

July 6, 2023

Mr. Kevin Foster – Chair Avon Zoning Board of Appeals Town of Avon 65 East Main Street Avon, MA 02322

Re: 225 Bodwell St – Rooftop Solar Installation Project Zoning Board Application – Variance

Dear Mr. Foster and Members of the Board:

NextGrid Inc., presents the Rooftop Solar Installation Project proposed at 225 Bodwell St in Avon, MA. The applicant is submitting this project for a variance from the Town of Avon Zoning By-Law, Section under the Town of Avon Zoning By-Law Section 255-6.4 Dimensional and Density Regulation Table.

Existing Site Summary: The current property at 225 Bodwell St falls within the Industrial District and totals approximately 3.99 acres (173,790 sf). The site is comprised of one (1) steel building steel totaling approximately 76,000 sf. In addition, the site has an existing bituminous concrete parking lot, with a total of forty-five (45) spaces. All existing and proposed structures are within the Industrial District. There are bordering vegetated wetlands located along the southern edge of the property, and there are no estimated habitats of rare wildlife. Finally, the entirety of the site falls within the Town of Avon's Water Supply Protection District.

Project Summary: The proposed project includes the installation of a rooftop only solar array, with accessory structures for the equipment associated with the array, including an accessory, prefabricated structure housing the stationary battery storage system along the northern property line. The project proposes a total of 1,566 panels. In addition, the applicant proposes a new electrical service, including a concrete equipment pad with utility enclosures. There is no knew impervious area, outside of two small equipment pads, which total less than 150 sf.

The proposed area encompassing the solar panels will be leased to NextGrid by the property Owner and after the useful life (20-25 years) will be disassembled and removed by NextGrid.

Variance Request:

Per Section 255-12.9 Variance, the Town of Avon lists four (4) specific findings for review of granting variances.

- 1. That there exist special circumstances relating to soil conditions, shape, or topography of the specific land or structures;
 - a. RESPONSE: The proposed project does not provide special circumstances relating to soil conditions, shape or topography of the specific land, however the proposed structure (Structure as determined by the Town of Zoning By-Law) is a piece of equipment associated with the proposed solar system.

Battery energy storage systems qualify as "structures that facilitate the collection of solar energy" under G.L. c. 40A, § G.L. c. 164 § 1, defines "energy storage system" as "a commercially available technology that is capable of absorbing energy, storing it for a period of time and thereafter dispatching the energy."

Guidance on the siting of outdoor Stationary Battery Energy Storage Systems is specified in NFPA 855 – Standard for Installation of Stationary Energy Storage Systems. NFPA-855, Section 4.4.3.3 Clearances to Exposures, states that ESS located outdoors shall be separated by a minimum of ten (10) feet from exposures, such as buildings and lot lines. Currently the BESS is located greater than ten (10) feet from the existing building. NFPA-855, Section 4.4.3.3.4 states "where approved, clearances from exposures other than buildings shall be permitted to be reduced to 3 ft (914 mm) where large-scale fire testing of the ESS demonstrates that a fire within the ESS enclosure will not generate radiant heat flux sufficient to ignite stored materials or otherwise threaten the exposure." Section 4.1.5 refers to UL9540A, Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems. The BESS built for this location utilizes battery racks manufactured by a company called SYL. These battery racks have completed unit level testing in compliance with UL9540A, demonstrating the containment of a thermal runaway condition, according to that standard.

- 2. That said circumstances do not generally affect the zoning district in which the land or structure is situated;
 - a. RESPONSE: Mass General Law 40A, Section 3 states "No Zoning.....bylaw shall prohibit or unreasonably regulate the installation of solar energy systems or the building structures to facilitate the collection of solar energy, except where necessary to protect the public health, safety or welfare". As noted above, the BESS has been designed and sited in accordance with the applicable Fire Code and provides no risk to the public health, safety, or welfare, and does not generally affect the zoning district in which the land or structure is situated.
- 3. That a literal enforcement of the provisions of this bylaw would involve substantial hardship, financial, or otherwise, to the petitioner (or appellant);
 - a. RESPONSE: Enforcement of the provisions of this bylaw, would result in loss of this project providing energy storage, which reduces the financial viability of the

proposed project with the Department of Energy Resources and the Solar Massachusetts Renewable Target (SMART) Program

- 4. That desirable relief might be granted without substantial detriment to the public good and without nullifying or substantially derogating from the intent or purposes generally of this bylaw.
 - a. RESPONSE: This variance is specifically related to a piece of vital electric infrastructure. The intent of this bylaw is to limit the effect that primary use structures would have on the density and setbacks withing the Industrial Zoning district. This would not go against the intent of the bylaw, nor would it set a precedent that would affect future developments outside of the accessory use (energy storage) which is already protected by NFPA 855 Standard for Installation of Stationary Energy Storage Systems. NFPA- 855, Section 4.4.3.3 and M.G.L. 40A.

The Applicant believes that granting a setback variance for this project, as proposed, presents no risk to the public health, safety, or welfare.

The applicant has obtained site plan review approval as well as a Special Permit from the Town of Avon Planning Board for work within the Watershed Protection Overlay District.

If we can be of any further assistance regarding this matter, please contact us at our office.

Very sincerely yours,

NextGrid Inc.

Nathan A. Collins, P.E.

Senior Manager of Engineering

Attachments:

- 1. Special Permit Application
- 2. Letter of Denial from Avon Building Permit
- 3. Certified Abutter's List
- 4. Eneon Bodwell Fire Protection Control Summary

Enclosures Under Separate Cover

- 5. Plan entitled "Proposed Layout Plan" prepared by NextGrid Inc. and dated 7/5/23.
- 6. Pages from Interconnection Plan Set Prepared by ARC Design dated 11/15/22.
- 7. Eneon BESS Layout Plan



The Commonwealth of Massachusetts Town of Avon

(This form to be filed with Town Clerk with the required fee)

TO THE BOARD OF APPEALS:

The undersigned hereby petitions the Avon Board of Appeals for a hearing to vary the terms of the Zoning by-laws of the Town of Avon, Acts of 1977 as amended or for a Special Permit at premises know as:

Street Address: 225 Bodwell Street

Map/Block/Lot: B7/3/3

In the following respect:

The applicant is requesting a variance on the sideyard setback of 25' to 3.4' in the Industrial District, to install equipment associated with the construction of a rooftop solar array, including a Battery Energy Storage System (BESS). The BESS has been sited in accordance with NFPA 855 – Standard for the Installation of Sationary Energy Storage Systems.

Or any limitation, extension, change, alteration or modification of use, or method of use as may at hearing appear as necessary or proper in the premises.

State briefly reasons for Variance / Special Permit:

See attached narrative

Address 23 Deer Hollow Rd, Forestdale, MA 02644
Telephone Number 774-269-1861

BUILDING DEPARTMENT

Robert C. Borden, Commissioner Rborden@avon-ma.gov Charles Comeau, Assistant Insp. Al Campbell, Plumbing & Gas Insp. Dennis Collum, Electrical Insp.

Town of Avon Massachusetts



TOWN OFFICES

Buckley Center 65 East Main St. 02322 Tel (508) 588-0414 Fax (508) 559-0209 www.avon-ma.gov

VIA Email, Certified Mail and USPS

January 20, 2023

Luke Niemiec Sunergy LLC 122 South Main St. Acushnet, MA 02743

ONEG II LLC 71 Mason Terrace Brookline, MA 02446

Dear Mr. Niemiec:

I must deny your building permit application for installation of roof-mounted solar electric panels and associated equipment located on the ground adjacent to the structure at 225 Bodwell St., Avon, MA.

All exterior work within the Industrial Park requires "site plan review" by the Avon Planning Board (see Avon Zoning By-Law 255-12.2). Additionally, the proposed location of the project is within the Avon Water Supply Protection Overlay District, which, as such, requires a "Special Permit" (see Avon Zoning By-Law 255-5.4) issued by the Avon Planning Board.

Both site plan review and the special permit hearings are generally conducted simultaneously. You must apply to the Avon Planning Board directly for the required public hearing.

Attached are the details of documents required and the application forms for the Town of Avon.

The battery storage system and associated structures (equipment) are located in the 25 foot required side yard set back of the Avon Industrial Zone (see Avon Zoning By-Law 255-6.4 Dimensional and Density Regulations Table).

Furthermore, the Mass. Fire Code has adopted NFPA 855 as reference for the fire protection and structural requirements for battery storage equipment and structures.

As Building Commissioner, pursuant to 780CMR Section 104.11 and in conjunction with Fire Chief Robert Spurr, we will require a third (3rd) party review, at your expense, of your plans and specifications for full compliance with NFPA 855 by a licensed design professional of our approval.

BUILDING DEPARTMENT

Robert C. Borden, Commissioner Rborden@avon-ma.gov Charles Comeau, Assistant Insp.

Al Campbell, Plumbing & Gas Insp. Dennis Collum, Electrical Insp.

Town of Avon Massachusetts

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TOWN OFFICES

Buckley Center 65 East Main St. 02322 Tel (508) 588-0414 Fax (508) 559-0209 www.avon-ma.gov

You may appeal the above zoning decision for a variance of the side yard set back requirement from 25 feet to that necessary for your proposed installation to the Avon Board of Appeals, 65 E. Main St., Avon, MA 02322 within thirty (30) days of this notice.

You may appeal the building code decision within forty-five (45) days to:

Board of Building Regulations and Standards

Board of Appeals 1000 Washington St. Boston, MA 02118

The Mass Building Code appeals application is available at the state website - Mass.gov/BBRS.

Sincerely:

Robert C. Borden

Building Commissioner

Town of Avon

CC: R. Spurr, Avon Fire Chief

P. Bessette, Town Clerk

L. McKenney, ZBA & Planning Board Secretary

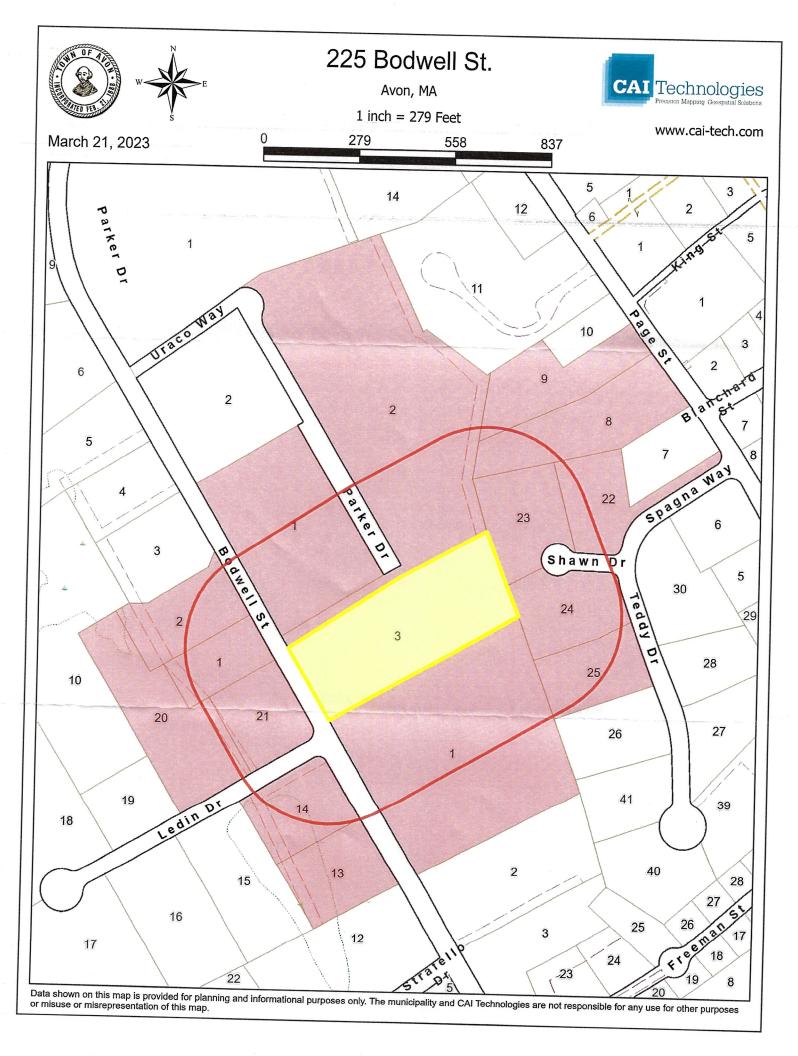
P. Mamane, PO Box 7775 #73069, San Francisco, CA 94120

Encls.

300' CERTIFIED ABUTTERS LIST 225 BODWELL ST. AVON, MA (B7-3-3) FOR: NEXTGRID, INC.

Sucan Moralan

B/ 3 9 410 Page St. Jose	3 8 404 Page St.	25 7 Teddy Dr.	3 24 5 Teddy Dr.	3 23 3 Shawn Dr.	3 22 1 Shawn Dr.	3 2 21 Parker Dr.	2 1 235 Bodwell St.	B7 1 2 238 Bodwell St. 238	1 1 230 Bodwell St.	2 1 215 Bodwell St.	1 21 1 Ledin Ave.	B6 1 20 11 Ledin Ave. N.E.	1 14 210 Bodwell St.	1 13 200 Bodwell St.	
Joseph, Pierre M.	Shawn Parker, Tr., Shawn Parker Trust Agreement of 2004	Meressi, Tesfay G. & Meressi, Selomie W	Barros, Silvestre B. & Barros, Idalina J	arker Trust Agreement of	Patel, Suresh & Patel, Malini S.	er Dr. I.I.C. c/o Oliver St. Capital	235 Bodwell Street LLC	238 Bodwell Street LLC	230 Bodwell RE LLC	Black Branch Terminals LLC	Cuming Microwave Corn c/o PPG Industries	N.E. Truck Solutions of Avon 110	Lodge #29 International Brotherhood of Boilermakers	CSMP Realty Trust, Linda I. Craig Tr	OWNERS MAINE
410 Page St.	/ leddy Dr.	5 leddy Dr.	3 Shawn Dr.	1 Shawn Dr.	303 Congress St.	30 Speen St.	150 Old Page St.	25 Toby Garden St.	PO Box 25612	One PPG Place	11 Ledin Ave.	210 Bodwell St.	8 Pickens Ave.		Mailing Address
-			Avon	Avon	Boston	Framingham MA 02060	Stoughton	Duxbury	Richmond	Pittsburgh	Avon		E. Freetown MA 02717		City



BOARD OF ASSESSORS Warren B. Lane, Chairman Jonathan D. Madore, Clerk

ASSISTANT ASSESSOR

Sam Kamel, Member

Town of Avon Massachusetts



Town Offices
Buckley Center
65 East Main Street
Avon, MA 02322
(508) 588-0414
FAX (508) 559-0209
www.avon-ma.gov



BOARD OF ASSESSORS

REQUEST FOR ABUTTERS LIST

APPLICANT INFORMATION	NAME:	Nathan A. Collins, PE NextGrid Inc.					
	ADDRESS:	23 Deer Hollow Rd					
	-	Forestdale, MA 02644					
	PHONE #:	774-269-1861					
REQUEST FOR ABUTTERS LIST	OF PARCEL	S WITHINFEET OF PROPERTY					
LOCATED AT 225 Bodwell							
MAP_B7_ BLOCK_3_ LOT_3							
REASON FOR REQUEST: _ Special Permit application for work within							
Water Resource Protecti	on Overlay	District					
DATE OF REQUEST: 3 / 21 /	23						
APPLICANT SIGNATURE: Math							
AMOUNT DUE WITH APPLICATION: \$25.00							
ELECTRONIC COPY (EXCEL SPREADSHEET): TO YOUR FLASH DRIVE OR EMAILED TO YOU: AN ADDITIONAL \$5.00 CHARGE.							
EMAIL ADDRESS:nathan@ne	extgrid.cor	n					



NextGrid

Bodwell BESS

Fire Control System Summary



NextGrid - Bodwell BESS **Fire Control System Summary**

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NextGrid

Prepared for:Duane Moulton, CMK Construction Nathan Collins, Nextgrid Inc.

Client RFP No. or Other Ref: 144712

Status / Rev.	Description	Date YYYY-MM- DD
R0	Initial Release	2023-02-16



NextGrid – Bodwell BESS Fire Control System Summary

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NextGrid – Bodwell BESS Fire Control System Summary

1 System Description

The BESS system located at 225 Bodwell St, Avon, Ma, 20322. The system is installed outdoors location near exposures, with the battery fully enclosed in outdoor rated modified shipping container. The enclosure is not a walk-in unit and can only be serviced from outside. The system is considered an electrochemical energy storage system with a Lithium Iron Phosphate chemistry. The system consists of the following components:

- 3X SYL SR8K96FE34 battery racks with a battery capacity of 304 kWHr each for a total of 912 kWhr, listed to UL1973 and tested to UL9540A unit level
- 1X EPC Power PD250 battery-based inverter, 250 kW, listed to UL1741
- 1X SPOT DC/DC converter rack, listed to UL1741
- 1x BESS, battery energy storage system, contains batteries, switchgears and safety systems, to be field evaluated to UL9540. Layout included in the document package

2 Battery Description

The battery enclosure is each composed of the following:

- Battery cells, manufactured by CATL, of which there are 340 cells per cabinet, each rated at 280 Ahr. The battery cells are of lithium iron phosphate chemistry.
- Battery modules, of which 10 cells are connected in series. Each battery module includes a
 mechanical structure, electrical interconnections, and a local monitor board to measure cell
 voltages and module temperatures.
- Battery rack, of which 34 modules are connected in series. The battery rack includes a
 mechanical rack structure, electrical interconnections, battery protection unit (switchgear) and
 monitoring and control system, with the ability to monitor the entire rack's cell voltages,
 temperatures, and current.

3 Battery Certifications

- The battery cabinets have been fully listed to UL1973, certificate included in document package.
- The battery cells and racks have been tested to UL9540A, full scale fire testing, reports included in document package.
- The overall system will be field evaluated to UL9540 with TUV SUD acting as the inspector / NRTL.



NextGrid – Bodwell BESS Fire Control System Summary

4 Fire Safety Controls and Features

Fire Detection:

The battery enclosure includes two smoke detectors and one CO detector which operate within their own independent zones. The smoke detectors and CO detector are connected back to the main fire control panel located inside of BESS enclosure. Specification sheet from Honeywell Notifier RP-2002C is included in the document package.

Fire Control Panel:

The fire control panel acts as a central control point for detection devices (smoke & CO, set for 25 ppm), notification devices (horn and strobe), and signaling (standard fire signals, alarm, trouble, supervisory). The fire control panel is also able to provide fault detection capabilities. Full specification on the fire control panel and control narrative of the fire control system has been included in the document package.

Sprinkler & Dry Pipe System:

Battery enclosure dry pipe system includes two overhead sprinklers with temperature blub, connected in series with one 1-1/2" pipe. Dry pipe system has an external 3" to 1-1/2" removable adapter allowing site contactor to connect the external pipe to the BESS dry pipe & sprinkler system. Piping has been leak tested. In the event of a fire, first responders may choose to connect a water supply to the fire department connection and flood the enclosure with water. Sprinkler and external adapter data sheet have been included in the document package.

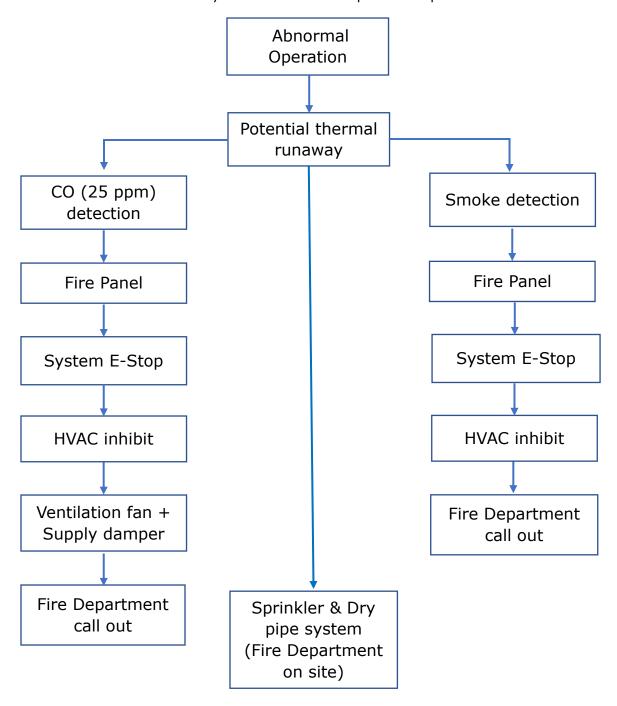
Ventilation System:

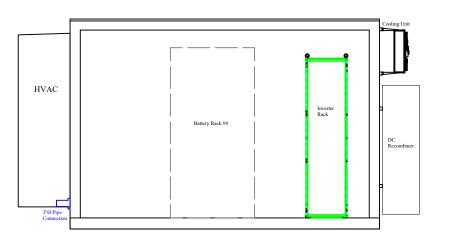
Ventilation system includes an intrinsically safe exhaust fan with motorized damper and supply vent with motorized damper. The system will be triggered by the CO gas detector upon detection of CO at 25 ppm. Two motorized dampers will open simultaneously, and the exhaust fan will operate venting out any offgas from the battery during a potential thermal runaway condition.



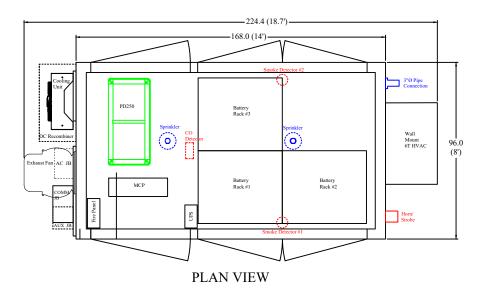
5 Sequence of Operation

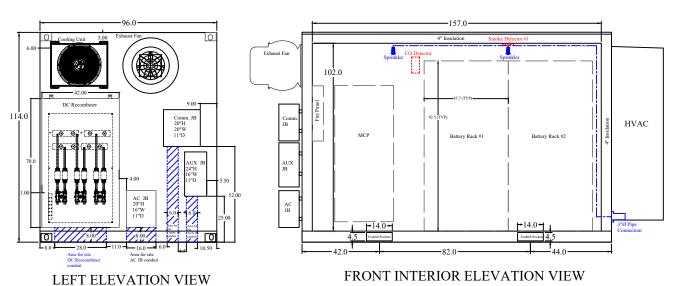
The BESS and Fire Control System follows this sequence of operation:

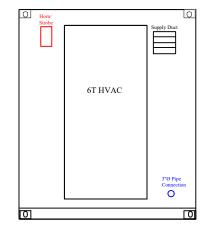




REAR INTERIOR ELEVATION VIEW







RIGHT ELEVATION VIEW



ENEON-ES

10550 - 42nd St, SE, Suite 107 Calgary, AB, T2C 5C7 Tel: (403) 236-0333

REV	DESCRIPTION	DATE
A	ISSUED FOR REVIEW	2022-04-05
0	ISSUSED FOR CONSTRUCTION	2022-08-05

PROPRIETARY AND CONFIDENTIAL

THIS DRAWING IS PROPERTY OF ENEON-ES
THIS DRAWING IS TO BE USED ONLY FOR
THE PURPOSE FOR WHICH IT IT INTENDED. IN
ACCEPTING THIS DRAWING, YOU AGREE THAT THE
INFORMATION CONTAINED HEREIN WILL NOT BE
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TO A THIRD PARTY WITHOUT ENEON-ES'S WRITTEN
CONSENT.

DRAWING TITLE:

BESS ENCLOSURE LAYOUT

	NAME	DATE
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APPROVAL	HI	2022-08-05

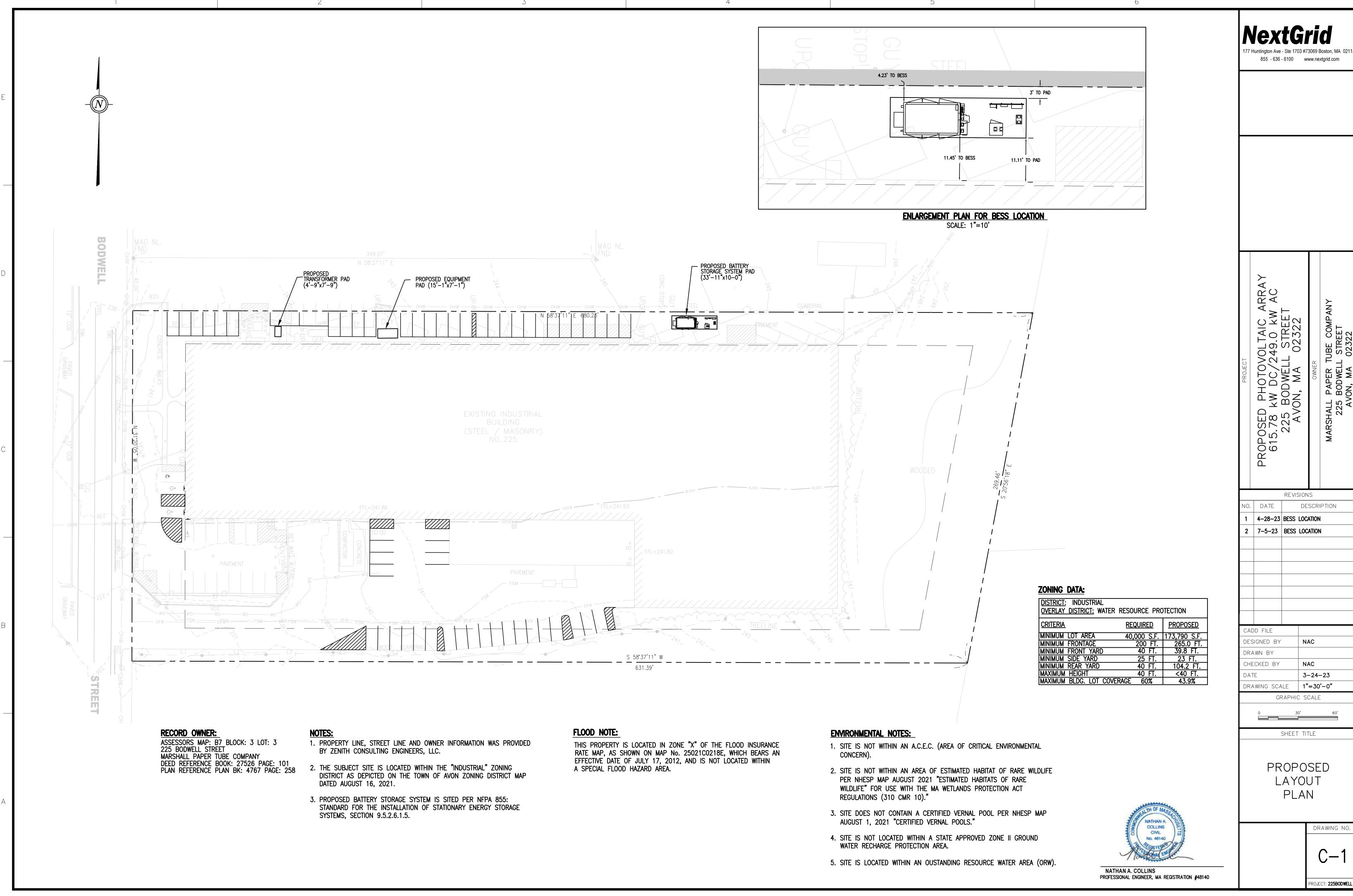
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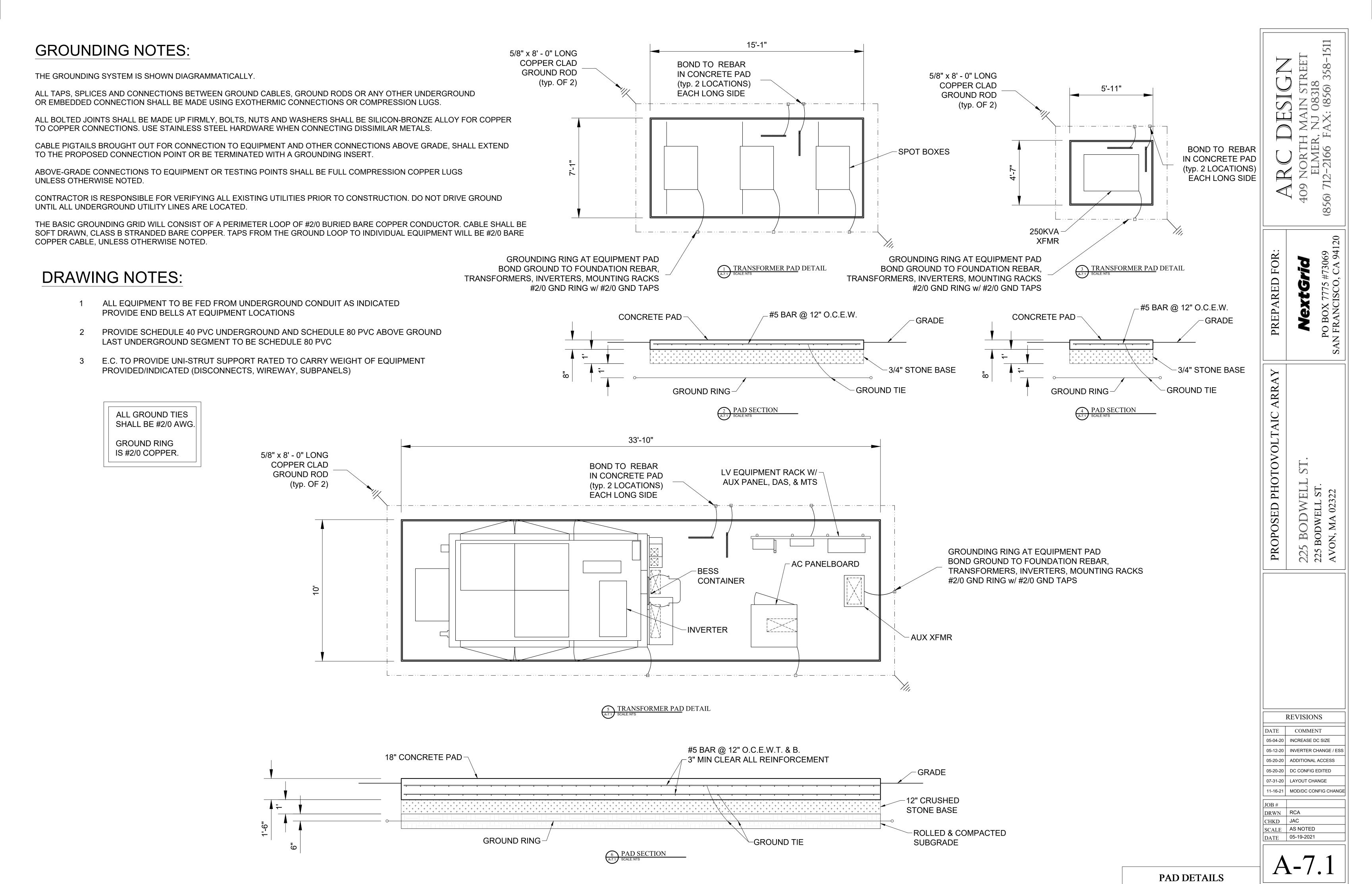
225 BODWELL ST, AVON, MA

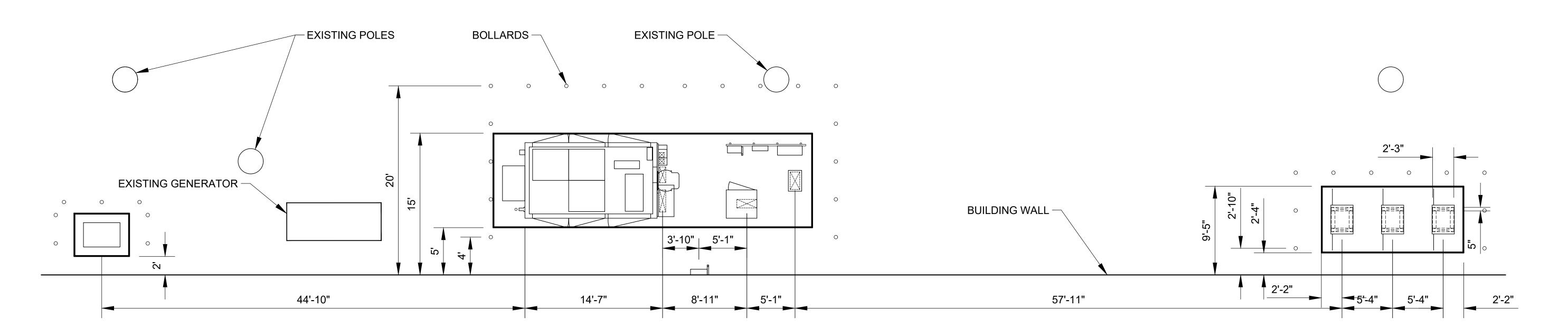
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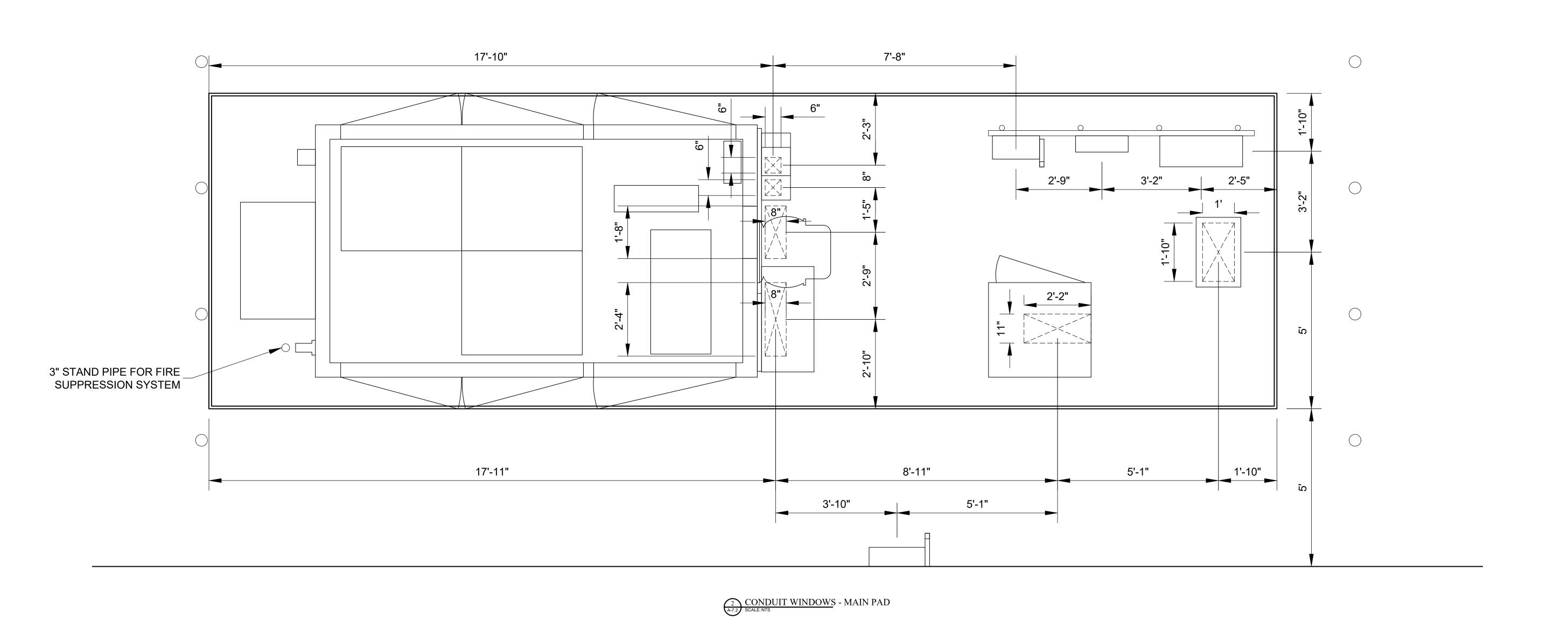
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CONDUIT WINDOWS - FULL
SCALE:NTS



- A-7.2

PAD DETAILS

(856) 712-409 PREPARED FOR: PROPOSED PHOTOVOLTAIC ARRAY ST

REVISIONS

DATE COMMENT

05-04-20 INCREASE DC SIZE

05-12-20 INVERTER CHANGE / ES

05-04-20 INCREASE DC SIZE

05-12-20 INVERTER CHANGE / ESS

05-20-20 ADDITIONAL ACCESS

05-20-20 DC CONFIG EDITED

07-31-20 LAYOUT CHANGE

11-16-21 MOD/DC CONFIG CHANGE

JOB #
DRWN RCA
CHKD JAC
SCALE AS NOTED
DATE 05-19-2021

D DETAIL C