



## **ENVIRONMENTAL ASSESSMENT**

PROPOSED OLD AMSTON ROAD  
FUEL CELL POWER PLANT

OLD AMSTON ROAD  
COLCHESTER, CONNECTICUT

**Prepared for:**

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# Table of Contents

<b>1</b>	<b>INTRODUCTION</b> .....	<b>1</b>
<b>2</b>	<b>PROPOSED PROJECT</b> .....	<b>3</b>
2.1	PROJECT SETTING .....	3
2.2	PROJECT DEVELOPMENT AND OPERATION .....	5
2.2.1	<i>Access</i> .....	6
2.2.2	<i>Public Health and Safety</i> .....	6
2.2.3	<i>Land Use Plans</i> .....	6
<b>3</b>	<b>ENVIRONMENTAL CONDITIONS</b> .....	<b>8</b>
3.1	AIR QUALITY .....	10
3.2	WATER RESOURCES .....	11
3.2.1	<i>Wetlands and Watercourses</i> .....	11
3.2.2	<i>Wetland Impacts</i> .....	12
3.2.3	<i>Floodplain Areas</i> .....	12
3.3	WATER QUALITY .....	13
3.3.1	<i>Groundwater</i> .....	13
3.3.2	<i>Surface Water</i> .....	13
3.3.3	<i>Stormwater Management</i> .....	14
3.4	HABITAT AND WILDLIFE .....	15
3.4.1	<i>Core Forest Determination</i> .....	16
3.4.2	<i>Wildlife</i> .....	16
3.5	RARE SPECIES .....	17
3.5.1	<i>Natural Diversity Data Base</i> .....	17
3.5.2	<i>USFWS Consultation</i> .....	18
3.6	SOILS AND GEOLOGY .....	19
3.6.1	<i>Prime Farmland Soils</i> .....	19
3.7	HISTORIC AND ARCHAEOLOGICAL RESOURCES .....	20
3.8	SCENIC AND RECREATIONAL AREAS .....	20
3.9	NOISE .....	22
<b>4</b>	<b>CONCLUSION</b> .....	<b>23</b>

# Figures

FIGURE 1 SITE LOCATION MAP .....	2
FIGURE 2 EXISTING CONDITIONS MAP .....	4
FIGURE 3 PROPOSED CONDITIONS MAP .....	9
FIGURE 4 SURROUNDING FEATURES MAP.....	21

# Table

TABLE 1 GREENHOUSE GAS EMISSIONS .....	10
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# Appendices

APPENDIX A – PROJECT PLANS	
APPENDIX B – PRODUCT INFORMATION SHEETS	
APPENDIX C – USFWS AND NDDDB COMPLIANCE STATEMENT	
APPENDIX D - CULTURAL RESOURCES REVIEW	
APPENDIX E – VISIBILITY DOCUMENTATION	
APPENDIX F – SOUND EVALUATION	

# **1 Introduction**

All-Points Technology Corporation, P.C. ("APT") prepared this Environmental Assessment ("EA") on behalf of ReNew Developers, LLC (hereinafter referred to as the "ReNew") for the proposed installation and utility interconnection of a fuel cell electric generating facility (collectively, the "Project"), with output of approximately 4.99 megawatts<sup>1</sup> ("MW") located in the Town of Colchester, Connecticut ("Town"). This EA has been completed to support ReNew's submission to the Connecticut Siting Council ("Council") of a petition for declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the construction, maintenance, and operation of the electric generating facility.

The results of this assessment demonstrate that the proposed development will comply with the Connecticut Department of Energy and Environmental Protection's ("DEEP") air and water quality standards and will not have an adverse effect on the existing environment and ecology of the Site or the surrounding area. Further, the proposed Project is neither defined as an "affecting facility"<sup>2</sup> nor located within an "environmental justice community"<sup>3</sup> under Connecticut General Statutes § 22a-20a.

The Project will be developed on a privately owned, 1.15-acre property south of Old Amston Road in Colchester, Connecticut (referred to herein as the "Site"). The Site, which formerly housed an automotive salvage yard, is vacant and cleared. The Town Assessor records assign a street address of 42 Old Amston Road to the larger property from which the Site has been divided; no number has been assigned to the Site at this time. The Site is zoned Suburban.

Figure 1, *Site Location Map*, depicts the location of the Site and the immediate surrounding area.

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<sup>1</sup> The output referenced is Alternating Current (AC).

<sup>2</sup> "Affecting facility" is defined, in part, as any electric generating facility with a capacity of more than ten megawatts.

<sup>3</sup> "Environmental justice community" means (A) a United States census block group, as determined in accordance with the most recent United States census, for which thirty per cent or more of the population consists of low income persons who are not institutionalized and have an income below two hundred per cent of the federal poverty level, or (B) a distressed municipality, as defined in subsection (b) of § 32-9p.





**Legend**

- Site
- Municipal Boundary

**Map Notes:**  
 Base Map Source: USGS 7.5 Minute Topographic  
 Quadrangle Maps, Colchester, CT (1984)  
 Map Scale: 1 inch = 2,000 feet  
 Map Date: April 2022



**Figure 1**  
**Site Location Map**  
 Proposed Fuel Cell Facility  
 Old Amston Road  
 Colchester, Connecticut



## **2 Proposed Project**

### **2.1 Project Setting**

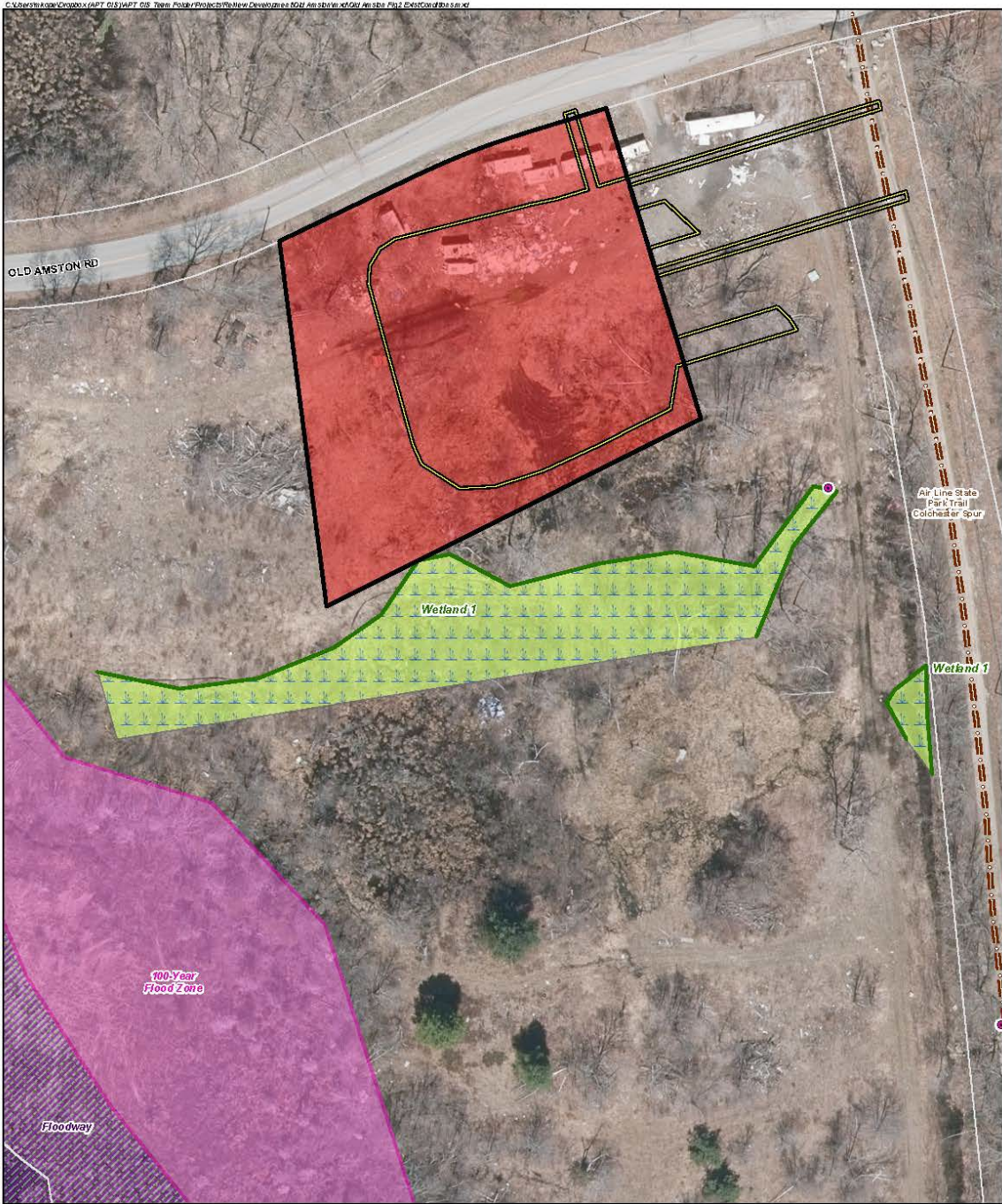
The Project will occupy ±0.69 acre (the "Project Area") on the ±1.15-acre Site and an adjacent property to the east. The fuel cell facility (the "Facility") and an electrical service interconnection line will be located on the Site; the interconnection line will extend out to Old Amston Road at the northeastern corner of the Site. Access to the Site will extend over an existing gravel drive on the adjacent property, then extend west to the Site at the northeast and southeast corners of the Facility. Underground natural gas and water connections will extend east from the Facility over the adjacent property to connections on the east side of the Air Line State Park Trail.

The Site's existing topography is generally level, ranging from approximately 410 feet to 416 feet above mean sea level ("AMSL").

Figure 2, *Existing Conditions*, depicts current conditions within the Project Area.

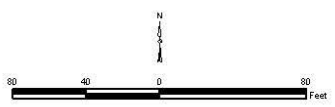
The surrounding area includes tracts of vacant land, with sparse residential development to the east beyond Judd Brook. The Air Line State Park Trail is to the east, with an Eversource substation and an existing fuel cell facility beyond the Trail. Town land, including the municipal transfer station and the Town dog park, is to the northeast.





- Legend**
- Site
  - Project Area
  - Existing Culvert
  - Airline State Park Trail
  - Delineated Wetland Boundary
  - Approximate Wetland Area
  - Habitat Cover Type**
  - Developed**
  - FEMA Flood Zones**
  - 100-Year Flood Zone
  - Floodway
  - Approximate Parcel Boundary

**Map Notes:**  
 Base Map Source: 2019 Aerial Photograph (CTECCO)  
 Map Scale: 1 inch = 80 feet  
 Map Date: July 2022



**Figure 2**  
**Existing Conditions Map**  
 Proposed Fuel Cell Facility  
 Old Amston Road  
 Colchester, Connecticut



## 2.2 Project Development and Operation

The Facility will consist of a total of 16 Bloom Energy Servers, 12 325-kW units, two (2) 300-kW units, one (1) 250-kW unit, and one (1) 249.9 kW unit, and associated equipment including utility cabinets, water deionizers, telemetry cabinets and disconnect switches. The Facility will be installed within an approximately 104' by 117', gravel-surfaced compound. The compound will be surrounded by an eight (8)-foot tall chain link fence. The Project will also require one (1) overhead electrical service and underground service connections to water and natural gas. A grass-lined stormwater management basin with a rip-rap lined overflow weir will be located west and south of the fence. Once complete, the Project Area (consisting of the fenced Facility, interconnection, stormwater management features, and vehicular and utility access) will occupy approximately 0.69 acre.<sup>4</sup>

Proposed development drawings are provided in Appendix A, *Project Plans*. Product Information Sheets for the Bloom Energy Servers are provided in Appendix B.

Construction activities within the Project Area will require the following:

- installing erosion and sedimentation control measures;
- creating one (1) water quality volume basin and associated grading;
- creating the gravel-based compound;
- trenching for natural gas and water service; and
- installing one (1) new overhead utility pole for interconnection to the existing electrical distribution system.

Minor earthwork is required for creation of the compound and access drive, grading associated with the required drainage and erosion and sedimentation control features, and construction of the water quality features.

The Facility is unstaffed; after construction is complete and the Facility is operable, traffic at the Site will be minimal.

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<sup>4</sup> The Project Area includes utility connections and vehicular access over the adjacent property to the east and the Air Line State Park Trail.

### **2.2.1 Access**

The Facility will be accessed from Old Amston Road via an existing gravel drive on the adjacent property. Two (2) new gravel drives will extend west from the existing drive to the eastern fence line; a 15'-wide drive will extend to the northern end and a 7'-wide drive will extend to the southern end. Temporary construction access will be provided from Old Amston Road directly north of the Facility location.

### **2.2.2 Public Health and Safety**

The Project will meet applicable local, state, national and industry health and safety standards and requirements related to electric power generation. The Facility will not consume any raw materials, will not produce any by-products and will be unstaffed during normal operating conditions.

The Facility will be enclosed by an eight (8)-foot tall chain link fence with anti-climb mesh. The entrance to the Facility will be gated, limiting access to authorized personnel only. All Town emergency response personnel will be provided access via a Knox padlock, and ReNew will offer to provide training. The Facility will be remotely monitored and will have the ability to remotely de-energize in the case of an emergency.

### **2.2.3 Land Use Plans**

The Project is consistent with state and federal policies and will support the state's energy goals by developing a renewable energy resource while not having a substantial adverse environmental effect. Although local land use requirements do not apply, the Project has been designed to comply with the Town's Zoning Regulations to the extent feasible.

The Site is located in the Town's Suburban Zoning District. The Town's Zoning Regulations include a finding that "alternative energy sources are important" in the context of wind powered devices, but are otherwise silent on alternative energy technologies, including fuel cells. Zoning Regulations, Town of Colchester, effective January 15, 2015, Section 8.11.13.A.1.

The Town's Plan of Conservation and Development ("POCD"), adopted in 2015, encouraged evaluation by the Town of "alternative energy approaches" for municipal facilities.

ReNew believes the Project will benefit the local community by improving electrical service for existing and future development through the availability of enhanced local, renewable generating capacity.

### **3 Environmental Conditions**

This section provides an overview of the current environmental conditions at the Site and an evaluation of the Project's potential impacts on the environment. The results of this assessment demonstrate that the Project will comply with the DEEP air and water quality standards and will not have an undue adverse effect on the existing environment and ecology.

Please refer to Figure 3, *Proposed Conditions* for a depiction of the Project and its relationship with the resources discussed herein.





**Figure 3**  
**Proposed Conditions Map**  
 Proposed Fuel Cell Facility  
 Old Amston Road  
 Colchester, Connecticut





### 3.1 Air Quality

Conn. Agencies Regs. § 22a-174-42 exempts fuel cells from air permitting requirements. Accordingly, no permits, registrations, or applications are required based on the actual emissions from the Facility.<sup>5</sup> It should be noted, however, that Bloom Energy fuel cells do meet the emissions standards of Section 22a-174-42. Table 1 lists emissions generated by Bloom equipment. The Bloom Energy fuel cells virtually eliminate NO<sub>x</sub>, SO<sub>x</sub>, CO, VOCs and particulate matter emissions from the energy production process. Similarly, there are no CH<sub>4</sub>, SF<sub>6</sub>, HFC or PFC emissions.

**Table 1: Greenhouse Gas Emissions**

Emission Type	Bloom Output
Nitrous Oxides (NO <sub>x</sub> )	<0.01 lbs/MWh
Carbon Monoxide (CO)	<0.05 lbs/MWh
Sulfur Oxides (SO <sub>x</sub> )	Negligible
Volatile Organic Compounds (VOCs)	<0.02 lbs/MWh
Carbon Dioxide (CO <sub>2</sub> ) <sup>6</sup>	679-833 lbs/MWh

The proposed Facility will ultimately displace less efficient fossil fueled marginal generation on the ISO New England system. Based upon the most recent US Environmental Protection Agency (EPA) “eGrid” data (2020), the proposed Facility is expected to reduce carbon emissions by approximately 13% while essentially eliminating local air pollutants like NO<sub>x</sub>, SO<sub>x</sub>, and particulate matter.

Temporary, potential, construction-related mobile source emissions will include those associated with construction vehicles and equipment. Any potential air quality impacts related to construction activities can be considered de minimis. Such emissions will be mitigated using available measures, including limiting idling times of equipment; proper maintenance of all vehicles and equipment; and watering/spraying to minimize dust and particulate releases. In addition, all on-

<sup>5</sup> See Conn. Agencies Regs. §§ 22a-174-42(b) and (e).

<sup>6</sup> Carbon dioxide is measured at Bloom’s stated lifetime efficiency level of 53-60%.

site and off-road equipment will meet the latest standards for diesel emissions, as prescribed by the United States Environmental Protection Agency.

## 3.2 Water Resources

### 3.2.1 Wetlands and Watercourses

APT Registered Soil Scientists identified portions of one (1) wetland proximate to the Site during field inspections and wetland delineations completed on March 23, 2022. The location of this resource is depicted on Figure 2, *Existing Conditions*. No wetlands were identified on the Site. The results of the field delineation are summarized below.

The wetland, located south of the Site on an adjoining parcel, consists of a large complex wetland and floodplain system with a diversity of hydrological conditions, vegetation communities, and morphologies. Boundaries to this wetland are generally well defined with a distinct vegetation break. The wetland is characterized by seasonally saturated seeps and semi-permanent flooding from Judd Brook, located to the west on the adjacent parcel. The wetland generally drains west toward Judd Brook, ±297 feet west of the Site, with interior pockets of seasonally flooded and/or semi-permanently flooded depressions. A high groundwater table also contributes to the saturation of this complex. Evidence of historic and more recent anthropogenic (man-made) influence is present in the form of filled/altered soils bordering the Site. Two (2) cut-swailes within the wetland convey flows from additional off-site wetland resources and roadway drainage.

The wetland is dominated by emergent vegetation along the wetland boundaries that transitions to a dense shrub layer bordering the floodplain. Some wetland disturbance, particularly along the northern wetland edge, has occurred in association with the previous automotive salvage yard activities. Dominant vegetation includes Red Maple (*Acer rubrum*), Purple Loosestrife<sup>7</sup> (*Lythrum salicaria*), Sensitive Fern (*Onoclea sensibilis*), Silky Dogwood (*Cornus amomum*), Soft Rush (*Juncus effuses*), Northern Arrow-wood (*Viburnum recognitum*), Speckled Alder (*Alnus rugosa*), Pussywillow (*Salix discolor*), Green Bulrush (*Scirpus atovirens*), Meadowsweet (*Spirea latifolia*) and Tussock Sedge (*Carex stricta*).

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<sup>7</sup> Connecticut Invasive Species Council invasive plant species

### **3.2.2 Wetland Impacts**

No portion of the wetland is located on the Project Area; as a result, there will be no direct impacts to the wetland. The Project's limits of disturbance will maintain a buffer to wetlands while the fenced Facility will be ±87 feet from wetlands. All proposed development will occur entirely within existing level and graded surfaces associated with either historic filling/grading or more recent restoration activities. The nearest construction activity, associated with construction of the stormwater management basin at the southwestern extent of the Project Area, is approximately 41 feet from the wetland boundary. Although construction activities are proposed in proximity to the wetland, Project development is within a disturbed area and does not entail clearing of mature vegetation<sup>8</sup> or significant grading. Thus, the Project would not be expected to result in an adverse impact to the Site's wetland resources.

### **3.2.3 Floodplain Areas**

The Facility will not be located within a 100- or 500-year flood zone. APT reviewed the United States Federal Emergency Management Agency ("FEMA") Flood Insurance Rate Map ("FIRM") covering the Site. A FIRM is the official map of a community on which FEMA has delineated both the special hazard areas and risk premium zones applicable to the community. The northern portion of the Site, including the location of the Facility, is mapped on FIRM PANEL #09011C 0152 G, dated July 18, 2011. Based upon the reviewed FIRM Map, the Site is located in an area designated as Zone X, which is defined as an area of minimal flooding, typically above the 500-year flood level. Higher risk flood areas associated with Judd Brook are located on western and southern portions of the adjacent property.

No special design considerations or precautions relative to flooding are required for the Facility. As no portion of the Project Area is proposed to be located in or impact 100- or 500-year flood zones, no impacts are anticipated to floodplain or downstream areas.

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<sup>8</sup> Most of the site consists of either typical lawn species, exposed fill or gravel surfaces.

### **3.3 Water Quality**

As discussed in this section, the Project will comply with DEEP's water quality standards. Once operative, the Facility will be unstaffed, and no potable water uses or sanitary discharges are associated with it. The Facility is designed to operate without water discharge under normal operating conditions, and uses no water after start-up, which requires a 1,536-gallon injection. No liquid fuels are associated with the operation of the Facility. Stormwater generated by the proposed development will be properly handled and treated in accordance with the 2004 *Connecticut Stormwater Quality Manual*.

#### **3.3.1 Groundwater**

Groundwater underlying the Site is classified by publicly available DEEP mapping as "GA, GAA may not meet current standards".<sup>9</sup> This classification indicates groundwater within the area is located within a GA- or GAA-classified area, but that it may be degraded and not meet current standards. Based upon a review of available DEEP mapping, the Site is not located within a mapped (preliminary or final) DEEP Aquifer Protection Area. However, the Site is located within a Town-designated Aquifer Protection Zone.

The Project will have no adverse environmental effect on ground water quality.

#### **3.3.2 Surface Water**

The Project will have no adverse environmental effect on surface water quality. Based upon DEEP mapping, the Site is located in Major Drainage Basin 4 (Connecticut River Basin), Regional Drainage Basin 47 (Salmon River), Subregional Drainage Basin 4702 (Judd Brook), and Local Drainage Basin 4702-00 (Judd Brook above unnamed brook). The nearest mapped waterbody is Judd Brook, which is located west of the Site and is classified by DEEP as a Class A surface waterbody<sup>10</sup>. At its nearest point Judd Brook is located approximately 370 feet west of the Project Area. The Project is expected to have no effect on this surface waterbody.

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<sup>9</sup> Designated uses in GA classified areas include existing private and potential public or private supplies of drinking water and base flow for hydraulically connected surface water bodies. Designated uses in GAA classified areas include existing or potential public supply of water suitable for drinking without treatment and baseflow for hydraulically-connected surface water bodies.

<sup>10</sup> Designated uses for A classified waterbodies include potential drinking water supply, fish and wildlife habitat, recreational use, agricultural and industrial supply and other legitimate uses including navigation.

Based upon the reviewed DEEP mapping, the Site is not located within a mapped Public Drinking Supply Watershed.

During construction, erosion and sediment ("E&S") controls will be installed and maintained in accordance with the 2002 *Connecticut Guidelines for Soil Erosion and Sediment Control*. Once operative, stormwater will be managed in accordance with the 2004 *Connecticut Stormwater Quality Manual*.

### **3.3.3 Stormwater Management**

The Project has been designed to meet the 2004 Connecticut Stormwater Quality Manual and 2002 Connecticut Guidelines for Soil Erosion and Sediment Control.<sup>11</sup> Combined, these address three (3) main concerns: stormwater runoff peak attenuation, water quality volume treatment, and E&S control during construction. Technical details, mapping, and HydroCAD modeling results are provided in a Stormwater Management Report. A summary of these results is provided below.

#### **Stormwater Runoff Peak Attenuation**

The Project will require the installation of fuel cell equipment and associated fencing, access road, and utility and stormwater management features. An increase in runoff is assumed due to the installation of a gravel pad and gravel access drive.

To manage the assumed increase in post-development runoff, one (1) grass-lined stormwater management basin with a rip-rap lined overflow weir is proposed. These features will collect surface runoff from within the Facility, thus managing the timing and release of flow from the Project Area.

The stormwater calculations for the Project predict that the proposed basin reduces post-development peak discharges to the waters of the State of Connecticut for the 2-, 25-, 50- and 100- year storm events compared to the pre-development peak discharges. Therefore, the Project is not anticipated to result in any adverse conditions to the surrounding areas and properties.

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<sup>11</sup> As the project disturbance is under one (1) acre, the Project is exempt from the CT DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities.

## **Water Quality Volume Treatment**

The Project design also provides for adequate treatment of water quality volume associated with effective impervious cover, which includes the proposed gravel pad and access drive and concrete equipment pads. The proposed basin is designed to provide the requisite treatment volumes associated with these features.

## **Erosion and Sediment Control During Construction**

To safeguard water resources from potential impacts during construction, ReNew is committed to implementing protective measures. Because the Project Area is under one (1) acre, perimeter compost filter socks will be employed for sediment and erosion control. Sedimentation and erosion control notes and phasing plans are incorporated in the Project plans (see Appendix A).

Open areas will be temporarily stabilized with quick growing annual seed during construction. Upon completion of construction, the Project Area outside the fenced Facility and stormwater management basin will be seeded with a permanent New England semi-shade grass and forbs mix.

With the incorporation of these protective measures, stormwater runoff from Project development is not anticipated to result in an adverse impact to water quality associated with nearby surface water bodies.

## **3.4 Habitat and Wildlife**

One (1) distinct habitat type – Developed - occupies the Project Area. This habitat was first assessed using remote sensing and publicly available datasets and subsequently verified during a March 23, 2022 field inspection at the time of the wetland delineation.

### **Developed**

The Developed habitat is evidenced by the disturbed, level and graded/filled nature of the Project Area. Site work has historically and more recently occurred throughout the Project Area and other portions of the adjacent parcel, resulting in exposed filled soils and generally level topography. Adjacent surrounding areas are also developed, with Old Amston Road to the north, a dirt access road to the east, and maintained lawn to the west. The wetland complex to the immediate south

shows evidence of historic and more recent alteration along and within the wetland boundary. The entire Project Area will be subject to redevelopment for construction of the Project.

### **3.4.1 Core Forest Determination**

The Site and Project Area are fully cleared so no tree removal is required for development of the Facility. As a result, the Project will not affect core forest resources.

### **3.4.2 Wildlife**

The Project will be constructed entirely within a Developed area. The Project Area and surrounding land currently provides limited value from a wildlife utilization standpoint due to the lack of vegetation and historic and current level of human activity. Project-related impacts on the Site will be limited, and therefore wildlife is not anticipated to be adversely affected by the Project.

The disturbed areas adjacent to the Project Area are likely utilized by species that are tolerant of human disturbance and habitat fragmentation. Generalist wildlife species, including several common bird species as well as mammals such as raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), grey squirrel (*Sciurus carolinensis*), Virginia opossum (*Didelphus virginiana*), white-tailed deer (*Odocoileus virginianus*), and eastern chipmunk (*Tamias striatus*), could be expected to use those areas. However, due to the lack of vegetative habitat and the existing disturbances, wildlife use is likely transient.

The Project Area will not encroach into the adjacent wetland habitat. As a result, wildlife utilization within nearby aquatic habitats is expected to continue relatively uninterrupted. Noise and associated human activities during construction may result in limited temporary disruption to wildlife using the nearby wetland habitat. Any wildlife possibly displaced during construction would be expected to temporarily disperse deeper into the wetland and nearby edge forest habitats with limited disruption to breeding or foraging activities resulting. Post construction, operation of the Facility will not result in a likely adverse effect to wildlife using the nearby habitats since the Facility will be unoccupied and does not generate any significant noise, traffic, or high level of human activity.

## 3.5 Rare Species

APT reviewed publicly available information to determine the potential presence of state/federally listed species and critical habitat on or proximate to the Site. A discussion is provided in the following sections.

### 3.5.1 Natural Diversity Data Base

The DEEP Natural Diversity Data Base (“NDDB”) program performs hundreds of environmental reviews each year to determine the impact of proposed development projects on state-listed species and to help landowners conserve the state’s biodiversity. In furtherance of this endeavor, the DEEP also developed maps to serve as a pre-screening tool to help ReNew determine if there is the potential for project-related impact to state-listed species.

The NDDB maps represent approximate locations of (i) endangered, threatened and special concern species and (ii) significant natural communities in Connecticut. The locations of species and natural communities depicted on the maps are based on data collected over the years by DEEP staff, scientists, conservation groups, and landowners. In some cases, an occurrence represents a location derived from literature, museum records and/or specimens. These data are compiled and maintained in the NDDB. The general locations of species and communities are symbolized as shaded (or cross-hatched) polygons on the maps. Exact locations have been masked to protect sensitive species from collection and disturbance and to protect landowner’s rights whenever species occur on private property.

At the onset of this Project, APT reviewed the most recent DEEP NDDB mapping (December 2021), which revealed that a NDDB polygon extends onto the Site and within the Project Area. As a result, consultation with NDDB is required. A request for NDDB review was submitted on April 22, 2022 and a response letter was received on May 12, 2022 (NDDB Determination No. 202205835; see Appendix C). The response letter identified two State-listed Special Concern Species: wood turtle (*Glyptemys insculpta*) and spotted turtle (*Clemmys guttata*) and indicated no impacts from the project would be anticipated provided work is performed during the turtles’ dormant season (November 1 – March 15). If work is to be performed during the turtles’ active season (March 16 – October 31), the following protection measures are recommended during construction to ensure the continued conservation of these species and avoid incidental mortality:



- Installing isolation measures (exclusionary fencing) to prevent any turtle access into the construction area and ensuring that no equipment, vehicles or construction materials are stored outside of the exclusionary fencing;
- Removal of any turtles prior to construction activities;
- Conducting a pre-construction Contractor educational session by a qualified biologist and the posting of educational poster materials that will be displayed at all times throughout the duration of construction activities; and
- Reporting any observations of the species directly to DEEP and providing a final report to the agency upon completion of construction.

Protection measures have been incorporated in a Rare Species Protection Program as provided in the project site plans.

### **3.5.2 USFWS Consultation**

Federal consultation was completed in accordance with Section 7 of the Endangered Species Act through the U.S. Fish and Wildlife Service's ("USFWS") Information, Planning, and Conservation System ("IPaC"). Based on the results of the IPaC review, federally-listed<sup>12</sup> threatened species, northern long-eared bat ("NLEB"; *Myotis septentrionalis*), does not occur within 150 feet of the Site.

The NLEB's range encompasses the entire State of Connecticut and suitable NLEB roost habitat includes trees (live, dying, dead, or snag) with a diameter at breast height ("DBH") of three (3) inches or greater. No trees are located on the Site or within the Project Area.

APT reviewed the DEEP's publicly available *Northern long-eared bat areas of concern in Connecticut to assist with Federal Endangered Species Act Compliance* map (February 1, 2016) to determine the locations of any known maternity roost trees or hibernaculum in the state. This map reveals that there are currently no known NLEB maternity roost trees within 0.25 mile of the Site. The nearest NLEB habitat resource to the Site is located in North Branford, approximately 26.1 miles to the southwest.

APT completed a determination of compliance with Section 7 of the Endangered Species Act of 1973 for the Project. In compliance with the USFWS criteria for assessing NLEB, the Project will

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<sup>12</sup> Listing under the federal Endangered Species Act

not likely result in an adverse effect or incidental take<sup>13</sup> of NLEB and does not require a permit from USFWS. A USFWS letter dated March 29, 2022 confirmed compliance; thus, no further consultation with USFWS is required for the proposed activity.

A full review of the *Endangered Species Act (ESA) Compliance Determination* and USFWS's Response Letter is provided in Appendix C, *USFWS and NDDB Compliance Statement*.

## **3.6 Soils and Geology**

The construction and grading of the compound, water quality basin and swale will generate some excess material that will be redistributed on Site. See Appendix A, Project Plans.

All exposed soils resulting from construction activities will be properly and promptly treated in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control.

Surficial materials within the Project Area are classified as deposits of sand and gravel and swamp deposits. Bedrock beneath the Subject Property is identified as Hebron Gneiss. Hebron Gneiss is described as an interlayered dark-gray, medium to coarse-grained schist, composed of andesine, quartz, biotite, and local K-feldspar, and greenish-gray, fine to medium-grained calc-silicate rock, composed of labradorite, quartz, biotite, actinolite, hornblende, and diopside, and locally scapolite.<sup>14</sup>

ReNew does not anticipate encountering bedrock during Project development.

### **3.6.1 Prime Farmland Soils**

Pursuant to the Code of Federal Regulations, CFR Title 7, part 657, farmland soils include land that is defined as prime, unique, or farmlands of statewide or local importance based on soil type. They represent the most suitable land for producing food, feed, fiber, forage, and oilseed crops.

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<sup>13</sup> "Incidental take" is defined by the Endangered Species Act as take that is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity." For example, harvesting trees can kill bats that are roosting in the trees, but the purpose of the activity is not to kill bats.

<sup>14</sup> Connecticut Natural Resources Atlas Series: Bedrock Geological map, [cteco.uconn.edu/maps/state/Bedrock\\_Geologic\\_Map\\_of\\_Connecticut.pdf](https://cteco.uconn.edu/maps/state/Bedrock_Geologic_Map_of_Connecticut.pdf)

According to the Connecticut Environmental Conditions Online Resource Guide<sup>15</sup>, no Prime Farmland Soils are found within the Project Area. See Figure 2, *Existing Conditions Map*.

### **3.7 Historic and Archaeological Resources**

At the request of APT, and on behalf of ReNew, Heritage Consultants, LLC (“Heritage”) reviewed relevant historic and archaeological information to determine whether the Site holds potential historic or cultural resource significance. Their review of historic maps and aerial images of the Site, examination of files maintained by the Connecticut State Historic Preservation Office (“SHPO”), and a pedestrian survey of the Site revealed no National Register of Historic Places (“NRHP”) located within 0.5 mile of the Site. One (1) State Register of Historic Places property is within 0.5 mile of the Site. That resource will not be impacted by the Project. In a letter dated May 17, 2022, the SHPO determined that no additional archaeological investigation is warranted, and concurred that neither archaeological nor historic resources will be impacted by the Project.

The Phase 1A report and the SHPO determination are included in Appendix D.

### **3.8 Scenic and Recreational Areas**

The Air Line State Park Trail runs to the east of the Facility, and proposed utility connections will extend under the Trail at two points south of Old Amston Road. There will be no permanent impact to the Trail once construction of the Project is complete. The proposed Facility will not reflect a significant change in the character of the views experienced from the surrounding area, including the Trail; the Project Area until recently contained an automotive salvage yard and is now cleared. As shown on the photo-simulations included as Appendix E, direct, open views will be experienced from nearby vantage points along Old Amston Road and the Trail.

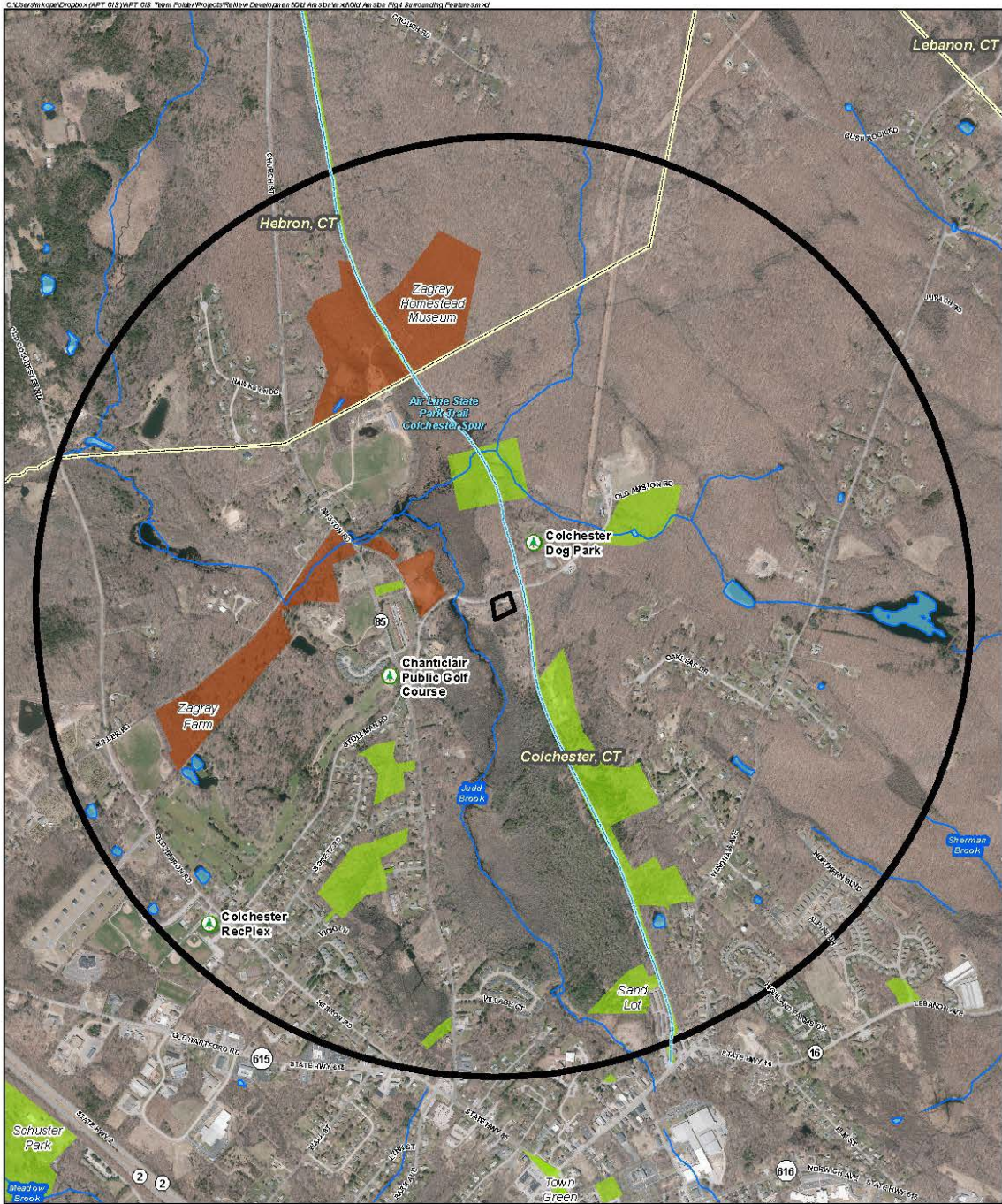
No state or local designated scenic roads, scenic areas or CT Blue Blaze Hiking Trails are located near the Site and therefore none will be physically or visually impacted by development of the Project.

See Figure 4, *Surrounding Features Map*, for resources located within one mile of the Project Area.

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<sup>15</sup> Connecticut Environmental Conditions Online (CTECO) Resource Guide, [www.cteco.uconn.edu](http://www.cteco.uconn.edu).

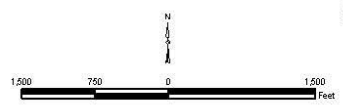




- |                    |                                |                              |
|--------------------|--------------------------------|------------------------------|
| <b>Legend</b>      |                                |                              |
| Site               | Surrounding Features           | Open Space Property (CTDEEP) |
| 1 Mile Radius      | Park / Recreation / Open Space | Private                      |
| Municipal Boundary | Watercourse (CTDEEP)           | Open Water (CTDEEP)          |
| Trail              |                                |                              |

**Figure 4**  
**Surrounding Features Map**  
 Proposed Fuel Cell Facility  
 Old Amston Road  
 Colchester, Connecticut

**Map Notes:**  
 Base Map Source: 2019 Aerial Photograph (CTECO)  
 Map Scale: 1 inch = 1,500 feet  
 Map Date: April 2022



### **3.9 Noise**

ReNew retained Cavanaugh Tocci to evaluate the acoustic impact of noise from the proposed Facility in the surrounding community. The report discusses the Facility in the context of the State of Connecticut Noise Regulations (R.C.S.A Sections 22a-69-1 to 22a-69-7.4). See Appendix F, Cavanaugh Tocci Environmental Sound Evaluation, July 19, 2022.

The nearest residential receptors, defined under the regulations as Class A, are approximately 900 feet west of the Facility. Other nearby properties are considered to be Class B receptors, generally categorized as commercial or agricultural in nature. The report concludes that “sound produced by the proposed project will comply with the most stringent requirements of the state noise regulations” and that it “will not produce a noticeable impact on the acoustic environment at existing nearby residences and will not have an unreasonable adverse effect at all surrounding properties.”

Construction noise is exempted under State of Connecticut regulations for the control of noise, RCSA 22a-69-1.8(h).

## **4 Conclusion**

As demonstrated in this Environmental Assessment, the Project will comply with the DEEP air and water quality standards. Further, it will not have an undue adverse effect on the existing environment and ecology; nor will it affect the scenic, historic and recreational resources in the vicinity of the Project.

The Project Area is cleared; no vegetative removal is required for development of the Project. Therefore, it will have no significant impact on existing habitats and wildlife. The Northern long-eared bat was identified as potentially occurring within the vicinity of the Site but the Project is not expected to result in an adverse effect or an incidental take. The Project Area contains no Prime Farmland Soils or Core Forest.

Once operative, the Facility will be unstaffed and generate minimal traffic.

Predicted visibility of the proposed Facility is limited to cleared areas along Old Amston Road and the Air Line State Park Trail within proximity to the Site.

The Facility will comply with State noise regulations and have no noticeable impact on nearby residences or surrounding properties.

There are no impacts, direct or indirect, to wetlands. The nearest wetland boundary to the Project Area is 41 feet away; the nearest point of the fenced Facility will be approximately 90 feet away. E&S controls will be installed and maintained throughout construction in accordance with the Project's Resource Protection Measures. The distance from the main areas of disturbance within the fenced Facility to wetlands and implementation of protective management techniques will mitigate potential impacts to these resources during construction.

Implementation of the Project involves minimal grading and excavation. The Project has been designed to adequately handle water volume and maintain water quality. Project plans include provisions for monitoring of development activities and the establishment of E&S controls to be installed and maintained throughout construction in accordance with the 2002 *Connecticut Guidelines for Soil Erosion and Sediment Control*.

# **APPENDIX A**

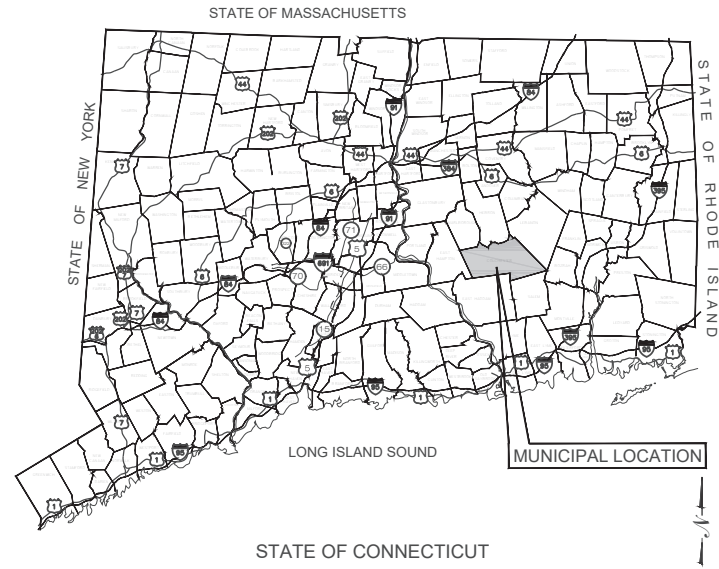
## PROJECT PLANS



# ReNew DEVELOPERS, LLC

## "OLD AMSTON ROAD FUEL CELL POWER PLANT"

### 42 OLD AMSTON ROAD COLCHESTER, CT 06415



#### LIST OF DRAWINGS

- T-1 TITLE SHEET
- 1 OF 1 IMPROVEMENT LOCATION / TOPOGRAPHIC SURVEY PROVIDED BY REYNOLDS ENGINEERING SERVICES, LLC
- GN-1 GENERAL NOTES
- GN-2 ENVIRONMENTAL NOTES RESOURCE PROTECTION MEASURES
- OP-1 OVERALL LOCUS MAP
- EC-1 SEDIMENTATION & EROSION CONTROL NOTES
- EC-2 SEDIMENTATION & EROSION CONTROL DETAILS
- EC-3 SEDIMENTATION & EROSION CONTROL PLAN
- GD-1 GRADING & DRAINAGE PLAN
- SP-1 SITE & UTILITY PLAN
- DN-1 SITE DETAILS

#### SITE INFORMATION

SITE NAME: "OLD AMSTON ROAD FUEL CELL POWER PLANT"

LOCATION: 42 OLD AMSTON ROAD  
COLCHESTER, CT 06415

SITE TYPE/DESCRIPTION: ADD (1) GROUND MOUNTED FUEL CELL FACILITY W/ ASSOCIATED EQUIPMENT, GRAVEL ACCESS ROAD, AND STORMWATER MANAGEMENT.

PROPERTY OWNER: RENEW DEVELOPERS, LLC  
123 SALEM ROAD  
COLCHESTER, CT 06415

APPLICANT: RENEW DEVELOPERS, LLC  
123 SALEM ROAD  
COLCHESTER, CT 06415

ENGINEER CONTACT: ROBERT C. BURNS, P.E.  
(860) 552-2036

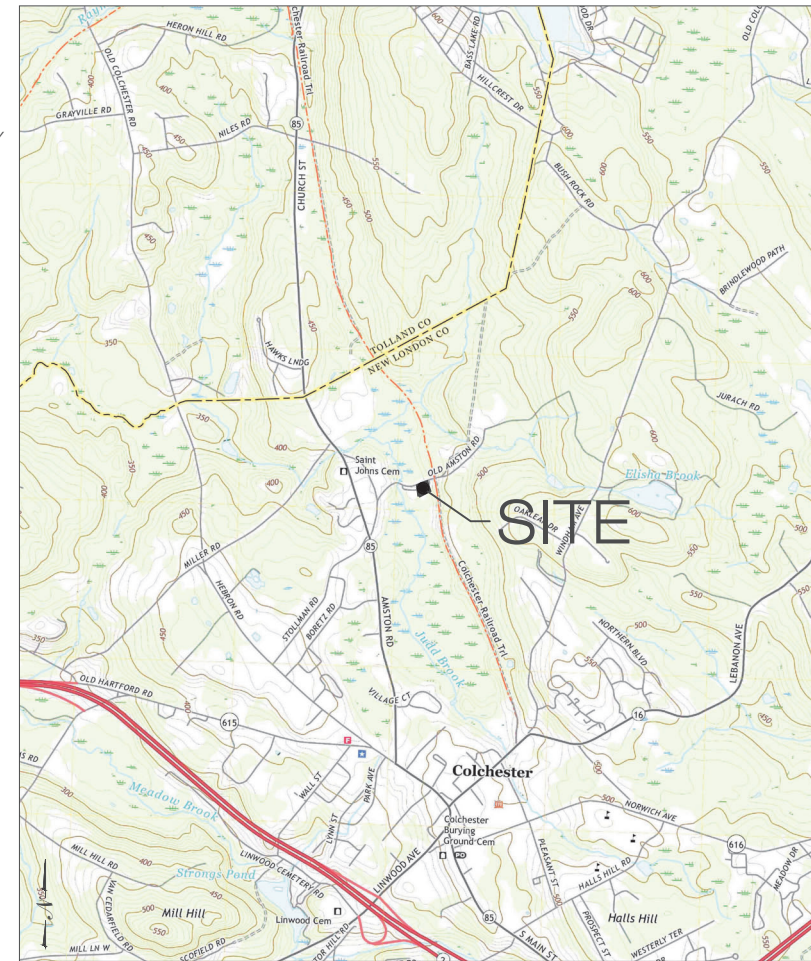
LATITUDE: 41° 35' 39.16" N  
LONGITUDE: 72° 20' 02.85" W

MBLU: 06-06-017-000  
ZONE: SUBURBAN DISTRICT

TOTAL SITE ACREAGE: 1.15± AC.  
TOTAL DISTURBED AREA: 0.69± AC.

APPROX. VOLUME OF CUT: 8± CY  
APPROX. VOLUME OF FILL: 911± CY  
APPROX. NET VOLUME: 903± CY OF FILL

#### USGS TOPOGRAPHIC MAP



SCALE : 1" = 2000± SOURCE: NRCS NEW LONDON CT DIGITAL RASTER GRAPHIC COUNTY MOSAIC, 2001

**ReNew  
DEVELOPERS, LLC**

123 SALEM ROAD  
COLCHESTER, CT 06415  
OFFICE: (860) 303-5726



567 VAUXHALL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385 PHONE: (860)-963-1697  
WWW.ALLPOINTSTECH.COM FAX: (860)-963-0935

CSC PERMIT SET		
NO	DATE	REVISION
0	07/25/22	FOR PERMIT: RCB
1		
2		
3		
4		
5		
6		

**DESIGN PROFESSIONAL OF RECORD**

PROF: ROBERT C. BURNS, P.E.  
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.  
ADD: 567 VAUXHALL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385

OWNER: RENEW DEVELOPERS, LLC  
ADDRESS: 123 SALEM ROAD  
COLCHESTER, CT 06415

**OLD AMSTON ROAD FUEL CELL POWER PLANT**

SITE  
ADDRESS: 42 OLD AMSTON ROAD  
COLCHESTER, CT 06415

APT FILING NUMBER: CT716100

DATE: 07/25/22

DRAWN BY: CSH  
CHECKED BY: RCB

SHEET TITLE:  
**TITLE SHEET**

SHEET NUMBER:  
**T-1**

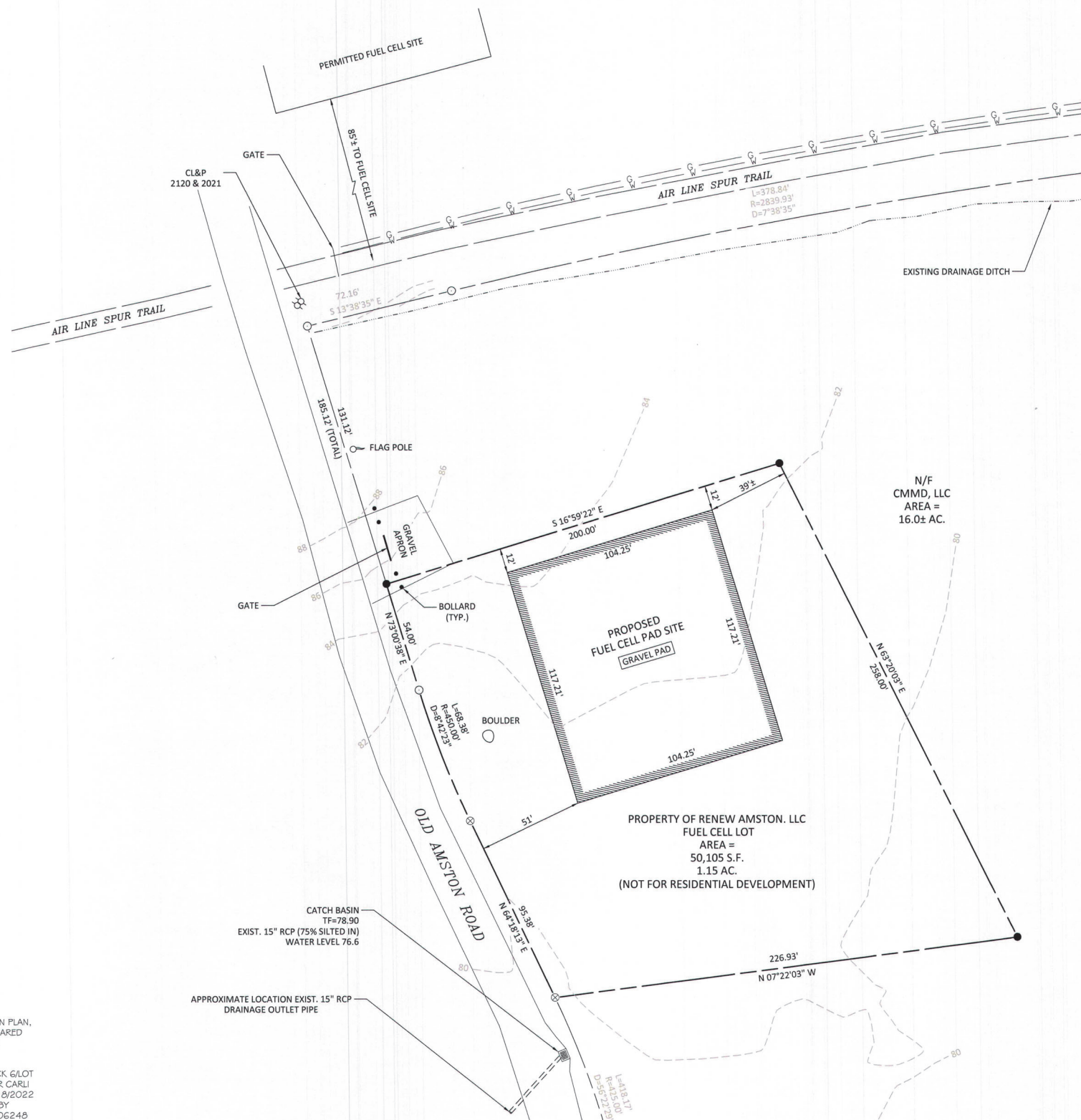
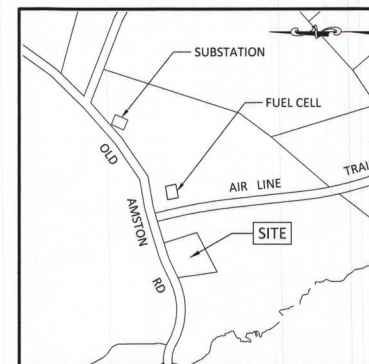


**LEGEND:**

These standard symbols will be found in the drawing.

- — — — — PROPERTY LINE
- - - - - EXISTING CONTOUR
- IRON PIN
- IRON PIN TO BE SET
- ⊗ ANGLE POINT

PER MAP REF. #1



**MAP REFERENCE:**

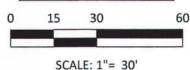
1. "PROPERTY BOUNDARY PLAN, CAR REMOVAL AND RESTORATION PLAN, TONY'S JUNK YARD, MAP 26 LOT 17 OLD AMSTON ROAD, PREPARED FOR NUNZIO A. GALATRO, COLCHESTER, CONNECTICUT", SCALE 1"=100', FILE A-09-067-BND, BY DUTTON ASSOCIATES, LLC.
2. "IMPROVEMENT LOCATION SURVEY PROJECT TITLE: MAP 6/BLOCK 6/LOT 17 OLD AMSTON ROAD COLCHESTER, CT PREPARED FOR: PETER CARLI 14 CHESTNUT HILL ROAD COLCHESTER, CT" DRAWING DATE: 1/18/2022 DRAWING SCALE: 1"=30', DRAWING # 1 OF 1, JOB #: 20-115 BY ROB HELLSTROM LAND SURVEYING 32 MAIN ST. HEBRON, CT. 06248

**MAP STANDARD NOTES**

1. THIS SURVEY (OR MAP) HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THRU 20-300b-20 AND THE "STANDARDS AND SUGGESTED METHODS AND PROCEDURES FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON AUGUST 29, 2019;

THE TYPE OF SURVEY: IMPROVEMENT LOCATION / TOPOGRAPHIC SURVEY  
 BOUNDARY DETERMINATION CATEGORY: RESURVEY  
 HORIZONTAL ACCURACY CLASS: A-2  
 TOPOGRAPHIC ACCURACY CLASS: T-2  
 TOPOGRAPHIC SURVEY PERFORMED ON 11/12/21  
 DATUM: ASSUMED

**PLAN VIEW**



TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

THIS DRAWING IS NOT VALID UNLESS IT BEARS AN ORIGINAL INK SIGNATURE AND EMBOSSED SEAL.

ROBERT W. HELLSTROM, L.S. #13626

**ROB HELLSTROM**  
**LAND SURVEYING LLC**  
 32 MAIN STREET  
 HEBRON, CT., 06248  
 (860) 228-9853  
 hellstromsurveying@yahoo.com  
 www.RHL5GT.com

Mailing Address:  
 P.O. BOX 378  
 HEBRON, CT. 06248

CIVIL ENGINEERING CONSULTANTS  
 63 NORWICH AVENUE SUITE 202  
 COLCHESTER, CT  
 06031-6003



Drawing #:  
**1 OF 1**  
 Job #: 20-115

**IMPROVEMENT LOCATION / TOPOGRAPHIC SURVEY**

PROJECT TITLE: MAP 6/BLOCK 6/LOT 17 COLCHESTER, CT  
 OLD AMSTON ROAD  
 PREPARED FOR: RENEW AMSTON, LLC  
 Colchester, CT  
 PO BOX 794

Drawing date: 1/18/2022  
 Drawing Scale: 1"=30'

Rev.	Date	By	Revision
1	2/15/22	MAR	TITLE BLOCK
2	7/12/22	SAM	GRAVEL PAD DIMENSIONS
3	7/31/22	SAM	NOTES

Designed By: MAR

Drawn By: SAM

Checked By: MAR

CAD File: 20070\_FUEL\_CELL\_LOT





## GENERAL NOTES

- ALL CONSTRUCTION SHALL COMPLY WITH PROJECT DEVELOPER STANDARDS, TOWN OF COLCHESTER STANDARDS, CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS IN THE ABOVE REFERENCED INCREASING HIERARCHY. IF SPECIFICATIONS ARE IN CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY.
- IF NO PROJECT CONSTRUCTION SPECIFICATION PACKAGE IS PROVIDED BY THE PROJECT DEVELOPER OR THEIR REPRESENTATIVE, THE CONTRACTOR SHALL COMPLY WITH THE MANUFACTURER, TOWN OF COLCHESTER, OR CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, AND BE IN ACCORDANCE WITH ALL APPLICABLE OSHA, FEDERAL, STATE AND LOCAL REGULATIONS.
- THE PROJECT DEVELOPER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY ZONING AND STORMWATER PERMITS REQUIRED BY GOVERNMENT AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL TOWN OF COLCHESTER CONSTRUCTION PERMITS. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
- REFER TO PLANS, DETAILS AND REPORTS PREPARED BY ALL-POINTS TECHNOLOGY CORPORATION FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS IN THE FIELD AND CONTACT THE PROJECT DEVELOPER IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT APPROPRIATE REVISIONS CAN BE MADE PRIOR TO BIDDING/CONSTRUCTION. ANY CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS SHALL BE CONFIRMED WITH THE PROJECT DEVELOPERS CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PRODUCTS, MATERIALS PER PLANS, AND SPECIFICATIONS TO THE PROJECT DEVELOPER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW.
- SHOULD ANY UNKNOWN OR INCORRECTLY LOCATED EXISTING PIPING OR OTHER UTILITY BE UNCOVERED DURING EXCAVATION, CONSULT THE PROJECT DEVELOPER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH WORK IN THIS AREA.
- DO NOT INTERRUPT EXISTING UTILITIES SERVICING FACILITIES OCCUPIED AND USED BY THE PROJECT DEVELOPER OR OTHERS DURING OCCUPIED HOURS, EXCEPT WHEN SUCH INTERRUPTIONS HAVE BEEN AUTHORIZED IN WRITING BY THE PROJECT DEVELOPER AND THE LOCAL MUNICIPALITY. INTERRUPTIONS SHALL ONLY OCCUR AFTER ACCEPTABLE TEMPORARY SERVICE HAS BEEN PROVIDED.
- THE CONTRACT LIMIT IS THE PROPERTY LINE UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE CONTRACT DRAWINGS.
- THE CONTRACTOR SHALL ABIDE BY ALL OSHA, FEDERAL, STATE AND LOCAL REGULATIONS WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINES, CONTACT POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS. ANY UTILITY COMPANY FEES SHALL BE PAID FOR BY THE CONTRACTOR.
- THE CONTRACTOR SHALL COMPLY WITH OSHA CFR 29 PART 1926 FOR EXCAVATION TRENCHING AND TRENCH PROTECTION REQUIREMENTS.
- THE ENGINEER IS NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE ENGINEER HAS NO CONTRACTUAL DUTY TO CONTROL THE SAFEST METHODS OR MEANS OF THE WORK, JOB SITE RESPONSIBILITIES, SUPERVISION OF PERSONNEL OR TO SUPERVISE SAFETY AND DO NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.
- THE CONTRACTOR SHALL RESTORE ANY DRAINAGE STRUCTURE, PIPE, CONDUIT, PAVEMENT, CURBING, SIDEWALKS, LANDSCAPED AREAS OR SIGNAGE DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER, AS APPROVED BY THE PROJECT DEVELOPER OR TOWN OF COLCHESTER.
- THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE PROJECT DEVELOPER AT THE END OF CONSTRUCTION.
- ALTERNATIVE METHODS AND PRODUCTS, OTHER THAN THOSE SPECIFIED, MAY BE USED IF REVIEWED AND APPROVED BY THE PROJECT DEVELOPER, ENGINEER, AND APPROPRIATE REGULATORY AGENCY PRIOR TO INSTALLATION DURING THE BIDDING/CONSTRUCTION PROCESS.
- INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE SYSTEMS HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY PROVIDER AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE SYSTEMS ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE SYSTEMS INCLUDING SERVICES. PRIOR TO DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" 72 HOURS BEFORE COMMENCEMENT OF WORK AT "811" AND VERIFY ALL UTILITY AND STORM DRAINAGE SYSTEM LOCATIONS.
- NO CONSTRUCTION OR DEMOLITION SHALL BEGIN UNTIL APPROVAL OF THE FINAL PLANS AND PERMITS ARE GRANTED BY ALL GOVERNING AND REGULATORY AGENCIES.

## SITE PLAN NOTES

- THE SURVEY WAS PROVIDED BY REYNOLDS ENGINEERING SERVICES, LLC, DATED 07/13/22. REYNOLDS ENGINEERING SERVICES, LLC ASSUMED A VERTICAL DATUM.
- THERE ARE WETLANDS LOCATED ADJACENT TO THE SITE AS INDICATED ON THE PLANS. WETLAND BOUNDARIES WERE FLAGGED AND LOCATED BY ALL-POINTS TECHNOLOGY CORPORATION, IN MARCH 2022.
- THERE WILL BE MINIMAL GRADING ON SITE TO ENSURE THAT PROPER DRAINAGE IS MAINTAINED.
- THE CONTRACTOR SHALL FOLLOW THE SUGGESTED SEQUENCE OF CONSTRUCTION NOTES PROVIDED ON THE EROSION CONTROL PLAN OR SUBMIT AN ALTERNATE PLAN FOR APPROVAL BY THE ENGINEER AND/OR PERMITTING AGENCIES PRIOR TO THE START CONSTRUCTION. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW.
- PROPER CONSTRUCTION PROCEDURES SHALL BE FOLLOWED ON ALL IMPROVEMENTS WITHIN THIS PARCEL SO AS TO PREVENT THE SILTING OF ANY WATERCOURSE OR WETLANDS IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS. IN ADDITION, THE CONTRACTOR SHALL ADHERE TO THE "EROSION CONTROL PLAN" CONTAINED HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE TO POST ALL BONDS AS REQUIRED BY GOVERNMENT AGENCIES WHICH WOULD GUARANTEE THE PROPER IMPLEMENTATION OF THE PLAN.
- ALL SITE WORK, MATERIALS OF CONSTRUCTION, AND CONSTRUCTION METHODS FOR EARTHWORK AND STORM DRAINAGE WORK, SHALL CONFORM TO THE SPECIFICATIONS AND DETAILS AND APPLICABLE SECTIONS OF THE PROJECT SPECIFICATIONS MANUAL. OTHERWISE THIS WORK SHALL CONFORM TO THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION AND PROJECT GEOTECHNICAL REPORT IF THERE IS NO PROJECT SPECIFICATIONS MANUAL. ALL FILL MATERIAL UNDER STRUCTURES AND PAVED AREAS SHALL BE PER THE ABOVE STATED APPLICABLE SPECIFICATIONS, AND/OR PROJECT GEOTECHNICAL REPORT, AND SHALL BE PLACED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL ENGINEER. MATERIAL SHALL BE COMPACTED IN 8" LIFTS TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 1557 AT 95% PERCENT OF OPTIMUM MOISTURE CONTENT.
- ALL DISTURBANCE INCURRED TO PUBLIC, MUNICIPAL, COUNTY, STATE PROPERTY DUE TO CONSTRUCTION SHALL BE RESTORED TO ITS PREVIOUS CONDITION OR BETTER, TO THE SATISFACTION OF THE TOWN OF COLCHESTER AND STATE OF CONNECTICUT.
- IF IMPACTED OR CONTAMINATED SOIL IS ENCOUNTERED BY THE CONTRACTOR, THE CONTRACTOR SHALL SUSPEND EXCAVATION WORK OF IMPACTED SOIL AND NOTIFY THE PROJECT DEVELOPER AND/OR PROJECT DEVELOPERS ENVIRONMENTAL CONSULTANT PRIOR TO PROCEEDING WITH FURTHER WORK IN THE IMPACTED SOIL LOCATION UNTIL FURTHER INSTRUCTED BY THE PROJECT DEVELOPER AND/OR PROJECT DEVELOPERS ENVIRONMENTAL CONSULTANT.

## UTILITY NOTES

- CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE TOWN OF COLCHESTER TO SECURE CONSTRUCTION PERMITS AND FOR PAYMENT OF FEES FOR STREET CUTS AND CONNECTIONS TO EXISTING UTILITIES.
- REFER TO DRAWINGS BY PROJECT DEVELOPER FOR THE ONSITE ELECTRICAL DRAWINGS AND INTERCONNECTION TO EXISTING ELECTRICAL GRID. SITE CONTRACTOR SHALL SUPPLY AND INSTALL PIPE ADAPTERS AS NECESSARY AT BUILDING CONNECTION POINT OR AT EXISTING UTILITY OR PIPE CONNECTION POINT. THESE DETAILS ARE NOT INCLUDED IN THESE PLANS.
- UTILITY LOCATIONS AND PENETRATIONS ARE SHOWN FOR THE CONTRACTORS INFORMATION AND SHALL BE VERIFIED WITH THE ELECTRICAL ENGINEER AND THE PROJECT DEVELOPERS CONSTRUCTION MANAGER PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE ELEVATION AND LOCATION OF ALL UTILITIES BY VARIOUS MEANS PRIOR TO BEGINNING ANY EXCAVATION. TEST PITS SHALL BE DUG AT ALL LOCATIONS WHERE PROP. SANITARY SEWERS AND WHERE PROP. STORM PIPING WILL CROSS EXISTING UTILITIES, AND THE HORIZONTAL AND VERTICAL LOCATIONS OF THE UTILITIES SHALL BE DETERMINED. THE CONTRACTOR SHALL CONTACT THE PROJECT DEVELOPER IN THE EVENT OF ANY DISCOVERED OR UNFORESEEN CONFLICTS BETWEEN EXISTING AND PROPOSED SANITARY SEWERS, STORM PIPING AND UTILITIES SO THAT AN APPROPRIATE MODIFICATION MAY BE MADE.
- UTILITY CONNECTION DESIGN AS REFLECTED ON THE PLAN MAY CHANGE SUBJECT TO UTILITY PROVIDER AND GOVERNING AUTHORITY STAFF REVIEW.
- THE CONTRACTOR SHALL ENSURE THAT ALL UTILITY PROVIDERS AND GOVERNING AUTHORITY STANDARDS FOR MATERIALS AND CONSTRUCTION METHODS ARE MET. THE CONTRACTOR SHALL PERFORM PROPER COORDINATION WITH THE RESPECTIVE UTILITY PROVIDER.
- THE CONTRACTOR SHALL ARRANGE FOR AND COORDINATE WITH THE RESPECTIVE UTILITY PROVIDERS FOR SERVICE INSTALLATIONS AND CONNECTIONS. THE CONTRACTOR SHALL COORDINATE WORK TO BE PERFORMED BY THE VARIOUS UTILITY PROVIDERS AND SHALL PAY ALL FEES FOR CONNECTIONS, DISCONNECTIONS, RELOCATIONS, INSPECTIONS, AND DEMOLITION UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATIONS MANUAL AND/OR GENERAL CONDITIONS OF THE CONTRACT.
- ALL EXISTING PAVEMENT WHERE UTILITY PIPING IS TO BE INSTALLED SHALL BE SAW CUT. AFTER UTILITY INSTALLATION IS COMPLETED, THE CONTRACTOR SHALL INSTALL TEMPORARY AND/OR PERMANENT PAVEMENT REPAIR AS DETAILED ON THE DRAWINGS OR AS REQUIRED BY THE TOWN OF COLCHESTER.
- ALL PIPES SHALL BE LAID ON STRAIGHT ALIGNMENTS AND EVEN GRADES USING A PIPE LASER OR OTHER ACCURATE METHOD.
- RELOCATION OF UTILITY PROVIDER FACILITIES, SUCH AS POLES, SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY PROVIDER.
- THE CONTRACTOR SHALL COMPACT PIPE BACKFILL IN 8" LIFTS ACCORDING TO THE PIPE BEDDING DETAILS. TRENCH BOTTOM SHALL BE STABLE IN HIGH GROUNDWATER AREAS. A PIPE FOUNDATION SHALL BE USED PER THE TRENCH DETAILS AND IN AREAS OF ROCK EXCAVATION.
- CONTRACTOR TO PROVIDE STEEL SLEEVES AND ANNULAR SPACE SAND FILL FOR UTILITY PIPE AND CONDUIT CONNECTIONS UNDER FOOTINGS.
- ALL UTILITY CONSTRUCTION IS SUBJECT TO INSPECTION FOR APPROVAL PRIOR TO BACKFILLING, IN ACCORDANCE WITH THE APPROPRIATE UTILITY PROVIDER REQUIREMENTS.
- A ONE-FOOT MINIMUM VERTICAL CLEARANCE BETWEEN WATER, GAS, ELECTRICAL, AND TELEPHONE LINES AND STORM PIPING SHALL BE PROVIDED. A SIX-INCH MINIMUM CLEARANCE SHALL BE MAINTAINED BETWEEN STORM PIPING AND SANITARY SEWER. A 6-INCH TO 18-INCH VERTICAL CLEARANCE BETWEEN SANITARY SEWER PIPING AND STORM PIPING SHALL REQUIRE CONCRETE ENCASMENT OF THE SANITARY PIPING.
- THE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, PIPE, CONDUIT, PAVEMENT, CURBING, SIDEWALKS, DRAINAGE STRUCTURE, SWALE OR LANDSCAPED AREAS DISTURBED DURING CONSTRUCTION, TO THEIR ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE PROJECT DEVELOPER AND TOWN OF COLCHESTER.
- INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY PROVIDER AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY, AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE INCLUDING SERVICES. CONTACT "CALL BEFORE YOU DIG" AT 811 72 HOURS PRIOR TO CONSTRUCTION AND VERIFY ALL UNDERGROUND AND OVERHEAD UTILITY AND STORM DRAINAGE LOCATIONS. THE CONTRACTOR SHALL EMPLOY THE USE OF A UTILITY LOCATING COMPANY TO PROVIDE SUBSURFACE UTILITY ENGINEERING CONSISTING OF DESIGNATING UTILITIES AND STORM PIPING ON PRIVATE PROPERTY WITHIN THE CONTRACT LIMIT AND CONSISTING OF DESIGNATING AND LOCATING WHERE PROP. UTILITIES AND STORM PIPING CROSS EXISTING UTILITIES AND STORM PIPING WITHIN THE CONTRACT LIMITS.
- THE CONTRACTOR SHALL ARRANGE AND COORDINATE WITH UTILITY PROVIDERS FOR WORK TO BE PERFORMED BY UTILITY PROVIDERS. THE CONTRACTOR SHALL PAY ALL UTILITY FEES UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATION MANUAL AND GENERAL CONDITIONS, AND REPAIR PAVEMENTS AS NECESSARY.
- ELECTRIC DRAWINGS AND REQUIREMENTS ARE NOT INCLUDED AS PART OF THIS DRAWING SET AND SHOULD BE OBTAINED FROM THE PROJECT DEVELOPER.
- ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED BY THE PROJECT DEVELOPER, ENGINEER, AND APPROPRIATE REGULATORY AGENCIES PRIOR TO INSTALLATION.
- THE CONTRACTOR SHALL MAINTAIN ALL FLOWS AND UTILITY CONNECTIONS TO EXISTING BUILDINGS WITHOUT INTERRUPTION UNLESS/UNTIL AUTHORIZED TO DISCONNECT BY THE PROJECT DEVELOPER, TOWN OF COLCHESTER, UTILITY PROVIDERS AND GOVERNING AUTHORITIES.

GENERAL LEGEND		
	EXISTING	PROPOSED
PROPERTY LINE	=====	
BUILDING SETBACK	-----	
EASEMENT	=====	
TREE LINE	~~~~~	~~~~~
WETLAND	=====	
MAJOR CONTOUR	-----	-----
MINOR CONTOUR	-----	-----
UNDERGROUND ELECTRIC	---E---E---	---E---E---
OVERHEAD ELECTRIC	---OH---OH---	---OH---OH---
GAS LINE	---GAS---	---GAS---
WATER LINE	---W---W---	---W---W---
BASIN		•••••
SWALE	--->---	--->---
FENCE		---X---X---
LIMIT OF DISTURBANCE		---LOD---
TEMPORARY LIMITS OF DISTURBANCE		---LOC---
FILTER SOCK		---FS---

## ReNew DEVELOPERS, LLC

123 SALEM ROAD  
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WWW.ALLPOINTSTECH.COM FAX: (860)-953-0935

### CSC PERMIT SET

NO	DATE	REVISION
0	07/25/22	FOR PERMIT: RCB
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### DESIGN PROFESSIONAL OF RECORD

PROF: ROBERT C. BURNS, P.E.  
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.  
ADD: 567 VAUXHALL STREET  
EXTENSION - SUITE 311  
WATERFORD, CT 06385

OWNER: RENEW DEVELOPERS, LLC  
ADDRESS: 123 SALEM ROAD  
COLCHESTER, CT 06415

### OLD AMSTON ROAD FUEL CELL POWER PLANT

SITE  
ADDRESS: COLCHESTER, CT 06415

APT FILING NUMBER: CT716100

DRAWN BY: CSH  
DATE: 07/25/22 CHECKED BY: RCB

### SHEET TITLE:

### GENERAL NOTES

### SHEET NUMBER:

GN-1



# ENVIRONMENTAL NOTES

## RESOURCE PROTECTION MEASURES

ENVIRONMENTAL NOTES - RESOURCES PROTECTION MEASURES

### RARE SPECIES PROTECTION PROGRAM

THE PROPOSED FUEL CELL ELECTRIC GENERATING FACILITY IS LOCATED IN THE VICINITY OF KNOWN OCCURRENCES OF TWO STATE-LISTED RARE SPECIES: WOOD TURTLE (*GLYPTEMYS INSCULPTA*) AND SPOTTED TURTLE (*CLEMMYS GUTTATA*). AS A RESULT, THE FOLLOWING PROTECTIVE MEASURES SHALL BE FOLLOWED TO HELP AVOID INCIDENTAL IMPACT TO THESE RARE TURTLE SPECIES DURING CONSTRUCTION.

WOOD TURTLE AND SPOTTED TURTLE ARE STATE SPECIAL CONCERN SPECIES AFFORDED PROTECTION UNDER THE CONNECTICUT ENDANGERED SPECIES ACT. THESE RARE SPECIES PROTECTION MEASURES ARE SIMILAR TO PROTECTION MEASURES PREVIOUSLY APPROVED BY THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION ("DEEP") WILDLIFE DIVISION ON OTHER SIMILAR PROJECTS.

IT IS OF THE UTMOST IMPORTANCE THAT THE CONTRACTOR COMPLIES WITH THE REQUIREMENT FOR IMPLEMENTATION OF THESE PROTECTIVE MEASURES AND THE EDUCATION OF ITS EMPLOYEES AND SUBCONTRACTORS PERFORMING WORK ON THE PROJECT SITE. THE RARE SPECIES PROTECTION MEASURES WITHIN THIS PLAN SHALL BE IMPLEMENTED IN ACCORDANCE WITH THE PLAN DETAILS BELOW.

ALL-POINTS TECHNOLOGY CORPORATION, P.C. ("APT") WILL SERVE AS THE ENVIRONMENTAL MONITOR FOR THIS PROJECT TO ENSURE THAT THESE PROTECTION MEASURES ARE IMPLEMENTED PROPERLY. APT WILL PROVIDE AN EDUCATION SESSION FOR THE CONTRACTOR ON NEARBY SENSITIVE WETLAND RESOURCES/VERNAL POOLS RESOURCES AND RARE SPECIES THAT MAY BE ENCOUNTERED PRIOR TO THE START OF CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL CONTACT DEAN GUSTAFSON, SENIOR BIOLOGIST AT APT, AT LEAST 5 BUSINESS DAYS PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES TO SCHEDULE A PRE-CONSTRUCTION MEETING. MR. GUSTAFSON CAN BE REACHED BY PHONE AT (860) 552-2033 OR VIA EMAIL AT DGUSTAFSON@ALLPOINTSTECH.COM.

THIS PROTECTION PROGRAM CONSISTS OF SEVERAL COMPONENTS: EDUCATION OF ALL CONTRACTORS AND SUB-CONTRACTORS PRIOR TO INITIATION OF WORK ON THE SITE; PROTECTIVE MEASURES; PERIODIC INSPECTION OF THE CONSTRUCTION PROJECT; AND REPORTING.

### 1. CONTRACTOR EDUCATION

- a. PRIOR TO WORK ON SITE, THE CONTRACTOR SHALL ATTEND AN EDUCATIONAL SESSION AT THE PRE-CONSTRUCTION MEETING WITH APT. THIS ORIENTATION AND EDUCATIONAL SESSION WILL CONSIST OF AN INTRODUCTORY MEETING WITH APT TO EMPHASIZE THE ENVIRONMENTALLY SENSITIVE NATURE OF THE PROJECT AND RARE SPECIES RESOURCES, AND THE REQUIREMENT TO DILIGENTLY FOLLOW THE PROTECTIVE MEASURES AS DESCRIBED IN SECTIONS BELOW. WORKERS WILL BE PROVIDED INFORMATION REGARDING THE IDENTIFICATION OF THE TWO RARE TURTLES THAT COULD BE ENCOUNTERED. THE MEETING WILL FURTHER EMPHASIZE THE NON-AGGRESSIVE NATURE OF THESE SPECIES, THE ABSENCE OF NEED TO DESTROY SUCH ANIMALS AND THE NEED TO FOLLOW PROTECTIVE MEASURES AS DESCRIBED IN FOLLOWING SECTIONS. THE CONTRACTOR WILL DESIGNATE ONE OF ITS WORKERS AS THE "PROJECT MONITOR", WHO WILL RECEIVE MORE INTENSE TRAINING ON THE IDENTIFICATION AND PROTECTION OF THE RARE TURTLES.
- b. THE IMPORTANCE OF PROTECTING NEARBY WETLAND RESOURCES WILL ALSO BE STRESSED AS PART OF THIS EDUCATIONAL SESSION.
- c. THE EDUCATION SESSION WILL ALSO FOCUS ON MEANS TO DISCRIMINATE BETWEEN THE SPECIES OF CONCERN AND OTHER NATIVE SPECIES TO AVOID UNNECESSARY "FALSE ALARMS". ENCOUNTERS WITH ANY SPECIES OF TURTLES, SNAKES AND AMPHIBIANS SHALL BE DOCUMENTED.
- d. THE CONTRACTOR WILL DESIGNATE A MEMBER OF ITS CREW AS THE PROJECT MONITOR TO BE RESPONSIBLE FOR THE PERIODIC "SWEEPS" FOR TURTLES WITHIN THE CONSTRUCTION ZONE EACH MORNING AND PRIOR TO INITIATION OF ANY GROUND DISTURBANCE WORK. THIS INDIVIDUAL WILL RECEIVE MORE INTENSE TRAINING FROM APT ON THE IDENTIFICATION AND PROTECTION OF THE TWO RARE TURTLE SPECIES IN ORDER TO PERFORM SWEEPS. ANY TURTLES DISCOVERED WOULD BE TRANSLOCATED OUTSIDE THE WORK ZONE IN THE GENERAL DIRECTION THE ANIMAL WAS ORIENTED.
- e. THE CONTRACTOR WILL BE PROVIDED WITH CELL PHONE AND EMAIL CONTACTS FOR APT PERSONNEL TO IMMEDIATELY REPORT ANY ENCOUNTERS WITH ANY RARE SPECIES. EDUCATIONAL POSTER MATERIALS WILL BE PROVIDED BY APT AND DISPLAYED ON THE JOB SITE TO MAINTAIN WORKER AWARENESS AS THE PROJECT PROGRESSES.
- f. APT WILL ALSO POST CAUTION SIGNS THROUGHOUT THE PROJECT SITE FOR THE DURATION OF THE CONSTRUCTION PROJECT PROVIDING NOTICE OF THE ENVIRONMENTALLY SENSITIVE NATURE OF THE WORK AREA, THE POTENTIAL FOR ENCOUNTERING THE TWO RARE TURTLES AND PRECAUTIONS TO BE TAKEN TO AVOID INJURY TO OR MORTALITY OF THESE ANIMALS.
- g. IF ANY RARE TURTLES (OR OTHER SPECIES) ARE ENCOUNTERED, THE CONTRACTOR SHALL IMMEDIATELY CEASE ALL WORK, AVOID ANY DISTURBANCE TO THE SPECIES, AND CONTACT APT.

### 2. ISOLATION MEASURES & SEDIMENTATION AND EROSION CONTROLS

- a. PLASTIC NETTING USED IN A VARIETY OF EROSION CONTROL PRODUCTS (I.E., EROSION CONTROL BLANKETS, FIBER ROLLS [WATTLES], REINFORCED SILT FENCE) HAS BEEN FOUND TO ENTANGLE WILDLIFE, INCLUDING REPTILES, AMPHIBIANS, BIRDS, AND SMALL MAMMALS, BUT PARTICULARLY SNAKES. NO PERMANENT EROSION CONTROL PRODUCTS OR REINFORCED SILT FENCE WILL BE USED ON THE PROJECT. TEMPORARY EROSION CONTROL PRODUCTS WILL USE EITHER EROSION CONTROL BLANKETS AND FIBER ROLLS COMPOSED OF PROCESSED FIBERS MECHANICALLY BOUND TOGETHER TO FORM A CONTINUOUS MATRIX (NETLESS) OR NETTING COMPOSED OF PLANAR WOVEN NATURAL BIODEGRADABLE FIBER TO AVOID/MINIMIZE WILDLIFE ENTANGLEMENT.
- b. INSTALLATION OF SEDIMENTATION AND EROSION CONTROLS, REQUIRED FOR EROSION CONTROL COMPLIANCE AND CREATION OF A BARRIER TO POSSIBLE MIGRATING/DISPERSING TURTLES, SHALL BE PERFORMED BY THE CONTRACTOR FOLLOWING CLEARING ACTIVITIES AND PRIOR TO ANY EARTHWORK. THE ENVIRONMENTAL MONITOR WILL INSPECT THE WORK ZONE AREA PRIOR TO AND FOLLOWING EROSION CONTROL BARRIER INSTALLATION TO ENSURE THE AREA IS FREE OF WOOD TURTLES AND SPOTTED TURTLES (ALONG WITH OTHER AMPHIBIANS AND REPTILES THAT MAY BE ENCOUNTERED) AND DOCUMENT BARRIERS HAVE BEEN SATISFACTORILY INSTALLED. THE INTENT OF THE BARRIER IS TO SEGREGATE THE MAJORITY OF THE WORK ZONE AND ISOLATE IT FROM NESTING/FORAGING/MIGRATING/DISPERSING TURTLES, SNAKES AND OTHER HERPETOFAUNA. OFTENTIMES COMPLETE ISOLATION OF A WORK ZONE IS NOT FEASIBLE DUE TO ACCESSIBILITY NEEDS AND LOCATIONS OF STAGING/MATERIAL STORAGE AREAS, ETC. ALTHOUGH THE BARRIERS MAY NOT COMPLETELY ISOLATE THE WORK ZONE, THEY WILL BE POSITIONED TO DEFLECT MIGRATING/DISPERSAL ROUTES AWAY FROM THE WORK ZONE TO

MINIMIZE POTENTIAL ENCOUNTERS WITH TURTLES, SNAKES AND OTHER HERPETOFAUNA.

- c. EXCLUSIONARY FENCING SHALL BE AT LEAST 20 INCHES TALL AND MUST BE SECURED TO AND REMAIN IN CONTACT WITH THE GROUND AND BE REGULARLY MAINTAINED BY THE CONTRACTOR (AT LEAST BI-WEEKLY AND AFTER MAJOR WEATHER EVENTS) TO SECURE ANY GAPS OR OPENINGS AT GROUND LEVEL THAT MAY LET ANIMAL PASS THROUGH.
- d. THE CONTRACTOR IS RESPONSIBLE FOR DAILY INSPECTIONS OF THE SEDIMENTATION AND EROSION CONTROLS FOR TEARS OR BREECHEES AND ACCUMULATION LEVELS OF SEDIMENT, PARTICULARLY FOLLOWING STORM EVENTS THAT GENERATE A DISCHARGE, AS DEFINED BY AND IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. THE CONTRACTOR SHALL NOTIFY THE APT ENVIRONMENTAL MONITOR WITHIN 24 HOURS OF ANY BREECHEES OF THE SEDIMENTATION AND EROSION CONTROLS AND ANY SEDIMENT RELEASES BEYOND THE PERIMETER CONTROLS THAT IMPACT WETLANDS, WATERCOURSES OR WITHIN 100 FEET OF WETLANDS AND WATERCOURSES. THE APT ENVIRONMENTAL MONITOR WILL PROVIDE PERIODIC INSPECTIONS OF THE SEDIMENTATION AND EROSION CONTROLS THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES ONLY AS IT PERTAINS TO THEIR FUNCTION AS ISOLATION MEASURES FOR THE PROTECTION OF RARE SPECIES. SUCH INSPECTIONS WILL GENERALLY OCCUR ONCE PER MONTH. THE FREQUENCY OF MONITORING MAY INCREASE DEPENDING UPON SITE CONDITIONS, LEVEL OF CONSTRUCTION ACTIVITIES IN PROXIMITY TO SENSITIVE RECEPTORS, OR AT THE REQUEST OF THE PERMITTEE. IF THE COMPLIANCE MONITOR IS NOTIFIED BY THE CONTRACTOR OF A SEDIMENT RELEASE, AN INSPECTION WILL BE SCHEDULED SPECIFICALLY TO INVESTIGATE AND EVALUATE POSSIBLE IMPACTS TO WETLAND AND/OR WATERCOURSE RESOURCES.
- e. THIRD PARTY MONITORING OF SEDIMENTATION AND EROSION CONTROLS WILL BE PERFORMED BY OTHER PARTIES, AS NECESSARY, UNDER APPLICABLE LOCAL, STATE AND/OR FEDERAL REGULATIONS AND PERMIT CONDITIONS.
- f. THE EXTENT OF THE SEDIMENTATION AND EROSION CONTROLS WILL BE AS SHOWN ON THE SITE PLANS. THE CONTRACTOR SHALL HAVE ADDITIONAL SEDIMENTATION AND EROSION CONTROLS STOCKPILED ON SITE SHOULD FIELD OR CONSTRUCTION CONDITIONS WARRANT EXTENDING THE CONTROLS AS DIRECTED BY THE APT ENVIRONMENTAL MONITOR OR OTHER REGULATORY AGENCIES.
- g. NO EQUIPMENT, VEHICLES OR CONSTRUCTION MATERIALS SHALL BE STORED OUTSIDE OF THE SEDIMENTATION AND EROSION CONTROLS WITHIN 100 FEET OF WETLANDS OR WATERCOURSES.
- h. ALL SEDIMENTATION AND EROSION CONTROLS SHALL BE REMOVED WITHIN 30 DAYS OF COMPLETION OF WORK AND PERMANENT STABILIZATION OF SITE SOILS SO THAT REPTILE AND AMPHIBIAN MOVEMENT BETWEEN UPLANDS AND WETLANDS IS NOT RESTRICTED.

### 3. PETROLEUM MATERIALS STORAGE AND SPILL PREVENTION

- a. CERTAIN PRECAUTIONS ARE NECESSARY TO STORE PETROLEUM MATERIALS, REFUEL AND CONTAIN AND PROPERLY CLEAN UP ANY INADVERTENT FUEL OR PETROLEUM (I.E., OIL, HYDRAULIC FLUID, ETC.) SPILL TO AVOID POSSIBLE IMPACT TO NEARBY RESOURCES.
- b. A SPILL CONTAINMENT KIT CONSISTING OF A SUFFICIENT SUPPLY OF ABSORBENT PADS AND ABSORBENT MATERIAL WILL BE MAINTAINED BY THE CONTRACTOR AT THE CONSTRUCTION SITE THROUGHOUT THE DURATION OF THE PROJECT. IN ADDITION, A WASTE DRUM WILL BE KEPT ON SITE TO CONTAIN ANY USED ABSORBENT PADS/MATERIAL FOR PROPER AND TIMELY DISPOSAL OFF SITE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL LAWS.
- c. THE FOLLOWING PETROLEUM AND HAZARDOUS MATERIALS STORAGE AND REFUELING RESTRICTIONS AND SPILL RESPONSE PROCEDURES WILL BE ADHERED TO BY THE CONTRACTOR.
  - i. PETROLEUM AND HAZARDOUS MATERIALS STORAGE AND REFUELING
    1. REFUELING OF VEHICLES OR MACHINERY SHALL OCCUR A MINIMUM OF 100 FEET FROM WETLANDS OR WATERCOURSES AND SHALL TAKE PLACE ON AN IMPERVIOUS PAD WITH SECONDARY CONTAINMENT DESIGNED TO CONTAIN FUELS.
    2. ANY FUEL OR HAZARDOUS MATERIALS THAT MUST BE KEPT ON SITE SHALL BE STORED ON AN IMPERVIOUS SURFACE UTILIZING SECONDARY CONTAINMENT A MINIMUM OF 100 FEET FROM WETLANDS OR WATERCOURSES.
    3. THE CONTRACTOR SHALL INSPECT ALL EQUIPMENT AT THE BEGINNING AND END OF EACH DAY FOR ANY FUEL OR HYDRAULIC LEAKS AND IF DISCOVERED SHALL TAKE IMMEDIATE STEPS TO MAKE REPAIRS AND CLEAN UP ANY DISCHARGES AS DETAILED IN THE FOLLOWING SECTIONS.
      - ii. INITIAL SPILL RESPONSE PROCEDURES
        1. STOP OPERATIONS AND SHUT OFF EQUIPMENT.
        2. REMOVE ANY SOURCES OF SPARK OR FLAME.
        3. CONTAIN THE SOURCE OF THE SPILL.
        4. DETERMINE THE APPROXIMATE VOLUME OF THE SPILL.
        5. IDENTIFY THE LOCATION OF NATURAL FLOW PATHS TO PREVENT THE RELEASE OF THE SPILL TO SENSITIVE NEARBY WATERWAYS OR WETLANDS.
        6. ENSURE THAT FELLOW WORKERS ARE NOTIFIED OF THE SPILL.
      - iii. SPILL CLEAN UP & CONTAINMENT
        1. OBTAIN SPILL RESPONSE MATERIALS FROM THE ON-SITE SPILL RESPONSE KIT. PLACE ABSORBENT MATERIALS DIRECTLY ON THE RELEASE AREA.
        2. LIMIT THE SPREAD OF THE SPILL BY PLACING ABSORBENT MATERIALS AROUND THE PERIMETER OF THE SPILL.
        3. ISOLATE AND ELIMINATE THE SPILL SOURCE.
        4. CONTACT THE APPROPRIATE LOCAL, STATE AND/OR FEDERAL AGENCIES, AS NECESSARY.
        5. CONTACT A DISPOSAL COMPANY TO PROPERLY DISPOSE OF CONTAMINATED MATERIALS IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
      - iv. REPORTING
        1. COMPLETE AN INCIDENT REPORT.
        2. SUBMIT A COMPLETED INCIDENT REPORT TO THE CONNECTICUT SITING COUNCIL, AND OTHER APPLICABLE LOCAL, STATE, AND FEDERAL OFFICIALS.
        4. HERBICIDE AND PESTICIDE RESTRICTIONS
          - a. THE USE OF HERBICIDES AND PESTICIDES AT THE FACILITY SHALL BE AVOIDED WHEN

POSSIBLE. IN THE EVENT HERBICIDES AND/OR PESTICIDES ARE REQUIRED AT THE FACILITY, THEIR USE WILL BE IN ACCORDANCE WITH CURRENT INTEGRATED PEST MANAGEMENT ("IPM") PRINCIPLES WITH PARTICULAR ATTENTION TO MINIMIZE APPLICATIONS WITHIN 100 FEET OF WETLAND OR WATERCOURSE RESOURCES. NO APPLICATIONS OF HERBICIDES OR PESTICIDES ARE ALLOWED WITHIN ACTUAL WETLAND OR WATERCOURSE RESOURCES.

### 5. TURTLE PROTECTION MEASURES - CONSTRUCTION PHASE

- a. PRIOR TO CONSTRUCTION AND FOLLOWING INSTALLATION OF ISOLATION BARRIERS, THE CONSTRUCTION AREA WILL BE SWEEPED BY APT AND ANY TURTLES OCCURRING WITHIN THE WORK AREA WILL BE RELOCATED TO SUITABLE HABITAT OUTSIDE OF THE ISOLATION BARRIERS.
- b. PRIOR TO THE START OF CONSTRUCTION EACH DAY, THE CONTRACTOR SHALL SEARCH THE ENTIRE WORK AREA FOR TURTLES.
- c. IF A TURTLE IS FOUND DURING THE ACTIVE PERIOD, IT SHALL BE IMMEDIATELY MOVED, UNHARMED, BY BEING CAREFULLY GRASPED IN BOTH HANDS, ONE ON EACH SIDE OF THE SHELL, BETWEEN THE TURTLES' FORELIMBS AND THE HIND LIMBS, AND PLACED JUST OUTSIDE OF THE ISOLATION BARRIER IN THE SAME APPROXIMATE DIRECTION IT WAS HEADING. WOOD TURTLES AND SPOTTED TURTLES ARE PROTECTED BY LAW AND NO TURTLES SHOULD BE RELOCATED FROM THE PROPERTY.
- d. SPECIAL CARE SHALL BE TAKEN BY THE CONTRACTOR DURING EARLY MORNING AND EVENING HOURS SO THAT POSSIBLE BASKING OR FORAGING TURTLES ARE NOT HARMED BY CONSTRUCTION ACTIVITIES.
- e. THE CONTRACTOR SHALL BE PARTICULARLY DILIGENT DURING THE MONTHS OF MAY AND JUNE WHEN TURTLES ARE ACTIVELY SELECTING NESTING SITES WHICH RESULTS IN AN INCREASE IN TURTLE MOVEMENT ACTIVITY.
- f. NO HEAVY MACHINERY OR VEHICLES MAY BE PARKED IN ANY TURTLE HABITAT.
- g. AVOID AND LIMIT ANY EQUIPMENT USE WITHIN 100 FEET OF WETLANDS AND NO HEAVY MACHINERY OR VEHICLES MAY BE PARKED IN ANY TURTLE HABITAT OR WITHIN 100 FEET OF WETLANDS.
- h. SPECIAL PRECAUTIONS MUST BE TAKEN TO AVOID DEGRADATION OF WETLAND HABITATS, PARTICULARLY ALONG ANY PERENNIAL STREAM RIPARIAN CORRIDORS.

### 6. REPORTING

- a. A COMPLIANCE MONITORING REPORT (BRIEF NARRATIVE AND APPLICABLE PHOTOS) DOCUMENTING EACH APT INSPECTION WILL BE SUBMITTED BY APT TO THE CONTRACTOR AND PERMITTEE FOR COMPLIANCE VERIFICATION. THESE REPORTS ARE NOT TO BE USED TO DOCUMENT COMPLIANCE WITH ANY OTHER PERMIT AGENCY APPROVAL CONDITIONS (I.E., DEEP STORMWATER PERMIT MONITORING, ETC.). ANY NON-COMPLIANCE OBSERVATIONS OF EROSION CONTROL MEASURES OR EVIDENCE OF EROSION OR SEDIMENT RELEASE WILL BE IMMEDIATELY REPORTED TO THE PERMITTEE AND ITS CONTRACTOR AND INCLUDED IN THE REPORTS.
- b. ANY OBSERVATIONS OF RARE SPECIES OR CORRECTIVE ACTIONS WILL BE INCLUDED IN THE REPORTS.
- c. FOLLOWING COMPLETION OF THE CONSTRUCTION PROJECT, APT WILL PROVIDE A FINAL COMPLIANCE MONITORING REPORT TO THE PERMITTEE DOCUMENTING IMPLEMENTATION OF THIS RARE SPECIES PROTECTION PROGRAM, MONITORING AND ANY SPECIES OBSERVATIONS. THE PERMITTEE SHALL PROVIDE A COPY OF THE FINAL COMPLIANCE MONITORING REPORT TO THE CONNECTICUT SITING COUNCIL FOR COMPLIANCE VERIFICATION.
- d. ANY OBSERVATIONS OF RARE SPECIES WILL BE REPORTED TO DEEP BY APT ON THE APPROPRIATE SPECIAL ANIMAL REPORTING FORM, WITH PHOTO-DOCUMENTATION (IF POSSIBLE) AND SPECIFIC INFORMATION ON THE LOCATION AND DISPOSITION OF THE ANIMAL.

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### CSC PERMIT SET

NO	DATE	REVISION
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### DESIGN PROFESSIONAL OF RECORD

PROF: ROBERT C. BURNS, P.E.  
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.  
ADD: 567 VAUXHALL STREET EXTENSION - SUITE 311 WATERFORD, CT 06385

OWNER: RENEW DEVELOPERS, LLC  
ADDRESS: 123 SALEM ROAD COLCHESTER, CT 06415

### OLD AMSTON ROAD FUEL CELL POWER PLANT

SITE 42 OLD AMSTON ROAD  
ADDRESS: COLCHESTER, CT 06415

APT FILING NUMBER: CT716100

	DRAWN BY: CSH
DATE: 07/25/22	CHECKED BY: RCB

### SHEET TITLE: ENVIRONMENTAL NOTES RESOURCE PROTECTION MEASURES

SHEET NUMBER:

GN-2



**ReNew DEVELOPERS, LLC**

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**OLD AMSTON ROAD FUEL CELL POWER PLANT**

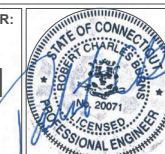
SITE: 42 OLD AMSTON ROAD  
ADDRESS: COLCHESTER, CT 06415

APT FILING NUMBER: CT716100

DATE: 07/25/22  
DRAWN BY: CSH  
CHECKED BY: RCB

SHEET TITLE:  
**OVERALL LOCUS MAP**

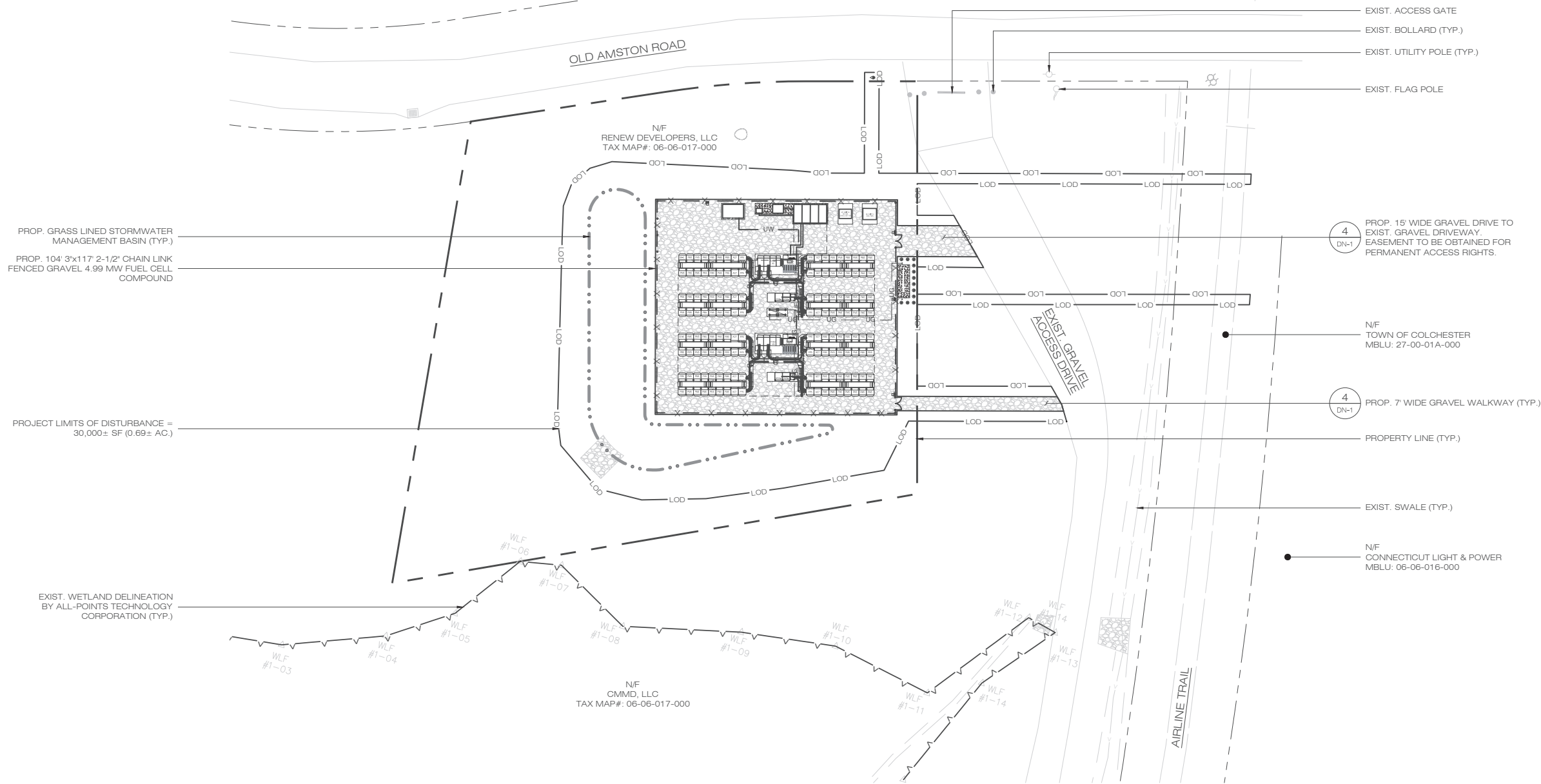
SHEET NUMBER:  
**OP-1**



N/F  
TOWN OF COLCHESTER  
TAX MAP#: 06-06-041-000

N/F  
RENEW DEVELOPERS, LLC  
TAX MAP#: 06-06-017-000

N/F  
CMMD, LLC  
TAX MAP#: 06-06-017-000



PROP. GRASS LINED STORMWATER MANAGEMENT BASIN (TYP.)  
PROP. 104' 3"x117' 2-1/2" CHAIN LINK FENCED GRAVEL 4.99 MW FUEL CELL COMPOUND

PROJECT LIMITS OF DISTURBANCE = 30,000± SF (0.69± AC.)

EXIST. WETLAND DELINEATION BY ALL-POINTS TECHNOLOGY CORPORATION (TYP.)

EXIST. ACCESS GATE  
EXIST. BOLLARD (TYP.)  
EXIST. UTILITY POLE (TYP.)  
EXIST. FLAG POLE

4  
DN-1  
PROP. 15' WIDE GRAVEL DRIVE TO EXIST. GRAVEL DRIVEWAY. EASEMENT TO BE OBTAINED FOR PERMANENT ACCESS RIGHTS.

N/F  
TOWN OF COLCHESTER  
MBLU: 27-00-01A-000

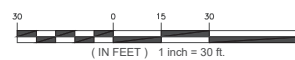
4  
DN-1  
PROP. 7' WIDE GRAVEL WALKWAY (TYP.)

PROPERTY LINE (TYP.)

EXIST. SWALE (TYP.)

N/F  
CONNECTICUT LIGHT & POWER  
MBLU: 06-06-016-000

**OVERALL LOCUS MAP**  
SCALE: 1" = 30'-0"



1  
OP-1



# EROSION CONTROL NOTES

## EROSION AND SEDIMENT CONTROL PLAN NOTES

- THE CONTRACTOR SHALL CONSTRUCT ALL SEDIMENT AND EROSION CONTROLS IN ACCORDANCE WITH THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, LATEST EDITION, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, AND AS DIRECTED BY THE TOWN OF COLCHESTER, PERMITTEE, AND/OR SWPCP MONITOR. ALL PERIMETER SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CLEARING AND GRUBBING AND DEMOLITION OPERATIONS.
- THESE DRAWINGS ARE ONLY INTENDED TO DESCRIBE THE SEDIMENT AND EROSION CONTROL MEASURES FOR THIS SITE. SEE CONSTRUCTION SEQUENCE FOR ADDITIONAL INFORMATION. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE EROSION & SEDIMENT CONTROL PLAN ARE SHOWN AS REQUIRED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL EROSION CONTROL MEASURES ARE CONFIGURED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO STORM DRAINAGE SYSTEMS AND/OR WATERCOURSES. ACTUAL SITE CONDITIONS OR SEASONAL AND CLIMATIC CONDITIONS MAY WARRANT ADDITIONAL CONTROLS OR CONFIGURATIONS, AS REQUIRED, AND AS DIRECTED BY THE PERMITTEE AND/OR SWPCP MONITOR. REFER TO SITE PLAN FOR GENERAL INFORMATION AND OTHER CONTRACT PLANS FOR APPROPRIATE INFORMATION.
- A BOND OR LETTER OF CREDIT MAY BE REQUIRED TO BE POSTED WITH THE GOVERNING AUTHORITY FOR THE EROSION CONTROL INSTALLATION AND MAINTENANCE.
- THE CONTRACTOR SHALL APPLY THE MINIMUM EROSION & SEDIMENT CONTROL MEASURES SHOWN ON THE PLAN IN CONJUNCTION WITH CONSTRUCTION SEQUENCING, SUCH THAT ALL ACTIVE WORK ZONES ARE PROTECTED. ADDITIONAL AND/OR ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES MAY BE INSTALLED DURING THE CONSTRUCTION PERIOD IF FOUND NECESSARY BY THE CONTRACTOR, OWNER, SITE ENGINEER, MUNICIPAL OFFICIALS, OR ANY GOVERNING AGENCY. THE CONTRACTOR SHALL CONTACT THE OWNER AND APPROPRIATE GOVERNING AGENCIES FOR APPROVAL IF ALTERNATIVE CONTROLS OTHER THAN THOSE SHOWN ON THE PLANS ARE PROPOSED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL TAKE EXTREME CARE DURING CONSTRUCTION SO AS NOT TO DISTURB UNPROTECTED WETLAND AREAS OR INSTALLED SEDIMENTATION AND EROSION CONTROL MEASURES. THE CONTRACTOR SHALL INSPECT ALL SEDIMENT AND EROSION CONTROLS WEEKLY AND WITHIN 24 HOURS OF A STORM WITH A RAINFALL AMOUNT OF 0.25 INCHES OR GREATER TO VERIFY THAT THE CONTROLS ARE OPERATING PROPERLY AND MAKE REPAIRS AS NECESSARY IN A TIMELY MANNER.
- THE CONTRACTOR SHALL KEEP A SUPPLY OF EROSION CONTROL MATERIAL (SILT FENCE, COMPOST FILTER SOCK, EROSION CONTROL BLANKET, ETC.) ON-SITE FOR PERIODIC MAINTENANCE AND EMERGENCY REPAIRS.
- ALL FILL MATERIAL PLACED ADJACENT TO ANY WETLAND AREA SHALL BE GOOD QUALITY, WITH LESS THAN 5% FINES PASSING THROUGH A #200 SIEVE (BANK RUN), SHALL BE PLACED IN MAXIMUM ONE FOOT LIFTS, AND SHALL BE COMPACTED TO 95% MAX. DRY DENSITY MODIFIED PROCTOR OR AS SPECIFIED IN THE CONTRACT SPECIFICATIONS.
- PROTECT EXISTING TREES THAT ARE TO BE SAVED BY FENCING, ORANGE SAFETY FENCE, CONSTRUCTION TAPE, OR EQUIVALENT FENCING/TAPE. ANY LIMB TRIMMING SHOULD BE DONE AFTER CONSULTATION WITH AN ARBORIST AND BEFORE CONSTRUCTION BEGINS IN THAT AREA; FENCING SHALL BE MAINTAINED AND REPAIRED DURING CONSTRUCTION.
- CONSTRUCTION ENTRANCES (ANTI-TRACKING PADS) SHALL BE INSTALLED PRIOR TO ANY SITE EXCAVATION OR CONSTRUCTION ACTIVITY AND SHALL BE MAINTAINED THROUGHOUT THE DURATION OF ALL CONSTRUCTION IF REQUIRED. THE LOCATION OF THE TRACKING PADS MAY CHANGE AS VARIOUS PHASES OF CONSTRUCTION ARE COMPLETED. CONTRACTOR SHALL ENSURE THAT ALL VEHICLES EXITING THE SITE ARE PASSING OVER THE ANTI-TRACKING PADS PRIOR TO EXITING.
- ALL CONSTRUCTION SHALL BE CONTAINED WITHIN THE LIMIT OF DISTURBANCE, WHICH SHALL BE MARKED WITH SILT FENCE, SAFETY FENCE, HAY BALES, RIBBONS, OR OTHER MEANS PRIOR TO CLEARING. CONSTRUCTION ACTIVITY SHALL REMAIN ON THE UPHILL SIDE OF THE SEDIMENT BARRIER UNLESS WORK IS SPECIFICALLY CALLED FOR ON THE DOWNHILL SIDE OF THE BARRIER.
- NO CUT OR FILL SLOPES SHALL EXCEED 2:1 EXCEPT WHERE STABILIZED BY ROCK FACED EMBANKMENTS OR EROSION CONTROL BLANKETS. ALL SLOPES SHALL BE SEEDED AND BANKS WILL BE STABILIZED IMMEDIATELY UPON COMPLETION OF FINAL GRADING UNTIL TURF IS ESTABLISHED.
- DIRECT ALL DEWATERING PUMP DISCHARGE TO A SEDIMENT CONTROL DEVICE CONFORMING TO THE GUIDELINES WITHIN THE APPROVED LIMIT OF DISTURBANCE IF REQUIRED. DISCHARGE TO STORM DRAINS OR SURFACE WATERS FROM SEDIMENT CONTROLS SHALL BE CLEAR AND APPROVED BY THE PERMITTEE OR MUNICIPALITY.
- THE CONTRACTOR SHALL MAINTAIN A CLEAN CONSTRUCTION SITE AND SHALL NOT ALLOW THE ACCUMULATION OF RUBBISH OR CONSTRUCTION DEBRIS ON THE SITE. PROPER SANITARY DEVICES SHALL BE MAINTAINED ON-SITE AT ALL TIMES AND SECURED APPROPRIATELY. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID THE SPILLAGE OF FUEL OR OTHER POLLUTANTS ON THE CONSTRUCTION SITE AND SHALL ADHERE TO ALL APPLICABLE POLICIES AND REGULATIONS RELATED TO SPILL PREVENTION AND RESPONSE/CONTAINMENT.
- MINIMIZE LAND DISTURBANCES. SEED AND MULCH DISTURBED AREAS WITH TEMPORARY MIX AS SOON AS PRACTICABLE (2 WEEK MAXIMUM UNSTABILIZED PERIOD) USING PERENNIAL RYEGRASS AT 40 LBS PER ACRE. MULCH ALL CUT AND FILL SLOPES AND SWALES WITH LOOSE HAY AT A RATE OF 2 TONS PER ACRE. IF NECESSARY, REPLACE LOOSE HAY ON SLOPES WITH EROSION CONTROL BLANKETS OR JUTE CLOTH. MODERATELY GRADED AREAS, ISLANDS, AND TEMPORARY CONSTRUCTION STAGING AREAS MAY BE HYDROSEEDED WITH TACKIFIER.
- SWEEP AFFECTED PORTIONS OF OFF SITE ROADS ONE OR MORE TIMES A DAY (OR LESS FREQUENTLY IF TRACKING IS NOT A PROBLEM) DURING CONSTRUCTION. FOR DUST CONTROL, PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER ON UNPAVED TRAVELWAYS TO KEEP THE TRAVELWAYS DAMP. CALCIUM CHLORIDE MAY ALSO BE APPLIED TO ACCESS ROADS. DUMP TRUCK LOADS EXITING THE SITE SHALL BE COVERED.
- VEGETATIVE ESTABLISHMENT SHALL OCCUR ON ALL DISTURBED SOIL, UNLESS THE AREA IS UNDER ACTIVE CONSTRUCTION, IT IS COVERED IN STONE OR SCHEDULED FOR PAVING WITHIN 30 DAYS. TEMPORARY SEEDING OR NON-LIVING SOIL PROTECTION OF ALL EXPOSED SOILS AND SLOPES SHALL BE INITIATED WITHIN THE FIRST 7 DAYS OF SUSPENDING WORK IN AREAS TO BE LEFT LONGER THAN 30 DAYS.
- MAINTAIN ALL PERMANENT AND TEMPORARY SEDIMENT CONTROL DEVICES IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. UPON COMPLETION OF WORK SWEEP CONCRETE PADS, CLEAN THE STORMWATER MANAGEMENT SYSTEMS AND REMOVE ALL TEMPORARY SEDIMENT CONTROLS ONCE THE SITE IS FULLY STABILIZED AND APPROVAL HAS BEEN RECEIVED FROM PERMITTEE OR THE MUNICIPALITY.
- THE SITE WAS DESIGNED TO COMPLY WITH FEDERAL, STATE, AND, IF APPLICABLE, LOCAL STANDARDS, PLUS CURRENT ACCEPTED PRACTICES FOR THE INDUSTRY. ADDITIONAL CONTROLS AND ACTIVITIES MAY BE DEEMED NECESSARY BY THE SWPCP MONITOR DURING CONSTRUCTION AS A RESULT OF UNFORESEEN CONDITIONS AND/OR MEANS AND METHODS. SUCH ITEMS MAY INCLUDE, BUT ARE NOT LIMITED TO: ADDITIONAL FOREBAYS, BASINS, OR UPSTREAM STRUCTURAL CONTROLS, THE USE OF FLOCCULANTS OF FLOCK LOGS TO DECREASE SEDIMENT, DISCHARGE MANAGEMENT SUCH AS ADDITIONAL ARMORING AND FILTERING MEASURES (I.E. STRAW BALES, WATTLES, ETC.), AND HYDROSEEDING WITH RAPIDLY GERMINATING SEED.
- SEEDING MIXTURES SHALL BE NEW ENGLAND SEMI-SHADE GRASS AND FORBS MIX, OR APPROVED EQUAL BY OWNER.

CONSTRUCTION OPERATION AND MAINTENANCE PLAN - BY CONTRACTOR		
E&S MEASURE	INSPECTION SCHEDULE	MAINTENANCE REQUIRED
CONSTRUCTION ENTRANCE	DAILY	PLACE ADDITIONAL STONE, EXTEND THE LENGTH OR REMOVE AND REPLACE THE STONE. CLEAN PAVED SURFACES OF TRACKED SEDIMENT.
COMPOST FILTER SOCK	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.25"	REPAIR/REPLACE WHEN FAILURE OR DETERIORATION IS OBSERVED.
SILT FENCE	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.25"	REPAIR/REPLACE WHEN FAILURE OR DETERIORATION IS OBSERVED. REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE FENCE.
TOPSOIL/BORROW STOCKPILES	DAILY	REPAIR/REPLACE SEDIMENT BARRIERS AS NECESSARY.
TEMPORARY SOIL PROTECTION	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.25"	REPAIR ERODED OR BARE AREAS IMMEDIATELY. RESEED AND MULCH.

## SEDIMENT & EROSION CONTROL NARRATIVE

- THE PROJECT INVOLVES THE CONSTRUCTION OF A GROUND MOUNTED FUEL CELL FACILITY WITH ASSOCIATED EQUIPMENT, INCLUDING THE GRADING OF APPROXIMATELY 0.69± ACRES OF EXISTING LOT.

### THE PROPOSED PROJECT INVOLVES THE FOLLOWING CONSTRUCTION:

- CONSTRUCTION OF A 104' 3"x117' 2-1/2' GRAVEL FUEL CELL COMPOUND AND ASSOCIATED EQUIPMENT.
  - THE STABILIZATION OF DISTURBED AREAS WITH PERMANENT VEGETATIVE TREATMENTS.
- FOR THIS PROJECT, THERE IS APPROXIMATELY 0.69± ACRES OF THE SITE BEING DISTURBED.
  - THE PROJECT SITE, AS MAPPED IN THE SOIL SURVEY OF STATE OF CONNECTICUT (NRCS, VERSION 18, DEC 6, 2018), CONTAINS TYPE 38E (HYDROLOGIC SOIL GROUP A) AND 306 & 61B (HYDROLOGIC SOIL GROUP B) SOILS. A GEOTECHNICAL ENGINEERING REPORT HAS NOT BEEN COMPLETED.
  - IT IS ANTICIPATED THAT CONSTRUCTION WILL BE COMPLETED IN APPROXIMATELY 3-4 MONTHS.
  - REFER TO THE CONSTRUCTION SEQUENCING AND EROSION CONTROL NOTES FOR INFORMATION REGARDING SEQUENCING OF MAJOR OPERATIONS IN THE ON-SITE CONSTRUCTION PHASES.
  - STORMWATER MANAGEMENT DESIGN CRITERIA UTILIZES THE APPLICABLE SECTIONS OF THE 2004 CONNECTICUT STORMWATER QUALITY MANUAL AND THE TOWN OF COLCHESTER STANDARDS, TO THE EXTENT POSSIBLE AND PRACTICABLE FOR THIS PROJECT ON THIS SITE. EROSION AND SEDIMENTATION MEASURES ARE BASED UPON ENGINEERING PRACTICE, JUDGEMENT AND THE APPLICABLE SECTIONS OF THE CONNECTICUT EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS, LATEST EDITION.
  - DETAILS FOR THE TYPICAL STORMWATER MANAGEMENT AND EROSION AND SEDIMENTATION MEASURES ARE SHOWN ON THE PLAN SHEETS OR PROVIDED AS SEPARATE SUPPORT DOCUMENTATION FOR REVIEW IN THIS PLAN.
  - CONSERVATION PRACTICES TO BE USED DURING CONSTRUCTION:
    - STAGED CONSTRUCTION;
    - MINIMIZE THE DISTURBED AREAS TO THE EXTENT PRACTICABLE DURING CONSTRUCTION;
    - STABILIZE DISTURBED AREAS WITH TEMPORARY OR PERMANENT MEASURES AS SOON AS POSSIBLE, BUT NO LATER THAN 7-DAYS FOLLOWING DISTURBANCE;
    - MINIMIZE IMPERVIOUS AREAS;
    - UTILIZE APPROPRIATE CONSTRUCTION EROSION AND SEDIMENTATION MEASURES.
  - THE FOLLOWING SEPARATE DOCUMENTS ARE TO BE CONSIDERED A PART OF THE EROSION AND SEDIMENTATION PLAN:
    - STORMWATER MANAGEMENT REPORT DATED JULY 2022.

### SUGGESTED CONSTRUCTION SEQUENCE

THE FOLLOWING SUGGESTED SEQUENCE OF CONSTRUCTION ACTIVITIES IS PROJECTED BASED UPON ENGINEERING JUDGEMENT AND BEST MANAGEMENT PRACTICES. THE CONTRACTOR MAY ELECT TO ALTER THE SEQUENCING TO BEST MEET THE CONSTRUCTION SCHEDULE, THE EXISTING SITE ACTIVITIES AND WEATHER CONDITIONS. SHOULD THE CONTRACTOR ALTER THE CONSTRUCTION SEQUENCE OR ANY EROSION AND SEDIMENTATION CONTROL MEASURES THEY SHALL MODIFY THE STORMWATER POLLUTION CONTROL PLAN ("SWPCP") AS REQUIRED BY THE GENERAL PERMIT. MAJOR CHANGES IN SEQUENCING AND/OR METHODS MAY REQUIRE REGULATORY APPROVAL PRIOR TO IMPLEMENTATION.

- THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING. PHYSICALLY FLAG THE LIMITS OF DISTURBANCE IN THE FIELD AS NECESSARY TO FACILITATE THE PRE-CONSTRUCTION MEETING.
- CONDUCT A PRE-CONSTRUCTION MEETING TO DISCUSS THE PROPOSED WORK AND EROSION AND SEDIMENTATION CONTROL MEASURES. THE MEETING SHOULD BE ATTENDED BY THE OWNER, THE OWNER'S REPRESENTATIVE(S), THE GENERAL CONTRACTOR, DESIGNATED SUB-CONTRACTORS AND THE PERSON, OR PERSONS, RESPONSIBLE FOR THE IMPLEMENTATION, OPERATION, MONITORING AND MAINTENANCE OF THE EROSION AND SEDIMENTATION MEASURES. THE CONSTRUCTION PROCEDURES FOR THE ENTIRE PROJECT SHALL BE REVIEWED AT THIS MEETING.
- NOTIFY CALL BEFORE YOU DIG AT 811, AS REQUIRED, PRIOR TO THE START OF CONSTRUCTION.
- REMOVE EXISTING IMPEDIMENTS AS NECESSARY TO INSTALL THE REQUIRED CONSTRUCTION ENTRANCES.
- INSTALL PERIMETER EROSION CONTROL.
- INSTALL STORMWATER MANAGEMENT BASIN.
- TEMPORARILY SEED DISTURBED AREAS NOT UNDER CONSTRUCTION.
- INSTALL REMAINING UTILITY CONDUITS.
- INSTALL GRAVEL EQUIPMENT COMPOUND.
- INSTALL CONCRETE EQUIPMENT PADS.
- INSTALL FUEL CELLS & ASSOCIATED EQUIPMENT AND COMPLETE UTILITY INSTALLATION.
- AFTER SUBSTANTIAL COMPLETION OF THE INSTALLATION OF THE FUEL CELL COMPLETE REMAINING SITE WORK, INCLUDING CHAIN LINK FENCE, ANY REQUIRED LANDSCAPE SCREENING, AND STABILIZE ALL DISTURBED AREAS.
- FINE GRADE, RAKE, SEED AND MULCH ALL REMAINING DISTURBED AREAS.
- AFTER THE SITE IS STABILIZED AND WITH THE APPROVAL OF THE PERMITTEE AND TOWN OF COLCHESTER AGENT, REMOVE PERIMETER EROSION AND SEDIMENTATION CONTROLS.

## ReNew DEVELOPERS, LLC

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### DESIGN PROFESSIONAL OF RECORD

PROF: ROBERT C. BURNS, P.E.  
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.  
ADD: 567 VAUXHALL STREET EXTENSION - SUITE 311 WATERFORD, CT 06385

OWNER: RENEW DEVELOPERS, LLC  
ADDRESS: 123 SALEM ROAD COLCHESTER, CT 06415

### OLD AMSTON ROAD FUEL CELL POWER PLANT

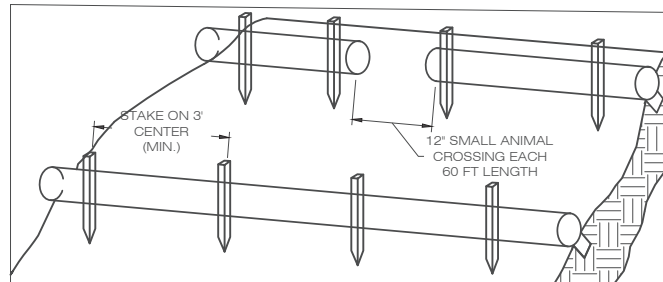
SITE 42 OLD AMSTON ROAD  
ADDRESS: COLCHESTER, CT 06415

APT FILING NUMBER: CT716100

DATE: 07/25/22 DRAWN BY: CSH  
CHECKED BY: RCB

### SHEET TITLE: SEDIMENTATION & EROSION CONTROL NOTES

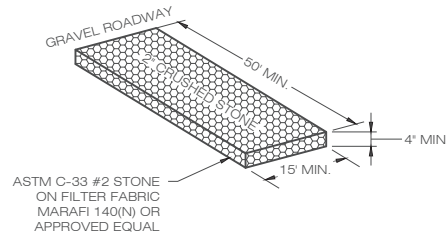
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**EC-1**



1. BEGIN AT THE LOCATION WHERE THE SOCK IS TO BE INSTALLED BY EXCAVATING A 2'-3" (5-7.5 CM) DEEP X 9" (22.9 CM) WIDE TRENCH ALONG THE CONTOUR OF THE SLOPE. EXCAVATED SOIL SHOULD BE PLACED UP SLOPE FROM THE ANCHOR TRENCH.
2. PLACE THE SOCK IN THE TRENCH SO THAT IT CONTOURS TO THE SOIL SURFACE. COMPACT SOIL FROM THE EXCAVATED TRENCH AGAINST THE SOCK ON THE UPHILL SIDE. SOCKS SHALL BE INSTALLED IN 60 FT CONTINUOUS LENGTHS WITH ADJACENT SOCKS TIGHTLY ABUT. EVERY 60 FT THE SOCK ROW SHALL BE SPACED 12 INCHES CLEAR, END TO END, FOR AMPHIBIAN AND REPTILE TRAVEL. THE OPEN SPACES SHALL BE STAGGERED MID LENGTH OF THE NEXT DOWN GRADIENT SOCK.
3. SECURE THE SOCK WITH 18-24" (45.7-61 CM) STAKES EVERY 3'-4' (0.9 -1.2 M) AND WITH A STAKE ON EACH END. STAKES SHOULD BE DRIVEN THROUGH THE MIDDLE OF THE SOCK LEAVING AT LEAST 2'-3" (5-7.5 CM) OF STAKE EXTENDING ABOVE THE SOCK. STAKES SHOULD BE DRIVEN PERPENDICULAR TO THE SLOPE FACE.

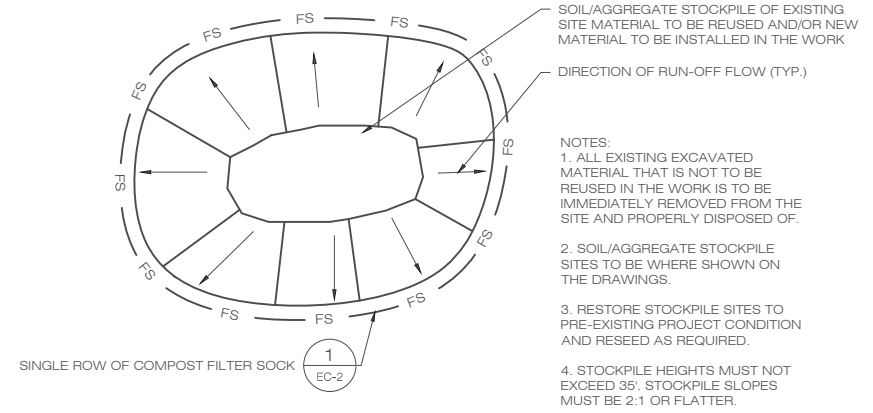
**COMPOST FILTER SOCK  
SEDIMENTATION CONTROL BARRIER**

1  
EC-2 SCALE : N.T.S.



**CONSTRUCTION  
ENTRANCE DETAIL**

2  
EC-2 SCALE : N.T.S.



**3 MATERIALS STOCKPILE DETAIL**

3  
EC-2 SCALE : N.T.S.

- NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
  2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.
  3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.
  4. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.

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**ALL-POINTS  
TECHNOLOGY CORPORATION**  
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WATERFORD, CT 06385 PHONE: (860)-953-1697  
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OWNER: RENEW DEVELOPERS, LLC  
ADDRESS: 123 SALEM ROAD COLCHESTER, CT 06415

**OLD AMSTON ROAD FUEL CELL  
POWER PLANT**

SITE: 42 OLD AMSTON ROAD  
ADDRESS: COLCHESTER, CT 06415

APT FILING NUMBER: CT716100

DATE: 07/25/22

DRAWN BY: CSH  
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SHEET TITLE:  
**SEDIMENTATION &  
EROSION CONTROL  
DETAILS**

SHEET NUMBER:  
**EC-2**

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**OLD AMSTON ROAD FUEL CELL POWER PLANT**

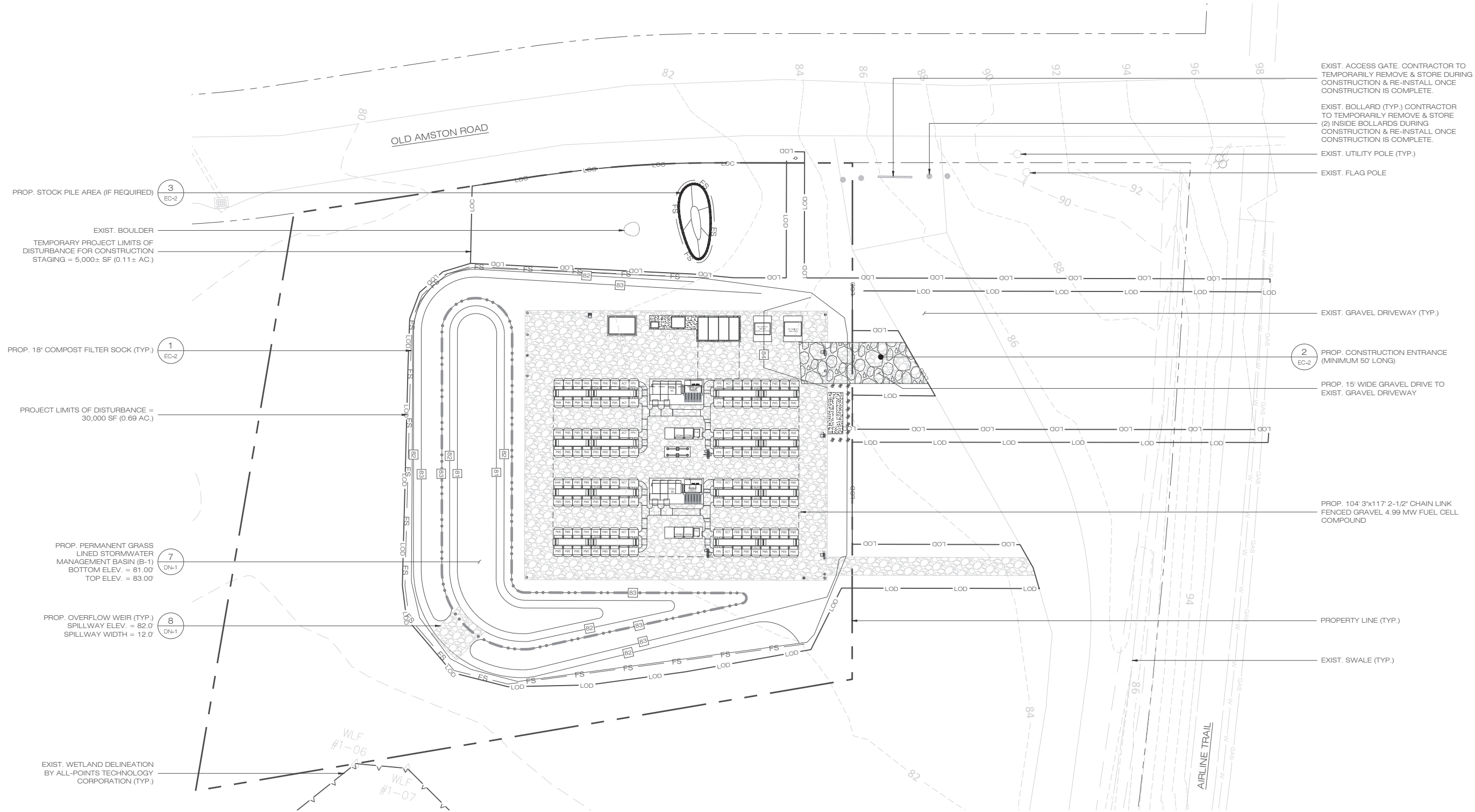
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APT FILING NUMBER: CT716100

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SHEET TITLE:  
**SEDIMENTATION & EROSION CONTROL PLAN**

SHEET NUMBER:  
**EC-3**



PROJ. STOCK PILE AREA (IF REQUIRED) (3) EC-2

EXIST. BOULDER

TEMPORARY PROJECT LIMITS OF DISTURBANCE FOR CONSTRUCTION STAGING = 5,000± SF (0.11± AC.)

PROJ. 18' COMPOST FILTER SOCK (TYP.) (1) EC-2

PROJECT LIMITS OF DISTURBANCE = 30,000 SF (0.69 AC.)

PROJ. PERMANENT GRASS LINED STORMWATER MANAGEMENT BASIN (B-1) (7) DN-1  
BOTTOM ELEV. = 81.00'  
TOP ELEV. = 83.00'

PROJ. OVERFLOW WEIR (TYP.) (8) DN-1  
SPILLWAY ELEV. = 82.0'  
SPILLWAY WIDTH = 12.0'

EXIST. WETLAND DELINEATION BY ALL-POINTS TECHNOLOGY CORPORATION (TYP.)

EXIST. ACCESS GATE. CONTRACTOR TO TEMPORARILY REMOVE & STORE DURING CONSTRUCTION & RE-INSTALL ONCE CONSTRUCTION IS COMPLETE.

EXIST. BOLLARD (TYP.) CONTRACTOR TO TEMPORARILY REMOVE & STORE (2) INSIDE BOLLARDS DURING CONSTRUCTION & RE-INSTALL ONCE CONSTRUCTION IS COMPLETE.

EXIST. UTILITY POLE (TYP.)

EXIST. FLAG POLE

EXIST. GRAVEL DRIVEWAY (TYP.)

PROJ. CONSTRUCTION ENTRANCE (MINIMUM 50' LONG) (2) EC-2

PROJ. 15' WIDE GRAVEL DRIVE TO EXIST. GRAVEL DRIVEWAY

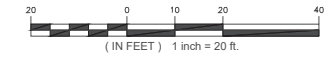
PROJ. 104' 3"x117' 2-1/2" CHAIN LINK FENCED GRAVEL 4.99 MW FUEL CELL COMPOUND

PROPERTY LINE (TYP.)

EXIST. SWALE (TYP.)



**1 SEDIMENTATION & EROSION CONTROL PLAN**  
EC-3 SCALE: 1" = 20'-0"



GRADING & DRAINAGE NOTES:  
1. THE SURVEY WAS PROVIDED BY REYNOLDS ENGINEERING SERVICES, LLC, DATED 07/13/22. REYNOLDS ENGINEERING SERVICES, LLC ASSUMED A VERTICAL DATUM.



**ReNew  
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**OLD AMSTON ROAD FUEL CELL POWER PLANT**

SITE  
ADDRESS: 42 OLD AMSTON ROAD COLCHESTER, CT 06415

APT FILING NUMBER: CT716100

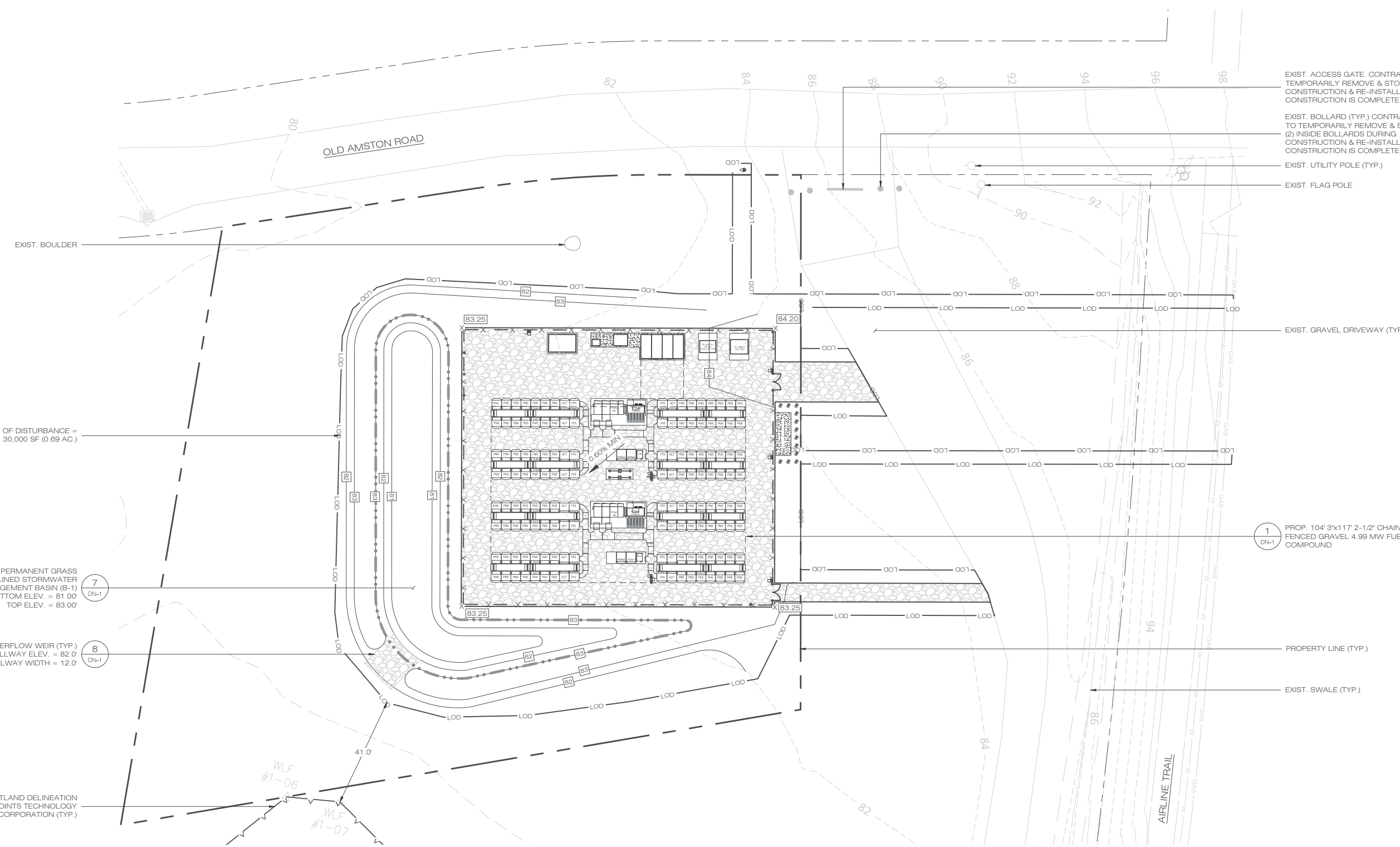
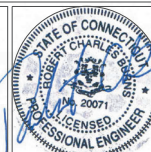
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**SHEET TITLE:**

**GRADING &  
DRAINAGE PLAN**

**SHEET NUMBER:**

**GD-1**



EXIST. ACCESS GATE. CONTRACTOR TO TEMPORARILY REMOVE & STORE DURING CONSTRUCTION & RE-INSTALL ONCE CONSTRUCTION IS COMPLETE.  
EXIST. BOLLARD (TYP.) CONTRACTOR TO TEMPORARILY REMOVE & STORE (2) INSIDE BOLLARDS DURING CONSTRUCTION & RE-INSTALL ONCE CONSTRUCTION IS COMPLETE.  
EXIST. UTILITY POLE (TYP.)  
EXIST. FLAG POLE

EXIST. GRAVEL DRIVEWAY (TYP.)

1 DN-1 PROP. 104' 3"x117' 2-1/2" CHAIN LINK FENCED GRAVEL 4.99 MW FUEL CELL COMPOUND

PROPERTY LINE (TYP.)

EXIST. SWALE (TYP.)

PROJECT LIMITS OF DISTURBANCE = 30,000 SF (0.69 AC.)

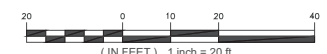
7 DN-1 PROP. PERMANENT GRASS LINED STORMWATER MANAGEMENT BASIN (B-1)  
BOTTOM ELEV. = 81.00'  
TOP ELEV. = 83.00'

8 DN-1 PROP. OVERFLOW WEIR (TYP.)  
SPILLWAY ELEV. = 82.0'  
SPILLWAY WIDTH = 12.0'

EXIST. WETLAND DELINEATION BY ALL-POINTS TECHNOLOGY CORPORATION (TYP.)

**1 GD-1 GRADING & DRAINAGE PLAN**

SCALE : 1" = 20'-0"



**GRADING & DRAINAGE NOTES:**  
1. THE SURVEY WAS PROVIDED BY REYNOLDS ENGINEERING SERVICES, LLC, DATED 07/13/22. REYNOLDS ENGINEERING SERVICES, LLC ASSUMED A VERTICAL DATUM.





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ADDRESS: 123 SALEM ROAD COLCHESTER, CT 06415

**OLD AMSTON ROAD FUEL CELL POWER PLANT**

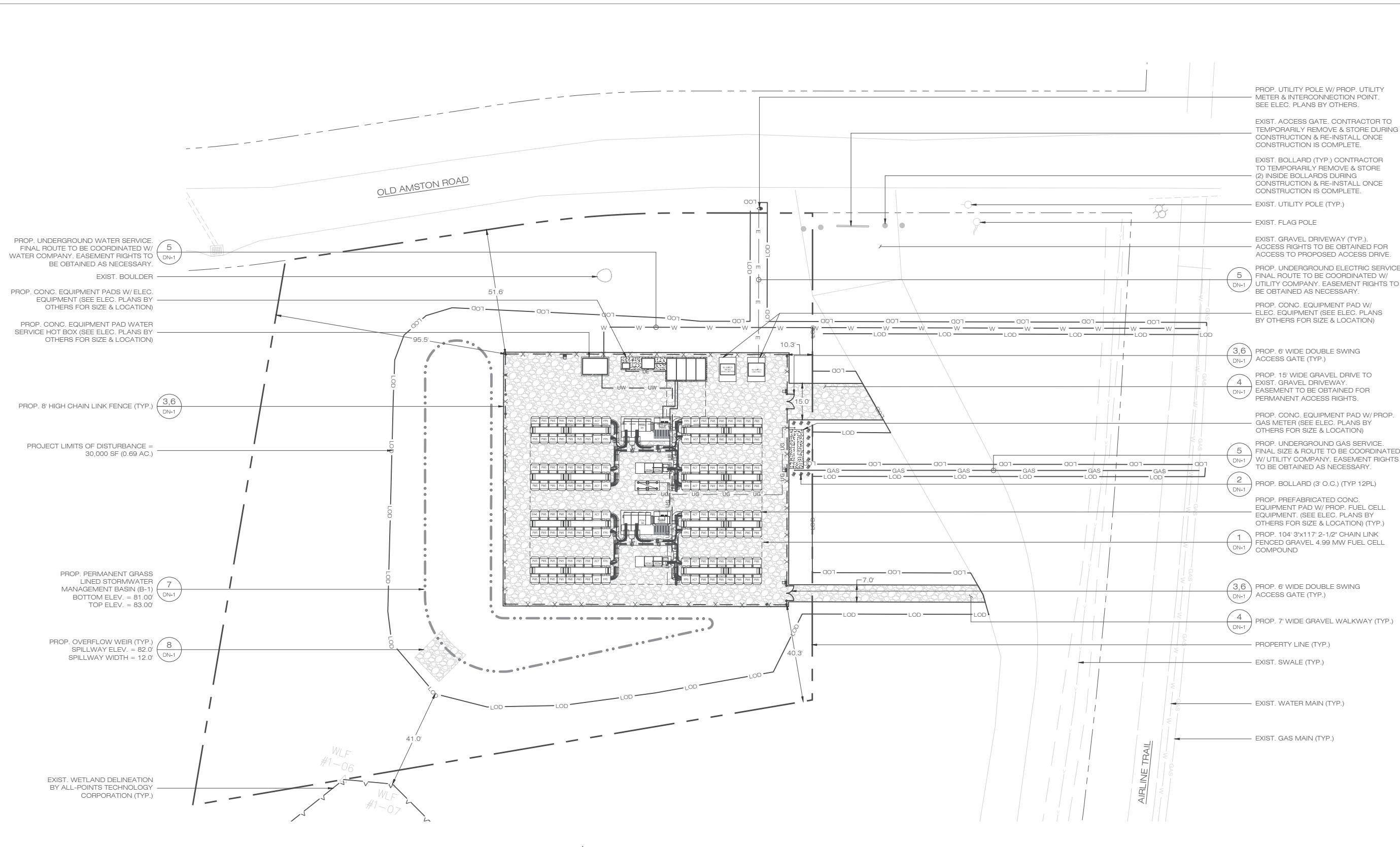
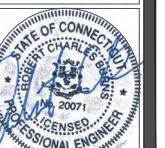
SITE ADDRESS: 42 OLD AMSTON ROAD COLCHESTER, CT 06415

APT FILING NUMBER: CT716100

DRAWN BY: CSH  
CHECKED BY: RCB  
DATE: 07/25/22

SHEET TITLE:  
**SITE & UTILITY PLAN**

SHEET NUMBER:  
**SP-1**

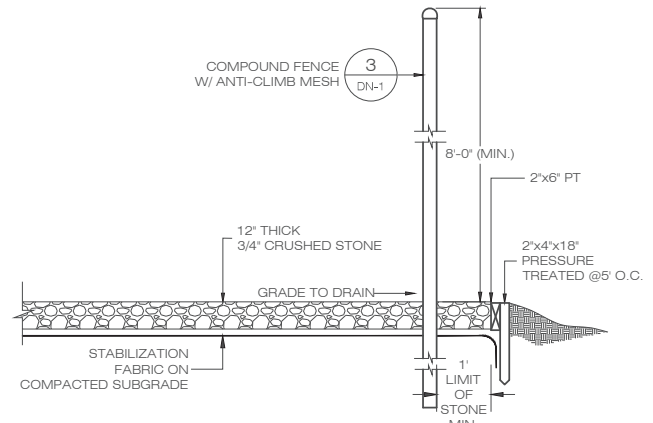


- SITE UTILITY NOTES:**
- CONTRACTOR SHALL ENGAGE THE SERVICES OF AN UNDERGROUND UTILITY LOCATING COMPANY TO LOCATE ALL UNDERGROUND EQUIPMENT IN THE TRENCHING AREA TO AVOID ANY DAMAGE.
  - HAND EXCAVATE WITHIN 5' OF EXIST. UNDERGROUND UTILITIES (V.I.F.) MAINTAIN 18" MIN. CLEARANCE.
  - CONTRACTOR TO COORDINATE TRENCHING OPERATIONS W/ OWNER AND/OR MANAGEMENT COMPANY SO AS TO MINIMIZE DISRUPTIONS TO THE EXIST. PROPERTY OPERATIONS. REINSTATE FINISHED GRADE TO PRE-CONSTRUCTION CONDITIONS & STANDARDS.

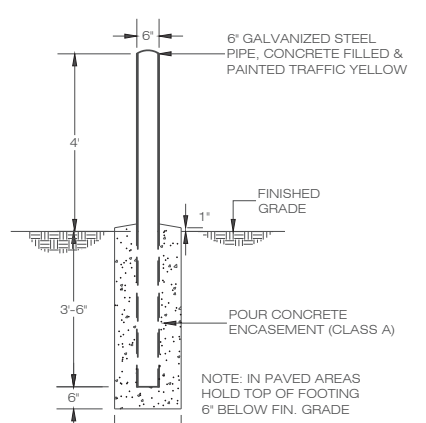
**1 SITE & UTILITY PLAN**  
SCALE: 1" = 20'-0"

- PROP. UTILITY POLE W/ PROP. UTILITY METER & INTERCONNECTION POINT. SEE ELEC. PLANS BY OTHERS.
- EXIST. ACCESS GATE. CONTRACTOR TO TEMPORARILY REMOVE & STORE DURING CONSTRUCTION & RE-INSTALL ONCE CONSTRUCTION IS COMPLETE.
- EXIST. BOLLARD (TYP.) CONTRACTOR TO TEMPORARILY REMOVE & STORE (2) INSIDE BOLLARDS DURING CONSTRUCTION & RE-INSTALL ONCE CONSTRUCTION IS COMPLETE.
- EXIST. UTILITY POLE (TYP.)
- EXIST. FLAG POLE
- EXIST. GRAVEL DRIVEWAY (TYP.) ACCESS RIGHTS TO BE OBTAINED FOR ACCESS TO PROPOSED ACCESS DRIVE.
- PROP. UNDERGROUND ELECTRIC SERVICE. FINAL ROUTE TO BE COORDINATED W/ UTILITY COMPANY. EASEMENT RIGHTS TO BE OBTAINED AS NECESSARY.
- PROP. CONC. EQUIPMENT PAD W/ ELEC. EQUIPMENT (SEE ELEC. PLANS BY OTHERS FOR SIZE & LOCATION)
- PROP. 6' WIDE DOUBLE SWING ACCESS GATE (TYP.)
- PROP. 15' WIDE GRAVEL DRIVE TO EXIST. GRAVEL DRIVEWAY. EASEMENT TO BE OBTAINED FOR PERMANENT ACCESS RIGHTS.
- PROP. CONC. EQUIPMENT PAD W/ PROP. GAS METER (SEE ELEC. PLANS BY OTHERS FOR SIZE & LOCATION)
- PROP. UNDERGROUND GAS SERVICE. FINAL SIZE & ROUTE TO BE COORDINATED W/ UTILITY COMPANY. EASEMENT RIGHTS TO BE OBTAINED AS NECESSARY.
- PROP. BOLLARD (3' O.C.) (TYP 12PL)
- PROP. PREFABRICATED CONC. EQUIPMENT PAD W/ PROP. FUEL CELL EQUIPMENT. (SEE ELEC. PLANS BY OTHERS FOR SIZE & LOCATION) (TYP.)
- PROP. 104' 3"x11' 2-1/2" CHAIN LINK FENCED GRAVEL 4.99 MW FUEL CELL COMPOUND
- PROP. 6' WIDE DOUBLE SWING ACCESS GATE (TYP.)
- PROP. 7' WIDE GRAVEL WALKWAY (TYP.)
- PROPERTY LINE (TYP.)
- EXIST. SWALE (TYP.)
- EXIST. WATER MAIN (TYP.)
- EXIST. GAS MAIN (TYP.)

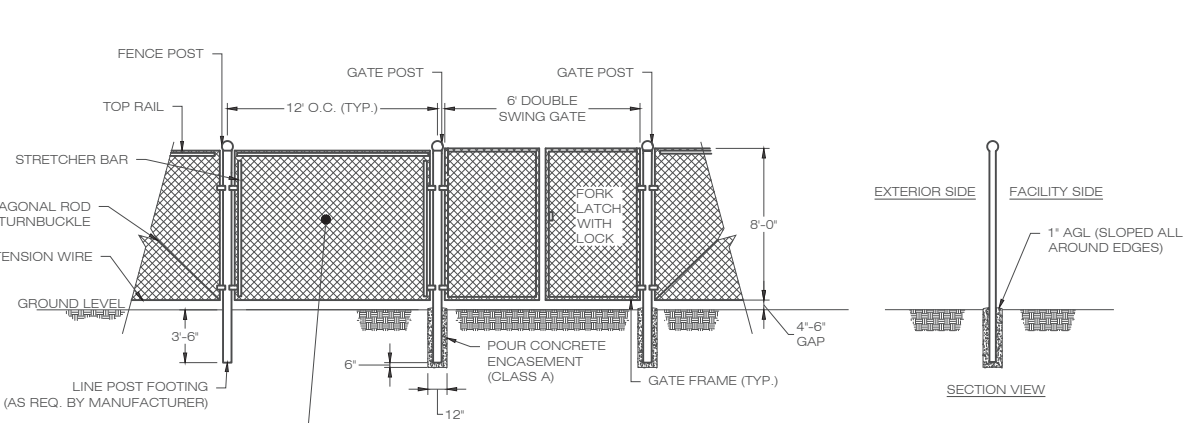
- PROP. UNDERGROUND WATER SERVICE. FINAL ROUTE TO BE COORDINATED W/ WATER COMPANY. EASEMENT RIGHTS TO BE OBTAINED AS NECESSARY.
- EXIST. BOULDER
- PROP. CONC. EQUIPMENT PADS W/ ELEC. EQUIPMENT (SEE ELEC. PLANS BY OTHERS FOR SIZE & LOCATION)
- PROP. CONC. EQUIPMENT PAD WATER SERVICE HOT BOX (SEE ELEC. PLANS BY OTHERS FOR SIZE & LOCATION)
- PROP. 8' HIGH CHAIN LINK FENCE (TYP.)
- PROJECT LIMITS OF DISTURBANCE = 30,000 SF (0.69 AC.)
- PROP. PERMANENT GRASS LINED STORMWATER MANAGEMENT BASIN (B-1) BOTTOM ELEV. = 81.00' TOP ELEV. = 83.00'
- PROP. OVERFLOW WEIR (TYP.) SPILLWAY ELEV. = 82.0' SPILLWAY WIDTH = 12.0'
- EXIST. WETLAND DELINEATION BY ALL-POINTS TECHNOLOGY CORPORATION (TYP.)



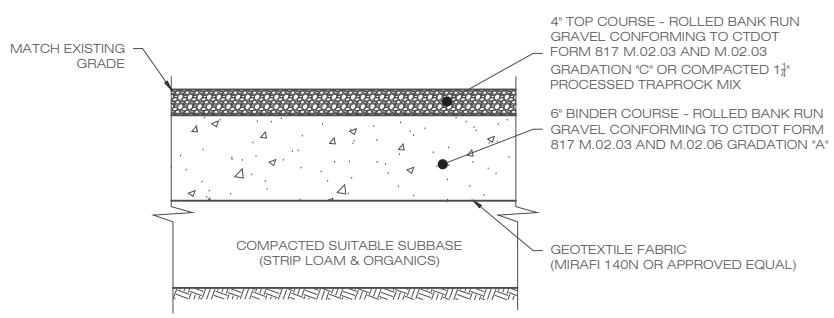
**1 COMPOUND DETAIL**  
DN-1 SCALE: N.T.S.



**2 BOLLARD DETAIL**  
DN-1 SCALE: N.T.S.

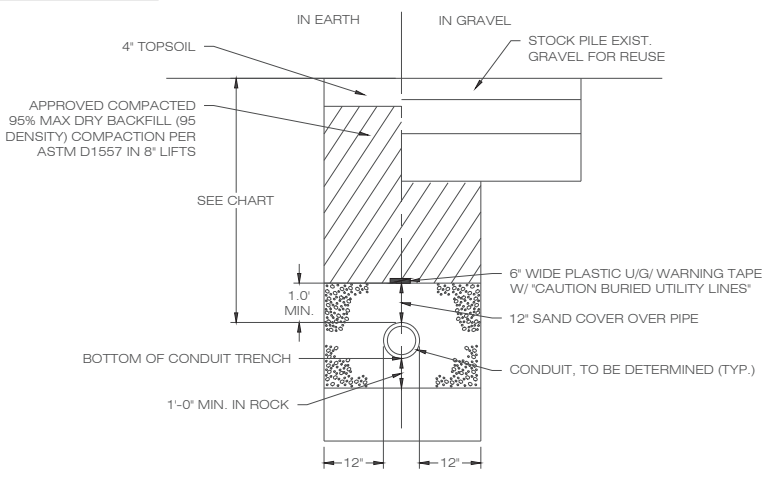


**3 CHAIN-LINK FENCE & GATE DETAIL**  
DN-1 SCALE: N.T.S.



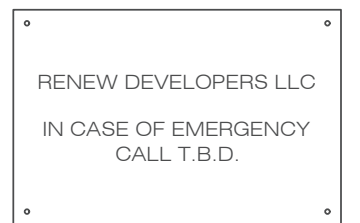
**NOTES:**  
1. SUBBASE MAY CONSIST OF NATIVE MATERIALS IF FOUND ACCEPTABLE BY THE ENGINEER. SUBBASE TO BE COMPACTED TO 95% MAX DRY DENSITY.  
2. SUBBASE IS TO BE FREE FROM DEBRIS AND UNSUITABLE MATERIALS.

**4 GRAVEL ACCESS DRIVE SECTION**  
DN-1 SCALE: N.T.S.



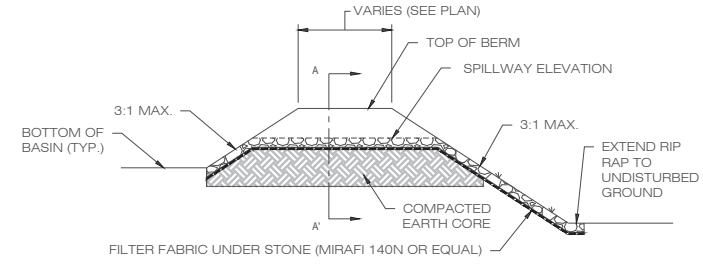
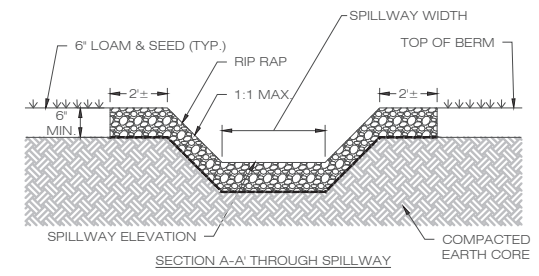
**BURIAL DEPTHS PER UTILITY (CONTRACTOR TO VERIFY DEPTHS W/ UTILITY COMPANIES PRIOR TO CONSTRUCTION):**  
 • 48" FOR WATER SERVICES  
 • 24" FOR GAS SERVICES  
 • 18" FOR ELECTRIC SERVICES

**5 TYPICAL UTILITY TRENCH DETAIL**  
DN-1 SCALE: N.T.S.

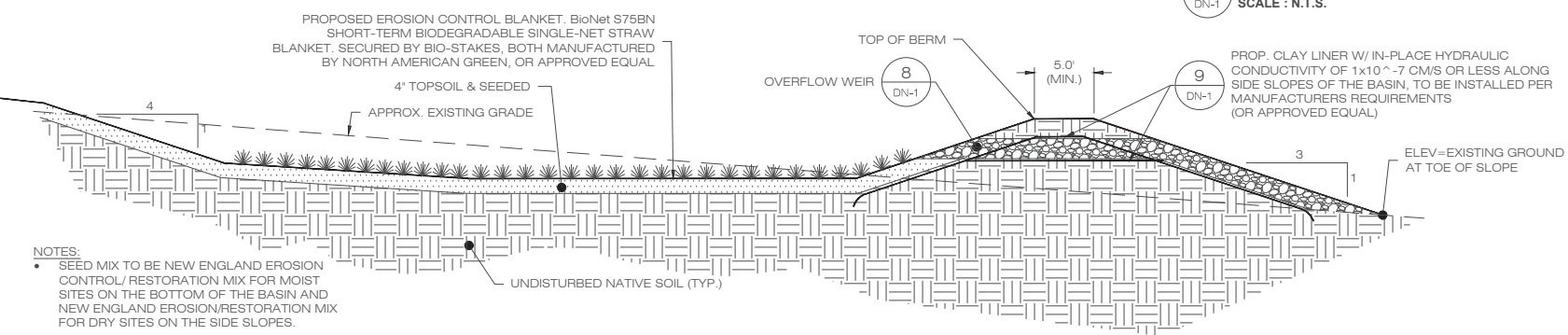


**NOTES:**  
EMERGENCY CALL NUMBER TO BE PROVIDED ONCE DETERMINED.

**6 NOTIFICATION SIGN DETAIL**  
DN-1 SCALE: N.T.S.

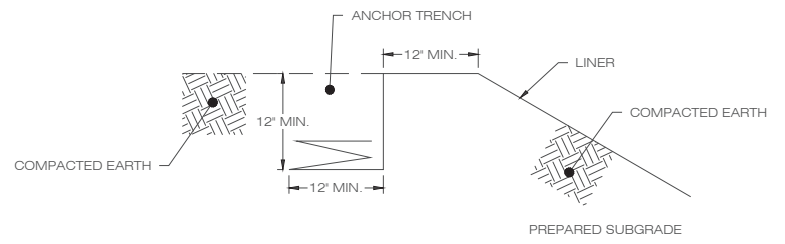


**8 OVERFLOW WEIR DETAIL**  
DN-1 SCALE: N.T.S.



**NOTES:**  
• SEED MIX TO BE NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR MOIST SITES ON THE BOTTOM OF THE BASIN AND NEW ENGLAND EROSION/RESTORATION MIX FOR DRY SITES ON THE SIDE SLOPES.

**7 GRASS LINED INFILTRATION BASIN**  
DN-1 SCALE: N.T.S.



**9 LINER ANCHOR DETAIL**  
DN-1 SCALE: N.T.S.

**ReNew DEVELOPERS, LLC**  
123 SALEM ROAD  
COLCHESTER, CT 06415  
OFFICE: (860) 303-5726

**ALL-POINTS TECHNOLOGY CORPORATION**  
567 VAUXHALL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385 PHONE: (860)-963-1697  
WWW.ALLPOINTSTECH.COM FAX: (860)-963-0935

CSC PERMIT SET		
NO	DATE	REVISION
0	07/25/22	FOR PERMIT: RCB
1		
2		
3		
4		
5		
6		

**DESIGN PROFESSIONAL OF RECORD**  
 PROF: ROBERT C. BURNS, P.E.  
 COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.  
 ADD: 567 VAUXHALL STREET EXTENSION - SUITE 311 WATERFORD, CT 06385

**OWNER:** RENEW DEVELOPERS, LLC  
 ADDRESS: 123 SALEM ROAD COLCHESTER, CT 06415

**OLD AMSTON ROAD FUEL CELL POWER PLANT**

**SITE** 42 OLD AMSTON ROAD  
**ADDRESS:** COLCHESTER, CT 06415

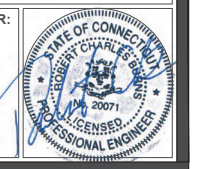
**APT FILING NUMBER:** CT716100

**DRAWN BY:** CSH  
**CHECKED BY:** RCB

**DATE:** 07/25/22

**SHEET TITLE:**  
SITE DETAILS

**SHEET NUMBER:**  
DN-1



# **APPENDIX B**

## PRODUCT INFORMATION SHEETS

## Energy Server™ 5

Always On, Clean Energy  
Using Patented Solid Oxide  
Fuel Cell Technology



*The Energy Server 5 provides combustion-free electric power with these benefits*



### Clean

Our systems produce near zero criteria pollutants (NOx, SOx, and particulate matter) and far fewer carbon emissions than legacy technologies.



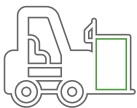
### Reliable

Bloom Energy Servers are designed around a modular architecture of simple repeating elements. This enables us to generate power 24 x 7 x 365 and can be configured to eliminate the need for traditional backup power equipment.



### Resilient

Our system operates at very high availability due to its fault-tolerant design and use of the robust natural gas pipeline system. Bloom Energy Servers have survived extreme weather events and other incidences and have continued providing power to our customers.



### Simple Installation and Maintenance

Our Energy Servers are 'plug and play' and have been designed in compliance with a variety of safety standards. Bloom Energy manages all aspects of installation, operation and maintenance of the systems.

Energy Server 5	Technical Highlights (ES5-YA8AAN)
<b>Outputs</b>	
Nameplate power output (net AC)	300 kW
Load output (net AC)	300 kW
Electrical connection	480V, 3-phase, 60 Hz
<b>Inputs</b>	
Fuels	Natural gas, directed biogas
Input fuel pressure	10-18 psig (15 psig nominal)
Water	None during normal operation
<b>Efficiency</b>	
Cumulative electrical efficiency (LHV net AC) <sup>1</sup>	65-53%
Heat rate (HHV)	5,811-7,127 Btu/kWh
<b>Emissions<sup>2</sup></b>	
NOx	0.0017 lbs/MWh
SOx	Negligible
CO	0.034 lbs/MWh
VOCs	0.0159 lbs/MWh
CO <sub>2</sub> @ stated efficiency	679-833 lbs/MWh on natural gas; carbon neutral on directed biogas
<b>Physical Attributes and Environment</b>	
Weight	15.8 tons
Dimensions (variable layouts)	18'94" x 8'8" x 7'0" or 32'11" x 4'5" x 7'5"
Temperature range	-20° to 45° C
Humidity	0% - 100%
Seismic vibration	IBC site class D
Location	Outdoor
Noise	< 70 dBA @ 6 feet
<b>Codes and Standards</b>	
Complies with Rule 21 interconnection and IEEE1547 standards	
Exempt from CA Air District permitting; meets stringent CARB 2007 emissions standards	
An Energy Server is a Stationary Fuel Cell Power System. It is Listed by Underwriters Laboratories, Inc. (UL) as a 'Stationary Fuel Cell Power System' to ANSI/CSA FC1-2014 under UL Category IRGZ and UL File Number MH45102.	
<b>Additional Notes</b>	
Access to a secure website to monitor system performance & environmental benefits	
Remotely managed and monitored by Bloom Energy	
Capable of emergency stop based on input from the site	

<sup>1</sup> 65% LHV efficiency verified by ASME PTC 50 Fuel Cell Power Systems Performance Test

<sup>2</sup> NOx and CO measured per CARB Method 100, VOCs measured as hexane by SCAQMD Method 25.3

## About Bloom Energy

Bloom Energy's mission is to make reliable, clean energy affordable for everyone in the world. The company's product, the Bloom Energy Server, delivers highly reliable and resilient, Always On electric power that is clean and sustainable. Bloom's customers include twenty-five of the Fortune 100 companies and leaders in cloud services and data centers, healthcare, retail, financial services, utilities and many other industries.

Bloom Energy

4353 North First Street  
San Jose, CA 95134

T 408 543 1500  
F 408 543 1501

info@bloomenergy.com  
www.bloomenergy.com

**Be**  
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DOC-1011391, Rev. A.



## Energy Server 5

Always On, Clean Energy  
Using Patented Solid Oxide  
Fuel Cell Technology



The Energy Server 5 provides combustion-free electric power with these benefits



### Clean

Our systems produce near zero criteria pollutants (NOx, SOx, and particulate matter) and far fewer carbon emissions than legacy technologies.



### Reliable

Bloom Energy Servers are designed around a modular architecture of simple repeating elements. This enables us to generate power 24 x 7 x 365 and can be configured to eliminate the need for traditional backup power equipment.



### Resilient

Our system operates at very high availability due to its fault-tolerant design and use of the robust natural gas pipeline system. Bloom Energy Servers have survived extreme weather events and other incidences and have continued providing power to our customers.



### Simple Installation and Maintenance

Our Energy Servers are 'plug and play' and have been designed in compliance with a variety of safety standards. Bloom Energy manages all aspects of installation, operation and maintenance of the systems.

Energy Server 5		Technical Highlights (ES5-EAXAAC)	
<b>Outputs</b>			
Nameplate power output (net AC)	250kW		
Load output (net AC)	250kW		
Electrical connection	480V, 3-phase, 60 Hz		
<b>Inputs</b>			
Fuels	Natural gas, directed biogas		
Input fuel pressure	10-18 psig (15 psig nominal)		
Water	None during normal operation		
<b>Efficiency</b>			
Cumulative electrical efficiency (LHV net AC) <sup>1</sup>	65-53%		
Heat rate (HHV)	5,811-7,127 Btu/kWh		
<b>Emissions<sup>2</sup></b>			
NOx	0.0017 lbs/MWh		
SOx	Negligible		
CO	0.034 lbs/MWh		
VOCs	0.0159 lbs/MWh		
CO <sub>2</sub> @ stated efficiency	679-833 lbs/MWh on natural gas; carbon neutral on directed biogas		
<b>Physical Attributes and Environment</b>			
Weight	13.6 tons		
Dimensions (variable layouts)	14'4" x 8'8" x 6'9" or 28'8" x 4'4" x 7'2"		
Temperature range	-20° to 45° C		
Humidity	0% - 100%		
Seismic vibration	IBC site class D		
Location	Outdoor		
Noise	< 70 dBA @ 6 feet		
<b>Codes and Standards</b>			
Complies with Rule 21 interconnection and IEEE1547 standards			
Exempt from CA Air District permitting; meets stringent CARB 2007 emissions standards			
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Bloom Energy

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Be

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DOC-1013935 Rev A

# **APPENDIX C**

## USFWS AND NDDDB COMPLIANCE STATEMENT





## USFWS & NDDB COMPLIANCE

May 16, 2022

ReNew Developers LLC  
103 South Main Street, Box 734  
Colchester, CT 06415

Re: Amston Road Fuel Cell: Old Amston Road, Colchester, Connecticut  
APT Job No: CT716100

On behalf of ReNew Developers LLC ("ReNew"), All-Points Technology Corporation, P.C. ("APT") performed an evaluation with respect to possible federally- and state-listed, threatened, endangered or special concern species in order to determine if the proposed  $\pm 4.99$  megawatts ("MW") fuel cell electric generating facility (the "Facility" or "Action") would result in a potential adverse effect to listed species.

The Facility will be developed on a privately owned, 1.15-acre property south of Old Amston Road in Colchester, Connecticut (the "Subject Property" or "Site"). The Site, which formerly housed an automotive salvage yard, is vacant and cleared; no tree or mature vegetation removal is required.

### USFWS

The federal consultation was completed in accordance with Sections 7 and 10 of the Endangered Species Act, as applicable to the proposed Facility, through the U.S. Fish and Wildlife Service's ("USFWS") Information, Planning, and Conservation System ("IPaC"). Based on the results of the IPaC review, one federally-listed<sup>1</sup> threatened species is known to occur in the vicinity of the Subject Property documented as the northern long-eared bat ("NLEB"; *Myotis septentrionalis*); please refer to the attached IPaC review. As a result of this preliminary finding, APT performed an evaluation to determine if the proposed referenced Facility would result in a likely adverse effect to NLEB.

The proposed Facility would be located in an existing cleared and graded area that characterizes the entire Subject Property; no tree clearing would occur (trees potentially provide NLEB habitat). Consultation with the Connecticut Department of Energy & Environmental Protection ("CTDEEP") Wildlife Division Natural Diversity Data Base ("NDDB") NLEB habitat map<sup>2</sup> revealed that the proposed Facility is not within 150 feet of a known occupied NLEB maternity roost tree and is not within 0.25 mile of a known NLEB hibernaculum. The nearest NLEB habitat resource to the proposed Facility is located  $\pm 26.1$  miles to the southwest in North Branford.

APT submitted the effects determination using the NLEB key within the IPaC system for the proposed Facility (the "Action"). This IPaC key assists users in determining whether a Federal action is consistent

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<sup>1</sup> Listing under the federal Endangered Species Act

<sup>2</sup> *Northern long-eared bat areas of concern in Connecticut to assist with Federal Endangered Species Act Compliance map*. March 6, 2019.

with the activities analyzed in the USFWS's January 5, 2016, intra-Service Programmatic Biological Opinion ("PBO") on the Final 4(d) Rule for the NLEB for Section 7(a)(2) compliance.

Based upon the IPaC submission, the Action is consistent with activities analyzed in the PBO; please refer to the enclosed March 29, 2022, USFWS letter. The Action may affect, but not likely to adversely affect NLEB; however, any incidental take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). If the USFWS does not respond within 30 days from the date of the letter (April 29, 2022), one may presume that the IPaC-assisted determination was correct and that the PBO satisfies and concludes ReNew's responsibilities for this Action under ESA Section 7(a)(2) with respect to NLEB. No response was received from USFWS; therefore, the Action complies with ESA Section 7(a)(2) with respect to NLEB.

### **NDDB**

According to the most recent DEEP NDDB maps, the proposed Facility is located within a shaded NDDB buffer area and therefore the proposed project could potentially conflict with listed rare species. Please refer to the enclosed NDDB Map. APT submitted a NDDB review request with DEEP to identify State Listed Endangered, Threatened, and Special Concern species occurring in the vicinity of the proposed Facility and if the proposed activity could potentially conflict with listed species.

DEEP issued a May 12, 2022, determination letter (No. 202205835) indicating that two State-listed Special Concern Species are known to occur in the vicinity of the Facility: Spotted Turtle (*Clemmys guttata*) and Wood Turtle (*Clemmys guttata*); please refer to the enclosed letter. ReNew is committed to protecting these species during construction, following the recommendations contained in DEEP's letter to avoid potential impact to these State-listed species.

Therefore, the proposed Facility is not anticipated to adversely impact any federal or state threatened, endangered or special concern species.

Sincerely,  
All-Points Technology Corporation, P.C.



Dean Gustafson  
Senior Biologist

Enclosures

# USFWS IPaC Review

---



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
New England Ecological Services Field Office  
70 Commercial Street, Suite 300  
Concord, NH 03301-5094  
Phone: (603) 223-2541 Fax: (603) 223-0104  
<http://www.fws.gov/newengland>

In Reply Refer To:  
Project Code: 2022-0025149  
Project Name: Old Amston Road Fuel Cell

March 29, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

*Please review this letter each time you request an Official Species List, we will continue to update it with additional information and links to websites may change.*

### **About Official Species Lists**

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Federal and non-Federal project proponents have responsibilities under the Act to consider effects on listed species.

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested by returning to an existing project's page in IPaC.

### **Endangered Species Act Project Review**

Please visit the “**New England Field Office Endangered Species Project Review and Consultation**” website for step-by-step instructions on how to consider effects on listed

species and prepare and submit a project review package if necessary:

<https://www.fws.gov/newengland/endangeredspecies/project-review/index.html>

**\*NOTE\*** Please do not use the **Consultation Package Builder** tool in IPaC except in specific situations following coordination with our office. Please follow the project review guidance on our website instead and reference your **Project Code** in all correspondence.

#### *Additional Info About Section 7 of the Act*

Under section 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to determine whether projects may affect threatened and endangered species and/or designated critical habitat. If a Federal agency, or its non-Federal representative, determines that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Federal agency also may need to consider proposed species and proposed critical habitat in the consultation. 50 CFR 402.14(c)(1) specifies the information required for consultation under the Act regardless of the format of the evaluation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

In addition to consultation requirements under Section 7(a)(2) of the ESA, please note that under sections 7(a)(1) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species. Please contact NEFO if you would like more information.

**Candidate species** that appear on the enclosed species list have no current protections under the ESA. The species' occurrence on an official species list does not convey a requirement to consider impacts to this species as you would a proposed, threatened, or endangered species. The ESA does not provide for interagency consultations on candidate species under section 7, however, the Service recommends that all project proponents incorporate measures into projects to benefit candidate species and their habitats wherever possible.

#### **Migratory Birds**

In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see:

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<https://www.fws.gov/birds/policies-and-regulations.php>

Please feel free to contact us at **newengland@fws.gov** with your **Project Code** in the subject line if you need more information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat.

Attachment(s): Official Species List

Attachment(s):

- Official Species List
-



## **Official Species List**

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

### **New England Ecological Services Field Office**

70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

---

## Project Summary

Project Code: 2022-0025149

Event Code: None

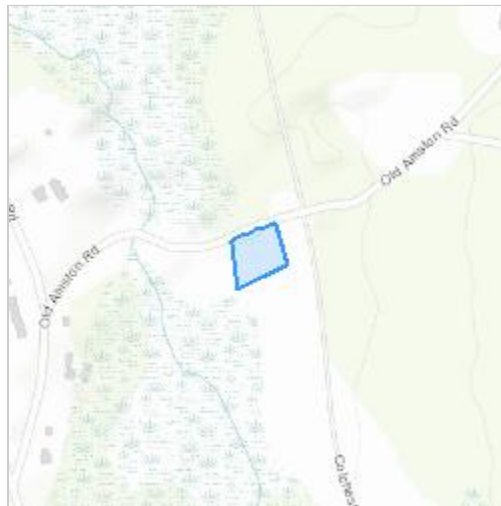
Project Name: Old Amston Road Fuel Cell

Project Type: Power Gen - Other

Project Description: ReNew Developers, LLC intends to develop a portion of a +/- 17.77-acre Property with a +/-5.0 (AC) megawatt fuel cell electric generating facility, incorporating technology provided by Bloom Energy Corporation.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@41.59407435,-72.33424477538969,14z>



Counties: New London County, Connecticut

---

## Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

### Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Threatened

### Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Candidate

### Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

---

## **IPaC User Contact Information**

Agency: All-Points Technology Corporation, P.C.  
Name: Deborah Gustafson  
Address: 567 Vauxhall Street Extension  
Address Line 2: Suite 311  
City: Waterford  
State: CT  
Zip: 06235  
Email: dleonardo@allpointstech.com  
Phone: 8609849514

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# USFWS NLEB Letter

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## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
New England Ecological Services Field Office  
70 Commercial Street, Suite 300  
Concord, NH 03301-5094  
Phone: (603) 223-2541 Fax: (603) 223-0104  
<http://www.fws.gov/newengland>

In Reply Refer To:  
Project code: 2022-0025149  
Project Name: Old Amston Road Fuel Cell

March 29, 2022

Subject: Consistency letter for the 'Old Amston Road Fuel Cell' project indicating that any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o).

Dear Deborah Gustafson:

The U.S. Fish and Wildlife Service (Service) received on March 29, 2022 your effects determination for the 'Old Amston Road Fuel Cell' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. You indicated that no Federal agencies are involved in funding or authorizing this Action. This IPaC key assists users in determining whether a non-Federal action may cause “take”<sup>[1]</sup> of the northern long-eared bat that is prohibited under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Please report to our office any changes to the information about the Action that you entered into IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation.

If your Action proceeds as described and no additional information about the Action’s effects on species protected under the ESA becomes available, no further coordination with the Service is required with respect to the northern long-eared bat.

The IPaC-assisted determination for the northern long-eared bat **does not** apply to the following ESA-protected species that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Candidate



You may coordinate with our Office to determine whether the Action may cause prohibited take of the animal species listed above.

---

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

---

## Action Description

You provided to IPaC the following name and description for the subject Action.

### 1. Name

Old Amston Road Fuel Cell

### 2. Description

The following description was provided for the project 'Old Amston Road Fuel Cell':

ReNew Developers, LLC intends to develop a portion of a +/- 17.77-acre Property with a +/-5.0 (AC) megawatt fuel cell electric generating facility, incorporating technology provided by Bloom Energy Corporation.

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@41.59407435,-72.33424477538969,14z>



## Determination Key Result

This non-Federal Action may affect the northern long-eared bat; however, any take of this species that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o).

### Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on **May 15, 2017**. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for non-Federal actions is to assist determinations as to whether proposed actions are excepted from take prohibitions under the northern long-eared bat 4(d) rule.

If a non-Federal action may cause prohibited take of northern long-eared bats or other ESA-listed animal species, we recommend that you coordinate with the Service.

---

## Determination Key Result

Based upon your IPaC submission, any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o).

## Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?

*No*

2. Will your activity purposefully **Take** northern long-eared bats?

*No*

3. [Semantic] Is the project action area located wholly outside the White-nose Syndrome Zone?

**Automatically answered**

*No*

4. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases and other sources of information on the locations of northern long-eared bat roost trees and hibernacula is available at [www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html](http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html).

*Yes*

5. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?

*No*

6. Will the action involve Tree Removal?

*No*

---

## Project Questionnaire

**If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.**

1. Estimated total acres of forest conversion:

0

2. If known, estimated acres of forest conversion from April 1 to October 31

0

3. If known, estimated acres of forest conversion from June 1 to July 31

0

**If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.**

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

**If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.**

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

**If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.**

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0

---

## **IPaC User Contact Information**

Agency: All-Points Technology Corporation, P.C.  
Name: Deborah Gustafson  
Address: 567 Vauxhall Street Extension  
Address Line 2: Suite 311  
City: Waterford  
State: CT  
Zip: 06235  
Email: [dleonardo@allpointstech.com](mailto:dleonardo@allpointstech.com)  
Phone: 8609849514

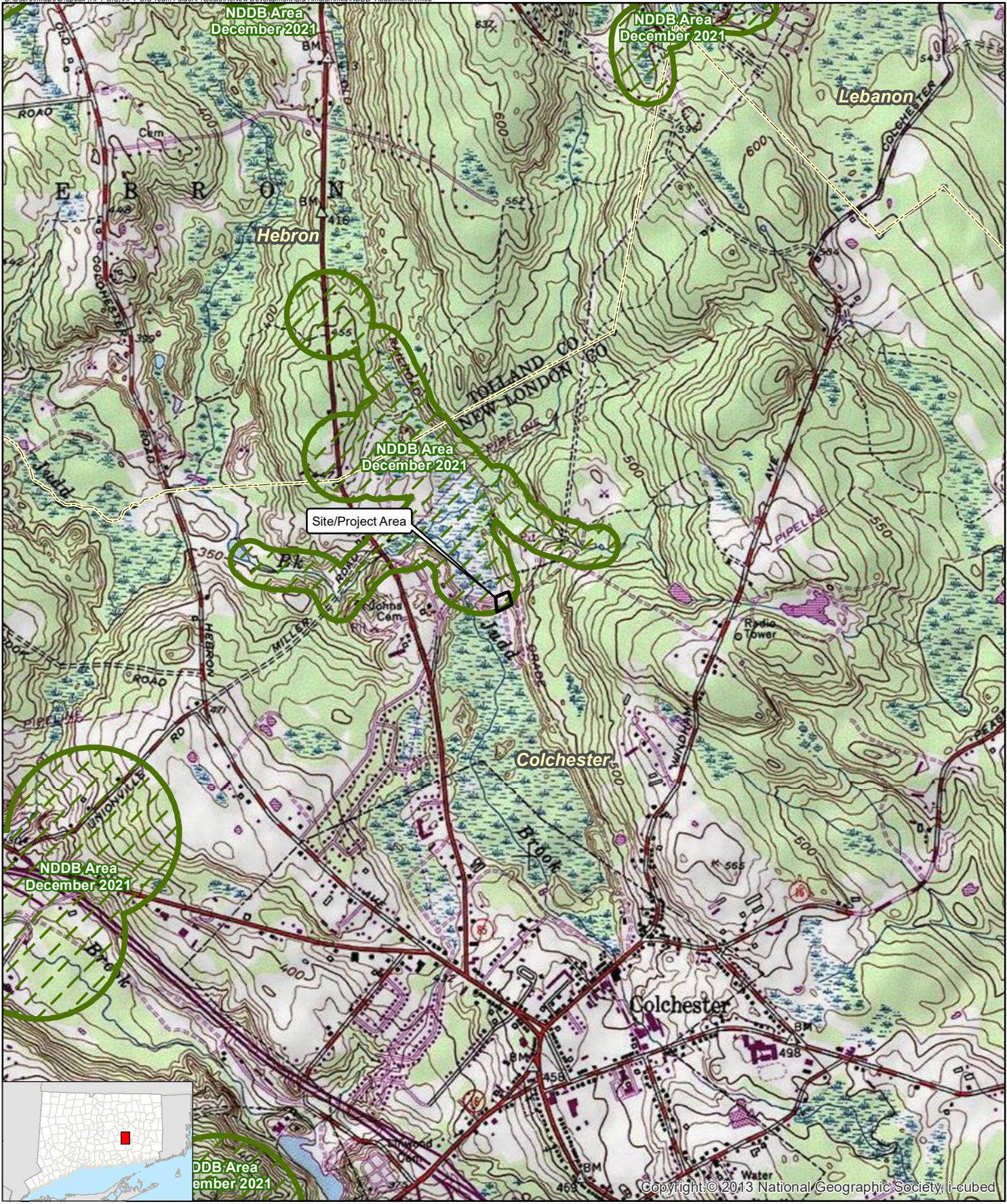
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# NDDDB Map

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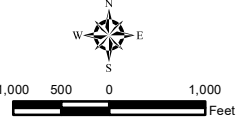
**Legend**

-  Site/Project Area
-  CTDEEP Natural Diversity Database (updated Dec 2021)
-  Municipal Boundary

**NDDB Map**

Proposed Fuel Cell Facility  
 Old Amston Road  
 Colchester, Connecticut

**Map Notes:**  
 Base Map Source: USGS 7.5 Minute  
 Topographic Quadrangle Map: Colchester, CT (1984)  
 Map Scale: 1:24,000  
 Map Date: March 2022





# NDDDB Determination Letter

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May 12, 2022

Dean Gustafson  
All-Points Technology Corporation, PC  
567 Vauxhall Street Ext, Wuite 311  
Waterford, CT 06385  
[dgustafson@allpointstech.com](mailto:dgustafson@allpointstech.com)

**NDDB DETERMINATION NUMBER: 202205835**

**Project:** Construction of a megawatt fuel cell electric generating facility, Old Amston Rd, Colchester

**Expiration Date:** May 12, 2024

I have reviewed Natural Diversity Data Base (NDDB) maps and files regarding this project. According to our records, there are State-listed species (RCSA Sec. 26-306) documented nearby the proposed project area.

**Wood turtle (*Glyptemys insculpta*)- State Special Concern**

**Spotted turtle (*Clemmys guttata*)- State Special Concern**

Wood turtle: Individuals of this species are riverine and riparian obligates, overwintering and mating in clear, cold, primarily sand-gravel and rock bottomed streams and foraging in riparian zones, fields and upland forests during the late spring and summer. They hibernate in the banks of the river in submerged tree roots between November 1 and March 31. Their summer habitat focuses within 90m (300ft of rivers) and they regularly travel 300m (0.2 mile) from rivers during this time. During summer they seek out early successional habitat: pastures, old fields, woodlands, powerline cuts and railroad beds bordering or adjacent to streams and rivers. Their habitat in Connecticut is already severely threatened by fragmentation of riverine, instream, riparian, and upland habitats, but is exacerbated by heavy adult mortality from machinery, cars, and collection. This is compounded by the species late maturity, low reproductive potential, and high nest and hatchling depredation rates.

Spotted turtle: Individuals of this species are associated with wetlands and vernal pools. Over the course of a season and lifetime, individuals will travel large distances (up to 1km) over upland forest and fields between multiple wetlands. They overwinter burrowed into the mud in wetlands between Nov 1- March 15. They do not begin to reproduce until 7-10 years old and adults can live at least 30 years. This species is threatened most by any activities that reduce adult survivorship including road kills, commercial and casual collection, increased predation in areas around commercial and residential development, mortality and injury from agricultural equipment or other mechanical equipment.

- I do not anticipate impacts from work that occurs during the dormant season (November 1- March 15).

For all work conducted during the active season (March 16- Oct 31):

- **Install exclusionary practices to prevent any turtle access into disturbance areas.** These measures will need to be installed at the limits of disturbance as shown on the plans, and also include areas of staging and storage.

- Exclusionary fencing be at least 20 in tall and must be secured to and remain in contact with the ground and be regularly maintained (at least bi-weekly and after major weather events) to secure any gaps or openings at ground level that may let animal pass through.
- All work areas including staging and storage areas, outside of previously paved locations, regardless of the duration of time they will be utilized, must be reviewed to remove individuals and exclude them from re-entry.
- All construction personnel working within the turtle habitat must be apprised of the species description and the possible presence of a listed species.
- Any turtles encountered within the immediate work area shall be carefully moved to an adjacent area outside of the excluded area and fencing should be inspected to identify and remove access point. These animals are protected by law and no turtles should be relocated from the site.

---

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Bureau of Natural Resources and cooperating units of DEEP, independent conservation groups, and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the NDDB should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated in the NDDB as it becomes available.

Please contact me if you have any questions ([shannon.kearney@ct.gov](mailto:shannon.kearney@ct.gov)). Thank you for consulting with the Natural Diversity Data Base and continuing to work with us to protect State-listed species.

Sincerely,

/s/ Shannon B. Kearney  
Wildlife Biologist

# **APPENDIX D**

## **CULTURAL RESOURCES REVIEW**



March 28, 2022

Ms. Jennifer Young Gaudet  
All-Points Technology Corporation  
567 Vauxhall Street Extension – Suite 311  
Waterford, Connecticut 06385

**RE: Preliminary Archaeological Assessment of a Proposed Fuel Cell Development Project Along Old Amston Road in Colchester, Connecticut**

Ms. Gaudet:

Heritage Consultants, LLC (Heritage), is pleased to have this opportunity to provide All-Points Technology Corporation (All-Points) with the following preliminary archaeological assessment of a proposed fuel cell development project along Old Amston Road in Colchester, Connecticut (Figure 1). The current project entailed completion of a cultural resources summary based on the examination of data obtained from the Connecticut State Historic Preservation Office (CT-SHPO), as well as GIS data, including historical mapping, aerial photographs, and topographic quadrangles, maintained by Heritage. This investigation is based upon project location information provided to Heritage by All-Points. The objectives of this study were to gather and present data regarding previously identified cultural resources situated within 0.8 km (0.5 mi) of the proposed fuel cell development and to investigate the proposed project area in terms of its natural and historical characteristics so that the need for completing additional cultural resources investigations could be evaluated.

Figure 2, which is a map excerpt dating from 1854, shows that the region containing the proposed fuel cell development parcel was only sparsely developed during the nineteenth century with the nearest residence belonging to J. S. Lewis. Other nearby residences nearby included those belonging to I. Fullmore, H. Foote, and G. Clark, but none of them was located within the project area. The 1854 map also shows that a well-developed road network also was in place by that time, but that the project area probably consisted of an outlying and unused parcel of land. A subsequent historic map dating from 1868 shows that road network had no changed appreciably by that time (Figure 3). Again, the project area consisted of an undeveloped parcel of land with no buildings or residence noted in the immediate vicinity.

The earliest readily available aerial image of the region containing the proposed fuel cell development parcel dates from 1934 (Figure 4). The image shows that the project region was still sparsely developed; however, a railroad had been constructed to the east. The surrounding area was mostly characterized by forest and wetland, with cleared areas to the west. The subsequent 1951 aerial photo of the project region shows the project area in essentially the same state (Figure 5). It appears that a utility corridor has been cleared to the northeast during the middle of the twentieth century. A 1970 aerial photo shows the project area as cleared, with a large number of vehicles parked on the land; it appears that the project area was used as a junk yard during the second half of the twentieth century (Figure 6). The 1990 aerial photo shows continued use of the project area as a junk yard, with very little change in nearby development and vegetation (Figure 7). Finally, Figure 8, an aerial image dating from 2019,

shows the project area in its modern state. The junk yard had been abandoned by then and most of the land containing the project area is open and is no vegetated.

A review of previously recorded cultural resources on file with the CT-SHPO revealed that there are no previously identified archaeological sites or National Register of Historic Places properties located within 0.8 km (0.5 mi) of the proposed fuel cell development location (Figures 3 and 4). The only State Register of Historic Places property situated within 0.8 km (0.5 mi) of the proposed fuel cell development is known as the Zagray Sawmill; it is discussed below.

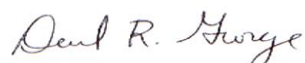
#### Zagray Sawmill

Zagray Sawmill is a State Register of Historic Places property located in Colchester Connecticut. It is located at 544 Amston Road (Route 85), Colchester and it is part of the Zagray Farm Museum. The Zagray Farm Museum encompasses nearly 200 acres of land, which is a combination of woodlands, fields, and a large marsh. There are several original buildings which include not only the sawmill but also the Zagray family homestead, a dairy barn, a machine shop, a foundry, and various sheds. The sawmill was built in 1873. Today, the Zagray Farm Museum is operated by the Quinebaug Valley Engineers Association, Inc. This resource will not be impacted by the construction of the fuel cell project.

Soils located within the project area are described as belonging to the Udorthents-Urban Land Complex (306). The Udorthents-Urban Land Complex consists of moderately, well drained, to excessively drained soils that have been disturbed by cutting or filling, as well as areas that are covered by buildings and pavement. Udorthents are found in areas that have been cut to a depth of 0.6 m (2 ft) or more or are within areas with more than 0.6 m (2 ft) of fill. Udorthents consist primarily of moderately coarse textured soil material and a few small areas of medium textured material. In some areas fill has been used to build up recreational areas and highways. These soils have no depositional integrity or archaeological sensitivity. This was confirmed during a review of the property, which shows that it is largely disturbed (Photos 1 through 3).

Based on the background research and the current condition of the project area, it is the professional opinion of Heritage Consultants, LLC that no additional archaeological examination of the project area is recommended. If you have any questions regarding this Technical Memorandum, or if we may be of additional assistance with this or any other projects you may have, please do not hesitate to call us at 860-299-6328. or email us [info@heritage-consultants.com](mailto:info@heritage-consultants.com). We are at your service.

Sincerely,



David R. George, M.A., R.P.A





Figure 1. Excerpt from a USGS 7.5' series topographic quadrangle image showing the location of the fuel cell development parcel in Colchester, Connecticut.





Figure 2. Excerpt from an 1854 historic map showing the location of the fuel cell development parcel in Colchester, Connecticut.





Figure 3. Excerpt from an 1868 historic map showing the location of the fuel cell development parcel in Colchester, Connecticut.



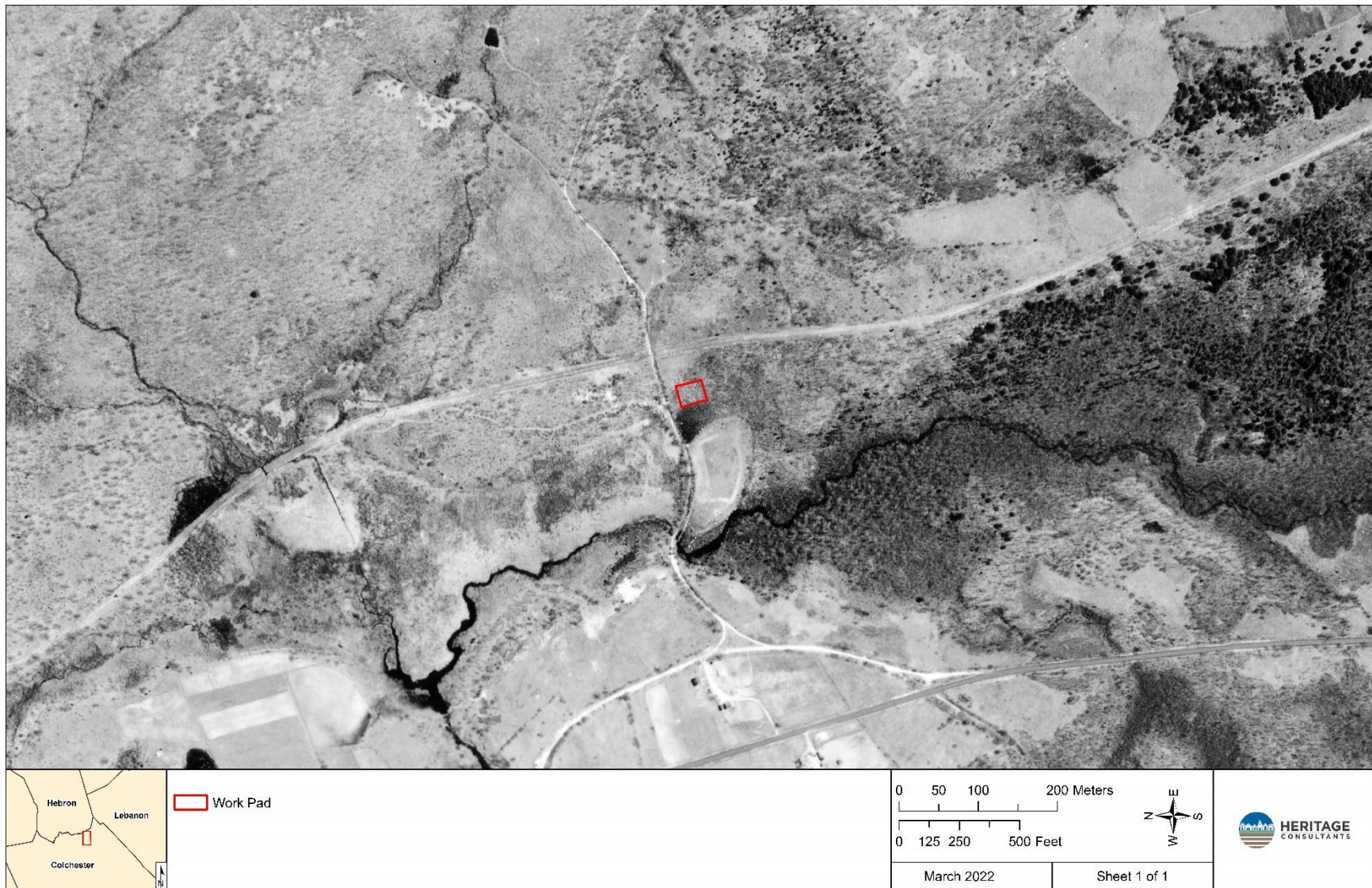


Figure 4. Excerpt from a 1934 aerial photograph showing the location of the fuel cell development parcel in Colchester, Connecticut.





Figure 5. Excerpt from a 1951 aerial photograph showing the location of the fuel cell development parcel in Colchester, Connecticut.



Figure 6. Excerpt from a 1970 aerial photograph showing the location of the fuel cell development parcel in Colchester, Connecticut.





Figure 7. Excerpt from a 1990 aerial photograph showing the location of the fuel cell development parcel in Colchester, Connecticut.





Figure 8. Excerpt from a 2019 aerial photograph showing the location of the fuel cell development parcel in Colchester, Connecticut.



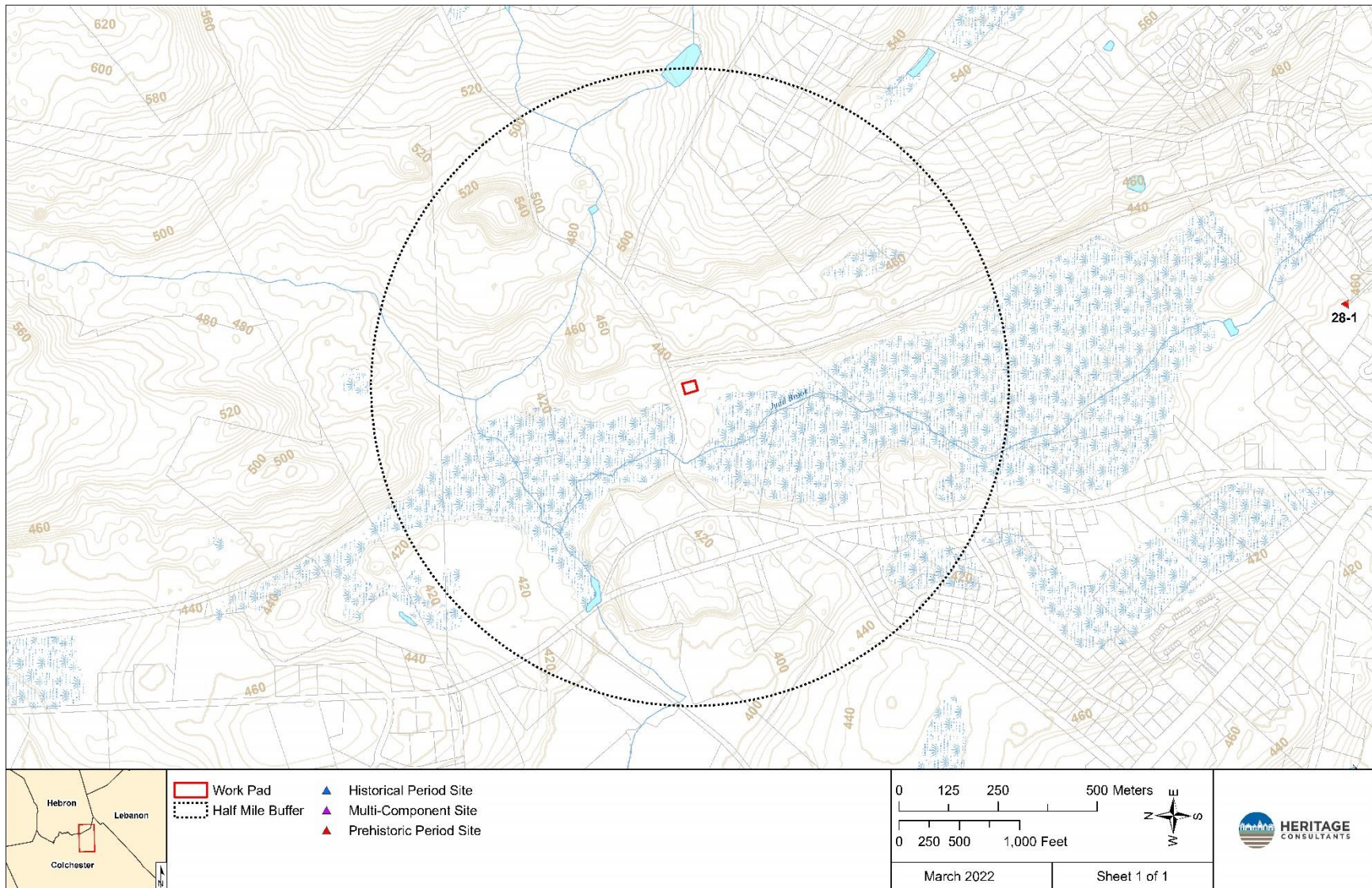


Figure 9. Digital map showing the location of previously identified archaeological sites in the vicinity of the fuel cell development parcel in Colchester, Connecticut.



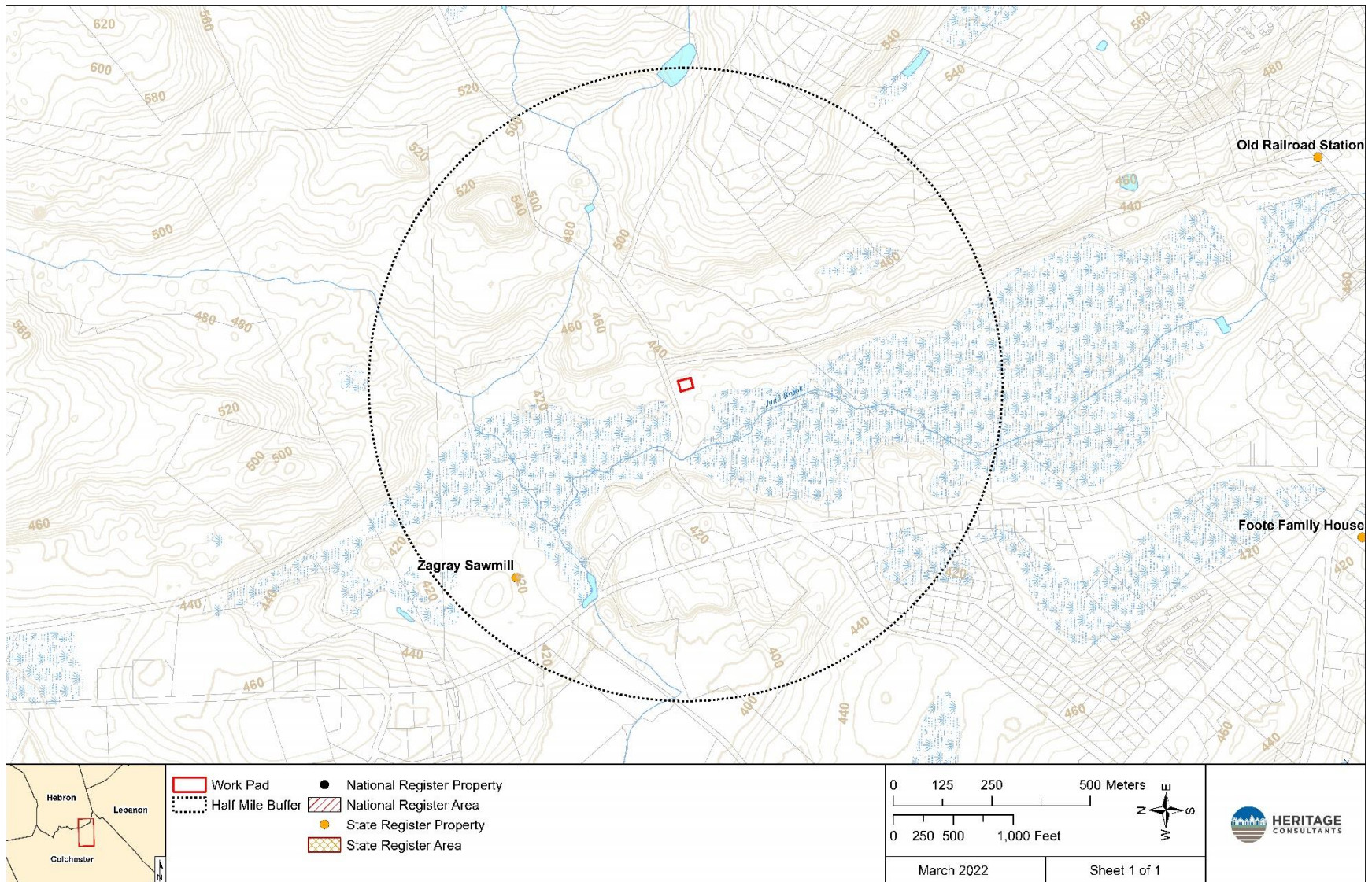


Figure 10. Digital map depicting the locations of previously identified National/State Register of Historic Places properties in the vicinity of the fuel cell development parcel in Colchester, Connecticut.

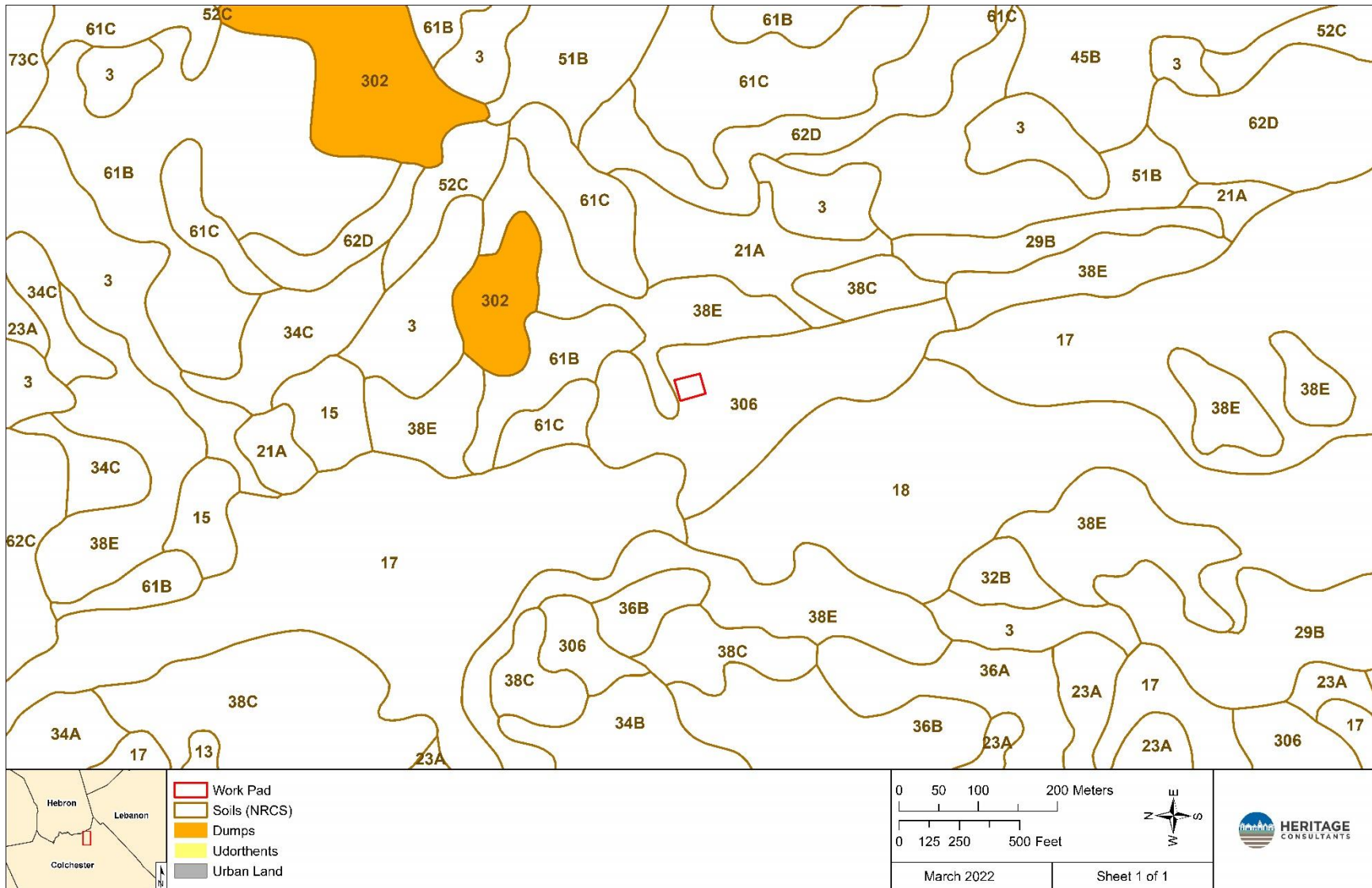


Figure 11. Map of soils located in the vicinity of the fuel cell development parcel in Colchester, Connecticut.





Photo 1. Overview photo of the fuel cell development parcel in Colchester, Connecticut.



Photo 2. Overview photo of the fuel cell development parcel in Colchester, Connecticut.



Photo 3. Overview photo of the fuel cell development parcel in Colchester, Connecticut.





Department of Economic and  
Community Development

State Historic Preservation Office

May 17, 2022

Ms. Jennifer Young Gaudet  
All-Points Technology Corp., PC  
567 Vauxhall Street Extension, Suite 311  
Waterford, CT 06385

Subject: Preliminary Archaeological Assessment  
Fuel Cell Facility  
Old Amston Road  
Colchester, Connecticut  
ENV-22-0738

Dear Ms. Gaudet:

The State Historic Preservation Office (SHPO) has reviewed the preliminary archaeological assessment prepared by Heritage Consultants, LLC (Heritage), dated March 28, 2022. The proposed activities are under the jurisdiction of the Connecticut Siting Council and are subject to review by this office pursuant to the Connecticut Environmental Policy Act (CEPA). The proposed undertaking includes the construction of a fuel cell facility, which is to occupy an approximately five acre area to the south of Old Amston Road. Access is to be from the north, through a proposed gravel drive. The submitted report is well-written, comprehensive, and meet the standards set forth in the *Environmental Review Primer for Connecticut's Archaeological Resources*.

No previously recorded archaeological sites are located within 0.5 miles of the project area. Similarly, no properties listed on the National Register of Historic Places (NR) are located within 0.5 miles of the project area. One property listed on the State Register of Historic Places is located within 0.5 miles of the project area: the Zagray Sawmill, at 544 Amston Road; however, it will not be impacted by the proposed undertaking. To the east of the project area is a portion of the Air Line Trail, which has not been fully evaluated for eligibility; however, it will not be impacted by the proposed facility.

The preliminary assessment included review of soil maps, GIS data, historical mapping, aerial photos, and pedestrian survey of the project area. Soil profiles are identified as Udorthents/Urban Land, characterized by periods of cutting/filling. Site history indicates that the property was

State Historic Preservation Office

450 Columbus Boulevard, Suite 5 | Hartford, CT 06103 | P: 860.500.2300 | [ct.gov/historic-preservation](http://ct.gov/historic-preservation)

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Department of Economic and  
Community Development

State Historic Preservation Office

undeveloped until the 1970, when it was being used as an auto salvage yard. Following a pedestrian survey, it was determined that the project area had been previously disturbed. These site characteristics indicate that the area has a low potential to contain significant, intact archaeological deposits.

As a result of the information submitted, SHPO concurs with the findings of the report that additional archeological investigation of the project area is not warranted and that no historic properties will be affected by the proposed activities. However, please be advised that if construction plans change to include previously uninvestigated/undisturbed areas, this office should be contacted for additional consultation.

This office appreciates the opportunity to review and comment upon this project. For additional information, please contact Marena Wisniewski, Environmental Reviewer, at (860) 500-2357 or [marena.wisniewski@ct.gov](mailto:marena.wisniewski@ct.gov).

Sincerely,

A handwritten signature in black ink that reads "Jonathan Kinney". The signature is written in a cursive style with a large, sweeping "J" and "K".

Jonathan Kinney  
State Historic Preservation Officer

State Historic Preservation Office

450 Columbus Boulevard, Suite 5 | Hartford, CT 06103 | P: 860.500.2300 | [ct.gov/historic-preservation](http://ct.gov/historic-preservation)

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# **APPENDIX E**

## VISIBILITY DOCUMENTATION





**EXISTING**

PHOTO

1

LOCATION

**OLD AMSTON ROAD**

ORIENTATION

**NORTH**





**PROPOSED**

PHOTO

1

LOCATION

**OLD AMSTON ROAD**

ORIENTATION

**NORTH**





**EXISTING**

PHOTO

2

LOCATION

**AIR LINE TRAIL, COLCHESTER SPUR**

ORIENTATION

**WEST**





**PROPOSED**

PHOTO

2

LOCATION

**AIR LINE TRAIL, COLCHESTER SPUR**

ORIENTATION

**WEST**





**EXISTING**

PHOTO

3

LOCATION

**OLD AMSTON ROAD**

ORIENTATION

**SOUTHEAST**





**PROPOSED**

PHOTO

3

LOCATION

**OLD AMSTON ROAD**

ORIENTATION

**SOUTHEAST**

# **APPENDIX F**

## SOUND EVALUATION



July 19, 2022

Mr. Peter Carli  
ReNew Developers, LLC  
14 Chestnut Hill Road  
Colchester, CT 06415

SUBJECT: Environmental Sound Evaluation  
Old Amston Road Fuel Cell Power Plant  
Colchester, CT

Dear Mr. Carli,

Cavanaugh Tocci Associates has evaluated environmental sound impacts associated with the proposed 4.99 MW fuel cell power plant at 42 Old Amston Road in Colchester, Connecticut. The objectives of this evaluation were:

- To quantify and characterize existing background sound in the community surrounding the project,
- To define acoustic design goals,
- To estimate the acoustic impact of the proposed project in the surrounding community.

Results of the evaluation are summarized herein. Appendix A of this report is a glossary of relevant acoustic terminology.

### **Existing Background Sound**

Sound is a feature of all environments. Sound is only objectionable when it is inconsistent with its environment; by being either too loud or by being distinctive in character (i.e. tonally or temporally varying). The goal of acoustical design is to render facility noise consistent with the level and character of other sounds in the environment. To this end, the following environmental noise analysis evaluates sound produced by the proposed Project in light of existing environmental sound levels.

An environmental sound survey was conducted to quantify and characterize the existing acoustic environment in the vicinity of the project site. To document typical background sound levels in the project area, the sound monitoring program consisted of continuous sound monitoring for approximately a weeklong period (4:00 p.m. March 30, 2022 to 12:00 noon April 6, 2022). Figure 1 is an aerial photograph of the Project area that indicates the sound monitoring location (SM-1). This location was selected to provide data that is representative of typical sound levels at the nearest residences west and southeast of the Project.

Sound levels were monitored using a Rion NL52 sound level meter outfitted with ½ inch electret microphones and windscreen. The instrument was calibrated before the measurement period using a Larson Davis CAL-200 acoustical calibrator. These instruments and their use conform to ANSI S1.4 for Type 1 precision sound measurement instrumentation and have current calibration certificates traceable to National Institute of Standards and Technology (NIST). During the measurements, the microphone was mounted on a tree limb approximately 5 feet above the ground.

For this study, the sound monitor was programmed to record the following hourly A-weighted and one-third octave band environmental noise descriptors:

- Maximum and minimum sound levels ( $L_{max}$ ,  $L_{min}$ )
- Percentile sound levels ( $L_{99}$ ,  $L_{90}$ ,  $L_{50}$ ,  $L_{10}$ ,  $L_{01}$ )
- Equivalent sound level ( $L_{eq}$ )

Figure 2 presents selected results of the environmental sound survey. To avoid sounds produced by insects and spring peepers, the data has been corrected by truncating the measured spectral data at 2,500 Hz and then calculating the A-weighted sound levels from the truncated data. The data indicates that hourly background sound levels at the nearest residences typically range between 35 dBA and 45 dBA with the lowest levels occurring during the early morning hours when local traffic is at a minimum.

### Environmental Sound Regulations

To the best of our knowledge, the Town of Colchester Connecticut does not have a noise regulation that is applicable to the proposed project. However, the Connecticut Regulations for the Control of Noise, which are enforced by the Connecticut Department of Energy and Environmental Protection, define limits for sound produced by the proposed project. The following briefly discusses the applicable aspects of this regulation.

#### ***State of Connecticut Noise Regulation***

The State of Connecticut Noise Regulation (Section 22a-69-1 to 7.4) defines sound level limits for environmental sound produced by the Project. These limits are based on both emitter and receptor land use classifications, and are listed below in Table 1:

**Table 1: Connecticut Regulations for the Control of Noise Sound Level Limits (dBA)**

Emitter Class	Receptor Class			
	C	B	A/Day	A/Night
C	70	66	61	51
B	62	62	55	45
A	62	55	55	45

### *Definitions*

In the above table, day is defined as the time interval 7:00 a.m. to 10:00 p.m. Night is defined as the time interval 10:00 p.m. to 7:00 a.m. Noise Zone Classifications are based on the actual use of the land. Where multiple land uses exist on the same property, the least restrictive limits apply.

- A Class A noise zone is land generally designated for residential use or areas where serenity and tranquility are essential to the intended use.
- A Class B noise zone includes land uses generally of a commercial or agriculture nature. In addition, vacant, undeveloped land, and parks are classified as Class B noise zones.
- A Class C noise zone includes uses generally of an industrial nature. The proposed fuel cell facility is considered a Class C noise emitter.

### *Exceptions and Other Limit Provisions*

#### *Section 22a-69-3.3 Prominent Discrete Tones*

To offset the undesirable nature of tonal sound in the environment, the regulation penalizes sources of prominent, audible discrete tones. If a facility produces such sounds, the applicable limits in Table 1 are reduced by 5 dBA. In its definitions (Section 22a-69-1.2), the regulation defines a method for identifying prominent discrete tones based on measuring one third octave band sound levels.

### **Facility Acoustic Requirements**

Our interpretation of the above referenced regulations follows:

- The Fuel Cell facility is classified as Class C emitter and will produce sound continuously during daytime and nighttime hours. As such, where the regulations provide more stringent limits for nighttime operation, these will apply.
- Sound produced by the fuel cell facility is not expected to contain prominent discrete tones as defined by the regulation.
- The Project lot is approximately 1.15 acres surrounded on the east, south, and west sides by an affiliated 16-acre property that is currently vacant. It is our understanding that future plans for this Property is an agricultural use. These boundaries (east, south, and west) are classified as Class B receptors with a limit of 66 dBA (day or night)
- Land north of the facility is owned by the Town of Colchester. Since this land is currently vacant, it is classified as a Class B receptor with a limit of 66 dBA (day or night).
- The nearest residential uses are approximately 900 feet west of the Project. At these residential property boundaries, the most stringent limit of 51 dBA applies.



### Facility Sound Analysis

Facility related sound impacts that are associated with equipment at the proposed Project have been calculated using CadnaA environmental sound modeling software (Version 2022 DataKustic GmbH). The CadnaA sound modeling software uses algorithms and procedures described in International Standard ISO 9613-2:1996 "Acoustics- Attenuation of sound during propagation outdoors – Part 2: General method of calculation". This standard and its associated methodology are the most universally accepted approach for environmental sound modeling of industrial and transit sound sources. The methodology described in this standard provides estimates of A-weighted and octave band sound levels for meteorological conditions that are favorable for the propagation of sound (downwind with a wind speed of 1-5 meters/sec). This methodology is also valid for sound propagation under well-developed moderate ground-based temperature profile inversions, which commonly occur on clear calm nights.

The analysis is based on source sound emission data derived from measurements performed near similar fuel cell equipment located in Cambridge, Massachusetts, and Colchester Connecticut. Figures 3 and 4 present the results of the acoustic modeling. As indicated in Figure 3, facility sound impacts are expected to be 60 dBA or lower at all property boundaries. In addition, estimated sound levels at existing residences are 35 dBA or lower (Figure 4).

### Conclusion

Based on our review of the modeling results, it is our opinion that sound produced by the proposed project will comply with the most stringent requirements of the state noise regulations. Furthermore, it is our opinion that sound produced by the proposed project will not produce a noticeable impact on the acoustic environment at existing nearby residences and will not have an unreasonable adverse effect at all surrounding properties.

Sincerely,  
CAVANAUGH TOCCI



Douglas H. Bell  
21065/42 Old Amston Road Fuel Cell Power Plant - Sound Evaluation rev2.docx

# FIGURES



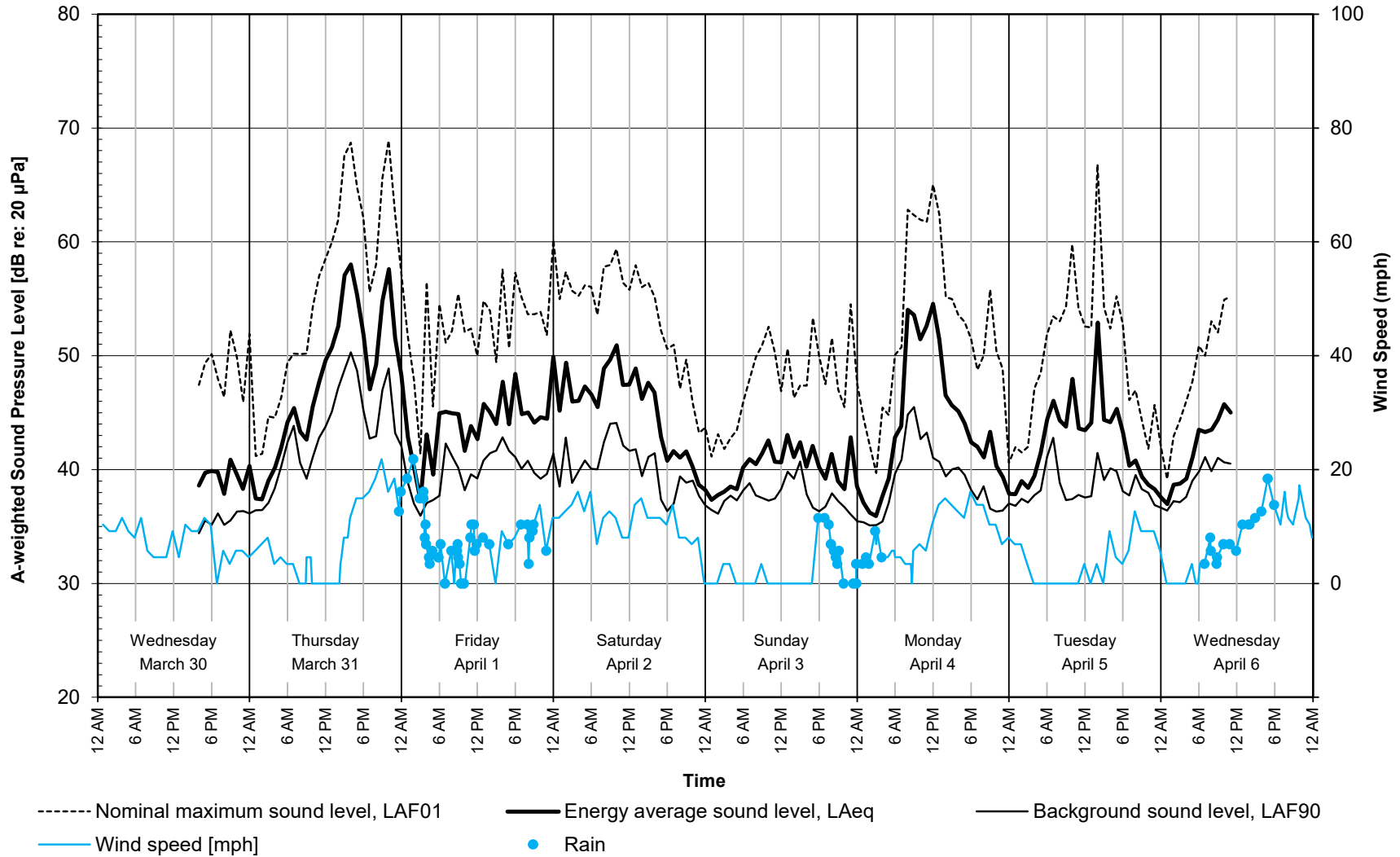
Aerial Photograph of Project Area Indicating Sound Monitoring Location

Figure 1



## Sound Levels Calculated from Spectra Measured 42 Old Amston Road (SM-1)

Colchester, CT (March 30 - April 6, 2022, truncated at 2000 Hz)



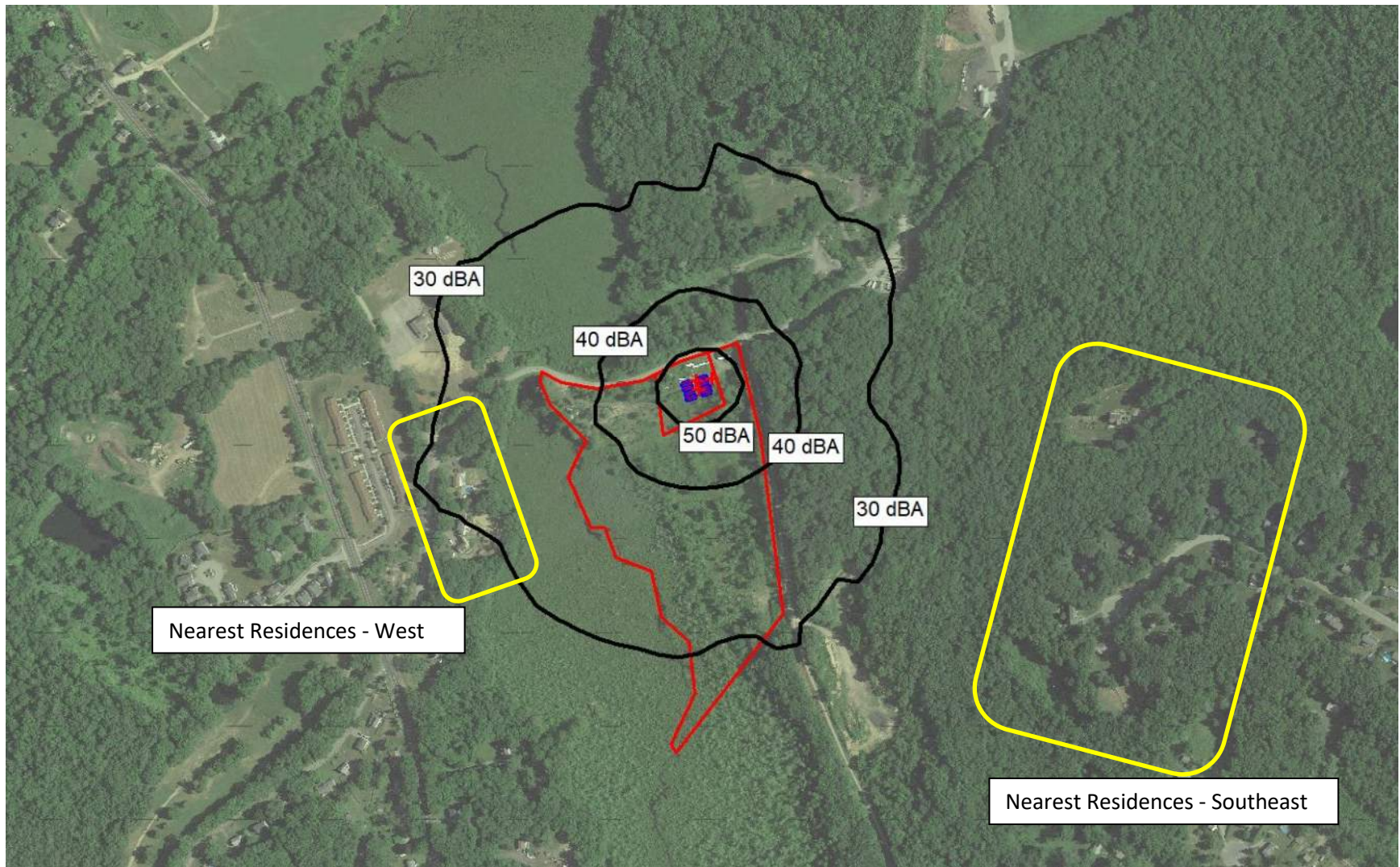
**Figure 2**



Estimates of Facility Sound – Property Boundaries

Figure 3





Estimates of Facility Sound – Nearest Residences

Figure 4





# Appendix A

## Sound Measurement Terminology



## **SOUND MEASUREMENT TERMINOLOGY**

In order to quantify the amplitude, frequency, and temporal characteristics of sound, various acoustical descriptors are used. The following is an introduction to acoustic terminology that is used in this report.

### **Sound Level**

Sound levels are typically quantified using a logarithmic decibel (dB) scale. The use of a logarithmic scale helps to compress the wide range of human sensitivity to sound amplitude into a scale that ranges from approximately 0 to 180 dB. Note however, that the use of the logarithmic scale prevents simple arithmetic operations when combining the cumulative impact of sources. For example, two sources of equal sound level operated simultaneously results in a combined sound level that is only 3 dB higher than if only one source was operated alone. An important feature of the human perception of continuous sound is that an increase or decrease in sound pressure level by 3 dB or less is barely perceptible, and an increase or decrease by 10 dB is perceived as a doubling or halving of noise level.

### **A-weighting**

Generally, the sensitivity of human hearing is restricted to the frequency range of 20 Hz to 20,000 Hz. However, the human ear is most sensitive to sound in the 500 Hz to 5,000 Hz frequency range. Above and below this range, the ear becomes progressively less sensitive. To account for this feature of human hearing, sound level meters incorporate filtering of acoustic signals that corresponds to the varying sensitivity of the human ear to sound at different frequencies. This filtering is called A-weighting. Sound level measurements that are obtained using this filtering are referred to as A-weighted sound levels and are signified by the identifier, dBA. A-weighted sound levels are widely used for evaluating human exposure to environmental sounds. To help place A-weighted sound levels in perspective, Figure A-1 contains a scale showing typical sound levels for common interior and environmental sound sources.

### **Spectral Characteristics – Octave and 1/3 Octave Band Sound Levels**

To characterize a sound, it is often necessary to evaluate the frequency distribution of the sound energy. As mentioned before, the frequencies of most interest where human exposure is concerned range between 20 Hz and 20,000 Hz. This frequency range is commonly divided into octave bands, where an octave band is a range of frequencies. Each octave band is referred to by its center frequency and has a bandwidth of one octave (a doubling of frequency). To cover the full range of human hearing, it is necessary to measure sound in 10 separate octave bands. Typically, the lowest frequency band measured has a center frequency of 31.5 Hz. The next frequency band has a center frequency of 63 Hz. This geometric series continues to the highest frequency band that has a center frequency of 16,000 Hz. A set of octave band sound levels to describe a particular sound is called an octave band spectrum. Covering the full range of

hearing, an octave band spectrum would have 10 values, one for each band. Under certain circumstances, more frequency resolution in acoustical data is needed to identify the presence of tonal sounds. A 1/3 octave band spectrum uses filters that divide each octave band into 3 separate frequency bands. Note that octave band and 1/3 octave band sound levels are not usually A-weighted, with their units being dB.

### **Environmental Noise Descriptors**

Sound levels in the environment are continuously fluctuating and it is difficult to quantify these time-varying levels with single number descriptors. Statistical approaches, which use *percentile sound levels* and *equivalent sound levels*, are often used to quantify the temporal characteristics of environmental sound.

Percentile sound levels ( $L_n$ ) are the A-weighted sound levels that are exceeded for specific percentages of time within a noise measurement interval. For example if a measurement interval is one hour long, the 50th percentile sound level ( $L_{50}$ ) is the A-weighted sound level that is exceeded for 30 minutes of that interval.

- $L_{90}$  is the sound level in dBA exceeded 90 percent of the time during the measurement period. The 90th percentile sound level represents the nominally lowest level reached during the monitoring interval and is typically influenced by sound of relatively low level, but nearly constant duration, such as distant traffic or continuously operating industrial equipment. The  $L_{90}$  is often used in standards to quantify the existing background or residual sound level.
- $L_{50}$  is the median sound level: the sound level in dBA exceeded 50 percent of the time during the measurement period.
- $L_{10}$  is the sound level exceeded only 10 percent of the time. It is close to the maximum level observed during the measurement period. The  $L_{10}$  is sometimes called the intrusive sound level because it is caused by occasional louder noises like those from passing motor vehicles or aircraft.

By using percentile sound levels, it is possible to characterize the sound environment in terms of the steady-state background sound ( $L_{90}$ ) and occasional transient sound ( $L_{10}$ ).

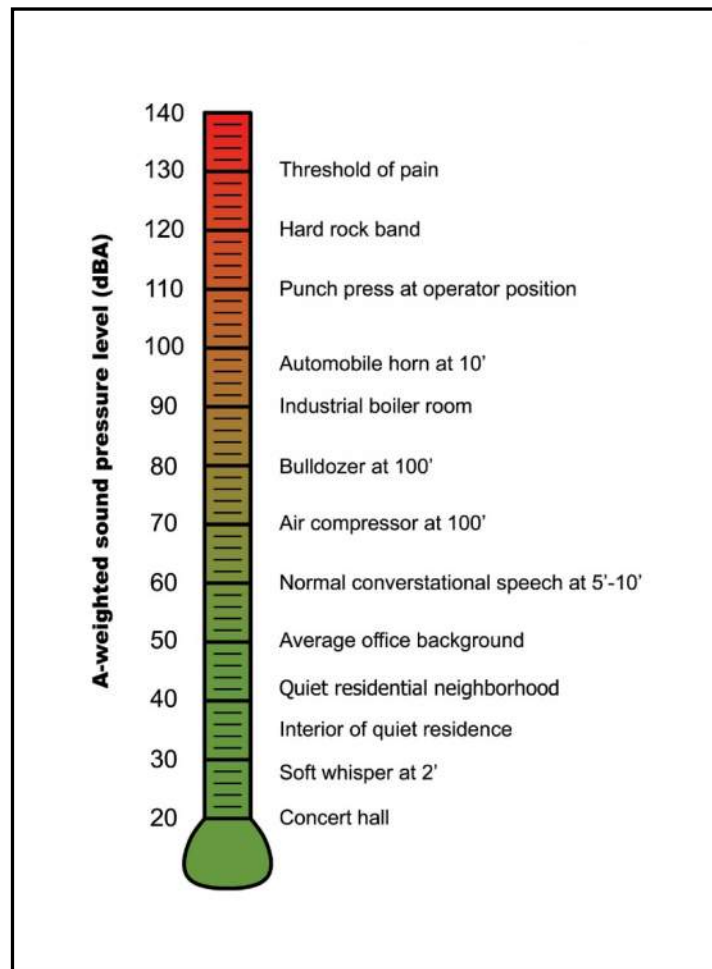
The equivalent sound level ( $L_{eq}$ ) is the energy average of the A weighted sound level for the measurement interval. Sounds of low level and long duration, as well as sounds of high level and short duration influence this sound level descriptor.

Noise levels at night generally produce greater annoyance than do the same levels which occur during the day. It is generally agreed that a given level of environmental noise during the day would appear to be 10 dBA louder at night – at least in terms of potential for causing community concern. The day night average sound level ( $L_{dn}$ ) is a 24 hour average A-weighted



sound level where a 10 dB “penalty” is applied to sound occurring between the hours of 10:00 p.m. and 7:00 a.m. The 10 dB penalty accounts for the heightened sensitivity of a community to noise occurring at night.

When a steady continuous sound is measured, the  $L_{10}$ ,  $L_{50}$ ,  $L_{90}$  and  $L_{eq}$  are all equal. For a constant sound level, such as from a power plant operating continuously for a 24-hour period, the  $L_{dn}$  is approximately 6 dBA higher than the directly measured sound level.



**Figure A-1**  
**Typical Sound Levels for Common Interior and Environmental Sources**