Cape Cod Commission
3225 Main Street
Barnstable, MA 02630

July 16, 2025

Subject: Supplemental Application Materials for Cape Cod Country Club Solar (ASD Cape Cod Solar MA)

Dear Cape Cod Commission,

Please find below a summary of the supplemental materials submitted in support of the Cape Cod Country Club Solar Projects. These updates reflect coordination with the Town of Falmouth, CCC staff, and PSE's project team, and are intended to further clarify and strengthen the project record.

Land Donation Structure
Exhibit Updated: 12.4
Revision date: April 9, 2025

This exhibit has been revised to include the finalized language for the proposed land donation, as developed in consultation with the Town of Falmouth's legal counsel, Cape Cod Commission staff, and PureSky Energy. The updated exhibit also includes the Land Court–approved plan showing the proposed donation boundaries.

Sight Distance Analysis – East Array
Exhibit Updated: 10.2
Revision date: March 18, 2025

The graphic associated with the East Array has been revised. The dashed blue sight lines have been corrected to reflect the accurate 15-foot offset measurement from the driveway, ensuring proper representation of sight distance compliance.

Nitrogen Loading Analysis
Exhibit Updated: 3.2
Revision date: March 17, 2025

The nitrogen loading analysis has been updated based on the most recent site survey and the refined project scope. Changes include:

- Updated total project site area
- Revised existing and proposed impervious surface areas

The revised analysis confirms that the project continues to result in an estimated 84% reduction in nitrogen loading compared to existing conditions.

Natural Resources Inventory (NRI) and Restoration Plan Updates
Exhibits Updated: 4.1 and 4.5
Revision dates: May 20, 2025, and May 19, 2025, respectively

- Exhibit 4.5 – *Habitat Enhancements and Monitoring*:
  Additions include installation and educational signage for:
  - Turtle nesting areas
  - Osprey nesting platforms

    - Bat boxes
- Exhibit 4.1 – *Time-of-Year Restrictions*:
  The exhibit has been updated to reflect species-specific timing restrictions for construction and land management activities to protect sensitive habitats.

Operations and Maintenance
Exhibit Updated: 7.1
Revision date: May 18, 2025

PureSky Energy will be responsible for all operations and maintenance of the photovoltaic (PV) and battery energy storage system (BESS), as well as vegetation management within the fenced area. In addition, PureSky will mow and maintain the open space where the future community sledding hill is planned. These commitments have been incorporated into the revised Operations and Maintenance Plan.

Energy Storage System Risk Mitigation Strategy
Exhibit Updated: 8.1
Revision date: July 3, 2025

The exhibit has been updated to clarify emergency response procedures for the BESS. In the event of a fire, the local fire department will access water via existing nearby fire hydrants and/or by bringing portable water tanks as part of their standard response protocol. These provisions are now reflected in the updated exhibit.

Invasive Species Management Plan
Standalone Document – July 2, 2025

In response to staff comments dated June 13, 2025, a standalone Invasive Species Management Plan has been submitted. This plan outlines:

- Preventative measures for equipment cleaning and material sourcing
- Contractor responsibilities and field protocols
- Best management practices (BMPs) and disposal procedures in the event of invasive species detection

The plan is intended to ensure no invasive species are introduced or spread during construction or post-construction management activities.

Compliance with Objective CH2 – Archaeological Resources

We acknowledge the importance of accurately identifying and protecting sensitive archaeological areas in compliance with Objective CH2 of the RPP. The Applicant is currently coordinating with SWCA Environmental Consultants to develop a formal Unanticipated Discoveries Plan (UDP). Once a draft plan is prepared, we will provide it to Commission staff for review to ensure the proposed scope and procedures are acceptable. The applicant is fully committed to implementing a staff-approved plan prior to the start of construction activities, consistent with the requirements of Objective CH2 and best practices for protecting archaeological resources.

Compliance with Objective WR1 – Water Resource Protection

We understand that compliance with Objective WR1 requires adherence to the Methods outlined in the Water Resources Technical Bulletin, particularly as the project site is mapped within multiple water resource protection areas.

To address these requirements, the project has been revised to include the following protective measures:

- Secondary containment will be installed around each BESS enclosure. The system will consist of an underground containment trench (similar in form to a shallow moat), covered with a removable metal grate to allow access and protection.
- A preliminary design for this secondary containment system has been included in the supplemental memo submission.
- Each containment area is sized to hold 110% of the total hazardous liquid volume per container, which includes:
    - Ethylene glycol, coolant: 52.8 gallons
    - R-513A, refrigerant: 0.264 gallons
    - Lead-acid electrolyte: 0.079 gallons
    - Total per container: 53.14 gallons
    - 110% secondary containment volume: 58.3 gallons
- With 7 BESS containers across the project, the total hazardous material volume is approximately 372 gallons, and the required 110% secondary containment capacity has been calculated at 409.2 gallons. The containment infrastructure has been designed to provide 77 gallons of containment for each BESS container which equates to 539 gallons secondary containment capacity across the project.

In addition, each equipment pad will be covered with a metal roof structure. The roof is intended to:

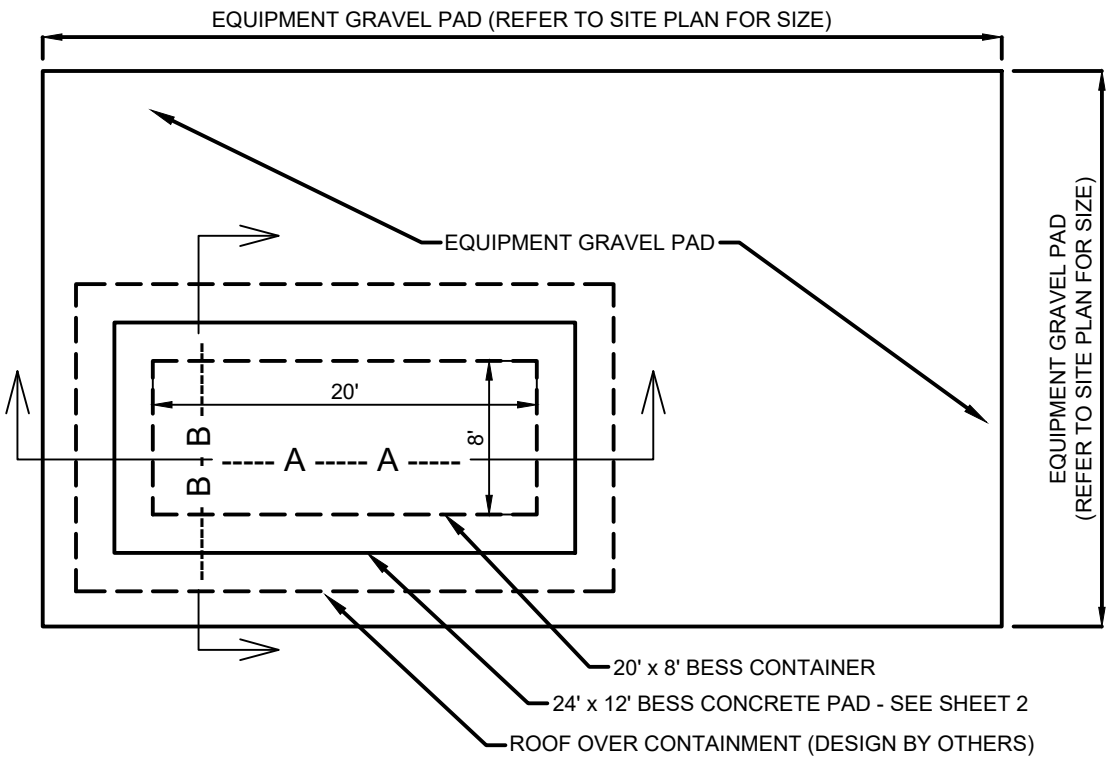
- Prevent stormwater from entering the containment area
- Reduce the likelihood of rainwater mobilizing spilled material

While this feature improves environmental controls, the stormwater management calculations remain unchanged, as the entire equipment area—including gravel space between pads—was conservatively modeled as impervious in the stormwater report.

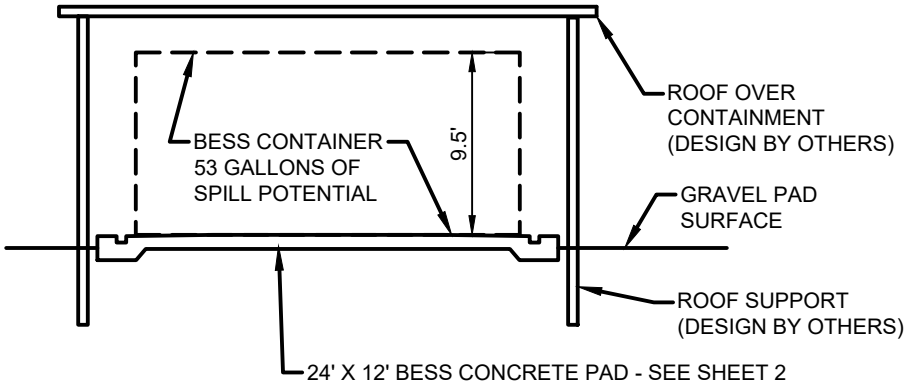
In the event of a release, a licensed hazardous waste disposal contractor will be retained to test, remove, transport, and dispose of any affected materials in accordance with all applicable federal and state hazardous waste regulations.

Sincerely,

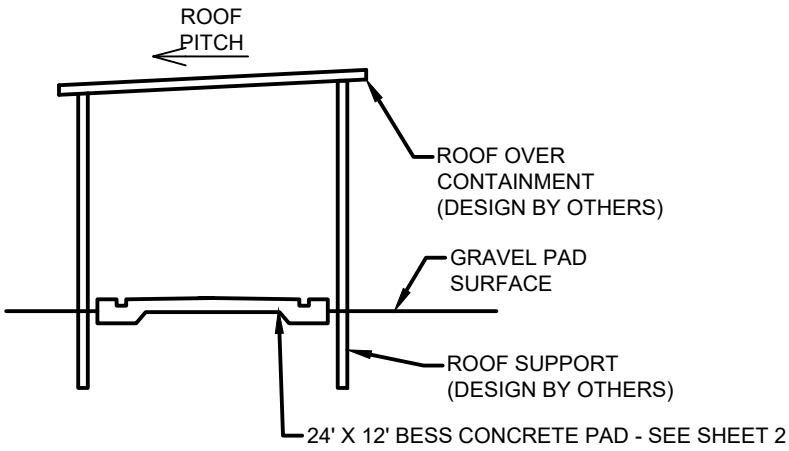
Manjoor Vahora
Project Developer
Puresky Energy
302-332-6376
Manjoor.vahora@pureskyenergy.com



CONCRETE PAD PLAN DETAIL



CONCRETE PAD SECTION A-A



CONCRETE PAD SECTION B-B

0 5 10 20

SCALE: 1" = 10'

DRAWING TITLE:
GRAPHIC: CONTAINER PAD
WITH PERIMETER CONTAINMENT

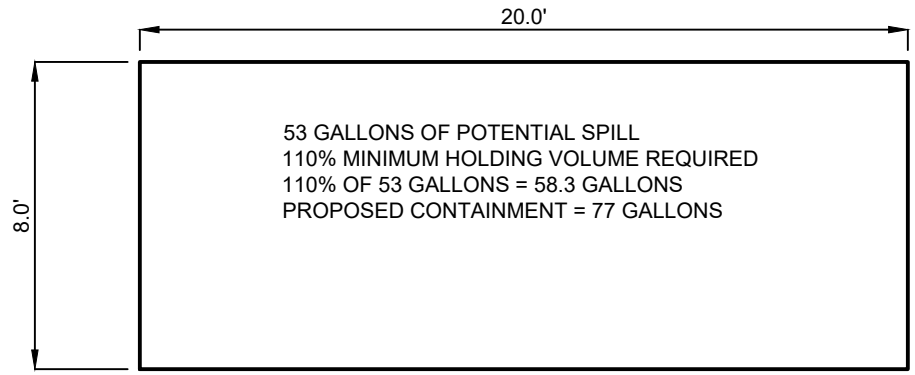
SHEET NO.: 1 OF 2 | DATE: JULY 16, 2025

DRAWN BY: RLR | CHECKED BY: RLR

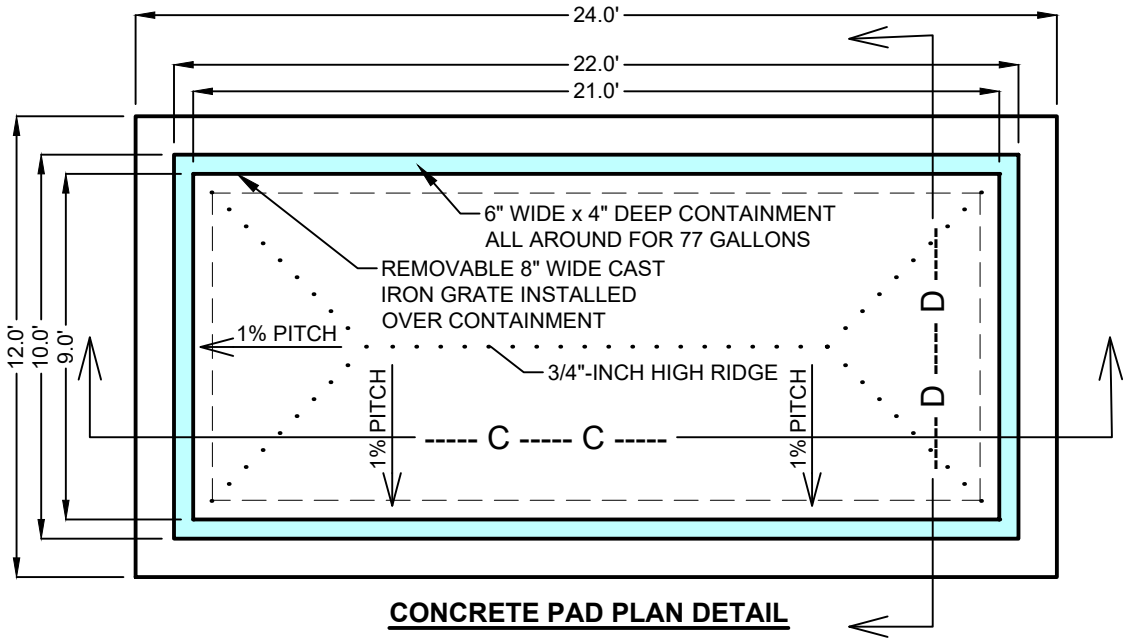
PROJECT:
41 & 48 THEATRE DRIVE & 0 BOXBERRY HILL ROAD
EAST FALMOUTH, MASSACHUSETTS

CAPE & ISLANDS ENGINEERING
508.477.7272 PHONE 508.477.9072 FAX
SUMMERFIELD PARK - 800 FALMOUTH ROAD - SUITE 301C - MASHPEE, MA 02649

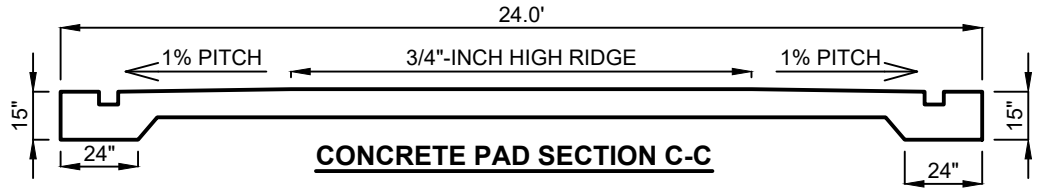
HAZARDOUS PAD CONTAINMENT



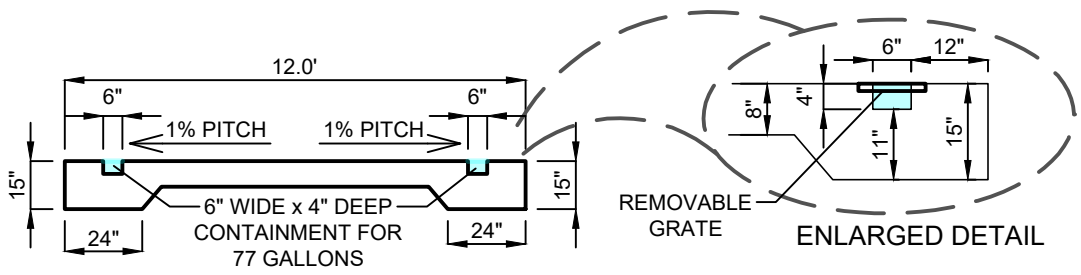
CONTAINER OVERALL FOOTPRINT



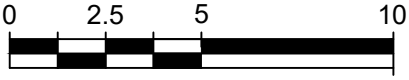
CONCRETE PAD PLAN DETAIL



CONCRETE PAD SECTION C-C



CONCRETE PAD SECTION D-D



SCALE: 1" = 5'

DRAWING TITLE:
GRAPHIC: CONTAINER PAD
WITH PERIMETER CONTAINMENT

SHEET NO.: 2 OF 2 | DATE: JULY 16, 2025

DRAWN BY: RLR | CHECKED BY: RLR

HAZARDOUS PAD CONTAINMENT

PROJECT:
41 & 48 THEATRE DRIVE & 0 BOXBERRY HILL ROAD
EAST FALMOUTH, MASSACHUSETTS

CAPE & ISLANDS ENGINEERING
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SUMMERFIELD PARK - 800 FALMOUTH ROAD - SUITE 301C - MASHPEE, MA 02649

Invasive Species Management Plan

Per the June 6, 2025 Cape Cod Commission Staff Report: *Staff recommends the Applicant develop a more detailed invasive species management plan prior to construction to share with contractors working on the site to ensure preventive measures are followed and any invasive species are properly identified and handled.*

The Contractor shall ensure that no invasive plant species, as defined and listed by the Massachusetts Invasive Plant Advisory Group, are introduced or moved around the site by construction activities either by improperly cleaned construction equipment or importation of infected materials such as soils, plant material, seed, or erosion control barriers.

All equipment shall be certified clean by contractors prior to mobilization to the work site. Clean is defined as being free of plant matter (stems, flowers, roots, etc), soil, or other deleterious materials prior to being brought to the project site.

Should invasive species be documented on-site during construction, corrective Best Management Practices (BMPs) measure shall be made by the Contractor as directed by an environmental monitor and through consultation with Cape Cod Commission Staff. Corrective action should be tailored to the invasive species present and size of the infestation in consideration of surrounding conditions. BMP's, may include, but are not limited to selective cutting and/or hand removal of the invasive species and/or herbicide application by a Licensed Pest Applicator in accordance with industry standards. Invasive vegetative debris removed by hand shall be bagged for proper disposal off-site at the Bourne Integrated Solid Waste Management Facility**.**

The Contractor shall be solely responsible for ensuring that invasive species are not introduced or moved around the site by construction activities and for all corrective measures required for as long as necessary to eliminate the introduced invasive plant species and prevent re-establishment of same.

Any equipment that has been placed or used within areas containing invasive species within the project site shall be cleaned of plant matter (stems, flowers, roots, etc), soil, or other deleterious materials at the site of the invasive species prior to being moved to other areas on the project site to prevent the spread of invasive species from one area to another.

Invasive species management shall be adaptive to the invasive species present, size of the infestation, and management response; in consideration of surrounding conditions to avoid adverse effects on naturalized habitat areas.

CAPE & ISLANDS ENGINEERING

May 5, 2022
Revised March 17, 2025

PureSky Development, Inc.
518 17th St., Suite 950
Denver, CO 80202

RE: 41, 42, 48, 51 Theater Drive & 0 Boxberry Hill Road – Nitrogen Loading Analysis

Dear AMP:

Cape & Islands Engineering, Inc. provides this analysis of Development Nitrogen Loading Impact for your proposed Ground-Mounted Solar Facility development at the above reference site. The calculations presented are based on the Cape Cod Commission Water Resources Technical Bulletin as part of the Regional Policy Plan.

The project intends to re-develop the Cape Cod Country Club golf course site with a new ground-mounted solar facility on 137 acres of land. As required for the Cape Cod Commission (a regional land planning agency) review process, the project has to conform with their established regulations. One of the requirements under this agency is to regulate nitrogen loading impacts from developments. Nitrogen content is introduced into the environment from several natural and development related sources. The intended development meets the Nitrogen Loading limits for this project in conformance with established regulation WR1 for nitrogen load below 5 mg/L and an estimated final nitrogen load of **0.05 mg/L**.

A typical development has the potential to introduce nitrogen by several means in addition to nitrogen content already deposited by natural processes. Project dependent activities that introduce nitrogen is mainly generated from surface runoff off impervious areas (i.e. roofs, parking and driveways), on-site sanitary wastewater discharge, and property fertilizer application. The Cape Cod Commission provides guidance for developers to analyze Nitrogen Loading for their projects. The calculations presented herein are based on such guidance.

The Technical Bulletin refers to the Massachusetts Estuaries Project (MEP) to identified impaired or stressed coastal embayment. The subject property is located within the Great Pond contributing area and the MEP study concluded that the Great Pond is one of the impaired embayment due to nitrogen levels. A target threshold for nitrogen concentration has been established as *0.40 mg/L (ppm)* and a total maximum daily load (TMDL) threshold as *23.09 kg/day*. The thresholds from the MEP study are levels that would allow the embayment to meet state water quality standards. As an impaired embayment the development within the contributing basin is required to not increase nitrogen load or provide an acceptable offset for increased nitrogen loading.

The existing golf course development at the site generates a nitrogen concentration of 2.90 mg/L (ppm) with a total nitrogen load of 801 kg/year. Currently, the main source of nitrogen is the use of fertilizer over approximately 49.6 acres of the golf course producing 735 kg/year of nitrogen load. The nitrogen input from wastewater (890 gpd) and impervious surfaces (158,106 sf. pavement and 10,841 sf. roofs) generates approximately 43 kg/year and 23 kg/year of nitrogen load, respectively. This concentration exceeds the recommended threshold of 0.40 mg/L from the Great Pond MEP study.

The proposed ground-mounted solar facility development provides a drastic reduction in nitrogen loading. The main reduction is due to the elimination of maintained lawn areas and therefore elimination of fertilizer. But there is also the elimination of all wastewater flows from the properties, elimination of all roofed structures and reduction of impervious areas to 101,550 sf. The project produces a nitrogen concentration of 0.05 mg/L (ppm) and 14.4 kg-N/year. This level is far below the recommended MEP levels to improve and restore the water quality of Great Pond.

In recap, the proposed development reduces on-site nitrogen loading impacts below established MEP threshold levels and therefore meets the nitrogen loading related objectives of the Cape Cod Commission Water Resources Technical Bulletin.

Existing Development Nitrogen Load and Concentration calculated as	801 kg/year / 2.90 mg/L
Proposed Development Nitrogen Load and Concentration calculated as	14.4 kg/year / 0.05 mg/L
Nitrogen impact reduction	98%

The enclosed documents include two pages showing the detailed nitrogen loading calculations using the worksheet as provided by the Cape Cod Commission. Please contact us if you have any questions regarding this report and accompanying documents.

Sincerely,

Raul Lizardi-Rivera

Raul Lizardi-Rivera, P.E.,
Director of Engineering



cc: Matthew Terry (Ament Klauer LLP)

Water Resources Nitrogen Loading and Mitigation Worksheet

See Technical Bulletin 91-001 for further details: http://www.capecodcommission.org/regulatory/NitrogenLoadTechbulletin.pdf

Project Nitrogen Load — ***Wastewater*** — ***Proposed development***

1.

Project Title-5 wastewater flows: 0.0 gpd **(a)**
Actual wastewater flows: 0.0 * **(b)**
Average wastewater flows: 0.0 gpd **(a)+(b) ÷2=** **(A)**
* Title-5 flows prescribed by TB91-001 for commercial uses

Place √ in applicable box:

Yes	No	
☐	☑	Will the project be connected to sewer ?
☐	☑	Is project Title-5 wastewater flow 10,000 gpd or greater ?

(If 'Yes', then the project must be reviewed for consistency with Additional Methods under Objective WR1)

Place √ in applicable box and multiply unsewered wastewater flow by applicable conversion factor:

☐	Standard Title-5 System (35-ppm-N)	x	0.048359
☐	DEP-approved I/A System (25-ppm-N)	x	0.034542
☐	DEP-approved I/A System (19-ppm-N)	x	0.026252
☐	Groundwater Discharge (10-ppm-N)	x	0.013817

} Type of system: _____

Wastewater nitrogen load **(Title-5 flows)** = 0.00 kg-N/yr **(B)**

Wastewater nitrogen load **(Actual flows)** = 0.00 kg-N/yr **(C)**

Stormwater Runoff

Town: **FALMOUTH**

Recharge rate for town (inches; for natural areas from Technical Bulletin 91-001): : 21 **(RECH)**

Project site area: 136.900 acres **(D)**
Project site wetland area: 13.092 acres **(E)**
Project site upland area: 123.808 acres **(F)**
Pervious unpaved upland: 121.477 acres **(G)**
0 % using LID — Paved area: 101,550 s.f. **(H)**
Factor may be adjusted for employment of LID → x 1.4158E-04
= 14.3778552 kg-N/yr **(I)**
Roof area: 0 s.f. **(J)**
x 7.0792E-05
= 0.0000 kg-N/yr **(K)**

Fertilizer

Managed turf: 0 s.f.
x 3.4019E-04
= 0.000 kg-N/yr **(L)**

Total Nitrogen Load

Total project nitrogen load **(Title-5 flows)**: 14.3779 kg-N/yr **(M)= (B)+(I)+(K)+(L)**
Total project nitrogen load **(Actual flows)**: 14.3779 kg-N/yr **(N)= (C)+(I)+(K)+(L)**
Nitrogen load **(Average)**: **14.3779** kg-N/yr **(O)= (M)+(N) ÷2**

Nitrogen Loading Concentration

Project nitrogen loading concentration (**Title-5 flows**): **0.05** ppm-N **(P)=** $\frac{\textbf{(M)}}{\textbf{(a)÷723.76 + (G)x(RECH)÷9.7286 + (H)÷10,594 + (K)÷0.75}}$
Project nitrogen loading concentration (**Actual flows**): **0.05** ppm-N **(Q)=** $\frac{\textbf{(N)}}{\textbf{(b)÷723.76 + (G)x(RECH)÷9.7286 + (H)÷10,594 + (K)÷0.75}}$
Project nitrogen loading concentration (**Average**): **0.05** ppm-N **(R)= (P)+(Q) ÷2**

next page -->

Existing (if redevelopment)

Calculate (A') through (P') as w/ (A) through (P):

Title-5 wastewater flows: 889.5 gpd
Actual wastewater flows: 889.5 *
Ave. wastewater flows: 889.5 gpd **(A')**

Place √ in applicable box:

Yes	No	
☐	☑	Is existing development on sewer ? (If 'Yes', then go to line 2.)

☑	Standard Title-5 System
☐	DEP-approved I/A System (commercial)
☐	DEP-approved I/A System (residential)
☐	Wastewater Treatment Facility (GWDP)

43.01 kg-N/yr **(B')**

43.01 kg-N/yr **(C')**
wastewater offsets

Project site area: 136.900 acres **(D)**
Project site wetland area: 13.092 acres **(E)**
Project site upland area: 123.808 acres **(F)**
Pervious unpaved upland: 119.930 acres **(G')**
Paved area (driveways, cart paths + parking): 158,106 s.f. **(H')**
Paving runoff offset: 22.3853 kg-N/yr **(I')**
Roof area (dwellings, clubhouse, pumphouse + accessory): 10,841 s.f. **(J')**
Roof runoff offset: 0.7675 kg-N/yr **(K')**

Managed turf (golf course fairways + rough areas): 2,161,023 s.f.
Fertilizer offset: 735.167 kg-N/yr **(L')**

Existing nitrogen load (Title-5 flows): 801.3348 kg-N/yr **(M')**
Existing nitrogen load (Actual flows): 801.3348 kg-N/yr **(N')**
Nitrogen offset: **801.3348** kg-N/yr **(O')**
601.001

Existing nitrogen loading concentrations:

Title-5 flows: **2.90** ppm-N **(P')**
Actual flows: **2.90** ppm-N **(Q')**
Average: **2.90** ppm-N **(R')**

Resource/ Impact Based Criteria

Marine Water Recharge Areas

	Yes	No	
2.	☑	☐	Is the project in Marine Water Recharge Area (MWRA) with a nitrogen-loading limit OR in a MWRA that discharges to coastal waters with documented impaired water quality** ? *(If 'No', then go to line 3.)*

Name of Marine Water Recharge Area sub-embayment **FALMOUTH GREAT POND** (*from RPP Data Viewer*):

Nitrogen-loading limit** : **0.000** kg-N/yr **(S)**

☐	☑	Does project's nitrogen load **(O)** exceed the existing load **(O')** AND the critical nitrogen load **(S)** ? *(If 'No', then go to line 3.)*

Project nitrogen load to be mitigated: 0.00 kg-N/yr **(T)=** LESSER OF **(O)-(S) x(F)** AND **(O)-(O') x(F)**

x $8,290 /kg/yr

= $ **0** **(U)**

☐ Place √ in box if applicant intends to make this payment **(S)**

(If not checked, then the project must provide an alternative strategy for meeting its nitrogen load requirement pursuant to Objective WR3)

*** When a nitrogen-loading limit has been determined through either a Total Maximum Daily Load (TMDL), a Massachusetts Estuaries Project-accepted technical report, or specified by a Commission-approved comprehensive wastewater management plan pursuant to Objective WR3, or if impaired water quality has been documented for the receiving coastal waters, the nitrogen loading limit shall be 0 kg-N/yr per acre pursuant to Objective WR3.*

Groundwater Quality

	Yes	No	
3.	☐	☑	Does the project's nitrogen loading concentration in groundwater **(R)** exceed the greater of **5 ppm** *or* the existing concentration **(R')** ? ***(If 'Yes' and the project is not located in an Impaired Area, the project will need to provide an alternative strategy for meeting Objective WR1)***

Potential Public Water Supply Areas

	Yes	No	
4.	☑	☐	Is project in a Potential Public Water Supply Area (PPWSA) ? *(If 'No', then go to line 5.)*
	☐	☑	Does the project's nitrogen loading concentration **(R)** exceed the greater of **1 ppm** *or* the existing concentration **(R')** ? ***(If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)***
	☐	☑	Does the project use, treat, generate, store or dispose of hazardous materials in excess of the greater of a) household quantities or b) existing quantities ? ***(If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)***

Wellhead ProtectionAreas

	Yes	No	
5.	☐	☑	Is project in a Wellhead Protection Area (WHPA) ? *(If 'No', then go to line 6.)*
	☐	☐	Does the project's nitrogen loading concentration **(R)** exceed the greater of **5 ppm** *or* the existing concentration **(R')** ? ***(If 'Yes' and the project is not located in an Impaired Area, the project must provide an alternative strategy for meeting Objective WR1)***
	☐	☐	Does the project use, treat, generate, store or dispose of hazardous materials in excess of the greater of a) household quantities or b) existing quantities ? ***(If 'Yes', the project must provide an alternative strategy for meeting Objective WR1)***

Fresh Water Recharge Areas

	Yes	No	
6.	☑	☐	Is project wastewater disposed of within 300 feet of a stream or fresh surface water body? *(If 'No', then go to line 7.)*
	☑	☐	Is the project located in a freshwater recharge area (FWRA) hydraulically upgradient of a stream or fresh surface water body? ***(If 'Yes', the project must provide an alternative strategy for meeting Objective WR2)***

Other Potential Impacts

	Yes	No	
7.	☑	☐	Will the project withdraw more than 20,000 gallons of water per day ? ***(If 'Yes', then the project must provide documentation demonstrating that there will not be significant impacts to water levels, surface waters and wetlands)***

8. ***The project must demonstrate compliance with Objective WR4, including use of Low Impact Development to mitigate impacts of stormwater runoff and O & M plans for maintaining stormwater infrastructure and landscaping.***

May 20, 2025

Email (manjoor.vahora@pureskyenergy.com)

Mr. Manjoor Vahora
ASD Cape Cod Holdings LLC
518 17th Street, Suite 950
Denver, CO 80202

Re: Natural Resources Inventory [LEC File #: CIE\20-251.01]
Proposed Ground-Mounted Solar Photovoltaic System
Theatre Drive and Boxberry Hill Road
Falmouth, Massachusetts

Dear Mr. Vahora:

On behalf of the Applicant, ASD Cape Cod Holdings LLC, LEC Environmental Consultants, Inc., (LEC) has prepared this Natural Resources Inventory (NRI) Report for the proposed ground-mounted solar photovoltaic system on the 136.9± acre Cape Cod Country Club properties in Falmouth. Proposed project details are depicted on the site plan set entitled *Ground-Mounted Solar Photovoltaic System – 41 & 48 Theatre Drive & 0 Boxberry Hill Road, Falmouth, Massachusetts,* prepared by Cape & Islands Engineering, Inc. (14 sheets) and supporting plans included within the DRI Application.

This NRI Report has been prepared in accordance with the Cape Cod Commission's (CCC) *Wildlife and Plant Habitat Technical Bulletin* (effective February 22, 2019), specifically documenting existing habitat cover types and wildlife habitat within and proximate to the project footprint. In evaluating existing wildlife habitat, LEC identified the existing dominant vegetative communities, topography, hydrology, and soil characteristics to ascertain potential species utilization, thus complementing direct wildlife observations. The following also provides a development impact analysis, and reviews proposed mitigating measures designed to protect and enhance wildlife and plant habitat.

Methodology

LEC (Brian Madden) conducted site evaluations on the following days:

- March 22, 2021 (Preliminary Site Reconnaissance)
- April 2, 2021 (Vernal Pool Assessment)
- May 28, 2021, between 5:30 a.m. and 10:30 a.m. (Dawn NRI Evaluation)
- June 7, 2021, between 5:00 p.m. and 8:30 p.m. (Dusk NRI Evaluation)
- March 25, 2022, April 5, 2022, and May 11, 2022 (Supplemental Follow-ups)
- November 3, 2022 / February 20, 2025 (Specimen Tree Evaluation)

- April 26, 2024 (Supplemental Follow-up)

The May 28, 2021 and June 7, 2021 site evaluations were conducted within one hour of sunset and sunrise respectively, to maximize wildlife habitat observations and target times when certain species are typically more active. The NRI site evaluations were conducted utilizing the guidelines set forth in the *Wildlife and Plant Habitat Technical Bulletin*. The Vernal Pool assessments were conducted implementing scientifically accepted professional practices and standards in accordance with the *Massachusetts Division of Fisheries and Wildlife Guidelines for Certification of Vernal Pool Habitat* (March 2009, "NHESP Certification Guidelines").

Pertinent reference materials were also reviewed in conjunction with the site evaluations, including but not limited to, USGS Topographic maps, FEMA Flood Insurance Rate maps, USDA Natural Resources Conservation Service (NRCS) Web Soil Survey, MassGIS Orthoimagery and data layers, 15th Edition of the *Massachusetts Natural Heritage Atlas* (effective August 1, 2021), BioMap (November 2022), 2015 Massachusetts State Wildlife Action Plan (SWAP), Falmouth's *Habitat of Potential Regional or Statewide Importance* map, District of Critical Planning Concern (DCPC) mapping, MassAudubon's Important Bird Areas (IBAs), and CCC GIS/Natural Areas Placetype mapping.

During the site evaluations, LEC personnel canvassed the site to document habitat cover types present, while noting any unique habitat features, actual wildlife habitat utilization, and evidence of the presence of wildlife, including avian vocalizations and wildlife signs (calls/sounds, tracks, scat, burrows, browse marks, nests, feathers, bone fragments, etc.); however, it is important to note that limited evaluations such as this cannot comprehensively document all species utilizing the site. Representative photographs are included **(Attachment A)**.

LEC has also conducted multiple site evaluations in late summer/fall of 2020 associated with demarcating protectable Wetland Resource Areas on-site and review of the Abbreviated Notice of Resource Area Delineation (ANRAD) to confirm wetland boundaries.

Existing Conditions

The 136.9± acre Cape Cod Country Club is composed of the following five subject parcels located south of Route 151 (Nathan Ellis Highway) and west of Sandwich Road in Hatchville (Falmouth):

West Array

- 41 and 59 Theatre Drive & portion of parking lot (Parcel IDs: 10-03-001-163, 01-028A-015, and 10-03-001-163) = 47.4± acres

East Array

- 0 Boxberry Hill Road (Parcel ID: 10-04-007-035) = 41.5± acres

South Array

- 48 and 42 Theatre Drive (Parcel IDs: 17-01-028-039 & 17-01-028B-014) = 48± acres

The site contains the 18-hole golf course and related amenities, club house, and paved parking area, accessed via Theatre Drive **(Attachments A and B)**. Boxberry Hill Road bisects the westerly and easterly portions of the golf course. Portions of the site maintain frontage along Coonamessett Pond to the west and Round Pond, located south of Theatre Drive. Two residential dwellings and a pump house occur on-site, with a dwelling and pump house maintaining frontage along Coonamessett Pond.

Single-family dwellings occur along Theatre Drive and Boxberry Hill Road surrounding the golf course. The Frances A. Crane Wildlife Management Area (WMA) exists further to north. Several parcels forming the Coonamessett Reservation held by the Falmouth Conservation Commission are located to the east and west. A paved parking area to the Coonamessett Reservation is located immediately northwest of the site and south/off Boxberry Hill Road. A trail system provides access to Coonamessett Pond.

Intact Forested Uplands and treed areas within a maintained (mowed) understory occur along the fringes of the golf course or in between holes, as further described below. Bordering Vegetated Wetlands (BVW) are present in association with Coonamessett Pond and Round Pond. Three Isolated Vegetated Wetlands (IVWs) are located on-site, one of which functions as a certifiable Vernal Pool (see below). The property west of Boxberry Hill Road contains characteristic rolling topography, while on-site areas to the west are generally flat, excluding the northwesterly portion abutting Boxberry Hill Road.

The following provides additional detail on the site:

Soils

According to the NRCS Web Soil Survey **(Attachment C)**, the upland portions of the site are mapped as Merrimac Fine Sandy Loam, Carver Coarse Sand, Eastchop Loamy Fine Sands, and Enfield silt loam. NRCS describes the Merrimac Series as a very deep, somewhat excessively drained soil formed in outwash; the Carver Series as very deep, excessively drained sandy soils formed in glaciofluvial deposits of coarse and very coarse sands; the Eastchop Series as very deep, excessively drained soils formed in sandy glacial outwash; and the Enfield Series as well drained soils in outwash plains. The Merrimac, Eastchop, and Enfield Series are mapped as Prime Farmland Soils by MassGIS.

Upland Vegetation

Intact Forested Upland

As depicted on the accompanying *Habitat Cover Type Map* **(Attachment D)**, the Intact Forested Upland containing stratified vegetative layers is primarily occupied by a typical Cape Cod oak-pine upland forest, consisting of a partially open canopy dominated by white oak (*Quercus alba*), black oak (*Quercus velutina*), and pitch pine (*Pinus rigida*) trees and scattered eastern white pine (*Pinus strobus*), red maple (*Acer rubrum*), black cherry (*Prunus serotina*), and eastern red cedar (*Juniperus virginiana*). The variable understory contains saplings from the canopy layer; a shrub layer of black huckleberry (*Gaylussacia baccata*), highbush blueberry (*Vaccinium corymbosum*), nannyberry (*Viburnum lentago*), arrowwood (*Viburnum dentatum*), and glossy buckthorn (*Rhamnus frangula*). Common greenbrier (*Smilax rotundifolia*), teaberry (*Gaultheria procumbens*), Pennsylvania sedge (*Carex pensylvanica*),

lowbush blueberry (*Vaccinium angustifolium*), bracken fern (*Pteridium aquilinum*), hay scented fern (*Dennstaedtia punctilobula*), wild sarsaparilla (*Aralia nudicaulis*), poison ivy (*Toxicodendron radicans*), and seedlings from the canopy and shrub layer occupy portions of the groundcover.

Forested upland habitat conditions are relatively consistent across the project footprint and surrounding areas. Mature trees vary in height, generally averaging 30-50± feet tall.

Snags of varying sizes are also located across the site. The forest floor of the Intact Forested Upland maintains a well-developed leaf litter/organic layer due to the deciduous vegetation. Decomposing woody material are distributed throughout the forest floor.

Managed Treed Areas

Various stands of mature trees occur in between golf holes that contain a maintained/mowed understory (refer to site photographs). The understory/groundcover appears to be mowed on a somewhat regular basis in association with typical golf course maintenance. Aside from sporadic shrubs occurring at the base of a few trees, the understory is absent. Leaf litter is also routinely maintained via raking, hand removal, and leaf blowers. As such, the managed trees areas generally lack a well-developed leaf litter/organic layer and coarse woody debris within the groundcover.

Standalone trees or small stands with maintained turf grasses underneath are also scattered throughout the golf course.

Specimen Trees

As noted in the CCC *Wildlife and Plant Habitat Technical Bulletin*, *Defining, a specimen tree on Cape Cod will vary depending on the species of tree, but typically softwoods greater than 18" dbh and hardwoods greater than 12" dbh are considered specimens.* LEC documented various softwoods greater than 18 inches dbh and hardwoods greater than 12 inches dbh on-site. The following provides a summary of those trees exceeding those dimensions within the project footprint, including both Intact Forested Upland and Managed Treed Areas:

West Array: Eleven (11) hardwood trees (oaks) and eleven (11) softwood trees (8 pitch pine and 3 eastern white pine)

East Array: Ninety-four (94) hardwood trees (93 oaks and 1 black cherry)

South Array: Seventy-four (74) hardwood trees (60 oaks, 6 hickory, and 8 red maple) and twenty (20) softwood trees (pitch pine)

LEC would not characterize the above trees within the project footprint as truly "specimen" trees. All the trees mentioned above are less than 30 inches dbh. The vast majority of the hardwoods are black oak trees that typically range between 12-18 inches dbh. The softwood trees are primarily pitch pine ranging between 18-24 inches dbh. The trees documented above are representative of a typical Cape Cod oak-pine upland forest found on-site, outside the project footprint, and commonly throughout Cape Cod.

LEC did observe one tree immediately outside of the project footprint that we would characterize as a "specimen" tree. A 36-inch dbh white oak tree is located immediately north of the West Array (northeast portion), along the edge of Hole #14 (golf holes numbered on the *Habitat Cover Type Map*, **(Attachment D**). This large white oak tree represents an older growth tree noteworthy of protection. LEC recommends implementation of appropriate tree protection prior to and during work activities.

Wetlands

Bordering Vegetated Wetlands

As stated above, BVW is present in association with Coonamessett Pond and Round Pond.

The BVW extending off Coonamessett Pond and Round Pond is generally a characteristic fringing forested wetland system occupied by red maple, tupelo (*Nyssa sylvatica*), sweet pepperbush (*Clethra alnifolia*), winterberry (*Ilex verticillata*), swamp azalea (*Rhododendron viscosum*), and highbush blueberry. Entanglements of common greenbrier are common throughout, while seedlings, poison ivy, and cinnamon fern (*Osmunda cinnamomea*) occur within the groundcover.

Coonamessett Pond and Round Pond are connected via open water. A cart path bridge immediately abutting Coonamessett Pond extends over the open water connection. Vegetation surrounding the open water connection is located on Hole #9 and is subject to routine vegetative maintenance. Existing vegetation includes various rushes (*Juncus* sp.), sedges (*Carex* sp.), jewelweed (*Impatiens capensis*), common greenbrier, grape vine (*Vitis* sp.), etc.

Isolated Vegetated Wetlands

Three IVWs are present on-site, situated within topographic low points within the landscape.

The B-series IVW is located between golf Hole #15 and Hole #18. Minimal Intact Forested Upland occurs to the north and south between the two golf holes. The westerly edge of the IVW abuts Hole #18 with a small portion extending into the fairway. A fringing forested upland area occurs between the IVW and Hole #15 to the east. Mature red maple trees are located along the southerly and easterly perimeter of the IVW. The interior is dominated by swamp loosestrife (*Decodon verticillatus*) with scattered open water pockets, swamp rose (*Rosa palustris*), sweet pepperbush, and red maple saplings. On April 2, 2021, LEC observed numerous Spotted Salamander (*Ambystoma maculatum*) egg masses within the interior of the IVW. The IVW holds standing water for at least a continuous two months in the spring, and therefore qualifies for certification as a Vernal Pool.

The C-series IVW is located immediately west of the B-series IVW within a small, narrow depression entirely within the fairway of Hole #18. As such, the C-series IVW is devoid of natural vegetation.

The F-series IVW occurs east of Hole #8 within a former borrow pit now occupied by forested conditions. The IVW is occupied by red maple, sweet pepperbush, poison ivy, cinnamon fern, and royal fern (*Osmunda regalis*). This IVW holds limited standing water during the spring hydroperiod, but does not function as viable Vernal Pool breeding habitat. More specifically, LEC observed the IVW to be dry

throughout the 2021 spring hydroperiod. One (1) Spotted Salamander egg mass was observed in 2022 shortly before drying out. On April 26, 2024, LEC observed the IVW to be generally dry with only a small pocket of standing water approximately 1-2± inches deep, but no evidence of amphibian breeding activity. The IVW does not hold sufficient water long enough to function as viable Vernal Pool breeding habitat.

FEMA Mapping

According to the July 16, 2014 FEMA Flood Insurance Rate Map (FIRM) for Barnstable County (*Map Number 25001C0528J*), the site is located within Flood Zone X, *Areas determined to be outside the 0.2% annual chance floodplain.*

Natural Heritage and Endangered Species Program Designation

According to the 15th Edition of the *Massachusetts Natural Heritage Atlas* (effective August 1, 2021) published by the Massachusetts Natural Heritage and Endangered Species Program (NHESP), the project site is not located within a *Priority Habitat of Rare Species* and *Estimated Habitat of Rare Species* **(Attachment B)**. Mapped Priority Habitats occur proximate to the site, including PH 216 associated with the electric easement located immediately to the south. PH 216 is mapped for the state-listed Papillose Nut-Sedge (*Scleria pacuiflora*). No work is proposed within or proximate to the electric easement that may provide habitat for the Papillose Nut-Sedge. Areas immediately abutting the easement are proposed to be naturally restored (see below).

BioMap

MassWildlife and The Nature Conservancy, with support from the Executive Office of Energy and Environmental Affairs, released the updated BioMap tool in November 2022, to guide strategic protection and stewardship of lands and waters that are the most important for conserving biological diversity in Massachusetts. BioMap conservation targets are organized into two main elements: Core Habitat and Critical Natural Landscape (CNL). Core Habitat *identifies areas critical for the long-term persistence of rare species, exemplary natural communities, and resilient ecosystems*. Critical Natural Landscape *identifies large landscape blocks that are minimally impacted by development, as well as buffers to core habitats and coastal areas, both of which enhance connectivity and resilience.*

According to *BioMap* MassGIS data layers, the project footprint is not located within a "Core Habitat" **(Attachment E)**. Core Habitat within the vicinity of the project footprint is largely associated with Coonamessett Pond and NHESP Priority/Estimated mapping off-site.

BioMap "Critical Natural Landscape" (CNL) is associated with Coonamessett Pond and Round Pond and extends on-site, primarily within forested buffers contiguous with the water bodies **(Attachment E)**. However, the CNL boundary does minimally encroach into developed portions of the golf course, including Hole #5 tee box, Hole #6 green, Hole #7 tee box, Hole #8 green, Hole #9 tee box, cart path, and rough, westerly portions of the paved parking lot, portions of the putting green and chipping area, and Hole #18 green.

The specific mapped CNL component is the "Aquatic Buffer" that includes both intact lands and wetlands that help support Aquatic Core Habitats and functionality as well as provide important areas of connectivity for species that move between habitats.

As represented on the *Open Space Plan*, prepared by Cape & Islands Engineering, Inc., last revised on February 19, 2025 **(Attachment H)**, the project footprint minimally extends into the CNL boundary; however, the encroachment does not result in habitat fragmentation. The project provides greater than a 100-foot undisturbed buffer off Coonamessett Pond and Round Pond, while providing significant habitat restoration that will enhance and expand protected buffers to the Aquatic Core Habitats. Habitat restoration within the CNL includes portions of the Hole #5 tee box; Hole #8 green; Hole #9 tee box, cart path, and rough; and westerly portions of the paved parking lot within 100 feet of Coonamessett Pond. Additionally, the project proposes comprehensive habitat restoration on Hole #18 and surrounding areas to expansively improve habitat connectivity between the Coonamessett Pond and Vernal Pool. Additional detail on habitat restoration is provided below.

Habitat of Potential Regional or Statewide Importance

According to the "Habitat of Potential Regional or Statewide Importance" map for Falmouth, the project site is not mapped as an "Important Wildlife Habitat" by the MassDEP Conservation Assessment and Prioritization Systems (CAP) program, an ecosystem-based approach for assessing the ecological integrity of lands and waters, and subsequently identifying and prioritizing land for habitat and biodiversity conservation **(Attachment F)**.

Area of Critical Environmental Concern

The project site does not lie within an Area of Critical Environmental Concern (ACEC) **(Attachment B)**.

CCC Natural Area Placetype

As the solar development overlaps with the existing golf course, the project footprint largely does not occur within a mapped Natural Area Placetype that extends around Coonamessett Pond, Round Pond, and B-series IVW. Specific Placetype mapping is depicted on the *Proposed Development by Cape Cod Commission Placetype*, prepared by Cape & Islands Engineering, last revised on February 19, 2025 (separate cover).

District of Critical Planning Concern (DCPC)

Aside from the Cape-wide Fertilizer Management DCPC, the project site is not located within a separate, specialized DCPC.

2015 Massachusetts State Wildlife Action Plan (SWAP)

The project site does not appear to be identified as a "Key Site" within the 2015 SWAP. Key Sites are:

1. *Sites with a concentration of co-occurring rare species listed under MESA*;
2. *Sites with the best-quality occurrences of high priority species or natural communities (e.g., globally rare species)*; and/or

3. Multiple, co-occurring, landscape-level resources, as identified by BioMap2.

Important Bird Area (IBA)

The project site is not located within an Important Bird Area (IBA), as identified by Mass Audubon.

Wildlife

The following reviews wildlife species and habitat utilization observed on-site:

Mammals

The following mammals were directly observed on-site: eastern coyote (*Canis latrans*), eastern cottontail (*Sylvilagus floridanus*), gray squirrel (*Sciurus carolinensis*), eastern chipmunk (*Tamias striatus*), and deer mice (*Peromyscus* spp.). The Intact Forested Upland provides cover for eastern cottontail burrows and habitat for eastern chipmunk burrows and gray squirrel nests. White-tailed deer (*Odocoileus virginianus*) scat and bones were also found on-site. The site and surrounding landscape also provide suitable habitat for raccoon (*Procyon lotor*), skunk (*Mephitis mephitis*), red fox (*Vulpes vulpes*), and fisher (*Martes pennanti*).

While no bats were observed during the evening site visit, the Northern Long-Eared Bat (NLEB, *Myotis septentrionalis*) is listed statewide by the US Fish and Wildlife Service (USFWS) and protected as an "Endangered" species under the federal *Endangered Species Act* (ESA). The NLEB is listed as an "Endangered" species protected under the *Massachusetts Endangered Species Act* (MESA, M.G.L. c. 131A) and its implementing *Regulations* (321 CMR 10.00), but the project site is not located within a Priority Habitat of Rare Species and therefore not subject to NHESP review.

LEC performed a "desktop" review of the online database maintained by MA NHESP, current as of March 2023, (http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/species-information-and-conservation/rare-mammals/northern-long-eared-bat.html). As depicted on **Attachment G**, the project site is not located within 0.25 miles of a known hibernacula or 150 linear feet of a known maternity roost tree according to NHESP's current online database. At the closest point, a known maternity roost tree has been observed adjacent to the electric easement on Joint Base Cape Cod, greater than 7.5± miles away. No NLEB hibernacula have been documented on Cape Cod per NHESP's database.

As NLEB guidance and regulatory requirements under the federal ESA are refined, the Applicant will consult with USFWS to facilitate ESA compliance, as applicable.

Birds

Various avian species were observed or documented via vocalizations on-site, including but not limited to mourning dove (*Zenaida macroura*), eastern towhee (*Pipilo erythrophthalmus*), gray catbird (*Dumetella carolinensis*), chipping sparrow (*Spizella passerina*), song sparrow (*Melospiza melodia*), red-bellied woodpecker (*Melanerpes carolinus*), black-capped chickadee (*Poecile atricapillus*), house wren (*Troglodytes aedon*), common yellowthroat (*Geothylpis trichas*), northern cardinal (*Cardinalis cardinalis*), tree swallow (*Tachycineta bicolor*), American robin (*Turdus migratorius*), Canada goose (*Branta canadensis*) and

American crow (*Corvus brachyrhynchos*). In addition to the red-bellied woodpecker, cavity feeders/nesting species, such as the downy woodpecker (*Picoides pubescens*) brown creeper (*Certhia americana*), and/or white-breasted nuthatch (*Sitta carolinensis*), presumably utilize the various snags located on and off-site. Red-tailed hawk (*Buteo jamaicensis*) and osprey (*Pandion haliaetus*) were observed on-site either perched, foraging, or inflight.

Coonamessett Pond and Round Pond provide habitat for a multitude of waterfowl. Excluding grazing geese, the upland interior of the site does not provide habitat for waterfowl.

Reptiles/Amphibians

The site provides habitat for the eastern garter snake (*Thamnophis sirtalis*), milk snake (*Lampropeltis triangulum*), eastern red-backed salamander (*Plethodon cinereus*), and/or American toad (*Anaxyrus americanus*) based on habitat conditions. Habitat for the Eastern Box Turtle (*Terrapene carolina*) may be present on Coonamessett Reservation properties and/or Frances A. Crane WMA. Terrestrial habitat for the Spotted Salamander habitat surrounding the on-site certifiable Vernal Pool is limited to the Intact Forested Upland north and south of the IVW. The Vernal Pool may also provide breeding habitat for spring peeper (*Pseudacris crucifer*). Painted turtles (*Chrysemys picta*) and snapping turtles (*Chelydra serpentina*) are present within Coonamessett Pond and Round Pond and likely utilize the Vernal Pool, migrating between the pool and Coonamessett Pond across Hole #18 (fairway).

Proposed Project

The proposed ground-mounted solar photovoltaic system is separated into three arrays across the 136.9± acre site. Specifically:

- West Array (Array B) = 17.87± acres
- East Array (Array C) = 25.91± acres
- South Array (Array D) = 13.02± acres

Prior to the start of the solar installation, the existing clubhouse, maintenance building, and ancillary structures will be razed, along with the on-site dwellings and pump house. The disturbed footprints will be restored in-kind and loamed and restored, as described below. Furthermore, existing paved cart paths within the solar arrays will be removed and cart paths outside of the array footprints will be kept for recreational access. The *Proposed Land Restoration Plan for Cape Cod Commission*, prepared by Cape & Islands Engineering, Inc., last revised on February 19, 2025 **(Attachment I)**, provides additional detail on the planned trail network within the Open Space.

The proposed solar panels will be supported by driven steel support posts and elevated 3± feet (low end) to 16-17± feet (high end) off the ground surface. More substantial regrading is required for the West and South Arrays due to the rolling topography, in comparison to the East Array. Existing topsoil will be screened following vegetative clearing and redistributed throughout the project footprint, thus maintaining the Prime Farmland Soils on-site. Cuts and fills have been balanced across the site. A Stormwater Pollution Prevention Plan (SWPPP), including a comprehensive Erosion and Sedimentation Control Plan,

will be implemented to manage stormwater during construction and protect adjacent wetlands. Best Management Practices (BMPs) will be implemented to control invasive species, as necessary.

Each solar array will be accessed via a 15-foot-wide access paved driveway, extending to the separate utility pads. The access driveways have been located at or immediately adjacent to existing cart path crossings off Boxberry Hill Road where site conditions, topography, etc., allow. Vegetative screening and earthen berms have been strategically designed along Boxberry Hill Road and Ashumet Road. Existing forested upland buffers will be enhanced to provide additional vegetative screening along previously developed areas within 100 feet of Coonamessett Pond and adjacent to southerly abutting residences on Hole #6.

The solar arrays will be encircled by seven-foot-tall chain link fencing with fabric. The permanent fencing will be elevated six inches off grade to allow small wildlife to pass underneath. Proposed batteries and converter units will be installed within the permanent fencing on concrete slabs. On-site electric lines will be installed underground. Drainage (dry) basins and leaching trenches are scattered throughout the solar arrays for stormwater management. Project details are depicted on the site plans.

Development Impact Analysis

The proposed solar arrays primarily overlap with existing developed conditions, including golf holes and related infrastructure (e.g., cart paths, parking lot, etc.). Disturbance into Intact Forested Upland has been minimized to the greatest extent feasible and has been generally limited to minor intrusions, excluding the narrow band of Intact Forested Upland between golf Hole #5 and Hole #6 (South Array). The proposed project has been designed to avoid any work within 100 feet of wetlands, excluding restoration activities (see below).

To avoid potential impacts during the bird nesting season and to roosting bats during the summer months, the Applicant is voluntarily proposing to conduct tree clearing between September-March. No tree clearing will occur between April-August, unless otherwise approved by the CCC or staff.

The proposed fenced-in solar footprint totals 56.8± acres. Approximately 54.9± acres of the site will be placed into permanently protected Open Space (see below), including 41.83± acres of upland, 1.1± acres of wetland, and 11.99± acres of Round Pond, as depicted on the *Open Space Plan* **(Attachment H)**. The solar arrays have been designed to maintain wildlife migratory corridors along Coonamessett Pond, while maximizing habitat connectivity between/along Coonamessett Pond and Round Pond and the Vernal Pool. Wildlife migratory corridor connecting to the electric easement to the south are also maintained. The protected Open Space will augment the existing surrounding conservation lands to ensure long-term habitat protection.

All temporary disturbed areas within the Limit of Work will be reseeded with a native pollinator seed mix based on the UMass Pollinator-Friendly Solar PV Platinum Certification Program. As such, the proposed 56.8± acre solar array footprint will be fully converted to a native wildflower meadow containing the panels, etc. The native pollinator seed mix will provide a permanent herbaceous cover to provide site

stabilization and wildlife habitat value for various invertebrates, grassland-dependent birds and small mammals, including voles, mice, and shrews, which in turn, provide a food source for larger mammals and raptors (hawks and owls). A Solar Operations and Maintenance Plan will be implemented for mowing the fenced-in solar footprint. In future years following establishment of the native wildflower meadow, LEC would recommend no mechanical maintenance (e.g., mowing) of the fenced-in solar footprint, including stormwater management areas, to occur between April 15 and October 15 (of any year) to avoid potential impacts to wildlife.

The bottom of the perimeter fence is proposed to be elevated 6-12 inches off grade to allow small wildlife to pass underneath. The top and bottom of the perimeter solar fence shall be manufactured with rounded edges referred to as selvedge or knuckle-type mesh, as opposed to barbed (with sharp edges) that could harm migrating animals.

350-foot Vernal Pool Buffer

According to WPH3:

"Where a project site is located adjacent to a vernal pool, including pools that include the criteria for certification as a vernal pool, development must be located outside of a 350-foot undisturbed buffer around these resources in order to protect both the pool habitat as well as the important upland habitat around them. Studies have demonstrated that vernal pool species, which spend most of their yearly lifecycles in upland vegetated buffers outside of the pool, may migrate up to 1,000 feet to breed in the temporary pools. Additionally, new stormwater discharges should be located a minimum of 100 feet from vernal pools in order to protect these resources from the adverse effects of sedimentation, nutrient inputs, or significant changes in water level or water period."

The project has been designed to avoid adverse impacts to the on-site Vernal Pool. The project footprint was further revised to avoid any intrusion into the Intact Forested Upland within 350 feet of the Vernal Pool. The proposed solar footprint within the outer 350-foot buffer (2.92± acres) occurs entirely within previously developed conditions. Conversely, the project will permanently protect the existing 4.63± acres of Intact Forested Upland surrounding the Vernal Pool and restore 6.55± acres of previously developed areas. Habitat conditions associated with the Vernal Pool and 350-foot buffer will be significantly enhanced, while increasing habitat connectivity and migratory corridors.

Water quality to the Vernal Pool will be improved through removal of the existing golf course operations (fertilizers, pesticides, etc.). No stormwater discharges are proposed within 100 feet of the Vernal Pool. Regrading is proposed in a manner to soften adjacent slope gradients and revegetate as native meadow habitat to effectively manage runoff rates. Stormwater management has been designed in accordance with Massachusetts Storwmater Management Standards to maintain Vernal Pool hydrology by balancing pre-drainage and post-drainage conditions, while promoting water quality treatment and natural recharge; refer to *Stormwater Management Report and Town of Falmouth Design Calculations*, prepared by Cape & Islands Engineering, Inc., last revised on February 18, 2025 (under separate cover). A

comprehensive erosion and sedimentation control plan is proposed to be implemented during construction to ensure the protection of the Vernal Pool; refer to *Erosion & Sedimentation Control Plan* set (under separate cover).

Furthermore, the project proposes to significantly expand its protection of the Vernal Pool by augmenting the vegetated buffer within 350 feet through habitat restoration. Under existing conditions, the 350-foot buffer surrounding the Vernal Pool is primarily occupied by existing golf holes and lacks a contiguous vegetated habitat buffer (Intact Forested Upland).

The portions of the West Array within the 350-foot buffer to the Vernal Pool (2.92± acres) occur entirely within the developed golf course that do not provide important or functional terrestrial habitat for the Vernal Pool species. Approximately twenty (20) trees (0.05± acres) are proposed to be removed within the 350-foot buffer; limited to isolated trees or small stands with maintained turf grasses underneath (golf course rough). Under existing conditions, the golf holes, comprised of turf grass (fairways, rough, and tee boxes) and paved cart paths, do not function as terrestrial habitat for Spotted Salamanders that have been documented to breed within the Vernal Pool. Spotted Salamanders spend the majority of their life cycle burrowed (overwintering) within forested uplands that contain an established organic/duff/leaf litter layer and overhanging canopy, typically with stratified vegetative layers (groundcover, understory, and canopy). Good quality microhabitat features for Spotted Salamanders include thick leaf litter, abundant coarse woody debris, loose soils, a predominantly closed canopy tree cover, and abundant rodent tunnels. These habitat conditions do not exist on the surrounding golf holes. No viable overwintering habitat is therefore present within project footprint overlapping with the developed golf holes.

Spotted Salamanders almost exclusively migrate through forested corridors to breeding pools to avoid desiccation and/or predators. The project does not propose to alter any vegetated migratory corridors within 350 feet of the Vernal Pool. Migratory corridors and habitat connections are proposed to be comprehensively expanded (see below).

Outside of the spring breeding season, the Spotted Salamanders breeding within the on-site Vernal Pool inhabit the immediately surrounding Intact Forested Upland (4.63± acres) that will be largely protected and significantly expanded (6.55± acres) via restoration as described below.

The Applicant is proposing to restore 6.55± acres within 350 feet of the Vernal Pool, as depicted on the *Proposed Land Restoration Plan for Cape Cod Commission* **(Attachment I)**. The 6.55± acres are currently occupied by fairway, rough, green, tee box, cart path, etc., that do not provide habitat for Vernal Pool breeding species as described above. The project will remove 10,820± square feet (0.25± acres) of cart path (impervious surface) within the 350-foot buffer, including portions within 100 feet of the Vernal Pool. A total of 185 trees will be planted within the 350-foot Vernal Pool Buffer. The habitat restoration will more than double the existing forested upland within the 350-foot buffer. Following restoration, approximately 11.18± acres of vegetated buffer will occur within 350 feet of the Vernal Pool.

In addition to providing 6.55± acres of new restored/vegetated buffer within 350 feet of the Vernal Pool, the restoration will provide an enhanced direct habitat connection/migratory corridor between the Vernal

Pool and surrounding 4.63± acres of Intact Forested Upland with Coonamessett Pond and its Intact Forested Upland buffer extending parallel to open water. Habitat restoration within the 350-foot Vernal Pool buffer will be permanently protected (refer to Open Space).

As proposed, the project will provide significantly greater habitat protection to the Vernal Pool and its 350-foot buffer in comparison to existing conditions.

Mitigation

The Applicant is proposing significant mitigation in the form of Habitat Enhancement/Restoration and Open Space. Additional mitigation/improvements, include, but are not necessarily limited to the following:

- Reduction of impervious surfaces on-site, including removing the two (2) single-family homes, pump house, clubhouse, maintenance building and ancillary structures, portions of the existing parking lot, and paved cart paths within the solar arrays.
- Removal of wastewater generation from the single-family homes and golf course operation.
- Providing stormwater management improvements.
- Funding a 10-year comprehensive water quality study totaling up to $414,000.00 in coordination with the Coonamessett Pond Association.

The following reviews the Habitat Enhancement/Restoration and Open Space in greater detail, along with the accompanying *Restoration Plan Narrative*, prepared by LEC, dated May 19, 2025, and *Proposed Land Restoration Plan for Cape Cod Commission*, prepared by Cape & Islands Engineering, Inc., last revised on February 19, 2025 **(Attachment I)**.

Habitat Enhancement/Restoration

As stated above, the fenced-in solar arrays and surrounding temporarily disturbed areas will be reseeded with a native pollinator seed mix. The chemical and fertilizer-free pollinator meadow will provide sustainable wildlife habitat for various invertebrates, grassland-dependent birds, mammals, and raptors. An O&M Plan will be implemented utilizing BMPs to avoid wildlife impacts and maintain appropriate habitat conditions.

To mitigate for the intrusion into the forested uplands on-site (10.42± acres, including 7.67± acres of Intact Forested Upland and 2.75± acres of Managed Treed Areas or standalone trees), the Applicant is proposing to implement a restoration plan covering 34.22± acres of the site, 16.05± acres of which is dedicated to re-establishing forested upland. A total of 650 trees are proposed to be planted throughout the restoration areas, with 185 trees being planted within the 350-foot Vernal Pool Buffer.

All existing turf (greens, tees, fairways, and rough) on individual golf holes within the Open Space (outside of the fenced-in solar arrays) will be rototilled and restored/revegetated. The revegetation efforts are intended to create and enhance a heterogenous mix of natural communities/habitat cover types on the

project site, including Open Meadow, Early and Mid-Successional Habitats, Forested Upland, and Wetlands.

The *Restoration Plan* details proposed revegetation within previously developed Wetlands and the 100-foot Buffer Zone, the 350-foot Vernal Pool Buffer, and remaining uplands. The existing golf holes outside of the fenced-in arrays will be planted with Cape Cod native vegetation, including areas with trees (saplings) to establish diversified habitat conditions that will provide a significant wildlife habitat improvement over existing conditions. The habitat restoration will comply with Falmouth Zoning Bylaw replanting requirements. Plantings will be monitored to ensure successful establishment.

The Applicant is proposing to restore 6.55± acres within 350 feet of the Vernal Pool. The 100-foot Buffer Zone on the east side (Hole #15) and the entirety of Hole #18 to the west will be restored. Habitat restoration on Hole #18 includes revegetating portions of protectable wetlands extending into the existing fairway, as approved by the Falmouth Conservation Commission. Wetland areas and the Buffer Zones will be replanted with the following:

Wetlands and 100-foot Buffer Zone (i.e., Holes #8, #15, and #18, and adjacent to the existing parking lot to be removed) are proposed to restored with the following plantings:

Wetlands

Trees: Red maple (*Acer rubrum*), Tupelo (*Nyssa sylvatica*), and Atlantic White Cedar (*Chamaecyparis thyoides*)

Shrubs: Winterberry (*Ilex verticillata*), Highbush Blueberry (*Vaccinium corymbosum*), Sweet Pepperbush (*Clethra alnifolia*), Silky Dogwood (*Cornus amomum*), Pussy Willow (*Salix discolor*), Elderberry (*Sambucus canadensis*), and Red Chokeberry (*Aronia arbutifolia*).

Groundcover: Native New England Wetmix (e.g., New England Wetland Plants or approved similar).

100-foot Buffer Zone

Trees: Eastern white pine (*Pinus strobus*), Gray Birch (*Betula populifolia*), Black Cherry (*Prunus serotina*), Black Oak (*Quercus velutina*), White Oak (*Quercus alba*), and Pitch Pine (*Pinus rigida*).

Shrubs: Bayberry (*Myrica pensylvanica*), Arrowwood (*Viburnum dentatum*), Wild raisin (*Viburnum cassinoides*), Inkberry (*Ilex glabra*), Shadbush (*Amelanchier canadensis*), Staghorn Sumac (*Rhus typhina*), and American Hazelnut (*Corylus americana*).

Groundcover: Native New England Conservation/Wildlife Mix (e.g., New England Wetland Plants or approved similar).

Additional upland restoration areas within the **350-foot Vernal Pool Buffer** (pink highlighted area labeled as "Existing Developed Areas to be Restored with Native Woody Seed Mix and Allowed to Become Natural Areas" on *Proposed Land Restoration Plan*) will be reseeded with a 50:50 mix of New England Conservation/Wildlife Mix and New England Roadside Matrix Upland Seed Mix (e.g., New England Wetland Plants or approved similar).

In addition to native grasses and wildflowers, the New England Roadside Matrix Upland Seed Mix contains seeds for the following native woody shrubs: Grey Dogwood (*Cornus racemosa*), Silky Dogwood (*Cornus amomum*), and Staghorn Sumac (*Rhus typhina*). The inclusion of woody shrubs within the seed mix will facilitate the restoration of the 350-foot Vernal Pool Buffer.

Upland Restoration Areas upgradient of the 100-foot Buffer Zone (Labeled as "Existing Developed Areas to be Restored with Native Seed Mix and Allowed to Become Natural Areas" and "Naturally Vegetated Areas to be Cleared, Graded, Restored with Native Seed Mix and Allowed to Become Natural Areas" on *Proposed Land Restoration Plan*) will be reseeded, following rototilling, with a native seed mix, including, but not necessarily limited to the following:

Upland Bentgrass (*Agrostis perennans*), Crinkled Hair Grass (*Deschampsia flexuosa*), Purple Lovegrass (*Eragrostis spectabilis*), Coastal Red Fescue (*Festuca rubra*), Switchgrass (*Panicum virgatum*), and Little Bluestem (*Schizachyrium scoparium*).

The *Proposed Land Restoration Plan* depicts areas and counts for native tree species to be planted throughout the restoration areas, in addition to showing areas to be planted with native shrubs. Upland restoration trees and shrubs to be planted include the following:

Trees: Eastern white pine (*Pinus strobus*), Gray Birch (*Betula populifolia*), Black Cherry (*Prunus serotina*), Black Oak (*Quercus velutina*), White Oak (*Quercus alba*), and Pitch Pine (*Pinus rigida*).

Shrubs: Bayberry (*Myrica pensylvanica*), Arrowwood (*Viburnum dentatum*), Wild raisin (*Viburnum cassinoides*), Inkberry (*Ilex glabra*), Shadbush (*Amelanchier canadensis*), Staghorn Sumac (*Rhus typhina*), and American Hazelnut (*Corylus americana*).

The existing fairway sand trap on Hole #18 will also be expanded to function as a turtle nesting habitat area. This sand trap is situated along the westerly edge of the fairway, north of the 18th green within an area that receives good sunlight exposure for nesting. The sand trap is ideally located between Coonamessett Pond and the Vernal Pool where turtle species likely migrate between. LEC also recommends installing a similarly sized turtle nesting habitat area (at least 12-18 inches of clean sand) on the opposite south-facing slope between the tee box #18 and fairway to enhance turtle nesting opportunities in this area.

Existing sand traps within the Open Space (outside of the fenced-in solar arrays) shall be retained to function as potential Turtle Nesting Habitat Areas. Minor edge regrading will occur sporadically to soften the perimeter to enable unimpeded access.

Bird nest boxes will be distributed throughout restoration areas along with strategically located bat boxes to further enhance wildlife habitat. A total of four (4) osprey platforms are proposed within the Open Space, as depicted on the *Proposed Land Restoration Plan*. The osprey platforms have been strategically spaced out and located within appropriate habitat areas.

Future management and monitoring are detailed within the *Restoration Plan Narrative*.

Open Space

Approximately 54.92± acres of the site, including 41.83± acres of upland, 1.1± acres of wetland, and 11.99± acres of Round Pond, will be permanently protected as Open Space (refer to *Open Space Plan* in **Attachment H**). Specifically, the Open Space will be transferred via a quitclaim deed to the Town of Falmouth under the care and custody of the Conservation Commission. The Open Space will therefore be permanently protected under Article 97. The Applicant also intends to donate the remaining 81.98± acres, including the solar array footprints, to the Town of Falmouth Board of Selectmen.

The Open Space serves to protect valuable upland habitat and important wetland resource areas (e.g., Round Pond, Vernal Pool). Buffer Zones bordering Coonamesset Pond and Round Pond will be permanently protected, in addition to the 350-foot Vernal Pool Buffer, as described above.

The Open Space provides direct habitat connections and maintains wildlife corridors between, on, and immediately off-site habitat features. Existing golf holes and development (e.g., single-family dwellings, pump house, and parking lot) will be restored within the Open Space to enhance habitat connectivity between the Vernal Pool, Coonamessett Pond, and Round Pond, eliminating habitat fragmentation. The Open Space also provides critical links to surrounding conservation lands, including the Coonamessett Reservation and proximate Frances A. Crane WMA.

Additionally, a network of recreational trails will be maintained throughout the site. Further details of the proposed Open Space are provided within the DRI Application Narrative.

Summary

LEC has prepared this NRI Report for the proposed ground-mounted solar photovoltaic system on the 136.9± acre Cape Cod Country Club properties in Falmouth in accordance with the Conservation Commission's *Wildlife and Plant Habitat Technical Bulletin*. The proposed project avoids and minimizes impacts to wildlife and plant habitat, while incorporating significant mitigation measures to protect and improve habitat, including comprehensive Habitat Enhancement/Restoration and Open Space preservation.

LEC is pleased to submit this Natural Resources Inventory Report. If you have any questions or require additional information, please do not hesitate to contact LEC at bmadden@lecenvironmental.com.

Sincerely,

LEC Environmental Consultants, Inc.



Brian T. Madden
Senior Wildlife/Wetland Scientist

Attachments

Attachment A

Photographs



Photo 1: Proposed West Array looking southwest from #1 green (6/7/22).



Photo 2: Proposed West Array looking southwest from #10 fairway (5/28/21).



Photo 3: Proposed West Array looking north along hole #14, #15 to left (5/28/21).



Photo 4: Proposed West Array looking south across hole #17, #16 to left (5/28/21).



Photo 5: Proposed East Array looking southeast from sledding hill across hole #13 (6/7/22).



Photo 6: Proposed East Array looking north along hole #12 (5/28/21).



Photo 7: Managed Treed Areas between hole #'s 12 & 11 within Proposed East Array (5/28/21).



Photo 8: Proposed East Array looking south from green #2 towards hole #3 (5/28/21).



Photo 9: Proposed South Array looking north along hole #8 (5/28/21).



Photo 10: Proposed South Array looking south from green #6 (5/28/21).



Photo 11: Proposed South Array looking north along hole #7, hole #6 to right (5/28/21).



Photo 12: Hole #5 looking north, located east (outside) of Proposed South Array (5/28/21).



Photo 13: Northwesterly view of Vernal Pool and surrounding forested upland (3/25/22).



Photo 14: Vernal Pool (4/2/21).



Photo 15: Hole #18 to be naturally revegetated between Vernal Pool (left) and Coonamassett Pond (right), looking southeasterly towards green (3/25/22).



Photo 16: Southeasterly view of existing developed conditions east of and within 100-foot wetlands buffer surrounding Vernal Pool to be naturally revegetated (3/25/22).



Photos 17 & 18: Narrow finger-like projection of forested upland to be altered within 350 feet of Vernal Pool located between hole #10 and #15 tee (3/25/22).





Photo 19: Narrow band of forested upland to be altered within 350 feet of Vernal Pool located behind/south of green #18 (3/25/22).



Photo 20: Isolated Vegetated Wetland (IVW) southeast of green #18 (5/11/22).



Photo 21: Easterly view from hole #9 and cart path bridge connecting to Coonamessett Pond, looking toward Round Pond (6/7/21).



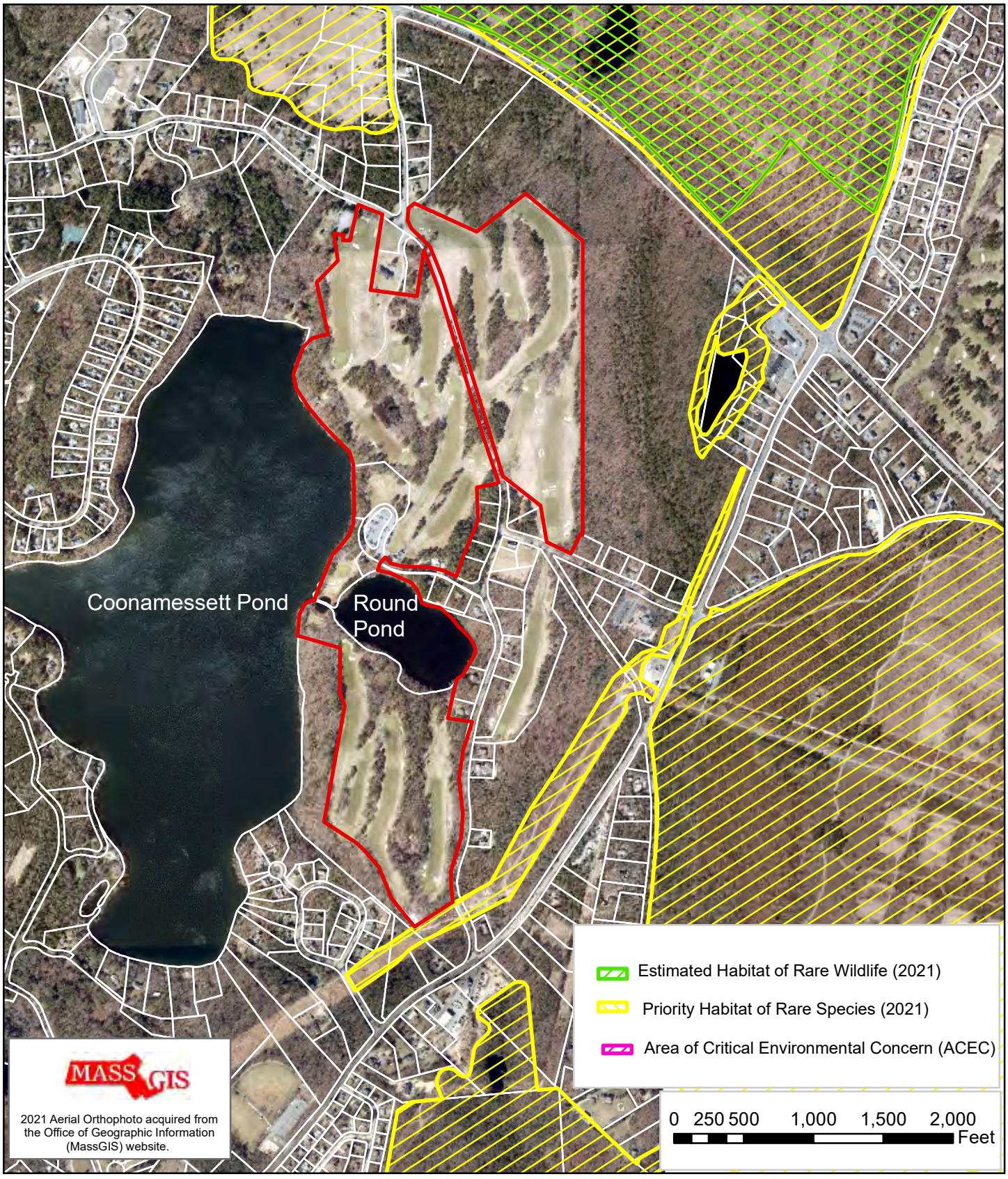
Photo 21: Northwesterly view from hole #9 towards Coonamessett Pond (5/28/21).



Photo 23: Specimen White Oak tree located immediately northeast of West Array (11/3/22).

Attachment B

Aerial Orthophot Map



LEC Environmental Consultants, Inc.
Plymouth, MA
508.746.9491
www.lecenvironmental.com

Aerial Orthophoto

Cape Cod Country Club
Theatre Drive & Boxberry Hill Rd
Falmouth, Massachusetts

N

March 2, 2023

Attachment C

Soil Map



Map Scale: 1:10,400 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Barnstable County, Massachusetts
Survey Area Data: Version 20, Sep 12, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 10, 2022—Jun 30, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1	Water	44.4	12.1%
55A	Freetown coarse sand, 0 to 3 percent slopes, sanded surface	4.0	1.1%
252C	Carver coarse sand, 8 to 15 percent slopes	29.7	8.1%
252D	Carver coarse sand, 15 to 35 percent slopes	65.4	17.8%
254A	Merrimac fine sandy loam, 0 to 3 percent slopes	32.9	8.9%
254B	Merrimac fine sandy loam, 3 to 8 percent slopes	12.6	3.4%
254C	Merrimac fine sandy loam, 8 to 15 percent slopes	3.3	0.9%
259A	Carver loamy coarse sand, 0 to 3 percent slopes	6.5	1.8%
259B	Carver loamy coarse sand, 3 to 8 percent slopes	34.7	9.4%
264B	Eastchop loamy fine sand, 3 to 8 percent slopes	21.5	5.8%
265A	Enfield silt loam, 0 to 3 percent slopes	111.8	30.4%
600	Pits, sand and gravel	1.5	0.4%
Totals for Area of Interest		**368.4**	**100.0%**

Attachment D

Habitat Cover Type Map



LEC Environmental Consultants, Inc.

Plymouth, MA
508.746.9491
www.lecenvironmental.com

Habitat Cover Type Map

Cape Cod Country Club
Theatre Drive & Boxberry Hill Rd
Falmouth, Massachusetts

N

March 2, 2023

Attachment E

Bio Map



LEC Environmental Consultants, Inc.
Plymouth, MA
508.746.9491
www.lecenvironmental.com

BioMap

Cape Cod Country Club
Theatre Drive & Boxberry Hill Rd
Falmouth, Massachusetts

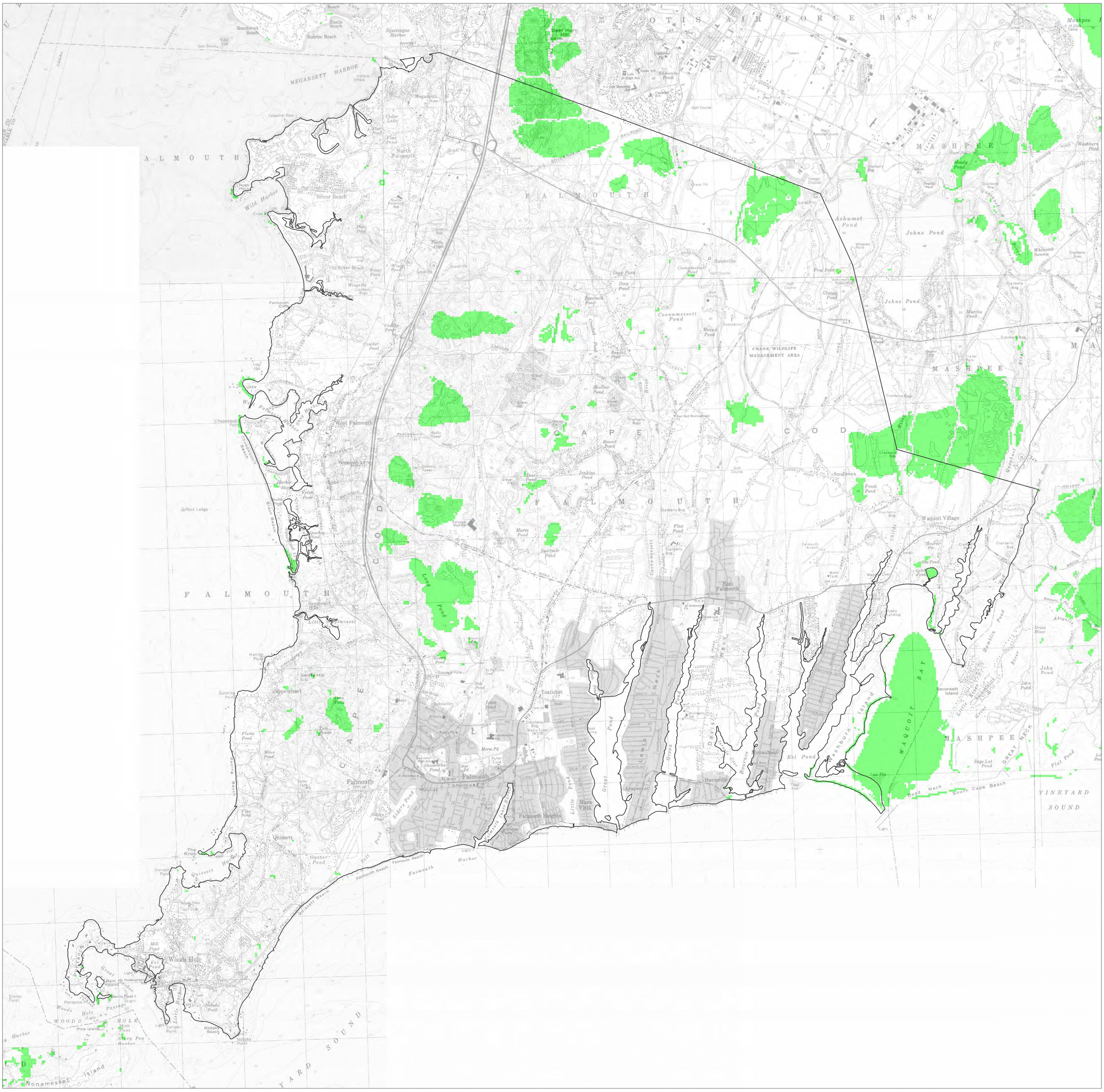
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March 2, 2023

Attachment F

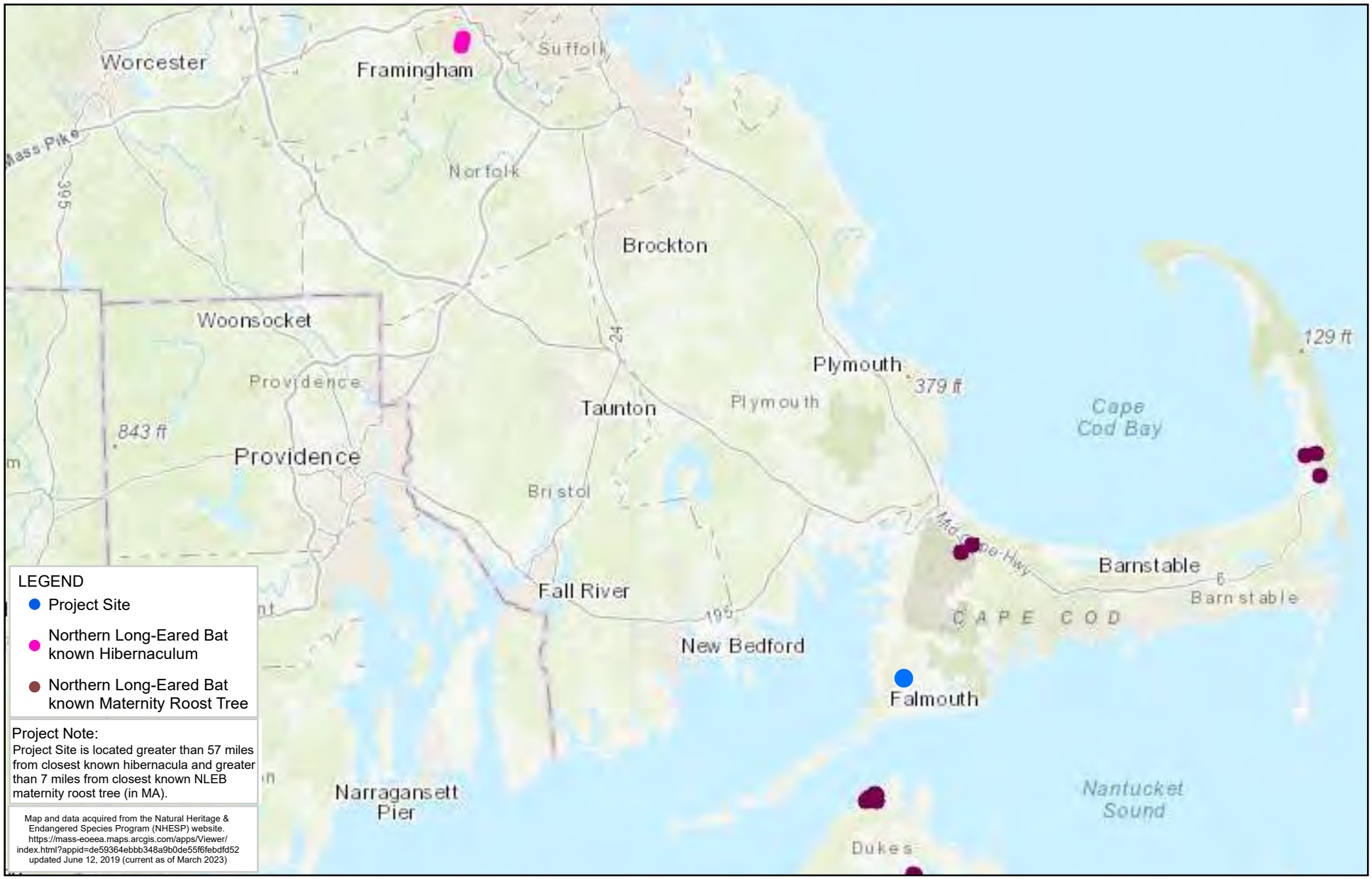
Habitat of Potential Regional or Statewide Importance

Habitat of Potential Regional or Statewide Importance
Town of FALMOUTH, MA


Deer Horn Hill
Megansett Harbor
Wild Harbor
Silver Beach
Old Silver Beach
Falmouth Cliffs
West Falmouth
Harbor Head
Gifford Ledge
Black Beach
Sippewissett
Falmouth
Quissett
The Knob
Woods Hole
Great Harbor
Nonamesset Island
Penzance Point
Woods Hole Light
Pine Island
Sharp Pen Harbor
Juniper Point
Nobska Beach
Nobska Point
Eustis Beach
Sunrise Beach
Southwest Beach
Squeteague Harbor
North Falmouth
Cedar Lake
Flax Pond
Hatchville
Coonamessett Pond
Deep Pond
Spectacle Pond
Crooker Pond
Crocker Pond
Round Pond
Jenkins Pond
Mares Pond
Long Pond
Snake Pond
Hamlin Pond
Swift Hill
Gunning Point
Flume Pond
Miles Pond
Fresh Pond
Oyster Pond
Soll Pond
Siders Pond
Shallow Pond
Ashumet Pond
Johns Pond
Grassy Pond
Martha Pond
Whitcomb Swamp
Moody Pond
Washburn Pond
Frog Pond
Wheelers Point
Waquoit Village
Smalltown
Fresh Pond
Flax Pond
Bog Pond
Teaticket
Jones Pond
Morse Pd
Fuller Field
Falmouth Heights
Maravista
Acapesket
Davisville
Menauhant
Eel Pond
Waquoit Bay
Seconsett Island
Sage Lot Pond
Flat Pond
Dead Neck
South Cape Beach
Vineyard Sound
Hamblin Pond
Abigails
Jehu Pond
Great River
Little River
Quaker Meetinghouse Road
Quashnet River
Waquoit Highway
Falmouth Airport
Falmouth Service Center
Falmouth Hospital
Falmouth High School
Lawrence High School
Shearwater Pond
Teaticket Highway
Davis Straits
Great Pond
Little Pond
Green Pond
Bournes Pond
Cape Cod Canal
Canal Road
Megansett Road
Barlows Landing Road
Ashumet Road
Sandwich Road
Gifford Street
Main Street
Locust Road
Old Barnstable Road
Carriage Shop Road
Blacksmith Shop Road
Meetinghouse Road
Old Dock Road
Old Main Road
Old Meetinghouse Road
Old Post Road
Old Stage Road
Old Town House Road
Oyster Pond Road
Quaker Road
Quashnet Road
Quissett Harbor Road
Quissett Beach Road
Race Point Road
Racing Beach Road
Ranger Road
Red Brook Road
Robbins Road
Rockmere Road
Round Pond Road
Sandwich Road
Sandy Neck Road
Scraggy Neck Road
Seacoast Shore Road
Shady Nook Road
Shore Road
Silver Beach Road
Skyline Drive
Smith Neck Road
Snake Pond Road
Snug Harbor Road
Spectacle Pond Road
Spring Bars Road
Spruce Road
Stage Harbor Road
Stanley Road
Station Avenue
Steamboat Wharf Road
Stonewall Lane
Strawberry Hill Road
Sunset Lane
Surf Drive
Surfside Road
Swift Road
Tahanto Road
Tanglewood Road
Tashmoo Road
Teaticket Highway
Teaticket Road
Terrace Road
Thomas Landing Road
Tower Hill Road
Trotting Park Road
Turtle Pond Road
Valley Road
Vineyard Avenue
Wampanoag Road
Water Street
Waterhouse Road
Waterview Road
Wauwinet Road
Wedgewood Road
Weeks Point Road
Wellington Road
Wenaumet Road
Wesley Road
Whitecap Road
Whitehall Road
Wianno Avenue
Wild Harbor Road
Willow Road
Winchester Road
Windmill Road
Winsor Road
Woodland Road
Woodside Road
Yarmouth Road
Yellow Thrush Road
Zion Union Heritage Museum
Falmouth Public Library

Attachment G

Northern Long-Eared Bat Map



LEC Environmental Consultants, Inc.
Plymouth, MA
508.746.9491
www.lecenvironmental.com

NLEB Map

Cape Cod Country Club
48 Theatre Drive
East Falmouth, Massachusetts

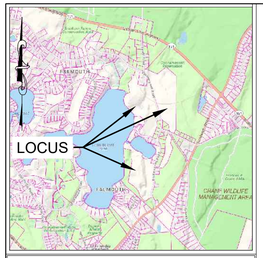
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January 13, 2023

Attachment H

Open Space Plan, Prepared by Cape & Islands Engineering, Inc.

GROUND-MOUNTED SOLAR PHOTOVOLTAIC SYSTEM
41 & 48 THEATRE DRIVE AND 0 BOXBERRY HILL ROAD
FALMOUTH, MASSACHUSETTS



LOCUS MAP NOT TO SCALE

GENERAL NOTES

ZONING DISTRICT: AGRICULTURAL AGA & BUSINESS B3
OVERLAY DISTRICT: GREAT PONT COASTAL POND OVERLAY DISTRICT

DEED REFERENCE: LAND COURT CERTIFICATE # 161233
PLAN REFERENCE: LAND COURT PLANS 12349-L, 12349-4 & 12349-R

OWNER: NEW CAPE COD COUNTRY CLUB, INC.
4 FRIEL GOLF ROAD, HUDSON, NH 03051-5247

L.C. PLAN 12349-R
0°-00'-21"
NAD 83

OPEN SPACE NOTES

THREE PARCELS TO BE REDEVELOPED FOR A LARGE-SCALE GROUND-MOUNTED SOLAR PHOTOVOLTAIC INSTALLATION (ARRAY SYSTEM).

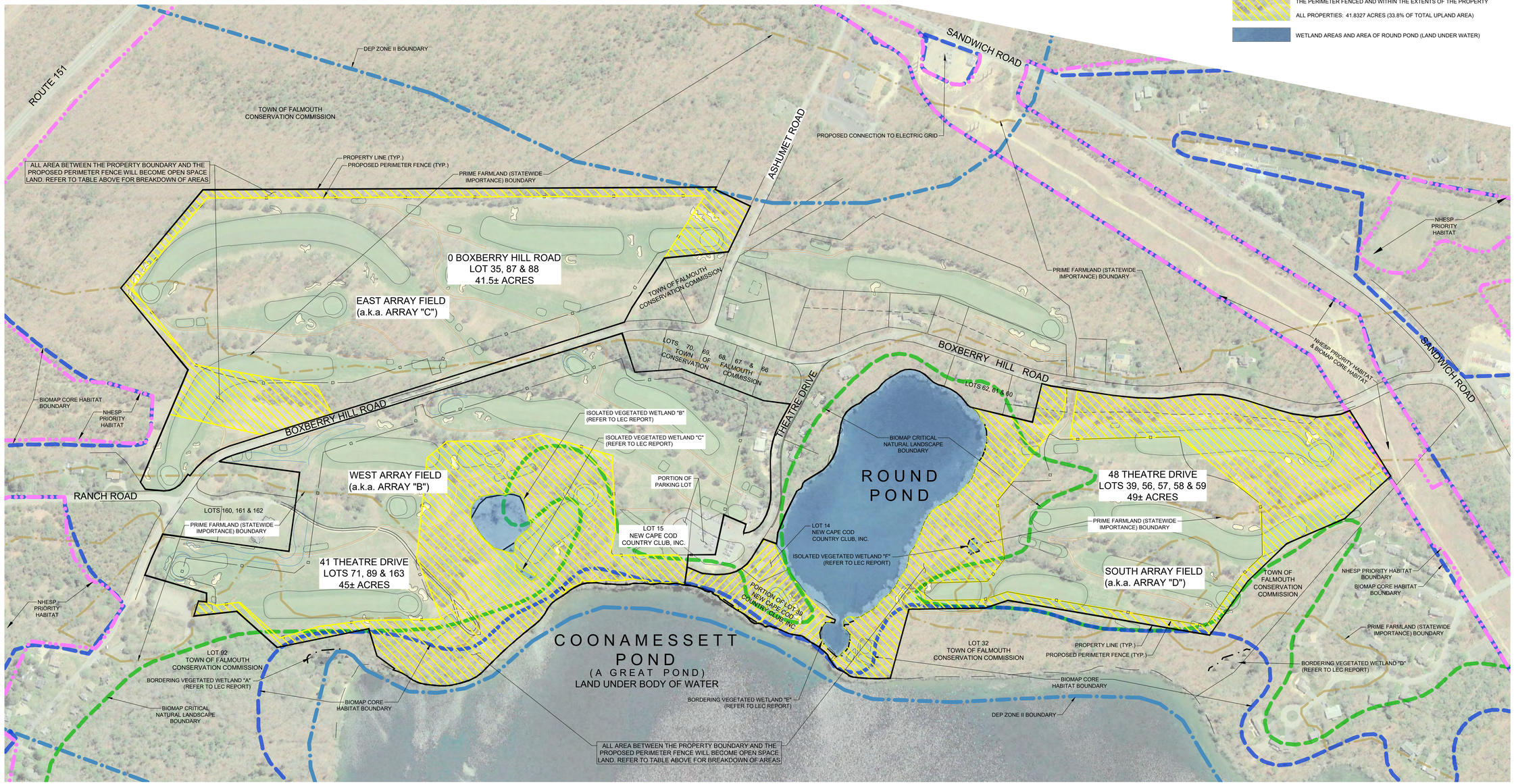
THE THREE PARCELS FOR ARRAY SYSTEMS ARE IDENTIFIED AS:
1) WEST ARRAY (WEST OF BOXBERRY HILL RD, a.k.a ARRAY "B"),
2) EAST ARRAY (EAST OF BOXBERRY HILL RD, , a.k.a ARRAY "C"),
3) SOUTH ARRAY (SOUTH OF ROUND POND, A.K.A ARRAY "D"),

PARCELS	ADDRESS	ASSESSOR'S ID	LOT AREA
WEST ARRAY:	41 THEATRE DRIVE (INCLUDES LOT 15 & PORTION OF PARKING LOT)	10 03 001 163 17 01 028A 015 10 03 001 163	47.4± ACRES
EAST ARRAY:	0 BOXBERRY HILL RD	10 03 007 035	41.5± ACRES
SOUTH ARRAY:	48 THEATRE DRIVE (INCLUDES LOT 14 & ROUND POND)	17 01 028 039 17 01 028B 014	48.0± ACRES
ROUND POND PLUS WETLAND AREAS WITHIN PROPERTIES			13.09 ACRES
TOTAL AREA OF ALL PROPERTIES:			136.9± ACRES
TOTAL UPLAND AREA OF ALL PROPERTIES:			123.8± ACRES

AREA WITH CROSS HATCH IS THE PROPOSED LAND LOCATED OUTSIDE THE PERIMETER FENCED AND WITHIN THE EXTENTS OF THE PROPERTY

ALL PROPERTIES: 41.8327 ACRES (33.8% OF TOTAL UPLAND AREA)

WETLAND AREAS AND AREA OF ROUND POND (LAND UNDER WATER)



0 200 400 600 800
SCALE: 1" = 200'

CAPE & ISLANDS ENGINEERING
SUMMERFIELD PARK
800 FALMOUTH ROAD SUITE 301C
MASHPEE, MA 02649
508.477.7272 PHONE
508.477.7272 FAX
info@CapeEng.com
www.CapeEng.com

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THIS PLAN MAY NOT BE ADDED TO, DELETED FROM, OR ALTERED IN ANY WAY BY ANYONE OTHER THAN CAPE & ISLANDS ENGINEERING, INC. UNLESS AND UNTIL SUCH TIME AS AN ORIGINAL STAMP AND SIGNATURE APPEARS ON THIS PLAN NO PERSON OR PERSONS, MUNICIPAL OR PUBLIC OFFICIAL MAY USE, REPRODUCE OR DISTRIBUTE THE INFORMATION CONTAINED HEREIN, AND THIS PLAN REMAINS THE PROPERTY OF CAPE AND ISLANDS ENGINEERING, INC.

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COMMONWEALTH OF MASSACHUSETTS
MATTHEW C. COSTA
No. 52282
PROFESSIONAL LAND SURVEYOR

COMMONWEALTH OF MASSACHUSETTS
RAUL LIZARDI-RIVERA
CIVIL
No. 46845
REGISTERED PROFESSIONAL ENGINEER

Drawn By: JVB, RLR
Checked By: MC

Rev	Date	Description	By
1	1/9/23	INCLUDE LOT AREAS PER LAND COURT PLAN 12349R (SHEET 6 OF 20) FOR ROUND POND, INCLUDE AREA FOR LOT 15, 14 AND PORTION OF PARKING LOT	RLR
2	2/1/23	UPDATE AREAS AND ELIMINATE LOT 37 FROM OPEN SPACE PLAN	RLR
3	2/28/23	REVISE DESCRIPTION OF OPEN SPACE AREA	RLR
4	3/14/24	REVISE OPEN SPACE AREA & HATCHED AREAS	RLR
5	12/10/24	REVISE ARRAY B AND ARRAY D LAYOUTS, UPDATE OPEN SPACE AREAS	RLR
6	2/18/25	REVISE AND INCREASE PROPOSED OPEN SPACE AREAS	RLR

Prepared For:
ASD CAPE COD HOLDINGS LLC
1560 WEWATTA STREET
DENVER, CO 80202

Project: 41 & 48 THEATRE DRIVE & 0 BOXBERRY HILL ROAD
EAST FALMOUTH, MASSACHUSETTS
ASSESSOR'S ID: 10 03 001 163 & 17 01 028 039

Drawing Title: OPEN SPACE PLAN

Date: JULY 26, 2022

G-110

G-110 OPEN SPACE PLAN

Attachment I

Proposed Land Restoration Plan for Cape Cod Commission,

Prepared by Cape & Islands Engineering, Inc., Last Revised on February 19, 2025

Proposed Land Restoration Plan for Cape Cod Commission

RESTORATION PLAN NARRATIVE

Purpose: Restoration activities are intended to create and enhance a heterogenous mix of natural communities / habitat cover types on the Project Site, including Open Meadow, Early and Mid-Successional Habitats, Forested Upland, and Wetlands along with sustainable Turtle Nesting Habitat Areas. The variety of habitat cover types outside of the fenced-in solar arrays and within the protected Open Space will provide important habitat conditions for a wide variety of wildlife.

Restoration activities include the elimination and significant reduction of impervious surfaces on-site, including removing the two (2) single-family homes, pump house, clubhouse, maintenance building and ancillary structures, portions of the existing parking lot, and cart paths outside of the solar arrays.

Restoration details are depicted on the *Proposed Land Restoration Plan for Cape Cod Commission*, prepared by Cape & Islands Engineering, Inc., last revised February 19, 2025 ("*Proposed Land Restoration Plan*").

INITIAL RESTORATION

Fenced-in Solar Array

The fenced-in solar arrays will be reseeded with a native pollinator seed mix based on the UMass Pollinator-Friendly Solar PV Platinum Certification Program, including, but not limited to the wildflower species listed on the Restoration Plan:

Patridge Pea (*Chamaecrista fasciculata*), Spotted Joe-Pye Weed (*Eupatoriadelphus maculatus*), Hyssopleaf thoroughwort (*Eupatorium hyssopifolium*), Common boneset (*Eupatorium perfoliatum*), Sweet Joe-Pye Weed (*Eupatorium purpureum*), Ox Eye Sunflower (*Helianthus helianthoides),* Wild Bergamot (*Monarda fistulosa*), Purple Bergamot (*Monarda media*), Golden Ragwort (*Packera aurea*), Mountain Mint (*Pycnanthemum spp.*), Goldenrods (*Solidago spp.),* and Wingstem (*Verbesina alternifolia*).

At least 75% of array footprint and perimeter are planned to be occupied by wildflower species which meet the following criteria:

- Seed mix(es) contain no more than 25% grass and sedge species, by seed count.
- Seed mix(es) contain at least 20 flowering species comprising 2% or more of seed mix, by seed count.

Seed mix(es) contain at least 3 blooming species per season, comprising 2% or more of seed mix, by seed count, for all 4 seasons (April, May/June, July/August, September/October).

The final species list will be sent to the Commission Staff for review and approval.

Outside of Solar Arrays

The following reviews rototilling, restoration plantings, and turtle nesting habitat areas to facilitate successful restoration of the areas outside of the fenced-in solar arrays and Open Space.

Additional restoration notes are included on the *Proposed Land Restoration Plan*.

Rototilling

All existing turf (greens, tees, fairways, and rough) on individual golf holes outside of the fenced-in solar arrays will be roto-tilled and reseeded with a native mix (see below).

As necessary, erosion control barriers (e.g., mulched silt sock or similar) will be installed between roto-tilled areas and downgradient of wetland areas (i.e., Holes 8, 9, 15, and 18) to prevent sedimentation/erosion and will remain in place until vegetative stabilization.

Rototilling will avoid naturalized habitat areas that contain native species that will proliferate following the termination of typical golf course maintenance (mowing).

Restoration Plantings

1) **Wetlands and 100-foot Buffer Zone** (i.e., Holes 8, 15, and 18, and adjacent to the existing parking lot to be removed) are proposed to restored with the following plantings:

   Wetlands

   Trees: Red maple (*Acer rubrum*)*, Tupelo (*Nyssa sylvatica*)*, and Atlantic White Cedar (*Chamaecyparis thyoides*) [*and within 50-foot Buffer Zone on Hole #18]

   Shrubs: Winterberry (*Ilex verticillata*), Highbush Blueberry (*Vaccinium corymbosum*)*, Sweet Pepperbush (*Clethra alnifolia*)*, Silky Dogwood (*Cornus amomum*), Pussy Willow (*Salix discolor*), Elderberry (*Sambucus canadensis*), and Red Chokeberry (*Aronia arbutifolia*) [*and within 50-foot Buffer Zone on Hole #18]

   Groundcover: Native New England Wetmix (e.g., New England Wetland Plants or approved similar)

   100-foot Buffer Zone

   Trees: Eastern white pine (*Pinus strobus*), Gray Birch (*Betula populifolia*), Black Cherry (*Prunus serotina*), Black Oak (*Quercus velutina*), White Oak (*Quercus alba*), and Pitch Pine (*Pinus rigida*)

   Shrubs: Bayberry (*Myrica pensylvanica*), Arrowwood (*Viburnum dentatum*), Wild raisin (*Viburnum cassinoides*), Inkberry (*Ilex glabra*), Shadbush (*Amelanchier canadensis*), Staghorn Sumac (*Rhus typhina*), and American Hazelnut (*Corylus americana*)

Groundcover: Native New England Conservation/Wildlife Mix (e.g., New England Wetland Plants or approved similar).

2) Additional upland restoration areas within the **350-foot Vernal Pool Buffer** (pink highlighted area labeled as "Existing Developed Areas to be Restored with Native Woody Seed Mix and Allowed to Become Natural Areas" on *Proposed Land Restoration Plan*) will be reseeded with a 50:50 mix of New England Conservation/Wildlife Mix and New England Roadside Matrix Upland Seed Mix (e.g., New England Wetland Plants or approved similar).

   In addition to native grasses and wildflowers, the New England Roadside Matrix Upland Seed Mix contains seeds for the following native woody shrubs: Grey Dogwood (*Cornus racemosa*), Silky Dogwood (*Cornus amomum*), and Staghorn Sumac (*Rhus typhina*). The inclusion of woody shrubs within the seed mix will facilitate the restoration of the 350-foot Vernal Pool Buffer.

3) **Upland Restoration Areas** upgradient of the 100-foot Buffer Zone (Labeled as "Existing Developed Areas to be Restored with Native Seed Mix and Allowed to Become Natural Areas" "Naturally Vegetated Areas to be Cleared, Graded, Restored with Native Seed Mix and Allowed to Become Natural Areas" on *Proposed Land Restoration Plan*) will be reseeded, following regrading and/or roto-tilling, with a native seed mix, including, but not necessarily limited to:

   Upland Bentgrass (*Agrostis perennans*), Crinkled Hair Grass (*Deschampsia flexuosa*), Purple Lovegrass (*Eragrostis spectabilis*), Coastal Red Fescue (*Festuca rubra*), Switchgrass (*Panicum virgatum*), and Little Bluestem (*Schizachyrium scoparium*).

   The *Proposed Land Restoration Plan* depicts areas and counts for native tree species to be planted throughout the restoration areas, in addition to showing areas to be planted with native shrubs. Upland restoration trees and shrubs to be planted include:

   Trees: Eastern white pine (*Pinus strobus*), Gray Birch (*Betula populifolia*), Black Cherry (*Prunus serotina*), Black Oak (*Quercus velutina*), White Oak (*Quercus alba*), and Pitch Pine (*Pinus rigida*).

   Shrubs: Bayberry (*Myrica pensylvanica*), Arrowwood (*Viburnum dentatum*), Wild raisin (*Viburnum cassinoides*), Inkberry (*Ilex glabra*), Shadbush (*Amelanchier canadensis*), Staghorn Sumac (*Rhus typhina*), and American Hazelnut (*Corylus americana*).

Turtle Nesting Habitat Areas

Existing sand traps outside of the fenced-in solar arrays shall be retained to function as potential Turtle Nesting Habitat Areas. Minor edge regrading will occur sporadically to soften the perimeter to enable unimpeded access.

The existing fairway sand trap on Hole 18 will be expanded to function as a turtle nesting habitat area; refer to *Proposed Land Restoration Plan*. A similarly sized turtle nesting habitat area will also be established on the opposite south-facing slope between the Hole 18 tee box and fairway to enhance turtle nesting opportunities immediately proximate to the Vernal Pool and Coonamessett Pond. The vegetative surface material and topsoil of the Turtle Nesting Habitat Areas will be stripped/removed to expose the underlying strata and 12-18 inches of clean sand will be introduced. The sandy substrate may be raked by hand or a York rake (or similar) to provide a loose, unconsolidated substrate.

MANAGEMENT / MONITORING

Maintenance contractors shall be educated on the purpose of the Restoration Plan and long-term management activities designed to avoid wildlife impacts and enhance plant/wildlife habitat. This Restoration Plan Narrative and Operations & Maintenance Plan with supporting reference materials shall be provided to maintenance contractors informing them of the potential presence of wildlife and steps to take if wildlife is encountered.

Solar Field & Perimeter

1) During the first three growing seasons (establishment period), vegetation management must be more intensive to promote successful establishment of native species and to control weeds and invasive species. A primary purpose of mowing during the establishment period is to cut the heads from flowering weeds to prevent them from going to seed while native plants are establishing. A schedule of high mowing (7 to 8 inches) will be implemented during the establishment period to inhibit weeds from reseeding.

   Specifically, during the first growing season, mow to a height of 7 to 8 inches with a string trimmer three times, once during each of the following periods: April 7 to May 1, July 1-15, and August 15-30. Perform any additional maintenance (e.g., trimming) to control weeds or invasive species, if the need to do so is identified during the annual monitoring inspection.

   At the start of the second growing season, one time between April 7 and May 1, mow with a string trimmer any material standing from the previous season to a height of 7 to 8 inches above ground level. This will allow the soil to warm more quickly, which will stimulate emergence of native seedlings, and reduce growth of woody species. Later in the second growing season, mow to a height of 7 to 8 inches with a string trimmer once between August 8-22. Perform any additional maintenance (e.g., trimming) as identified during the annual monitoring inspection.

   In Year 3, mow once annually in the early spring between April 7 and May 1, at a mower height of 7 to 8 inches above ground level. If needed to control weeds or invasive plants,

perform any additional trimming needs as identified during the annual monitoring inspection.

2) In future years, the area within the fenced-in solar arrays and immediately abutting perimeter shall be mowed between October 15 through April 15 (of any year), to the greatest extent practicable, to avoid/minimize wildlife impacts. Any mowing between April 15 through October 15 (of any year) within the interior of the fenced-in solar panel field shall be limited as feasible. Woody seedlings and/or debris may also be removed by hand at any time of the year. Should tall grasses interfere with the solar panels between April 15 and October 15, hand-held weed whacking may occur; however, no closer than 12-inches off the ground.

3) The perimeter fencing shall be inspected on an annual basis to confirm that at least 6 inches of clearance are present between existing grades and bottom of the fencing. Modifications shall be implemented by hand to maintain the 6-inch gap. The fencing shall be kept free of vegetation.

Stormwater Management Areas

4) Maintenance activities associated with the stormwater drainage “dry basins” within the fenced-in solar arrays shall avoid and/or minimize impacts to the wildlife. Maintenance activities that require mechanical methods (e.g., mowing, etc.) shall be conducted between October 15 and April 15 (of any year) to the greatest extent practicable. Debris removal by hand and/or manual pulling or individual cutting (by hand) of smaller shrubs and saplings may be conducted any time during the year.

5) Dry Basins outside of the fenced-in solar arrays will be left to naturalize.

Bird/Bat Boxes and Osprey Platforms

6) The bird/bat boxes and osprey platforms installed within the Open Space will be inspected on an annual basis and necessary repairs or replacement will be implemented.

Monitoring

7) A qualified biologist shall conduct an annual site evaluation between June-September during the first three growing seasons to assess seed mix and planting establishment, vegetative growth, cover, etc.

Revegetated areas shall be inspected for the presence of invasive species. Invasive species shall be managed as necessary through manual, mechanical, and chemical methods, implementing Best Management Practices (BMPs). If small concentrations of invasive species are documented, the vegetative material is recommended to be removed

by hand and properly disposed of off-site (e.g., collected and left to dry out before disposal at a landfill or bagged and brought to a solid waste digester). If larger concentrations are documented and mechanical removal is not feasible, the Cape Cod Commission (CCC) staff shall be contacted to discuss potential chemical treatments. The quantity and type of herbicide to be utilized shall be reviewed with CCC staff. Herbicide shall only be applied by certified applicator.

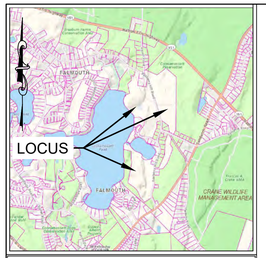
8) A summary report shall be prepared to CCC within 30 days of the monitoring. At a minimum, the report will provide a description of the existing conditions, representative photographs, and provide site specific habitat management recommendations, as necessary.

9) Management activities are intended to be adaptive based on existing conditions.

10) The Applicant/Property Owner and/or Solar Operator shall take all reasonable steps necessary to implement the habitat management activities for the life of the solar array or as modified with CCC and/or Staff.

11) The Applicant/Property Owner and/or Solar Operator reserves the right to adapt management activities based on habitat conditions. Accordingly, the vegetative maintenance frequency may be modified and/or limited herbicide application may be necessary to maintain habitat conditions and/or control invasive species.

GROUND-MOUNTED SOLAR PHOTOVOLTAIC SYSTEM
41 & 48 THEATRE DRIVE AND 0 BOXBERRY HILL ROAD
FALMOUTH, MASSACHUSETTS



LOCUS MAP NOT TO SCALE

GENERAL NOTES

ZONING DISTRICT: AGRICULTURAL AGA & BUSINESS B3
OVERLAY DISTRICT: GREAT POND COASTAL POND OVERLAY DISTRICT

DEED REFERENCE: LAND COURT CERTIFICATE # 161233
PLAN REFERENCE: LAND COURT PLANS 12349-L, 12349-4 & 12349-R

OWNER: NEW CAPE COD COUNTRY CLUB, INC.
4 FRIEL GOLF ROAD, HUDSON, NH 03051-5247

L.C. PLAN 12349-R
0°-00'-21"
NAD 83

ARRAY SYSTEM PARCEL INFORMATION

THREE PARCELS TO BE REDEVELOPED FOR A LARGE-SCALE GROUND-MOUNTED SOLAR PHOTOVOLTAIC INSTALLATION (ARRAY SYSTEM).

THE THREE PARCELS ARE IDENTIFIED AS:
1) WEST ARRAY (WEST OF BOXBERRY HILL RD, a.k.a. ARRAY "B"),
2) EAST ARRAY (EAST OF BOXBERRY HILL RD, , a.k.a. ARRAY "C"),
3) SOUTH ARRAY (SOUTH OF ROUND POND, a.k.a. ARRAY "D"),

PARCELS	ADDRESS	ASSESSOR'S ID	LOT AREA
WEST ARRAY:	41 THEATRE DRIVE (INCLUDES LOT 15 & PORTION OF PARKING LOT)	10 03 001 163 17 01 028A 015 10 03 001 163	47.4± ACRES
EAST ARRAY:	0 BOXBERRY HILL RD	10 03 007 035	41.5± ACRES
SOUTH ARRAY:	48 THEATRE DRIVE (INCLUDES LOT 14)	17 01 028 039 17 01 028B 014	48± ACRES
ROUND POND PLUS WETLAND AREAS WITHIN PROPERTIES			13.09 ACRES
TOTAL AREA OF ALL PROPERTIES:			136.9± ACRES
TOTAL UPLAND AREA OF ALL PROPERTIES:			123.8± ACRES

LAND RESTORATION LEGEND

- RAISED EARTH BERMS TO SCREEN ARRAY SYSTEM FROM PUBLIC ROADWAYS. SCREEN PLANTINGS TO BE INSTALLED WITHIN RAISED EARTH BERMS.
- EXISTING NATURALLY VEGETATED AREAS TO REMAIN AND BE PROTECTED AT ALL TIMES DURING CONSTRUCTION ACTIVITIES.
- EXISTING DEVELOPED AREAS TO BE RESTORED WITH NATIVE SEED MIX AND ALLOWED TO BECOME NATURAL AREAS.
- NATURALLY VEGETATED AREAS TO BE CLEARED, GRADED, RESTORED WITH NATIVE SEED MIX AND ALLOWED TO BECOME NATURAL AREAS.
- EXISTING DEVELOPED AREAS TO BE RESTORED WITH NATIVE WOODY SEED MIX AND ALLOWED TO BECOME NATURAL AREAS.
- AREAS TO BE RESTORED WITH NATIVE SHRUBS AND/OR TREES. REFER TO RESTORATION PLANTING NOTES. A TOTAL OF 650 PROPOSED NATIVE TREE SPECIES THROUGHOUT. 232 PROPOSED TREES WITHIN THE OPEN SPACE PROTECTION AREA, WITH 185 OF THESE TREES WITHIN THE 350' VERNAL POOL BUFFER.
- RECOMMENDED TURTLE NESTING HABITAT AREAS. (TWO AREAS) APPROXIMATELY 600 S.F.
- EXISTING PAVED CART PATHS WITHIN STEEP SLOPES AND WITHIN LOW ELEVATIONS AND WET SOIL CONDITIONS TO REMAIN FOR COMMUNITY TRAIL.
- PROPOSED WALKING TRAIL PATH. PAVEMENT TO BE REMOVED UNLESS OTHERWISE NOTED. ALL TRAILS LOCATED ALONG OUTSIDE OF PERIMETER FENCE.
- WETLAND AREAS AND AREA OF ROUND POND (LAND UNDER WATER)

RESTORATION PLANTING NOTES

PROPOSED TREES WITHIN OPEN SPACE PROTECTION AREA - 2" CALIPER SIZE SPACED 10 TO 15-FEET O.C.
ADDITIONAL DETAIL PROVIDED WITHIN THE LEC ENVIRONMENTAL CONSULTANTS, INC. RESTORATION PLAN NARRATIVE.

FOR UPLAND AREAS:

- TREES: EASTERN WHITE PINE (Pinus strobus), GRAY BIRCH (Betula populifolia), BLACK CHERRY (Prunus serotina), BLACK OAK (Quercus velutina), WHITE OAK (Quercus alba), AND PITCH PINE (Pinus rigida).
- UPLAND WOODY SHRUBS, A COMBINATION OF ANY THE FOLLOWING SPECIES: BAYBERRY (myrica pensylvanica), ARROWWOOD (viburnum dentatum), WILD RAISIN (viburnum cassinoides), INKBERRY (ilex glabra), SHADBUSH (amelanchier canadensis), STAGHORN SUMAC (rhus typhina), AND AMERICAN HAZELNUT (corylus americana)

FOR WETLAND AREAS:

- TREES: BLACK TUPELO (Nyssa sylvatica), RED MAPLE (Acer rubrum), AND ATLANTIC WHITE CEDAR (Chamaecyparis thyoides).
- WOODY SHRUBS, A COMBINATION ANY OF THE FOLLOWING SPECIES: WINTERBERRY (Ilex verticillata), HIGHBUSH BLUEBERRY (Vaccinium corymbosum), SWEET PEPPERBUSH (Clethra alnifolia), SILKY DOGWOOD (Cornus amomum), PUSSY WILLOW (Salix discolor), ELDERBERRY (Sambucus canadensis), RED CHOKEBERRY (Aronia arbutifolia)

FOR HOLE 18 RESTORATION AREA LOCATED WITHIN THE 35' WETLAND BUFFER:

- THE CONTRACTOR SHALL REMOVE THE EXISTING FAIRWAY TURF WITHIN THE RESTORATION WETLAND AREAS AND WITHIN THE 35' BUFFER ZONE BY SCRAPING THE UPPER TOP SOIL TO A DEPTH OF APPROXIMATELY 2-INCHES. SUPPLEMENTAL CLEAN TOPSOIL SHALL BE USED TO RESTORE SURFACE GRADES AS NECESSARY
- SHRUB PLANTINGS TO BE 2 GALLON CONTAINERS OR LARGER, STAGGERED IN FORMATION AND PLANTED 3 FEET ON CENTER TO ADEQUATELY RE-VEGETATE THE 35' BUFFER ZONE AREA.

FOR ALL RESTORATION AREAS WITHIN PROJECT SITE:

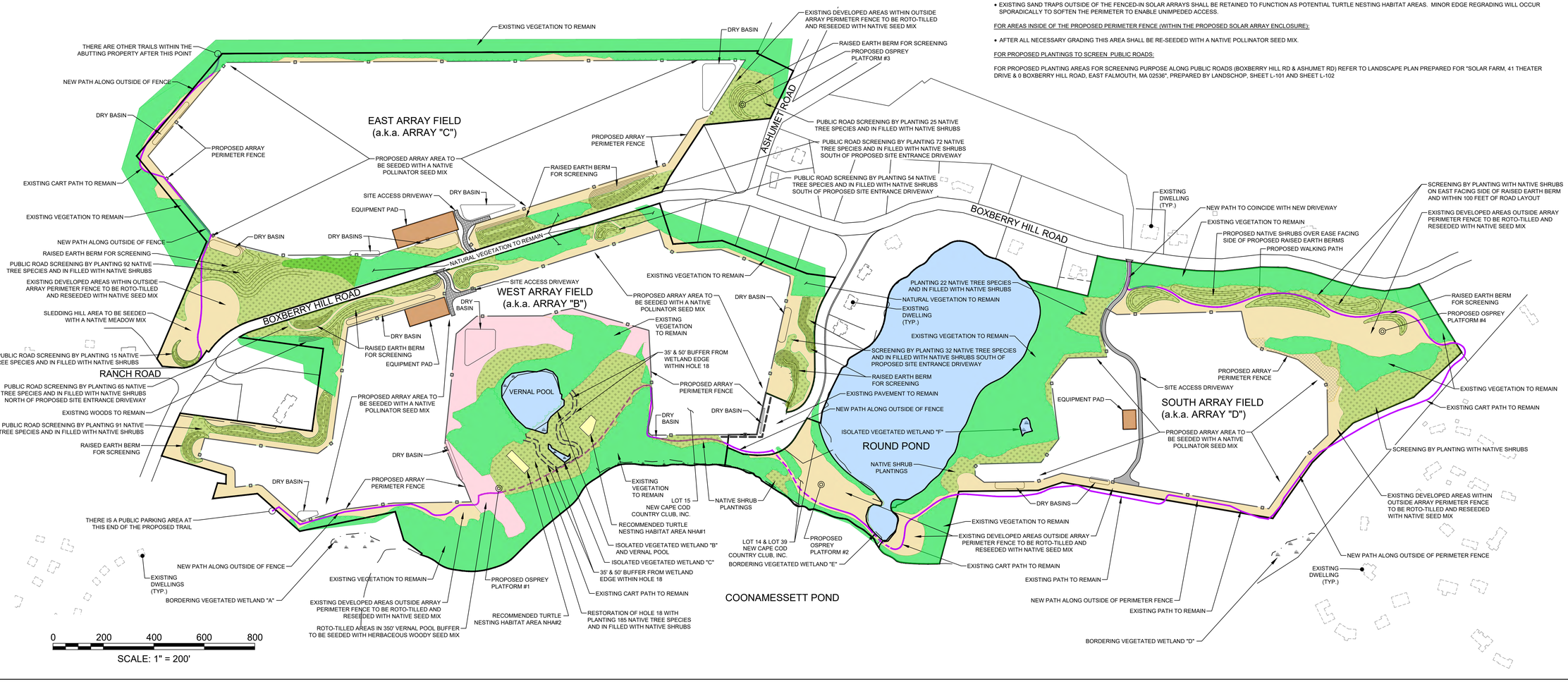
- SHRUBS SHALL MAINTAIN A 5' MINIMUM CLEARANCE FROM EXISTING TREES AND FROM PROPOSED TREES.
- PLANTINGS SHALL BE MAINTAINED IN GOOD HEALTH AND SHALL BE REPLACED IN KIND AS NECESSARY TO PROPERLY ESTABLISH VEGETATION.
- "EXISTING DEVELOPED AREAS TO BE RESTORED WITH NATIVE WOODY SEED MIX AND ALLOWED TO BECOME NATURAL AREAS" TO BE RESEEDED WITH A 50:50 MIX OF NEW ENGLAND CONSERVATION/WILDLIFE MIX AND NEW ENGLAND ROADSIDE MATRIX UPLAND SEED MIX (E.G., NEW ENGLAND WETLAND PLANTS OR APPROVED SIMILAR)
- "EXISTING DEVELOPED AREAS TO BE RESTORED WITH NATIVE SEED MIX AND ALLOWED TO BECOME NATURAL AREAS" TO BE RESEEDED WITH UPLAND BENTGRASS (agrostis perennans), CRINKLED HAIR GRASS (deschampsia flexuosa), PURPLE LOVEGRASS (eragrostis spectabilis), COASTAL RED FESCUE (festuca rubra), SWITCHGRASS (panicum virgatum), AND LITTLE BLUESTEM (schizachyrium scoparium).
- EXISTING SAND TRAPS OUTSIDE OF THE FENCED-IN SOLAR ARRAYS SHALL BE RETAINED TO FUNCTION AS POTENTIAL TURTLE NESTING HABITAT AREAS. MINOR EDGE REGRADING WILL OCCUR SPORADICALLY TO SOFTEN THE PERIMETER TO ENABLE UNIMPEDED ACCESS.

FOR AREAS INSIDE OF THE PROPOSED PERIMETER FENCE (WITHIN THE PROPOSED SOLAR ARRAY ENCLOSURE):

- AFTER ALL NECESSARY GRADING THIS AREA SHALL BE RE-SEEDED WITH A NATIVE POLLINATOR SEED MIX.

FOR PROPOSED PLANTINGS TO SCREEN PUBLIC ROADS:

FOR PROPOSED PLANTING AREAS FOR SCREENING PURPOSE ALONG PUBLIC ROADS (BOXBERRY HILL RD & ASHUMET RD) REFER TO LANDSCAPE PLAN PREPARED FOR "SOLAR FARM, 41 THEATER DRIVE & 0 BOXBERRY HILL ROAD, EAST FALMOUTH, MA 02536", PREPARED BY LANDSCHOP, SHEET L-101 AND SHEET L-102



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COMMONWEALTH OF MASSACHUSETTS
MATTHEW C. COSTA
No. 52282
PROFESSIONAL LAND SURVEYOR

COMMONWEALTH OF MASSACHUSETTS
RAUL LIZARDI-RIVERA
CIVIL
No. 48845
REGISTERED PROFESSIONAL ENGINEER

Drawn By: JVB, RLR
Checked By: MC

Rev	Date	Description	By
1	12/10/24	REVISE ARRAY B AND ARRAY D LAYOUTS. UPDATE DEVELOPMENT AREAS	RLR
2	1/16/25	ADD LOCATION FOR FOUR PROPOSED OSPREY PLATFORMS	RLR
3	1/30/25	UPDATE SOUTH ARRAY MITIGATION AREAS	RLR
4	2/19/25	REVISE PROPOSED RESTORATION AREAS WITH NATIVE SEED MIX	RLR

Prepared For: ASD CAPE COD HOLDINGS LLC
1550 WEWATTA STREET
DENVER, CO 80202

Project: 41 & 48 THEATRE DRIVE & 0 BOXBERRY HILL ROAD
EAST FALMOUTH, MASSACHUSETTS
ASSESSOR'S ID: 10 03 001 163 & 17 01 028 039

Drawing Title: PROPOSED LAND RESTORATION PLAN FOR CAPE COD COMMISSION

Date: APRIL 1, 2024

G-130

G-125 CCC SITE PLAN

RESTORATION PLAN NARRATIVE

Purpose: Restoration activities are intended to create and enhance a heterogenous mix of natural communities / habitat cover types on the Project Site, including Open Meadow, Early and Mid-Successional Habitats, Forested Upland, and Wetlands along with sustainable Turtle Nesting Habitat Areas. The variety of habitat cover types outside of the fenced-in solar arrays and within the protected Open Space will provide important habitat conditions for a wide variety of wildlife.

Restoration activities include the elimination and significant reduction of impervious surfaces on-site, including removing the two (2) single-family homes, pump house, clubhouse, maintenance building and ancillary structures, portions of the existing parking lot, and cart paths outside of the solar arrays.

Restoration details are depicted on the *Proposed Land Restoration Plan for Cape Cod Commission*, prepared by Cape & Islands Engineering, Inc., last revised February 19, 2025 ("*Proposed Land Restoration Plan*").

INITIAL RESTORATION

Fenced-in Solar Array

The fenced-in solar arrays will be reseeded with a native pollinator seed mix based on the UMass Pollinator-Friendly Solar PV Platinum Certification Program, including, but not limited to the wildflower species listed on the Restoration Plan:

Patridge Pea (*Chamaecrista fasciculata*), Spotted Joe-Pye Weed (*Eupatoriadelphus maculatus*), Hyssopleaf thoroughwort (*Eupatorium hyssopifolium*), Common boneset (*Eupatorium perfoliatum*), Sweet Joe-Pye Weed (*Eupatorium purpureum*), Ox Eye Sunflower (*Helianthus helianthoides),* Wild Bergamot (*Monarda fistulosa*), Purple Bergamot (*Monarda media*), Golden Ragwort (*Packera aurea*), Mountain Mint (*Pycnanthemum spp.*), Goldenrods (*Solidago spp.),* and Wingstem (*Verbesina alternifolia*).

At least 75% of array footprint and perimeter are planned to be occupied by wildflower species which meet the following criteria:

- Seed mix(es) contain no more than 25% grass and sedge species, by seed count.
- Seed mix(es) contain at least 20 flowering species comprising 2% or more of seed mix, by seed count.

Seed mix(es) contain at least 3 blooming species per season, comprising 2% or more of seed mix, by seed count, for all 4 seasons (April, May/June, July/August, September/October).

The final species list will be sent to the Commission Staff for review and approval.

Outside of Solar Arrays

The following reviews rototilling, restoration plantings, and turtle nesting habitat areas to facilitate successful restoration of the areas outside of the fenced-in solar arrays and Open Space.

Additional restoration notes are included on the *Proposed Land Restoration Plan*.

Rototilling

All existing turf (greens, tees, fairways, and rough) on individual golf holes outside of the fenced-in solar arrays will be roto-tilled and reseeded with a native mix (see below).

As necessary, erosion control barriers (e.g., mulched silt sock or similar) will be installed between roto-tilled areas and downgradient of wetland areas (i.e., Holes 8, 9, 15, and 18) to prevent sedimentation/erosion and will remain in place until vegetative stabilization.

Rototilling will avoid naturalized habitat areas that contain native species that will proliferate following the termination of typical golf course maintenance (mowing).

Restoration Plantings

1) **Wetlands and 100-foot Buffer Zone** (i.e., Holes 8, 15, and 18, and adjacent to the existing parking lot to be removed) are proposed to restored with the following plantings:

   Wetlands

   Trees: Red maple (*Acer rubrum*)*, Tupelo (*Nyssa sylvatica*)*, and Atlantic White Cedar (*Chamaecyparis thyoides*) [*and within 50-foot Buffer Zone on Hole #18]

   Shrubs: Winterberry (*Ilex verticillata*), Highbush Blueberry (*Vaccinium corymbosum*)*, Sweet Pepperbush (*Clethra alnifolia*)*, Silky Dogwood (*Cornus amomum*), Pussy Willow (*Salix discolor*), Elderberry (*Sambucus canadensis*), and Red Chokeberry (*Aronia arbutifolia*) [*and within 50-foot Buffer Zone on Hole #18]

   Groundcover: Native New England Wetmix (e.g., New England Wetland Plants or approved similar)

   100-foot Buffer Zone

   Trees: Eastern white pine (*Pinus strobus*), Gray Birch (*Betula populifolia*), Black Cherry (*Prunus serotina*), Black Oak (*Quercus velutina*), White Oak (*Quercus alba*), and Pitch Pine (*Pinus rigida*)

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   In addition to native grasses and wildflowers, the New England Roadside Matrix Upland Seed Mix contains seeds for the following native woody shrubs: Grey Dogwood (*Cornus racemosa*), Silky Dogwood (*Cornus amomum*), and Staghorn Sumac (*Rhus typhina*). The inclusion of woody shrubs within the seed mix will facilitate the restoration of the 350-foot Vernal Pool Buffer.

3) **Upland Restoration Areas** upgradient of the 100-foot Buffer Zone (Labeled as "Existing Developed Areas to be Restored with Native Seed Mix and Allowed to Become Natural Areas" "Naturally Vegetated Areas to be Cleared, Graded, Restored with Native Seed Mix and Allowed to Become Natural Areas" on *Proposed Land Restoration Plan*) will be reseeded, following regrading and/or roto-tilling, with a native seed mix, including, but not necessarily limited to:

   Upland Bentgrass (*Agrostis perennans*), Crinkled Hair Grass (*Deschampsia flexuosa*), Purple Lovegrass (*Eragrostis spectabilis*), Coastal Red Fescue (*Festuca rubra*), Switchgrass (*Panicum virgatum*), and Little Bluestem (*Schizachyrium scoparium*).

   The *Proposed Land Restoration Plan* depicts areas and counts for native tree species to be planted throughout the restoration areas, in addition to showing areas to be planted with native shrubs. Upland restoration trees and shrubs to be planted include:

   Trees: Eastern white pine (*Pinus strobus*), Gray Birch (*Betula populifolia*), Black Cherry (*Prunus serotina*), Black Oak (*Quercus velutina*), White Oak (*Quercus alba*), and Pitch Pine (*Pinus rigida*).

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The existing fairway sand trap on Hole 18 will be expanded to function as a turtle nesting habitat area; refer to *Proposed Land Restoration Plan*. A similarly sized turtle nesting habitat area will also be established on the opposite south-facing slope between the Hole 18 tee box and fairway to enhance turtle nesting opportunities immediately proximate to the Vernal Pool and Coonamessett Pond. The vegetative surface material and topsoil of the Turtle Nesting Habitat Areas will be stripped/removed to expose the underlying strata and 12-18 inches of clean sand will be introduced. The sandy substrate may be raked by hand or a York rake (or similar) to provide a loose, unconsolidated substrate.

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Solar Field & Perimeter

1) During the first three growing seasons (establishment period), vegetation management must be more intensive to promote successful establishment of native species and to control weeds and invasive species. A primary purpose of mowing during the establishment period is to cut the heads from flowering weeds to prevent them from going to seed while native plants are establishing. A schedule of high mowing (7 to 8 inches) will be implemented during the establishment period to inhibit weeds from reseeding.

   Specifically, during the first growing season, mow to a height of 7 to 8 inches with a string trimmer three times, once during each of the following periods: April 7 to May 1, July 1-15, and August 15-30. Perform any additional maintenance (e.g., trimming) to control weeds or invasive species, if the need to do so is identified during the annual monitoring inspection.

   At the start of the second growing season, one time between April 7 and May 1, mow with a string trimmer any material standing from the previous season to a height of 7 to 8 inches above ground level. This will allow the soil to warm more quickly, which will stimulate emergence of native seedlings, and reduce growth of woody species. Later in the second growing season, mow to a height of 7 to 8 inches with a string trimmer once between August 8-22. Perform any additional maintenance (e.g., trimming) as identified during the annual monitoring inspection.

   In Year 3, mow once annually in the early spring between April 7 and May 1, at a mower height of 7 to 8 inches above ground level. If needed to control weeds or invasive plants,

perform any additional trimming needs as identified during the annual monitoring inspection.

2) In future years, the area within the fenced-in solar arrays and immediately abutting perimeter shall be mowed between October 15 through April 15 (of any year), to the greatest extent practicable, to avoid/minimize wildlife impacts. Any mowing between April 15 through October 15 (of any year) within the interior of the fenced-in solar panel field shall be limited as feasible. Woody seedlings and/or debris may also be removed by hand at any time of the year. Should tall grasses interfere with the solar panels between April 15 and October 15, hand-held weed whacking may occur; however, no closer than 12-inches off the ground.

3) The perimeter fencing shall be inspected on an annual basis to confirm that at least 6 inches of clearance are present between existing grades and bottom of the fencing. Modifications shall be implemented by hand to maintain the 6-inch gap. The fencing shall be kept free of vegetation.

Stormwater Management Areas

4) Maintenance activities associated with the stormwater drainage “dry basins” within the fenced-in solar arrays shall avoid and/or minimize impacts to the wildlife. Maintenance activities that require mechanical methods (e.g., mowing, etc.) shall be conducted between October 15 and April 15 (of any year) to the greatest extent practicable. Debris removal by hand and/or manual pulling or individual cutting (by hand) of smaller shrubs and saplings may be conducted any time during the year.

5) Dry Basins outside of the fenced-in solar arrays will be left to naturalize.

Bird/Bat Boxes and Osprey Platforms

6) The bird/bat boxes and osprey platforms installed within the Open Space will be inspected on an annual basis and necessary repairs or replacement will be implemented.

Monitoring

7) A qualified biologist shall conduct an annual site evaluation between June-September during the first three growing seasons to assess seed mix and planting establishment, vegetative growth, cover, etc.

Revegetated areas shall be inspected for the presence of invasive species. Invasive species shall be managed as necessary through manual, mechanical, and chemical methods, implementing Best Management Practices (BMPs). If small concentrations of invasive species are documented, the vegetative material is recommended to be removed

by hand and properly disposed of off-site (e.g., collected and left to dry out before disposal at a landfill or bagged and brought to a solid waste digester). If larger concentrations are documented and mechanical removal is not feasible, the Cape Cod Commission (CCC) staff shall be contacted to discuss potential chemical treatments. The quantity and type of herbicide to be utilized shall be reviewed with CCC staff. Herbicide shall only be applied by certified applicator.

8) A summary report shall be prepared to CCC within 30 days of the monitoring. At a minimum, the report will provide a description of the existing conditions, representative photographs, and provide site specific habitat management recommendations, as necessary.

9) Management activities are intended to be adaptive based on existing conditions.

10) The Applicant/Property Owner and/or Solar Operator shall take all reasonable steps necessary to implement the habitat management activities for the life of the solar array or as modified with CCC and/or Staff.

11) The Applicant/Property Owner and/or Solar Operator reserves the right to adapt management activities based on habitat conditions. Accordingly, the vegetative maintenance frequency may be modified and/or limited herbicide application may be necessary to maintain habitat conditions and/or control invasive species.

Operation & Maintenance Plan
ASD Cape Cod Holdings MA Solar LLC, PV Array and BESS
Falmouth, MA
Revision date: May 18, 2025

The following is an Operation and Maintenance Plan for the Solar Photovoltaic (PV) Array and Battery Energy Storage System (BESS) located in Falmouth, MA on 41 and 59 Theatre Drive, 0 Boxberry Hill Road, and 48 and 42 Theatre Drive.

The PV Array and BESS consists of paved access drives, gravel perimeter maintenance drives, perimeter fencing, earthen berms for development screening, stormwater management controls with infiltration, PV Array racking, and grass pollinator meadow areas. Structural and non-structural best management practices (BMPs) have been incorporated into this site design and are outlined below.

Responsible Parties

The long-term operations and maintenance of the solar arrays and associated infrastructure will be the responsibility of ASD Cape Cod Holdings MA Solar LLC, the Applicant and future long-term lessee and operator (managed by PureSky Energy). This includes maintenance of all solar-related infrastructure, stormwater Best Management Practices (BMPs) within the fenced solar array areas, vegetated dry basins, pollinator meadows, and access roads.

Upon donation of the open space parcels, the Town of Falmouth will assume ownership and be responsible for the long-term maintenance of the publicly accessible lands located outside the fenced-in array areas, including walking trails, the sledding hill, on-site habitat enhancement features such as turtle nesting areas, bird/bat boxes, and the osprey platform, and any other features situated on land not under lease by the Applicant. The Town will also be responsible for any future public improvements or recreational amenities added to the donated land.

ASD Cape Cod Holdings MA Solar LLC c/o Puresky Development Inc.
518 17th St., Suite 950
Denver Colorado, 80202
303-598-7192
AssetManagement@PureskyEnergy.com

1. ***During Construction***

Sediment & Erosion Control Plans have been prepared and included within the permit drawing set to outline measures designed to address all facets of sediment and erosion control and site work phasing during construction which include temporary stabilization and control measures during construction and permanent controls for the life of the project. Some of the measures included in these plans are as follows:

- Silt fence Erosion Control Barriers
- Earthen Diversion Berms
- Slope Stabilization with Erosion Control Blankets
- Check Dams
- Construction entrance
- Dust control
- Temporary seeding for stabilization of exposed soils
- Temporary excavated sediment traps
- Extended Detention Basins
- Infiltration Trenches

During construction, the access road shall be inspected twice monthly. The driveway apron and roadway along Boxberry Hill Road and Theatre Drive shall be inspected daily and cleared of mud caused by construction operations.

During Construction, construction debris and litter removal over the entire property will be removed daily with a site wide inspection to take place no less than weekly and, in any circumstance, promptly upon request by a local authority.

2. ***Long Term Maintenance***

The following is a list of long-term BMPs to ensure the array's continued stormwater compliance and overall effectiveness.

a. Litter Control

Routinely walk or drive to the site to pick up and remove debris and litter from the area, perimeter greenspace areas and around the perimeter fencing. This maintenance requirement is in addition to the seasonal grass mowing operations.

b. ***Stormwater Installation Inspection***

Inspect all sediment containment structures that capture sediment and reduce runoff velocities from potential overland flow (4) four times per year and after all major storm events as outlined in the MassDEP Stormwater Management Handbook. Repair eroded ground and plant vegetation as necessary. Realign rocks to reduce channelization. Remove sediment if greater the 6" deep and redistribute on property.

Maintenance activities associated with the stormwater basin and Drainage Easements shall avoid and/or minimize impacts to the wildlife. Maintenance activities that require mechanical methods (e.g., mowing, etc.) shall be conducted between November 1 and March 31 (of any year) to the greatest extent practicable. Debris removal by hand and/or manual pulling, or individual cutting (by hand) of smaller shrubs and saplings may be conducted any time during the year.

c. ***Outlet Control Structures, Rip Rap Flared End Sections and Emergency Overflow Weirs***

Inspect all outlet control structures and rip rap flared end structures (4) four times per year at a minimum to ensure orifices and grates are clean of debris. Remove accumulated sand, sediment, and leaves from the structures at least four times per year. Dispose of sediments at an approved off-site location. Maintain records of inspections and cleaning. As part of routine maintenance, visual inspections should be conducted after heavy precipitation events.

d. ***Access Road Maintenance and Inspection***

No less than twice annually, and after every major storm event, the entire length of the access road and internal roads shall be inspected for erosion and sufficient gravel covering. The inspections shall initially take place in the fall and spring to ensure that the access road is in the appropriate condition before and after snow season. The array owner will promptly repair the access road to maintain proper emergency vehicle access.

After every significant snowfall, the access road shall be plowed to maintain proper access. Specific attention shall be paid to ensure that no significant amount of gravel is pushed into the bordering vegetated wetlands during plowing on the section of road that encroaches a wetland, and the twice annual inspections shall properly remove any gravel deposits in and around the wetland setbacks.

e. ***Panel, Racking, Foundation, Fence Inspection***

Twice annually visually inspect all racking equipment and panel to panel connections. Annually inspect panels for hotspots, weather damage, and module degradation. Replace panels as necessary.

Inspect all foundation points for signs of erosion and apply erosion control materials as necessary.

Annually, inspect the perimeter fence for damage. Ensure the fence maintains an approximately 6-inch gap for wildlife passage.

f. Meadow Areas and Vegetation control

Solar Field & Perimeter:

1. During the first three growing seasons (establishment period), vegetation management must be more intensive to promote successful establishment of native species and to control weeds and invasive species. A primary purpose of mowing during the establishment period is to cut the heads from flowering weeds to prevent them from going to seed while native plants are establishing. A schedule of high mowing (7 to 8 inches) will be implemented during the establishment period to inhibit weeds from reseeding.

   Specifically, during the first growing season, mow to a height of 7 to 8 inches with a string trimmer three times, once during each of the following periods: April 7 to May 1, July 1-15, and August 15-30. Perform any additional maintenance (e.g., trimming) to control weeds or invasive species, if the need to do so is identified during the annual monitoring inspection.

   At the start of the second growing season, one time between April 7 and May 1, mow with a string trimmer any material standing from the previous season to a height of 7 to 8 inches above ground level. This will allow the soil to warm more quickly, which will stimulate emergence of native seedlings, and reduce growth of woody species. Later in the second growing season, mow to a height of 7 to 8 inches with a string trimmer once between August 8-22. Perform any additional maintenance (e.g., trimming) as identified during the annual monitoring inspection.

   In Year 3, mow once annually in the early spring between April 7 and May 1, at a mower height of 7 to 8 inches above ground level. If needed to control weeds or invasive plants, perform any additional trimming needs as identified during the annual monitoring inspection.

2. In future years, the area within the fenced-in solar arrays and immediately abutting perimeter shall be mowed between November 1 and March 31 (of any year) to the greatest extent practicable. Any mowing between April 1 through October 31 (of any year) within the interior of the fenced-in solar panel field shall be limited as feasible. Woody seedlings and/or debris may also be removed by hand at any time of the year. Should tall grasses interfere with the solar panels between April 1 and October 31, hand-held weed whacking may occur; however, no closer than 12-inches off the ground.

3. The perimeter fencing shall be inspected on an annual basis to confirm that at least 6 inches of clearance are present between existing grades and bottom of the fencing. Modifications shall be implemented by hand to maintain the 6-inch gap. The fencing shall be kept free of vegetation.

The wildflower pollinator meadows that comprise most of the array area shall be maintained by the Applicant.

No Massachusetts Prohibited Plant List species will be used. There will be no routine use of pesticides or other chemicals will be used for vegetation management or module cleaning.

Areas of the array with a higher volume of grass will be mowed regularly to limit the amount of combustible material potentially available.

Monitoring:

1. A qualified biologist shall conduct an annual site evaluation between June-September during the first three growing seasons to assess seed mix and planting establishment, vegetative growth, cover, etc.

   Revegetated areas shall be inspected for the presence of invasive species. Invasive species shall be managed as necessary through manual, mechanical, and chemical methods, implementing BMPs. If small concentrations of invasive species are documented, the vegetative material is recommended to be removed by hand and properly disposed of off-site (e.g., collected and left to dry out before disposal at a landfill or bagged and brought to a solid waste digester). If larger concentrations are documented and mechanical removal is not feasible, the Cape Cod Commission (CCC) staff shall be contacted to discuss potential chemical treatments. The quantity and type of herbicide to be utilized shall be reviewed with CCC staff. Herbicide shall only be applied by certified applicator.

2. A summary report shall be prepared to CCC within 30 days of the monitoring. At a minimum, the report will provide a description of the existing conditions, representative photographs, and provide site specific habitat management recommendations, as necessary.

3. Management activities are intended to be adaptive based on existing conditions. Any modifications to the long-term management shall require review and written approval by CCC.

4. The Applicant/Property Owner and/or Solar Operator shall take all reasonable steps necessary to implement the habitat management activities for the life of the solar array or as modified with CCC and/or Staff.

5. The Applicant/Property Owner and/or Solar Operator reserves the right to adapt management activities based on habitat conditions. Accordingly, the vegetative maintenance frequency may be modified and/or limited herbicide application may be necessary to maintain habitat conditions and/or control invasive species. All proposed modifications require approval by CCC and/or Staff.

PureSky Energy – Energy Storage System Risk Mitigation Strategy

Revision date: July 3, 2025

Introduction

PureSky Energy (PSE) is committed to meeting or exceeding all local, state, and federal fire requirements for energy storage systems. PSE's energy storage equipment is chosen based on safety, quality, and efficiency standards and will be installed in a way that minimizes the risk of fire and subsequent damages. This document explains potential safety concerns and their mitigation strategies. A key focus for PSE is to collaborate with the local fire department to ensure the system design and operation is acceptable and well understood by first responders.

Technology

PSE's Energy Storage Systems ("ESS") utilize state-of-the-art lithium-ion battery technology contained in secure, controlled enclosures. The ESS solution employs a factory-built LFP energy storage solution that includes explosion prevention and fire safety features.

These ESS enclosures include the following equipment:

- Battery cells – solid-state lithium-ion cells from a tier-one battery cell supplier,
- Battery Management System ("BMS") – used to monitor battery cell state of charge, cell health, and is capable of shutting off any battery cell experiencing unusual conditions,
- Power conversion equipment – used to regulate the power supplied by the battery modules for optimum operation,
- Security system – used to deter unauthorized access and theft,
- Thermal Management system – used to control the temperature inside the enclosures for optimum battery performance and safety,

PSE uses battery cells from leading cell manufacturers and collaborates with leading battery system integrators to build safe and reliable ESS installations that comply with all relevant electrical and mechanical engineering standards, including Underwriters Laboratories ("UL") battery cell certifications. During the procurement and detailed design of the ESS, PSE consults with the local fire department in order to incorporate specific local requirements for fire safety. Once the system is installed, PSE can facilitate site visits by the fire department to inspect the system and better understand the safety

systems and operation. PSE can provide additional information as required and involve the ESS equipment supplier as needed.

Siting of Energy Storage Systems

The objective of PSE ESS installations is to harvest the maximum amount of clean solar energy. The ESS will be co-located with the solar energy inverters in safe sites with sufficient separation from other buildings. Following the Standard on Explosion Prevention Systems (NFPA 69), National Electrical Code (NFPA 70), Safety requirements for secondary lithium cells and batteries for use in industrial applications (IEC62619) and Standard for the Installation of Stationary Energy Storage Systems (NFPA 855), PSE ESS sites will maintain safe distances (more than 5 ft) from lot lines, public ways, buildings, and other combustibles as well as the necessary 2-hour fire barriers required by NFPA Codes.

Possibility of Thermal Runaway

Thermal runaway is an infrequent situation when the battery cell temperatures rise so high that the cells become unstable. This situation only occurs when the cells are operated outside of their normal temperature range without being cooled by a thermal management system. Runaway temperatures of typical battery chemistries vary from 302°F to 518°F [1]. Given that all these battery chemistries have high thermal runaway temperatures, Lithium-ion cells are thermally stable in the range of normal ambient temperature variations.

Mitigation of Thermal Runaway

Battery packs are fitted with separation walls to stop the failing cell from spreading to neighbouring cells. The BMS monitors and controls the batteries to ensure they remain in acceptable performance and safe operating conditions. The BMS monitors abnormal conditions of each battery cell and takes active preventive measures. Each PSE ESS is also equipped with a dedicated thermal management system, which operates automatically at abnormal temperatures. PSE projects are developed with advanced Energy Management Systems ("EMS") to optimize the energy dispatch between the ESS and the PV system. The EMS ensures battery cells are not stressed or abused during normal operation, which could lead to thermal runaway.

Possibility of Fire:

The chance of a fire caused by the ESS is very low. Lithium-ion battery electrolytes contain different solvents, which may be flammable [2]. However, flashpoints (burn temperature) of

these electrolytes are very high, and they have been sealed in air-tight cell pouches. Since all the batteries are also contained in a NEMA-rated enclosure, the possibility of cell damage due to impact and exposure of flammable solvents to catch fire is very low.

Accumulation of Combustible Gases:

A thermal runaway event can produce combustible gases. Accumulation of such gases should be vented out to mitigate possible explosions. PSE ESS enclosures are equipped with gas detectors. When gas accumulations are detected, the thermal management system vents out such gases. Due to this safety design, the possibility of gas accumulation is considerably low with PSE ESS enclosures.

Possibility of Electrolyte Spills

Lithium-ion batteries contain electrolytes that are semi-solid or gel, depending on their solvent characteristics [2], and have very high melting points, so the risk of spillage is very low during normal operating conditions. Electrolytes used in PSE cells are nonaqueous materials [3] and do not easily mix with water. With different layers of packaging, the risk of water contamination is very low.

Spill Mitigation

PSE ESS has several layers of packaging. All the cells with electrolytes are packaged in air-tight pouches. Then these cells are packaged as battery modules within battery racks. All the battery racks are contained within a NEMA-rated enclosure. Considering these different layers of packaging, it is very unlikely that a spill will occur outside of the ESS. The electrolyte in these LFP cells is largely absorbed in the electrodes within the individual cells (which are individually wrapped and contained in trays). In practical terms, there is no freely flowing liquid electrolyte in PSE ESS units that can easily leak out into the environment, even in the event of cell damage. Furthermore, PSE battery enclosures will be installed on elevated equipment pads for added containment.

Possibility of Gas Emissions

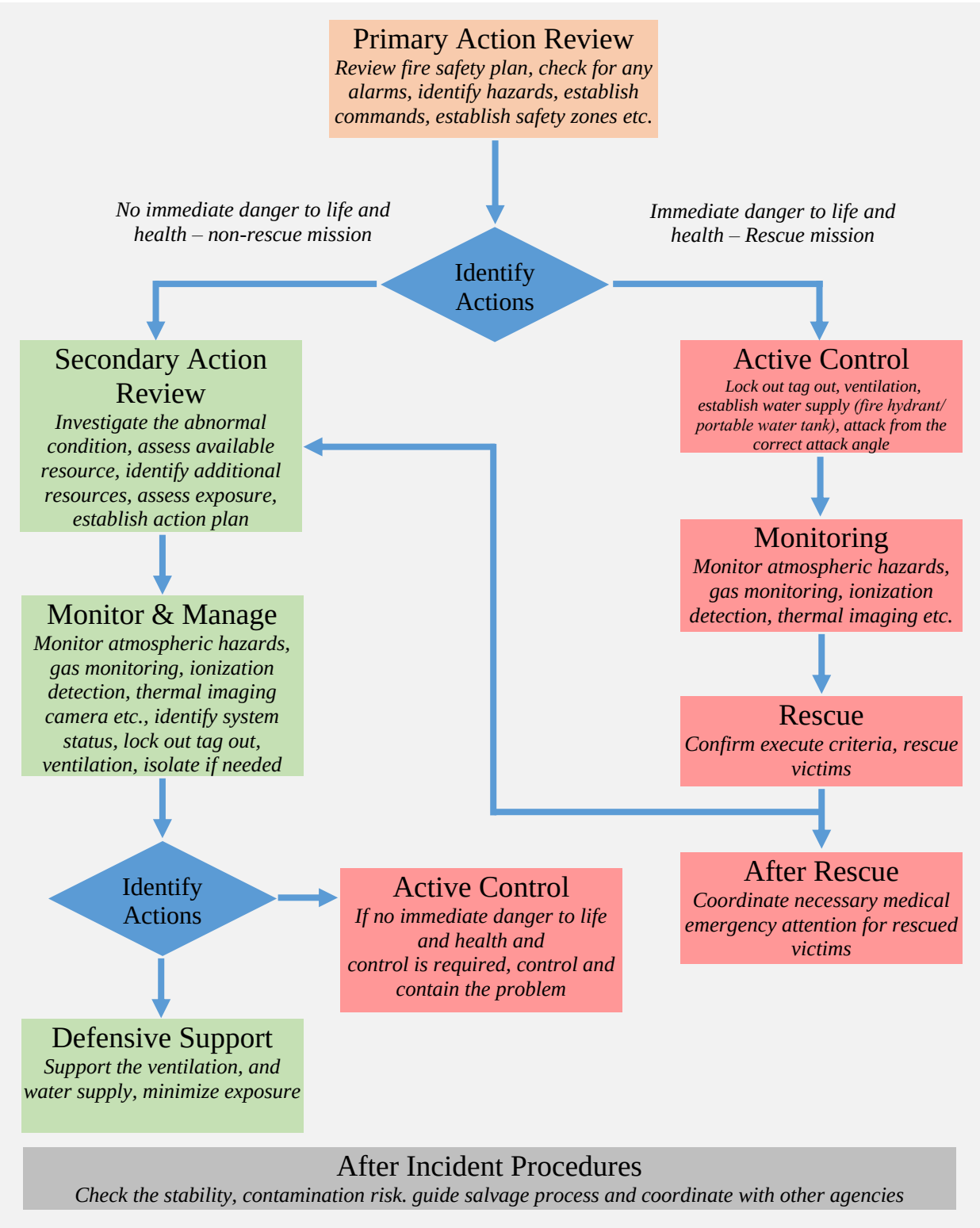
Lithium-ion batteries do not produce measurable gas emissions while they are under normal operation [4]. In an unlikely event of a battery fire, different toxic gases could be emitted based on the battery cells and packaging materials [5]. However, the possibility of a fire and subsequent gas emission is very low due to fire prevention measures.

Risk of Lightning:

In PSE ESS projects, batteries are placed in NEMA outdoor-rated enclosures, which are electrically grounded using stable grounding grids. Therefore, enclosures could never be electrically energized in any situation. Even though the risk of lightning cannot be mitigated, the damage due to lightning has been mitigated with these actively grounded enclosures. These enclosures act as "Faraday Cage" during lightning events and protect all the contents from electrical damage.

Fire Safety Plan

PSE selects battery cell technology for each project based on the battery operation requirements. The chemical compositions of these cell technologies vary from project to project. The following fire safety procedure forms the basis for initial discussions with the local fire department and can be updated for each project based on additional requirements.


Primary Action Review
Review fire safety plan, check for any alarms, identify hazards, establish commands, establish safety zones etc.
No immediate danger to life and health – non-rescue mission
Immediate danger to life and health – Rescue mission
Identify Actions
Secondary Action Review
Investigate the abnormal condition, assess available resource, identify additional resources, assess exposure, establish action plan
Active Control
Lock out tag out, ventilation, establish water supply (fire hydrant/ portable water tank), attack from the correct attack angle
Monitoring
Monitor atmospheric hazards, gas monitoring, ionization detection, thermal imaging etc.
Rescue
Confirm execute criteria, rescue victims
Monitor & Manage
Monitor atmospheric hazards, gas monitoring, ionization detection, thermal imaging camera etc., identify system status, lock out tag out, ventilation, isolate if needed
After Rescue
Coordinate necessary medical emergency attention for rescued victims
Identify Actions
Active Control
If no immediate danger to life and health and control is required, control and contain the problem
Defensive Support
Support the ventilation, and water supply, minimize exposure
After Incident Procedures
Check the stability, contamination risk. guide salvage process and coordinate with other agencies

Scientific References

[1] Understanding Lithium-ion.
https://batteryuniversity.com/learn/archive/understanding_lithium_ion

[2] Qi Li, Juner Chen, Lei Fan, Xueqian Kong, Yingying Lu, Progress in electrolytes for rechargeable Li-based batteries and beyond, Green Energy & Environment 1 (2016) 18 – 42.
https://www.sciencedirect.com/science/article/pii/S2468025716300218

[3] Makoto Ue, Yukio Sasaki, Yasutaka Tanaka, Masayuki Morita Nonaqueous Electrolytes with Advances in Solvents.
https://link.springer.com/chapter/10.1007/978-1-4939-0302-3_2

[4] Mia Romare and Lisbeth Dahllöf, The Life Cycle Energy Consumption and Greenhouse Gas Emissions from Lithium-Ion Batteries, IVL Swedish Environmental Research Institute, S-100 31 Stockholm, Sweden.
http://www.energimyndigheten.se/globalassets/forskning--innovation/transporter/c243-the-life-cycle-energy-consumption-and-co2-emissions-from-lithium-ion-batteries-.pdf

[5] Final Report Considerations for ESS Fire Safety. Consolidated Edison and NYSERDA New York, NY, DNV.GL, Report No.: OAPUS301WIKO(PP151894), Rev. 4 February 9th, 2017.
https://www.nyserda.ny.gov/-/media/Files/Publications/Research/Energy-Storage/20170118-ConEd-NYSERDA-Battery-Testing-Report.pdf

CAPE & ISLANDS ENGINEERING

June 27, 2023
Revised: March 18, 2025

PureSky Development, Inc.
518 17th St., Suite 950
Denver, CO 80202

RE: 41, 42, 48, 51 Theater Drive & 0 Boxberry Hill Road – Driveway Sight Distance Analysis

Dear AMP:

Cape & Islands Engineering, Inc. provides this analysis for the proposed site Development Stopping Sight Distance (SDD) at the three driveway locations for your proposed Ground-Mounted Solar Facility development at the above reference site. The calculations presented are based on Guidelines from the American Association of State Highway and Transportation Officials (AASHTO).

The project intends to construct three access driveways, one for each of the solar array sites. The proposed locations of these three driveway entrances are located off Boxberry Hill Road and at almost the existing location of golf course cart crossing locations. In addition to the AASHTO stopping distance analysis, the Town of Falmouth Engineering Division provides a guidance table for sight distance. The proposed site access driveway location exceeds both minimum recommended distance by AASHTO and the Town of Falmouth.

Boxberry Hill Road is a rural residential side road in Falmouth. The roadway travel lane grades approaching the proposed driveway locations range between 4% and 0.7%. The recommended and calculated stopping sight distance are between 322 feet to 390 feet. The existing sight distances exceed 400 feet in all directions at the proposed locations of these three driveways. The driveway locations for the East and West solar array fields provide the required sight distance without the need to manage vegetation along the road shoulders. The driveway locations for the South solar array field will require that the existing road shoulders approximately 85 feet from the driveway is maintained and kept at no higher than 2 feet as currently exists. The location of all three proposed driveways is adequate with respect to vehicular sight distance.

Please contact us if you have any questions regarding this report and accompanying documents.

Sincerely,

Raul Lizardi-Rivera

Raul Lizardi-Rivera, P.E.,
Director of Engineering

cc: Matthew Terry (Ament Klauer LLP)

COMMONWEALTH OF MASSACHUSETTS
RAUL LIZARDI-RIVERA
CIVIL
No. 46845
REGISTERED PROFESSIONAL ENGINEER

Date: June 27, 2023

Sight Distance Calculations

Based on A Policy on the Geometric Design of Highways and Streets, AASHTO

Stopping Sight Distance (SSD): Manual Chapter 3, page 109

SSD, $d = 1.47Vt + 1.075 V^2 / a$ or $d = 1.47Vt + V^2 / [30(a / 32.2) \pm G]$

d = minimum sight distance along the major road from the intersection (feet).

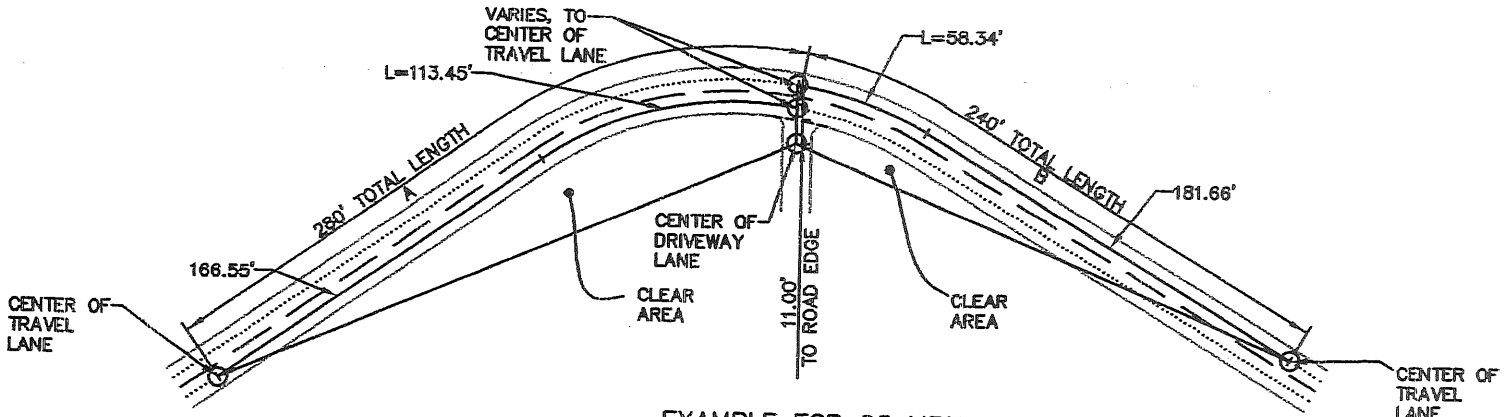
t = break reaction time, 2.5 seconds

V = design speed, miles per hour (mph), rural residential road, 35 mph

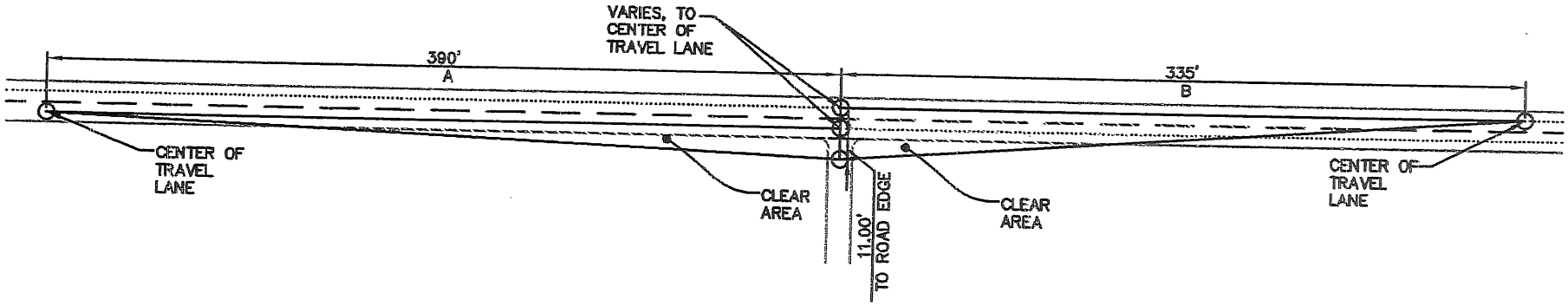
a = deceleration rate, ft/s^2, 90% of drivers decelerate at 11.2 ft/s^2

G = roadway grade

	Road Grade	Sight Distance, feet		
		Calculted	Falmouth	Existing
West Array driveway, north approach (left)	3.70%	322	390	> 700
West Array driveway, south approach (right)	-1.50%	323	335	> 600
East Array driveway, north approach (right)	3.70%	322	335	> 800
East Array driveway, south approach (left)	-1.50%	323	390	> 500
South Array driveway, north approach (left)	-3.70%	323	390	> 400
South Array driveway, north approach (right)	0.70%	323	335	> 400



EXAMPLE FOR 25 MPH
ON A CURVE



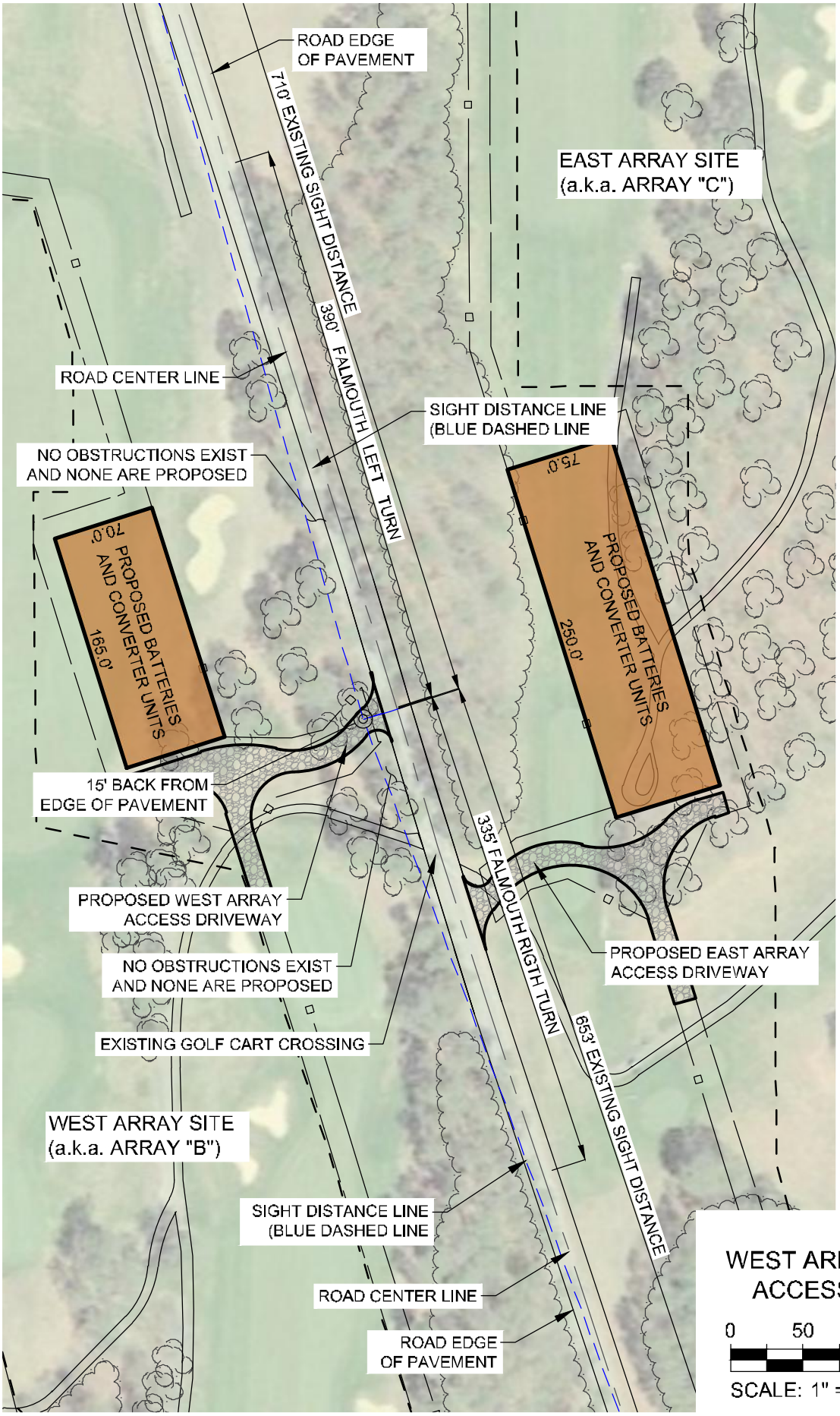
EXAMPLE FOR 35 MPH
ON STRAIGHT SECTION

NOTE: EXISTING SIGHT CONDITIONS MAY DICTATE STRICTER REQUIREMENTS (TO BE DETERMINED ON A CASE BY CASE BASIS)

Length of Sight Distance Legs (ft)		
Street Design Speed (mph)	Left Turn, A (ft)	Right Turn, B (ft)
15	170	145
20	225	195
25	280	240
30	335	290
35	390	335
40	445	385
45	500	430
50	555	480
55	610	530

CLEAR SIGHT TRIANGLE EXAMPLES
PURSUANT TO § 199-3 DIMENSIONS OF OBSTRUCTED VIEW

TOWN OF FALMOUTH
DEPARTMENT OF
PUBLIC WORKS
ENGINEERING DIVISION
416 GIFFORD STREET
FALMOUTH, MA 02540
508-457-2543



WEST ARRAY PROPOSED
ACCESS DRIVEWAYS

0 50 100 200

SCALE: 1" = 100'

DRAWING TITLE:
GRAPHIC: PROPOSED
DRIVEWAYS SIGHT DISTANCE

SHEET NO.: 1 OF 3 | DATE: JUNE 27, 2023

DRAWN BY: RLR | CHECKED BY: RLR

PROJECT:
41 & 48 THEATRE DRIVE & 0 BOXBERRY HILL ROAD
EAST FALMOUTH, MASSACHUSETTS

CAPE & ISLANDS
ENGINEERING
508.477.7272 PHONE 508.477.9072 FAX
SUMMERFIELD PARK - 800 FALMOUTH ROAD - SUITE 301C - MASHPEE, MA 02649

SSD GRAPHICS

EAST ARRAY PROPOSED
ACCESS DRIVEWAYS

0 50 100 200

SCALE: 1" = 100'

REVISION: 3/18/25 - CORRECT SIGHT DISTANCE TRIANGLE

PROJECT:
41 & 48 THEATRE DRIVE & 0 BOXBERRY HILL ROAD
EAST FALMOUTH, MASSACHUSETTS

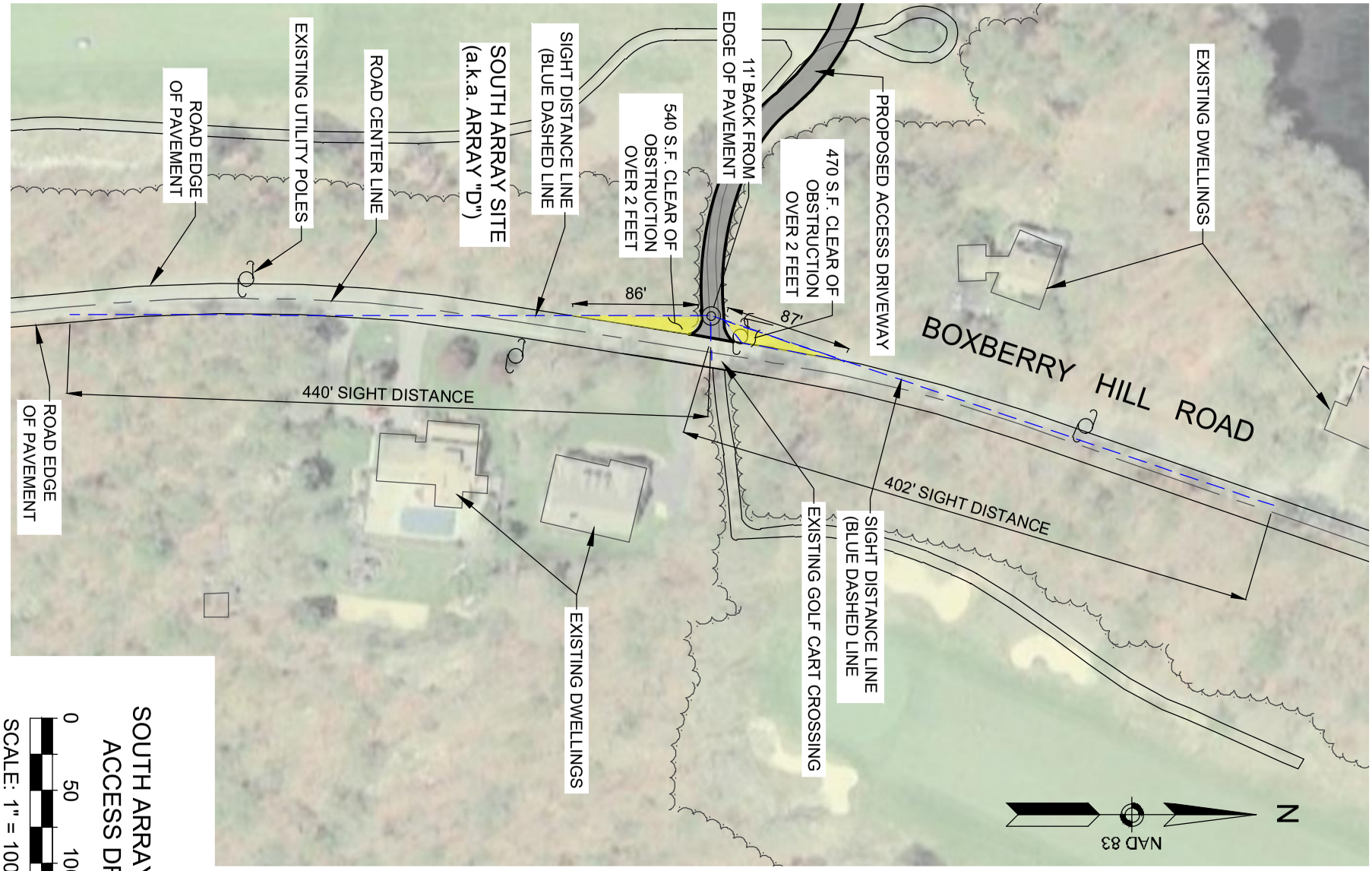
DRAWING TITLE:
GRAPHIC: PROPOSED
DRIVEWAYS SIGHT DISTANCE

SHEET NO.: 2 OF 3 | DATE: JUNE 27, 2023

DRAWN BY: RLR | CHECKED BY: RLR

SSD GRAPHICS

CAPE & ISLANDS
ENGINEERING
508.477.7272 PHONE 508.477.9072 FAX
SUMMERFIELD PARK - 800 FALMOUTH ROAD - SUITE 301C - MASHPEE, MA 02649



SOUTH ARRAY PROPOSED ACCESS DRIVEWAYS

SCALE: 1" = 100'

0 50 100 200

PROJECT:
41 & 48 THEATRE DRIVE & 0 BOXBERRY HILL ROAD
EAST FALMOUTH, MASSACHUSETTS

CAPE & ISLANDS ENGINEERING
508.477.7272 PHONE 508.477.9072 FAX
SUMMERFIELD PARK - 800 FALMOUTH ROAD - SUITE 301C - MASHPEE, MA 02649

DRAWING TITLE:
GRAPHIC: PROPOSED DRIVEWAYS SIGHT DISTANCE

SHEET NO.: 3 OF 3	DATE: JUNE 27, 2023
DRAWN BY: RLR	CHECKED BY: RLR

SSD GRAPHICS

Revision date: April 9, 2025

QUITCLAIM DEED

ASD CAPE COD HOLDINGS LLC, a Delaware limited liability company, with a mailing address of 518 17th Street, Suite 950, Denver, CO 80202 ("Grantor"),

for nominal consideration paid of One ($1.00) Dollar,

grants to The TOWN OF FALMOUTH, a municipal corporation located in Barnstable County and the Commonwealth of Massachusetts, acting by and through its SELECT BOARD, for general municipal purposes and conservation purposes as designated herein, with a mailing address of 59 Town Hall Square, Falmouth, MA 02540 ("Grantee"),

with **QUITCLAIM COVENANTS**,

The land in Falmouth, County of Barnstable, Commonwealth of Massachusetts, described as follows:

Lots 35, 87 and 88

Land Court Plan 12349-R (Sheets 8, 9 and 16)

The above premises are conveyed subject to and with the benefit of all rights, rights of way, easements, restrictions and reservations of record, if any, insofar as the same are in force and applicable.

Grantor makes this conveyance subject to the following restrictions, which Grantee agrees to for its successor and assigns by acceptance and recording of this deed:

Grantor hereby designates the portions of the premises shown as "Open Space Land Shown in Cross Hatch 6.10+/- Acres" in the attached sketch plan attached hereto as Exhibit A (the "Restricted Areas") to be subject to the Restriction that it may be used for the exclusive public purpose of conserving those portions of the premises in their natural state in perpetuity, subject to Article 97 of the Articles of Amendments to the Massachusetts Constitution. Grantor and Grantee have agreed to this Restriction applicable to the Restricted Areas in perpetuity (i) as a gift for public purposes exempt from the limitations on the length of the term of restrictions affecting the use of real property in accordance with in M.G.L. Chapter 184, Section 23 and (ii) as a restriction held by a governmental body (as such term is defined in M.G.L. Chapter 184, Section 26) exempt from the provisions of M.G.L. Chapter 184, Sections 26 through 30 applicable to restrictions on the use of land which run with the land in accordance with M.G.L.

Chapter 184, Section 26, it being understood and agreed that this Restriction shall not be a conservation restriction, as such term is defined in M.G.L. Chapter 184, Section 31, having the benefit of M.G.L. Chapter 184, Section 32 but shall be a restriction on the use of the Restricted Areas in perpetuity for open space conservation purposes granted as a gift for public purposes to be held by the Town for the benefit of the inhabitants of the Town.

The portions of the premises not identified as Restricted Areas above are not subject to the foregoing preservation and protection restrictions and are designated as a gift for general municipal purposes, reserving from this designation, and Grantee shall take the premises subject to, the terms and conditions of that certain Ground Lease by and between Grantor and the Town of Falmouth dated [_____], 20[__] (the "Ground Lease") and with respect to which a Notice of Ground Lease is filed herewith (the "Notice"). Upon the expiration or earlier termination of the Ground Lease, the reservation made by Grantor herein shall immediately expire and be of no further force or effect. For the sake of clarity, Grantor's reservation solely applies to the Ground Lease and does not apply to any other lease, ground lease, license or any other interest in the premises, whether now existing or hereinafter purported to arise.

The grantor is not classified for the current taxable year as a corporation for federal income tax purposes.

Property address: 0 Boxberry Hill Road, Falmouth, MA

For Grantor's title, see Certificate of Title Number [_____].

[Signature appears on the following page]

Executed under seal this ___ day of _____, 202__.

ASD CAPE COD HOLDINGS LLC

By: _____
Derek Moretz, Authorized Signatory

STATE OF [_____]

County of _____, ss.

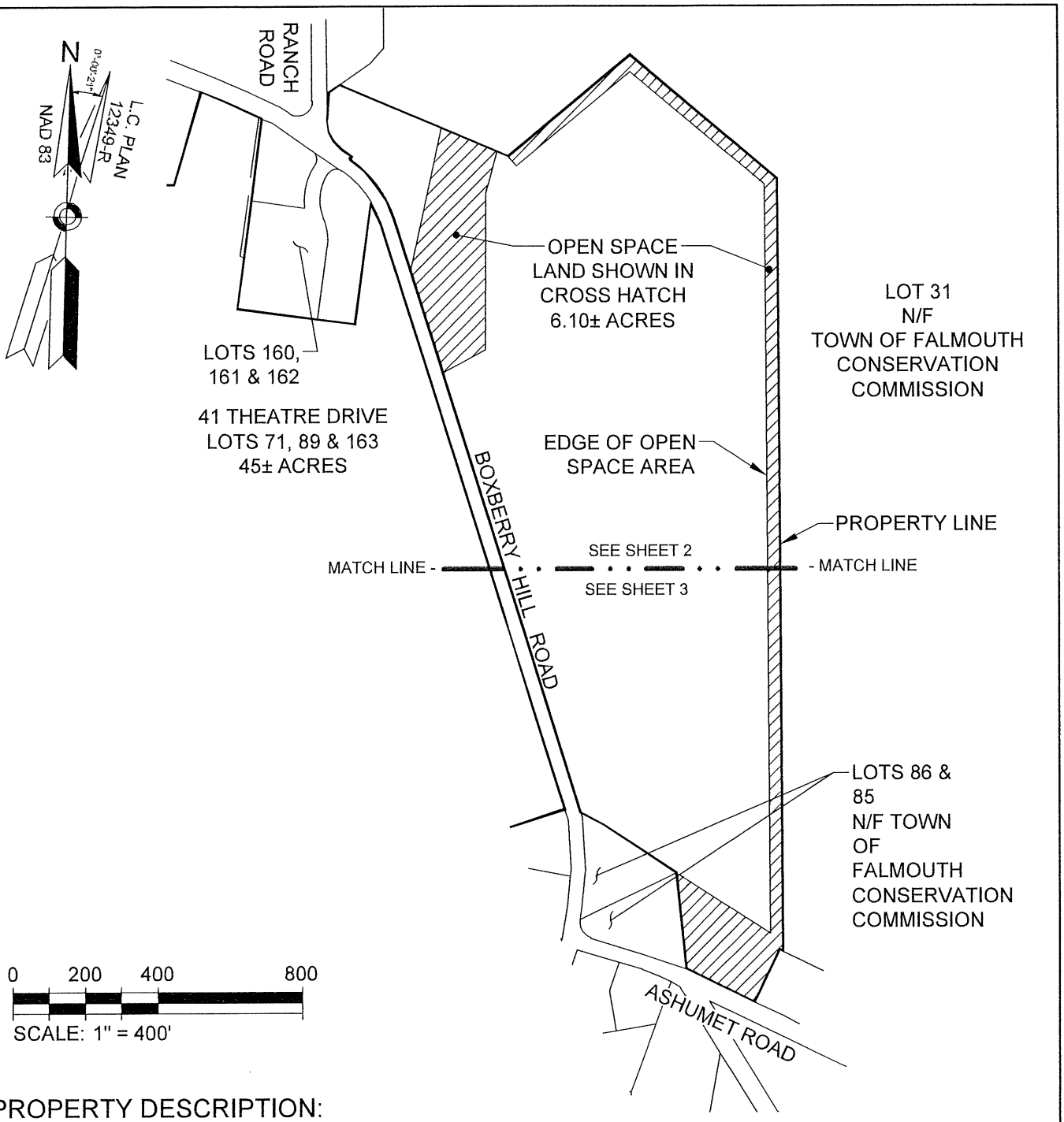
On this ___ day of _____, 202__ before me, the undersigned notary public, personally appeared Derek Moretz, as Authorized Signatory of ASD Cape Cod Holdings LLC, proved to me through satisfactory evidence of identification, which was _____, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that they signed it voluntarily as Authorized Signatory for its stated purpose as the free act and deed of ASD Cape Cod Holdings LLC.

_____
Notary Public
My Commission Expires:

Exhibit A

Sketch Plan – Open Space

[See Attached]



PROPERTY DESCRIPTION:

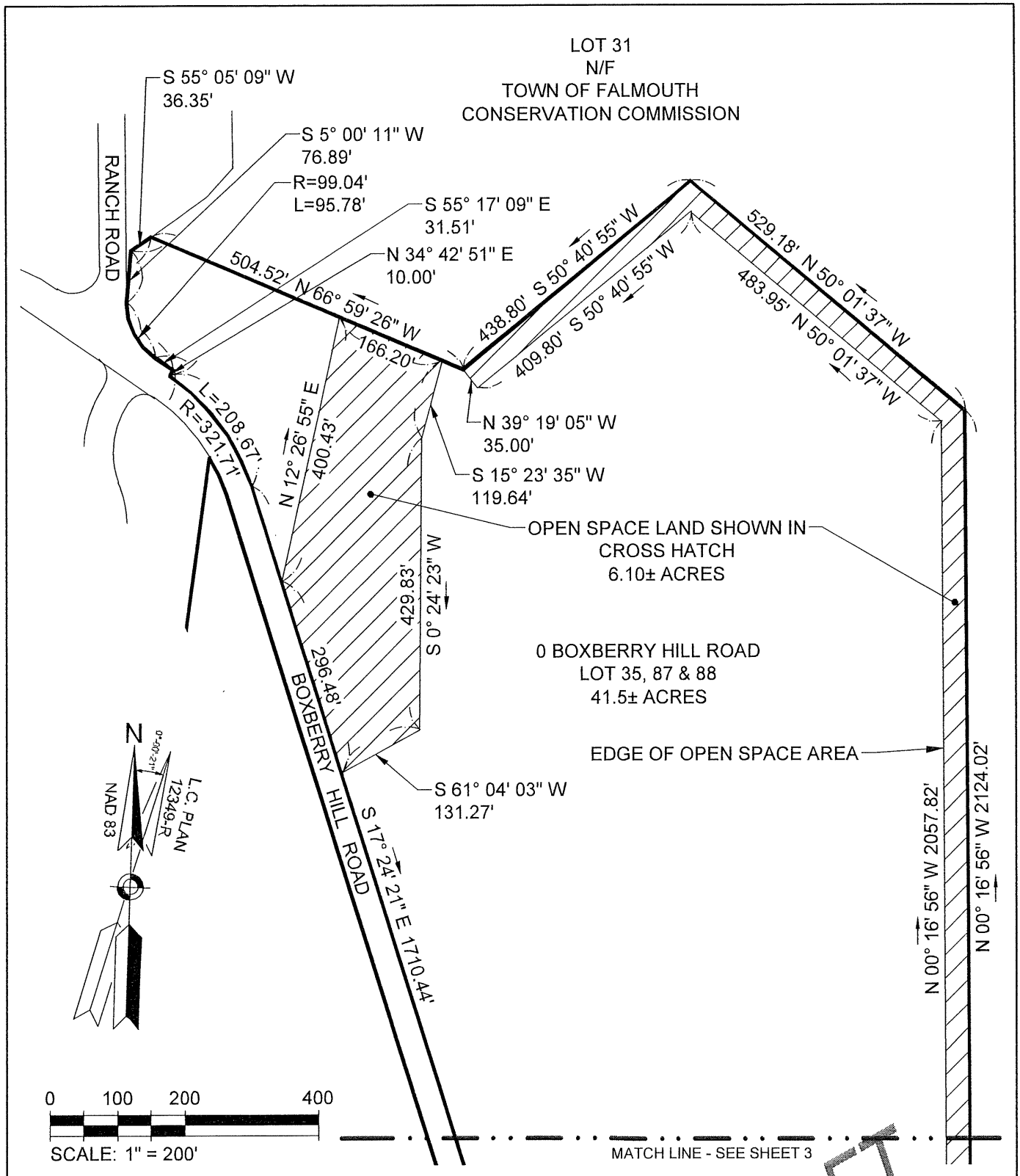
THOSE CERTAIN PARCELS OF REGISTERED LAND, WITH ALL BUILDINGS, STRUCTURES AND IMPROVEMENTS THEREON, LOCATED IN FALMOUTH, BARNSTABLE COUNTY, MASSACHUSETTS, AND DESCRIBED AS FOLLOWS:

LOTS 35, 87, AND 88 ON LAND COURT PLAN 12349-R (SHEETS 8, 9, AND 16)

FOR TITLE, SEE CERTIFICATE OF TITLE NO. ~~102289.~~ [TBD]

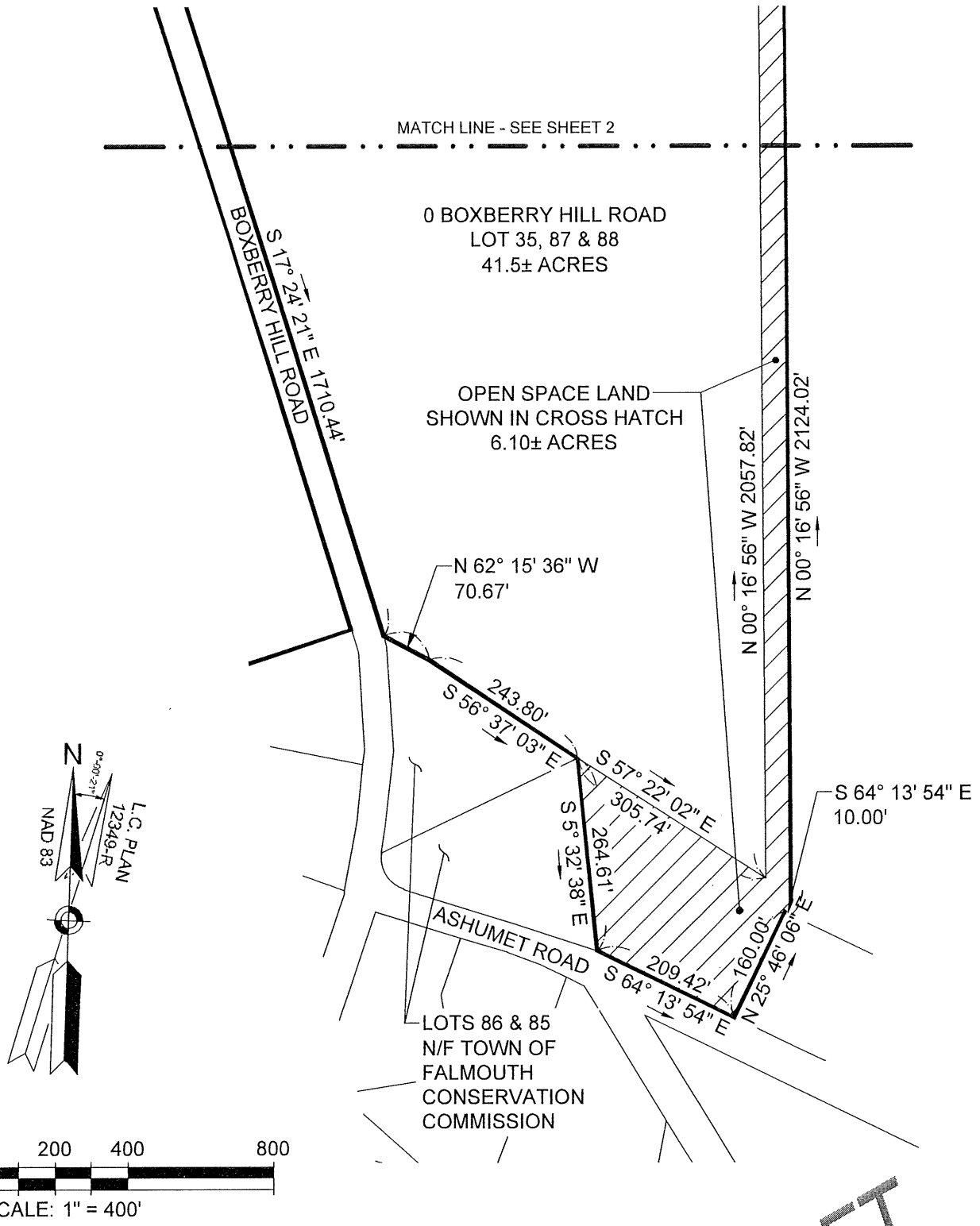
DRAFT

PROJECT: 0 BOXBERRY HILL ROAD EAST FALMOUTH, MASSACHUSETTS	DRAWING TITLE: OPEN SPACE - LOT 35, 87 & 88
CAPE & ISLANDS ENGINEERING 508.477.7272 PHONE 508.477.9072 FAX SUMMERFIELD PARK - 800 FALMOUTH ROAD - SUITE 301C - MASHPEE, MA 02649	SHEET NO.: 1 OF 3 / DATE: FEB. 6, 2025 ASSESSORS INFORMATION: 10 04 007 035 DRAWN BY: JVB, RLR / CHECKED BY: MC



PROJECT: 0 BOXBERRY HILL ROAD EAST FALMOUTH, MASSACHUSETTS	DRAWING TITLE: OPEN SPACE - LOT 35, 87 & 88
CAPE & ISLANDS ENGINEERING 508.477.7272 PHONE 508.477.9072 FAX SUMMERFIELD PARK - 800 FALMOUTH ROAD - SUITE 301C - MASHPEE, MA 02649	SHEET NO.: 2 OF 3 | DATE: FEB. 6, 2025 ASSESSORS INFORMATION: 10 04 007 035 DRAWN BY: JVB, RLR | CHECKED BY: MC

DRAFT



PROJECT: 0 BOXBERRY HILL ROAD EAST FALMOUTH, MASSACHUSETTS	DRAWING TITLE: OPEN SPACE - LOT 35, 87 & 88
CAPE & ISLANDS ENGINEERING 508.477.7272 PHONE 508.477.9072 FAX SUMMERFIELD PARK - 800 FALMOUTH ROAD - SUITE 301C - MASHPEE, MA 02649	SHEET NO.: 3 OF 3 / DATE: FEB. 6, 2025 ASSESSORS INFORMATION: 10 04 007 035 DRAWN BY: JVB, RLR / CHECKED BY: MC

DRAFT

THEATER 41-48-59 - RECORDING OPEN SPACE