



# TOWN OF KITTERY

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Visit us: [www.kitteryme.gov/planning-board](http://www.kitteryme.gov/planning-board)

## Planning Review Notes April 25 2024

### ITEM 1 – 0 Appledore Island– Shoreland Development Plan Review

Action: Accept application. Approve plan or continue review: Ross Hansen, on behalf of the Shoals Marine Lab, requests approval to install a 2,500 square foot extension to an existing solar array on Appledore Island, Tax Map 70, Lot 17, in the Residential-Rural Conservation and Resource Protection Overlay Zone.

#### PROCESS SUMMARY

REQUIRED	ACTION	COMMENTS	STATUS
Yes	Staff Review	4/18/24	Accepted
No	Site Visit	Optional	Optional
No	Public Hearing	Optional	Optional
Yes	Approval	Scheduled for 4/25/24	Pending

#### OTHER POTENTIAL PERMITS AND REQUIREMENTS

- Solar Energy System Permit through Code Enforcement
- Minor Site Plan application through Planning Staff

#### PROJECT INTRODUCTION

0 Appledore Island is a placeholder name as most of the island (including the area of the Shoals Marine Laboratory) does not have its own separate property address. The laboratory and existing solar array are located near the center of the island, between Broad Cove to the east and Pepperrell's Cove to the west.

The applicant proposes expanding the existing solar field to meet the energy demands of a new cabled acoustic array project from the University of New Hampshire without increasing fuel usage of an existing diesel generator. The applicant would install 6 ground-mounted arrays, each containing 14 panels, over an area of approximately 2,500 square feet. All disturbed area will meet DEP standards to prevent erosion and sediment runoff, and the applicants will make efforts to facilitate sufficient recovery of any disturbed vegetation.

Per **§16.9.B.(2)**, planning board review of the proposal is required due to the lot's proximity within the Resource Protection Overlay zone. Per the maritime and shoreland development ordinance in **§16.9.C**, a survey is not an official submission

32 requirement for a shoreland development project unless explicitly requested by Town  
33 Staff. Planning and Code Enforcement Staff agree that due to the clear evidence that  
34 the proposed development will not increase nonconformance (further described  
35 below), the submitted graphics in this application packet are sufficient.

36 **Staff recommend the planning board approve the application at this time.**

37 **APPLICATION & PLAN REVIEW**

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38 Staff reviewed the submitted application and plan and have the following comments:

- 39 1. Per **§16.7.5.A.(1)**, the proposal also triggers minor site plan review, as the solar  
40 array exceeds 1,000 square feet. Minor site plans are reviewed by Planning staff  
41 and the Technical Review Committee, all of whom believe the application  
42 materials provided are sufficient for the scope of the proposed project.
  - 43 a. The original solar array was installed around 2015, before a solar energy  
44 system ordinance was written. At that time, only a building permit was  
45 required.
- 46 2. The Shoreland Overlay Zone Ordinance **§16.4.28.E.(3).(a)**. requires new principal  
47 and accessory structures to be set back at least 100 feet, horizontal distance,  
48 from the HAT line of any water bodies, tributary streams, the upland edge of a  
49 coastal wetland, or the upland edge of a freshwater wetlands. The applicant has  
50 provided an aerial showing the proposed area for the solar panels are more  
51 than 200 feet away from the high-tide line of the shores of Appledore Island.
  - 52 a. The aerial also shows existing solar panels sited closer to the water than  
53 the proposed area. It appears the proposed solar development would not  
54 increase or create nonconformance to water-body setbacks.
- 55 3. General provision **§16.1.8.C.4.(b)**. requires expansion of structures within base  
56 zone setback in the shoreland overlay zone not exceed 30% of the total footprint  
57 of structures existing within the property on January 1, 1989. In regard to this  
58 provision, a solar array is not considered a “structure” per the definition in **§16.3**.  
59 Additionally, this standard only applies to structures within a water-body  
60 setback.
- 61 4. **§16.4.28.E.(2)**. allows 20% of total lot area in the shoreland zoning overlay to be  
62 comprised of non-vegetated surfaces or structures. The proposed development  
63 is not part of an existing parcel, meaning it incorporates the entirety of  
64 Appledore Island. Code Enforcement do not believe devegetation calculations  
65 to be necessary, as the development is negligible in terms of the 20% maximum  
66 threshold.

67 **DISCUSSION, NEXT STEPS, AND RECOMMENDATIONS**

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68 The proposed development does not create nonconformance, and facilitating  
69 renewable energy generation aligns with the goals of the recently adopted Climate  
70 Action Plan. Staff suggest **acceptance** of the plan and allowing the application to  
71 **move to final plan approval** and meet all other permitting requirements. The  
72 Planning Board should discuss the plan and determine if it meets the requirements

73 to accept the plan, and/or direct the applicant to make any changes that are  
74 necessary.

75 **RECOMMENDED MOTIONS**

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76 Below are motions for the Planning Board's consideration:

77 ***Motion to accept the application***

78 Move to accept the plan for a shoreland development application from Ross Hansen,  
79 on behalf of the Shoals Marine Lab

80 ***Motion to approve the application***

81 Move to approve the plan for a shoreland development application from Ross Hansen,  
82 on behalf of the Shoals Marine Lab

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**Kittery Planning Board  
Findings of Fact  
For 0 Appledore Island  
Shoreland Development Plan Review**

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Note: This approval by the Planning Board constitutes an agreement between the Town and the Developer incorporating the Development plan and supporting documentation, the Findings of Fact, and all waivers and/or conditions approved and required by the Planning Board.

**WHEREAS:** Ross Hansen, on behalf of the Shoals Marine Lab, requests approval to install a 2,500 square feet extension to an existing solar array on Appledore Island, Tax Map 70, Lot 17, in the Residential-Rural Conservation and Resource Protection Overlay Zone.

Pursuant to the Plan Review meetings conducted by the Planning Board as noted in the plan review notes prepared for 4/25/2024.

Shoreland Development Plan Staff Review	4/18/24
Site Walk	None
Public Hearing	None
Approval	4/25/24

Pursuant to the application and plan and other documents considered to be a part of a plan review decision by the Planning Board in this Finding of Fact consisting of the following (hereinafter the “Plan”):

1. Shoreland development plan application received 3/21/2024 from Ross Hansen of the University of New Hampshire.

**NOW THEREFORE,** based on the entire record before the Planning Board and pursuant to the applicable standards in the Land Use and Development Code, the Planning Board makes the following factual findings and conclusions:

**FINDINGS OF FACT**

**Chapter 16.4 LAND USE ZONE REGULATIONS**

<b>16.4.28.E. Shoreland Overlay Zone</b>
<i>(2) The total footprints of the areas devegetated for structures, parking lots and other impervious surfaces, must not exceed twenty (20) percent of the lot area, including existing development, except in the following zones:</i>
<u>Finding:</u> The proposed development is a small enough impact to generate no threat of nonconformance the allowed 20% devegetation maximum.
<u>Conclusion:</u> The requirement appears to be met.
<b>Vote: ___ in favor ___ against ___ abstaining</b>

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**Chapter 9 MARITIME AND SHORELAND RELATED DEVELOPMENT**  
**Article III Planning Board Shoreland Development Review**

**16.9.3.F. Findings of Fact**

*(2) An application will be approved or approved with conditions if the reviewing authority makes a positive finding based on the information presented. It must be demonstrated the proposed use will:*

*(a). Maintain safe and healthful conditions:*

Finding: The proposed solar array does not propose any adverse impact to the health and safety of Appledore Island.

Conclusion: This requirement appears to be met.

**Vote: \_\_\_ in favor \_\_\_ against \_\_\_ abstaining**

*(b) Not result in water pollution, erosion or sedimentation to surface waters:*

Finding: Best management practices for erosion control will ensure no adverse impact on wildlife Broad or Pepperrell's Cove.

Conclusion: This requirement appears to be met.

**Vote: \_\_\_ in favor \_\_\_ against \_\_\_ abstaining**

*(c) Adequately provide for the disposal of all wastewater:*

Finding: The proposed development will not generate wastewater.

Conclusion: This requirement does not appear applicable.

**Vote: \_\_\_ in favor \_\_\_ against \_\_\_ abstaining**

*(d) Not have an adverse impact on spawning grounds, fish, aquatic life, bird or other wildlife habitat:*

Finding: By reducing reliance on the lab's diesel generator, the proposal will reduce the risk of air pollution to nearby wildlife.

Conclusion: The requirement appears to be met.

**Vote: \_\_\_ in favor \_\_\_ against \_\_\_ abstaining**

*(e) Conserve shore cover and visual, as well as actual, points of access to inland and coastal waters:*

Finding: Shore cover is conserved in accordance with the Code. There are no adverse impacts to visual or actual points of access to waters.

Conclusion: This requirement appears to be met.

**Vote: \_\_\_ in favor \_\_\_ against \_\_\_ abstaining**

<p><i>(f) Protect archaeological and historic resources:</i></p> <p><b>Finding:</b> There appear to be neither archaeological nor historic resources impacted.</p> <p><b>Conclusion:</b> This requirement does not appear applicable.</p> <p style="text-align: center;"><b>Vote: ___ in favor ___ against ___ abstaining</b></p>
<p><i>(g) Not adversely affect existing commercial fishing or maritime activities in a commercial fisheries/maritime activities district:</i></p> <p><b>Finding:</b> The property is not located in the Commercial Fisheries / Maritime Use Zone and will have no adverse effect on commercial fishing nor maritime activities.</p> <p><b>Conclusion:</b> This requirement is not applicable.</p> <p style="text-align: center;"><b>Vote: ___ in favor ___ against ___ abstaining</b></p>
<p><i>(h) Avoid problems associated with floodplain development and use:</i></p> <p><b>Finding:</b> The applicants will ensure adherence to the floodplain management ordinance as relevant for the proposed solar array.</p> <p><b>Conclusion:</b> This requirement appears to be met.</p> <p style="text-align: center;"><b>Vote: ___ in favor ___ against ___ abstaining</b></p>
<p><i>(i) Is in conformance with the provisions of this code:</i></p> <p><b>Finding:</b> The proposed project will adhere to all conformance standards set in the provisions of Title 16.</p> <p><b>Conclusion:</b> This requirement appears to be met.</p> <p style="text-align: center;"><b>Vote: ___ in favor ___ against ___ abstaining</b></p>
<p><i>(j) Be recorded with the York County Registry of Deeds:</i></p> <p><b>Finding:</b> The proposed development does not require a survey and is not required to be recorded at York County Registry of Deeds.</p> <p><b>Conclusion:</b> This requirement does not appear applicable.</p> <p style="text-align: center;"><b>Vote: ___ in favor ___ against ___ abstaining</b></p>

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Based on the foregoing Findings, the Planning Board finds the applicant has satisfied each of the review standards for approval and, therefore, the Planning Board approves the Shoreland Development Plan Application subject to any conditions or waivers, as follows:

42 **Waivers:** None

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44 **Conditions of Approval:**

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46 1. Applicant/contractor will follow Maine DEP *Best Management Practices* for all  
47 work associated with site and construction to ensure adequate erosion control  
48 and slope stabilization.

49 2. Incorporate any plan revisions on the final plan as recommended by Staff,  
50 Planning Board or Peer Review Engineer, and submit for Staff review prior to  
51 presentation on final plan.

52 3. All Notices to Applicant contained herein (Findings of Fact dated 4/25/2024).

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54 **Notices to Applicant:**

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56 1. Incorporate any plan revisions on the final plan as required by Planning  
57 Board and submit for Staff review prior to final approval.

58 2. Prior to issuance of a building permit, the applicant must pay all outstanding  
59 fees associated with the permitting, including, but not limited to, Town  
60 Attorney fees, peer review, newspaper advertisements and abutter  
61 notification.

62 3. This approval by the Town Planning Board constitutes an agreement  
63 between the Town and the Developer, incorporating as elements the  
64 Development Plan and supporting documentation, the Findings of Fact, and  
65 any Conditions of Approval.

66 4. Prior to construction, applicant shall obtain any and all permits required by  
67 the code enforcement office to complete proposed work.

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70 The Planning Board authorizes the Planning Board Chair or Vice chair to sign the  
71 Final Plan and the Findings of Fact upon confirmation of required plan changes.

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73 **Vote: \_\_\_ in favor \_\_\_ against \_\_\_ abstaining**

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75 APPROVED BY THE KITTERY PLANNING BOARD ON 4/25/24

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80 \_\_\_\_\_  
Dutch Dunkelberger, Planning Board Chair

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83 Per Title 16.2.12. - An aggrieved party with legal standing may appeal a final decision  
84 of the Planning Board to the York County Superior Court in accordance with Maine  
85 Rules of Civil Procedures Section 80B, within forty-five (45) days from the date the  
86 decision by the Planning Board was rendered.



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March 21, 2024

Dear Kittery Town Planning Committee:

The Shoals Marine Lab (SML) is proposing to install a 30 kilowatt (kW) ground mounted PV solar array on Appledore Island in order to support UNH's Cabled Acoustic Array project.

SML produces its own power via solar, wind and a diesel generator. When there is insufficient sun and/or wind to keep its batteries charged, a diesel generator runs to keep the power on. The more load on SML's electrical grid, the more the diesel generator is needed. Over the last decade or more, SML has worked hard to reduce its electrical base load thus reducing the amount of diesel fuel burned. The solar PV proposed is needed to supplement the additional energy needs of the Cabled Acoustic Array.

The 30 kW array consists of six individual arrays of 14 panels each. The proposed plan consists of clearing approximately 2,500 sq. ft. of shrubby vegetation (sumac, poison ivy, briar bushes). On the site, holes will be dug to ledge in order to drill and pin a Sono-tube of concrete and rebar to the ledge. The Sono-tube will be back-filled and act as the "foundation" to the foot of the ground mount racking system. Each array consists of six Sono-tubes. This type of foundation system is intended to reduce the amount of "earth" to be removed overall. This will allow most of the existing ground cover to stay in place, thus reducing potential erosion and sediment runoff concerns. It should also be noted that due to the terrain, the gradual slope, and the rocky makeup of the area, combined with the fact that the material removed will be used to backfill the holes dug for the Sono-tubes, the erosion risk and run-off is considered to be minimal.

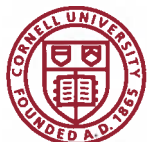
Attached to this cover letter we have included an aerial view of the portion of Appledore Island (parcel 70-17) where the proposed ground-mounted solar array will be installed along with additional documentation outlining details of the racking system that will be used for the solar panels.

Please let me know if you require any additional information.

Sincerely,

A handwritten signature in blue ink that reads "Ross Hansen" with a long, sweeping underline.

Ross Hansen  
Director of Facilities  
Shoals Marine Laboratory



Cornell University






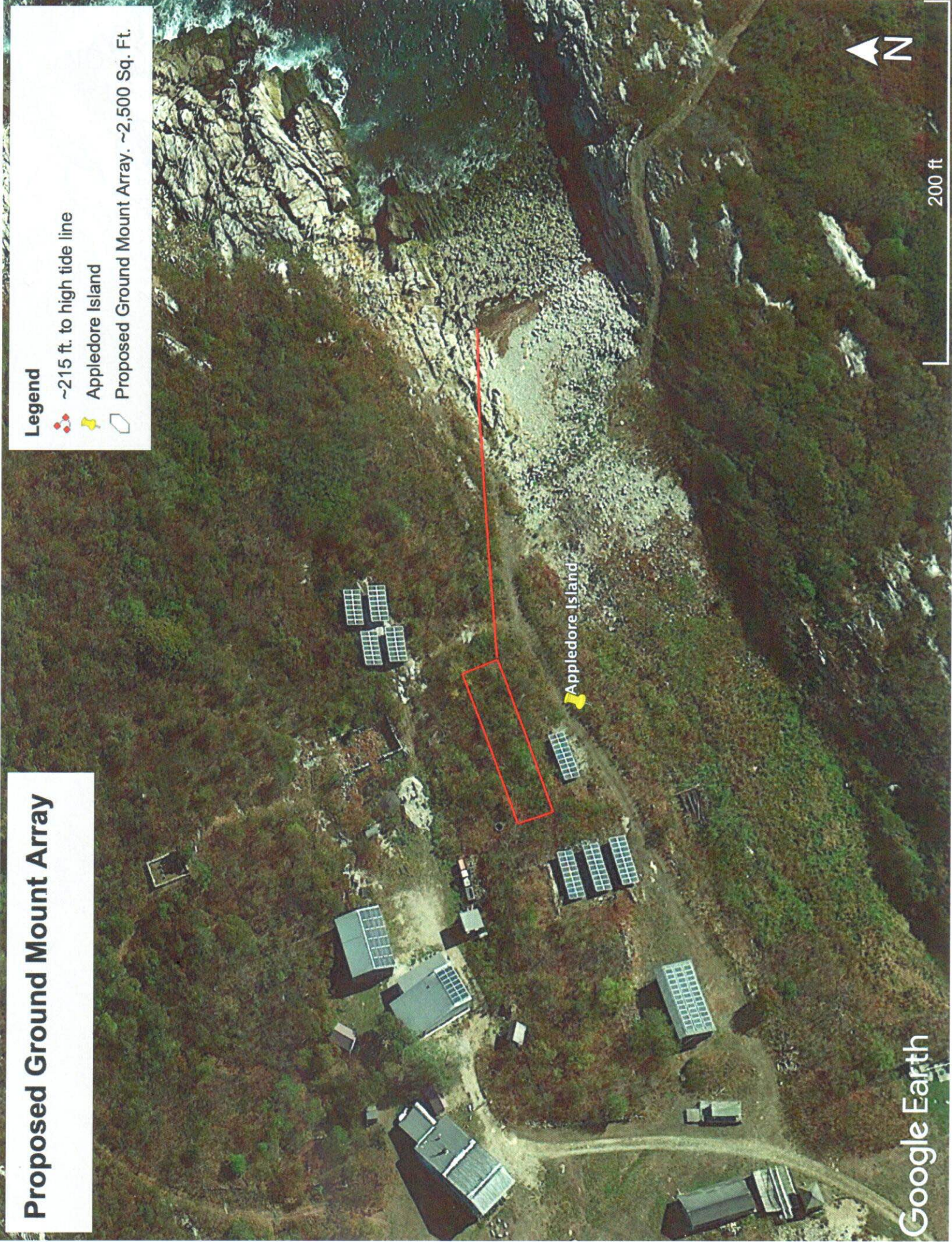
University of  
New Hampshire



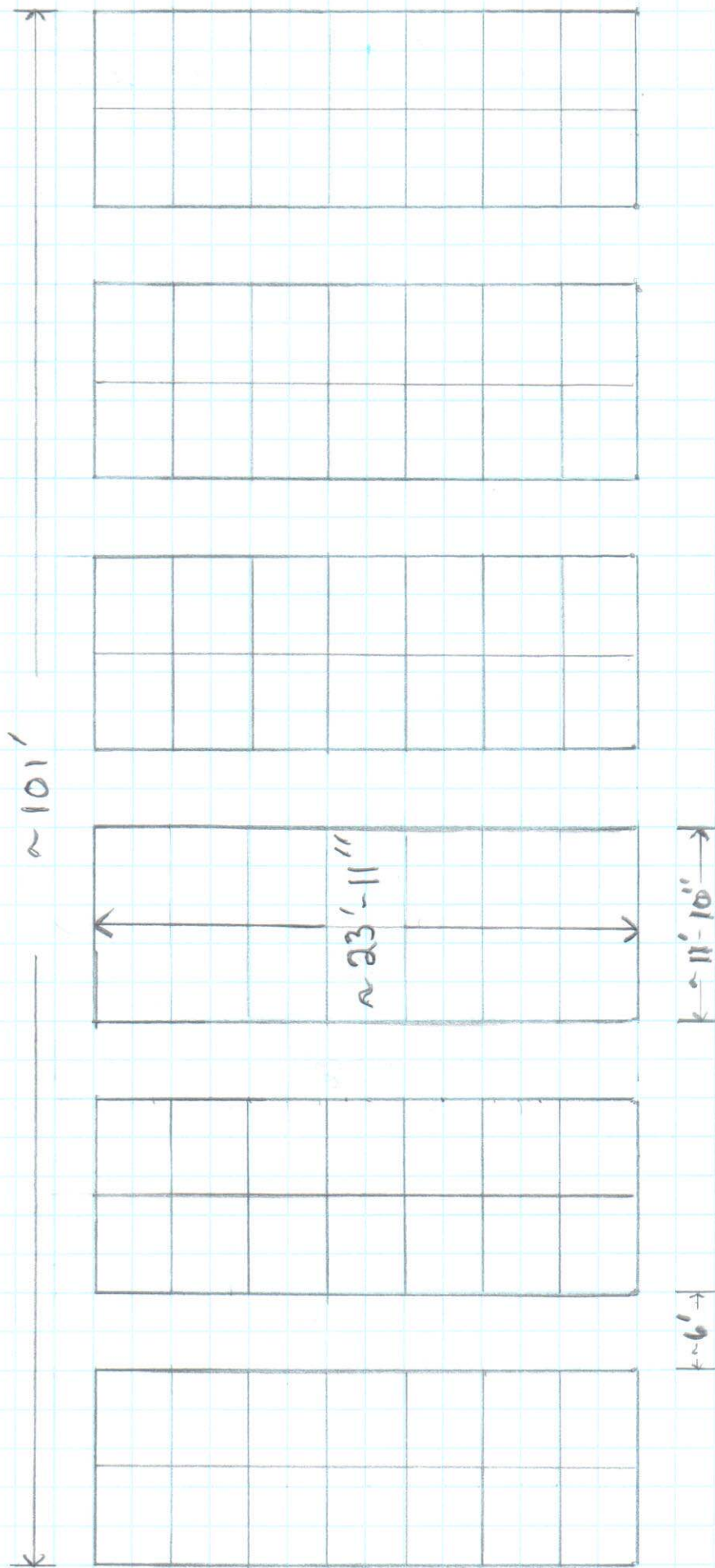
# Proposed Ground Mount Array

## Legend

-  ~215 ft. to high tide line
-  Appledore Island
-  Proposed Ground Mount Array. ~2,500 Sq. Ft.



# SIX GROUND MOUNTED SOLAR ARRAYS.

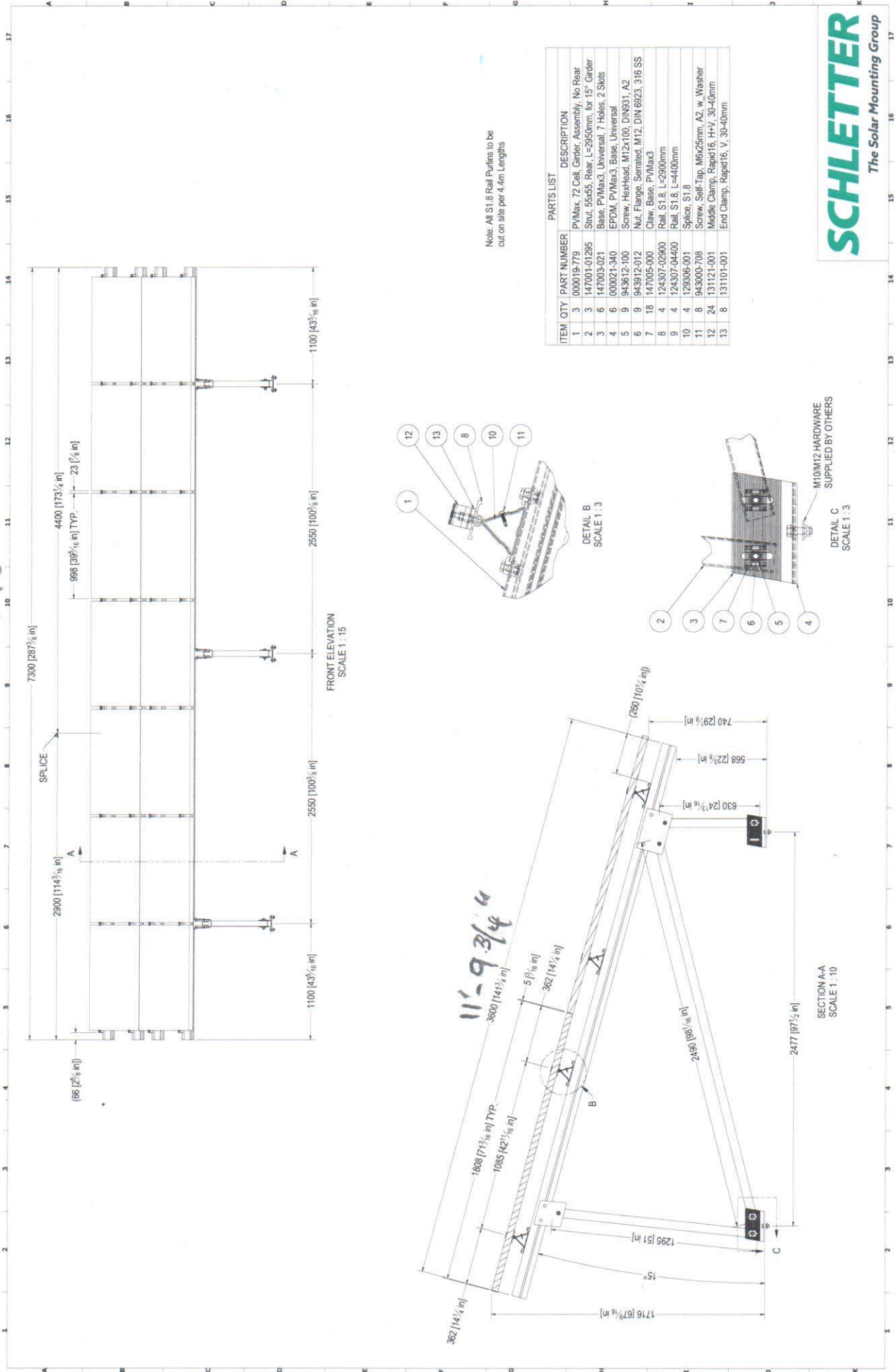


APPROXIMATE AREA OF THE SOLAR GROUND MOUNT ARRAY IS:

$$23'-11" \times 101' = 2,416 \text{ SQ.FT.}$$

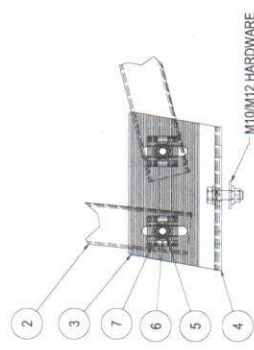
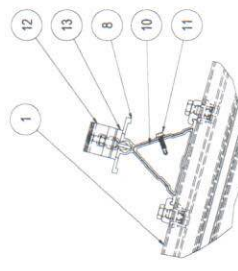
**2,500 SQ.FT.**

23' - 11 3/8"

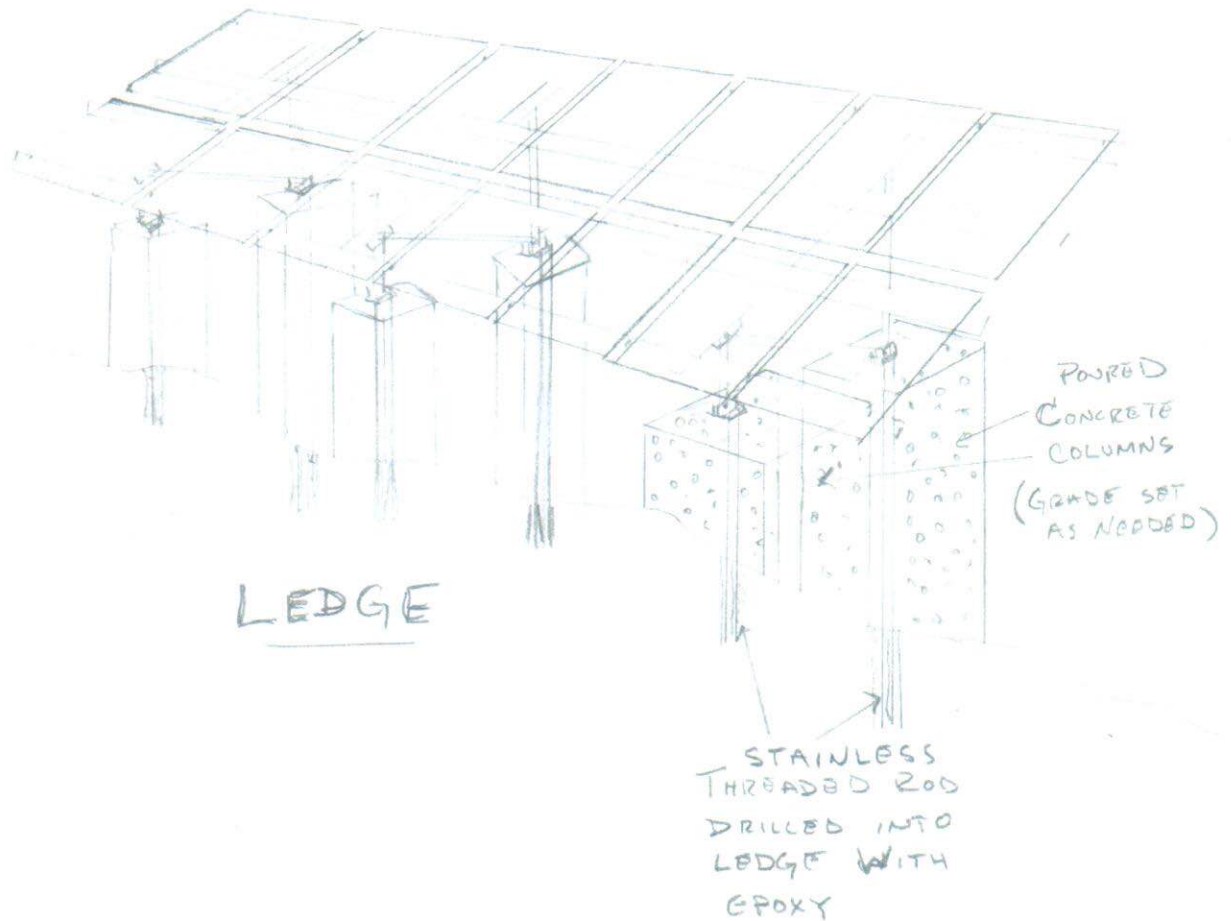


Note: All S1.8 Rail Purlins to be cut on site per 4.4m Lengths

ITEM	QTY	PART NUMBER	DESCRIPTION
1	3	000019-779	PVMax, 72 Cell, Gilder, Assembly, No Rear
2	3	147001-01295	Shut, 55x55, Rear, L=2950mm, for 15" Gilder
3	6	147003-021	Base, PVMax3, Universal, 7 Holes, 2 Slots
4	6	000021-340	EPDM, PVMax3, Base, Universal
5	9	943612-100	Screw, Hex-Head, M12x100, DIN931, A2
6	9	943912-012	Nut, Flange, Serrated, M12, DIN 6923, 316 SS
7	18	147005-000	Claw, Base, PVMax3
8	4	124307-02900	Rail, S1.8, L=2900mm
9	4	124307-04400	Rail, S1.8, L=4400mm
10	4	129306-001	Splice, S1.8
11	8	943000-008	Screw, Self-Tap, M6x25mm, A2, w/ Washer
12	24	131121-001	Middle Clamp, Rapid16, HV, 30-40mm
13	8	131101-001	End Clamp, Rapid16, V, 30-40mm



DESIGN FOR SCHLETTER PUMAX  
RACKING SYSTEM FOR APPELDORF ISLAND



THIS IS ONE ARRAY. NEED A TOTAL OF  
(6) ARRAYS.