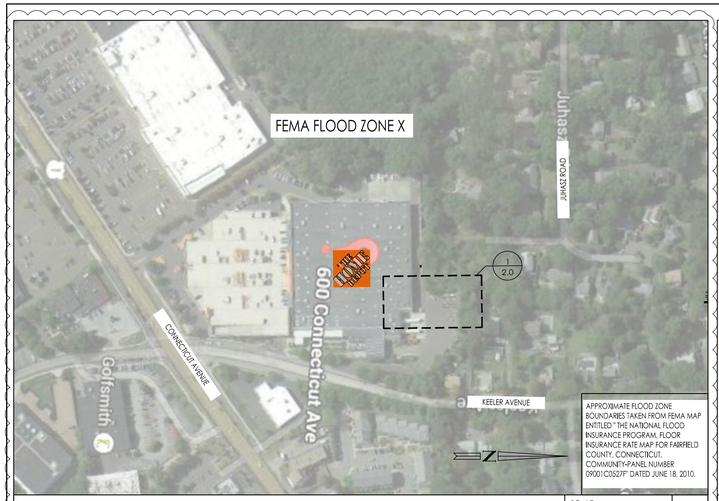

OVERALL SITE PLAN

SCALE: 1" = 200'

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OVERALL	
GROSS OUTPUT POWER	210 kW
NET OUTPUT POWER	200 kW
VOLTAGE	480 VAC
MAXIMUM OUTPUT CURRENT	252 Amps
FREQUENCY	60 Hz
TOTAL SYSTEM WEIGHT	43,814 LBS
WEIGHT - POWER MODULE (6)	5,700 LBS
WEIGHT - INPUT/OUTPUT MODULE (1)	4,850 LBS
WEIGHT - INTEGRATED EQUIPMENT (WDM, PDS, & TC)	1,514 LBS
WEIGHT - STEEL SUPPORT FRAME	3,250 LBS
TOTAL SYSTEM AIR EXHAUST	8400 CFM
AIR EXHAUST - POWER MODULE (6)	1200 CFM
AIR EXHAUST - INPUT / OUTPUT MODULE (1)	1200 CFM
ELECTRICAL REQUIREMENTS	
LOW VOLTAGE - DATA TO TC	
CONNECTION	RJ-45 FEMALE
CABLE TYPE	(1) WIRE
CABLE SIZE	1 CAT5e WITH RJ-45 (MALE/MALE) ENDS
SPEED	70 Kbps/EACH
CONDUIT SIZE	SITE SPECIFIC
LOW VOLTAGE - CONTROL SIGNAL TO TC	
CONNECTION	-
CABLE TYPE	(2) WIRE
CABLE SIZE	2 CAT5e (SHIELDED)
SPEED	-
CONDUIT SIZE	SITE SPECIFIC

LOW VOLTAGE - GAS ANALYZER TO TC	
CONNECTION	RJ-45 FEMALE
CABLE TYPE	1 WIRE
CABLE SIZE	CAT5e WITH RJ-45 (MALE/MALE) ENDS
SPEED	-
CONDUIT SIZE	SITE SPECIFIC
LOW VOLTAGE - HEAT TRACE TO PDS	
CONNECTION	120 VAC
CABLE TYPE	2 WIRE + GROUND
CABLE SIZE - POWER	#12/3 AWG
CABLE SIZE - GROUND	#12/0 AWG
CONDUIT SIZE	SITE SPECIFIC
HIGH VOLTAGE - POWER TO PDS	
CONNECTION - POWER	3 PHASE, 480 VAC
CABLE TYPE	3 WIRE + GROUND
CABLE SIZE - POWER	SITE SPECIFIC
CABLE SIZE - GROUND	SITE SPECIFIC
CONDUIT SIZE	SITE SPECIFIC
WATER REQUIREMENTS	
WATER TYPE	MUNICIPAL GRADE
MINIMUM PRESSURE	35 psi
MAXIMUM PRESSURE	150 psi
FLOW - STARTUP	< 0.8 gal/min
FLOW - CONTINUOUS	0 gal/min
FLOW - DISCHARGE	0 gal/min
CONNECTION	1/2" MNPT
PIPE SIZE - SUPPLY	SIZE SITE DEPENDENT, USE STAINLESS STEEL OR PVC
PIPE SIZE - RISER	3/4"Ø
VALVE - ISOLATION	3/4" x 1/2" MALE STAINLESS STEEL BALL VALVE
PIPE SIZE - EXTENSION	1/2"Ø NPT
QUICK DISCONNECT COUPLER (QDC)	BE#023005

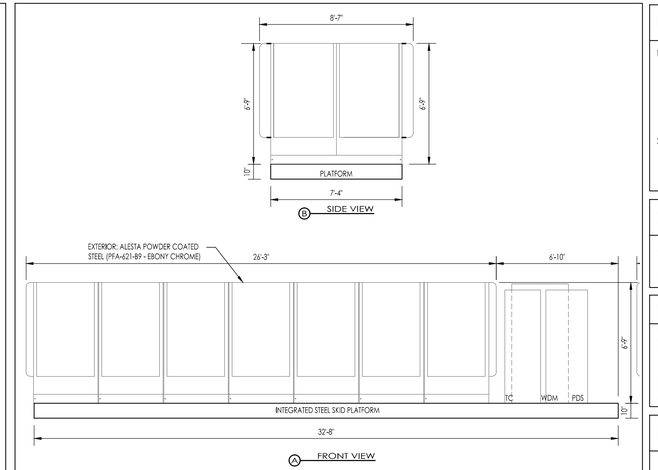
NATURAL GAS REQUIREMENTS	
FUEL TYPE	NATURAL GAS
PRESSURE	15 (+3/-5) psig
AVERAGE CONSUMPTION RATE (60°, 1 atm)	1.32 MMBtu/hr
MAXIMUM CONSUMPTION RATE (60°F, 1 atm)	2.00 MMBtu/hr
CONNECTION	1" FNPT
PIPE SIZE - SUPPLY	SIZE SITE DEPENDENT
PIPE SIZE - RISER	1"Ø
VALVE - ISOLATION	1"Ø CGA BALL VALVE
PIPE SIZE - EXTENSION	1"Ø NPT
QUICK DISCONNECT COUPLER (QDC)	BE#030033

BLOOMENERGY ES-5700 SPECIFICATION

BLOOMENERGY SPECIFICATIONS

SCALE: NTS

3



TYP. ELEV. OF BLOOMENERGY ES UNITS

SCALE: 3" = 1'

2

RESPONSIBILITY NOTES

1. THE FOLLOWING EQUIPMENT SHOWN ON THESE PLANS WILL BE PROVIDED AND DELIVERED BY BLOOM ENERGY. APPLICABLE TRADES TO MOUNT AND MAKE FINAL CONNECTIONS:
   - POWER DISTRIBUTION SECTION (PDS)
   - WATER DEIONIZATION MODULE (WDM)
   - TELEMETRY CABINET (TC)
   - SIGNAGE (SEE SAFETY SIGNAGE)
   - SITE KIT (SEE SITE KIT NOTES)
2. 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
   - ISS SERVER SKID

SITE KIT NOTES

1. 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 SPECIFICATIONS.
3. PWM DEFLECTORS ARE NOT REQUIRED ON THIS SITE.

CONDUIT & PIPE LENGTHS

TYPE	TOTAL DISTANCE FROM TIE-IN TO ES UNIT (LINEAR)
GAS PIPE	±150'
ELECTRICAL CONDUIT	±156'
DATA CONDUIT TO GAS METER	±115'
DATA CONDUIT LREC METER	±55'
DATA CONDUIT FROM SEL RELAY TO (N) PDS	±100'
DATA CONDUIT TO TELEMETRY	WIRELESS
WATER PIPE	±160'

LEGEND OF UTILITY LINES

- DATA LINE
- FENCE LINE
- FIBER OPTICS & PHONE
- GAS LINE
- JOINT TRENCH
- OVERHEAD ELECTRICAL
- SANITARY LINE
- STORM LINE
- TELEVISION LINE
- UNDERGROUND ELECT.
- WATER LINE

HOME DEPOT GENERAL NOTES

1. IF GRASSED AREAS ARE DISTURBED CONTRACTOR MUST REPLACE AREAS WITH SOD. SEEDING WILL NOT BE PERMITTED.
2. AT ALL TIMES HALF OF THE DRIVEWAY MUST REMAIN OPEN.
3. ALL NEW CONDUIT LOCATED ON THE BUILDING MUST BE PAINTED TO MATCH THE COLOR OF THE EXISTING BUILDING.
4. UNDERGROUND WATERLINE IS TO BE INSTALLED BELOW FROST DEPTH OF 48". EXTERIOR WATERLINE INSTALLED ABOVE FROST DEPTH TO BE HEAT TRACED AND INSULATED.
5. RESTORATION OF DAMAGED AREAS SHALL BE PART OF THE CONTRACTOR'S WORK. UPON COMPLETION OF THE LANDSCAPE AREAS, PLEASE NOTIFY HOME DEPOT TO CONDUCT A PUNCH WALK. ANY NOTED AREAS SHALL BE FIXED OR RESTORED PRIOR TO CONFIRMATION OF COMPLETION OF THE WORK.

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

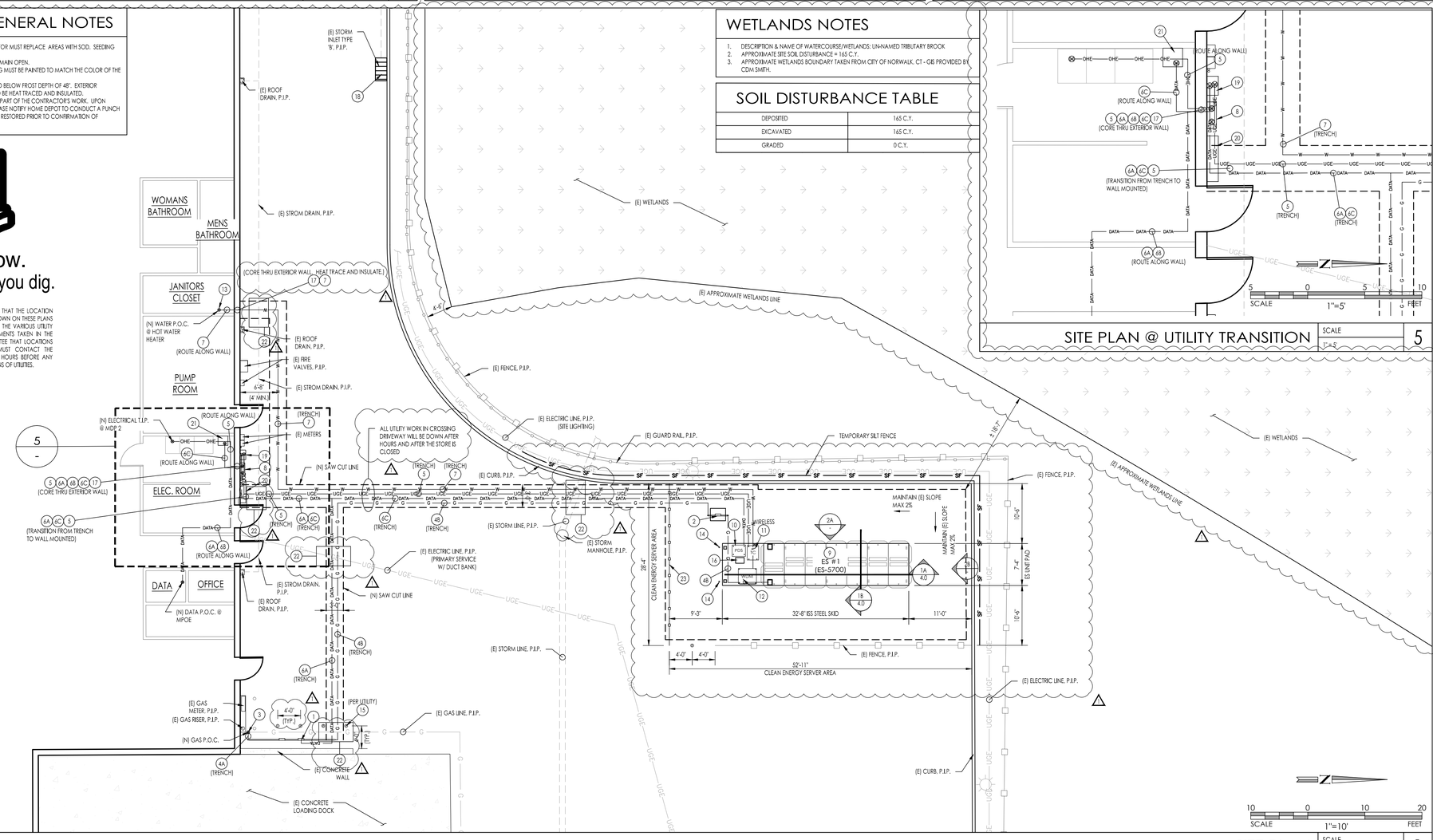
THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON DESIGN DRAWINGS, RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. CORE STATES, INC. DOES NOT GUARANTEE THAT LOCATIONS SHOWN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

WETLANDS NOTES

1. DESCRIPTION & NAME OF WATERCOURSE/WETLANDS: UN-NAMED TRIBUTARY BROOK
2. APPROXIMATE SITE SOIL DISTURBANCE = 165 C.Y.
3. APPROXIMATE WETLANDS BOUNDARY TAKEN FROM CITY OF NORWALK. CT - GIS PROVIDED BY CDM SMITH.

SOIL DISTURBANCE TABLE

DEPOSITED	165 C.Y.
EXCAVATED	165 C.Y.
GRADED	0 C.Y.



SITE PLAN

SCALE: 1"=10'

1

SITE PLAN @ UTILITY TRANSITION

SCALE: 1"=5'

5

KEYNOTES

1. (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. MSA & INTERCONNECTION PER NATURAL GAS DIAGRAM (DETAIL 1/5.0) AND ONE LINE DIAGRAM (SHEET 6.0). ADD IMPACT PROTECTION AS INDICATED BY UTILITY COMPANY.
2. (N) PRIVATE GAS SHUT-OFF VALVE (SOV) FOR CLEAN ENERGY SERVER . MAINTAIN MINIMUM 3'-0" CLEARANCE FROM ALL IGNITION SOURCES. CONTRACTOR TO PROVIDE CAST-IN-PLACE PAD PER SHUT-OFF VALVE (DETAIL 5/5.0). CONTRACTOR TO PROVIDE RISER & INTERCONNECTION PER NATURAL GAS SUPPLY DIAGRAM (DETAIL 1/5.0). SEE DETAIL 4/5.0 FOR SOV RISER.
3. (N) GAS SERVICE BIFURCATION BY UTILITY COMPANY. EXACT LOCATION TO BE COORDINATED WITH UTILITY. REQUIREMENTS PER UTILITY COMPANY.
4A. (N) GAS PIPE FROM (N) GAS TAP TO TERMINATE AT (N) UTILITY MSA INSTALLED BY UTILITY COMPANY. SIZE(S) & TRENCHING REQUIREMENTS PER UTILITY COMPANY.
4B. (N) GAS PIPE FROM (N) UTILITY GAS MSA TO TERMINATE AT (N) ES UNIT INSTALLED BY CONTRACTOR. DETAILS PER DETAILS & SECTIONS (SHEET 4.0). SIZE PER GAS METER DETAILS (SHEET 5.0).
5. (N) ELECTRICAL CONDUIT & WIRES FROM (N) PDS TO (N) CT CABINET & DISCONNECT WITH FINAL TERMINATION AT (E) SWITCHBOARD. DETAIL(S) PER DETAIL & SECTIONS (SHEET 4.0). SIZE(S) PER ONE LINE DIAGRAM (SHEET 6.0).
6A. (N) DATA CONDUIT & CABLE FROM (N) GAS METER TO (E) MPOE. DETAIL(S) PER DETAILS & SECTIONS (SHEET 4.0). SIZE(S) PER ONE LINE DIAGRAM (SHEET 6.0).
6B. (N) DATA CONDUIT & CABLE FROM (N) LREC TO (E) MPOE. DETAIL(S) PER DETAILS & SECTIONS (SHEET 4.0). SIZE(S) PER ONE LINE DIAGRAM (SHEET 6.0).
6C. (N) DATA CONDUIT & CABLE FROM (N) SEL RELAY TO (E) PDS. DETAIL(S) PER DETAILS & SECTIONS (SHEET 4.0). SIZE(S) PER ONE LINE DIAGRAM (SHEET 6.0).
7. (N) WATER PIPE FROM BUILDING DOMESTIC WATER SYSTEM TO (N) WDM. CONNECT TO NEAREST AVAILABLE LOCATION. UNDERGROUND WATERLINE IS TO BE INSTALLED BELOW FROST DEPTH OF 48". EXTERIOR WATERLINE INSTALLED ABOVE FROST DEPTH TO BE HEAT TRACED AND INSULATED. DETAILS & SEE PER DETAILS & SECTIONS(SHEET 4.0). SIZE(S) PER ONE LINE DIAGRAM (SHEET 6.0).
8. (N) DISCONNECT SWITCH IN A NEMA 3R ENCLOSURE. DISCONNECT SPECIFICATIONS PER ONE LINE DIAGRAM (SHEET 6.0). 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.
9. (N) BLOOMENERGY ES-5700 ENERGY SERVER. (N) PLATFORM MOUNTED TO (N) GRADE BEAMS PER DETAILS & SECTIONS (SHEET 4.0). CONDUIT STUB-UP LOCATIONS & DETAILS PER DETAILS & SECTIONS (SHEET 4.0). SEE SHEET C5.1 FOR STEEL PLATFORM.
10. (N) POWER DISTRIBUTION SECTION (PDS). CONDUIT STUB-UP LOCATIONS PER DETAILS & SECTIONS (SHEET 4.0).
11. (N) WIRELESS TELEMETRY CABINET (TC) WITH FACTORY WIRED CLEAN ENERGY SERVER EMERGENCY POWER-OFF SWITCH (EPO). CONDUIT STUB-UP LOCATIONS PER DETAILS & SECTIONS (SHEET 4.0).
12. (N) WATER DEIONIZATION MODULE (WDM). PIPE & CONDUIT STUB-UP LOCATIONS PER DETAILS & SECTIONS (SHEET 4.0).
13. (N) WATER TAP. IF PRESSURE EXCEEDS 150 PSI. COORDINATE WITH BLOOMENERGY. PURCHASE & INSTALL PRESSURE REGULATOR PRIOR TO WDM. CONTRACTOR TO ENSURE EXISTING PRESSURE & FLOW MEETS MIN. BLOOM STANDARDS.
14. (N) 10'-0" COPPER GROUNDING RODS 6'-0" APART. SPECIFICATIONS PER ONE LINE DIAGRAM (SHEET 6.0).
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 HOOKS EXIST THAT IMPEDE FORKLIFT ACCESS.
16. (N) PROVIDE SECURITY BOXES OF CONDUIT & WIRE AT ALL ELECTRICAL STUB UP LOCATIONS.
17. CORE CONDUIT AND/OR PIPE THROUGH WALL. SCAN WALL PRIOR TO CORING. DETAIL(S) PER DETAILS & SECTIONS (SHEET 4.0).
18. (N) INLET BMP - INSTALL "DANDY SACK" WITH OVERFLOW PORTS (BY DANDY PRODUCTS) OR APPROVED EQUAL WITH OUTFLOW PORTS. INSTALL PRIOR TO CONSTRUCTION START AND REMOVE WHEN SITE IS STABILIZED.
19. (N) UTILITY APPROVED LREC METER IN NEMA 3R ENCLOSURES. SPECIFICATIONS PER ONE LINE DIAGRAM (SHEET 6.0). 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.
20. (N) UTILITY APPROVED CT CABINET IN NEMA 3R ENCLOSURES. SPECIFICATIONS PER ONE LINE DIAGRAM (SHEET 6.0). 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.
21. (N) SEL RELAY FOR (N) PDS BREAKER CONTROL. RELAY SPECIFICATIONS PER ONE LINE DIAGRAM (SHEET 6.0). 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.
22. CONTRACTOR TO INSTALL (N) UTILITIES WITHOUT DAMAGING (E) UTILITIES. (N) UTILITIES ARE TO BE INSTALLED MAINTAINING MINIMUM CLEARANCES TO (E) UTILITIES AS IDENTIFIED IN TRENCHING DETAILS.
23. (N) GUIDERAIL (TYP). TYPE, SIZE AND LOCATION PER IMPACT PROTECTION PLAN & DETAILS (SHEET 3.0). ENSURE SLEEVE IS FLUSH WITH GRADE AND NO ANGLES OR HOOKS EXIST THAT IMPEDE FORKLIFT ACCESS.

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PROPRIETARY & CONFIDENTIAL

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SEAL

REV	DATE	DESCRIPTION
1	04/01/15	REV PER HD COMMENTS

PROJECT INFORMATION

JOB #	BEC-17969
DATE:	1/07/15
DRAWN BY:	NDS
CHECKED BY:	RNP

MODEL: (1) ISS-L ES-5700

SHEET TITLE: SITE PLAN

SHEET NUMBER: 2.0

2015.04.09 - ISSUE FOR BID

Drawing: L:\Bloom Energy\BEC-17969 (Home Depot, Norwalk, CT)\Drawings\BEC-17969 - Home Depot (Norwalk, CT) - 2.0 Site Plan.dwg Site Plan
User: NDUNDON
Last Saved: Jan. 08, 15 - 14:26
Plot Date/Time: Apr. 09, 15 - 09:36:00