



ENVIRONMENTAL ASSESSMENT

PROPOSED BRISTOL
FUEL CELL POWER PLANT

234 RIVERSIDE AVENUE
BRISTOL, CONNECTICUT

Prepared for:

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

Prepared by:

**All-Points Technology Corporation, P.C.
567 Vauxhall Street Extension – Suite 311
Waterford, CT 06385**

August 2022

Table of Contents

1	INTRODUCTION	1
2	PROPOSED PROJECT	3
2.1	PROJECT SETTING.....	3
2.2	PROJECT DEVELOPMENT AND OPERATION.....	5
2.2.1	Access.....	5
2.2.2	Public Health and Safety.....	5
2.2.3	Land Use Plans.....	6
3	ENVIRONMENTAL CONDITIONS.....	7
3.1	AIR QUALITY	9
3.2	WATER RESOURCES.....	10
3.2.1	Wetlands and Watercourses.....	10
3.2.2	Wetland Impacts.....	10
3.2.3	Floodplain Areas	11
3.3	WATER QUALITY.....	11
3.3.1	Groundwater.....	12
3.3.2	Surface Water	12
3.3.3	Stormwater Management	13
3.4	HABITAT AND WILDLIFE.....	14
3.4.1	Core Forest Determination.....	15
3.4.2	Wildlife.....	16
3.5	RARE SPECIES	16
3.5.1	Natural Diversity Data Base.....	16
3.5.2	USFWS Consultation	17
3.6	SOILS AND GEOLOGY.....	18
3.6.1	Prime Farmland Soils	19
3.7	HISTORIC AND ARCHAEOLOGICAL RESOURCES	19
3.8	SCENIC AND RECREATIONAL AREAS.....	20
3.9	NOISE	22
4	CONCLUSION	23

Figures

FIGURE 1 SITE LOCATION MAP	2
FIGURE 2 EXISTING CONDITIONS MAP	4
FIGURE 3 PROPOSED CONDITIONS MAP	8
FIGURE 4 SURROUNDING FEATURES MAP.....	21

Table

TABLE 1 GREENHOUSE GAS EMISSIONS	10
TABLE 2 HABITAT AREAS.....	15

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 "ReNew") for the proposed installation and utility interconnection of a fuel cell electric generating facility (collectively, the "Project"), with output of approximately 4 megawatts¹ ("MW") located in the City of Bristol, Connecticut ("City"). 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.

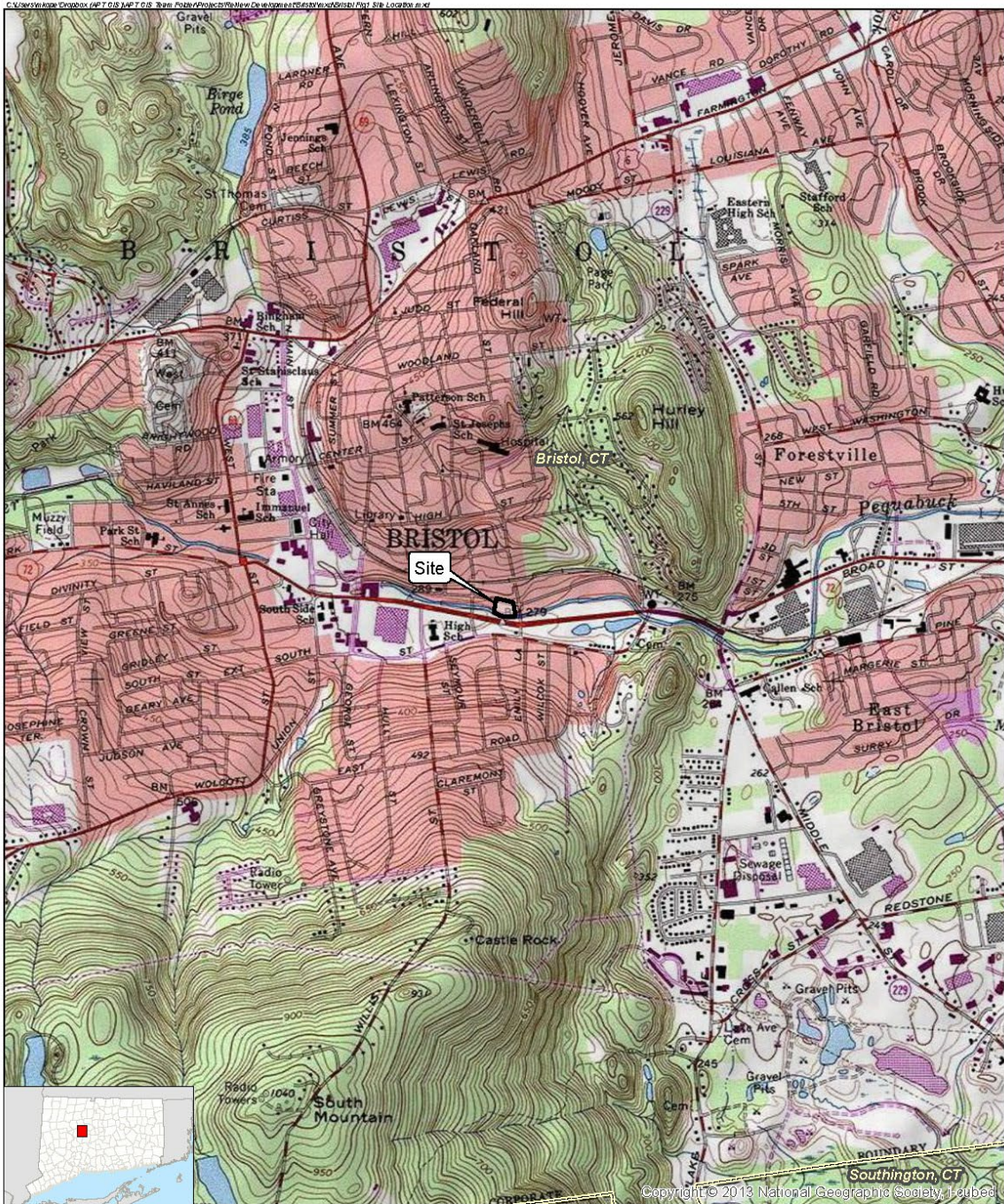
The results of this assessment demonstrate that the proposed development will comply with the Connecticut Department of Energy and Environmental Protection's ("DEEP") air and water quality standards and will not have an adverse effect on the existing environment and ecology of the Site or the surrounding area. Further, the proposed Project is not defined as an environmental justice "affecting facility"² as it does not have a capacity greater than 10 MW.

The Project will be developed on a privately owned, ±1.62-acre property at 234 Riverside Avenue in Bristol, Connecticut (referred to herein as the "Site"). The Site, which formerly housed an auto sales and service business, is located at the intersection of Riverside Avenue (State Route 72) and East Street. The Site is zoned BHC, Route 72 Corridor Business Zone.

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

¹ The output referenced is Alternating Current (AC).

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



Legend

-  Site
-  Municipal Boundary

Map Notes:
 Base Map Source: USGS 7.5 Minute
 Topographic Quadrangle Map: Bristol, CT (1994)
 Map Scale: 1 inch = 2,000 feet
 Map Date: August 2022



Figure 1
Site Location Map
 Proposed Bristol Fuel Cell Power Plant
 234 Riverside Avenue
 Bristol, Connecticut



2 Proposed Project

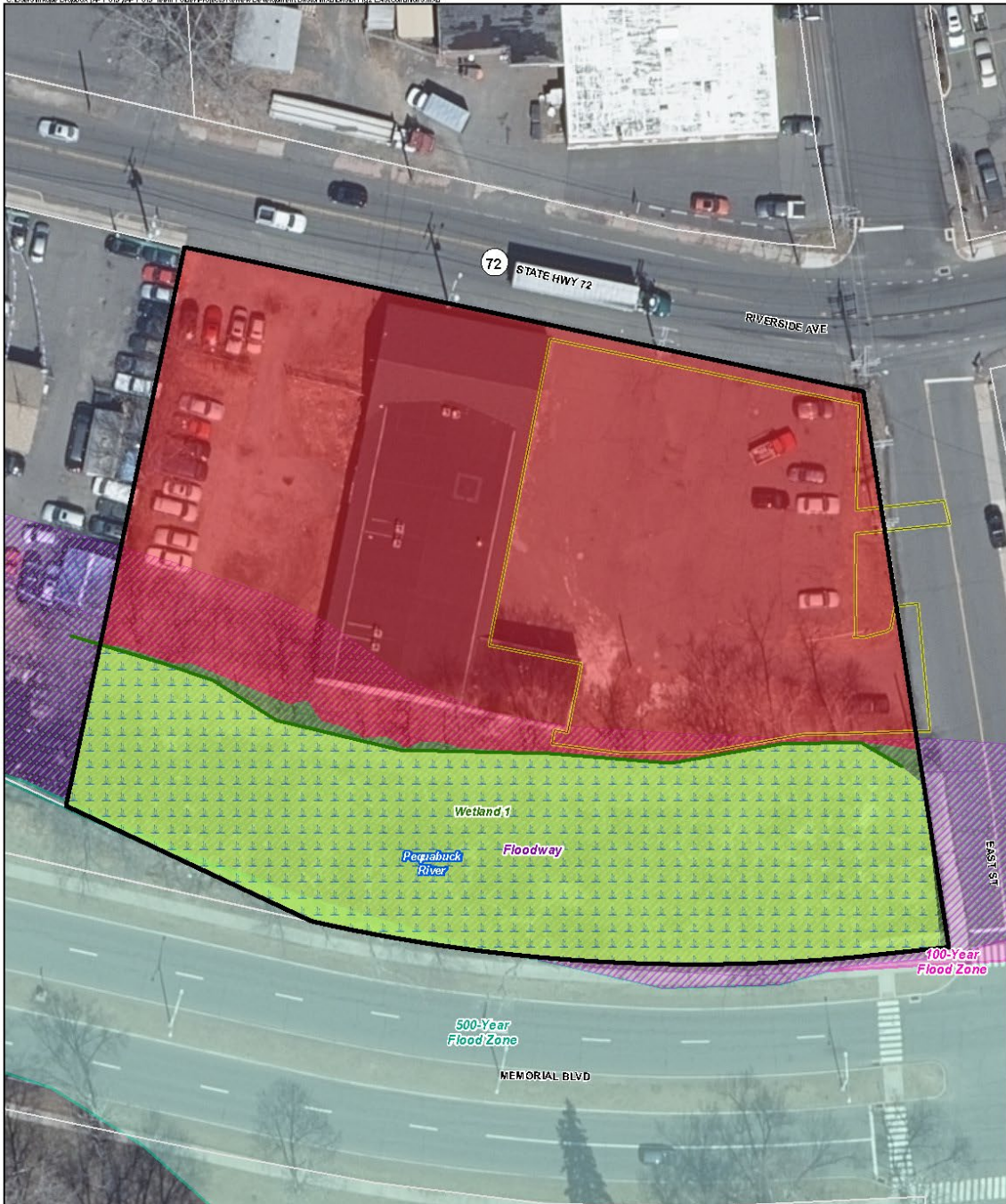
2.1 Project Setting

The Project will occupy ±0.44 acre (the “Project Area”) on the ±1.62-acre Site. The fuel cell facility (the “Facility”) and an electrical service interconnection line will be located on the Site; water and natural gas interconnections will extend to East Street on the eastern side of the Site. Access to the Site will extend from East Street over a gravel drive. Gates will be placed at the northwest and southwest corners of the compound.

The Site’s existing topography is generally level, ranging from approximately 286 feet to 273 feet above mean sea level (“AMSL”).

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

The immediately surrounding area consists primarily of commercial development along the Route 72 corridor, with residential properties beyond that to the north. Memorial Boulevard and the Memorial Boulevard Park are to the south beyond the Pequabuck River. Additional residential development is south of Memorial Boulevard.



- Legend**
- Site
 - Project Area
 - Delineated Wetland Boundary
 - Approximate Wetland Area
 - Habitat Cover Type**
Developed
 - Forested Wetland
 - FEMA Flood Zones**
100-Year Flood Zone
 - 500-Year Flood Zone
 - Floodway
 - Approximate Parcel Boundary

Map Notes:
 Base Map Source: 2019 Aerial Photograph (CTECO)
 Map Scale: 1 inch = 50 feet
 Map Date: August 2022

Figure 2
Existing Conditions Map
 Proposed Bristol Fuel Cell Power Plant
 234 Riverside Avenue
 Bristol, Connecticut



2.2 Project Development and Operation

The Facility will consist of 13 Bloom Energy Servers, 10 325-kW units and three (3) 250-kW units, and associated equipment including power, fuel processing and water distribution modules, telemetry cabinets, power distribution modules and step-up transformers. The Facility will be installed within an approximately 82' by 115', gravel-surfaced compound. The compound will be surrounded by an eight (8)-foot tall chain link fence. The Project will require underground service connections to water, telecommunications and natural gas; electrical connections will be routed to a new building to be constructed on the property in the future. Once complete, the Project Area (consisting of the fenced Facility, utility interconnections, and vehicular and utility access) will occupy approximately 0.44 acre.

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 the gravel-based compound and installation of the fuel cell equipment and appurtenances; and
- trenching for natural gas, electrical, telecommunications and water service.

Minor earthwork may be required for the removal of the existing pavement and replacement with gravel and stabilization seeding.

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

2.2.1 Access

The Facility will be accessed from East Street via a gravel drive at the south side of the Project Area. Gates will be located at the northwest and southwest corners of the Facility fence.

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. The entrance to the Facility will be gated, limiting access to authorized personnel only. All City 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 City's Zoning Regulations and policies to the extent feasible.

The Site is located in the City's BHC – Route 72 Corridor Business Zone. The City's Zoning Regulations define "renewable energy generation facility" and provide for such facilities as a special permit use only in the I – General Industrial Zone. Zoning Regulations, City of Bristol, Connecticut, effective December 21, 1990, amended to May 3, 2022, Section VII.3.r.

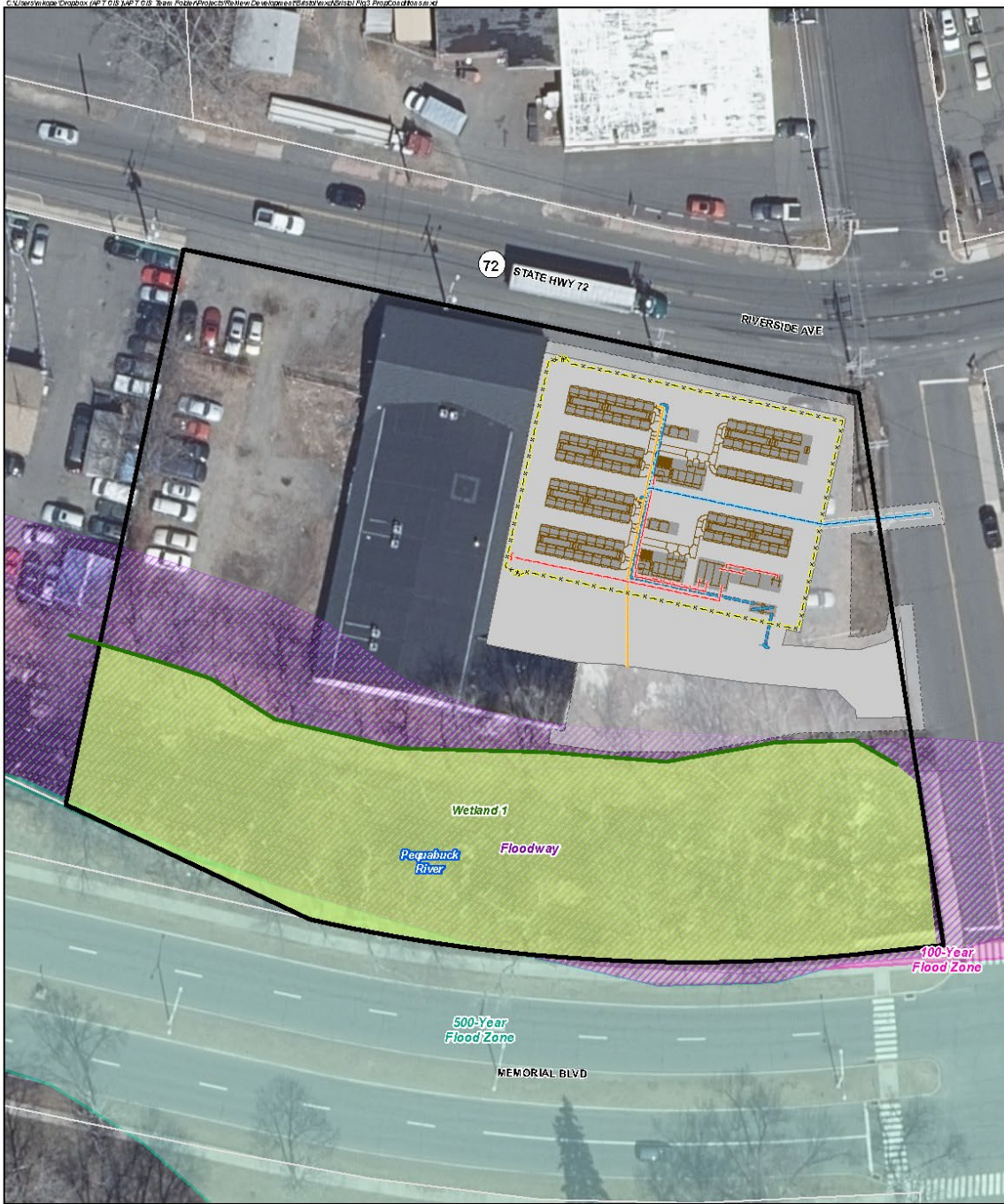
The City's Plan of Conservation and Development ("POCD"), adopted in 2015 and revised in 2018, includes a goal to "encourage energy-efficient patterns of development and land use, the use of solar and other renewable forms of energy, and energy conservation" in the context of natural resource protection. Bristol 2015 Plan of Conservation and Development, Revised April 1, 2018, Section 4.3.3.

ReNew believes the Project will benefit the local community by providing electrical service for future Site development through a renewable energy generation facility and minimizing a draw on existing local electrical 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.



- Legend**
- Site
 - Fuel Cell Equipment
 - Underground Electrical Service
 - Underground Gas Service
 - Underground Water Service
 - Underground Data Service
 - Fence
 - Utility Trench
 - Concrete Pad
 - Gravel (Equipment Area)
 - Limit of Disturbance
 - Approximate Parcel Boundary
 - Approximate Wetland Area
 - Delineated Wetland Boundary

- FEMA Flood Zones**
- 100-Year Flood Zone
 - 500-Year Flood Zone
 - Floodway

Map Notes:
 Base Map Source: 2019 Aerial Photograph (CTECCO)
 Map Scale: 1 inch = 50 feet
 Map Date: August 2022

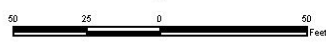


Figure 3
Proposed Conditions Map
 Proposed Bristol Fuel Cell Power Plant
 234 Riverside Avenue
 Bristol, Connecticut



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.³ 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_x, SO_x, CO, VOCs and particulate matter emissions from the energy production process. Similarly, there are no CH₄, SF₆, HFC or PFC emissions.

Table 1: Greenhouse Gas Emissions

Emission Type	Bloom Output
Nitrous Oxides (NO _x)	<0.01 lbs/MWh
Carbon Monoxide (CO)	<0.05 lbs/MWh
Sulfur Oxides (SO _x)	Negligible
Volatile Organic Compounds (VOCs)	<0.02 lbs/MWh
Carbon Dioxide (CO ₂) ⁴	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_x, SO_x, 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-

³ See Conn. Agencies Regs. §§ 22a-174-42(b) and (e).

⁴ 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 on or proximate to the Site during a field inspection and wetland delineation completed on March 23, 2022. The results of the field delineation are summarized below. The location of this resource is depicted on Figure 2, *Existing Conditions*.

The wetland consists of a perennial watercourse, identified as the Pequabuck River, with narrow bordering forested wetlands dominated by white oak (*Quercus alba*), eastern cottonwood (*Populus deltoides*), red maple (*Acer rubrum*) and green ash (*Fraxinus pennsylvanica*) in the overstory. The Pequabuck River flows in an easterly direction through the southern portion of the Site. The stream bottom is composed of a rocky/cobble material within an approximately 30-foot-wide channel with steep fill slopes along the southeastern bank. Historic channelization of this watercourse and an increase of impervious land surface within the watershed have contributed to alteration of stream flow and channelization. Evidence of continued anthropogenic influence along the bordering forested edge is apparent with the presence of invasive species, including: winged euonymus (*Euonymus alata*), Japanese knotweed (*Polygonum cuspidatum*), privet (*Ligustrum spp.*), and multiflora rose (*Rosa multiflora*).

3.2.2 Wetland Impacts

The Facility will be located in the eastern portion of the Site within an existing developed area consisting of bituminous pavement. There are no direct wetland impacts or tree clearing activities associated with the Project. Impacts in proximity to the wetland generally include removal of existing pavement and replacement with gravel. During construction, a material stockpile area will be temporarily located in the existing grassed lawn area in the southeastern portion of the Site in close proximity to the delineated wetland boundary. No removal of surface materials is proposed within this area. However, to offset the disturbance associated with stockpiling and improve the function of the narrow buffer that will remain between the Facility and the Pequabuck River, a post-construction seeding plan is proposed. Due to the proximity of construction activities to wetland resources (approximately two (2) feet at the nearest point), a Resource Protection

Plan has been developed, which details monitoring protocols for sensitive areas to minimize the potential for impacts. Details of the resource protection measures are provided on Sheet No. GN-2 of the *Project Plans* found in Appendix A.

Construction activities would not be expected to result in an adverse impact to the wetland resource based on the existing developed nature of the Site, the Project's avoidance of direct wetland impacts, implementation of the proposed Resource Protection Plan, and additional protective measures contained within the erosion and sedimentation control plan.

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 #09003C 0466 F, dated September 26, 2008. Based upon the reviewed FIRM Map, the northern portion of the Site, including the Project Area, is located in an area designated as unshaded Zone X, which is defined as an area of minimal flooding, typically above the 500-year flood level. Higher risk flood areas associated with the Pequabuck River are located on southern portions of the Site.

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 either the 100- or 500-year flood zones, no impacts are anticipated to floodplain or downstream areas.

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 1,248-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 “GB”.⁵ This classification is indicative of the Site’s location within a historically urbanized area, and indicates that groundwater within the area is presumed not suitable for human consumption without treatment.

Based upon a review of available DEEP mapping, the Site is not located within a mapped (preliminary or final) DEEP Aquifer Protection Area.

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), Regional Drainage Basin 43 (Farmington River), Subregional Drainage Basin 4315 (Pequabuck River), and Local Drainage Basin 4315-00 (Pequabuck River above unnamed brook). The Pequabuck River traverses the southern portion of the Site. It is classified by DEEP as a Class B surface waterbody⁶.

Based upon the reviewed Department of Public Health mapping, the Site is not located within a Public Water Supply Watershed. The Site and surrounding area are within the Bristol Water Department public water service area.

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*. Provided the Resource Protection Plan and other best management practices are employed, the Project is expected to have no effect on the Pequabuck River.

⁵ Designated uses in GB classified areas include industrial process water and cooling waters and base flow for hydraulically connected surface water bodies.

⁶ Designated uses for B classified surface water bodies include habitat for fish and other aquatic life and wildlife; recreation; navigation; and water supply for industry and agriculture.

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.⁷ Combined, these address three (3) main concerns: stormwater runoff peak attenuation, water quality volume treatment, and E&S control during construction.

Stormwater Runoff Peak Attenuation

The Project will require the installation of fuel cell equipment and associated fencing, access road, and utilities. Since the Project development will replace existing pavement with gravel, a decrease in stormwater runoff is anticipated, which would result in a reduction of 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, no stormwater management features are needed and the Project is not anticipated to result in any adverse conditions to the surrounding areas and properties.

Water Quality Volume Treatment

The Project development is anticipated to result in a decrease in effective impervious cover. Therefore, water quality volume treatment is not required.

Erosion and Sediment Control During Construction

To safeguard water resources from potential impacts during construction, ReNew is committed to implementing protective measures. 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).

Upon completion of construction, the Project Area outside the fenced Facility and the gravel parking and turnaround area will be seeded with a permanent New England semi-shade grass and forbs mix.

⁷ 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.

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

Two (2) distinct habitat types (vegetative communities) are located on the Site. They are separated by a narrow transitional ecotone. These habitats were assessed using remote sensing and publicly available datasets and were physically inspected during a March 23, 2022 field evaluation.

The habitats occupying the Site are as follows:

- Riparian; and
- Developed.

Riparian

As introduced in Section 3.2.1, a riparian corridor with narrow bordering forested wetland habitat occupies the southern third of the Site. Consisting of a ± 30 -foot wide rocky/cobble bottom, this perennial watercourse, known as the Pequabuck River, is characterized by seasonal flooding and steep, disturbed, and narrow forested banks. Evidence of historic fill was observed along the river's northern bank and narrow bordering wetlands on and extending offsite, with significant impervious surfaces noted within the immediate watershed. A very narrow and disturbed upland boundary dominated by American beech (*Fagus grandifolia*), red maple, winged euonymus, Japanese knotweed, privet, and multiflora rose serves as the narrow transitional ecotone between the Riparian and Developed areas.

As discussed in Section 3.2.3, no direct impacts to the Riparian habitat are proposed from the development of the Facility. No tree clearing is proposed and work will take place within the existing Developed areas. Erosion and sediment control measures will be installed and maintained as part of the Project erosion and sedimentation control plan, to avoid potential secondary impacts to the Riparian habitat during construction.

Developed

Developed areas are located throughout the remainder of the Site, totaling ± 1.04 acres. A $\pm 9,926$ sq. ft. abandoned automotive building is located within the central portion, with paved areas to the west and east. Riverside Avenue (State Route 72) borders the Site to the north and East Street to the east. The Project will be located along both bordering roadways within an area of existing bituminous pavement in the eastern portion of the Site. The proposed development will replace existing pavement with gravel along the access road and fuel cell footprint. As the Project's impacts to the Developed habitat entirely consist of improvements in the form of transitioning currently impervious paved surfaces to more pervious gravel and native seeded buffer, the Developed area is not considered to be adversely impacted by the Facility.

Table 2, *Habitat Areas* provides the total acreages of each habitat type located on the Site and within the Project Area.

Table 2: Habitat Areas

Habitat Areas		
Habitat Type	Total Area On-Site (+ac.)	Area Occupied by Project (\pm ac.)
Developed	1.04	0.44
Riparian	0.58	0.00

3.4.1 Core Forest Determination

Core forests are essentially forests surrounded by other forests, and in Connecticut, have been defined as forest features that are relatively far (more than 300 feet) from the forest-nonforest boundary. Core forests provide habitat for many species of wildlife that cannot tolerate significant disturbance. Based on a review of the DEEP's Forestland Habitat Impact map, no core forest is located on the Site.

The Project Area is cleared and previously developed; 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

Development of the Project will occur within portions of one (1) of the Site's two (2) habitats, with the entirety of the proposed Facility occupying what is currently characterized as Developed. Developed habitat areas currently provide limited value from a wildlife utilization standpoint as a result of routine management, disturbance, and lack of natural vegetation. Project-related impacts to wildlife are not anticipated due to the existing Developed condition and high level of human activity on and surrounding the Site.

Based on the surrounding land uses and development, there are minimal surrounding areas that serve as useful wildlife habitat. Within the Riparian habitat there is a potential for species that prefer edge forests and are more tolerant of human disturbance and habitat fragmentation. Generalist wildlife species, including several habituated song birds and mammals such as raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), grey squirrel (*Sciurus carolinensis*), Virginia opossum (*Didelphus virginiana*), and eastern chipmunk (*Tamias striatus*) could be expected to use this area. Due to the relatively small size of this habitat block, and surrounding development/disturbance, the Project is not anticipated to result in a significant impact to wildlife.

The Project Area will not encroach into the southern Riparian habitat and will be limited to existing Developed areas. As a result, wildlife utilization along the Pequabuck River is expected to continue relatively uninterrupted. Noise and associated human activities during construction may result in limited, temporary disruption to wildlife using the nearby Riparian habitat, which could disperse into similar adjacent habitat. Post construction, operation of the Facility will not result in a likely adverse effect to wildlife because it will be unoccupied and does not generate any significant noise or traffic.

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.

APT reviewed the most recent DEEP NDDB mapping (August 2022), which revealed that no NDDB polygons exists within or proximate to the Site. As such, consultation with DEEP NDDB is not required. The nearest known area of listed species occurs approximately 0.76 mile to the south and is separated by multiple developments. Therefore, the Project will not impact State-listed rare species. A full assessment of State-listed species is provided in Appendix C, *USFWS and NDDB Compliance Statement*.

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, one federally-listed⁸ threatened species, northern long-eared bat ("NLEB"; *Myotis septentrionalis*) is known to occur in the vicinity 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 tree clearing is proposed to develop the Project.

⁸ Listing under the federal Endangered Species Act

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 in Connecticut. The nearest NLEB habitat resource to the Site is located in Morris, approximately 10.9 miles to the west.

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 activities under the January 5, 2016 intra-Service Programmatic Biological Opinion on the Final 4(d) Rule for the NLEB for Section 7(a)(2) compliance, the Project will not likely result in an adverse effect or incidental take⁹ of NLEB and does not require a permit from USFWS. A USFWS letter dated July 19, 2022 confirmed compliance; thus, no further consultation with USFWS is required for the proposed activity at this time. Therefore, the Project will not impact Federally-listed rare species. 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*.

On March 23, 2022, the USFWS published a proposal to reclassify the NLEB as Endangered under the Endangered Species Act. The NLEB faces extinction due to the range-wide impacts of white-nose syndrome, a deadly fungal disease affecting cave-dwelling bats across North America. The U.S. District Court for the District of Columbia has ordered the USFWS to complete a new final listing determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The proposed reclassification, if finalized, would eliminate the applicability of the 4(d) Rule, which applies only to threatened species. The change in the species' status may trigger a requirement to re-initiate consultation.

3.6 Soils and Geology

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

⁹ "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.

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 alluvium overlying undifferentiated coarse deposits. Bedrock beneath the Site is identified as Bristol Gneiss. Bristol Gneiss is described as a light, medium-grained, massive to well-layered gneiss, composed of plagioclase, quartz, and biotite, also muscovite and garnet in many layers, interlayered in places with dark amphibolite.¹⁰

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.

According to the Connecticut Environmental Conditions Online Resource Guide¹¹, 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 that five (5) National Register of Historic Places (“NRHP”) are located within 0.5 mile of the Site. One (1) property listed on the State Register of Historic Places is also located within 0.5 mile of the Site, but appears to have been demolished. The report concludes that these resources will not be impacted by the Project. No previously identified archaeological sites are within a 0.5-mile radius of the Site.

¹⁰ Connecticut Natural Resources Atlas Series: Bedrock Geological map, cteco.uconn.edu/maps/state/Bedrock_Geologic_Map_of_Connecticut.pdf

¹¹ Connecticut Environmental Conditions Online (CTECO) Resource Guide, www.cteco.uconn.edu.

Heritage's report has been forwarded to the SHPO; the results of SHPO's review will be provided when available. The Phase 1A report is included in Appendix D.

3.8 Scenic and Recreational Areas

The Memorial Boulevard Park, a City of Bristol linear park/green space with war memorials that lines Memorial Boulevard, is located south of the Site. Occasional views of the developed portion of the Site may be experienced from points along Memorial Boulevard and within the Park, but are obstructed by existing mature vegetation. The proposed Facility will not reflect a significant change in the character of the views experienced from the surrounding area, as shown on the photo-simulations included as Appendix E.

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 scenic and recreational resources located within one mile of the Project Area.

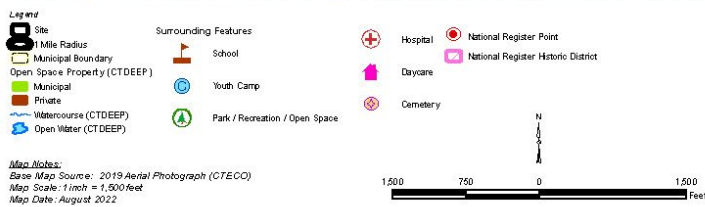
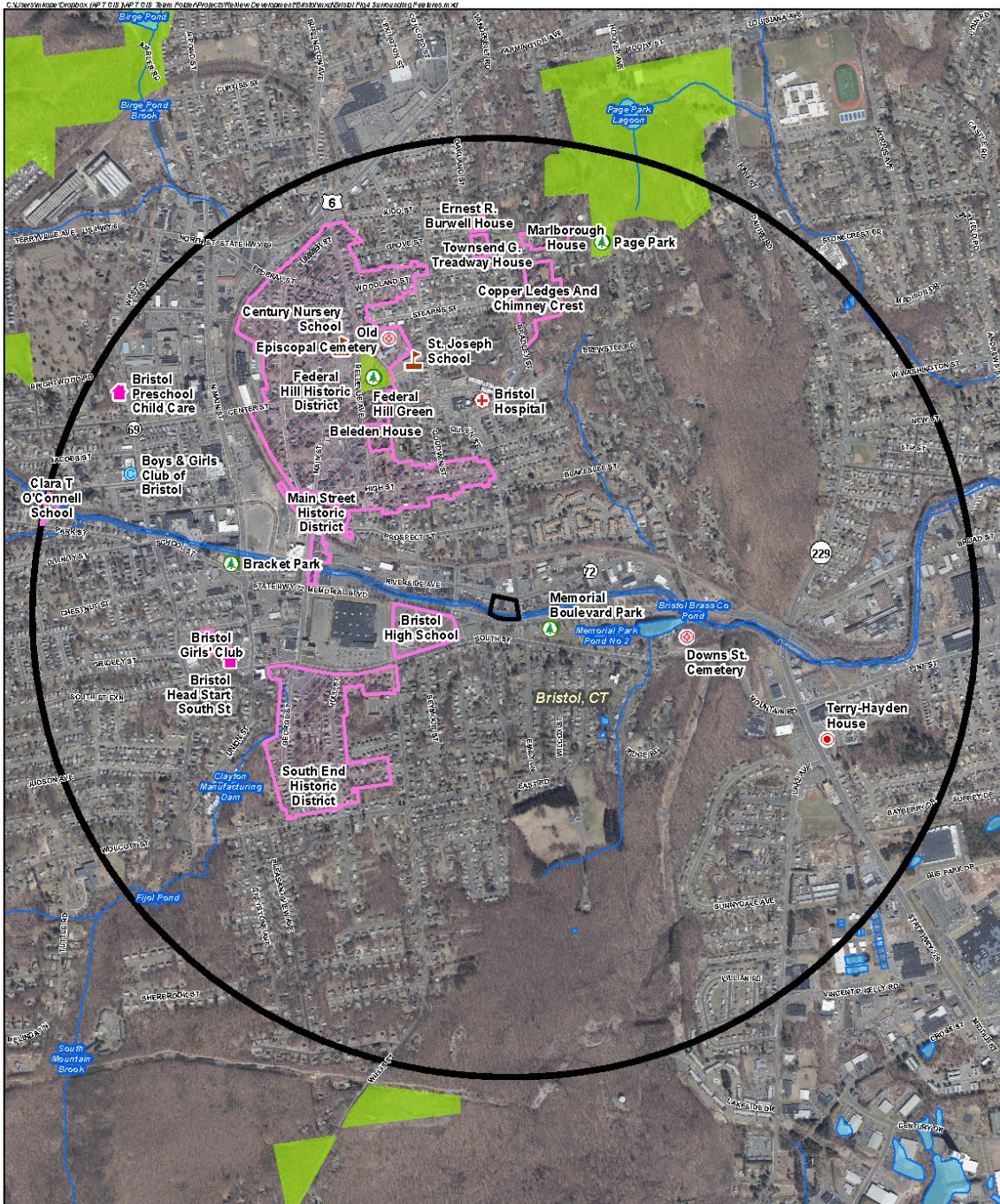


Figure 4
Surrounding Features Map
 Proposed Fuel Cell Facility
 234 Riverside Avenue
 Bristol, Connecticut



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) and City of Bristol Noise Ordinance (City of Bristol Code of Ordinances, Article II, Sections 15-16 to 15-40). See Appendix F, Cavanaugh Tocci Environmental Sound Evaluation, August 18, 2022.

The nearest residential receptors, defined under the regulations as Class A, are approximately 450 feet north and south of the Facility. Other nearby properties are considered to be Class B receptors, with commercial uses to the north, east and west, and Memorial Park to the south. 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 previously developed. No tree clearing 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 the immediate area. Some visibility may be experienced from points within the Memorial Boulevard Park, but will be partially obstructed by existing vegetation.

The Facility will comply with State noise regulations and the City of Bristol noise ordinance, and have no noticeable impact on nearby residences or surrounding properties.

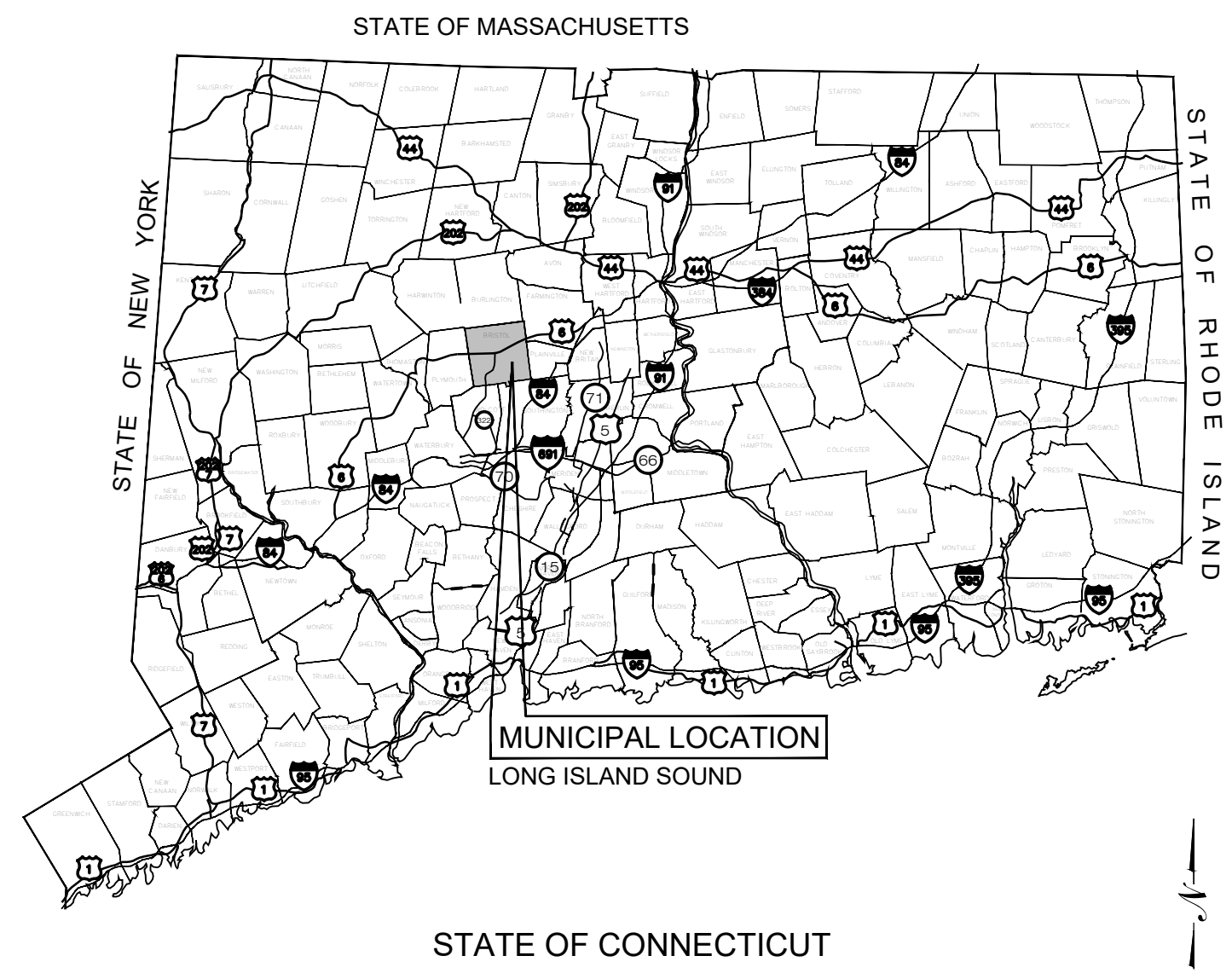
There are no impacts, direct or indirect, to wetlands. The nearest wetland boundary to the Project Area is 2 feet away; this area is intended as a temporary soil staging area during construction and will be permanently seeded once the Facility is completed. The access drive will be approximately 8.4 feet away from wetlands at the nearest point; the fenced Facility will be approximately 43.2 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 and implementation of protective management techniques will mitigate potential impacts to wetland resources during construction.

Implementation of the Project involves minimal grading and excavation. The Project has been designed to 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

"BRISTOL FUEL CELL POWER PLANT"

**234 RIVERSIDE AVENUE
BRISTOL, CT**

LIST OF DRAWINGS

- T-1 TITLE SHEET & INDEX
- 1 OF 1 PROPERTY AND TOPOGRAPHIC SURVEY PROVIDED BY BL COMPANIES
- 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
- SP-1 SITE & GRADING & UTILITY PLAN
- DN-1 SITE DETAILS

SITE INFORMATION

SITE NAME: "BRISTOL FUEL CELL POWER PLANT"
 LOCATION: 234 RIVERSIDE AVENUE
 BRISTOL, CT

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

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

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

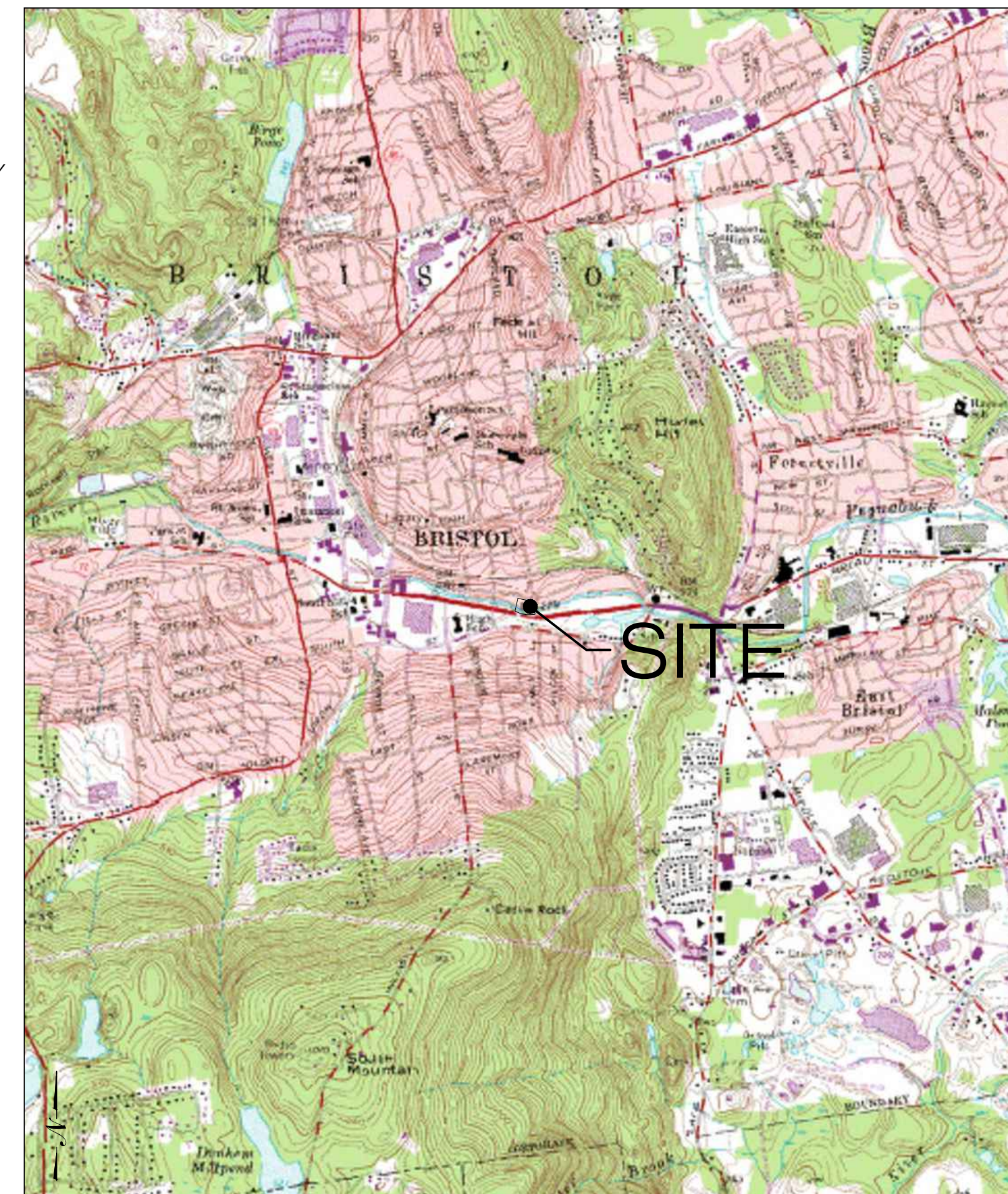
ENGINEER CONTACT: ROBERT C. BURNS, P.E.
 (860) 552-2036

LATITUDE: 41°40'11.64" N
 LONGITUDE: 72°56'03.76" W

MBLU: 30-117A
 ZONE: BHC

TOTAL SITE ACREAGE: 1.62± AC.
 TOTAL DISTURBED AREA: 0.44± AC.

USGS TOPOGRAPHIC MAP



SCALE : 1" = 2000'± SOURCE: NRCS HARTFORD 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)-863-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-863-0935

CSC PERMIT SET

NO	DATE	REVISION
0	08/22/22	FOR REVIEW: 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 RIVERSIDE LLC

ADDRESS: 123 SALEM ROAD
 COLCHESTER, CT 06415

BRISTOL FUEL CELL POWER PLANT

SITE 234 RIVERSIDE AVENUE
 ADDRESS: BRISTOL, CT

APT FILING NUMBER: CT716120

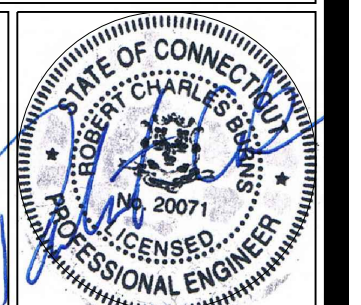
DATE: 08/22/22 DRAWN BY: JT
 CHECKED BY: RCB

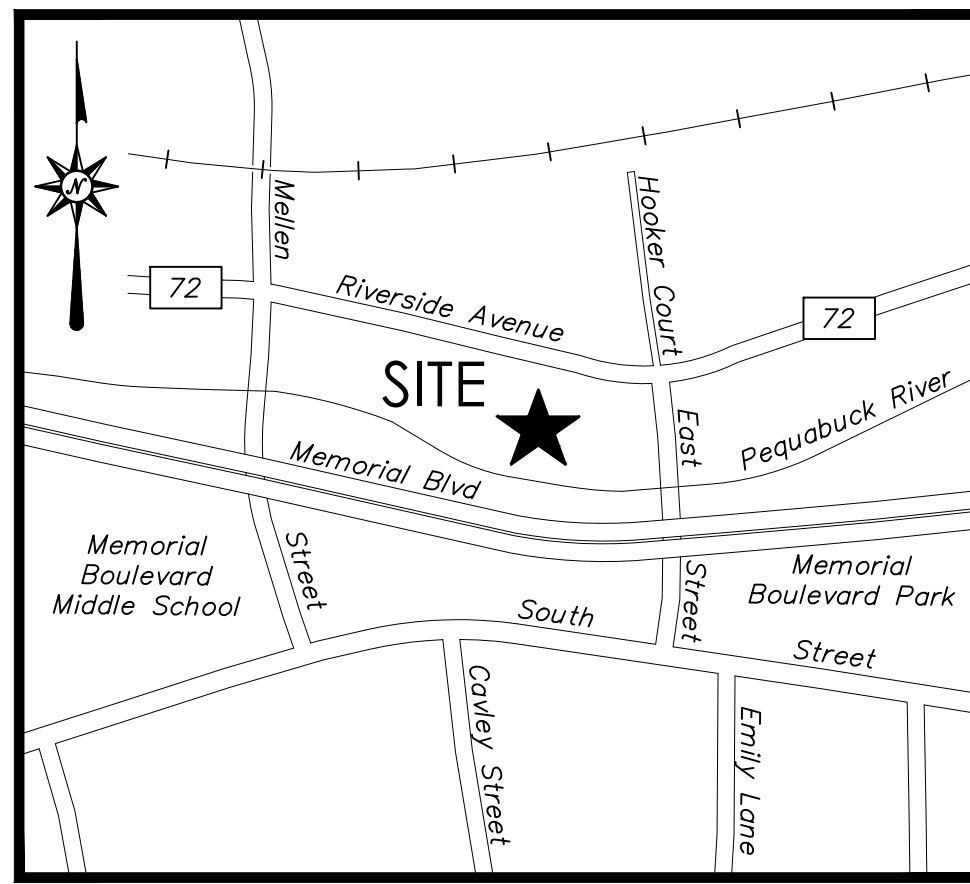
SHEET TITLE:

TITLE SHEET & INDEX

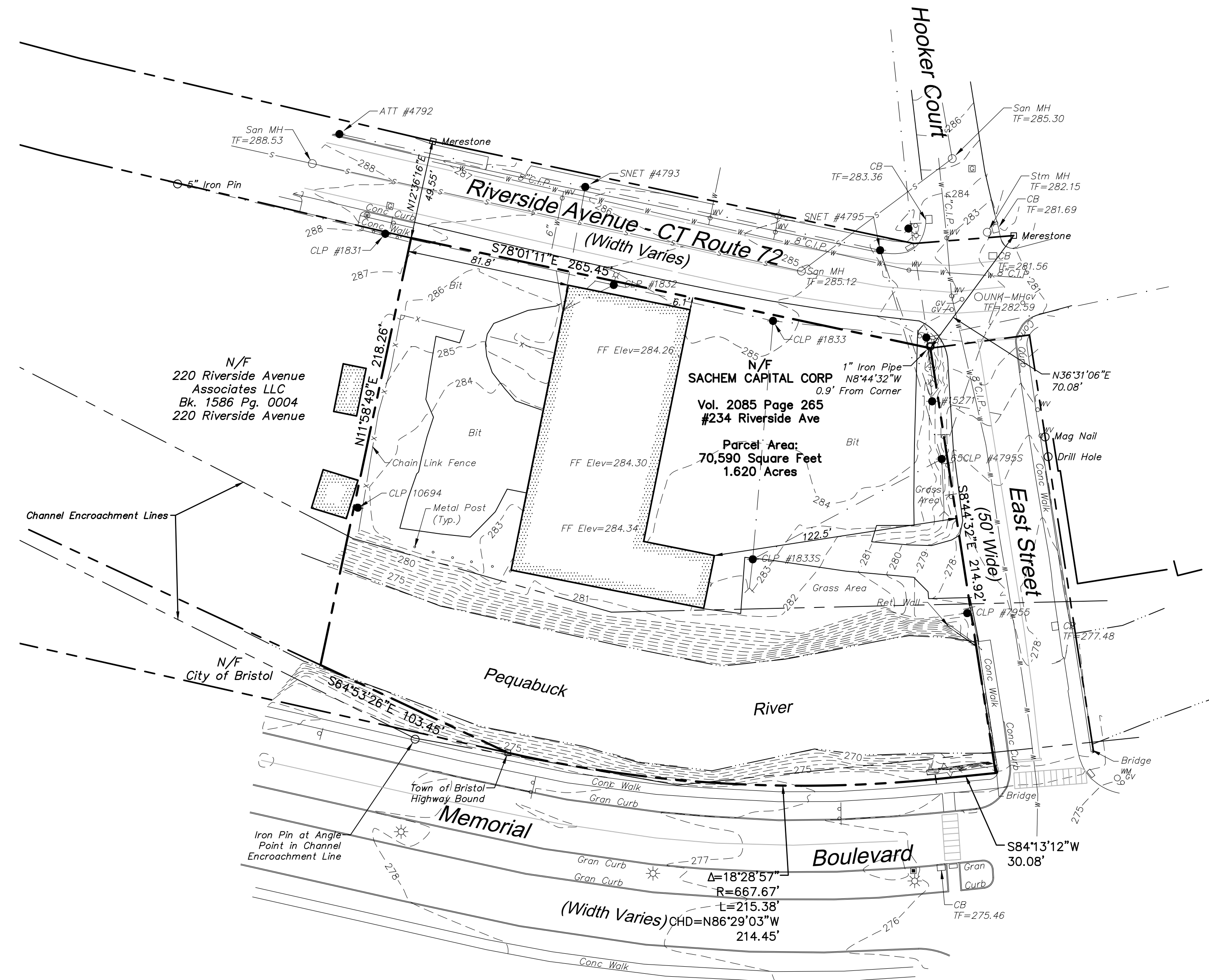
SHEET NUMBER:

T-1



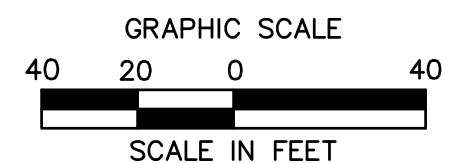


LOCATION MAP
NOT TO SCALE



LEGEND

	Property Line		Handhole
	Easement Line		Utility Pole
	Setback Line		Utility Pole w/ Light
	Edge of Water		Guy Wire
	Major Contour		Light Pole
	Minor Contour		Gas Valve
	Retaining Wall		Gas Test Station
	Guide Rail		Catch Basin
	Fence		Manhole
	Overhead Wires		Fire Hydrant
	Water Line		Water Valve
			Sign
			Monitoring Well



GENERAL NOTES

- A) THIS MAP HAS BEEN PREPARED IN ACCORDANCE WITH THE REGULATIONS OF CONNECTICUT STATE AGENCIES, SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARDS AND SUGGESTED METHODS AND PROCEDURES FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" PREPARED AND ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. AUGUST 29, 2019.

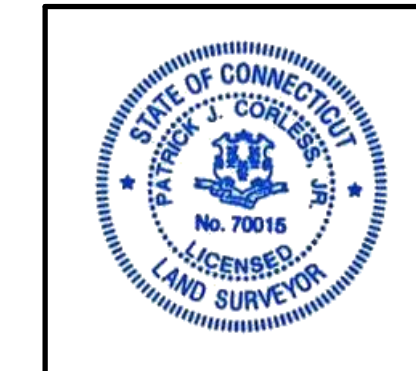
B) THIS PLAN CONFORMS TO HORIZONTAL ACCURACY CLASS A-2 AND TOPOGRAPHIC ACCURACY CLASS T-2.

C) BOUNDARY DETERMINATION IS BASED UPON A RESURVEY.

D) THE TYPE OF SURVEY PERFORMED IS A PROPERTY/TOPOGRAPHIC SURVEY AND IS INTENDED TO DEPICT THE EXISTING CONDITIONS WITH RESPECT TO MONUMENTATION FOUND, STRUCTURES, EASEMENTS, ENCROACHMENTS, VISIBLE UTILITIES, ROADWAYS AND CONTOURS.
- NORTH ARROW AND BEARINGS REFER TO THE CONNECTICUT STATE PLANE COORDINATE SYSTEM (CT NAD 83 - EPOCH 2011) AND ARE BASED ON GPS OBSERVATIONS PERFORMED BY BL COMPANIES DURING OCTOBER 2021 REFERENCED TO THE C.O.R.S. NETWORK BASE STATION "CTW" LOCATED IN WINCHESTER, CT HAVING THE FOLLOWING PUBLISHED VALUES:
STATION: CTW (DH5839)
COORDINATES (US FT): N: 888.006, E: 912.956
ELLIPSOID HEIGHT (US FT): 630.21 (192.08 M)
- ELEVATIONS REFER TO THE NORTH AMERICAN DATUM OF 1988 (NAVD 88). THE DATUM WAS DETERMINED BY USING (GEOID 18) AND IS BASED ON GPS OBSERVATIONS PERFORMED BY BL COMPANIES IN OCTOBER 2021 AND REFERENCED TO C.O.R.S. BASE STATION "CTW" LOCATED IN WINCHESTER, CT HAVING THE PUBLISHED COORDINATE AND ELEVATION VALUES AS DESCRIBED IN NOTE 2 ABOVE.
- PARCEL IS LOCATED IN A FLOOD HAZARD AREA "AE" (BASE FLOOD ELEVATION DETERMINED), IN A FLOODWAY AREAS IN ZONE "AE", IN A FLOOD AREA "X SHADED" (AREAS OF 0.2% ANNUAL CHANCE FLOOD) AND IN A FLOOD AREA "X NOT SHADED" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD) AS DEPICTED ON F.I.R.M. COMMUNITY PANEL NO. 0900300466F PANEL 466 OF 675 EFFECTIVE DATE: SEPTEMBER 26, 2008.
- THE UNDERGROUND UTILITIES DEPICTED HAVE BEEN PLOTTED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES DEPICTED COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES DEPICTED ARE IN THE EXACT LOCATION INDICATED THOUGH THEY ARE PLOTTED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY EXPOSED THE UNDERGROUND UTILITIES. PER CONNECTICUT STATE LAW THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF EXCAVATION. CALL BEFORE YOU DIG 1-800-922-4455.
- THE CURRENT DEED FOR THE SUBJECT PARCEL (VOL 2085 PAGE 265) MENTIONS A RIGHT OF WAY FOR SEWER DATED MAY 4, 1895 AND DESCRIBED IN VOL 48 PAGE 589 OF THE BRISTOL LAND RECORDS. NO EVIDENCE OF SAID RIGHT OF WAY COULD BE FOUND AT THE TIME OF THE SURVEY.

MAP REFERENCES

- "MAP SHOWING PORTION OF PROPERTY BELONGING TO A.L. SESSIONS EST. BRISTOL, CONN." SCALE: 1"=50'. DATE: SEPT. 1937. PREPARED BY SPERRY & BUELL, INC. CIVIL ENGINEERS.
- "MAP SHOWING PROPERTY OF A.L. SESSIONS, ESTATE. EAST OF MELLETT ST. BRISTOL, CONN." SCALE: 1"=50'. DATE: APRIL 1940. PREPARED BY SPERRY & BUELL, INC. ENGINEERS.
- "CHANNEL ENCROACHMENT LINES PORTION OF PEQUABUCK RIVER BRISTOL CONN. PREPARED FOR WATER RESOURCES COMMISSION A-57-110-1". SCALE: 1"=100'. DATE: 3-19-59. PREPARED BY JOHN J. MOZZOCHI & ASSOCIATES.
- "CHANNEL ENCROACHMENT LINES PORTION OF PEQUABUCK RIVER BRISTOL CONN. PREPARED FOR WATER RESOURCES COMMISSION A-57-110-2". SCALE: 1"=100'. DATE: 3-19-59. PREPARED BY JOHN J. MOZZOCHI & ASSOCIATES.
- "CONNECTICUT STATE HIGHWAY DEPARTMENT, RIGHT OF WAY MAP, TOWN OF BRISTOL, RIVERSIDE AVENUE, FROM THE BOULEVARD WESTERLY TO MAIN ST., ROUTE U.S.6., NUMBER 17-05, SHEET NO. 2 OF 3" SCALE: 1"=40'. DATE: MAR. 31, 1939.
- "MAP OF MEMORIAL BOULEVARD BRISTOL, CT, SHEET 1 OF 4" SCALE 1"= 40', DATE: JUNE 2009, PREPARED BY DEPARTMENT OF PUBLIC WORKS DIVISION OF ENGINEERING CITY OF BRISTOL CONNECTICUT AND FILED AS MAP 35-92A IN THE CITY OF BRISTOL.



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

Patrick J. Corless, Jr. 11/5/2021
PATRICK J. CORLESS, JR., L.S. #70015

NO CERTIFICATION IS EXPRESSED OR IMPLIED UNLESS THIS MAP BEARS THE ORIGINAL SIGNATURE AND EMBOSSED SEAL OF THE ABOVE NAMED LAND SURVEYOR.



355 Research Parkway
Meriden, CT 06450
(203) 630-1406
(203) 630-2615 Fax

LAND OF SACHEM CAPITAL CORP.
234 RIVERSIDE AVENUE
CITY OF BRISTOL, HARTFORD COUNTY, CONNECTICUT

REVISIONS	Date	
No.		
Surveyed	J.C.	
Drawn	K.S.	
Reviewed	P.J.C.	
Scale	1"=40'	
Project No.	2101763	
Date	11/2/2021	
Field Book	561	
CAD File:	EX210176301	
Title		

PROPERTY & TOPOGRAPHIC SURVEY

Sheet No.

EX-1

Nov 05, 2021 2:40pm pcorless G:\0821\1A\2101763\DWG\ED10176301.dwg
Layout: EX1_24036

© 2021 BL COMPANIES, INC. THESE DRAWINGS SHALL NOT BE UTILIZED BY ANY PERSON, FIRM OR CORPORATION WITHOUT THE SPECIFIC WRITTEN PERMISSION OF BL COMPANIES.

Xref (bl): Y210176301

ENVIRONMENTAL NOTES
RESOURCE PROTECTION MEASURES

ENVIRONMENTAL NOTES - RESOURCES PROTECTION MEASURES

WETLAND PROTECTION PROGRAM

AS A RESULT OF THE PROJECT'S LOCATION IN THE VICINITY OF SENSITIVE WETLAND RESOURCES, THE FOLLOWING PROTECTION PROGRAM SHALL BE IMPLEMENTED BY THE CONTRACTOR TO AVOID UNINTENTIONAL IMPACTS TO PROXIMATE WETLAND RESOURCES DURING CONSTRUCTION ACTIVITIES.

IT IS OF THE UTMOST IMPORTANCE THAT THE CONTRACTOR COMPLIES WITH THE REQUIREMENT FOR THE INSTALLATION OF PROTECTIVE MEASURES AND THE EDUCATION OF ITS EMPLOYEES AND SUBCONTRACTORS PERFORMING WORK ON THE PROJECT SITE. THE WETLAND PROTECTION MEASURES SHALL BE IMPLEMENTED AND MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES UNTIL PERMANENT STABILIZATION OF SITE SOILS HAS OCCURRED.

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 AND WILL PROVIDE AN EDUCATION SESSION ON THE PROJECTS PROXIMITY TO SENSITIVE WETLANDS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL CONTACT DEAN GUSTAFSON, SENIOR WETLAND SCIENTIST AT APT, AT LEAST 5 BUSINESS DAYS PRIOR TO THE PRE-CONSTRUCTION MEETING. MR. GUSTAFSON CAN BE REACHED BY PHONE AT (860) 562-2033 OR VIA EMAIL AT DGUSTAFSON@ALLPOINTSTECH.COM.

THIS RESOURCES PROTECTION PROGRAM CONSISTS OF SEVERAL COMPONENTS INCLUDING: EDUCATION OF ALL CONTRACTORS AND SUB-CONTRACTORS PRIOR TO INITIATION OF WORK ON THE SITE; INSTALLATION OF EROSION CONTROLS; PETROLEUM MATERIALS STORAGE AND SPILL PREVENTION; PROTECTIVE MEASURES; RARE SPECIES PROTECTION MEASURES; HERBICIDE, PESTICIDE, AND SALT RESTRICTIONS; AND REPORTING.

1. CONTRACTOR EDUCATION:

a. PRIOR TO WORK ON SITE AND INITIAL DEPLOYMENT/MOBILIZATION OF EQUIPMENT AND MATERIALS, THE CONTRACTOR SHALL ATTEND AN EDUCATIONAL SESSION AT THE PRE-CONSTRUCTION MEETING WITH APT. THIS ORIENTATION AND EDUCATIONAL SESSION WILL CONSIST OF INFORMATION SUCH AS, BUT NOT LIMITED TO: IDENTIFICATION OF WETLAND RESOURCES PROXIMATE TO WORK AREAS, REPRESENTATIVE PHOTOGRAPHS OF TYPICAL HERPETOFAUNA THAT MAY BE ENCOUNTERED, TYPICAL SPECIES BEHAVIOR, AND PROPER PROCEDURES IF SPECIES ARE ENCOUNTERED, AND THE ENVIRONMENTALLY SENSITIVE NATURE OF THE DEVELOPMENT SITE.

b. THE CONTRACTORS PROJECT MONITOR WILL BE PROVIDED WITH CELL PHONE AND EMAIL CONTACTS FOR APT PERSONNEL. EDUCATIONAL POSTER MATERIALS WILL BE PROVIDED BY APT AND DISPLAYED ON THE JOB SITE TO MAINTAIN WORKER AWARENESS AS THE PROJECT PROGRESSES.

c. 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.

2. EROSION AND SEDIMENTATION CONTROLS/ISOLATION BARRIERS

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. NO PERMANENT EROSION CONTROL PRODUCTS OR REINFORCED SILT FENCE WILL BE USED ON THE PROJECT. TEMPORARY EROSION CONTROL PRODUCTS THAT WILL BE EXPOSED AT THE GROUND SURFACE AND REPRESENT A POTENTIAL FOR WILDLIFE ENTANGLEMENT 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. THE EXTENT OF THE 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 DEVICES. IN ADDITION TO THE CONTRACTOR MAKING THESE DETERMINATIONS, REQUESTS FOR ADDITIONAL CONTROLS WILL ALSO BE AT THE DISCRETION OF THE ENVIRONMENTAL MONITOR.

c. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY INSPECTIONS OF THE SEDIMENTATION AND EROSION CONTROLS FOR TEARS OR BREACHES 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 BREACHES OF THE SEDIMENTATION AND EROSION CONTROLS AND ANY SEDIMENT RELEASES BEYOND THE PERIMETER CONTROLS THAT IMPACT WETLANDS, THE VERNAL POOL, OR AREAS WITHIN 100 FEET OF WETLANDS. 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 TO PROTECT NEARBY WETLANDS. 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 REGULATORY AGENCIES. IF THE ENVIRONMENTAL MONITOR IS NOTIFIED BY THE CONTRACTOR OF A SEDIMENT RELEASE, AN INSPECTION WILL BE SCHEDULED SPECIFICALLY TO INVESTIGATE AND EVALUATE POSSIBLE IMPACTS TO WETLAND RESOURCES.

d. 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.

e. NO EQUIPMENT, VEHICLES OR CONSTRUCTION MATERIALS SHALL BE STORED WITHIN 100 FEET OF WETLAND RESOURCES.

f. ALL SILT FENCING AND OTHER EROSION CONTROL DEVICES SHALL BE REMOVED WITHIN 30 DAYS OF COMPLETION OF WORK AND PERMANENT STABILIZATION OF SITE SOILS. IF FIBER ROLLS/WATTLES, STRAW BALES, OR OTHER NATURAL MATERIAL EROSION CONTROL PRODUCTS ARE USED, SUCH DEVICES WILL NOT BE LEFT IN PLACE TO BIODEGRADE AND SHALL BE PROMPTLY REMOVED AFTER SOILS ARE STABLE SO AS NOT TO CREATE A BARRIER TO WILDLIFE MOVEMENT. SEED FROM SEEDING OF SOILS SHOULD NOT SPREAD OVER FIBER ROLLS/WATTLES AS IT MAKES THEM HARDER TO REMOVE ONCE SOILS ARE STABILIZED BY VEGETATION.

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 DUE TO THE PROJECT'S LOCATION IN PROXIMITY TO WETLAND 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. SERVICING OF MACHINERY SHALL NOT OCCUR WITHIN 100 FEET OF WETLANDS.

d. AT A MINIMUM, 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 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.

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 WETLANDS AND VERNAL POOL.
 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 APPROPRIATE LOCAL, STATE AND/OR FEDERAL AGENCIES, AS NECESSARY.
 5. CONTACT A DISPOSAL COMPANY TO PROPERLY DISPOSE OF CONTAMINATED MATERIALS.

i. REPORTING
 1. COMPLETE AN INCIDENT REPORT.
 2. SUBMIT A COMPLETED INCIDENT REPORT TO LOCAL, STATE AND FEDERAL AGENCIES, AS NECESSARY, INCLUDING THE CONNECTICUT SITING COUNCIL.

4. HERBICIDE, PESTICIDE, AND SALT RESTRICTIONS

a. THE USE OF HERBICIDES AND PESTICIDES AT THE FACILITY SHALL BE MINIMIZED. IF HERBICIDES AND/OR PESTICIDES ARE REQUIRED AT THE FACILITY, THEIR USE WILL BE USED IN ACCORDANCE WITH CURRENT INTEGRATED PEST MANAGEMENT (IPM) PRINCIPLES WITH PARTICULAR ATTENTION TO AVOID/MINIMIZE APPLICATIONS WITHIN 100 FEET OF WETLAND AND VERNAL POOL RESOURCES.

b. MAINTENANCE OF THE FACILITY DURING THE WINTER MONTHS SHALL NOT INCLUDE THE APPLICATION OF SALT OR SIMILAR PRODUCTS FOR MELTING SNOW OR ICE.

5. REPORTING

a. COMPLIANCE MONITORING REPORTS (BRIEF NARRATIVE AND APPLICABLE PHOTOS) DOCUMENTING EACH APT INSPECTION WILL BE SUBMITTED BY APT TO THE PERMITTEE AND ITS CONTRACTOR FOR COMPLIANCE VERIFICATION OF THESE PROTECTION MEASURES. 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. FOLLOWING COMPLETION OF THE CONSTRUCTION PROJECT, APT WILL PROVIDE A FINAL COMPLIANCE MONITORING REPORT TO THE PERMITTEE DOCUMENTING IMPLEMENTATION OF THE WETLAND PROTECTION PROGRAM AND MONITORING OBSERVATIONS. THE PERMITTEE IS RESPONSIBLE FOR PROVIDING A COPY OF THE FINAL COMPLIANCE MONITORING REPORT TO THE CONNECTICUT SITING COUNCIL FOR COMPLIANCE VERIFICATION.

ReNew DEVELOPERS, LLC

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



567 VAUXHALL STREET EXTENSION - SUITE 311
 WATERFORD, CT 06385 PHONE: (860)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

NO	DATE	REVISION
0	08/22/22	FOR REVIEW: 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 RIVERSIDE LLC

ADDRESS: 123 SALEM ROAD COLCHESTER, CT 06415

BRISTOL FUEL CELL POWER PLANT

SITE 234 RIVERSIDE AVENUE
 ADDRESS: BRISTOL, CT

APT FILING NUMBER: CT716120

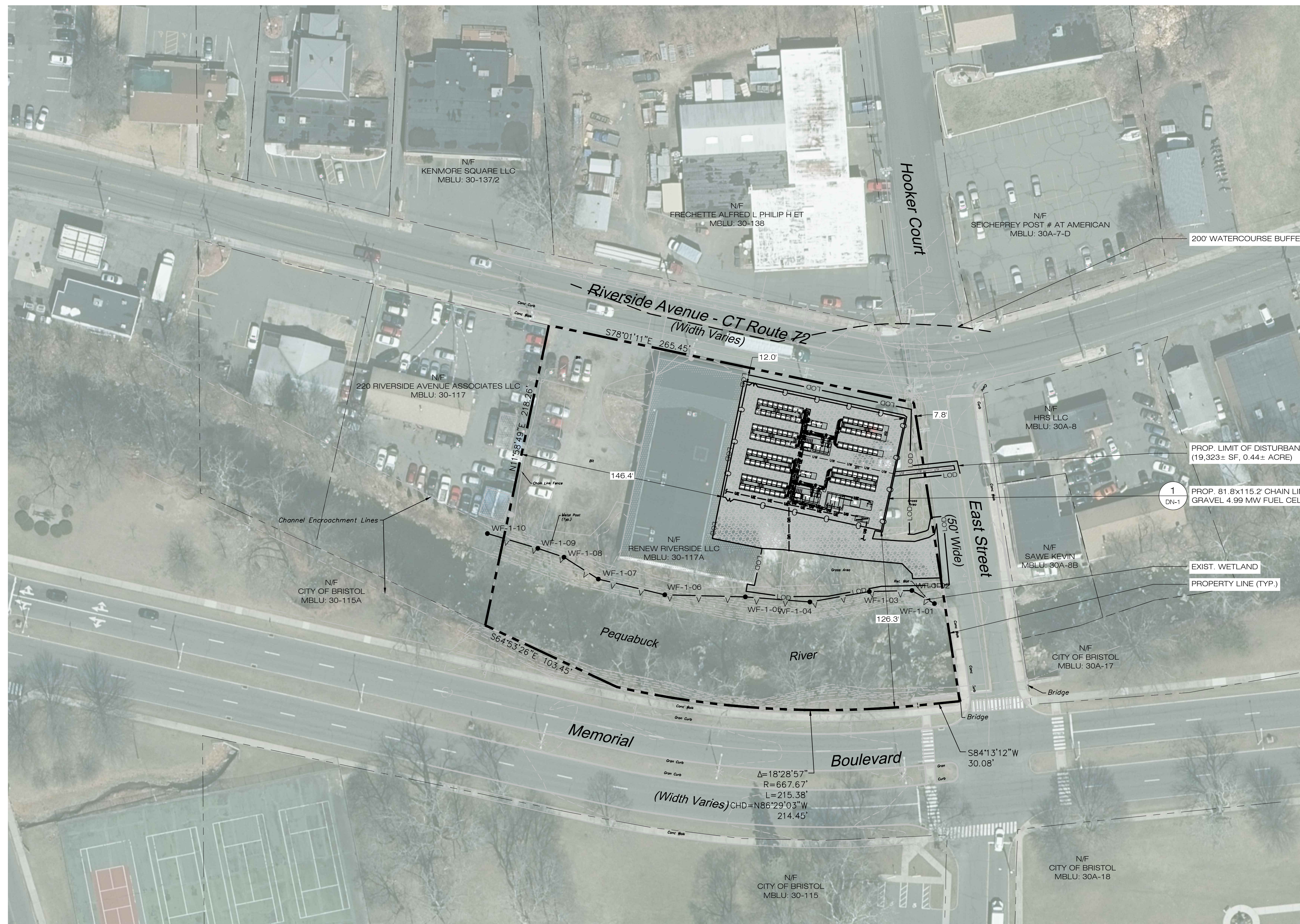
DATE: 08/22/22 DRAWN BY: JT
 CHECKED BY: RCB

SHEET TITLE:
**ENVIRONMENTAL NOTES
 RESOURCE PROTECTION
 MEASURES**

SHEET NUMBER:

GN-2





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)-663-1697
 WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

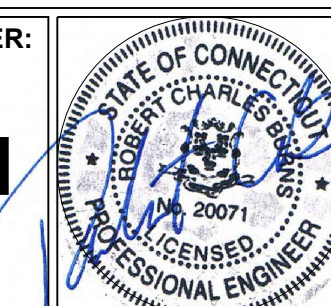
CSC PERMIT SET		
NO	DATE	REVISION
0	08/22/22	FOR REVIEW: RCB
1		
2		
3		
4		
5		
6		

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 RIVERSIDE LLC
 ADDRESS: 123 SALEM ROAD COLCHESTER, CT 06415

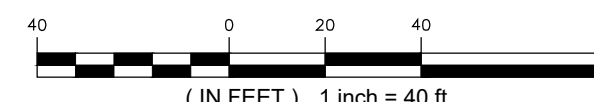
BRISTOL FUEL CELL POWER PLANT
 SITE ADDRESS: 234 RIVERSIDE AVENUE BRISTOL, CT
 APT FILING NUMBER: CT716120
 DATE: 08/22/22
 DRAWN BY: JT
 CHECKED BY: RCB

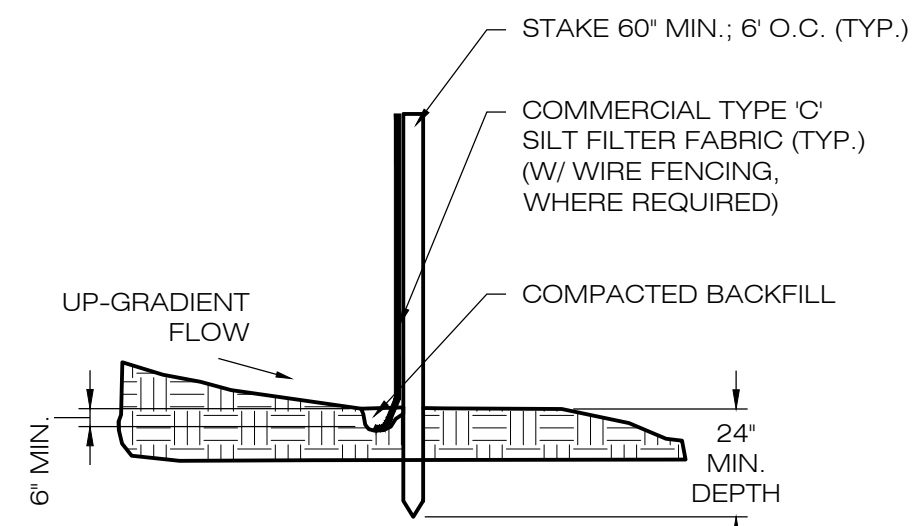
SHEET TITLE:
OVERALL LOCUS MAP

SHEET NUMBER:
OP-1



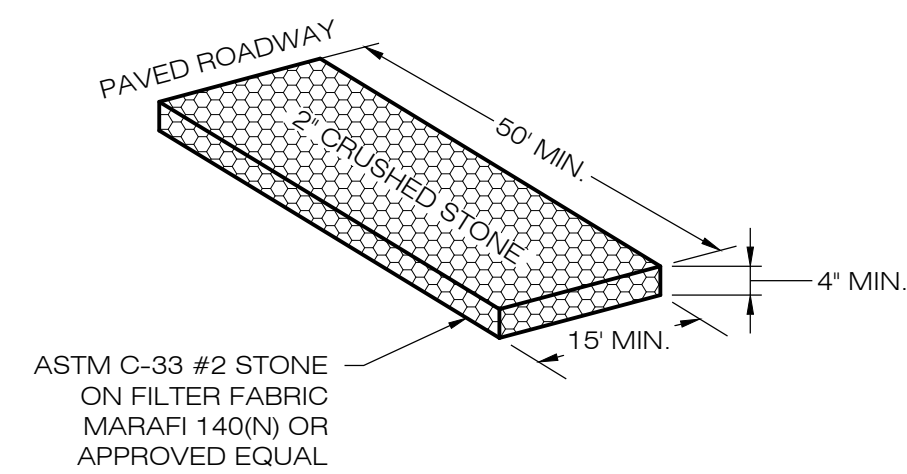
OVERALL LOCUS MAP
 SCALE: 1" = 40'-0"



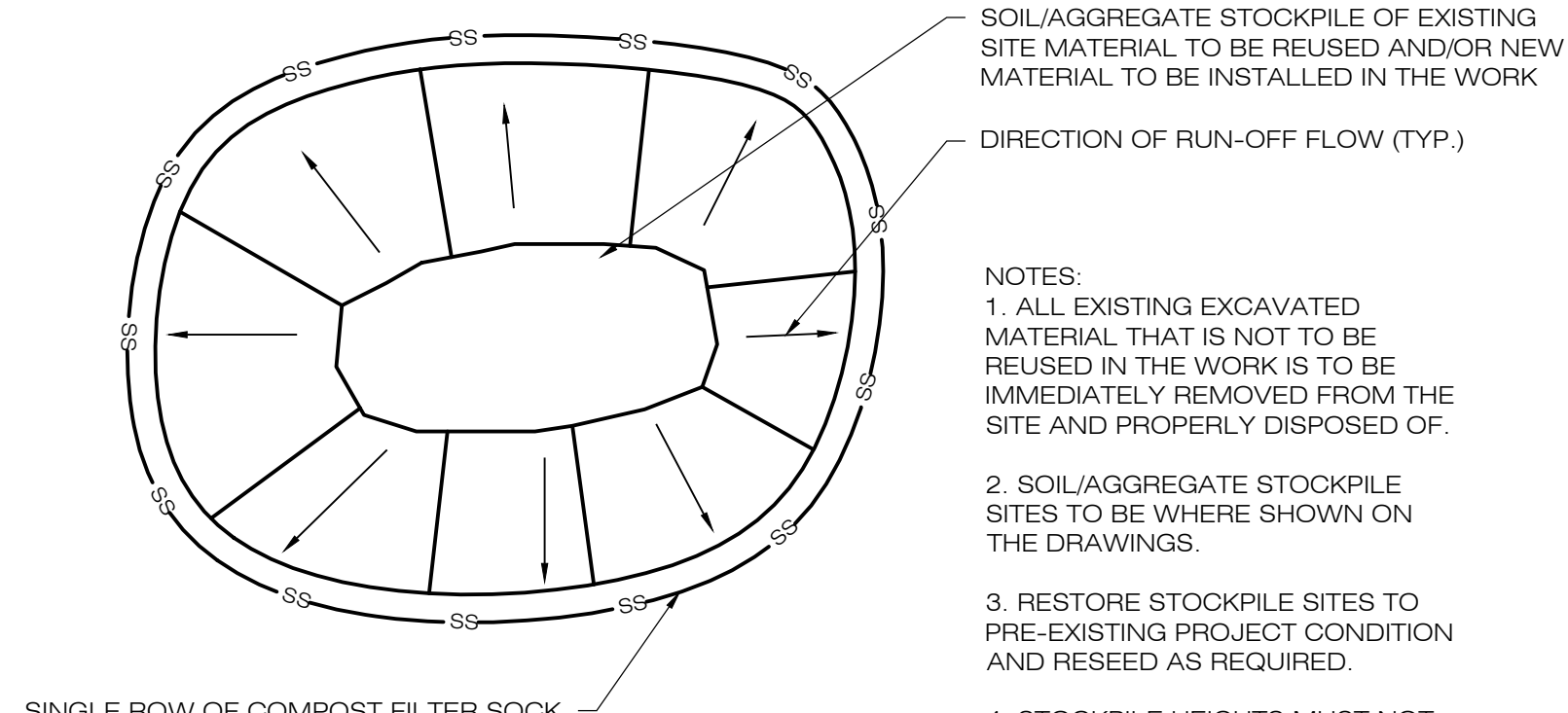


NOTE:
SILT FENCE SHALL BE LAPPED ONLY
WHEN NECESSARY PER THE
MANUFACTURER RECOMMENDATIONS.

1 SILT FENCE DETAIL
SCALE : N.T.S.

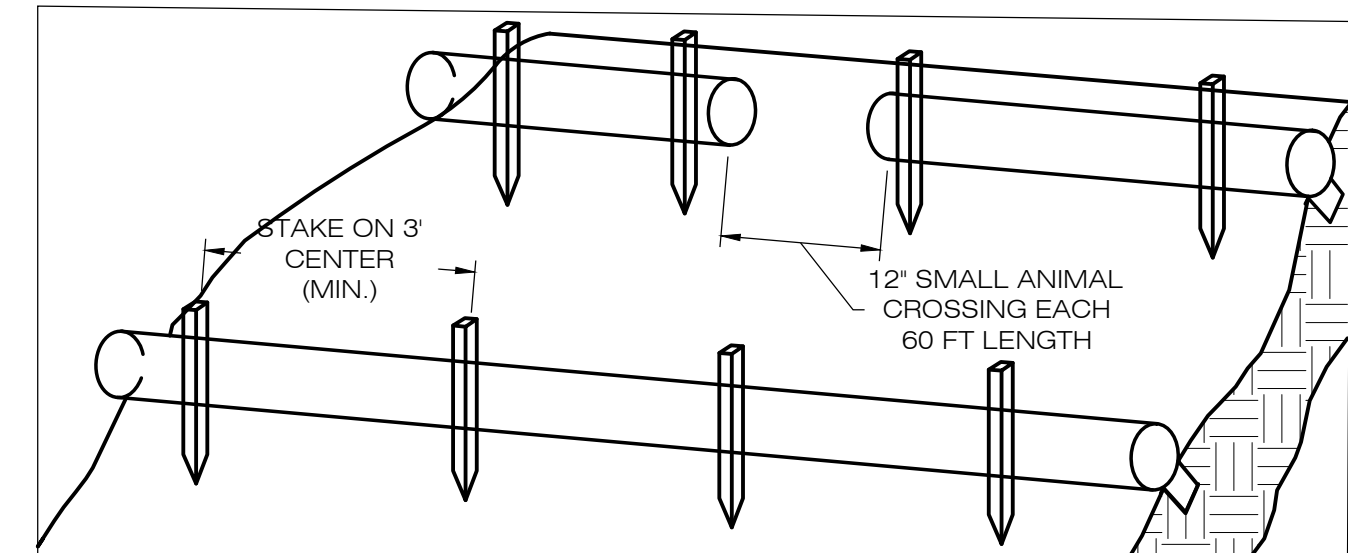


2 CONSTRUCTION ENTRANCE DETAIL
SCALE : N.T.S.



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.

3 MATERIALS STOCKPILE DETAIL
SCALE : N.T.S.



1. BEGIN AT THE LOCATION WHERE THE SOCK IS TO BE INSTALLED BY EXCAVATING A 2-3' (6-7.5 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.

4 COMPOST FILTER SOCK SEDIMENTATION CONTROL BARRIER
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)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET		
NO	DATE	REVISION
0	08/22/22	FOR REVIEW: RCB
1		
2		
3		
4		
5		
6		

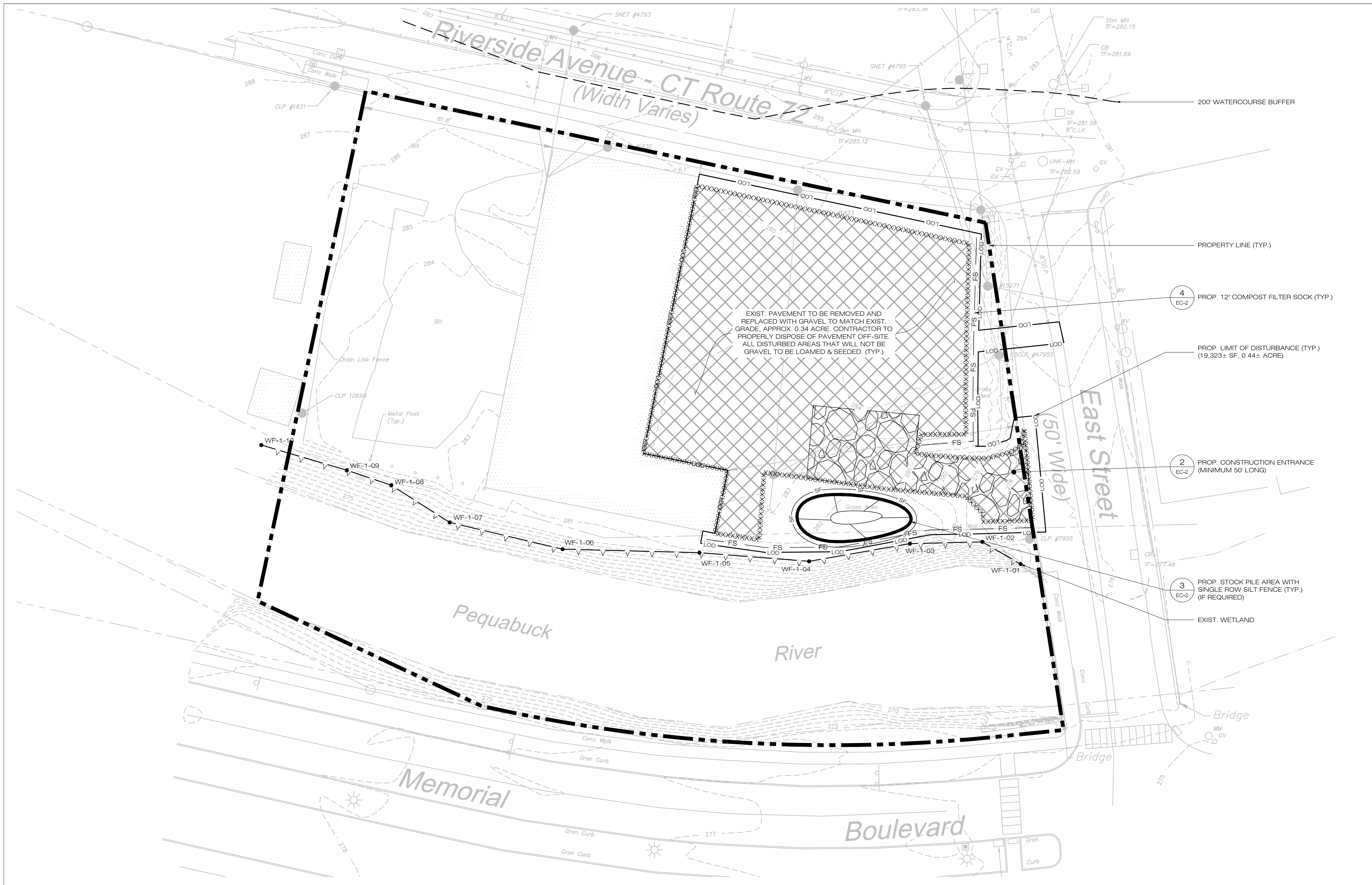
DESIGN PROFESSIONAL OF RECORD
PROF: ROBERT C. BURNS, P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 567 VAUXHALL STREET EXTENSION - SUITE 311 WATERFORD, CT 06385
OWNER: RENEW RIVERSIDE LLC
ADDRESS: 123 SALEM ROAD COLCHESTER, CT 06415

BRISTOL FUEL CELL POWER PLANT
SITE ADDRESS: 234 RIVERSIDE AVENUE BRISTOL, CT
APT FILING NUMBER: CT716120
DRAWN BY: JT
DATE: 08/22/22 CHECKED BY: RCB

SHEET TITLE:
SEDIMENTATION & EROSION CONTROL DETAILS

SHEET NUMBER:
EC-2





ReNew DEVELOPERS, LLC

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



567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

NO	DATE	REVISION
0	08/22/22	FOR REVIEW: 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 RIVERSIDE LLC

ADDRESS: 123 SALEM ROAD COLCHESTER, CT 06415

BRISTOL FUEL CELL POWER PLANT

SITE ADDRESS: BRISTOL, CT

APT FILING NUMBER: CT716120

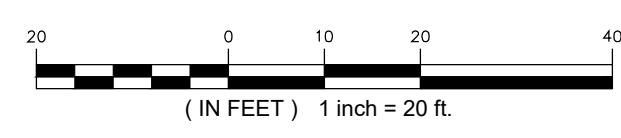
DATE: 08/22/22
DRAWN BY: JT
CHECKED BY: RCB

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

SHEET NUMBER:

EC-3

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



ReNew DEVELOPERS, LLC

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



567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

NO	DATE	REVISION
0	08/22/22	FOR REVIEW: 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 RIVERSIDE LLC

ADDRESS: 123 SALEM ROAD
COLCHESTER, CT 06415

BRISTOL FUEL CELL POWER PLANT

SITE ADDRESS: BRISTOL, CT

APT FILING NUMBER: CT716120

DRAWN BY: JT

DATE: 08/22/22 CHECKED BY: RCB

**SHEET TITLE:
SITE & GRADING &
UTILITY PLAN**

SHEET NUMBER:

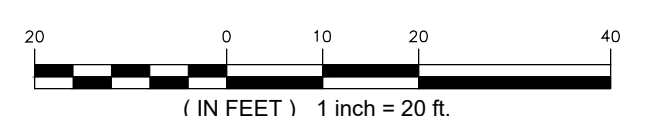
SP-1

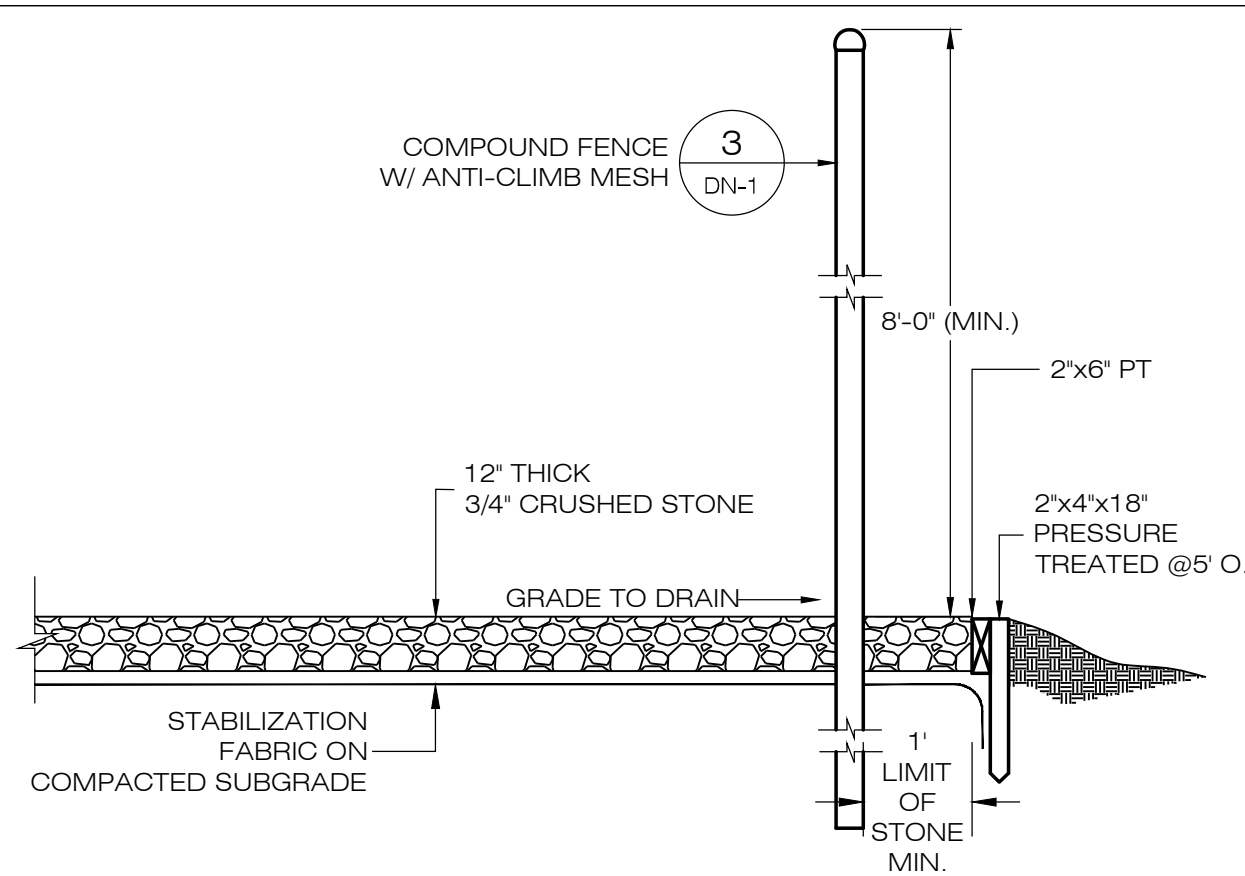


SITE UTILITY NOTES:

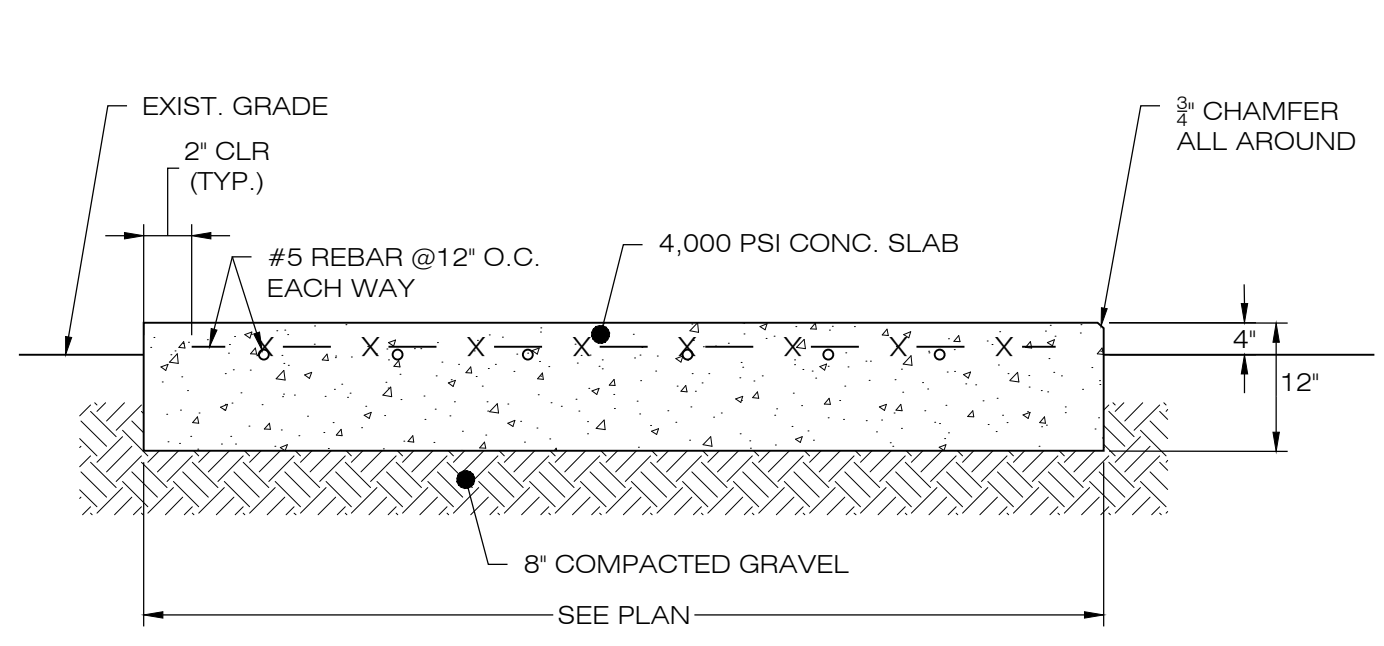
- CONTRACTOR SHALL ENGAGE THE SERVICES OF AN UNDERGROUND UTILITY LOCATING COMPANY TO LOCATE ALL UNDERGROUND EQUIPMENT IN THE TRENCHING AREA TO AVOID ANY DAMAGE.
- HAND EXCAVATE WITHIN 5' OF EXIST. UNDERGROUND UTILITIES (V.I.F.) MAINTAIN 18" MIN. CLEARANCE.
- CONTRACTOR TO COORDINATE TRENCHING OPERATIONS 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 & GRADING & UTILITY PLAN
SCALE: 1" = 20'-0"

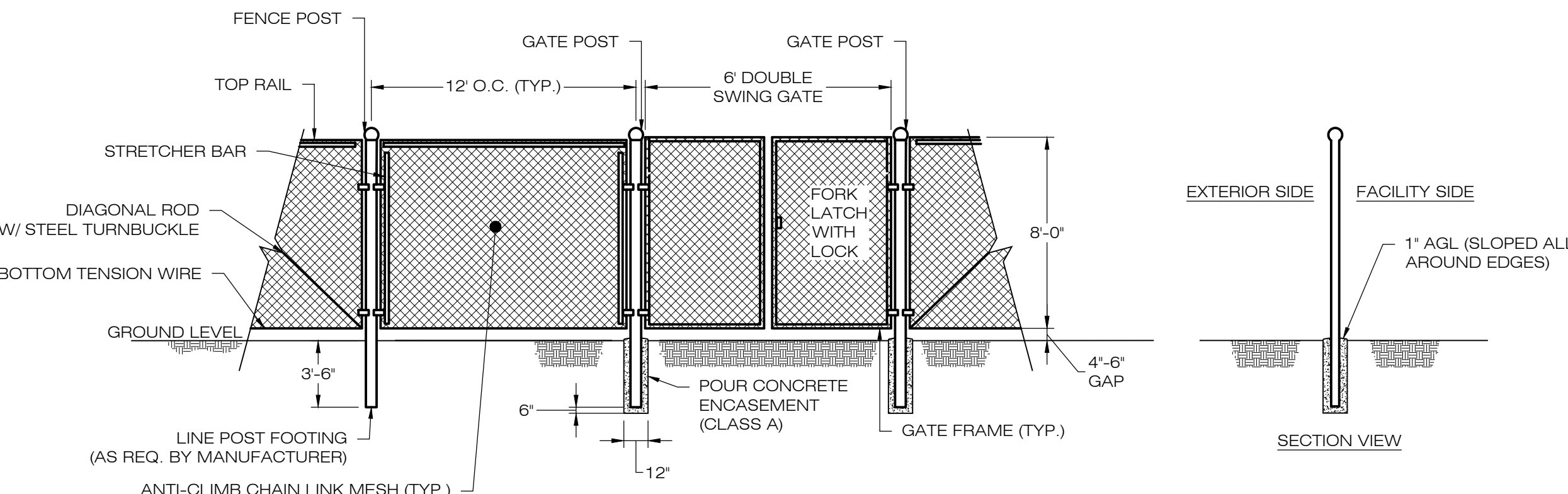




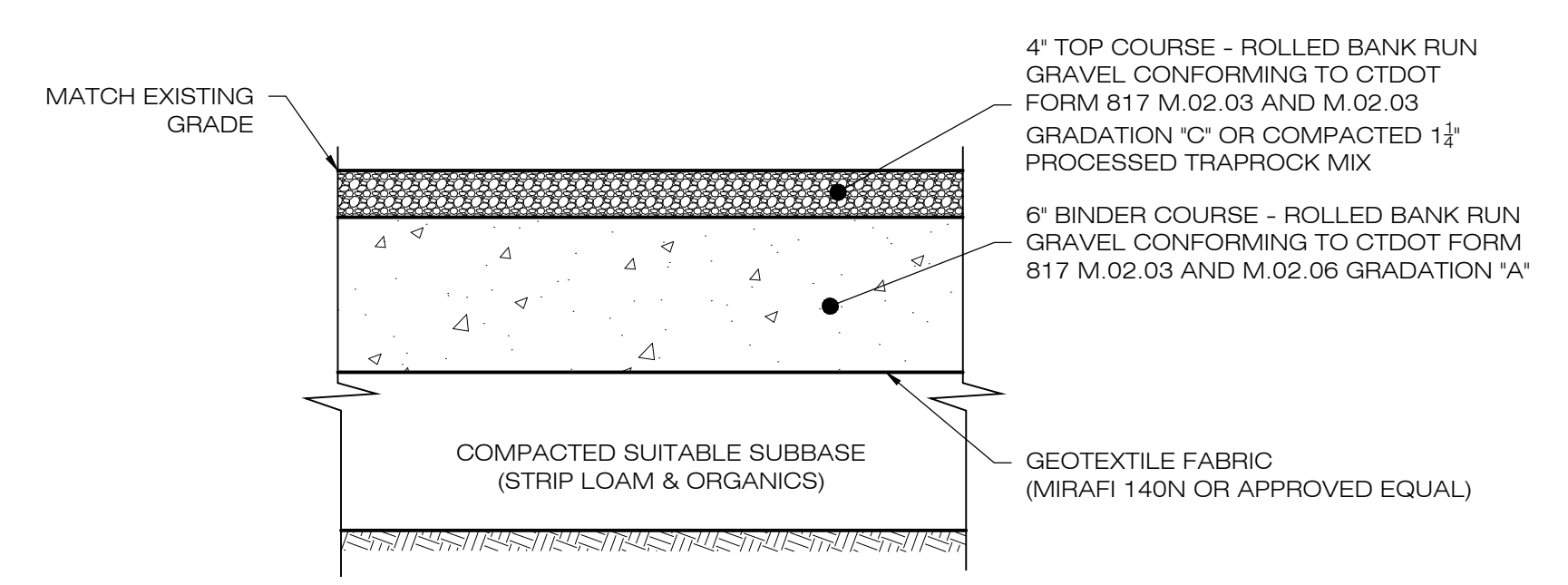
1 COMPOUND DETAIL
SCALE: N.T.S.



2 CONCRETE EQUIPMENT PAD
SCALE: N.T.S.

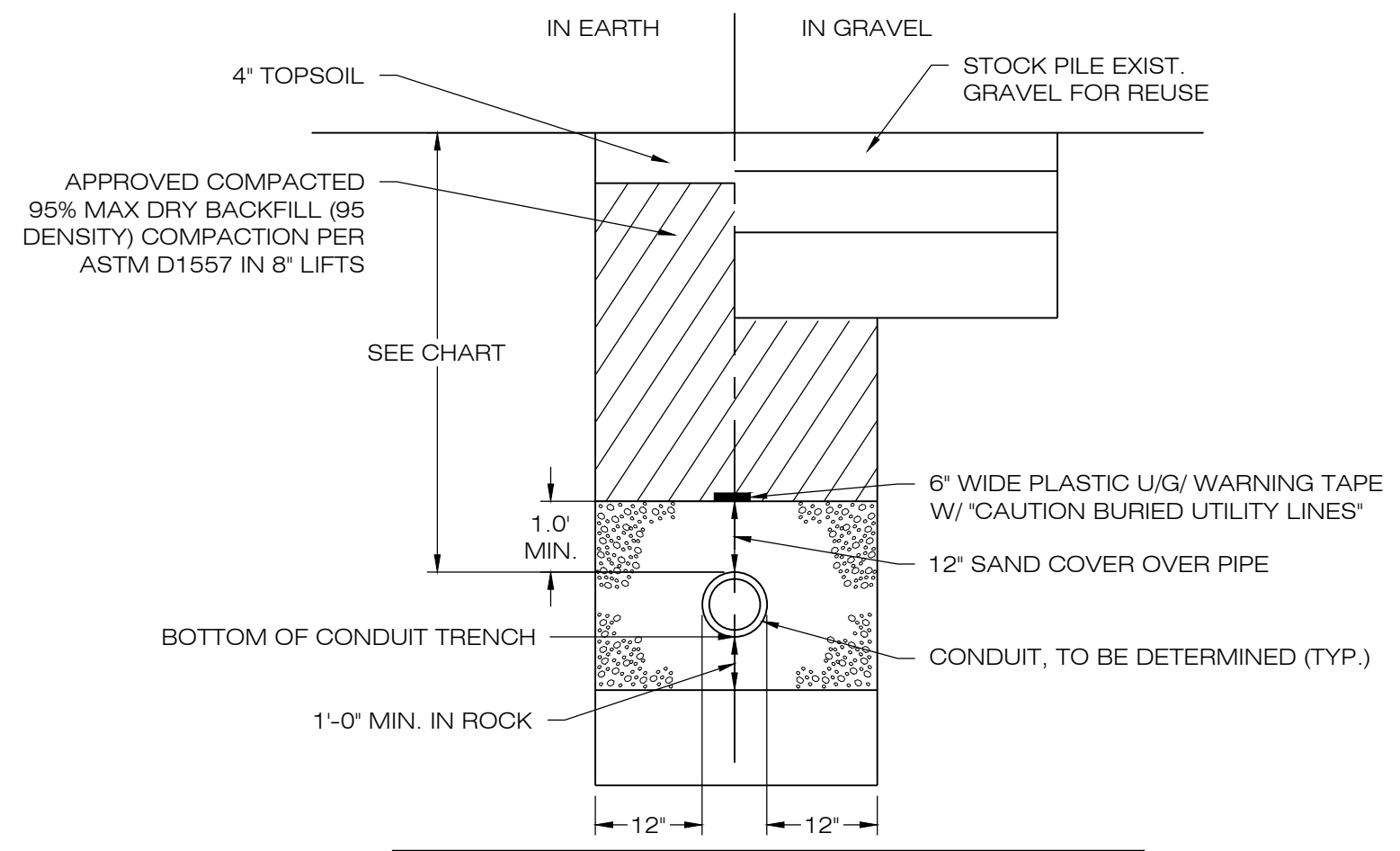


3 CHAIN-LINK FENCE & GATE DETAIL
SCALE: N.T.S.



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
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 FOR ELECTRIC/TELECOMMUNICATION SERVICES

5 TYPICAL UTILITY TRENCH DETAIL
SCALE: N.T.S.

RENEW DEVELOPERS LLC
IN CASE OF EMERGENCY
CALL T.B.D.

NOTES:
EMERGENCY CALL NUMBER TO BE PROVIDED ONCE DETERMINED.

6 NOTIFICATION SIGN DETAIL
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)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET		
NO	DATE	REVISION
0	08/22/22	FOR REVIEW: 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 RIVERSIDE LLC
 ADDRESS: 123 SALEM ROAD COLCHESTER, CT 06415

BRISTOL FUEL CELL POWER PLANT
 SITE ADDRESS: 234 RIVERSIDE AVENUE BRISTOL, CT
 APT FILING NUMBER: CT716120
 DATE: 08/22/22
 DRAWN BY: JT
 CHECKED BY: RCB

SHEET TITLE:
SITE DETAILS

SHEET NUMBER:
DN-1



APPENDIX B

PRODUCT INFORMATION SHEETS

The Bloom Energy Server 5

Using solid oxide fuel cell technology, Bloom Energy Servers convert natural gas, biogas, or hydrogen into electricity at high efficiency and without combustion, significantly reducing environmental impacts.

Bloom Energy's solid oxide fuel cell (SOFC) platform provides an electrochemical pathway to convert fuel directly to electricity without combustion. Our systems can run on natural gas, biogas, and hydrogen, and our modular platform approach provides a pathway to upgrade existing systems to align with the sustainability goals of our customers over time.

Bloom is working with two leading non-profit organizations, MiQ and Equitable Origin, to help set a responsible standard for sourcing natural gas. Responsibly sourced gas is natural gas whose production has been evaluated across a range of stringent social, environmental, and governance criteria, including climate, community, and labor issues, to ensure that the highest standards and best practices were used to minimize greenhouse gases across its entire value chain.



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 their 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.

Specifications

Outputs

Nameplate power output (net AC) — 325 kW
 Load output (net AC) — 325 kW
 Electrical connection — 480V, 3-phase, 60Hz

Inputs

Fuels — Natural gas, directed biogas
 Input fuel pressure — 10–18 psig (15 psig nominal)
 Water — None during normal operation

Efficiency

Cumulative electrical efficiency — 65–53%
 (LHV net AC)¹
 Heat rate (HHV) — 5,811–7,127 Btu/kWh

Emissions²

NOx — 0.0017 lbs/MWh
 SOx — Negligible
 CO — 0.012 lbs/MWh
 VOCs — 0.01 lbs/MWh
 CO₂ @ stated efficiency — 679–833 lbs/MWh on natural gas;
 carbon neutral on directed biogas

¹ 65% LHV efficiency verified by ASME PTC 50 Fuel Cell Power Systems Performance Test
² NOx and CO measured per CARB Method 100, VOCs measured as hexane by SCAQMD Method 25.3

Physical Attributes and Environment

Weight — 15.8 tons
 Dimensions (variable layouts) — 17'11" x 8'8" x 6'9" or
 32'3" 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

Codes and Standards

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.

Additional Notes

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.



Bloom Energy Headquarters
 4353 North First Street
 San Jose, CA 95134 USA

bloomenergy.com

Flexible. Future Proof.

Accelerate your path to a
 zero-carbon future.

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)	
Outputs			
Nameplate power output (net AC)	250kW		
Load output (net AC)	250kW		
Electrical connection	480V, 3-phase, 60 Hz		
Inputs			
Fuels	Natural gas, directed biogas		
Input fuel pressure	10-18 psig (15 psig nominal)		
Water	None during normal operation		
Efficiency			
Cumulative electrical efficiency (LHV net AC) ¹	65-53%		
Heat rate (HHV)	5,811-7,127 Btu/kWh		
Emissions²			
NOx	0.0017 lbs/MWh		
SOx	Negligible		
CO	0.034 lbs/MWh		
VOCs	0.0159 lbs/MWh		
CO ₂ @ stated efficiency	679-833 lbs/MWh on natural gas; carbon neutral on directed biogas		
Physical Attributes and Environment			
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		
Codes and Standards			
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.			
Additional Notes			
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			

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

² 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

© Bloom Energy Corporation 2019. All Rights Reserved
DOC-1013935 Rev A

APPENDIX C

USFWS AND NDDB COMPLIANCE STATEMENT



USFWS & NDDB COMPLIANCE

August 15, 2022

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

Re: Bristol Fuel Cell Power Plant: 234 Riverside Avenue, Bristol, CT
APT Job No: CT716120

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 referenced fuel cell power plant ("Facility") would result in a potential adverse effect to listed species.

The proposed project would consist of construction of a ± 4.0 megawatt fuel cell electric generating facility on a privately owned and commercially developed ± 1.52 -acre property at 234 Riverside Avenue in Bristol, Connecticut (referred to herein as the "Site"). The Site, which formerly housed an auto sales and service business, is located at the intersection of Riverside Avenue (State Route 72) and East Street. The Facility would be sited within an existing paved parking area located east of an existing vacant commercial building.

USFWS

The 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, one federally-listed¹ threatened species is known to occur in the vicinity of the Site documented as the northern long-eared bat ("NLEB"; *Myotis septentrionalis*). As a result of this preliminary finding, APT performed an evaluation to determine if the proposed Facility would result in a likely adverse effect to NLEB.

The proposed Facility would be located in a developed portion of the Site and will require no tree clearing and therefore would not impact habitat used by NLEB. Consultation with the Connecticut Department of Energy & Environmental Protection ("CTDEEP") Wildlife Division Natural Diversity Data Base ("NDDB") 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 ± 10.9 miles to the northwest in Morris.

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

¹ Listing under the federal Endangered Species Act

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 July 19, 2022, USFWS letter. The Action may affect NLEB; however, any 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 (August 19, 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

No known areas of state-listed species are currently depicted on the most recent CTDEEP NDDB Maps in the location of the proposed ReNew Facility or on the Site. Please refer to the enclosed NDDB Map which depicts the nearest NDDB buffer ± 0.76 mile south of the Site. Since the proposed Facility and Site are not located within a NDDB buffer area, consultation with DEEP is not required in accordance with their review policy or the Connecticut Siting Council's review policy.

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 NLEB Letter



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

In Reply Refer To:
Project code: 2022-0063300
Project Name: Renew Developers Bristol Fuel Cell

July 19, 2022

Subject: Consistency letter for the 'Renew Developers Bristol 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 July 19, 2022 your effects determination for the 'Renew Developers Bristol 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”^[1] 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

Renew Developers Bristol Fuel Cell

2. Description

The following description was provided for the project 'Renew Developers Bristol Fuel Cell':

Renew Developers intends to develop a portion of the ±1.6-acre Property with a ±4.0 (AC) megawatt fuel cell electric generating facility located at 234 Riverside Avenue, Bristol, Connecticut.

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@41.66975820000004,-72.93464493504212,14z>



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/media/nleb-roost-tree-and-hibernacula-state-specific-data-links-0.

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.

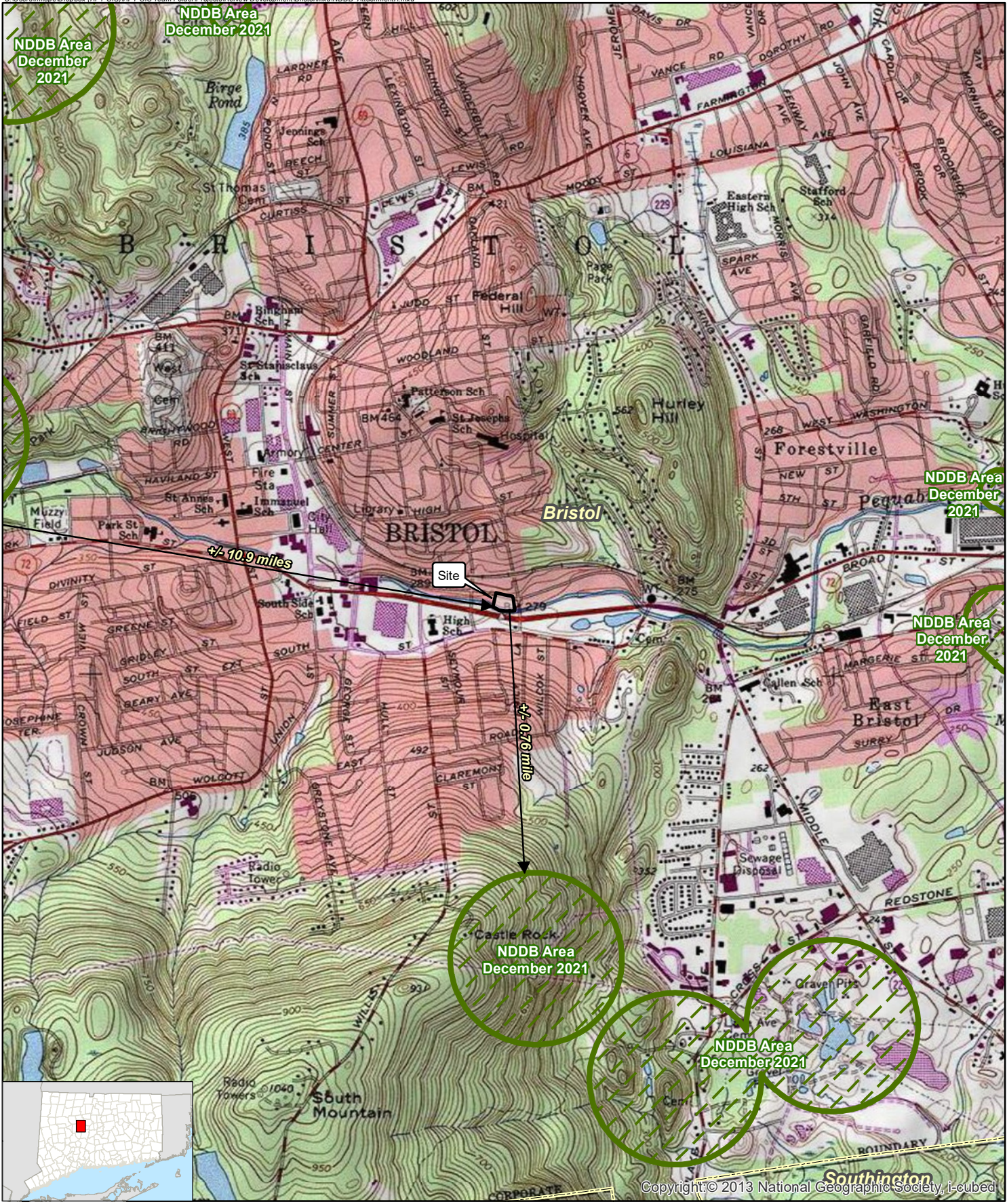
10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

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
Phone: 8609849514

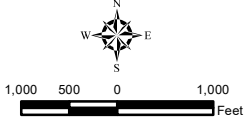
NDDDB Map



Legend

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

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



**NDDB Attachment A:
Overview Map**

Proposed Fuel Cell Facility
 234 Riverside Avenue
 Bristol, Connecticut



APPENDIX D

CULTURAL RESOURCES REVIEW



July 21, 2022

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

RE: Archaeological Assessment of Proposed Fuel Cell Development Project at 234 Riverside Avenue in Bristol, Connecticut

Ms. Gaudet:

Heritage Consultants, LLC (Heritage), is pleased to have this opportunity to provide All-Points Technology Corporation (All-Points) with the following archaeological assessment of a proposed fuel cell development project (the project) located at 234 Riverside Avenue in Bristol, Connecticut (Figure 1). The scope of the proposed project consists of the development of a proposed fuel cell that will be situated on a parcel measuring approximately 1.62 acres in size situated between Riverside Avenue and the Pequabuck River. The project parcel is situated at the southwest corner of the intersection between East Street and Riverside Avenue in a well-developed portion of the City of Bristol. This part of Bristol is commercial in nature and contains a multitude of businesses. At the time of the investigation, the project parcel was almost entirely covered in asphalt with the exception of a small area located to the south of an existing building on the property and Pequabuck River. The above-referenced disused commercial structure is positioned centrally within the project parcel along Riverside Avenue; it once housed an automobile repair facility.

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 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 study area and to investigate the proposed project parcel in terms of its natural and historical characteristics so that the need for completing additional cultural resources investigations could be evaluated.

As seen in Figure 2, a historical map excerpt dating from 1855 shows that the region containing the fuel cell development parcel was largely developed by the middle of the nineteenth century. This map excerpt shows that a great deal of the present day road alignment was in use by this time. Residences located near the project area at this time included those belonging to C. Smith, W.R. Richards, and S. Taylor. Businesses in the vicinity of the project area as of 1855 included the nearby Peck Company and Barns Store. The 1855 maps also depicts a railroad track to the north of the project area. A subsequent historic map dating from 1869 shows that a grist mill had been constructed nearby, along with residences of A. Wilcox, Wm. J. Morgan, and Mrs. Hills (Figure 3). Again this portion of Bristol consisted of a mixture of residential, commercial, and industrial structures as of 1869. The above-referenced railroad remained in place as well.

The earliest available aerial photograph depicting the portion of Bristol containing the project parcel dates from 1934 (Figure 4). This image shows that the region continued to develop throughout the late nineteenth and early twentieth centuries. The surrounding area still supported both residential and commercial uses. In addition, the Bristol High School to the south of the project parcel had been erected by 1934. The subsequent 1951 aerial photograph shows apparent clearing of trees for nearby parkland, as well as the influx of new businesses as recognized by the increased number of commercial buildings to the east and west of the project parcel (Figure 5). The aerial photograph depicted in Figure 6, which was taken in 1970, shows the area surrounding the project parcel as in essentially the same state as 1951. Finally, Figure 7, which is an excerpt from a 2022 aerial photograph, shows the proposed fuel cell location in its modern state. The area is defined by a paved parking lot, commercial building, and a tree line adjacent to the river to the south. The surrounding area remains defined by commercial and residential development.

Background research for the current project also included a review of previously identified archaeological sites and State/National Register of Historic Places properties/districts sites situated within 0.8 km (0.5 mi) of the proposed fuel cell location (Figures 12 and 13). While the review did not result in the identification of any previously identified archaeological sites in the area, a State Register of Historic Places listed property and five National Register of Historic Places properties have been identified within 0.8 km (0.5 mi) of the project location. These resources included the Burnadette Peck House, The Beledon House, The Federal Hill Historic District, The Main Street Historic District, Bristol High School, and the South End Historic District. These items are discussed briefly below.

The Burnadette Peck House

The Burnadette Peck House was a historical residential structure located at 51 Prospect Street in Bristol, Connecticut (Figure 9). It is listed on the Connecticut State Register of Historic Places; however, the structure appears to have been demolished. It will not be impacted by the proposed undertaking.

The Beledon House

The Beledon House is a historical residence located at 50 Bellevue Avenue in Bristol, Connecticut (Figure 9). The home was designed by architect Samuel J. Brown for the owner William E. Sessions; it was constructed in 1908. William Sessions was a local civic leader who came to prominence because of his work in the local manufacturing and financial sectors. The Beledon House was designed in the Beaux-Arts Style, which was popular at the turn of the twentieth century. The building was modified later to include a Georgian Revival Portico, as well as additional Mediterranean influences. The home was the grandest and most opulent in a neighborhood that was once filled with many large residential dwellings. It was listed on the National Register of Historic Places in 1982 under Criterion C because it was considered a prime example of the Beaux-Arts style of architecture, which rose to prominence in Central Connecticut around the turn of the twentieth century. The Beledon House is located well away from the project parcel and will not be impacted directly or indirectly by the proposed fuel cell development.

Bristol High School

The Bristol High School was listed on the National Register of Historic Places in 2018 (Figure 9). It is the site of the former Bristol High School, which was later converted to the Memorial Boulevard Middle School. The structure was completed in 1923 and was designed by George Potter of New York City. The building was constructed in a classical revival style. It was constructed of brick trimmed with cast stone. The Bristol High School was listed on the National Register of Historic Places for its contributions to the

architectural history of Bristol. It is located away from the project area. It will be not be impacted directly, nor will it be impacted indirectly due to intervening vegetation between it and the project parcel.

The Federal Hill Historic District

The Federal Hill Historic District is centered around a Congregational Church located at the top of Federal Hill and it represents the center of community life after Bristol separated from Farmington (Figure 9). As Bristol grew and became an industrial center, the Federal Hill Historic District became home to many of the town's economic and political leaders, such as the Ingraham, Sessions, Ives, and Peck Families. The district is primarily residential in nature and it contains elaborate and well-preserved examples of Greek Revival, Colonial Revival, Federal Revival, Queen Anne, and Italianate architectural styles that date from 1790 through 1920. In total, the Federal Hill Historic District is comprised of 290 buildings. Of these, 264 are considered contributing elements of the district. The district was nominated to the National Register of Historic Places in 1986 under Criteria A and C for its associations with Bristol's early settlement and historic development, as well as for its architectural significance. The historic district is located well away from the project parcel and will not be impacted directly or indirectly by the proposed fuel cell development.

The Main Street Historic District

The Main Street Historic District is comprised of 18 contributing commercial and social buildings and structures dating from the mid nineteenth to mid twentieth century (Figure 9). The dominant architectural styles found within this historic district include Classic Revival, Art Deco, and Late Gothic Revival. This cohesive group of buildings, which exhibit few modifications, was deemed significant based on architectural or engineering attributes. Taken together, the buildings comprising the Main Street Historic District represent the historical center of Bristol, Connecticut. The collection of structures contained within the district represents the early financial, commercial, and governmental core of early nineteenth century Bristol. The Main Street Historic District was listed on the National Register of Historic Places in 1995 under Criterion C for its architectural significance. The historic district is located well away from the project parcel and will not be impacted directly or indirectly by the proposed fuel cell development.

The South End Historic District

The South End Historic district encompasses 132 buildings, 112 of which are considered contributing elements (Figure 9). The contributing buildings were primarily constructed during the nineteenth century, and they reflect the changing industrial development of Bristol. This area of Bristol got its start through the ambitious design of Chauncey Jerome, who built a bridge over the Pequabuck River and a road, which later became Main Street, to connect the rest of Bristol with his factory. Jerome settled his family here, as did his later business partner Darrow, and later the Dunbar and Barnes Families. The second half of the nineteenth century and early twentieth century in this area is characterized by residences constructed in the South End for factory workers and tradesmen. Because many craftsmen lived in this area and constructed the houses themselves, the buildings were solidly built and ornately embellished. The South End Historic District was listed on the National Register of Historic Places in 2001 under Criteria B and C for its association with Chauncey Jerome, an early pioneer in American clockmaking, as well as for its architectural significance. The historic district is located well away from the project parcel and will not be impacted directly or indirectly by the proposed fuel cell development.

Jennifer Gaudet

July 21, 2022

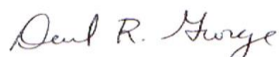
Page 4

In addition to previously identified cultural resources, Heritage examined soils data for the proposed project parcel. According to the National Resources Conservation Service (NRCS), soils located within the project area consist of Urban Land (soil code 309) and Fluvaquents-Udifluvents complex (soil code 109) soils (Figure 10). Urban Land soils consists of very deep, somewhat excessively drained soils formed in outwash that have been disturbed by cutting or filling; they also occur in areas that are covered by buildings and pavement. Urban Land soils have been largely disturbed and are not well correlated with intact prehistoric or historical period archaeological deposits. Fluvaquents-Udifluvents complex soils are frequently flooded, deep, nearly level, range from well drained to very poorly drained unconsolidated alluvium. They are generally stratified and vary widely in texture and drainage over short distances. The alluvium has been recently deposited by streams and is subject to frequent changes through stream overflow. Due to locations along water courses, this soil is considered Hydric. Fluvaquents-Udifluvents are also not well correlated with intact prehistoric or historical period archaeological deposits.

Pedestrian survey of the proposed project parcel was undertaken by Heritage personnel in July of 2022. This walkover investigation included photo-documentation of the asphalt lot and the abandoned commercial building located on the project parcel. According the Bristol Assessor's Office, the building located with the project parcel was built in ca., 1920, and encompasses 9,926 square feet of interior space. The exterior of the building, which was a former automobile sales and repair shop, consists of stucco applied over the original historic brick façade. Most of the building is covered by a relatively steep gable roof, excerpt the rearward portion, which has a low pitch double gable configuration roof. The northern portion of the building is characterized by modern plate glass windows and a modern entry door, while the southern sections of the building contain five-over-four pane windows set in steel frames that rest upon painted concrete lintels. There are also smaller arched windows in the upper portion of the western wall of the northern portion of the building. There are also several roll up doors and "man doors" in the eastern façade of the building that allowed personnel and automobile access. Heritage personnel also noted the letters "ARAG" were painted on the western façade of the northern portion of the building, indicating that the building has been used as a garage. Today, the building is in a significant state of disrepair and has been abandoned for some time. Its historical fabric has been considerably altered and diminished, and it was determined that the building does not rise to the level of significance for listing on the National Register of Historic Places applying the criteria of evaluation (36 CFR 60.4 [a-d]). No additional architectural recordation of this building is recommended prior to it being razed. Finally, the project parcel is considered to have little, if any, potential to yield intact archaeological deposits. No additional archaeological assessment of the project parcel 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 me at 860-299-6328 or email me at dgeorge@heritage-consultants.com. We are at your service.

Sincerely,



David R. George, M.A., R.P.A.
Heritage Consultants, LLC

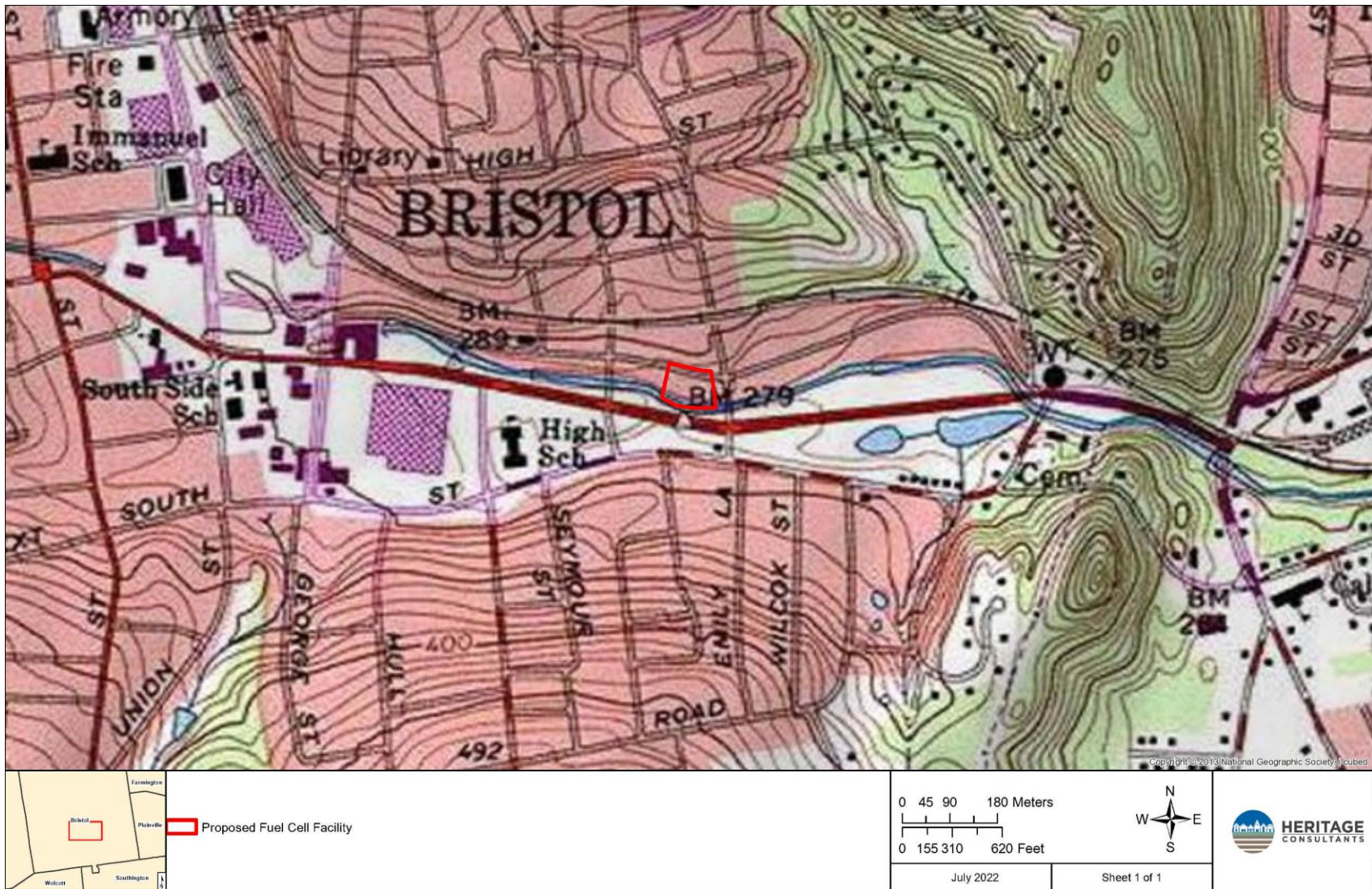


Figure 1. Excerpt from a USGS 7.5' series topographic quadrangle image showing the location of the project parcel in Bristol, Connecticut.

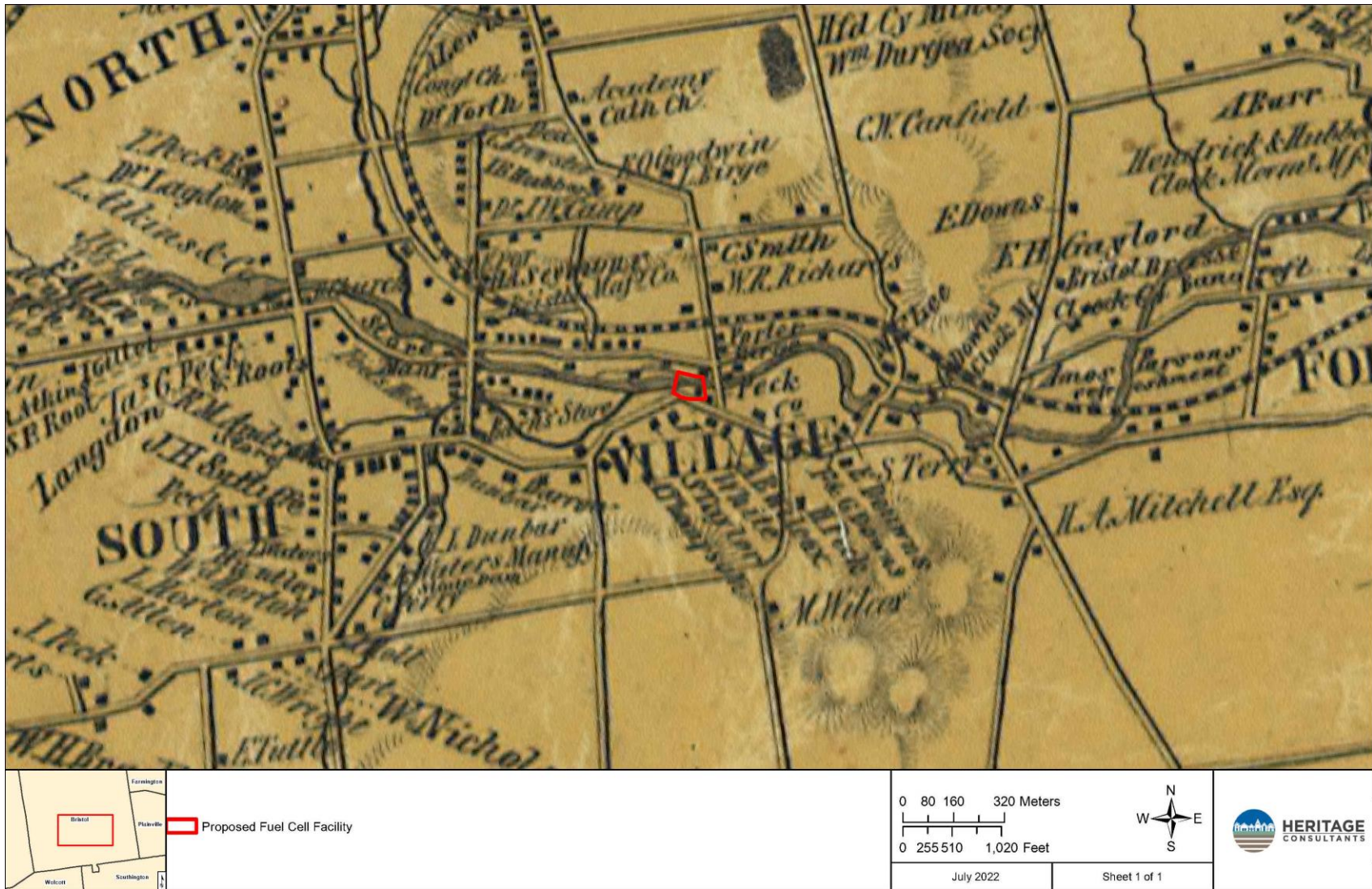


Figure 2. Excerpt from an 1855 historical map showing the location of the project parcel in Bristol, Connecticut.

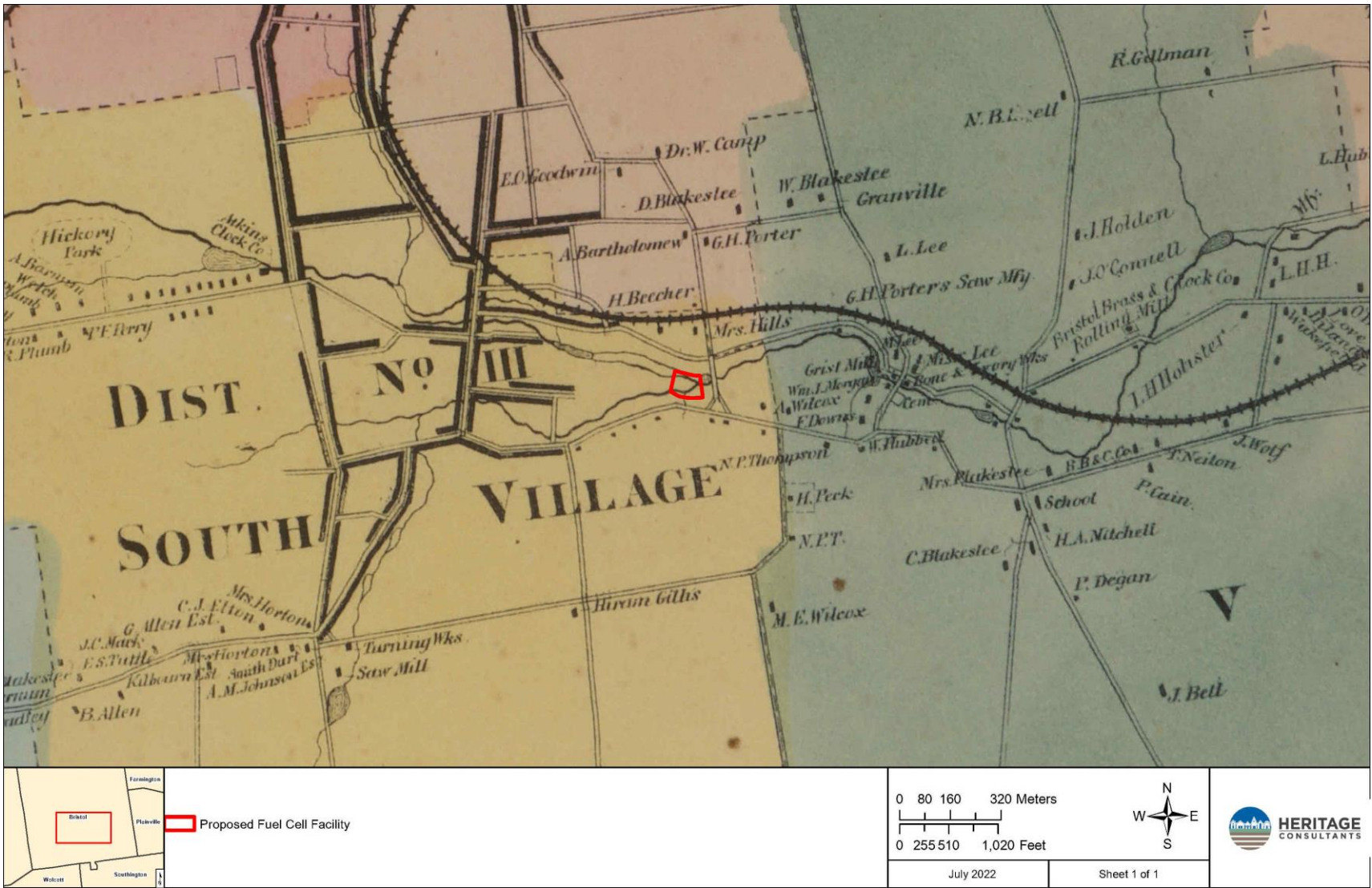


Figure 3. Excerpt from an 1869 historical map showing the location of the project parcel in Bristol, Connecticut.



Figure 4. Excerpt from a 1934 aerial photograph showing the location of the project parcel in Bristol, Connecticut.



Figure 5. Excerpt from a 1951 aerial photography showing the location of the project parcel in Bristol, Connecticut.



Figure 6. Excerpt of a 1970 aerial photograph showing the location of the project parcel in Bristol, Connecticut.



Figure 7. Excerpt from a 2022 aerial photograph showing the location of the project parcel in Bristol, Connecticut.

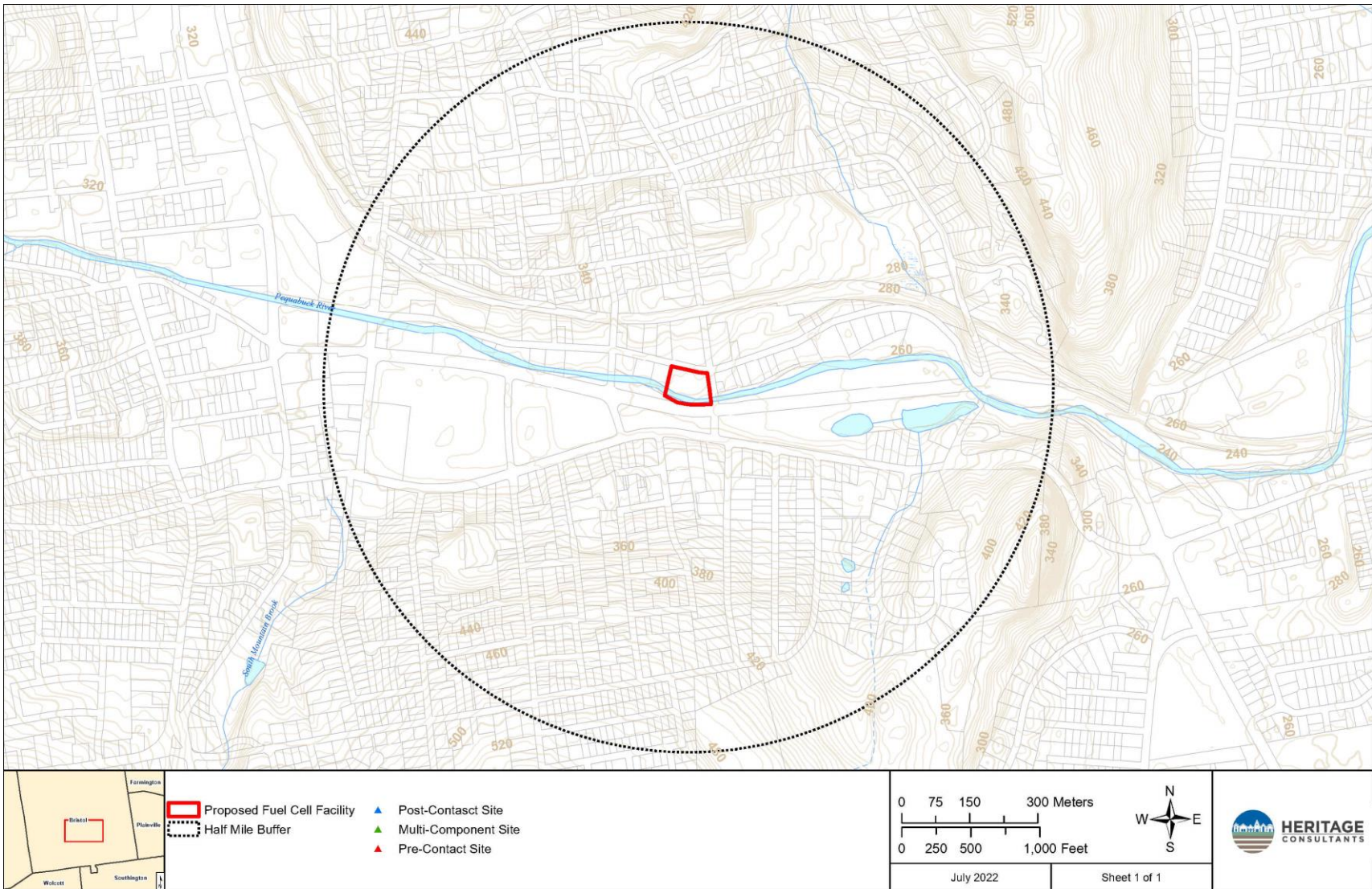


Figure 8. Digital map depicting the locations of previously identified archaeological sites in the vicinity of the project parcel in Bristol, Connecticut (note: none have been identified in this area).

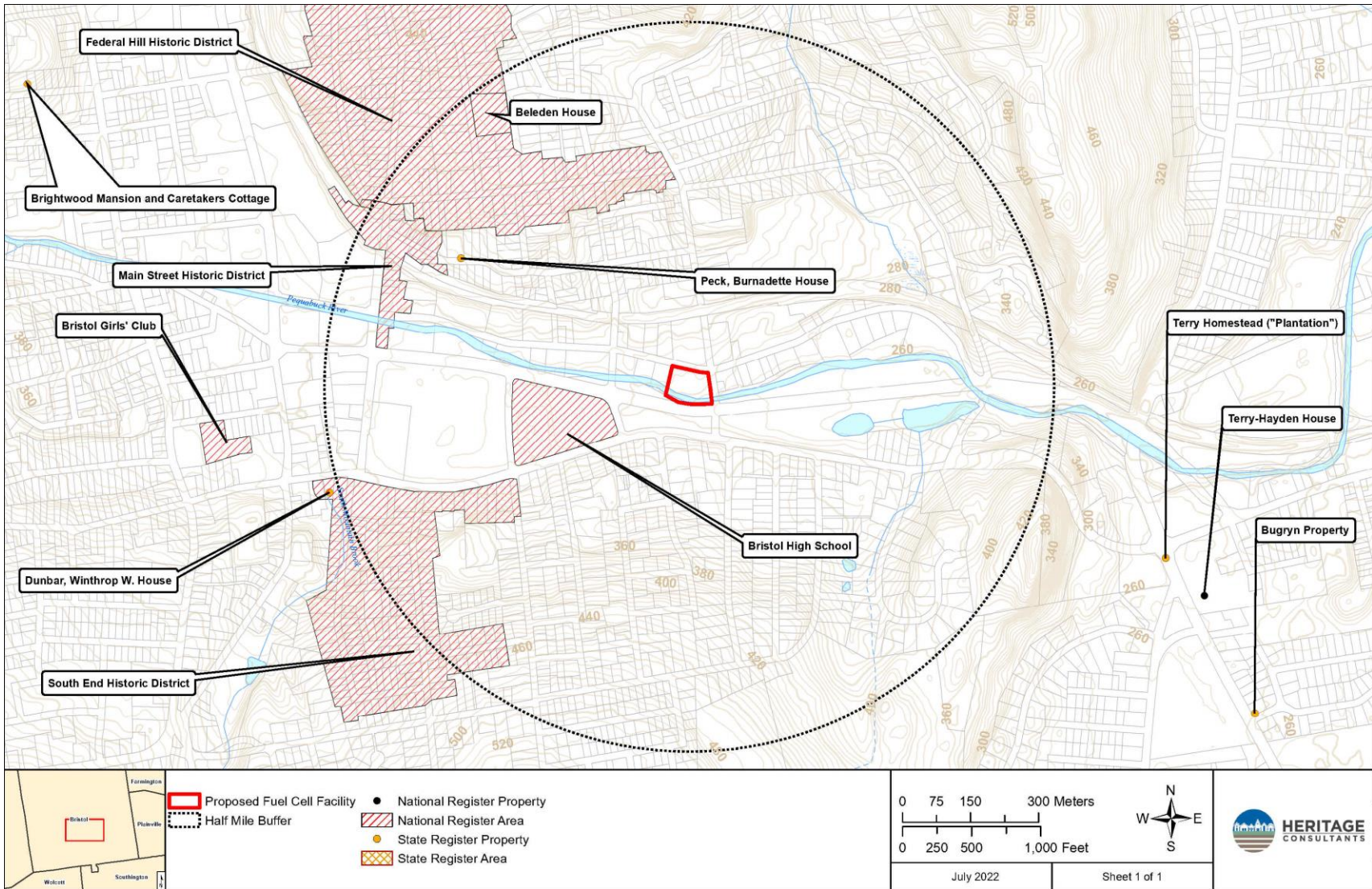


Figure 9. Digital map depicting the locations of the previously identified National Register of Historic Places and State Register of Historic Places properties in the vicinity of the project parcel in Bristol, Connecticut.

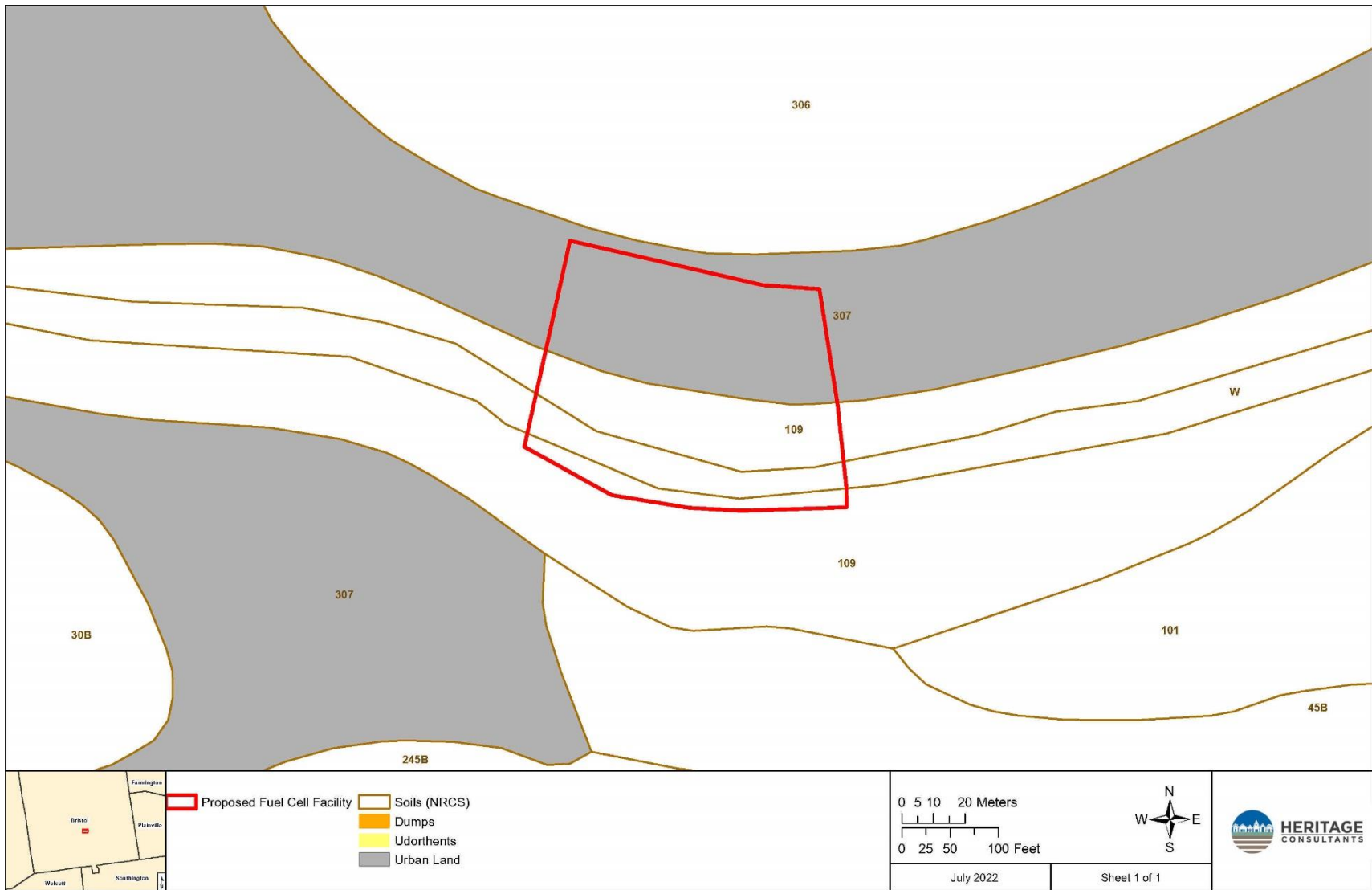


Figure 10. Digital map depicting the soil types present in the vicinity of the project parcel in Bristol, Connecticut.

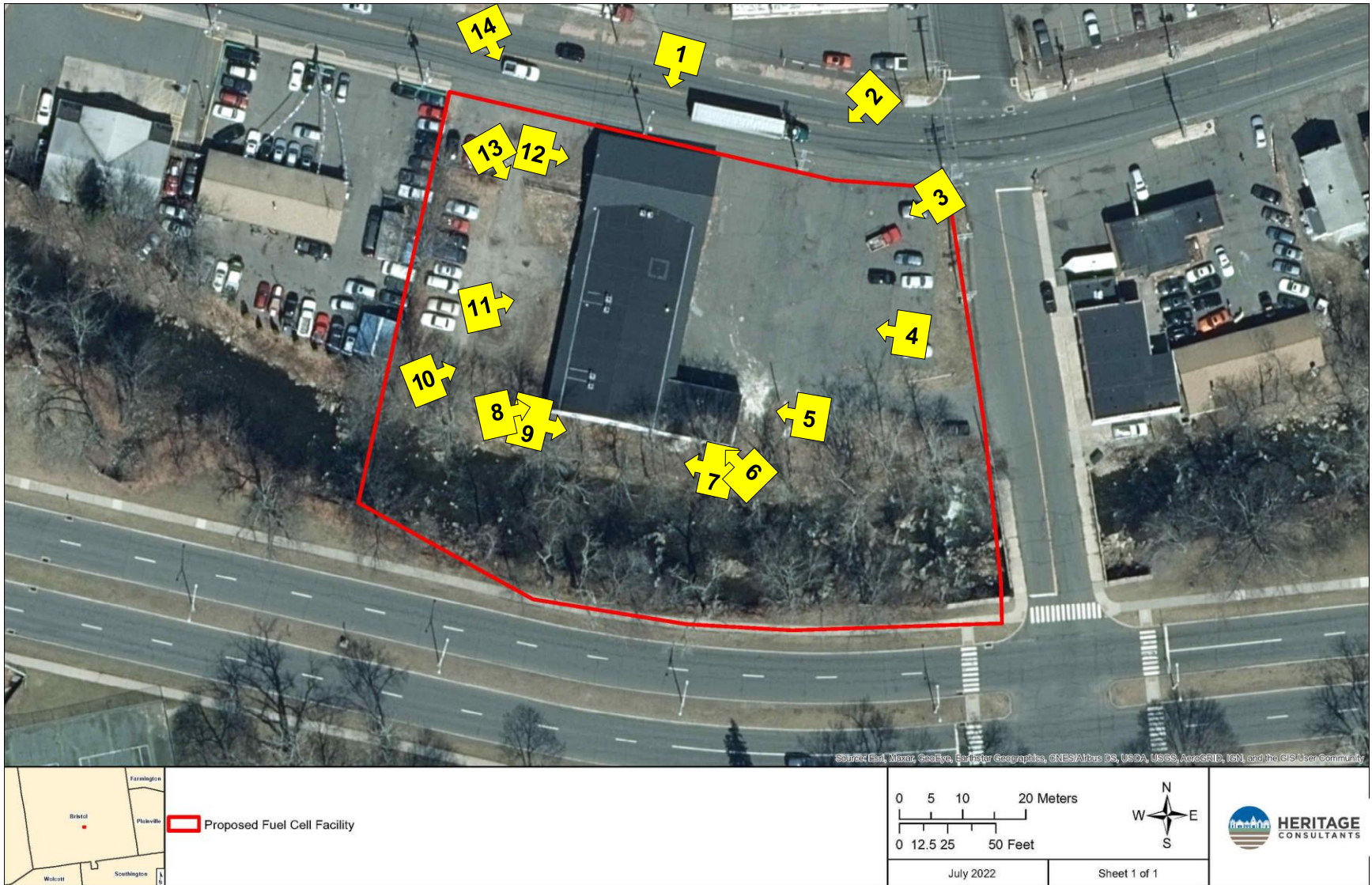


Figure 11. Excerpt from a 2019 aerial map depicting location of photos taken of the proposed fuel cell site at 234 Riverside Avenue, Bristol, Connecticut.



Photo 1. Overview photo taken from across Riverside Avenue facing south toward proposed project area.



Photo 2. Overview photo taken from across Riverside Avenue facing southwest toward proposed project area.



Photo 3. Overview photo taken from edge of lot facing southwest toward project area.



Photo 4. Overview photo taken from edge of lot facing west toward project area.



Photo 5. Detail photo of existing structure in project area, looking west.



Photo 6. Detail photo of rear wall of existing structure in project area, looking northwest.



Photo 7. Detail photo of rear wall of existing structure in project area, looking west.



Photo 8. Detail photo of rear wall of existing structure in project area, looking northeast.



Photo 9. Detail photo of rear wall of existing structure in project area, looking east.



Photo 10. Overview photo of project area taken from rear edge of lot facing northeast.



Photo 11. Detail photo of existing structure in project area looking northwest.



Photo 12. Detail photo of existing structure in project area looking east.



Photo 13. Overview photo of project area looking southeast.



Photo 14. Overview photo of project area taken from across Riverside Avenue facing southeast.

APPENDIX E

VISIBILITY DOCUMENTATION



EXISTING

PHOTO

1

**OBLIQUE AERIAL PHOTO
SOURCE: PICTOMETRY 9/7/2021**



PROPOSED

PHOTO

OBLIQUE AERIAL PHOTO
SOURCE: PICTOMETRY 9/7/2021



EXISTING

PHOTO

1A

**OBLIQUE AERIAL PHOTO
SOURCE: PICTOMETRY 9/7/2021**



PROPOSED

PHOTO

1A

**OBLIQUE AERIAL PHOTO
SOURCE: PICTOMETRY 9/7/2021**



EXISTING

PHOTO

2

LOCATION

RIVERSIDE AVENUE

ORIENTATION

SOUTH



PROPOSED

PHOTO

2

LOCATION
CURTIS STREET

ORIENTATION
WEST

APPENDIX F

SOUND EVALUATION

August 18, 2022

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

SUBJECT: Environmental Sound Evaluation
234 Riverside Ave. Fuel Cell Power Plant
Bristol, CT

Dear Mr. Carli,

Cavanaugh Tocci Associates has evaluated environmental sound impacts associated with the proposed 4 MW fuel cell power plant at 234 Riverside Avenue in Bristol, 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 a weeklong period (starting at 12:00 noon July 13, 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 properties.

Sound levels were monitored using a Rion NL-52 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 telephone pole 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. The data indicates that hourly background sound levels at the nearest properties typically range between 45 dBA and 55 dBA with the lowest levels occurring during the early morning hours when local traffic is at a minimum.

Environmental Sound Regulations

There are two regulations that are pertinent with respect to sound produced by the proposed Project. These are the Connecticut Regulations for the Control of Noise, which are enforced by the Connecticut Department of Energy and Environmental Protection, and City of Bristol Noise Ordinance. The following briefly discusses the applicable aspects of these regulations.

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.

City of Bristol, CT Noise Ordinance

Chapter 15 Article II of the Code of the City of Bristol is a noise ordinance. The definitions and limits found in this regulation are nearly identical to the state regulations.

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 is surrounded on the north, east, and west sides by commercial land uses. To the south is a park. All of these properties are classified as Class B receptors with a limit of 66 dBA (day or night).

- The nearest residential uses are approximately 450 feet north and south 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 presents the results of the acoustic modeling. As indicated in Figure 3, facility sound impacts are expected to be 55 dBA or lower at all receptor property boundaries. In addition, estimated sound levels at existing residences are 42 dBA or lower.

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
22183/234 Riverside Ave Britol CT Fuel Cell Power Plant - Sound Evaluation.docx

FIGURES



Aerial Photograph of Project Area Indicating Sound Monitoring Location

Figure 1

Sound Levels Measured at Project Site (SM-1)

234 Riverside Ave, Bristol, CT (July 13 - July 20, 2022)

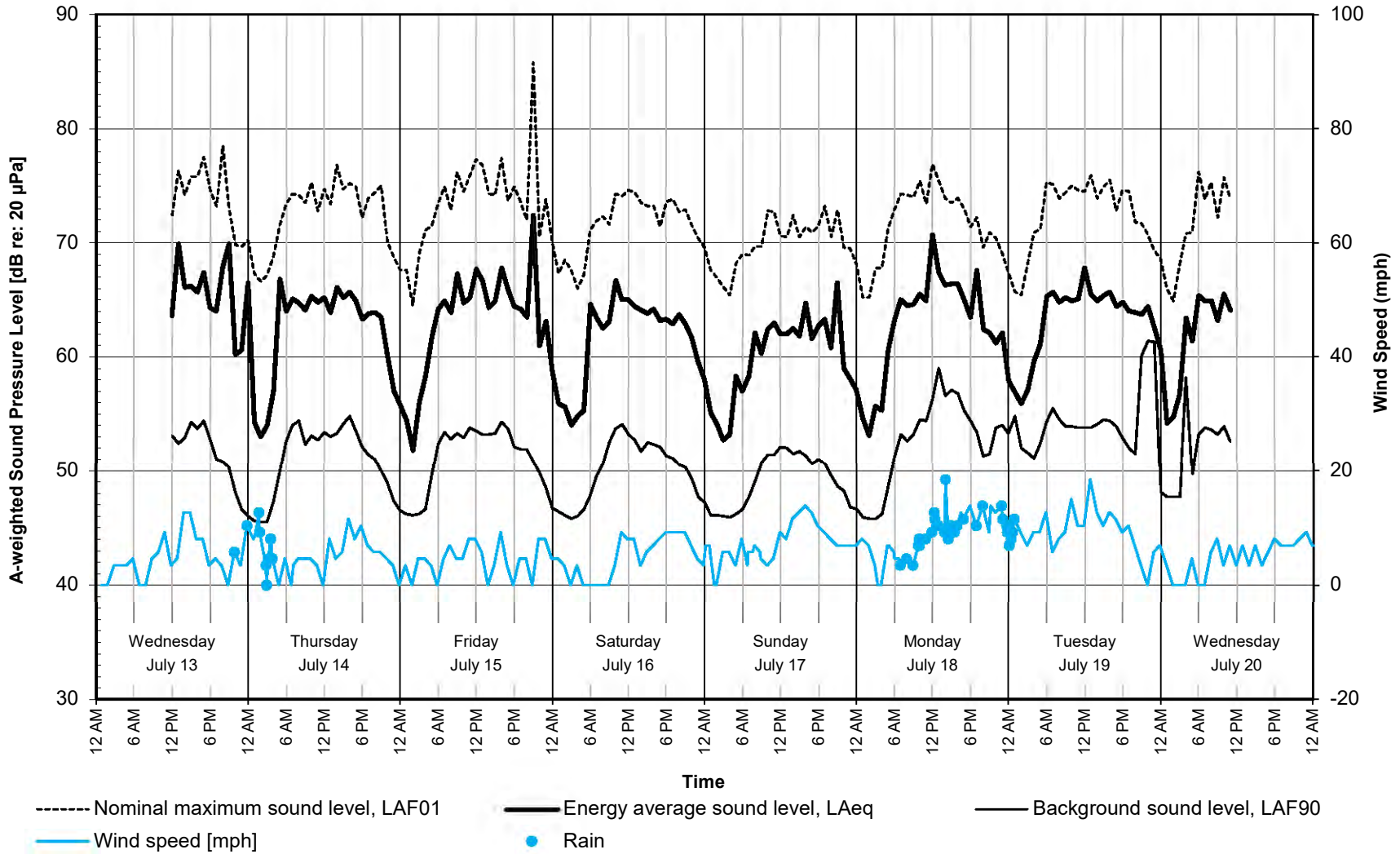
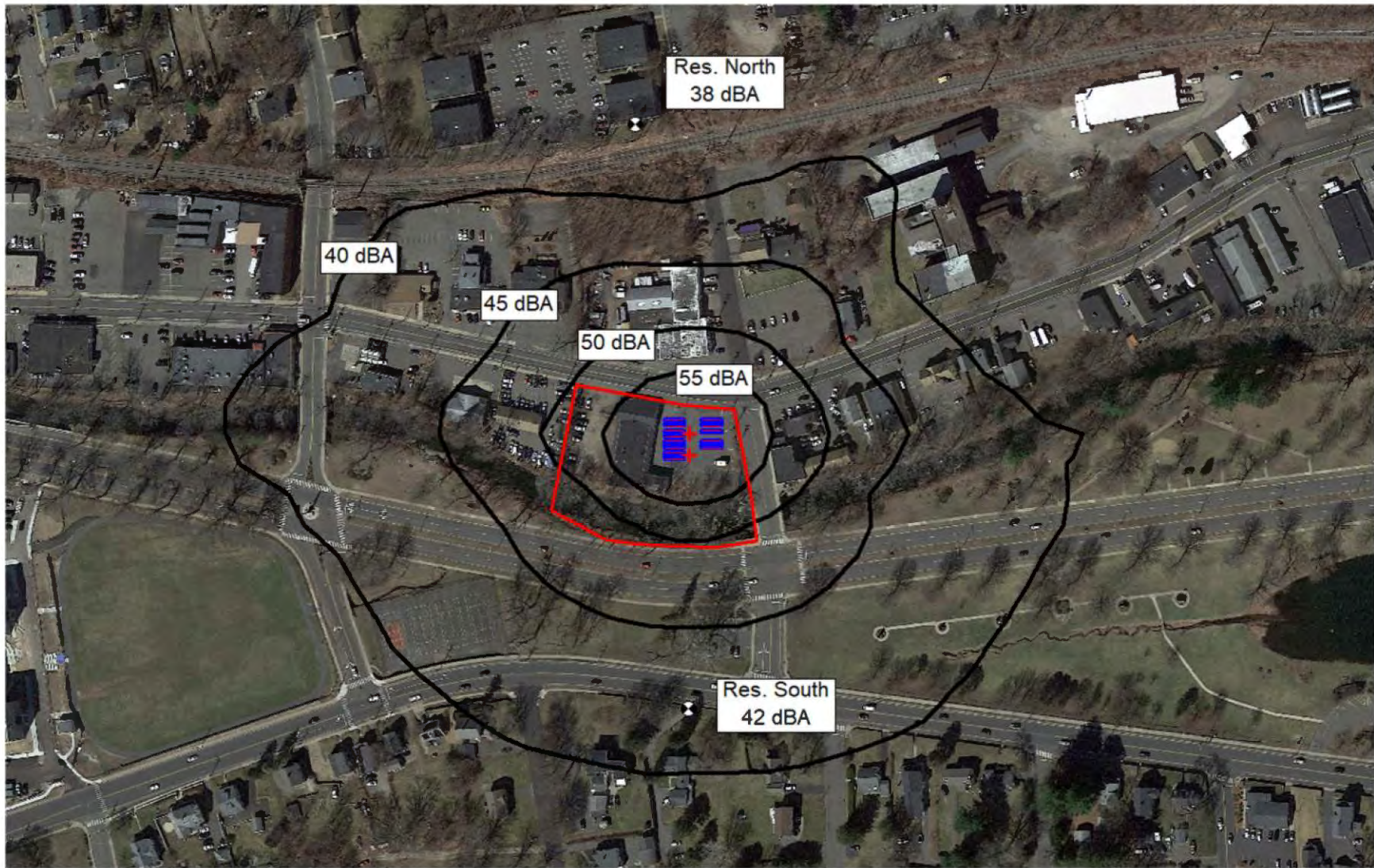


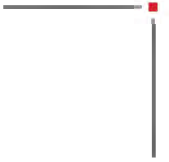
Figure 2

SM-1



Estimates of Facility Sound – Property Boundaries and Nearest Residences

Figure 3



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.

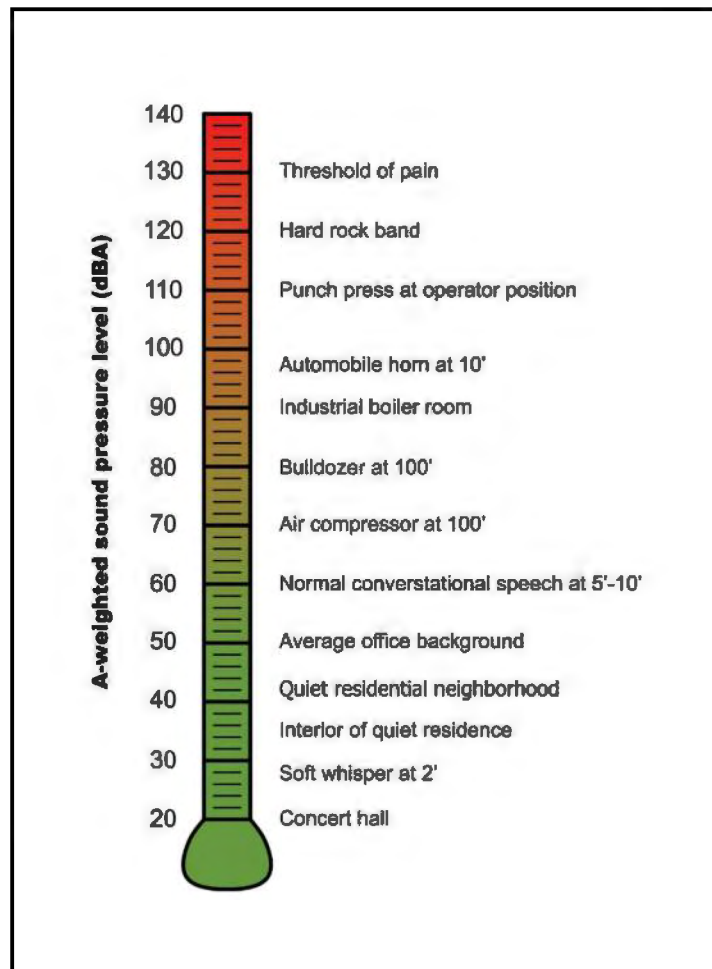


Figure A-1
Typical Sound Levels for Common Interior and Environmental Sources