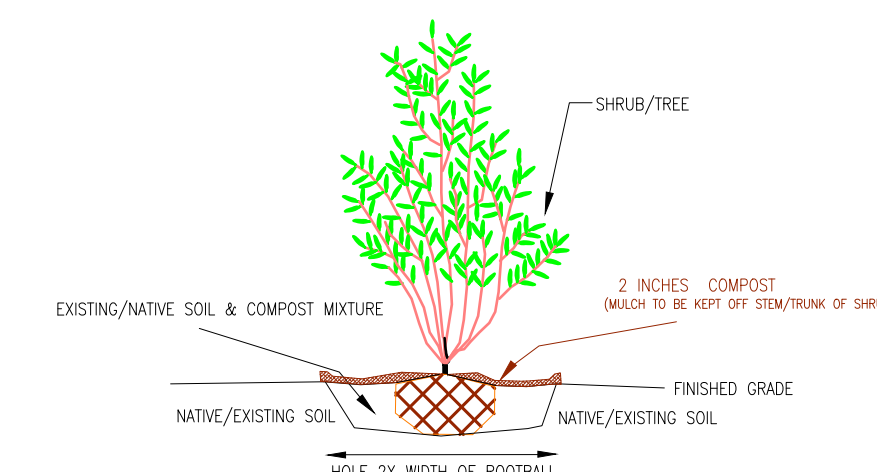
PLANTING SPECIFICATIONS						
	COMMON NAME	GENUS/SPECIES	SIZE	PLANTING SPECIFICATIONS	NUMBER OF SPECIES	
	TREES					
●	eastern red cedar	<i>Juniperus virginiana</i>	4-6' min.	singles, spaced 10-25' on-center	5	
●	black oak	<i>Quercus velutina</i>	4-6' min.	singles, spaced 10-25' on-center	5	
●	tupelo	<i>Nyssa sylvatica</i>	4-6' min.	singles, spaced 10-25' on-center	4	
●	eastern white pine	<i>Pinus strobus</i>	4-6' min.	singles, spaced 10-25' on-center	5	
				Total Trees	19	
	SHRUBS					
●	highbush blueberry	<i>Vaccinium corymbosum</i>	2-3' min.	clusters of 3-7, spaced 4-6' on-center	25	
●	bayberry	<i>Myrica pennsylvanica</i>	2-3' min.	clusters of 3-7, spaced 4-6' on-center	34	
●	beachplum	<i>Prunus maritima</i>	2-3' min.	clusters of 3-7, spaced 4-6' on-center	26	
●	arrowwood	<i>Viburnum dentatum</i>	2-3' min.	clusters of 3-7, spaced 4-6' on-center	39	
				Total Shrubs	124	

TREE PLANTING DETAIL
(NOT TO SCALE)

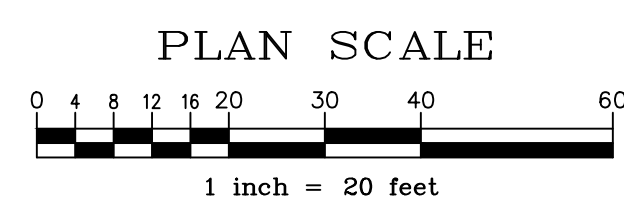


-HOLE SHOULD BE DUG TO ALLOW APPROX. 1 INCH OF ROOT BALL TO PROTRUDE SLIGHTLY ABOVE SURROUNDING GRADE. GRADUALLY SLOPE THE EXISTING SOIL UP FROM THE SURROUNDING GRADE TO MEET THE ROOT FLARE.
 -LOOSEN EXPOSED ROOTS ON ROOTBALL BY SCRATCHING SURFACE OF ROOTBALL.
 -SOIL REMOVED FROM HOLE SHOULD BE USED AS BACKFILL. SOIL AMENDMENTS HAVE NOT PROVEN BENEFICIAL FOR NEWLY PLANTED TREES.
 -PREVENT BURYING OF ROOT FLARE (WHERE THE FIRST MAIN ROOTS ATTACH TO THE TRUNK).
 -QUALITY LEAF COMPOST MULCH TO BE USED ON SURFACE WITHIN 2 TO 3 FEET OF ROOT BALL (EITHER 3" OF COMPOST OR APPROX. 1" OF PINE BARK MULCH OVER APPROX. 1-2" OF COMPOST).
 -WATER THOROUGHLY UNTIL ROOTBALL AND SURROUNDING SOIL IS COMPLETELY SATURATED.

UPLAND SHRUB PLANTING DETAIL
(NOT TO SCALE)



-EXCAVATE HOLE TO THE APPROXIMATE DEPTH FOR THE ROOT BALL.
 -PREVENT BURYING OF ROOT FLARE (WHERE THE FIRST MAIN ROOTS ATTACH TO THE TRUNK).
 -LOOSEN EXPOSED ROOTS AS NECESSARY.
 -WATER THOROUGHLY UNTIL ROOTBALL AND SURROUNDING SOIL IS COMPLETELY SATURATED.
 -PLANTS THAT PREFER ACIDIC ORGANIC RICH SOIL (E.G. AZALEAS, RHODODENDRONS) SHALL INCLUDE PEAT IN SOIL AMENDMENT AND/OR ON SURFACE BENEATH MULCH.



Plan adapted by:
 LEC Environmental Consultants, Inc.
 from plan entitled;

PROPOSED SITE PLAN

DATED 9-26-2022

Prepared by:

BRACIEN
 ENGINEERING, INC.

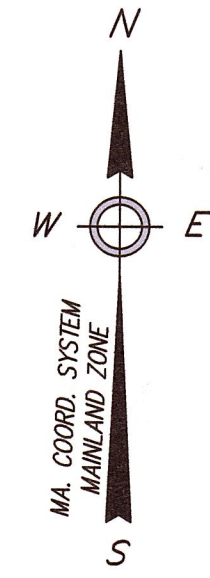
49 HERRING POND ROAD
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 (tel) 508.833.0070
 (fax) 508.833.2282

19 OLD SOUTH ROAD
 NANTUCKET, MA 02554
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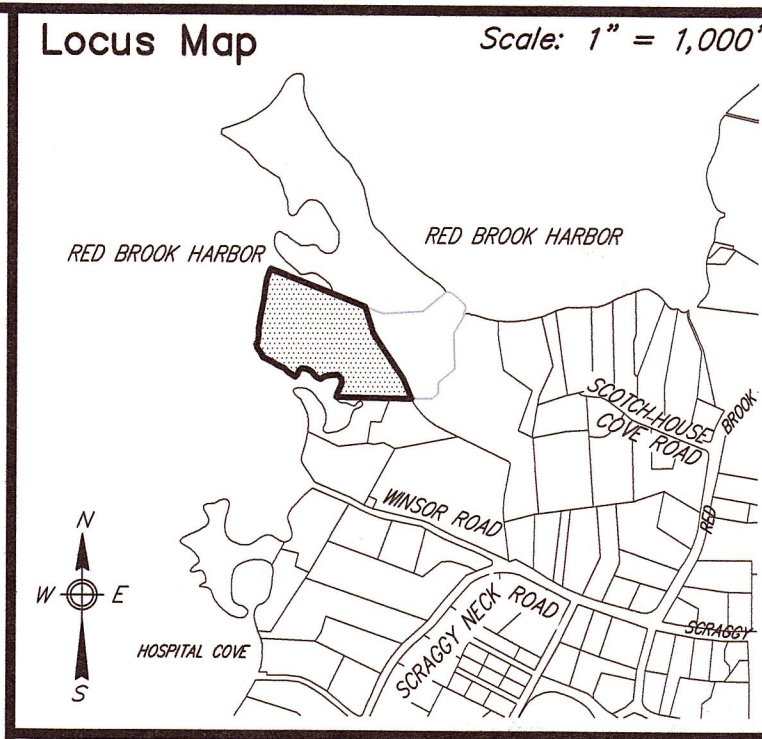
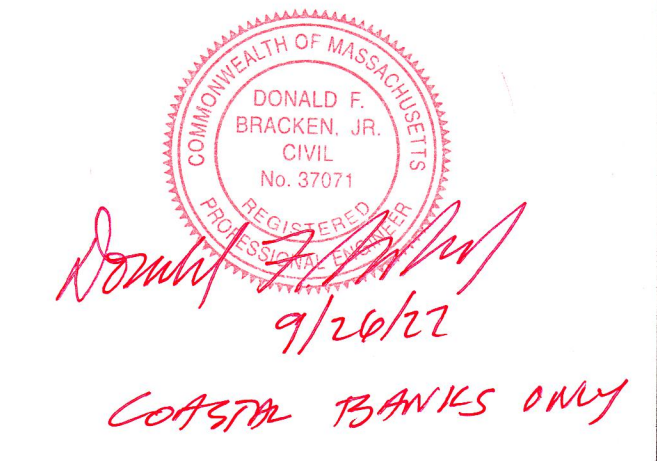
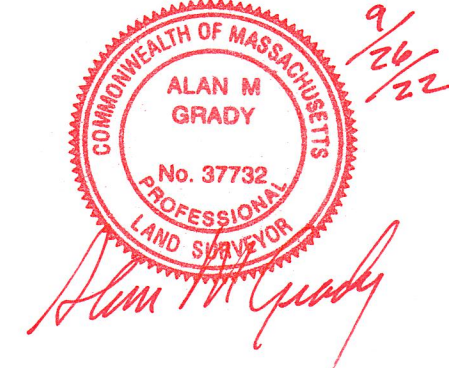
Attachment C

Existing Conditions Plan, Prepared by Bracken
Engineering, Inc., Last Revised September 26, 2022

RED BROOK HARBOR



MASS COORDINATE SYSTEM
MAINLAND ZONE MERIDIAN
DETERMINED USING A
TOPCON HIPER SR GPS RTK UNIT
COLLECTION DATE 03/03/2020



Notes

- LOCUS: #176 SCRAGGY NECK ROAD MAP 51 PARCEL 01 (LOT 2)
- OWNER: STEPHEN BISSON and MARYBETH BISSON trustees of THE LONG POINT TRUST PO BOX 10 CATAUMET MA, 02534
- DEED REF: Bk: 22554 Pg: 257
- PLAN REF: Plan Bk: 687 Pg: 11 (LOT 2)
- PORTIONS OF THE LOCUS FALL WITHIN A SPECIAL FLOOD HAZARD ZONE VE(EL. 19), VE(EL. 17) AND AE(EL. 15) AS SHOWN ON FEMA FLOOD INSURANCE RATE MAPS No. 25001C-0482-J & 25001C-0511-J, BOTH DATED 07/16/2014.
- LOCUS PARTIALLY FALLS WITHIN AN NHESP ESTIMATED HABITAT OF RARE WILDLIFE AND PRIORITY HABITAT OF RARE SPECIES.
- LOCUS DOES NOT FALL WITHIN A ZONE II WELLHEAD PROTECTION AREA OR BOURNE WATER RESOURCE DISTRICT.
- THE LOCATION OF UNDERGROUND UTILITIES AS REPRESENTED ON THESE PLANS IS BASED UPON PLANS AND INFORMATION PROVIDED BY THE RESPECTIVE UTILITY COMPANIES OR MUNICIPAL DEPARTMENTS SUPPLEMENTED BY FIELD IDENTIFICATION WHEREVER POSSIBLE. NO WARRANTY IS MADE AS TO THE ACCURACY OF THESE LOCATIONS OR THAT ALL UNDERGROUND UTILITIES ARE SHOWN. THE CONTRACTOR SHALL CONTACT DIG SAFE AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
- MEAN HIGH WATER ELEVATION DETERMINED USING THE BUZZARDS BAY ESTUARY TIDAL DATUM VIEWER AND COASTAL LIDAR DATA PROVIDED BY NOAA NCEI COASTAL LIDAR ARCHIVE. MEAN LOW WATER ELEVATION WAS DETERMINED USING THE BUZZARDS BAY ESTUARY TIDAL DATUM VIEWER AND INTERPOLATION USING GROUND SHOTS BY THIS FIRM.

LEGEND

- EXISTING CONTOUR
- EXISTING COASTAL BANK
- LIMIT OF SALT MARSH LINE
- 100' SALT MARSH BUFFER
- 50' COASTAL BANK BUFFER
- 50' BOTTOM COASTAL BANK BUFFER
- FLOOD ZONE LINE per FEMA FIRM
- ACTUAL "AE" FLOOD LINE el. 15'
- LIMIT OF NHESP JURISDICTION

Prepared By:

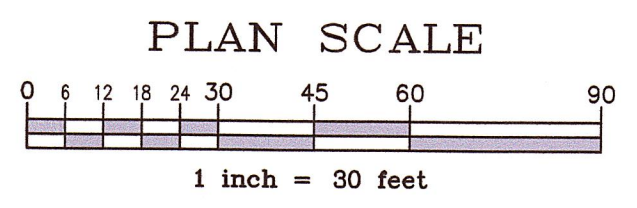
 49 HERRING POND ROAD NANTUCKET, MA 02532 | 19 OLD SOUTH ROAD NANTUCKET, MA 02534
 (tel) 508.833.0070 | (tel) 508.325.0044
 (fax) 508.833.2282 | www.brackeneng.com

**EXISTING CONDITIONS PLAN
 IN BOURNE, MA**
 Prepared For:
**STEPHEN & MARYBETH BISSON
 TRUSTEES OF THE LONG
 POINT TRUST**
 #176 SCRAGGY NECK ROAD
 MAP 51 PARCEL 1 (LOT 2)

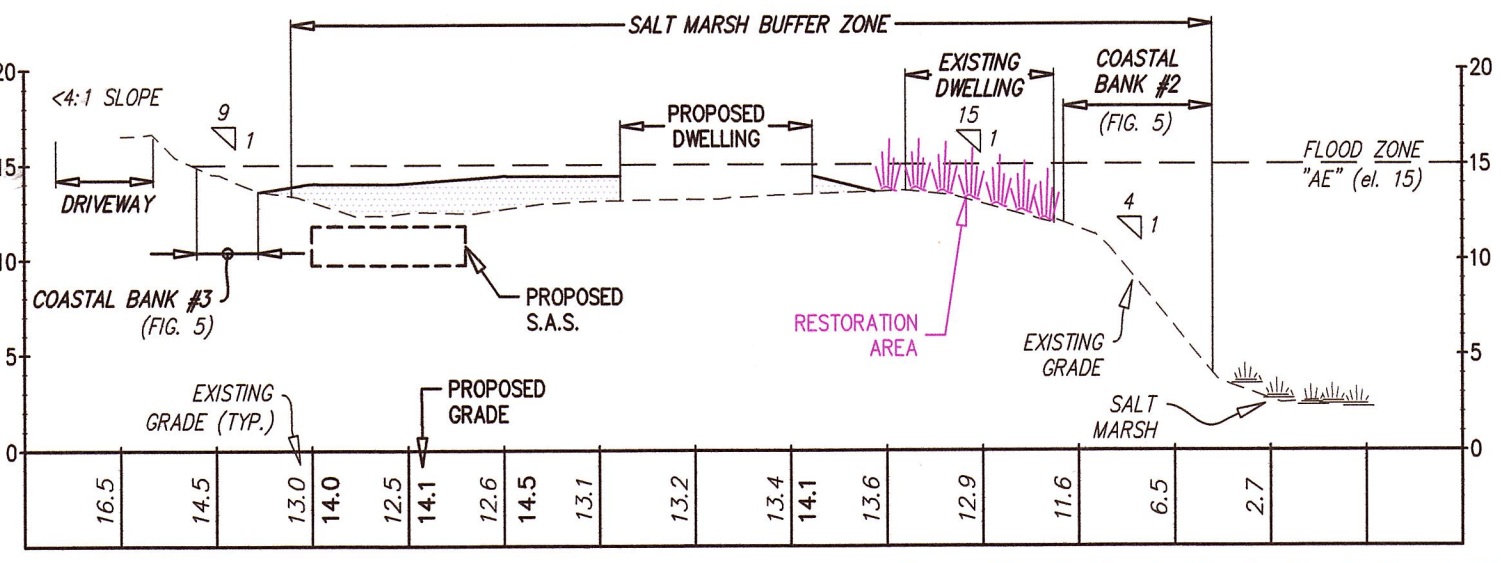
No.	Date	Revision Description	By
3	9/26/22	MISC. LABELS	JPH
2	8/22/22	MISC. LABELS	JPH
1	6/14/22	NO CHANGES	JPH

Date: MAY 16, 2022 Drawn: JPH/BEI Checked: DFB/AMG Sheet: 1 of 3

LOT 2
 MAP 51 PARCEL 1
 TOTAL AREA = 298,496± S.F.
 (6.9± AC.)
 UPLAND AREA = 51,482± S.F.
 (1.18± AC.)

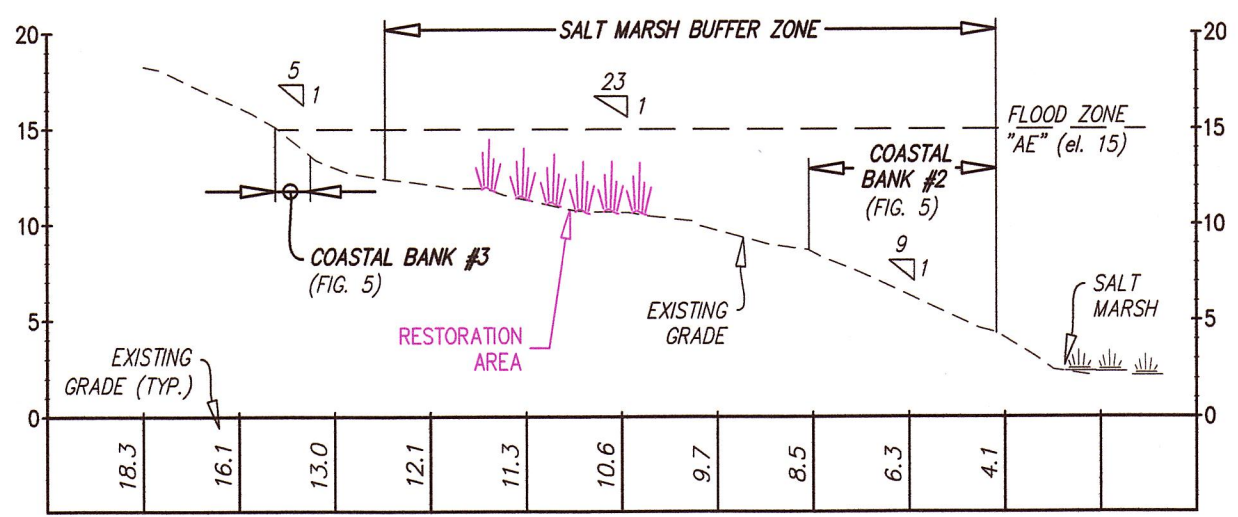


NOT PART OF THIS DOCUMENT MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC, MECHANICAL, PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE EXPRESS WRITTEN PERMISSION OF BRACKEN ENGINEERING INC. ANY VIOLATION OF THIS STATEMENT SHALL BE SUBJECT TO PENALTY UNDER FEDERAL AND STATE LAWS.



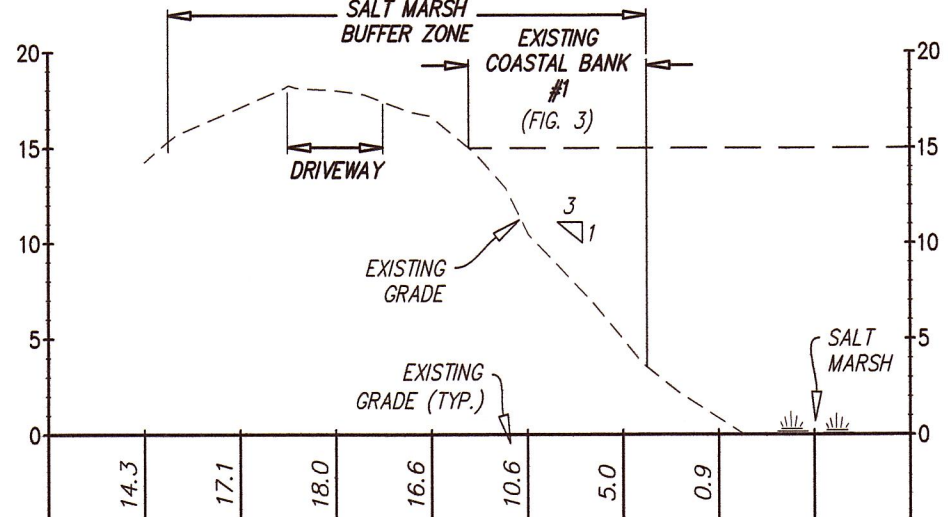
TRANSECT A-A

SCALE: HOR. - 1"=40'
VER. - 1"=10'



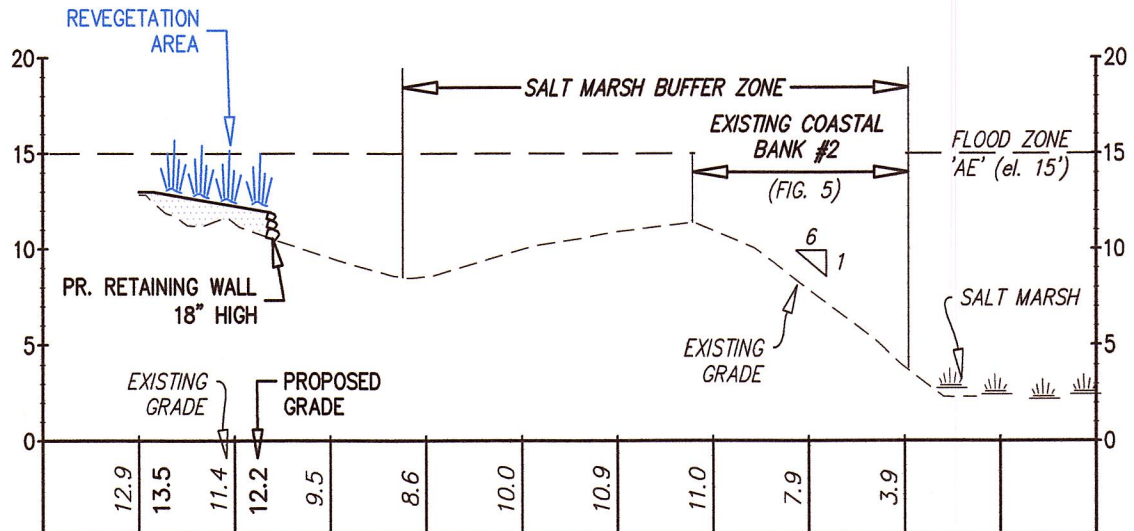
TRANSECT B-B

SCALE: HOR. - 1"=40'
VER. - 1"=10'



TRANSECT C-C

SCALE: HOR. - 1"=40'
VER. - 1"=10'



TRANSECT D-D

SCALE: HOR. - 1"=40'
VER. - 1"=10'

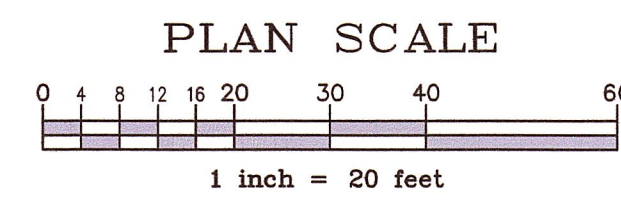
EROSION CONTROL NOTES

- ANY BUILDING SUPPLIES, DEBRIS, FILL OR OTHER MATERIALS SHALL BE STOCKPILED AS FAR AWAY FROM DESIGNATED WETLAND RESOURCE AREAS AS PRACTICABLE, AND AT A LOCATION TO PREVENT SUCH MATERIALS FROM ENTERING THE RESOURCE AREA.
- ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE IMMEDIATELY STABILIZED AGAINST EROSION AND REVEGETATED WITH APPROPRIATE FAST GROWING EROSION CONTROL SPECIES OR LOCAL INDIGENOUS PLANTS WITH 30 DAYS OF FINAL SITE GRADING.

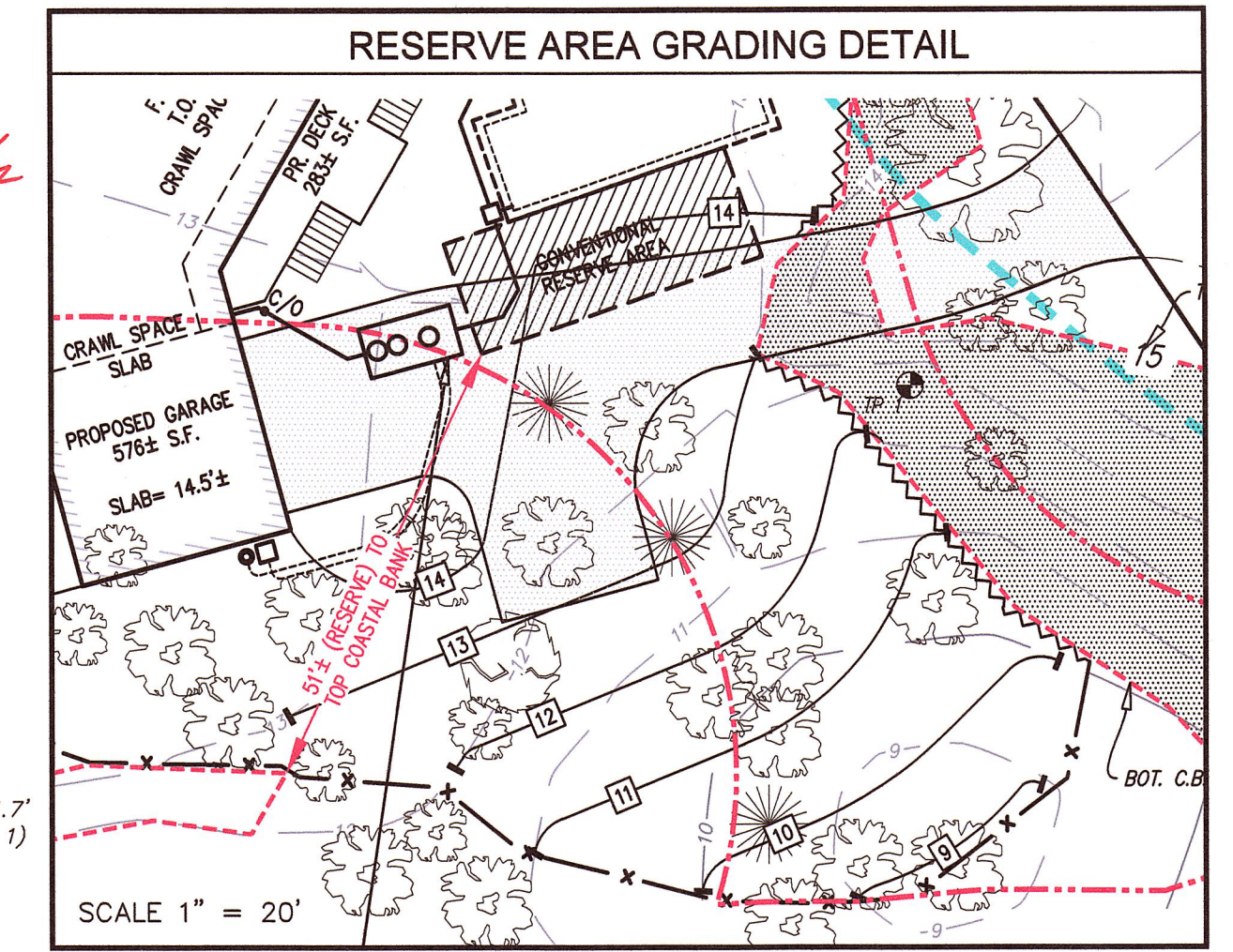
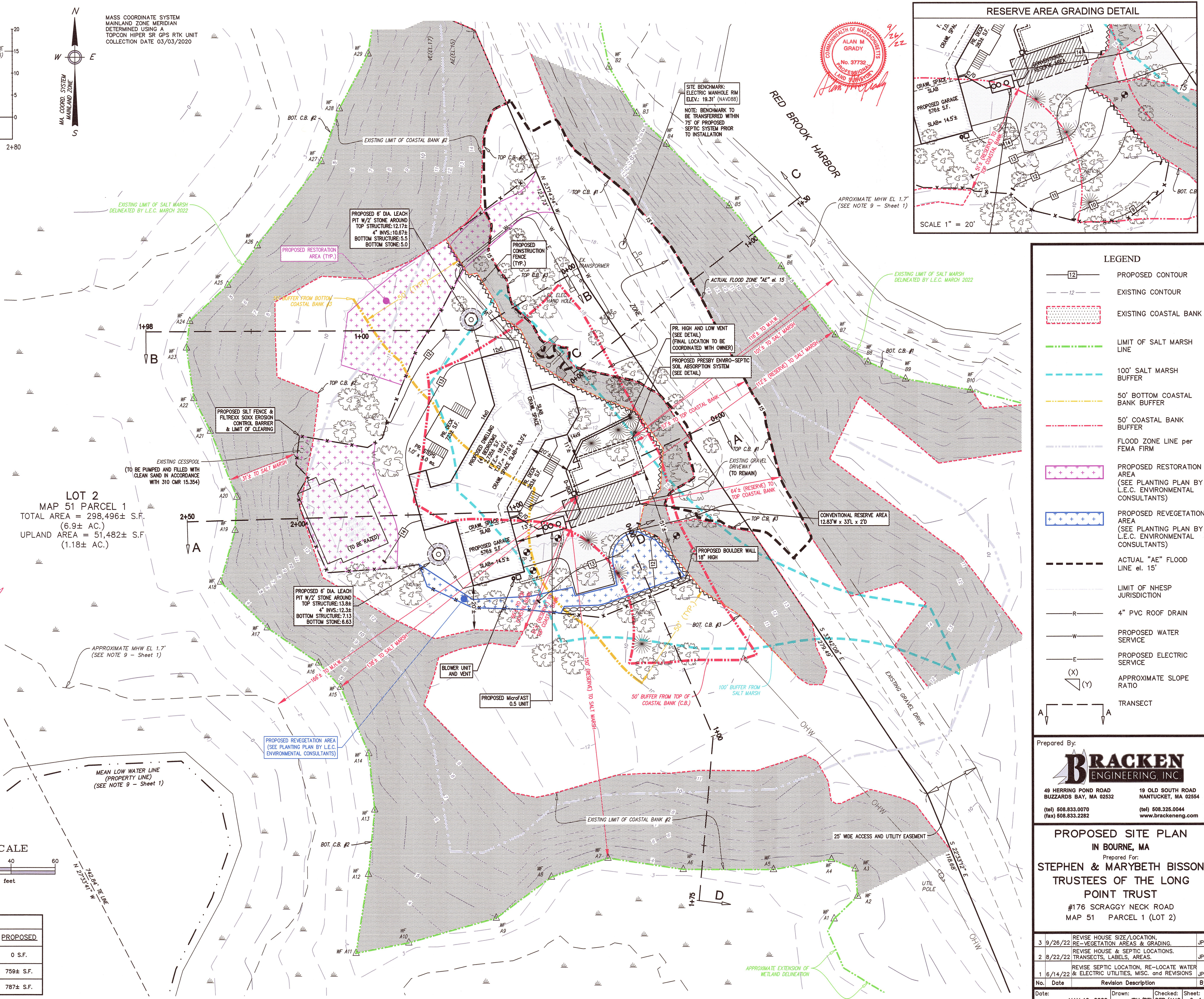
SEAL: DONALD F. BRACKEN JR. CIVIL No. 37071
9/26/22

MASS COORDINATE SYSTEM
MAINLAND ZONE MERIDIAN
DETERMINED USING A
TOPCON HIPER SR GPS RTK UNIT
COLLECTION DATE 03/03/2020

LOT 2
MAP 51 PARCEL 1
TOTAL AREA = 298,496± S.F.
(6.9± AC.)
UPLAND AREA = 51,482± S.F.
(1.18± AC.)



SUMMARY OF DISTURBED AREAS - COASTAL BANKS & BUFFER ZONE		
DESCRIPTION	EXISTING	PROPOSED
STRUCTURE WITHIN COASTAL BANK	6± S.F.	0 S.F.
STRUCTURE WITHIN 50' BUFFER FROM COASTAL BANK #2	986± S.F.	759± S.F.
DRIVEWAY & PARKING WITHIN 50' BUFFER TO COASTAL BANK	1,539± S.F.	787± S.F.



LEGEND

- 12 — PROPOSED CONTOUR
- - - 12 - - - EXISTING CONTOUR
- [Red Dotted Box] EXISTING COASTAL BANK
- LIMIT OF SALT MARSH LINE
- 100' SALT MARSH BUFFER
- 50' BOTTOM COASTAL BANK BUFFER
- 50' COASTAL BANK BUFFER
- - - FLOOD ZONE LINE per FEMA FIRM
- [Pink Star Pattern] PROPOSED RESTORATION AREA (SEE PLANTING PLAN BY L.E.C. ENVIRONMENTAL CONSULTANTS)
- [Blue Star Pattern] PROPOSED REVEGETATION AREA (SEE PLANTING PLAN BY L.E.C. ENVIRONMENTAL CONSULTANTS)
- - - ACTUAL "AE" FLOOD LINE el. 15'
- - - LIMIT OF NHSP JURISDICTION
- - - 4" PVC ROOF DRAIN
- - - PROPOSED WATER SERVICE
- - - PROPOSED ELECTRIC SERVICE
- (X) (Y) APPROXIMATE SLOPE RATIO
- A - - - A TRANSECT

Prepared By:
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PROPOSED SITE PLAN
IN BOURNE, MA
Prepared For:
STEPHEN & MARYBETH BISSON
TRUSTEES OF THE LONG POINT TRUST
#176 SCRAGGY NECK ROAD
MAP 51 PARCEL 1 (LOT 2)

No.	Date	Revision Description	By
3	9/26/22	REVISE HOUSE SIZE, LOCATION, RE-VEGETATION AREAS & GRADING.	JPH
2	8/22/22	REVISE HOUSE & SEPTIC LOCATIONS, TRANSECTS, LABELS, AREAS.	JPH
1	6/14/22	REVISE SEPTIC LOCATION, RE-LOCATE WATER & ELECTRIC UTILITIES, MISC. AND REVISIONS	JPH

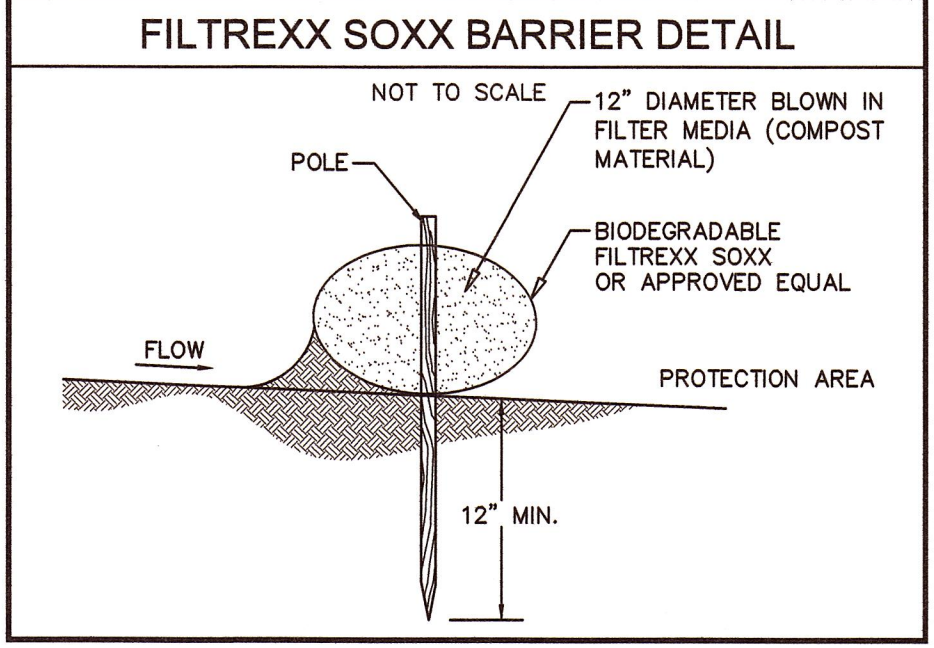
Date: MAY 16, 2022
Drawn: JPH/BEI
Checked: DFB/AMG
Sheet: 2 of 3

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DONALD P. BRACKEN JR.
 CIVIL
 No. 37071
 9/20/22

Notes

- BENCHMARK: ELEVATION = 19.31 (NAVD88)
- ALL CONSTRUCTION METHODS AND MATERIALS TO CONFORM TO TITLE 5 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 WATERTIGHT.
- 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.
- OWNER/APPLICANT:
STEPHEN BISSON
MARYBETH BISSON Trustees of
THE LONG POINT TRUST
P.O. BOX No. 10
CATAUMET MA, 02563
- DEED REFERENCE: Deed Bk: 22554 Pg: 257
- PLAN REFERENCE: Plan Bk: 687 Pg: 11 (LOT 2)
- 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.
- 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.
- LOCUS DOES NOT FALL WITHIN A ZONE II WELLHEAD PROTECTION AREA.
- LOCUS PARTIALLY FALLS WITHIN AN NHESP ESTIMATED HABITAT OF RARE WILDLIFE AND PRIORITY HABITAT OF RARE SPECIES.
- THE PROPOSED SEPTIC SYSTEM DOES FALL WITHIN A SPECIAL FLOOD HAZARD ZONE "AE" (EL. 15) AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP No. 25001C-0492-J & 25001C-0511-J BOTH dated 7/16/2014.
- CONTRACTOR TO REFER TO ALL MANUFACTURER'S REQUIREMENTS AND SPECIFICATIONS FOR INSTALLATION OF THE MICROFAST UNIT AND PRESBY ENVIRO-SEPTIC SYSTEM.
- 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 UNIT, ALL SYSTEM TESTING, MONITORING & REPORTING IS TO BE CONDUCTED IN ACCORDANCE TO THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) REMEDIAL USE PERMITS.
- CONTRACTOR TO COORDINATE PLACEMENT OF ALL ALARM/CONTROL PANELS WITH THE HOMEOWNER & SYSTEM MANUFACTURERS PRIOR TO INSTALLATION.
- CONTRACTOR TO COORDINATE FINAL LOCATIONS OF HIGH AND LOW VENTS WITH OWNER AND ENGINEER.
- SOIL CONDITIONS ENCOUNTERED DURING EXCAVATION MAY DIFFER FROM THE PREVIOUSLY OBSERVED CONDITIONS AT THE TEST PITS. ADDITIONAL REMOVAL AND REPLACEMENT OF SOIL MAY BE REQUIRED, IF UNSUITABLE CONDITIONS ARE ENCOUNTERED, THE DESIGN ENGINEER SHALL BE CONSULTED.



DESIGN CALCULATIONS

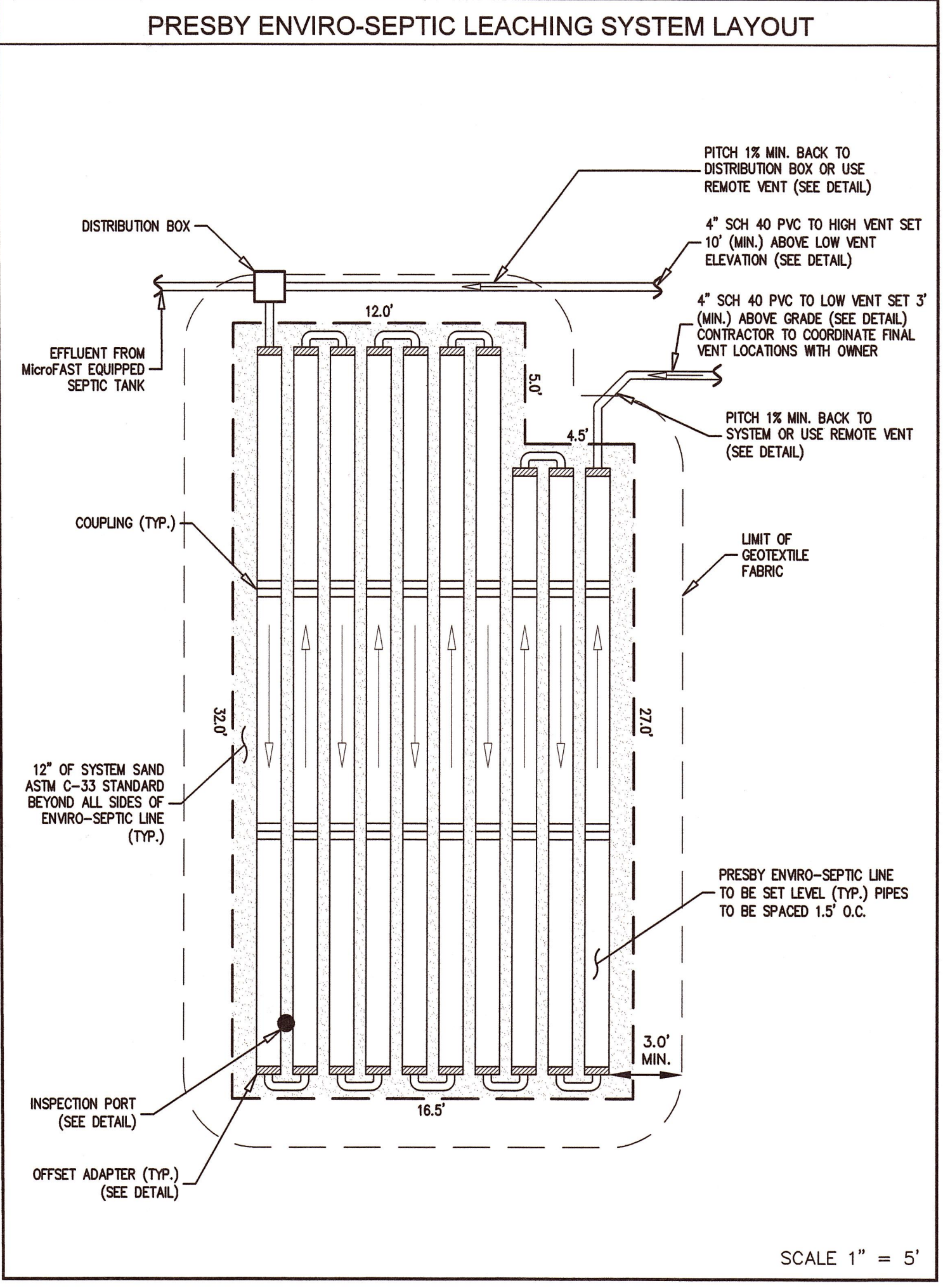
SOIL TEXTURAL CLASS: CLASS I
 PERC. RATE: <2 MINUTES/INCH
 NO. OF BEDROOMS: 4
 DESIGN FLOW REQUIRED: 440 GPD
 SEPTIC TANK REQUIRED: 1,500 GALLONS
 SEPTIC TANK PROVIDED: MicroFAST 0.5 Unit

LEACHING SYSTEM:
 PRESBY ENVIRO-SEPTIC WASTEWATER TREATMENT SYSTEM
 505 S.F. AREA x 2' DEEP SYSTEM (SEE DETAIL FOR FIELD DIMENSIONS)

EFFECTIVE LEACHING: (BASED ON GENERAL USE APPROVAL)
 TRANSMITTAL No. Accelo-21-CLM-000073-APP
 ENVIRO-SEPTIC PIPE REQUIRED: 70 L.F. PER 110 GAL/DAY
 110 GAL/DAY / 70 L.F. = 1.57 GAL/DAY/L.F.

ENVIRO-SEPTIC PIPE PROVIDED
 10 SERIAL LINES AT 285 L.F. TOTAL
 TOTAL LENGTH = 7 x 30 L.F. + 3 x 25 L.F. = 285 L.F.
 285 L.F. * 1.57 GAL/DAY/L.F. = 447.45 GAL/DAY > 440 GAL/DAY
 LINES SPACED 1.50' ON CENTER

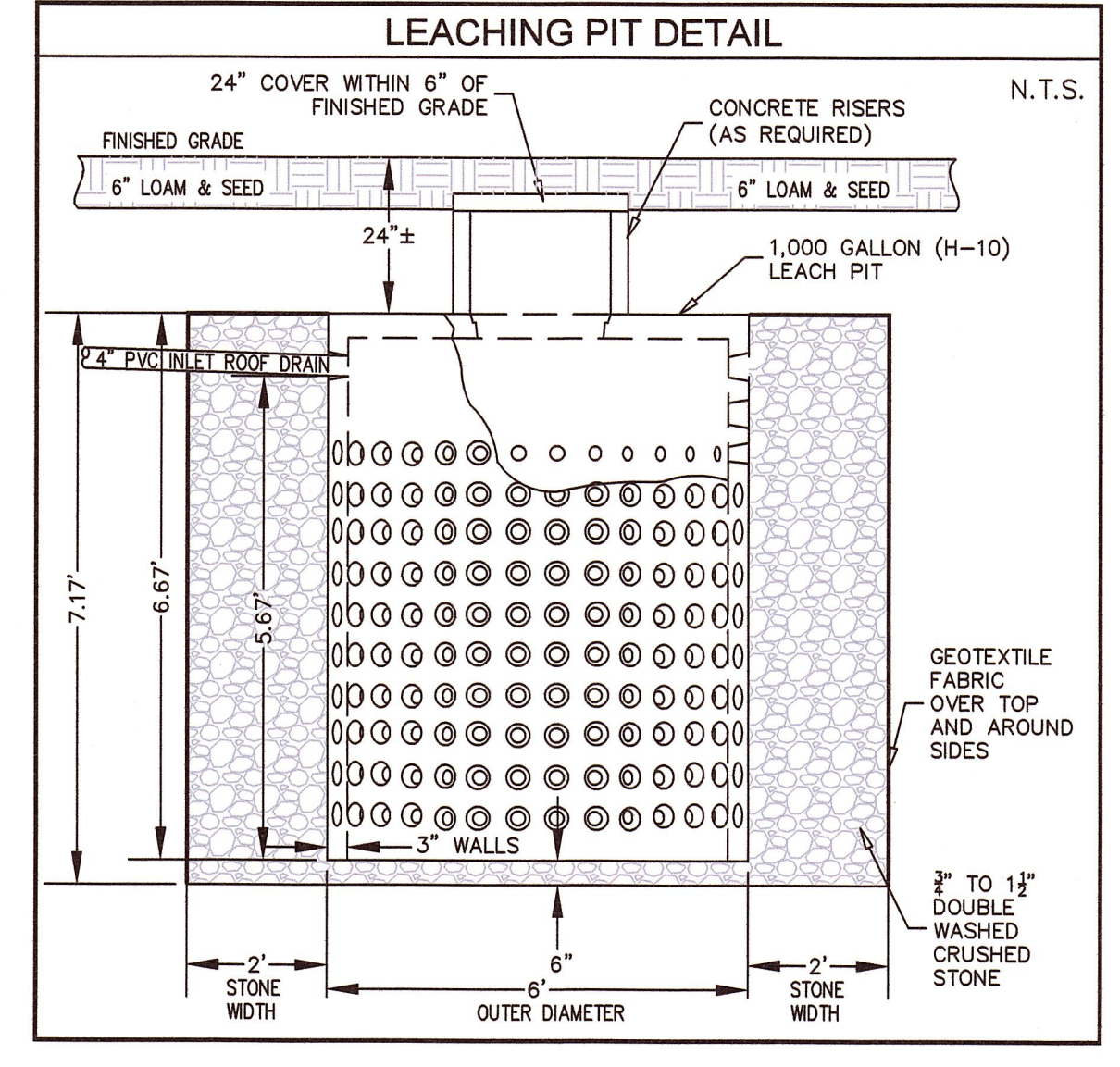
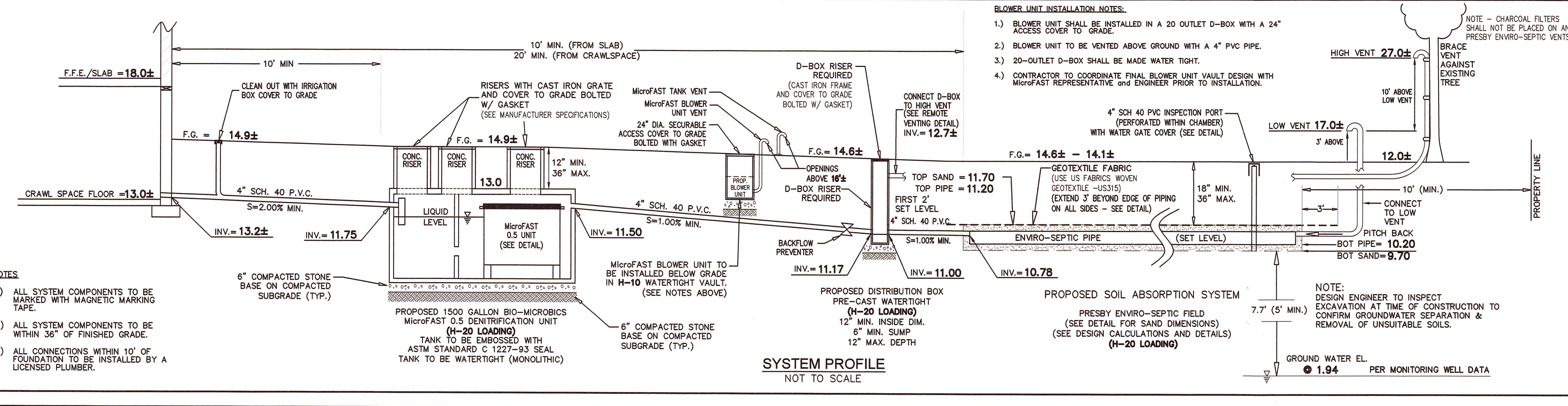
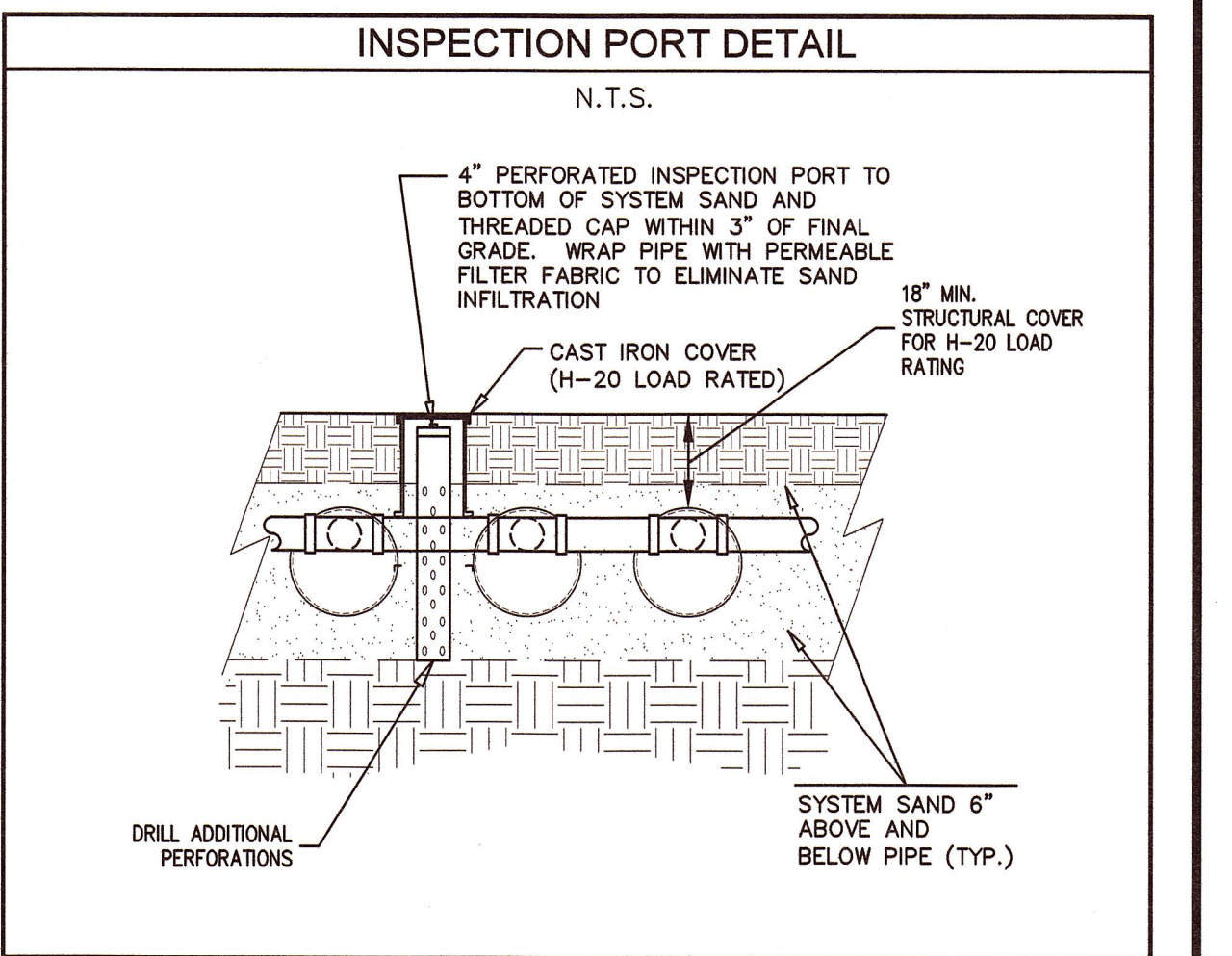
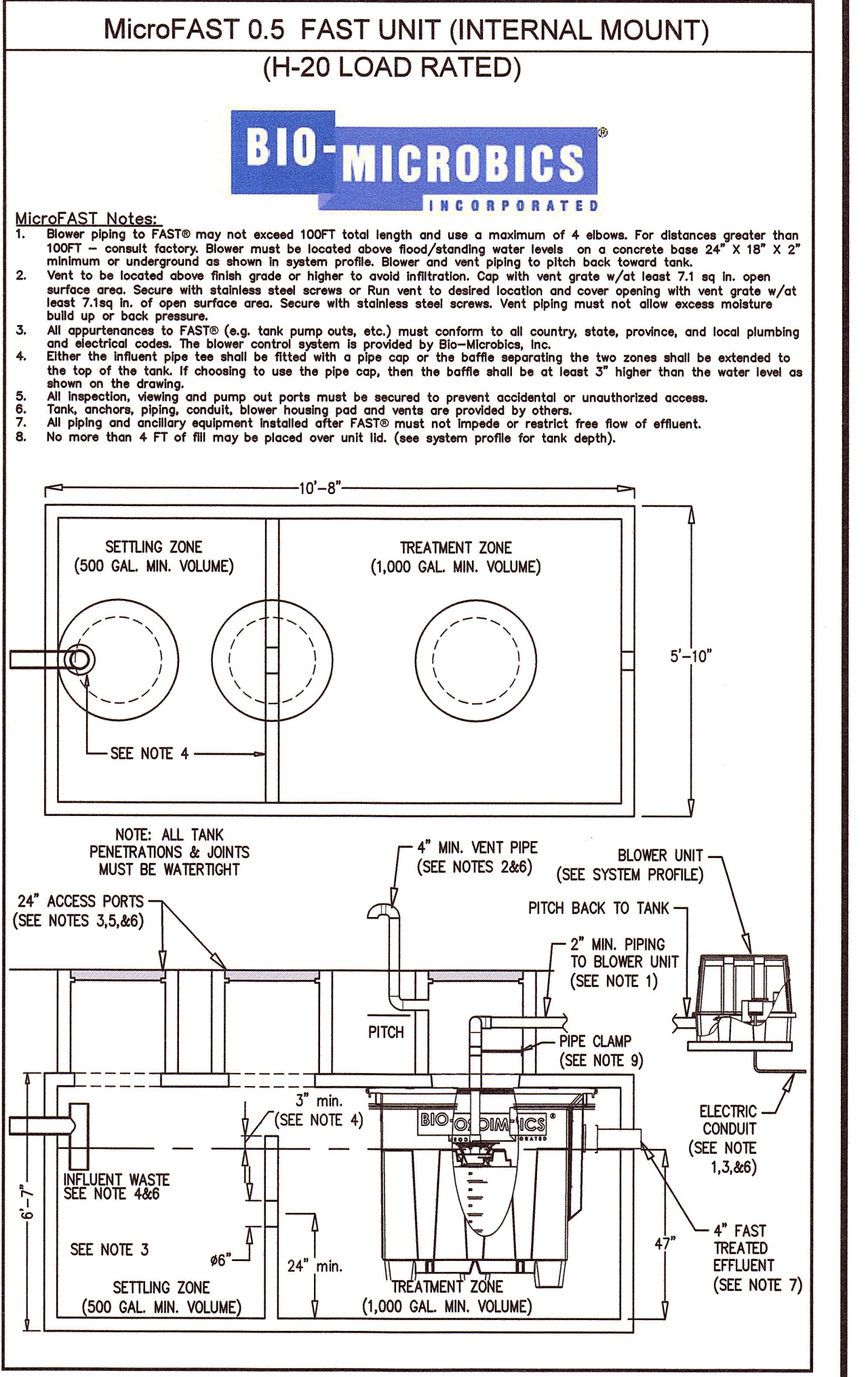
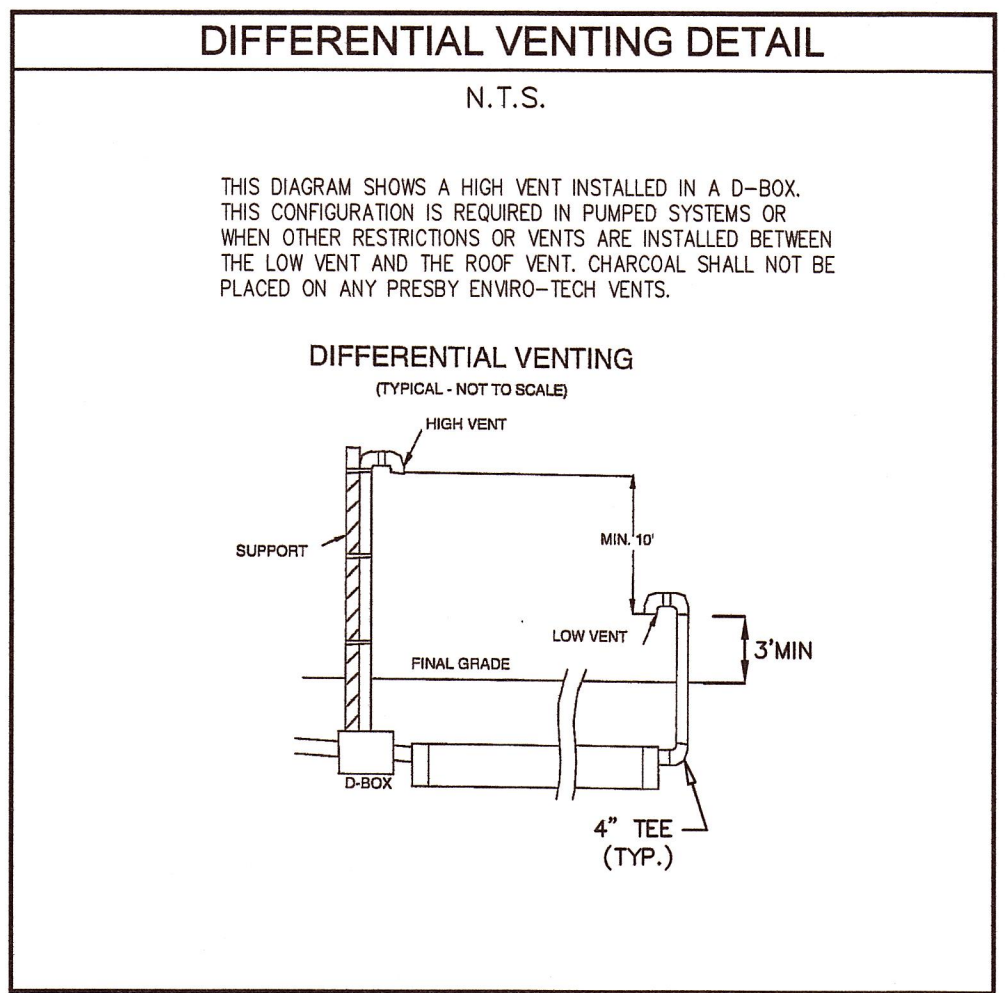
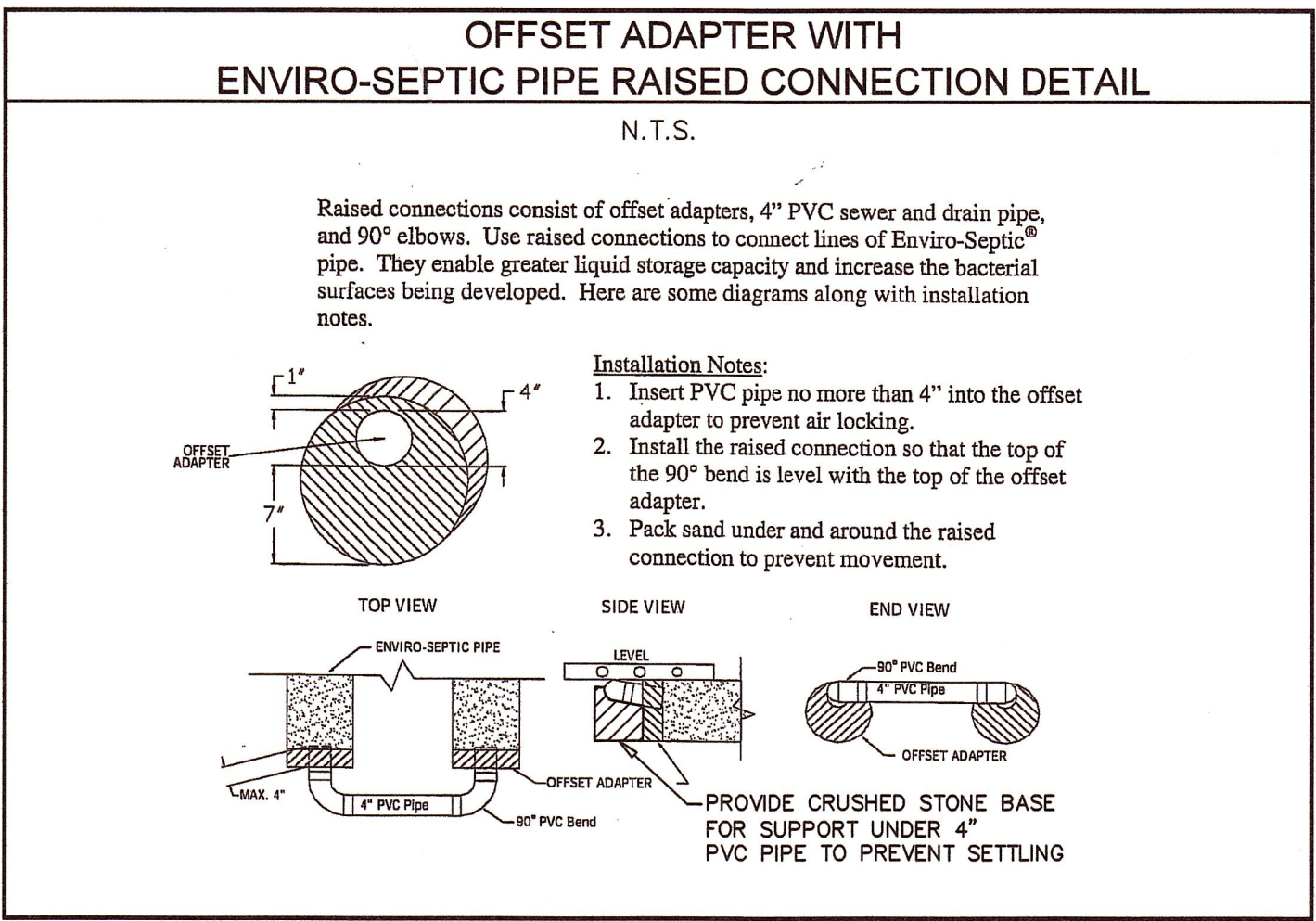
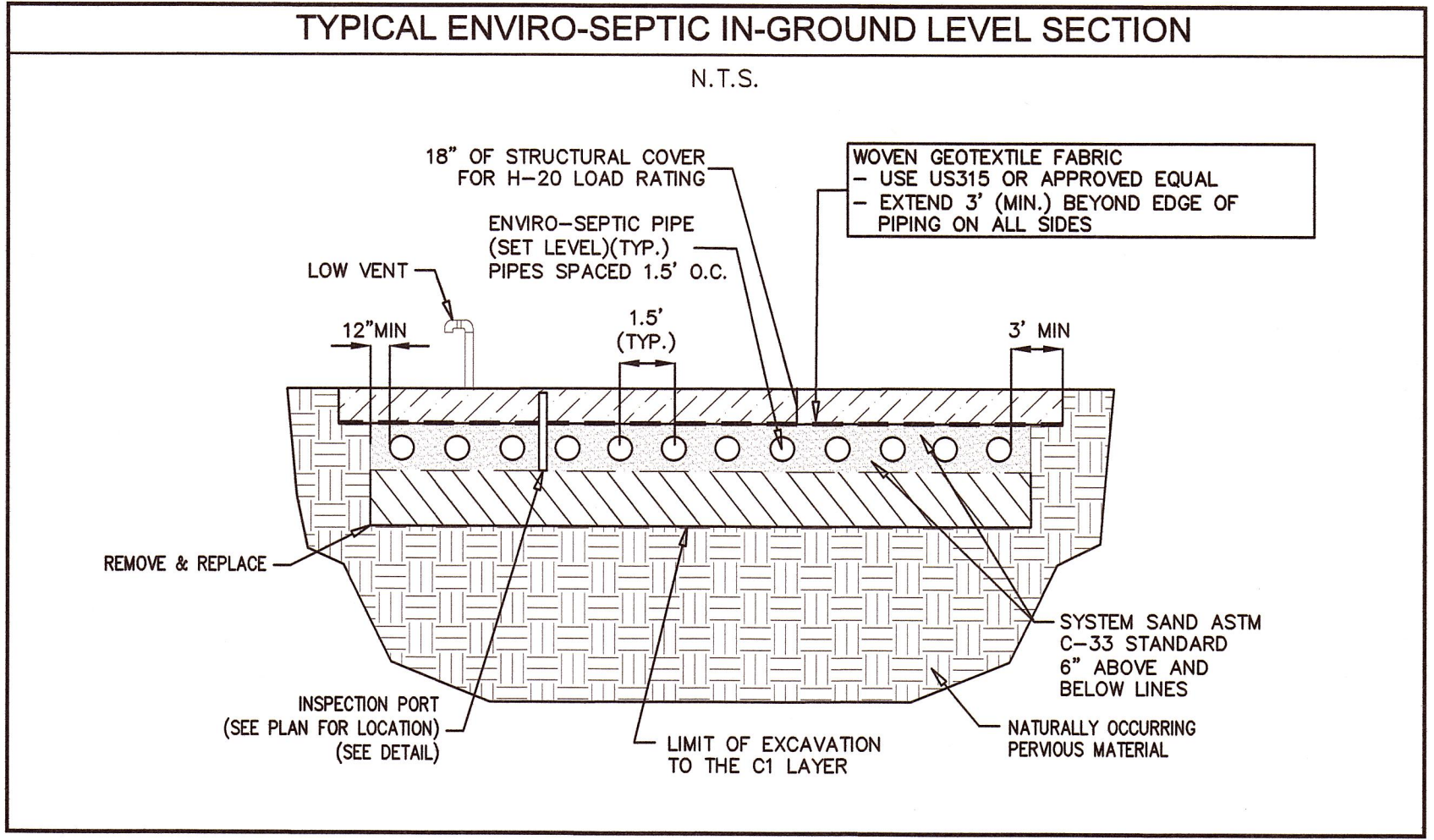
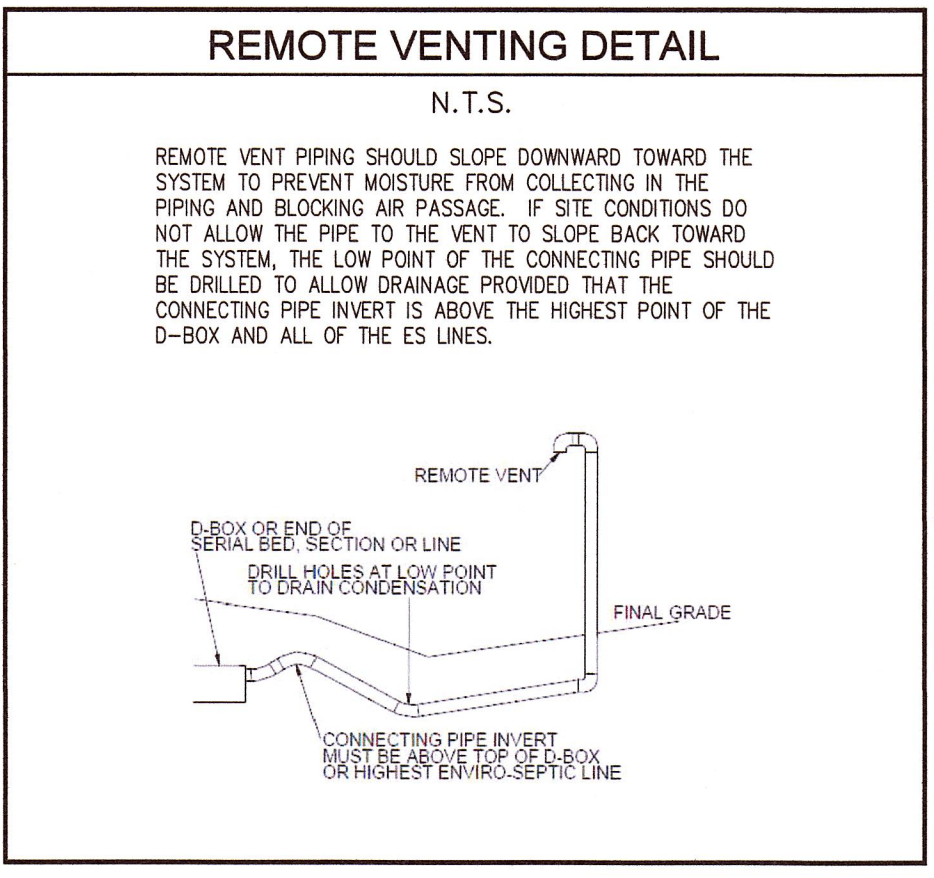
CONVENTIONAL SYSTEM DESIGN:
 12.83' WIDE x 33' LONG x 2' DEEP
 BOTTOM AREA = 423 S.F. TOTAL = 806 S.F.
 SIDEWALL AREA = 183 S.F.
 LOADING RATE = 0.74 GPD/SF
 FLOW PROVIDED: 448 GPD > 440 GPD



SOIL LOGS

TP NO.	1	2	3	4
GRD. EL.	12.3	12.7	12.8	12.8
GW. EL.	NONE to 2.5'	NONE to 2.1'	NONE to 2.1'	NONE to 2.1'
0'	A/O LOAMY SAND 10YR 4/1	FILL	A/O LOAMY SAND 10YR 4/1	A/O LOAMY SAND 10YR 4/1
12"	Bw LOAMY SAND 10YR 5/4	Apb LOAMY SAND 10YR 3/2	Bw LOAMY SAND 10YR 5/4	Bw LOAMY SAND 10YR 5/4
36"	C1 MEDIUM SAND 2.5Y 5/6	Bw MEDIUM SAND 10YR 5/4	C MEDIUM SAND 2.5Y 5/6	C MEDIUM SAND 2.5Y 5/6
80"	C2 MEDIUM SAND 2.5Y 5/6	C MEDIUM SAND 2.5Y 5/6	C MEDIUM SAND 2.5Y 5/6	C MEDIUM SAND 2.5Y 5/6
100"	C3 MEDIUM SAND 2.5Y 6/4	C MEDIUM SAND 2.5Y 5/6	C MEDIUM SAND 2.5Y 5/6	C MEDIUM SAND 2.5Y 5/6
140"	WEEPING @ 128"	NO MOTTLING NO WATER	NO MOTTLING NO WATER	NO MOTTLING NO WATER

EXCAVATION NOTE
 THIS SYSTEM REQUIRES THE EXCAVATION OF ALL UNSUITABLE AND/OR SPOILED SOIL BELOW THE SOIL ABSORPTION SYSTEM. SOIL SHALL BE EXCAVATED TO THE EXISTING C SAND LAYER. 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.



Prepared By:

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SEPTIC DETAILS
 IN BOURNE, MA

Prepared For:
STEPHEN & MARYBETH BISSON
 TRUSTEES OF THE LONG POINT TRUST
 #176 SCRAGGY NECK ROAD
 MAP 51 PARCEL 1 (LOT 2)

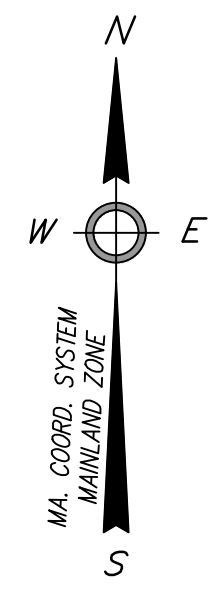
No.	Date	Revision Description	By
3	9/26/22	REVISE SEPTIC DETAIL LAYOUT	JPH
2	8/22/22	REVISE SEPTIC LAYOUT, MISC. DETAILS	JPH
1	6/14/22	REVISE SEPTIC LAYOUT, MISC. DETAILS	JPH

Date: MAY 16, 2022 Drawn: JPH/BEI Checked: DFB/AMG Sheet: 3 of 3

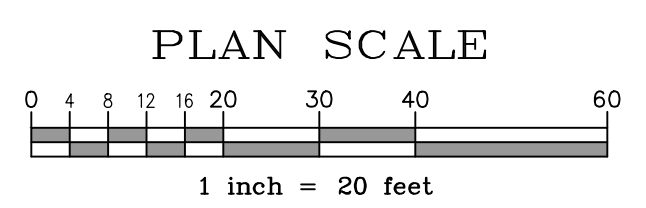
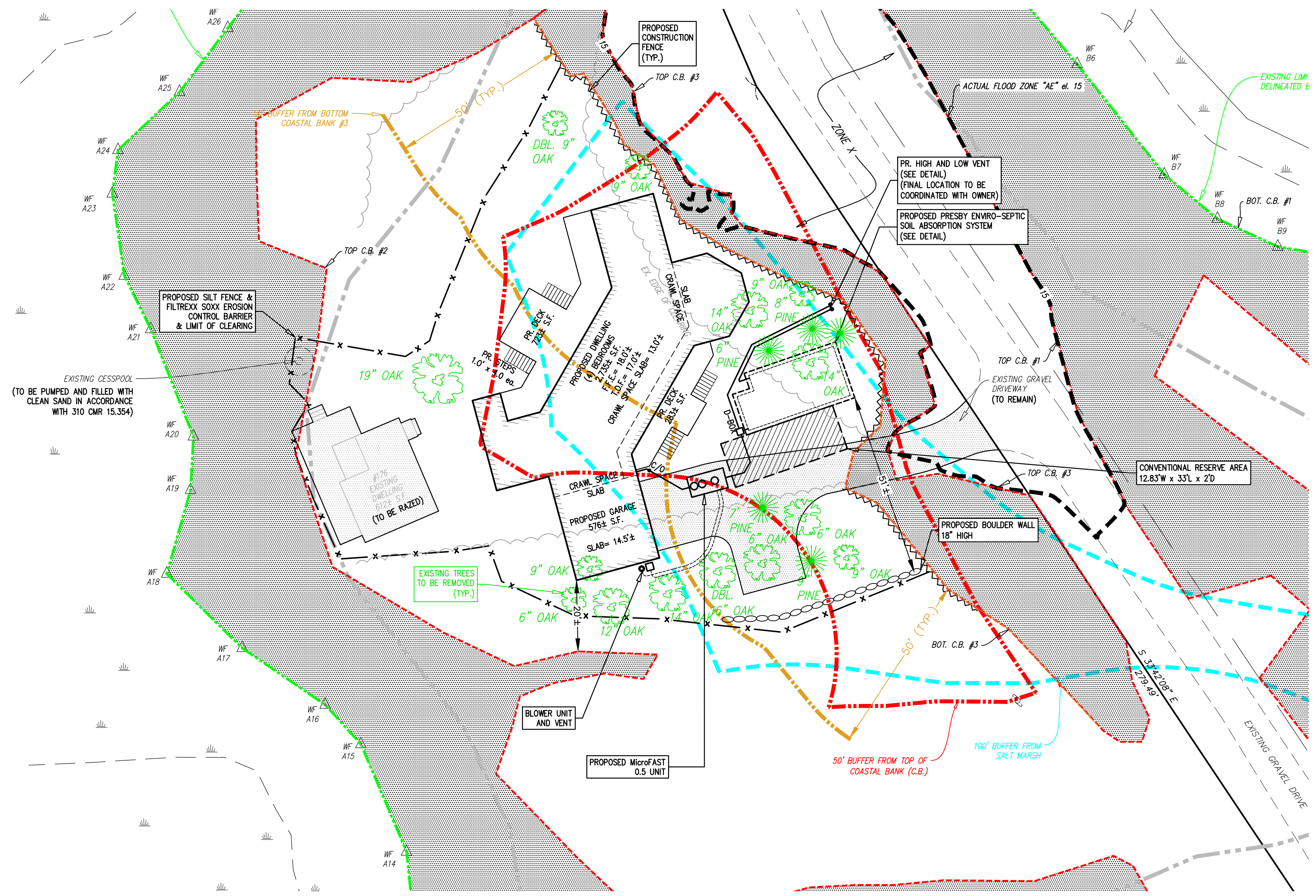
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Attachment D

Proposed Site Exhibit, Prepared by Bracken Engineering, Inc.,
Dated September 26, 2022



MASS COORDINATE SYSTEM
 MAINLAND ZONE MERIDIAN
 DETERMINED USING A
 TOPCON HIPER SR GPS RTK UNIT
 COLLECTION DATE 03/03/2020



NOTE:
 ALL TREES SHOWN TO BE REMOVED ARE WITHIN THE LIMIT OF WORK, THIS PLAN DOES NOT REPRESENT AND FULL SITE TREE INVENTORY.

Prepared By:

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PROPOSED SITE EXHIBIT
 IN BOURNE, MA
 Prepared For:
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 TRUSTEES OF THE LONG POINT TRUST
 #176 SCRAGGY NECK ROAD
 MAP 51 PARCEL 1 (LOT 2)

No.	Date	Revision Description	By

Date: SEPTEMBER 26, 2022 Drawn: BEI Checked: DFB/AMG Sheet: 1 of 1