



January 25, 2022

Jim Amaral
Planning Board Chair
Town of Alna
1574 Alna Road
Alna, ME 04535

Dear Jim,

We appreciate the time you have spent helping us better understand Alna's municipal approval process as we seek approval from the Planning Board for the development of the Alna Solar Project (Project). Alna Community Solar, LLC, an entity wholly owned by Tangent Energy Solutions (Tangent), is proposing the development of the Project and Biodiversity Research Institute (BRI) has been engaged as the lead consultant to support the Project. On behalf of Tangent, we are submitting this memo to demonstrate that the Project complies with the standards set forth in the Alna Subdivision and Site Plan Review Ordinance.

The Project is a 2.9-megawatt (MW AC) ground-mounted utility-scale solar array that will deliver clean renewable energy to the local electrical grid. The Project is located off Alna Road/State Route 218 and will occupy a 15.4-acre portion of the parcel known as Map R1, Lot 9 (Site). See **Attachment A** for a detailed description of the Project and its compliance with the Subdivision and Site Plan Review Ordinance Standards (Section VI & VII). The Site Plan is included as **Attachment B**, the FEMA 100-Year Flood Map is included as **Attachment C**, and an updated construction schedule is included as **Attachment D**.

To date, the Project team has submitted a Site Plan Review Application on October 19, 2021 and a Shoreland Zoning Memo on January 4, 2022. Both of these applications were found complete by the Alna Planning Board on January 4, 2022. We are providing responses to each standard listed in Sections VI and VII to help the Planning Board better review these previously submitted applications.

If you have any questions, please do not hesitate to contact me at (207) 400-5757, or by email at matt.kennedy@BRIenvironmental.org.

Sincerely,

A handwritten signature in black ink, appearing to read "Matt Kennedy", with a long, sweeping underline.

Matt Kennedy
Project Manager
BRI Environmental
30 Danforth Street, Suite 213
Portland, ME 04101

Attachment A

Addressing Standards Section VI & VII

ALNA SOLAR PROJECT: ADDRESSING STANDARDS SECTION VI & VII

Project Description

Alna Community Solar LLC, an entity wholly-owned by Tangent Energy Solutions (Tangent), is proposing the development and operation of the Alna Solar Project (Project), a solar energy generation facility located in Alna, Maine. The proposed Project is a ground-mounted solar photovoltaic array and will occupy approximately 15.4 acres, including all infrastructure such as solar arrays, equipment pads, access roads, and interconnection equipment (Site). See the Site Plan as **Attachment B**.

The goal of the Project is to provide approximately 2.9 megawatts (MW AC) of renewable power to the local electrical grid that will contribute to Maine's renewable energy production goals and will benefit local energy consumers.

The Project team submitted a Site Plan Review Application with the Town of Alna Planning Board on October 19, 2021 and a Shoreland Zoning Memo on January 4, 2022. All exhibit materials referenced in this memo can be found in either of those submissions and all attachments referenced are associated with this document.

Project Location and Existing Conditions

The proposed Project is located off Alna Road/State Route 218 on the parcel known as Map R1, Lot 9. A transmission line owned by Central Maine Power (CMP) runs through the parcel and will abut the Project along its northwest boundary. Natural resource surveys have been conducted within the Project area and have informed the Project design. The Site is comprised of forested uplands that have been extensively harvested throughout the past two decades. Near the Project entrance off Alna Road/State Route 218, an unnamed intermittent stream runs through a 48-inch culvert beneath the existing access road.

Proposed Site Conditions

The Project will be located on a forested hillside and proposes to utilize the existing entrance and access road off Alna Road/State Route 218. In order for the Project to interconnect to the electrical grid, the Project proposes to install five (5) overhead power utility poles along the existing access road near Alna Road/State Route 218. Two (2) of these utility poles are proposed to be installed within the Stream Protection District. Based on the definitions listed in Section 17 of the Shoreland Zoning Ordinance, utility poles do not qualify as a structure. During Project construction, the existing access road may be improved with additional gravel road base materials; however, the existing road will not be widened outside of the existing footprint. For more details on the proposed Project,

please refer to **Attachment B** of this document or revisit the previous Site Plan Review Application or Shoreland Zoning Memo submissions.

Section VI. Site Plan Content and Application Procedures

A. The Site Plan of Development Application shall include as a minimum:

1. A map or maps prepared at a scale of not less than one (1) Inch to 50 feet and shall include:

The Site Plan, included in **Attachment B**, required a scale of 1 inch equals 100 feet in order to adequately depict the proposed Project. Therefore, the Project team requested a waiver for the 1 inch equals 50 feet Site Plan scale requirement.

a) Name of the applicant, his authorized agent as appropriate, and name of proposed development and any land within 500 feet of the proposed development in which the applicant has title or interest.

The applicant (Alna Community Solar LLC), the agent (Biodiversity Research Institute), and any land within 500 feet of the development in which the applicant has title or interest are included on the Site Plan.

b) Existing soil conditions as determined by a high intensity soil survey by a Certified Soil Scientist. At the discretion of the Planning Board the survey may be to 1/8 of an acre depending on the density of development.

Since the Project does not propose the installation of a septic system, the Project team requested a waiver of the requirement for a high intensity soil survey performed by a Certified Soil Scientist. Soil map units at the Site were identified through the Natural Resources Conservation Service (NRCS) Web Soil Survey for Knox and Lincoln Counties, Maine, included as **Attachment G** of the Stormwater Permit by Rule (**Exhibit K**). The soils present on the Site are generally suitable for the proposed use, given the lack of ground disturbance proposed. Best Management Practices and properly installed and maintained Erosion Control Measures will address any necessary soil stabilization and restoration efforts. In addition, before construction begins, the Project will perform a geotechnical analysis to evaluate the racking foundation design. Prior to Project construction, a copy of the geotechnical analysis will be provided to the Town of Alna.

c) Municipal tax maps and lot numbers and names of abutting landowners:

The Project parcel is Map R1, Lot 9. The title, right, or interest documentation is included as **Exhibit B** and the tax map is included in **Exhibit D**. A list of abutting landowners is included in **Exhibit E**.

d) Perimeter survey of the parcel made and certified by a registered land surveyor relating to reference points, showing true north point, graphic scale, corners of parcel and date of survey and total acreage. Areas within 250 feet of the proposed development site shall be included;

Prior to submission of a building permit application and the Project beginning construction, a registered land surveyor will complete and certify a perimeter survey of the parcel in accordance with the procedure described in A.1.d.

e) Existing and proposed locations and dimensions of any utility lines, easements, drainage ways and public or private right-of-ways;

A transmission line owned by CMP runs through the Project parcel and will abut the Project Site at its northwest boundary. There is an existing access road to the Site off Alna Road/State Route 218 that the Project plans to utilize and improve if necessary. The access road will be extended at its current terminus, and will continue parallel to the solar array fence line. Five utility poles will be constructed alongside this existing access road to interconnect to the CMP pole on Alna Road. These utility poles will carry an overhead line that will then run underground, parallel with the road, to the equipment pad. There is a Wiscasset, Waterville, and Farmington (WW&F) railway parcel easement that cuts across the access road area. The Project Team has been in communication with WW&F railway and discussed that the overhead utility lines will run through this parcel at a height of 35 feet. According to Dave Buczkowski of WW&F, 35-foot utility lines is well above the 25 feet they would need to avoid interference with potential future development of the railroad in this area.

f) Location, ground floor area and elevation of buildings and other structures, septic systems and wells on parcels abutting the site;

There are no buildings, septic systems, or wells on the Project parcel. Since the Project does not propose a septic system or a water supply well, the Project team requested a waiver of the requirement to identify the location, ground floor area, and elevation of buildings and other structures, septic systems and wells on parcels abutting the Site. The proposed fixed-tilt solar arrays are shown on the Site Plan, along with their height of approximately 13 feet.

g) Location and dimensions of on-site pedestrian and vehicular access ways, parking areas, loading and unloading facilities, ingress and egress points to and from the site onto public streets and curb and sidewalk lines;

The existing access road onsite will be extended northwest to the CMP transmission line. Both the existing and proposed portions of the access road are depicted on the Site Plan. Two locked gates will prevent unauthorized access to the access road and within the fence line of the solar array. The Site will be visited by maintenance personnel no more

than once per month; therefore, the anticipated traffic volume will be minimal and no parking areas are needed. Hammerhead turnarounds are included along portions of the access road, and will provide sufficient parking for the occasional maintenance visits.

h) Landscape plan showing location, type and approximate size of plantings and location and dimensions of all fencing and screening;

Location of proposed tree line, fencing, and existing vegetation are all shown on the Site Plan. The areas of existing vegetation that surround the solar array and will remain on-Site will provide adequate visual screening of the Site to abutting properties. Therefore, no visual buffer plantings are proposed.

i) Topography indicating contours at intervals as specified by the Planning Board.

Two-foot contours are included on the Site Plan.

j) An indication of the type, and location, of water supply system(s) to be used in the development. When water is to be supplied by public water supply, a written statement from the servicing water district shall be submitted indicating there is adequate supply and pressure for the development.

Operation of the Project will not require any water supply. During construction of the Project, non-potable water may be used for dust control on the access road. The water will be drawn from an off-site, non-potable source and spread on-site by tanker trucks. Any wash water produced during construction will be released on concrete pads and gravel surfaces.

k) The number of acres within the proposed development, location of property lines, existing buildings, vegetative cover type, and other essential existing physical features. Also, the proposed lot lines with dimensions and lot areas, as applicable.

The Project's Limit of Disturbance (LOD), the approximate locations of property lines, footprints of existing buildings, vegetative cover, and other essential existing physical features are included on the Site Plan. Revegetation of the Site will utilize a native wildlife/conservation seed mix to establish meadow conditions in and around the solar array. The Project does not propose any new lot lines.

l) The surveyed location of all rivers, streams, wetlands and brooks within or adjacent to the proposed development.

All rivers, streams, wetlands and brooks on the Site have been delineated by a wetland scientist and are located on the Site Plan. For more information on natural resources, see **Exhibit G**.

m) Location of any zoning boundaries affecting the development.

An unnamed, intermittent stream runs through a 48-inch culvert through the access road. This area of the access road and two proposed utility poles are therefore within the Stream Protection District within the Shoreland Zone, as noted on the Site Plan and in the Shoreland Zoning Ordinance Memo previously submitted to the Planning Board on January 4, 2022.

n) The location and size of existing and proposed sewers, water mains, culverts, and drainage ways on or adjacent to the development.

These are detailed on the Site Plan. Two existing culverts, a 48-inch and 36-inch culvert, are located at the entrance of the access road. One existing 30-inch culvert is located near the Project array.

o) The location, names, and present widths of existing streets, highways, easements, building lines, parks and other open spaces on or adjacent to the development.

These are detailed on the Site Plan (**Attachment B**).

p) All parcels of land proposed to be dedicated to public use and the conditions of such dedication. The location of any open space to be preserved and a description of proposed ownership, improvement and management.

The Project does not propose any land dedicated to public use.

q) The area on each lot where existing forest cover will be permitted to be removed and converted to lawn, structures or other cover and any proposed restrictions to be placed on clearing existing vegetation.

The Project proposes to clear 14.89 acres of existing trees/shrubs on the Site in order to install the solar array. Using a native wildlife/conservation seed mix, the Site will be revegetated to establish meadow conditions in and around the solar array. The area of proposed clearing is depicted on the Site Plan by the "Proposed Treeline" symbol.

r) If any portion of the development is in a flood-prone area, the boundaries of any flood hazard areas

The Project is not located in the 1% annual flood hazard zone and is a minimal flood hazard, as depicted in the Federal Emergency Management (FEMA) 100-year Flood Map included as **Attachment C**:

s) A hydro geologic assessment prepared by a Certified Geologist or Registered Professional Engineer, experienced in hydrogeology.

The Project team requested a waiver of the requirement to have a hydrogeologic assessment prepared by a Certified Geologist or registered Professional Engineer. Instead, the Project will require a geotechnical analysis to evaluate the racking foundation design and the Project team will provide a copy of the geotechnical analysis to the Town of Alna prior to Project construction.

t) An estimate of the amount and type of vehicular traffic to be generated on a daily basis and at peak hours.

During Project operation, there will be no significant change to traffic volumes along Alna Road. Maintenance personnel may visit the Site approximately once per month to perform routine maintenance and will be able to park at the turnarounds along the access road. More information is included in **Exhibit A**.

u) For developments involving 40 or more parking spaces or projected to generate more than 400 vehicle trips per day, a traffic impact analysis, prepared by a Registered Professional Engineer with experience in traffic engineering

This Project will not involve 40 or more parking spaces or generate more than 400 vehicle trips per day.

v) Areas within or adjacent to the proposed development which have been identified as high or moderate value wildlife habitat by the Maine Department of Inland Fisheries and Wildlife.

The Maine Department of Inland Fisheries and Wildlife (MDIFW) stated that there are no essential habitats that would be directly affected by the Project. However, based on information provided by the MDIFW, a large portion of the Project was mapped as Deer Wintering Area (DWA). This area is shown in **Exhibit F** in the letter from MDIFW dated September 29, 2021.

The Project team consulted with Bob Stratton and G. Keel Kemper of MDIFW, to review the DWA mapped on the Site. During a Site visit completed in November 2021, MDIFW agreed that the portion of the DWA on the Site does not contain the appropriate habitat conditions that would meet the department's minimum criteria to be considered DWA of moderate or high value. For more details, see the November 5, 2021 letter from MDIFW included in **Exhibit D** of the Shoreland Zoning Memo.

w) A storm water management plan, prepared by a registered professional engineer in accordance with the Storm water Management or Maine: Best Management Practices, published by the Maine Department of Environmental Protection (1995).

The Project team filed a Stormwater Permit by Rule (PBR) application, prepared by a registered professional engineer, with the Maine Department of Environmental Protection (MDEP) in October 2021. The MDEP approved this Stormwater PBR in November 2021. During construction and operation of the Project, Best Management Practices will be followed for erosion and sedimentation control and are detailed in the Erosion and Sedimentation Control Inspection and Maintenance Plan included in the Stormwater PBR application (**Exhibit K**).

x) An erosion and sedimentation control plan prepared in accordance with the Maine Erosion and Sedimentation Control Handbook for Construction: Best Management Practices, published by the Cumberland County Soil and Water Conservation District and the Maine Department of Environmental Protection, March 1991.

During construction and operation of the Project, Best Management Practices will be followed for erosion and sedimentation control and are detailed in the Erosion and Sedimentation Control Inspection and Maintenance Plan included in the Stormwater PBR application (**Exhibit K**).

2. A) written statement by the applicant that shall consist of:

a) Evidence by the applicant of his title and interest in the land which the application covers;

Evidence of title, right, or interest is included in **Exhibit B**.

b) A description of the proposed uses to be located on the site, including quantity and type of residential unit, if any;

A description of the Project is included in **Exhibit A**. The Project proposes an approximately 2.9-MW AC solar array that will include fixed-tilt solar panel racking, transformers/inverter pads, and a fence surrounding the solar array. From the solar array to the proposed location of interconnection utility poles, the Project proposed to install underground power cables along the access road. In order for the Project to interconnect to the electrical grid and meet CMP's requirements, the Project proposes to install five (5) overhead power utility poles along the existing access road near Alna Road/State Route 218.

c) Total floor area and ground coverage of each proposed building and structure and percentage of lot covered by each building or structure;

The proposed Project does not include the construction of any buildings with floors or walls. The total planimetric area of the proposed solar array is approximately 196,560 square feet. This represents the ground surface area that will be directly covered by solar panels.

d) Summary of existing and proposed easements, restrictions and covenants placed on property;

There is an existing CMP transmission line corridor within the center of the Project parcel, abutting the Project. In addition, there is a Wiscasset, Waterville, and Farmington (WW&F) railway parcel easement that cuts across the access road area. The Project Team has been in communication with WW&F railway and discussed that the overhead utility lines will run through this parcel at a height of 35 feet. According to Dave Buczkowski of WW&F, 35-foot utility lines are well above the 25 feet they would need to avoid interference with potential future development of the railroad in this area. There are no other proposed or existing easements, restrictions and covenants placed on property.

e) Method of solid waste disposal;

Solid waste generation will be limited to the construction phase of the Project only. Waste generated will primarily derive from tree clearing, construction, and packing materials associated with the shipment of Project equipment.

Solid waste generated during clearing and construction of the Project will be hauled and disposed of by a Category A, state-licensed transporter. After tree clearing, all remaining stumps will either be left in place or ground on-site and used to make erosion control mulch. All stumps that are not able to be chipped on-site will be hauled off-site and disposed of at a nearby transfer station.

f) Project notification letters by registered mail and receipt requested to all persons owning property within 2,000 feet of the location as indicated on the current tax maps of the Town of Alna and to the Selectmen, Road Commissioner, Fire Chief, Building Inspector/Code Enforcement Officer notifying them of the proposed development;

At least seven days prior to the Planning Board meeting, the Project team sent out project notification letters to all persons owning property within 2,000 feet of the Project parcel boundary, the Selectmen, the Road Commissioner, the Fire Chief, and the Building Inspector/Code Enforcement Officer to notify them of the proposed Project. **See Exhibit E** for the list and map of these abutting/nearby property owners and the notice letter that was sent.

g) Statement of financial capacity which should include the names and sources of the financing parties including banks, government agencies, private corporations, partnerships and limited partnerships and whether these sources of financing are for construction loans or long-term mortgages or both;

The Project has included a statement of financial capacity provided as **Exhibit I**.

h) Filing dates, status and copies of approval letters for all Federal and State rules, regulation or laws which are applicable to the development.

The Project team submitted a Site Plan Review Application on October 19, 2021, and a Shoreland Zone Memo on January 4, 2022 to the Alna Planning Board. Both were deemed complete by the Alna Planning Board on January 4, 2022. In addition, the Project also applied for a Stormwater PBR with the MDEP, a Natural Resources Protection Act Utility Crossing PBR with the MDEP, and a Driveway/Entrance Permit with the MDOT. A copy of the Stormwater PBR permit application and the Driveway/Entrance Permit are included in **Exhibit K** and **Exhibit L**, respectively, in the Site Plan Review Application.

i) A statement from the Fire Chief as to the availability of fire hydrants and/or fire ponds, or provisions of fire protection services;

On January 11, 2022, the Project team spoke on the phone and sent an email to the Fire Chief, Mike Trask, to notify him of the proposed Project and to request a statement as to the availability of fire hydrants and/or fire ponds, or provisions of fire protection services. The Project team will continue to consult with the Fire Chief about Project safety and emergency protocols.

The Project proposes to place “Knox Boxes” at both Project gates to allow for emergency personnel access. There are three proposed turnarounds along the gravel access road: one located outside the fence along the southeast perimeter of the solar array, one within the solar array near the gated entrance inside the fence, and one located outside of the fence at the northern terminus of the access road. Near the date of construction completion, the Project team offers to host a field training exercise for Alna Volunteer Fire Department personnel regarding Site-specific emergency response procedures for the Project.

j) A statement from either the Road Commissioner or Selectmen that the proposed road or street construction will meet town specifications.

This request is not applicable as the existing access road pre-dates the Project. However, as the Project access road is located off State Route 218, the Project team applied for a Driveway/Entrance Permit with the MDOT to address the change of use of the access road. This application was approved on October 28, 2021 by the MDOT.

k) The schedule of construction of the development;

Contingent upon issuance of all required permits, Project construction is expected to begin in October 2022 and last approximately six to seven months. Construction will include the installation of concrete equipment pads, utility lines, interconnection infrastructure, solar arrays, and the improvement/extension of the gravel access road. Solar arrays will not require ballasted foundations and will instead rely on ground screws

or driven posts to mount solar panel racking. This installation method minimizes native soil disturbance, which in turn lowers any potential risk for erosion and sedimentation during or after construction. Construction will employ all applicable erosion and sedimentation control best management practices from commencement of work through completion of the Project. See **Exhibit K** for the Erosion and Sedimentation Control Inspection and Maintenance Plan, included as Attachment D of the Stormwater PBR. Additionally, a formal boundary survey of the Site will be completed prior submission of the building permit application. The proposed construction schedule is included as **Attachment D**.

l) A list of construction and maintenance items, with both capital and annual operating cost estimates, that must be financed by the town. These lists shall include but not be limited to: Schools, including busing; Street maintenance and snow removal; Police and fire protection; Solid waste disposal; Recreation facilities and Storm water drainage. The applicant shall provide an estimate of the net increase in taxable assessed valuation at the completion of the construction of the development.

There are no construction or maintenance items that must be financed by the Town of Alna for this Project.

m) An on-site soils investigation report by a State of Maine licensed site-evaluator or soil scientist shall be provided. The report shall contain the types of soil, location of test pits, and proposed location and design of the best practical subsurface disposal systems(s) for the Site;

Since the Project does not propose a septic system or other wastewater disposal system, the Project team requested a waiver of the requirement to identify existing soil conditions as determined in a high intensity soil survey by a Certified Soil Scientist. The Project will require a geotechnical analysis to evaluate the racking foundation design and the Project team will provide a copy of the geotechnical analysis to the Town of Alna prior to Project construction.

n) A list of construction and maintenance items, with both capital and annual operating cost estimates, that must be financed by the developer including a description of the method to be established to meet those costs by the developer and/or residents of the development.

Solar arrays generally have low operation costs and require minimal maintenance. Operation and maintenance costs are estimated to be approximately \$28,000 a year with a one percent escalation each year. Maintenance personnel may visit the Site no more than once per month to perform routine maintenance. Mowing of the meadow under the array will occur no more than twice per year, as required by MDEP. Total Project cost is

estimated to be about \$4,403,634, as determined by the table below. For Financial Capability, see **Exhibit I**.

Category	Total
Design & Permitting	\$152,000
Engineering, Procurement, & Construction	\$3,597,634
Utility Interconnection	\$654,000
Total	\$4,403,634

1. Application form completely filled out.

A completed application form was submitted with the Site Plan Review Application packet.

B. Application Procedures:

1. N/A
2. N/A
3. N/A
4. N/A
5. Fees:

a) Application Fee & b) Trust Account Fee

Along with the materials provided we have included an application fee of \$250 to account for the Application Fee and the Trust Account Fee. We anticipate, upon approval from the Planning Board of the Site Plan Review Application and the Shoreland Zoning Ordinance Memo, that we will pay \$49,140 to the Town of Alna for a Building Permit based on the Building Fees listed as \$0.25/sq ft for Commercial/Industrial. Our planimetric area of the Project is 196,560 square feet.

$$196,560 \times 0.25 = \$49,140.$$

Section VII. Performance Standards

A. Preservation and Enhancement of the Landscape: The landscape shall be preserved in its natural state insofar as practicable by minimizing tree removal, and disturbance of soil, retaining existing vegetation during construction. After construction is completed, landscaping shall be designed and planted that will define, soften or screen the appearance of off-street parking areas from the public right-of-way and abutting properties and/or structures in order to enhance the physical design of the building(s) or site, and to minimize the encroachment of the proposed use on neighboring land-uses.

The Project solar array was sited so it would not be visible from Alna Road. As proposed, the Project solar array will be set back from Alna road approximately 1100 feet, with a buffer of existing forest between the road and the Project. Natural features will also be maintained between the proposed Project and the abutting properties. A native wildlife/conservation seed mix will be used across the Site to establish meadow conditions in and around the solar array. Natural resources surveys informed the design and layout of the Project and impacts to natural resources were avoided to the greatest extent practicable. A detailed Natural Resources report is included as **Exhibit G**.

B. Relationship of the Proposed Buildings to the Environment: Proposed structures shall be related harmoniously to the terrain and to existing buildings in the vicinity which have a visual relationship to the proposed buildings. Special attention shall be paid to the bulk, location and height of the building(s) and such natural features as slope, soil type and drainage ways.

The proposed Project will solar arrays will include racking and modules that are approximately 13-foot tall and a 7-foot-tall agricultural-style fence, which will include 6-inch spacing to allow for the movement of small wildlife in and out of the array. The location of the arrays, infrastructure, and fence were intentionally sited to maintain a visual buffer consisting solely of existing vegetation that will remain on-Site. No slopes, soils, or drainageways will be altered.

C. Vehicular Access: The development shall provide for safe access and egress from public and private roads by providing adequate location, numbers and controls of access points including sight distances, turning lanes, traffic signalization, when required by existing and projected traffic flow on the municipal road system.

To prevent unauthorized vehicular access to the Site, the Project will be secured by two locked gates along the gravel access road. An existing gate is located at the entrance of the existing access road off Alna Road. A second gate is proposed at the junction of the access road and the fence surrounding the solar array. See the Site Plan, included as

Attachment B, for details. During Project operation, there will be no significant change to traffic volume along Alna Road. The access road intersects Alna Road at approximately 90 degrees, and will be maintained in accordance with Section VIII of the Town of Alna *Subdivision and Site Plan Review Ordinance* (Road Design and Construction Standards). The MDOT approved the Driveway/Entrance permit (**Exhibit L**) on October 28, 2021.

D. Parking and Circulation: The layout and design of all means of vehicular and pedestrian circulation, including walkways, interior drives, and parking areas shall provide for safe general interior circulation, separation of pedestrian and vehicular traffic, service traffic, loading areas, and arrangement and use of parking areas.

The Project will create minimal day-to-day traffic. Maintenance personnel may visit the Site no more than once per month to perform routine maintenance and will be able to park at the turnarounds along the access road. Since the public will be restricted from entering the Site, the Project does not propose any public parking areas.

E. Surface Water Drainage: Adequate provision shall be made for surface drainage so that removal of surface waters will not adversely affect neighboring properties, downstream conditions, soil erosion or the public storm drainage system. Whenever possible, on-site absorption of run-off waters shall be utilized to minimize discharges from the site.

The Project does not propose to alter surface water drainageways. The Project acquired a Stormwater PBR from the MDEP in November 2021. During construction and operation of the Project, Best Management Practices will be followed for erosion and sedimentation control and are detailed in the Erosion and Sedimentation Control Inspection and Maintenance Plan included in the Stormwater PBR application. This will adequately provide that neighboring properties, downstream conditions, soil erosion or the public storm drainage system will not be adversely affected.

F. Existing Utilities: The development shall not impose an unreasonable burden on storm drains, or other public utilities.

Since the Project will “self-treat” stormwater through the establishment of the vegetated meadow in and around the solar array, the proposed Project will not impose an unreasonable burden on storm drains. In terms of electrical utilities, the Project team will coordinate directly with CMP to interconnect the proposed Project utility poles to the proposed 3-phase electrical power lines to be installed along Alna Road and will not rely on municipal infrastructure or municipal personnel during this process.

G. Advertising Features: The size, location, design, lighting and materials of all exterior signs and outdoor advertising structures or features shall not detract from the design of proposed buildings and structures and the surrounding properties.

The Project proposes to install signs relating to public safety at the existing gate located at the entrance to the Project. An informational placard will be installed at the entrance gate and will list a 24-hour emergency contact phone number. These signs will not be illuminated and will not be higher than 5 feet above ground. No advertising or other signage is proposed by the Project.

H. Special Features of the Development: Lighting features, exposed storage areas, exposed machinery installation, service areas, truck loading areas, utility buildings and similar structures shall have sufficient setbacks and screening to provide an audio/visual buffer sufficient to minimize their adverse impact on other land uses within the development area and surrounding properties.

As proposed, the Project will encompass a 15.4-acre limit of disturbance (LOD) and will include approximately 31,682 square feet (0.73 acres) of impervious area, including equipment pads, access roads, fence posts, and racking posts. Project infrastructure will respect a setback of 20 feet from all property lines, which will provide an audio buffer from abutting properties. Existing vegetation that will remain around the solar array will provide a visual buffer of the Project from Alna Road and abutting properties.

I. Exterior Lighting: All exterior lighting shall be designed to minimize adverse impact on neighboring properties and localized aesthetics.

No exterior lighting is proposed by the Project.

J. Emergency Vehicle Access: Provisions shall be made for providing and maintaining convenient and safe emergency vehicle access to all buildings at all times.

The Project proposes to place “Knox Boxes” at both Project gates to allow for 24-hour emergency personnel access. Emergency vehicles will be able to turn around in the three proposed turnarounds along the gravel access road.

K. Municipal Services: The development will not have an unreasonable adverse impact on the municipal services including municipal road systems, fire department, law enforcement, solid waste program, schools, open spaces, recreational programs and facilities, and other municipal services and facilities.

The Project will not have unreasonable adverse impact on municipal services.

L. Water Pollution: The development will not result in water pollution. In making this determination the Planning Board shall at least consider the elevation of land above sea level and its relation to the flood plains, the nature of soils and subsoils and their ability to adequately support waste disposal; the slope of the land and its affect on effluents and the existing subsurface sewage disposal systems and wells

of abutters; the availability of streams for disposal of surface run-off; and the applicable federal, state and local health and water resource laws and regulations.

The Project will not result in water pollution or erosion or sedimentation to surface waters. During Project construction and operation, Best Management Practices will be followed for erosion and sedimentation control in accordance with the Erosion and Sedimentation Control Inspection and Maintenance plan. During Project construction and operation, no wastewater will be produced. The Project will follow all applicable federal, state, and local health and water resource laws and regulations.

M. Air Pollution: The development will not result in air pollution. In making this determination the Planning Board shall consult federal and state authorities to determine applicable air quality laws and regulations.

The Project will not adversely affect the air quality or produce any air emissions throughout operation.

N. Water Availability: The development has sufficient water available for the reasonable, foreseeable needs of the subdivision without adversely affecting other areas in Alna.

Operation of the Project will not require any water supply. During construction of the Project, non-potable water may be used for dust control on the access road. The water will be drawn from an off-site, non-potable source and spread on-site by tanker trucks. Any wash water produced during construction will be released on concrete pads and gravel surfaces.

O. Existing Water Supply: The development will not cause an unreasonable burden on an existing water supply, if one is to be utilized.

The Project will not require any water supply, and therefore will not cause an unreasonable burden.

P. Soil Erosion and Storm Water: The development will not cause unreasonable soil erosion or reduction in the capacity of the land to hold water so that a dangerous or unhealthy condition results.

The Project acquired a Stormwater PBR from MDEP in November 2021. A copy of the application is included in **Exhibit K**. Solar panels are not considered impervious surfaces by the MDEP. Vegetated meadow conditions have been proposed beneath the solar arrays to provide treatment of stormwater produced by the panel posts and the equipment pads. Mowing of the solar array meadow will be limited to twice per year. During and post construction, Best Management Practices will be followed for erosion and sedimentation control and are detailed in the Erosion and Sedimentation Control Inspection and Maintenance plan included as **Attachment D** in the Stormwater PBR. The Project will not

cause unreasonable soil erosion or reduction in the capacity of the land to hold water so that a dangerous or unhealthy condition results.

Q. Sewage: The development will provide for adequate sewage waste disposal.

Operation of the Project will not require any sewage disposal or septic system. During construction, temporary toilet facilities will be provided for construction personnel working on the Site. A Maine-licensed wastewater service provider will transport and maintain the temporary toilet facilities.

R. Waste Disposal: The disposal or storage of hazardous wastes and the disposal or storage of radioactive wastes within the boundaries of the Town of Alna is prohibited unless an exception is allowed under a Special Exception Permit granted by the Planning Board. Applications for such permits must be made in writing, and must be handled by the same administrative procedures as pertain to amendments to this Ordinance (Ref: Section XII).

Solid waste generation will be limited to the construction phase of the Project only. Waste generated will primarily derive from tree clearing, construction, and the packing materials associated with the shipment of Project equipment.

Solid waste generated during clearing and construction of the Project will be hauled and disposed of by a Category A, state-licensed transporter. After tree clearing, all remaining stumps will either be left in place or ground on-site and used to make erosion control mulch. All stumps that are not able to be chipped on-site will be hauled off-site and disposed of at a nearby transfer station.

S. Critical Areas: The development will not have an undue adverse affect on the scenic or natural beauty of the area, aesthetics, historic sites or rare and irreplaceable natural areas.

The Project will not have an undue adverse effect on the scenic or natural beauty of the area. The Project was sited to avoid natural resources and to be visually screened by existing vegetation. Both the MDIFW) and Maine Natural Areas Program (MNAP) were consulted (see correspondence in **Exhibit F**). No Essential Habitats, and no or rare and exemplary botanical features have been mapped on the Site. In addition, the Project parcel, as well as all adjacent properties, are not listed or eligible to be listed on the National Register of Historic Places. The nearest property listed on the National Register of Historic Places is the Wiscasset Jail and Museum, 2.2 miles from the Site.

T. Capacity: The applicant has adequate financial and technical capacity to meet the above standards.

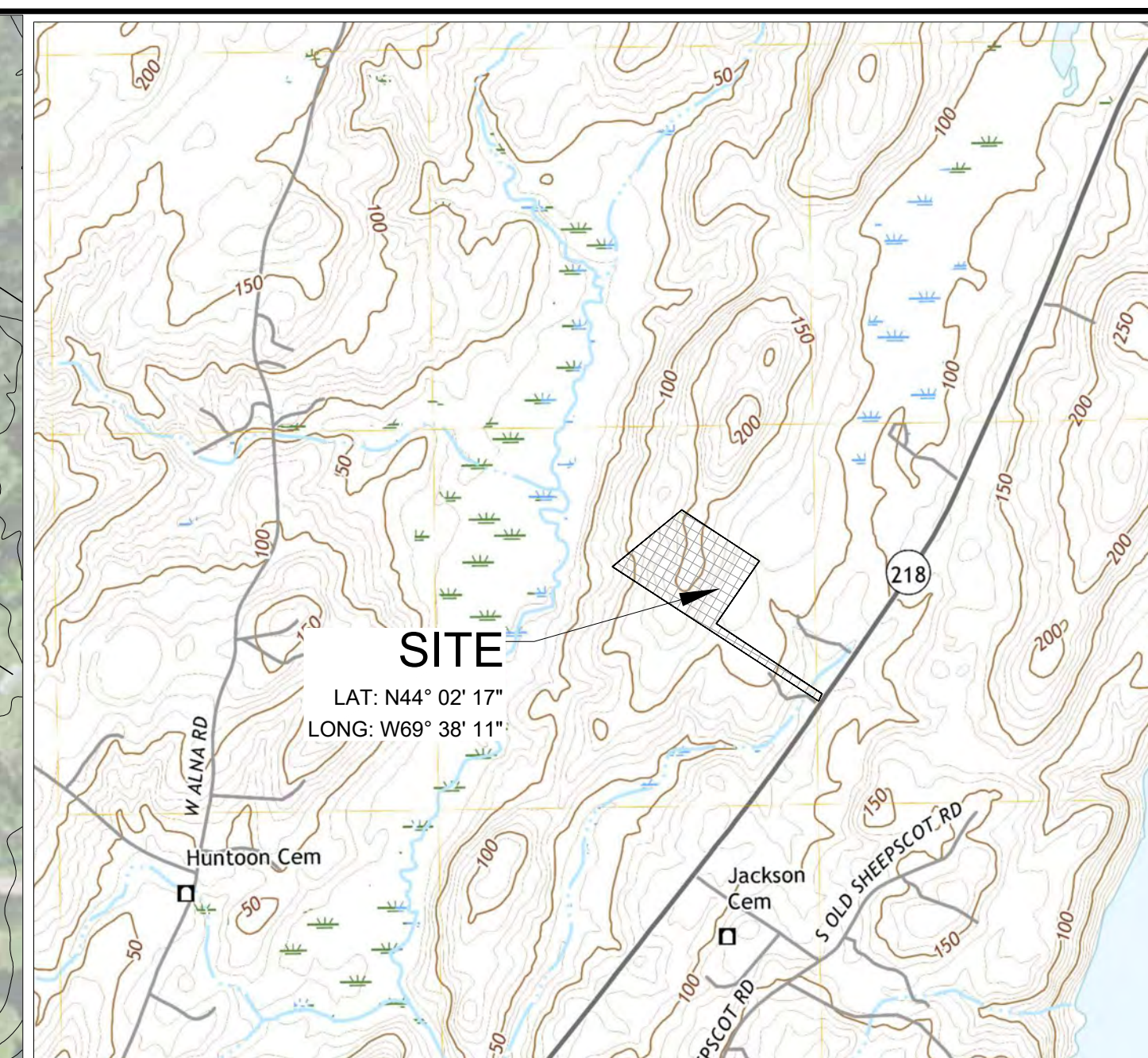
A statement of financial capacity is provided as **Exhibit I**.

U. Shoreland: Whenever situated in the shoreland zone or adjacent to a locally identified wetland, the development will not adversely affect the quality of any water body or unreasonably affect the shoreline of any water body.

A stream mapped on the Shoreland Zoning Map flows through culverts under the existing gravel access road. To prevent adverse effects to the water quality or to the shoreline of this stream, Project construction and operation will employ all applicable erosion and sedimentation control Best Management Practices. For more information on portions of the Project within the Shoreland Zone – Stream Protection District, see the Shoreland Zoning Ordinance Memo submitted to the Planning Board on January 4, 2022.

Attachment B

Site Plan



LOCATION MAP
SCALE: 1" = 1/4 Mile

LEGEND

- AREAS OF EXPOSED LEDGE
- EXISTING POWER POLE / PROPOSED POLE
- APPROXIMATE PROPERTY LINES
- APPROXIMATE PROJECT PARCEL
- SETBACKS TO SOLAR PANEL RACKING
- EXISTING GRADE CONTOUR LINES (10 FOOT INTERVALS)
- PROPOSED GRADE CONTOUR LINES (10 FOOT INTERVALS)
- PROPOSED GRADE CONTOUR LINES (2 FOOT INTERVALS)
- EXISTING TREELINE
- EXISTING OVERHEAD POWER
- 35' INTERMITTENT STREAM SETBACK
- EXISTING GRAVEL ROAD
- PROPOSED 8' HIGH AGRICULTURAL FENCE
- PROPOSED UNDERGROUND POWER
- PROPOSED OVERHEAD POWER
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED SILT FENCE/ EROSION CONTROL
- PROPOSED TREELINE
- PROPOSED SWITCH GEAR PAD & TRANSFORMER/INVERTER PAD
- PROPOSED FIXED TILT SOLAR PANEL RACKING - 13' TALL
- DELINEATED WETLANDS
- PROPOSED 12' WIDE GRAVEL ACCESS DRIVE

ALNA SOLAR
Alna, Maine

Tangent
energy solutions

bri
BIODIVERSITY RESEARCH INSTITUTE

KREBS & LANSING
CONSULTING ENGINEERS
164 Main Street, Suite 201
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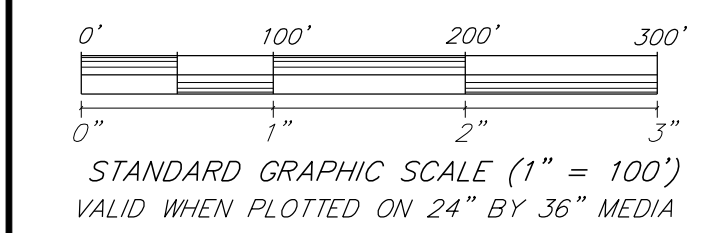
BH2M
Berry, Huff, McDonald, Milligan Inc.
Engineers, Surveyors
28 State Street
Gorham, Maine 04038
Tel: (207) 839-2771
Fax: (207) 839-8250

FOR CLIENT REVIEW

MAPPING SOURCE DATA USED FOR PLAN COMPILATION

Civil Engineering:
Krebs and Lansing Consulting Engineers, Inc.
164 Main Street, Suite 201
Colchester, Vermont 05446
Environmental:
BRI Environmental
276 Conco Road
Portland, ME 04103

Stormwater:



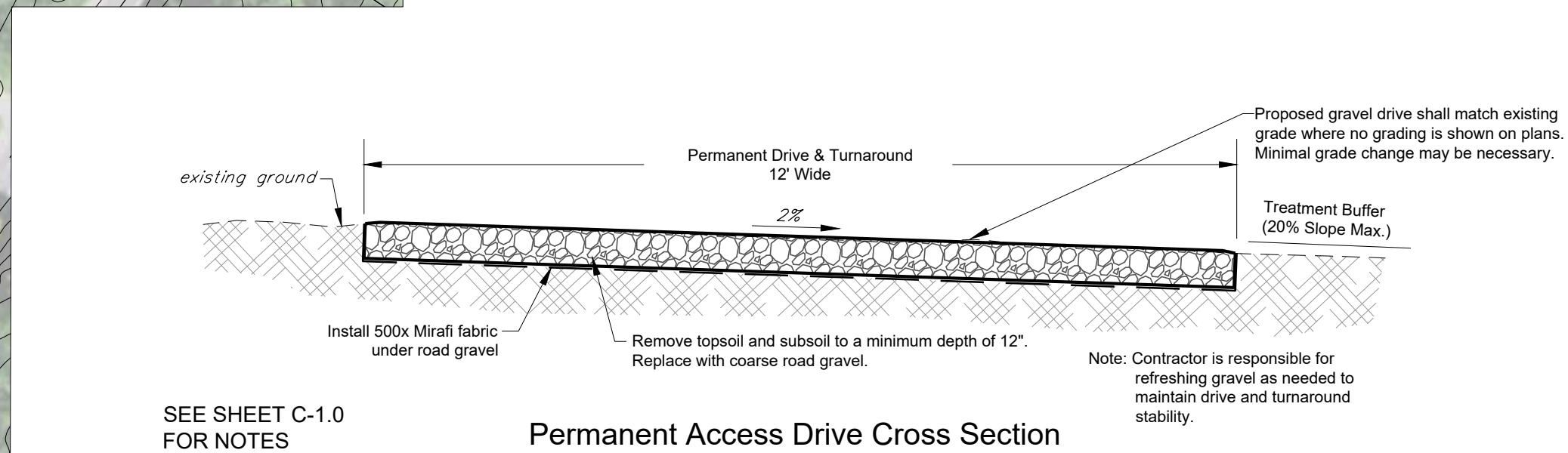
DESIGN SUMMARY FOR ENTIRE SITE
3.80 MW DC
2.875 MW AC
DC/AC: 1.32
8,640 MODULES
360 STRINGS OF 24 MODULES
440 W, TILT = 20°
PITCH = 24°
GCR = 0.54
LOD = 15.39 ACRES

REV. NO.	REVISIONS/COMMENTS	DATE
1		
2		
3		

DRAWING TITLE:

OVERALL SITE PLAN

DATE of Issue: 01/17/2022
Drawn by: RTR Checked by: EJM
Project No.: 21343 Scale: 1" = 100'
Drawing No.: Rev No.:



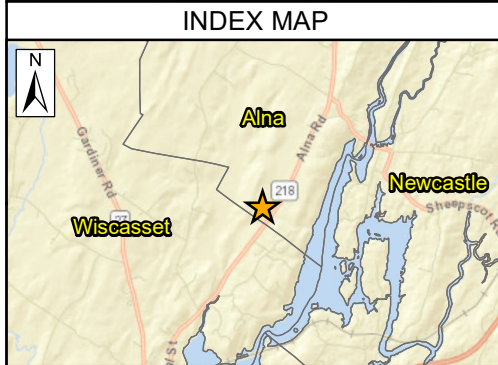
SEE SHEET C-1.0 FOR NOTES

Permanent Access Drive Cross Section

Note: Contractor is responsible for refreshing gravel as needed to maintain drive and turnaround stability.

Attachment C

FEMA 100-Year Flood Map



LEGEND

Flood Zone

- ZONE A - 1% Annual Flood Hazard
- ZONE X - Minimal Flood Hazard

Project Limit of Disturbance

Special Flood Hazard Areas Inundated by 100-Year Flood.
No base flood elevation determined. Data Derived from FEMA MSC

SCALE:

0 300 600 Feet

1 inch = 300 feet

**FEMA 100-YEAR FLOOD MAP
ALNA SOLAR PROJECT: ALNA, MAINE**

JANUARY 21, 2022

Attachment D

Construction Schedule

Solar Project Construction Schedule

Alna Solar Project

Alna Community Solar, LLC

TASK NAME	START DATE	END DATE	START ON DAY*	DURATION* (WORK DAYS)
Solar Project Construction Schedule				
Begin Construction	10/1/2022	10/1/2022	1	1
Construction Survey	10/2/2022	10/10/2022	1	9
Erosion Control Measures and Site Enclosures				
Enclosures	10/11/2022	10/16/2022	10	6
Site Prep/Tree Clearing/Grading	10/17/2022	11/30/2022	16	45
Stormwater Controls	11/1/2022	12/1/2022	31	31
Access Roads	11/15/2022	12/1/2022	45	17
Racking/Fencing/Trenching	12/1/2022	1/15/2023	61	46
Solar Modules	12/1/2022	1/15/2023	61	46
DC Electrical	1/1/2023	2/1/2023	92	32
Equipment Pads/Switch Gear/Inverters	1/15/2023	2/15/2023	106	32
AC/MV Electrical and Interconnection	3/1/2023	3/21/2023	151	21
Commissioning	4/1/2023	4/7/2023	182	7
Reseeding/Site Stabilization	4/1/2023	4/15/2023	182	15
Finish Construction	4/21/2023	4/21/2023	202	1

