

March 29, 2024

Melanie Bachman, Esq. Executive Director Connecticut Siting Council 10 Franklin Square New Britain, CT 06051

RE: Bloom Energy Corporation, **Notice of Exempt Modification** *Pursuant to RCSA 16-50j-57(a)* to Existing Fuel Cell Energy Facility Site at The Home Depot, 55 Granby Street, Bloomfield, CT 06002 ("Notice of Exempt Modification")

Dear Ms. Bachman:

This letter is to herby notify the Connecticut Siting Council of Bloom Energy Corp.'s intent to undertake an exempt modification, in accordance with Section 16-50f-57(a) of the Regulations of Connecticut State Agencies ("RCSA"), for the necessary upgrade to Bloom's fuel cell energy server system at **The Home Depot, located at 55 Granby Street, Bloomfield, CT 06002** 

#### **Proposed Modification**

The existing facility consists of one (1) 200kw Bloom Energy ES-5700 Energy Server, now reaching the end of its service life. Specifications for the existing equipment and new equipment to be installed are provided in Attachment 1. As-builts showing the existing facility layout is shown in Attachment 2. There will be no changes to the site footprints, layouts, or utility routing as Bloom plans to replace all components in kind.

Bloom Energy proposes the following modifications to the facility:

- 1. Disconnect existing servers from the natural gas source, water source, supervisory control and data acquisition, and electricity systems.
- 2. Remove the existing fuel cell servers.
- 3. Install one (1) current generation fuel cell server (Model No. ES5-1650US0301S-NASY4N-0) on existing concrete pad or skid at the site (direct replacement in kind).
- 4. Install new server repower components.

The proposed modification would not have a substantial adverse environmental effect or cause a significant adverse change or alteration in the physical or environmental characteristics of the facility because:





- a. The modification does not extend the boundaries of the site beyond the existing compound and will not impair the structural integrity of the facility.
- b. The modification does not increase the height of the existing associated equipment.
- c. The modification will not increase noise levels at the site boundary or to levels that exceed state and local criteria.
- d. Electric and magnetic field levels at the site will not be affected by the modifications due to low or no change in export of power from site.
- e. No endangered, threatened, or sensitive species are within the vicinity of the facility per NDDB.
- f. The modifications would not affect any waterways or wetlands and the facility is not located in a flood zone.

Construction start is expected to begin on August 12<sup>th</sup>, 2024 and will be completed within 4-6 weeks.

Bloom will provide the Council with an original and two copies of this notice, including the required \$625 filing fee. A copy of this notice will also be provided to the Mayor of Bloomfield and the property owners representative, Colin Holloway via electronic mail.

Please let us know if you have any questions or require additional information regarding this notification. Thank you.

Respectfully,

Kristen Grillo

Senior Permitting Specialist | East Coast Field Office

Customer Installations Group | North America

(917) 803-4511

Kristen.Grillo@bloomenergy.com

CC: Danielle C. Wong, Mayor of Bloomfield Colin Holloway, The Home Depot





## **Bloomenergy**®

### ES-5700

Clean, Reliable, Affordable Energy



#### **CLEAN, RELIABLE POWER ON DEMAND**

Bloom Energy's ES-5700 delivers clean power that reduces emissions and energy costs. The modular architecture enables the installation to be tailored to the actual electricity demand, with a flexibility to add servers as the load increases. The ES-5700 actively communicates with Bloom Energy's network operations centers so system performance can be monitored and maintained 24 hours per day, 365 days per year.

#### **INNOVATIVE TECHNOLOGY**

Utilizing patented solid oxide fuel cell (SOFC) technology, the ES-5700 produces combustion-free power at unprecedented efficiencies, meaning it consumes less fuel and produces less  $\rm CO_2$  than competing technologies. Additionally, no water is needed under normal operating conditions.

#### **ALL-ELECTRIC POWER**

The ES-5700, which operates at a very high electrical efficiency, eliminates the need for complicated and costly CHP systems. Combining the standard electrical and fuel connections along with compact footprint and sleek design, the ES-5700 is the most deployable fuel cell on the market.

#### CONTROLLED AND PREDICTABLE COST

By providing efficient on-site power generation, the economic and environmental benefits are central to the ES-5700 value proposition. Bloom Energy customers can lock in their long term energy costs and mitigate the risk of electricity rate increases. The ES-5700 has been designed in compliance with a variety of safety standards and is backed by a comprehensive warranty.

#### **About Bloom Energy**

Bloom Energy is making clean, reliable energy affordable. Our unique on-site power generation systems utilize an innovative fuel cell technology with roots in NASA's Mars program. By leveraging breakthrough advances in materials science, Bloom Energy systems are among the most efficient energy generators, providing for significantly reduced operating costs and dramatically lower greenhouse gas emissions. Bloom Energy Servers are currently producing power for many Fortune 500 companies including Apple, Google, Walmart, AT&T, eBay, Staples, as well as notable non-profit organizations such as Caltech and Kaiser Permanente.

#### **Headquarters:**

Sunnyvale, California

#### For More Information:

www.bloomenergy.com

### ES-5700

Outputs				
Nameplate power output (net AC)	210 kW			
Base load output (net AC)	200 kW			
Electrical connection	480 V, 3-phase, 60 Hz			
Inputs				
Fuels	Natural gas, directed biogas			
Input fuel pressure	15 psig			
Water	None during normal operation			
Efficiency				
Cumulative electrical efficiency (LHV net AC)	52-60%			
Heat rate (HHV)	6,295-7,264 Btu/kWh			
Emissions				
NOx	< 0.01 lbs/MWh			
S0x	Negligible			
CO	< 0.10 lbs/MWh			
VOCs	< 0.02 lbs/MWh			
CO <sub>2</sub> @ stated efficiency	735-849 lbs/MWh on natural gas;			
	carbon neutral on directed biogas			
Physical Attributes and Environment				
Weight	19.4 tons			
Dimensions	26' 5" x 8' 7" x 6' 9"			
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 strir	ngent CARB 2007 emissions standards			
Product listed by Underwriters Laboratories Inc. (UL) to ANSI/CSA America FC 1-2004				
Additional Notes				
Access to a secure website to monitor system performance & environmental benefits				

## **Bloomenergy**°

Bloom Energy Corporation 1299 Orleans Drive Sunnyvale CA 94089 T 408 543 1500 www.bloomenergy.com

## **Bloomenergy**®

## Energy Server 5.5

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



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  $24 \times 7 \times 365$  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 5.5	Technical Highlights (ES5-1650US0301S-NASY14-0)
Outputs	
Nameplate power output (net AC)	165kW
Load output (net AC)	165kW
Electrical connection	480V, 3-phase, 60Hz
Inputs	
Fuels	Natural gas
Input fuel pressure	12-18 psig (15 psig nominal)12-18 psig (15 psig nominal)Natural gas
Water	None during normal operation
Efficiency	
Cumulative electrical efficiency (LHV net AC) <sup>1</sup>	65-53%
Heat rate (HHV)	5,811 <b>-</b> 7,127 Btu/kWh
Emissions <sup>2</sup>	
NOx	0.0017 lbs/MWh
SOx	Negligible
CO	0.034 lbs/MWh
VOCs	0.0159 lbs/MWh
CO <sub>2</sub> @ stated efficiency	679-833 lbs/MWh on natural gas; carbon neutral on directed biogas
Physical Attributes and Environment	
Weight	9.9 tons
Dimensions (variable layouts)	10'9" x 8'8" x 7'0" or 21'6" x 4'4" x 6'9"
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 IEEE 1547 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

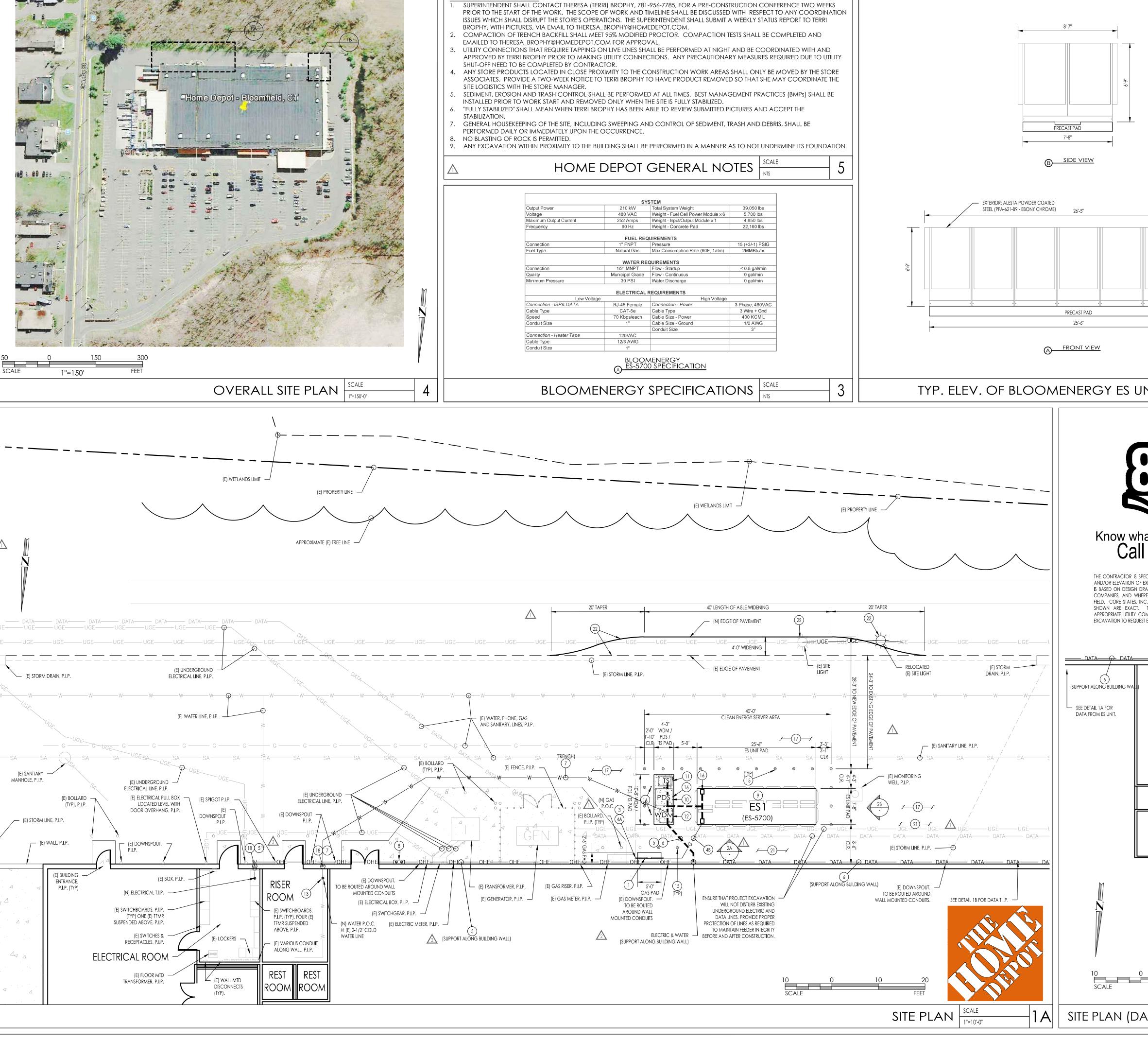
<sup>1</sup> 65% LHV efficiency verified by ASME PTC 50 Fuel Cell Power Systems Performance Test

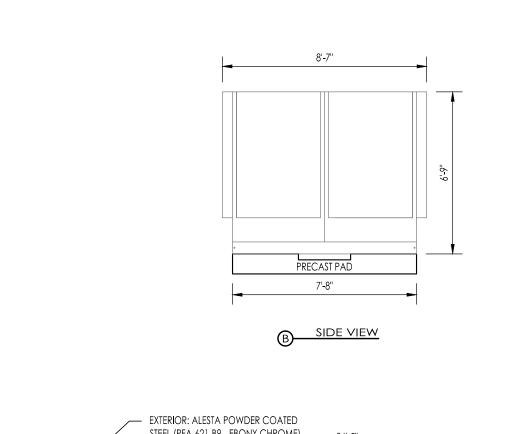
<sup>2</sup> NOx and CO measured per CARB Method 100, VOCs measured as hexane by SCAQMD Method 25.3

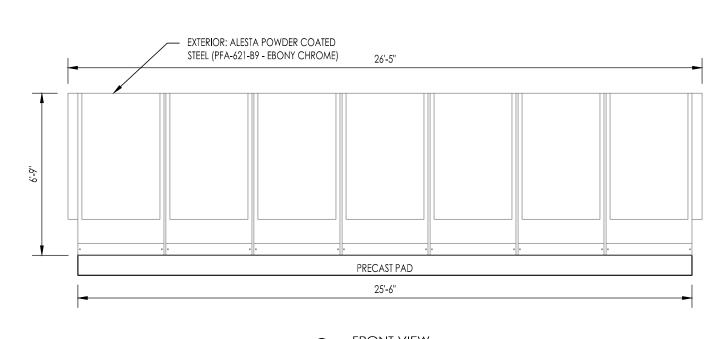
#### About Bloom Energy

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





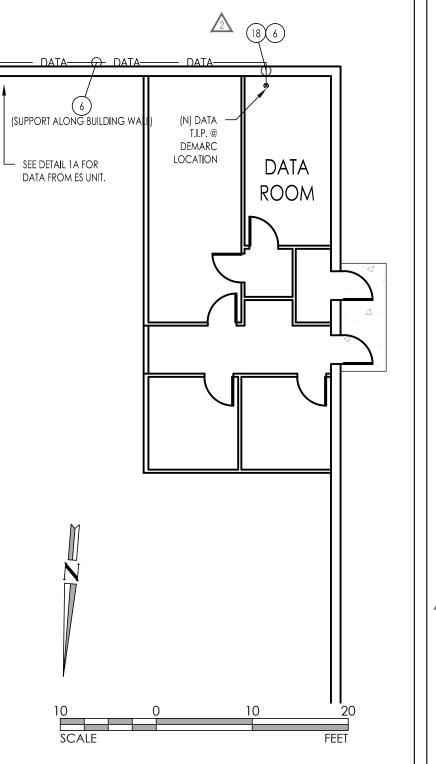




TYP. ELEV. OF BLOOMENERGY ES UNITS SCALE 3" = 1'-0"

# Know what's below. Call before you dig.

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON DESIGN DRAWINGS, RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. CORE STATES, INC. DOES NOT GUARANTEE THAT LOCATIONS SHOWN ARE EXACT. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF UTILITIES.



## **RESPONSIBILITY NOTES**

- THE FOLLOWING EQUIPMENT SHOWN ON THESE PLANS WILL BE PROVIDED AND DELIVERED BY BLOOM ENERGY. APPLICABLE TRADES TO MOUNT AND MAKE FINAL - POWER DISTRIBUTION MODULE (PDS)
- WATER DEIONIZATION MODULE (WDM) - TELEMETRY SECTION (TS) - SIGNAGE (SEE SAFETY SIGNAGE) - SITE KIT (SEE SITE KIT NOTES)
- THE FOLLOWING EQUIPMENT SHOWN ON THESE PLANS WILL BE PROVIDED, DELIVERED AND MOUNTED BY BLOOM ENERGY. APPLICABLE TRADES TO MAKE FINAL CONNECTIONS: - CLEAN ENERGY SERVER - PRECAST SUPPORT PADS (SEE SHEET 1 OF 1)

## SITE KIT NOTES

BLOOMENERGY TO PROVIDE AND DELIVER THE SITE KIT . ELECTRICAL AND PLUMBING CONTRACTOR TO INSTALL SITE KITS, CONSISTING OF PAD PLUMBING AND BUS BARS WITH SECURITY BOXES, ON THE PRECAST CONCRETE PAD PER MANUFACTURER SPECIFICATIONS. PWM DEFLECTORS ARE NOT REQUIRED ON THIS SITE

## **UTILITIES**

- GAS: CONNECTICUT NATURAL GAS (CNG) - ELECTRIC: CONNECTICUT LIGHT & POWER (CL&P)

## **CONDUIT & PIPE LENGTHS**

TYPE	TOTAL DISTANCE FROM TIE-IN TO FURTHERMOST ES UNIT (LINEAF
GAS PIPE	±25'
ELECTRICAL CONDU	JIT ±135'
DATA CONDUIT	±365'
WATER PIPE	±130'

## LEGEND OF UTILITY LINES

- 1				
١				
ı	DATA DATA	DATA LINE	——SA———SA———	Sanitary line
ı		FENCE LINE	—st——st——	STORM LINE
ı	—-F0&TF0&T	FIBER OPTICS & PHONE	—tv—tv—tv—	TELEVISION LINE
ı	G G	GAS L <b>I</b> NE	—UGE——UGE——	UNDERGROUND
ı		JOINT TRENCH	w	WATER LINE
ı	—оне——оне——	OVERHEAD ELECTRICAL		

## **KEYNOTES**

- )—(N) UTILITY GAS METER SET ASSEMBLY (MSA) FOR CLEAN ENERGY SERVER. COORDINATE LOCATION & INSTALLATION REQUIREMENTS WITH UTILITY COMPANY PRIOR TO INSTALLATION. MAINTAIN MINIMUM 3'-0" CLEARANCE FROM ALL IGNITION SOURCES. CONTRACTOR TO PROVIDE CAST-IN-PLACE PAD PER GAS ASSEMBLY PAD (DETAIL 3/5.0). MSA & INTERCONNECTION PER NATURAL GAS DIAGRAM (DETAIL 1/5.0). ADD IMPACT PROTECTION AS INDICATED BY UTILITY COMPANY.
- (3)—(N) GAS SERVICE TAP BY UTILITY COMPANY. EXACT LOCATION TO BE COORDINATED WITH UTILITY. REQUIREMENTS PER UTILITY COMPANY.
- (N) GAS PIPE FROM (N) GAS TAP TO TERMINATE AT (N) UTILITY MSA INSTALLED BY UTILITY COMPANY. SIZE & TRENCHING REQUIREMENTS PER UTILITY COMPANY.
- 4B)—(N) GAS PIPE FROM (N) UTILITY GAS MSA TO TERMINATE AT (N) ES UNIT INSTALLED B CONTRACTOR. DETAIL(S) PER GRADING PLAN (SHEET 3.0). SIZE(S) PER INTERCONNECTION DIAGRAM (SHEET 5.0) & ELECTRICAL DATA DETAILS (SHEET 6.2
- 5)—(N) ELECTRICAL CONDUIT & WIRES FROM (N) PDS TO (N) DISCONNECT WITH FINA TERMINATION AT (E) SWITCHBOARD. DETAIL(S) PER GRADING PLAN (SHEET 3.0). SIZE(S) PER ONE LINE DIAGRAM (SHEET 6.1).
- GRADING PLAN (SHEET 3.0). SIZE(S) PER ELECTRICAL DATA DETAILS (SHEET 6.2). PER
- SITE VISIT, RUN IS LIKELY TO EXCEED 500' AND WILL REQUIRE FIBER OPTIC.  $^{7}$  iggr)—(N) water PIPE from Building domestic water system to (N) wdm. connect TO NEAREST AVAILABLE LOCATION. DETAIL(S) PER GRADING PLAN (SHEET 3.0). SIZE(S) PER INTERCONNECTION DIAGRAM (SHEET 5.0).
- (8)—(N) DISCONNECT SWITCH & NEMA 3R ENCLOSURE. DISCONNECT SPECIFICATIONS PER ONE LINE DIAGRAM (SHEET 6.1), MOUNT TO BUILDING WALL & PER MANUFACTURER SPECIFICATIONS. ENSURE LOCATION MEETS ALL REQUIRED N.E.C CLEARANCES. PROVIDE MODEL NUMBER ON THE OUTSIDE OF THE FRONT PANEL. COMPLETE SPECIFICATION PER ELECTRICAL SPECIFICATIONS (SHEET 8.0), SECTION
- ( 9 )— (N) BLOOMENERGY ES-5700 ENERGY SERVER. PRECAST PAD AND MOUNTING SPECIFICATIONS PER PRECAST CONCRETE PAD. PAD PLACEMENT PER GRADING PLAN (SHEET 3.0). PIPE & CONDUIT STUB-UP LOCATIONS PER PIPE PLAN & DETAILS (SHEET 4.0) AND ELECTRICAL CONDUIT DETAILS (SHEET 6.3), RESPECTIVELY.
- (10)—(N) POWER DISTRIBUTION SECTION (PDS). CAST-IN-PLACE PAD AND MOUNTING SPECIFICATIONS PER GRADING PLAN (SHEET 3.0). CONDUIT STUB-UP LOCATIONS PER
- ELECTRICAL CONDUIT PLAN (SHEET 6.3). (11)—(N) TELEMETRY SECTION (TS) WITH FACTORY WIRED CLEAN ENERGY SERVER EMERGENCY POWER-OFF SWITCH (EPO). CAST-IN-PLACE PAD AND MOUNTING
- SPECIFICATIONS PER GRADING PLAN (SHEET 3.0). CONDUIT STUB-UP LOCATIONS PER ELECTRICAL CONDUIT DETAILS (SHEET 6.3). 12)—(N) WATER DEIONIZATION MODULE (WDM). CAST-IN-PLACE PAD AND MOUNTING SPECIFICATIONS PER GRADING PLAN (SHEET 3.0). PIPE & CONDUIT STUB-UP
- LOCATIONS PER PIPE PLAN & DETAILS (SHEET 4.0) & ELECTRICAL CONDUIT DETAILS
- (13)—(N) WATER TAP. IF PRESSURE EXCEEDS 150 PSI, COORDINATE WITH BLOOMENERGY, PURCHASE & INSTALL PRESSURE REGULATOR PRIOR TO WDM. (14)—(N) 10'-0" COPPER GROUNDING RODS 6'-0" APART. SPECIFICATIONS PER ONE LINE

DIAGRAM (SHEET 6.1).

- 15)—(N) GUARD POST (TYP). INSTALL GUARD POST AFTER ES UNITS AND/OR ELECTRICAL EQUIPMENT HAVE BEEN INSTALLED. TYPE, SIZE AND LOCATION PER IMPACT PROTECTION PLAN (SHEET 3.2). ENSURE SLEEVE IS FLUSH WITH GRADE AND NO ANGLES OR HOOKS EXIST THAT IMPEDE FORKLIFT ACCESS.
- 16)—(N) PROVIDE SECURITY BOXES OF CONDUIT & WIRE AT ALL ELECTRICAL STUB UP LOCATIONS.
- (17)—(E) ASPHALT PAVEMENT TO REMAIN. (18)—CORE CONDUIT AND/OR PIPE THROUGH WALL. SCAN WALL PRIOR TO CORING.
- DETAIL(S) PER SHEET 3.1 (19)—(NOT ON PLAN). NO (E) STRUCTURES ARE WITHIN THE VICINITY OF (N) FUEL CELL. NO SOUND INVESTIGATION WAS PERFORMED. NO SOUND WALL IS REQUIRED.
- (20)—(NOT ON PLAN.) REFER TO "SITE MANAGEMENT PLAN" (PROVIDED BY OTHERS) FOR DIRECTION REGARDING EXCAVATIONS, SOIL HANDLING, DEWATERING (IF
- (21)—IF HOME DEPOT FACILITY UTILIZES THESE AREAS FOR PRODUCT STORAGE, COORDINATE WITH TERRI BROPHY TO HAVE AREA CLEARED AS REQUIRED. REFER TO ALL HOME DEPOT GENERAL NOTES HEREON.
- (22)—DRIVE AISLE TO BE WIDENED BY 4'-0" AS SHOWN IN ORDER TO ACHIEVE A 28'-0" CLEAR DRIVE AISLE AFTER FUEL CELL AND BOLLARD INSTALLATION. MATCH (E) ASPHALT PAVEMENT SECTION. NO CURB REQUIRED; ASPHALT MEETS GRASS DIRECTLY. RELOCATE (E) LIGHT POLE AND ADD (N) CONDUIT AND WIRE IF / AS NECESSARY TO MAINTAIN SITE LIGHTING. AVOID (E) TREES AND (E) SWALE. IF NECESSARY, RELOCATE (E) CONDUIT SO THAT IT LIES BENEATH (N) ASPHALT
- NECESSART, NEED PAVEMENT SECTION.

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2014.04.25 ISSUE FOR CONSTRUCTION

SSUE DATE DESCRIPTION 03/03/14 REVISED PER IFC 2 04/25/14 REVISED PER CLIENT

PROJECT INFORMATION

(1) ES-5700

SITE PLAN

Sheet Number