Flycatcher
LAND + SCIENCE + PEOPLE

February 7, 2024

Ben Frey, Chair
Newcastle Planning Board
P.O. Box 386
Newcastle, ME 04553

Subject: **Newcastle Solar**
Large Site Plan and Conditional Use Application

Dear Chair Frey,

On behalf of Midcoast Solar, LLC (Applicant), we are writing to submit our application for a Large Site Plan and Special Use Permit for the proposed Newcastle Solar project (Project). We appreciate your consideration.

The Applicant is proposing to construct a distributed generation, ground mounted solar electric facility on private land off of Route 1 in Newcastle, Maine. The proposed Project includes solar panels, associated electrical equipment, perimeter fencing and site access. The location of these facilities is provided on the attached Site Plan (Appendix 2). The Project will be located on a portion of land identified on the Town of Newcastle assessment as Map 3 Lot 24 which is zoned as Rural Highway (SD). Based on the proposed use (Utilities & Services), the Project is an allowed use with special permit approval and large-scale project review. Town CEO, George Chase, indicated in an email that it would be appropriate for the large-scale review to be completed by the Planning Board.

The Applicant believes that the Project as designed is consistent with the Town of Newcastle's Comprehensive Plan. The Project is designed to maximize solar energy output and minimize impacts on natural resources, surrounding landowners and land uses, and to comply with applicable federal, state, and local codes, ordinances, and regulations. The Project has been sited to avoid impacts to wetlands and streams, limit the need for tree clearing and limit views from public vantage points.

We look forward to meeting with you. If you have any questions or need additional information, please do not hesitate to contact me at (207) 400-6161 or Sean@flycatcherllc.com.

Respectfully submitted,

Sean Murphy
Senior Project Manager

Flycatcher
LAND + SCIENCE + PEOPLE

Appendix 1

Application

Zoning Permit Application

TAX MAP 3 **LOT** 24

CONTACT INFORMATION

Applicant (if different than Owner):

Name Midcoast Solar LLC

Address 6 Balsam Circle, New Harbor, ME 04554

Phone Number 810-625-1801

Email sales@midcoastsolar.com

Property Owner:

Name Timothy Hanley

Address 745 Route One, Newcastle, ME 04553

Phone Number 207-242-6131

Email timhanley007@gmail.com

PROPERTY INFORMATION

District (circle one): **D1 D2 D3 D4 D5 D6 SD-** Rural Highway (Special District)

Street Address Route One

Lot Size 51.4 Acres Lot Frontage 555 ft.

SECTION 1

PROJECT INFO:

Proposed:

Lot Division ( ) New Construction ( ) Use/Change of Use ( )

Addition ( ) Massing/Arch. Component ( ) Additional Structure ( ) Other Utility

Commercial ( ) Residential ( ) Mixed Use ( ) Multi Unit ( )

Existing Use Forested Proposed Use Solar facility

Primary Building ( ) Accessory Building ( )

Number of Units: Existing_____ Proposed _____

Building Dimensions:

Footprint of proposed structure/s _____sf. Total Building area_____sf.

Width _____ft, Depth _____ft, Number of Stories _____

Setbacks: Front ~950 ft,, Side ~250 ft. Rear ~600 ft., (distance to proposed structure from lot line or R.O.W.)

Provide brief description of project:

Midcoast Solar, LLC is proposing to install and operate a 1.55 MWdc solar array. The Project will include photovoltaic solar panels, equipment pads, inverters and transformers, an access road, and will connect to the local electric distribution network on Route 1.

Provide a sketch of proposed project on the back of this sheet or provide an itemization additional Information being submitted with this application.

TOWN OF NEWCASTLE
ZONING PERMIT APPLICATION

OFFICE ADMINSTRATION USE ONLY

TAX MAP___LOT___

DEVELOPMENT REVIEW TYPE: (X)

a. Small Project Plan ___	b. Large Project Plan X	c. Master Plan ___
d. Residential Companion Use ___	e. Subdivision Plan___	f. Plan Revision ___
g. Expanded Use Permit ___	h. Use/Change of Use Permit ___	i. Special Permit X
j. Variance ___		

This project requires Virtual Lot review: YES ( ) NO ( )
A sketch of proposed lot has been provided: YES (X) NO ( )

ADDITIONAL PERMIT APPLICATIONS: (X)

a. Shoreland Zoning ___	b. Resource Protection ___	c. Flood Plain ____
h. Demolition Delay ___	e. Wireless Communications ____	f. Timber Harvesting ____
g. Earthwork ____	h. Erosion/Sediment Control X	i. Seasonal Conversion ____
j. Mobile Home Park____		

SEWER INFO: A sewer system: is required to be installed ( ), is existing ( )
This section is not applicable to the application type (X)
Private ( ) Municipal ( )
Private Septic Permit Number: _____ Municipal Connection Agreement Identifier:_____
Residential Use (per unit): number of bedrooms _____number of bathrooms_____

APPLICATION FEE: $_____ Date Payment Received_____

Is the existing Building, Lot or Use to be considered: Conforming ( ) Non-Conforming ( )
This Application requires Planning Board Review YES X NO____
Proposed Date to be reviewed by Planning Board: _____

PERMIT FEE: $_____ Date Payment Received_____
PERMIT PROCESSED BY:_____

SIGNATURE OF APPLICANT
I certify that the above submitted application and information within is correct to the best of my knowledge and understand that any falsification is reason for denial of permit.

Applicant

November 20 2023

Date

SECTION 2 - FLOOD ZONE INFORMATION This section -Not Applicable (x)

****

Flood Zone Classification _____ Panel Number _____ Base Flood Elevation_____

Fair Market Value of existing structure $_____

Renovation Cost $ _____ (fair value, including all labor and material)

Elevation of the lowest portion of the structure (including basement) _____

Name of the certified professional documenting elevation of structure _____

Address_____, Phone number_____

Email address:_____

SECTION 3 - SHORELAND ZONING This section -Not Applicable (x)

****

THIS SECTION APPLIES ONLY THAT PORTION OF THE STRUCTURE THAT IS LESS THAN THE REQUIRED SETBACK

Please indicate the following for that portion of the structure that is less than 75 feet from the highwater water mark of tidewater and 100 feet from the fresh water and/or for that portion of the structure that is less than 15 feet from the property line.

Square feet_____ Total Volume _____Cubic Feet

Total square footage _____x30% equals _____area of expansion

Please indicate the amount of additional square footage proposed _____sf.

Please indicate the amount of additional volume proposed _____cu.ft.

SECTION 4 - FLOOD PLAIN BUILDINGS ONLY This section -Not Applicable (x)

****

Does your project include any foundation work? YES ( ) NO ( )

Will the foundation extend beyond the outer limits of the structure, as it exists now?

Will the new foundation cause the structure to be elevated more than 3 additional feet? YES ( ) NO ( )

Will you attempt to relocate the foundation and/or structure to meet the setback requirements to the greatest practical extent possible? YES ( ) NO ( )

SECTION 5 – PIERS, DOCKS, WHARFS, FLOATS AND/OR STAIRWAYS This section -Not Applicable (x)

****

Application for:

New_____, Repair Existing _____. Replacement_____

Dimensions: Wharf_____, Ramp (s) _____, Float (s)_____

Sideline Setbacks _____

Stairway dimensions _____

Please supply a detail drawing showing the footprint and profile of the structure, high and low water elevation marks and sideline locations.

SECTION 6 – FARMLAND, OPEN SPACE, TREE GROWTH, OR WORKING WATERFRONT

This section -Not Applicable (x)

****

Please indicate the amount, if any, acreage that is currently in the farmland, open space, tree growth, or working waterfront. Please also list any other pertinent information in this space.

_____

_____

_____

_____

_____

SECTION 7 – EARTHWORK This section - Not Applicable ( )

****

Please indicate any excavating or driveway work you are planning by attaching any sketches or drawings that may be relevant

****

SECTION 8 – TOURIST RENTAL This section - Not Applicable (x)

****

Please state what may impact public infrastructure or public services, including any hazards to public safety or other disturbances to the peace of neighbors and the community with the rental of this property.

_____

_____

_____

_____

_____

END OF APPLICATION

Appendix 2

Agent Letter

December 18, 2023

To Whom it May Concern:

On behalf of Midcoast Solar, LLC, I hereby authorize Flycatcher, LLC, to act as Midcoast Solar's agent with respect to all permitting and regulatory matters pertaining to the proposed solar site to be located off of Route 1 in Newcastle, Maine (Map 3, Lot 24).

Sincerely,

Nathaniel Curtis

Managing Director

ATTACHMENT 1
PROJECT DESCRIPTION AND DEVELOPMENT REVIEW

PROJECT DESCRIPTON AND NARRATIVE ON STANDARDS

PROJECT OVERVIEW

Midcoast Solar, LLC is proposing to install and operate a 1.55 MWdc solar array off of Route 1 in Newcastle, Maine (Project). The Project will include photovoltaic solar panels mounted on a fixed or tracker racking system, equipment pads, inverters and transformers, an access road and will connect to the local electric distribution network on Route 1. The Project will be located on Tax Map 3, Lot 24 which is zoned as Rural Highway (SD). Based on the proposed use (Utilities & Services), the Project is an allowed use with special permit approval and large-scale project review by the Planning Board.

Pending approval, the Project is anticipated to start work in Q3 of 2024 with an anticipated construction period of 6 to 8 months in duration. The Project will be constructed in compliance with applicable municipal, state, and federal regulations, guidelines, and standards, and the specific requirements of the necessary permits. Maps and figures related to the Project are provided in Attachment 2, site plans are provided in Attachment 3, and a demonstration of right, title, and interest is provided in Attachment 5.

The proposed Project includes solar panels, associated electrical equipment, perimeter fencing and site access. The location of these facilities is provided on the attached site plans (Attachment 3). While the site plans show fixed tilt racking, there would be no material change in impacts (e.g., visual, noise) should it be determined that a tracker racking system is more suitable for the site. There are no buildings and therefore no floor area. Agricultural fencing will be installed around the solar arrays, per the National Electric Safety Code (NESC). No exterior lighting is proposed for the facility, as none is required to meet NESC. However, there may be lighting at the transformers to allow for potential nighttime repairs.

Construction of the Project will begin with establishing base lines and demarcating the Project limit of work. Following installation of temporary erosion and sediment control measures such as silt fence and erosion control mix (ECM), the site will be cleared and grubbed as necessary. The design of erosion and sedimentation control measures will be based on the Maine Erosion & Sediment Control Handbook for Construction: Best Management Practices (BMPs). Gravel access roads or entranceways will then be constructed, along with proposed stormwater management features. The perimeter fence will be installed, followed by installation of solar panels. Posts will first be installed for attachment of the racking system, then installation of solar panels and aboveground and underground conductors will occur. The ground around the solar panels will be planted with herbaceous vegetation. The final number of solar panels will be based on site conditions as determined during construction and may vary slightly from the permit drawings. Individual foundation excavations will then be made and concrete pads will be installed for the placement of electrical equipment such as the transformers and inverters. Any necessary final grading, site stabilization, vegetation management and landscaping will then be completed.

Decommissioning

Decommissioning of the Project will, generally, reverse the order of the above steps. A decommissioning plan which is compliant with the Maine Solar Decommissioning Law (35-A M.R.S. §§ 3491 through 3496) is provided as Attachment 4.

Site Access

The Project will be accessed by a single roadway that is designed to be the shortest practical distance while avoiding protected natural resources.

Parking

The Project will not require permanent parking spaces for construction or operation. During construction, most construction personnel will park at the temporary laydown area. Some parking will occur within the Project development area where construction activities are occurring, including for equipment delivery, loading, and unloading; these areas will be spread out through the Project. After construction, the site will generally be unmanned, except for mowing and maintenance.

Traffic Access / Congestion

The Project will be accessed via a new access road from Maine Route 1 in Newcastle. During construction, the Project will temporarily increase traffic on municipal roads, but these effects will be temporary in nature and relatively minor. Standard trucking methods will be used to transport materials and equipment to the Project site. The inverter and transformer stations are anticipated to be delivered assembled on standard-width flatbed tractor-trailers. Other Project equipment (e.g., solar panels, wire, cable, conduit, and construction materials) will also be transported on standard-width trucks. On-site, heavy construction equipment is anticipated to be limited to a backhoe for foundation-post and conduit excavation, cement trucks for delivery of concrete for the pier foundations under each inverter enclosure and the transformer pads, and a light duty crane to place the enclosures on these concrete piers.

During operations, no full-time staff will be located at the facility. On-site personnel visits are anticipated to be largely limited to managing the property grounds and associated solar facilities in accordance with any permitting requirements and maintenance of equipment as recommended by manufacturer specifications. Occasionally small crews may access the site to effect repairs in the event of equipment breakdown. These visits will generally be of short duration and the long-term traffic volume generated by the development will be negligible.

Pedestrian Traffic

The facility will be fenced, therefore there will be no pedestrian access to the Project area. The installation of the fencing will not impede access to any known resources for which pedestrian access would be desirable.

Outdoor Storage

There will be no permanent outdoor storage or waste disposal containers.

Sewage disposal

No wastewater disposal systems will be required for this Project. During construction, on-site portable toilets will be used. During operation, on-site personnel visits are anticipated to be largely of limited duration. No sewage disposal facilities are proposed.

Water Supply

No water supply system will be required for this Project. During construction, anticipated water usage will include use of bottled drinking water or water trucked in from municipal sources for construction personnel and dust abatement. Water for dust abatement will be from publicly accessible, off-site water sources, excluding streams, brooks, and groundwater sources.

There will be no full-time staff required to be located at the Project site for operation of the solar energy facility. On-site personnel visits are anticipated to be largely limited to managing the property grounds and associated solar facilities in accordance with any permitting requirements and maintenance of equipment as recommended by manufacturer specifications. Therefore, no water supply facilities are proposed.

Fire and Emergency Zones

There are no fire or emergency zones associated with this Project. The Fire Department will have access to Project gate keys through Knox boxes. The access road will be sixteen (16) feet wide, as is standard for a solar facility of this size.

Signage

Signage will be limited to that which is required to promote public safety around the facility, including access warnings.

Fencing

Agricultural fencing will be installed around the solar arrays, per the National Electric Safety Code (NESC).

Exterior Lighting

No exterior lighting is proposed for the solar facility, as none is required to meet NESC. However, limited downward lighting may be installed on the equipment to allow for nighttime maintenance and repairs.

Flood Plain

Based on Federal Emergency Management Agency (FEMA) map 23015C0265D, effective on 7/16/2015, the Project is not within a mapped flood plain area. See Attachment 2 for a map showing FEMA boundaries within the Project area.

Stormwater

The Project will disturb one acre or more of area during construction and therefore will be required to demonstrate that is has been developed accordance with the State's Stormwater Management Law. The Project is not located within the direct watershed of a lake most-at-risk from new development, or an urban impaired stream, and will not result in greater than one acre of impervious area, or five or more acres of developed area.

"Impervious area" is defined by DEP as "the total area of a parcel covered with a low-permeability material, such as asphalt, concrete, and gravel roadways." Consistent with this definition, the total impervious area calculated for the Project includes areas covered by concrete equipment pads, gravel access roadways, and the ground-driven post mounts for the solar panels. DEP has previously deemed that the solar panels are not considered impervious area. The total impervious area of the Project is 0.848 acres.

"Developed area" is defined by DEP as "an impervious area, landscaped area, or unrevegetated area; developed area includes all disturbed areas except an area that is returned to a condition that existed prior to the disturbance and is revegetated within one calendar year of being disturbed, provided the area is not mowed more than twice per year." During a DEP Solar Round Table meeting held on February 5, 2020, DEP confirmed that the area under solar panels is not considered developed as long as it is revegetated after construction and does not get mowed more than twice a year. Therefore, the total developed area of the Project is 0.848 acres.

Because the Project will not result in greater than one acre of impervious area, or five or more acres of developed area, the Project will be subject to the basic stormwater standards set forth in DEP's Chapter

500 Stormwater Management Rule ("Chapter 500"). The Project will utilize stormwater management BMPs to control runoff and provide water quality treatment for impervious and developed areas. Such BMPs may include wet ponds, vegetated soil filters, vegetated swales, vegetated buffers, and other low impact development (LID) techniques. Proposed stormwater BMPs will be designed in accordance with the standards set forth in Chapter 500 and the guidance provided in DEP's Stormwater Best Management Practices Manual.

NARRATIVE ON STANDARDS

The following discussion is intended to demonstrate that the Project will be consistent with the Town of Newcastle's Special Use Permit standards, Large Project Plan standards, and Road, Driveway, and Entrances Ordinance requirements. The Planning Board agreed at its January 18th meeting that the Subdivision standards are not applicable to the Project.

Special Use Permit Approval Standards

1. When determining whether to approve or deny an application, the Planning Board must consider the following:

a. The adopted Comprehensive Plan of the Town of Newcastle;

b. The purpose and intent of this Code;

c. The purpose of the District(s) where the property is located;

The Project will be located on Tax Map 3, Lot 24 which is zoned as Rural Highway (SD). Based on the proposed use (Utilities & Services), the Project is an allowed use with special permit approval and large-scale project review by the Planning Board.

d. The proposed use or activity will be established, maintained, and operated so as to be harmonious with the surrounding area and will not impede the development, use, and quiet enjoyment of abutting property in any foreseeable manner;

The Project will be accessed by a single roadway that is designed to be the shortest practical distance while avoiding protected natural resources. The solar array is located approximately 1,700 feet from the nearest building.

e. The proposed use or activity will be of a character that does not produce excessive noise, heat, glare, dust, smoke, fumes, odors, or vibration detectable off the property or that adversely affects the surrounding area;

Noise

Sound generated by the Project would consist of: (1) short-term duration during construction and (2) sound during normal facility operations. Construction noise levels will exceed ambient conditions at times, mainly when the equipment is in operation in close proximity to the Project site boundary. Construction noise will not be unusual, but rather typical of noise associated with any residential or

commercial development. The equipment used is not generally operated continuously, nor is all of the equipment always operated simultaneously. There will be times when no equipment is operating and noise will be at ambient levels. Construction activities are scheduled to occur mostly during daytime hours, when many people are at work and away from home. Specifically, construction will occur from 7am until 7pm or from sunrise to sunset, whichever is less.

During Project operation, concurrent operation of the solar facility site components and the on-site substation should be assumed to be limited to daytime hours only. In terms of estimating noise, the frequency of most inverters is 50-60 Hz, the same as AC electricity in home or commercial buildings. A study of sound at three solar facility sites conducted by the Massachusetts Clean Energy Center[1] found that the average Leq sound levels at a distance of 10 feet from the inverter face varied over the range of 48 dBA to 61 dBA for two sites and in the range of 59 to 72 dBA for a third site. Sound levels along the fenced boundary of the arrays were generally at background levels, though a faint inverter hum could be heard at some locations along the boundary during the day. After sunset, when the plant no longer receives solar radiation, the inverters will not produce noise and the pad-mounted transformers will be energized but likely operating under low noise condition using natural draft cooling (no fans) due to reduced nighttime heat loads. The nearest residential home is approximately 1,700 feet from the solar array and the intervening ground cover and vegetation is expected to provide sound attenuation.

Glare

Solar panels are designed to absorb light and although the glass in first generation solar panels put off light equal to a windshield on a car they are now built standard with anti-glare coating in all instances. Modern panels have a standard anti-glare coating which guarantee that the maximum reflection is 2% of light input whereas residential windows reflect at 3%.

Other

Once the Project is operational, it will not generate any heat, dust, odor, vibration, smoke, litter or other nuisances.

f. The proposed use or activity will not result in the destruction, loss, or damage of any feature determined to be of significant natural, scenic or historic importance; and,

The Applicant completed field studies at this site to determine the feasibility of constructing a solar project at this location. These studies documented the presence of wetlands, streams, and significant vernal pools. Following the resource studies, project engineers overlaid the wetland, stream, and vernal pool locations on site topography in order to design the Project with minimal impact to natural

[1] Accessed on January 2, 2024:
http://files.masscec.com/research/StudyAcousticEMFLevelsSolarPhotovoltaicProjects.pdf

resources. The solar arrays and associated equipment were sited entirely within upland areas thereby avoiding impacts to protected natural resources.

The Applicant considered multiple alternatives for the access road. Any route that completely avoided wetlands would have required an excessively long road for a project of this size and/or significant fill or side cuts to create a level surface of the required width along the steep terrain in the western portion of the parcel. Based on the expected costs associated with these significant engineering measures, it was determined to be impractical to completely avoid wetland impacts.

Therefore, the access road will cross an unnamed stream at a point where the wetlands on the site are at their narrowest point (approximately 15 feet), resulting in only 715 square feet of wetland impact. The Applicant received a Natural Resources Protection Act (NRPA) Permit-by-Rule to account for this stream crossing and will be filing a Maine General Permit application with the U.S. Army Corps of Engineers. By taking a comprehensive approach to avoidance and minimization, the Project design has minimized overall impacts to protected resources to the greatest extent practicable.

A request was made to the Maine Historical Preservation Commission regarding potential archaeological or historical resources in the Project area. In a communication dated November 8, 2023, the State Historic Preservation Officer stated "Based on the information submitted, I have concluded that there will be no historic properties affected by the proposed undertaking, as defined by Section 106 of the National Historic Preservation Act."

g. Considerations indicated elsewhere in this Code for special permit approval.

See following section.

Additional Standards For Utilities & Services Uses

1. Standards related to wind energy facilitates are located in the Wind Energy Ordinance.

These standards are not applicable.

2. Buildings required for the production and distribution of utility services must meet the following standards:

a. Utility buildings must be built to the standards of a permitted building within the district in which they are located.

b. Utility equipment that cannot be located indoors must utilize screening elements and walls to blend into the surrounding context.

There are no buildings proposed for the Project.

The Project design and layout has maximized available site so as to minimize the visual impact on the surrounding area. The Project is sufficiently separated from public roads and residences that any visible components of the Project (e.g. arrays and transmission poles) will appear small. The maximum height of the solar panels at full tilt (dawn, dusk, wind events) is proposed to be eighteen (18) feet, which is significantly lower in height than the trees located outside of the Limits of Disturbance.

3. Where real windows are impractical, a utility building may meet window and door requirements with recessed panels and applying any of the following finishes to the panel to simulate window patterns:

a. Glass cladding.

b. Louvered or paneled shutters covering the panel in a "closed" position.

c. A trellis, grille, grate, or fretwork.

No windows are proposed for this Project.

4. The proposed Use shall comply with the Nuisance Standards in Article 6 Section 1.G.

As described earlier in this submittal, the Project will not adversely affect the use and quiet enjoyment of abutting property as a result of noise, vibrations, fumes, odor, dust, glare or other cause.

Large Project Plan Approval Standards

1. The Code Enforcement Officer must approve a Large Project Plan application and issue findings of fact upon verifying consistency to the following:

a. The standards of this Code.

b. The adopted Comprehensive Plan of the Town of Newcastle.

c. Any/all prior approvals for the subject property.

d. Any additional type of development review required by this Code has been completed in accordance with the standards of this Article.

e. Considerations indicated elsewhere in this Code for the required Large Project Plan approval.

As previously discussed, the Project meets the standards of the Town's Core Zoning Code and is consistent with the Town's Comprehensive Plan.

Road, Driveway, and Entrances Ordinance Review

An entrance onto existing state-aid or state highway must be approved by the MeDOT. Copies of such approval shall be submitted to the permitting authority at the time of application review.

The Project will be accessed by a single roadway that is designed to be the shortest practical distance while avoiding protected natural resources.

The Applicant submitted a Driveway / Entrance Permit Application on February 5, 2024. The Applicant requests that providing the MDOT's approval with the Building Permit application be a condition of the Planning Board's approval, should such approval be granted.

Entrance standards shall apply to the first 20 ft of the road, driveway, or parking lot, that intersects the public way.

Entrance Standards

D. DESIGN

1. All entrances shall be designed and constructed in accordance with the latest Maine Department of Transportation's Manual for Standard Specifications.

The Applicant has applied to the Maine DOT for an entrance permit and will be expected to adhere to their design standards.

2. Entrances shall be constructed to prevent water run-off onto the adjacent traveled way.

All surface water flowing or diverted towards the construction entrance will be piped beneath the entrance or, if piping is impractical, a mountable berm with 5:1 slopes will be installed.

.

a. Public Roads and Private Roads shall be sloped no greater than 3% above or below the adjacent traveled way for first 20 ft of the entrance.

The Applicant agrees with this standard and is compliant based on the attached Site Plans.

b. If the Permitting Authority determines that an entrance culvert is necessary, the applicant shall bear the burden of the cost for the culvert installation, which shall be constructed to the standards of this ordinance.

The Applicant agrees with this standard and will provide confirmation.

3. Entrances shall intersect the adjacent traveled way at a horizontal angle of 90 degrees.

a. Proposed horizontal angles of intersection less than 90 and greater than 75 degrees may;

i. Be permitted via Special Permit, and

ii. Shall not be permitted less than 75 degrees

The entrance is currently at an approximately 90 degree horizontal angle in relation to Route 1 and any modifications will not result in a less than 75 degree horizontal angle.

b. Entrances shall have an unobstructed view to and of the adjacent traveled way, and shall be wide enough to allow emergency vehicles to enter from either direction.

c. Entrances shall have a 35 ft radius along the edge of intersection between the entrance and adjacent traveled way.

The proposed access road is 16 feet wide, which is standard for solar projects. The Applicant agrees with this standard and will provide confirmation with the Project's Building Permit application.

4. No part of the entrance shall extend beyond the property lot frontage.

The Project is compliant with this standard.

5. Entrance side slopes and banks shall not be steeper than horizontal to vertical ratio of 2:1.

The Project is compliant with this standard.

E. LOCATION

1. All entrances shall be so located such that vehicles approaching or using the entrance;

a. Shall be able to obtain unobstructed sight distance in both directions along the adjacent traveled way in accordance with Table 1.1 Sight Distance.

b. Shall be able to maneuver safely without interference with traffic.

2. Entrances shall not be constructed within the following distance of an intersection;

a. 75 ft of an un-signaled intersection

b. 125 ft of a signaled intersection.

The access road is an existing forest management roadway. There will be no obstructions for vehicles approaching or using the entrance and the nearest intersection is approximately a half mile away.

F. SIGHT DISTANCE

1. Entrances shall be placed such that an exiting vehicle has an unobstructed view in both directions along the adjacent traveled way according to Table 1.1 Sight Distance.

2. Sight distance shall be measured as follows;

a. From a point of origin 4 ft above ground, 10 ft from the edge of the shoulder of the adjacent traveled way, at the horizontal center of the proposed entrance.

b. To a point 4 ft above ground, measured in a straight line along the traveled way, farthest from the point of origin that can be seen without obstruction.

TABLE 2.1 SIGHT DISTANCE

SPEED (MPH) SIGHT DISTANCE (FT)

50 570

60 645

Based on a site visit completed on January 18, 2024, the proposed Project access road has an unobstructed view for at least 645 feet in either direction.

Driveway & Roads Standards

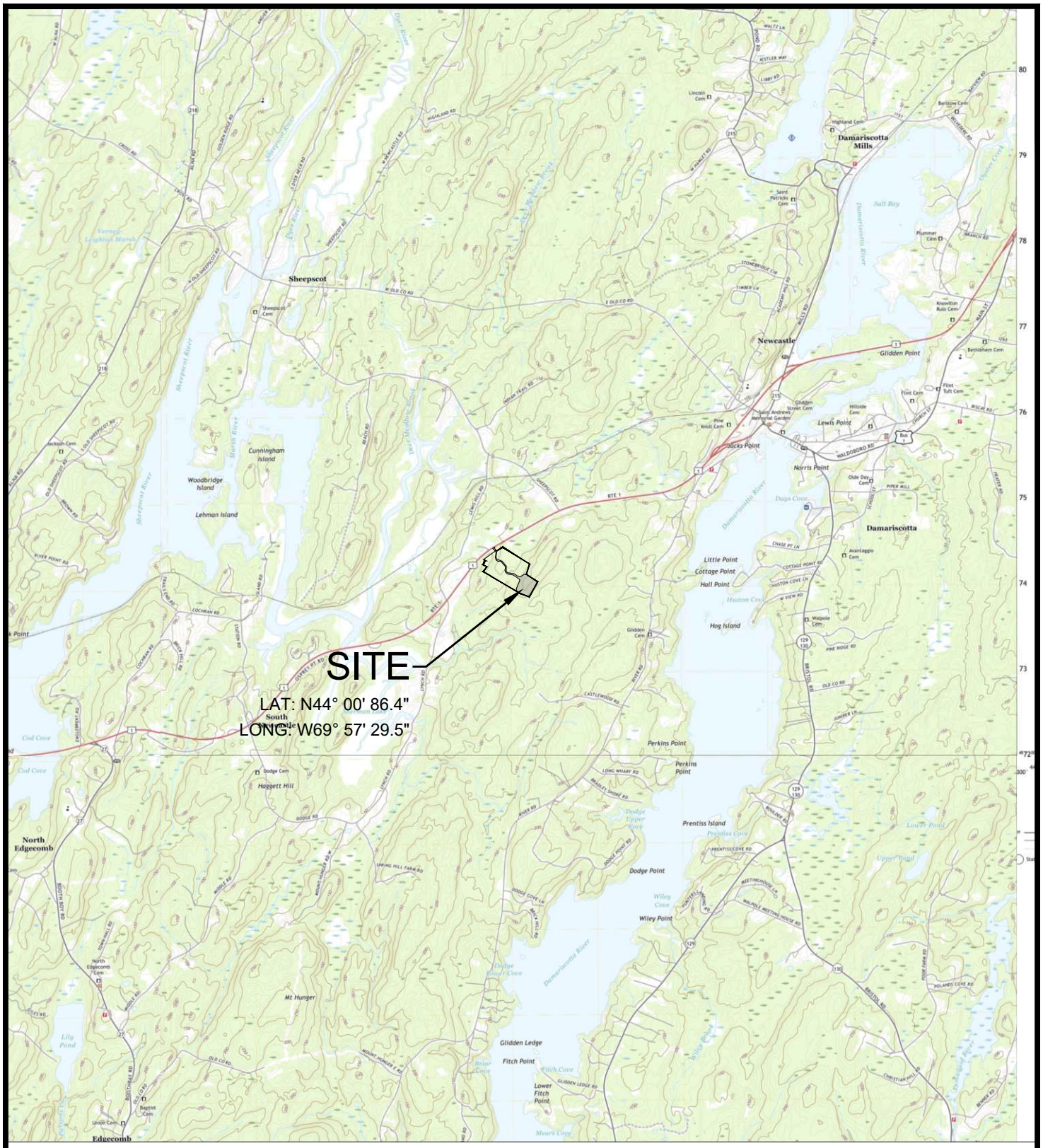
Applies to the design, location, and construction of new driveways, and public and private roads.

1. Driveways shall have no design or construction standards, but shall comply with all Entrance standards.

2. Shared Driveways may provide access in whole or in part on or across from an abutting lot or lots, provided that an access easement exists between all owners.

The Project will comply with all entrance standards and is not proposing a shared driveway.

ATTACHMENT 2
PROJECT MAPS AND FIGURES



LOCATION MAP

SCALE: 1" = 1 MILE

NEWCASTLE SOLAR PROJECT

Route 1
Newcastle, Maine

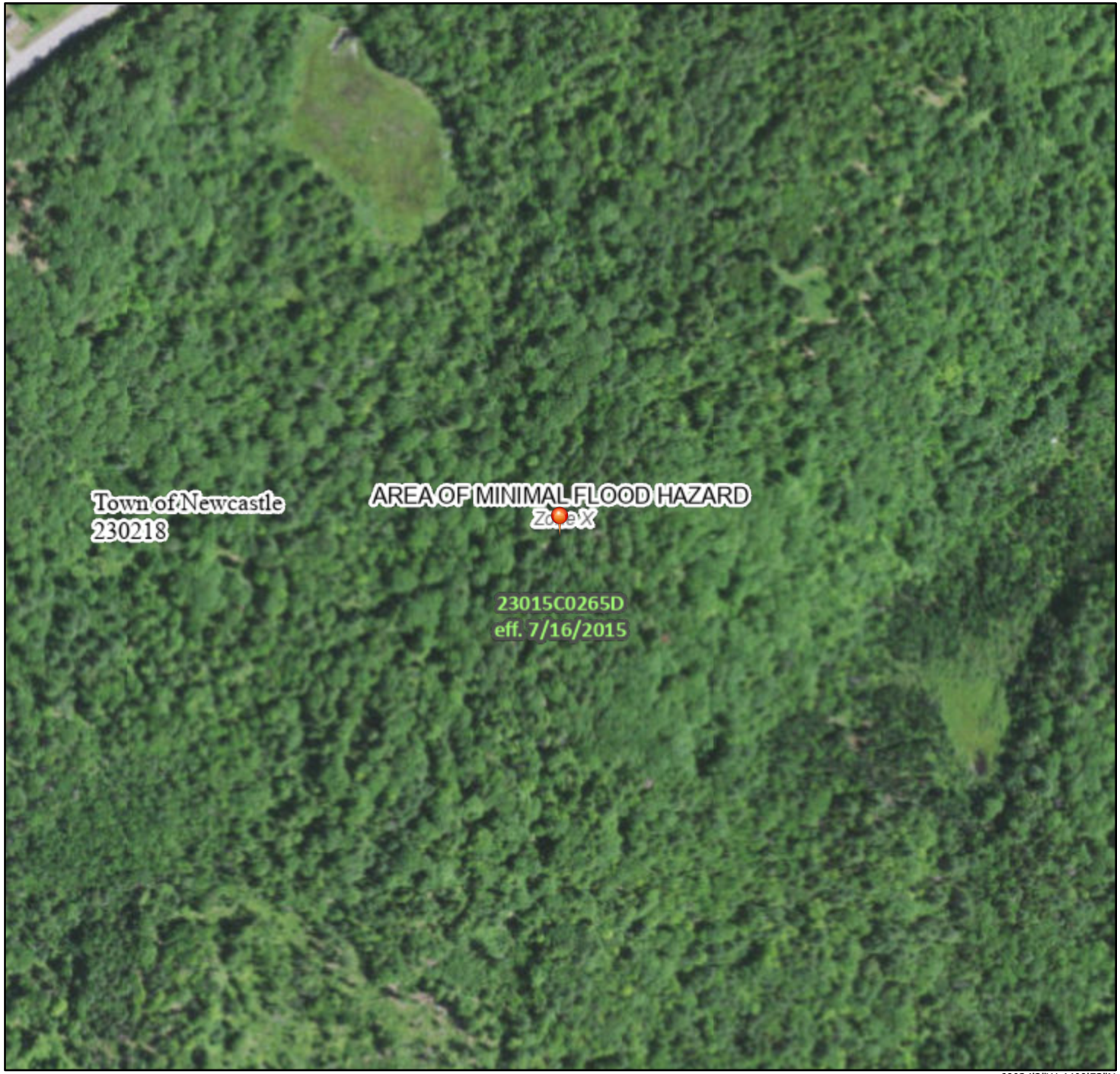
Date: December 15, 2023

KREBS & LANSING CONSULTING ENGINEERS
164 Main Street, Suite 201
Colchester, Vermont 05446
P: (802) 878-0375
www.krebsandlansing.com

National Flood Hazard Layer FIRMette

FEMA

69°34'39"W 44°1'19"N



69°34'2"W 44°0'53"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 11/6/2023 at 4:49 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Map 3

Property Map

Town of Newcastle

Lincoln County, Maine

July 22, 2020

Legend

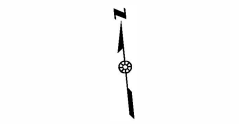
- Parcel Line
- Right of Way
- RR Right of Way
- Boundary Stream
- Townline
- Discontinued Road
- Other
- Private Right of Way
- Lakes , Ponds and Rivers
- Non-forested Wetlands
- Adjacent Maps
- 5 Adjacent Map Number

Land Use Zoning Districts

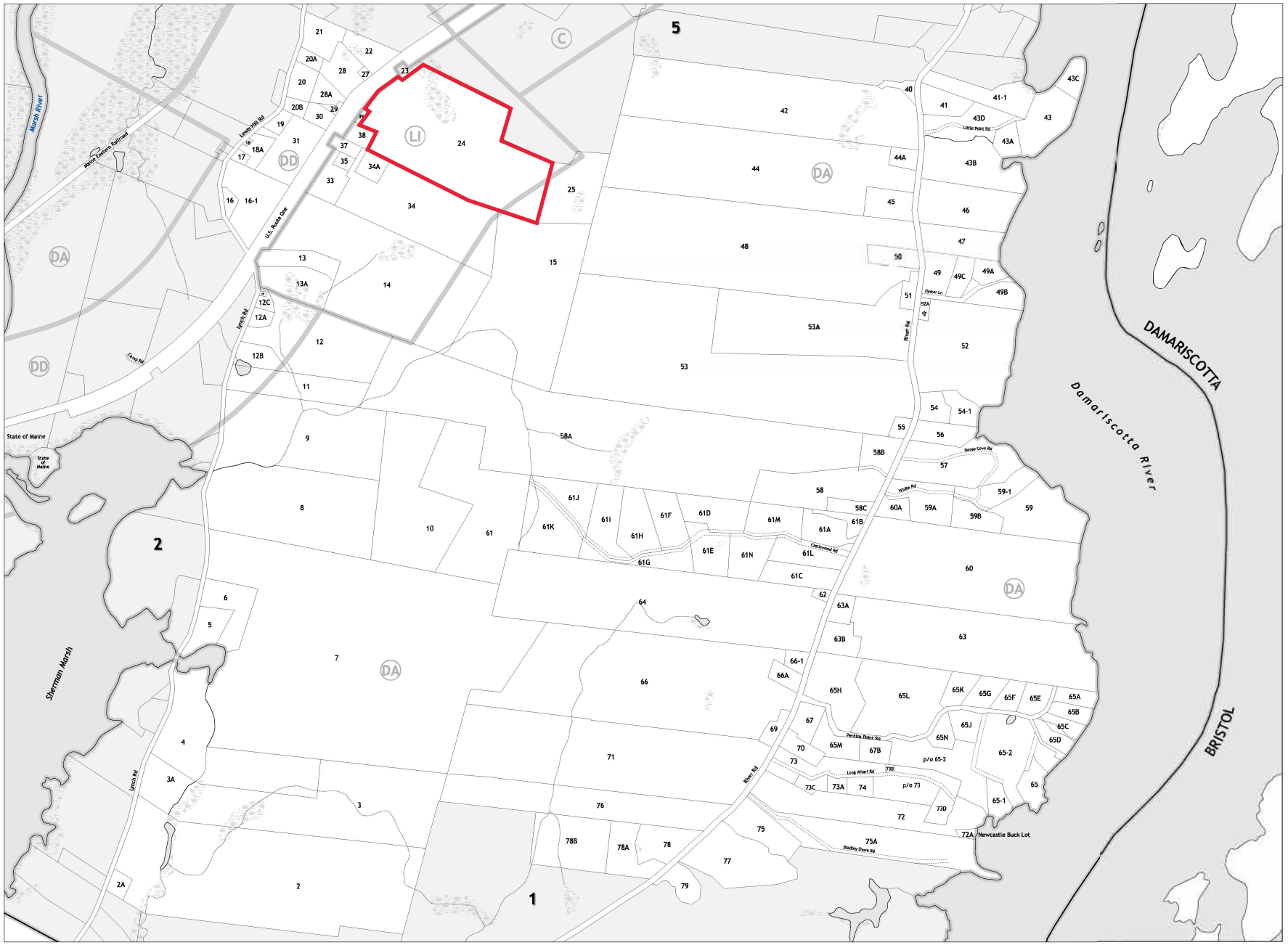
- C Commercial
- LI Light Industrial
- R1 Route 1
- R Rural
- DA District A
- DB District B
- DD District D
- VB Village Business
- VC Village Center
- VR Village Residential

DISCLAIMER: This map is intended for property tax assessment purposes only. The information contained on this mapis based upon recorded deeds, plans, and other public sources. These primary sources should be consulted to verify the information contained on this map. Due to conflicts, errors, and omissions inthe primary sources, the tax map should be considered to be a represent ation of the editor's judgment, based uponthe available evidence. Tax maps arenot legalevidenceof size, shape, location, orownership of realestate, roads, ormunicipal boundaries.

THE TOWN OF NEWCASTLE ASSUMES NO LIABILITYRELATED TO THE USE OF THIS MAP. THIS MAP IS NOT A SURVEY.

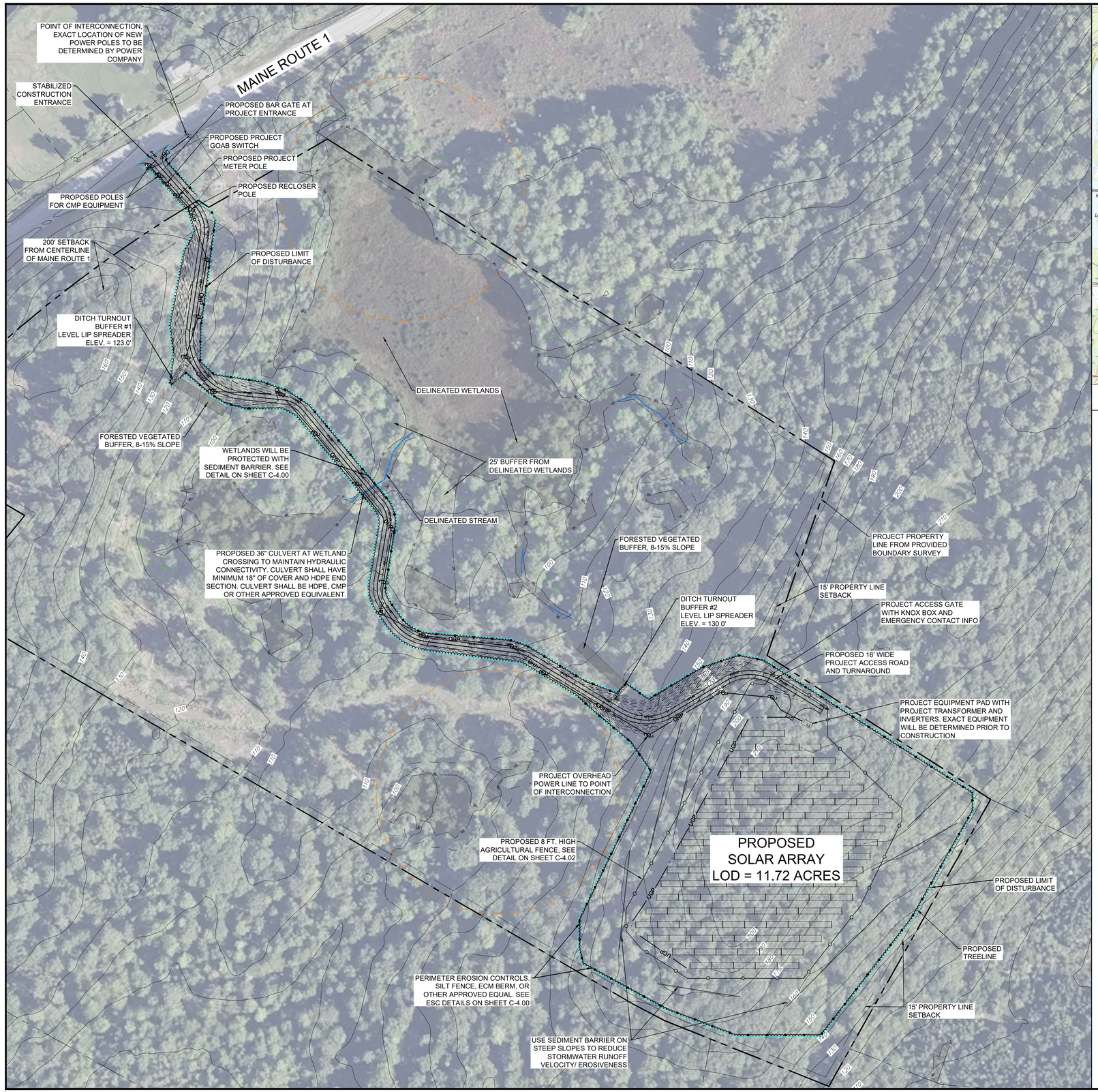


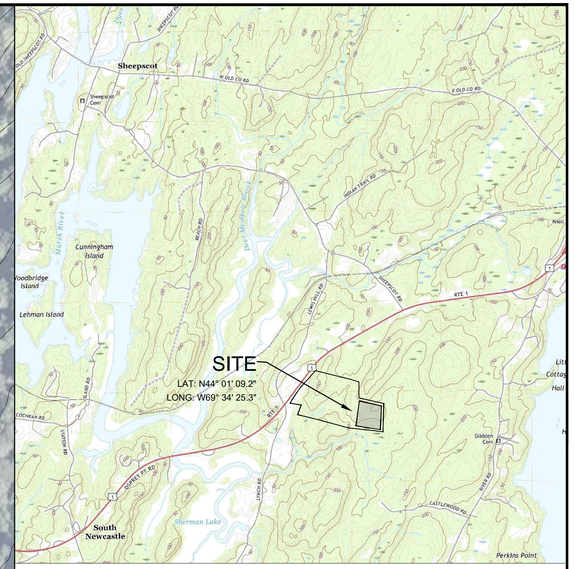
Northern Geomantics, Inc.
PO Box 557, Bradford, NH 03221
info@ngeomtgs.com
www.ngeomtgs.com



Map 3

ATTACHMENT 3
SITE PLANS





LOCATION MAP
SCALE: 1" = 1/2 MILE

LEGEND

- EXISTING POWER POLE / PROPOSED POLE
- TAX MAP PROPERTY LINES
- SURVEYED PROPERTY LINES
- SETBACKS TO SOLAR PANEL RACKING
- EXISTING GRADE CONTOUR LINES (10 FOOT INTERVALS)
- EXISTING GRADE CONTOUR LINES (2 FOOT INTERVALS)
- PROPOSED GRADE CONTOUR LINES (10 FOOT INTERVALS)
- PROPOSED GRADE CONTOUR LINES (2 FOOT INTERVALS)
- EXISTING OVERHEAD POWER
- EXISTING TREELINE
- DELINEATED WETLAND
- PROPOSED PROJECT FENCE
- PROPOSED TREELINE
- PROPOSED OVERHEAD POWER
- PROPOSED UNDERGROUND POWER
- PROPOSED PROJECT EQUIPMENT
- PROPOSED FIXED SOLAR PANEL RACKING
- STAGING AREA FOR CONSTRUCTION
- LIMIT OF DISTURBANCE (LOD)
- 250 FOOT VERNAL POOL SETBACK
- 25 FOOT WETLAND SETBACK
- PERIMETER EROSION CONTROLS/ SILT FENCE
- SEDIMENT BARRIER, SEE DETAILS ON C-4.00
- DITCH TURNOUT STORMWATER TREATMENT BUFFER

NOTES:

1. ASPECTS OF PLAN ARE APPROXIMATE AND DERIVED FROM AERIAL PHOTOGRAPHY.
2. THE HORIZONTAL COORDINATE SYSTEM IS BASED ON NAD83 MAINE STATE PLANES, WEST ZONE (US SURVEY FEET). ELEVATIONS ARE BASED ON THE NAVD88 (US SURVEY FEET).
3. EXISTING GROUND CONTOUR ELEVATIONS ARE BASED STATE OF MAINE LiDAR
4. UTILITIES ARE NOT WARRANTED TO BE COMPLETE OR ACCURATE, CONTRACTOR SHALL CONTACT DIG SAFE BEFORE BEGINNING ANY EXCAVATION.
5. THIS IS IN NO WAY A BOUNDARY SURVEY. PROPERTY LINES SHOWN ARE FROM TOWN TAX MAPS AND ALTERED BASED ON EVIDENCE FROM AERIAL PHOTOGRAPHY.
6. THIS IS A PRELIMINARY DESIGN PLAN. FINAL DESIGN WILL BE MODIFIED TO MATCH EQUIPMENT PURCHASED AND POSSIBLE PERMIT CONSTRAINTS REVEALED DURING PROJECT'S REVIEW.
7. PRELIMINARY ENVIRONMENTAL SITE REVIEW DATA IS BASED ON INFORMATION DOWNLOADED FROM THE MAINE OFFICE OF GIS WEBSITE AND PRELIMINARY FIELD REVIEWS.

Maine State Plane, West Grid North (NAD83)

PROJECT SPECIFICATIONS:

NUMBER OF MODULES: 3,168 (@490W PER PANEL)

DC OUTPUT: 1.55 MW

AC OUTPUT: 0.996 MW

DC/AC RATIO: 1.56

DESIGN: FIXED TILT @ 30° TILT

GCR: 0.435 (43.5%)

NEWCASTLE SOLAR PROJECT

Route 1
Newcastle, Maine

MIDCOAST SOLAR

KREBS & LANSING CONSULTING ENGINEERS
164 Main Street, Suite 201
Colchester, Vermont 05446
P: (802) 878-0375
www.krebsandlansing.com

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

CIVIL ENGINEER:
Krebs and Lansing Consulting Engineers, Inc.
164 Main Street, Suite 201
Colchester, Vermont 05446

ENVIRONMENTAL:
Flycatcher LLC
Lower Falls landing
106 Lafayette Street, Suite 2A
Yarmouth, Maine 04096

STAMP:
STATE OF MAINE
IAN A. JENKES
NO. 17165
LICENSED PROFESSIONAL ENGINEER
JANUARY 24, 2024

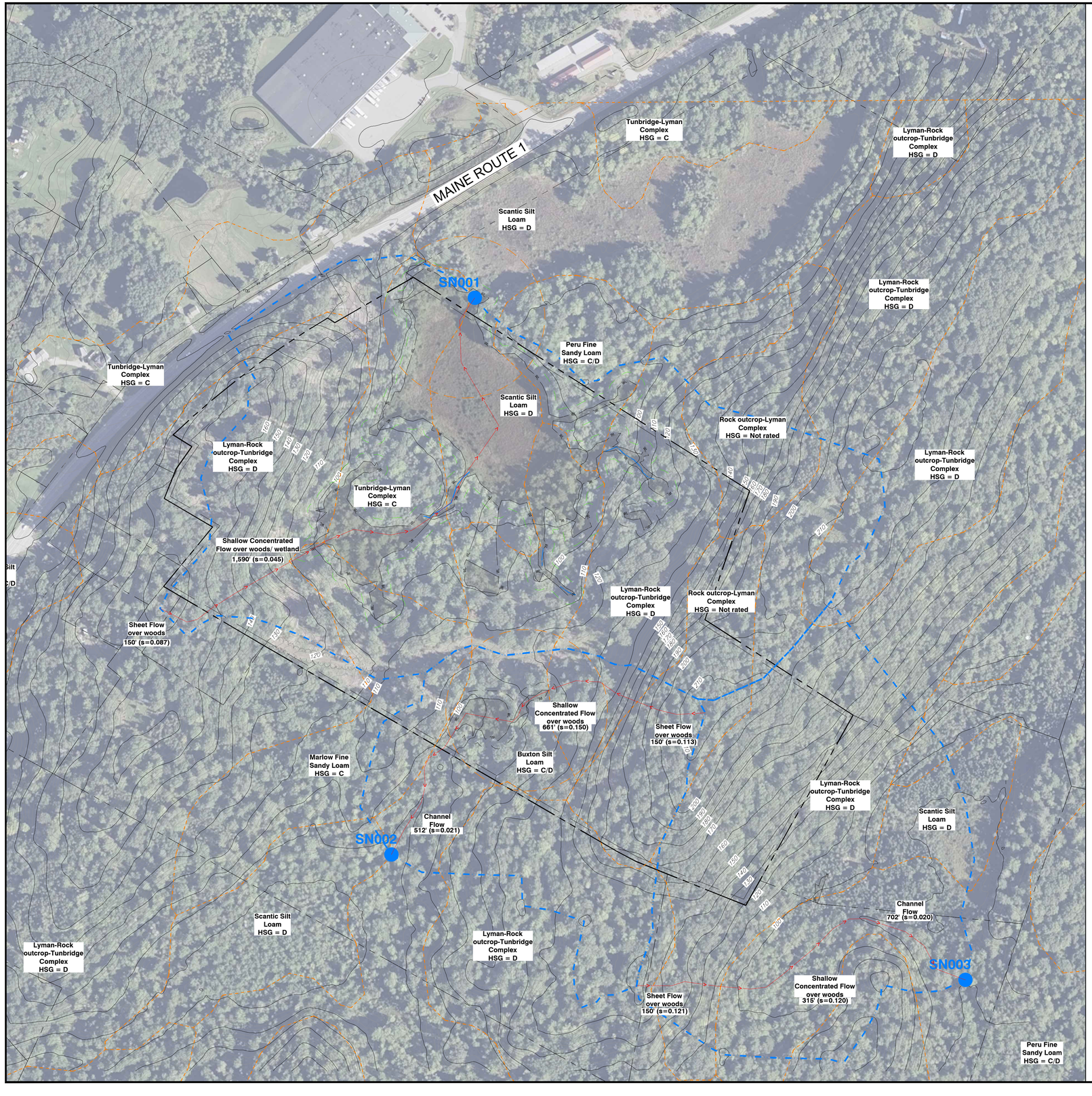
0' 50' 100' 200' 300'
0" 1" 2" 3"
STANDARD GRAPHIC SCALE (1" = 100')
VALID WHEN PLOTTED ON 24" BY 36" MEDIA

REV. NO.	REVISIONS/COMMENTS	DATE

DRAWING TITLE:
OVERALL SITE PLAN

DATE ISSUED: 01/24/2024
DRAWN BY: EJM CHECKED BY: IAJ
PROJECT NO.: 23276 SCALE: 1" = 100'
DRAWING NO.: C-1.00 REV. NO.:

DWG NAME: Newcastle-Solar_Base.dwg



LEGEND

- EXISTING POWER POLE
- APPROXIMATE PROPERTY LINES
- PROJECT PROPERTY LINES
- SETBACKS TO SOLAR PANEL RACKING
- EXISTING GRADE CONTOUR LINES (10 FOOT INTERVALS)
- EXISTING GRADE CONTOUR LINES (2 FOOT INTERVALS)
- EXISTING TREELINE
- DELINEATED WETLAND
- DELINEATED STREAM
- 250 FOOT VERNAL POOL SETBACK
- 25 FOOT WETLAND SETBACK
- NRCS SOIL MAPPING
- PRE-CONSTRUCTION WATERSHED BOUNDARY
- TIME OF CONCENTRATION FLOW PATH
- SN004 PROJECT ANALYSIS POINT

Maine State Plane, West Zone (US Survey Feet)

SEE SHEET C-1.00 FOR NOTES

NEWCASTLE SOLAR PROJECT

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STAMP:
STATE OF MAINE
IAN A. JENKES
NO. 17165
LICENSED PROFESSIONAL ENGINEER
JANUARY 23, 2024

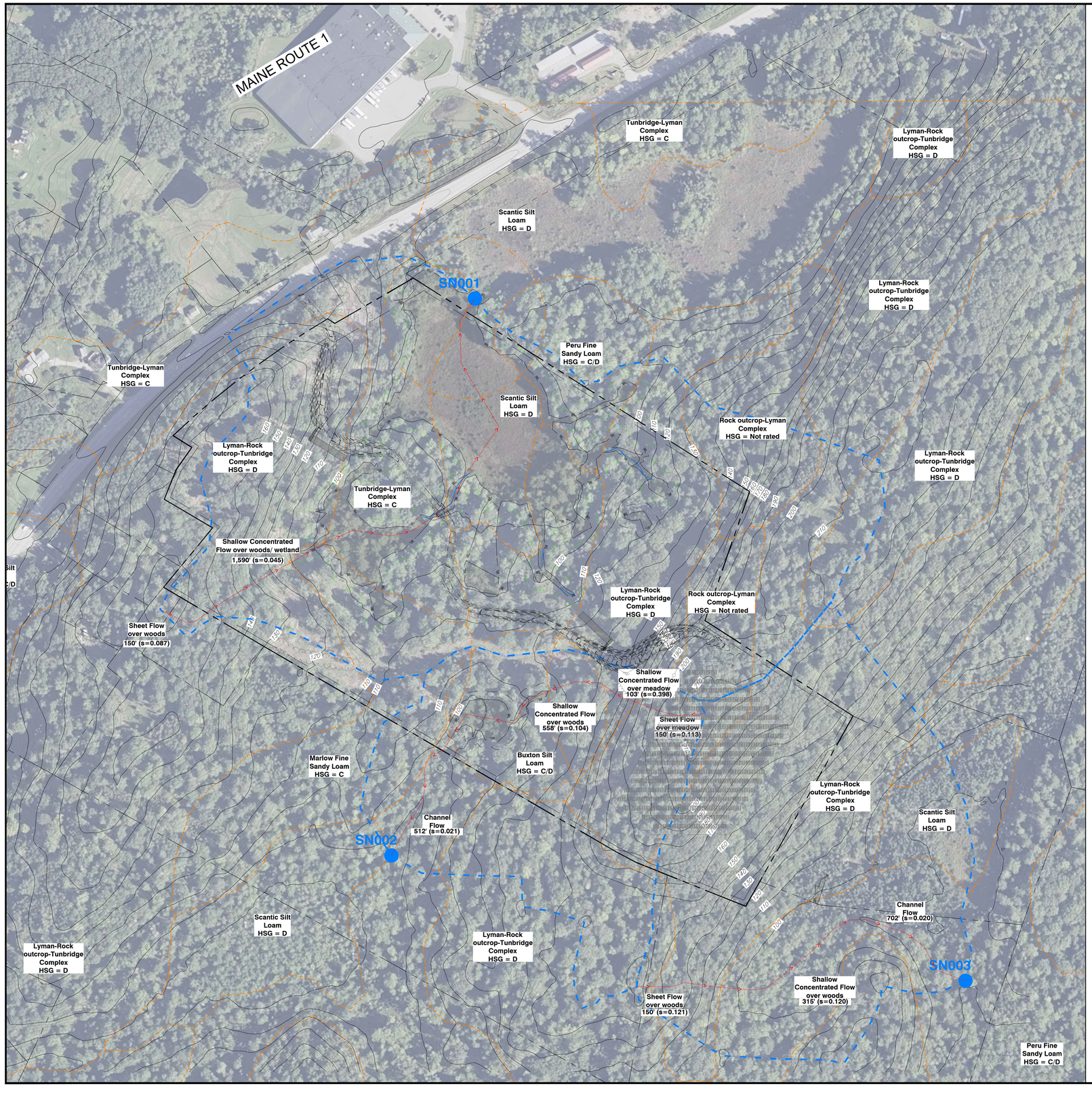
0' 75' 150' 300' 450'
0" 1" 2" 3"
STANDARD GRAPHIC SCALE (1" = 150')
VALID WHEN PLOTTED ON 24" BY 36" MEDIA

REV. NO.	REVISIONS/COMMENTS	DATE

DRAWING TITLE:
PRE-DEVELOPMENT DRAINAGE PLANS

DATE ISSUED: 01/24/2024
DRAWN BY: EJM CHECKED BY: IAJ
PROJECT NO.: 23276 SCALE: 1" = 150'
DRAWING NO.: C-2.00 REV. NO.:

DWG NAME: Newcastle-Solar_Base.dwg



SEE SHEET C-1.00
FOR NOTES

LEGEND

- EXISTING POWER POLE / PROPOSED POLE
- APPROXIMATE PROPERTY LINES
- PROJECT PROPERTY LINES
- SETBACKS TO SOLAR PANEL RACKING
- EXISTING GRADE CONTOUR LINES (10 FOOT INTERVALS)
- EXISTING GRADE CONTOUR LINES (2 FOOT INTERVALS)
- PROPOSED GRADE CONTOUR LINES (10 FOOT INTERVALS)
- PROPOSED GRADE CONTOUR LINES (2 FOOT INTERVALS)
- EXISTING TREELINE
- DELINEATED WETLAND
- DELINEATED STREAM
- 250 FOOT VERNAL POOL SETBACK
- 25 FOOT WETLAND SETBACK
- PROPOSED PROJECT FENCE
- PROPOSED UNDERGROUND POWER
- PROPOSED OVERHEAD POWER
- PROPOSED 16' GRAVEL ACCESS DRIVE
- PROPOSED TREELINE
- PROPOSED FIXED TILT GROUND MOUNTED SOLAR ARRAY
- PROPOSED CENTRALIZED EQUIPMENT LOCATIONS
- NRCS SOIL MAPPING
- POST-CONSTRUCTION WATERSHED BOUNDARY
- TIME OF CONCENTRATION FLOW PATH
- SN004 PROJECT ANALYSIS POINT

Maine State Plane, West Zone
Grid North (NAD83)

NEWCASTLE SOLAR PROJECT

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Lower Falls landing
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Yarmouth, Maine 04096

STAMP:
STATE OF MAINE
JAY A. JEWKES
NO. 17165
LICENSED PROFESSIONAL ENGINEER
JANUARY 23, 2024

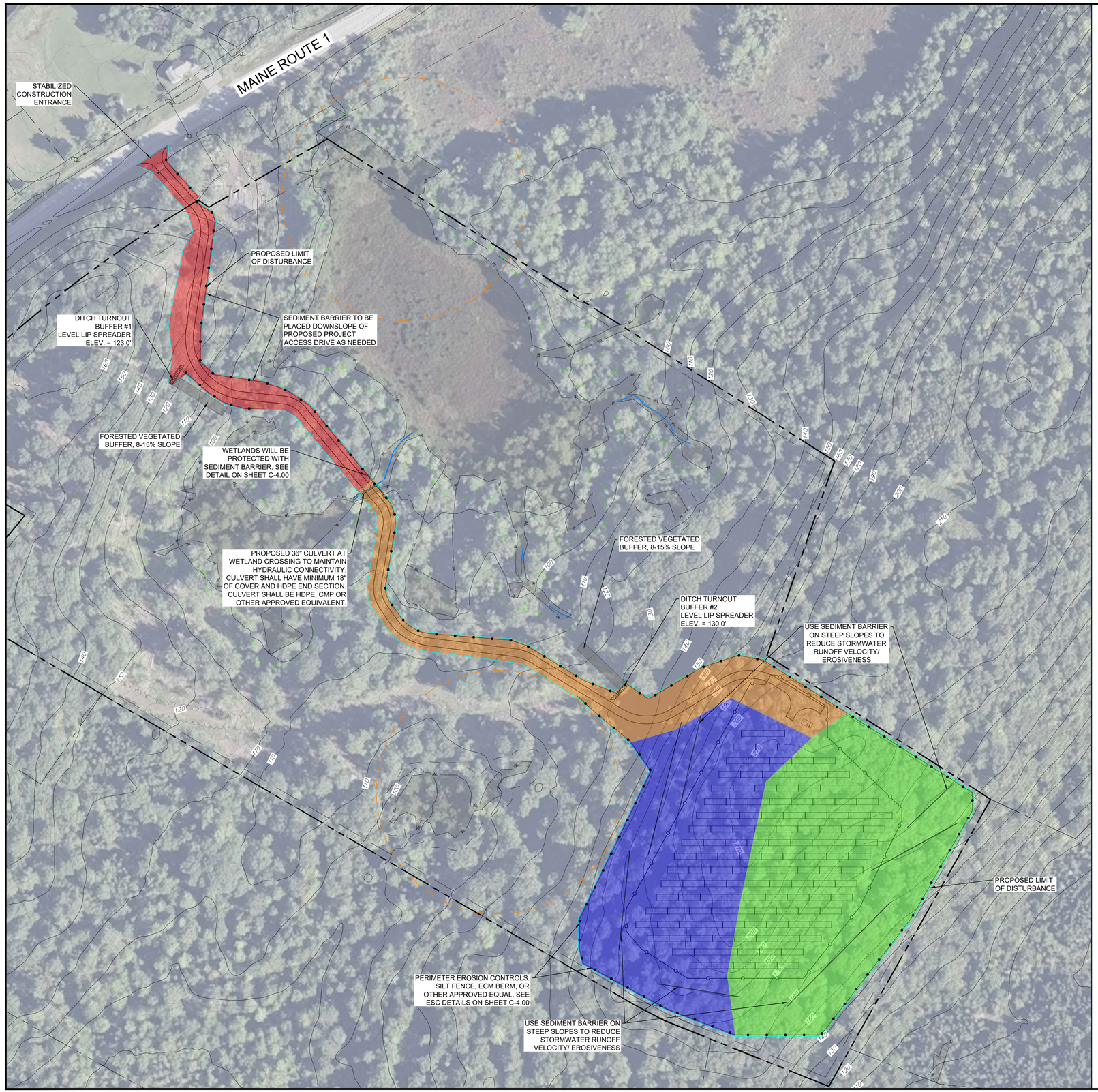
0' 75' 150' 300' 450'
0" 1" 2" 3"
STANDARD GRAPHIC SCALE (1" = 150')
VALID WHEN PLOTTED ON 24" BY 36" MEDIA

REV. NO.	REVISIONS/COMMENTS	DATE

DRAWING TITLE:
POST-DEVELOPMENT DRAINAGE PLAN

DATE ISSUED: 01/24/2024
DRAWN BY: EJM CHECKED BY: IAJ
PROJECT NO.: 23276 SCALE: 1" = 150'
DRAWING NO.: C-2.01 REV. NO.:

DWG NAME: Newcastle-Solar_Base.dwg



LEGEND

- PHASE 1 (1.1 ACRES): ROAD CONSTRUCTION & TREE CLEARING
- PHASE 2 (1.8 ACRES): ROAD CONSTRUCTION, WETLAND CROSSING AND TREE CLEARING
- PHASE 3 (4.8 ACRES): ARRAY ZONE 1
- PHASE 4 (4.0 ACRES): ARRAY ZONE 2
- PROJECT LIMIT OF DISTURBANCE
- PERIMETER EROSION CONTROLS/ SILT FENCE
- SEDIMENT BARRIERS, SEE DETAILS ON C-4.00
- DITCH TURNOUT STORMWATER TREATMENT BUFFER

NOTE: PHASING IS BASED ON RECOMMENDATIONS MADE IN MAINE DEP'S "TECHNICAL GUIDANCE ON LARGE CONSTRUCTION PROJECTS". CONTRACTOR SHOULD MAINTAIN A MAXIMUM LIMIT OF DISTURBED AREAS OF 2 ACRES AT ANY TIME. DISTURBED AREAS SHOULD BE STABILIZED BEFORE FURTHER DISTURBANCE IS CREATED.

A MINIMUM OF 200 BALES OF STRAW HAY/ MULCH SHOULD BE MAINTAINED ON SITE FOR EROSION CONTROL AND STABILIZATION OF DISTURBED AREAS AS NECESSARY. EROSION CONTROLS SHALL BE MAINTAINED ALONG THE LIMITS OF THE PROJECT AND REFRESHED AFTER LARGE STORM EVENTS OR AS NECESSARY. ACCEPTABLE EROSION CONTROLS INCLUDE SILT FENCE, EROSION CONTROL MIX BERM, STRAW WATTLES, OR OTHER APPROVED ALTERNATIVES.

STAGING AREAS SHOWN ON THE PLAN ARE SCHEMATIC AND MAY NOT REFLECT THE EXACT AREA USED FOR STAGING. STAGING AREAS SHOULD BE RESTORED TO THEIR ORIGINAL CONDITION AFTER THE COMPLETION OF CONSTRUCTION. ANY STAGING AREAS LEFT IN PLACE LONGER THAN 12 MONTHS MUST HAVE STORMWATER TREATMENT IN COMPLIANCE WITH ME DEP CHAPTER 500 STANDARDS.

NOTE THAT ARRAY AREAS 1 & 2 ARE IN SEPARATE WATERSHEDS AND DRAIN TO DIFFERENT ENVIRONMENTAL FEATURES. WORK MAY OCCUR SIMULTANEOUSLY IN THESE AREAS, WITH THE TOTAL DISTURBED AREA *IN EACH WATERSHED* NOT EXCEEDING 2 ACRES AT ANY TIME. CLEARING AND SOLAR PANEL RACKING CONSTRUCTION WILL OCCUR IN THE UPHILL-DOWNHILL DIRECTION, WITH HIGHER ELEVATION AREAS BEING STABILIZED BEFORE LOWER ELEVATION AREAS ARE DISTURBED.

Maine State Plane, West Grid North (NAD83)

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LICENSED PROFESSIONAL ENGINEER
JANUARY 24, 2024

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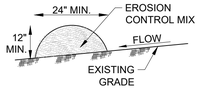
0" 1" 2" 3"
STANDARD GRAPHIC SCALE (1" = 100')
VALID WHEN PLOTTED ON 24" BY 36" MEDIA

REV. NO.	REVISIONS/COMMENTS	DATE

DRAWING TITLE:
PHASING AND ESC PLAN

DATE ISSUED: 01/24/2024
DRAWN BY: EJM CHECKED BY: IAJ
PROJECT NO.: 23276 SCALE: 1" = 100'
DRAWING NO.: C-3.00 REV. NO.:
DWG NAME: Newcastle-Solar_Base.dwg



COMPOSITION:

EROSION CONTROL MIX BERM SHALL BE MANUFACTURED ON OR OFF THE PROJECT SITE SUCH THAT ITS COMPOSITION IS IN ACCORDANCE WITH *THE MAINE EROSION CONTROL AND BEST MANAGEMENT PRACTICES (BMPS) MANUAL*. SEDIMENT CONTROL BMP, B-1 SEDIMENT BARRIERS. IT MUST CONSIST PRIMARILY OF ORGANIC MATERIAL, SEPARATED AT THE POINT OF GENERATION, AND MAY INCLUDE: SHREDDED BARK, STUMP GRINDINGS, COMPOSTED WOOD AND BARK CHIPS AND/OR ACCEPTABLE MANUFACTURED PRODUCTS. GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS WILL NOT BE ACCEPTABLE. ALL MATERIALS USED TO MANUFACTURE THE EROSION CONTROL MIX SHALL BE NATIVE MAINE MATERIALS.

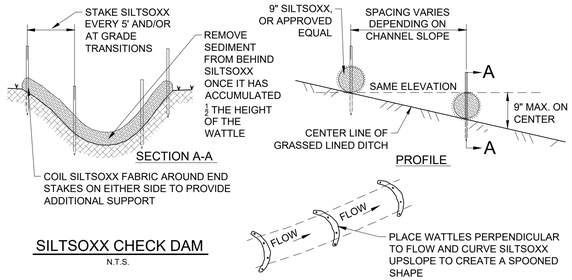
NOTES

1. THE BARRIER MUST BE PLACED ALONG A RELATIVELY LEVEL CONTOUR.
2. EXISTING GROUND SHALL BE PREPARED AS NEEDED SUCH THAT THE BARRIER LIES NEARLY FLAT ALONG THE GROUND TO AVOID THE CREATION OF VOIDS AND BRIDGES IN ORDER TO MINIMIZE THE POTENTIAL OF WASH OUTS UNDER THE BARRIER.
3. ON SLOPES < 5% OR AT THE BOTTOM OF STEEPER SLOPES (<2:1) UP TO 20' LONG, THE BARRIER MUST BE A MINIMUM OF 12" HIGH, AS MEASURED ON THE UPHILL SIDE OF THE BARRIER, AND A MINIMUM OF 2 FT. WIDE. ON LONGER OR STEEPER SLOPES, THE BARRIER SHALL BE WIDER TO ACCOMMODATE ADDITIONAL FLOW.
4. EROSION CONTROL MIX MAY BE INSTALLED WHERE SILT FENCE IS ILLUSTRATED AND SCHEDULED ON THE DESIGN PLANS EXCEPT IN, BUT NOT LIMITED TO, THE FOLLOWING AREAS: WETLAND AREAS, AT POINTS OF CONCENTRATED FLOW, BELOW STORMWATER END SECTIONS AT OUTFALLS, AROUND CATCH BASINS AND CLOSED STORM SYSTEMS AND AT THE BOTTOM OF STEEP SLOPES (UP TO 2:1 WITH ON SITE PLAN COORDINATOR APPROVAL) THAT ARE MORE THAN 50 FEET FROM TOP TO BOTTOM. EROSION CONTROL MIX MAY NOT BE USED IN WETLAND AREAS.

TYPICAL EROSION CONTROL MIX BERM
N.T.S.

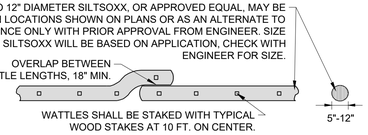
NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION, MAINTENANCE, AND REMOVAL OF SILTSOXX IN ALL LOCATIONS SHOWN ON THE PLANS. SILTSOXX MAY BE LEFT IN PLACE IF THE CONTRACTOR SEEDS AND MULCHES WATTLE FOR GROWTH POST CONSTRUCTION.
2. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND ADDITIONAL SILTSOXX WILL BE ADDED WHEN SEDIMENT REACHES HALF OF PRODUCT HEIGHT.
3. WHEN INSTALLING LENGTHS OF SILTSOXX, LENGTHS WILL OVERLAP BY MINIMUM 2' WHEN TRANSITIONING TO A NEW LENGTH OF WATTLE.
4. CONTRACTOR SHALL REFER TO ALL MANUFACTURES SPECIFICATIONS AND DETAILS.
5. SILTSOXX CAN ONLY BE USED IN A GRASS LINED SWALE, MAY NOT BE USED IN STONE LINED SWALES.
6. SILTSOXX CHECK DAM CAN ONLY BE USED IN CHANNELS WITH SLOPES LESS THAN 5%.
5. SILTSOXX IS A SPECIFIC MANUFACTURER, OTHER MANUFACTURERS WITH EQUAL PRODUCTS MAY BE USED IF APPROVED BY ENGINEER.



SILTSOXX CHECK DAM
N.T.S.

5" TO 12" DIAMETER SILTSOXX, OR APPROVED EQUAL, MAY BE USED IN LOCATIONS SHOWN ON PLANS OR AS AN ALTERNATE TO SILT FENCE ONLY WITH PRIOR APPROVAL FROM ENGINEER. SIZE OF SILTSOXX WILL BE BASED ON APPLICATION, CHECK WITH ENGINEER FOR SIZE.



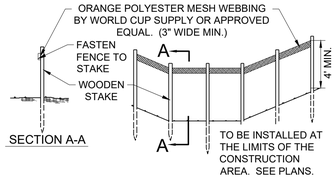
NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION, MAINTENANCE, AND REMOVAL OF SILTSOXX IN ALL LOCATIONS SHOWN ON THE PLANS. SILTSOXX MAY BE LEFT IN PLACE IF THE CONTRACTOR SEEDS AND MULCHES OVER SILTSOXX FOR GROWTH POST CONSTRUCTION.
2. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND ADDITIONAL WATTLES WILL BE ADDED WHEN SEDIMENT REACHES HALF OF PRODUCT HEIGHT.
3. WHEN INSTALLING LENGTHS OF SILTSOXX, LENGTHS WILL OVERLAP BY MINIMUM 18" WHEN TRANSITIONING TO A NEW LENGTH OF SILTSOXX.
4. CONTRACTOR SHALL REFER TO ALL MANUFACTURES SPECIFICATIONS AND DETAILS.
5. SILTSOXX IS A SPECIFIC MANUFACTURER, OTHER MANUFACTURERS WITH EQUAL PRODUCTS MAY BE USED IF APPROVED BY ENGINEER.
6. SILTSOXX CAN BE USED AS A SILT FENCE ALTERNATIVE, WITH PRIOR APPROVAL OF THE ENGINEER.

TYPICAL SILTSOXX SEDIMENT CONTROL
N.T.S.

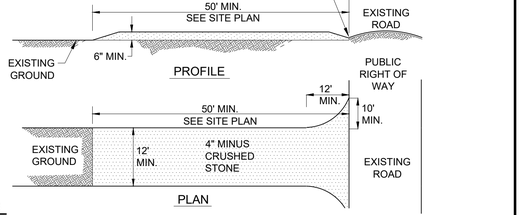
NOTES

1. ACCEPTABLE EPSC MEASURE DETAILS ARE PROVIDED BELOW.
2. AT A MINIMUM, EPSC MEASURES MEET ME DEP STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION AND SEDIMENT CONTROL OR PREVIOUSLY APPROVED INTERCHANGEABLE PRACTICES.
3. LIMITS OF DISTURBANCE (OR "CONSTRUCTION DEMARCATION") SHALL BE INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITIES.
4. BARRIER TAPE/ROPE: FOR USE WHERE PROPOSED DISTURBANCE BORDERS NON-WOODED, VEGETATED AREAS MORE THAN 100 FT FROM THE NEAREST WATER RESOURCE (STREAM, BROOK, LAKE, POND, WETLAND, ETC.). BARRIER TAPE IS HIGH VISIBILITY FIBERGLASS TAPE, MINIMUM 3" IN WIDTH COMMONLY USED IN SKI AREAS FOR DEMARCATING CLOSED AREAS. BARRIER TAPE AND ROPE SHOULD BE ATTACHED TO STAKES, AT A MINIMUM HEIGHT OF 4 FT FROM THE GROUND.
5. MINIMUM 1 TO 2 ROWS OF MESH BARRIER TAPE TO BE INSTALLED ALONG CONSTRUCTION PERIMETER.
6. EACH ROW OF BARRIER TAPE TO BE 3" WIDE MINIMUM.
7. BARRIER TAPE TO BE ORANGE.
8. SECURE BARRIER TAPE TO STAKES OR EXISTING TREE TRUNKS WITH BOTTOM ROW AT 4' DISTANCE FROM GROUND SURFACE (MINIMUM).
9. MAINTAIN AND REPLACE AS NEEDED. REMOVE AT COMPLETION OF PROJECT PER ON SITE PLAN COORDINATOR.
10. IN EVENT THE ON SITE PLAN COORDINATOR DETERMINES BARRIER TAPE IS NOT SUFFICIENT, REPLACE WITH ORANGE CONSTRUCTION FENCE OR SNOW FENCE.



TYPICAL CONSTRUCTION LIMIT BARRIER
N.T.S.

PROVIDE APPROPRIATE TRANSITION BETWEEN STABILIZED CONSTRUCTION ENTRANCE AND EXISTING EDGE OF TRAVELED WAY



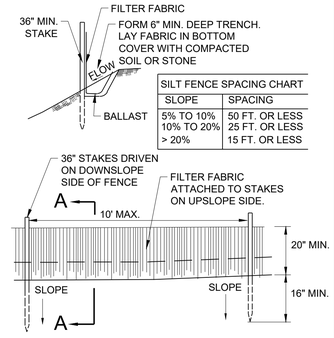
NOTES

1. CONTRACTOR SHALL STABILIZE CONSTRUCTION ENTRANCE AS REQUIRED TO PREVENT TRACKING OF SEDIMENT OFF-SITE.
2. CONTRACTOR TO USE MIRAFI 500X UNDER STONE FOR TEMPORARY CONSTRUCTION ROADS.
3. CRUSHED STONE SHALL BE ADDED OR REPLACED WHEN 80% OF THE VOIDS ARE FILLED WITH SEDIMENT.
4. STONE SIZE SHALL BE 2-3" ROCK.
5. ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES IS ALLOWED.

STABILIZED CONSTRUCTION ENTRANCE
N.T.S.

NOTES

1. AT A MINIMUM, EROSION AND SEDIMENT CONTROL MEASURES MUST MEET ALL MEDEP STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL OR PREVIOUSLY APPROVED INTERCHANGEABLE PRACTICES.
2. PERIMETER CONTROLS SHALL BE UTILIZED IN SMALL AREAS < 1 ACRE. IN AREAS > 1 ACRE, TEMPORARY SEDIMENT TRAPS OR TEMPORARY SEDIMENT BASINS ARE TO BE UTILIZED.
3. PERIMETER CONTROLS SHALL BE INSTALLED ON DOWNSLOPE SIDE OF PLANNED EARTH DISTURBANCE.
4. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITIES WITHIN UPSLOPE CONTRIBUTING AREA.
5. SILT FENCE SHALL NOT BE USED AS CONSTRUCTION DEMARCATION.
6. SILTSOXX CAN BE USED AS A SILT FENCE ALTERNATIVE, WITH PRIOR APPROVAL OF THE ENGINEER. SEE DETAIL.
7. IF SILT FENCE IS INSTALLED WHEN GROUND IS FROZEN, A GRAVEL, SHOT ROCK, OR SAND BALLAST MUST BE USED, MINIMUM OF 8".
8. WHEN DISTURBANCE IS WITHIN 75' OF A WATERBODY OR WETLAND CONTRACTOR MUST USE 2 ROWS OF SILT FENCE OR OTHER APPROVED PERIMETER BMP (SUCH AS SILT FENCE WITH FILTER SOCK OR SILT FENCE WITH EROSION CONTROL MIX).
9. INSTALL SILT FENCE AROUND DOWNGRADIENT OF ALL STOCKPILES AND PREVENT STORMWATER FROM RUNNING ONTO STOCKPILE AREAS.



TYPICAL TEMPORARY SILT FENCE
N.T.S.

CONSTRUCTION EROSION AND SEDIMENT CONTROL INSPECTOR

1. THE CONTRACTOR SHALL DESIGNATE A EROSION AND SEDIMENT CONTROL INSPECTOR THROUGHOUT THE ENTIRETY OF CONSTRUCTION. THE INSPECTOR OR HIS/HER DESIGNEE SHALL BE ON-SITE ON A DAILY BASIS DURING ACTIVE CONSTRUCTION.
2. THE INSPECTOR SHALL BE KNOWLEDGEABLE IN PRINCIPLES AND PRACTICES OF EROSION PREVENTION AND STORMWATER CONTROL. IMPLEMENTATION AND POSSESS SKILLS TO ASSESS CONDITIONS AT THE CONSTRUCTION SITE THAT COULD IMPACT STORMWATER QUALITY. TO ASSESS EFFECTIVENESS OF CONSTRUCTION BEST MANAGEMENT PRACTICES (BMPs) SELECTED TO CONTROL QUALITY OF STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITY.
3. THE INSPECTOR SHALL BE RESPONSIBLE FOR ON-SITE IMPLEMENTATION OF THIS EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTIONS, MONITORING AND REPORTING.
4. INSPECTIONS SHALL BE PERFORMED AT MINIMUM ONCE A WEEK BUT ALSO PRIOR TO AND 24 HOURS AFTER A WET WEATHER EVENT. A "WET WEATHER EVENT" IS DEFINED AS 0.5 INCHES OR GREATER IN A 24 HOUR PERIOD.
5. THE SCOPE OF CONSTRUCTION INSPECTIONS SHALL INCLUDE BUT ARE NOT LIMITED TO ALL THE EROSION AND SEDIMENT CONTROL MEASURES ON SITE. DOCUMENTATION OF THE OVERALL DISTURBANCE FOR THE PROJECT SITE. REVIEW OF ALL STOCKPILE AREAS AND VEHICLE EGRESSES FROM THE PROJECT SITE.
6. CONSTRUCTION INSPECTION AND CORRECTIVE ACTION DOCUMENTATION RECORDS SHALL BE MAINTAINED FOR A MINIMUM OF 3 YEARS. THIS DOCUMENTATION SHALL BE MAINTAINED BY THE CONTRACTOR UNLESS OTHERWISE AUTHORIZED BY THE OWNER. CORRECTIVE ACTIONS SHOULD BE STARTED SAME DAY COMPLETED WITHIN 7 DAYS OR BEFORE THE NEXT STORM EVENT, WHICHEVER IS FIRST.
7. THE INSPECTOR SHALL HAVE AUTHORITY TO STOP AND/OR MODIFY CONSTRUCTION ACTIVITIES AS NECESSARY TO COMPLY WITH THESE PLANS AND TERMS AND CONDITIONS OF THE PERMIT.
8. THE INSPECTORS CONTACT INFORMATION SHALL BE PROVIDED TO MAINE DEP (IF DESIRED), PROJECT ENGINEER AND PROJECT OWNER PRIOR TO START OF CONSTRUCTION.

CONSTRUCTION LIMITS FOR EROSION AND SEDIMENT CONTROL

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PERFORMED IN ACCORDANCE WITH THE "MAINE EROSION AND SEDIMENT CONTROL BMPs" DEPARTMENT OF ENVIRONMENTAL PROTECTION, LATEST REVISION. CONTRACTOR SHALL HAVE A COPY OF THE LATEST REVISION ON SITE AT ALL TIMES.
2. CONTRACTOR SHALL LIMIT EXCAVATION AND EARTHWORK TO NO MORE THAN 10 ACRES NON-CONTIGUOUS OR 10 ACRES PER PROJECT SUBCATCHMENT THROUGHOUT THE CONSTRUCTION SITE AT ONE TIME. TEMPORARY STABILIZE ALL AREAS OF COMPLETED EXCAVATION AND EARTHWORK PRIOR TO MOVING ONTO A NEW AREA.
3. EXPOSED OR OPEN AREA FREE OF VEGETATION FROM CONSTRUCTION ACTIVITY SHALL BE LIMITED TO THAT WHICH CAN BE MULCHED IN ONE DAY.
4. CONTRACTOR SHALL MINIMIZE THE AMOUNT OF TIME AN AREA UNDERGOING ACTUAL CONSTRUCTION WILL BE LEFT EXPOSED OR FREE OF VEGETATION. AREAS WHICH ARE INITIALLY DISTURBED BUT FURTHER CONSTRUCT IS PLANNED MUST BE TEMPORARILY STABILIZED WITHIN 7 DAYS. IF THE AREAS ARE BEING LEFT FOR AN EXTENDED PERIOD OF TIME. AREAS WHICH ARE CONSIDERED FINISHED SHALL BE PERMANENTLY STABILIZED WITHIN 7 DAYS OF THE FINISH WORK. IF WORK IS WITHIN 75 FEET OF A WETLAND OR WATERBODY, THE ABOVE MENTIONED TIMEFRAME IS REDUCED TO 2 DAYS IN BOTH THE PERMANENT AND TEMPORARY CONDITIONS.
5. ALL EROSION AND SEDIMENT CONTROL BMPs SHALL BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE. CONTRACTOR SHALL MAINTAIN THE BMPS THROUGHOUT CONSTRUCTION. REFER TO INDIVIDUAL DETAILS FOR EACH BMP.
6. REPAIR AND/OR REPLACE ANY EROSION AND SEDIMENT CONTROL BMPs WHICH HAVE BEEN DAMAGED OR NEED MAINTENANCE. ONCE A PROBLEM HAS BEEN IDENTIFIED BY THE INSPECTOR OR OTHERS, THE REPAIR SHALL BE UNDERWAY WITHIN THE END OF THE NEXT WORKING DAY AND COMPLETED WITHIN 7 DAYS OR BEFORE THE NEXT STORM EVENT.
7. CONTRACTOR IS RESPONSIBLE TO REMOVE ALL EROSION AND SEDIMENT CONTROL BMPs WITHIN 30 DAYS OF PERMANENT STABILIZATION. PERMANENT STABILIZATION IS DEFINED AS 90% GRASS CATCH IN VEGETATED AREAS.

GRADING, SEEDING AND MULCHING

1. NO SLOPES, PERMANENT OR TEMPORARY, SHALL BE STEEPER THAN 1.5:1. SLOPE STABILITY BASED UPON UNSATURATED SOIL CONDITIONS. IF DURING CONSTRUCTION SATURATED SOILS ARE ENCOUNTERED CONTRACTOR , CONTACT THE ENGINEER.
2. ALL AREA DISTURBED AND ALL AREAS WITHIN THE CLEARING LIMITS SHALL BE GRADED AND COVERED WITH A MINIMUM OF 4" OF LOAM TOPSOIL AND SMOOTHED.
3. MULCH ALL AREAS WHICH ARE DISTURBED FROM CONSTRUCTION PER THE TABLE BELOW. IF MULCH IS USED AS TEMPORARY STABILIZATION, REFRESH MULCHING AS NEEDED TO MAINTAIN STABILIZATION.
4. SEEDING SHOULD BE PERFORMED THROUGHOUT CONSTRUCTION AS A PERMANENT AND TEMPORARY STABILIZATION MEASURE. SEE SEED SPECIFICATIONS BELOW, TEMPORARY SEED CAN BE USES FOR BOTH TEMPORARY STABILIZATION OR IN COLDER MONTHS.

SEEDING SPECIFICATIONS

PERMANENT SEED MIX SHALL BE USED AS EARLY AS PRACTICABLE BETWEEN 4/15 AND 8/15 AND SHALL MEET THE FOLLOWING CRITERIA:

SEED	% WEIGHT
RED FESCUE	50%
SHEEP FESCUE	25%
RED TOP	5%
WHITE CLOVER	10%
ANNUAL RYE	10%

TEMPORARY SEED MIX SHALL BE USED BETWEEN 8/15 AND 04/15 AND SHALL MEET THE FOLLOWING CRITERIA:

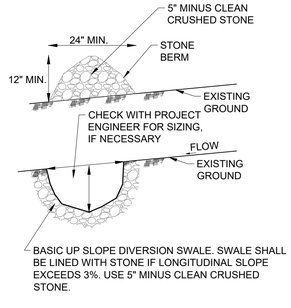
SEED	% WEIGHT	%GERMINATION
WINTER RYE	80% MIN.	85% MIN.
RED FESCUE (CREEPING)	4% MIN.	80% MIN.
PERENNIAL RYE GRASS	3% MIN.	90% MIN.
RED CLOVER	3% MIN.	90% MIN.
OTHER CROP GRASS	0.5% MAX.	
NOXIOUS WEED SEED	0.5% MAX.	
INERT MATTER	1% MAX.	

POLLINATOR SEED MIX SHALL CONTAIN SOME OF THE SPECIES OF SEED OR APPROVED EQUAL:

EASTERN (RED) COLUMBINE
BLUE FALSE INDIGO
HORSEFLYWEED
TALL WHITE BEARD TONGUE
OHIO SPIDERWORT
COMMON MILKWEED
BUTTERFLY MILKWEED
PARTRIDGE PEA
WILD BERGAMOT
VIRGINIA MOUNTAIN MINT
EARLY GOLDENROD
SMOOTH ASTER
NEW ENGLAND ASTER
HEATH ASTER
GRAY GOLDEN ROD
LITTLE BLUESTEM
BLACK EYED SUSAN
COREOPSIS
FOXGLOVE BEARDTONGUE
INDIAN BLANKET
BEE BALM
CARDINAL FLOWER
GOLDEN ALEXANDERS
SUNDIAL LUPINE

GUIDE TO MULCH MATERIALS, RATES, AND USES

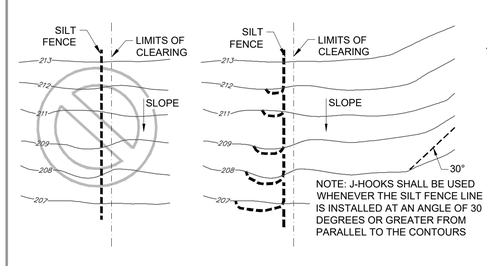
	QUALITY STANDARDS	PER 1000 SQ. FT. (Rates noted shall be doubled during winter construction)	PER ACRE	DEPTH OF APPLICATION	REMARKS
WOOD CHIPS OR SHAVINGS	AIR-DRIED. FREE OF OBJECTIONABLE COARSE MATERIAL	500-900 LBS	10-20 TONS	2 - 7"	USED PRIMARILY AROUND SHRUB AND TREE PLANTINGS AND RECREATION TRAILS TO INHIBIT WEED COMPETITION. RESISTANT TO WIND BLOWING. DECOMPOSES SLOWLY.
WOOD FIBER CELLULOSE (PARTLY DIGESTED WOOD FIBERS)	MADE FROM NATURAL WOOD USUALLY WITH GREEN DYE AND DISPERSING AGENT	50 LBS	2,000 LBS.	-	APPLY WITH HYDROMULCHER. NO TIE DOWN REQUIRED. LESS EROSION CONTROL PROVIDED THAN 2 TONS OF HAY OR STRAW.
GRAVEL, CRUSHED STONE OR SLAG	WASHED; SIZE 2B OR 3A - 1½"	9 CU. YDS.	405 CU. YDS.	3"	EXCELLENT MULCH FOR SHORT SLOPES AND AROUND PLANTS AND ORNAMENTALS. USE 2B WHERE SUBJECT TO TRAFFIC. (APPROXIMATELY 2,000 LBS./CU. YD.). FREQUENTLY USED OVER FILTER FABRIC FOR BETTER WEED CONTROL.
HAY OR STRAW	AIR-DRIED; FREE OF UNDESIRABLE SEEDS & COARSE MATERIALS	90-100 LBS 2-3 BALES	2 TONS (100-120 BALES)	COVER ABOUT 90% SURFACE	USE SMALL GRAIN STRAW WHERE MULCH IS MAINTAINED FOR MORE THAN THREE MONTHS. SUBJECT TO WIND BLOWING UNLESS ANCHORED. MOST COMMONLY USED MULCHING MATERIAL. PROVIDES THE BEST MICRO-ENVIRONMENTAL FOR GERMINATING SEEDS.
COMPOST	UP TO 3" PIECES, MODERATELY TO HIGHLY STABLE	3-9 CU. YDS.	134-402 CU. YDS.	1 - 3"	COARSER TEXTURED MULCHES MAY BE MORE EFFECTIVE IN REDUCING WEED GROWTH AND WIND EROSION.
EROSION CONTROL MIX	WELL-GRADED MIXTURE OF PARTICLE SIZES, ORGANIC CONTENT BETWEEN 80-100%, DRY WEIGHT. PARTICLE SIZE SHALL PASS 6" SCREEN (100%)	* SLOPES 3(HZ.):1(VERT.) OR FLATTER = 2 INCH DEPTH PLUS ADDITIONAL 1/2 INCH DEPTH PER 20 FT. OF SLOPE UP TO 100 FT. ** SLOPES BETWEEN 3(HZ.):1(VERT.) AND 2(HZ.):1(VERT.) = 4 INCH DEPTH PLUS ADDITIONAL 1/2 INCH PER 20 FT. OF SLOPE UP TO 100 FT. *** SLOPES STEEPER THAN 2(HZ.):1(VERT.) USE OF EROSION CONTROL MIX AND MULCH DEPTH TO BE REVIEWED AND APPROVED PRIOR TO USE BY ON SITE PLAN COORDINATOR OR EPSC SPECIALIST			COMPRISED OF SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK, OR ACCEPTABLE MANUFACTURED PRODUCTS, MAY CONTAIN ROCK < 4" IN DIAMETER. ORGANICS SHALL BE FIBROUS AND ELONGATED. NO LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS.



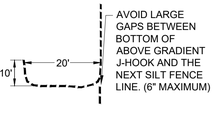
NOTES

1. UPSLOPE DIVERSION BERM WILL BE USED AS SHOWN ON PLAN AND DETAIL. DIVERSION SWALES ARE NOT PART OF THIS DESIGN, IF NECESSARY DURING CONSTRUCTION, CONTRACTOR SHALL CHECK WITH THE PROJECT ENGINEER FOR SIZING.

TYPICAL UPSLOPE DIVERSION DETAIL
N.T.S.



SLOPE STEEPNESS	MAXIMUM SPACING BETWEEN SILT FENCE J-HOOKS (FT.)
2:1 SLOPE (50%)	25
3:1 SLOPE (33%)	50
4:1 SLOPE (25%)	75
5:1 SLOPE OR FLATTER (50%)	100



NOTES

1. PROPER INSTALLATION OF J-HOOKS PROVIDES SILT FENCE THE ABILITY TO TEMPORARILY POND RUNOFF, ALLOWING TIME FOR SEDIMENTS TO SETTLE.
2. LONG RUNS OF SILT FENCE BETWEEN J-HOOKS SHOULD BE AVOIDED REFER TO ADJACENT TABLE FOR PROPER SPACING OF J-HOOKS.
3. J-HOOKS SHOULD BE BUILT ALONG CONTOUR IN A "SMILE" SHAPE WITH A MINIMUM WIDTH OF 20 FEET AND MINIMUM DEPTH OF 10 FEET.
4. ALONG A NARROW RIGHT OF WAY, NARROWER J-HOOKS CAN BE USED WITH A HIGHER SPACING FREQUENCY.

TYPICAL SILT FENCE "J-HOOK" CONSTRUCTION
N.T.S.

NEWCASTLE SOLAR PROJECT

Route 1
Newcastle, Maine

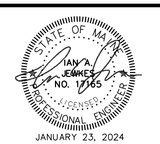
KREBS & LANSING CONSULTING ENGINEERS
164 Main Street, Suite 201
Colchester, Vermont 05446
P: (802) 878-0375
www.krebsandlansing.com

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

CIVIL ENGINEER:
Krebs and Lansing Consulting Engineers, Inc.
164 Main Street, Suite 201
Colchester, Vermont 05446

ENVIRONMENTAL:
Flycatcher LLC
Lower Falls Landing
106 Lafayette Street, Suite 1C
Yarmouth, Maine 04096

STAMP:



JANUARY 23, 2024

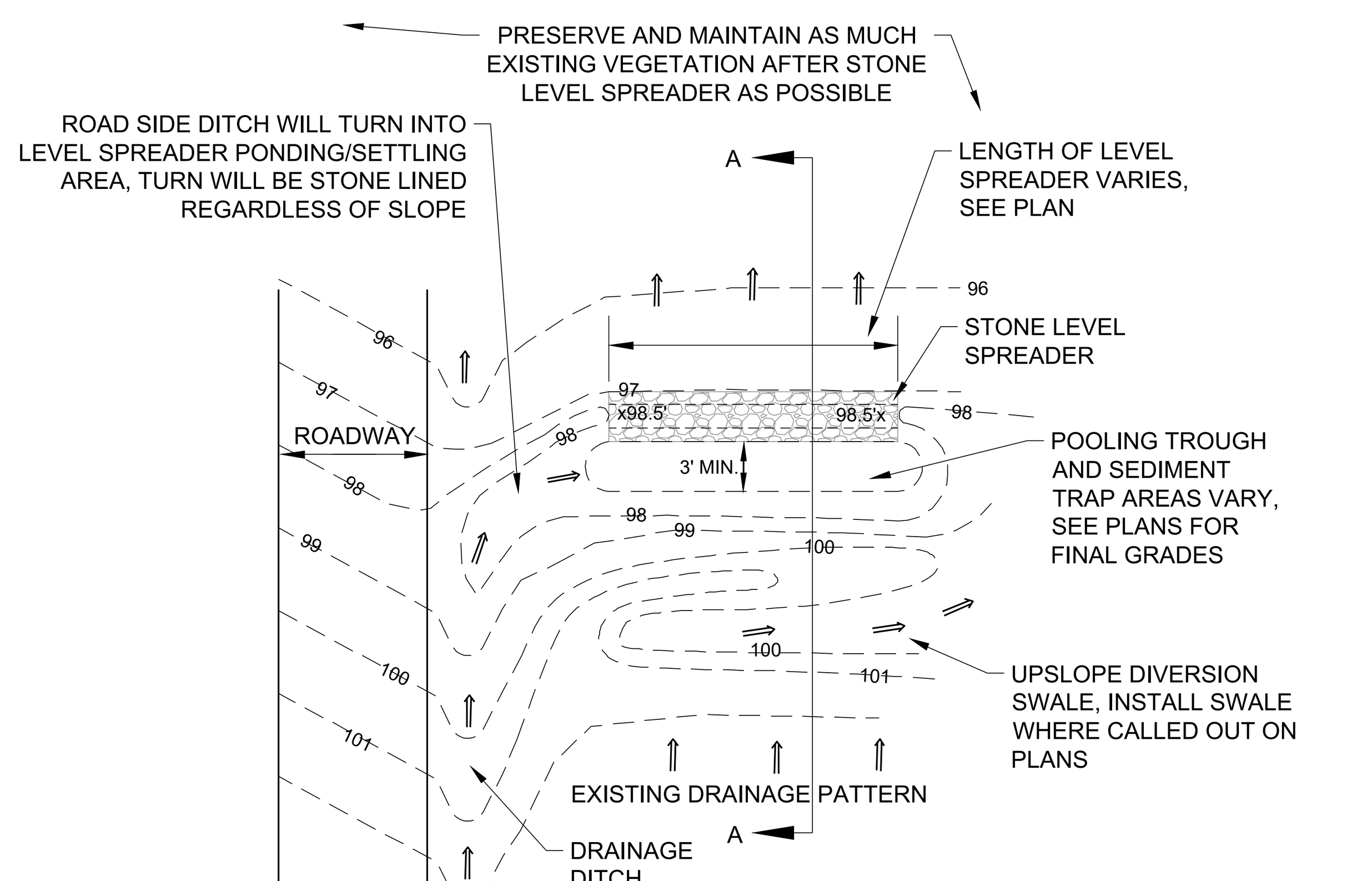
REV. NO.	REVISIONS/COMMENTS	DATE

DRAWING TITLE:

EPSC DETAILS

DATE ISSUED: 01/23/2024
DRAWN BY: EJM
CHECKED BY: IAJ
PROJECT NO.: 23276
SCALE: N/A
DRAWING NO.: C-4.00
REV. NO.:

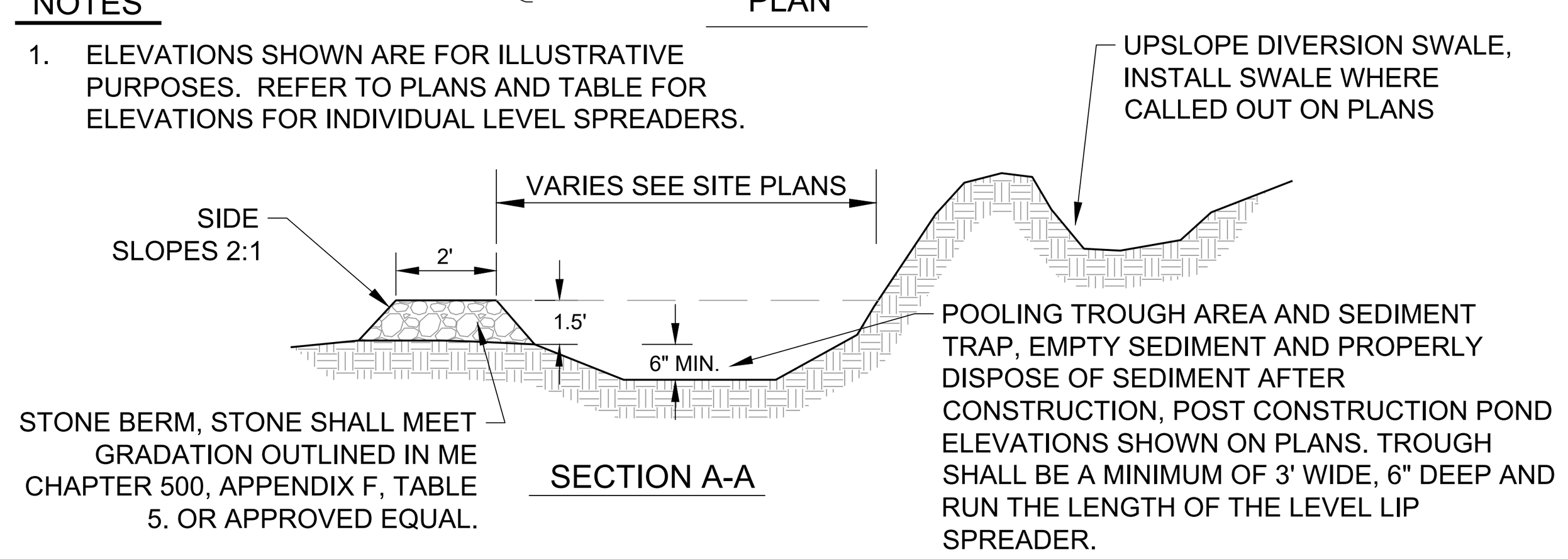
DWG NAME: Newcastle-Solar_Base.dwg



PLAN

NOTES

1. ELEVATIONS SHOWN ARE FOR ILLUSTRATIVE PURPOSES. REFER TO PLANS AND TABLE FOR ELEVATIONS FOR INDIVIDUAL LEVEL SPREADERS.



SECTION A-A

LEVEL LIP SPREADER & DITCH TURNOUT DETAIL

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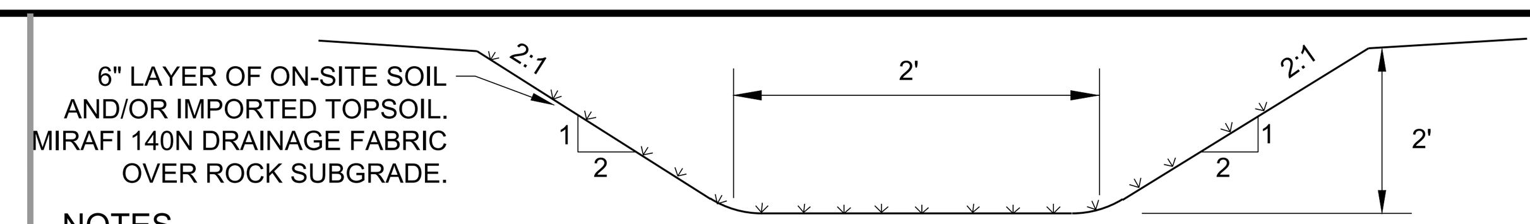


NOTES

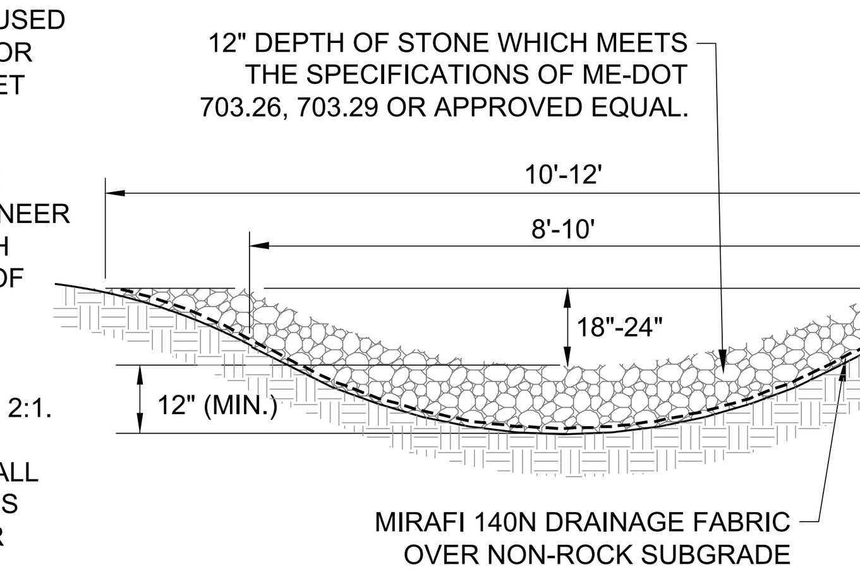
1. TYPICAL GRASS SWALE. SEE PLAN VIEW FOR LOCATIONS.
2. TYPICAL SIDE SLOPES TO BE 2:1.
3. DURING CONSTRUCTION TEMPORARILY SEEDED AND HEAVILY MULCHED. EROSION CONTROL BLANKET MAY BE NECESSARY IN STEEPER SLOPES, INSTALL BLANKET IF EROSION PERSISTS AND/OR GRASS IS HAVING DIFFICULTY GERMINATING. POST CONSTRUCTION CONTRACTOR SHALL RE-GRADE ANY EROSION, REMOVE BUILD UP SEDIMENTS, PERMANENT SEED AND HEAVILY RE-MULCH.
4. CROSS-SECTION SHALL BE EXCAVATED TO NEAT LINES AND GRADES. OVER-EXCAVATED AREAS SHALL BE BACKFILLED WITH MOIST SOIL COMPACTED TO DENSITY OF SURROUNDING MATERIAL.
5. ALL EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE SPREAD OR DISPOSED OF IN APPROVED UPLAND AREA (PER ON SITE PLAN COORDINATOR) SUCH THAT IT DOES NOT INTERFERE WITH FUNCTION.

GRASS SWALE CROSS SECTION

N.T.S.

NOTES

1. STONE-LINED SWALES TO BE USED ON SLOPES >5%. DESIGNED FOR VELOCITIES LESS THAN 10 FEET PER SECOND.
2. USE RIP RAP STONE. PROVIDE QUARRY GRADATION TO ENGINEER FOR APPROVAL. STONE WHICH MEETS THE SPECIFICATIONS OF ME-DOT 703.26, 703.29 OR APPROVED EQUAL.
3. SIDE SLOPES NOT TO EXCEED 2:1.
4. STONE LINING THICKNESS SHALL BE 1.5 X MAX. STONE SIZE PLUS THE THICKNESS OF FILTER OR BEDDING.
5. ALL DISTURBED AREAS SHALL BE STABILIZED AND OTHERWISE PROTECTED AGAINST SOIL EROSION.

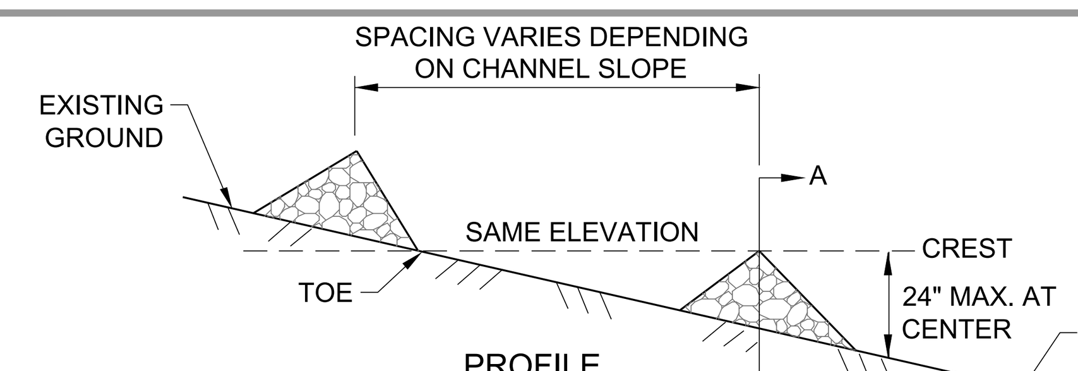


STONE SWALE CROSS SECTION

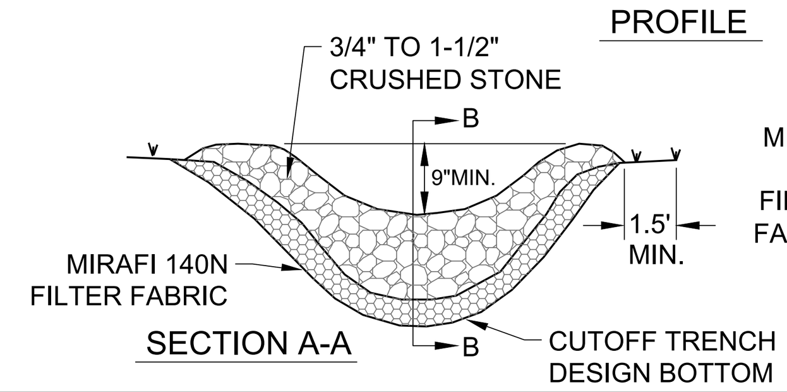
N.T.S.

NOTES

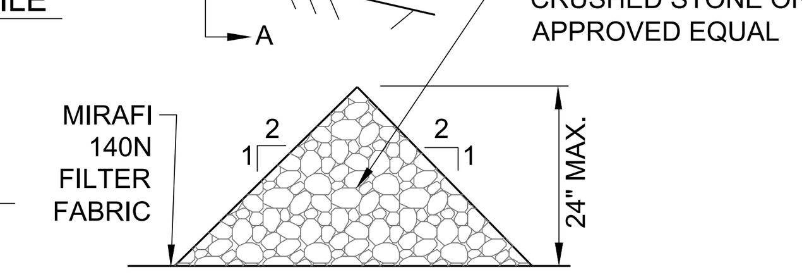
1. SILT FENCING TO BE INSTALLED BEFORE CONSTRUCTION OF STAGING AREA IS INSTALLED.
2. INSTALL AND MAINTAIN SURFACE OF STAGING AREA WITH CONSTRUCTION FABRIC OVER EXISTING GROUND. COVER WITH 6"-8" OF CRUSHED GRAVEL, SEE DETAIL. MAINTAIN DEPTH OF GRAVEL THROUGHOUT PROJECT CONSTRUCTION.
3. INSTALL AND MAINTAIN STABILIZED CONSTRUCTION ENTRANCE, SEE DETAIL. INSTALL WOODEN GATE AT ENTRANCE OF OF STAGING AREA.
4. ALL ABUTTERS TO STAGING AREA WILL BE NOTIFIED OF THE PROJECT. DUE TO LIKELY CONSTRUCTION NOISE, ACTIVITIES AT STAGING AREA AND CONSTRUCTION SITE SHALL ABIDE BY LOCAL NOISE ORDINANCES.
5. STAGING AREA IS LIKELY TO BE USED FOR PARKING DURING CONSTRUCTION, STAGING OF CONSTRUCTION MATERIALS, BASE OF PROJECT OPERATIONS AND MISCELLANEOUS PROJECT ACTIVITIES.
6. CLOSE TO PROJECT CONSTRUCTION COMPLETION, STAGING AREA WILL BE REMOVED. GRAVEL AND CONSTRUCTION FABRIC SHALL BE REMOVED AND PROPERLY DISPOSED OF. RESTORE THE PORTION OF EXISTING MEADOW COVERED BY STAGING AREA BY SEEDING, MULCHING, AERATING, ETC AS NECESSARY TO RESTORE AREA TO ITS NATURAL PRECONSTRUCTION STATE.
7. CONTRACTOR IS RESPONSIBLE FOR REFRESHING GRAVEL AS NEEDED TO MAINTAIN STABILITY OF STABILIZED STAGING AREA.



PROFILE



SECTION A-A



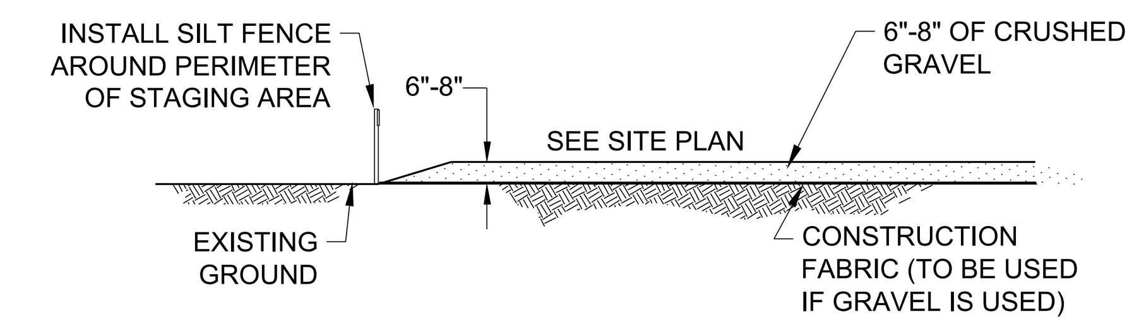
SECTION B-B

NOTES

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONES.

STONE CHECK DAM

N.T.S.



TYPICAL STABILIZED STAGING AREA SURFACE

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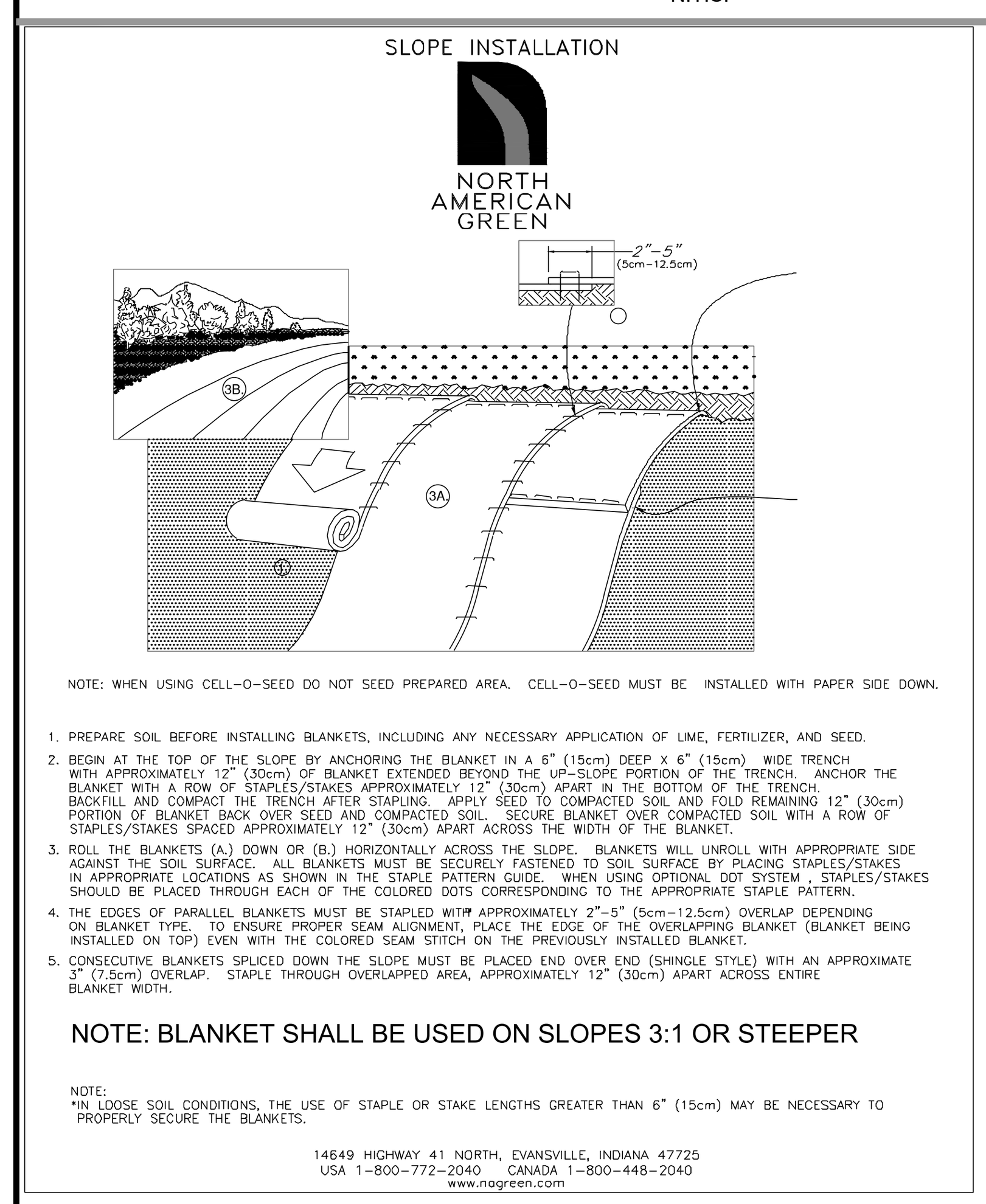

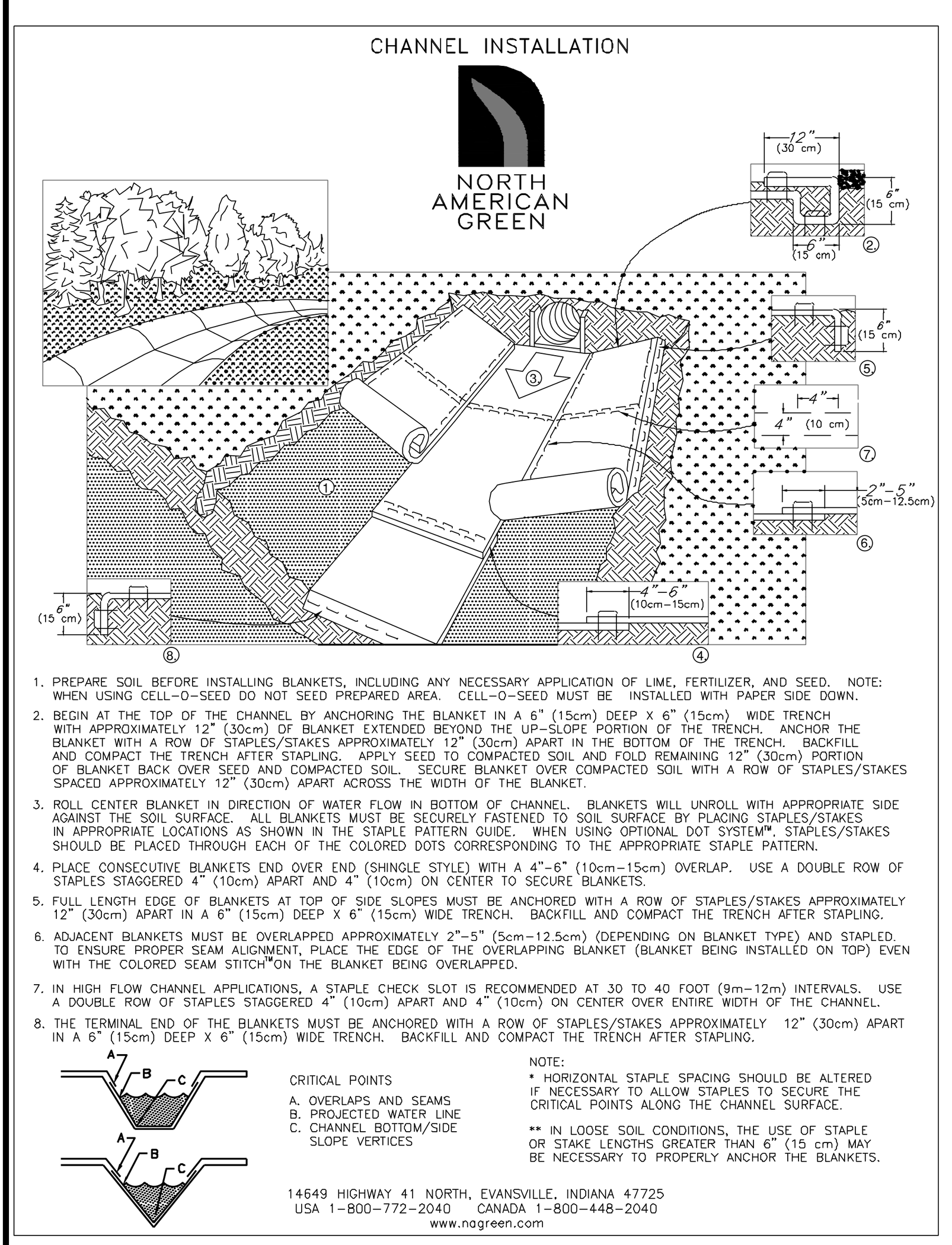

EROSION CONTROL BLANKET

NORTH AMERICAN GREEN S75BN

MATERIAL SPECIFICATIONS:

- EROSION CONTROL BLANKET SHALL BE A MACHINE-PRODUCED MAT OF 100% AGRICULTURAL STRAW.
- THE BLANKET SHALL BE OF CONSISTENT THICKNESS WITH THE STRAW EVENLY DISTRIBUTED OVER THE ENTIRE AREA OF THE MAT. THE BLANKET SHALL BE COVERED ON THE TOP SIDE WITH 100% BIODEGRADABLE WOVEN NATURAL ORGANIC FIBER NETTING HAVING AN APPROXIMATE 1/2" X 1" MESH AND BE SEWN TOGETHER WITH BIODEGRADABLE THREAD.
- STRAW EROSION CONTROL BLANKET SHALL BE S75BN AS MANUFACTURED BY NORTH AMERICAN GREEN, INC. (812-867-6632) OR EQUIVALENT. EROSION CONTROL BLANKET SHALL HAVE THE FOLLOWING PROPERTIES:

MATERIAL CONTENT:

- STRAW: 100% (0.50 lbs/sq.yd.)(0.27 kg/m^2)
- NETTING: ONE SIDE ONLY, LENO WOVEN 100% BIODEGRADABLE NATURAL ORGANIC FIBER (APPROX. WEIGHT 9.3 lbs./100 sq. ft.)
- THREAD: BIODEGRADABLE

PHYSICAL SPECIFICATIONS (ROLL):

- WIDTH: 6.67 feet (2.03 m)
- LENGTH: 108 feet (32.92 m)
- WEIGHT: 46.4 lbs. ± 10% (21.05 kg)
- AREA: 80 sq. yd. (50 m^2)

WINTER EROSION CONTROL PROCEDURES

(FOR ANY EARTH WORK PERFORMED BETWEEN NOVEMBER 1ST AND APRIL 15TH)

WINTER EROSION CONTROL NARRATIVE:
OBJECTIVE - ANY SITE WORK PERFORMED LATER THAN NOVEMBER 1ST WILL RESULT IN EXPOSED SOIL THROUGH THE WINTER. THIS PRESENTS A POTENTIAL FOR EROSION THROUGH THE WINTER. THE WINTER EROSION CONTROL MEASURES ARE INTENDED TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION ZONE DURING THAWS AND RAINSTORMS IN THE SPRING AND DURING MID-WINTER THAWS.

WINTER EROSION CONTROL SEQUENCE:
THE CONTRACTOR SHALL BE SURE ALL EROSION CONTROL MEASURES REQUIRED FOR WINTER CONSTRUCTION ARE INSTALLED BY NOVEMBER 1ST AND PRIOR TO GROUND FREEZING. IF A PERMITTED AREA CAN BE LEFT UNDISTURBED UNTIL THE SPRING THE CONTRACTOR SHALL MAKE EVERY EFFORT TO LIMIT DISTURBANCE OF THESE AREAS.

THE CONTRACTOR SHALL STABILIZE ANY PORTION OF THE SITE THAT IS BEING WORKED AND DISTURBED PRIOR TO BEGINNING CONSTRUCTION AT ANOTHER AREA OF THE SITE. AT NO TIME DURING WINTER CONSTRUCTION SHALL THERE BE MORE THAN 1 ACRE OF EXPOSED SOIL OR WHAT CAN BE STABILIZED IN ONE DAY ON SITE.

ANTICIPATED WINTER CONSTRUCTION ACTIVITIES WILL INCLUDE ALL ASPECTS OF THE PROJECT PROPOSED DURING SUMMER CONSTRUCTION. THIS IS A CONTINUATION OF WORK WHICH WAS NOT COMPLETED DURING THE SUMMER. MAJOR GRADING IS EXPECTED TO BE COMPLETE BEFORE NOVEMBER 1ST.

LIMITS OF DISTURBANCE - LOD WILL BE MOVED AND/OR REPLACED TO REFLECT THE BOUNDARY OF WINTER WORK. CONTRACTOR WILL MAINTAIN A MINIMUM 25' BUFFER FROM PERIMETER CONTROLS TO ALLOW FOR SNOW CLEARING AND MAINTENANCE.

SNOW STORAGE ON SITE - CONTRACTOR WILL CREATE A SNOW MANAGEMENT PLAN. PLAN WILL IDENTIFY LOCATIONS FOR ADEQUATE SNOW STORAGE AND CONTROL SNOW MELT. SNOW STORAGE WILL BE DOWN GRADIENT OF ALL DISTURBED AREAS AND WILL NOT PROHIBIT THE FUNCTION OF ALL PERMANENT STORMWATER TREATMENT STRUCTURES. CONTRACTOR SHALL KEEP ALL DRAINAGE STRUCTURES OPEN AND FREE OF SNOW AND ICE DAMS. CONTRACTOR SHALL NOT STORE SNOW IN ONE CENTRAL LOCATION WHICH WOULD CREATE A CENTRALIZED POINT IN A MELTING SITUATION, ATTEMPT TO SPREAD SNOW PILES.

INSTALL SILT FENCE - SILT FENCE SHALL BE INSTALLED ON THE DOWNHILL SIDE OF THE WINTER CONSTRUCTION AREAS AND SOIL STOCKPILE AREAS, AS SHOWN ON THE PLAN, BY NOVEMBER 1ST. IF THE GROUND IS UNFROZEN, THE SILT FENCE SHALL BE DUG IN AS NORMAL. IF THE GROUND IS FROZEN CONTACT THE ENGINEER FOR ALTERNATE OPTIONS. STONE BERM, FILTREXX SILT SOXX, STRAW WATTLES, HAY BALES,ETC. ALL MAY BE USED TO KEY IN SILT FENCE AND STRENGTHEN THE BMP.

STABILIZED CONSTRUCTION ENTRANCE - THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL STABILIZED CONSTRUCTION ENTRANCES TO PREVENT SEDIMENT TRACKING OFF SITE. CONTRACTOR SHALL ENLARGE THE WIDTH OF ACCESS TO PROVIDE ADDITIONAL ROOM FOR SNOW STOCKPILING, IF NEEDED. ADDITIONAL STONE SHALL BE ADDED OR THE LENGTH SHALL BE INCREASED, IF ICE AND SNOW LIMITS CONSTRUCTION ENTRANCE'S ABILITY TO HOLD SEDIMENTS ON SITE.

WINTER STABILIZATION – ALL DISTURBED AREAS NOT INVOLVED IN WINTER CONSTRUCTION SHALL BE AT LEAST TEMPORARILY STABILIZED BY NOVEMBER 1ST. AFTER, ALL AREAS DISTURBED DURING WINTER CONSTRUCTION SHALL BE STABILIZED DAILY TO PREVENT EXPOSURE FROM RAIN EVENTS AND ACCUMULATION OF SNOWFALL (SEE EXCEPTIONS BELOW). STABILIZATION RATES IN THE WINTER WILL BE DOUBLED THE RATES LISTED IN THE MULCHING SCHEDULE. CONTRACTOR SHALL ADD ADDITIONAL STONE, AS NECESSARY, TO PROVIDE STABILIZATION THROUGH WINTER CONSTRUCTION ON ALL AREAS WHERE CONSTRUCTION TRAFFIC IS ANTICIPATED.

EXCEPTIONS:

- HYDROSEEDING AFTER NOVEMBER 1ST AND BEFORE APRIL 15TH MUST BE STABILIZED WITH STRAW MULCH OR EROSION CONTROL MATTING.
- SNOW AND/OR ICE MUST BE REMOVED TO, AT MOST, ONE INCH PRIOR TO APPLYING MULCH OR EROSION CONTROL STABILIZATION MATTING.
- IF NO PRECIPITATION, WITHIN 24 HOURS, IS FORECASTED AND WORK WILL RESUME IN THE SAME DISTURBED AREA WITHIN 24 HOURS, DAILY STABILIZATION IS NOT NECESSARY.
- DISTURBED AREAS THAT COLLECT AND RETAIN RUNOFF, SUCH AS OPEN UTILITY TRENCHES, REQUIRE STABILIZATION AT THE END OF EACH WORK WEEK.

MAINTENANCE - ALL DISTURBED AREAS SHALL BE MONITORED BY THE CONTRACTOR AND THE INSPECTOR IN ACCORDANCE WITH THE PERMIT. THE CONTRACTOR AND INSPECTOR SHALL EVALUATE THE SITE AFTER A THAW OR RAINSTORM. THE CONTRACTOR OR INSPECTOR SHALL NOTIFY THE ENGINEER IF ANY EROSION CONTROL MEASURES APPEAR TO BE INADEQUATE. THE CONTRACTOR OR INSPECTOR SHALL IMMEDIATELY (WITHIN THE SAME BUSINESS DAY) IMPLEMENT ANY FURTHER EROSION CONTROL MEASURES SPECIFIED BY THE ENGINEER. THE CONTRACTOR OR INSPECTOR SHALL ADD MULCH, AS NECESSARY, THROUGHOUT THE WINTER AFTER THAWS OR RAINSTORMS. THE MULCH DEPTHS SHALL BE DOUBLED. THE MULCH AND SILT FENCE SHALL BE MAINTAINED UNTIL A PERMANENT GROUND COVER (90% STABILIZATION) IS ESTABLISHED IN THE SPRING. THE SITE SHALL BE REMULCHED AND RESEEDED, IN THE SPRING, AS REQUIRED TO ESTABLISH A VIGOROUS PERMANENT GROUND COVER.

INSPECTION - THE EROSION AND SEDIMENT INSPECTOR SHALL BE RESPONSIBLE FOR, AT A MINIMUM, DAILY WRITTEN INSPECTIONS WHILE THE SITE IS DISTURBED OR WEEKLY IF EVERYTHING IS STABILIZED BUT CONSTRUCTION IS ON-GOING. IF, DURING WINTER CONSTRUCTION, EARTH DISTURBANCE ACTIVITIES TEMPORARILY CEASE AND THE SITE HAS BEEN FULLY STABILIZED, INSPECTION AND MONITORING REQUIREMENTS FOR THE INSPECTOR MAY BE REDUCED TO ONCE PER MONTH MINIMUM. ALL INSPECTION SHEETS SHALL BE KEPT ON SITE AND BE AVAILABLE UPON REQUEST.

HOUSEKEEPING PROCEDURES

1. SPILL PREVENTION. CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM CONSTRUCTION AND WASTE MATERIALS STORED ON SITE TO ENTER STORMWATER, WHICH INCLUDES STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER. THE SITE CONTRACTOR OR OPERATOR MUST DEVELOP, AND IMPLEMENT AS NECESSARY, APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING MEASURES.

NOTE: ANY SPILL OR RELEASE OF TOXIC OR HAZARDOUS SUBSTANCES MUST BE REPORTED TO THE DEPARTMENT. FOR OIL SPILLS, CALL 1-800-482-0777 WHICH IS AVAILABLE 24 HOURS A DAY. FOR SPILLS OF TOXIC OR HAZARDOUS MATERIAL, CALL 1-800-452-4664 WHICH IS AVAILABLE 24 HOURS A DAY. FOR MORE INFORMATION, VISIT THE DEPARTMENT'S WEBSITE AT : HTTP://WWW.MAINE.GOV/DEP/SPILLS/EMERGSPILLRESP/

2. GROUNDWATER PROTECTION. DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA. AN "INFILTRATION AREA" IS ANY AREA OF THE SITE THAT BY DESIGN OR AS A RESULT OF SOILS, TOPOGRAPHY AND OTHER RELEVANT FACTORS ACCUMULATES RUNOFF THAT INFILTRATES INTO THE SOIL. DIKES, BERMS, SUMPS, AND OTHER FORMS OF SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS. ANY PROJECT PROPOSING INFILTRATION OF STORMWATER MUST PROVIDE ADEQUATE PRE-TREATMENT OF STORMWATER PRIOR TO DISCHARGE OF STORMWATER TO THE INFILTRATION AREA, OR PROVIDE FOR TREATMENT WITHIN THE INFILTRATION AREA, IN ORDER TO PREVENT THE ACCUMULATION OF FINES, REDUCTION IN INFILTRATION RATE, AND CONSEQUENT FLOODING AND DESTABILIZATION.

   SEE APPENDIX D FOR LICENSE BY RULE STANDARDS FOR INFILTRATION OF STORMWATER.

NOTE: LACK OF APPROPRIATE POLLUTANT REMOVAL BEST MANAGEMENT PRACTICES (BMPS) MAY RESULT IN VIOLATIONS OF THE GROUNDWATER QUALITY STANDARD ESTABLISHED BY 38 M.R.S.A. §465-C(1).

3. FUGITIVE SEDIMENT AND DUST. ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. OIL MAY NOT BE USED FOR DUST CONTROL, BUT OTHER WATER ADDITIVES MAY BE CONSIDERED AS NEEDED. A STABILIZED CONSTRUCTION ENTRANCE (SCE) SHOULD BE INCLUDED TO MINIMIZE TRACKING OF MUD AND SEDIMENT. IF OFF-SITE TRACKING OCCURS, PUBLIC ROADS SHOULD BE SWEPT IMMEDIATELY AND NO LESS THAN ONCE A WEEK AND PRIOR TO SIGNIFICANT STORM EVENTS. OPERATIONS DURING DRY MONTHS, THAT EXPERIENCE FUGITIVE DUST PROBLEMS, SHOULD WET DOWN UNPAVED ACCESS ROADS ONCE A WEEK OR MORE FREQUENTLY AS NEEDED WITH A WATER ADDITIVE TO SUPPRESS FUGITIVE SEDIMENT AND DUST.

NOTE: DEWATERING A STREAM WITHOUT A PERMIT FROM THE DEPARTMENT MAY VIOLATE STATE WATER QUALITY STANDARDS AND THE NATURAL RESOURCES PROTECTION ACT.

4. DEBRIS AND OTHER MATERIALS. MINIMIZE THE EXPOSURE OF CONSTRUCTION DEBRIS, BUILDING AND LANDSCAPING MATERIALS, TRASH, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE AND OTHER MATERIALS TO PRECIPITATION AND STORMWATER RUNOFF. THESE MATERIALS MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.

NOTE: TO PREVENT THESE MATERIALS FROM BECOMING A SOURCE OF POLLUTANTS, CONSTRUCTION AND POST- CONSTRUCTION ACTIVITIES RELATED TO A PROJECT MAY BE REQUIRED TO COMPLY WITH APPLICABLE PROVISION OF RULES RELATED TO SOLID, UNIVERSAL, AND HAZARDOUS WASTE, INCLUDING, BUT NOT LIMITED TO, THE MAINE SOLID WASTE AND HAZARDOUS WASTE MANAGEMENT RULES; MAINE HAZARDOUS WASTE MANAGEMENT RULES; MAINE OIL CONVEYANCE AND STORAGE RULES; AND MAINE PESTICIDE REQUIREMENTS.

5. EXCAVATION DE-WATERING. EXCAVATION DE-WATERING IS THE REMOVAL OF WATER FROM TRENCHES, FOUNDATIONS, COFFER DAMS, PONDS, AND OTHER AREAS WITHIN THE CONSTRUCTION AREA THAT RETAIN WATER AFTER EXCAVATION. IN MOST CASES THE COLLECTED WATER IS HEAVILY SILTED AND HINDERS CORRECT AND SAFE CONSTRUCTION PRACTICES. THE COLLECTED WATER REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, MUST BE SPREAD THROUGH NATURAL WOODED BUFFERS OR REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A COFFERDAM SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE. EQUIVALENT MEASURES MAY BE TAKEN IF APPROVED BY THE DEPARTMENT.

NOTE: DEWATERING CONTROLS ARE DISCUSSED IN THE “MAINE EROSION AND SEDIMENT CONTROL BMPS, MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION.”

6. AUTHORIZED NON-STORMWATER DISCHARGES. IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES. WHERE ALLOWED NON-STORMWATER DISCHARGES EXIST, THEY MUST BE IDENTIFIED AND STEPS SHOULD BE TAKEN TO ENSURE THE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON- STORMWATER COMPONENT(S) OF THE DISCHARGE. AUTHORIZED NON-STORMWATER DISCHARGES ARE:
   a. DISCHARGES FROM FIREFIGHTING ACTIVITY
   b. FIRE HYDRANT FLUSHINGS
   c. VEHICLE WASHWATER IF DETERGENTS ARE NOT USED AND WASHING IS LIMITED TO THE EXTERIOR OF VEHICLES (ENGINE, UNDERCARRIAGE AND TRANSMISSION WASHING IS PROHIBITED)
   d. DUST CONTROL RUNOFF IN ACCORDANCE WITH PERMIT CONDITIONS AND APPENDIX (C)(3)
   e. ROUTINE EXTERNAL BUILDING WASHDOWN, NOT INCLUDING SURFACE PAINT REMOVAL, THAT DOES NOT INVOLVE DETERGENTS
   f. PAVEMENT WASHWATER (WHERE SPILLS/LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURRED, UNLESS ALL SPILLED MATERIAL HAD BEEN REMOVED) IF DETERGENTS ARE NOT USED
   g. UNCONTAMINATED AIR CONDITIONING OR COMPRESSOR CONDENSATE
   h. UNCONTAMINATED GROUNDWATER OR SPRING WATER
   i. FOUNDATION OR FOOTER DRAIN-WATER WHERE FLOWS ARE NOT CONTAMINATED
   j. UNCONTAMINATED EXCAVATION DEWATERING (SEE REQUIREMENTS IN APPENDIX C(5))
   k. POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHINGS
   l. LANDSCAPE IRRIGATION.
7. UNAUTHORIZED NON-STORMWATER DISCHARGES. THE DEPARTMENT'S APPROVAL UNDER THIS CHAPTER DOES NOT AUTHORIZE A DISCHARGE THAT IS MIXED WITH A SOURCE OF NON-STORMWATER, OTHER THAN THOSE DISCHARGES IN COMPLIANCE WITH APPENDIX C (6). SPECIFICALLY, THE DEPARTMENT'S APPROVAL DOES NOT AUTHORIZE DISCHARGES OF THE FOLLOWING:
   a. WASTEWATER FROM THE WASHOUT OR CLEANOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS OR OTHER CONSTRUCTION MATERIALS
   b. FUELS, OILS OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE
   c. SOAPS, SOLVENTS, OR DETERGENTS USED IN VEHICLE AND EQUIPMENT WASHING
   d. TOXIC OR HAZARDOUS SUBSTANCES FROM A SPILL OR OTHER RELEASE
8. ADDITIONAL REQUIREMENTS. ADDITIONAL REQUIREMENTS MAY BE APPLIED ON A SITE-SPECIFIC BASIS.

NEWCASTLE SOLAR PROJECT

Route 1
Newcastle, Maine

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Colchester, Vermont 05446
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ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

CIVIL ENGINEER:
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164 Main Street, Suite 201
Colchester, Vermont 05446

ENVIRONMENTAL:
Flycatcher LLC
Lower Falls Landing
106 Lafayette Street, Suite 1C
Yarmouth, Maine 04096

STAMP:
STATE OF MAINE
IAN A. JEWKES
NO. 17165
LICENSED
PROFESSIONAL ENGINEER
JANUARY 23, 2024

REV. NO.	REVISIONS/COMMENTS	DATE

DRAWING TITLE:

EPSC DETAILS

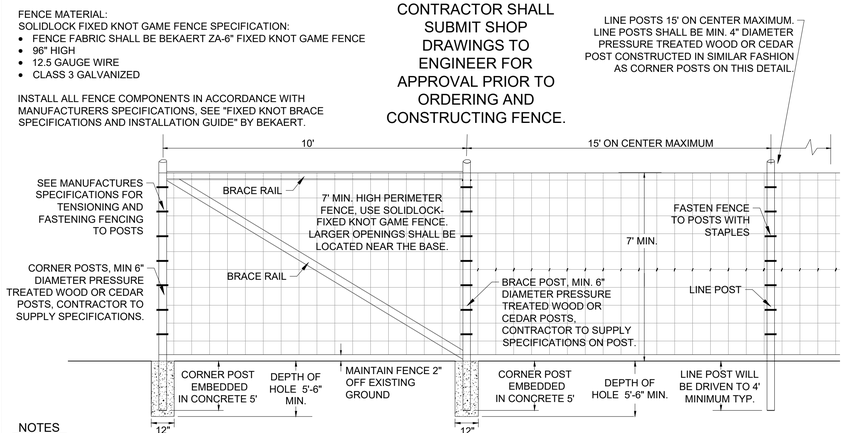
DATE ISSUED: 01/23/2024	
DRAWN BY: EJM	CHECKED BY: IAJ
PROJECT NO.: 23276	SCALE: N/A
DRAWING NO.: C-4.01	REV. NO.:

DWG NAME: Newcastle-Solar_Base.dwg

FENCE MATERIAL:
SOLIDLOCK FIXED KNOT GAME FENCE SPECIFICATION:
- FENCE FABRIC SHALL BE BEKAERT ZA-6" FIXED KNOT GAME FENCE
- 96" HIGH
- 12.5 GAUGE WIRE
- CLASS 3 GALVANIZED

INSTALL ALL FENCE COMPONENTS IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS, SEE "FIXED KNOT BRACE SPECIFICATIONS AND INSTALLATION GUIDE" BY BEKAERT.

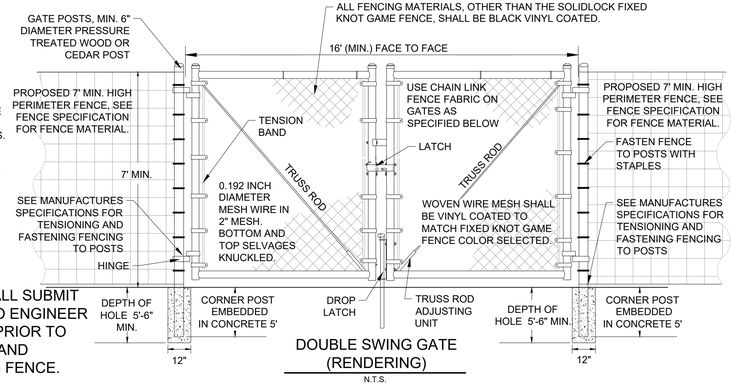
CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO ORDERING AND CONSTRUCTING FENCE.



NOTES
1. ADDITIONAL BRACING MAY BE REQUIRED ON LONGER FENCE RUNS. CONTRACTOR TO ADD ADDITIONAL BRACING WHEN CONTRACTOR OBSERVES CORNER POST DEFLECTION DURING FENCE TENSINOING/FASTENING.
2. FABRIC TO BE FASTENED TO POSTS WITH STAPLES APPROVED BY THE ENGINEER.

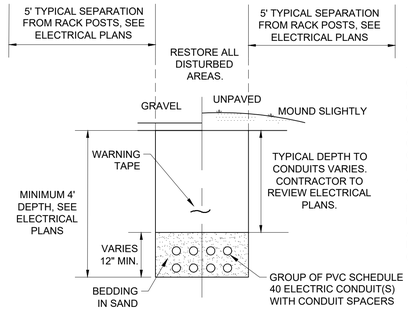
TYPICAL FIXED KNOT GAME FENCE AROUND ARRAY (RENDERING)
N.T.S.

NOTES
1. PAINT ALL GALVANIZED PIPE AND FITTINGS TO MATCH SOLIDLOCK FIXED KNOT GAME FENCE. PAINT SHALL BE SUITABLE FOR USE ON GALVANIZED SURFACES.
2. EMERGENCY CONTACT SIGN SHALL BE PLACED ON THE GATE, WHICH IDENTIFIES THE PROJECT OWNER AND PROVIDES A 24-HOUR EMERGENCY CONTACT PHONE NUMBER.



CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO ORDERING AND CONSTRUCTING FENCE.

DOUBLE SWING GATE (RENDERING)
N.T.S.



THE EXCAVATION CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH OSHA REGULATIONS. ALL BACKFILL SHALL BE COMPACTED TO 95% OF THE STANDARD PROCTOR VALUE. SEE ADDITIONAL NOTES.

USE "TRENCH BREAKERS" EVERY 50 FEET ALONG DOWNHILL PORTIONS OF CONDUIT RUNS.

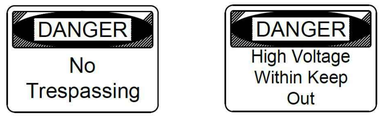
CONDUIT TRENCHING NOTES
1. THE METHODS AND MATERIALS OF CONSTRUCTION SHALL CONFORM TO THE LATEST STANDARDS OF THE CENTRAL MAINE POWER'S HANDBOOK OF REQUIREMENTS AND THE STATE OF MAINE. ALL WORK SHALL BE IN CONFORMANCE WITH ALL PERMITS AND APPROVALS ISSUED FOR THE PROJECT. IN CASE OF CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY AS DIRECTED BY THE OWNERS REPRESENTATIVE.
2. THE EXCAVATION CONTRACTOR SHALL DIG THE CONDUIT TRENCHING AND ASSIST THE ELECTRICIAN IN PLACING THE CONDUIT. THE CONDUITS SHALL BE PLACED WITH CONDUIT SPACERS WHEN MORE THAN TWO CONDUITS ARE PLACED IN A TRENCH. ALL CONDUIT AND SPACERS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
3. THE EXCAVATION CONTRACTOR SHALL ALLOW SUFFICIENT TIME FOR THE CONDUIT TO BE INSPECTED PRIOR TO BACKFILLING. IF ANY CONDUIT IS BACKFILLED WITHOUT INSPECTION IT WILL BE THE EXCAVATION CONTRACTOR'S RESPONSIBILITY TO UNCOVER THE CONDUIT FOR INSPECTION AND BACKFILL THE TRENCH WITHOUT CHARGE.
4. THE WORKERS AND PUBLIC SHALL BE PROTECTED BY THE EXCAVATION CONTRACTOR FROM ANY AND ALL HAZARDS CONNECTED WITH THE CONSTRUCTION WORK. OPEN TRENCHES, MATERIALS, OR EQUIPMENT WITHIN THE WORKING LIMITS ARE TO BE GUARDED BY THE USE OF ADEQUATE BARRICADES OR FLAGGERS. ALL BARRICADES LEFT IN POSITION OVERNIGHT ARE TO BE PROPERLY LIGHTED. WHEN WORK NARROWS THE USABLE PAVEMENT, FLAGGERS SHALL BE EMPLOYED TO AID THE FLOW OF TRAFFIC SO THAT THERE WILL BE NO UNDUE DELAYS. ALL WORK SHALL BE IN CONFORMANCE TO OSHA REGULATIONS, TITLE 19, PARTS 1926.651 AND 1926.652.
5. ALL CONDUIT CROSSING GRAVEL AREAS OR GRASS PATH AREAS SHALL BE ENCASED IN CONCRETE. CONCRETE ENCASEMENT SHALL BE IN ACCORDANCE WITH CENTRAL MAINE POWER'S HANDBOOK OF REGULATIONS AND THE ELECTRICAL PLANS.
6. THE EXCAVATION CONTRACTOR IS RESPONSIBLE FOR COMPACTING ALL TRENCH BACKFILL TO 95% OF THE STANDARD PROCTOR VALUE.
7. THE EXCAVATION CONTRACTOR IS RESPONSIBLE FOR ALL CONDUIT EXCAVATION AND BACKFILL NECESSARY TO COMPLETE THE PROJECT.
8. REFER TO ELECTRICAL ENGINEER PLANS AND DETAILS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

SITE ADDRESS: XXXXXXX

SITE OWNER: XXXXXXX
CONTACT: XXX-XXX-XXXX

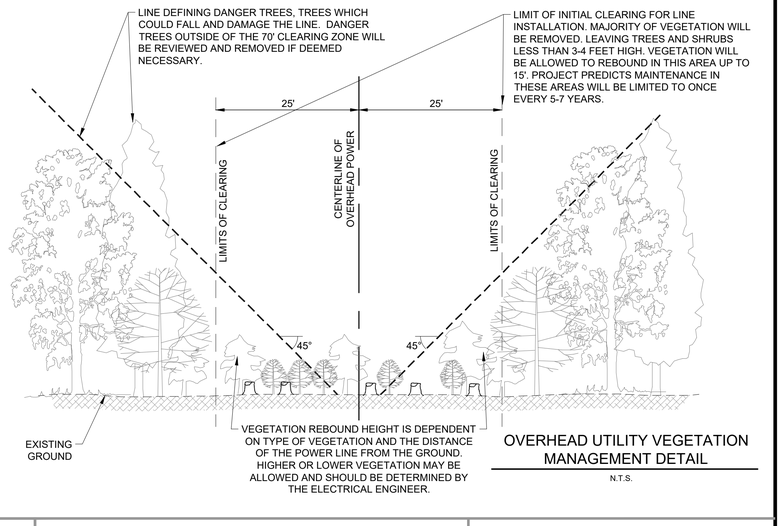
O & M COMPANY: SOLAR PROJECT OWNER NAME
CONTACT: XXX-XXX-XXXX

TYPICAL EMERGENCY CONTACT SIGN
N.T.S.



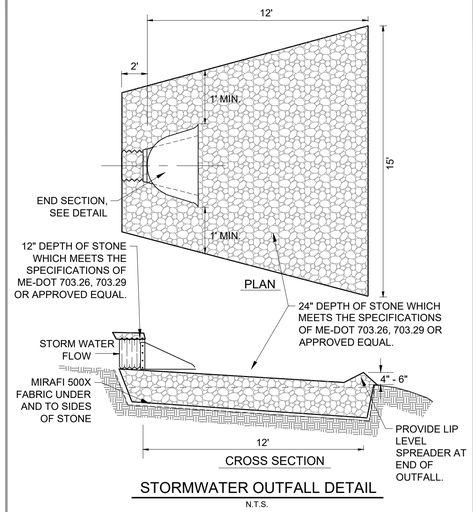
TYPICAL WARNING SIGNS
N.T.S.

NOTES
1. SIGNS SHALL CONFORM TO 2013 OSHA AND ANSI REQUIREMENTS
2. SIGNS SHALL BE 20" WIDE BY 14" HIGH MINIMUM
3. SIGNS SHALL HAVE A MOUNTING HEIGHT BETWEEN 45 AND 66 INCHES.
4. SIGNS SHALL BE 10 GAUGE ALUMINUM WITH HIGH VISIBILITY REFLECTIVE SHEETING, OR APPROVED EQUAL

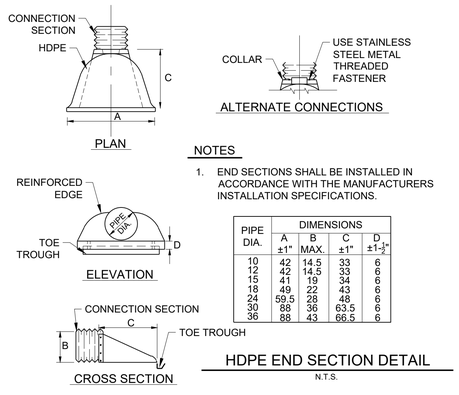


OVERHEAD UTILITY VEGETATION MANAGEMENT DETAIL
N.T.S.

CONSTRUCTION NOTES
1. THE METHODS AND MATERIALS OF CONSTRUCTION SHALL BE IN CONFORMANCE WITH ALL PERMITS AND APPROVALS ISSUED FOR THE PROJECT. IN CASE OF CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY AS DIRECTED BY ENGINEER. ALL WORK SHALL BE DONE IN A WORKMANLIKE MANNER AND COMPLETED IN THE TIME SPECIFIED BY OWNER.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK AND MATERIALS SHOWN AND REQUIRED TO MAKE THE JOB COMPLETE. THESE DRAWINGS DO NOT SHOW EVERY FITTING OR APPURTENANCE. MATERIALS SHALL BE AS SPECIFIED ON THE DRAWINGS. MANUFACTURER'S PRODUCT SPECIFICATIONS SHALL BE SUBMITTED FOR ALL MATERIALS TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
3. THE LOCATION AND SIZE OF EXISTING UNDERGROUND UTILITIES IS NOT WARRANTED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL FIELD LOCATE ALL UTILITIES AND SHALL CONTACT THE AFFECTED UTILITY COMPANY, THE ENGINEER AND THE TOWN PRIOR TO MAKING ANY HOOK UPS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL EXISTING UTILITIES AND THEIR UNINTERRUPTED SERVICES. ALL OFF-SITE BACKFILL, SHEETING AND SHORING, DEWATERING, CLEARING AND GRUBBING, EROSION CONTROL, DUST CONTROL, TRAFFIC CONTROL, GRADING, AND ALL INCIDENTALS SHALL BE INCLUDED AS PART OF THE REQUIRED WORK.
4. THE CONTRACTOR SHALL VERIFY ALL TEMPORARY BENCH MARKS BEFORE USE.
5. THE WORKMEN AND PUBLIC SHALL BE PROTECTED BY THE CONTRACTOR FROM ANY AND ALL HAZARDS CONNECTED WITH THE CONSTRUCTION WORK. OPEN TRENCHES, MATERIALS, OR EQUIPMENT WITHIN THE WORKING LIMITS ARE TO BE GUARDED BY THE USE OF ADEQUATE BARRICADES OR FLAGMEN. ALL BARRICADES LEFT IN POSITION OVERNIGHT ARE TO BE PROPERLY LIGHTED. KEROSENE POTS ARE NOT ACCEPTABLE. WHEN WORK NARROWS THE USABLE PAVEMENT, FLAGMEN SHALL BE EMPLOYED TO AID THE FLOW OF TRAFFIC SO THAT THERE WILL BE NO UNDUE DELAYS. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE SAFETY OF ALL WORKMEN AND THE GENERAL PUBLIC AND ALL DAMAGES TO PROPERTY OCCURRING FROM OR UPON THE WORK OCCASIONED BY NEGLIGENCE OR OTHERWISE GROWING OUT OF A FAILURE ON THE PART OF THE CONTRACTOR TO PROTECT PERSONS OR PROPERTY FROM HAZARDS OF OPEN TRENCHES, MATERIALS, OR EQUIPMENT AT ANY TIME OF THE DAY OR NIGHT WITHIN THE WORKING AREA. ALL WORK SHALL BE IN CONFORMANCE TO OSHA REGULATIONS, TITLE 19, PARTS 1926.651 AND 1926.652.
6. THE CONTRACTOR SHALL VERIFY ALL UTILITY INTERSECTIONS AND CONTACT ENGINEER AND OWNER WITH CONFLICTS.
7. THE CONTRACTOR SHALL CALL, DIG SAFE OR OTHER APPROVED EQUAL UNDERGROUND UTILITY IDENTIFIER PRIOR TO ANY EXCAVATION.
8. THE CONTRACTOR SHALL COORDINATE WITH FINAL ELECTRICAL, STRUCTURAL AND LANDSCAPING PLANS.



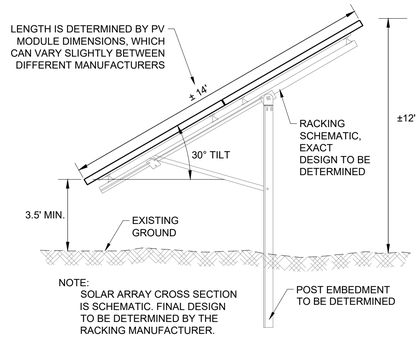
STORMWATER OUTFALL DETAIL
N.T.S.



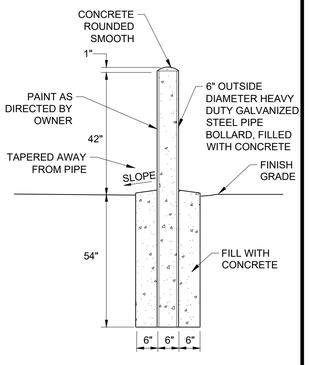
NOTES
1. END SECTIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTALLATION SPECIFICATIONS.

PIPE DIA.	DIMENSIONS A ±1"	B MAX.	C ±1"	D ±1-½"
10	42	14.5	33	6
12	42	14.5	33	6
15	41	19	34	6
18	49	22	43	6
24	59.5	28	48	6
30	88	36	63.5	6
36	88	43	66.5	6

HDPE END SECTION DETAIL
N.T.S.



TYPICAL SOLAR ARRAY CROSS SECTION (RENDERING)
N.T.S.



PIPE BOLLARD DETAIL
N.T.S.

NEWCASTLE SOLAR PROJECT

Route 1
Newcastle, Maine

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ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

CIVIL ENGINEER:
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Colchester, Vermont 05446

ENVIRONMENTAL:
Flycatcher LLC
Lower Falls Landing
106 Lafayette Street, Suite 1C
Yarmouth, Maine 04096

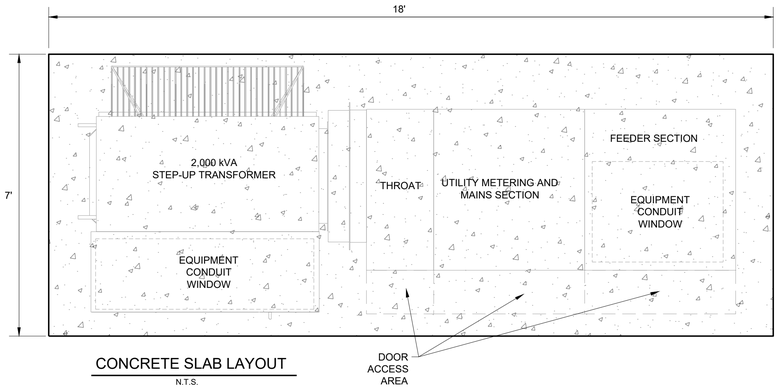
STAMP:
STATE OF MAINE
IAN A. JAMES
NO. 17165
LICENSED PROFESSIONAL ENGINEER
JANUARY 23, 2024

REV. NO.	REVISIONS/COMMENTS	DATE

DRAWING TITLE:
DETAILS

DATE ISSUED: 01/23/2024
DRAWN BY: EJM CHECKED BY: IAJ
PROJECT NO.: 23276 SCALE: N/A
DRAWING NO.: C-4.02 REV. NO.:

DWG NAME: Newcastle-Solar_Base.dwg

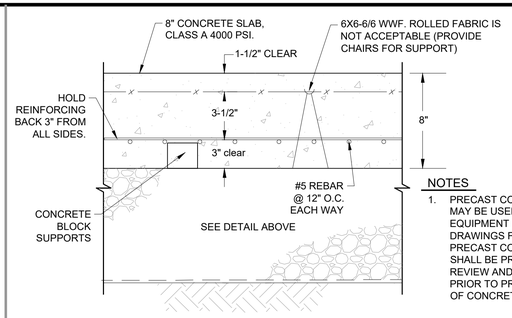


CONCRETE SLAB LAYOUT

N.T.S.

NOTES:

1. SLAB LAYOUT TO BE REVIEWED AND CERTIFIED BY ELECTRICAL ENGINEER PRIOR TO INSTALLATION.
2. CONTRACTOR TO VERIFY LOCATIONS OF REBAR IN SLAB AND REDUCE CONFLICTS WITH DRILL LOCATIONS FOR EQUIPMENT SUPPORTS.
3. NO CONCRETE WINDOWS ARE PROPOSED FOR THIS SLAB. CONDUIT WILL BE INSTALLED PRIOR TO POURING CONCRETE. STUB CONDUIT UP THROUGH THE PREPARED SLAB IN THE EQUIPMENT WINDOW LOCATIONS SHOWN AND POUR CONCRETE AROUND STUBBED CONDUIT.

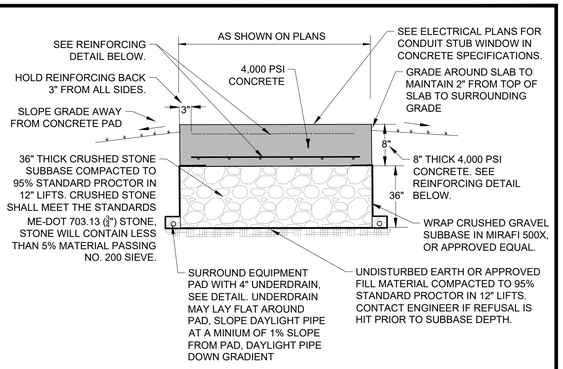


NOTES

1. PRECAST CONCRETE MAY BE USED FOR EQUIPMENT PAD. SHOP DRAWINGS FOR ALL PRECAST CONCRETE SHALL BE PROVIDED FOR REVIEW AND APPROVAL PRIOR TO PRODUCTION OF CONCRETE.

TYPICAL CONCRETE SLAB REINFORCING DETAIL

N.T.S.

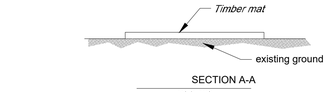


NOTES

1. COLD WEATHER CONSTRUCTION PROCEDURES:
   - A. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTINUOUSLY PROTECT SOILS, CONCRETE, MASONRY AND OTHER BUILDING MATERIALS FROM DAMAGE DUE TO COLD TEMPERATURES UNTIL THE SLAB HAS BEEN TURNED OVER TO THE OWNER.
   - B. THIS SHALL INCLUDE TEMPORARY ENCLOSURES, INSULATED BLANKETS AND TEMPORARY HEATING. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE ANY DAMAGED OR DEFECTIVE WORK, IN A MANNER APPROVED BY THE ARCHITECT/ENGINEER.
   - C. ALL PROTECTIVE AND CORRECTIVE WORK SHALL BE AT THE EXPENSE OF THE CONTRACTOR.
2. PERFORM WORK IN ACCORDANCE WITH ACI 301 STANDARDS AND RECOMMENDED PRACTICES.
3. ACQUIRE CEMENT AND AGGREGATE FROM SAME SOURCE FOR ALL WORK.
4. CONFORM TO ACI 305R WHEN CONCRETING DURING HOT WEATHER.
5. CONFORM TO ACI 306R WHEN CONCRETING DURING COLD WEATHER.
6. CEMENT ASTM C150, TYPE I, GRAY - NORMAL; DO NOT CHANGE SOURCE OF MANUFACTURER OF CEMENT DURING THE COURSE OF THE WORK.
7. FINE AND COARSE AGGREGATES ASTM C33.
8. WATER CLEAN, POTABLE AND NOT DETRIMENTAL TO CONCRETE.
9. AIR ENTRAINMENT ASTM C260.
10. CHEMICAL ASTM C494 TYPE A - WATER REDUCING.
11. BONDING AGENT SIKA ARMATEC 110 EPOCEM BONDING AGENT, NO -SOLVENT THREE COMPONENT EPOXY AS MANUFACTURED BY SIKA OR EQUIVALENT.
12. NON -SHRINK GROUT PREMIXED COMPOUND CONSISTING OF NON -METALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTICIZING AGENTS; CAPABLE OF DEVELOPING MINIMUM COMPRESSIVE STRENGTH OF 2,400 PSI IN 48 HOURS AND 7,000 PSI IN 28 DAYS; MANUFACTURED BY FIVE STAR PRODUCTS, INC. OR APPROVED EQUIVALENT.
13. FORM RELEASE AGENT WATER BASED, NON TOXIC, ENVIRONMENTALLY FRIENDLY PRODUCT WHICH WILL NOT STAIN CONCRETE, OR ABSORB MOISTURE , OR IMPAIR NATURAL BONDING OR COLOR CHARACTERISTICS OF COATING INTENDED FOR USE ON CONCRETE.
14. MIX CONCRETE IN ACCORDANCE WITH ACI 304. DELIVER CONCRETE IN ACCORDANCE WITH ASTM C94.
15. THE MIX DESIGN SHALL MEET THE REQUIREMENTS OF ACI 318, CHAPTER 19. INCLUDE THE WATER -CEMENT RATIO, AIR CONTENT, SLUMP, ADMIXTURES, AND THE PLANT TO BE USED.
16. CONCRETE MIXTURES SHALL CONSIST OF THE APPROPRIATE PROPORTIONS OF PORTLAND CEMENT, WATER, COARSE AND FINE AGGREGATE, AIR ENTRAINING AGENT AND WATER REDUCING AGENT FOR THE INTENDED APPLICATION.
17. PROVIDE CONCRETE TO THE FOLLOWING CRITERIA
   - A. COMPRESSIVE STRENGTH AT 28 DAYS SLABS ON GRADE = 4,000 PSI
   - B. SLUMP 2 -4 INCHES BEFORE ADDITION OF WATER REDUCER, 6 -8 INCHES AFTER THE ADDITION OF WATER REDUCER.
   - C. MAXIMUM WATER TO CEMENT RATIO= 0.5
18. USE ACCELERATING ADMIXTURES IN COLD WEATHER ONLY WHEN APPROVED BY ARCHITECT/ENGINEER. USE OF ADMIXTURES WILL NOT RELAX COLD WEATHER PLACEMENT REQUIREMENTS.
19. USE CALCIUM CHLORIDE SHALL NOT BE PERMITTED.
20. USE SET RETARDING ADMIXTURES DURING HOT WEATHER ONLY WHEN APPROVED BY ARCHITECT/ENGINEER.
21. ADD AIR ENTRAINING AGENT TO NORMAL WEIGHT CONCRETE MIX FOR WORK EXPOSED TO EXTERIOR. DO NOT ADD AIR ENTRAINMENT TO INTERIOR SLABS.
22. PLACE CONCRETE IN ACCORDANCE WITH ACI 301, ACI 318, AND ACI 304.
23. ENSURE REINFORCEMENT, INSERTS, EMBEDDED PARTS, FORMED EXPANSION AND CONTRACTION JOINTS, ARE NOT DISTURBED DURING CONCRETE PLACEMENT.
24. DO NOT INTERRUPT SUCCESSIVE PLACEMENT; DO NOT PERMIT COLD JOINTS TO OCCUR.
25. SCREED SLABS ON GRADE LEVEL, MAINTAINING SURFACE FLATNESS OF MAXIMUM 1/4 INCH IN 10 FT.
26. FLOOR SLABS SHALL BE FINISHED AS FOLLOWS IN ACCORDANCE WITH ACI 301 AS FOLLOWS: EXTERIOR SURFACES = BROOM FINISH PERPENDICULAR TO PEDESTRIAN TRAFFIC. SAWCUT CONTROL JOINTS 4" DEPTH AT INTERVALS OF 20'.
27. IMMEDIATELY AFTER PLACEMENT, PROTECT CONCRETE FROM PREMATURE DRYING, EXCESSIVELY HOT OR COLD TEMPERATURES, AND MECHANICAL INJURY.
28. MAINTAIN CONCRETE WITH MINIMAL MOISTURE LOSS AT RELATIVELY CONSTANT TEMPERATURE FOR PERIOD NECESSARY FOR HYDRATION OF CEMENT AND HARDENING OF CONCRETE.
29. CURE FLOOR SURFACES IN ACCORDANCE WITH ACI 305, ACI 306, AND ACI 308.
30. OWNER AND/OR CONTRACTOR IS NOT ALLOWED TO PLACE DEICING MATERIAL ON NEWLY PORED CONCRETE FOR A PERIOD OF 6 MONTHS.
31. APPLY 2 COATS OF EUCLID EVERCLEAR VOX CURE SEAL COMPOINT TO ALL CONCRETE SURFACES, PER MANUFACTURER'S SPECIFICATIONS. PRODUCT SHALL BE APPLIED AFTER 7 DAY CURING IS COMPLETE.

CONCRETE SLAB DETAIL FOR EQUIPMENT PAD

N.T.S.

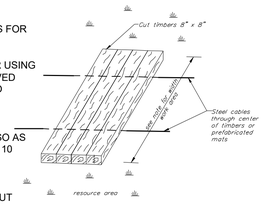


SECTION A-A

not to scale

NOTE:

1. MATS ARE TO BE INSTALLED WHERE NECESSARY IN PROTECTED OR ENVIRONMENTALLY SENSITIVE AREAS FOR ACCESS DURING CONSTRUCTION.
2. MATS SHALL BE SECURED TOGETHER USING CABLES, BOLTS, STRAPS, OR APPROVED EQUAL AND SHALL BE POSITIONED TO MAINTAIN THE NATURAL GROUND CONTOURS/CONDITIONS.
3. TIMBER MATTING SHALL BE PLACED SO AS TO ALLOW FOR A MINIMUM WIDTH OF 10 FEET FOR CONSTRUCTION VEHICLE TRAFFIC.
3. MATS TO BE MAINTAINED THROUGHOUT CONSTRUCTION AND REMOVED UPON COMPLETION OF PROJECT.
4. SNOW/ICE REMOVAL BY MECHANICAL METHODS: NO DEICING SALT OR CHEMICALS TO BE USED. LIGHT APPLICATION OF SAND FOR TRACTION IS ACCEPTABLE SO NO RESIDUE ACCUMULATES IN PROTECTED AREAS.



TIMBER MATTING DETAIL

N.T.S.

STORMWATER BMP MAINTENANCE NOTES

VEGETATED BUFFERS

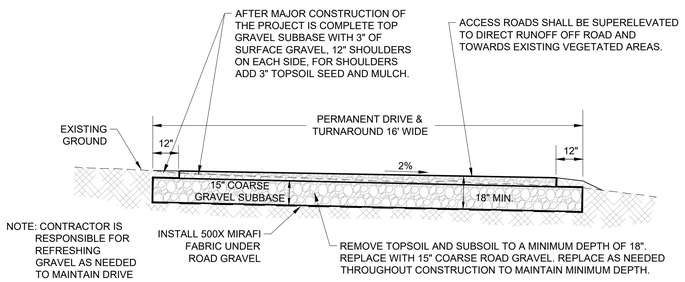
MAINTENANCE: BUFFERS SHOULD BE INSPECTED ANNUALLY FOR EVIDENCE OF EROSION OR CONCENTRATED FLOWS THROUGH OR AROUND THE BUFFER. ALL ERODED AREAS SHOULD BE REPAIRED, SEEDED AND MULCHED.

- MOWING: MEADOW BUFFERS MAY BE MOWN NO MORE THAN TWICE PER YEAR. THEY MAY NOT BE MAINTAINED AS A LAWN.
- ACCESS AND USE: BUFFERS SHOULD NOT BE TRAVERSED BY ALL-TERRAIN VEHICLES OR OTHER VEHICLES. ACTIVITIES WITHIN BUFFERS SHOULD BE CONDUCTED SO AS NOT TO DAMAGE VEGETATION, DISTURB ANY ORGANIC DUFF LAYER, OR EXPOSE SOIL.
- MODEL MAINTENANCE PLAN: THE FOLLOWING TECHNIQUES SHOULD BE FOLLOWED TO MAINTAIN THE INTEGRITY OF BUFFERS FROM INITIAL PLANNING THROUGH POST-CONSTRUCTION:

O PLANNING STAGE:
- ✓ REQUIRE BUFFER LIMITS ON ALL CLEARING/GRADING AND EROSION CONTROL PLANS.
- ✓ RECORD ALL BUFFER BOUNDARIES ON OFFICIAL MAPS AND SITE PLANS.
- ✓ CLEARLY ESTABLISH ACCEPTABLE AND UNACCEPTABLE USES FOR THE BUFFER, AND INCLUDE THESE USES IN DEED RESTRICTIONS AND CONSERVATION EASEMENTS.
- ✓ ESTABLISH CLEAR VEGETATION TARGETS AND MANAGEMENT RULES FOR THE BUFFER.
- ✓ PROVIDE INCENTIVES FOR OWNERS TO PROTECT BUFFERS THROUGH PERPETUAL CONSERVATION EASEMENTS RATHER THAN DEED RESTRICTIONS.

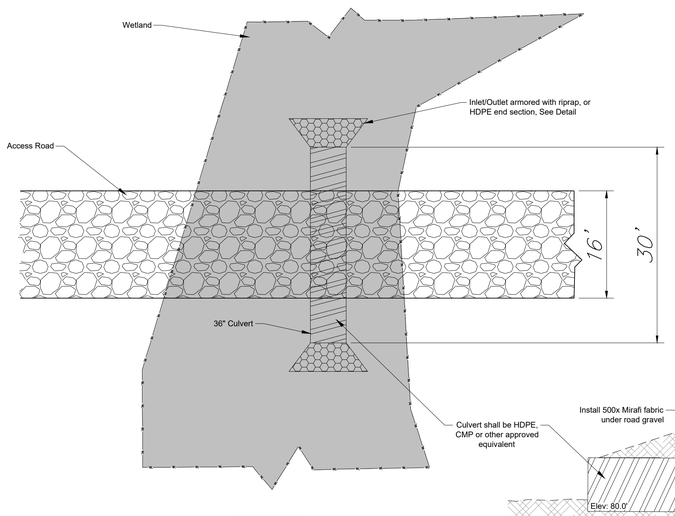
O CONSTRUCTION STAGE:
- ✓ PRE-CONSTRUCTION STAKEOUT OF BUFFERS TO DEFINE THE LIMIT OF DISTURBANCE (LOD).
- ✓ SET LOD BASED ON DRIP-LINE OF THE FORESTED BUFFER.
- ✓ FAMILIARIZE CONTRACTORS WITH LOD AND BUFFER LIMIT.
- ✓ MARK THE LOD WITH BARRIERS OR SIGNS TO EXCLUDE CONSTRUCTION EQUIPMENT.

O POST-DEVELOPMENT STAGE:
- ✓ MARK BUFFER BOUNDARIES WITH PERMANENT SIGNS (OR FENCES) DESCRIBING USE.
- ✓ EDUCATE PROPERTY OWNERS/HOMEOWNER ASSOCIATIONS ON THE PURPOSE, LIMITS AND ALLOWABLE USES OF THE BUFFER.
- ✓ CONDUCT PERIODIC "BUFFER WALKS" TO INSPECT THE CONDITION OF THE BUFFER NETWORK.
- ✓ REPLANT UNUSED MEADOW BUFFERS WITH TREES AND SHRUBS, IF POSSIBLE.

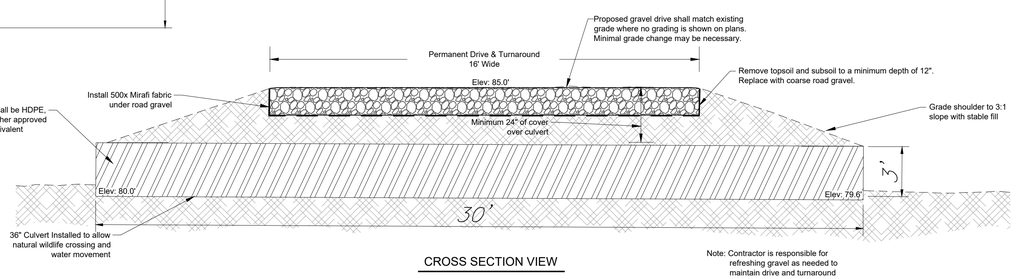


PERMANENT ACCESS DRIVE CROSS SECTION

N.T.S.



PLAN VIEW



CROSS SECTION VIEW

ACCESS DRIVE WETLAND CROSSING DETAILS

N.T.S.

NEWCASTLE SOLAR PROJECT

Route 1
Newcastle, Maine

KREBS & LANSING CONSULTING ENGINEERS
164 Main Street, Suite 201
Colchester, Vermont 05446
P: (802) 878-0375
www.krebsandlansing.com

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION

CIVIL ENGINEER:
Krebs and Lansing Consulting Engineers, Inc.
164 Main Street, Suite 201
Colchester, Vermont 05446

ENVIRONMENTAL:
Flycatcher LLC
Lower Falls Landing
106 Lafayette Street, Suite 1C
Yarmouth, Maine 04096

STAMP:

STATE OF MAINE
IAN A. EMMES
P.E. NO. 17165
LICENSED PROFESSIONAL ENGINEER

JANUARY 24, 2024

REV. NO.	REVISIONS/COMMENTS	DATE

DRAWING TITLE:

DETAILS

DATE ISSUED: 01/24/2024

DRAWN BY: EJM CHECKED BY: IAJ

PROJECT NO.: 23276 SCALE: N/A

DRAWING NO.: C-4.03

REV. NO.:

DWG NAME: Newcastle-Solar_Base.dwg

ATTACHMENT 4
DECOMMISSIONING PLAN

Decommissioning Plan

Newcastle Solar Project

745 Route One, Newcastle, Maine

As the owner of the Project, the Applicant is solely responsible for decommissioning the Project. Commercial-scale solar fields are designed for a minimum expected operational life of 20 years but may operate for 25 to 30 years or more. As the solar field approaches the end of its operational life, it is expected that technological advances will make more efficient and cost-effective solar arrays that will economically drive the replacement of the existing solar arrays. Therefore, decommissioning of the Project shall commence after 12 consecutive months of no power generation at the facility except in the case of a natural disaster, act of violence, or other event which results in the absence of electrical generation for 12 months. The facility will be removed in its entirety by no later than ninety (90) days after the end of the twelve-month period.

As defined by the Act to Ensure Decommissioning of Solar Energy Developments (35-A M.R.S §§ 3491 through 3496, "the Act"), there are no Farmland areas on the Project site.

For decommissioning, the Applicant shall:

- Be responsible for all decommissioning costs;
- Obtain any additional permits required for the decommissioning, removal, and legal disposal of Project components prior to commencement of decommissioning activities;
- Remove and dispose of all above-ground infrastructure, including arrays, inverter structures, concrete foundations and pads, and fences, and grade and revegetate in accordance with permits and in compliance with all applicable rules and regulations then in effect governing the disposal thereof;

- Remove and dispose of rack support posts and buried collector cables or abandon them in place as allowed;
- Remove all hazardous materials and transport them to be disposed of by licensed contractors at an appropriate facility in accordance with rules and regulations governing the disposal of such materials; and
- Removed materials shall be recycled and/or salvaged to the maximum extent practical and all waste streams shall be managed in accordance with the State of Maine's solid waste requirements.

Decommissioning means the physical removal of all Project components to a depth of at least 24 inches or to the depth of bedrock, whichever is less, to the extent such components are not otherwise in or proposed to be placed in productive use or otherwise authorized to remain in place by the Maine Department of Environmental Protection. Decommissioning also includes the grading to postconstruction grade and revegetation of all earth disturbed during construction and decommissioning, except for areas already restored.

The decommissioning and restoration processes consist of the removal of above-ground structures; grading, to the extent necessary; restoration of topsoil (if needed) and seeding. The process of removing structures involves evaluating and categorizing all components and materials into categories of recondition and reuse, salvage, recycling and disposal. The Project consists of numerous materials that can be recycled, including steel, aluminum, glass, copper and plastics. In the interest of increased efficiency and minimal transportation impacts, components and material may be stored on-site until the bulk of similar components or materials are ready for transport. The components and material will be transported to the appropriate facilities for reconditioning, salvage, recycling, or disposal. Above-ground structures include the panels, racks, inverters, pads, and any interconnection facilities located on the property. At the time of decommissioning, a plan will be submitted for continued beneficial use of any components to be left on site, including roads.

Estimated Costs of Decommissioning

The estimated costs for decommissioning the Newcastle Solar Project are provided below in Table 1. These estimates are based on the following assumptions:

- While it is not possible to estimate the future costs of decommissioning with any precision, given the costs and salvage values of components today it is reasonable to assume that the cost of decommissioning the solar arrays will be at least somewhat offset by the salvage value of the solar panels and components.
- The baseline estimated costs for decommissioning activities are based on the New York State

Energy Research and Development (NYSERDA) guidance document entitled "Decommissioning Solar Panels".

- Agricultural fencing will be removed to be sold or recycled.
- Racking system will be cut, stacked, and recycled.
- Racking posts will be removed, stacked and recycled.
- AC and DC wiring that is able to be disconnected and removed will be consolidated for recycling. Buried conductors and PVC conduit that would require substantial soil disturbance for removal is excluded.
- On site power poles and medium voltage wiring will be removed.
- Disturbed areas will be backfilled and compacted, then reseeded.

The estimated cost of decommissioning will be updated 15 years after approval of the Project and no less frequently than every 5 years thereafter.

Table 1: Estimated Decommissioning Costs for Newcastle Solar Project (1.55 MWdc)

Remove Rack Wiring	$1,900
Remove Panels	$1,900
Dismantle Racks	$9,600
Remove Electrical Equipment	$1,450
Breakup / Remove Concrete Pads	$1,200
Remove Racks	$6,050
Remove Cable	$5,000
Remove Ground Screws and Power Poles	$10,750
Remove Fence	$3,900
Grading	$3,100
Seed Disturbed Areas	$200
Truck to Recycle Center	$1,700
TOTAL:	**$46,750**

ATTACHMENT 5
OPTION AGREEMENT (REDACTED)

OPTION TO LEASE

BETWEEN

TIMOTHY HANLEY

AND

MIDCOAST SOLAR LLC

The following information is presented as a summary of the principal terms of a proposed Option to Lease Agreement (the "**Option**") between the parties set forth below. This indicative Letter of Intent is not intended to be, nor shall it be construed as, a binding offer or a binding agreement. The final terms and conditions of the Option and the resulting Lease shall be set forth in definitive documentation to be agreed between the parties.

1.	**Parties**	Timothy Hanley, an Individual ("**Owner**") MidCoast Solar LLC, a Maine limited liability company, or a nominated affiliate ("**Midcoast**")
2.	**Purpose**	The purpose of this Letter of Intent is to set forth the essential terms upon which the parties shall enter into good faith negotiations with the intent to execute the binding Option, which shall provide for the grant by Owner to MidCoast of an option to lease the Premises (as defined below) for the proposed development, construction, operation and ownership by MidCoast of the System (as defined below).
3.	**Premises**	A portion of certain lands situated at an undeveloped site approximately 745 Route 1 and with parcel identification numbers 003-023 an indicative plan of which is set forth in Exhibit A hereto (the "**Premises**").
4.	**Proposed Use of Premises**	MidCoast proposes to develop, construct, own, maintain and operate a ground-mounted solar photovoltaic electrical energy system and all ancillary equipment thereto (the "**System**") on the Premises.
5.	**Rent for Lease**	[redacted] per acre, per annum, with a [redacted] escalator.
6.	**Option Consideration**	[redacted] payable by MidCoast to Owner within ten (10) days of execution of the Option.
7.	**Option Term**	Twelve (12) months from the execution of the Option (the "**Option Term**"). MidCoast may extend the Option Term for a further six (6) months upon (i) delivering written notice to Owner prior to the expiration of the initial Option Term, and (ii) paying an extension fee of [redacted] to Owner.
8.	**Form of Lease**	The Option shall attach the form of lease to be executed between the Parties if MidCoast exercises the option (the "**Lease**"). The terms of the Lease shall:

- Provide for an initial term of twenty five (25) years and grant MidCoast the option to extend the term for two (2) further extended terms of five (5) years each;
- Permit MidCoast to grant a leasehold mortgage or similar encumbrance in respect of its leasehold interest in the Premises to any lender financing the System;
- Contain customary events of defaults and remedies;
- Deem all components comprising the System to be the personal property of MidCoast and not a fixture; and
- Provide for such other covenants, representations and warranties of MidCoast and Owner that are customary of transactions of the type contemplated by the Lease, including, without limitation, with respect to Owner's title to the Premises.

9. Due Diligence

Within thirty (30) days of the execution of the Option, Owner shall deliver to MidCoast for review, without charge, copies of all plans and permits, plans, maps, surveys, descriptions, title reports, title policies, deeds, current tax bills, information regarding utility availability for the Premises (including water, sewer, electric and gas), soil reports, environmental reports and investigations, permits, certifications, licenses, approvals and other documentation respecting the Premises which are in the possession or control of Owner as of the date thereof. All such material shall be returned to Owner by MidCoast upon the expiration or earlier termination of the Option.

10. Access for Development Activities

During the Option Term, Owner shall grant MidCoast and its designated agents access to the Premises at all reasonable times and upon reasonable prior notice by MidCoast to permit MidCoast or its designated agents to conduct any inspections, tests, surveys, engineering, environmental, interconnection and/or market and economic feasibility studies, and due diligence matters related thereto, concerning the Premises. Any activities of MidCoast or its designated agents on the Premises shall be conducted in such a manner so as to not cause any material damage to the Premises and so as to not unreasonably interfere with the current use of the Premises.

11. Owner Restrictions during Option Term

During the Option Term, Owner shall not directly or indirectly (a) solicit, initiate, facilitate or encourage any proposal for the lease, sale, development or encumbrance of the Premises, (b) participate in any discussions or negotiations regarding, or furnish any person any information with respect to, or take any action knowingly to facilitate or encourage any inquiries or the making of any proposal that constitutes any proposal for the lease, sale, development or encumbrance of the Premises, or (c) enter into any contract, agreement, letter of intent or term sheet (whether written or oral) with respect to the sale, lease, development or encumbrance of the Premises.

Additionally, Owner shall not change the use of the Premises or cause any material damage to the Premises during the Option Term.

12. Owner Cooperation

Owner will support and cooperate with MidCoast to facilitate MidCoast's assessment of the feasibility of the Premises for the System, such as the

execution or procurement of affidavits, consents, subordination agreements, non-disturbance agreements, estoppels and other related documents, and any applications for permits, approvals and variances from governmental authorities and the interconnecting utility.

Owner acknowledges that any election by MidCoast to exercise the Option is dependent on MidCoast being satisfied, in its discretion, with the suitability of the Premises for the System, including the Premises meeting the interconnectivity criteria from the utility in respect of the System, MidCoast obtaining permitting approval from the relevant governmental authority and there being no material environmental or other site-suitability issues.

13.	**Assignment and Financing**	Subject to MidCoast's rights to grant a security interest to a lender and provided that there exists no uncured event of default under the Option or, following any exercise by MidCoast of its option, the resulting Lease, MidCoast shall have the right to assign the Option or the Lease, as applicable, with the consent of the Owner, which consent shall not be unreasonably withheld. However, MidCoast may, without the consent of Owner, transfer or assign the Option or the resulting Lease Agreement, as applicable, to: (a) an affiliate of MidCoast; or (b) any person or entity succeeding to all or substantially all of the assets of MidCoast (whether voluntarily or by operation of law). MidCoast shall give notice to Owner within five (5) business days after such assignment.
14.	**Governing Law of Option and Lease**	State where the Premises are located.
15.	**Memorandum of Option and Lease**	At the request of MidCoast, Owner agrees to execute and permit MidCoast to record a memorandum of the Option with the Recorder's Office of the County in which the Premises are located. The Lease shall also permit MidCoast to record a memorandum of the Lease.

The parties shall be responsible for their own costs and expenses related to the negotiation and completion of this Letter of Intent and the transactions contemplated by this Letter of Intent, including any due diligence activities undertaken by either party.

[Signatures on following page.]

The parties hereto have executed this Letter of Intent on the date first set forth above by their authorized representatives as set forth below.

TIMOTHY HANLEY	**MIDCOAST SOLAR LLC**
By: _____ Name: Title: OWNER	By: _____ Name: Nathaniel Curtis Title: Managing Director
By: _____ Name: Title:	

EXHIBIT A
INDICATIVE PLAN OF PREMISES