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780 Lynnhaven Parkway, Suite 400, Virginia Beach, Virginia 23452 • 757.821.3095
environmental consulting & engineering services

August 19, 2020

Mr. Jim Lamphere, Town Planner
Planning Board
Hopkinton Town Hall
1 Town House Road
Hopkinton, RI 02833

Re: Development Plan Review – Maxson Hill Solar, 0.5 MW ± Solar Array
40 Maxson Hill Road, Hopkinton, RI 02804
AP 4 Lot 38
ESS Project C641-000

Dear Mr. Lamphere,

Please find the Development Plan Review package on behalf of Ronnie and Bonnie Sposato for the proposed Maxson Hill Road Solar project enclosed. The package includes ten copies of the following:

1. Development Plan Review Checklist;
2. Existing Conditions and Proposed Conditions Plans - full size and 11”x 17”;
3. Visual Simulation;
4. Ashaway Volunteer Fire Association letter, dated July 21, 2020;
5. Decommission Plan;
6. Soils Map;
7. Stormwater Management Checklist;
8. Noise Impact Assessment
9. Drainage Report;
10. Operations and Maintenance Plan;
11. Soil Erosion and Sediment Control Plan;
12. $200 Filing Fee.

A brief narrative of the existing conditions and proposed project is provided below.

Existing Conditions

The 25± acre primarily wooded Site is located on the southern side of Maxson Hill Road in Hopkinton, RI. It is identified as Assessor’s Plat 4, Lot 38, and is zoned Residential, Farming, and Rural-80 (RFR-80). The property is defined as a “Large Farm” under the Farm Viability Ordinance, “land of at least fifteen (15) acres in area…and has earned at least ten thousand (10,000) dollars gross income on farm products in either of the preceding two (2) years.” A zoning certificate confirming this endorsement is enclosed.

The northern portion of the Site is accessed by a 1,100± foot long paved and gravel driveway that terminates at a residence, consisting of a single-family home, 3 sheds and a fenced inground pool. A cleared area located approximately half-way up the driveway is occupied by a 1,750± SF garage, vehicles and equipment storage. Machinery, trucks, and equipment are stored along the shoulders of the driveway. The Site is zoned RFR-80. Abutting land use includes residences to the north, east, south and west. The property is

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located within flood zone "X" per FIRM Map 44009C0142H. Flood zone "X" refers to areas of minimal flood hazard above the 500-year flood level. A portion of the property is considered prime farmland. The Site is mapped by the Natural Resources Conservation Service (NRCS) as Woodbridge fine sandy loam, Canton and Charlton fin sandy loams, Hinckley loamy sand, Scarboro mucky fine sandy loam and Bridgehampton silt loam. Land use of the Site is classified as Farm/Forest Mdl 01 based on the latest property listing report.

While a swamp, unnamed intermittent stream, and Area Subject to Storm Flowage have been identified on-site, they are located in the southwestern portion of the Site, approximately 420 feet from the proposed development in the northern portion of the Site. The proposed project does not drain directly to the wetlands, rather stormwater runoff is collected by a catch basin in Maxson Hill Road.

Historic districts, state designated scenic areas, unfragmented forest tracts, RIDEM Natural Heritage Areas, or state designated Greenway Corridors are not present on or adjacent to the Site. A historic cemetery, identified as the "Thomas Wilbur Lot", is located adjacent to the property to the south.

The property is located primarily within a Primary Protection Zone with the exception of the eastern corner which is within a Secondary Protection Zone per Hopkinton GIS "Map 3 Groundwater and Wellhead Protection Areas, Hopkinton, RI."

Proposed Project

The Applicant proposes to construct a 0.5± MW direct current (DC) ground-mounted solar installation within a 1.8± acre fenced area with 1,470± modules, associated electrical equipment and 3 new utility poles. A 7-foot high chain link fence will surround the solar array. The array will be accessed via a 15-foot wide crushed stone driveway constructed off of the existing driveway at 40 Maxson Hill Road. The area within the fence will be cleared, grubbed, loamed and seeded. Shade trees outside the fence will be cut in the area shown on Drawing C-1. Stumps and existing ground cover will remain in this area. The landowner may use this area as a Christmas tree farm as indicated on the drawing.

The project is permitted by the Town of Hopkinton Non-Residential Photovoltaic Solar Energy Systems (PSES) ordinance and the Farm-Based Photovoltaic Solar Energy Systems amendment (Code of Ordinances – Chapter 246 and 247). The site has been designed in accordance with the requirements of these PSES Ordinances including:

1. The 1.8± acre proposed fenced area is less than the 2 acres allowed for large farms less than 50 acres in size by Chapter 247 VII.A.2.

2. All electrical connection and distribution lines within the system will be underground. Overhead lines will connect the system to the point of interconnection on Maxson Hill Road.

3. All proposed height and minimum yard setbacks are adhered to.

4. A seven-foot-high security fence surrounding the perimeter of each array is proposed.

5. Exterior lighting is not proposed.

6. The maximum height of the panels will not exceed 12 feet.

7. The construction and operation of the PSES will be consistent with all applicable local, state, and federal requirements.

8. The PSES will be installed in accordance with the manufacturer's directions.

9. The PSES will not prevent the normal and orderly use, development, or improvement of the adjacent property, for uses permitted in the district. The existing vegetation within the yard setback in the vicinity of the array will remain and a stockade fence will be installed north of the array to avoid visual impact and to promote architectural compatibility with surrounding land uses.

10. The PSES will not misdirect concentrated solar radiation onto nearby properties, public roads, or other areas accessible to the public.

11. The PSES will avoid any disruption, interference with, or loss or radio, telephone, television or similar signals.

12. Radiation impacts are not anticipated with the PSES.

13. The enclosed noise study demonstrates that sound levels are not expected to exceed 40 dBA at the property line.

14. The proposed transformer will contain FR3 fluid, which is comprised of 98% vegetable oil and is biodegradable and nontoxic. However, the solar ordinance requires containment of any "fluid"; therefore, the proposed transformer pad will be surrounded with a secondary containment trench providing a storage volume of 546± cubic feet. This is greater than 125% of the 190± gallons of FR3 fluid stored within the proposed transformer. The containment trench will be lined with an impermeable liner and four "baffle board" panels. The baffle board panels are designed to allow water to flow through and to turn solid when in contact with an oil.

15. A financial security instrument covering the estimated decommissioning cost of $18,352 will be provided.

The proposed project has also been designed to me the Development Plan Review Design Standards as demonstrated below.

Access and Parking

Off-street loading spaces, automobile parking spaces, pedestrian entrances, exits, walks, and walkways are not proposed. Access to the site will is proposed by a 15-foot wide crushed stone driveway off of the existing driveway at 40 Maxson Hill Road. Traffic to the site will be minimal, and limited to occasional maintenance activities throughout the year. A Knox padlock will be provided at the gate for emergency access to the Site.

Architectural

Construction of buildings is not proposed for this project. Proposed solar modules and associated electrical equipment are the extents of development.

Environmental

The proposed project will not alter existing drainage areas, flow paths, or runoff curve numbers as described below. Water supplies are not proposed, and the project will not generate solid or septic waste.

Landscaping

- The existing vegetation within the yard setback in the vicinity of the array will remain and a stockade fence will be installed north of the array.
- Outdoor lighting is not proposed.
- Proposed signage will adhere to Section C of the Hopkinton Solar Ordinance.
- Finished grades, slopes, and the location, height, and material of the proposed fence are depicted on the proposed conditions plans.

Stormwater

Low-Impact Development (LID) site planning and design strategies are proposed to the maximum extent possible and include minimization of site disturbance and ground cover changes to preserve the natural characteristics of the Site. Grading is not proposed, and clearing will be limited to the area occupied by the solar array. Groundcover will be maintained outside of the array. Shade trees will be cut, but not stumped. Stormwater BMP's are not proposed as the results of the stormwater analysis indicate that the proposed conditions peak runoff rates and volumes generated by the 1, 2, 10, 25, and 100-year storm events will not exceed pre-development conditions without attenuation.. Refer to the drainage report attached for hydrologic and hydraulic analysis of stormwater runoff.

The 11 Minimum Stormwater Management Standards required by the RI Stormwater Design and Installation Manual (RISDISM) have been met. The proposed project will not have a significant effect on down gradient properties.

The landowner may use the area cleared of shade trees as a Christmas tree farm as indicated on the drawing. Additional stormwater analysis will be warranted at that time as this use is not considered in the stormwater analysis completed for this solar project or the drawings submitted with the RIPDES application.

Sediment and Erosion Control

Please refer to the Soil Erosion and Sediment Control plan enclosed for proposed control measures. Control measures include temporary and permanent stabilization, a construction entrance, filter socks, and silt sacks at catch basins down gradient from the Site. Hazardous waste generation is not proposed and pollution prevention measures will be taken.

Noise

The results of the enclosed Noise Impact Assessment demonstrate that the maximum predicted sound levels from the proposed photovoltaic solar array will likely not be perceptible above existing ambient sound

levels at the property line or at any point beyond the property line, and will be well below the required threshold of 40 dBA for PSES installations.

State Permits

A RIDEM Application for Stormwater Construction General Permit was submitted on May 11, 2020.

Conclusion

The proposed project meets the Development Plan Review and the PSES Ordinance standards. The proposed construction and installation of the solar array will result in minimal impacts to the Site and surrounding area. It will not adversely impact the municipal road system, fire district, police department, solid waste program, schools, open spaces, recreational programs, facilities, or public utilities. In addition, significant land type alterations are not proposed, therefore landscape and ecological impacts will be minimal. Streams, wetlands, and slopes will not be impacted by the project. Safe access to the site is provided and all required setbacks will be maintained. Proposed development activity impacts will be mitigated by soil erosion controls and LID development techniques will be utilized to preserve peak runoff rates to the maximum extent possible.

Please do not hesitate to call or email Jason Gold at 781-419-7726 or Jgold@ESSGroup.com with any questions or comments.

Sincerely,
ESS GROUP, INC.

Jason Gold

Jason M. Gold, P.E.
Manager, Civil/Site Engineering Services

Enc.

CC: Colleen DeBenedetto, Centrica Business Solutions
Steven Surdut, Esquire

Hopkinton **Planning Department**
RHODE ISLAND

DEVELOPMENT PLAN REVIEW GUIDELINES & CHECKLIST

(From Article III of the Hopkinton Code of Ordinances)

APPLICATION PROCEDURE

A. Pre-application Conference

For all plans to be viewed by the Planning Board, a pre-application conference must be held with the Town Planner. At this conference the following items may be discussed: the land involved, the proposed type of development, the requirements of this ordinance, and scheduling for the Planning Board's agenda. At this time the Town Planner may review those applications which meet the Hopkinton Zoning Code in full, do not merit a full board review, and provide a staff review of the project. Please refer to the *Hopkinton Code of Ordinances* for complete information.

B. Plan Submission

1. ***Fees***
All submissions for site plan approvals shall be accompanied by a fee to pay for the costs of the planning review. The fee shall be as follows:

a. Residential Development - $50.00 per unit

b. Nonresidential development - $100.00 per 1,000 square feet of gross floor area.

c. The cost of any specialized studies or independent outside review of said studies ordered by the Council or Board, shall be borne by the applicant.

The Town Planner shall forward the filing fee to the Town Clerk together with a summary sheet indicating in specific detail what materials have been filed with the Town Planner and where such materials are located.

2. ***Exceptions***
For minor site development plans, or in other appropriate circumstances, the Planning Board may waive the provision of any items of information listed in Section 4 below, *Plan Submission*.

3. ***Duties of the Planning Board***
The Planning Board shall review the site development plan and act upon the application within 45 days from the time of submission to the Town Planner. Failure on the part of the Planning Board to act shall be deemed to constitute approval, unless the time limit is extended by stipulation with the applicant.

In reviewing the site plan, the Planning Board shall take into consideration: the public health, safety, and general welfare; the comfort and convenience of the public in general and of the residents of the immediate neighborhood; and, shall set any appropriate conditions and safeguards of the general purpose and intent of these regulations and the general criteria and standards set forth herein.

Project Maxson Hill Road Solar Plat(s) 4 Lot(s) 38

The decision of the Planning Board on the site plan will be forwarded to the Town Council for consideration.

4. ***Plan Submission***

Upon completion of the pre-application conference, the site plan submission for the Planning Board shall include eight copies of the site plan at a scale no smaller than 1 inch = 40 feet, prepared by a professional engineer or surveyor registered under the provisions of R.I.G.L., Title 5, Chapter 8. The following information shall also be submitted:

a. ***General:***

___1. Completed application form

X 2. Name of the proposed development

X 3. Name and address of the property owners

X 4. Name of registered professional preparing plan and stamp of registration

X 5. Locus map at a scale of 1 inch = 1,000 feet

X 6. Date, north arrow, graphic scale

X 7. Zoning setbacks

b. ***Existing Conditions Plan:***

X 1. Boundary line (All boundary information to conform to Class II standard as adopted by the Rhode Island Society of Professional Land Surveyors and a statement to such effect must appear on the site plan. Bench marks must be shown on plan with vertical datum.)

X 2. Zoning classification

X 3. Area of parcel

X 4. Abutting property owners within two hundred (200) feet

X 5. Assessor's plat and lot number(s)

X 6. Name and width of all abutting streets and associated right-of-ways

X 7. Contours at two-foot intervals

X 8. Existing structures

X 9. Existing paved areas, curb cuts (on site and within 200 feet) and percent of impervious site coverage

Project Maxson Hill Road Solar Plat(s) 4 Lot(s) 38

X 10. Existing lawns, meadows, shrubs, trees, water courses, water bodies, wetlands, rock outcrops, and other prominent physical features

X 11. Existing sewers, water mains, all culverts, and other underground appurtenances within and adjacent to the tract. This must include pipe sizes, grades, manholes and locations.

X 12. All developments, existing or proposed, within 200 feet of the proposed development.

c. ***Access and Parking:***

X 1. Location, arrangement, and dimensions of off-street loading spaces

X 2. Location, arrangement, and dimensions of automobile parking spaces, bays, angle of parking

X 3. Location and dimensions of vehicular drives, entrances, exits, acceleration and deceleration lanes

X 4. Location and dimension of pedestrian entrances, exits, walks and walkways

X 5. Location, widths, and names of all existing or prior platted streets, railroad, or utility rights-of-way, parks, and other public open spaces, permanent easements, and municipal boundary lines, within 200 feet of the proposed development

d. ***Architectural:***

N/A 1. An architectural rendering of plans and building elevations

N/A 2. Total floor area and ground coverage of each proposed building or structure, and total percentage of lot covered by such

N/A 3. Location and exterior dimensions of existing and proposed structures and signs.

e. ***Environmental:***

X 1. Flood hazard zone if applicable

N/A 2. Proposals for providing water supply

N/A 3. Method of septic waste disposal

N/A 4. Method of solid waste disposal

X 5. Soils information from the RI Soil Survey by the Soil Conservation Service

N/A 6. Location of OWTS soil tests if such is planned

Project Maxson Hill Road Solar Plat(s) 38 Lot(s) 4

f. ***Landscaping:***

N/A 1. Location, type, intensity of all illumination and height of all outdoor lighting fixtures

N/A 2. Location, dimensions of all proposed signs

X 3. Finished grades, slopes, banks, and swales

X 4. Landscaping retained and created, showing type, location and size of plantings and screening materials

X 5. Location, height, and materials of walls, and fences

g. ***Soil Erosion and Stormwater Control Plan***

X 1. A site plan showing the grades, elevations, and contours of the land prior to disturbance and the proposed grades, elevations, and contours to be created

X 2. Location and description of existing natural and man-made features on the property where the work is to be performed, on the land of adjacent owners which are within 100 feet of the property, or which may be adversely affected by the proposed operations

X 3. Location and description of proposed changes on the site

X 4. A schedule of the sequence of installation or application of planned, erosion and stormwater control measure, both temporary and permanent, and estimated starting and completion dates

X 5. A description of methods to be employed in processing and disposing of soil and other material that is removed from the grading site

X 6. A soils survey or soils engineering report

X 7. A slope stabilization plan and revegetation plan

X 8. An engineering hydrologic analysis of stormwater runoff (refer to the *Rhode Island Stormwater Design and Installation Standards Manual*, December 2010 or latest revision)

X 9. All revisions of data shall be submitted to the planning board for approval.

h. ***Supporting Materials:***

X 1. A narrative which briefly describes and summarizes the land, its history, the development proposal, the development impacts, proposed mitigations of those impacts, all existing and proposed easements, restrictions, and covenants on or proposed for the property

Project Maxson Hill Road Solar Plat(s) 4 Lot(s) 38

X 2. An aerial photograph of the proposed site and surrounding area within 200 feet

X 3. Traffic impacts of the proposed development

X 4. Proposals for all waste disposal

N/A 5. A copy of RI DEM approval for septic system(s) if such are planned

___ 6. A list of all names and addresses of abutting property owners within 200 feet of the proposed development

N/A 7. A copy of the wetlands application and approval, as submitted to the RI DEM Wetlands Section, if applicable

N/A 8. Where no wetlands have been determined to be present on the site, the following statement shall be placed on the site plan by a qualified professional:

"…that said professional has inspected the site and no wetlands features have been observed on month/day/year."

C. Design Standards

The following criteria, as well as the Soil and Erosion Control Standards, are to be used by the Planning Board in judging applications for Development Plan Review. The design standards set forth in this section shall serve as the minimum requirements for approval of the site plan application.

Participation by the Planning Board shall be restricted to a reasonable, professional review and full responsibility for design shall be retained by the Applicant. In all instances the burden of proof that all design standards have been met shall be on the applicant. The burden of proof shall include the production of evidence necessary to complete the application, including the following:

1. ***Ecological Considerations***

X **a.** There has been minimal degradation of unique or irreplaceable land types and minimum adverse impact upon the critical areas such as streams, wetlands, areas of aquifer recharge and discharge, steep slopes, highly erodible soils, areas with a high water table, mature stands of vegetation, and extraordinary wildlife nesting, feeding, or breeding grounds

X **b.** Conforms with existing geological and topographical features for most appropriate use of the land

X **c.** All applicable local, state, and federal pollution control standards have been observed relative to waste disposal. The Planning Board shall require the applicant to provide written certification from the appropriate agencies that such standards are met

Project Maxson Hill Road Solar Plat(s) 4 Lot(s) 38

2. ***Landscape***

X **a.** The landscape has been preserved in its natural state as practicable by minimizing tree removal, disturbance of the soil, and retaining the existing vegetation

X **b.** Landscaping shall be installed according to the landscaping design shown on the site plan

X **c.** All signs must conform with Section 27 of the Hopkinton Zoning Ordinance.

3. Municipal Services

X **a.** The development shall not have an adverse impact on the municipal road system, fire district, police department, solid waste program, schools, open spaces, recreational programs and facilities, as well as public utilities.

4. Parking and Circulation.

X **a.** The site layout provides for safe access to and from public and private roads

X **b.** Site distances, turning lanes, and traffic signals when required by existing and projected flow on the municipal road systems

X **c.** Safe and accessible emergency access to all proposed structures on the site at all times

___ **d.** Written certification that the local police, fire, and ambulance services have reviewed the proposed site plan and approve of its design

X **e.** Written approval of the proposed site plan from the Public Works Director

5. ***Soil Erosion and Stormwater Control.***

X **a.** Development minimizes effects upon the natural or existing topography and soil conditions and erosion

X **b.** Development is oriented on the site so grading and site preparation is kept to a minimum

X **c**. Erosion and sediment control measures are in place

X **d.** Natural vegetation is retained and protected wherever feasible

X **e**. Development strives for retention/enlargement of the natural features and qualities of the site.

X **f**. Sediment basins are to be installed where determined necessary, in conjunction with the initial grading operations and maintained through the development process

X **g**. Water run-off will be minimized and retained on site to facilitate groundwater recharge.

X **h.** Retention facilities shall use natural topography and natural vegetation

Project Maxson Hill Road Solar Plat(s) 4 Lot(s) 38

X **i.** Lots maximize the amount of natural drainage to percolate into the soil to minimize overland run-off into adjoining streets and water courses.

X j. Grading shall not be done so as to divert water onto the property of another landowner without the expressed consent of that landowner and the Planning Board.

6. ***Visual Buffers***

X **a**. Exposed areas, service areas, loading docks, utilities, lighting, and the proposed structures have sufficient setbacks and screening to provide a buffer sufficient to minimize any possible adverse impact on other adjacent land

7. ***Visual Relationship of Buildings.***

X **a**. Proposed structures are harmonious to the terrain and to existing buildings in the vicinity with special attention paid to the bulk, location, and height of structures

8. ***Unique and Cultural Areas***

X **a**. The site plan does not impose any adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites, or rare and irreplaceable natural areas.

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Waltham, Massachusetts 02451
p 781.419.7696
www.essgroup.com

MAXSON HILL ROAD SOLAR VISUAL SIMULATION

August 18, 2020

The enclosed visual simulation rendering was prepared to demonstrate the approximate view of the conceptual solar array from abutting properties and public roadways. Figure 1 shows the location and view direction of the simulation, from the property line along Maxson Hill Road. Figure 2 demonstrates that the existing vegetation can be expected to sufficiently screen the proposed array from the road during the time of year this photo was taken. The effectiveness of the visual screening makes it difficult to see the rendered fence and solar array in the image. Therefore, the same rendering is shown on Figure 3 without the photograph for comparison. This shows the amount of screening from the terrain alone without the vegetated buffer.

The photograph used in the simulation was taken from the western portion of the Site, looking east to provide a representative view of the general size and density of existing vegetation. The rendering is based on a distance from the viewer of 156 feet to the fence and 167 feet to the panels. This view was selected to be conservatively representative as it is in a location with the most direct view of the array.

The fence, solar array, and topography of the 0.5 MW Concept Plan shown on Drawing C-3, dated August 18, 2020 were rendered in 3D using Autodesk 3ds Max software. This rendering is shown on Figure 3. The existing site photograph, shown in the upper left corner of Figure 2, was superimposed over this rendering with Adobe Photoshop to generate the final simulation.

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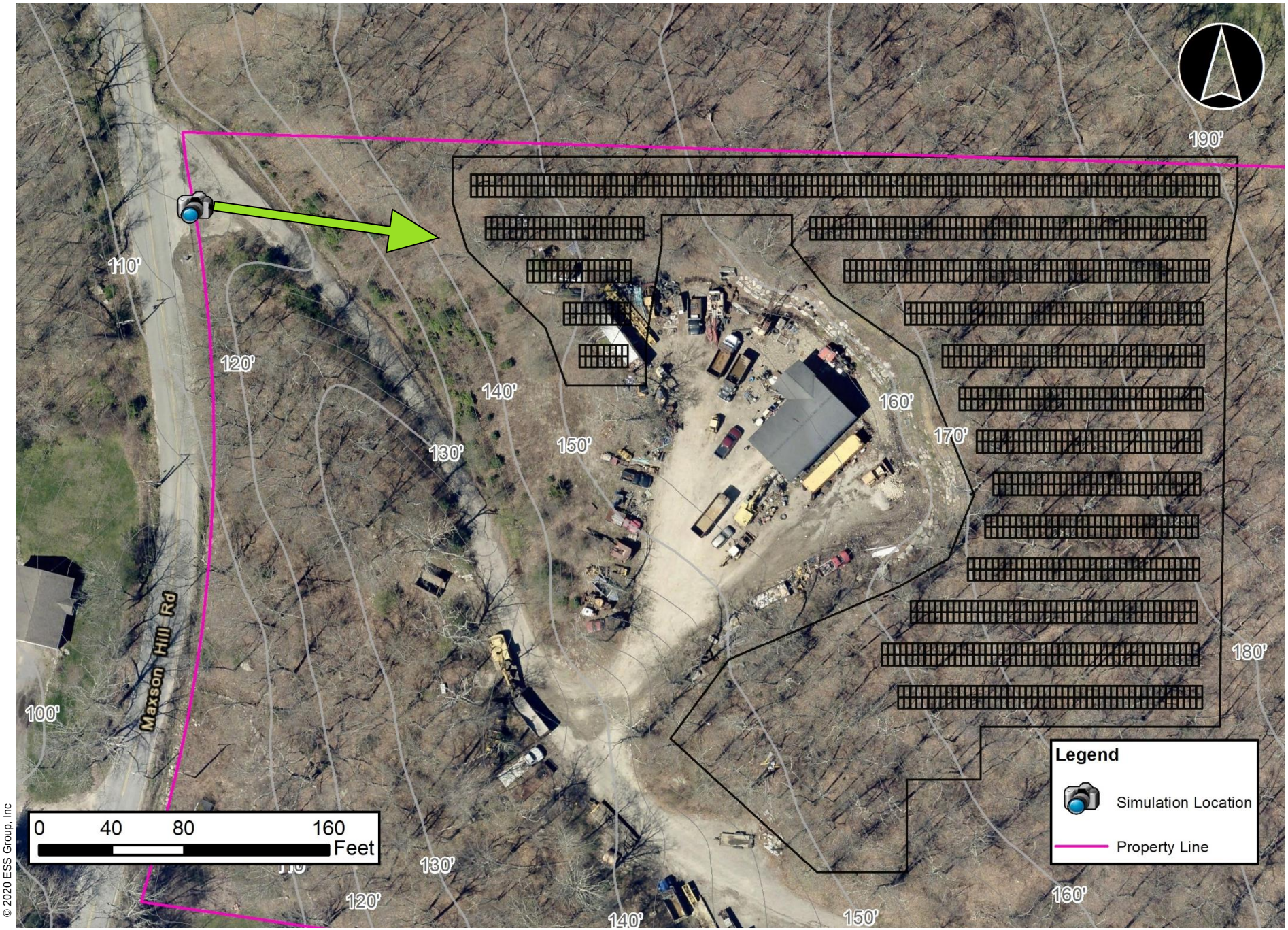

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Centrica Business Solutions
Maxson Hill Road Solar
AP 4 Lot 48, Hopkinton, RI

Conceptual Site Rendering Location
0.5MW± DC Solar Array

Figure 1

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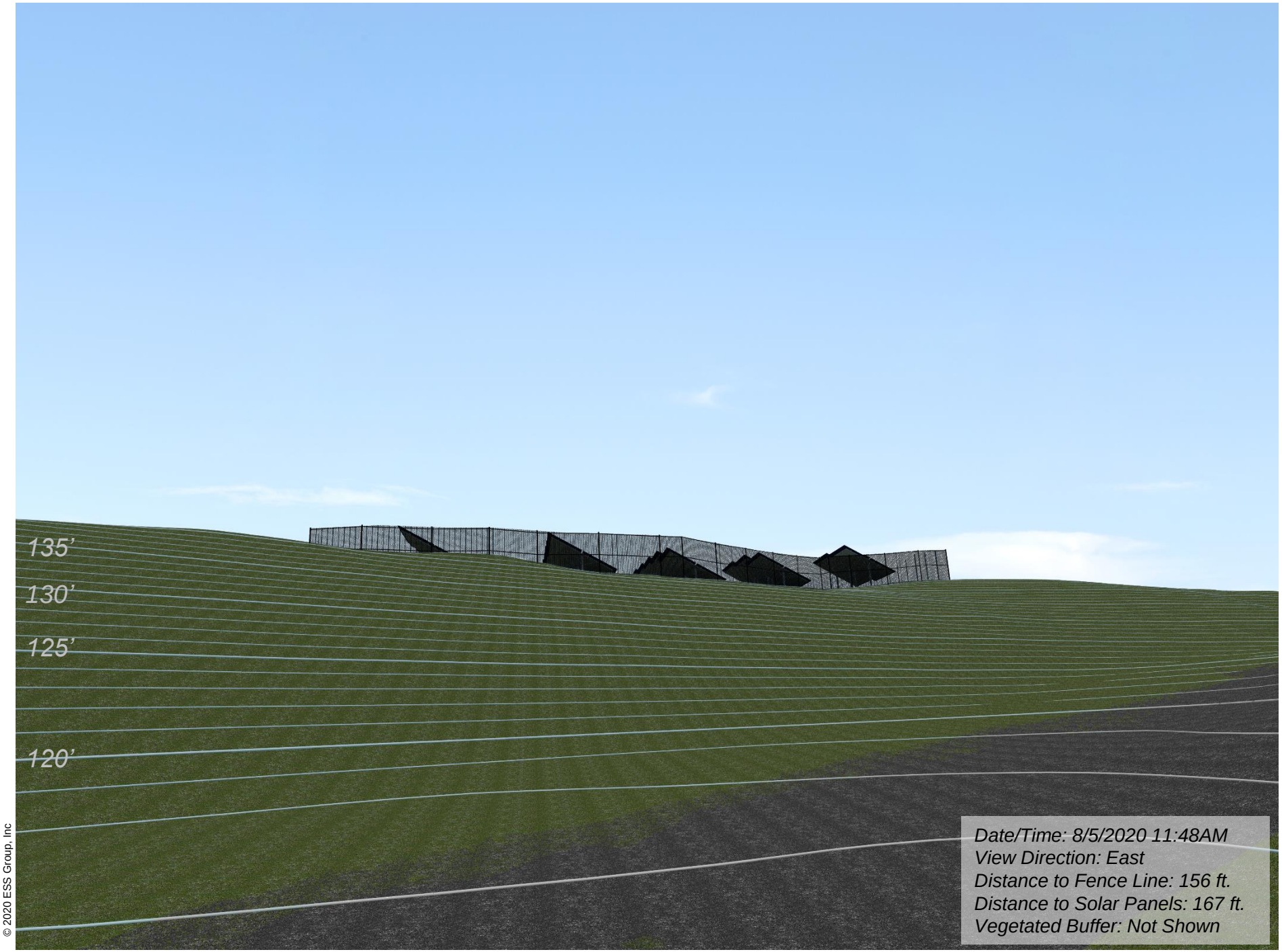
Centrica Business Solutions
Maxson Hill Road Solar
AP 4 Lot 48, Hopkinton, RI

Conceptual Site Rendering
0.5MW± DC Solar Array

Figure 2



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Centrica Business Solutions
Maxson Hill Road Solar
AP 4 Lot 48, Hopkinton, RI

Conceptual Site Rendering- Bare Earth
0.5MW± DC Solar Array

Figure 3

Ashaway Volunteer Fire Association

P.O. Box 44
213 Main Street
Ashaway, R.I. 02804
Station 401-377-4549
Fax 401-377-1024
E-mail: ashawayvolfire@ashawayfire.necoxmail.com
Visit our website: www.ashawayfire.org

Ronnie J Sposato
Chief

21 July 2020

To Whom It May Concern

The Ashaway Volunteer Fire Association has no issue accessing the full length of the driveway located at 40 Maxson Hill Road, Ashaway Rhode Island. We verify that we can access the entire driveway on an annual basis.

Should you have any questions contact me at asstchiefs@ashawayfire.necoxmail.com or call my cell 401-481-4104.

Respectfully submitted,
Richard M Girton, Jr
1st Assistant Chief
AVFA

Decommissioning Plan

40 Maxson Hill Road
Hopkinton, Rhode Island 02804

THE COMPONENTS OF THE 500kW(.5 MW) PSES

PSES Segment	Component	Usable life(in
Solar	Modules	25(warrantied)
	Inverters	20(warrantied)
	Optimizers	25(warrantied)
Structure	Racking	30+
	Columns/Footing	30+
Electrical	AC and DC Wiring	30+
	Electrical Boxes	30+
	Metal And PVC Conduits	30+
	500 kVA Transformer	40+
Utility	Pole(s)	40+
Site	Fencing	30+
	Access Road	40+ if maintained
	Transformer Concrete	40+
	Ground Cover	N/A

Note #1: The Decommissioning process will allow for all components to be removed from site. There is a large amount of raw materials in this project that have a monetary value. Obviously, any material not deemed of value, recyclable, or salvageable will be disposed of at an appropriate facility. The decommissioning plan will be the same whether a portion of the project or the entire project will be decommissioned. In the event any part of the PSES is deemed usable for the future use of the parcel, it will be noted on the plan that will be presented to the town for approval.

1. **Step 1- Compliance**
    a. Notification to;
        i. The Town of Hopkinton of the intent to decommission the PSES
        ii. National Grid for utility disconnection
    b. Planning
        i. Assessing and Identifying all laws and regulations at the time to insure the PSES decommissioning follows all federal, state, and town laws and regulations.
        ii. Assessing all materials on site and Identifying them as either;
            1. Scrap Metal of Value
            2. Recyclable
            3. Salvageable
            4. "Trash"
            5. Remaining on site for future use
    c. Preparation
        i. Prepare construction decommissioning documents
            1. Based on what is determined in the steps above(1-B-i and ii), plans will show what components are being removed and what components are remaining
            2. For permitting that shows the town what and where the items are being brought to for proper disposal.
            3. To be given to contractors for the process of bidding for the work to be done.
    d. Permitting
        i. After reviewing with town, ensuring all town departments are aware of the plan and necessary actions to be acted upon.
        ii. All Permits will be in place prior to any work commencing.

2. **Step 2- Removal(In the most likely chronological order, as the fence and road will be the last to be removed)**
    a. Array
        i. The PSES will be taken apart the same way it was put together, this is a controlled demolition.
        ii. The system will be disconnected from the PSES by the Utility company
        iii. All of the Solar components (modules and inverters) will be removed (by hand) and sent to an appropriate recycling/scrap facility.
        iv. The steel racking will be removed with heavy equipment and sent to an appropriate facility.
            1. Foundation voids will be filled in with appropriate material.
    b. Electrical Components

i. All of the copper and/or aluminum wire will be removed and sent to appropriate facility.
ii. All of the conduits will be removed, including underground conduits and sent to appropriate recycling/scrap facility.
    1. Any voids left by the removal of the underground conduits will be filled in with appropriate material
iii. All of the Electrical Boxes will be removed and sent to appropriate facility.

c. Transformer
    i. Will have a useful life left and will be sold or stored for future use.
d. Utility
    i. Utility will be made aware and will remove the pole and overhead wires
        a. If deemed usable for future use, it will be noted on plan
e. Site
    i. Fence
        1. If deemed not usable for future use of the site
            a. Most likely the fence will have useful life and will be removed and sold or stored
            b. Voids left by posts will filled in.
            c. If deemed usable for future use, it will be noted on plan
    ii. Access Road
        1. If deemed not usable for future use of the site
            a. The material for the access road will be removed and disposed of at an appropriate facility and/or recycled.
            b. If deemed usable for future use, it will be noted on plan
f. Vegetation
    i. Once all of the components the PSES are removed, the owner will decide what to do with the open space

3. Step 3- Final Inspection

a. When all applicable components have been completely removed, the owner/applicant will notify the town of the completion.
b. Upon passing inspection from the town, the decommissioning process will be deemed complete.

Costs total before scrapping of the materials

Decommissioning Costs	
Remove Rack Wiring	$600
Remove Modules	$1,800
Dismantle Racks	$2,600
Remove Electrical Equipment	$500
Breakup and Remove Concrete Pad	$500
Remove Racking and Modules from Site	$3,200
Remove Cable	$500
Remove Fence	$1,500
Current Total	$11,200
Total After 20 Years (2.5% inflation rate)	$18,352

Hydrologic Soil Group—State of Rhode Island: Bristol, Kent, Newport, Providence, and Washington Counties
(Maxson Hill Solar)

Map Scale: 1:5,240 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 250 500 1000 1500

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

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

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 1:12,000.

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: State of Rhode Island: Bristol, Kent, Newport, Providence, and Washington Counties
Survey Area Data: Version 19, Sep 12, 2019

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

Date(s) aerial images were photographed: Mar 30, 2011—May 1, 2011

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BmB	Bridgehampton silt loam, till substratum, 3 to 8 percent slopes	B	17.6	12.9%
CdB	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	B	16.7	12.2%
CeC	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, very rocky	B	24.5	17.9%
ChB	Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony	B	26.2	19.2%
HkA	Hinckley loamy sand, 0 to 3 percent slopes	A	6.5	4.7%
HkC	Hinckley loamy sand, 8 to 15 percent slopes	A	10.2	7.4%
Rf	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	D	3.5	2.5%
Sb	Scarboro mucky fine sandy loam, 0 to 3 percent slopes	A/D	2.7	2.0%
SuB	Sutton fine sandy loam, 0 to 8 percent slopes, very stony	B/D	0.2	0.2%
WoB	Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony	C/D	28.7	21.0%
Totals for Area of Interest			**136.8**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX A: STORMWATER MANAGEMENT PLAN CHECKLIST AND LID PLANNING REPORT – STORMWATER DESIGN SUMMARY

PROJECT NAME: Maxson Hill Road Solar	**(RIDEM USE ONLY)**
TOWN: Hopkinton	**STW/WQC File #:**
BRIEF PROJECT DESCRIPTION: 0.5±MW ground-mounted solar installation proposed on 1.3± acres of the property surrounded by a 7-foot high chain link fence that comprises 1.8± acres. The proposed project does not result in the change in CN, TC, or runoff.	**Date Received:**

Stormwater Management Plan (SMP) Elements – Minimum Standards

Submit four separately bound documents: Appendix A Checklist; Stormwater Site Planning, Analysis and Design Report with Plan Set/Drawings; Soil Erosion and Sediment Control (SESC) Plan, and Post Construction Operations and Maintenance (O&M) Plan. Please refer to Suggestions to Promote Brevity.

Note: **All stormwater construction projects must submit a Stormwater Management Plan (SMP). However, not every element listed below is required per the RIDEM Stormwater Rules and the RIPDES Construction General Permit (CGP). This checklist will help identify the required elements to be submitted with an Application for Stormwater Construction Permit & Water Quality Certification.**

PART 1. PROJECT AND SITE INFORMATION

PROJECT TYPE (Check all that apply)

☐ Residential	☒ Commercial	☐ Federal	☐ Retrofit	☐ Restoration
☐ Road	☐ Utility	☐ Fill	☐ Dredge	☐ Mine
☐ Other (specify):				

SITE INFORMATION

☒ Vicinity Map

LOCATION MAP
SCALE: 1"=3,000'

N

INITIAL DISCHARGE LOCATION(S): The WQv discharges to: (You may choose more than one answer if several discharge points are associated with the project.) See Guidance to identify receiving waters.		
☐ **Groundwater**	☐ **Surface Water**	☐ **MS4**
☐ GAA	☐ Isolated Wetland	☐ RIDOT
☐ GA	☐ Named Waterbody	☐ RIDOT Alteration Permit is Approved
☐ GB	☐ Unnamed Waterbody Connected to Named Waterbody	☐ Town
		☒ Other (specify): Road Drain (Not MS4)

ULTIMATE RECEIVING WATERBODY LOCATION(S): Include pertinent information that applies to both WQ_v and flow from larger storm events including overflows. Choose all that apply, and repeat table for each waterbody.			
☒ Groundwater or Disconnected Wetland	☐ SRWP		
☒ Waterbody Name: Ashaway River	☒ Coldwater	☐ Warmwater	☐ Unassessed
☒ Waterbody ID: RI0008039R-02A	☐ 4th order stream of pond 50 acres or more		
☒ TMDL for: Enterococci	☐ Watershed of flood prone river (e.g., Pocasset River)		
☐ Contributes to a priority outfall listed in the TMDL	☐ Contributes stormwater to a public beach		
☒ 303(d) list – Impairment(s) for: elevated bacterial measurements. (enterococci)	☐ Contributes to shellfishing grounds		

PROJECT HISTORY		
☐ RIDEM Pre- Application Meeting	Meeting Date:	☐ Minutes Attached
☐ Municipal Master Plan Approval	Approval Date:	☐ Minutes Attached
☐ Subdivision Suitability Required	Approval #:	
☐ Previous Enforcement Action has been taken on the property	Enforcement #:	

FLOODPLAIN & FLOODWAY See Guidance Pertaining to Floodplain and Floodways	
☐ Riverine 100-year floodplain: **FEMA FLOODPLAIN FIRMETTE** has been reviewed and the 100-year floodplain is on site	
☐ Delineated from FEMA Maps	
NOTE: Per Rule 250-RICR-150-10-8-1.1(B)(5)(d)(3), provide volumetric floodplain compensation calculations for cut and fill/displacement calculated by qualified professional	
☐ Calculated by Professional Engineer	
☐ Calculations are provided for cut vs. fill/displacement volumes proposed within the 100-year floodplain	Amount of Fill (CY):
	Amount of Cut (CY):
☐ Restrictions or modifications are proposed to the flow path or velocities in a floodway	
☐ Floodplain storage capacity is impacted	
☒ Project area is not within 100-year floodplain as defined by RIDEM	

CRMC JURISDICTION
☐ CRMC Assent required
☐ Property subject to a Special Area Management Plan (SAMP). If so, specify which SAMP:
☐ Sea level rise mitigation has been designed into this project

LUHPPL IDENTIFICATION - MINIMUM STANDARD 8:			
1. OFFICE OF WASTE MANAGEMENT (OWM)			
	☐ Known or suspected releases of HAZARDOUS MATERIAL are present at the site (Hazardous Material is defined in Rule 1.4(A)(33) of 250-140-30-1 of the RIDEM Rules and Regulations for Investigation and Remediation of Hazardous Materials (the Remediation Regulations))		**RIDEM CONTACT:**
	☐ Known or suspected releases of PETROLEUM PRODUCT are present at the site (Petroleum Product as defined in Rule 1.5(A)(84) of 250-140-25-1 of the RIDEM Rules and Regulations for Underground Storage Facilities Used for Regulated Substances and Hazardous Materials)		
	☐ This site is identified on the RIDEM Environmental Resources Map as one of the following regulated facilities		**SITE ID#:**
		☐ CERCLIS/Superfund (NPL)	
		☐ State Hazardous Waste Site (SHWS)	
		☐ Environmental Land Usage Restriction (ELUR)	
		☐ Leaking Underground Storage Tank (LUST)	
		☐ Closed Landfill	
Note: If any boxes in 1 above are checked, the applicant must contact the RIDEM OWM Project Manager associated with the Site to determine if subsurface infiltration of stormwater is allowable for the project. Indicate if the infiltration corresponds to "Red," "Yellow" or "Green" as described in Section 3.2.8 of the RISDISM Guidance (Subsurface Contamination Guidance). Also, note and reference approval in PART 3, Minimum Standard 2: Groundwater Recharge/Infiltration.			
2. PER MINIMUM STANDARD 8 of RICR 8.14.C.1-6 "LUHPPLS," THE SITE IS/HAS:			
	☐ Industrial Site with RIPDES MSGP, except where No Exposure Certification exists. http://www.dem.ri.gov/programs/water/permits/ripdes/stormwater/status.php		
	☐ Auto Fueling Facility (e.g., gas station)		
	☐ Exterior Vehicles Service, Maintenance, or Equipment Cleaning Area		

	☐ Road Salt Storage and Loading Areas (exposed to rainwater)	
	☐ Outdoor Storage and Loading/Unloading of Hazardous Substances	
3.	**STORMWATER INDUSTRIAL PERMITTING**	
	☐ The site is associated with existing or proposed activities that are considered Land Uses with Higher Potential Pollutant Loads (LUHPPLS) (see RICR 8.14.C)	Activities: Sector:
	☐ Construction is proposed on a site that is subject to THE MULTI-SECTOR GENERAL PERMIT (MSGP) UNDER RULE 31(B)15 OF THE RIPDES REGULATIONS.	MSGP permit #
	☐ Additional stormwater treatment is required by the MSGP Explain:	

REDEVELOPMENT STANDARD – MINIMUM STANDARD 6		
☐ Pre Construction Impervious Area		
	☐ Total Pre-Construction Impervious Area (**TIA**) 0.42 Acres	
	☐ Total Site Area (**TSA**) 25 Acres	
	☐ Jurisdictional Wetlands (**JW**) 1.99 Acres	
	☐ Conservation Land (**CL**) 0.00	
☐ Calculate the Site Size (defined as contiguous properties under same ownership)		
	☐ Site Size (**SS**) = (**TSA**) – (**JW**) – (**CL**) 23.01 Acres	
	☐ (**TIA**) / (**SS**) = 0.018	☐ (**TIA**) / (**SS**) >**0.4**?
☐ YES, Redevelopment		

PART 2. LOW IMPACT DEVELOPMENT ASSESSMENT – MINIMUM STANDARD 1

(NOT REQUIRED FOR REDEVELOPMENT OR RETROFITS)
This section may be deleted if not required.

Note: A written description must be provided specifying why each method is not being used or is not applicable at the Site. Appropriate answers may include:

- Town requires … (state the specific local requirement)
- Meets Town's dimensional requirement of …
- Not practical for site because …
- Applying for waiver/variance to achieve this (pending/approved/denied)
- Applying for wavier/variance to seek relief from this (pending/approved/denied)

A) PRESERVATION OF UNDISTURBED AREAS, BUFFERS, AND FLOODPLAINS	**IF NOT IMPLEMENTED, EXPLAIN HERE**
☒ Sensitive resource areas and site constraints are identified (required) ☒ Local development regulations have been reviewed (required) ☐ All vegetated buffers and coastal and freshwater wetlands will be protected during and after construction ☐ Conservation Development or another site design technique has been incorporated to protect open space and pre-development hydrology. **Note:** If Conservation Development has been used, check box and skip to Subpart C ☒ As much natural vegetation and pre-development hydrology as possible has been maintained	Coastal and freshwater wetlands are not impacted by this project.

B) LOCATE DEVELOPMENT IN LESS SENSITIVE AREAS AND WORK WITH THE NATURAL LANDSCAPE CONDITIONS, HYDROLOGY, AND SOILS ☐ Development sites and building envelopes have been appropriately distanced from wetlands and waterbodies ☐ Development and stormwater systems have been located in areas with greatest infiltration capacity (e.g., soil groups A and B) ☐ Plans show measures to prevent soil compaction in areas designated as Qualified Pervious Areas (QPA's) ☐ Development sites and building envelopes have been positioned outside of floodplains ☐ Site design positions buildings, roadways and parking areas in a manner that avoids impacts to surface water features ☒ Development sites and building envelopes have been located to minimize impacts to steep slopes (≥15%) ☐ Other (describe):	No buildings are proposed. No new stormwater systems are proposed. QPA's are not proposed. Floodplains are not present. Surface water features are not present. Buildings are not proposed.
C) MINIMIZE CLEARING AND GRADING ☒ Site clearing has been restricted to minimum area needed for building footprints, development activities, construction access, and safety. ☒ Site has been designed to position buildings, roadways, and parking areas in a manner that minimizes grading (cut and fill quantities) ☒ Protection for stands of trees and individual trees and their root zones to be preserved has been specified, and such protection extends at least to the tree canopy drip line(s) ☐ Plan notes specify that public trees removed or damaged during construction shall be replaced with equivalent	No public trees are proposed to be removed.
D) REDUCE IMPERVIOUS COVER ☐ Reduced roadway widths (≤22 feet for ADT ≤ 400; ≤ 26 feet for ADT 400 - 2,000) ☒ Reduced driveway areas (length minimized via reduced ROW width (≤ 45 ft.) and/or reduced (or absolute minimum) front yard setback; width minimized to ≤ 9 ft. wide one lane; ≤ 18 ft. wide two lanes; shared driveways; pervious surface) ☐ Reduced building footprint: Explain approach: ☐ Reduced sidewalk area (≤ 4 ft. wide; one side of the street; unpaved path; pervious surface) ☐ Reduced cul-de-sacs (radius < 45 ft; vegetated island; alternative turn-around) ☐ Reduced parking lot area: Explain approach ☒ Use of pervious surfaces for driveways, sidewalks, parking areas/overflow parking areas, etc. ☒ Minimized impervious surfaces (project meets or is less than maximum specified by Zoning Ordinance) ☐ Other (describe):	No roadways are proposed. No new buildings are proposed. No sidewalks, cul-de-sacs, or parking lots are proposed.
E) DISCONNECT IMPERVIOUS AREA ☐ Impervious surfaces have been disconnected, and runoff has been diverted to QPAs to the maximum extent possible ☐ Residential street edges allow side-of-the-road drainage into vegetated open swales ☐ Parking lot landscaping breaks up impervious expanse AND accepts runoff ☐ Other (describe):	QPA's are not allowed in D soils. No new streets or parking lots are proposed.
F) MITIGATE RUNOFF AT THE POINT OF GENERATION ☐ Small-scale BMPs have been designated to treat runoff as close as possible to the source	No new BMP's are proposed.

G) PROVIDE LOW-MAINTENANCE NATIVE VEGETATION ☒ Low-maintenance landscaping has been proposed using native species and cultivars ☒ Plantings of native trees and shrubs in areas previously cleared of native vegetation are shown on site plan ☒ Lawn areas have been limited/minimized, and yards have been kept undisturbed to the maximum extent practicable on residential lots	
H) RESTORE STREAMS/WETLANDS ☐ Historic drainage patterns have been restored by removing closed drainage systems, daylighting buried streams, and/or restoring degraded stream channels and/or wetlands ☐ Removal of invasive species ☐ Other	No streams or wetlands will be impacted by design.

PART 3. SUMMARY OF REMAINING STANDARDS

GROUNDWATER RECHARGE – MINIMUM STANDARD 2		
YES	**NO**	
☐	☒	The project has been designed to meet the groundwater recharge standard.
☐	☐	If "No," the justification for groundwater recharge criterion waiver has been explained in the Narrative (e.g., threat of groundwater contamination or physical limitation), if applicable (see RICR 8.8.D);
☒	☐	Your waiver request has been explained in the Narrative, if applicable.
☐	☒	Is this site identified as a Regulated Facility in Part 1, Minimum Standard 8: LUHPPL Identification?
☐	☐	If "Yes," has approval for infiltration by the Office of Waste Management Site Project Manager, per Part 1, Minimum Standard 8, been requested?

TABLE 2-1: Summary of Recharge (see RISDISM Section 3.3.2)
(Add or Subtract Rows as Necessary)

Design Point	Impervious Area Treated (sq ft)	Total Re_v Required (cu ft)	LID Stormwater Credits (see RISDISM Section 4.6.1) Portion of Re_v directed to a QPA (cu ft)	Recharge Required by Remaining BMPs (cu ft)	Recharge Provided by BMPs (cu ft)
DP-1:	0	4	0	4	0
DP-2:					
DP-3:					
DP-4:					
TOTALS:	0	4	0	4	0

Notes:
1. Only BMPs listed in RISDISM Table 3-5 "List of BMPs Acceptable for Recharge" may be used to meet the recharge requirement.
2. Recharge requirement must be satisfied for each waterbody ID.

☒ Indicate where the pertinent calculations and/or information for the above items are provided (i.e., name of report/document, page numbers, appendices, etc.): Drainage Report Section 4.2

WATER QUALITY – MINIMUM STANDARD 3		
YES	**NO**	
☐	☒	Does this project meet or exceed the required water quality volume WQv (see RICR 8.9.E-I)?
☐	☒	Is the proposed final impervious cover greater than 20% of the disturbed area (see RICR 8.9.E-I)?
☐	☐	If "Yes," either the Modified Curve Number Method or the Split Pervious/Impervious method in Hydro-CAD was used to calculate WQv; or,
☐	☐	If "Yes," either TR-55 or TR-20 was used to calculate WQv; and,
☐	☒	If "No," the project meets the minimum WQv of 0.2 watershed inches over the entire disturbed area.
☒	☐	Not Applicable
☐	☒	Does this project meet or exceed the ability to treat required water quality flow WQf (see RICR 8.9.I.1-3)?
☒	☐	Does this project propose an increase of impervious cover to a receiving water body with impairments? If "Yes," please indicate below the method that was used to address the water quality requirements of no further degradation to a low-quality water. Minimal changes to existing ground cover and no changes to pre-existing flow patterns will ensure no further degradation to the Ashaway River. There has been no change to drainage from predevelopment to post development. Low maintenance grasses that require little to no fertilizer will be used.
☐	☒	RICR 8.36. A Pollutant Loading Analysis is needed and has been completed.
☒	☐	The Water Quality Guidance Document (Water Quality Goals and Pollutant Loading Analysis Guidance for Discharges to Impaired Waters) has been followed as applicable.
☐	☒	BMPs are proposed that are on the approved technology list . If "Yes," please provide all required worksheets from the manufacturer.
☐	☒	Additional pollutant-specific requirements and/or pollutant removal efficiencies are applicable to the site as the result of a TMDL, SAMP, or other watershed-specific requirements. If "Yes," please describe:

TABLE 3-1: Summary of Water Quality (see RICR 8.9)

Design Point and WB ID	Impervious area treated (sq ft)	Total WQ_v Required (cu ft)	LID Stormwater Credits (see RICR 8.18) WQv directed to a QPA (cu ft)	Water Quality Treatment Remaining (cu ft)	Water Quality Provided by BMPs (cu ft)
DP-1:	0	44	0	44	0
DP-2:					
DP-3:					
TOTALS:	0	44	0	44	0

Notes:
1. Only BMPs listed in RICR 8.20 and 8.25 or the Approved Technologies List of BMPs is Acceptable for Water Quality treatment.
2. For each Design Point, the Water Quality Volume Standard must be met for each Waterbody ID.

☐ YES ☒ NO	This project has met the setback requirements for each BMP. If "No," please explain: No BMP's are proposed.

☒ Indicate where the pertinent calculations and/or information for the above items are provided (i.e., name of report/document, page numbers, appendices, etc.) Drainage Report Section 4.3

CONVEYANCE AND NATURAL CHANNEL PROTECTION (RICR 8.10) – MINIMUM STANDARD 4			
YES	**NO**		
☒	☐	Is this standard waived? If "Yes," please indicate one or more of the reasons below:	
		☐	The project directs discharge to a large river (i.e., 4th-order stream or larger. See RISDISM Appendix I for State-wide list and map of stream orders), bodies of water >50.0 acres in surface area (i.e., lakes, ponds, reservoirs), or tidal waters.
		☒	The project directs is a small facility with impervious cover of less than or equal to 1 acre.
		☐	The project has a post-development peak discharge rate from the facility that is less than 2 cfs for the 1-year, 24-hour Type III design storm event (prior to any attenuation). (Note: LID design strategies can greatly reduce the peak discharge rate).
☐	☐	Conveyance and natural channel protection for the site have been met. If "No,' explain why:	

TABLE 4-1: Summary of Channel Protection Volumes (see RICR 8.10)					
Design Point	**Receiving Water Body Name**	**Coldwater Fishery? (Y/N)**	**Total CPv Required (cu ft)**	**Total CPv Provided (cu ft)**	**Average Release Rate Modeled in the 1-yr storm (cfs)**
DP-1:	Ashaway River	Y	0	0	NA
DP-2:					
DP-3:					
DP-4:					
TOTALS:			0	0	NA
Note: The Channel Protection Volume Standard must be met in each waterbody ID.					
☐ YES ☐ NO	The CPv is released at roughly a uniform rate over a 24-hour duration (see examples of sizing calculations in Appendix D of the RISDISM).				
☐ YES ☐ NO	Do additional design restrictions apply resulting from any discharge to cold-water fisheries; If "Yes," please indicate restrictions and solutions below.				
☐ Indicate below where the pertinent calculations and/or information for the above items are provided (i.e., name of report/document, page numbers, appendices, etc.).					

OVERBANK FLOOD PROTECTION (RICR 8.11) AND OTHER POTENTIAL HIGH FLOWS – MINIMUM STANDARD 5			
YES	**NO**		
☐	☒	Is this standard waived? If yes, please indicate one or more of the reasons below:	
		☐	The project directs discharge to a large river (i.e., 4th-order stream or larger. See Appendix I for state-wide list and map of stream orders), bodies of water >50.0 acres in surface area (i.e., lakes, ponds, reservoirs), or tidal waters.
		☐	A Downstream Analysis (see RICR 8.11.D and E) indicates that peak discharge control would not be beneficial or would exacerbate peak flows in a downstream tributary of a particular site (e.g., through coincident peaks).
☐	☒	Does the project flow to an MS4 system or subject to other stormwater requirements? If "Yes," indicate as follows:	
		☐	RIDOT
		☐	Other (specify):
Note: The project could be approved by RIDEM but not meet RIDOT or Town standards. RIDOT's regulations indicate that post-volumes must be **less** than pre-volumes for the 10-yr storm at the design point entering the RIDOT system. If you have not already received approval for the discharge to an MS4, please explain below your strategy to comply with RIDEM and the MS4.			
		Indicate below which model was used for your analysis. ☐ TR-55 ☐ TR-20 ☒ HydroCAD ☐ Bentley/Haestad ☐ Intellisolve ☐ Other (Specify):	
YES	**NO**		
☐	☐	Does the drainage design demonstrate that flows from the 100-year storm event through a BMP will safely manage and convey the 100-year storm? If "No," please explain briefly below and reference where in the application further documentation can be found (i.e., name of report/document, page numbers, appendices, etc.):	
☒	☐	Do off-site areas contribute to the sub-watersheds and design points? If "Yes,"	
☒	☐	Are the areas modeled as "present condition" for both pre- and post-development analysis?	
☒	☐	Are the off-site areas shown on the subwatershed maps?	
☒	☐	Does the drainage design confirm safe passage of the 100-year flow through the site for off-site runoff?	
☐	☒	Is a Downstream Analysis required (see RICR 8.11.E.1)?	
☐	☐	Calculate the following:	
		☐	Area of disturbance within the sub-watershed (areas) 1.8 acres
		☐	Impervious cover (%) 1.64%
☐	☒	Is a dam breach analysis required (earthen embankments over six (6) feet in height, or a capacity of 15 acre-feet or more, and contributes to a significant or high hazard dam)?	
☒	☐	Does this project meet the overbank flood protection standard?	

Table 5-1 Hydraulic Analysis Summary								
Subwatershed (Design Point)	**1.2" Peak Flow** (cfs) **		**1-yr Peak Flow** (cfs)		**10-yr Peak Flow** (cfs)		**100-yr Peak Flow** (cfs)	
	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)
DP-1:	0.05	0.05	4.03	4.03	16.47	16.47	42.06	42.06
DP-2:								
DP-3:								
DP-4:								
TOTALS:	0.05	0.05	4.03	4.03	16.47	16.47	42.06	42.06

** Utilize modified curve number method or split pervious /impervious method in HydroCAD.

Note: The hydraulic analysis must demonstrate no impact to each individual subwatershed DP unless each DP discharges to the same wetland or water resource.

Indicate as follows where the pertinent calculations and/or information for the items above are provided	**Name of report/document, page numbers, appendices, etc.**
Existing conditions analysis for each subwatershed, including curve numbers, times of concentration, runoff rates, volumes, and water surface elevations showing methodologies used and supporting calculations.	Drainage Report Appendix B
Proposed conditions analysis for each subwatershed, including curve numbers, times of concentration, runoff rates, volumes, water surface elevations, and routing showing the methodologies used and supporting calculations.	Drainage Report Appendix B
Final sizing calculations for structural stormwater BMPs, including contributing drainage area, storage, and outlet configuration.	NA
Stage-storage, inflow and outflow hydrographs for storage facilities (e.g., detention, retention, or infiltration facilities).	NA

Table 5-2 Summary of Best Management Practices											
BMP ID	**DP #**	**BMP Type** (e.g., bioretention, tree filter)	**BMP Functions**					**Bypass Type**	**Horizontal Setback Criteria are met per RICR 8.21.B.10, 8.22.D.11, and 8.35.B.4**		
			Pre-Treatment (Y/N/ NA)	Re_v	WQ_v	CP_v (Y/N/ NA)	Overbank Flood Reduction (Y/N/NA)	External (E) Internal (I) or NA	Yes/ No	Technical Justification (Design Report page number)	Distance Provided
NA											
		TOTALS:									

Table 5.3 Summary of Soils to Evaluate Each BMP									
DP #	**BMP ID**	**BMP Type** (e.g., bioretention, tree filter)	**Soils Analysis for Each BMP**						
			Test Pit ID# and Ground Elevation		SHWT Elevation (ft)	Bottom of Practice Elevation* (ft)	Separation Distance Provided (ft)	Hydrologic Soil Group (A, B, C, D)	Exfiltration Rate Applied (in/hr)
			Primary	Secondary					
NA									
		TOTALS:							

* For underground infiltration systems (UICs) bottom equals bottom of stone, for surface infiltration basins bottom equals bottom of basin, for filters bottom equals interface of storage and top of filter layer

LAND USES WITH HIGHER POTENTIAL POLLUTANTS LOADS (LUHPPLs) – MINIMUM STANDARD 8			
YES	**NO**	**N/A**	
☐	☐	☒	Describe any LUHPPLs identified in Part 1, Minimum Standard 8, Section 2. If not applicable, continue to Minimum Standard 9.
☐	☐	☐	Are these activities already covered under an MSGP? If "No," please explain if you have applied for an MSGP or intend to do so?
☐	☐	☐	List the specific BMPs that are proposed for this project that receive stormwater from LUHPPL drainage areas. These BMP types must be listed in RISDISM Table 3-3, "Acceptable BMPs for Use at LUHPPLs." Please list BMPs:
☐	☐	☐	Additional BMPs, or additional pretreatment BMP's if any, that meet RIPDES MSGP requirements; Please list BMPs:
			Indicate below where the pertinent calculations and/or information for the above items are provided (i.e., name of report/document, page numbers, appendices, etc.).

ILLICIT DISCHARGES – MINIMUM STANDARD 9			
Illicit discharges are defined as unpermitted discharges to Waters of the State that do not consist entirely of stormwater or uncontaminated groundwater, except for certain discharges identified in the RIPDES Phase II Stormwater General Permit.			
YES	**NO**	**N/A**	
☒	☐	☐	Have you checked for illicit discharges?
☐	☒	☐	Have any been found and/or corrected? If "Yes," please identify.
☐	☒	☐	Does your report explain preventative measures that keep non-stormwater discharges out of the Waters of the State (during and after construction)?

SOIL EROSION AND SEDIMENT CONTROL (SESC) – MINIMUM STANDARD 10			
YES	**NO**	**N/A**	
☒	☐	☐	Have you included a Soil Erosion and Sediment Control Plan Set and/or Complete Construction Plan Set?
☒	☐	☐	Have you provided a **separately-bound** document based upon the SESC Template? If yes, proceed to Minimum Standard 11 (the following items can be assumed to be addressed).
			If "No," include a document with your submittal that addresses the following elements of an SESC Plan:
		☐	Soil Erosion and Sediment Control Plan Project Narrative, including a description of how the fifteen (15) Performance Criteria have been met:
		☐	Provide Natural Buffers and Maintain Existing Vegetation
		☐	Minimize Area of Disturbance
		☐	Minimize the Disturbance of Steep Slopes
		☐	Preserve Topsoil
		☐	Stabilize Soils
		☐	Protect Storm Drain Inlets
		☐	Protect Storm Drain Outlets
		☐	Establish Temporary Controls for the Protection of Post-Construction Stormwater Control Measures
		☐	Establish Perimeter Controls and Sediment Barriers
		☐	Divert or Manage Run-On from Up-Gradient Areas
		☐	Properly Design Constructed Stormwater Conveyance Channels
		☐	Retain Sediment On-Site
		☐	Control Temporary Increases in Stormwater Velocity, Volume, and Peak Flows
		☐	Apply Construction Activity Pollution Prevention Control Measures
		☐	Install, Inspect, and Maintain Control Measures and Take Corrective Actions
		☐	Qualified SESC Plan Preparer's Information and Certification
		☐	Operator's Information and Certification; if not known at the time of application, the Operator must certify the SESC Plan upon selection and prior to initiating site activities
		☐	Description of Control Measures, such as Temporary Sediment Trapping and Conveyance Practices, including design calculations and supporting documentation, as required

STORMWATER MANAGEMENT SYSTEM OPERATION, MAINTENANCE, AND POLLUTION PREVENTION PLAN – MINIMUM STANDARDS 7 AND 9		
Operation and Maintenance Section		
YES	**NO**	
☒	☐	Have you minimized all sources of pollutant contact with stormwater runoff, to the maximum extent practicable?
☒	☐	Have you provided a **separately-bound** Operation and Maintenance Plan for the site and for all of the BMPs, and does it address each element of RICR 8.17 and RISDISM Appendix C and E?
☒	☐	Lawn, Garden, and Landscape Management meet the requirements of RISDISM Section G.7? If "No," why not?
☐	☒	Is the property owner or homeowner's association responsible for the stormwater maintenance of all BMP's? If "No," you must provide a legally binding and enforceable maintenance agreement (see RISDISM Appendix E, page 26) that identifies the entity that will be responsible for maintenance of the stormwater. Indicate where this agreement can be found in your report (i.e., name of report/document, page numbers, appendices, etc.).
☐	☒	Do you anticipate that you will need legal agreements related to the stormwater structures? (e.g. off-site easements, deed restrictions, covenants, or ELUR per the Remediation Regulations). If "Yes," have you obtained them? Or please explain your plan to obtain them:

☐	☒	Is stormwater being directed from public areas to private property? If "Yes," note the following: Note: This is not allowed unless a funding mechanism is in place to provide the finances for the long-term maintenance of the BMP and drainage, or a funding mechanism is demonstrated that can guarantee the long-term maintenance of a stormwater BMP by an individual homeowner.
Pollution Prevention Section		
☐	☒	Designated snow stockpile locations?
☐	☒	Trash racks to prevent floatables, trash, and debris from discharging to Waters of the State?
☐	☒	Asphalt-only based sealants?
☐	☒	Pet waste stations? (Note: If a receiving water has a bacterial impairment, and the project involves housing units, then this could be an important part of your pollution prevention plan).
☐	☒	Regular sweeping? Please describe:
☐	☒	De-icing specifications, in accordance with RISDISM Appendix G. (NOTE: If the groundwater is GAA, or this area contributes to a drinking water supply, then this could be an important part of your pollution prevention plan).
☒	☐	A prohibition of phosphate-based fertilizers? (Note: If the site discharges to a phosphorus impaired waterbody, then this could be an important part of your pollution prevention plan).

PART 4. SUBWATERSHED MAPPING AND SITE-PLAN DETAILS

Existing and Proposed Subwatershed Mapping (REQUIRED)			
YES	**NO**		
☒	☐	Existing and proposed drainage area delineations	
☒	☐	Locations of all streams and drainage swales	
☒	☐	Drainage flow paths, mapped according to the DEM *Guidance for Preparation of Drainage Area Maps* (included in RISDISM Appendix K)	
☒	☐	Complete drainage area boundaries; include off-site areas in both mapping and analyses, as applicable	
☐	☒	Logs of borings and/or test pit investigations along with supporting soils/geotechnical report	
☐	☒	Mapped seasonal high-water-table test pit locations	
☐	☒	Mapped locations of the site-specific borings and/or test pits and soils information from the test pits at the locations of the BMPs	
☐	☒	Mapped locations of the BMPs, with the BMPs consistently identified on the Site Construction Plans	
☐	☒	Mapped bedrock outcrops adjacent to any infiltration BMP	
☐	☐	Soils were logged by a:	
		☐	DEM-licensed Class IV soil evaluator Name:
		☐	RI-registered P.E. Name:

Subwatershed and Impervious Area Summary				
Subwatershed (area to each design point)	**First Receiving Water ID or MS4**	**Area Disturbed (units)**	**Existing Impervious (units)**	**Proposed Impervious (units)**
DP-1:	Town CB	1.8 ac	0.424 ac	0.436 ac
DP-2:				
DP-3:				
DP-4:				
TOTALS:	Town CB	1.8 ac	0.424 ac	0.436 ac

Site Construction Plans (Indicate that the following applicable specifications are provided)		
YES	**NO**	
☒	☐	Existing and proposed plans (scale not greater than 1" = 40') with North arrow
☒	☐	Existing and proposed site topography (with 1 or 2-foot contours); 10-foot contours accepted for off-site areas
☒	☐	Boundaries of existing predominant vegetation and proposed limits of clearing
☒	☐	Site Location clarification
☒	☐	Location and field-verified boundaries of resource protection areas such as: ▸ freshwater and coastal wetlands, including lakes and ponds ▸ coastal shoreline features Perennial and intermittent streams, in addition to Areas Subject to Storm Flowage (ASSFs)
☒	☐	All required setbacks (e.g., buffers, water-supply wells, septic systems)
☐	☒	Representative cross-section and profile drawings, and notes and details of structural stormwater management practices and conveyances (i.e., storm drains, open channels, swales, etc.), which include: ▸ Location and size of the stormwater treatment practices (type of practice, depth, area). Stormwater treatment practices (BMPs) must have labels that correspond to RISDISM Table 5-2; ▸ Design water surface elevations (applicable storms); ▸ Structural details of outlet structures, embankments, spillways, stilling basins, grade-control structures, conveyance channels, etc.; ▸ Existing and proposed structural elevations (e.g., inverts of pipes, manholes, etc.); ▸ Location of floodplain and, if applicable, floodway limits and relationship of site to upstream and downstream properties or drainage that could be affected by work in the floodplain; ▸ Planting plans for structural stormwater BMPs, including species, size, planting methods, and maintenance requirements of proposed planting
☐	☒	Logs of borings and/or test pit investigations along with supporting soils/geotechnical report and corresponding water tables
☐	☒	Mapping of any OWM-approved remedial actions/systems (including ELURs)
☒	☐	Location of existing and proposed roads, buildings, and other structures including limits of disturbance; ▸ Existing and proposed utilities (e.g., water, sewer, gas, electric) and easements; ▸ Location of existing and proposed conveyance systems, such as grass channels, swales, and storm drains, and location(s) of final discharge point(s) (wetland, waterbody, etc.); ▸ Cross sections of roadways, with edge details such as curbs and sidewalks; ▸ Location and dimensions of channel modifications, such as bridge or culvert crossings
☐	☒	Locations, cross sections, and profiles of all stream or wetland crossings and their method of stabilization