

# M E M O R A N D U M

P L A N N I N G   D E P A R T M E N T  
T O W N   O F   C U M B E R L A N D ,   M A I N E

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Date: July 12, 2018  
To: Cumberland Planning Board  
From: Carla Nixon, Town Planner  
Subject: Site Plan Review: ReVision Energy Solar Array

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Project Status: This project could be approved at this meeting despite the fact that there is an outstanding MDEP permit. That permit is for a minor revision to the MDEP Solid Waste permit. The Site Plan Ordinance does not require that DEP permits be provided prior to final approval, so I have listed this as a proposed condition of approval.



Date July 12, 2018  
To Town of Cumberland Planning Board  
From Carla Nixon, Town Planner  
Subject **Major Site Plan–Revision Energy Solar Array – Drowne Road**

**1. REQUEST/PROJECT DESCRIPTION:**

The applicant is Revision Energy of 142 Presumpscot Street, Portland Maine. The applicant is proposing to lease land owned by the Town of Cumberland located at Drowne Road and construct a 474.7 KW solar array on the eastern portion of the Town's closed landfill. Right, Title or Interest is shown by an executed Power Purchase Agreement (PPA) on file. The parcel is 108.8 acres and is shown on Tax Assessor Map R03 Lot 51A. This parcel also includes the Town Hall, the Drowne Road School Apartments, the Town Forest, and the closed landfill. The solar array will include 1,376 solar panels, footing blocks, racking, solar panels, conduit, wiring and transformer and an enclosure fence.

The use, classified as Municipal Use, is a permitted use in the Rural Residential 1 (RR1) zoning district.

Jeffrey Read, P.E. of Sevee and Maher Engineering prepared the site plan application and will represent the applicant at the Planning Board meeting. Al Palmer, P.E. of Gorrill Palmer Engineers provided peer review of the project for the Town.

This project is subject to review under the provisions of the Site Plan Ordinance. This project exceeds the limit of construction of a new structure under 3000 sf therefore Planning Board review and approval is required.

**2. PROJECT HISTORY:** None

**3. DESCRIPTION:**

|                                 |  |
|---------------------------------|--|
| <b>Proposed Use:</b>            | Municipal Use  |
| <b>Access:</b>                  | An existing 20' x 50' paved entrance from Drowne Rd.   |
| <b>Employees:</b>               | N/A  |
| <b>Parking:</b>                 | 2-3 vehicles, spaces are unmarked.   |
| <b>Water:</b>                   | N/A  |
| <b>Sewer:</b>                   | N/A  |
| <b>Electrical:</b>              | Will connect to the existing three phase power service of a new overhead drop to connect to the electrical grid. |
| <b>Floodplain:</b>              | Map # 230162 0015B - Designation: Zone C (area of minimal flooding)  |
| <b>Fire Protection:</b>         | Nearest hydrant is 60' from entrance location.   |
| <b>Lighting:</b>                | None   |
| <b>Solid Waste Disposal:</b>    | None   |
| <b>Days/Hours of Operation:</b> | This is an unmanned facility that will operate 24-7 year round   |
| <b>Signs:</b>                   | None proposed.   |

**4. Outside Agency Approvals:**

MDEP Solid Waste Permit Minor Revision: Outstanding

Central Maine Power: Ability to serve letter outstanding.

Maine Historic Preservation Commission: Letter outstanding.



**5. Town Planner's Review**

1. The Town Council minutes of the May 14, 2018 meeting but there was not a referral by the Town Council to the Planning Board, it is a standard site plan application. *"Motion by Councilor Bingham, seconded by Councilor Gruber, to authorize the Town Manager to execute a Solar Power Purchase Agreement as authorized by the Finance Committee in consultation with the Cumberland Climate Action Team. The solar array shall be located near the Town Forest as depicted on the attached photo. VOTE: 6-0 UNANIMOUS"*.
2. Agency letters outstanding.
3. Waivers to be considered by Board.
4. Town Engineer comments to be addressed prior to final approval.

**6. Town Engineer's Review: Al Palmer, P.E. Gorrill Palmer**

**Site Plan Review Application**

- We have no comments regarding the Waiver Requests.
- Under Section 229-10 of their Narrative, the Applicant indicates that "A site review has been requested from the Maine Department of Inland Fisheries & Wildlife (MEIFW). A copy of the request for review is included in Appendix B. **Results of the review will be forwarded prior to final approval.**" Have the results of the review been provided to the Town?
- It is noted in the Narrative that Landscaping will be coordinated with the Town Planner to provide a visual buffer to abutting properties to the greatest extent practicable. We concur with the Applicant that plantings along the perimeter of the landfill will have limited effectiveness to buffer adjacent structures.
- While we do necessarily agree with the limits of the watershed mapping and the other assumptions in the Stormwater Analysis, we concur with the findings that the minor change in surface coverage (from grass/meadow to gravel surface) will not have an adverse impact to the downstream drainage or abutting properties.
- Site Lines & View Profiles – We could not identify the height of the installed panels within the narrative. We would recommend that the height be verified, and the Site Line & View Profiles updated if necessary.
- Is PV module washing anticipated on a routine basis for maintenance? If so, we would recommend that the Planning Board consider limiting the use of cleaning fluids that contain harmful chemicals to prevent leaching into the landfill cover.

**Site Plan Drawing Set**

- Site Plan
  - What horizontal control will be provided to ensure that the proposed fence will be installed outside the Limit of Waste?
  - Will the "temporary crane mat" be used for all material deliveries including the crushed stone, footer block supports, racks and panels?
  - The slope of the "temporary crane mat" access is approximately 12% approaching Drowne Road? Is this the optimum access point given the slope constraints?
  - Based on observations at other facilities, it appears that construction vehicle access is necessary between successive rows of panels to allow construction, which may result in a greater disturbed area than proposed as part of the application. We would recommend that the Applicant clearly depict the limits of disturbance on the Site Plan to ensure that they are not exceeded during



construction. An updated calculation of the disturbed area should be provided based on the final limits.

- What geotechnical investigations have been conducted to verify that the vehicle loading on the temporary crane mat will not result in excessive settlement/disturbance in the clay cap?
- What geotechnical investigations have been conducted to verify that the loading from the footer block supports will not result in excessive settlement/disturbance in the clay cap?
- The plan depicts installation of silt fence within the limit of the landfill which would result in the stakes penetrating 6" into the 18" clay cap. Is this desirable?
- No grounding information is shown for the solar array. We assume that any grounding would be accomplished outside of the limits of the landfill.
- How would dust control be accomplished during construction, and if water is proposed for dust control would water trucks be used? If so, what requirements are necessary to ensure that the clay cap is not impacted by loading from the water trucks?
- If construction traffic will be in close proximity to gas vents, we would recommend that consideration be given to installing a temporary barrier; such as jersey barriers around the gas vents to prevent disturbance.

#### 7. Department Head Reviews

William Longely, Code Enforcement Officer: No comments

Charles Rumsey, Police Chief: No comments

Dan Small, Fire Chief: No comments

**Section 229-4: Waivers and modifications.** *Where the Planning Board or Town Planner finds that there are special circumstances of a particular plan that make a particular submission requirement or standard inapplicable, a waiver may be granted, provided that such waiver will not have the effect of nullifying the intent and purpose of the Comprehensive Plan. The applicant shall submit, in writing, the reason for the requested waiver. In granting waivers or modifications, the Planning Board or Town Planner may require such conditions that will substantially secure the objectives of the standards so waived or modified.*

#### Waiver Requests:

1. A waiver from performing a hydrogeological evaluation for the project. There will be no subsurface wastewater disposal or other anticipated groundwater impacts associated with this project.
2. A waiver from performing a market study. Based on the use and function of the closed landfill, a market study does not apply to this project.
3. A waiver from no increased stormwater runoff from the proposed development. Proposed increases in runoff will be minor and contained within the existing stormwater measures for the closed landfill.



## Chapter 229 – SITE PLAN REVIEW

### SECTION 10: APPROVAL STANDARDS AND CRITERIA

The following criteria shall be used by the Planning Board in reviewing applications for site plan review and shall serve as minimum requirements for approval of the application. The application shall be approved unless the Planning Board determines that the applicant has failed to meet one or more of these standards. In all instances, the burden of proof shall be on the applicant who must produce evidence sufficient to warrant a finding that all applicable criteria have been met.

#### A. Utilization of the Site

Utilization of the Site - The plan for the development, including buildings, lots, and support facilities, must reflect the natural capabilities of the site to support development. Environmentally sensitive areas, including but not limited to, wetlands, steep slopes, floodplains, significant wildlife habitats, fisheries, scenic areas, habitat for rare and endangered plants and animals, unique natural communities and natural areas, and sand and gravel aquifers must be maintained and preserved to the maximum extent. The development must include appropriate measures for protecting these resources, including but not limited to, modification of the proposed design of the site, timing of construction, and limiting the extent of excavation.

**The proposed use is one of the few uses allowed under the current MEDEP permit structure for closed landfills. The solar array will provide years of clean energy through the proposed Power Purchase Agreement (PPA) to help offset electrical expenses at multiple municipal facilities. The site is not situated over a sand and gravel aquifer and will have no impact to rare or endangered species. There will be no cutting of trees.**

**Based on the above findings of fact, the Board finds the standards of this section have been met.**

#### B. Traffic, Circulation and Parking

- (1) **Traffic Access and Parking.** Vehicular access to and from the development must be safe and convenient.
  - (a) Any driveway or proposed street must be designed so as to provide the minimum sight distance according to the Maine Department of Transportation standards, to the maximum extent possible.
  - (b) Points of access and egress must be located to avoid hazardous conflicts with existing turning movements and traffic flows.
  - (c) The grade of any proposed drive or street must be not more than +3% for a minimum of two (2) car lengths, or forty (40) feet, from the intersection.



**(d)** The intersection of any access/egress drive or proposed street must function: (a) at a Level of Service D, or better, following development if the project will generate one thousand (1,000) or more vehicle trips per twenty-four (24) hour period; or (b) at a level which will allow safe access into and out of the project if less than one thousand (1,000) trips are generated.

**(e)** Where a lot has frontage on two (2) or more streets, the primary access to and egress from the lot must be provided from the street where there is less potential for traffic congestion and for traffic and pedestrians hazards. Access from other streets may be allowed if it is safe and does not promote short cutting through the site.

**(f)** Where it is necessary to safeguard against hazards to traffic and pedestrians and/ or to avoid traffic congestion, the applicant shall be responsible for providing turning lanes, traffic directional islands, and traffic controls within public streets.

**(g)** Access ways must be designed and have sufficient capacity to avoid queuing of entering vehicles on any public street.

**(h)** The following criteria must be used to limit the number of driveways serving a proposed project:

(1) No use which generates less than one hundred (100) vehicle trips per day shall have more than one (1) two-way driveway onto a single roadway. Such driveway must be no greater than thirty (30) feet wide.

(2) No use which generates one hundred (100) or more vehicle trips per day shall have more than two (2) points of entry from and two (2) points of egress to a single roadway. The combined width of all access ways must not exceed sixty (60) feet.

## **(2) Access way Location and Spacing**

Access ways must meet the following standards:

**(a)** Private entrance / exits must be located at least fifty (50) feet from the closest un-signalized intersection and one hundred fifty (150) feet from the closest signalized intersection, as measured from the point of tangency for the corner to the point of tangency for the access way. This requirement may be reduced if the shape of the site does not allow conformance with this standard.

**(b)** Private access ways in or out of a development must be separated by a minimum of seventy-five (75) feet where possible.



**(3) Internal Vehicular Circulation.** The layout of the site must provide for the safe movement of passenger, service, and emergency vehicles through the site.

**(a)** Projects that will be served by delivery vehicles must provide a clear route for such vehicles with appropriate geometric design to allow turning and backing.

**(b)** Clear routes of access must be provided and maintained for emergency vehicles to and around buildings and must be posted with appropriate signage (fire lane - no parking).

**(C)** The layout and design of parking areas must provide for safe and convenient circulation of vehicles throughout the lot.

**(d)** All roadways must be designed to harmonize with the topographic and natural features of the site insofar as practical by minimizing filling, grading, excavation, or other similar activities which result in unstable soil conditions and soil erosion, by fitting the development to the natural contour of the land and avoiding substantial areas of excessive grade and tree removal, and by retaining existing vegetation during construction. The road network must provide for vehicular, pedestrian, and cyclist safety, all season emergency access, snow storage, and delivery and collection services.

**(4) Parking Layout and Design.** Off street parking must conform to the following standards:

**(a)** Parking areas with more than two (2) parking spaces must be arranged so that it is not necessary for vehicles to back into the street.

**(b)** All parking spaces, access drives, and impervious surfaces must be located at least fifteen (15) feet from any side or rear lot line, except where standards for buffer yards require a greater distance. No parking spaces or asphalt type surface shall be located within fifteen (15) feet of the front property line. Parking lots on adjoining lots may be connected by accessways not exceeding twenty-four (24) feet in width.

**C.** Parking stalls and aisle layout must conform to the following standards.

| Parking Angle | Stall Width | Skew Width | Stall Depth | Aisle Width  |
|---------------|-------------|------------|-------------|--------------|
| 90°           | 9'-0"       |            | 18'-0"      | 24'-0" 2-way |
| 60°           | 8'-6"       | 10'-6"     | 18'-0"      | 16'-0" 1-way |
| 45°           | 8'-6"       | 12'-9"     | 17'-6"      | 12'-0" 1-way |
| 30°           | 8'-6"       | 17'-0"     | 17'-0"      | 12'-0" 1 way |



(d) In lots utilizing diagonal parking, the direction of proper traffic flow must be indicated by signs, pavement markings or other permanent indications and maintained as necessary.

(e) Parking areas must be designed to permit each motor vehicle to proceed to and from the parking space provided for it without requiring the moving of any other motor vehicles.

(f) Provisions must be made to restrict the "overhang" of parked vehicles when it might restrict traffic flow on adjacent through roads, restrict pedestrian or bicycle movement on adjacent walkways, or damage landscape materials.

#### **(5) Building and Parking Placement**

(a) The site design should avoid creating a building surrounded by a parking lot. Parking should be to the side and preferably in the back. In rural, uncongested areas buildings should be set well back from the road so as to conform to the rural character of the area. If the parking is in front, a generous, landscaped buffer between road and parking lot is to be provided. Unused areas should be kept natural, as field, forest, wetland, etc.

(b) Where two or more buildings are proposed, the buildings should be grouped and linked with sidewalks; tree planting should be used to provide shade and break up the scale of the site. Parking areas should be separated from the building by a minimum of five (5) to ten (10) feet. Plantings should be provided along the building edge, particularly where building facades consist of long or unbroken walls.

#### **(6) Pedestrian Circulation**

The site plan must provide for a system of pedestrian ways within the development appropriate to the type and scale of development. This system must connect the major building entrances/ exits with parking areas and with existing sidewalks, if they exist or are planned in the vicinity of the project. The pedestrian network may be located either in the street right-of-way or outside of the right-of-way in open space or recreation areas. The system must be designed to link the project with residential, recreational, and commercial facilities, schools, bus stops, and existing sidewalks in the neighborhood or, when appropriate, to connect the amenities such as parks or open space on or adjacent to the site.

**There is an existing 20' X 50' paved entrance into the site from Drowne Road. This area will be sufficient for the infrequent parking needs by technicians (estimated to be less than three per year). There are no proposed buildings, only the solar arrays. There is no need for pedestrian ways within the development as there will be no public access to the site. The site will be completely fenced with a**



**locked gate for access by authorized personnel for mowing, maintenance and emergencies.**

**Based on the above findings of fact, the Board finds the standards of this section have been met.**

**(c) Stormwater Management and Erosion Control**

**(1) Stormwater Management.** Adequate provisions must be made for the collection and disposal of all stormwater that runs off proposed streets, parking areas, roofs, and other surfaces, through a stormwater drainage system and maintenance plan, which must not have adverse impacts on abutting or downstream properties.

**(a)** To the extent possible, the plan must retain stormwater on the site using the natural features of the site.

**(b)** Unless the discharge is directly to the ocean or major river segment, stormwater runoff systems must detain or retain water such that the rate of flow from the site after development does not exceed the predevelopment rate.

**(c)** The applicant must demonstrate that on - and off-site downstream channel or system capacity is sufficient to carry the flow without adverse effects, including but not limited to, flooding and erosion of shoreland areas, or that he / she will be responsible for whatever improvements are needed to provide the required increase in capacity and / or mitigation.

**(d)** All natural drainage ways must be preserved at their natural gradients and must not be filled or converted to a closed system unless approved as part of the site plan review.

**(e)** The design of the stormwater drainage system must provide for the disposal of stormwater without damage to streets, adjacent properties, downstream properties, soils, and vegetation.

**(f)** The design of the storm drainage systems must be fully cognizant of upstream runoff which must pass over or through the site to be developed and provide for this movement.

**(g)** The biological and chemical properties of the receiving waters must not be degraded by the stormwater runoff from the development site. The use of oil and grease traps in manholes, the use of on-site vegetated waterways, and vegetated buffer strips along waterways and drainage swales, and the reduction in use of deicing salts and fertilizers may be required, especially where the development stormwater discharges into a gravel aquifer area or other water supply source, or a great pond.



**(2) Erosion Control**

**(a)** All building, site, and roadway designs and layouts must harmonize with existing topography and conserve desirable natural surroundings to the fullest extent possible, such that filling, excavation and earth moving activity must be kept to a minimum. Parking lots on sloped sites must be terraced to avoid undue cut and fill, and / or the need for retaining walls. Natural vegetation must be preserved and protected wherever possible.

**(b)** Soil erosion and sedimentation of watercourses and water bodies must be minimized by an active program meeting the requirements of the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices, dated March 1991, and as amended from time to time.

**No buildings are being constructed and there will be minimal site disturbance required for the placement of the solar panels. No additional stormwater permitting is required from the MEDEP. A stormwater management report was submitted with the application that shows there will be no adverse impacts to downstream properties. Construction will be completed in accordance with the most recent version of the Maine Erosion and Sediment Control Handbook.**

**Based on the above findings of fact, the Board finds the standards of this section have been met.**

**(D) Water, Sewer, and Fire Protection**

**(1) Water Supply Provisions**

The development must be provided with a system of water supply that provides each use with an adequate supply of water. If the project is to be served by a public water supply, the applicant must secure and submit a written statement from the supplier that the proposed water supply system conforms with its design and construction standards, will not result in an undue burden on the source of distribution system, and will be installed in a manner adequate to provide needed domestic and fire protection flows.

**(2) Sewage Disposal Provisions**

The development must be provided with a method of disposing of sewage which is in compliance with the State Plumbing Code. If provisions are proposed for on-site waste disposal, all such systems must conform to the Subsurface Wastewater Disposal Rules.

**(3) Utilities**

The development must be provided with electrical, telephone, and telecommunication service adequate to meet the anticipated use of the project. New utility lines and facilities must be screened from view to



the extent feasible. If the service in the street or on adjoining lots is underground, the new service must be placed underground.

**(4) Fire Protection**

The site design must comply with the Fire Protection Ordinance. The Fire Chief shall issue the applicant a “Certificate of Compliance” once the applicant has met the design requirement of the Town’s Fire Protection Ordinance.

**The proposed development does not include water or sewer service. Fire protection is not required for the solar array.**

**Based on the above findings of fact, the Board finds the standards of this section have been met.**

**E. Water Protection**

**(1) Groundwater Protection**

The proposed site development and use must not adversely impact either the quality or quantity of groundwater available to abutting properties or to the public water supply systems. Applicants whose projects involve on-site water supply or sewage disposal systems with a capacity of two thousand (2,000) gallons per day or greater must demonstrate that the groundwater at the property line will comply, following development, with the standards for safe drinking water as established by the State of Maine.

***There will be no septic systems needed for this project.***

**(2) Water Quality**

All aspects of the project must be designed so that:

**(a)** No person shall locate, store, discharge, or permit the discharge of any treated, untreated, or inadequately treated liquid, gaseous, or solid materials of such nature, quantity, obnoxious, toxicity, or temperature that may run off, seep, percolate, or wash into surface or groundwaters so as to contaminate, pollute, or harm such waters or cause nuisances, such as objectionable shore deposits, floating or submerged debris, oil or scum, color, odor, taste, or unsightliness or be harmful to human, animal, plant, or aquatic life.

**(b)** All storage facilities for fuel, chemicals, chemical or industrial wastes, and biodegradable raw materials, must meet the standards of the Maine Department of Environmental Protection and the State Fire Marshall's Office.



*There will be no storage facilities for fuel, chemicals, chemical or industrial wastes or biodegradable raw materials. Nor will there be any discharge of liquid, gaseous or solid materials.*

**(3) Aquifer Protection**

If the site is located within the Town Aquifer Protection Area, a positive finding by the Board that the proposed plan will not adversely affect the aquifer is required.

*The site is not located within the Town Aquifer Protection Area.*

*Based on the materials included in the application, the Board finds that the standards of this section have been met.*

**F. Floodplain Management**

If any portion of the site is located within a special flood hazard area as identified by the Federal Emergency Management Agency, all use and development of that portion of the site must be consistent with the Town's Floodplain management provisions.

*The site is not located within a floodplain. See Appendix D of the application for a FEMA Flood map of the area.*

*Based on the above finding of fact, the Board finds the standards of this section have been met.*

**G. Historic and Archaeological Resources**

If any portion of the site has been identified as containing historic or archaeological resources, the development must include appropriate measures for protecting these resources, including but not limited to, modification of the proposed design of the site, timing of construction, and limiting the extent of excavation.

*A site review has been requested from the Maine Historic Preservation Commission. A condition of approval is for the letter to be provided prior to the preconstruction conference.*

**With the proposed condition of approval,** the Board finds the standards of this section have been met.

**H. Exterior Lighting**

The proposed development must have adequate exterior lighting to provide for its safe use during nighttime hours, if such use is contemplated. All exterior lighting must be designed and shielded to avoid undue glare, adverse impact on neighboring properties and rights - of way, and the unnecessary lighting of the night sky.



*No exterior lighting is proposed.*

*Based on the above findings of fact, the Board finds the standards of this section have been met.*

## **10.9 Buffering and Landscaping**

### **(1) Buffering of Adjacent Uses**

The development must provide for the buffering of adjacent uses where there is a transition from one type of use to another use and for the screening of mechanical equipment and service and storage areas. The buffer may be provided by distance, landscaping, fencing, changes in grade, and / or a combination of these or other techniques.

### **(2) Landscaping**

Landscaping must be provided as part of site design. The landscape plan for the entire site must use landscape materials to integrate the various elements on site, preserve and enhance the particular identity of the site, and create a pleasing site character. The landscaping should define street edges, break up parking areas, soften the appearance of the development, and protect abutting properties.

*The proposed array will be located on the eastern portion of the closed landfill to minimize impact to adjacent properties. While plantings are not allowed on the landfill cap, the placement of the array in a low area of the site will provide a natural “berm” so that passing pedestrians and vehicles will not see the array. The applicant has agreed to work with the Town Planner to place new plantings to provide screening from the Drowne Road Senior Housing site.*

*Based on the above findings of fact, the Board finds the standards of this section have been met.*

## **J. Noise**

The development must control noise levels such that it will not create a nuisance for neighboring properties.

*While the solar panels do not emit noise, development maintenance activities may produce elevated noise levels periodically.*

*There will be a period of time during the construction phase that may create elevated noise levels compared to normal operation of the development, but will not be permanent noises associated with the development. Anticipated noises that could possibly occur during construction could come from, but are not limited to, equipment noise.*

*It is anticipated that no adverse impact will occur on the surrounding area.*

*Based on the above findings of fact, the Board finds the standards of this section have been met.*



**K. Storage of Materials**

(1) Exposed nonresidential storage areas, exposed machinery, and areas used for the storage or collection of discarded automobiles, auto parts, metals or other articles of salvage or refuse must have sufficient setbacks and screening (such as a stockade fence or a dense evergreen hedge) to provide a visual buffer sufficient to minimize their impact on abutting residential uses and users of public streets.

(2) All dumpsters or similar large collection receptacles for trash or other wastes must be located on level surfaces which are paved or graveled. Where the dumpster or receptacle is located in a yard which abuts a residential or institutional use or a public street, it must be screened by fencing or landscaping.

(3) Where a potential safety hazard to children is likely to arise, physical screening sufficient to deter small children from entering the premises must be provided and maintained in good condition.

*There is no proposed outdoor storage of materials.*

*Based on the above findings of fact, the Board finds the standards of this section have been met.*

**L. Capacity of the Applicant**

The applicant must demonstrate that he / she has the financial and technical capacity to carry out the project in accordance with this ordinance and the approved plan.

**Technical Ability:** *The applicant has retained a licensed land surveyor and a professional engineer to prepare plans and the application.*

**Financial Capacity:** *The project will be funded by a power purchase Agreement with the Town of Cumberland. ReVision Energy has provided nearly 100 nonprofit PPA projects in the past six years and has developed nearly 80 solar PPA projects valued at a capacity*

*Based on the above findings of fact, the Board finds the standards of this section have been met.*

**M. Design and Performance Standards**

- (1) Route 100 Design Standards
- (2) Route 1 Design Standards
- (3) Town Center District Design and Performance Standards
- (4) Village Mixed Use Performance Standards.

*None of the above are applicable to this project.*



## **229-11: EXPIRATION OF APPROVAL:**

Construction of the improvements covered by any site plan approval must be substantially commenced within 12 months of the date upon which the approval was granted. If construction has not been substantially commenced within 12 months of the date upon which construction was granted, the approval shall be null and void. If construction has not been substantially completed within 24 months of the date upon which approval was granted or within a time period as specified by the Planning Board, the approval shall be null and void. The applicant may request an extension of the deadline to commence or complete construction prior to expiration of the period. Such requests must be in writing and must be made to the Planning Board. The Planning Board may grant up to two one-year extensions to the period if the approved plan conforms to the ordinances in effect at the time the extension is granted and any and all federal and state approvals and permits are current.

## **STANDARD CONDITION OF APPROVAL:**

This approval is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted by the applicant. Any variation from the plans, proposals and supporting documents, except de minimus changes as so determined by the Town Planner which do not affect approval standards, is subject to review and approval of the Planning Board prior to implementation.

## **PROPOSED CONDITIONS OF APPROVAL:**

1. All outstanding fees shall be paid prior the issuance of a building permit.
2. A preconstruction conference shall be held prior to the start of construction.
3. The applicant shall submit all outstanding agency letters prior to the preconstruction conference. These include the Maine Dept. of Inland Fisheries and Wildlife, the Maine Historical Association, Central Maine Power and Maine DEP.



July 13, 2018

Carla Nixon, Town Planner  
Cumberland Town Hall  
290 Tuttle Road  
Cumberland, Maine 04021

Subject: 474.7 kW Solar Array  
Town of Cumberland Site Plan Review Application  
Response to Peer Review Comments dated 7/10/18

Dear Ms. Nixon:

On behalf of ReVision Energy, Sevee & Maher Engineers, Inc. (SME) is pleased to provide this letter as a written response to peer review comments prior to the July 17, 2018 Planning Board meeting. The comment responses correspond with the peer review comments received in an email from Gorrill-Palmer Consulting Engineers, dated July 10, 2018, and the Proposed Conditions of Approval outlined in the Town Planner's memo issued to the Cumberland Planning Board, dated July 12, 2018.

#### **GORRILL-PALMER CONSULTING ENGINEERS COMMENTS**

The comments from Gorrill-Palmer Consulting Engineers were received in an email dated July 10, 2018. The plans and application materials were revised in response as indicated below:

1. **We have no comments regarding the Waiver Requests.**

SME's Response: No response necessary.

2. **Under Section 229-10 of their Narrative, the Applicant indicates that "*A site review has been requested from the Maine Department of Inland Fisheries & Wildlife (MEIFW). A copy of the request for review is included in Appendix B. Results of the review will be forwarded prior to final approval.*" Have the results of the review been provided to the Town?**



SME's Response: The results of the Maine Department of Inland Fisheries and Wildlife (MEIFW) were received on July 13, 2018. A copy of the review letter is attached to this letter.

3. **It is noted in the Narrative that Landscaping will be coordinated with the Town Planner to provide a visual buffer to abutting properties to the greatest extent practicable. We concur with the Applicant that plantings along the perimeter of the landfill will have limited effectiveness to buffer adjacent structures.**

SME's Response: No response necessary.

4. **While we do necessarily agree with the limits of the watershed mapping and the other assumptions in the Stormwater Analysis, we concur with the findings that the minor change in surface coverage (from grass/meadow to gravel surface) will not have an adverse impact to the downstream drainage or abutting properties.**

SME's Response: No response necessary.

5. **Site Lines & View Profiles – We could not identify the height of the installed panels within the narrative. We would recommend that the height be verified, and the Site Line & View Profiles updated if necessary.**

SME's Response: The height of the array will be less than 9.5 feet. A typical section detail is included as an attachment to this letter. The site line and view profiles previously submitted are based on this height and scaled appropriately.

6. **Is PV module washing anticipated on a routine basis for maintenance? If so, we would recommend that the Planning Board consider limiting the use of cleaning fluids that contain harmful chemicals to prevent leaching into the landfill cover.**

SME's Response: PVC module washing is not part of the routine maintenance program for the solar array. Impact to the landfill cap from cleaning fluids is not anticipated.

7. **What horizontal control will be provided to ensure that the proposed fence will be installed outside the Limit of Waste?**

SME's Response: SME is contracted to assist ReVision with construction layout for the proposed solar array. Prior to construction, SME will set control



for the site using the Online Positioning User Service (OPUS), and provide survey layout for critical points of the proposed work.

8. **Will the “temporary crane mat” be used for all material deliveries including the crushed stone, footer block supports, racks and panels?**

SME's Response: Yes. Crane mats will be used to distribute load from delivery vehicles and minimize impact to the landfill cap and existing vegetative cover.

9. **The slope of the “temporary crane mat” access is approximately 12% approaching Drowne Road? Is this the optimum access point given the slope constraints?**

SME's Response: The proposed site access was selected as the optimal location based on existing site constraints. A 12 percent grade is not anticipated to be challenging for construction vehicle access.

10. **Based on observations at other facilities, it appears that construction vehicle access is necessary between successive rows of panels to allow construction, which may result in a greater disturbed area than proposed as part of the application. We would recommend that the Applicant clearly depict the limits of disturbance on the Site Plan to ensure that they are not exceeded during construction. An updated calculation of the disturbed area should be provided based on the final limits.**

SME's Response: The anticipated disturbed area outlined in the application is based on construction at previous sites. Construction vehicle access between rows is minimized to limit impact to the existing landfill cap system. If required, timber mats are used to minimize disturbance of the existing vegetated layer.

11. **What geotechnical investigations have been conducted to verify that the vehicle loading on the temporary crane mat will not result in excessive settlement/disturbance in the clay cap?**

SME's Response: An evaluation of settlement potential and settlement maintenance strategy is included in the MEDEP application for a solid waste project minor amendment and will be part of the review. Landfill cap settlement from the construction or operation of the proposed solar array is not anticipated.



- 12. What geotechnical investigations have been conducted to verify that the loading from the footer block supports will not result in excessive settlement/disturbance in the clay cap?**

SME's Response: Please see response to comment 11 above.

- 13. The plan depicts installation of silt fence within the limit of the landfill which would result in the stakes penetrating 6" into the 18" clay cap. Is this desirable?**

SME's Response: Erosion control mix sediment barrier will be used within the limits of waste to minimize disturbance to the existing clay cap.

- 14. No grounding information is shown for the solar array. We assume that any grounding would be accomplished outside of the limits of the landfill.**

SME's Response: This assumption is correct. Electrical grounding will occur outside the limits of waste.

- 15. How would dust control be accomplished during construction, and if water is proposed for dust control would water trucks be used? If so, what requirements are necessary to ensure that the clay cap is not impacted by loading from the water trucks?**

SME's Response: Temporary dust control is outlined in the Erosion Control Notes, Section C, on plan sheet C-300. The scale of soil disturbance is small and the installation of system components is low impact. System installation does not typically produce excessive quantities of dust. If dust control is required, a water truck will access the site using the temporary crane mats and water will be applied using the hose connection on the water tank.

- 16. If construction traffic will be in close proximity to gas vents, we would recommend that consideration be given to installing a temporary barrier; such as jersey barriers around the gas vents to prevent disturbance.**

SME's Response: Project plans outline a minimum 10-foot setback for all system components from existing gas vents. Temporary barriers around gas vents have not been required at other projects and will not be necessary for the proposed installation.



**CONDITIONS OF APPROVAL**

The Conditions of Preliminary Plan Approval were received in an email dated July 12, 2018. The plans and application materials were revised in response as indicated below:

1. **All outstanding fees shall be paid prior the issuance of a building permit.**

SME's Response: This is understood and acceptable.

2. **A preconstruction conference shall be held prior to the start of construction.**

SME's Response: This is understood and acceptable.

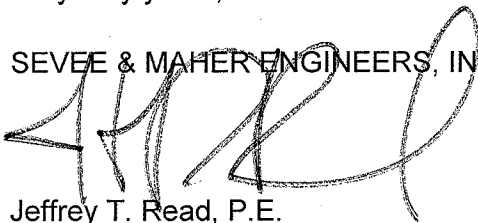
3. **The applicant shall submit all outstanding agency letters prior to the preconstruction conference. These include the Maine Dept. of Inland Fisheries and Wildlife, the Maine Historical Association, Central Maine Power and Maine DEP.**

SME's Response: This is understood and acceptable.

Please do not hesitate to call if the Planning Board requires additional information to review the project at the meeting scheduled for June 20, 2018.

Very truly yours,

SEVEE & MAHER ENGINEERS, INC.



Jeffrey T. Read, P.E.

Attachments





PAUL R. LEPAGE  
GOVERNOR

STATE OF MAINE  
DEPARTMENT OF  
INLAND FISHERIES & WILDLIFE  
284 STATE STREET  
41 STATE HOUSE STATION  
AUGUSTA ME 04333-0041

CHANDLER E. WOODCOCK  
COMMISSIONER

July 13, 2018

Jeffrey T. Read  
Sevee & Maher Engineers, Inc.  
4 Blanchard Road, P.O. Box 85A  
Cumberland, ME 04021

**RE: Information Request – Drowne Road Solar Array, Cumberland**

Dear Jeff:

Per your request received June 23, 2018, we have reviewed current Maine Department of Inland Fisheries and Wildlife (MDIFW) information for known locations of Endangered, Threatened, and Special Concern species; designated Essential and Significant Wildlife Habitats; and inland fisheries habitat concerns within the vicinity of the *Drowne Road Solar Array Project* in Cumberland.

Our information indicates no locations of Endangered, Threatened, or Special Concern species within the project area that would be affected by your project. Additionally, our Department has not mapped any Essential or Significant Wildlife Habitats or inland fisheries habitats that would be directly affected by your project.

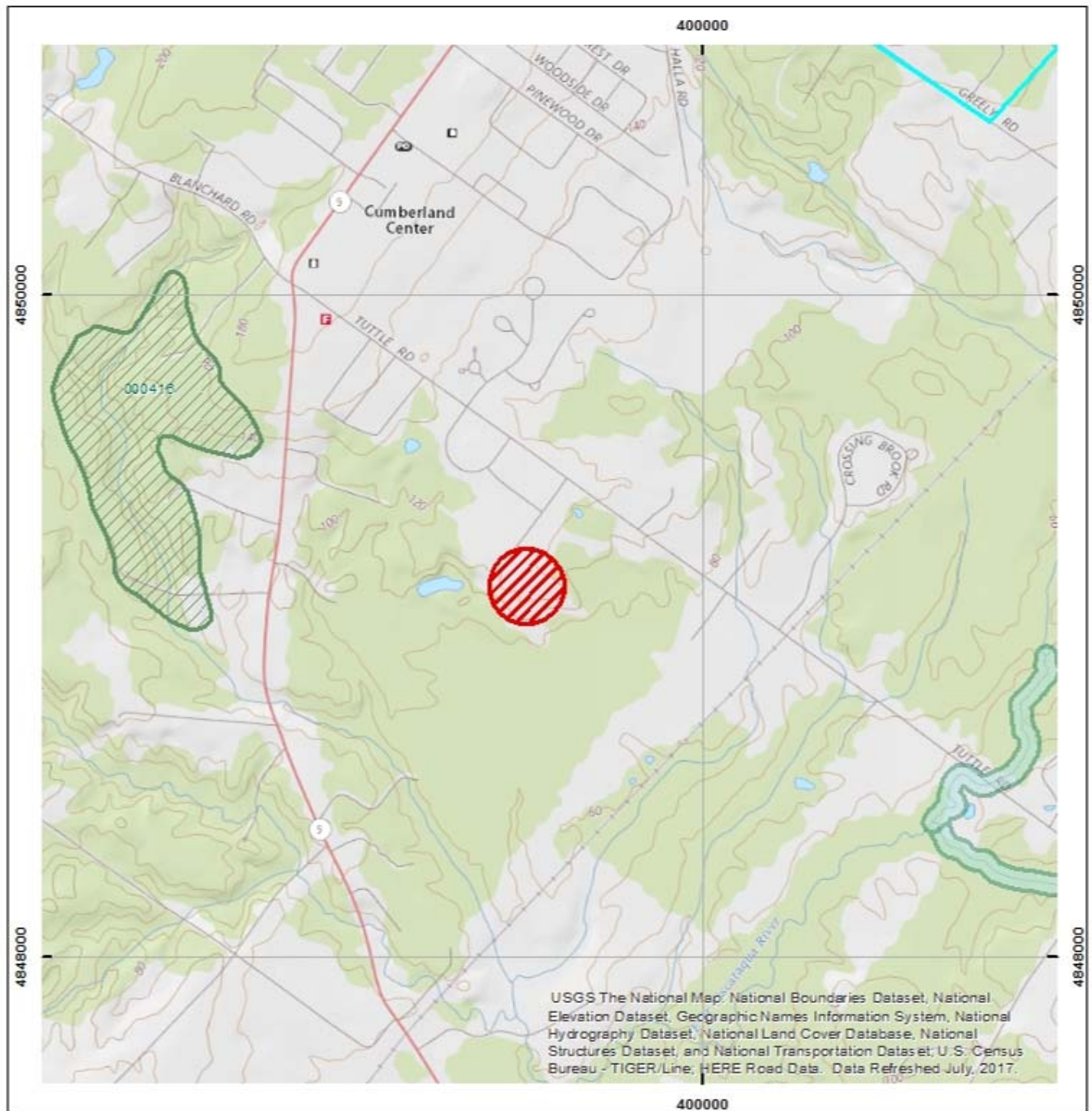
This consultation review has been conducted specifically for known MDIFW jurisdictional features and should not be interpreted as a comprehensive review for the presence of other regulated features that may occur in this area. Prior to the start of any future site disturbance we recommend additional consultation with the municipality, and other state resource agencies including the Maine Natural Areas Program and Maine Department of Environmental Protection in order to avoid unintended protected resource disturbance.

Please feel free to contact my office if you have any questions regarding this information, or if I can be of any further assistance.

Best regards,

John Perry  
Environmental Review Coordinator





## Environmental Review of Fish and Wildlife Observations and Priority Habitats

Project Name:

ER Tool Test

(Version 1)



Maine Department of  
Inland Fisheries and Wildlife



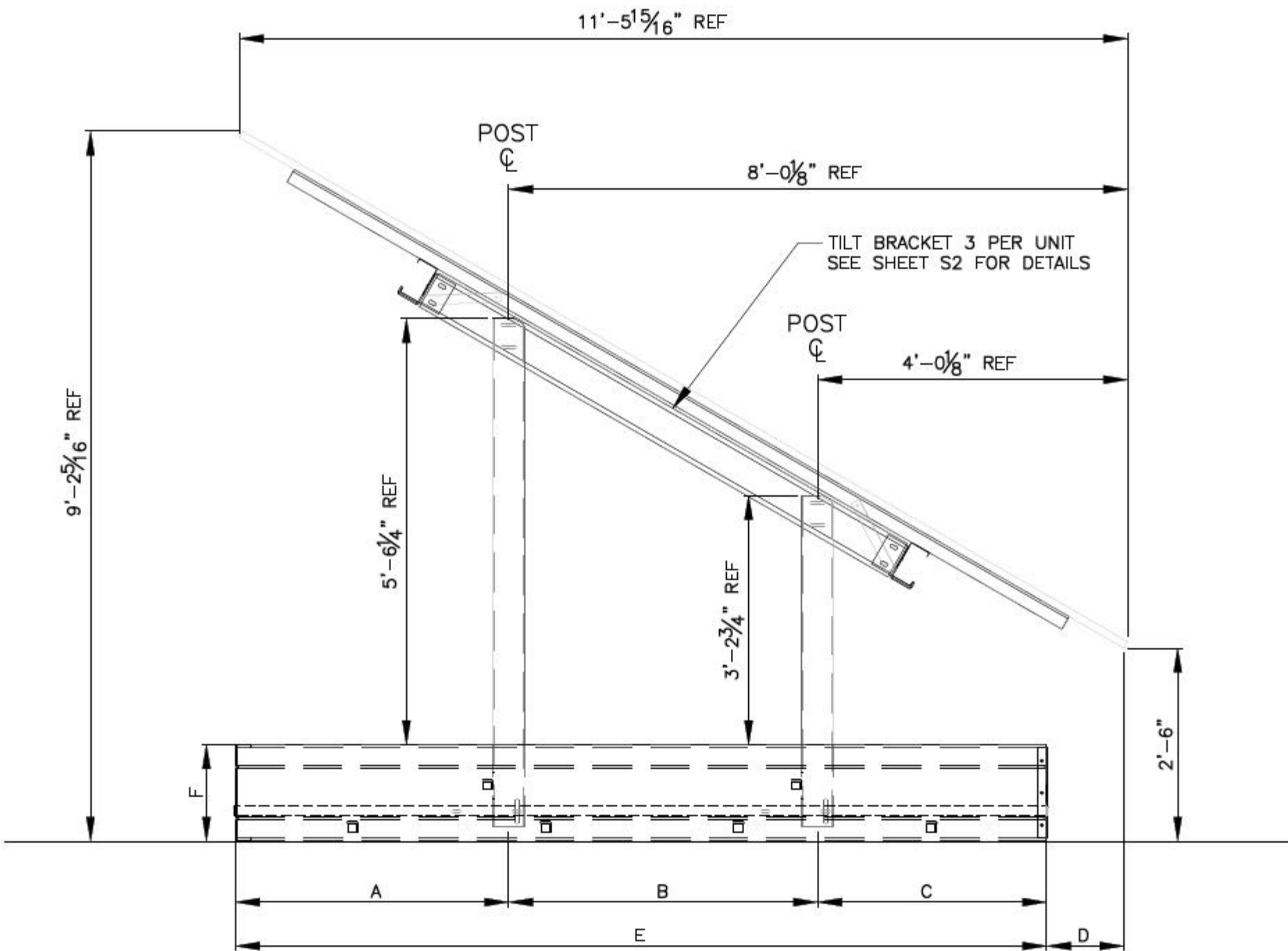
Projection: UTM, NAD83, Zone 19N

Date: 2018-07-13

- Deer Winter Area
- Special Concern-occupied habitats(100ft buffer)



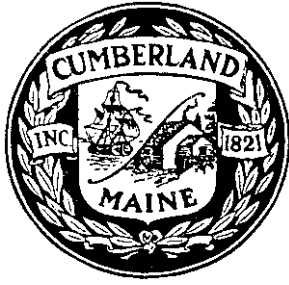




DETAIL 4-S1

SCALE:  $1/2" = 1'-0"$





# MEMORANDUM CODE ENFORCEMENT OFFICE

---

To: Planning Board  
From: William C. Longley Jr. CEO  
Subject: Solar Arrays to be installed at old landfill off Drown Road (Site Plan)  
Date: 6-27-18  
CC: Carla Nixon, Town Planner  
William Shane, Town Manager

Please accept this as my comments for the proposed use and plan for alteration which includes installation of solar arrays for power generation to benefit the Town of Cumberland.

I'll address the use of the property. This property appears to fall within the RR1 Rural Residential District - 1 Zone per the Official Zoning Map Cumberland Maine adopted and amended 5-28-17.

Per Town of Cumberland Zoning Ordinance Chapter 315 and sub-section 315-06 of the same the Rural Residential District 1 zone lists as an allowed uses per 315-06 (z) Municipal uses and buildings, subject to Site Plan review. Therefore this proposed "Municipal use" to benefit the Town of Cumberland is a use that also seeks Site Plan approval and is an allowed use.



**From:** [Carla Nixon](#)  
**To:** [Planning Board](#)  
**Cc:** [Jeffrey Read](#)  
**Subject:** FW: Buffering Standard  
**Date:** Tuesday, July 17, 2018 1:25:07 PM  
**Attachments:** [image001.png](#)

---

Good Afternoon,

Steve Moriarty asked that I check in with the Town Attorney to find out how the buffering requirement of the site plan ordinance should be applied to the solar array project. Below is her answer.

See you all tonight at 7:00. Given that Gerry has resigned and a new member has not yet been appointed by the Town Council, there are only six members of the Board. Please let me know if you will NOT be attending this evening.

Thank you.

Carla

Carla Nixon, AICP  
Director of Planning  
Town of Cumberland  
290 Tuttle Road  
Cumberland, ME 04021  
(207) 829-2206  
[cnixon@cumberlandmaine.com](mailto:cnixon@cumberlandmaine.com)

---

**From:** Natalie L. Burns [mailto:[nburns@JBGH.com](mailto:nburns@JBGH.com)]  
**Sent:** Tuesday, July 17, 2018 12:32 PM  
**To:** Carla Nixon <[cnixon@cumberlandmaine.com](mailto:cnixon@cumberlandmaine.com)>  
**Subject:** Buffering Standard

Carla,

You asked me to review the site plan buffering standard, found in Section 229.10.I(1) of the Site Plan Review Ordinance. At issue is the question of whether a buffer must completely (or even partially) block a development from the sight of all neighboring properties. After reviewing the Ordinance as a whole, it is my opinion that the standard does not require that a buffer block development from the sight of all neighbors. The reasons for this are as follows:

1. The types of acceptable buffers set forth in Sec. 229.10.I(1) include distance, landscaping, fencing, changes in grade, and/or a combination of these or other techniques. Not everything on this list would block a use from site. For example distance is an acceptable buffer type, with or without other types of buffering. Fencing would not block most structures from view of neighboring properties. Landscaping, which is one of the allowed types of buffer, is further described in subsection (2) as being used to "soften the appearance of the development, and protect abutting properties." This section does not state that landscaping must block views of a development.
2. Sec. 229-10.K (1) establishes the requirements for screening of certain types of storage, including a stockade fence or a dense evergreen hedge. These requirements are not part of Subsection I(1).



3. Buffers serve functions beyond blocking something from sight, including noise attenuation and aesthetics. As noted in the list of allowed buffers, these purposes may be served by various means, some of which do not block the view at all, such as distance.

4. Even where dense buffers are required, they often do not block development from sight, even after the landscaping has been in place for many years. See, for example, Sec. 229-10.B.5, which requires “a generous, landscaped buffer between the road and the parking lot.” A driveway to the parking lot will afford views of the parking lot and possibly of other parts of a development.

5. A requirement of a completely sight-blocking buffer would in some cases mean that a site cannot be developed because of its topography or other similar factors that mean that any buffer will not completely block the use from sight from another property.

Please let me know if you have any questions.

Thanks,

Natalie

Natalie L. Burns, Esq.

***Jensen Baird Gardner & Henry***

Ten Free Street

P.O. Box 4510

Portland, Maine 04112-4510

207-775-7271 or 800-756-1166

Fax: 207-775-7935

[nburns@jbgh.com](mailto:nburns@jbgh.com)

[www.jbgh.com](http://www.jbgh.com)



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June 26, 2018

Cumberland Town Hall  
290 Tuttle Road  
Cumberland, Maine 04021

Subject: 474.7 kW Solar Array  
Drowne Road, Cumberland, Maine  
Site Plan Review


Dear Ms. Nixon:

On behalf of ReVision Energy, Sevee & Maher Engineers, Inc. (SME) is pleased to submit the attached Site Plan Review Application for the 474.7 kilowatt (kW) solar array on the closed Drowne Road landfill in Cumberland. We have enclosed four (4) copies of this narrative and the associated plans and figures.

We look forward to reviewing the project with the Planning Board on July 17, 2018 and appreciate your consideration of our application. Please feel free to contact me at 207.829.5016 or [jtr@smemaine.com](mailto:jtr@smemaine.com) if you have any questions or need additional information.

Very truly yours,

SEVEE & MAHER ENGINEERS, INC.



Jeffrey T. Read, P.E.  
Project Engineer

Attachments



SITE PLAN REVIEW

229 Attachment 3

Town of Cumberland

Appendix C  
Planning Board Site Plan Review Application

Applicant's name ReVision Energy, c/o Josh Baston

Applicant's address 142 Presumpscot Street, Portland, ME 04103

Cell phone \_\_\_\_\_ Home phone \_\_\_\_\_ Office phone 207-221-6342

Project address Drowne Road

Project name 474.7 kW Solar Array

Describe project Installation of a 474.7 kW Solar Array on the closed Drowne Road landfill in Cumberland, ME

Number of employees N/A

Days and hours of operation N/A

Project review and notice fee N/A

Name of representative Jeffrey Read, Sevee & Maher Engineers Inc

Contact information: Cell: \_\_\_\_\_ Office: 207-829-5016

What is the applicant's interest in the property? Power Purchase Agreement (PPA)

Own n/a Lease n/a Purchase and sale agreement n/a (provide copy of document)

**Boundary Survey**

Submitted? Yes \_\_\_\_\_ No X

Are there any deed restrictions or easements? Yes \_\_\_\_\_ No X If yes, provide information and show easement location on site plan.

**Building Information**

Are there existing buildings on the site? Yes \_\_\_\_\_ No X Number: \_\_\_\_\_

Will they be removed? Yes n/a No n/a (Note: A demolition permit is required 10 days prior to demolition.)

Will a new structure(s) be built on the site? Yes X No \_\_\_\_\_

Describe: 474 kW Solar Array, including footing blocks, racking, solar panels, conduit, wiring and transformer

Number of new buildings 0

Square footage 0

Number of floor levels including basement 0



## CUMBERLAND CODE

### Parking

Number of existing parking spaces n/a

Number of new parking spaces n/a

Number of handicapped spaces n/a

### Entrance

Location: Existing site entrance off Drowne Road.

Width 20' Length 50'

Is it paved? x Yes        No        If not, do you plan to pave it?

Where will snow storage for entrance and parking be located? Show on site plan.

### Utilities

**Water:** Public water n/a Well n/a (Show location on site plan.)

**Sewer/septic:** Public sewer n/a Private septic n/a Show location on site plan and submit HHE-200 septic design or location of passing test pit locations if new system is proposed. Also show any wells on abutting properties within 200 feet of the site.

**Electric:** On site? Yes        No x

Show location of existing and proposed utilities on the site plan and indicate if they are above or below ground.

### Signs

Number: n/a

Size: n/a

Material: n/a

Submit sign design and completed sign application.

Will the sign be lighted? n/a Submit information on type and wattage of lights.

Show location of sign(s) on the site plan.

### Natural Features

N/A- Closed Landfill

Show location of any of the following on the site plan:

River n/a Stream n/a Wetland n/a Pond n/a Lake n/a Stone walls n/a

Are there any other historic or natural features? n/a

### Lighting

Will there be any exterior lights? Yes        No x Show location on site plan (e.g., pole fixtures, wall packs on building) and provide fixture and lumen information.

### Trees

Show location of existing trees on the site plan and indicate if any are to be removed.

### Landscaping

Is there existing landscaping on the site? Yes        No x Show type and location on site plan.

Is new landscaping proposed? (Note: if property has frontage on Route 100, a twenty-five-foot landscape easement to the Town is required.)



## SITE PLAN REVIEW

### Buffering

Show any existing or proposed buffering measures for adjacent properties, e.g., plantings, fences.

### Erosion Control

Has an erosion and sedimentation control plan been submitted? Yes ☒ No ☐

### Stormwater Management Plan

Provide stormwater information for both pre and post development of the site. Show location of any detention areas and/or culverts on the site plan.

### Fire Protection

Location of nearest hydrant 60' Sprinklers? Yes ☐ No ☒

Do you plan to have an alarm system? Yes ☐ No ☒ Please contact the Fire/EMS Department at 829-4573 to discuss any Town or state requirements.

### Trash

Will trash be stored inside n/a outside n/a. If outside, will a dumpster be used? Yes ☐ No ☒ Show location on site plan and show type of screening proposed (e.g., fencing, plantings).

### Technical Capacity

List and provide contact information for all consultants who worked on the project, for example: licensed land surveyor, licensed soils evaluator, professional engineer, attorney, etc.

Revision Energy, Sevee & Maher Engineers, Inc

### Financial Capacity

Please indicate how project will be financed. If obtaining a bank loan, provide a letter from the bank Power Purchase Agreement (PPA)

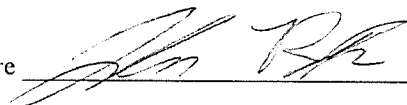


CUMBERLAND CODE

|                          |   |                                |
|--------------------------|---|--------------------------------|
| <input type="checkbox"/> | Zoning district:  | RR1                            |
| <input type="checkbox"/> | Minimum lot size:   | 4 ac                           |
| <input type="checkbox"/> | Classification of proposed use:   | Municipal MDL 96               |
| <input type="checkbox"/> | Parcel size:  | 108.88 Acres                   |
| <input type="checkbox"/> | Frontage:   | >400 ft                        |
| <input type="checkbox"/> | Setbacks: Front   | 50 ft                          |
| <input type="checkbox"/> | Side  | 30 ft. Combined at least 75 ft |
| <input type="checkbox"/> | Rear  | 75 ft                          |
| <input type="checkbox"/> | Board of Appeals Required?  | No                             |
| <input type="checkbox"/> | Tax Map   | R03                            |
| <input type="checkbox"/> | Lot   | 51A                            |
| <input type="checkbox"/> | Deed book   | 589                            |
| <input type="checkbox"/> | Deed page   | 207                            |
| <input type="checkbox"/> | Floodplain map number   | 230162 0015 B                  |
| <input type="checkbox"/> | Designation   | Other areas                    |
| <input type="checkbox"/> | Vernal pool identified?   | No                             |
| <input type="checkbox"/> | Is parcel in a subdivision?   | No                             |
| <input type="checkbox"/> | Outside agency permits required:  |                                |
|                          | MDEP Tier 1   | N/A                            |
|                          | MDEP Tier 2   | N/A                            |
|                          | Army Corps of Engineers   | N/A                            |
|                          | MDEP general construction (stormwater) permit (for disturbance of 1 acre or more) |                                |
| <input type="checkbox"/> | MDOT entrance permit  | N/A                            |
| <input type="checkbox"/> | MDOT traffic movement permit  | N/A                            |
| <input type="checkbox"/> | Traffic study required  | N/A                            |
| <input type="checkbox"/> | Hydrogeologic evaluation  | N/A                            |
| <input type="checkbox"/> | Market study  | N/A                            |
| <input type="checkbox"/> | Route 1 Design Guidelines?  | N/A                            |
| <input type="checkbox"/> | Route 100, VMU or TCD Design Standards?   | N/A                            |

MEDEP Solid Waste Permit Minor Revision

Applicant's signature



Submission date:

June 26, 2018

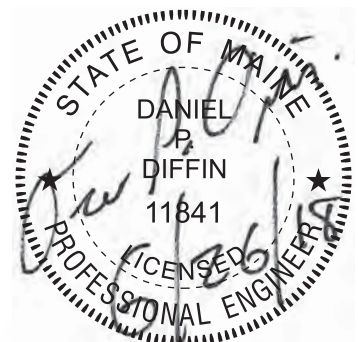


**TOWN OF CUMBERLAND  
PLANNING BOARD  
SITE PLAN REVIEW APPLICATION**

**Prepared for**

**REVISION ENERGY  
474.7 kW SOLAR ARRAY  
CUMBERLAND, MAINE**

**June 2018**



ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE



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**TOWN OF CUMBERLAND  
PLANNING BOARD SITE PLAN REVIEW APPLICATION  
REVISION ENERGY  
474.7 kW SOLAR ARRAY  
CUMBERLAND, MAINE**

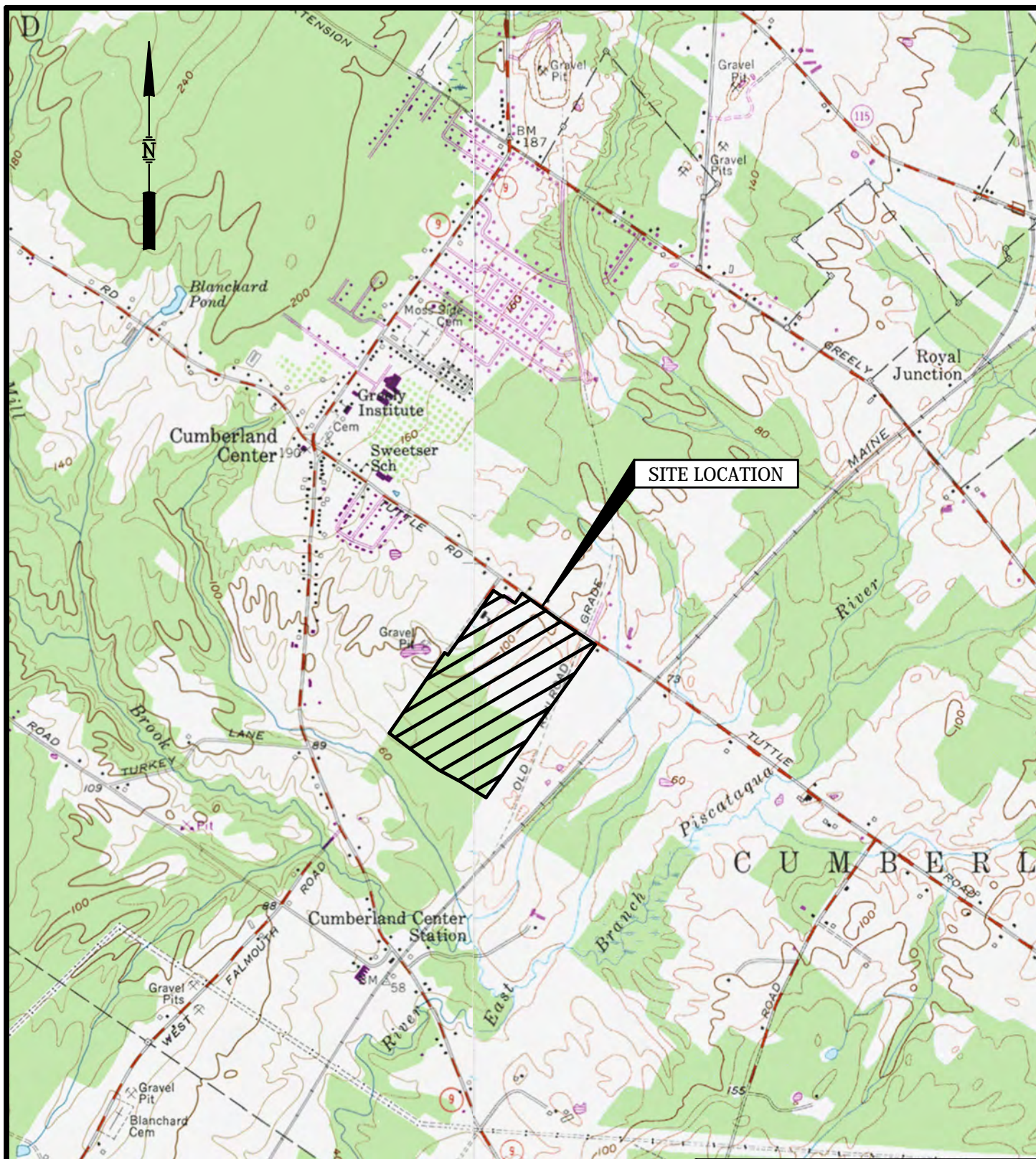
**A. PROJECT DESCRIPTION**

ReVision Energy plans to install 474.7 kilowatt (kW) solar array on the closed landfill located off Drowne Road in Cumberland. The project location is outlined in Figure 1 (Site Location Map). The property is a 108.88-acre parcel owned by the Town of Cumberland. Town Hall, the Drowne Road Apartments, the Town Forest, and the closed landfill are all located on the property. The parcel is bordered by Tuttle Road to the north and Drowne Road abuts the landfill to the west. Large, undeveloped areas exist to the south and east. Existing residential development is located beyond Tuttle Road and Drowne Road to the north and west, respectively. The property is located in the Rural Residential 1 zone and designated as municipal use.

The proposed project area is located on the eastern portion of the closed landfill. This location will minimize visual impact to abutting properties by locating the array as far as possible from the existing residential development, and orienting the panels perpendicular to the line of sight from the roadway. The Drowne Road Apartments abut the landfill to the north. The existing Public Works Facility and the Village Green development adjacent to Drowne Road to the west. The Town Forest and a large wetland area exist to the south and east. An aerial view of the landfill and surrounding areas is shown on Figure 2 (Aerial Map).

The proposed solar array will include approximately 1,376 solar panels supported by a metal racking system founded on cast-in-place concrete footer blocks placed on top of the existing clay cap. A thin layer of crushed stone will be used for vegetation control under each panel row. The system will connect to the electrical grid at Drowne Road, near the northwest corner of the landfill. The project will require extension of the existing three phase power service to a new overhead drop to connect to the electrical grid.





BASE MAP ADAPTED FROM 7.5 MIN USGS TOPO QUADS  
YARMOUTH, ME - 1975  
CUMBERLAND CENTER, ME - 1975



DWG: SITELOC LMN: LMN CTB: SME-STD REV: 6/26/2018

FIGURE 1  
SITE LOCATION MAP  
474.7 kW SOLAR ARRAY  
REVISION ENERGY  
CUMBERLAND, MAINE

**SME**  
SEVEE & MAHER  
ENGINEERS



\\userver\CFS\Revision Energy\Cumberland Solar Array\Landfill Acad\Plans\BASE.dwg, 6/26/2018 10:24:53 AM, .pdf



60 0 120 FEET

FIGURE 2  
AERIAL MAP  
474.7 kW SOLAR ARRAY  
REVISION ENERGY  
CUMBERLAND, MAINE





The existing landfill was capped with 18 inches of compacted clay overlain by 6 inches of vegetated topsoil. The clay cap is impermeable by design. Proposed development will replace approximately 25,000 square feet (sf) of turf with crushed stone and approximately 7,570 sf of concrete foundation blocks on the existing landfill cap. Any areas impacted by construction will be seeded, mulched, and restored to original condition.

In addition to the Site Plan application required by the Town, this project will require a Minor ReVision to the landfill operations license with the Maine Department of Environmental Protection (MEDEP). The project will disturb less than one acre of land on a previously developed site and will not require additional stormwater permitting from MEDEP.

Other than the electrical wiring and components required to connect the power generating system to the electrical grid, there are no additional utilities planned for the site. There will be no impact to the existing water and sewer services located in Drowne Road. There will be no additional burden on any other Town services associated with the project.

The following describes how the project complies with the applicable Chapters of the Town of Cumberland Zoning and Site Plan Review Ordinances.

## **CHAPTER 229 – SITE PLAN REVIEW**

### **§229-10 Waivers and modifications**

As part of this application, the Town requests the following waivers from the Site Plan Review ordinance:

1. A waiver from performing a hydrogeological evaluation for the project. There will be no subsurface wastewater disposal or other anticipated groundwater impacts associated with this project.
2. A waiver from performing a market study. Based on the use and function of the closed landfill, a market study does not apply to this project.



3. A waiver from no increased stormwater runoff from the proposed development. Proposed increases in runoff will be minor and contained within the existing stormwater measures for the closed landfill.

## **§229-10 Approval Standards and Criteria**

### **A. Utilization of the Site**

The proposed solar array provides a unique opportunity to provide a productive use for a municipal property with limited options for development. As a closed landfill, the site is regulated by a closure order from MEDEP that restricts future development of the property. The installation of solar panels is one of the few uses allowed under the current MEDEP permit structure. The proposed solar array will provide years of clean energy through the proposed Power Purchase Agreement (PPA) to help offset electrical expenses at multiple municipal facilities. A copy of the memorandum of license outlining the agreement and use of the property is included in Appendix A.

The site is not situated over a sand and gravel aquifer and will have no impact to rare or endangered species. The proposed array was sited to minimize impact to adjacent properties and natural resources. A site review has been requested from the Maine Department of Inland Fisheries and Wildlife (ME IFW). A copy of the request for review is included in Appendix B. Results of the review will be forwarded prior to final approval. The development is within the closed landfill boundary and will not include any cutting of trees.

Landscaping will be coordinated with the Town Planner to provide a visual buffer to abutting properties to the greatest extent practicable. Sight lines and existing topography may limit the effectiveness of any plantings located outside the limits of the existing landfill. Post closure use of the property prohibits disturbance of the final cover. Plantings are not allowed on the landfill cap.



## B. Traffic, Circulation and Parking

The proposed solar array will have no impact to existing traffic, circulation, and parking. Following the construction of the array, site visits will be limited to emergency service and system maintenance, which are anticipated to be less than three per year.

Solar panels, associated racking, and equipment will be located on the east side of the closed Drowne Road Landfill. Connecting wires and conduit from the array to the point of connection at Drowne Road will be covered with loam, seed and mulch. The site will be enclosed by 7-foot tall security fencing.

Access to the site will be from the existing 20-foot by 50-foot paved apron near the southwest corner of the closed landfill. Perimeter fencing will include a 17-foot wide double leaf gate to allow access for system maintenance and landfill mowing operations.

No additional parking or internal traffic circulation is proposed. Public use is not planned for the closed landfill and public access is not anticipated.

## C. Stormwater Management and Erosion Control

The project will disturb less than one acre of land on a closed landfill and will not require additional stormwater permitting from MEDEP. Proposed development will replace approximately 25,000 sf of turf with crushed stone and concrete footing blocks on the existing landfill cap.

Sevee & Maher Engineers, Inc. (SME) conducted an investigation to determine the impact of proposed site improvements on the existing site drainage. There will be no adverse impacts to downstream properties. Results are outlined in the Stormwater Management Report included in Appendix C.



The construction will be completed in accordance with the most recent version of the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices and as detailed on Drawing C-103 and C-300 included in the drawing set.

D. Water, Sewer and Fire Protection

The proposed development does not include water or sewer service. Fire protection is not required for the proposed solar array.

E. Water Protection

There will be no groundwater impact as a result of this project. There will be no hazardous materials stored on the property during construction, or discharged from the site as part of system operation. The property is not located within a designated source protection area or a mapped sand and gravel aquifer. The landfill cover will not be impacted with the solar array development.

F. Floodplain Management

This project is not located in a mapped floodplain area. A Flood Insurance Rate Map for the project area is included in Appendix D.

G. Historic and Archaeological resources

A site review has been requested from the Maine Historic Preservation Commission (MHPC). A copy of the request for review is included in Appendix B. Results of the review have not been received, but will be forwarded prior to final approval. SME anticipates a favorable finding based on the fact that the proposed development is located on a closed landfill.

H. Exterior Lighting

Exterior site lighting is not proposed as part of the proposed site development.



#### I. Buffering and Landscaping

The proposed array will be located on the eastern portion of the closed landfill to minimize impact to adjacent properties. Site photos of the proposed project area are included in Appendix E. Post closure use of the property prohibits disturbance of the final cover. Plantings are not allowed on the landfill cap. Sight lines and existing topography may limit the effectiveness of any plantings located outside the limits of the existing landfill. Landscaping will be assessed and coordinated with the Town Planner to the greatest extent practicable. Sight lines and view profiles for some of the local residential areas are provided in Figures contained in Appendix F.

#### J. Noise

The proposed solar array will not generate noise. There will be no change in noise level at the property line from the proposed development.

#### K. Storage of Materials

This project does not include materials to be stored on site. Any waste generated during construction will be removed from the property by the contractor prior to completion. There will be no hazardous materials stored on site. A dumpster is not proposed.

#### L. Capacity of the Applicant

1. Financial Capacity – The project will be funded by a Power Purchase Agreement (PPA) with the Town of Cumberland. ReVision Energy is the leading provider of solar PPAs in northern New England, with nearly 100 nonprofit PPA projects built and financed over the past six years. ReVision Energy has developed nearly 80 solar PPA projects, totaling 5 megawatts of installed capacity valued at \$15 million. A letter from Bangor Savings Bank outlining ReVision Energy's capacity to complete the work is included in Appendix G.



2. ReVision Energy will complete the technical design of the solar array and power conversion systems. ReVision has retained SME to assist with the civil design and project permitting. Construction and maintenance of the project will be performed by ReVision Energy.

M. Design and Performance Standards

The design and performance standards listed in this portion of the Land Use Ordinance do not apply to this project. The project is not located on Route 100, Route 1, the Town Center District, or the Village Mixed-Use District.



## APPENDIX A

TITLE, RIGHT OR INTEREST



---

DOCUMENT PREPARED BY AND AFTER RECORDING, PLEASE RETURN TO:  
ReVision Impact Fund I LLC  
c/o ReVision Energy Inc., Legal Department  
55 Bell Street  
Portland, ME 04103

**NOTICE OF GRANT OF INTEREST IN REALTY**

Notice is hereby given that pursuant to a Solar Power Purchase Agreement between the parties listed below, dated as of 6/4/2018 (the "**Solar Agreement**"), such Solar Agreement includes the grant of License to Seller, pursuant to the terms of the Solar Agreement (the "**License**"). This notice may be executed in counterparts by the Parties to the Solar Agreement.

Parties to the Solar Agreement:

Seller: ReVision Impact Fund I LLC  
c/o ReVision Energy Inc.  
55 Bell St.  
Portland, ME 04103

Purchaser: Town of Cumberland  
290 Tuttle Road  
Cumberland, ME 04021

Date of Execution of Solar Agreement: June 4, 2018

Description of Premises: See **Attachment A**

**TERM OF AGREEMENT:**

The term of the License shall be for a period commencing on the Effective Date of the Solar Agreement and expiring on the date that is one hundred and twenty (120) days following the date of expiration or termination of the Term (as that phrase is defined in the Solar Agreement) of the Solar Agreement. The Term of the Solar Agreement shall expire on the twenty-fifth (25th) anniversary of the Commercial Operation Date (as that phrase is defined in the Solar Agreement), subject to extension of up two (2) Additional Terms (as that phrase is defined in the Solar Agreement) of five (5) years each, or early termination pursuant to the terms of the Solar Agreement.

[signature pages follow]



**Attachment A**  
Description of the Premises

The Premises is that certain lot or parcel of land in the Town of Cumberland described in that certain affidavit dated October 24, 2006, as recorded in the Cumberland County Registry of Deeds, Document Number 70898, in Book 24507, Page 298:

Doc# 70898 Bk#24507 Pg# 298

AFFIDAVIT  
TOWN OF CUMBERLAND  
LANDFILL CLOSURE

The following is filed as an addendum to and hereby partially amends the Deed of property located off Drowne Road in the Town of Cumberland as recorded in the Cumberland County Registry of Deeds in Book 589, Page 207. This affidavit only amends that portion of said property as shown on Tax Map R-3, Lot 51-A of the Town of Cumberland's Tax Maps located in the Cumberland Town Office on Tuttle Road in said Cumberland, which portion thereof is more particularly described on Exhibit A attached hereto.

The underlying deed is hereby amended to provide notification to any potential purchaser of the following:

1. A portion of the property has been used for a municipal solid waste disposal facility and that landfill was closed on November 1992 in general accordance with the applicable provisions of the Maine Department of Environmental Protection's rules pertaining to closure of municipal solid waste landfills.
2. Post-closure use of the property shall never be allowed to disturb the integrity of any final cover, liner system or other components of the closed landfill without prior written approval of the Maine Department of Environmental Protection.
3. Closing plans and closure checklist may be reviewed at the Cumberland Town Office or the Maine Department of Environmental Protection.

William R. Shane, Town Manager of the Town of Cumberland, being first duly sworn, states that the revisions herein are solely to inform potential purchasers of the closed landfill of the closure and to provide information as required by the Department of Environmental Protection closure requirements.

Dated: October 24, 2006.

TOWN OF CUMBERLAND

By: \_\_\_\_\_

William R. Shane  
Its Town Manager



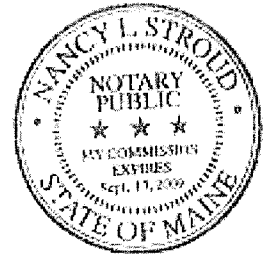
State of Maine  
County of Cumberland, ss.

October 24, 2006

Personally appeared the above-named William R. Shane, Town Manager of the Town of Cumberland and acknowledged the foregoing instrument to be his free act and deed and the free act and deed of the Town of Cumberland and subscribed and swore to the same.

Nancy L. Stroud  
Notary Public  
Print Name Nancy L. Stroud  
Commission Expires Sept. 13, 2009

Affix Notarial Seal Here







PROFESSIONAL LAND SURVEYING, LLC  
P.O. BOX 1023  
WESTBROOK, MAINE 04098-1023  
207-854-1015

EXHIBIT A

A certain lot or parcel of land, with any improvements thereon, located on the southeasterly side of Drowne Road in the Town of Cumberland, County of Cumberland, State of Maine and more particularly bounded and described as follows:

Beginning at a point on the southeasterly side of Drowne Road, said point of beginning is located S 35°23'27" E a distance of 49.43' from a found granite monument at the easterly corner of land now or formerly of the Town of Cumberland as described in Deed Book 15732, Page 22 and depicted on the plan recorded in the Cumberland County Registry of Deeds in Plan Book 201, Page 141;

Thence N 54°36'33" E, along Drowne Road, a distance of 497.83' to a point at the remaining land of the Town of Cumberland as described in Deed Book 589, Page 204;

Thence S 36°32'47" E, along remaining land of Town of Cumberland, a distance of 91.14' to a point;

Thence S 89°38'29" E, along remaining land of Town of Cumberland, a distance of 128.75' to set 5/8" iron rebar at the land now or formerly of School Administrative District 51;

Thence S 51°03'54" E, along land of School Administrative District 51, a distance of 245.20' to set 5/8" iron rebar at the remaining land of the Town of Cumberland as described in Book 589, Page 204;

Thence S 29°19'47" E, along the Town of Cumberland, a distance of 255.92' to a point;

Thence S 14°26'33" E, along the Town of Cumberland a distance of 400.77' to a point;

Thence N 81°49'27" W, along the Town of Cumberland a distance of 782.07' to a point;

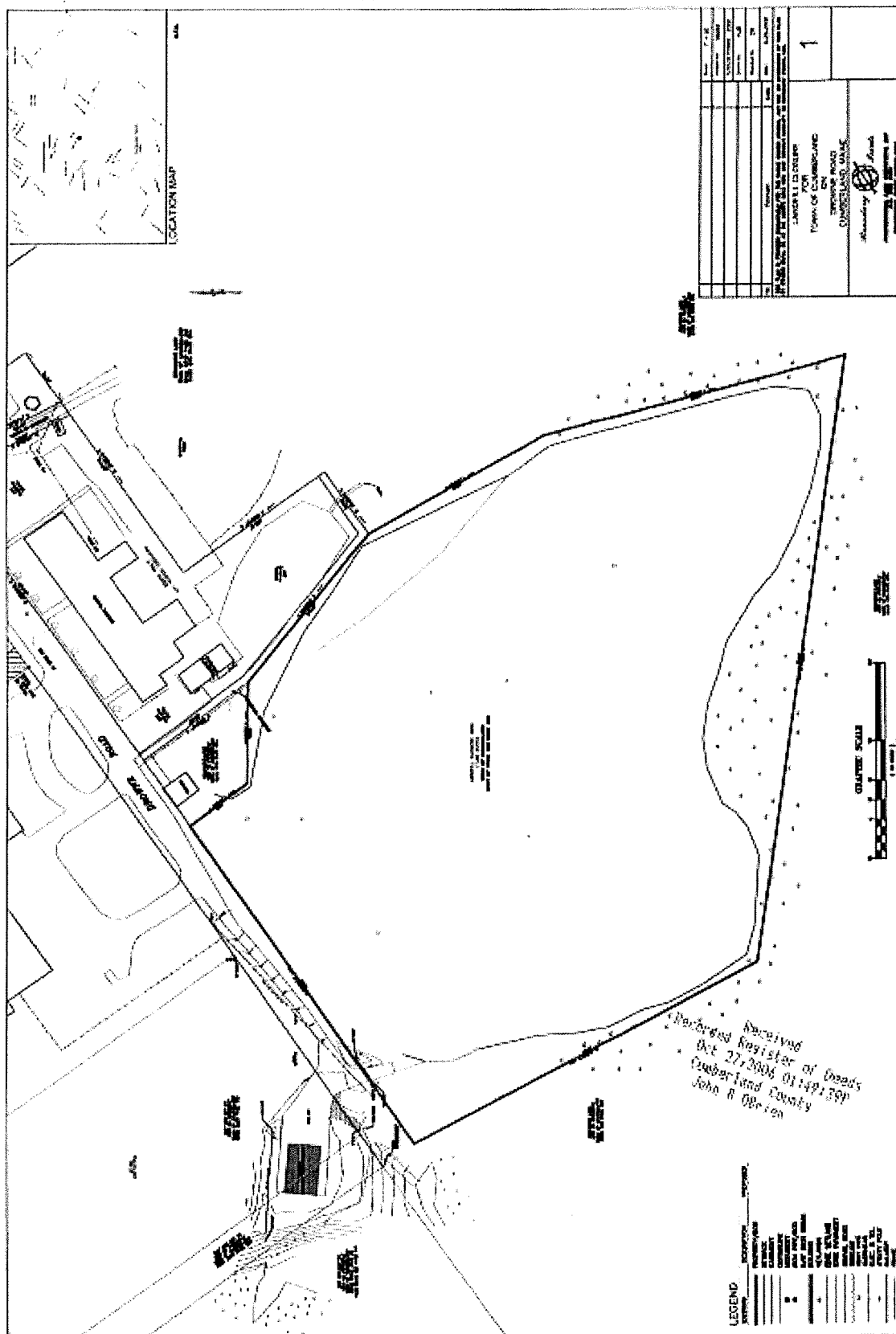
Thence N 27°41'17" W, along the Town of Cumberland a distance of 496.67' to the point of beginning.

Containing an area of 11.89 Acres, more or less.

Bearings for this description were determined from the Magnetic Meridian.

Meaning and intending to describe a portion of the premises as described in a deed to the Town of Cumberland from Elizabeth Drowne dated July 22, 1891 recorded in the Cumberland County Registry of Deed in Book 589, Page 204.







IN WITNESS WHEREOF, this Notice has been executed and delivered under seal on this 4  
day of June, 2018.

GRANTOR:  
**TOWN OF CUMBERLAND**

By: [Signature]  
Print Name: William R Shane  
Title: Town Manager

STATE OF Maine :

ss.

COUNTY OF Cumberland :

Be it Remembered, that on this 4<sup>th</sup> day of June, 2018, before me, a Notary Public in and for the State and County aforesaid, personally appeared William Shane who acknowledged him/herself to be Town Manager of Cumberland, and that he/she as such \_\_\_\_\_, being authorized to do so, executed the foregoing instrument for the purposes therein contained.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal.

[Signature]  
Notary Public  
My Commission expires:

**ELIZA S. PORTER**  
NOTARY PUBLIC  
State of Maine  
My Commission Expires:  
June 29, 2023

GRANTEE:  
**REVISION IMPACT FUND I LLC**

By: [Signature]  
Print Name: Fortune Mueller  
Title: Manager

STATE OF Maine :

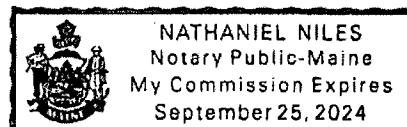
ss.

COUNTY OF Cumberland :

Be it Remembered, that on this 7 day of June, 2018, before me, a Notary Public in and for the State and County aforesaid, personally appeared Fortune Mueller who acknowledged him/herself to be Manager of Revision Impact Fund I LLC, and that he/she as such Manager, being authorized to do so, executed the foregoing instrument for the purposes therein contained.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal.

[Signature]  
Notary Public  
My Commission expires: 9/25/2024





**APPENDIX B**

**OUTSIDE AGENCY REVIEW LETTERS**



June 21, 2018

John Perry, Environmental Review Coordinator  
Maine Department of Inland Fisheries and Wildlife  
284 State Street, 41 SHS  
Augusta, Maine 04333-0041

Subject: 474.7 kW Solar Array  
Drowne Road, Cumberland, Maine  
Site Plan Review

Dear John:

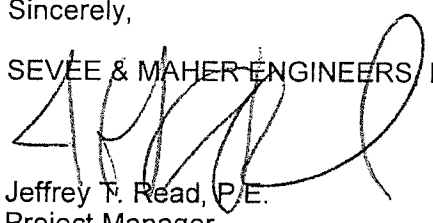
ReVision Energy is seeking approval from the Cumberland Planning Board for a site plan to install a 474.7 kilowatt (kW) solar array on the closed landfill in Cumberland. The site location is shown on the attached Figure 1 - Site Location Map. The property is a 109-acre lot bordered to the north and south by residential parcels, to the east by municipal property and residential parcels, and to the west by municipal property.

We would appreciate receiving any information relative to rare, threatened, or endangered species or the presence of important wildlife or fisheries habitat at or in the immediate vicinity of our project.

Should you have any questions or require additional information, please contact me. Thank you in advance for your consideration.

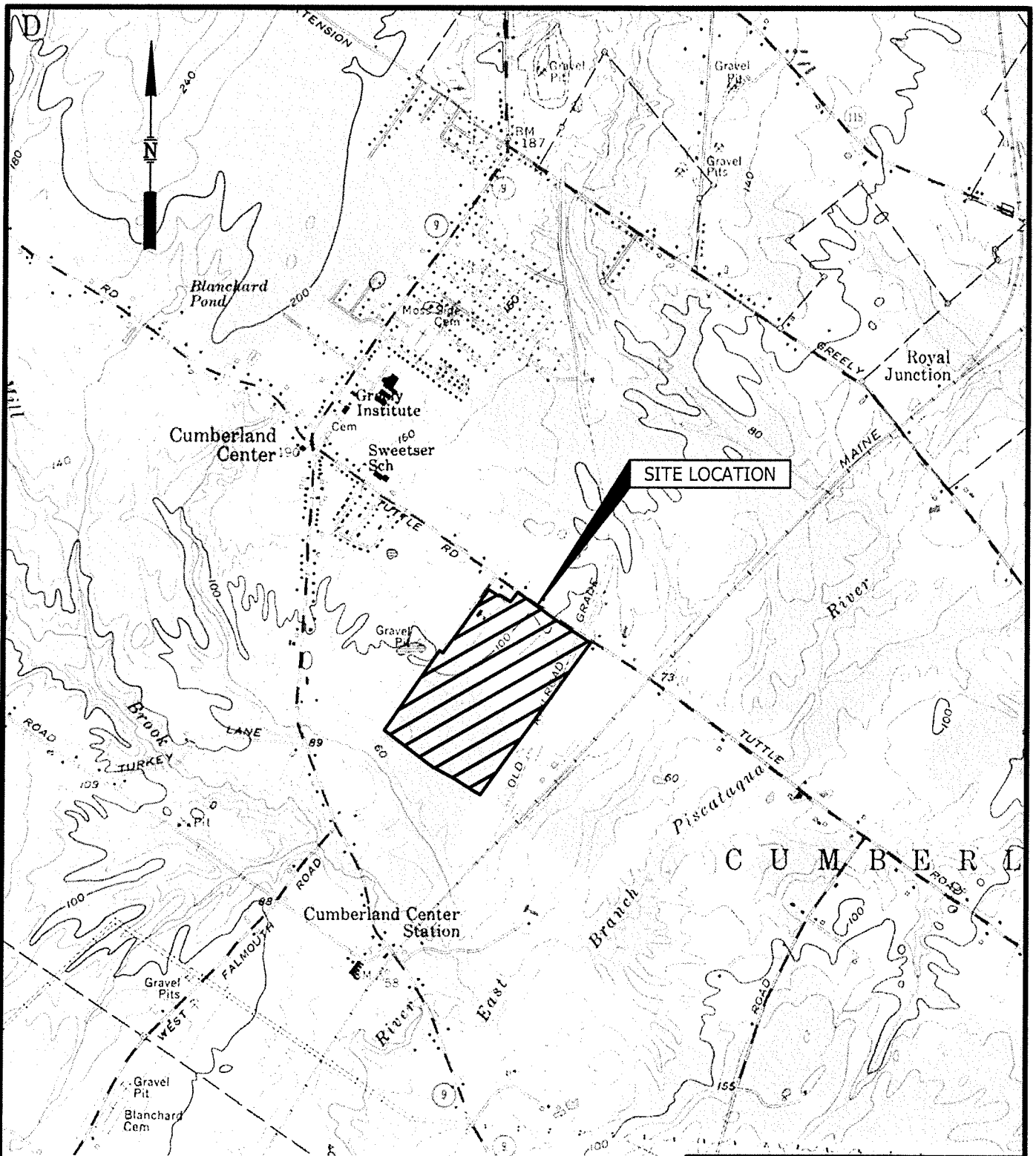
Sincerely,

SEVEE & MAHER ENGINEERS, INC.

  
Jeffrey T. Read, P.E.  
Project Manager

Attachments





BASE MAP ADAPTED FROM 7.5 MIN USGS TOPO QUADS  
YARMOUTH, ME - 1975  
CUMBERLAND CENTER, ME - 1975



FIGURE 1  
SITE LOCATION MAP  
474.7 KW SOLAR ARRAY  
CUMBERLAND, MAINE  
REVISION ENERGY

**SME**  
SEVEE & MAHER  
ENGINEERS



June 21, 2018

Mr. Kirk F. Mohnney, Director  
Maine Historic Preservation Commission  
55 Capitol Street  
65 State House Station  
Augusta, Maine 04333-0065

Subject: 474.7 kW Solar Array  
Drowne Road, Cumberland, Maine

Dear Mr. Mohnney:

On behalf of Revision Energy, Sevee & Maher Engineers (SME) is requesting a letter of review from the Maine Historic Preservation Commission for the proposed 474.7 kilowatt (kW) Solar Array on the closed Drowne Road landfill in Cumberland, Maine.

### **PROJECT DESCRIPTION**

Revision Energy proposes to install a 474.7 kW solar array on a portion of the closed landfill located off Drowne Road in Cumberland. The property is within the Rural Residential 1 (RR1) zone, and abutted by the Town forest to the east and south. The municipal Public Works facility and new residential construction exist to the west. A new senior housing facility is located to the north. The property location is shown on the attached Figure 1 – Site Location Map.

### **HISTORICAL FINDINGS**

A search of the National Register of Historic Places online maps showed no known historic properties or districts near the property. In addition to searching the National Register of Historic Places, records of the neighboring properties were searched for any buildings over fifty (50) years old. All properties with such buildings are listed below with photos attached and their location keyed to Figure 1.

- 263 Tuttle Road (1955)
- 267 Tuttle Road (1963)
- 273 Tuttle Road (1960)
- 280 Tuttle Road (1835)
- 79 Corey Road (1820)



Please feel free to contact me at 207.829.5016 or [jtr@smemaine.com](mailto:jtr@smemaine.com) if you have any questions or need additional information.

Very truly yours,

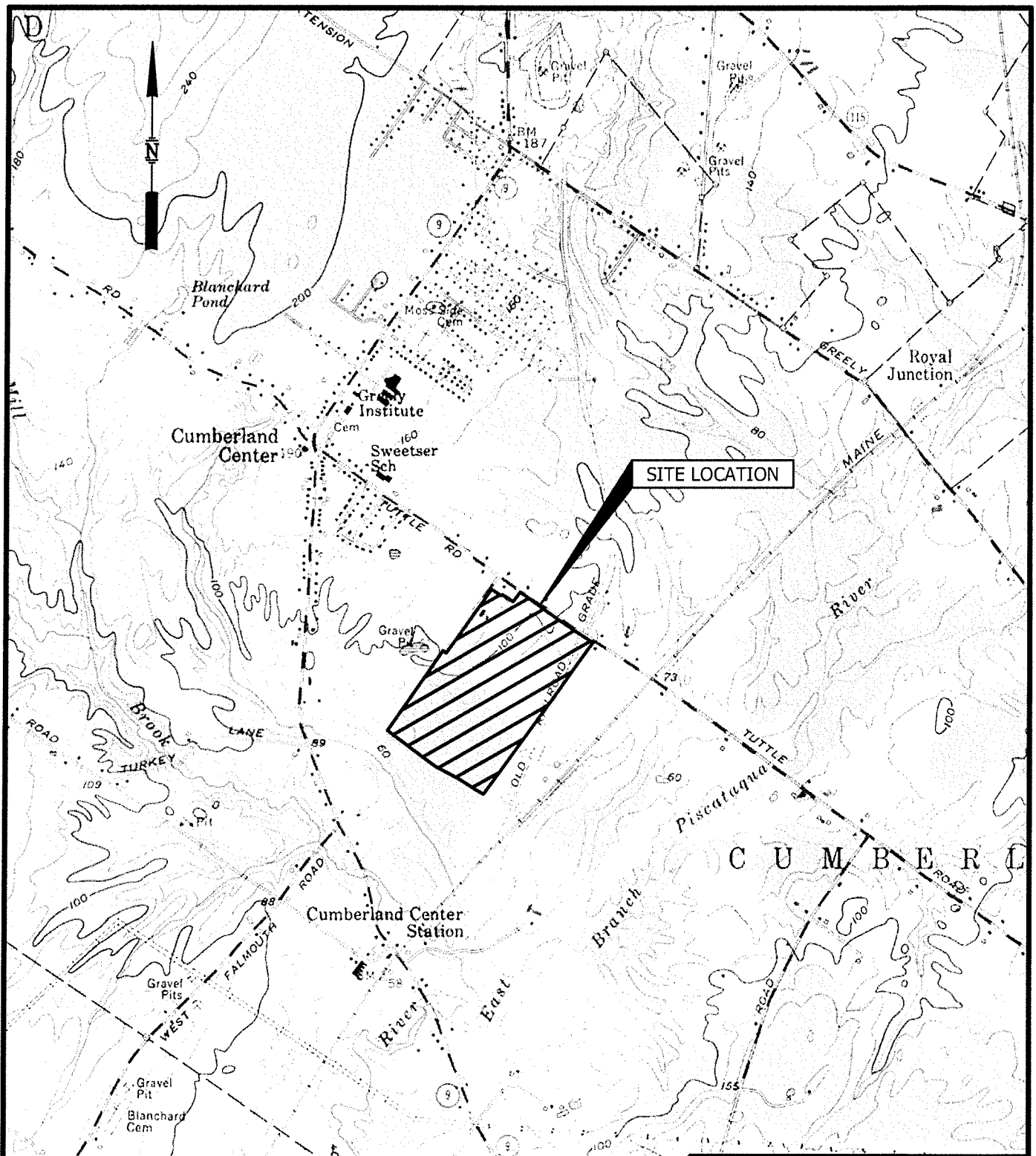
SEVEE & MAHER ENGINEERS, INC

A handwritten signature in black ink, appearing to read 'J. Read', is written over the company name.

Jeffrey T. Read, P.E.  
Civil Engineer

Attachments





BASE MAP ADAPTED FROM 7.5 MIN USGS TOPO QUADS  
YARMOUTH, ME - 1975  
CUMBERLAND CENTER, ME - 1975



FIGURE 1  
SITE LOCATION MAP  
474.7 KW SOLAR ARRAY  
CUMBERLAND, MAINE  
REVISION ENERGY

**SME**  
SEVEE & MAHER  
ENGINEERS



SURVEY MAP NO. \_\_\_\_\_

SURVEY MAP NAME \_\_\_\_\_

MHPC USE ONLY

INVENTORY NO. \_\_\_\_\_

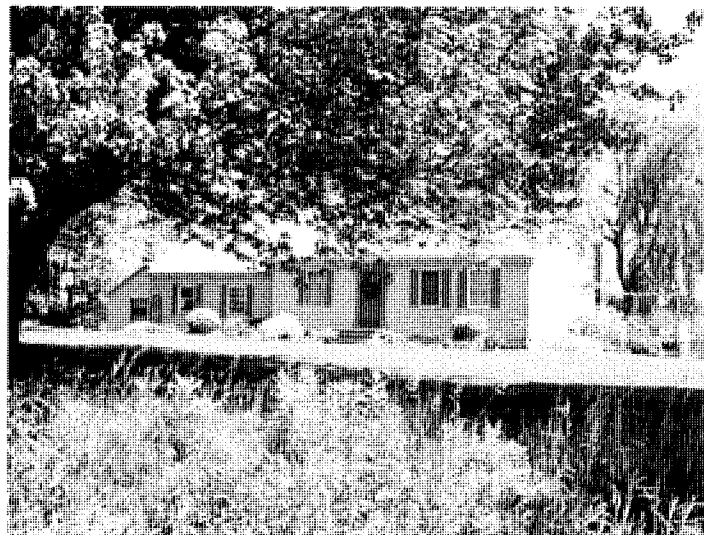
# **MAINE HISTORIC PRESERVATION COMMISSION** **Historic Building/Structure Survey Form**

1. PROPERTY NAME (HISTORIC): 263 Tuttle Road
2. PROPERTY NAME (OTHER): \_\_\_\_\_
3. STREET ADDRESS: 263 Tuttle Road
4. TOWN: Cumberland
5. COUNTY: Cumberland
6. DATE RECORDED: 1955
7. SURVEYOR: \_\_\_\_\_
8. OWNER NAME: Scott L Cyr
- ADDRESS: \_\_\_\_\_
9. PRIMARY USE (PRESENT):
- |   |                    |                           |                   |
|---|--------------------|---------------------------|-------------------|
| <input checked="" type="checkbox"/> SINGLE FAMILY | _____ AGRICULTURE  | _____ COMMERCIAL/TRADE    | _____ FUNERARY    |
| _____ MULTI-FAMILY                                | _____ GOVERNMENTAL | _____ EDUCATION           | _____ HEALTH CARE |
| _____ INDUSTRY                                    | _____ RELIGIOUS    | _____ HOTEL               | _____ LANDSCAPE   |
| _____ TRANSPORTATION                              | _____ DEFENSE      | _____ SUMMER COTTAGE/CAMP | _____ SOCIAL      |
| _____ RECREATION/CULTURE                          | _____ UNKNOWN      |                           |                   |
| _____ OTHER _____                                 |                    |                           |                   |
10. CONDITION: ☒ GOOD \_\_\_\_\_ FAIR \_\_\_\_\_ POOR \_\_\_\_\_ DESTROYED, DATE   /  /

## **ARCHITECTURAL DATA**

11. PRIMARY STYLISTIC CATEGORY:
- |                      |                        |                            |                     |
|----------------------|------------------------|----------------------------|---------------------|
| _____ COLONIAL       | _____ STICK STYLE      | _____ NEO-CLASSICAL REV.   | _____ FOUR SQUARE   |
| _____ FEDERAL        | _____ QUEEN ANNE       | _____ RENAISSANCE REV.     | _____ ART DECO      |
| _____ GREEK REVIVAL  | _____ SHINGLE STYLE    | _____ 19TH/20TH C. REVIVAL | _____ INTERNATIONAL |
| _____ GOTHIC REVIVAL | _____ R. ROMANESQUE    | _____ ARTS & CRAFTS        | _____ RANCH         |
| _____ ITALIANATE     | _____ ROMANESQUE       | _____ BUNGALOW             | _____ VERNACULAR    |
| _____ SECOND EMPIRE  | _____ HIGH VIC. GOTHIC | OTHER _____                |                     |
12. OTHER STYLISTIC CATEGORY:
- |                      |                        |                            |                     |
|----------------------|------------------------|----------------------------|---------------------|
| _____ COLONIAL       | _____ STICK STYLE      | _____ NEO-CLASSICAL REV.   | _____ FOUR SQUARE   |
| _____ FEDERAL        | _____ QUEEN ANNE       | _____ RENAISSANCE REV.     | _____ ART DECO      |
| _____ GREEK REVIVAL  | _____ SHINGLE STYLE    | _____ 19TH/20TH C. REVIVAL | _____ INTERNATIONAL |
| _____ GOTHIC REVIVAL | _____ R. ROMANESQUE    | _____ ARTS & CRAFTS        | _____ RANCH         |
| _____ ITALIANATE     | _____ ROMANESQUE       | _____ BUNGALOW             | _____ VERNACULAR    |
| _____ SECOND EMPIRE  | _____ HIGH VIC. GOTHIC | OTHER _____                |                     |
13. HEIGHT: \_\_\_\_\_ 1 STORY \_\_\_\_\_ 1 1/2 STORY \_\_\_\_\_ 2 STORY \_\_\_\_\_ 2 1/2 STORY \_\_\_\_\_ 3 STORY \_\_\_\_\_ 4 STORY  
 \_\_\_\_\_ 5 STORY \_\_\_\_\_ OVER 5 ( )
14. PRIMARY FACADE WIDTH (MAIN BLOCK; USE GROUND FLOOR):  
 \_\_\_\_\_ 1 BAY \_\_\_\_\_ 2 BAY \_\_\_\_\_ 3 BAY \_\_\_\_\_ 4 BAY \_\_\_\_\_ 5 BAY \_\_\_\_\_ MORE THAN 5 ( )
15. APPENDAGES: \_\_\_\_\_ SIDE ELL \_\_\_\_\_ REAR ELL \_\_\_\_\_ FRONT \_\_\_\_\_ ADDED STORIES \_\_\_\_\_ SHED  
 \_\_\_\_\_ DORMERS \_\_\_\_\_ PORCH \_\_\_\_\_ TOWER \_\_\_\_\_ CUPOLA \_\_\_\_\_ BAY WINDOW

## **PHOTOGRAPH:**





**263 TUTTLE ROAD****Location** 263 TUTTLE ROAD**Mblu** R04/B 6/ / /**Acct#** C0230R**Owner** CYR SCOTT L**Assessment** \$285,500**PID** 1157**Building Count** 1**Current Value**

| Assessment     |              |           |           |
|----------------|--------------|-----------|-----------|
| Valuation Year | Improvements | Land      | Total     |
| 2017           | \$145,500    | \$140,000 | \$285,500 |

**Owner of Record****Owner** CYR SCOTT L**Sale Price** \$269,500**Co-Owner** CYR PHYLLIS M**Certificate****Address** 263 TUTTLE ROAD  
CUMBERLAND CTR, ME 04021**Book & Page** 18120/ 208**Sale Date** 09/23/2002**Instrument** 00**Ownership History**

| Ownership History |            |             |             |            |            |
|-------------------|------------|-------------|-------------|------------|------------|
| Owner             | Sale Price | Certificate | Book & Page | Instrument | Sale Date  |
| CYR SCOTT L       | \$269,500  |             | 18120/ 208  | 00         | 09/23/2002 |
| MANSON DAVID W JR | \$150,000  |             | 13961/ 166  | 00         | 07/07/1998 |
| SMALL FRANCES M   | \$0        |             | 3232/ 226   |            |            |

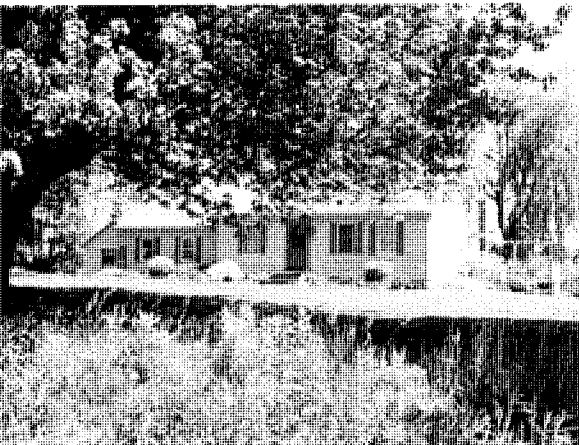
**Building Information****Building 1 : Section 1****Year Built:** 1955**Living Area:** 1,797**Replacement Cost:** \$189,902**Building Percent** 74**Good:****Replacement Cost****Less Depreciation:** \$140,500

| Building Attributes |             |
|---------------------|-------------|
| Field               | Description |
| Style               | Cape Cod    |



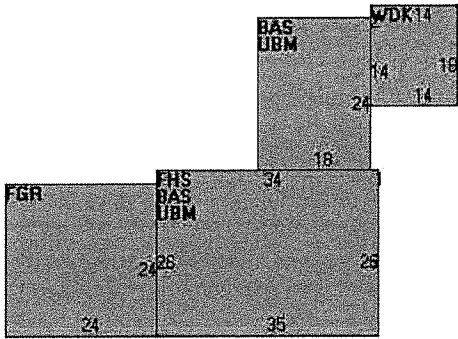
|                    |                |
|--------------------|----------------|
| Model              | Residential    |
| Grade:             | Average        |
| Stories:           | 1 1/2 Stories  |
| Occupancy          | 1              |
| Exterior Wall 1    | Wood Shingle   |
| Exterior Wall 2    |                |
| Roof Structure:    | Gable/Hip      |
| Roof Cover         | Asph/F GlS/Cmp |
| Interior Wall 1    | Drywall/Sheet  |
| Interior Wall 2    | Plastered      |
| Interior Flr 1     | Hardwood       |
| Interior Flr 2     | Carpet         |
| Heat Fuel          | Oil            |
| Heat Type:         | Hot Water      |
| AC Type:           | None           |
| Total Bedrooms:    | 3 Bedrooms     |
| Total Bthrms:      | 2              |
| Total Half Baths:  | 0              |
| Total Xtra Fixtrs: |                |
| Total Rooms:       | 8 Rooms        |
| Bath Style:        | Average        |
| Kitchen Style:     | Average        |

### Building Photo



(<http://images.vgsi.com/photos/CumberlandMEPhotos//\00\00\5>)

### Building Layout



| Building Sub-Areas (sq ft) |                      |            | Legend      |
|----------------------------|----------------------|------------|-------------|
| Code                       | Description          | Gross Area | Living Area |
| BAS                        | First Floor          | 1,342      | 1,342       |
| FHS                        | Half Story, Finished | 910        | 455         |
| FGR                        | Garage               | 576        | 0           |
| UBM                        | Basement, Unfinished | 1,342      | 0           |
| WDK                        | Deck, Wood           | 224        | 0           |
|                            |                      | 4,394      | 1,797       |

### Extra Features

| Extra Features |             |         |       | Legend |
|----------------|-------------|---------|-------|--------|
| Code           | Description | Size    | Value | Bldg # |
| FLU2           | BRICK       | 1 UNITS | \$500 | 1      |

### Land

### Land Use

### Land Line Valuation



**Use Code** 1010  
**Description** Single Fam MDL-01  
**Zone** RR1  
**Neighborhood** 130  
**Alt Land Appr** No  
**Category**

**Size (Acres)** 1.98  
**Frontage** 0  
**Depth** 0  
**Assessed Value** \$140,000

### Outbuildings

| Outbuildings |             |          |                 |          |         | Legend |
|--------------|-------------|----------|-----------------|----------|---------|--------|
| Code         | Description | Sub Code | Sub Description | Size     | Value   | Bldg # |
| FGR1         | GARAGE-AVE  |          |                 | 520 S.F. | \$4,200 | 1      |
| SHD1         | SHED FRAME  |          |                 | 70 S.F.  | \$300   | 1      |

### Valuation History

| Assessment     |              |           |           |
|----------------|--------------|-----------|-----------|
| Valuation Year | Improvements | Land      | Total     |
| 2015           | \$145,500    | \$140,000 | \$285,500 |
| 2014           | \$145,500    | \$140,000 | \$285,500 |
| 2013           | \$145,500    | \$140,000 | \$285,500 |

(c) 2016 Vision Government Solutions, Inc. All rights reserved.



SURVEY MAP NO. \_\_\_\_\_

SURVEY MAP NAME \_\_\_\_\_

MHPC USE ONLY

INVENTORY NO. \_\_\_\_\_

# **MAINE HISTORIC PRESERVATION COMMISSION** **Historic Building/Structure Survey Form**

1. PROPERTY NAME (HISTORIC): 263 Tuttle Road
2. PROPERTY NAME (OTHER): \_\_\_\_\_
3. STREET ADDRESS: 263 Tuttle Road
4. TOWN: Cumberland
5. COUNTY: Cumberland
6. DATE RECORDED: 1955
7. SURVEYOR: \_\_\_\_\_
8. OWNER NAME: Scott L Cyr
- ADDRESS: \_\_\_\_\_
9. PRIMARY USE (PRESENT):
- |   |                                       |  |                                      |
|---|---------------------------------------|--|--------------------------------------|
| <input checked="" type="checkbox"/> SINGLE FAMILY | <input type="checkbox"/> AGRICULTURE  | <input type="checkbox"/> COMMERCIAL/TRADE    | <input type="checkbox"/> FUNERARY    |
| <input type="checkbox"/> MULTI-FAMILY             | <input type="checkbox"/> GOVERNMENTAL | <input type="checkbox"/> EDUCATION           | <input type="checkbox"/> HEALTH CARE |
| <input type="checkbox"/> INDUSTRY                 | <input type="checkbox"/> RELIGIOUS    | <input type="checkbox"/> HOTEL               | <input type="checkbox"/> LANDSCAPE   |
| <input type="checkbox"/> TRANSPORTATION           | <input type="checkbox"/> DEFENSE      | <input type="checkbox"/> SUMMER COTTAGE/CAMP | <input type="checkbox"/> SOCIAL      |
| <input type="checkbox"/> RECREATION/CULTURE       | <input type="checkbox"/> UNKNOWN      |  |                                      |
| <input type="checkbox"/> OTHER                    |                                       |  |                                      |
10. CONDITION: ☒ GOOD ☐ FAIR ☐ POOR ☐ DESTROYED, DATE    /    /

## **ARCHITECTURAL DATA**

11. PRIMARY STYLISTIC CATEGORY:
- |   |   |   |  |
|---|---|---|--|
| <input type="checkbox"/> COLONIAL       | <input type="checkbox"/> STICK STYLE      | <input type="checkbox"/> NEO-CLASSICAL REV.   | <input type="checkbox"/> FOUR SQUARE   |
| <input type="checkbox"/> FEDERAL        | <input type="checkbox"/> QUEEN ANNE       | <input type="checkbox"/> RENAISSANCE REV.     | <input type="checkbox"/> ART DECO      |
| <input type="checkbox"/> GREEK REVIVAL  | <input type="checkbox"/> SHINGLE STYLE    | <input type="checkbox"/> 19TH/20TH C. REVIVAL | <input type="checkbox"/> INTERNATIONAL |
| <input type="checkbox"/> GOTHIC REVIVAL | <input type="checkbox"/> R. ROMANESQUE    | <input type="checkbox"/> ARTS & CRAFTS        | <input type="checkbox"/> RANCH         |
| <input type="checkbox"/> ITALIANATE     | <input type="checkbox"/> ROMANESQUE       | <input type="checkbox"/> BUNGALOW             | <input type="checkbox"/> VERNACULAR    |
| <input type="checkbox"/> SECOND EMPIRE  | <input type="checkbox"/> HIGH VIC. GOTHIC | <input type="checkbox"/> OTHER                |  |
12. OTHER STYLISTIC CATEGORY:
- |   |   |   |  |
|---|---|---|--|
| <input type="checkbox"/> COLONIAL       | <input type="checkbox"/> STICK STYLE      | <input type="checkbox"/> NEO-CLASSICAL REV.   | <input type="checkbox"/> FOUR SQUARE   |
| <input type="checkbox"/> FEDERAL        | <input type="checkbox"/> QUEEN ANNE       | <input type="checkbox"/> RENAISSANCE REV.     | <input type="checkbox"/> ART DECO      |
| <input type="checkbox"/> GREEK REVIVAL  | <input type="checkbox"/> SHINGLE STYLE    | <input type="checkbox"/> 19TH/20TH C. REVIVAL | <input type="checkbox"/> INTERNATIONAL |
| <input type="checkbox"/> GOTHIC REVIVAL | <input type="checkbox"/> R. ROMANESQUE    | <input type="checkbox"/> ARTS & CRAFTS        | <input type="checkbox"/> RANCH         |
| <input type="checkbox"/> ITALIANATE     | <input type="checkbox"/> ROMANESQUE       | <input type="checkbox"/> BUNGALOW             | <input type="checkbox"/> VERNACULAR    |
| <input type="checkbox"/> SECOND EMPIRE  | <input type="checkbox"/> HIGH VIC. GOTHIC | <input type="checkbox"/> OTHER                |  |
13. HEIGHT:
- ☐ 1 STORY ☐ 1 1/2 STORY ☐ 2 STORY ☐ 2 1/2 STORY ☐ 3 STORY ☐ 4 STORY
- ☐ 5 STORY ☐ OVER 5 ( )
14. PRIMARY FACADE WIDTH (MAIN BLOCK; USE GROUND FLOOR):
- ☐ 1 BAY ☐ 2 BAY ☐ 3 BAY ☐ 4 BAY ☐ 5 BAY ☐ MORE THAN 5 ( )
15. APPENDAGES:
- ☐ SIDE ELL ☐ REAR ELL ☐ FRONT ☐ ADDED STORIES ☐ SHED
- ☐ DORMERS ☐ PORCH ☐ TOWER ☐ CUPOLA ☐ BAY WINDOW

## **PHOTOGRAPH:**





## 267 TUTTLE ROAD

**Location** 267 TUTTLE ROAD

**Mblu** R04/B 5/ / /

**Acct#**

**Owner** STANCIOFF LUCIA MCKIM

**Assessment** \$278,700

**PID** 1155

**Building Count** 1

### Current Value

| Assessment     |              |           |           |
|----------------|--------------|-----------|-----------|
| Valuation Year | Improvements | Land      | Total     |
| 2017           | \$138,400    | \$140,300 | \$278,700 |

### Owner of Record

**Owner** STANCIOFF LUCIA MCKIM  
**Co-Owner** CARR BENJAMIN JOSEPH  
**Address** 267 TUTTLE ROAD  
CUMBERLAND, ME 04021

**Sale Price** \$226,000  
**Certificate**  
**Book & Page** 30283/ 329  
**Sale Date** 01/04/2013  
**Instrument** 1N

### Ownership History

| Ownership History         |            |             |             |            |            |
|---------------------------|------------|-------------|-------------|------------|------------|
| Owner                     | Sale Price | Certificate | Book & Page | Instrument | Sale Date  |
| STANCIOFF LUCIA MCKIM     | \$226,000  |             | 30283/ 329  | 1N         | 01/04/2013 |
| COLLINS T EDWARD*         | \$300,000  |             | 23052/ 63   | 00         | 08/22/2005 |
| FGL SMALL ASSOCIATES LLC  | \$0        |             | 16394/ 77   | 1N         | 06/08/2001 |
| SMALL FRANCIS M           | \$0        |             | 16307/ 217  | 1N         | 05/16/2001 |
| SMALL MARION B - HEIRS OF | \$0        |             | 2763/ 473   |            |            |

### Building Information

#### Building 1 : Section 1

**Year Built:** 1963  
**Living Area:** 1,144  
**Replacement Cost:** \$178,786  
**Building Percent** 76  
**Good:**  
**Replacement Cost**  
**Less Depreciation:** \$135,900

**Building Attributes**



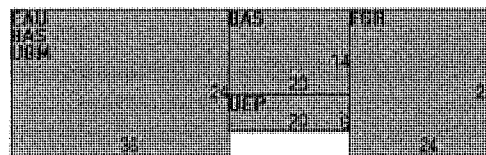
| Field              | Description    |
|--------------------|----------------|
| Style              | Cape Cod       |
| Model              | Residential    |
| Grade:             | Average +20    |
| Stories:           | 1 Story        |
| Occupancy          | 1              |
| Exterior Wall 1    | Vinyl Siding   |
| Exterior Wall 2    |                |
| Roof Structure:    | Gable/Hip      |
| Roof Cover         | Asph/F Gls/Cmp |
| Interior Wall 1    | Plastered      |
| Interior Wall 2    |                |
| Interior Flr 1     | Hardwood       |
| Interior Flr 2     | Carpet         |
| Heat Fuel          | Oil            |
| Heat Type:         | Hot Water      |
| AC Type:           | None           |
| Total Bedrooms:    | 2 Bedrooms     |
| Total Bthrms:      | 1              |
| Total Half Baths:  | 0              |
| Total Xtra Fixtrs: | 1              |
| Total Rooms:       | 5 Rooms        |
| Bath Style:        | Average        |
| Kitchen Style:     | Average        |

## Building Photo



(<http://images.vgsi.com/photos/CumberlandMEPhotos//\00\00\5>)

## Building Layout



| Building Sub-Areas (sq ft) |                              |            | Legend      |
|----------------------------|------------------------------|------------|-------------|
| Code                       | Description                  | Gross Area | Living Area |
| BAS                        | First Floor                  | 1,144      | 1,144       |
| EAU                        | Attic, Expansion, Unfinished | 864        | 0           |
| FGR                        | Garage                       | 576        | 0           |
| UBM                        | Basement, Unfinished         | 864        | 0           |
| UEP                        | Porch, Enclosed, Unfinished  | 120        | 0           |
|                            |                              | 3,568      | 1,144       |

## Extra Features

| Extra Features |                |         |         | Legend |
|----------------|----------------|---------|---------|--------|
| Code           | Description    | Size    | Value   | Bldg # |
| FPL1           | FIREPLACE 1 ST | 1 UNITS | \$1,700 | 1      |

## Land

## Land Use

## Land Line Valuation



**Use Code** 1010  
**Description** Single Fam MDL-01  
**Zone** RR1  
**Neighborhood** 130  
**Alt Land Appr** No  
**Category**

**Size (Acres)** 2.01  
**Frontage** 0  
**Depth** 0  
**Assessed Value** \$140,300

### Outbuildings

| Outbuildings |                |          |                 |          |       | <u>Legend</u> |
|--------------|----------------|----------|-----------------|----------|-------|---------------|
| Code         | Description    | Sub Code | Sub Description | Size     | Value | Bldg #        |
| BRN1         | BARN - 1 STORY |          |                 | 800 S.F. | \$800 | 1             |

### Valuation History

| Assessment     |              |           |           |
|----------------|--------------|-----------|-----------|
| Valuation Year | Improvements | Land      | Total     |
| 2015           | \$138,400    | \$140,300 | \$278,700 |
| 2014           | \$138,400    | \$140,300 | \$278,700 |
| 2013           | \$138,400    | \$140,300 | \$278,700 |

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SURVEY MAP NO. \_\_\_\_\_

SURVEY MAP NAME \_\_\_\_\_

MHPC USE ONLY

INVENTORY NO. \_\_\_\_\_

# MAINE HISTORIC PRESERVATION COMMISSION Historic Building/Structure Survey Form

1. PROPERTY NAME (HISTORIC): 263 Tuttle Road  
 2. PROPERTY NAME (OTHER): \_\_\_\_\_  
 3. STREET ADDRESS: 263 Tuttle Road  
 4. TOWN: Cumberland 5. COUNTY: Cumberland  
 6. DATE RECORDED: 1955 7. SURVEYOR: \_\_\_\_\_  
 8. OWNER NAME: Scott L Cyr ADDRESS: \_\_\_\_\_

9. PRIMARY USE (PRESENT):  
☒ SINGLE FAMILY \_\_\_\_\_ AGRICULTURE \_\_\_\_\_ COMMERCIAL/TRADE \_\_\_\_\_ FUNERARY  
☐ MULTI-FAMILY \_\_\_\_\_ GOVERNMENTAL \_\_\_\_\_ EDUCATION \_\_\_\_\_ HEALTH CARE  
☐ INDUSTRY \_\_\_\_\_ RELIGIOUS \_\_\_\_\_ HOTEL \_\_\_\_\_ LANDSCAPE  
☐ TRANSPORTATION \_\_\_\_\_ DEFENSE \_\_\_\_\_ SUMMER COTTAGE/CAMP \_\_\_\_\_ SOCIAL  
☐ RECREATION/CULTURE \_\_\_\_\_ UNKNOWN \_\_\_\_\_  
☐ OTHER \_\_\_\_\_

10. CONDITION: ☒ GOOD ☐ FAIR ☐ POOR ☐ DESTROYED, DATE    /    /   

## **ARCHITECTURAL DATA**

11. PRIMARY STYLISTIC CATEGORY:  
☐ COLONIAL ☐ STICK STYLE ☐ NEO-CLASSICAL REV. ☐ FOUR SQUARE  
☐ FEDERAL ☐ QUEEN ANNE ☐ RENAISSANCE REV. ☐ ART DECO  
☐ GREEK REVIVAL ☐ SHINGLE STYLE ☐ 19TH/20TH C. REVIVAL ☐ INTERNATIONAL  
☐ GOTHIC REVIVAL ☐ R. ROMANESQUE ☐ ARTS & CRAFTS ☐ RANCH  
☐ ITALIANATE ☐ ROMANESQUE ☐ BUNGALOW ☐ VERNACULAR  
☐ SECOND EMPIRE ☐ HIGH VIC. GOTHIC ☐ OTHER \_\_\_\_\_

12. OTHER STYLISTIC CATEGORY:  
☐ COLONIAL ☐ STICK STYLE ☐ NEO-CLASSICAL REV. ☐ FOUR SQUARE  
☐ FEDERAL ☐ QUEEN ANNE ☐ RENAISSANCE REV. ☐ ART DECO  
☐ GREEK REVIVAL ☐ SHINGLE STYLE ☐ 19TH/20TH C. REVIVAL ☐ INTERNATIONAL  
☐ GOTHIC REVIVAL ☐ R. ROMANESQUE ☐ ARTS & CRAFTS ☐ RANCH  
☐ ITALIANATE ☐ ROMANESQUE ☐ BUNGALOW ☐ VERNACULAR  
☐ SECOND EMPIRE ☐ HIGH VIC. GOTHIC ☐ OTHER \_\_\_\_\_

13. HEIGHT: ☐ 1 STORY ☐ 1 1/2 STORY ☐ 2 STORY ☐ 2 1/2 STORY ☐ 3 STORY ☐ 4 STORY  
☐ 5 STORY ☐ OVER 5 ( )

14. PRIMARY FACADE WIDTH (MAIN BLOCK; USE GROUND FLOOR):  
☐ 1 BAY ☐ 2 BAY ☐ 3 BAY ☐ 4 BAY ☐ 5 BAY ☐ MORE THAN 5 ( )

15. APPENDAGES: ☐ SIDE ELL ☐ REAR ELL ☐ FRONT ☐ ADDED STORIES ☐ SHED  
☐ DORMERS ☐ PORCH ☐ TOWER ☐ CUPOLA ☐ BAY WINDOW

## **PHOTOGRAPH:**





## 273 TUTTLE ROAD

**Location** 273 TUTTLE ROAD

**Mblu** R04/B 1/ / /

**Acct#** S1020R

**Owner** SMALL GEORGE B

**Assessment** \$313,700

**PID** 1142

**Building Count** 1

### Current Value

| Assessment     |              |           |           |
|----------------|--------------|-----------|-----------|
| Valuation Year | Improvements | Land      | Total     |
| 2017           | \$184,000    | \$129,700 | \$313,700 |

### Owner of Record

**Owner** SMALL GEORGE B

**Sale Price** \$0

**Co-Owner** SMALL CAROLYN F

**Certificate**

**Address** 273 TUTTLE ROAD  
CUMBERLAND, ME 04021

**Book & Page** 2935/ 321

**Sale Date**

### Ownership History

| Ownership History |            |             |             |           |
|-------------------|------------|-------------|-------------|-----------|
| Owner             | Sale Price | Certificate | Book & Page | Sale Date |
| SMALL GEORGE B    | \$0        |             | 2935/ 321   |           |

### Building Information

#### Building 1 : Section 1

**Year Built:** 1960

**Living Area:** 2,391

**Replacement Cost:** \$224,245

**Building Percent** 76

**Good:**

**Replacement Cost**

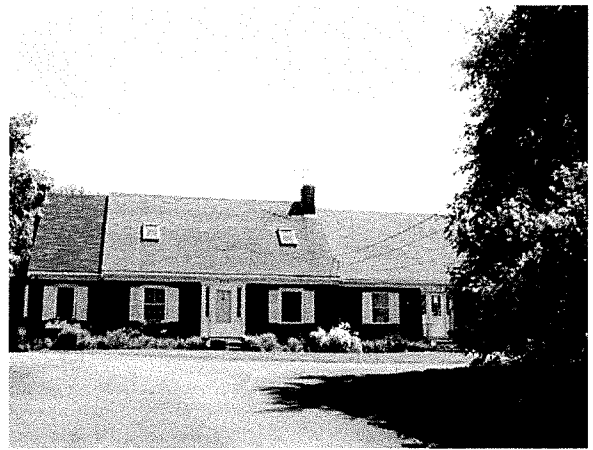
**Less Depreciation:** \$170,400

| Building Attributes |             |
|---------------------|-------------|
| Field               | Description |
| Style               | Cape Cod    |
| Model               | Residential |
| Grade:              | Average     |



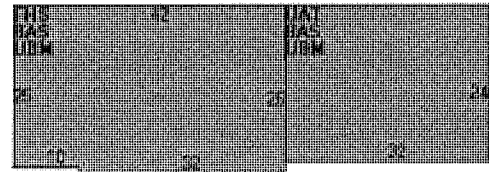
|                    |                |
|--------------------|----------------|
| Stories:           | 1 1/2 Stories  |
| Occupancy          | 1              |
| Exterior Wall 1    | Wood Shingle   |
| Exterior Wall 2    |                |
| Roof Structure:    | Gable/Hip      |
| Roof Cover         | Asph/F Gls/Cmp |
| Interior Wall 1    | Drywall/Sheet  |
| Interior Wall 2    | Plastered      |
| Interior Flr 1     | Hardwood       |
| Interior Flr 2     |                |
| Heat Fuel          | Oil            |
| Heat Type:         | Hot Water      |
| AC Type:           | None           |
| Total Bedrooms:    | 4 Bedrooms     |
| Total Bthrms:      | 1              |
| Total Half Baths:  | 1              |
| Total Xtra Fixtrs: |                |
| Total Rooms:       | 8 Rooms        |
| Bath Style:        | Average        |
| Kitchen Style:     | Average        |

## Building Photo



(<http://images.vgsi.com/photos/CumberlandMEPhotos/\\00\00\5>)

## Building Layout



| Building Sub-Areas (sq ft) |                      |            | Legend      |
|----------------------------|----------------------|------------|-------------|
| Code                       | Description          | Gross Area | Living Area |
| BAS                        | First Floor          | 1,850      | 1,850       |
| FHS                        | Half Story, Finished | 1,082      | 541         |
| UAT                        | Attic, Unfinished    | 768        | 0           |
| UBM                        | Basement, Unfinished | 1,850      | 0           |
|                            |                      | 5,550      | 2,391       |

## Extra Features

| Extra Features |                |         |         | Legend |
|----------------|----------------|---------|---------|--------|
| Code           | Description    | Size    | Value   | Bldg # |
| FPL2           | 1.5 STORY CHIM | 1 UNITS | \$1,900 | 1      |

## Land

## Land Use

## Land Line Valuation



**Use Code** 0101  
**Description** Single Fam  
**Zone** RR1  
**Neighborhood** 130  
**Alt Land Appr** No  
**Category**

**Size (Acres)** 1.3  
**Frontage** 0  
**Depth** 0  
**Assessed Value** \$129,700

## Outbuildings

| Outbuildings |                |          |                 |          |         | Legend |
|--------------|----------------|----------|-----------------|----------|---------|--------|
| Code         | Description    | Sub Code | Sub Description | Size     | Value   | Bldg # |
| BRN3         | 1 STORY W/LOFT |          |                 | 750 S.F. | \$4,900 | 1      |
| SHD1         | SHED FRAME     |          |                 | 400 S.F. | \$1,600 | 1      |
| SHD1         | SHED FRAME     |          |                 | 100 S.F. | \$400   | 1      |
| SPL2         | VINYL/PLASTIC  |          |                 | 800 S.F. | \$4,800 | 1      |

## Valuation History

| Assessment     |              |           |           |
|----------------|--------------|-----------|-----------|
| Valuation Year | Improvements | Land      | Total     |
| 2015           | \$184,000    | \$129,700 | \$313,700 |
| 2014           | \$184,000    | \$129,700 | \$313,700 |
| 2013           | \$184,000    | \$129,700 | \$313,700 |

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SURVEY MAP NO. \_\_\_\_\_

SURVEY MAP NAME \_\_\_\_\_

MHPC USE ONLY

INVENTORY NO. \_\_\_\_\_

# **MAINE HISTORIC PRESERVATION COMMISSION** **Historic Building/Structure Survey Form**

1. PROPERTY NAME (HISTORIC): 263 Tuttle Road
2. PROPERTY NAME (OTHER): \_\_\_\_\_
3. STREET ADDRESS: 263 Tuttle Road
4. TOWN: Cumberland 5. COUNTY: Cumberland
6. DATE RECORDED: 1955 7. SURVEYOR: \_\_\_\_\_
8. OWNER NAME: Scott L Cyr ADDRESS: \_\_\_\_\_
9. PRIMARY USE (PRESENT):
- |   |                                       |  |                                      |
|---|---------------------------------------|--|--------------------------------------|
| <input checked="" type="checkbox"/> SINGLE FAMILY | <input type="checkbox"/> AGRICULTURE  | <input type="checkbox"/> COMMERCIAL/TRADE    | <input type="checkbox"/> FUNERARY    |
| <input type="checkbox"/> MULTI-FAMILY             | <input type="checkbox"/> GOVERNMENTAL | <input type="checkbox"/> EDUCATION           | <input type="checkbox"/> HEALTH CARE |
| <input type="checkbox"/> INDUSTRY                 | <input type="checkbox"/> RELIGIOUS    | <input type="checkbox"/> HOTEL               | <input type="checkbox"/> LANDSCAPE   |
| <input type="checkbox"/> TRANSPORTATION           | <input type="checkbox"/> DEFENSE      | <input type="checkbox"/> SUMMER COTTAGE/CAMP | <input type="checkbox"/> SOCIAL      |
| <input type="checkbox"/> RECREATION/CULTURE       | <input type="checkbox"/> UNKNOWN      |  |                                      |
| <input type="checkbox"/> OTHER _____              |                                       |  |                                      |
10. CONDITION: ☒ GOOD ☐ FAIR ☐ POOR ☐ DESTROYED, DATE   /  /

## **ARCHITECTURAL DATA**

11. PRIMARY STYLISTIC CATEGORY:
- |   |   |   |  |
|---|---|---|--|
| <input type="checkbox"/> COLONIAL       | <input type="checkbox"/> STICK STYLE      | <input type="checkbox"/> NEO-CLASSICAL REV.   | <input type="checkbox"/> FOUR SQUARE   |
| <input type="checkbox"/> FEDERAL        | <input type="checkbox"/> QUEEN ANNE       | <input type="checkbox"/> RENAISSANCE REV.     | <input type="checkbox"/> ART DECO      |
| <input type="checkbox"/> GREEK REVIVAL  | <input type="checkbox"/> SHINGLE STYLE    | <input type="checkbox"/> 19TH/20TH C. REVIVAL | <input type="checkbox"/> INTERNATIONAL |
| <input type="checkbox"/> GOTHIC REVIVAL | <input type="checkbox"/> R. ROMANESQUE    | <input type="checkbox"/> ARTS & CRAFTS        | <input type="checkbox"/> RANCH         |
| <input type="checkbox"/> ITALIANATE     | <input type="checkbox"/> ROMANESQUE       | <input type="checkbox"/> BUNGALOW             | <input type="checkbox"/> VERNACULAR    |
| <input type="checkbox"/> SECOND EMPIRE  | <input type="checkbox"/> HIGH VIC. GOTHIC | <input type="checkbox"/> OTHER _____          |  |
12. OTHER STYLISTIC CATEGORY:
- |   |   |   |  |
|---|---|---|--|
| <input type="checkbox"/> COLONIAL       | <input type="checkbox"/> STICK STYLE      | <input type="checkbox"/> NEO-CLASSICAL REV.   | <input type="checkbox"/> FOUR SQUARE   |
| <input type="checkbox"/> FEDERAL        | <input type="checkbox"/> QUEEN ANNE       | <input type="checkbox"/> RENAISSANCE REV.     | <input type="checkbox"/> ART DECO      |
| <input type="checkbox"/> GREEK REVIVAL  | <input type="checkbox"/> SHINGLE STYLE    | <input type="checkbox"/> 19TH/20TH C. REVIVAL | <input type="checkbox"/> INTERNATIONAL |
| <input type="checkbox"/> GOTHIC REVIVAL | <input type="checkbox"/> R. ROMANESQUE    | <input type="checkbox"/> ARTS & CRAFTS        | <input type="checkbox"/> RANCH         |
| <input type="checkbox"/> ITALIANATE     | <input type="checkbox"/> ROMANESQUE       | <input type="checkbox"/> BUNGALOW             | <input type="checkbox"/> VERNACULAR    |
| <input type="checkbox"/> SECOND EMPIRE  | <input type="checkbox"/> HIGH VIC. GOTHIC | <input type="checkbox"/> OTHER _____          |  |
13. HEIGHT: ☐ 1 STORY ☐ 1 1/2 STORY ☐ 2 STORY ☐ 2 1/2 STORY ☐ 3 STORY ☐ 4 STORY ☐ 5 STORY ☐ OVER 5 ( )
14. PRIMARY FACADE WIDTH (MAIN BLOCK; USE GROUND FLOOR): ☐ 1 BAY ☐ 2 BAY ☐ 3 BAY ☐ 4 BAY ☐ 5 BAY ☐ MORE THAN 5 ( )
15. APPENDAGES: ☐ SIDE ELL ☐ REAR ELL ☐ FRONT ☐ ADDED STORIES ☐ SHED ☐ DORMERS ☐ PORCH ☐ TOWER ☐ CUPOLA ☐ BAY WINDOW

## **PHOTOGRAPH:**





**280 TUTTLE ROAD****Location** 280 TUTTLE ROAD**Mblu** R03/ 50/A / /**Acct#** S1160R**Owner** SMITH DOUGLAS E**Assessment** \$303,600**PID** 1134**Building Count** 1**Current Value**

| Assessment     |              |           |           |
|----------------|--------------|-----------|-----------|
| Valuation Year | Improvements | Land      | Total     |
| 2017           | \$160,300    | \$143,300 | \$303,600 |

**Owner of Record****Owner** SMITH DOUGLAS E**Sale Price** \$0**Co-Owner** SMITH CAROL S**Certificate****Address** 280 TUTTLE ROAD  
CUMBERLAND, ME 04021**Book & Page** 7496/ 079**Sale Date****Ownership History**

| Ownership History |            |             |             |           |
|-------------------|------------|-------------|-------------|-----------|
| Owner             | Sale Price | Certificate | Book & Page | Sale Date |
| SMITH DOUGLAS E   | \$0        |             | 7496/ 079   |           |

**Building Information****Building 1 : Section 1****Year Built:** 1835**Living Area:** 1,688**Replacement Cost:** \$188,519**Building Percent** 72**Good:****Replacement Cost****Less Depreciation:** \$135,700

| Building Attributes |             |
|---------------------|-------------|
| Field               | Description |
| Style               | Colonial    |
| Model               | Residential |
| Grade:              | Average +10 |



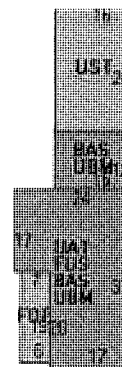
|                    |                |
|--------------------|----------------|
| Stories:           | 2 Stories      |
| Occupancy          | 1              |
| Exterior Wall 1    | Clapboard      |
| Exterior Wall 2    |                |
| Roof Structure:    | Gable/Hip      |
| Roof Cover         | Asph/F Gls/Cmp |
| Interior Wall 1    | Plastered      |
| Interior Wall 2    |                |
| Interior Flr 1     | Pine/Soft Wood |
| Interior Flr 2     |                |
| Heat Fuel          | Oil            |
| Heat Type:         | Hot Water      |
| AC Type:           | None           |
| Total Bedrooms:    | 3 Bedrooms     |
| Total Bthrms:      | 1              |
| Total Half Baths:  | 0              |
| Total Xtra Fixtrs: |                |
| Total Rooms:       | 6 Rooms        |
| Bath Style:        | Average        |
| Kitchen Style:     | Average        |

## Building Photo



(<http://images.vgsi.com/photos/CumberlandMEPhotos//000005>)

## Building Layout



| Building Sub-Areas (sq ft) |                              |            | Legend      |
|----------------------------|------------------------------|------------|-------------|
| Code                       | Description                  | Gross Area | Living Area |
| BAS                        | First Floor                  | 940        | 940         |
| FUS                        | Upper Story, Finished        | 748        | 748         |
| FOP                        | Porch, Open, Finished        | 114        | 0           |
| UAT                        | Attic, Unfinished            | 748        | 0           |
| UBM                        | Basement, Unfinished         | 940        | 0           |
| UST                        | Utility, Storage, Unfinished | 416        | 0           |
|                            |                              | 3,906      | 1,688       |

## Extra Features

| Extra Features |             |         |         | Legend |
|----------------|-------------|---------|---------|--------|
| Code           | Description | Size    | Value   | Bldg # |
| FPL            | FIREPLACE   | 1 UNITS | \$1,000 | 1      |

## Land



**Land Use**

**Use Code** 1010  
**Description** Single Fam MDL-01  
**Zone** RR1  
**Neighborhood** 130  
**Alt Land Appr Category** No

**Land Line Valuation**

**Size (Acres)** 2.6  
**Frontage** 0  
**Depth** 0  
**Assessed Value** \$143,300

**Outbuildings**

| Outbuildings |                |          |                 |           |          | <u>Legend</u> |
|--------------|----------------|----------|-----------------|-----------|----------|---------------|
| Code         | Description    | Sub Code | Sub Description | Size      | Value    | Bldg #        |
| BRN1         | BARN - 1 STORY |          |                 | 840 S.F.  | \$6,300  | 1             |
| BRN1         | BARN - 1 STORY |          |                 | 2880 S.F. | \$17,300 | 1             |

**Valuation History**

| Assessment     |              |           |           |
|----------------|--------------|-----------|-----------|
| Valuation Year | Improvements | Land      | Total     |
| 2015           | \$155,400    | \$143,300 | \$298,700 |
| 2014           | \$155,400    | \$143,300 | \$298,700 |
| 2013           | \$155,400    | \$145,300 | \$300,700 |

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SURVEY MAP NO. \_\_\_\_\_

SURVEY MAP NAME \_\_\_\_\_

MHPC USE ONLY

INVENTORY NO. \_\_\_\_\_

# **MAINE HISTORIC PRESERVATION COMMISSION** **Historic Building/Structure Survey Form**

1. PROPERTY NAME (HISTORIC): 263 Tuttle Road
2. PROPERTY NAME (OTHER): \_\_\_\_\_
3. STREET ADDRESS: 263 Tuttle Road
4. TOWN: Cumberland
5. COUNTY: Cumberland
6. DATE RECORDED: 1955
7. SURVEYOR: \_\_\_\_\_
8. OWNER NAME: Scott L Cyr
- ADDRESS: \_\_\_\_\_
9. PRIMARY USE (PRESENT):
- |   |                                       |  |                                      |
|---|---------------------------------------|--|--------------------------------------|
| <input type="checkbox"/> SINGLE FAMILY      | <input type="checkbox"/> AGRICULTURE  | <input type="checkbox"/> COMMERCIAL/TRADE    | <input type="checkbox"/> FUNERARY    |
| <input type="checkbox"/> MULTI-FAMILY       | <input type="checkbox"/> GOVERNMENTAL | <input type="checkbox"/> EDUCATION           | <input type="checkbox"/> HEALTH CARE |
| <input type="checkbox"/> INDUSTRY           | <input type="checkbox"/> RELIGIOUS    | <input type="checkbox"/> HOTEL               | <input type="checkbox"/> LANDSCAPE   |
| <input type="checkbox"/> TRANSPORTATION     | <input type="checkbox"/> DEFENSE      | <input type="checkbox"/> SUMMER COTTAGE/CAMP | <input type="checkbox"/> SOCIAL      |
| <input type="checkbox"/> RECREATION/CULTURE | <input type="checkbox"/> UNKNOWN      |  |                                      |
| <input type="checkbox"/> OTHER _____        |                                       |  |                                      |

10. CONDITION: ☒ GOOD ☐ FAIR ☐ POOR ☐ DESTROYED, DATE    /    /

## **ARCHITECTURAL DATA**

11. PRIMARY STYLISTIC CATEGORY:
- |   |   |   |  |
|---|---|---|--|
| <input type="checkbox"/> COLONIAL       | <input type="checkbox"/> STICK STYLE      | <input type="checkbox"/> NEO-CLASSICAL REV.   | <input type="checkbox"/> FOUR SQUARE   |
| <input type="checkbox"/> FEDERAL        | <input type="checkbox"/> QUEEN ANNE       | <input type="checkbox"/> RENAISSANCE REV.     | <input type="checkbox"/> ART DECO      |
| <input type="checkbox"/> GREEK REVIVAL  | <input type="checkbox"/> SHINGLE STYLE    | <input type="checkbox"/> 19TH/20TH C. REVIVAL | <input type="checkbox"/> INTERNATIONAL |
| <input type="checkbox"/> GOTHIC REVIVAL | <input type="checkbox"/> R. ROMANESQUE    | <input type="checkbox"/> ARTS & CRAFTS        | <input type="checkbox"/> RANCH         |
| <input type="checkbox"/> ITALIANATE     | <input type="checkbox"/> ROMANESQUE       | <input type="checkbox"/> BUNGALOW             | <input type="checkbox"/> VERNACULAR    |
| <input type="checkbox"/> SECOND EMPIRE  | <input type="checkbox"/> HIGH VIC. GOTHIC | <input type="checkbox"/> OTHER _____          |  |
12. OTHER STYLISTIC CATEGORY:
- |   |   |   |  |
|---|---|---|--|
| <input type="checkbox"/> COLONIAL       | <input type="checkbox"/> STICK STYLE      | <input type="checkbox"/> NEO-CLASSICAL REV.   | <input type="checkbox"/> FOUR SQUARE   |
| <input type="checkbox"/> FEDERAL        | <input type="checkbox"/> QUEEN ANNE       | <input type="checkbox"/> RENAISSANCE REV.     | <input type="checkbox"/> ART DECO      |
| <input type="checkbox"/> GREEK REVIVAL  | <input type="checkbox"/> SHINGLE STYLE    | <input type="checkbox"/> 19TH/20TH C. REVIVAL | <input type="checkbox"/> INTERNATIONAL |
| <input type="checkbox"/> GOTHIC REVIVAL | <input type="checkbox"/> R. ROMANESQUE    | <input type="checkbox"/> ARTS & CRAFTS        | <input type="checkbox"/> RANCH         |
| <input type="checkbox"/> ITALIANATE     | <input type="checkbox"/> ROMANESQUE       | <input type="checkbox"/> BUNGALOW             | <input type="checkbox"/> VERNACULAR    |
| <input type="checkbox"/> SECOND EMPIRE  | <input type="checkbox"/> HIGH VIC. GOTHIC | <input type="checkbox"/> OTHER _____          |  |

13. HEIGHT: ☐ 1 STORY ☐ 1 1/2 STORY ☐ 2 STORY ☐ 2 1/2 STORY ☐ 3 STORY ☐ 4 STORY
- ☐ 5 STORY ☐ OVER 5 (    )

14. PRIMARY FACADE WIDTH (MAIN BLOCK; USE GROUND FLOOR):
- ☐ 1 BAY ☐ 2 BAY ☐ 3 BAY ☐ 4 BAY ☐ 5 BAY ☐ MORE THAN 5 (    )

15. APPENDAGES: ☐ SIDE ELL ☐ REAR ELL ☐ FRONT ☐ ADDED STORIES ☐ SHED
- ☐ DORMERS ☐ PORCH ☐ TOWER ☐ CUPOLA ☐ BAY WINDOW

## **PHOTOGRAPH:**





## 79 COREY ROAD

**Location** 79 COREY ROAD

**Mblu** R03/ 9/ / /

**Acct#** W1880R

**Owner** WORMELL LEROY C JR

**Assessment** \$307,500

**PID** 1030

**Building Count** 1

### Current Value

| Assessment     |              |           |           |
|----------------|--------------|-----------|-----------|
| Valuation Year | Improvements | Land      | Total     |
| 2017           | \$185,300    | \$122,200 | \$307,500 |

### Owner of Record

**Owner** WORMELL LEROY C JR  
**Co-Owner** WORMELL CAROLE A  
**Address** 184 BROOK STREET  
WESTBROOK, ME 04092

**Sale Price** \$240,000  
**Certificate**  
**Book & Page** 19103/ 289  
**Sale Date** 03/31/2003  
**Instrument** 1A

### Ownership History

| Ownership History  |            |             |             |            |            |
|--------------------|------------|-------------|-------------|------------|------------|
| Owner              | Sale Price | Certificate | Book & Page | Instrument | Sale Date  |
| WORMELL LEROY C JR | \$240,000  |             | 19103/ 289  | 1A         | 03/31/2003 |
| WORMELL LEROY C    | \$0        |             | 3619/ 300   |            |            |

### Building Information

#### Building 1 : Section 1

**Year Built:** 1820  
**Living Area:** 1,777  
**Replacement Cost:** \$196,311  
**Building Percent** 68  
**Good:**  
**Replacement Cost**  
**Less Depreciation:** \$133,500

| Building Attributes |              |
|---------------------|--------------|
| Field               | Description  |
| Style               | Conventional |
| Model               | Residential  |







**Use Code** 1010  
**Description** Single Fam MDL-01  
**Zone** RR1  
**Neighborhood** 70  
**Alt Land Appr** No  
**Category**

**Size (Acres)** 55.5  
**Frontage** 0  
**Depth** 0  
**Assessed Value** \$122,200

## Outbuildings

| Outbuildings |                |          |                 |           |          | Legend |
|--------------|----------------|----------|-----------------|-----------|----------|--------|
| Code         | Description    | Sub Code | Sub Description | Size      | Value    | Bldg # |
| BRN3         | 1 STORY W/LOFT |          |                 | 4000 S.F. | \$18,200 | 1      |
| SHD1         | SHED FRAME     |          |                 | 500 S.F.  | \$1,400  | 1      |
| PAT2         | PATIO-GOOD     |          |                 | 3600 S.F. | \$3,600  | 1      |
| BRN1         | BARN - 1 STORY |          |                 | 4450 S.F. | \$15,600 | 1      |
| SHD1         | SHED FRAME     |          |                 | 336 S.F.  | \$900    | 1      |
| BRN8         | POLE BARN      |          |                 | 2880 S.F. | \$7,100  | 1      |
| SHD1         | SHED FRAME     |          |                 | 1800 S.F. | \$5,000  | 1      |

## Valuation History

| Assessment     |              |           |           |
|----------------|--------------|-----------|-----------|
| Valuation Year | Improvements | Land      | Total     |
| 2015           | \$185,300    | \$122,200 | \$307,500 |
| 2014           | \$185,300    | \$122,200 | \$307,500 |
| 2013           | \$185,300    | \$122,200 | \$307,500 |

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**APPENDIX C**

**STORMWATER MANAGEMENT REPORT**

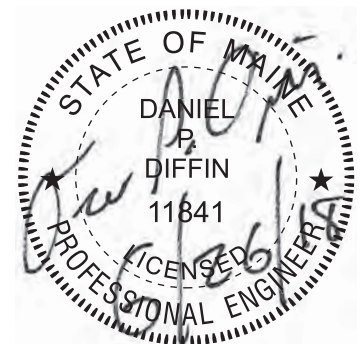


# STORMWATER MANAGEMENT REPORT

Prepared for

**REVISION ENERGY  
474.7 kW SOLAR ARRAY  
CUMBERLAND, MAINE**

**June 2018**



ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE

4 Blanchard Road, P.O. Box 85A, Cumberland, ME 04021 • Tel 207.829.5016 • Fax 207.829.5692 • [smemaine.com](http://smemaine.com)



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**STORMWATER MANAGEMENT REPORT  
474.7 kW SOLAR ARRAY  
CUMBERLAND, MAINE**

**1.0 INTRODUCTION**

This stormwater management report has been prepared by Sevee & Maher Engineers, Inc. (SME) to assess stormwater management for the proposed 474.7 kilowatt (kW) solar array located on the closed landfill located off Drowne Road in Cumberland, Maine. Stormwater evaluation is based on the water quality and quantity objectives identified in Chapter 500 of the Maine Department of Environmental Protection's (MEDEP) Stormwater Management Law.

**2.0 PROJECT DESCRIPTION**

As outlined above, ReVision Energy plans to lay 474.7 kilowatt (kW) solar array on the closed landfill located off Drowne Road in Cumberland. The property is a 108.88-acre parcel owned by the Town of Cumberland. The proposed project area is located on the eastern portion of the closed landfill. The Drowne Road Apartments abut the landfill to the north. The existing Public Works Facility and the Village Green development abut Drowne Road to the west. The Town Forest and a large wetland area exist to the south and east. The site location is shown on Figure 1 and Figure 2, provided in the Planning Board Site Plan Review Application.

The existing landfill was capped with 18 inches of compacted, clay overlain by 6 inches of vegetated topsoil. The clay cap is impermeable by design. Proposed development will replace approximately 25,000 square feet of turf with crushed stone on the existing landfill cap. Any areas impacted by construction will be seeded, mulched, and restored to original condition. A thin layer of crushed stone will be used for vegetation control under each panel row.

This project will require a Site Plan application for the Town of Cumberland and a Minor ReVision to update the closure order for the landfill operations license with the Maine Department of Environmental Protection (MEDEP). The project will disturb less than one acre of land on a previously developed site and will not require additional stormwater permitting from MEDEP.



### **3.0 SITE WATERSHED**

As previously outlined, the solar array will be constructed on a closed landfill. The landfill was capped with 18 inches of compacted clay overlain by 6 inches of vegetated topsoil. The clay cap is designed to minimize infiltration of rainfall into the closed landfill.

On-site soils were identified using the Natural Resources Conservation Service (NRCS) soil information for Cumberland County and Part of Oxford County, Maine. A copy of the Custom Soil Resource Report is included in Appendix A. The report outlined native soils in the work area, including Buxton silt loam (BuC2), Lamoine silt loam (BuB), Hinckley-Suffield complex (HnC), Elmwood fine sandy loam (EmB), and Scantic silt loam (Sn). Based on the known construction and impermeable nature of the landfill cap, soils in the project area were modeled as Hydrologic Soil Group D.

The landfill cap is characterized by two central high points separated by a shallow saddle, with the ground surface sloping away in all directions at grades ranging from 3 to 25 percent. The cap surface is vegetated with dense turf. No other plantings or structures exist on the landfill surface.

For this analysis, the landfill cap was divided into three subcatchments. Subcatchment 1 includes the western portion of the cap area that drains to the existing roadside ditch at Drowne Road. This ditch will be used as the first Analysis Point (AP-1) for this report. Subcatchment 2 includes the southern portion of the cap that drains to a large wetland located south of the former landfill. The wetland will be used as the second Analysis Point (AP-2) for this report. Subcatchment 3 includes the northern portion of the cap, which drains to a natural, wide bottomed swale that conveys stormwater around the eastern limit of the closed landfill. This swale will be used as the third Analysis Point (AP-3) for this report. The solar panel array is located entirely within Subcatchments 2 and 3.



Under developed conditions, site drainage patterns will be similar to existing conditions. Proposed development will replace approximately 25,000 square feet of turf with crushed stone on the existing landfill cap in Subcatchments 2 and 3.

Pre-development and post-development stormwater management plans identify the on-site drainage patterns before and after development (See Drawings D-100 and D-101). These drawings are included in the project plan set for reference. Appendices B and C provide pre- and post-development calculations, respectively, using TR-20 methodologies prepared with the HydroCAD Version 10.0 computer stormwater modeling system by Applied Microcomputer Systems of Chocorua, New Hampshire.

#### **4.0 STORMWATER QUALITY ANALYSIS**

This project will disturb less than one acre of land. Stormwater treatment is not required in accordance with the General Standards in Chapter 500 of the MEDEP's Stormwater Management Law (Chapter 500).

#### **5.0 STORMWATER QUANTITY ANALYSIS**

This project was analyzed using the Flooding Standard of Chapter 500. Table 2 below demonstrates peak flow rates from the subwatershed areas to the analysis points shown on Drawings D-100 and D-101.

**TABLE 2**  
**STORMWATER QUANTITY SUMMARY**

|                                   | 2-Year Storm |          | 10-Year Storm |          | 25-Year Storm |          |
|-----------------------------------|--------------|----------|---------------|----------|---------------|----------|
|                                   | Existing     | Proposed | Existing      | Proposed | Existing      | Proposed |
| <b>Analysis Point 1<br/>(cfs)</b> | 1.10         | 1.10     | 2.14          | 2.14     | 3.02          | 3.02     |
| <b>Analysis Point 2<br/>(cfs)</b> | 6.71         | 7.08     | 13.20         | 13.65    | 18.63         | 19.12    |
| <b>Analysis Point 3<br/>(cfs)</b> | 3.57         | 3.78     | 7.13          | 7.39     | 10.22         | 10.49    |



Our model indicated no increase in peak flows at AP-1 and minor increases in peak flows at AP-2 and AP-3 for the proposed site in the 2-, 10- and 25-year events when compared to the existing conditions. The increases in peak flow runoff outlined in the model are based on the removal and replacement of approximately 25,000 sf of turf with crushed stone on the landfill cap.

The surface of the crushed stone will match existing surface grades on the landfill cap. SME conservatively modeled the crushed stone as compacted gravel (CN 96), which resulted in peak flow increases of less than 0.5 cubic feet per second (CFS) during the 25-year storm. These minor increases flow to the existing wetland located south of the closed landfill and are contained to the existing property. Modeling assumptions are outlined in the HydroCAD reports included in Appendices B and C.

## **6.0 SUMMARY**

Given the minor nature of peak flow increases from the proposed development, and the fact that in the increased flows will be directed to the large wetland south of the landfill and contained to the property, SME does not anticipate the project will have any adverse impact to the downstream drainage or abutting properties.



**APPENDIX A**  
**NRCS SOIL REPORT**





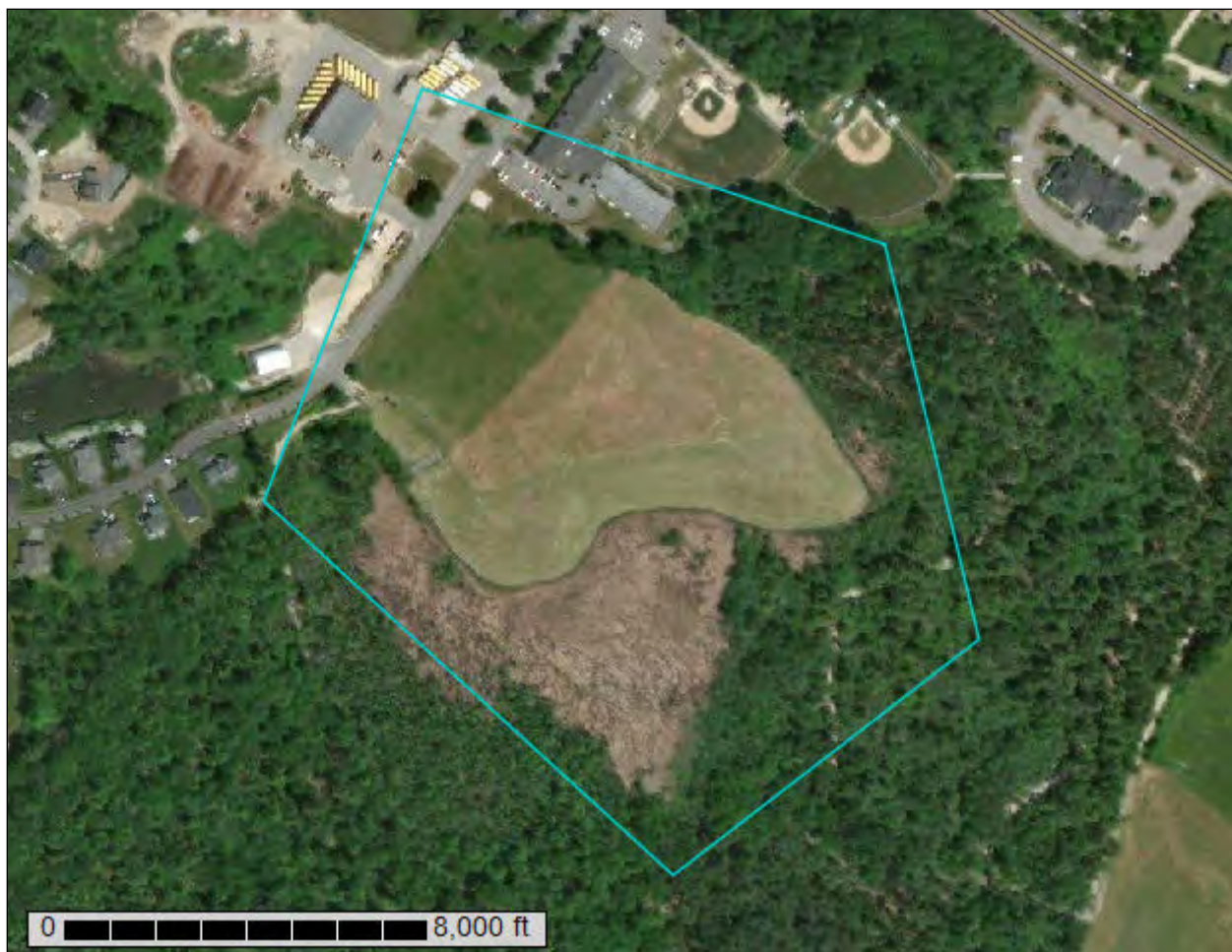
United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for Cumberland County and Part of Oxford County, Maine





# Preface

---

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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| BuB—Lamoine silt loam, 3 to 8 percent slopes.....             | 14 |
| BuC2—Buxton silt loam, 8 to 15 percent slopes.....            | 15 |
| EmB—Elmwood fine sandy loam, 0 to 8 percent slopes.....       | 16 |
| HnC—Hinckley-Suffield complex, 8 to 15 percent slopes.....    | 17 |
| Sn—Scantic silt loam, 0 to 3 percent slopes.....              | 19 |
| WmB—Windsor loamy sand, 0 to 8 percent slopes.....            | 20 |
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# How Soil Surveys Are Made

---

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil



scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and



## Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.



# Soil Map

---

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.




# Custom Soil Resource Report Soil Map





## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)


### Soils


 Soil Map Unit Polygons


 Soil Map Unit Lines


 Soil Map Unit Points

### Special Point Features

 Blowout

 Borrow Pit


 Clay Spot


 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole


 Slide or Slip


 Sodic Spot


 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

### Water Features

 Streams and Canals


### Transportation

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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

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

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

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

Soil Survey Area: Cumberland County and Part of Oxford County, Maine  
Survey Area Data: Version 13, Sep 11, 2017

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

Date(s) aerial images were photographed: Dec 31, 2009—Oct 13, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background



## MAP LEGEND

## MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



## Map Unit Legend

| Map Unit Symbol                    | Map Unit Name  | Acres in AOI | Percent of AOI |
|------------------------------------|--|--------------|----------------|
| BgB                                | Belgrade very fine sandy loam, 0 to 8 percent slopes | 1.5          | 5.1%           |
| BuB                                | Lamoine silt loam, 3 to 8 percent slopes             | 5.4          | 18.1%          |
| BuC2                               | Buxton silt loam, 8 to 15 percent slopes             | 4.7          | 15.7%          |
| EmB                                | Elmwood fine sandy loam, 0 to 8 percent slopes       | 1.8          | 6.2%           |
| HnC                                | Hinckley-Suffield complex, 8 to 15 percent slopes    | 3.0          | 10.0%          |
| Sn                                 | Scantic silt loam, 0 to 3 percent slopes             | 13.2         | 44.4%          |
| WmB                                | Windsor loamy sand, 0 to 8 percent slopes            | 0.2          | 0.6%           |
| <b>Totals for Area of Interest</b> |  | <b>29.7</b>  | <b>100.0%</b>  |

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit



descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.



## Cumberland County and Part of Oxford County, Maine

### BgB—Belgrade very fine sandy loam, 0 to 8 percent slopes

#### Map Unit Composition

*Belgrade and similar soils:* 85 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Belgrade

##### Setting

*Landform:* Lakebeds

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Coarse-silty glaciolacustrine deposits

##### Typical profile

*H1 - 0 to 9 inches:* very fine sandy loam

*H2 - 9 to 18 inches:* very fine sandy loam

*H3 - 18 to 28 inches:* silt loam

*H4 - 28 to 65 inches:* silt loam

##### Properties and qualities

*Slope:* 0 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Moderately well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)

*Depth to water table:* About 18 to 30 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* High (about 9.9 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* B

*Hydric soil rating:* No

### BuB—Lamoine silt loam, 3 to 8 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2t0kc

*Elevation:* 10 to 490 feet

*Mean annual precipitation:* 33 to 60 inches

*Mean annual air temperature:* 36 to 52 degrees F

*Frost-free period:* 90 to 160 days

*Farmland classification:* Farmland of statewide importance



**Map Unit Composition**

*Lamoine and similar soils: 85 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Lamoine**

**Setting**

*Landform: Marine terraces, river valleys*

*Landform position (two-dimensional): Footslope*

*Landform position (three-dimensional): Base slope*

*Down-slope shape: Linear*

*Across-slope shape: Linear*

*Parent material: Fine glaciomarine deposits*

**Typical profile**

*Ap - 0 to 7 inches: silt loam*

*Bw - 7 to 13 inches: silt loam*

*Bg - 13 to 24 inches: silty clay loam*

*Cg - 24 to 65 inches: silty clay*

**Properties and qualities**

*Slope: 3 to 8 percent*

*Depth to restrictive feature: More than 80 inches*

*Natural drainage class: Somewhat poorly drained*

*Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)*

*Depth to water table: About 6 to 17 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)*

*Available water storage in profile: Moderate (about 7.6 inches)*

**Interpretive groups**

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 3w*

*Hydrologic Soil Group: C/D*

*Hydric soil rating: No*

**BuC2—Buxton silt loam, 8 to 15 percent slopes**

**Map Unit Setting**

*National map unit symbol: 2x1by*

*Elevation: 10 to 490 feet*

*Mean annual precipitation: 33 to 60 inches*

*Mean annual air temperature: 36 to 52 degrees F*

*Frost-free period: 90 to 160 days*

*Farmland classification: Not prime farmland*

**Map Unit Composition**

*Buxton and similar soils: 85 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*



## **Description of Buxton**

### **Setting**

*Landform:* Marine terraces, river valleys  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Parent material:* Fine glaciomarine deposits

### **Typical profile**

*Ap - 0 to 7 inches:* silt loam  
*Bw1 - 7 to 18 inches:* silt loam  
*Bw2 - 18 to 23 inches:* silty clay loam  
*BC - 23 to 35 inches:* silty clay loam  
*C - 35 to 65 inches:* silty clay

### **Properties and qualities**

*Slope:* 8 to 15 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.14 in/hr)  
*Depth to water table:* About 17 to 24 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline (0.0 to 1.9 mmhos/cm)  
*Available water storage in profile:* High (about 9.1 inches)

### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3e  
*Hydrologic Soil Group:* C/D  
*Hydric soil rating:* No

## **EmB—Elmwood fine sandy loam, 0 to 8 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* blh8  
*Elevation:* 10 to 900 feet  
*Mean annual precipitation:* 38 to 55 inches  
*Mean annual air temperature:* 43 to 46 degrees F  
*Frost-free period:* 130 to 195 days  
*Farmland classification:* All areas are prime farmland

### **Map Unit Composition**

*Elmwood and similar soils:* 88 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*



## Description of Elmwood

### Setting

*Landform:* Stream terraces  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Coarse-loamy glaciolacustrine deposits

### Typical profile

*H1 - 0 to 8 inches:* fine sandy loam  
*H2 - 8 to 25 inches:* sandy loam  
*H3 - 25 to 65 inches:* silty clay loam

### Properties and qualities

*Slope:* 0 to 8 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately high (0.00 to 0.20 in/hr)  
*Depth to water table:* About 18 to 36 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* High (about 9.7 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2w  
*Hydrologic Soil Group:* B  
*Hydric soil rating:* No

## HnC—Hinckley-Suffield complex, 8 to 15 percent slopes

### Map Unit Setting

*National map unit symbol:* blht  
*Elevation:* 10 to 2,000 feet  
*Mean annual precipitation:* 30 to 48 inches  
*Mean annual air temperature:* 37 to 46 degrees F  
*Frost-free period:* 90 to 160 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Hinckley and similar soils:* 60 percent  
*Suffield and similar soils:* 25 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

## Description of Hinckley

### Setting

*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Footslope



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*Landform position (three-dimensional):* Tread

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Sandy-skeletal glaciofluvial deposits derived from granite and gneiss

### Typical profile

*H1 - 0 to 7 inches:* gravelly sandy loam

*H2 - 7 to 10 inches:* gravelly sandy loam

*H3 - 10 to 24 inches:* gravelly loamy sand

*H4 - 24 to 65 inches:* very gravelly sand

### Properties and qualities

*Slope:* 8 to 15 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Excessively drained

*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (6.00 to 20.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* Very low (about 2.3 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 4e

*Hydrologic Soil Group:* A

*Hydric soil rating:* No

## Description of Suffield

### Setting

*Landform:* Coastal plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Parent material:* Fine glaciolacustrine deposits

### Typical profile

*H1 - 0 to 6 inches:* silt loam

*H2 - 6 to 23 inches:* silt loam

*H3 - 23 to 33 inches:* silty clay

*H4 - 33 to 65 inches:* silty clay

### Properties and qualities

*Slope:* 8 to 15 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Moderately well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately high (0.00 to 0.20 in/hr)

*Depth to water table:* About 18 to 30 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* High (about 9.5 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified



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*Land capability classification (nonirrigated): 3e*  
*Hydrologic Soil Group: C*  
*Hydric soil rating: No*

### **Sn—Scantic silt loam, 0 to 3 percent slopes**

#### **Map Unit Setting**

*National map unit symbol: 2slv3*  
*Elevation: 10 to 900 feet*  
*Mean annual precipitation: 33 to 60 inches*  
*Mean annual air temperature: 39 to 45 degrees F*  
*Frost-free period: 90 to 160 days*  
*Farmland classification: Not prime farmland*

#### **Map Unit Composition**

*Scantic and similar soils: 85 percent*  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### **Description of Scantic**

##### **Setting**

*Landform: Marine terraces, river valleys*  
*Landform position (three-dimensional): Talf*  
*Down-slope shape: Linear*  
*Across-slope shape: Linear*  
*Parent material: Glaciomarine deposits*

##### **Typical profile**

*Ap - 0 to 9 inches: silt loam*  
*Bg1 - 9 to 16 inches: silty clay loam*  
*Bg2 - 16 to 29 inches: silty clay*  
*Cg - 29 to 65 inches: silty clay*

##### **Properties and qualities**

*Slope: 0 to 3 percent*  
*Depth to restrictive feature: More than 80 inches*  
*Natural drainage class: Poorly drained*  
*Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)*  
*Depth to water table: About 0 to 12 inches*  
*Frequency of flooding: None*  
*Frequency of ponding: None*  
*Available water storage in profile: Moderate (about 6.3 inches)*

##### **Interpretive groups**

*Land capability classification (irrigated): None specified*  
*Land capability classification (nonirrigated): 4w*  
*Hydrologic Soil Group: D*  
*Hydric soil rating: Yes*



## **WmB—Windsor loamy sand, 0 to 8 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2w2x2

*Elevation:* 0 to 1,410 feet

*Mean annual precipitation:* 36 to 71 inches

*Mean annual air temperature:* 39 to 55 degrees F

*Frost-free period:* 140 to 240 days

*Farmland classification:* Farmland of statewide importance

### **Map Unit Composition**

*Windsor and similar soils:* 85 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Windsor**

#### **Setting**

*Landform:* Outwash plains, outwash terraces, deltas, dunes

*Landform position (three-dimensional):* Tread, riser

*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear, convex

*Parent material:* Loose sandy glaciofluvial deposits derived from granite and/or  
loose sandy glaciofluvial deposits derived from schist and/or loose sandy  
glaciofluvial deposits derived from gneiss

#### **Typical profile**

*Oe - 0 to 1 inches:* moderately decomposed plant material

*A - 1 to 3 inches:* loamy sand

*Bw - 3 to 25 inches:* loamy sand

*C - 25 to 65 inches:* sand

#### **Properties and qualities**

*Slope:* 0 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Excessively drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to  
very high (1.42 to 99.90 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline (0.0 to 1.9 mmhos/cm)

*Available water storage in profile:* Low (about 4.5 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2s

*Hydrologic Soil Group:* A

*Hydric soil rating:* No







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## Custom Soil Resource Report

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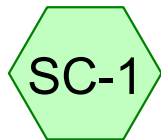
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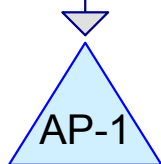
## **APPENDIX B**

### **PRE-DEVELOPMENT HYDROCAD CALCULATIONS**





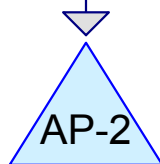
EAST



ANALYSIS POINT 1



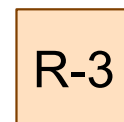
SOUTH



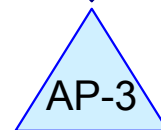
ANALYSIS POINT 2



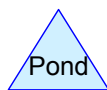
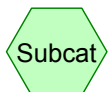
NORTH



SWALE



ANALYSIS POINT 3



**Routing Diagram for Existing 062218**

Prepared by Sevee & Maher Engineers, Inc., Printed 6/22/2018  
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**Existing 062218***Type III 24-hr 2-yr Storm Rainfall=3.10"*

Prepared by Sevee &amp; Maher Engineers, Inc.

Printed 6/22/2018

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment SC-1: EAST**Runoff Area=35,773 sf 0.00% Impervious Runoff Depth>1.22"  
Flow Length=182' Tc=9.6 min CN=80 Runoff=1.10 cfs 0.084 af**Subcatchment SC-2: SOUTH**Runoff Area=237,922 sf 0.00% Impervious Runoff Depth>1.22"  
Flow Length=469' Tc=12.3 min CN=80 Runoff=6.71 cfs 0.555 af**Subcatchment SC-3: NORTH**Runoff Area=139,166 sf 0.00% Impervious Runoff Depth>1.22"  
Flow Length=337' Tc=13.4 min CN=80 Runoff=3.83 cfs 0.325 af**Reach R-3: SWALE**Avg. Flow Depth=0.24' Max Vel=3.00 fps Inflow=3.83 cfs 0.325 af  
n=0.030 L=726.0' S=0.0413 '/' Capacity=1,503.19 cfs Outflow=3.57 cfs 0.323 af**Pond AP-1: ANALYSIS POINT 1**Inflow=1.10 cfs 0.084 af  
Primary=1.10 cfs 0.084 af**Pond AP-2: ANALYSIS POINT 2**Inflow=6.71 cfs 0.555 af  
Primary=6.71 cfs 0.555 af**Pond AP-3: ANALYSIS POINT 3**Inflow=3.57 cfs 0.323 af  
Primary=3.57 cfs 0.323 af



**Existing 062218**

Prepared by Sevee &amp; Maher Engineers, Inc.

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Type III 24-hr 2-yr Storm Rainfall=3.10"

Printed 6/22/2018

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**Summary for Subcatchment SC-1: EAST**

Runoff = 1.10 cfs @ 12.14 hrs, Volume= 0.084 af, Depth&gt; 1.22"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Type III 24-hr 2-yr Storm Rainfall=3.10"

| Area (sf) | CN | Description              |
|-----------|----|--------------------------|
| * 35,773  | 80 | Grass cover, Good, HSG D |
| 35,773    |    | 100.00% Pervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 9.3      | 100           | 0.0600        | 0.18              |                | <b>Sheet Flow, Sheet flow</b>                           |
|          |               |               |                   |                | Grass: Dense n= 0.240 P2= 3.10"                         |
| 0.3      | 82            | 0.0731        | 4.06              |                | <b>Shallow Concentrated Flow, Shallow Concentratedf</b> |
|          |               |               |                   |                | Grassed Waterway Kv= 15.0 fps                           |
| 9.6      | 182           | Total         |                   |                |   |

**Summary for Subcatchment SC-2: SOUTH**

Runoff = 6.71 cfs @ 12.18 hrs, Volume= 0.555 af, Depth&gt; 1.22"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Type III 24-hr 2-yr Storm Rainfall=3.10"

| Area (sf) | CN | Description              |
|-----------|----|--------------------------|
| * 237,922 | 80 | Grass cover, Good, HSG D |
| 237,922   |    | 100.00% Pervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description                             |
|----------|---------------|---------------|-------------------|----------------|---|
| 11.0     | 100           | 0.0400        | 0.15              |                | <b>Sheet Flow,</b>                      |
|          |               |               |                   |                | Grass: Dense n= 0.240 P2= 3.10"         |
| 0.9      | 82            | 0.0490        | 1.55              |                | <b>Shallow Concentrated Flow, SC -1</b> |
|          |               |               |                   |                | Short Grass Pasture Kv= 7.0 fps         |
| 0.4      | 287           | 0.0906        | 12.82             | 166.69         | <b>Channel Flow,</b>                    |
|          |               |               |                   |                | Area= 13.0 sf Perim= 16.3' r= 0.80'     |
|          |               |               |                   |                | n= 0.030 Earth, grassed & winding       |
| 12.3     | 469           | Total         |                   |                |   |

**Summary for Subcatchment SC-3: NORTH**

Runoff = 3.83 cfs @ 12.20 hrs, Volume= 0.325 af, Depth&gt; 1.22"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Type III 24-hr 2-yr Storm Rainfall=3.10"



**Existing 062218**

Type III 24-hr 2-yr Storm Rainfall=3.10"

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|   | Area (sf) | CN | Description              |
|---|-----------|----|--------------------------|
| * | 139,166   | 80 | Grass cover, Good, HSG D |
|   | 139,166   |    | 100.00% Pervious Area    |

| Tc<br>(min) | Length<br>(feet) | Slope<br>(ft/ft) | Velocity<br>(ft/sec) | Capacity<br>(cfs) | Description  |
|-------------|------------------|------------------|----------------------|-------------------|--|
| 12.3        | 100              | 0.0300           | 0.14                 |                   | <b>Sheet Flow,</b><br>Grass: Dense n= 0.240 P2= 3.10"              |
| 0.5         | 87               | 0.0460           | 3.22                 |                   | <b>Shallow Concentrated Flow,</b><br>Grassed Waterway Kv= 15.0 fps |
| 0.6         | 150              | 0.0867           | 4.42                 |                   | <b>Shallow Concentrated Flow,</b><br>Grassed Waterway Kv= 15.0 fps |
| 13.4        | 337              | Total            |                      |                   |  |

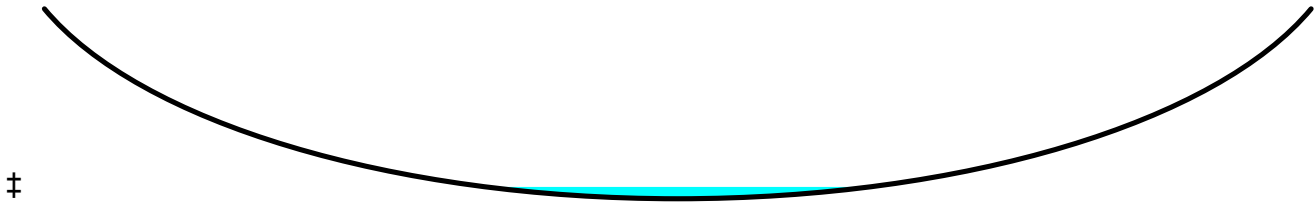
**Summary for Reach R-3: SWALE**

Inflow Area = 3.195 ac, 0.00% Impervious, Inflow Depth > 1.22" for 2-yr Storm event  
 Inflow = 3.83 cfs @ 12.20 hrs, Volume= 0.325 af  
 Outflow = 3.57 cfs @ 12.32 hrs, Volume= 0.323 af, Atten= 7%, Lag= 7.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Max. Velocity= 3.00 fps, Min. Travel Time= 4.0 min  
 Avg. Velocity= 1.35 fps, Avg. Travel Time= 9.0 min

Peak Storage= 875 cf @ 12.25 hrs  
 Average Depth at Peak Storage= 0.24'  
 Bank-Full Depth= 4.00' Flow Area= 80.0 sf, Capacity= 1,503.19 cfs

30.00' x 4.00' deep Parabolic Channel, n= 0.030 Earth, grassed & winding  
 Length= 726.0' Slope= 0.0413 '  
 Inlet Invert= 110.00', Outlet Invert= 80.02'

**Summary for Pond AP-1: ANALYSIS POINT 1**

Inflow Area = 0.821 ac, 0.00% Impervious, Inflow Depth > 1.22" for 2-yr Storm event  
 Inflow = 1.10 cfs @ 12.14 hrs, Volume= 0.084 af  
 Primary = 1.10 cfs @ 12.14 hrs, Volume= 0.084 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



**Summary for Pond AP-2: ANALYSIS POINT 2**

Inflow Area = 5.462 ac, 0.00% Impervious, Inflow Depth > 1.22" for 2-yr Storm event  
Inflow = 6.71 cfs @ 12.18 hrs, Volume= 0.555 af  
Primary = 6.71 cfs @ 12.18 hrs, Volume= 0.555 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Summary for Pond AP-3: ANALYSIS POINT 3**

Inflow Area = 3.195 ac, 0.00% Impervious, Inflow Depth > 1.21" for 2-yr Storm event  
Inflow = 3.57 cfs @ 12.32 hrs, Volume= 0.323 af  
Primary = 3.57 cfs @ 12.32 hrs, Volume= 0.323 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



**Existing 062218**

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Type III 24-hr 10-yr Storm Rainfall=4.60"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment SC-1: EAST**Runoff Area=35,773 sf 0.00% Impervious Runoff Depth>2.37"  
Flow Length=182' Tc=9.6 min CN=80 Runoff=2.14 cfs 0.162 af**Subcatchment SC-2: SOUTH**Runoff Area=237,922 sf 0.00% Impervious Runoff Depth>2.37"  
Flow Length=469' Tc=12.3 min CN=80 Runoff=13.20 cfs 1.079 af**Subcatchment SC-3: NORTH**Runoff Area=139,166 sf 0.00% Impervious Runoff Depth>2.37"  
Flow Length=337' Tc=13.4 min CN=80 Runoff=7.47 cfs 0.631 af**Reach R-3: SWALE**Avg. Flow Depth=0.33' Max Vel=3.69 fps Inflow=7.47 cfs 0.631 af  
n=0.030 L=726.0' S=0.0413 '/' Capacity=1,503.19 cfs Outflow=7.13 cfs 0.628 af**Pond AP-1: ANALYSIS POINT 1**Inflow=2.14 cfs 0.162 af  
Primary=2.14 cfs 0.162 af**Pond AP-2: ANALYSIS POINT 2**Inflow=13.20 cfs 1.079 af  
Primary=13.20 cfs 1.079 af**Pond AP-3: ANALYSIS POINT 3**Inflow=7.13 cfs 0.628 af  
Primary=7.13 cfs 0.628 af



**Existing 062218***Type III 24-hr 25-yr Storm Rainfall=5.80"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

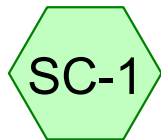
**Subcatchment SC-1: EAST**Runoff Area=35,773 sf 0.00% Impervious Runoff Depth>3.37"  
Flow Length=182' Tc=9.6 min CN=80 Runoff=3.02 cfs 0.231 af**Subcatchment SC-2: SOUTH**Runoff Area=237,922 sf 0.00% Impervious Runoff Depth>3.37"  
Flow Length=469' Tc=12.3 min CN=80 Runoff=18.63 cfs 1.533 af**Subcatchment SC-3: NORTH**Runoff Area=139,166 sf 0.00% Impervious Runoff Depth>3.37"  
Flow Length=337' Tc=13.4 min CN=80 Runoff=10.54 cfs 0.896 af**Reach R-3: SWALE**Avg. Flow Depth=0.39' Max Vel=4.11 fps Inflow=10.54 cfs 0.896 af  
n=0.030 L=726.0' S=0.0413 '/ Capacity=1,503.19 cfs Outflow=10.22 cfs 0.892 af**Pond AP-1: ANALYSIS POINT 1**Inflow=3.02 cfs 0.231 af  
Primary=3.02 cfs 0.231 af**Pond AP-2: ANALYSIS POINT 2**Inflow=18.63 cfs 1.533 af  
Primary=18.63 cfs 1.533 af**Pond AP-3: ANALYSIS POINT 3**Inflow=10.22 cfs 0.892 af  
Primary=10.22 cfs 0.892 af



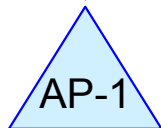
## **APPENDIX C**

### **POST-DEVELOPMENT HYDROCAD CALCULATIONS**





EAST



ANALYSIS POINT 1



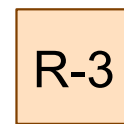
SOUTH



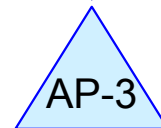
ANALYSIS POINT 2



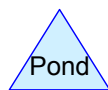
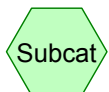
NORTH



SWALE



ANALYSIS POINT 3



**Routing Diagram for Proposed 062218**

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**Proposed 062218***Type III 24-hr 2-yr Storm Rainfall=3.10"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment SC-1: EAST**Runoff Area=35,773 sf 0.00% Impervious Runoff Depth>1.22"  
Flow Length=182' Tc=9.6 min CN=80 Runoff=1.10 cfs 0.084 af**Subcatchment SC-2: SOUTH**Runoff Area=237,922 sf 0.00% Impervious Runoff Depth>1.28"  
Flow Length=469' Tc=12.3 min CN=81 Runoff=7.08 cfs 0.584 af**Subcatchment SC-3: NORTH**Runoff Area=139,166 sf 0.00% Impervious Runoff Depth>1.28"  
Flow Length=337' Tc=13.4 min CN=81 Runoff=4.03 cfs 0.341 af**Reach R-3: SWALE**Avg. Flow Depth=0.25' Max Vel=3.05 fps Inflow=4.03 cfs 0.341 af  
n=0.030 L=726.0' S=0.0413 '/' Capacity=1,503.19 cfs Outflow=3.78 cfs 0.339 af**Pond AP-1: ANALYSIS POINT 1**Inflow=1.10 cfs 0.084 af  
Primary=1.10 cfs 0.084 af**Pond AP-2: ANALYSIS POINT 2**Inflow=7.08 cfs 0.584 af  
Primary=7.08 cfs 0.584 af**Pond AP-3: ANALYSIS POINT 3**Inflow=3.78 cfs 0.339 af  
Primary=3.78 cfs 0.339 af



**Proposed 062218**

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Type III 24-hr 2-yr Storm Rainfall=3.10"

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**Summary for Subcatchment SC-1: EAST**

Runoff = 1.10 cfs @ 12.14 hrs, Volume= 0.084 af, Depth&gt; 1.22"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Type III 24-hr 2-yr Storm Rainfall=3.10"

| Area (sf) | CN | Description              |
|-----------|----|--------------------------|
| * 35,773  | 80 | Grass cover, Good, HSG D |
| 35,773    |    | 100.00% Pervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description   |
|----------|---------------|---------------|-------------------|----------------|---|
| 9.3      | 100           | 0.0600        | 0.18              |                | <b>Sheet Flow, Sheet flow</b>                           |
|          |               |               |                   |                | Grass: Dense n= 0.240 P2= 3.10"                         |
| 0.3      | 82            | 0.0731        | 4.06              |                | <b>Shallow Concentrated Flow, Shallow Concentratedf</b> |
|          |               |               |                   |                | Grassed Waterway Kv= 15.0 fps                           |
| 9.6      | 182           | Total         |                   |                |   |

**Summary for Subcatchment SC-2: SOUTH**

Runoff = 7.08 cfs @ 12.18 hrs, Volume= 0.584 af, Depth&gt; 1.28"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Type III 24-hr 2-yr Storm Rainfall=3.10"

| Area (sf) | CN | Description              |
|-----------|----|--------------------------|
| * 221,787 | 80 | Grass cover, Good, HSG D |
| 16,135    | 96 | Gravel surface, HSG D    |
| 237,922   | 81 | Weighted Average         |
| 237,922   |    | 100.00% Pervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description                             |
|----------|---------------|---------------|-------------------|----------------|---|
| 11.0     | 100           | 0.0400        | 0.15              |                | <b>Sheet Flow,</b>                      |
|          |               |               |                   |                | Grass: Dense n= 0.240 P2= 3.10"         |
| 0.9      | 82            | 0.0490        | 1.55              |                | <b>Shallow Concentrated Flow, SC -1</b> |
|          |               |               |                   |                | Short Grass Pasture Kv= 7.0 fps         |
| 0.4      | 287           | 0.0906        | 12.82             | 166.69         | <b>Channel Flow,</b>                    |
|          |               |               |                   |                | Area= 13.0 sf Perim= 16.3' r= 0.80'     |
|          |               |               |                   |                | n= 0.030 Earth, grassed & winding       |
| 12.3     | 469           | Total         |                   |                |   |

**Summary for Subcatchment SC-3: NORTH**

Runoff = 4.03 cfs @ 12.19 hrs, Volume= 0.341 af, Depth&gt; 1.28"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Type III 24-hr 2-yr Storm Rainfall=3.10"



**Proposed 062218**

Type III 24-hr 2-yr Storm Rainfall=3.10"

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|   | Area (sf) | CN | Description              |
|---|-----------|----|--------------------------|
| * | 129,914   | 80 | Grass cover, Good, HSG D |
|   | 9,252     | 96 | Gravel surface, HSG D    |
|   | 139,166   | 81 | Weighted Average         |
|   | 139,166   |    | 100.00% Pervious Area    |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description  |
|----------|---------------|---------------|-------------------|----------------|--|
| 12.3     | 100           | 0.0300        | 0.14              |                | <b>Sheet Flow,</b><br>Grass: Dense n= 0.240 P2= 3.10"              |
| 0.5      | 87            | 0.0460        | 3.22              |                | <b>Shallow Concentrated Flow,</b><br>Grassed Waterway Kv= 15.0 fps |
| 0.6      | 150           | 0.0867        | 4.42              |                | <b>Shallow Concentrated Flow,</b><br>Grassed Waterway Kv= 15.0 fps |
| 13.4     | 337           | Total         |                   |                |  |

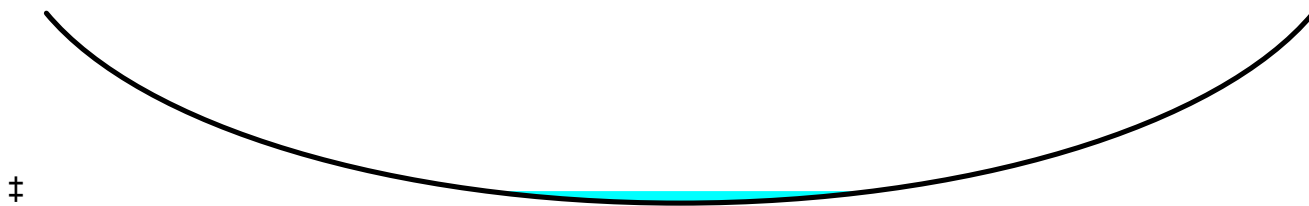
**Summary for Reach R-3: SWALE**

Inflow Area = 3.195 ac, 0.00% Impervious, Inflow Depth > 1.28" for 2-yr Storm event  
 Inflow = 4.03 cfs @ 12.19 hrs, Volume= 0.341 af  
 Outflow = 3.78 cfs @ 12.31 hrs, Volume= 0.339 af, Atten= 6%, Lag= 7.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs  
 Max. Velocity= 3.05 fps, Min. Travel Time= 4.0 min  
 Avg. Velocity = 1.36 fps, Avg. Travel Time= 8.9 min

Peak Storage= 908 cf @ 12.25 hrs  
 Average Depth at Peak Storage= 0.25'  
 Bank-Full Depth= 4.00' Flow Area= 80.0 sf, Capacity= 1,503.19 cfs

30.00' x 4.00' deep Parabolic Channel, n= 0.030 Earth, grassed & winding  
 Length= 726.0' Slope= 0.0413 '/'  
 Inlet Invert= 110.00', Outlet Invert= 80.02'

**Summary for Pond AP-1: ANALYSIS POINT 1**

Inflow Area = 0.821 ac, 0.00% Impervious, Inflow Depth > 1.22" for 2-yr Storm event  
 Inflow = 1.10 cfs @ 12.14 hrs, Volume= 0.084 af  
 Primary = 1.10 cfs @ 12.14 hrs, Volume= 0.084 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



**Summary for Pond AP-2: ANALYSIS POINT 2**

Inflow Area = 5.462 ac, 0.00% Impervious, Inflow Depth > 1.28" for 2-yr Storm event  
Inflow = 7.08 cfs @ 12.18 hrs, Volume= 0.584 af  
Primary = 7.08 cfs @ 12.18 hrs, Volume= 0.584 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

**Summary for Pond AP-3: ANALYSIS POINT 3**

Inflow Area = 3.195 ac, 0.00% Impervious, Inflow Depth > 1.27" for 2-yr Storm event  
Inflow = 3.78 cfs @ 12.31 hrs, Volume= 0.339 af  
Primary = 3.78 cfs @ 12.31 hrs, Volume= 0.339 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



**Proposed 062218***Type III 24-hr 10-yr Storm Rainfall=4.60"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment SC-1: EAST**Runoff Area=35,773 sf 0.00% Impervious Runoff Depth>2.37"  
Flow Length=182' Tc=9.6 min CN=80 Runoff=2.14 cfs 0.162 af**Subcatchment SC-2: SOUTH**Runoff Area=237,922 sf 0.00% Impervious Runoff Depth>2.46"  
Flow Length=469' Tc=12.3 min CN=81 Runoff=13.65 cfs 1.117 af**Subcatchment SC-3: NORTH**Runoff Area=139,166 sf 0.00% Impervious Runoff Depth>2.45"  
Flow Length=337' Tc=13.4 min CN=81 Runoff=7.72 cfs 0.653 af**Reach R-3: SWALE**Avg. Flow Depth=0.34' Max Vel=3.73 fps Inflow=7.72 cfs 0.653 af  
n=0.030 L=726.0' S=0.0413 '/' Capacity=1,503.19 cfs Outflow=7.39 cfs 0.650 af**Pond AP-1: ANALYSIS POINT 1**Inflow=2.14 cfs 0.162 af  
Primary=2.14 cfs 0.162 af**Pond AP-2: ANALYSIS POINT 2**Inflow=13.65 cfs 1.117 af  
Primary=13.65 cfs 1.117 af**Pond AP-3: ANALYSIS POINT 3**Inflow=7.39 cfs 0.650 af  
Primary=7.39 cfs 0.650 af



**Proposed 062218***Type III 24-hr 25-yr Storm Rainfall=5.80"*

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

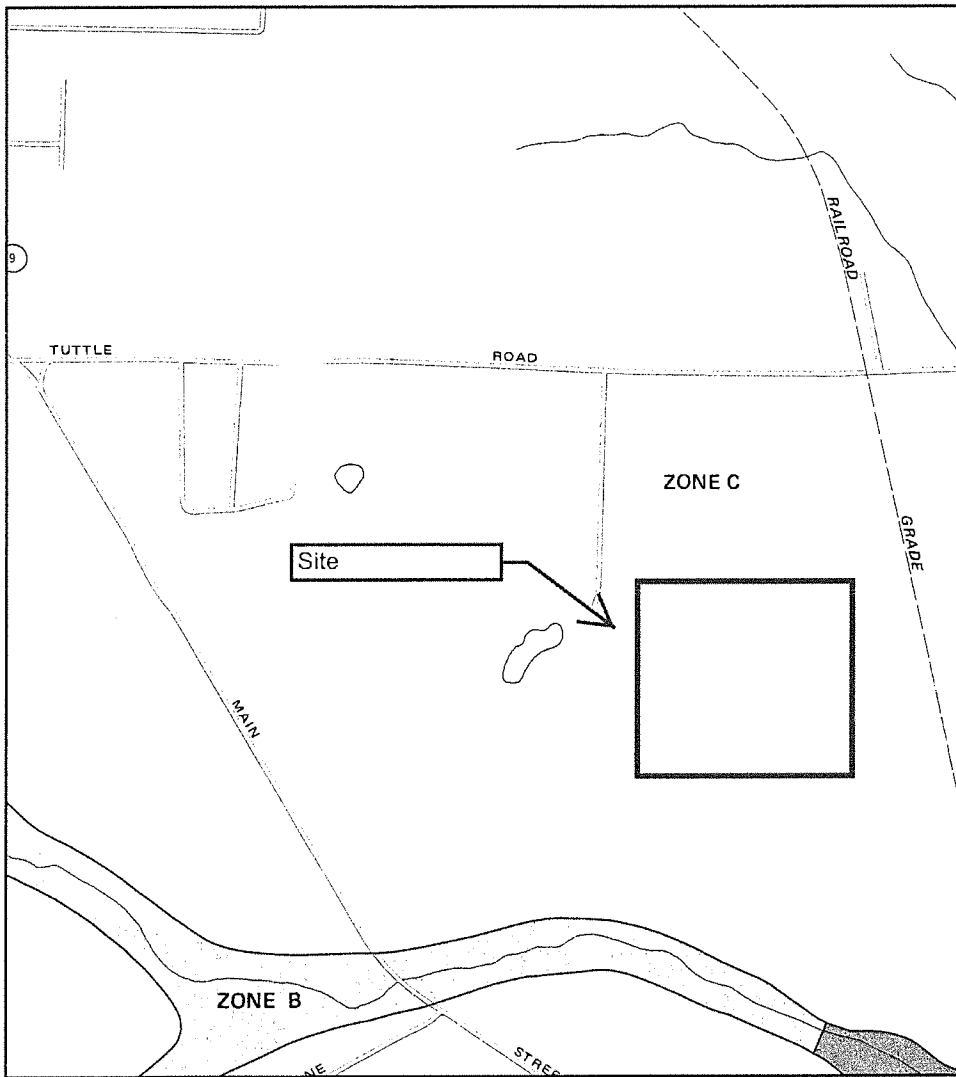
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment SC-1: EAST**Runoff Area=35,773 sf 0.00% Impervious Runoff Depth>3.37"  
Flow Length=182' Tc=9.6 min CN=80 Runoff=3.02 cfs 0.231 af**Subcatchment SC-2: SOUTH**Runoff Area=237,922 sf 0.00% Impervious Runoff Depth>3.47"  
Flow Length=469' Tc=12.3 min CN=81 Runoff=19.12 cfs 1.577 af**Subcatchment SC-3: NORTH**Runoff Area=139,166 sf 0.00% Impervious Runoff Depth>3.46"  
Flow Length=337' Tc=13.4 min CN=81 Runoff=10.81 cfs 0.922 af**Reach R-3: SWALE**Avg. Flow Depth=0.40' Max Vel=4.14 fps Inflow=10.81 cfs 0.922 af  
n=0.030 L=726.0' S=0.0413 '/ Capacity=1,503.19 cfs Outflow=10.49 cfs 0.919 af**Pond AP-1: ANALYSIS POINT 1**Inflow=3.02 cfs 0.231 af  
Primary=3.02 cfs 0.231 af**Pond AP-2: ANALYSIS POINT 2**Inflow=19.12 cfs 1.577 af  
Primary=19.12 cfs 1.577 af**Pond AP-3: ANALYSIS POINT 3**Inflow=10.49 cfs 0.919 af  
Primary=10.49 cfs 0.919 af



**APPENDIX D**  
**FEMA FLOODPLAIN MAP**





APPROXIMATE SCALE

800 0 800 FEET

NATIONAL FLOOD INSURANCE PROGRAM

**FIRM**  
FLOOD INSURANCE RATE MAP

TOWN OF  
CUMBERLAND, MAINE  
CUMBERLAND COUNTY

PANEL 15 OF 25  
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER  
230162 0015 B

EFFECTIVE DATE:  
MAY 19, 1981



federal emergency management agency  
federal insurance administration

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at [www.msc.fema.gov](http://www.msc.fema.gov)



**APPENDIX E**  
**SITE PHOTOS**





Aerial View Looking East From Upper Village Green



Wetlands Looking South From Array Site





Drowne Road Apartments Looking Toward Array Site



Array Site Looking Toward Drowne Road Apartments





Upper Village Green Looking Towards Array Site



Array Site Looking Towards Upper Village Green



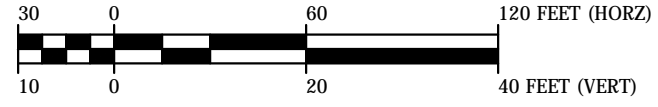
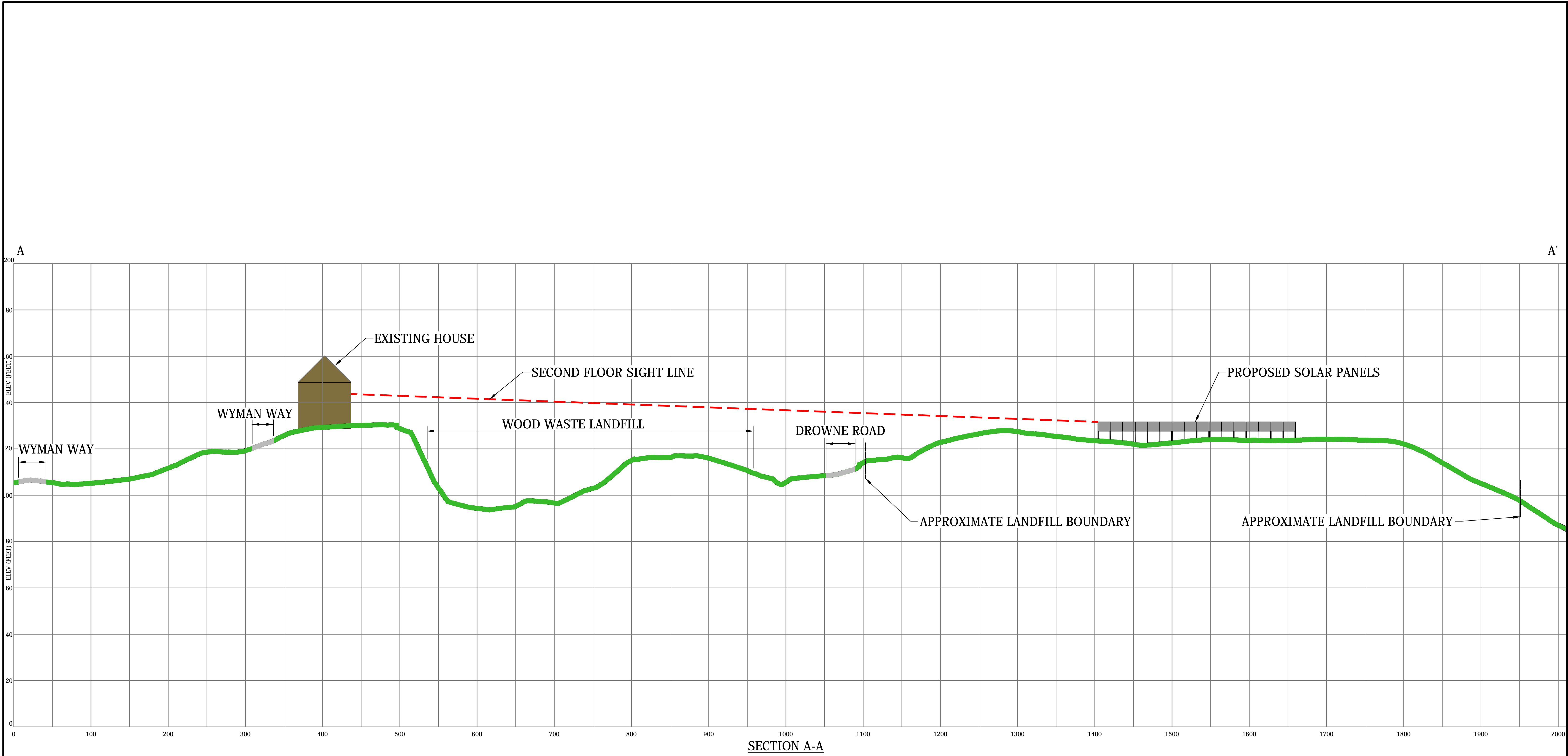
**APPENDIX F**

**SITE LINES AND VIEW PROFILES**







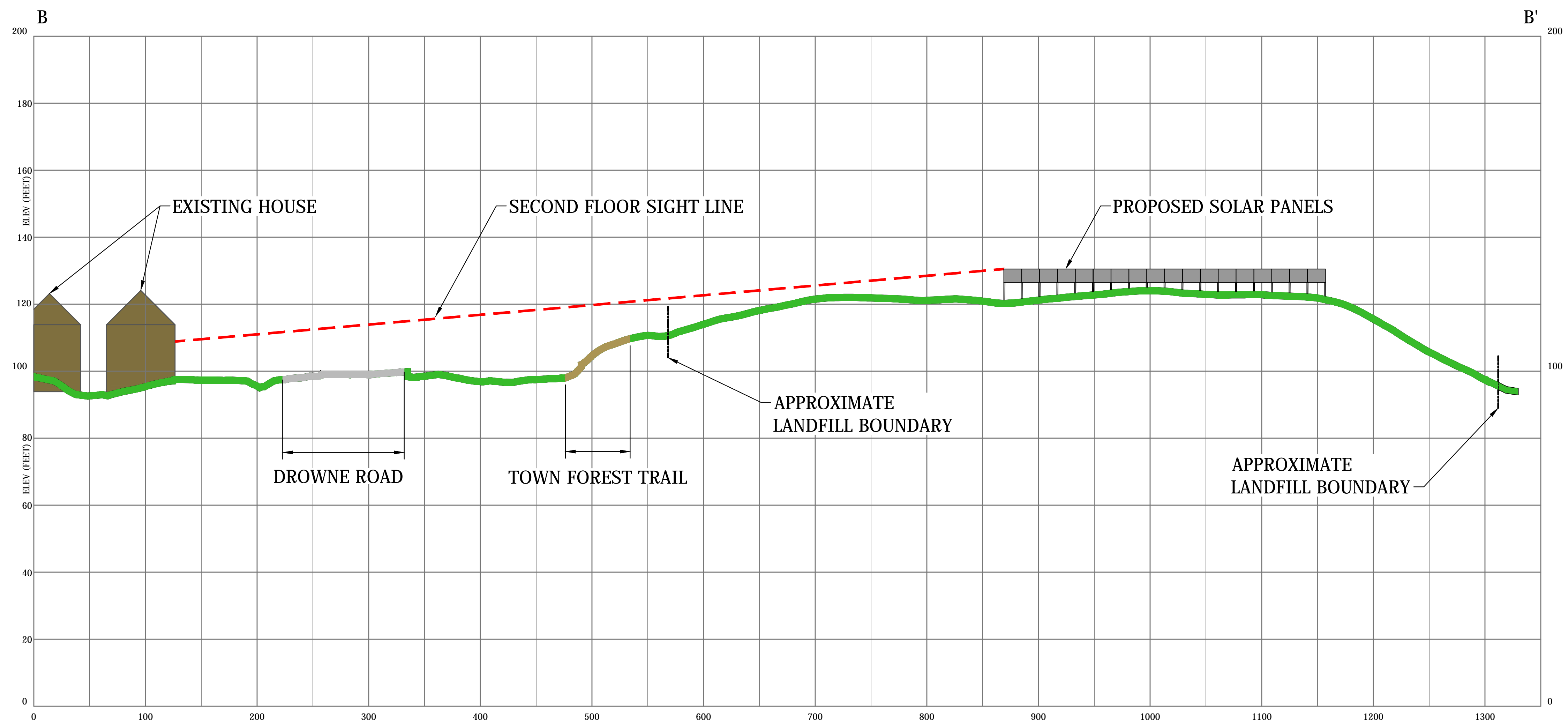


SITE SECTIONS  
CUMBERLAND LANDFILL  
TOWN OF CUMBERLAND  
CUMBERLAND, MAINE

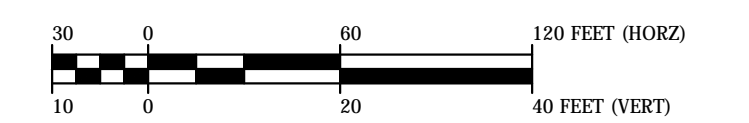


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SECTION B-B



SITE SECTIONS  
CUMBERLAND LANDFILL  
TOWN OF CUMBERLAND  
CUMBERLAND, MAINE

**SME**  
SEVEE & MAHER  
ENGINEERS

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**APPENDIX G**  
**FINANCIAL CAPACITY**





June 25, 2018

Town of Cumberland  
290 Tuttle Road  
Cumberland Center, ME 04021

Dear Sir or Madam:

William Behrens, Treasurer of ReVision Energy, Inc., has requested that the Bank evidence their financial capacity to complete the proposed solar installation for the Town of Cumberland. It is my understanding that the estimated cost of the project is just over \$1.1 million. ReVision Energy maintains significant deposits with the Bank and have average deposit balances that are in excess of the estimated cost of the project. In addition, they have a working capital line of credit that provides a secondary liquidity option for completing jobs. In their time with Bangor Savings Bank they have worked on many similar, and larger scope, projects and always shown the ability to adequately complete and fund the work to the agreed upon specifications. If I can answer any additional questions please do not hesitate to call me at (207) 990-6453. For non-traditional business hours I can be reached on my cell phone at (207) 649-8708.

Sincerely,

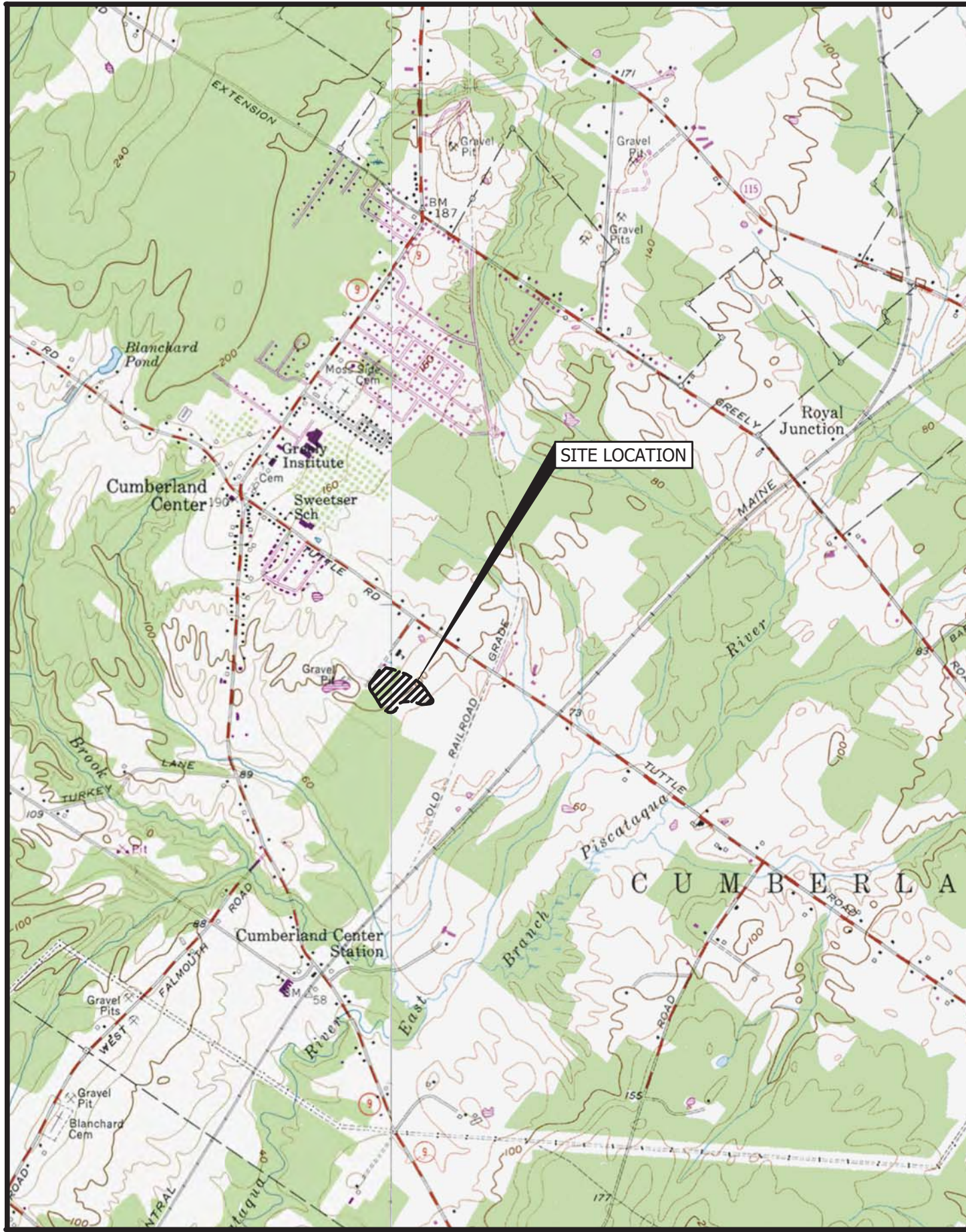
A handwritten signature in dark ink, appearing to read "David Holden", is written over a horizontal line.

David Holden  
Senior Vice President



# 474.7 KW SOLAR ARRAY REVISION ENERGY CUMBERLAND, MAINE

LOCATION MAP

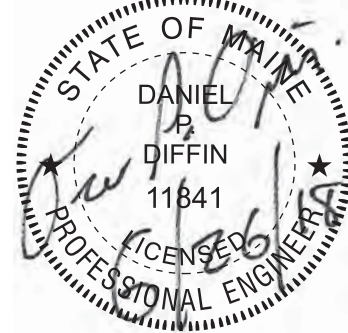


| TITLE  | DWG NO |
|--|--------|
| COVER SHEET  |        |
| GENERAL NOTES, LEGEND, AND ABBREVIATIONS               | C-100  |
| EXISTING CONDITIONS PLAN                               | C-101  |
| SITE OVERVIEW PLAN                                     | C-102  |
| SITE PLAN  | C-103  |
| EROSION CONTROL NOTES AND DETAILS                      | C-300  |
| SECTIONS AND DETAILS                                   | C-301  |
| STORMWATER MANAGEMENT PLAN PRE-DEVELOPMENT CONDITIONS  | D-100  |
| STORMWATER MANAGEMENT PLAN POST-DEVELOPMENT CONDITIONS | D-101  |
| LANDSCAPE SITE PLAN                                    | L-100  |



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GENERAL SITE NOTES:

- THE CUMBERLAND LANDFILL IS LOCATED OFF DROWNE ROAD IN CUMBERLAND, MAINE. THE LANDFILL IS ON A PARCEL OWNED BY THE TOWN OF CUMBERLAND AND IS ZONED AS RURAL RESIDENTIAL (RR1).
- BASEMAP FROM LOW ALTITUDE AERIAL PHOTOGRAMMETRIC MAPPING PERFORMED BY SEVEE & MAHER ENGINEERS, INC. (SME) OF CUMBERLAND, MAINE, DATED MAY 1, 2018. HORIZONTAL DATUM IS STATE PLANE NAD 83, WEST, FT. VERTICAL DATUM IS NAVD88.
- TOPOGRAPHIC INFORMATION SHOWN OUTSIDE OF THE LANDFILL PERIMETER FROM MAINE GIS DATABASE.
- EXCAVATE AND STOCKPILE ON-SITE TOPSOIL. TOPSOIL IS TO REMAIN THE PROPERTY OF THE OWNER DURING CONSTRUCTION, AND SHALL NOT BE REMOVED FROM THE SITE. AFTER FINAL LOAM AND SEED, EXCESS TOPSOIL SHALL BE REMOVED FROM SITE BY CONTRACTOR.
- STANDARD PRACTICE DICTATES THAT PLANS COMPILED IN THIS MANNER SHOULD BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO ENGINEER. THE ACCURACY AND COMPLETENESS OF SUBSURFACE INFORMATION IS NOT GUARANTEED. VERIFY SITE CONDITIONS INCLUDING TEST PITTS FOR LOCATIONS AND INVERTS OF UTILITIES AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO PROCEEDING WITH THAT PORTION OF THE WORK.

ZONING NOTES:

1. OWNER/DEVELOPER:

REVISION ENERGY  
142 PRESUMPSCOT ST  
PORTLAND, MAINE 04103
2. PROJECT:

474.7 KW SOLAR ARRAY  
DROWNE ROAD LANDFILL
3. ZONING DISTRICT:

RR1 - RURAL RESIDENTIAL 1
4. ZONE STANDARDS:

MINIMUM LOT SIZE

REQUIRED 4.0 ACRES

PROVIDED 1108.88 ACRES

SETBACKS

FRONT 50 FEET

>50 FEET

SIDE 30(70 COMB) FEET

>30 FEET

REAR 75 FEET

>75 FEET
5. TAX MAP R03, LOT 51A.
6. PROPOSED USE: MUNICIPAL USE
7. PARKING SUMMARY:

EXISTING PARKING 0 SPACES

PROPOSED PARKING 0 SPACES
8. THE PROPERTY IS OUTSIDE OF THE 100 YEAR FLOODPLAIN.

GRADING NOTES:

- ADD 6" LOAM, SEED AND MULCH TO DISTURBED AREAS UNLESS OTHERWISE NOTED. PROVIDE EROSION CONTROL MESH ON ALL SLOPES 6:1 OR STEEPER, AND ALONG DITCH CHANNELS.
- GRADE SURFACES TO DRAIN AWAY FROM BUILDINGS. PUDDLING OF WATER IN PAVED OR UNPAVED AREAS WILL NOT BE ACCEPTABLE, EXCEPT FOR AREAS DESIGNATED AS PONDS.
- MAINTAIN TEMPORARY EROSION CONTROL MEASURES FOR THE FULL DURATION OF CONSTRUCTION. INSPECT WEEKLY AND AFTER EACH STORM AND REPAIR AS NEEDED. PLACE IN AREA OF LOW EROSION POTENTIAL, AND STABILIZE WITH SEED AND MULCH. REMOVE SEDIMENTS FROM THE SITE.
- PLACE TEMPORARY SOIL STABILIZATION WITHIN 30 DAYS OF INITIAL DISTURBANCE. PLACE PERMANENT SOIL STABILIZATION WITHIN 7 DAYS OF FINAL GRADING.

UTILITY NOTES:

- EXISTING UTILITIES IN DROWNE ROAD INCLUDE:  
PUBLIC WATER  
PUBLIC SEWER  
OVERHEAD ELECTRIC  
OVERHEAD COMMUNICATIONS  
STORM DRAIN
- THE ACCURACY AND COMPLETENESS OF SUBSURFACE INFORMATION IS NOT GUARANTEED. VERIFY SITE CONDITIONS INCLUDING TEST PITTS OUTSIDE THE LANDFILL LIMIT FOR LOCATIONS AND INVERTS OF UTILITIES AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO PROCEEDING WITH THAT PORTION OF THE WORK.
- CLEAN SEDIMENTS FROM NEW AND EXISTING STORM DRAIN PIPES AND CATCH BASINS.
- COORDINATE WORK ON UTILITY LINES WITH THE TOWN OF CUMBERLAND.
- SLOPE CONDUITS AWAY FROM BUILDINGS TO HANDHOLES OR UTILITY POLES TO AVOID GROUND WATER SEEPAGE INTO BUILDINGS.

TYPICAL ABBREVIATIONS:

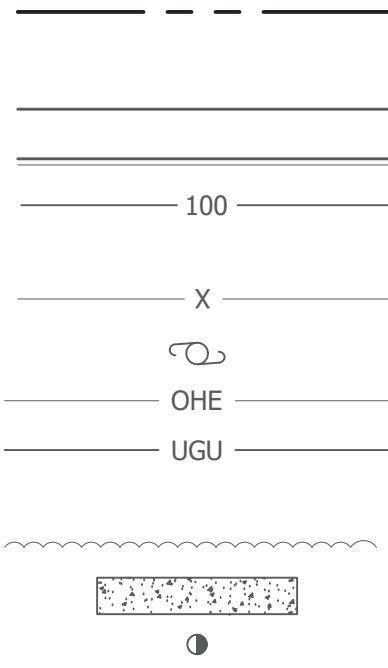
|         |                       |          |                          |         |                           |        |                          |
|---------|-----------------------|----------|--------------------------|---------|---------------------------|--------|--------------------------|
| ACCP    | ASPHALT COATED CMP    | D        | DEGREE OF CURVE          | HDPE    | HIGH DENSITY POLYETHYLENE | PERF   | PERFORATED               |
| ACP     | ASBESTOS CEMENT PIPE  | DBL      | DOUBLE                   | HORIZ   | HORIZONTAL                | PP     | POWER POLE               |
| AC      | ACRE                  | DEG OR ° | DEGREE                   | HP      | HORSEPOWER                | PSI    | POUNDS PER SQUARE INCH   |
| AGG     | AGGREGATE             | DEPT     | DEPARTMENT               | HYD     | HYDRANT                   | PVC    | POLYVINYL CHLORIDE       |
| ALUM    | ALUMINUM              | DI       | DUCTILE IRON             |         |                           | PVMT   | PAVEMENT                 |
| APPD    | APPROVED              | DIA OR   | DIAMETER                 | ID      | INSIDE DIAMETER           |        |                          |
| APPROX  | APPROXIMATE           | DIM      | DIMENSION                | IN OR " | INCHES                    | QTY    | QUANTITY                 |
| ARMH    | AIR RELEASE MANHOLE   | DIST     | DISTANCE                 | INV     | INVERT                    |        |                          |
| ASB     | ASBESTOS              | DN       | DOWN                     | INV EL  | INVERT ELEVATION          | RCP    | REINFORCED CONCRETE PIPE |
| ASP     | ASPHALT               | DR       | DRAIN                    |         |                           | ROW    | RIGHT OF WAY             |
| AUTO    | AUTOMATIC             | DWG      | DRAWING                  | LB      | POUND                     | RAD    | RADIUS                   |
| AUX     | AUXILIARY             |          |                          | LC      | LEACHATE COLLECTION       | REQD   | REQUIRED                 |
| AVE     | AVENUE                | EA       | EACH                     | LD      | LEAK DETECTION            | RT     | RIGHT                    |
| AZ      | AZIMUTH               | EG       | EXISTING GROUND OR GRADE | LF      | LINEAR FEET               | RTE    | ROUTE                    |
|         |                       | ELEC     | ELECTRIC                 | LOC     | LOCATION                  |        |                          |
|         |                       | EL       | ELEVATION                | LT      | LEACHATE TRANSPORT        | S      | SLOPE                    |
|         |                       | ELB      | ELBOW                    |         |                           | SCH    | SCHEDULE                 |
| BCCMP   | BITUMINOUS COATED CMP | EOP      | EDGE OF PAVEMENT         | MH      | MANHOLE                   | SF     | SQUARE FEET              |
| BM      | BENCH MARK            | EQUIP    | EQUIPMENT                | MJ      | MECHANICAL JOINT          | SH     | SHEET                    |
| BIT     | BITUMINOUS            | EST      | ESTIMATED                | MATL    | MATERIAL                  | SMH    | SANITARY MANHOLE         |
| BLDG    | BUILDING              | EXC      | EXCAVATE                 | MAX     | MAXIMUM                   | ST     | STREET                   |
| BOT     | BOTTOM                | EXIST    | EXISTING                 | MFR     | MANUFACTURE               | STA    | STATION                  |
| BRG     | BEARING               |          |                          | MIN     | MINIMUM                   | SY     | SQUARE YARD              |
| BV      | BALL VALVE            |          |                          | MISC    | MISCELLANEOUS             | TAN    | TANGENT                  |
|         |                       |          |                          | MON     | MONUMENT                  | TDH    | TOTAL DYNAMIC HEAD       |
| CB      | CATCH BASIN           |          |                          |         |                           | TEMP   | TEMPORARY                |
| CEN     | CENTER                | FI       | FIELD INLET              |         |                           | TYP    | TYPICAL                  |
| CEM LIN | CEMENT LINED          | FG       | FINISH GRADE             | NTC     | NOT IN THIS CONTRACT      | UD     | UNDERDRAIN               |
| CHD     | CORRUGATED METAL PIPE | FBRGL    | FIBERGLASS               | NTS     | NOT TO SCALE              | V      | VOLTS                    |
| CO      | CLEAN OUT             | FDN      | FOUNDATION               | N/F     | NOW OR FORMERLY           | VA TEE | VALVE ANCHORING TEE      |
| CF      | CUBIC FEET            | FLEX     | FLEXIBLE                 | NO OR # | NUMBER                    | VERT   | VERTICAL                 |
| CFS     | CUBIC FEET PER SECOND | FLG      | FLANGE                   |         |                           |        |                          |
| CI      | CAST IRON             | FLR      | FLOOR                    |         |                           |        |                          |
| CL      | CLASS                 | FPS      | FEET PER SECOND          |         |                           |        |                          |
| CONC    | CONCRETE              | FT OR '  | FEET                     | OC      | ON CENTER                 |        |                          |
| CONST   | CONSTRUCTION          | FTG      | FOOTING                  | OD      | OUTSIDE DIAMETER          |        |                          |
| CONTR   | CONTRACTOR            |          |                          |         |                           |        |                          |
| CS      | CURB STOP             | GA       | GAUGE                    | PC      | POINT OF CURVE            | WG     | WATER GATE               |
| CTR     | CENTER                | GAL      | GALLON                   | PD      | PERIMETER DRAIN           | W/     | WITH                     |
| CU      | COPPER                | GALV     | GALVANIZED               | PV      | POINT OF INTERSECTION     | W/O    | WITHOUT                  |
| CY      | CUBIC YARD            | GPD      | GALLONS PER DAY          | PV      | POST INDICATOR VALVE      |        |                          |
|         |                       | GPM      | GALLONS PER MINUTE       | PT      | POINT OF TANGENT          | YD     | YARD                     |

DIG SAFE NOTES:

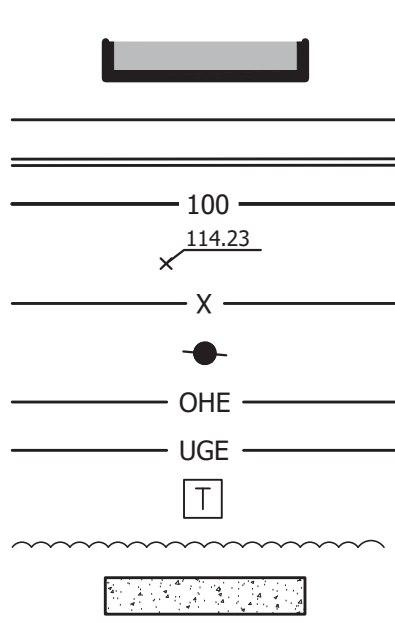
- PRIOR TO EXCAVATION, VERIFY THE UNDERGROUND UTILITIES, PIPES, STRUCTURES AND FACILITIES. PROVIDE THE FOLLOWING MINIMUM MEASURES:
- PRE-MARK THE BOUNDARIES OF YOUR PLANNED EXCAVATION WITH WHITE PAINT, FLAGS OR STAKES, SO UTILITY CREWS KNOW WHERE TO MARK THEIR LINES.
  - CALL DIG SAFE, AT 811, AT LEAST THREE BUSINESS DAYS - BUT NO MORE THAN 30 CALENDAR DAYS - BEFORE STARTING WORK. DO NOT ASSUME SOMEONE ELSE WILL MAKE THE CALL.
  - IF BLASTING, NOTIFY DIG SAFE AT LEAST ONE BUSINESS DAY IN ADVANCE.
  - WAIT THREE BUSINESS DAYS FOR LINES TO BE LOCATED AND MARKED WITH COLOR-CODED PAINT, FLAGS OR STAKES. NOTE THE COLOR OF THE MARKS AND THE TYPE OF UTILITIES THEY INDICATE. TRANSFER THESE MARKS TO THE AS-BUILT DRAWINGS.
  - CONTACT THE LANDOWNER AND OTHER "NON-MEMBER" UTILITIES (WATER, SEWER, GAS, ETC.). FOR THEM TO MARK THE LOCATIONS OF THEIR UNDERGROUND FACILITIES. TRANSFER THESE MARKS TO THE AS-BUILT DRAWINGS.
  - RE-NOTIFY DIG SAFE AND THE NON-MEMBER UTILITIES IF THE DIGGING, DRILLING OR BLASTING DOES NOT OCCUR WITHIN 30 CALENDAR DAYS, OR IF THE MARKS ARE LOST DUE TO WEATHER CONDITIONS, SITE WORK ACTIVITY OR ANY OTHER REASON.
  - HAND DIG WITHIN 18 INCHES IN ANY DIRECTION OF ANY UNDERGROUND LINE UNTIL THE LINE IS EXPOSED. MECHANICAL METHODS MAY BE USED FOR INITIAL SITE PENETRATION, SUCH AS REMOVAL OF PAVEMENT OR ROCK.
  - DIG SAFE REQUIREMENTS ARE IN ADDITION TO TOWN, CITY AND/OR STATE DOT STREET OPENING PERMIT REQUIREMENTS.
  - FOR COMPLETE DIG SAFE REQUIREMENTS, CALL THE PUBLIC UTILITIES COMMISSION (PUC) AT 1-800-452-4699 OR VISIT WWW.STATE.ME.US/MPUC
  - IF YOU DAMAGE, DISLOCATE OR DISTURB ANY UNDERGROUND UTILITY LINE, IMMEDIATELY NOTIFY THE AFFECTED UTILITY. IF DAMAGE CREATES SAFETY CONCERNS, CALL THE FIRE DEPARTMENT AND TAKE IMMEDIATE STEPS TO SAFEGUARD HEALTH AND PROPERTY.
  - ANY TIME AN UNDERGROUND LINE IS DAMAGED OR DISTURBED OR IF LINES ARE IMPROPERLY MARKED, YOU MUST FILE AN INCIDENT REPORT WITH THE PUC FOR AN INCIDENT REPORT FORM VISIT WWW.STATE.ME.US/MPUC OR CALL THE PUC AT 1-800-452-4699.

LEGEND

EXISTING



PROPOSED

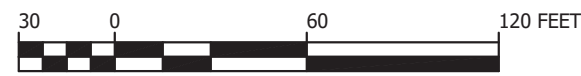


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|   | JTR | 6/2018 | ISSUED FOR PERMITTING |
| REV.  | BY  | DATE   | STATUS                |
| <div><div><div>STATE OF MAINE<br/>DANIEL B. DIFFIN<br/>11841<br/>REGISTERED PROFESSIONAL ENGINEER</div></div><div>474.7 KW SOLAR ARRAY<br/>REVISION ENERGY<br/>CUMBERLAND, MAINE</div></div>  |     |        |                       |
| GENERAL NOTES, LEGEND, AND ABBREVIATIONS  |     |        |                       |
| <div><div><div>SME</div><div>SEVEE &amp; MAHER ENGINEERS</div><div>ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE</div><div>4 Blanchard Road, PO Box 85A, Cumberland, Maine 04021</div><div>Phone 207.829.5016 • Fax 207.829.5692 • smemaine.com</div></div></div> |     |        | DESIGN BY: JTR        |
|   |     |        | DRAWN BY: JRL         |
|   |     |        | DATE: 6/2018          |
|   |     |        | CHECKED BY: BDP       |
|   |     |        | LMN: NONE             |
| JOB NO. 18161 DWG FILE GEN-NOTES-LGND   |     |        | CTB: SME-STD          |
|   |     |        | C-100                 |





- NOTES:
- SEE GENERAL SITE NOTES ON DWG C-100 FOR TOPOGRAPHIC REFERENCES.
  - LIMIT OF WASTE DERIVED FROM HISTORICAL AERIAL IMAGERY.
  - EXISTING DROWN ROAD LANDFILL PROPERTY BOUNDARY FROM TOWN OF CUMBERLAND GIS DATA.
  - EXISTING WOODWASTE/CDD LANDFILL PROPERTY BOUNDARY FROM BOUNDARY POINTS PROFESSIONAL LAND SURVEYING, LLC, CUMBERLAND, MAINE, DATED JUNE 29, 2014.



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474.7 KW SOLAR ARRAY  
REVISION ENERGY  
CUMBERLAND, MAINE

EXISTING CONDITIONS PLAN

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DRAWN BY: JRL  
DATE: 6/2018  
CHECKED BY: BDP  
LMN: EXCON  
CTB: SME-STD

JOB NO. 18161

DWG FILE BASE

C-101

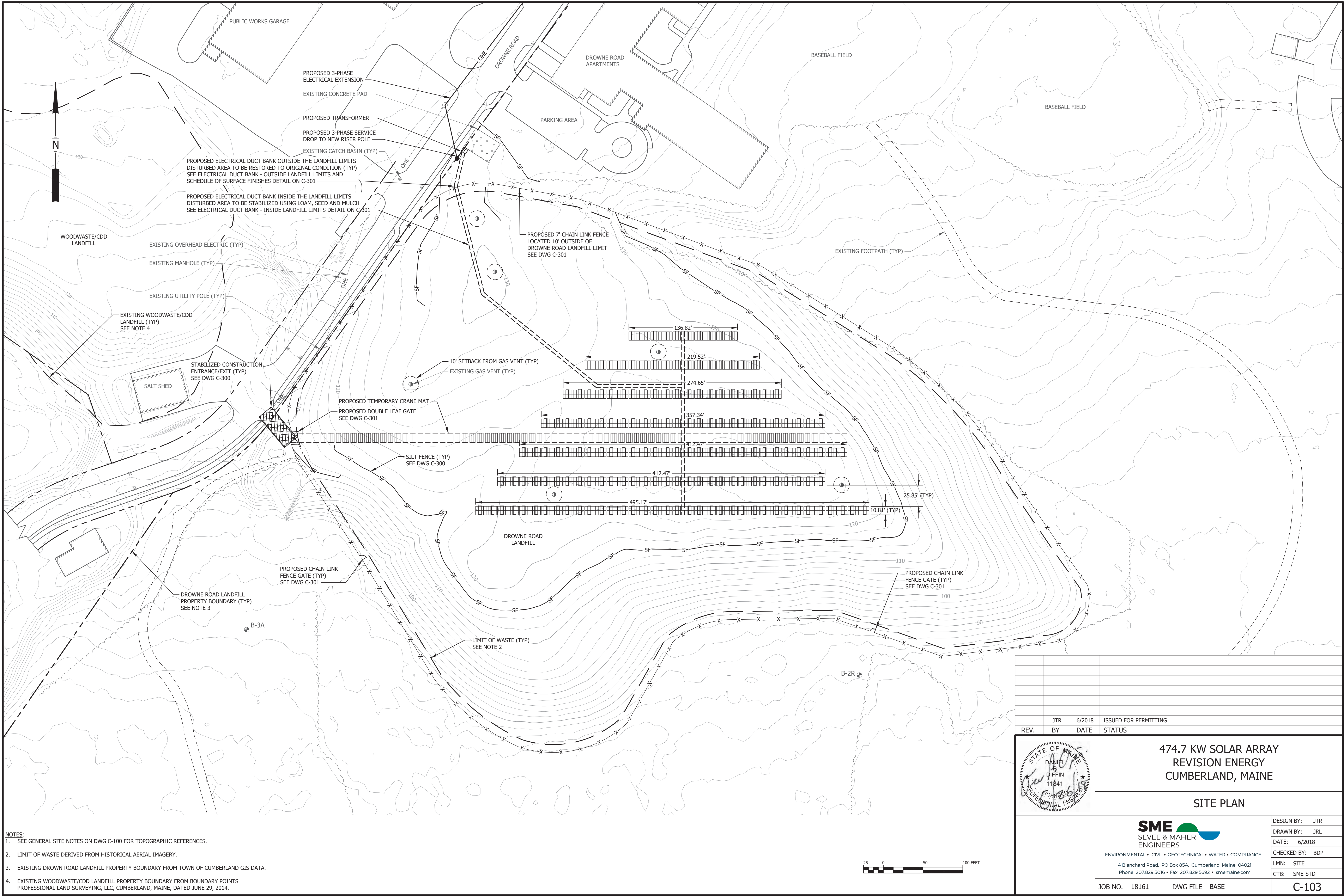




- NOTES:
1. SEE GENERAL SITE NOTES ON DWG C-100 FOR TOPOGRAPHIC REFERENCES.
  2. LIMIT OF WASTE DERIVED FROM HISTORICAL AERIAL IMAGERY.
  3. EXISTING DROWN ROAD LANDFILL PROPERTY BOUNDARY FROM TOWN OF CUMBERLAND GIS DATA.
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| REV.  | BY  | DATE   | STATUS                |         |
| <div><div><div>STATE OF MAINE</div><div>DANIEL J. DIFFIN</div><div>11841</div><div>PROFESSIONAL ENGINEER</div></div><div>474.7 KW SOLAR ARRAY<br/>REVISION ENERGY<br/>CUMBERLAND, MAINE</div></div>   |     |        |                       |         |
|   |     |        | SITE OVERVIEW PLAN    |         |
| <div><div><div>SME</div><div>SEVEE &amp; MAHER</div><div>ENGINEERS</div></div><div>ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE</div><div>4 Blanchard Road, PO Box 85A, Cumberland, Maine 04021</div><div>Phone 207.829.5016 • Fax 207.829.5692 • smemaine.com</div></div> |     |        | DESIGN BY:            | JTR     |
|   |     |        | DRAWN BY:             | JRL     |
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|   |     |        | CTB:                  | SME-STD |
| JOB NO. 18161   |     |        | DWG FILE BASE         | C-102   |





- NOTES:
- SEE GENERAL SITE NOTES ON DWG C-100 FOR TOPOGRAPHIC REFERENCES.
  - LIMIT OF WASTE DERIVED FROM HISTORICAL AERIAL IMAGERY.
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474.7 KW SOLAR ARRAY  
REVISION ENERGY  
CUMBERLAND, MAINE

SITE PLAN

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| DESIGN BY: JTR  |
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| JOB NO. 18161 | DWG FILE BASE | C-103 |
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I:\main\CT\Site\Ren Energy\Cumberland Solar Array\Landfill\Acad\Photos\B&E.dwg, 6/20/2018 2:46:59 PM, jrl















## tc ① TIME OF CONCENTRATION WITH SUBCATCHMENT DESIGNATION

A circular professional engineer seal for the State of Maryland. The outer ring contains the text "STATE OF MARYLAND" at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by a star on the right. The center of the seal contains the name "DANIEL P. DIFFIN" and the license number "11841". Below the license number is the expiration date "12/31/2006". The seal is stamped over a document with handwritten notes and a signature.



