

Island Grown Farm Master Plan Phase 1
DRI 212-M

Martha's Vineyard Commission
January 13, 2022

Island Grown Farm Master Plan Phase 1

- Applicant:** Island Grown MV / South Mountain Co.
- Owner:** The Island Grown Initiative Ltd.
- Permits:** Building permit, special permit for exemption from local zoning under MGL Chapter 40A, septic and well permits; the property is also subject to a MV Land Bank Agricultural Preservation Restriction, and the Land Bank has approved of the site plan.
- Checklist:** 3.1b (Development of commercial space – 3,500+ ft²), 8.6a (Development of current/former farmland), 1.3D (Previous DRI); mandatory review

LUPC: 10/25/21

Site visit: 1/11/22

Hearing: 1/13/22



ISLAND CONTEXT



AREA MAP





Tisbury, MA

Contact

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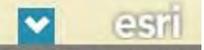
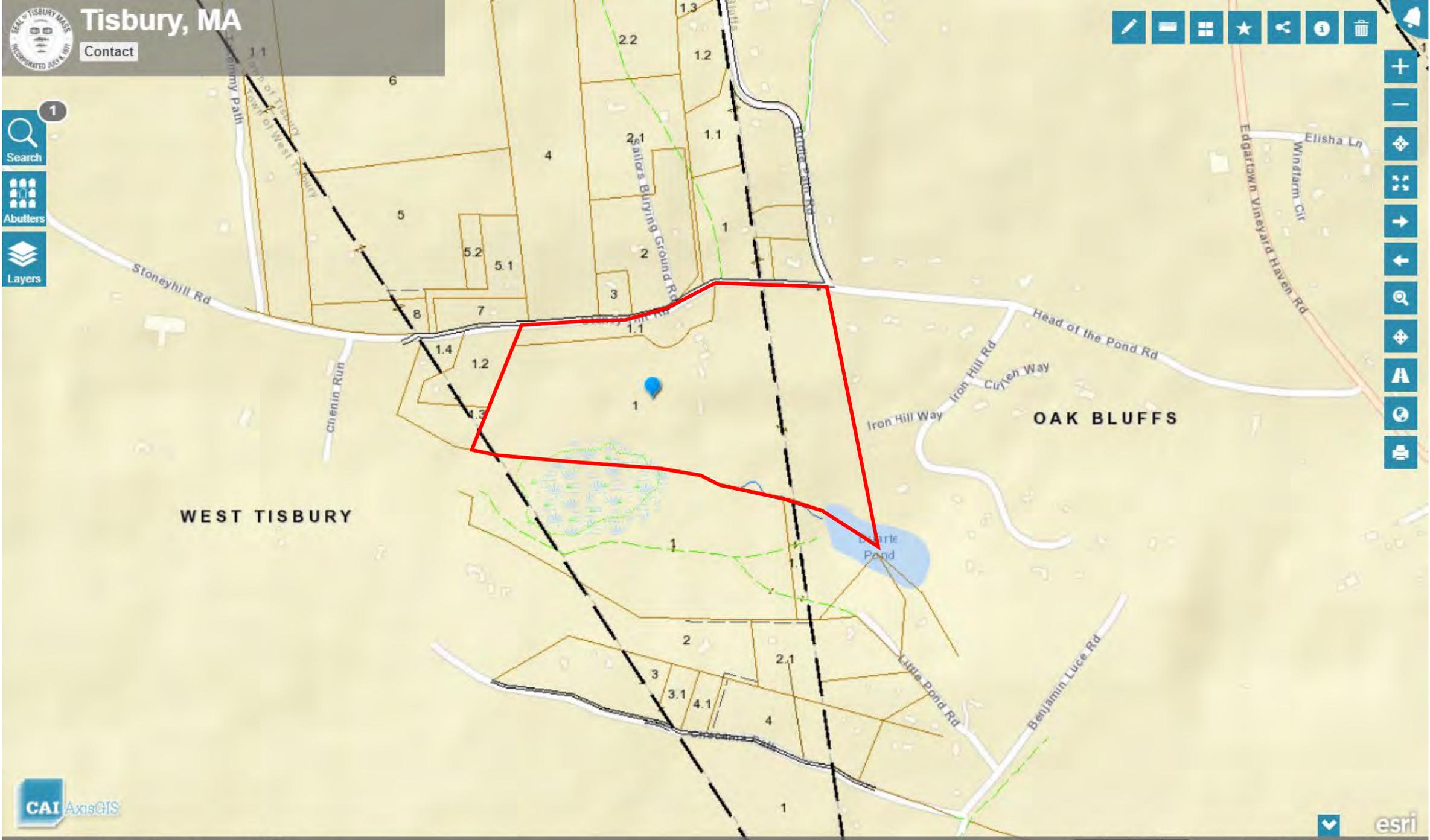
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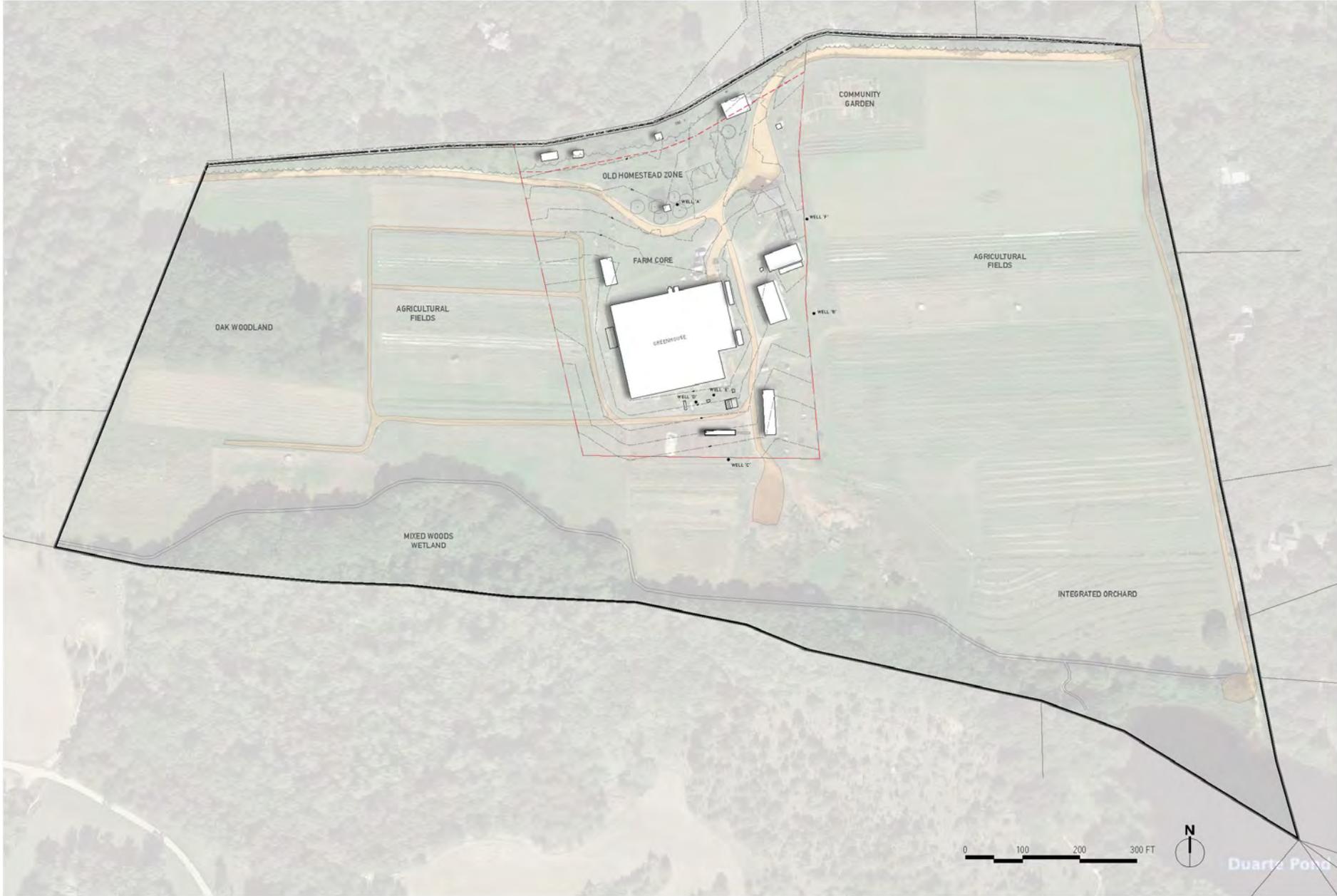
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Layers

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Map navigation icons: zoom in, zoom out, home, layers, search, print, etc.





ISLAND GROWN FARM
 MARTHA'S VINEYARD COMMISSION
 OCTOBER 19, 2021

EXISTING
 PROPERTY
 PLAN

Project history

- MVC approved DRI 212 (Thimble Farm) with conditions in 1986, allowing for the construction of a 30,000 ft² greenhouse and 4,000 gallons of fuel storage.
- The farm was owned by Bencion and Patricia Moskow, and later by Laurence Benson and Eric Grubman, who leased the land to Andrew Woodruff, who ran a CSA program for several years.
- Island Grown Initiative (IGI) purchased the land in 2012, restored the greenhouse and began licensing the fields to local farmers.
- In recent years, IGI and Woodruff have worked to establish regenerative agricultural practices that support the land, and the farm has become a hub for agricultural activity, including a CSA, field trips, gleaning, and community gardens.

Proposal

Island Grown Farm Master Plan:

- Consolidate IGI operations
- Expand educational programming
- Provide additional housing for IGI workers

Phase 1:

- Education and Innovation Center (EIC): One story, 4,240 ft², offices and educational space
- Housing #1: One story, 1,703 ft², two one-bedroom units for farmworkers
- Housing #2: One story, 2,247 ft², two two-bedroom units for farmworkers
- Installation of three seasonal yurts (16' diameter; 600 ft²)
- Existing 1,345 ft² hoop house will be removed
- Smaller hoop house will be relocated

Proposal

Future phases:

- Agricultural building #1: 800 ft²
- Agricultural building #2: 960 ft²
- Pole barn: 1,625 ft²



LEGEND

- PROPERTY BUILDING ENVELOPE
- PROPERTY SETBACK 50'
- EXISTING 1' CONTOUR
- PROPERTY LINE
- EXISTING TREELINE
- EXISTING HEDGE
- EXISTING UTILITIES
- PROPOSED EVC STATIONS
- PROPOSED SOLAR LOCATIONS
- PROPOSED SEPTIC
- PROPOSED PHASE I INFRASTRUCTURE
- PROPOSED PHASE II INFRASTRUCTURE
- EXISTING INFRASTRUCTURE

HARDSCAPE LEGEND

- HARDENED SAND and/or COMPACTED GRAVEL
- SECONDARY FARM ACCESS ROADS
- STONE DUST PATHWAY
- RECLAIMED GRANITE STONES
- STONE PAVERS
- STONE SEATING and RETAINING WALL(S)
- FENCING
- FENCE GATES

LANDSCAPE AREAS

- INTENSIVE USE GARDEN AREAS
- KITCHEN GARDENS
- NATIVE GROUND COVER
- NATIVE MEADOW

PLANTING LEGEND

- EXISTING TREES
- LARGE CANOPY to SMALL SHADE TREES
- SMALL TREES to UNDERSTORY SHRUBS
- HERBACEOUS PERENNIALS



ISLAND GROWN FARM SQUARE FOOTAGE SUMMARY



EXISTING STRUCTURES	SQ.FT.
SHED (ALONG NORTH PROPERTY LINE)	340
SHED (ALONG NORTH PROPERTY LINE)	245
SHED (ALONG NORTH PROPERTY LINE)	150
SHED (COMMUNITY GARDEN)	70
SHED (GREENHOUSE)	55
WELL HOUSE	135
GREENHOUSE	32,125
PROP HOUSE	1,010
HYDROPONIC TRAILER	385
FOOD STORAGE	1,860
BATHROOM	30
WORKSHOP & APARTMENT	2,150
FLY TRAILER	320
CHICKEN COOP	1,600
HOOP HOUSE	1,345
41,820	TOTAL EXISTING SQUARE FOOTAGE

EXISTING STRUCTURES TO BE REMOVED	SQ.FT.
HOOP HOUSE	1,345
1,345	TOTAL EXISTING TO BE REMOVED

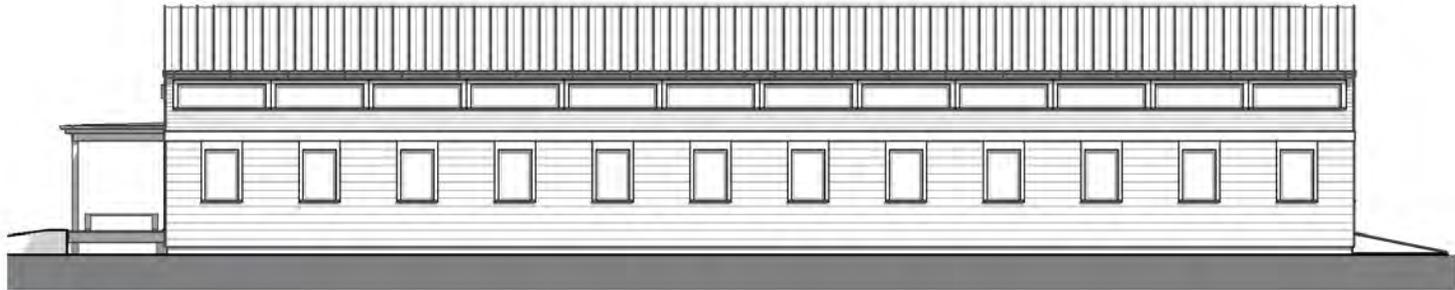
	SQ.FT.	SQ.FT.	SQ.FT.
PROPOSED STRUCTURES (PHASE I)	BUILDING	DECKS/PORCHES	SUBTOTAL
EDUCATION & INNOVATION CENTER	3,200	1,040	4,240
HOUSING - (2) 1-BEDROOM UNITS	1,288	415	1,703
HOUSING - (2) 2-BEDROOM UNITS	1,792	455	2,247
(3) SEASONAL YURTS	600		600
8,790	TOTAL ADDED - PHASE I		

PROPOSED STRUCTURES (PHASE II)	SQ.FT.
AGRICULTURAL BUILDING	800
AGRICULTURAL BUILDING	960
POLE BARN	1,625
3,385	TOTAL ADDED - PHASE II

52,650	TOTAL PROPOSED SQUARE FOOTAGE (25% INCREASE)
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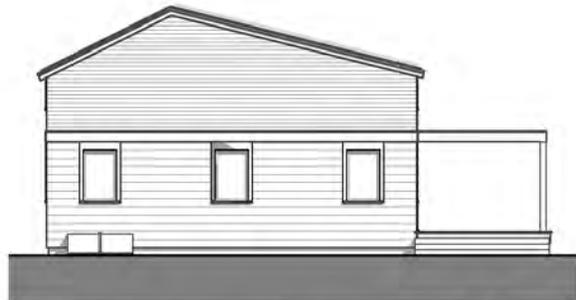
South Elevation



North Elevation

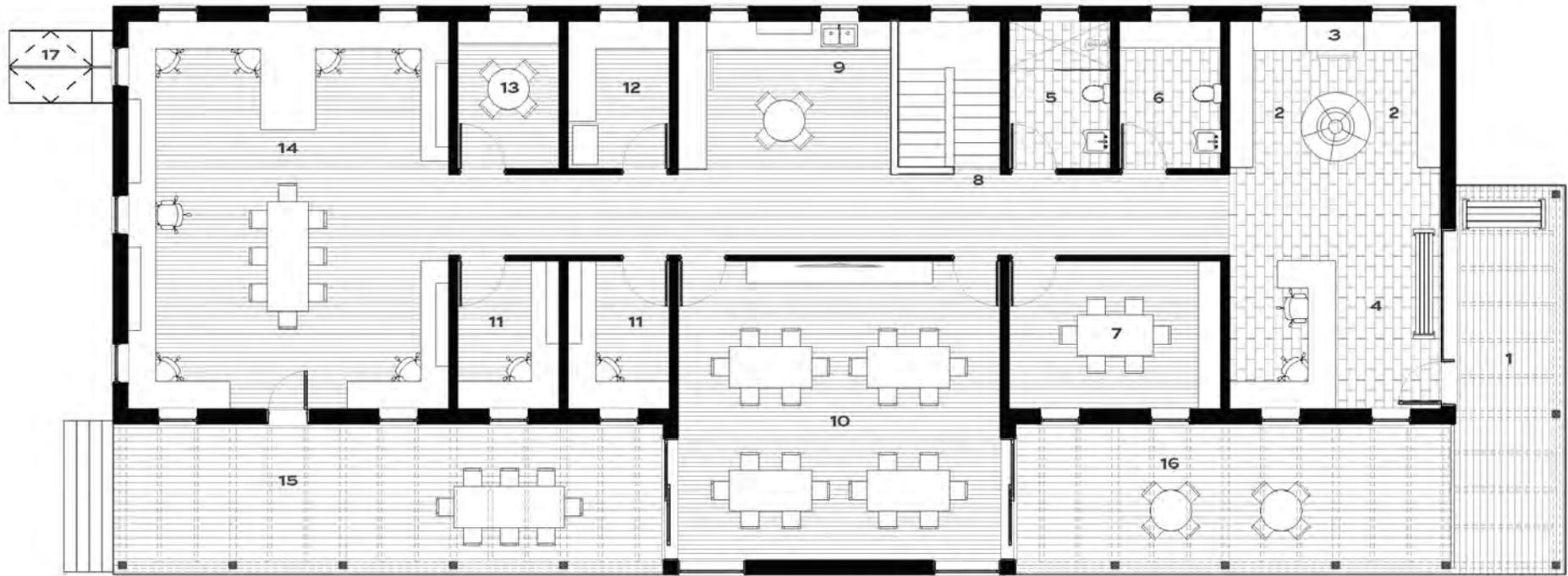


East Elevation



West Elevation





PLAN LEGEND

- 1 Covered Entry Porch
- 2 Cubbies / Coats
- 3 Eggs / Greens / Merchandise
- 4 Reception
- 5 Accessible Bathroom w/Shower
- 6 Accessible Bathroom
- 7 Medium Meeting Room
- 8 Stair to Basement
- 9 Kitchenette
- 10 Large Meeting Room
- 11 Private Office(s)
- 12 Office Supplies / Copier
- 13 Small Meeting Room
- 14 Studio
- 15 Deck w/Pergola
- 16 Covered Porch
- 17 Basement Bulkhead





Education & Innovation Center



Workforce Housing

Unfinished Wood Decking



Unfinished Wood Siding



White Cedar Shingles



Fiberglass Windows & Doors (black)



Copper (roofettes, gutters, & downspouts)

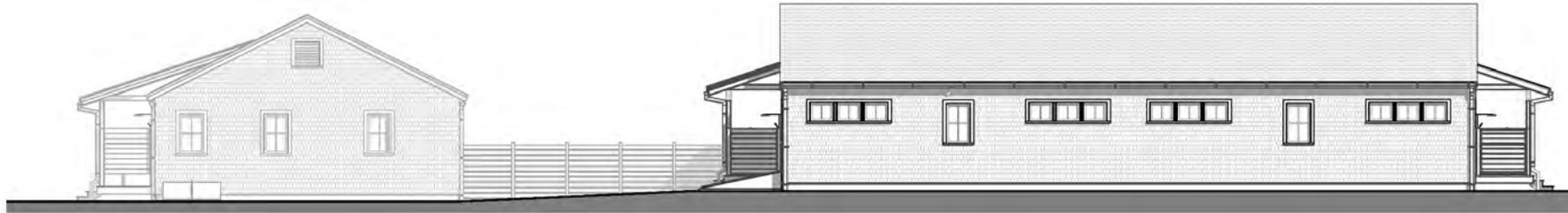


Asphalt Shingles (weathered wood)





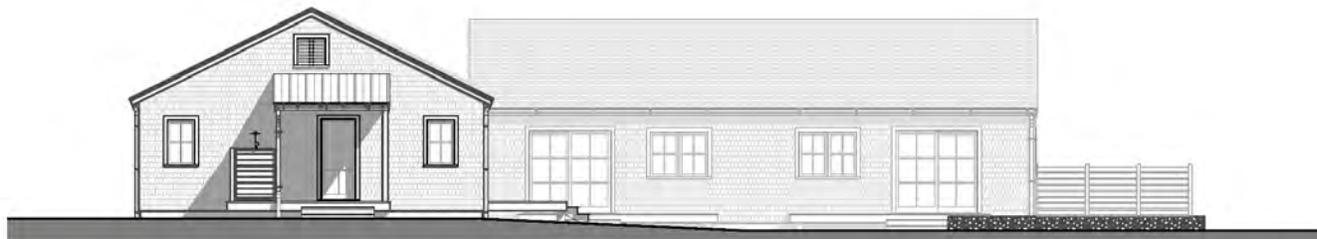
South Elevation



North Elevation

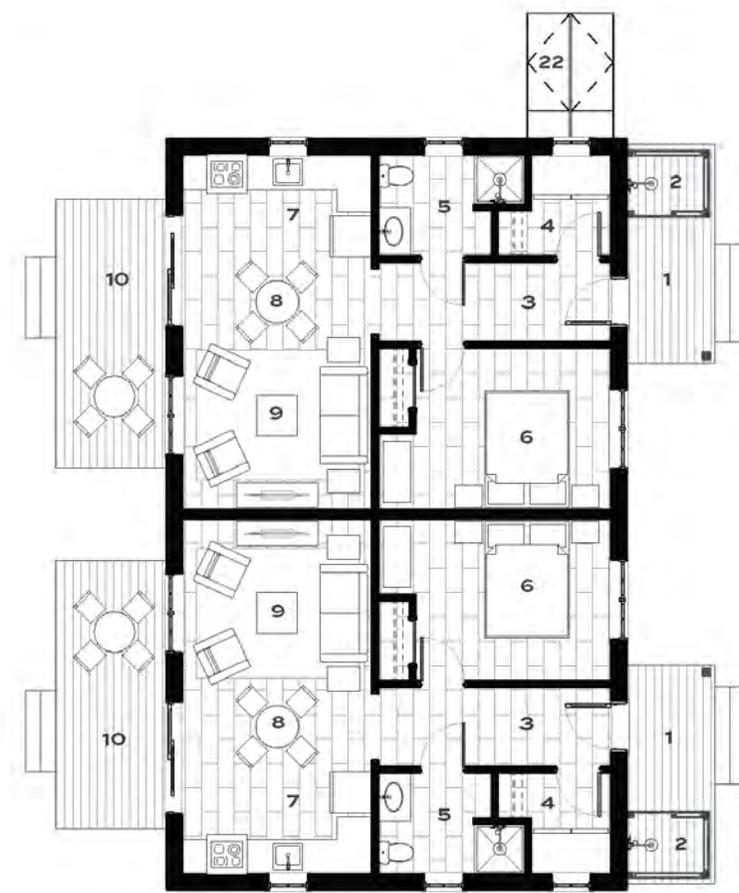
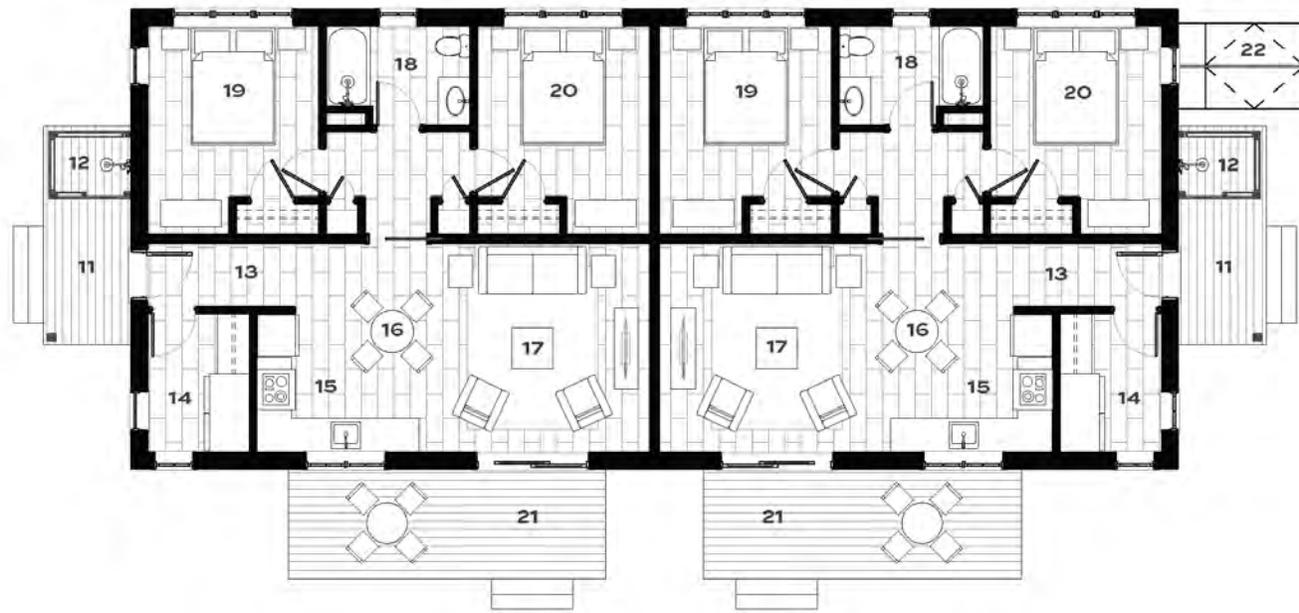


East Elevation



West Elevation





PLAN LEGEND

(2) 1-BEDROOM UNITS

- 1 Porch
- 2 Outdoor Shower
- 3 Entry
- 4 Laundry
- 5 Bathroom
- 6 Bedroom
- 7 Kitchen
- 8 Dining
- 9 Living
- 10 Deck

(2) 2-BEDROOM UNITS

- 11 Entry Porch
- 12 Outdoor Shower
- 13 Entry
- 14 Storage/Mud Room/Laundry
- 15 Kitchen
- 16 Dining
- 17 Living
- 18 Bathroom
- 19 Bedroom A
- 20 Bedroom B
- 21 Deck
- 22 Basement Bulkhead



Planning concerns

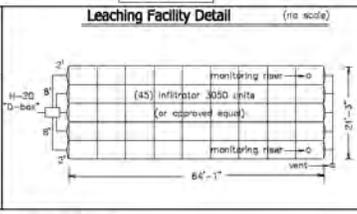
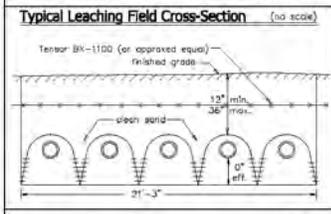
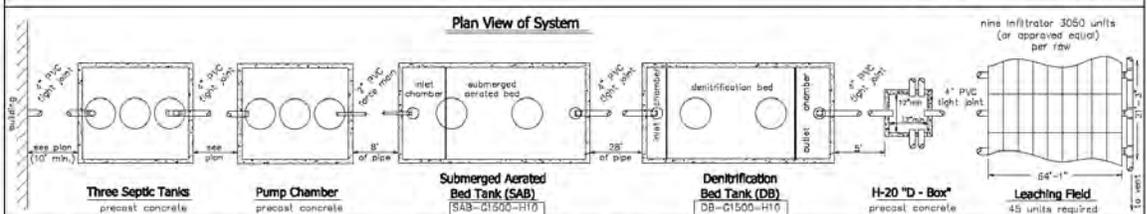
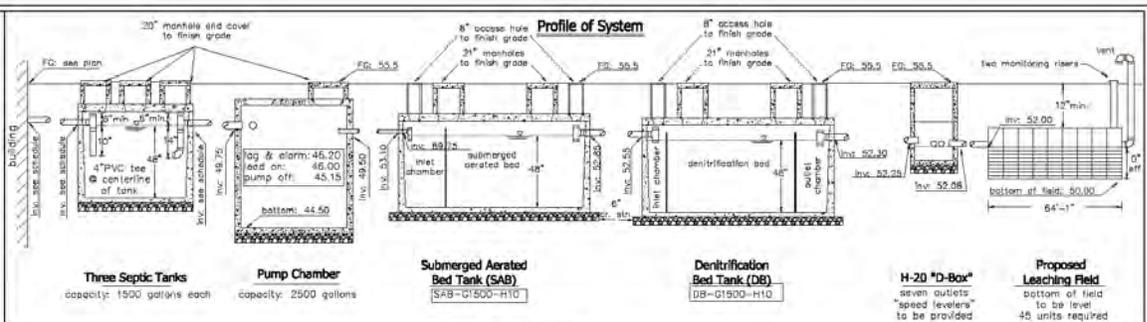
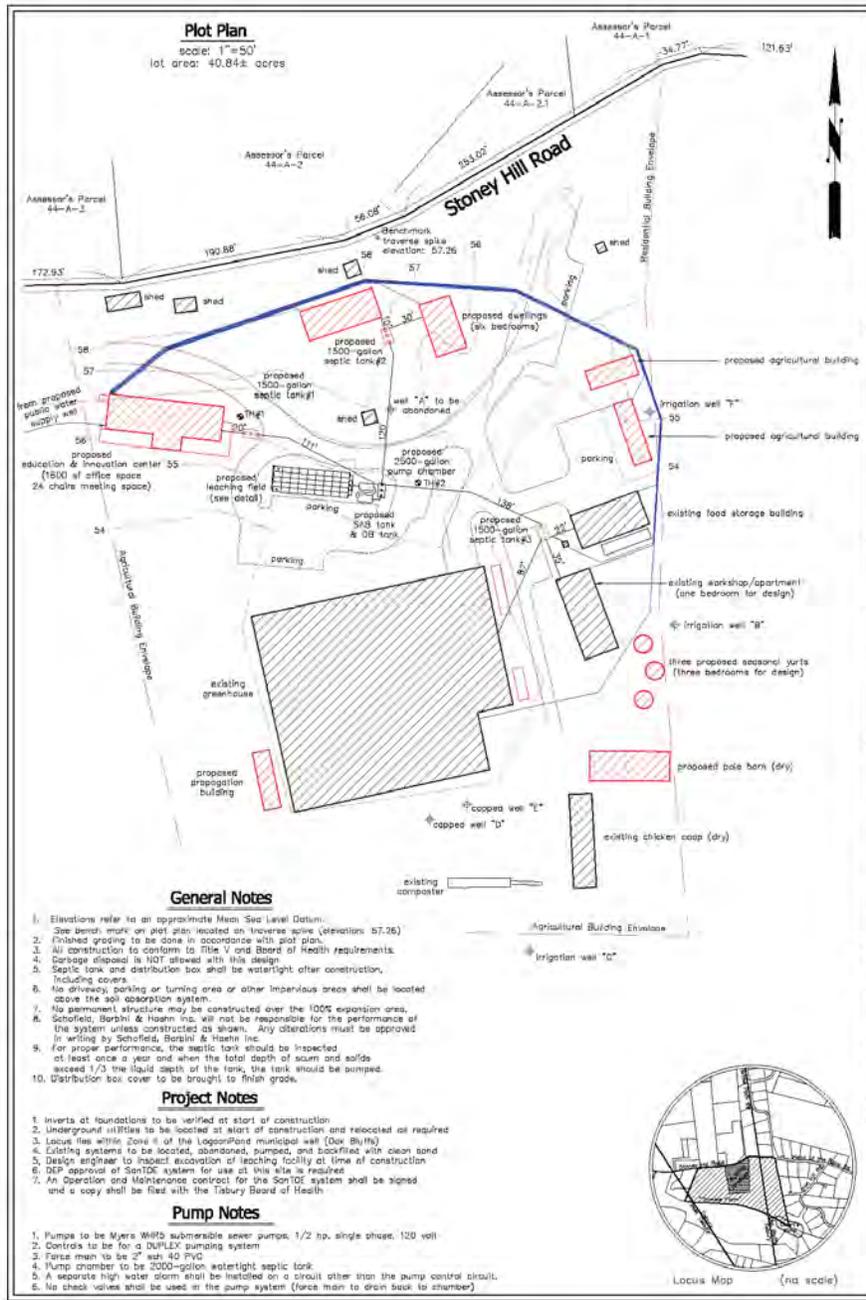
- Wastewater
- Cultural resources
- Stormwater
- Energy
- Traffic
- Economic and social development
- Housing
- Lighting and landscape

Wastewater

- Located in the Lagoon Pond watershed
- Will include a distributed denitrifying septic system (Schofield, Barbini and Hoehn, in collaboration with KleanTu Wastewater Treatment Technologies).
- The farm currently has three 1,000-gallon above-ground liquid petroleum (LP) storage tanks, including two within a protected concrete enclosure. The third tank, which is unprotected, will be relocated to within the enclosure with the other two.
- The farm also has a 165-gallon above-ground diesel tank in a protected enclosure, and two 120-gallon above-ground LP tanks near an existing prop house that are unprotected. The hoop house and 120-gallon tanks will be relocated to the west side of the greenhouse.
- A list of fertilizers, biocides, and other substances that may be used at the site has been provided.

Nitrogen loading

- SBH has calculated that the development envelope including wastewater, runoff, and landscape maintenance (no landscape maintenance proposed) would generate 19.6 kilograms of nitrogen per year, which is 62% more than the allowable load for the property (12.08 kg/year).
- The SBH calculation does not account for other farm activities including the composting program.



Design Data

1. Estimated Hydraulic Loading:
A. Housing
36 bedrooms @ 110 gallons per day per bedroom = 3960 GPD
1000 sq ft @ 1.10 GPD/sq ft = 1100 GPD
Housing Total: 1100 GPD
4 400 sq ft @ 1.10 GPD/sq ft @ 1.10 GPD/sq ft = 1760 GPD
1000 sq ft @ 1.10 GPD/sq ft @ 1.10 GPD/sq ft = 1100 GPD
Total Estimated Hydraulic Flow = 1640 GPD

2. Septic Tank Size:
Required septic tank capacities: 1500/1500/1500 @ 20% = 4500/1500/1500 gallons (min)
Septic tank provided: three tanks at 1500 gallons each

3. Design percolation rate: 2 MP
Soil texture class: I
Loading rate: 0.74 GPD/SF

4. Leaching Area:
Total leaching area provided: 1381 SF

5. Maximum Allowable Loading:
1381 SF x 1.67 (chamber general permits) x 0.74 GPD/SF = 1681 GPD
Actual hydraulic loading: 1640 GPD

Schedule of Elevations

Top of foundation:	see architectural	finished grade	finished grade
Basement floor:	see architectural	41.42 41.43	41.42 41.43
Inverts at foundation:	53.50 54.80 56.00 (see Note 1)	56.00 (see above)	55.5
Invert at septic tank inlet:	53.00 54.00 56.50	56.00 57.00 53.3	55.5
Invert at septic tank outlet:	52.75 53.75 56.25	56.00 57.00 53.3	56.8
Invert at pump chamber inlet:	49.75		50.00
Invert at pump chamber outlet:	49.50	55.5	50.00
			Elevation of field bottom:

Deep Test Pit 1 (Surface Elevation: 56.04)

Depth	Horiz.	Soil Description	Depth	Horiz.	Soil Description
0'-8"	fill	Sandy LDM	0'-12"	A	Silt LDM
8'-15"	A	Silt LDM with Clay	12'-38"	B	Silt LDM
15'-46"	B	Silt LDM with Clay	38'-126"	C	m-c SAND with Gravel and Stones
46'-156"	C	m-c SAND with Gravel			

Percolation Test Data

test #	date	top of 12" of water 18" at 20"	top of 12" of water elevation (msl)	rate
1	4/22/21	45"	52.0±	<2
2	4/22/21	42"	52.5±	<2

Groundwater was not encountered at a depth of 156" (elevation: 43.0±)
Groundwater was not encountered at a depth of 1260" (elevation: 45.5±)

Legend

---○--- Denotes proposed contour
D.O. = F.R.X. Denotes proposed finished grade
XX Denotes existing contour
S Denotes test hole location
P.V.C. Denotes polyvinyl chloride pipe, Sch. 40, unless noted
Denotes catch basin
E.H.C.L. Denotes extra heavy cast iron

Proposed Sewage Disposal System
To Serve Multiple Waste Water Generating Uses
80 & 104 Stoney Hill Road
Assessor Parcels 45-A-1 & 45-A-1.1
Tisbury, Massachusetts

Applicant: The Island Grown Initiative, Ltd. Phone: (508) 693-2788
c/o Schofield, Barbin, & Hoehn, Inc. PO Box 339
Vineyard Haven, MA 02568

Date: October 11, 2021
designed by: CPA drawn by: CPA checked by: JRL
Schofield, Barbin & Hoehn, Inc. Land Surveying, Civil Engineering
12 Surveyor's Lane, Box 339
Vineyard Haven, Mass. 02568
508-693-2781
www.sbhinc.net

Nitrogen: Mitigation

- To mitigate the overage (7.52 kg/year) for the development envelope, the applicant has proposed installing 1-2 residential NitROE Innovative/Alternative (I/A) systems elsewhere in the Lagoon Pond watershed, and plans to work with the Tisbury Board of Health and others to identify a location.
- This would likely require servicing more than one property.
- Should include testing and a management/monitoring plan.

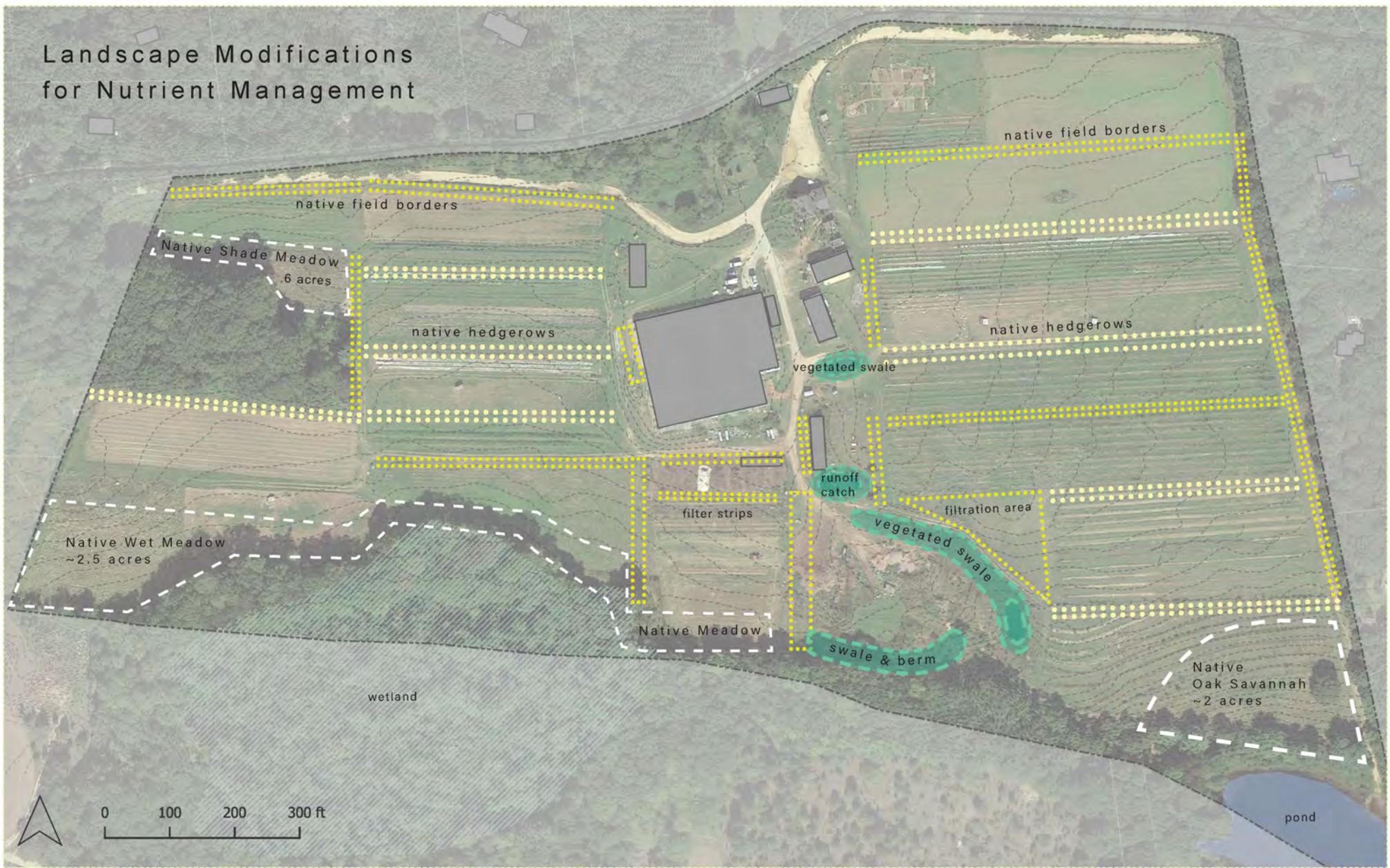
Nitrogen: Composting

805.95 kg/year (total N content of compost produced onsite)

169 kg/year (soluble N – based on composting test results)

- *Applicant has stated that most or all N applied on the farm is taken up by the plants, with minimal potential for leaching or runoff.*
- *IGI follows Mass Dept of Agriculture regulations and UMass Nutrient Guide for best practices.*
- *Landscape management can further reduce N leaching and runoff.*
- *All compost would be contained with liners, etc.*

Landscape Modifications for Nutrient Management



MVC Water Quality Policy

3.5 Agricultural DRI Projects

“...agricultural DRI Projects are not required to meet nitrogen-loading limits if sufficient documentation is provided to assure that environmental impacts are minimized.”

Documentation:

- *USDA Natural Resource Conservation Service farm plan addressing nutrient management.*
- *Commitment to become certified organic, or use specified nitrogen reduction and water quality protection techniques.*

Cultural resources

The Public Archaeology Lab (PAL) issued a Cultural Resources Due Diligence Assessment for a 1.3-acre portion of the property in March 2020, which included the following conclusions and recommendations:

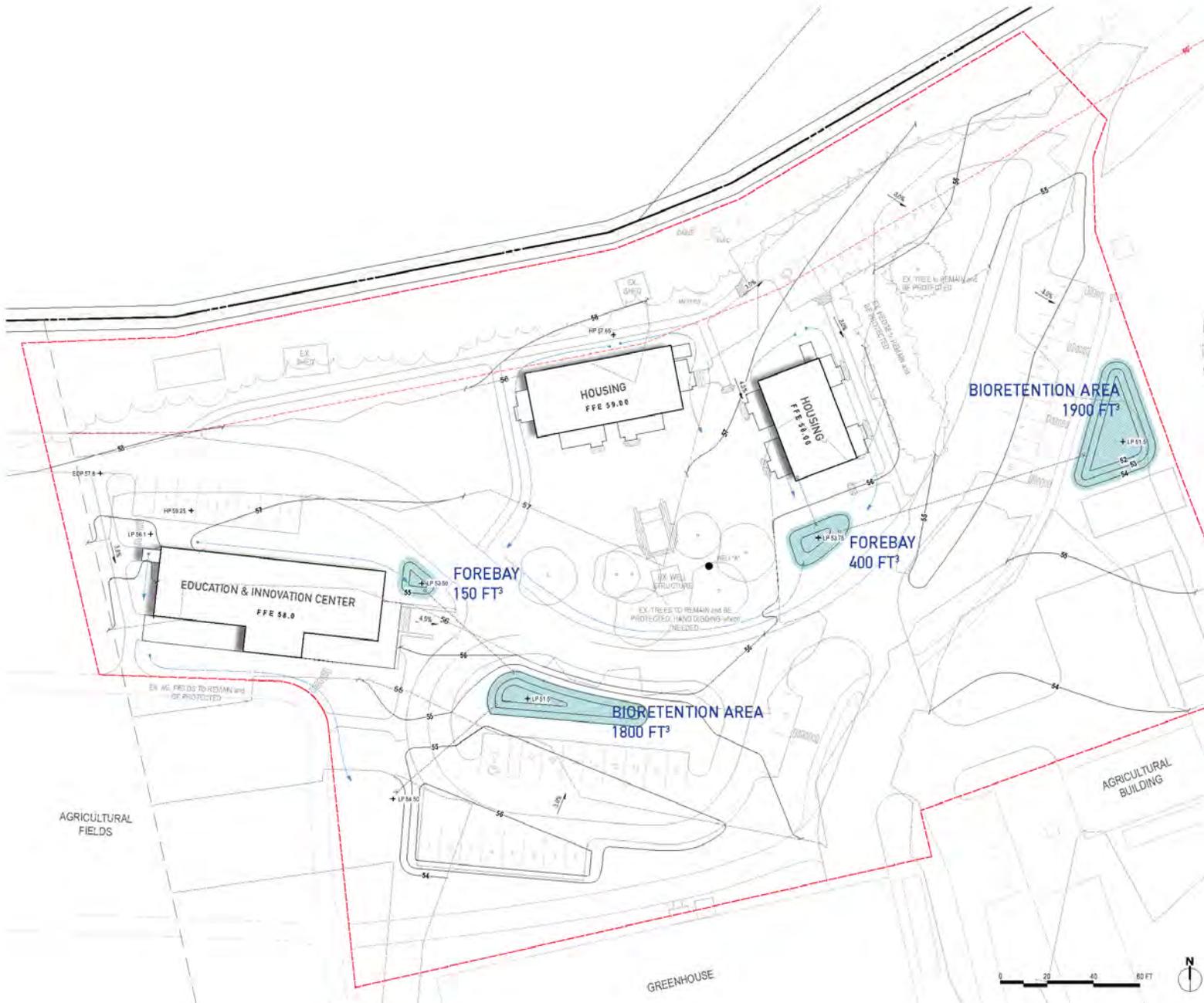
- A pre-contact archaeological site known as Site C, recorded in 1978 by the MV Historical Society, is within or immediately adjacent to the project area, although the actual site boundaries are unknown.
- Any archaeological deposits in the area would likely provide important new information about Native American land use and activity.
- The project should be designed to avoid ground disturbance as much as possible (efforts could include constructing buildings on slabs, raising the ground surface for access and parking, installing only above-ground utilities, etc.).

Cultural resources

- PAL conducted an intensive archaeological survey in December 2021, which revealed both ancient and post-contact cultural materials. As a result, PAL recommended the following:
 - Machine excavation should be conducted in the area of the proposed housing units, which may necessitate additional consultation and investigation.
 - No other investigations are required for the project site.
- A report on the machine excavation is expected sometime in January, after which MHC will issue a final response within 30 days.

Stormwater

- The applicant has stated that hardscape will include reclaimed stone and untreated wood that has a minimal energy footprint.
- A stormwater management summary prepared by SBH and Whole Systems Design Collaborative indicates that runoff will be handled by two bio-retention areas capable of handling at least a 25-year storm, along with two forebays (small pools) that would help filter the runoff and handle most smaller storm events.



STORM WATER MANAGEMENT SUMMARY

The proposed stormwater management strategy will capture runoff from all new impervious surfaces in a series of bio-retention areas that allow for infiltration. The bio-retention areas would remain dry most of the time except for during large storm events wherein the stormwater is anticipated to fully infiltrate within 72 hours or less. The retention areas are planted with native wet-loving grasses and forbes.

The plan currently includes 9,025 SF of impervious surface that has been divided into two management areas: the Education & Innovation Center (EIC) area with 4,685 SF of impervious surface and the Housing (HO) area with 4,340 SF of impervious surface. A 25-year storm event at Island Grown Farm would generate approximately 5.75" of rain over a 24-hour period based on current rainfall intensity curves. During such an event, the EIC area would generate approximately 1800 FT³ of stormwater and the HO area would generate approximately 1680 FT³ of stormwater over a 24-hour period.

Based on test pit data, the A and B soil horizons on site are silt loams with clay that are not ideal for good infiltration rates. At 3-4 FT below horizons A&B, soil horizon C (the subsoil) is a sand-gravel mix that is valued (by state and federal standards) as a soil type with the highest possible infiltration rate at 8.27 in per hour.

The bio-retention areas are designed to a depth of 3-4 FT in order to reach soil horizon C with the high infiltration rate. Graded to these depths, each retention area has enough volume to accommodate the amount of stormwater generated during a 25-year storm event without the added benefit of infiltration (which will occur at a high rate) during the event taken into account. Each management area includes a small forebay that drains into the larger bio-retention areas. The forebay is intended help settle out solids and potential pollutants while also handling most smaller storm events.

Energy

- The new buildings will be all-electric, with rooftop solar panels on the IEC and one of the housing structures that will potentially allow the buildings to be net energy producers (negative energy footprint).
- Electric vehicle charging stations are proposed at seven locations on the property, including four adjacent to the housing units.

Energy

- The applicant is working with Eversource to install a new electric connection from Edgartown-Vineyard Haven Road (at Eversource's expense), which will likely serve other properties along Head of the Pond Road to the east that are currently served by a private connection.
- The new connection will also enable the proposed onsite solar generation.

Traffic and transportation

- Access to the farm will be primarily from Head of the Pond Road to the east (near Island Alpaca), with secondary access via Stoney Hill Road to the west.
- The applicant does not expect a significant increase in traffic, in part because the reduction in trips from the current IGI offices in West Tisbury would help offset any new trips created by the expansion. (The total number of employees onsite will increase from 15 to 25.)
- Based on a conservative evaluation of the projected trip generation, the project is expected to generate about 47 daily trips. This assumes there will be several employees already living onsite, reducing the total number of trips per day.

Traffic and transportation

- Given the location and position of access to the site, the traffic volumes should not present an issue on the main roads of entry.
- Sight distances at the study area intersection of Head of the Pond Road and Edgartown-Vineyard Haven Road are adequate.
- The EIC would be open from 8-6, Monday-Saturday, with occasional weekend and evening workshops.
- The farm is about 0.75 miles from the shared-use path and nearest VTA stop on Edgartown-Vineyard Haven Road.

Traffic and transportation

- The applicant estimates there is currently room for about 26 cars, although the spaces are unmarked.
- The plans call for 57 marked spaces, distributed in six different areas with trees providing shade in most cases. The applicant has stated that the 57 spaces exceed the estimated need for 49 spaces, as well as the required number of spaces under Tisbury Zoning Bylaw 07.07.



LEGEND

- PROPERTY BUILDING ENVELOPE
- PROPERTY SETBACK 50'
- EXISTING 1' CONTOUR
- PROPERTY LINE
- EXISTING TREELINE
- EXISTING HEDGE
- EXISTING UTILITIES
- PROPOSED INFRASTRUCTURE
- EXISTING INFRASTRUCTURE

HARDSCAPE LEGEND

- HARDENED SAND and/or COMPACTED GRAVEL
- SECONDARY/FARM ACCESS ROADS
- STONE DUST PATHWAY
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- STONE PAVERS
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- FENCE GATES

LANDSCAPE AREAS

- INTENSIVE USE GARDEN AREAS
- KITCHEN GARDENS
- OPEN LAWN and/or GROUNDCOVER
- NATIVE MEADOW

PLANTING LEGEND

- EXISTING TREES
- LARGE CANOPY to SMALL SHADE TREES
- SMALL TREES to UNDERSTORY SHRUBS
- HERBACEOUS PERENNIALS



ISLAND GROWN FARM PARKING SUMMARY

EDUCATION & INNOVATION CENTER	# PEOPLE	RATIO	TOTAL # SPOTS	NOTES
OFFICE STAFF (DEDICATED)	8	1:1	8	Daily Full Time Office Staff
OFFICE STAFF (FLOATERS)	5	1:1.5	4	Part Time Office Staff
SHORT TERM (VISITORS)	10	1:1	10	Workshop Attendees & CSA Pickup
COMMUNITY GARDEN	5	1:1	5	
SUBTOTAL:			27	

HOUSING	# PEOPLE	RATIO	TOTAL # SPOTS	NOTES
LONG TERM (RESIDENTS)	8	1:1	8	
SHORT TERM (VISITORS)	2	1:1	2	
SUBTOTAL:			10	

FARM	# PEOPLE	RATIO	TOTAL # SPOTS	NOTES
FARM STAFF (DEDICATED)	2	1:1	2	Matthew, Taz
FARM STAFF (FLOATERS)	5	1:1.5	4	
FARM VEHICLES	1	1:1	1	Farm Truck
DEDICATED VEHICLES	2	1:1	2	Mobile Market & Refrigerated Van
SHORT TERM (VISITORS)	4	1:1.5	3	Volunteers, Dropoff/Deliveries
SUBTOTAL:			12	

ESTIMATED PARKING SPACES REQUIRED: 49

57 SPACES ON CURRENT MASTER PLAN

NOTES:

1. Plan for bus dropoff/pickup and turnaround to accommodate school field trips at the E&IC (45' outside turning radius).
2. Plan for event overflow parking; 35-50 spots (up to 8,000 square feet).
3. Tisbury Zoning Bylaw Parking Regulations state that 2 spots must be provided for each dwelling unit (4x2 = 8 total).
4. Tisbury Zoning Bylaw Parking Regulations state that offices must provide 1 spot for every 150 square feet (3200 sq.ft./150 = 21 total).
5. Tisbury Zoning Bylaw Parking Regulations state that assemblages must provide 1 spot for every 3 persons permitted occupancy. (75/3 = 25 total)



Economic and social development

- The project aims to expand and enhance the current IGI offerings, which include educational programs and community events, including the Mobile Market, prepared meals programs, adult education workshops, and job-readiness programs for people with disabilities.
- The new facilities will allow IGI to extend educational programs to other groups such as Camp Jabberwocky and the MV Community Services Family Center, which are unable to participate due to the conditions in the greenhouse.
- The applicant expects a total of 25 employees at the farm, including 15 existing and 10 employees who will relocate from the IGI offices in West Tisbury

Housing

- Workforce housing would be year-round for IGI staff members and farmworkers, including families, and occasionally for interns or seasonal staff if a unit is available.
- Applicant is willing to apply an income restriction of up to 150% median family income for the units.
 - Unit A: two bedrooms, up to three tenants, 896 ft²
 - Unit B: two bedrooms, up to three tenants, 896 ft²
 - Unit C: one bedroom, up to two tenants, 644 ft²
 - Unit D: one bedroom, up to two tenants, 644 ft²

Total capacity: 10 tenants

Lighting and landscape

Preliminary landscape plan features native species.

Goals:

- Increase pollinator habitat
- Build soil
- Reduce erosion
- Provide learning opportunities
- Seasonal food and herbal medicine for onsite use



PLANTING PALETTE

A diverse selection of species are chosen with several primary goals: to showcase native species, provide pollinator habitat, build soil while increasing ecological resilience, reduce erosion, act as seasonal food and medicine sources for on-site uses, and provide highly tangible learning opportunities for visitors and staff on the farm.

The species shown here are samples from our preliminary plant list. When composed on-site, they will contribute to the refined yet low-key pastoral character we aim to achieve.



ISLAND GROWN FARM
 MARTHA'S VINEYARD COMMISSION
 OCTOBER 19, 2021

LANDSCAPE &
 PLANTING
 PLAN 12



KITCHEN GARDEN



INTENSIVE GARDENS



Prunella serotina
SMALL TREE and UNDERSTORY SHRUBS



Prunella serotina



Stipa sp.



Prunella serotina



Prunella serotina



Prunella serotina



Prunella serotina



Quercus alba
LARGE CANOPY and OVERSTORY TREES



Quercus alba



Acer rubrum



HERBACEOUS PERENNIALS and NATIVE MEADOW





STONE DUST PATHWAYS



PARKING AREAS



RECLAIMED GRANITE WALLS



RECLAIMED GRANITE STONES AND STEPS



WOODEN PRIVACY FENCING



WIRE MESH FENCING AND GATE



ISLAND GROWN FARM
MARTHA'S VINEYARD COMMISSION
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HARDSCAPE
PALETTE