

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, 75 Frontage Road, East Haven, CT 06512 ("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 75 Frontage Road, East Haven, CT 06512** 

### **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 June 27<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 Town of East Haven Mayor 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: Joseph Carfora, Town of East Haven Mayor

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		
SOx	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 IEEE15	547 standards		
Exempt from CA Air District permitting; meets stringent 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

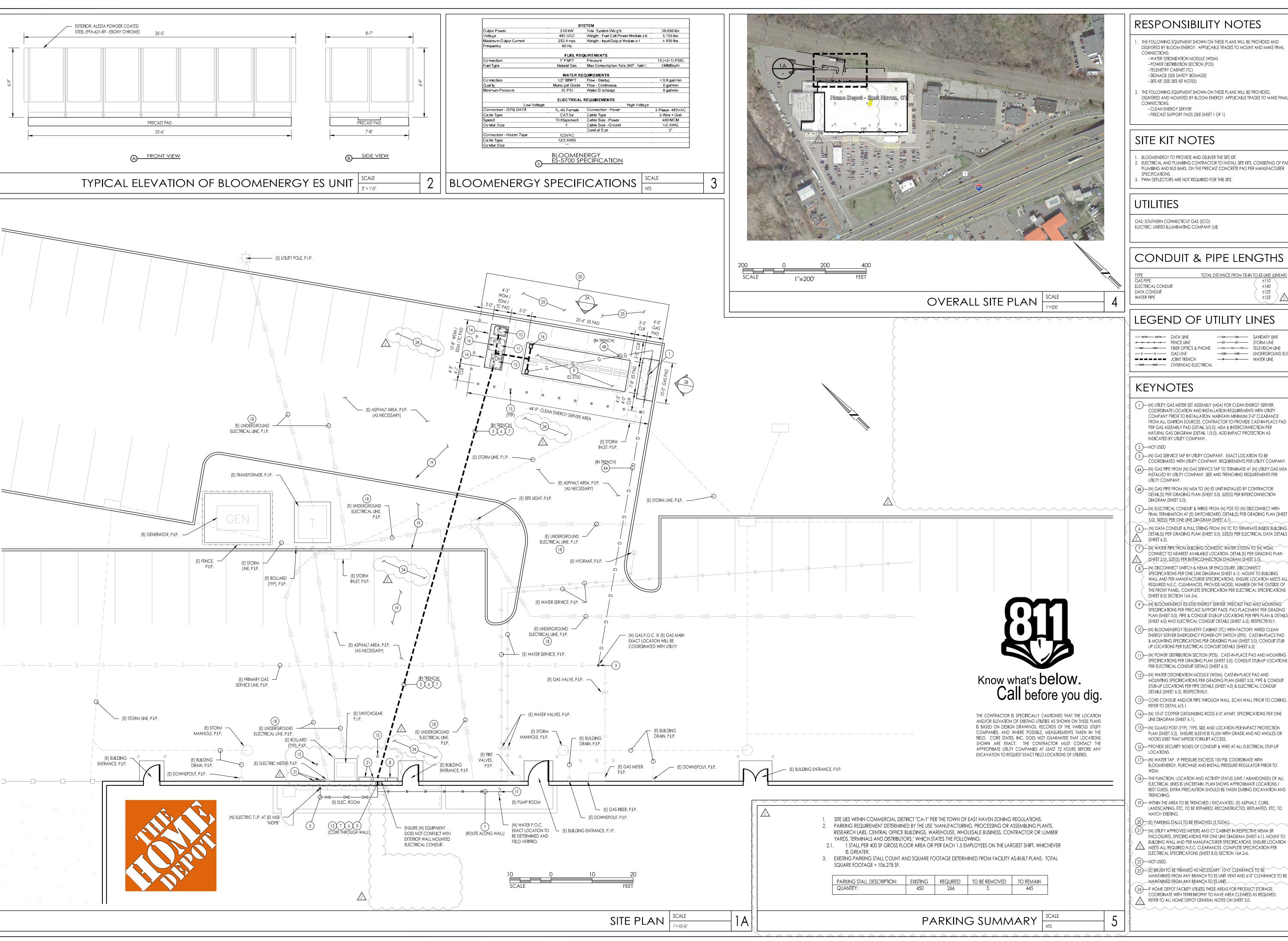
<sup>1</sup> 65% LHV efficiency verified by ASME PTC 50 Fuel Cell Power Systems Performance Test

<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.





**RESPONSIBILITY NOTES** 

THE FOLLOWING EQUIPMENT SHOWN ON THESE PLANS WILL BE PROVIDED AND DELIVERED BY BLOOM ENERGY. APPLICABLE TRADES TO MOUNT AND MAKE FINAL

- WATER DEIONIZATION MODULE (WDM) - POWER DISTRIBUTION SECTION (PDS)

THE FOLLOWING EQUIPMENT SHOWN ON THESE PLANS WILL BE PROVIDED, DELIVERED AND MOUNTED BY BLOOM ENERGY. APPLICABLE TRADES TO MAKE FINAL

BLOOMENERGY TO PROVIDE AND DELIVER THE SITE KIT. 2. ELECTRICAL AND PLUMBING CONTRACTOR TO INSTALL SITE KITS, CONSISTING OF PAD PLUMBING AND BUS BARS, ON THE PRECAST CONCRETE PAD PER MANUFACTURER

### CONDUIT & PIPE LENGTHS

l	TYPE	TOTAL DISTANCE FROM TIE-IN TO ES-UNIT (LINE)
l	GAS PIPE	±110'
l	ELECTRICAL CONDUIT	\ ±140'
ł	DATA CONDUIT	
l	WATER PIPE	±155'
ı		/ 4

### LEGEND OF UTILITY LINES

- 1	Л				
	$\langle$	DATA DATA	DATA LINE	SASA	Sanitary line
	1	-000	FENCE LINE	—st——st——	STORM LINE
		—	FIBER OPTICS & PHONE GAS LINE JOINT TRENCH	<u>—тv—тv—тv—</u>	TELEVISION LINE
-	4	— G —— G ——	GAS LINE	UGE	UNDERGROUND E
-	1		JOINT TRENCH	—	WATER LINE
-	4	OHE	OVERHEAD ELECTRICAL		

- (1)—(N) UTILITY GAS METER SET ASSEMBLY (MSA) FOR CLEAN ENERGY SERVER. COORDINATE LOCATION AND 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
- COORDINATED WITH UTILITY COMPANY. REQUIREMENTS PER UTILITY COMPANY. (4A)—(N) GAS PIPE FROM (N) GAS SERVICE TAP TO TERMINATE AT (N) UTILITY GAS MSA INSTALLED BY UTILITY COMPANY. SIZE AND TRENCHING REQUIREMENTS PER
- $\overline{(4B)}$ —(N) GAS PIPE FROM (N) MSA TO (N) ES UNIT INSTALLED BY CONTRACTOR. DETAIL(S) PER GRADING PLAN (SHEET 3.0). SIZE(S) PER INTERCONNECTION
- (5)—(N) ELECTRICAL CONDUIT & WIRES FROM (N) PDS TO (N) DISCONNECT WITH FINAL TERMINATION AT (E) SWITCHBOARD. DETAIL(S) PER GRADING PLAN (SHEET 3.0). SIZE(S) PER ONE LINE DIAGRAM (SHEET 6.1).
- (6)— (N) DATA CONDUIT & PULL STRING FROM (N) TC TO TERMINATE INSIDE BUILDING. DETAIL(S) PER GRADING PLAN (SHEET 3.0). SIZE(S) PER ELECTRICAL DATA DETAILS
- (7)—(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 AND 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 (9)—(N) BLOOMENERGY ES-5700 ENERGY SERVER. PRECAST PAD AND MOUNTING
- SPECIFICATIONS PER PRECAST SUPPORT PADS. 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) BLOOMENERGY TELEMETRY CABINET (TC) WITH FACTORY WIRED CLEAN
- & MOUNTING SPECIFICATIONS PER GRADING PLAN (SHEET 3.0). CONDUIT STUB UP LOCATIONS PER ELECTRICAL CONDUIT DETAILS (SHEET 6.3) (11)—(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 DETAILS (SHEET 6.3).
- MOUNTING SPECIFICATIONS PER GRADING PLAN (SHEET 3.0). PIPE & CONDUIT STUB-UP LOCATIONS PER PIPE DETAILS (SHEET 4.0) & ELECTRICAL CONDUIT
- (14)—(N) 10'-0" COPPER GROUNDING RODS 6'-0" APART. SPECIFICATIONS PER ONE
- (15)—(N) GUARD POST (TYP). TYPE, SIZE AND LOCATION PER IMPACT PROTECTION PLAN (SHEET 3.2). ENSURE SLEEVE IS FLUSH WITH GRADE AND NO ANGLES OR
- 16—PROVIDE SECURITY BOXES OF CONDUIT & WIRE AT ALL ELECTRICAL STUP-UP
- (17)—(N) WATER TAP. IF PRESSURE EXCEEDS 150 PSI, COORDINATE WITH BLOOMENERGY, PURCHASE AND INSTALL PRESSURE REGULATOR PRIOR TO
- (18)— THE FUNCTION, LOCATION AND ACTIVITY STATUS (LIVE / ABANDONED) OF ALL ELECTRICAL LINES IS UNCERTAIN. PLAN SHOWS APPROXIMATE LOCATIONS / BEST GUESS. EXTRA PRECAUTION SHOULD BE TAKEN DURING EXCAVATION AND
- (19)— WITHIN THE AREA TO BE TRENCHED / EXCAVATED, (E) ASPHALT, CURB, LANDSCAPING, ETC. TO BE REPAIRED, RECONSTRUCTED, REPLANTED, ETC. TO
- (20)—(E) PARKING STALLS TO BE REMOVED (5 TOTAL)
- , (21)—(N) UTILITY APPROVED METERS AND CT CABINET IN RESPECTIVE NEMA 3R ENCLOSURES. SPECIFICATIONS PER ONE LINE DIAGRAM (SHEET 6.1). MOUNT TO
- (23)—(E) BRUSH TO BE TRIMMED AS NECESSARY. 10-0" CLEARANCE TO BE MAINTAINED FROM ANY BRANCH TO ES UNIT VENT AND 6'-0" CLEARANCE TO BE
- MAINTAINED FROM ANY BRANCH TO ES UNIT. (24)—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 ON SHEET 3.0.

Bloom





2014.02.28

ISSUE FOR CONSTRUCTION UE DATE DESCRIPTION 02 | 02/28/14 | REVISED PER IFC PROJECT INFORMATION

CHECKED BY (1) ES-5700

SHEET TITLE SITE PLAN

SHEET NUMBER