

# Century Tywood J3 Corp - 380kW, 760kWh Energy Storage System

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- Applicable Codes
- 2020 NFPA National Electric Code 1
- 2020 NFPA National Electric Code 855
- 2020 NFPA National Electric Code 70
- 2021 International Fire Code
- 2021 International Building Code
- 2021 International Existing Building Code
- 527 CMR 12.00 Massachusetts State Building Code (NFPA W/ Massachusetts Amendments)
- 780 CMR Tenth Edition Massachusetts State Building Code

*Design Criteria*

Wind Speed: 120 MPH  
Snow Load: 40 PSF  
High Design Temperature: 120° F  
Low Design Temperature: -25° F

— Power Pole Number: 54  
Image included on later Page

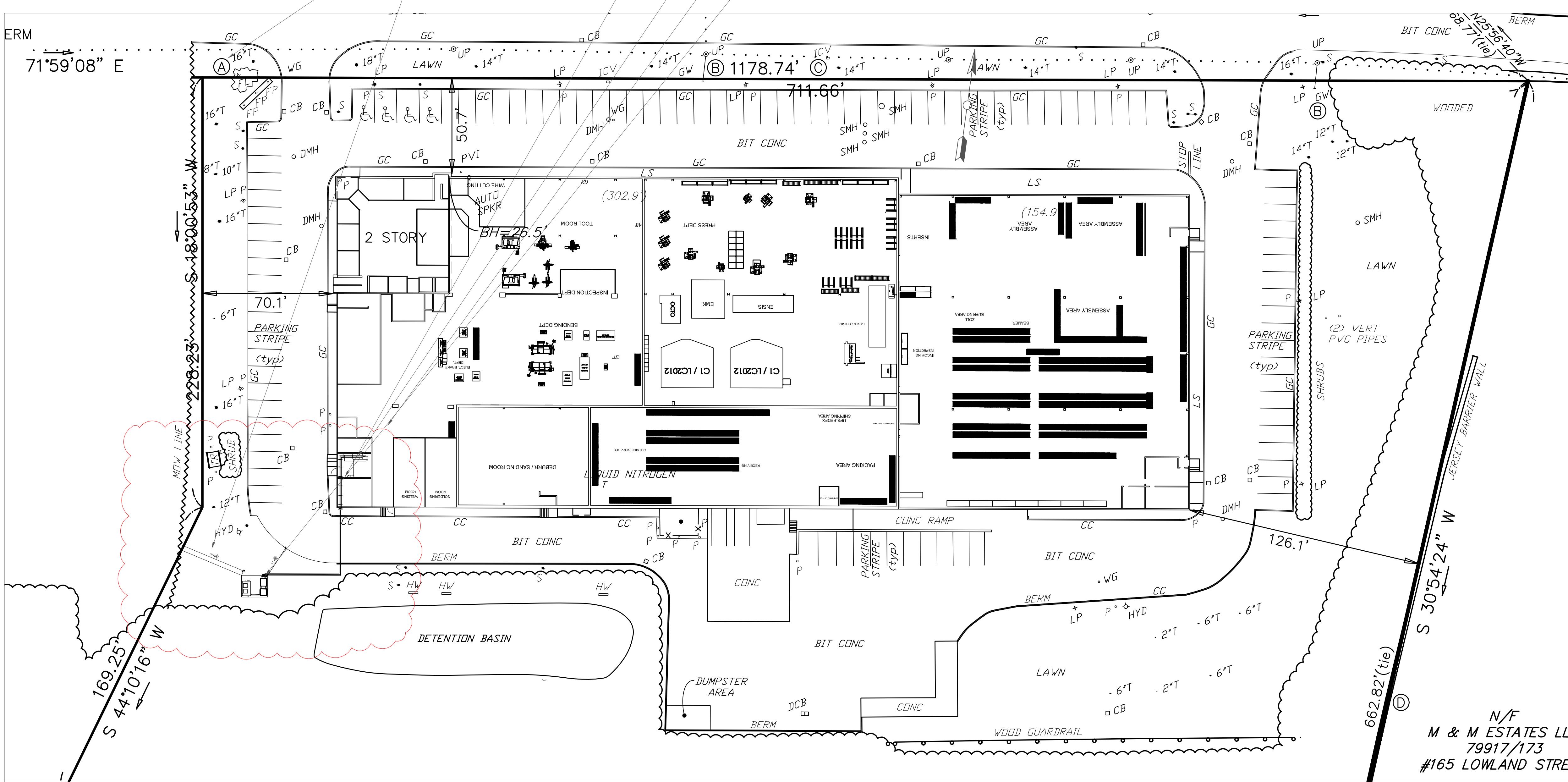
Revenue Meter: Revenue meter is located in main electric room.  
Revenue Meter: Honeywell Type A39SM  
Serial Number: 08105653  
Image included on Later Page

#### Point of Interconnection: Main Distribution Panel

## Area of Interest

## 3 Site Plan

Scale: 1/32 = 1'0"



## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)  
**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh  
**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

**Name:** Century-Tywood J3 Corp  
**Address:** 79 Lowland St  
Holliston, MA, 01747  
**Website:** [www.century-tywood.com/](http://www.century-tywood.com/)  
**Phone:** (508)-422-8552  
**Contact:** Jack Mahoney

**ENGINEER OF RECORD**



**Wyssling Consulting, PLLC**  
76 N Meadowbrook Drive, Alpine UT 84004  
Massachusetts COA #001629764  
Signed 11/06/2025

V.	DATE	DESCRIPTION

# AHJ

# EQORE PROJECT

Century-Tywood  
Holliston, MA

# DESIGNER

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**Company:** EQORE Inc.  
**Address:** 444 Somerville Ave,  
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**Website:** [www.eqore.net](http://www.eqore.net)  
**Phone:** 786-234-2655  
**Contact:** Donald Grob

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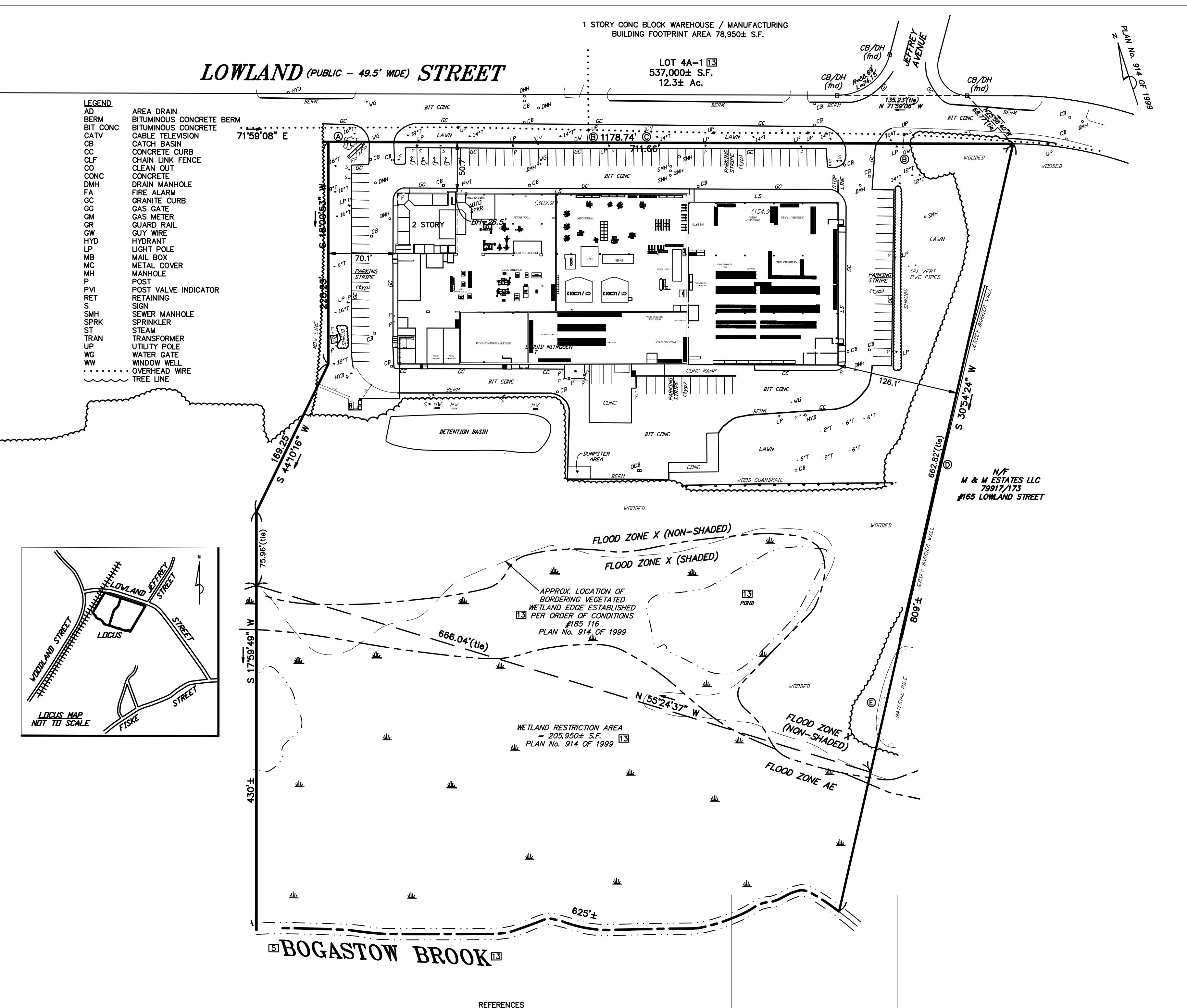
# Century- Tywood J3 Corp - Property Details

## Parcel Information

Location: 79 Lowland St  
Parcel ID: 012.0-0004-0064.2  
Owner: 79 LOWLAND ST LLC  
Owner Address: 79 Lowland St, Holliston, MA, 01746  
LS\_BOOK: 81004  
LS\_PAGE: 528  
LOT Size: 12.299 Acre

## Property Line Map

Scale: 1/32 = 1



## SYSTEM INFORMATION

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**Inverter Model:** Dynapower CPS1250

## CUSTOMER INFORMATION

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AHJ

## Town of Holliston, MA

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EQORE PROJECT

Century-Tywood  
Holliston, MA

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# Century-Tywood J3 Corp - EQORE System Overview

## Overview:

EQORE is a vertically integrated provider of energy storage systems designed for mid-sized to large commercial and industrial facilities. EQORE systems are installed Behind the Meter similar to a solar system or any ordinary piece of manufacturing equipment a facility might have.

EQORE handles software development, system design, planning, permitting, interconnections, system commissioning, and maintenance with the support of partner engineers, installers and hardware suppliers. EQORE does not manufacture batteries and instead relies on fully tested, proven hardware.

## Operating Goal:

The EQORE system operates as a billing optimization filter between the facility and the electricity grid. EQORE manages the specific function of the battery continuously via automated software, but at any given time the battery may be either importing power or exporting power to the facility. The EQORE system will do so depending on the facility load, the current market conditions, and several other factors. The objective of the importing and exporting of power is to maximize savings and revenue for the facility. EQORE does not own the battery, the facility purchases and owns the battery, EQORE simply manages the battery for the facility in return for an upfront and then a monthly fee.

The Century-Tywood project will be most similar to the one installed in Hayward, CA because the Sungrow BESS selected has integrated heating and cooling so no housing is required. In the Goffstown, NH project, the system was placed in a container due to weather constraints. The major difference from the Hayward project is that the disconnect will be mounted outside near the batteries and inside, the facility will only have the "EQORE Computing Unit" which controls the BESS using EQORE's proprietary control method.

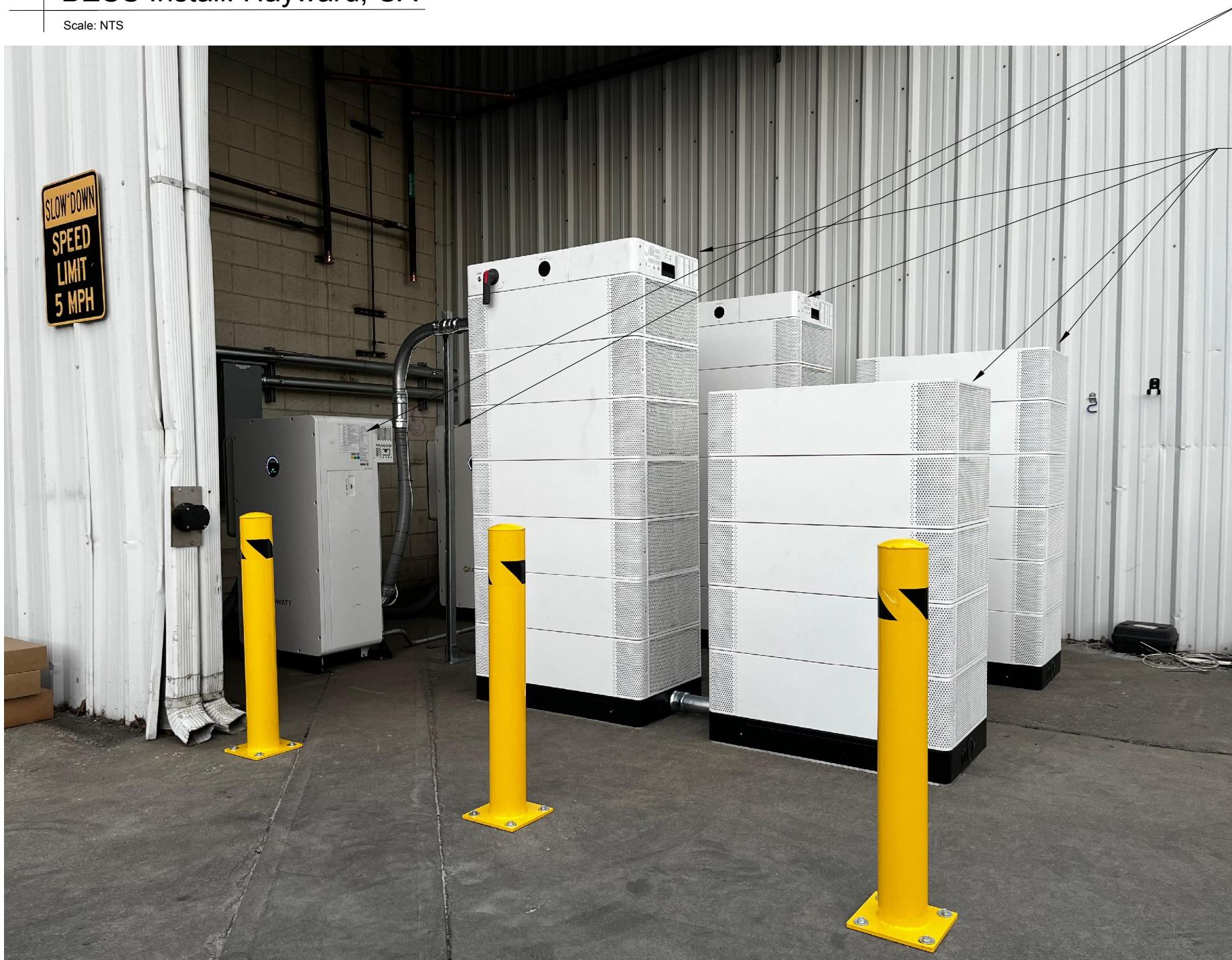
1 | Project: Goffstown, NH



2 | Interior of Project: Goffstown, NH



3 | BESS Install: Hayward, CA



4 | Interior Switchgear Detail: Hayward, CA



## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

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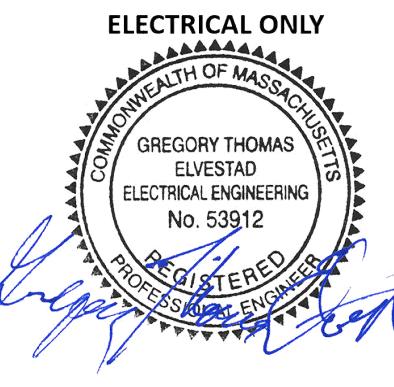
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**Contact:** Jack Mahoney

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Town of Holliston, MA

## EQORE PROJECT

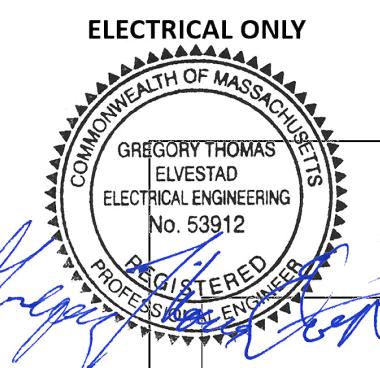
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Holliston, MA

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# Century-Tywood J3 Corp - Existing Switchgear

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## NOTE:

All the switchgear is existing, the power is distributed from the transformer to this main distribution panel. The utility meter is located in the same room and uses current sensors to read the energy usage.

We will be opening this main distribution panel to install our own current meters to monitor the power going into the building. This panel will also serve as the main point of interconnection of the battery system. We will be using one of the available slots on the main distribution panel.

The EQORE control box will be mounted inside the electrical room and monitor the facility load and controlling the BESS located outside the building. Additional details can be seen on page labeled "Main Distribution Panel Detail."

## 1 | Main Distribution Panel

Scale: NTS



## SYSTEM INFORMATION

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**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

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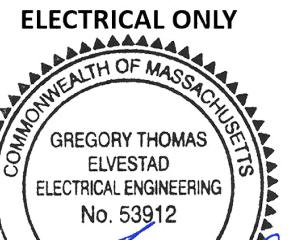
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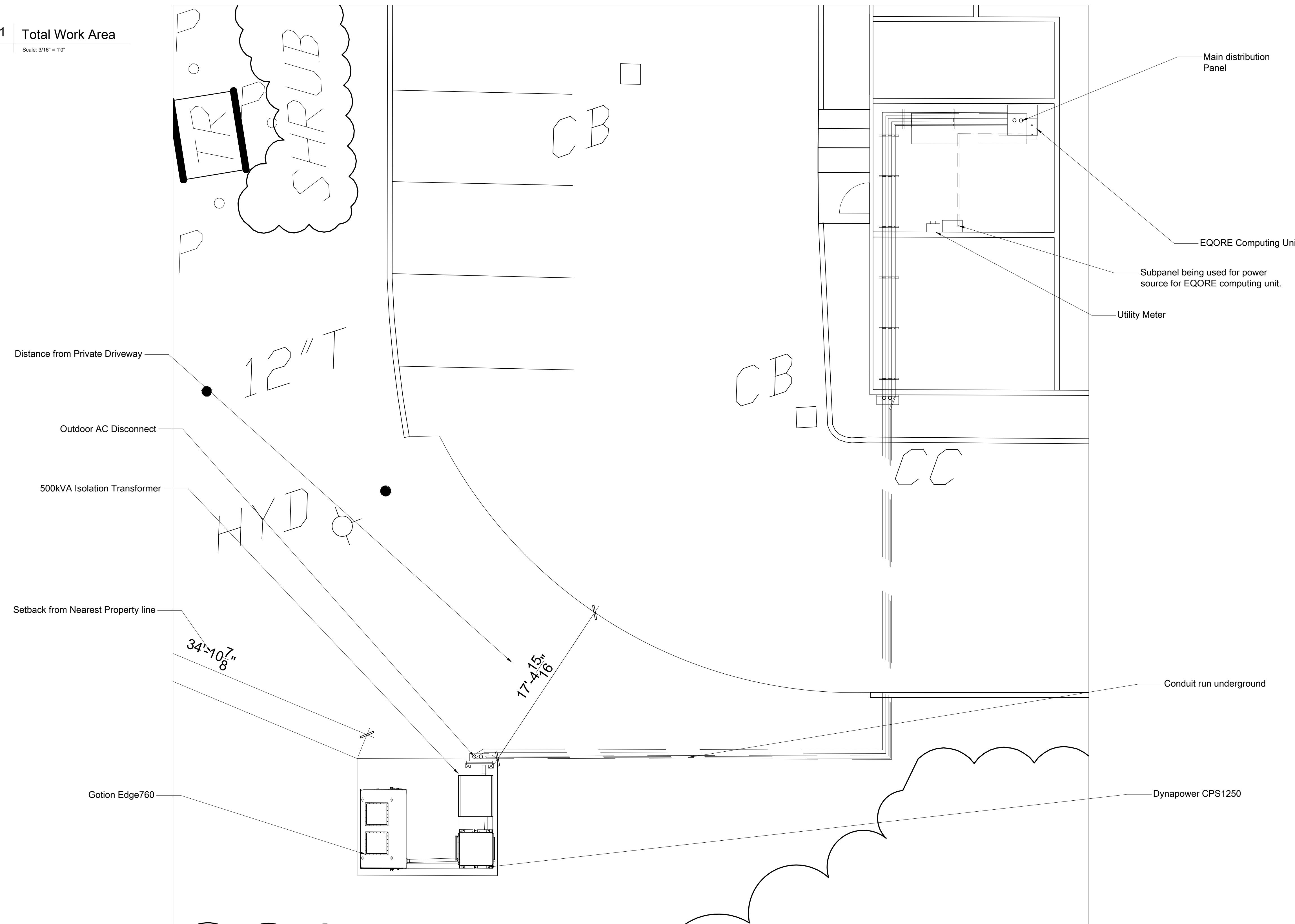


# Century Tywood J3 Corp - Plan Overview & Total Impact Area

## NOTE:

This page shows the extent of the work being done. We will be running metal EMT conduit from the existing electrical main distribution panel in the electrical room to the outside of the building at which point there will be a transition to PVC conduit at a pull box mounted on the exterior wall of the building. The PVC conduit will go down to a minimum depth of 2 ft per NEC and will run 40 ft or so under the private driveway to the open grass area on the opposite side of the road. The PVC will then make a 90 degree turn and run an additional 40ft. The PVC will then turn upwards and terminate into a 600AMP electrical disconnect. This installation involves running two 6 inch conduit lines. Additionally in the same trench we will run another 1-1/2 inch line that will be used for running communication lines into the building. The communication is running from the inverter and BESS to the EQORE computing unit. The EQORE computing unit will be supplied power from a 120V/208V subpanel located in the electricity distribution room in the facility.

The 600AMP disconnect will be mounted to a concrete pad using strut. This concrete pad will have one Gotion EDGE760 unit mounted to it, a 500kVA isolation transformer, and a Dynapower CPS1250. The EQORE system is intended to smooth the electricity load of the facility thereby reducing the costs of electricity for the facility. The concrete pad where the system will be placed is approximately 11-1/2 ft by 14 ft in size (additional details provided on subsequent pages).



## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

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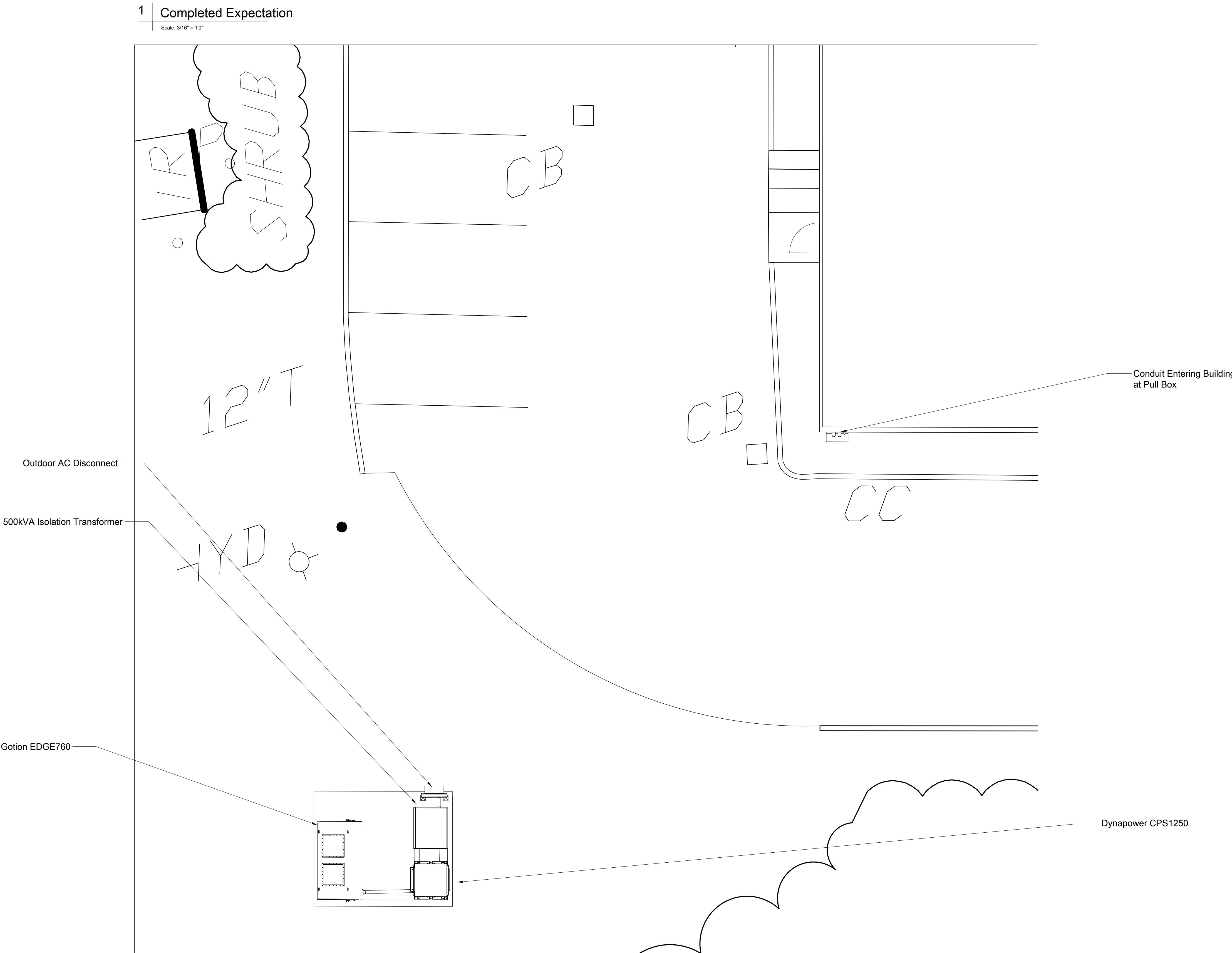
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# Century Tywood J3 Corp - Top View: Exterior Complete Expectation

**NOTE:**

This page shows the expected top view once the project is completed per the specifications outlined.



## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

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## AHJ

Town of Holliston, MA

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# Century Tywood J3 Corp - Top View: On-Pad Details

We will be installing the batteries in compliance with the installation manual as well as in compliance with the requirements of NFPA 855, the standard for fire protection regulation for battery storage. In ESS-20, we review the compliance methods taken to ensure that the battery installation is in compliance with all the battery regulations for energy storage systems.

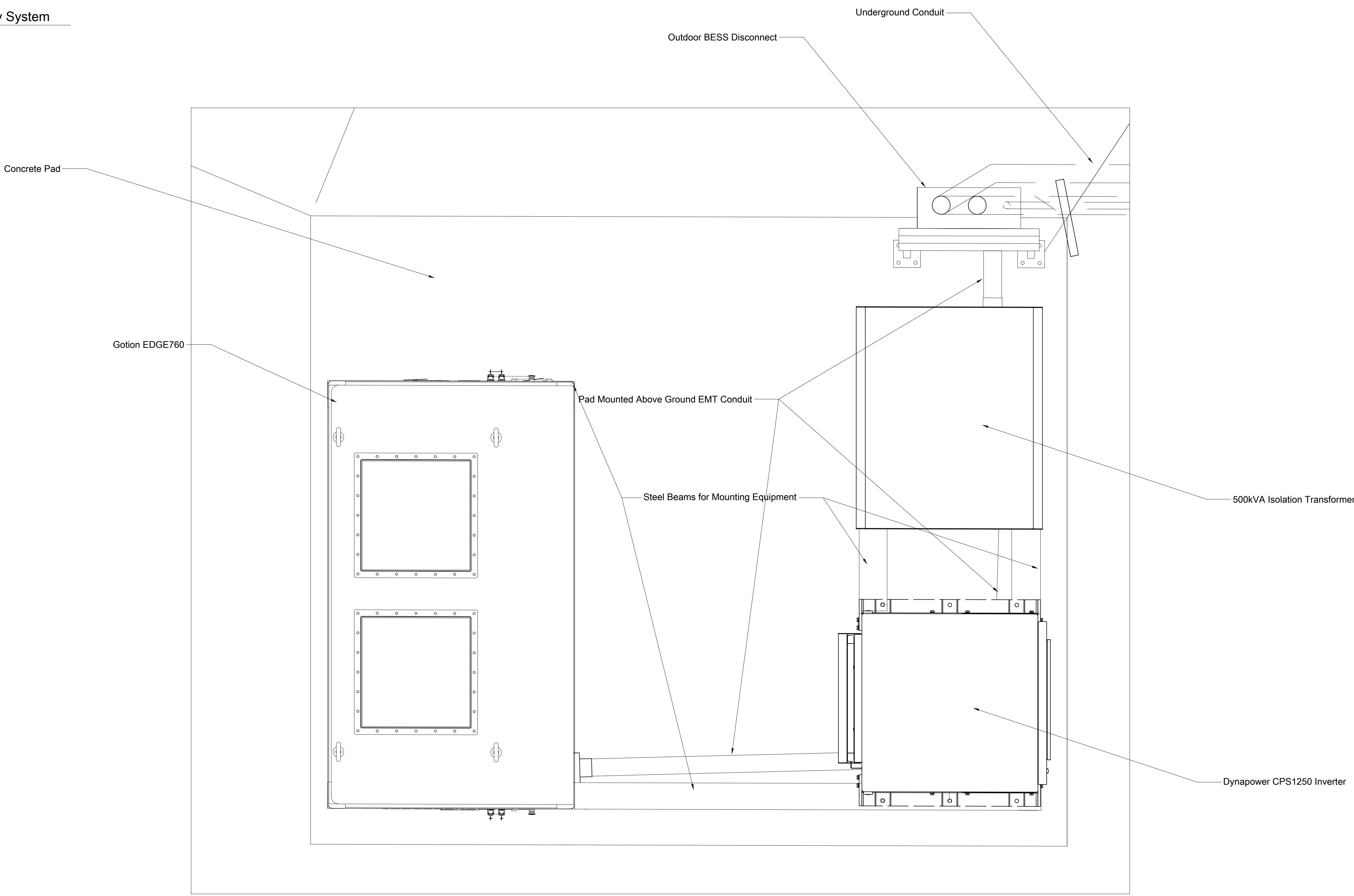
The PVC conduit runs underneath the ground, to the electrical disconnect that is mounted on strut just adjacent to the battery systems. Then from the disconnect, the conduit runs into the isolation transformer and then from the isolation transformer to the Dynapower CPS1250 and then from the CPS1250 to the Edge760.

The computing unit is hooked up to the controls of the BESS. It is our proprietary EQORE Computing Unit that monitors, controls, forecasts, and operates the system. The computing system is also connected to the current and voltage probes which come from the main distribution panel and provide the computing system readings on the voltage and current being used by the facility. Ethernet is run from the EQORE Computing Unit to the Disconnect, then from the disconnect to the Dynapower CPS1250 and then from the Dynapower CPS1250 to the Gotion Edge760. This allows EQORE to control and monitor the entire system.

The Gotion EDGE760, has integrated fire suppression, temperature monitoring, fire annunciation, and controls and the EQORE Computing unit has various temperature and monitoring sensors that allow it to ensure safe operation of the total EQORE system which consists of the Gotion battery system, the 500kVA isolation transformer, the Dynapower CPS1250, the disconnect mounted outside, and the controls box mounted inside the building.

1 | Battery System

Scale: 1" = 1'-0"



## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

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**AHJ**  
Town of Holliston, MA

**EQORE PROJECT**  
Century-Tywood  
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## PAGE NOTES

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Sheet No. Revision A

# Century Tywood J3 Corp - Top View: Interior Conduit Run Details

## 1 | Conduit Run Description

There will be a total of 3 conduit lines run into the building and then into the main electrical room. Two will be 6 inches in diameter and one will be 1-1/2 inches in diameter. However, the 1-1/2 inch line will terminate in the EQORE Control Box while the 6 inch conduit will terminate into the Main Switchgear for the facility and then ultimately the conductors into a single Cutler Hammer HLD3600 breaker. The breaker will be outfitted with the appropriate lug kit to terminate the 2 x 700kcmil Aluminum conductors per leg.

## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

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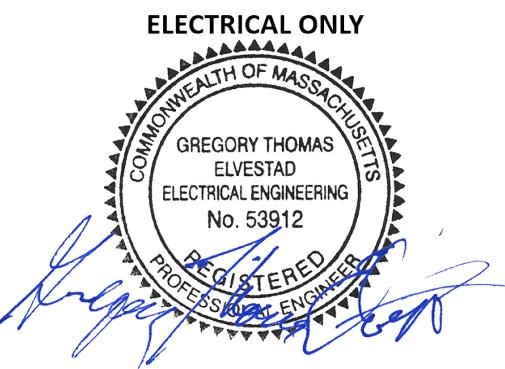
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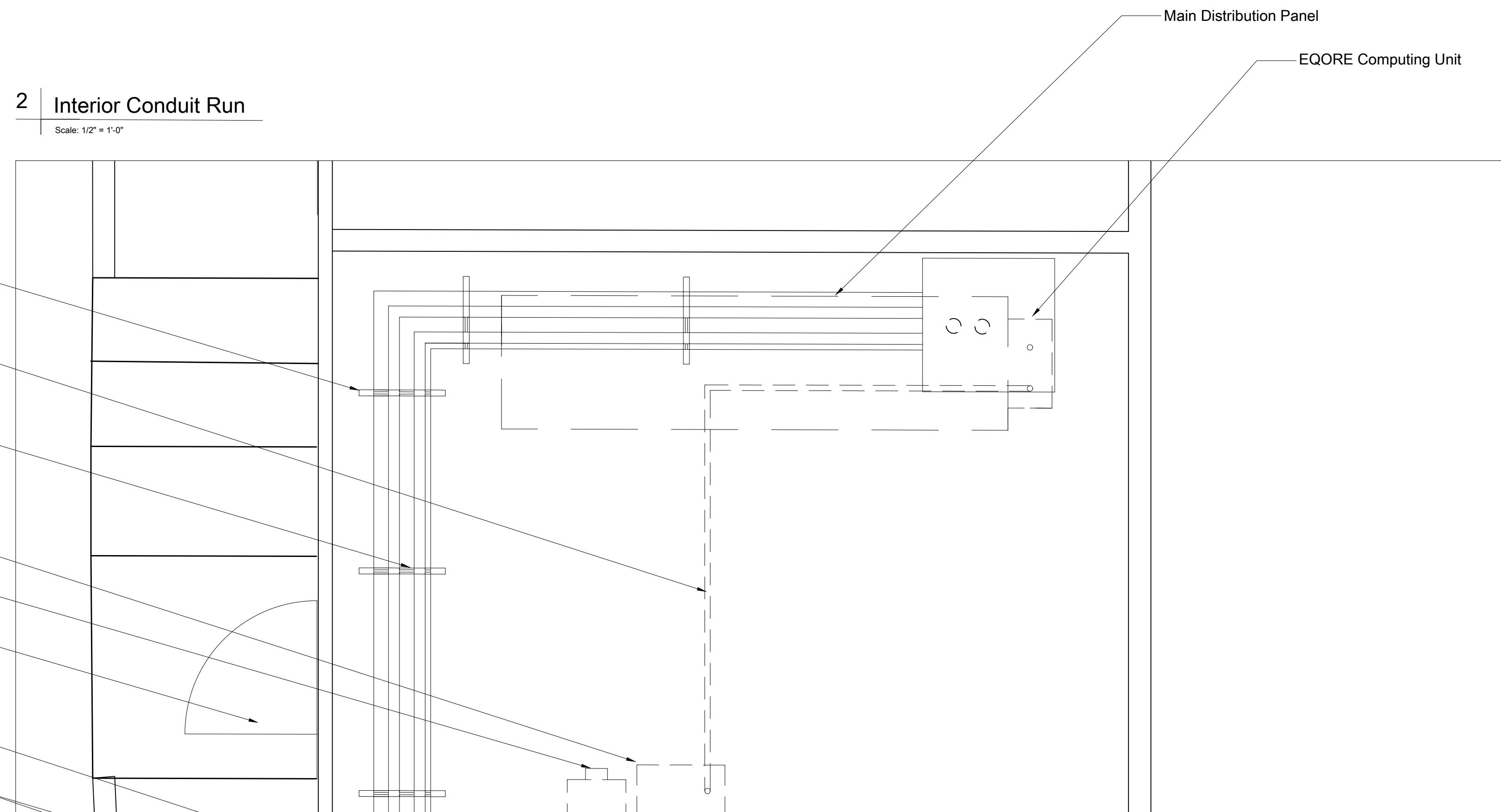
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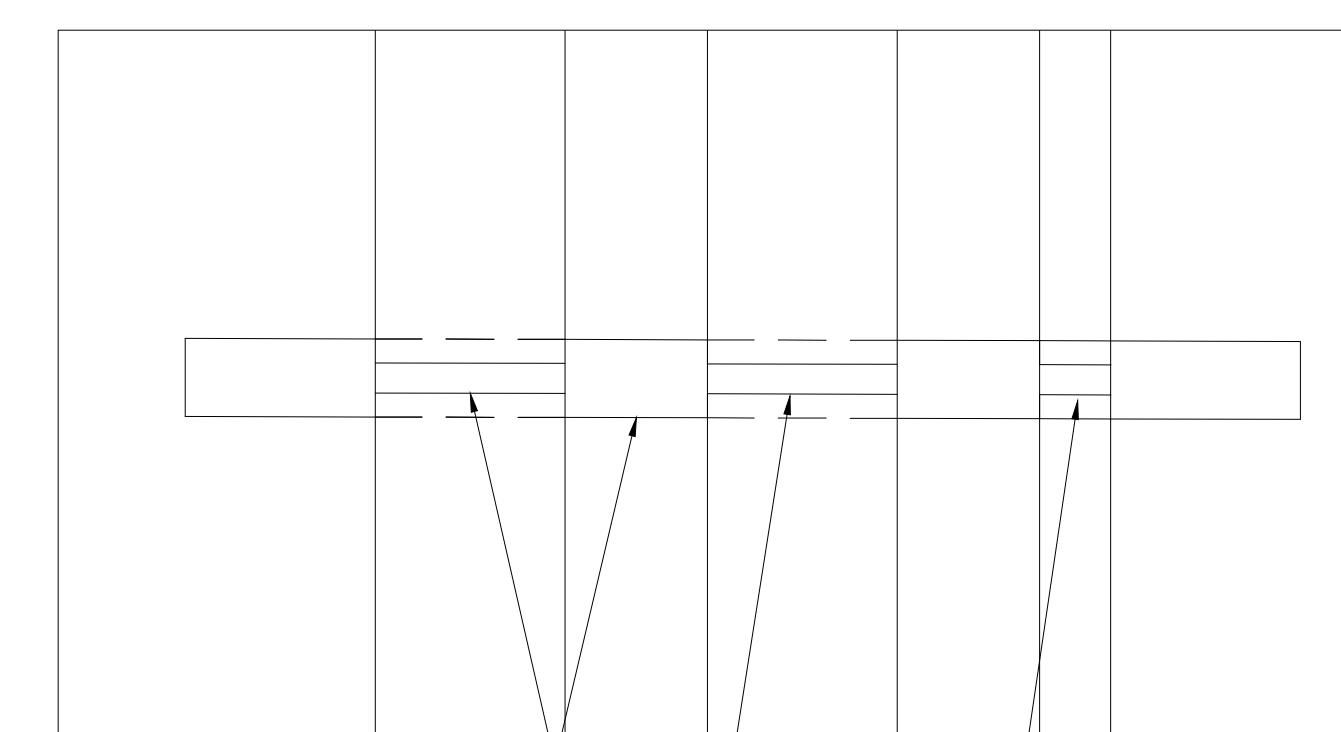
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## 2 | Interior Conduit Run



## 3 | Conduit Strut Attachment

Scale: 3" = 1'-0"



1-5/8 Inch Strut attached to Plywood subfloor

6 Inch EMT Strut Clamp

1-1/2 Inch EMT Strut Clamp



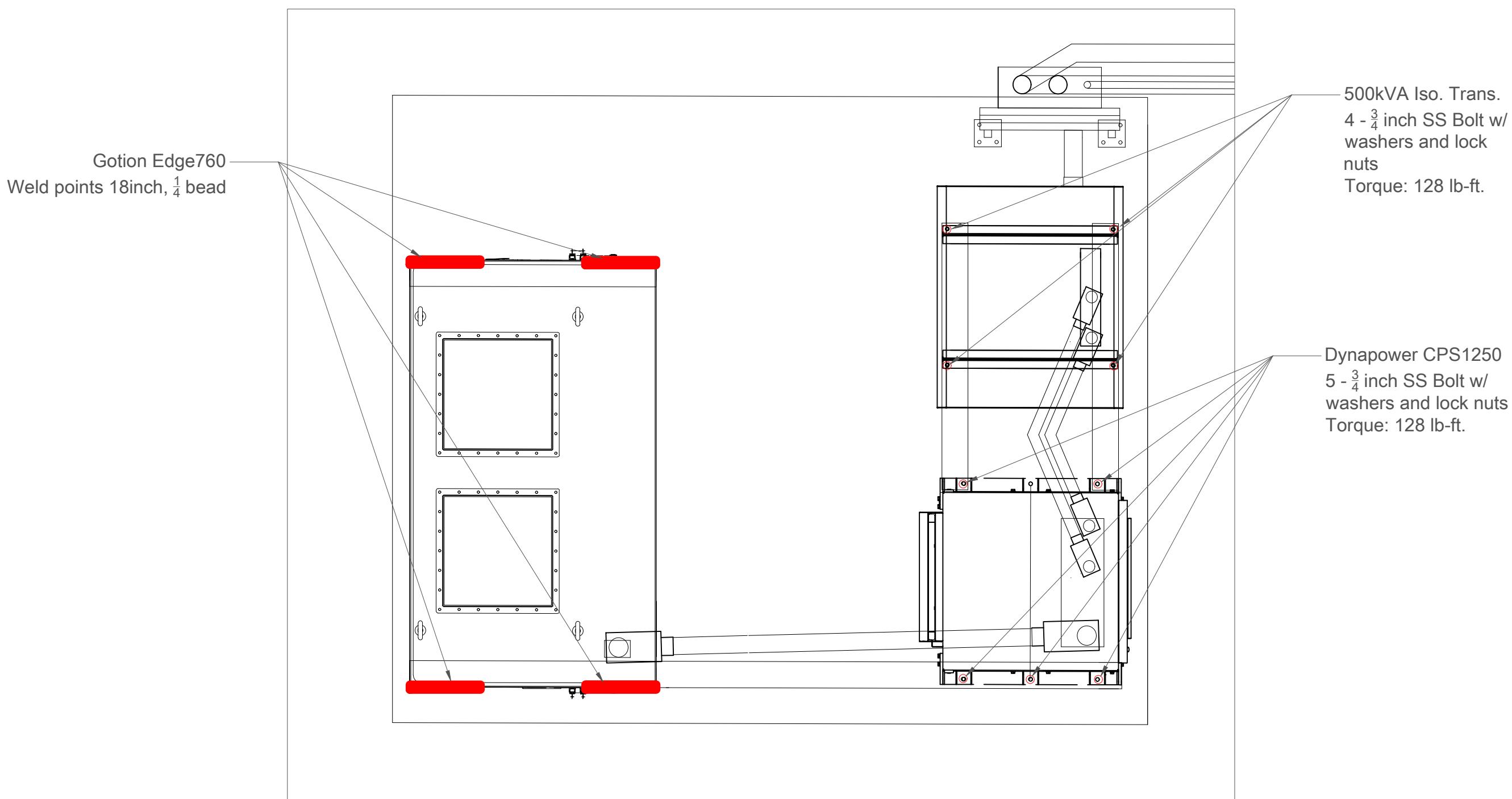
# Century Tywood J3 Corp- Equipment Attachment: Top View w/ Attachment Specs

Here you can see the attachment details for the equipment to the pad or Steel frame. The Gotion Edge760, Dynapower CPS1250 and the 500kVA Isolation transformer are all mounted to Steel I beams (detailed on a subsequent page) which are bolted to the slab.

## 1 On-Pad Conduit Routing Details

Scale: 1/2" = 1'-0"

The Gotion Edge760 is welded to the I beams (welding specifications provided below). The Isolation transformer and Dynapower Edge 760 are both bolted to the steel I beams



## 3 Gotion Edge 760 Attachment Weld Details

The Gotion EDGE 760 gets attached to the Steel I beams by welding it at the 4 corners of the unit to the I beams. Below are the specifications for the welds:

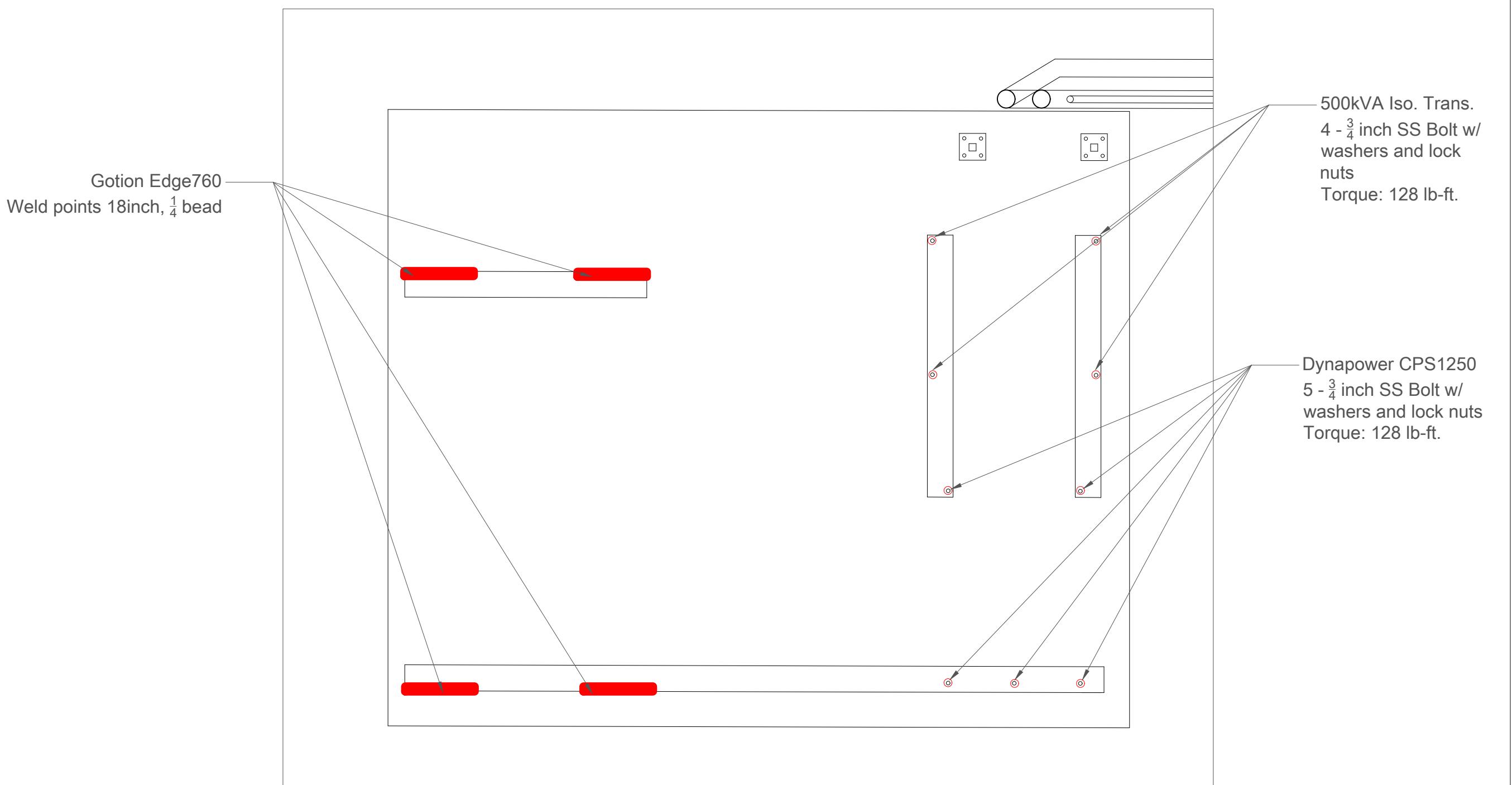
- Process and code: Field welds shall conform to AWS D1.1/D1.1M, latest edition; welders and procedures shall be qualified to AWS D1.1; I beam shall be ASTM or equivalent structural steel compatible with AWS D1.1 Group steels.
- Weld type and extent: Provide continuous fillet welds along each cabinet base member contact with the I beams as indicated by the red highlight above; do not use intermittent, skip, or spot welds at these fixation points unless otherwise shown on stamped structural details; grind flush only where required for fit or coating system.
- Minimum size: Unless increased by the structural design, specify a minimum fillet weld leg size of 1/4 in around each contact line; the OEM provides no explicit size, so tcalculations are provided to the right jusifying the 18 inch, 1/4 inch bead.
- Length/bead continuity: Weld continuously 18 inch beads at the 4 corners of the unit; where obstructions limit access, provide end returns of 50 mm 2 in at each accessible end and continuous weld over the accessible segment; do not rely on short intermittent beads at primary fix points.
- Preparation/fit-up: Clean mill scale, rust, oil, and coatings from weld areas; ensure bearing and alignment with the foundation flatness tolerance of 5 mm top surface variance before welding; provide temporary shims or jacks at mid-spans to maintain support while welding to prevent base distortion.
- Inspection and NDE: Visual inspection per AWS D1.1 Clause 6; repair defects per AWS D1.1; acceptance criteria per AWS D1.1.
- Corrosion protection: After acceptance, clean spatter and apply manufacturer-approved anti-corrosion treatment/coating system at all welds and heat-affected areas, matching foundation/coating specification; this is explicitly required by the OEM.

## 2 Equipment Attachment Method and Holes

Scale: 1/2" = 1'-0"

As mentioned, all equipment is mounted on steel I beams which are mounted to the concrete slab. The beam attachment details are provided later but the attachment details for the equipment to the beams are provided here.

- Gotion Edge760: Welded
- Dynapower CPS1250: Bolted
- 500kVA Isolation Transformer: Bolted



## 4 Dynapower Attachment Details

Below are the details for the bottom of the unit as extracted from the manufacturer cut sheets.

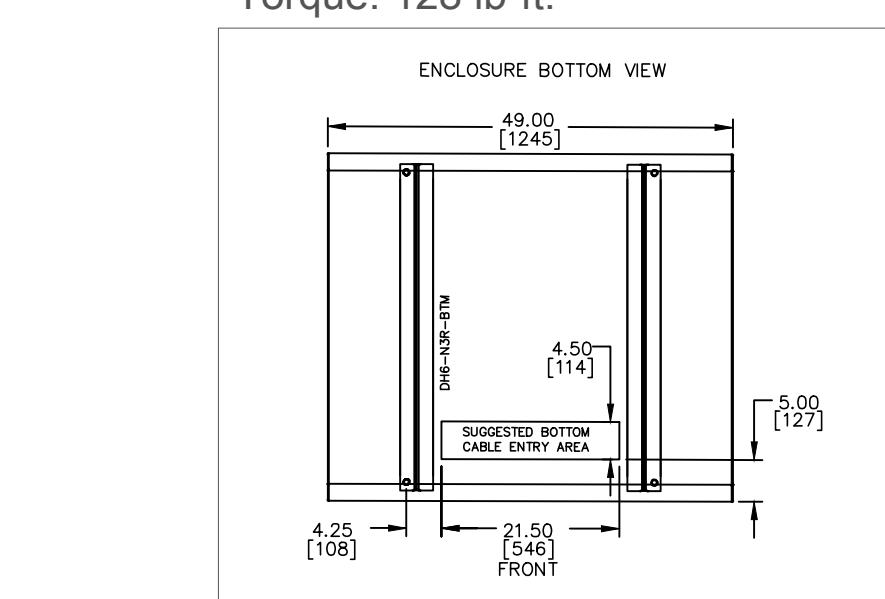
- Bolts: 3/4 inch Stainless Steel Bolt w/lock nuts
- Torque: 128 lb-ft.

Weld Calculations	
Parameter	Value
Cabinet Dead Load	78.5 kN (8 metric tons)
Design Wind Speed	128 mph (57.2 m/s)
Wind Pressure (q)	2007 Pa
Wind Force (lateral)	12.0 kN
Snow Load	70 psf (3352 Pa)
Snow Force (vertical)	11.3 kN
Total Vertical Load	89.7 kN
STABILITY CHECK	
Overturining Moment (wind)	15.1 kN-m
Resisting Moment (dead load)	94.2 kN-m
Factor of Safety (overturining)	6.26
WELD DESIGN (AWS D1.1)	
Weld Type	Fillet weld, SMAW, E70XX electrodes
Leg Size	0.25 in (6.35 mm)
Effective Throat	4.49 mm
Length per Corner	18 in (457 mm)
Number of Corners	4
Total Weld Length	72 in (1829 mm)
Allowable Shear Stress (Fv)	21.0 ksi (144.8 MPa)
WELD CAPACITY	
Total Weld Area	8210 mm <sup>2</sup>
Weld Shear Capacity	1188.8 kN
DEMAND ON WELDS	
Lateral Demand (wind)	12.0 kN
Demand per Corner	3.0 kN
UNITY CHECK	
Demand / Capacity	
Status	PASS (< 1.0)

## 5 500kVA Attachment Details

Below are the details for the bottom of the unit as extracted from the manufacturer cut sheets.

- Bolts: 3/4 inch Stainless Steel Bolt w/lock nuts
- Torque: 128 lb-ft.



## SYSTEM INFORMATION

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BESS: Gotion Edge 760

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# Century Tywood J3 Corp - West View: Completed Expectation

**NOTE:**

This page shows the expected West view once the project is completed per the specifications outlined. The three main views provided are Top, West and South.

## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

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**Website:** [www.century-tywood.com/](http://www.century-tywood.com/)

**Phone:** (508)-422-8552

**Contact:** Jack Mahoney

## ENGINEER OF RECORD



Wyssling Consulting, PLLC  
76 N Meadowbrook Drive, Alpine UT 84004  
Massachusetts COA #001629764  
Signed 11/06/2025

REV.	DATE	DESCRIPTION
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**AHJ**  
Town of Holliston, MA

**EQORE PROJECT**  
Century-Tywood  
Holliston, MA

**DESIGNER**  
**Company:** EQORE Inc.  
**Address:** 444 Somerville Ave,  
Somerville, MA, 02143  
**Website:** [www.eqore.net](http://www.eqore.net)  
**Phone:** 786-234-2655  
**Contact:** Donald Groh

## PAGE NOTES

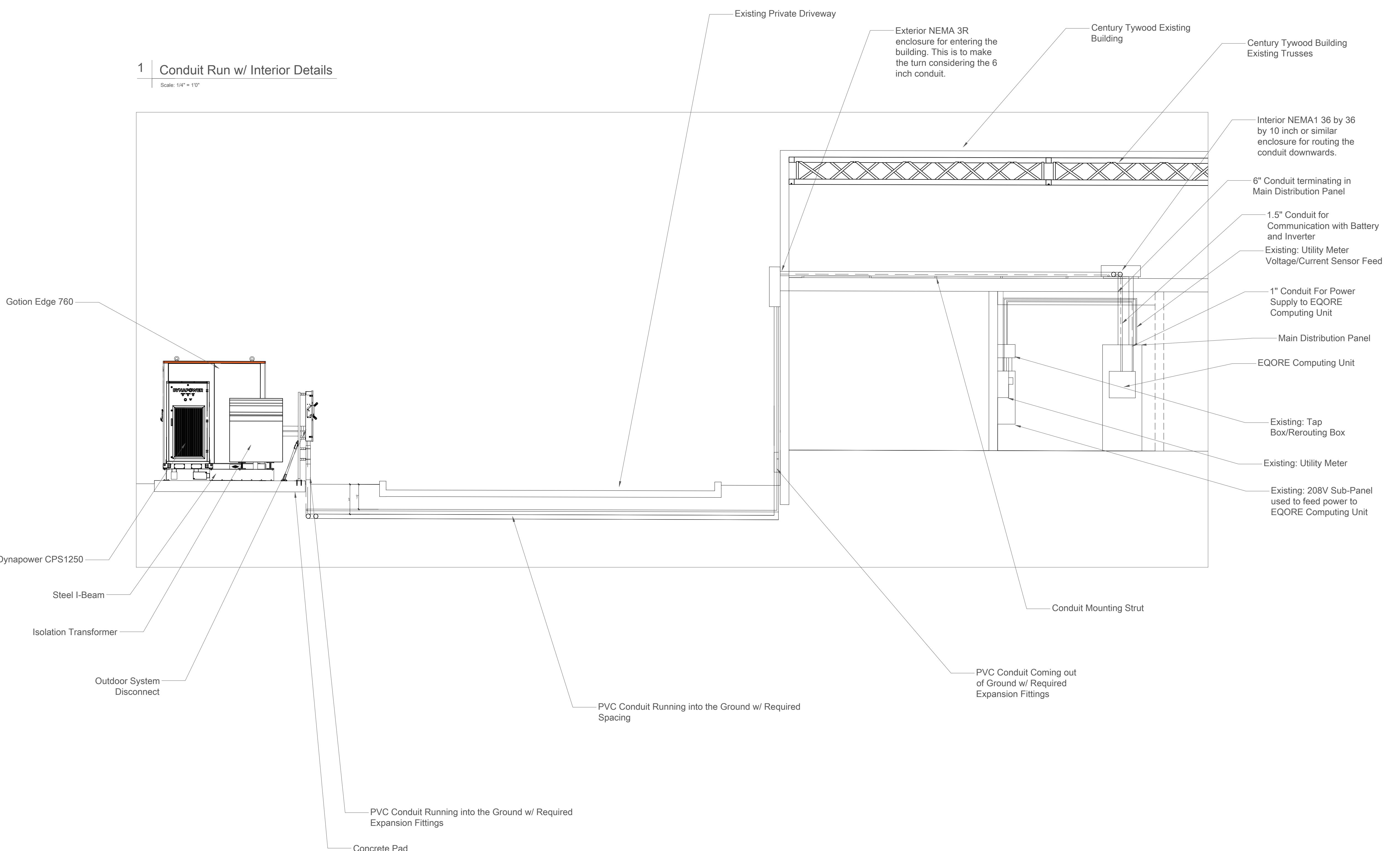
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Drawn by: DG	Checked by:	Approved by: DG Date: 11/03/2025
Sheet No.		Revision A

# Century Tywood J3 Corp - West View: Conduit Run & Interior

**NOTE:**  
This page shows the expected West view including conduit run details and some interior installation details.

## 1 Conduit Run w/ Interior Details

Scale: 1/4" =



## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

## **Inverter Model: Dynapower CPS1250**

**DC System Size:** 760kWh  
**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

**Name:** Century-Tywood J3 Corp

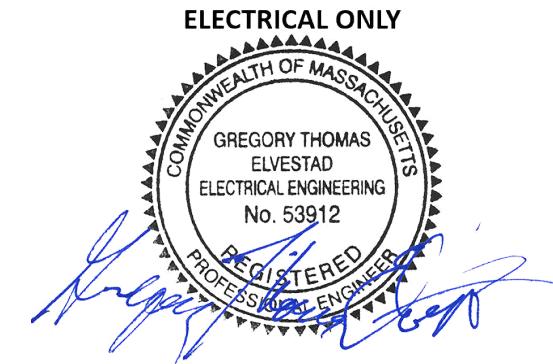
**ress: 79 Lowland St**

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DESIGNER

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Sheet No.			Revision A

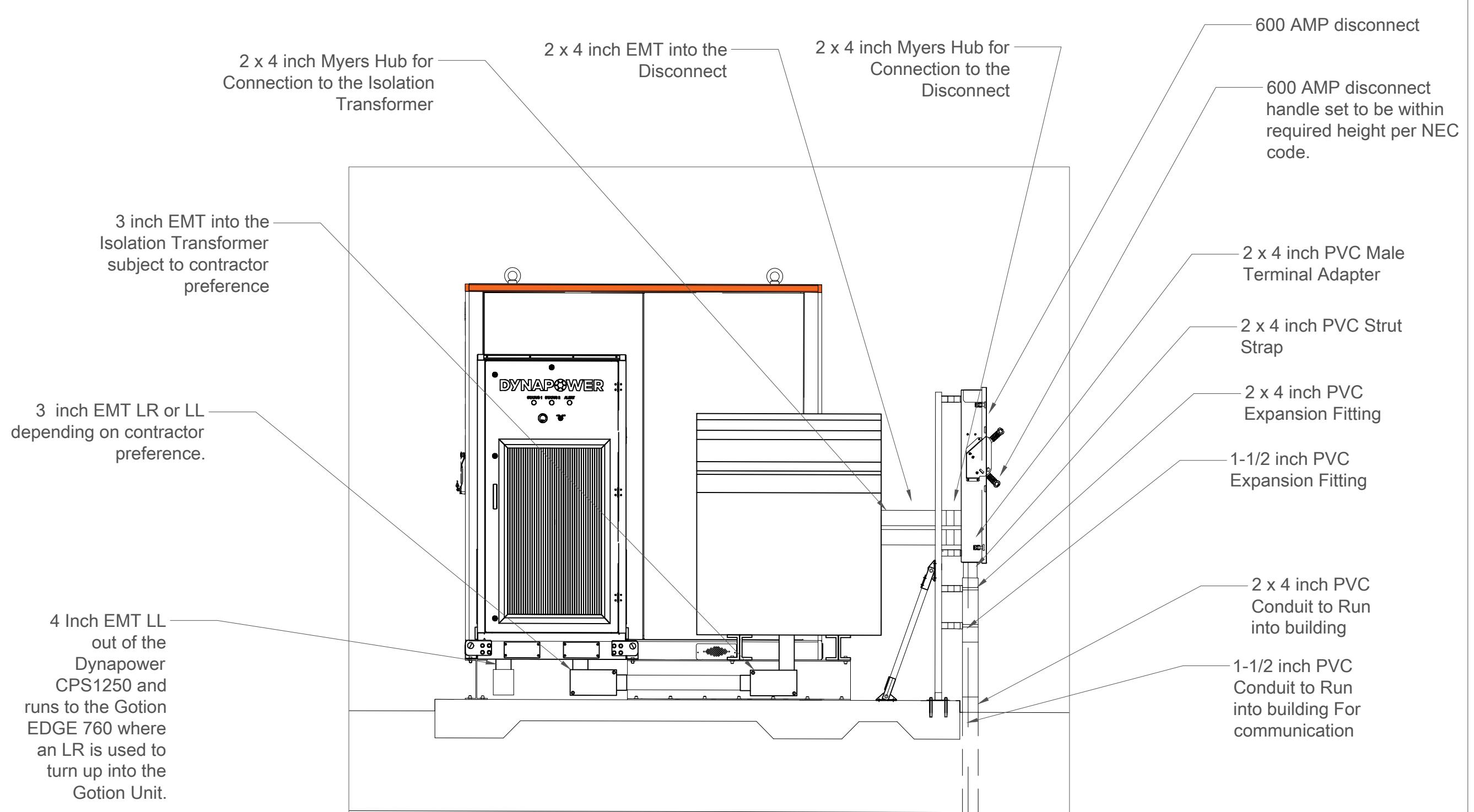
# Century Tywood J3 Corp- West View: Conduit and Attachment details

Here you can see additional details for the conduit runs on the pad, the installation of the steel I beams to the concrete pad, and the installation of the equipment to the steel I beams.

## 1 On-Pad Conduit Routing Details

Scale: 1/2" = 1'-0"

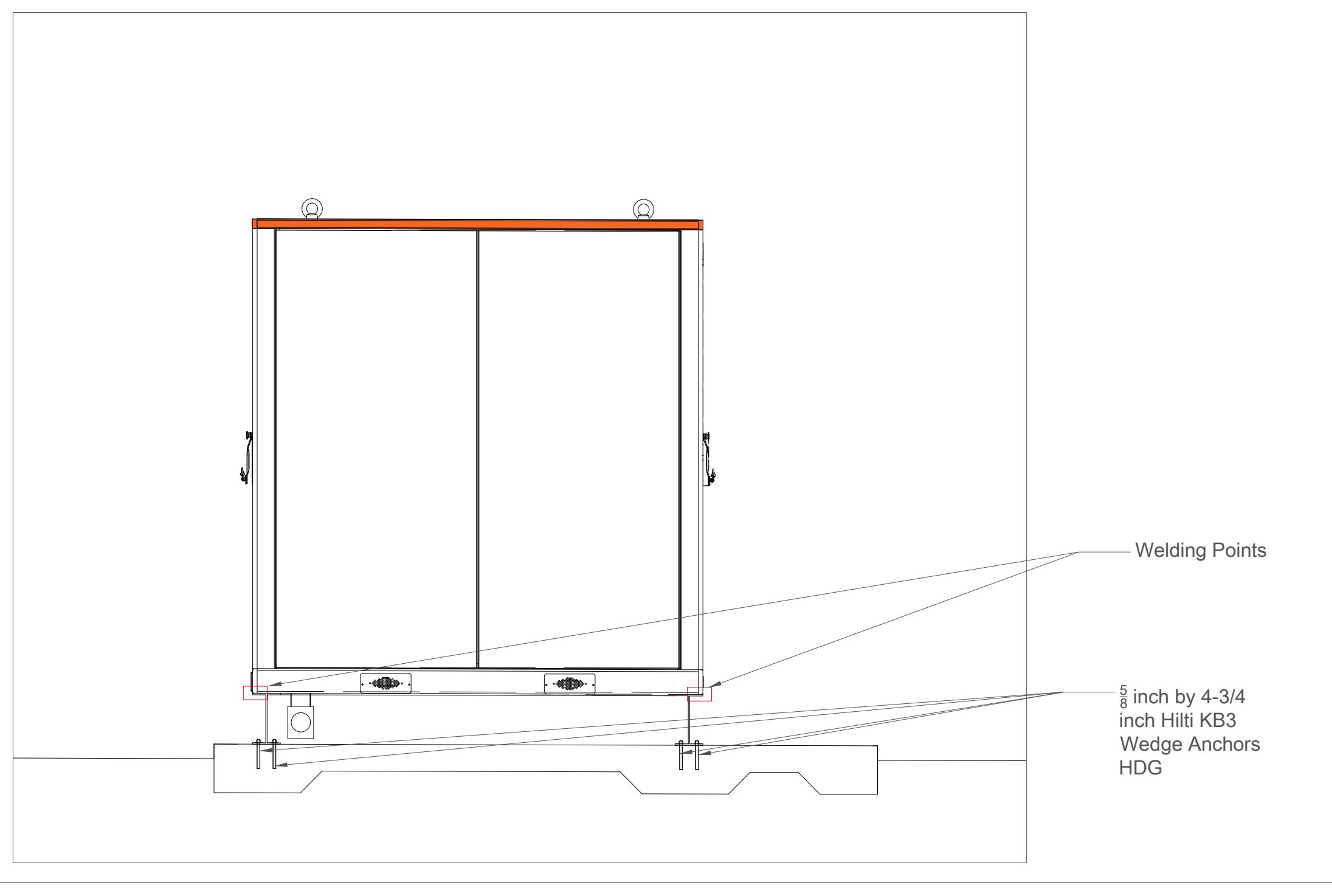
The Gotion Edge760, Dynapower CPS1250, and the 500kVA isolation transformer are all bottom entry devices so the conduit between the devices is run below the units.



## 3 Gotion Edge760 Attachment details & I Beam Attachment

Scale: 1/2" = 1'-0"

As described in the top view attachment specifications, the Gotion Edge760 is attached to the steel I-Beams by welding the frame to the I-beams. The I-Beams are then attached to the slab using  $\frac{5}{8}$  inch by 4-3/4 inch Hilti Kwik Bolt 3 Wedge Anchors which have the detailed specifications provided on previous pages.

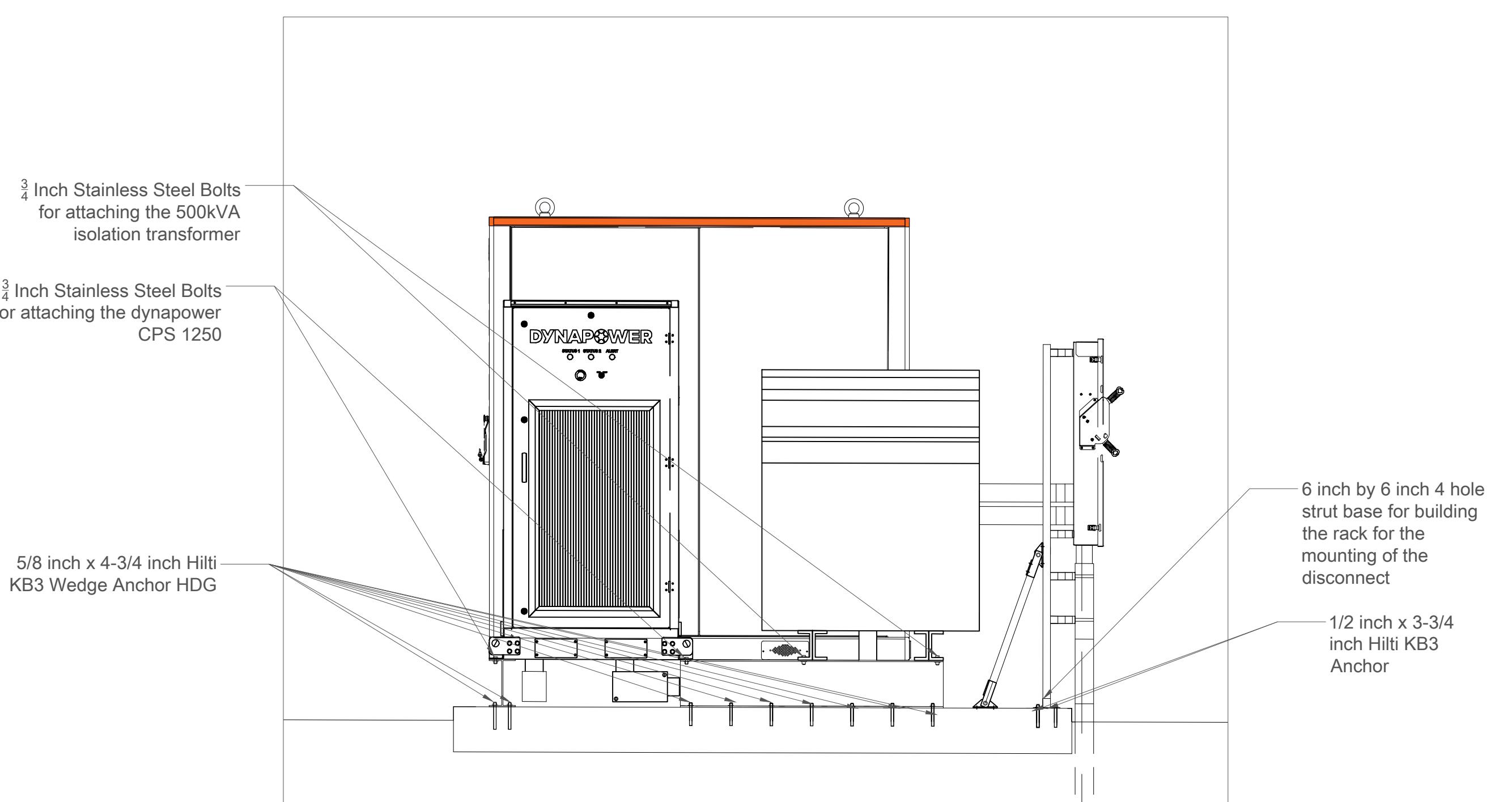


## 2 Other Equipment Attachment Method

Scale: 1/2" = 1'-0"

The main details of interest here are:

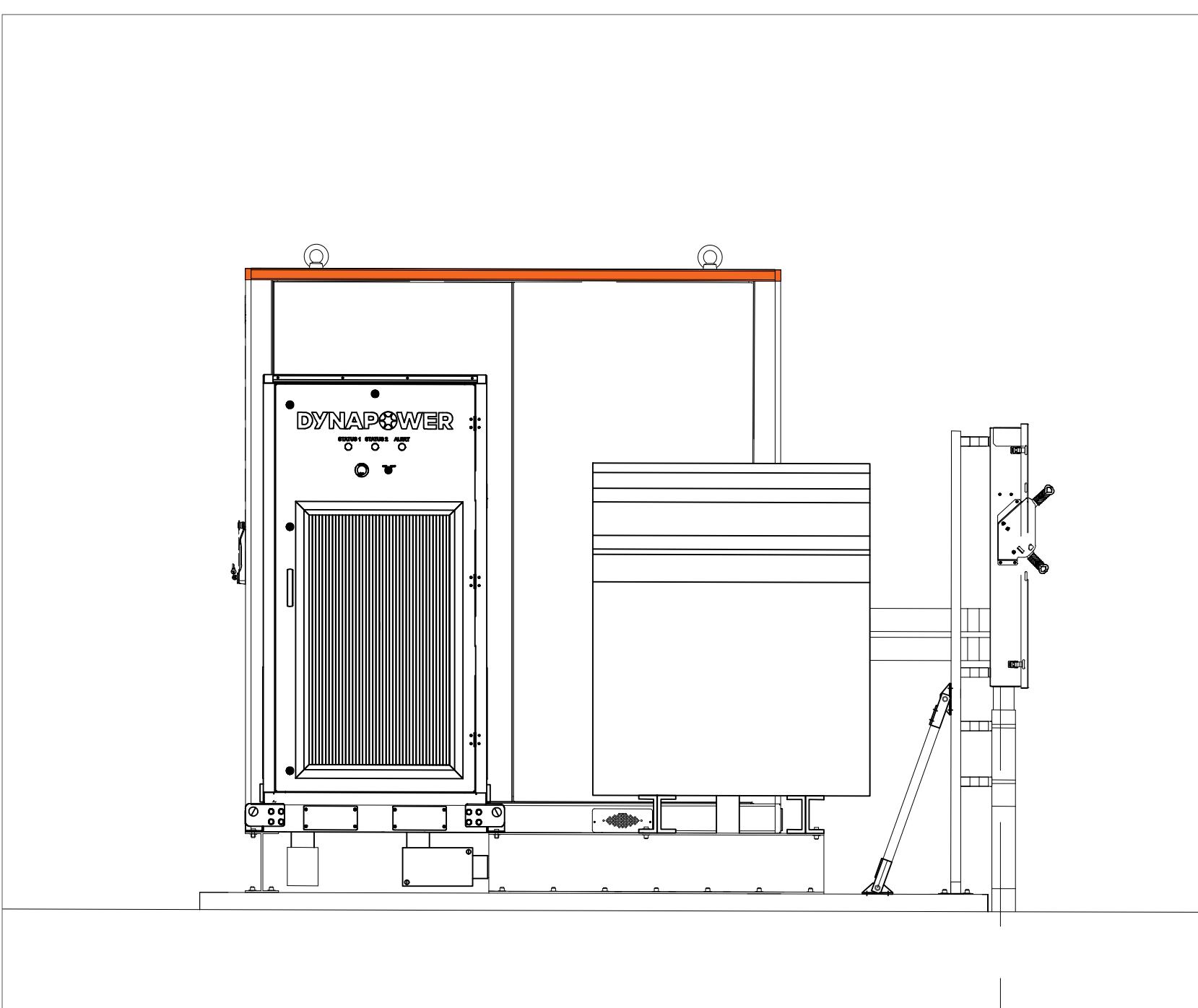
- The attachment details for the steel I beams to the concrete slab.
- Attachment details for the strut frame used to mount the disconnect
- The attachment details for the equipment to the I beams



## 4 Expected Complete Installation

Scale: 1/2" = 1'-0"

This shows the installation as it is expected upon completion.



## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

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Holliston, MA

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## PAGE NOTES

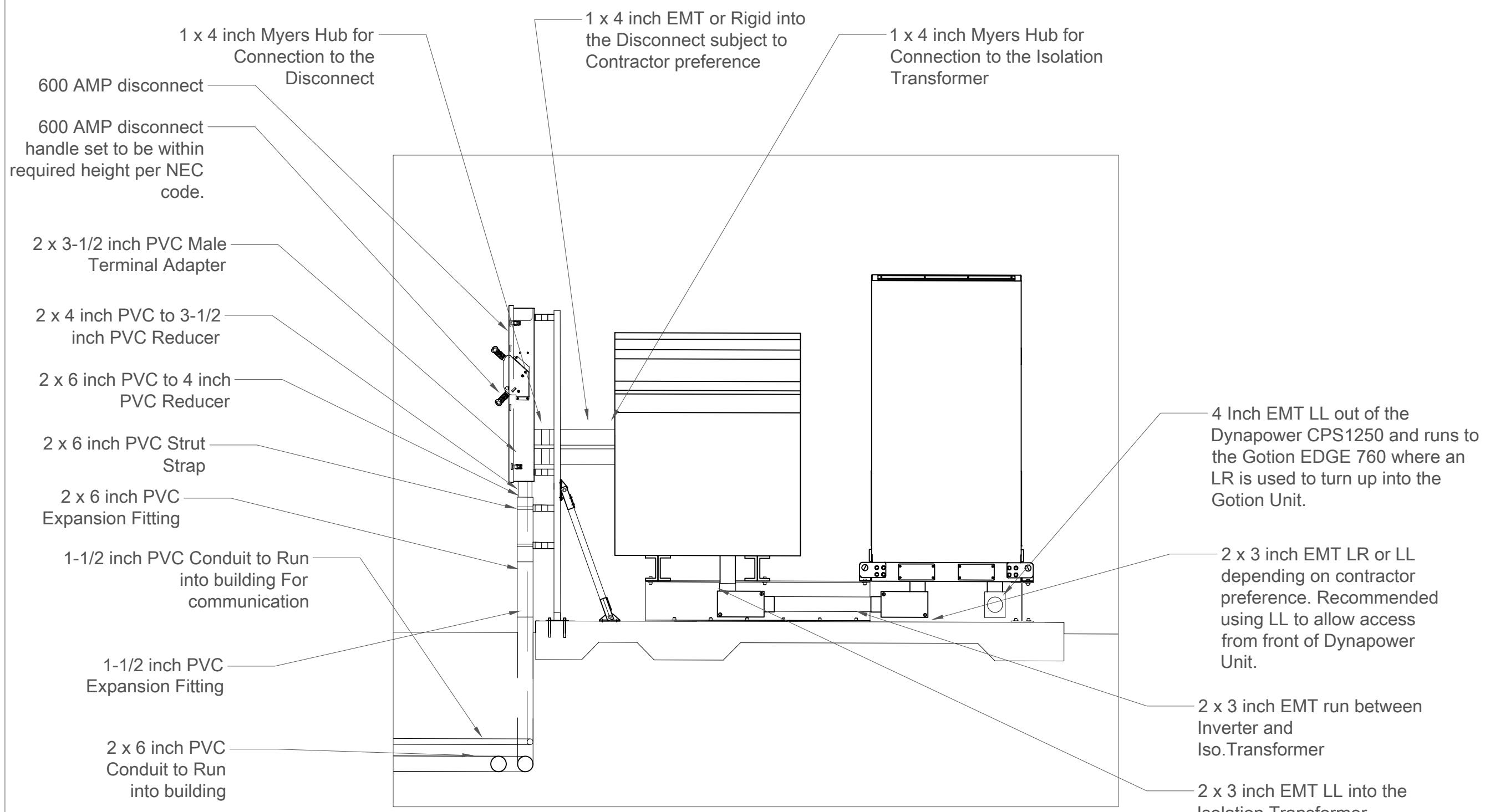
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		ESS-7.2
Drawn by:	Checked by:	Approved by:
DG		DG
Date: 11/03/2025		
Sheet No.		Revision
		A

# Century Tywood J3 Corp- East View

Here you can see additional details for the conduit runs on the pad, the installation of the equipment to the concrete pad, and some detail about the construction of the strut frame used to mount the disconnect to the pad.

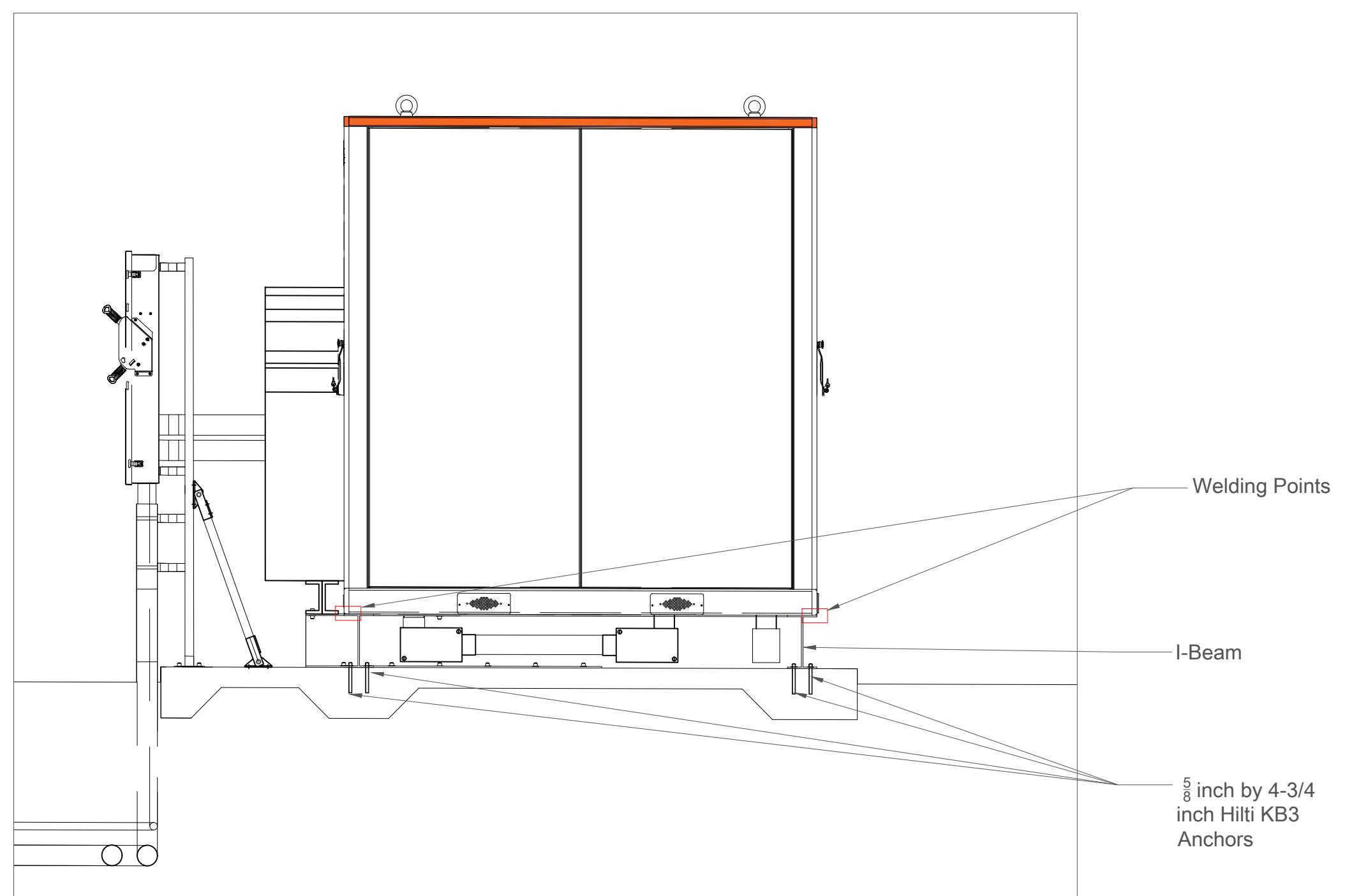
## 1 On-Pad Conduit Routing Details

The Gotion Edge760, Dynapower CPS1250, and the 500kVA isolation transformer are all bottom entry devices so the conduit between the devices is run below the units.



## 3 Gotion Edge760 Attachment details & I Beam Attachment

As described in the top view attachment specifications, the Gotion Edge760 is attached to the steel I-Beams by welding the frame to the I-beams. The I-Beams are then attached to the slab using  $\frac{5}{8}$  inch by 4-3/4 inch Hilti Kwik Bolt 3 Wedge Anchor HDG.

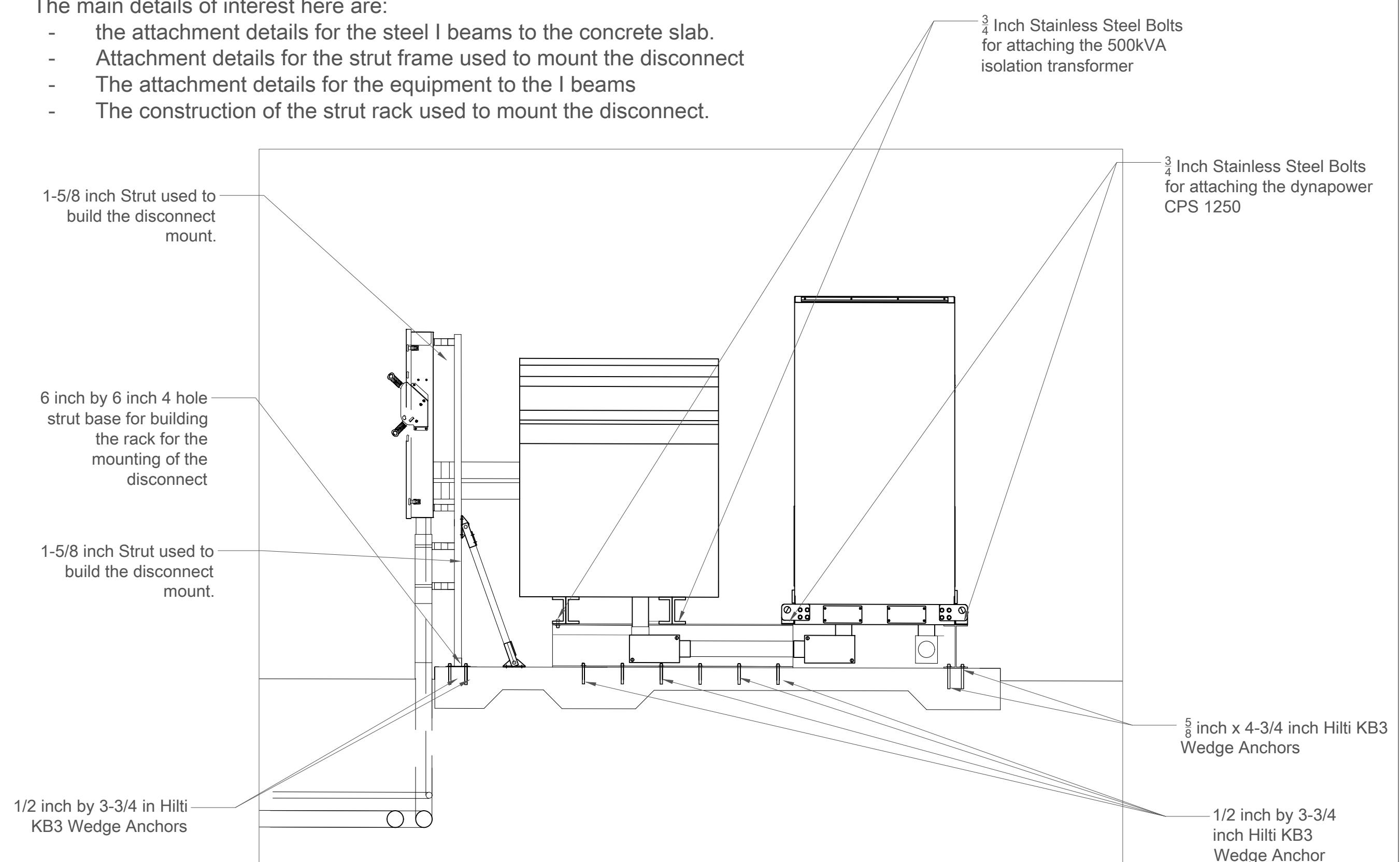


## 2 Other Equipment Attachment Method

Scale: 1/2" = 1'-0"

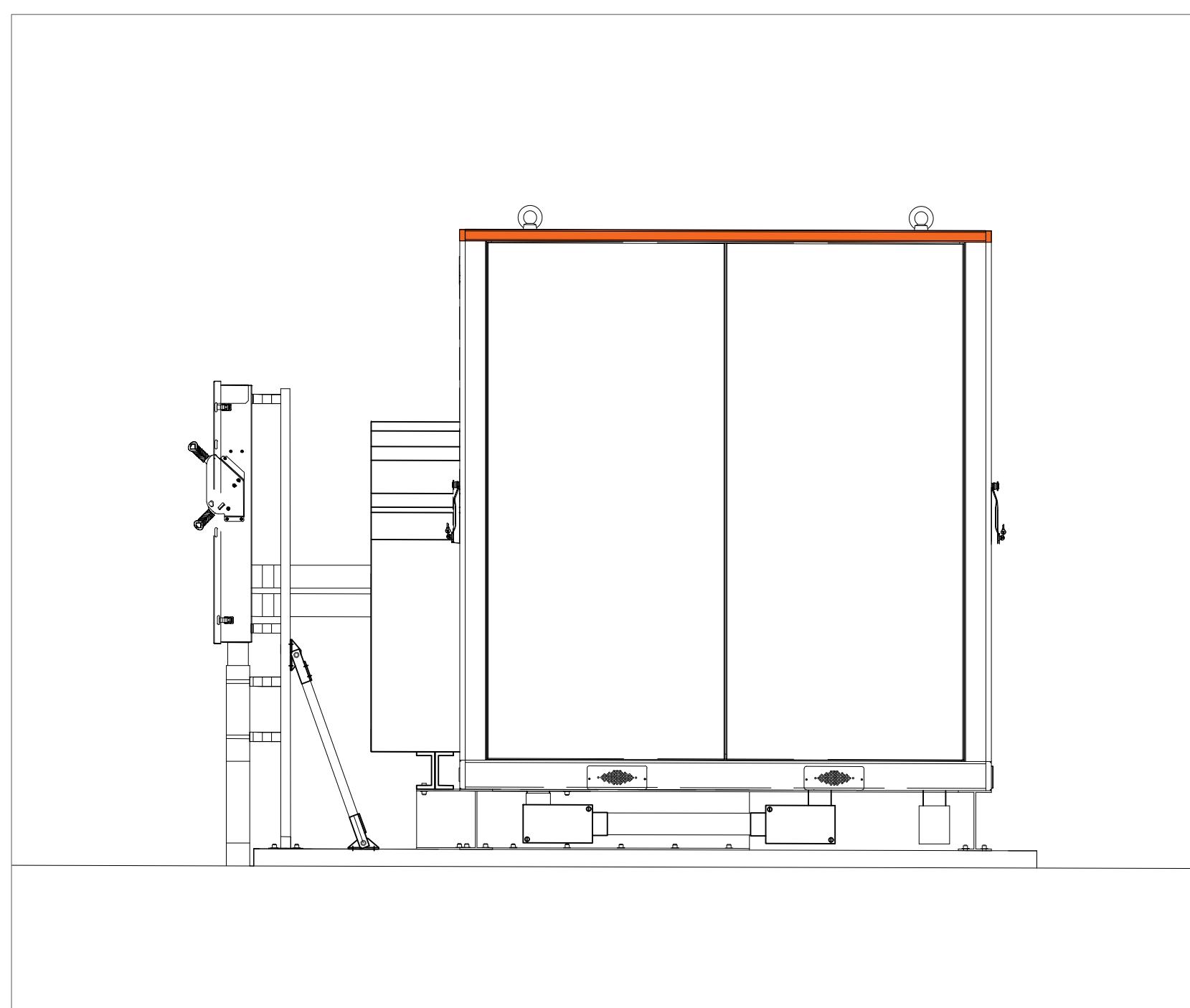
The main details of interest here are:

- the attachment details for the steel I beams to the concrete slab.
- Attachment details for the strut frame used to mount the disconnect
- The attachment details for the equipment to the I beams
- The construction of the strut rack used to mount the disconnect.



## 4 Expected Complete Installation

This shows the installation as it is expected upon completion.



## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

**Name:** Century-Tywood J3 Corp

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**Contact:** Jack Mahoney

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Holliston, MA

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## PAGE NOTES

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Sheet No.		Revision A

# Century Tywood J3 Corp - South View: Completed Expectation

NOTE:

This page shows the expected Southwards view once the project is completed per the specifications outlined. The three main views provided are Top, West and South.

## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

**Name:** Century-Tywood J3 Corp

**Address:** 79 Lowland St  
Holliston, MA, 01747

**Website:** [www.century-tywood.com/](http://www.century-tywood.com/)

**Phone:** (508)-422-8552

**Contact:** Jack Mahoney

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Massachusetts COA #001629764

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## EQORE PROJECT

Century-Tywood  
Holliston, MA

## DESIGNER

**Company:** EQORE Inc.

**Address:** 444 Somerville Ave,  
Somerville, MA, 02143

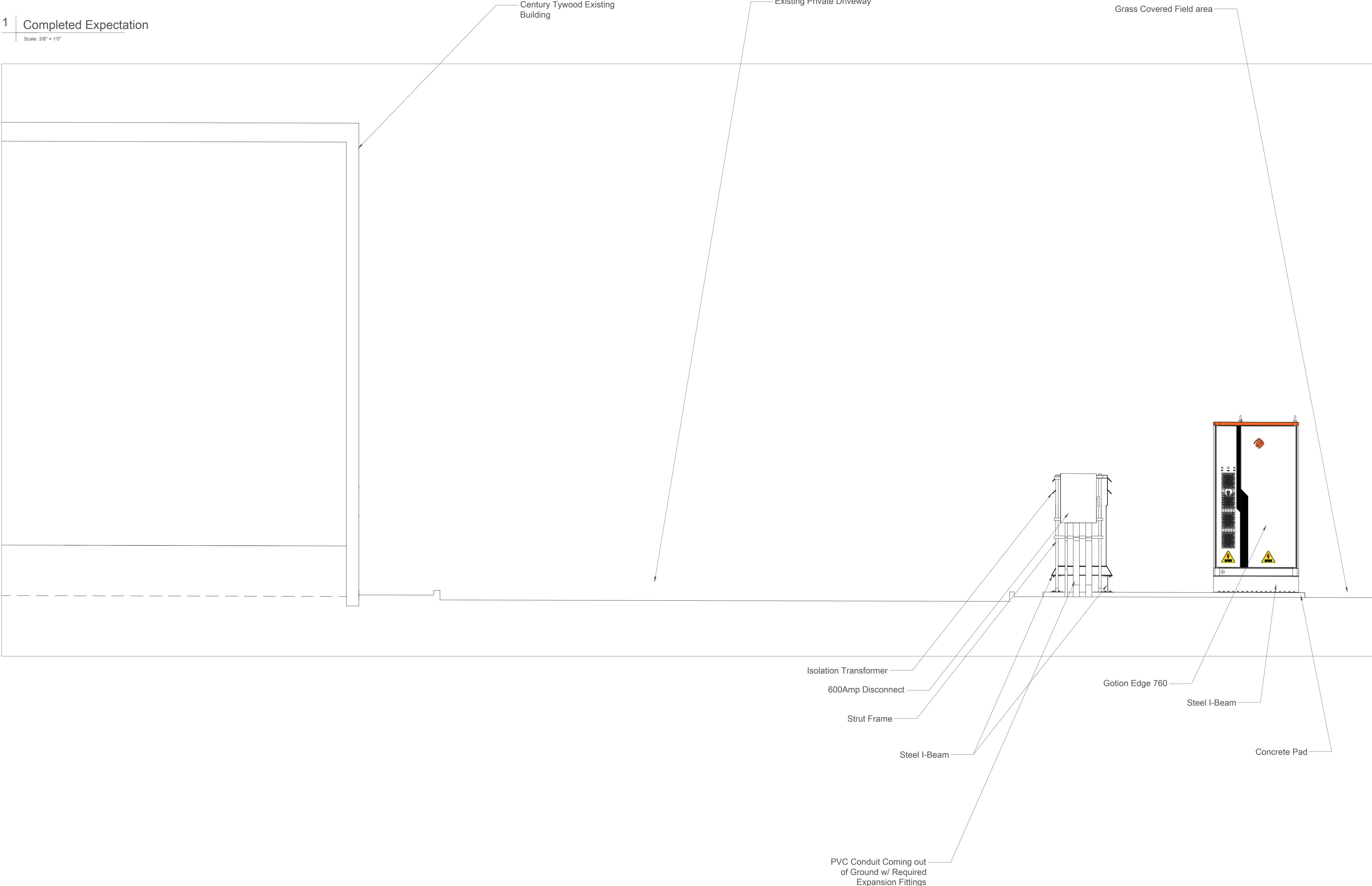
**Website:** [www.eqore.net](http://www.eqore.net)

**Phone:** 786-234-2655

**Contact:** Donald Groh

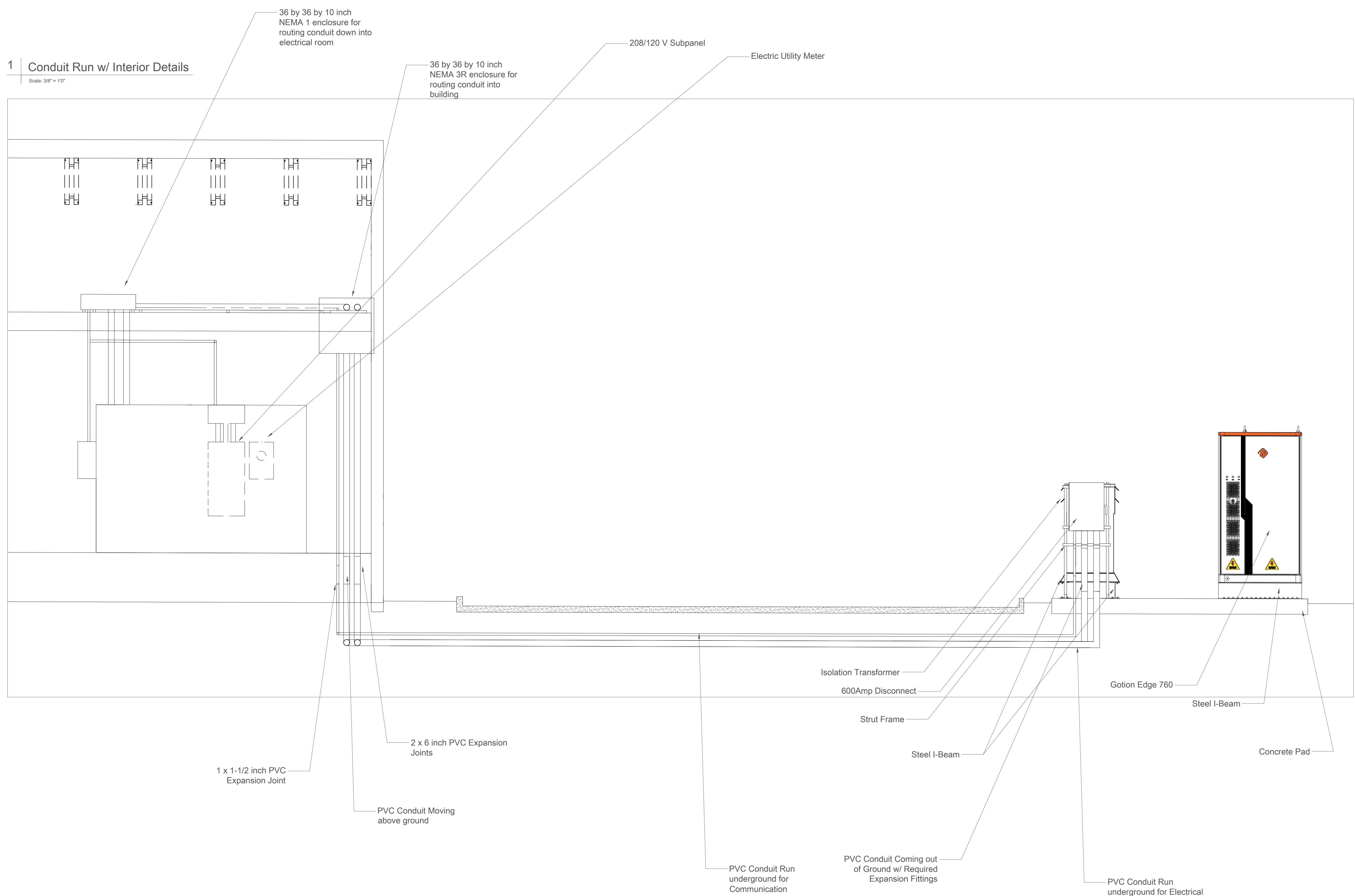
## PAGE NOTES

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				11/03/2025
Sheet No.			Revision	A



# Century Tywood J3 Corp - South View: Conduit Run

**NOTE:**  
This page shows the expected West view including conduit run details and some interior installation details.



## **SYSTEM INFORMATION**

**AC System Size:** 380kW (Internally

De-Rated from 1250kW)

**DC System Size:** 760kWh

**BESS: Gotian Edge 760**

## CUSTOMER INFORMATION

**Name:** Century-Tywood J3 Corp

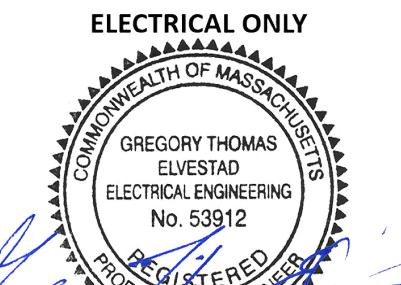
**Address:** 79 Lowland St  
Edinburgh EH1 1JZ

Holliston, MA, 01747  
[www.constructionmag.com/](http://www.constructionmag.com/)

**Website:** [www.century-ty.com](http://www.century-ty.com)  
**Phone:** (508) 422-8552

**Phone:** (508)-422-8552  
**Contact:** Jack Mahoney

# ENGINEER OF RECORD



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PAGE NOTES

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Sheet No.				



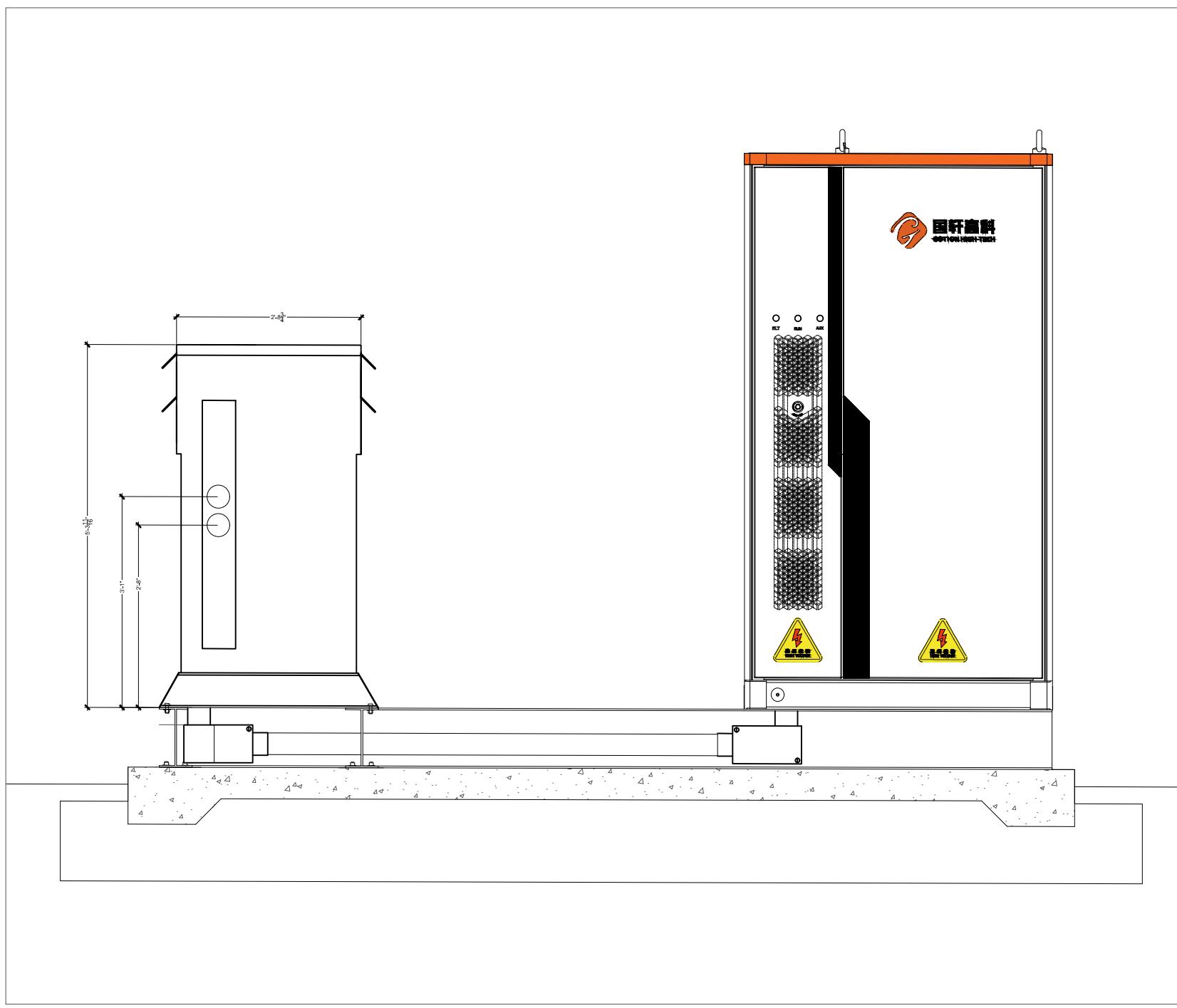
# Century Tywood J3 Corp- South View: Outdoor Detail and Disconnect Details

Here you can see conduit routing details and the details for the disconnect strut rack construction.

## 1 On-Pad Conduit Routing Details

Scale: 1/2" = 1'-0"

Please note the rough location of the run for the conduit from this perspective. The hole location in the isolation transformer and the disconnect are critical. The details are provided on this page.

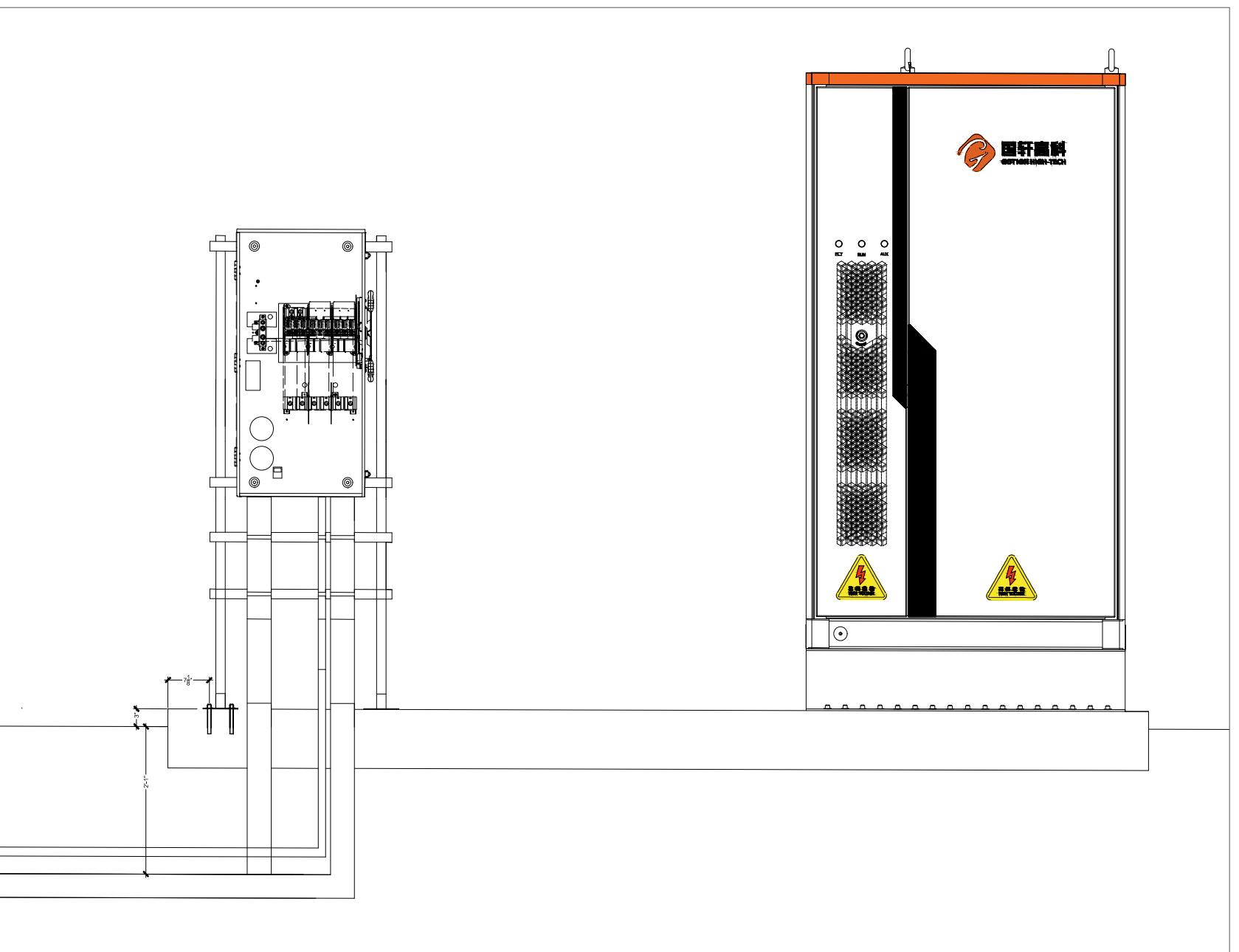


## 2 Conduit Run detail

Scale: 1/2" = 1'-0"

The main objective of this view is to show the conduit and disconnect details at a higher fidelity to what the connection will need to look like.

- The strut is mounted to the slab using 4 hole strut post bases. The disconnect has 3 PVC conduits running to it with bottom entry. It is critical that the PVC run underground has expansion fittings prior to reaching the strut attachment points to allow for movement due to frost heave.
- The back side of the disconnect has EMT that runs to the unit. This EMT should be connected to both the disconnect and the isolation transformer using Myers Hubs.
- Additional details on the strut and disconnect are provided below.

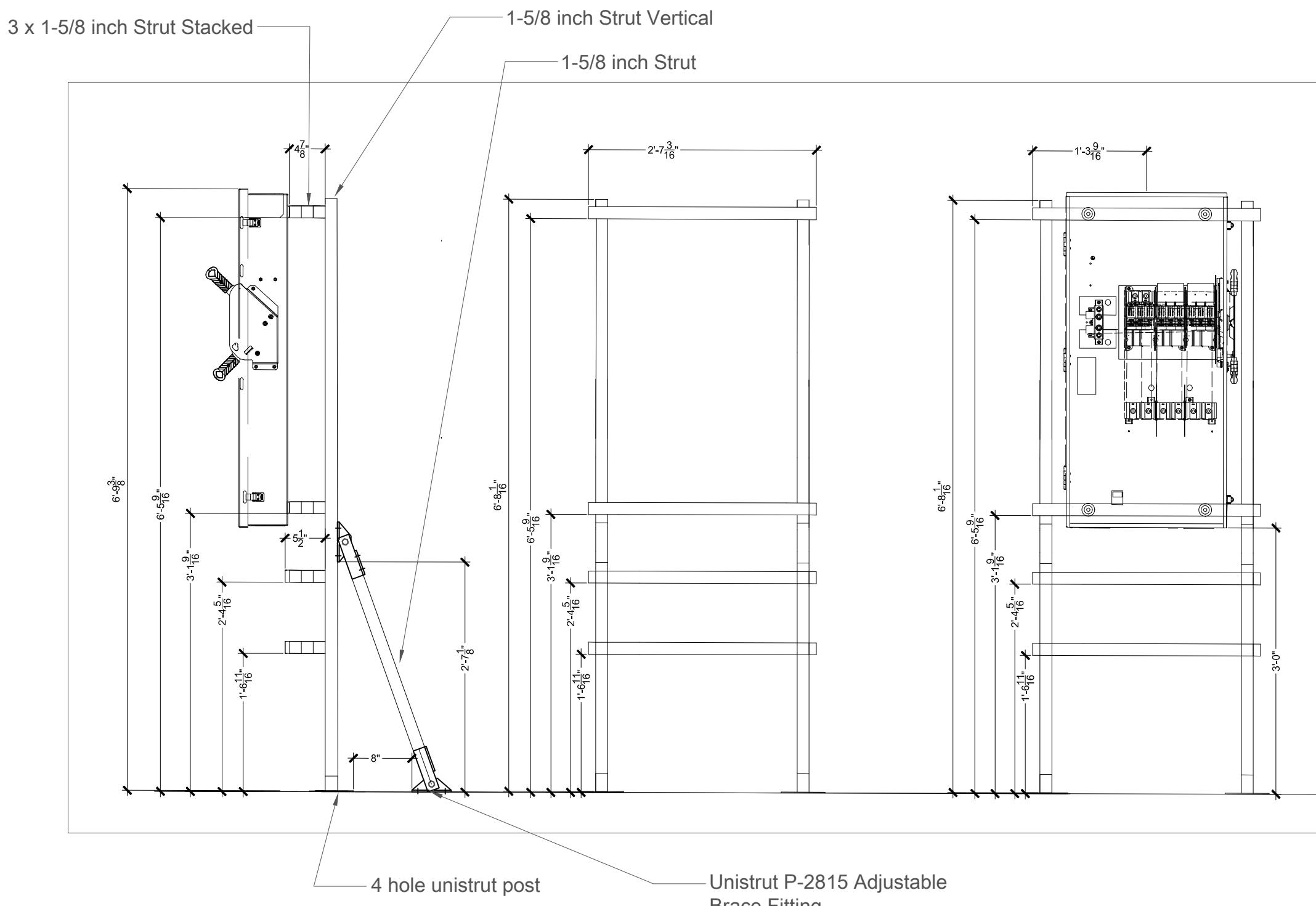


## 4 Disconnect Strut Rack Specifications

Scale: 3/4" = 1'-0"

The main objective of this view is to show the detail for the construction of the strut frame used to support the disconnect.

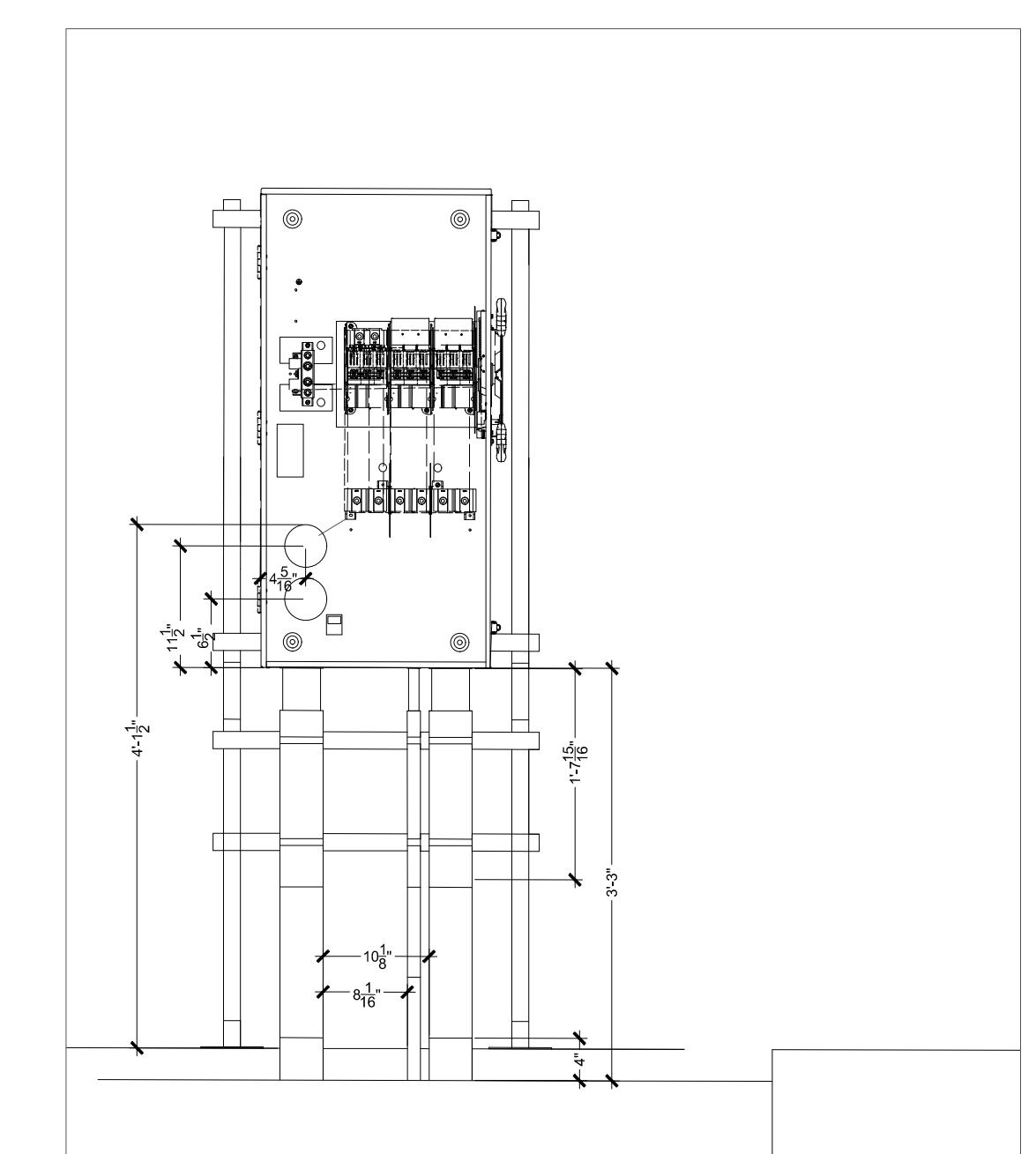
- The base should be 6 inch by 6 inch 4 hole strut base using minimum of 3 inch embedded 1/2 inch Hilti Kwik Bolt 3 Wedge Anchors similar to those used on the I beam but  $\frac{1}{2}$  inch rather than  $\frac{3}{8}$  inch. The minimum edge distance for the anchors should be 3 inches from the edge of the slab.
- The entire frame should be built using 1-5/8" strut channel.
- The horizontal strut used to offset the disconnect from the vertical strut should be bolted at each strut level, not bolted through.
- The diagonal support is required to stabilize the disconnect. And should be attached to the slab using the same  $\frac{1}{2}$  inch Hilti KB3 anchors.



## 5 Conduit Location and Connection detail

The main objective of this view is to show the manner in which the conduit is connected to the disconnect. Some important notes are mentioned below:

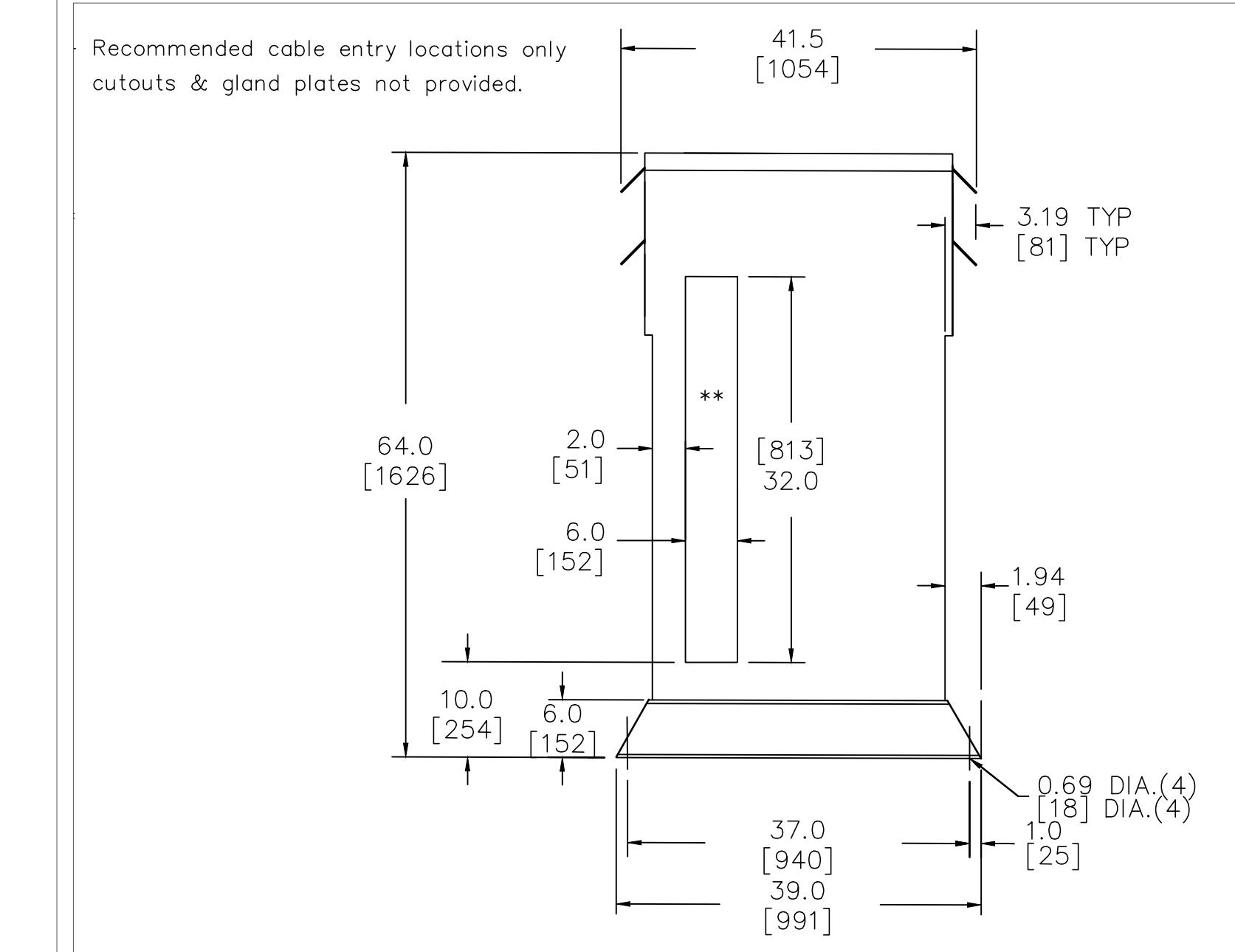
- The 6 inch PVC conduit runs should come up parallel separated 10-1/8 inch due to the existing knock outs in the unit.
- The 1-1/2 inch PVC conduit should come up in between the 4 inch lines.
- The 6 inch PVC must be reduced to 3-1/2 inch prior to entering the disconnect. Which may require two separate reductions of 6 inches to 4 inches followed by a 4 inch to 3-1/2 inch.
- The 1-1/2 inch must be reduced to 3/4 inch prior to entering the disconnect. All PVC conduit must have expansion joints. All EMT must have grounding bushings.



## 3 Isolation transformer Cable entry location detail

Scale: 3/4" = 1'-0"

Prior to creating the hole for the conduit on the isolation transformer or the disconnect ensure the alignment based on the required location of entry into the isolation transformer. The dimensions are provided below.



## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

**Name:** Century-Tywood J3 Corp

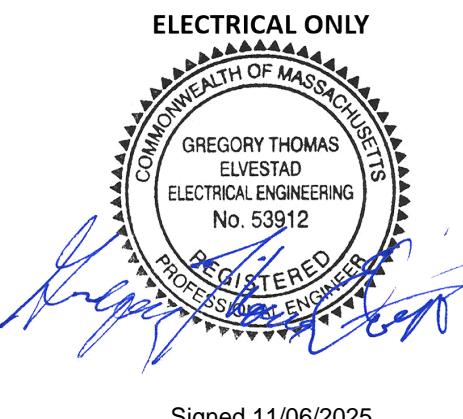
**Address:** 79 Lowland St  
Holliston, MA, 01747

**Website:** www.century-tywood.com/

**Phone:** (508)-422-8552

**Contact:** Jack Mahoney

## ENGINEER OF RECORD



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Town of Holliston, MA

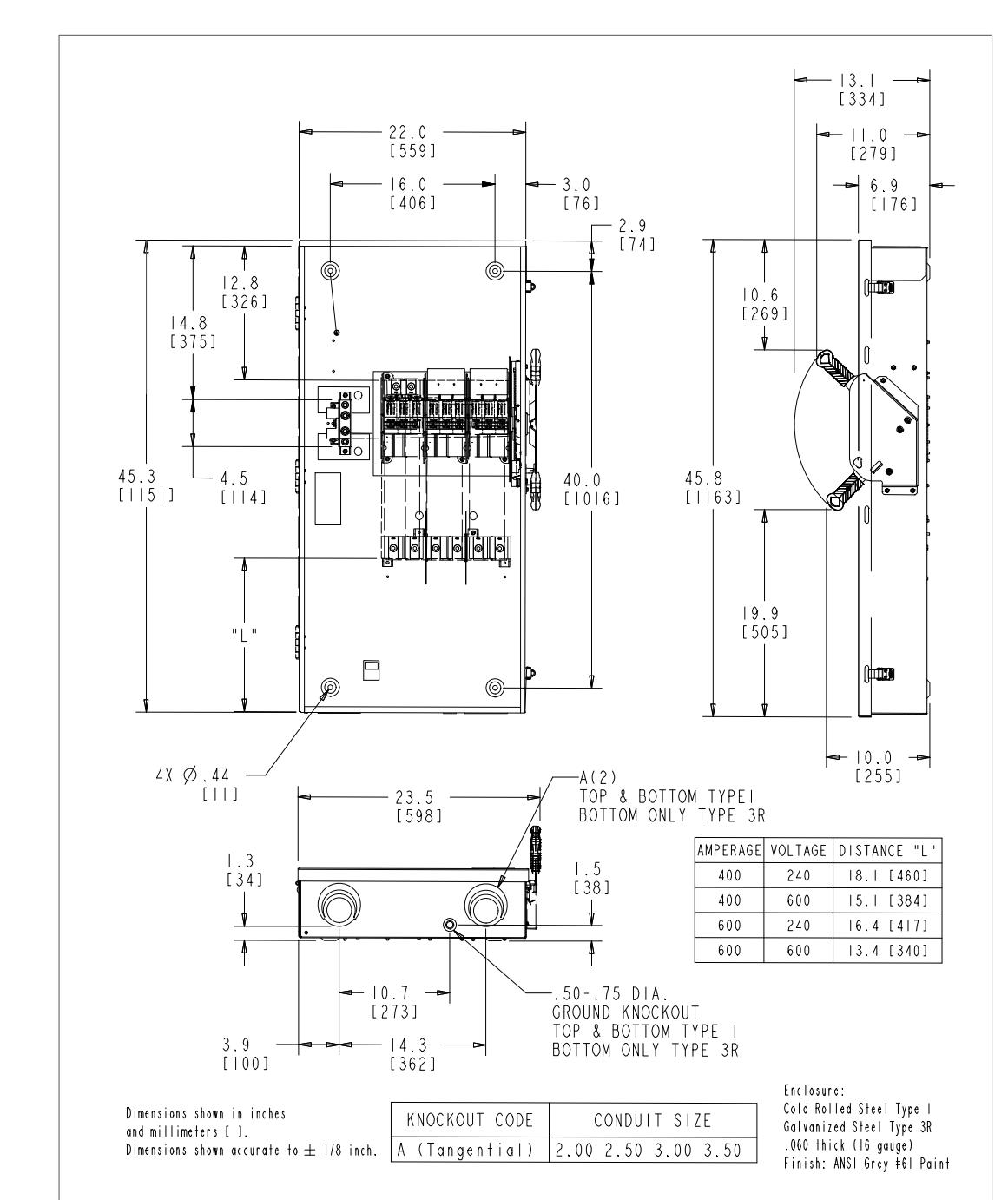
## EQORE PROJECT

Century-Tywood  
Holliston, MA

## DESIGNER

**Company:** EQORE Inc.  
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## PAGE NOTES



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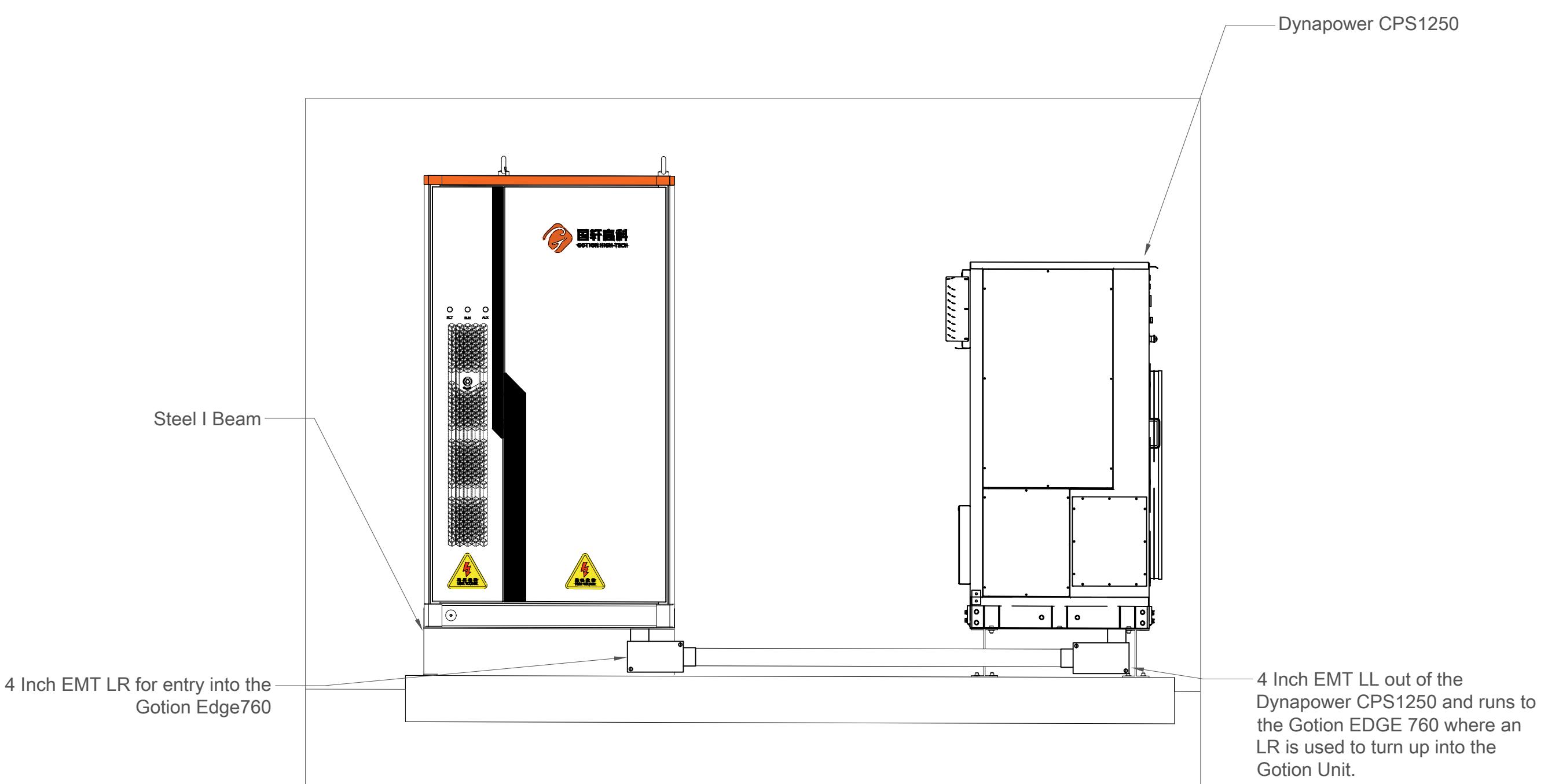
# Century Tywood J3 Corp- North View

Here you can see additional details for the conduit runs on the pad and the view from the north.

## 1 On-Pad Conduit Routing Details

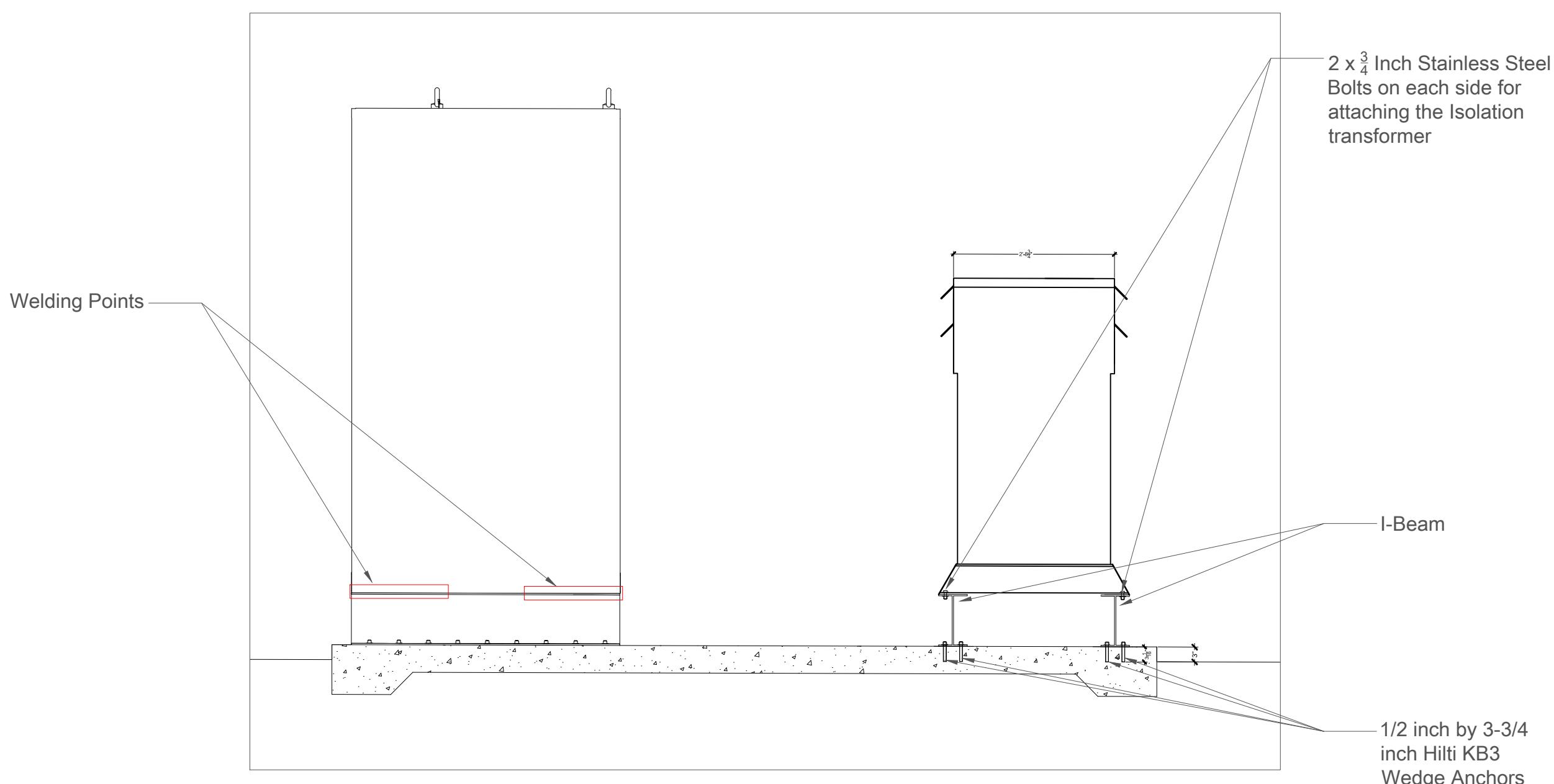
Scale: 1/2" = 1'-0"

This is a similar view to the south view included for redundancy.



## 3 Gotion Edge760 Attachment details & I Beam Attachment

As described in the top view attachment specifications, the I beams used for the isolation transformer and the Dynapower CPS1250 use 1/2 inch by 3-3/4 inch Hilti KB3 Wedge Anchors and  $\frac{3}{4}$  inch bolts for bolting to the steel I beam frame.

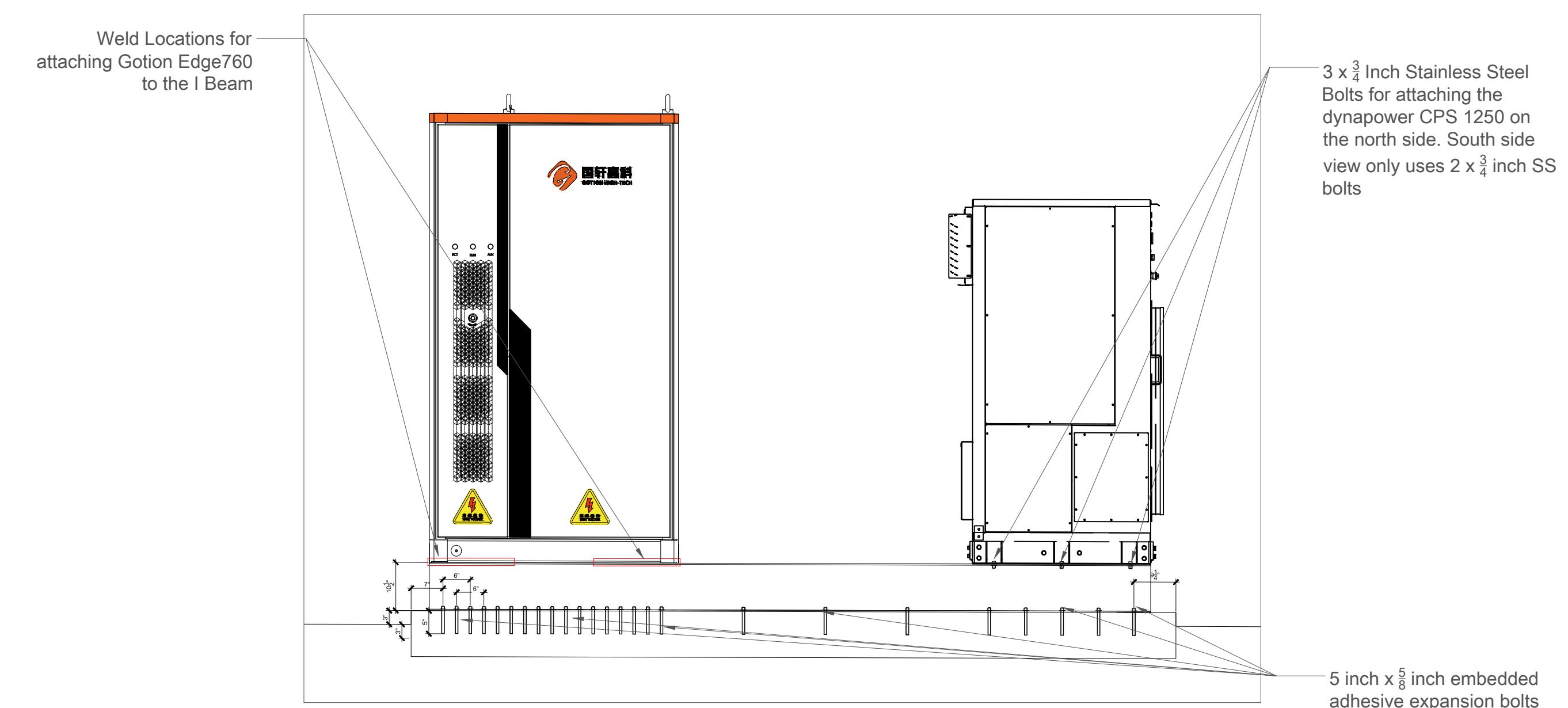


## 2 Other Equipment Attachment Method

Scale: 1/2" = 1'-0"

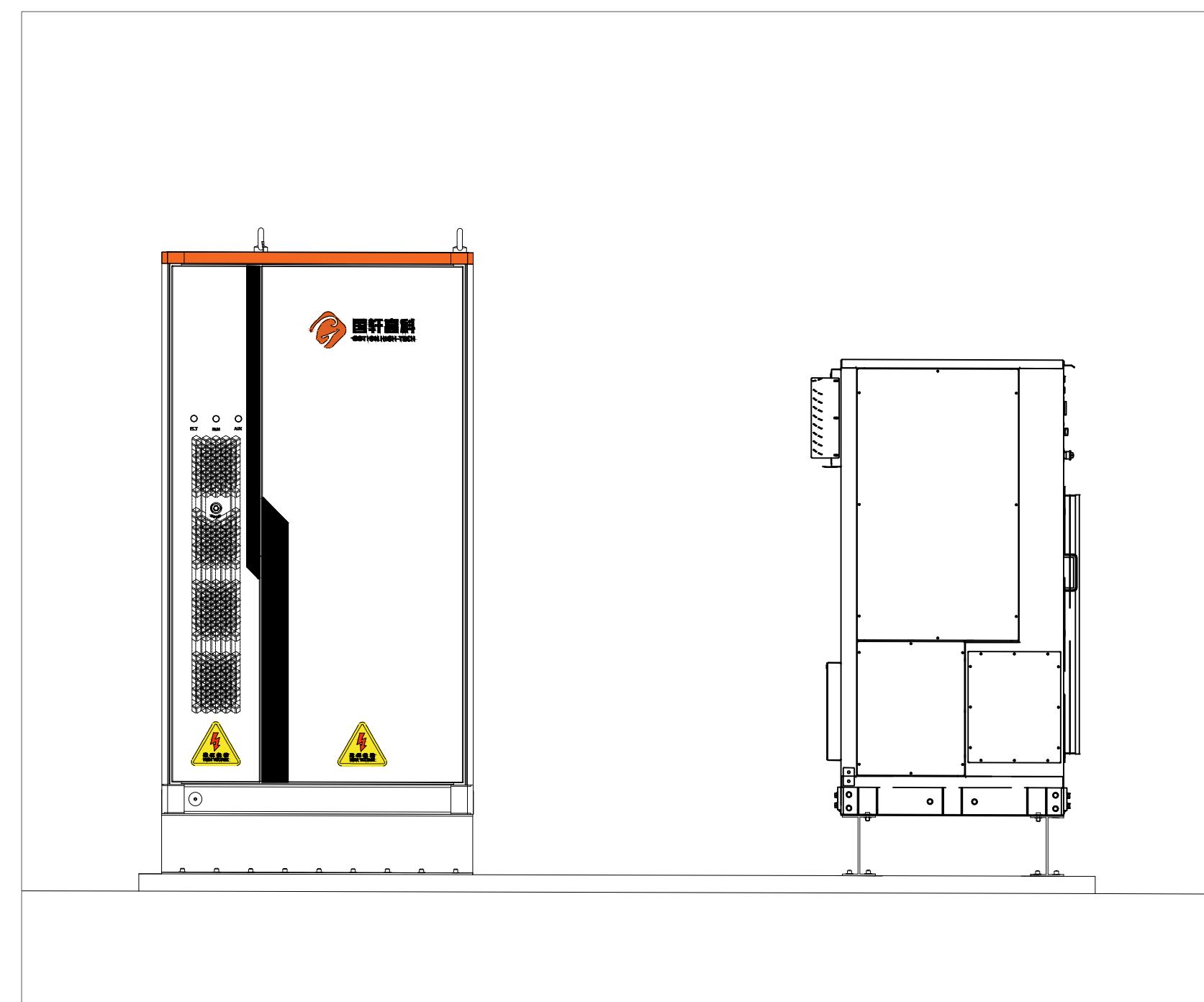
The main objective of this view is to show the attachment details for the equipment from the north perspective.

- The Dynapower CPS1250 is bolted to the I Beam that is shared with the Gotion EDGE760. It is bolted at three separate locations on the I Beam. The other side of the CPS1250 is bolted to 2 separate I beams which are shared with the Isolation Transformer.
- Beam Attachment:
- The Steel I Beam showed is a W10x30 Beam. The Beam is attached to the concrete slab using a total of 33- $\frac{5}{8}$  inch Hilti HIT-RE 500 or equivalent Adhesive Expansion Anchors embedded 5 inches into the concrete slab.



## 4 Expected Complete Installation

This shows the installation as it is expected upon completion.



## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

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**Contact:** Jack Mahoney

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## PAGE NOTES

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DG		DG
Sheet No.		Revision A

# Century Tywood J3 Corp- Concrete Slab Foundation Details

Here you can see details about the construction of the concrete pad.

## 1 North/South Cross Section View of Slab & Details

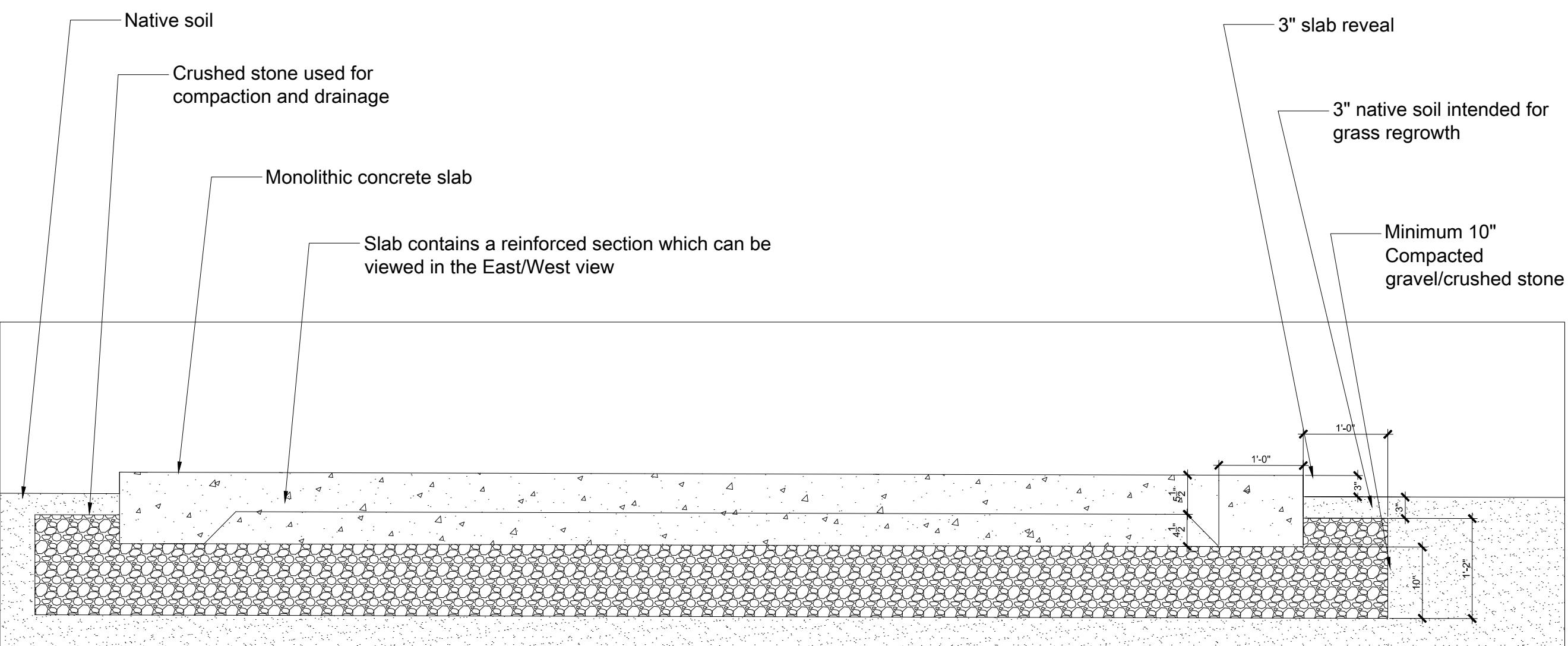
Scale: 3/4" = 1'-0"

The main objective of this view is to show the slab specifications for the equipment from the north/south perspective.

- This installation uses a monolithic, single pour floating slab. The slab is not intended to extend below the frost line as movement is allowed. More details are provided.
- The slab is reinforced concrete. Specifications about the steel are provided in the detailed rebar layout.
- Load calculations are also provided for why the slab size and design is sufficient for the load.

### Ground Work

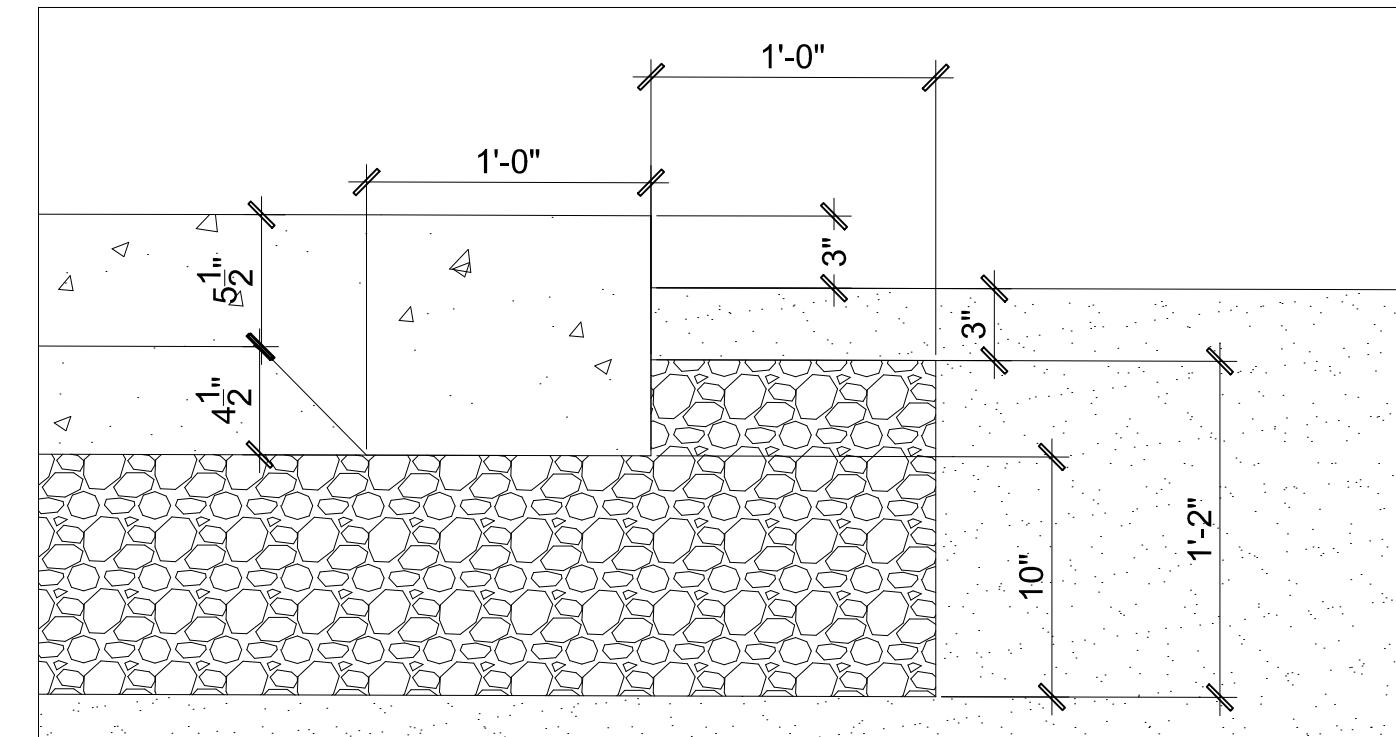
The excavation work should remove native soil to make space for the new crushed rock/gravel which will be used for compaction. The details of the excavation work are provided in more detail in the slab construction narrative but below you can see the specifications for the required fill and some details about this view.



The slab will be 10" thick around the entire perimeter and in reinforced sections. Additional detailed zoom on the dimensions.

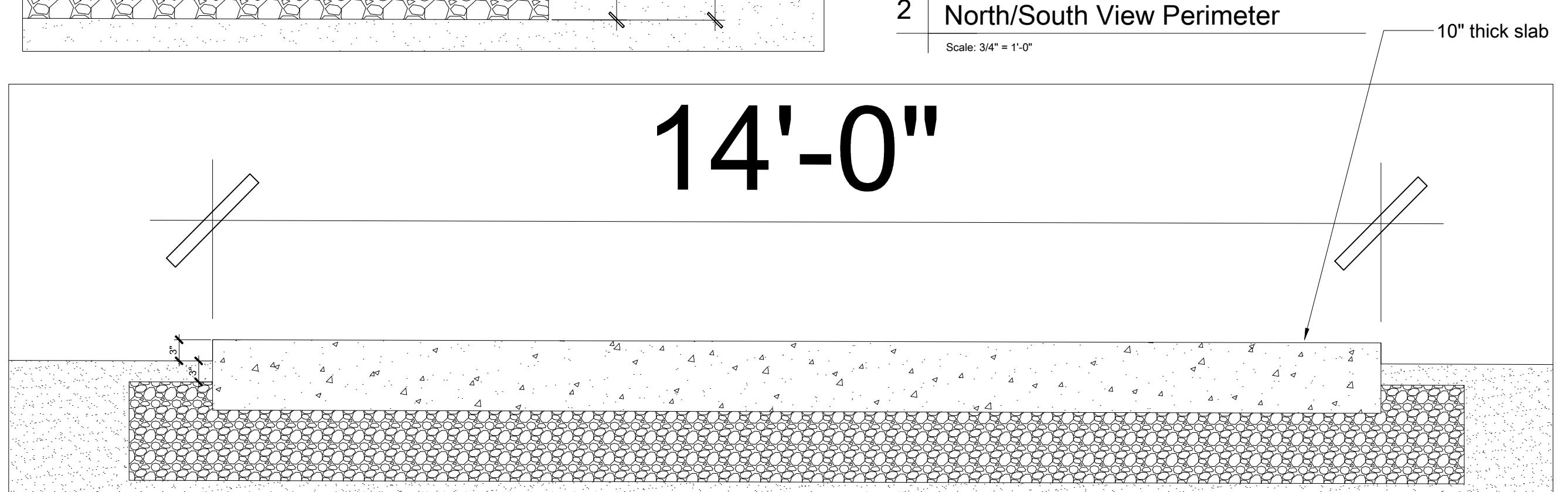
## 2 North/South Zoom Dimension View

Scale: 1-1/2" = 1'-0"



## 2 North/South View Perimeter

Scale: 3/4" = 1'-0"

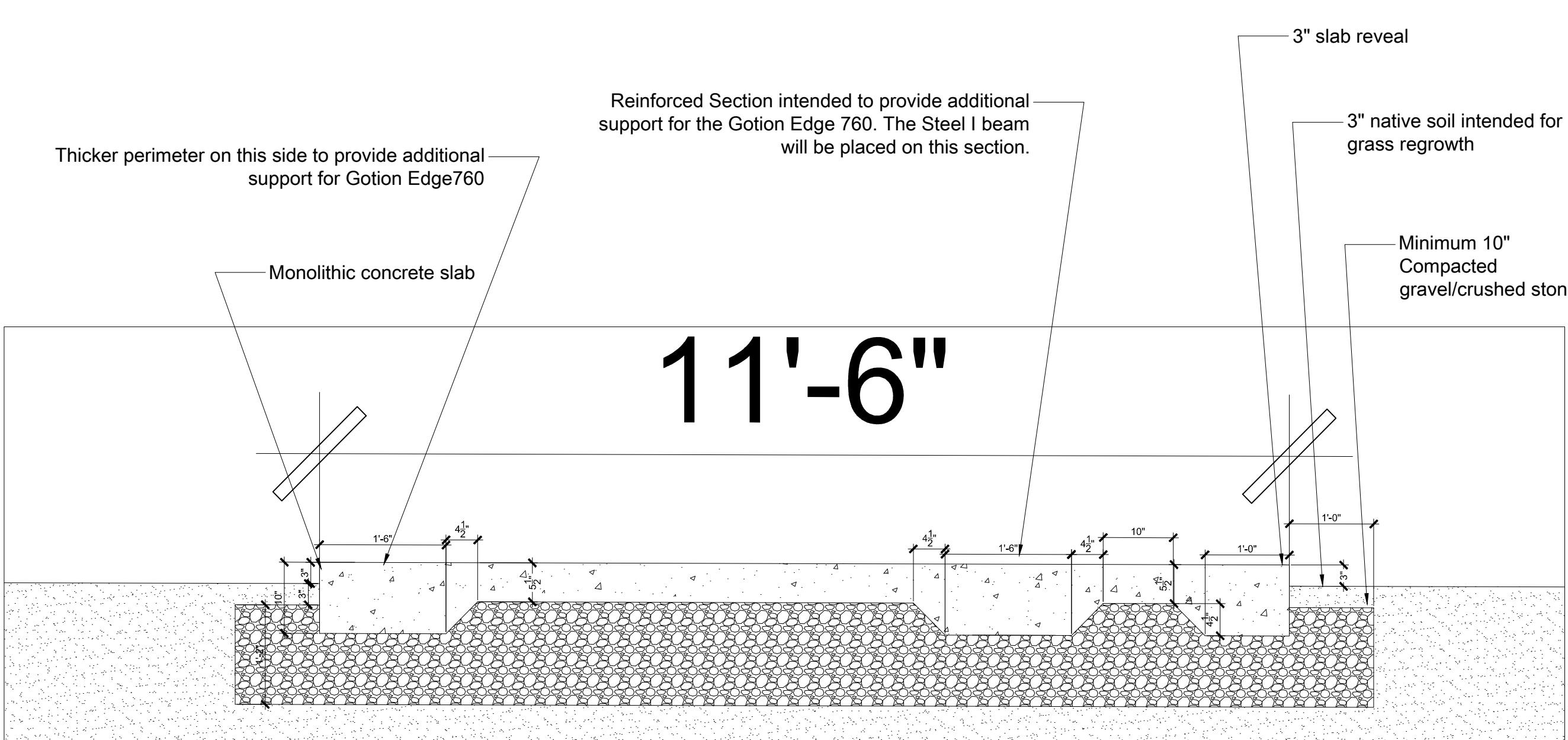


## 1 West Facing Cross Section View of Slab & Details

Scale: 3/4" = 1'-0"

The main objective of this view is to show the slab specifications for the equipment from the west perspective.

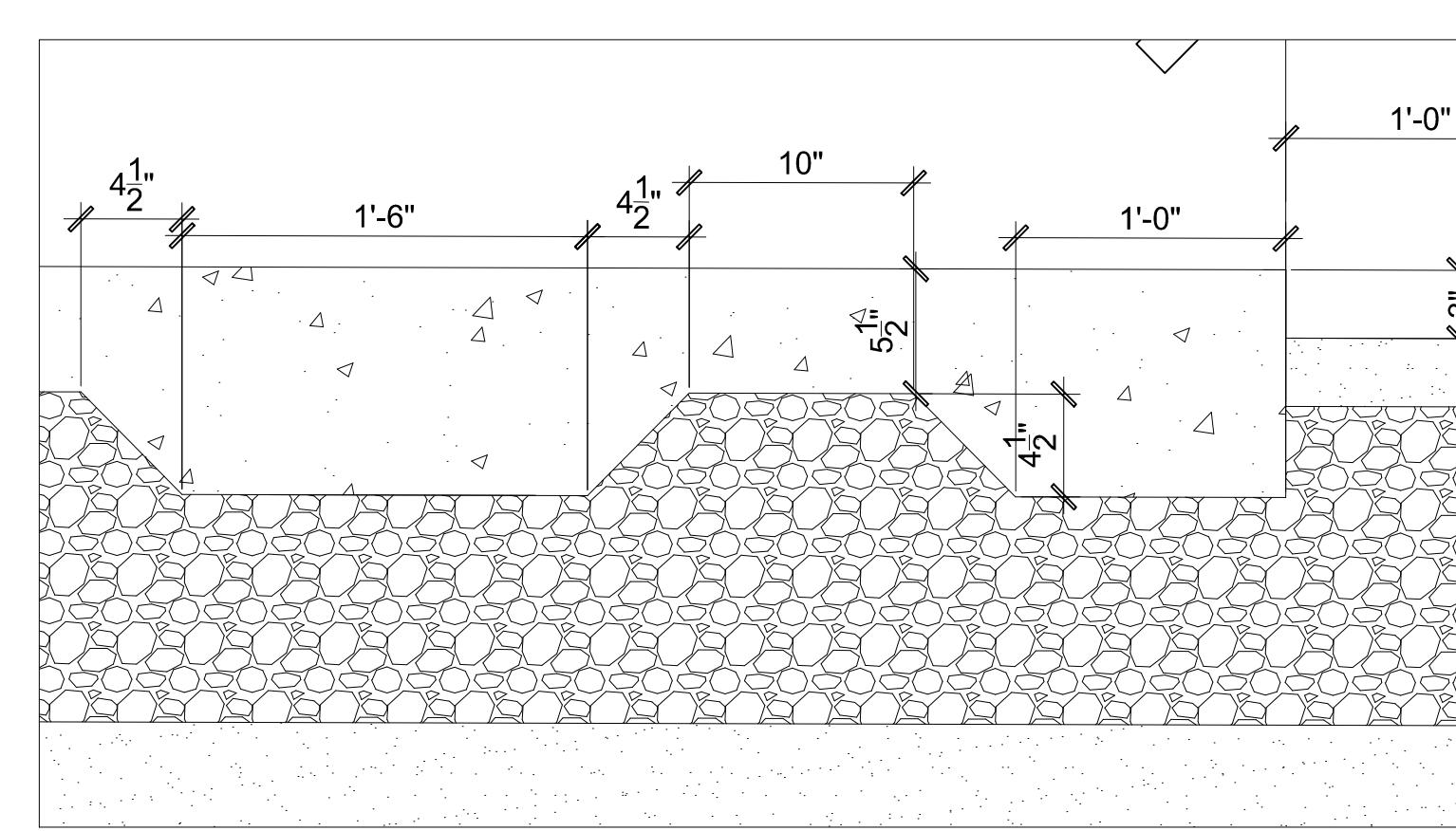
- The main objective is to reinforce the sections specified because these sections are intended to support the EDGE 760 which requires a minimum of 4 inch concrete anchors so requires thicker concrete.



The slab will be 10" thick around the entire perimeter and in reinforced sections. Additional detailed zoom on the dimensions.

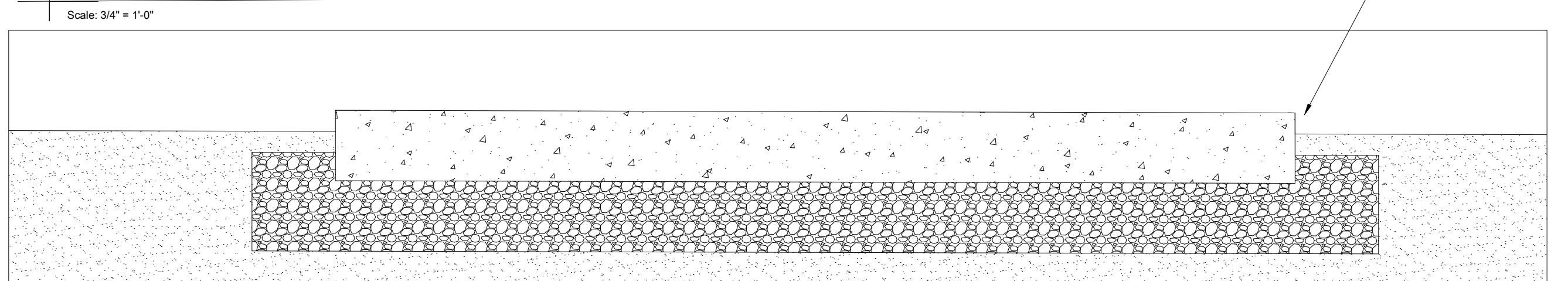
## 2 North/South Zoom Dimension View

Scale: 1-1/2" = 1'-0"



## 2 North/South View Perimeter

Scale: 3/4" = 1'-0"



## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

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**Address:** 79 Lowland St  
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**Phone:** (508)-422-8552

**Contact:** Jack Mahoney

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Holliston, MA

## DESIGNER

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Somerville, MA, 02143  
**Website:** www.eqore.net  
**Phone:** 786-234-2655  
**Contact:** Donald Groh

## PAGE NOTES

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		ESS-11.0
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Sheet No.		Revision A



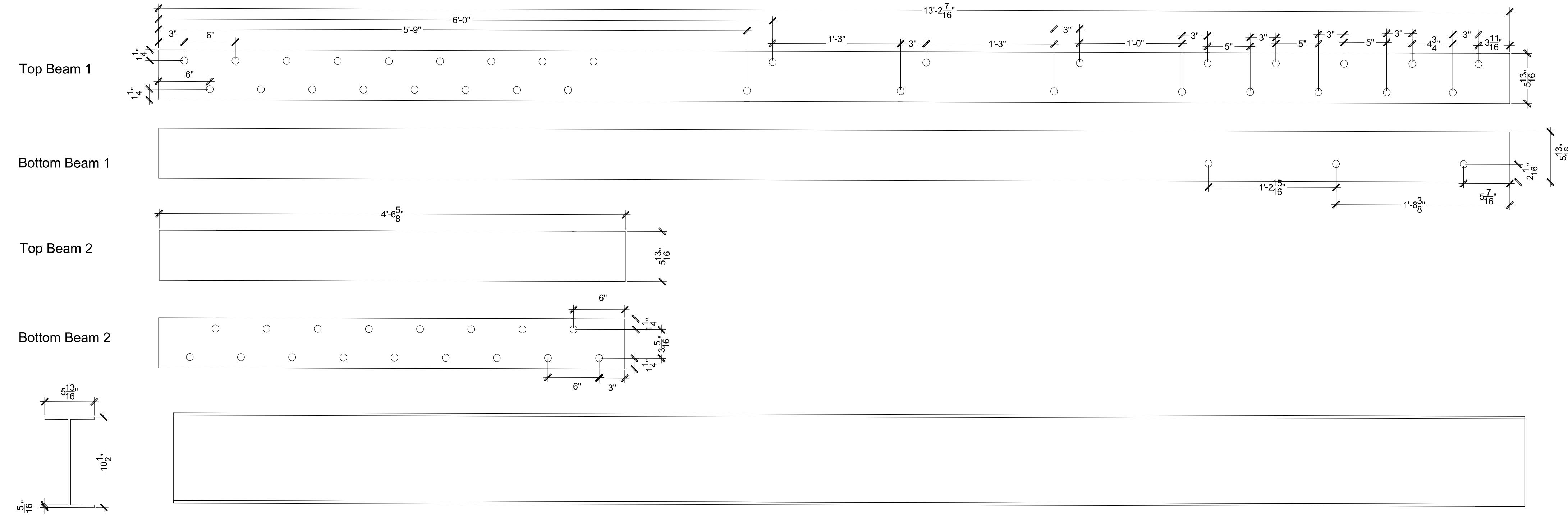
# Century Tywood J3 Corp- Concrete Slab: Steel I-Beam Specifications

Here you can see details for the Steel I-Beams being used in the construction of the system. The important note is the location of the holes. These are critical for the fitment of the equipment once the beams are mounted. All beams are W10 x 30.

# 1 | Hole locations for the Gotion Edge760 I Beams

Scale: 1-1/2" = 1'-0"

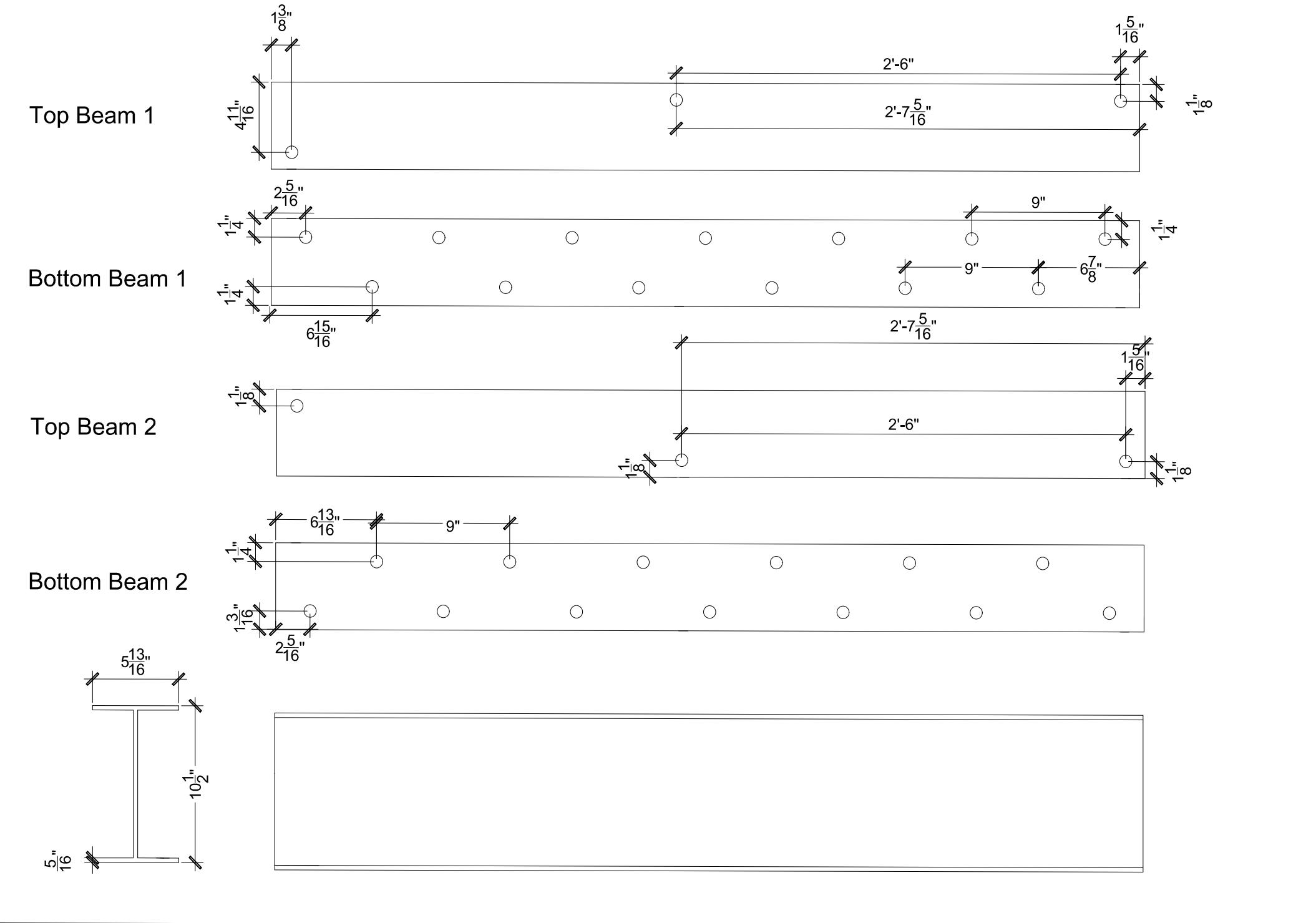
## Steel I Beam Dimensions: Under Inverter and Transformer



2 | Steel I Beams for Dynapower CPS1250 and Isolation Transformer

Scale: 1-1/2" = 1'-0"

Steel I Beam Dimensions: Under Inverter and Transformer



## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh  
**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

**Name:** Century-Tywood J3 Corp  
**Address:** 76 Larchmont St.

**Address:** 79 Lowland St  
Wellesley, MA 02478

Holliston, MA, 01747

**Website:** [www.century-tyw.com](http://www.century-tyw.com)

**Phone:** (508)-422-8552  
**Contact:** Jack Mahaney

Contact: Jack Mahoney

## ENGINEER OF RECORD



**Wyssling Consulting, PLLC**  
76 N Meadowbrook Drive, Alpine UT 84004  
Massachusetts COA #001629764  
Signed 11/06/2025

ΔΗΙ

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Town of Holliston, MA

EQORE PROJECT

# EQUITY PROJECT

## Century-Tywood Holliston, MA

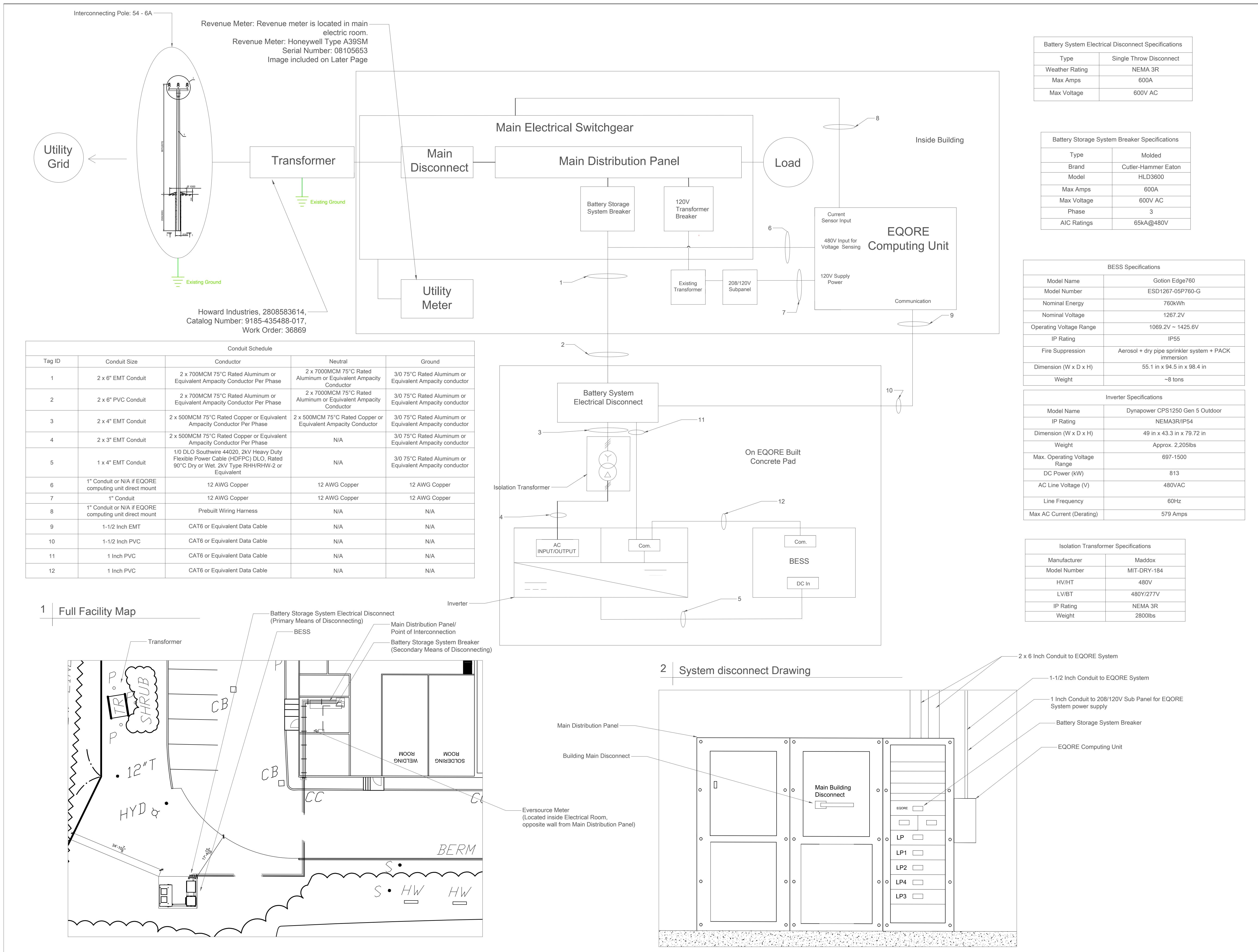
DESIGNER

**Company:** EQORE Inc.  
**Address:** 444 Somerville Ave,  
Somerville, MA, 02143  
**Website:** [www.eqore.net](http://www.eqore.net)  
**Phone:** 786-234-2655  
**Contact:** Donald Groh

PAGE NOTES

Scale <b>As Noted</b>	Sheet <b>ESS-12.0</b>		
Drawn by: DG	Checked by:	Approved by: DG	Date: 11/03/2022
Sheet No.			Revision A

# Century Tywood - Single Line Diagram



SYSTEM INFORMATION	
<b>AC System Size:</b>	380kW (Internally De-Rated from 1250kW)
<b>Inverter Model:</b>	Dynapower CPS1250
<b>DC System Size:</b>	760kWh
<b>BESS:</b>	Gotion Edge 760

CUSTOMER INFORMATION	
<b>Name:</b>	Century-Tywood J3 Corp
<b>Address:</b>	79 Lowland St Holliston, MA, 01747
<b>Website:</b>	<a href="http://www.century-tywood.com/">www.century-tywood.com/</a>
<b>Phone:</b>	(508)-422-8552
<b>Contact:</b>	Jack Mahoney

ENGINEER OF RECORD	
	<b>ELECTRICAL ONLY</b> COMMONWEALTH OF MASSACHUSETTS REGISTRATION NO. 53912 GREGORY THOMAS ELVESTAD ELECTRICAL ENGINEERING REGISTERED ELECTRICAL ENGINEER
Signed 11/06/2025	

BESS Specifications	
Model Name	Gotion Edge760
Model Number	ESD1267-05P760-G
Nominal Energy	760kWh
Nominal Voltage	1267.2V
Operating Voltage Range	1069.2V ~ 1425.6V
IP Rating	IP55
Fire Suppression	Aerosol + dry pipe sprinkler system + PACK immersion
Dimension (W x D x H)	55.1 in x 94.5 in x 98.4 in
Weight	~8 tons

REV.	DATE	DESCRIPTION

AHJ	
Town of Holliston, MA	

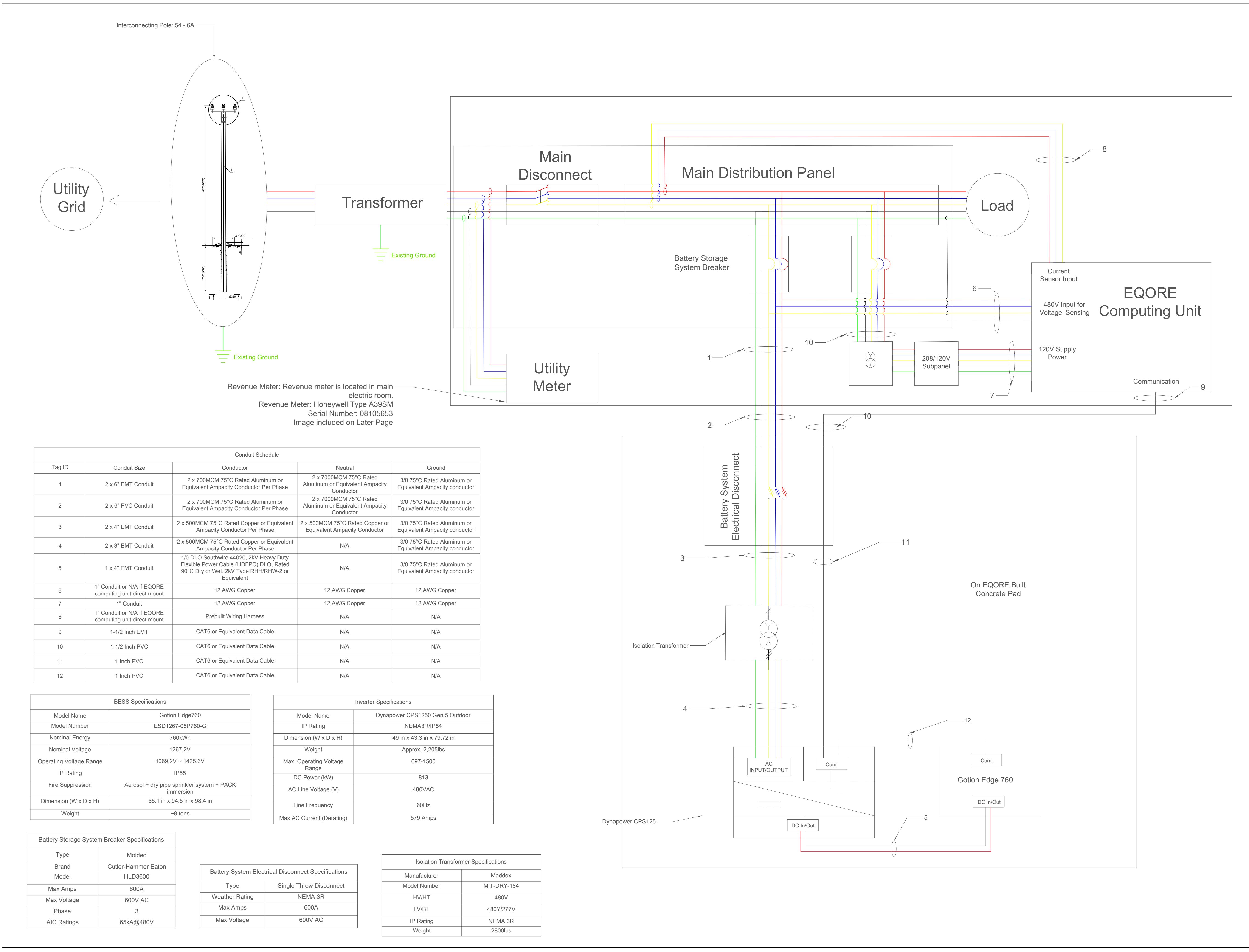
EQORE PROJECT	
Century-Tywood	Holliston, MA

DESIGNER	
Company:	EQORE Inc.
Address:	444 Somerville Ave, Somerville, MA, 02143
Website:	<a href="http://www.eqore.net">www.eqore.net</a>
Phone:	786-234-2655
Contact:	Donald Groh

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Sheet No. Revision A			

# Century Tywood - Line Diagram: Three Line



<b>SYSTEM INFORMATION</b>	
AC System Size: 380kW (Internally De-Rated from 1250kW)	
Inverter Model: Dynapower CPS1250	
DC System Size: 760kWh	
BESS: Gotion Edge 760	
<b>CUSTOMER INFORMATION</b>	
Name: Century-Tywood J3 Corp	
Address: 79 Lowland St	
Holliston, MA, 01747	
Website: www.century-tywood.com/	
Phone: (508)-422-8552	
Contact: Jack Mahoney	
<b>ENGINEER OF RECORD</b>	
 Signed 11/06/2025	

REV.	DATE	DESCRIPTION
<b>AHJ</b> Town of Holliston, MA		
<b>EQORE PROJECT</b> Century-Tywood Holliston, MA		
<b>DESIGNER</b> Company: EQORE Inc. Address: 444 Somerville Ave, Somerville, MA, 02143 Website: www.eqore.net Phone: 786-234-2655 Contact: Donald Groh		

Scale	As Noted	Sheet	ESS-13.1
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Sheet No.		Revision A	

# Century Tywood - Electrical Equipment: BESS Specifications

## BESS:

Full original specification sheets, manuals, and certifications are provided as attachments to the plans.

### Gotion

EDGE760 Liquid-Cooled BESS Product Specification v1.2

Item	Specification	Note
<b>Battery Cabinet Model</b>	ESD1267-05P760-G	
<b>Nominal Energy</b>	760kWh	0.5P, 100%DoD, 77 ±3.6°F (25 ±2°C)
<b>Nominal Voltage</b>	1267.2V	
<b>Nominal Capacity</b>	300Ah	0.5P, 100%DoD, 77 ±3.6°F (25 ±2°C)
<b>Operating Voltage Range</b>	1069.2V ~ 1425.6V	2.7-3.6V, 95%DoD
<b>Operating Temperature</b>	59°F ~ 104°F (15°C ~ 40°C)	
<b>Maximum Charging/Discharging Power</b>	380kW	0.5P, 77 ±3.6°F (25 ±2°C)
<b>Maximum Charging/Discharging Ratio</b>	0.5P	@77°F (25°C)
<b>Cycle Life</b>	8000 cycles	77 ±3.6°F (25 ±2°C), 0.5P/0.5P 95%DoD, 70%EOL
<b>Calendar Life</b>	15 years	77 ±3.6°F (25 ±2°C), 50%SoC, 70%EOL
<b>Operating Ambient Temperature</b>	-4°F ~ 113°F (-20°C ~ 45°C)	
<b>Operating Humidity</b>	0% ~ 95%	
<b>Protection Class</b>	IP55	
<b>Cooling Method</b>	Intelligent liquid cooling	
<b>Fire Suppression System</b>	Aerosol + dry pipe sprinkler system + PACK immersion	Adjustable based on AHJ requirements
<b>Altitude</b>	≤6561.7ft (2000m)	
<b>Communication Protocol</b>	CAN, RS485, Ethernet	
<b>Dimension (W x D x H)</b>	55.1in x 94.5in x 98.4in (1400mm x 2400mm x 2500mm)	
<b>Weight</b>	≈8t	

Table 2-1 Battery Cabinet Product Specifications

### 2.2.1. Cell



### 2.2.2. Battery Pack

The battery pack consists of four 1P26S sub-modules connected in series to form 1P104S, with a rated specification of 332.8V/314Ah.



Item	Specification	Note
<b>Cell Type</b>	Prismatic	
<b>Cell Chemistry</b>	LiFePO4	
<b>Cell Model Name</b>	IFP81175200-300Ah	
<b>Dimension (W x D x H)</b>	6.9in x 3.2in x 8in (175.4mm x 81.2mm x 202.6mm)	±0.02in (0.5mm), including the cell pole
<b>Weight</b>	13.2lb ±0.7lb (5998g ±300g)	
<b>Cell Capacity</b>	300Ah	77 ±3.6°F (25 ±2°C), 100% DoD
<b>Nominal Voltage</b>	3.2V	
<b>Operating Voltage Range</b>	2.5V ~ 3.65V	T > 32°F (0°C), 100% DoD
<b>Nominal Energy</b>	960Wh	77 ±3.6°F (25 ±2°C), 100% DoD
<b>Maximum Continuous Discharge Rate</b>	0.48kW	0.5P
<b>Operating Temperature</b>	59°F ~ 113°F (15°C ~ 45°C)	Charging Power ≤0.5P
<b>Storage Temperature</b>	-22°F ~ 140°F (-30°C ~ 60°C)	Optimum storage temperature 59°F ~ 95°F (15°C ~ 35°C)
<b>DC Internal Resistance</b>	≤0.5mΩ	50%SoC@3c30s, 77 ±3.6°F (25 ±2°C)
<b>Cycle Life</b>	8,000 cycles	77 ±3.6°F (25 ±2°C), 0.5P/0.5P, 90% DoD, 70%EOL
<b>Calendar Life</b>	15 years	77 ±3.6°F (25 ±2°C), 50% SoC, 70% EOL

Item	Specification	Note
<b>Battery Pack Model</b>	EPD140-05P42	
<b>Dimension (W x D x H)</b>	31in x 42.8in x 9.3in (787mm x 1088mm x 235mm)	±0.1in (3mm), including the cooling pipe connector
<b>Weight</b>	691.8lb ±11lb (313.8kg ±5kg)	
<b>Nominal Voltage</b>	140.8V	
<b>Operating Voltage Range</b>	118.8V ~ 158.4V	
<b>Pack Grouping (Parallel and Serial)</b>	1P44S	Cell: IFP81175200-300Ah
<b>Cell Capacity</b>	300Ah	
<b>Nominal Energy</b>	42.24kWh	0.5P, 100% DoD, 77 ±3.6°F (25 ±2°C)
<b>Maximum Charge/Discharge Power</b>	21.1kW	0.5P, 77 ±3.6°F (25 ±2°C)
<b>Operating Temperature</b>	59°F ~ 104°F (15°C ~ 40°C)	Charging power ≤0.5P
<b>Operating Humidity</b>	5% ~ 95%	
<b>Protection Class</b>	IP67	

### 2.2.3. Battery Rack

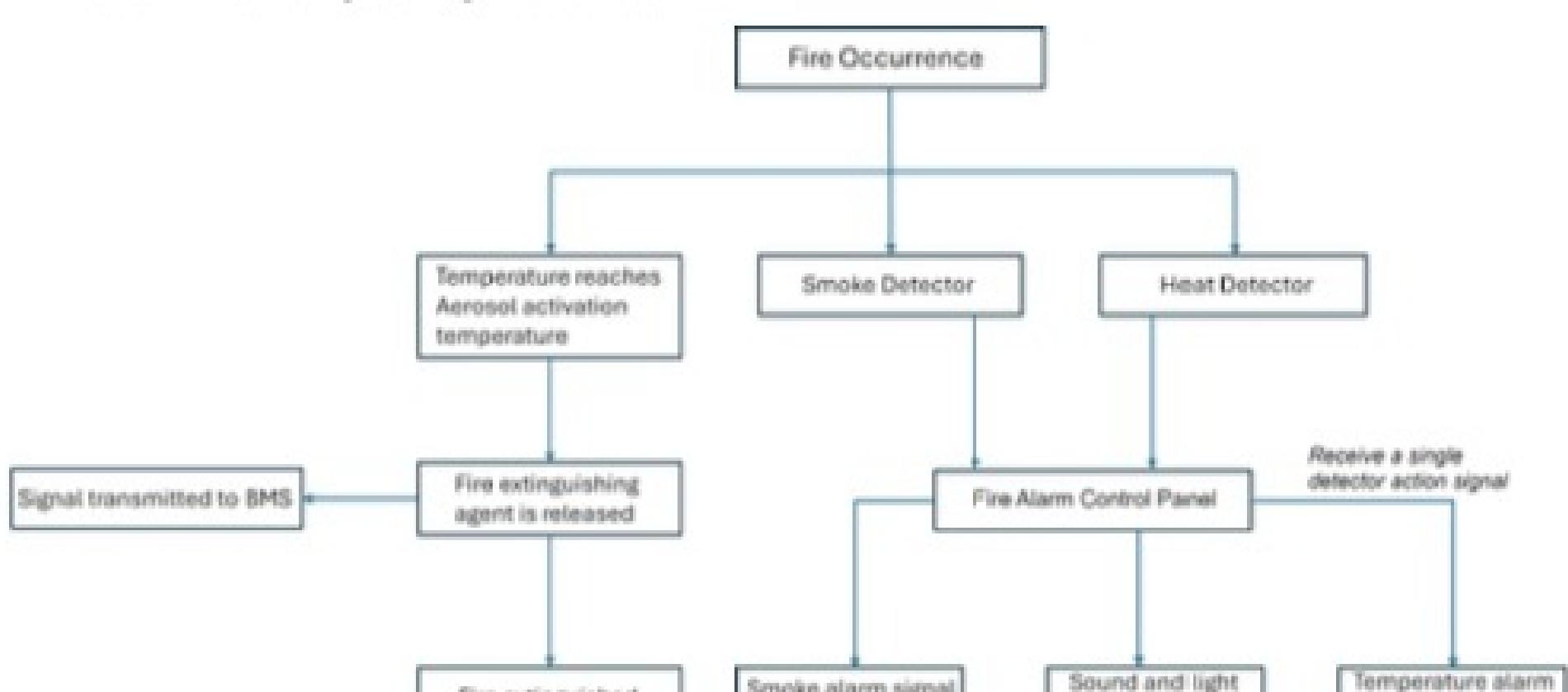


FSS configurations are shown in the following table:

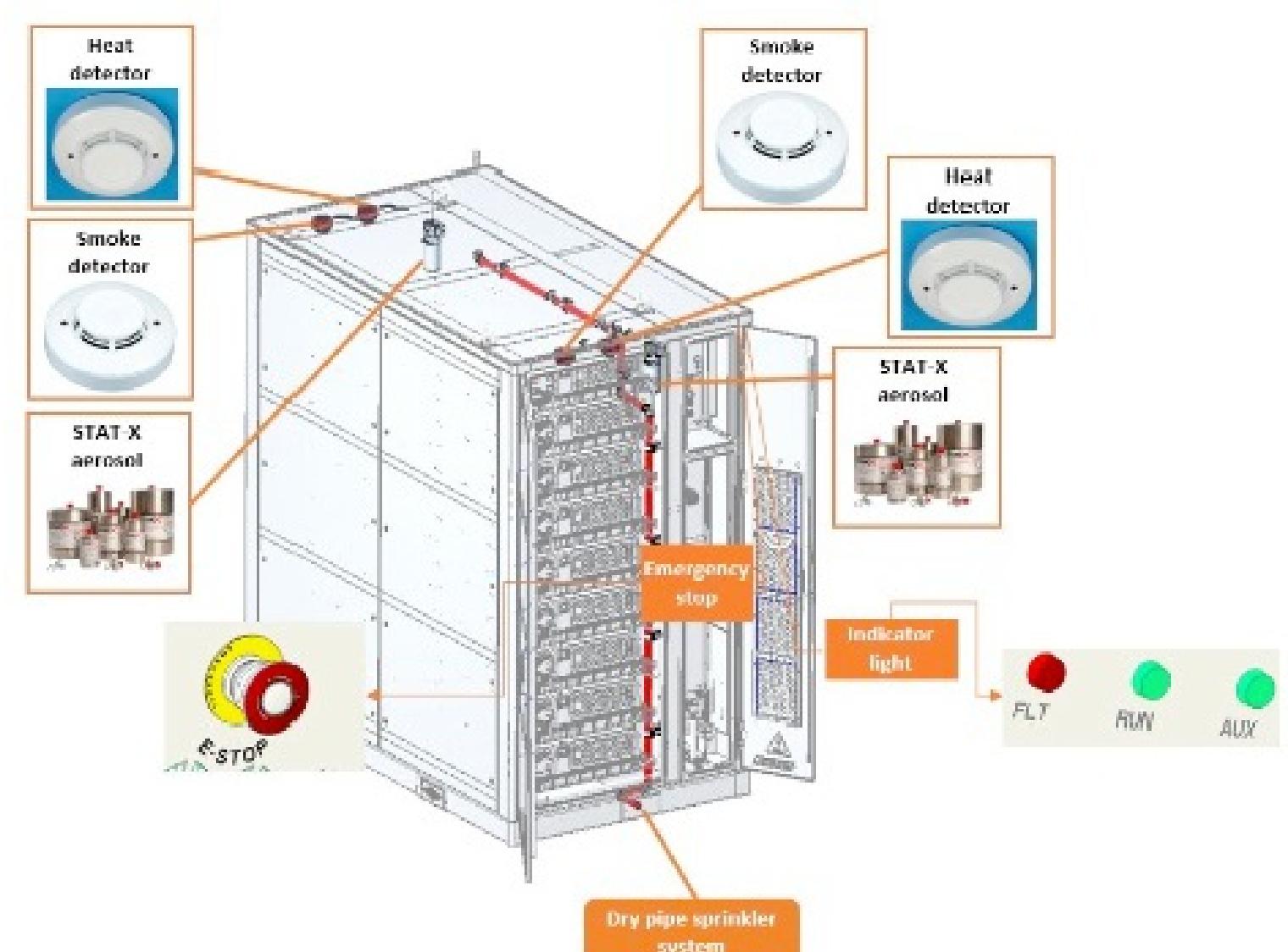
FSS Components	Model	Quantity of Device
Sound and light alarm	Potter S-24/H5-24 Series	1
FSS control panel	Potter ARC-100	1
Heat detector	Point detector, NB758H-4	2
Smoke detector	Point detector, NB758S-4	2
STAT-X Aerosol fire extinguishing device	Stat-X 250MT	2
Sprinkler	VK345	3
Dry pipe system	DN25 pipe	1

Table 2-12 FSS components

### 2.5.3. Fire Extinguishing Flow Chart



Item	Specification	Note
<b>Battery Rack Model</b>	ED1267-05P380	
<b>Number of Packs per Rack</b>	9	Pack: EPD140-05P42
<b>Dimension (W x D x H)</b>	35.3in x 41.9in x 93.9in (896mm x 1065mm x 2385mm)	±0.16in (4mm)
<b>Cell Capacity</b>	300 Ah	0.5P, 100%DoD, 77 ±3.6°F (25 ±2°C)
<b>Nominal Capacity</b>	380.16 kWh	0.5P, 100%DoD, 77 ±3.6°F (25 ±2°C)
<b>Nominal Voltage</b>	1267.2 V	
<b>Voltage Range</b>	1069.2 V ~ 1425.6 V	
<b>Maximum Charging/Discharging Power</b>	190.08 kW	0.5P, 77 ±3.6°F (25 ±2°C)
<b>Working Temperature</b>	59°F ~ 113°F (15°C ~ 45°C)	Charging power ≤0.5P
<b>Working Humidity</b>	5% ~ 95%	
<b>Weight</b>	6834.3lb (3100 kg)	±176.4lb (80kg)



## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

**Name:** Century-Tywood J3 Corp

**Address:** 79 Lowland St

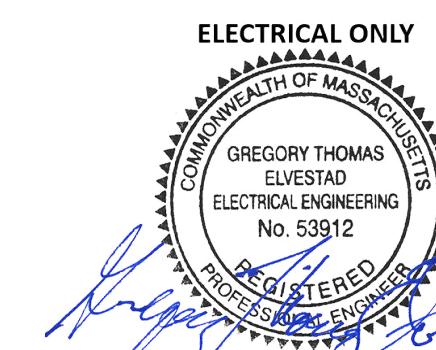
Holliston, MA, 01747

**Website:** www.century-tywood.com/

**Phone:** (508)-422-8552

**Contact:** Jack Mahoney

## ENGINEER OF RECORD



Signed 11/06/2025

## DESIGNER

**Company:** EQORE Inc.

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Somerville, MA, 02143

**Website:** www.eqore.net

**Phone:** 786-234-2655

**Contact:** Donald Groh

## PAGE NOTES

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Sheet No.		Revision A

# Century Tywood - Electrical Equipment: Inverter Specifications

## Inverter:

Full original specification sheets, manuals, and certifications are provided as attachments to the plans.

	CPS-1250 Indoor	CPS-1250 Outdoor	CPS-2500 Indoor	CPS-2500 Outdoor
Enclosure Options				
Updated Model Pending	Updated Model Pending	Updated Model Pending		
Installation Location	Indoor	Outdoor	Indoor	Outdoor
Ingress Protection Rating	NEMA 1 / IP 20 Protected against solid foreign objects of 12 mm diameter and greater. No water protection.	NEMA 3R / IP 54: Protected against dust limited ingress, no harmful deposits and protected against water splashed from all directions, limited ingress permitted.	NEMA 1 / IP 20 Protected against solid foreign objects of 12 mm diameter and greater. No water protection.	NEMA 3R / IP 54: Protected against dust limited ingress, no harmful deposits and protected against water splashed from all directions, limited ingress permitted.
W x D x H	49.0 L x 43.3 W x 79.72 H inches	49.0 L x 43.3 W x 79.72 H inches	85.04L x 43.3 W x 79.72H inches	85.04L x 47.40W x 79.72H inches
Weight	Approx. 2,205 lbs.	Approx. 2,205 lbs.	Approx. 4,420 lbs.	Approx. 4,420 lbs.
Humidity	95% RH non-condensing	95% RH non-condensing	95% RH non-condensing	95% RH non-condensing
Cooling	Forced Air. Controls are segregated within the enclosure to limit the exposure of the controls to the external air.			
Grounding Provisions	Ground terminals available in AC & DC wiring compartments and on sides of units			
Operational Temp Range	-35°C to +60°C (> 45°C deratings)			
Storage Temp Range	-40°C to +70°C			
Altitude	3,000 meters max for electrical safety, derate operation above 1000m			
Sound Pressure	85 dBA. Reading taken using a calibrated SPL meter in a non-anechoic environment at 1m from the unit under test.			
Seismic Rating	IEEE 693-2018 High 0.5G 2PA - Dynamic Analysis			
Wind Loading	IBC 2018/ASCE 7-22:V = 180mph	IBC 2018/ASCE 7-22:V = 180mph	IBC 2018-V = 150mph (Risk Category II)	IBC 2018-V = 150mph (Risk Category II)
Design Life	20 years with Preventative Maintenance and Scheduled Service			
Color	White; RAL 9003			

## Electrical Ratings

CPS-1250 kVA	585	693	802	902	1002	1052	1102	1152	1336
Input DC									
Max Operating Voltage range	511-1500	604-1500	697-1500	783-1500	869-1500	912-1500	995-1500	998-1500	1157-1500
Min Voltage for Full Active Power (V)	525	618	711	797	883	926	970	1013	1171
Operating Voltage Range*	585-1500	678-1500	771-1500	857-1500	943-1500	986-1500	1069-1500	1072-1500	1231-1500
DC Power (kW)	593	702	813	914	1015	1066	1117	1167	1354
Max Voltage (V)					1500				
Continuous Current (A)	1158	1162	1165	1167	1168	1169	1122	1169	1170
Overload Continuous Current (A)					1404				
Voltage Ripple (%) / current Ripple	1% / <5% for rated current 2% typical								
Peak Efficiency	98.60 @ 1500Vdc & 98.70 @ 1280Vdc								
Output AC									
Continuous AC Power (kW)	585	693	802	902	1002	1052	1102	1152	1336
Line Voltage (V)	350	415	480	540	600	630	660	690	800
Line Frequency (Hz)					60				
Continuous AC Current (A)					964				
Overload AC Current (A)					1157				
Power Efficiency	Four Quadrant								

\*Note Operating Voltage Range Includes Reactive Power Requirements per UL1741 Ed. 3

## AC/DC Protections

AC/DC Protections	CPS-2500/CPS-1250	Unit of Measure / Notes
AC Circuit Breaker Ampacity	1200	A <sub>RMS</sub>
AC Circuit Breaker Operator	Motorized	Status available through Modbus
AC Circuit Breaker Shunt Trip	Yes	
AC Circuit Breaker UL Interrupt Rating	85kA@480v, 50kA@600V	KA
AC Circuit Breaker Lockable	Yes	
AC Surge Protection Device	Included and monitored	
DC Isolation	DC Contactor	Status available through Modbus
DC Switch Lockable	Yes	
DC Fuse	1400	A <sub>DC</sub> per fuse, 4 per CPS-2500 2 per CPS-1250
DC Fuse Class	1500Vdc aR	
DC Fuse Short Circuit Current Interrupt Rating	250	KA per DC input

## Max Fault Contribution

Max Fault Contribution	CPS-1250	CPS-2500	Unit of Measure / Notes
Initial Symmetrical Short-Circuit Current	2.65		kA <sub>PEAK</sub> Measured at inverter terminals.
First Peak of Short-Circuit Current	2.65		kA <sub>PEAK</sub> Measured at inverter terminals.
Steady-State Short Circuit Current	964	1928	A <sub>rms</sub> Measured at inverter terminals. Assuming Ride through time >160ms
Time to Reach Steady State Current	160		ms
DC Short Circuit Contribution	8	16	kA <sub>PEAK</sub> Measured at inverter terminals.
DC Fault Current Duration	<10		ms

## AC Configuration

AC Configuration	CPS-1250	Notes
Number AC Inputs	1	Single 3 phase Input
AC Input Configuration Options	Bottom entry standard/Side entry optional	
AC Input Configuration	L1, L2, L3, and chassis ground; no neutral terminal.	
AC Isolation Requirements	IT - Galvanic isolation from earth ground required.	
Number of Inverters	1	
Permissible on a Single Transformer Winding		

## DC Configuration

DC Configuration	CPS-1250 DC Input Configuration	Notes
Number DC Inputs	1	Independent DC terminal sets
DC Input Configuration Options	Bottom entry standard/Side entry optional	
DC Network Configuration	Fully isolated from earth ground	
DC Precharge	Included	For initial charging of DC capacitors through resistor
Typical DC Cable Scheme	(8) 500MCM Cu 90°C connection points per pole.	(Qty) Size per pole

## Auxiliary Configuration

Auxiliary Configuration	CPS-1250	CPS-2500	Unit of Measure / Notes
Auxiliary Power Configuration	Auxiliary (Aux) power derived from DC and AC input terminals with seamless transition between them in the case of loss of voltage from either. AC Aux power will be pulled from the line side of the AC breaker.		
Auxiliary Power Consumption	Estimated 1kVA	Estimated 2kVA	(kW) Aux Power included in system efficiency data.
Active Standby Power Consumption	Estimated 1kVA	Estimated 2kVA	(kW) See Modes of Operation for Active Standby description.

## Software Protections

All Configurations
Battery Voltage and Current Curtail Limits to protect battery
AC Current Limiting Pending
AC Over/Under Voltage, Over Current faults
AC Over/Under Voltage, Over/Under Frequency, Over Current faults by software
Anti-islanding Protection, Open Phase at inverter terminals
Temperature monitoring and protective power curtailment
Watchdog Timer to detect loss of communications

## Codes and Standards

All Configurations* Pending
UL 1741 edition 3
Conforms to standards for use in UL 9540 Listed system
IEEE 1547-2018 IEEE Standard for Interconnection and Interoperability of Distributed Energy Resources with Associated Electric Power Systems Interfaces
IEEE 693-2018 IEEE Recommended Practice for Seismic Design of Substations
IEEE 519-2014 IEEE Recommended Practice and Requirements for Harmonic Control in Electric Power Systems
Sunspec Modbus
Hawaii Rule 14H Compliant
California Rule 21 Compliant

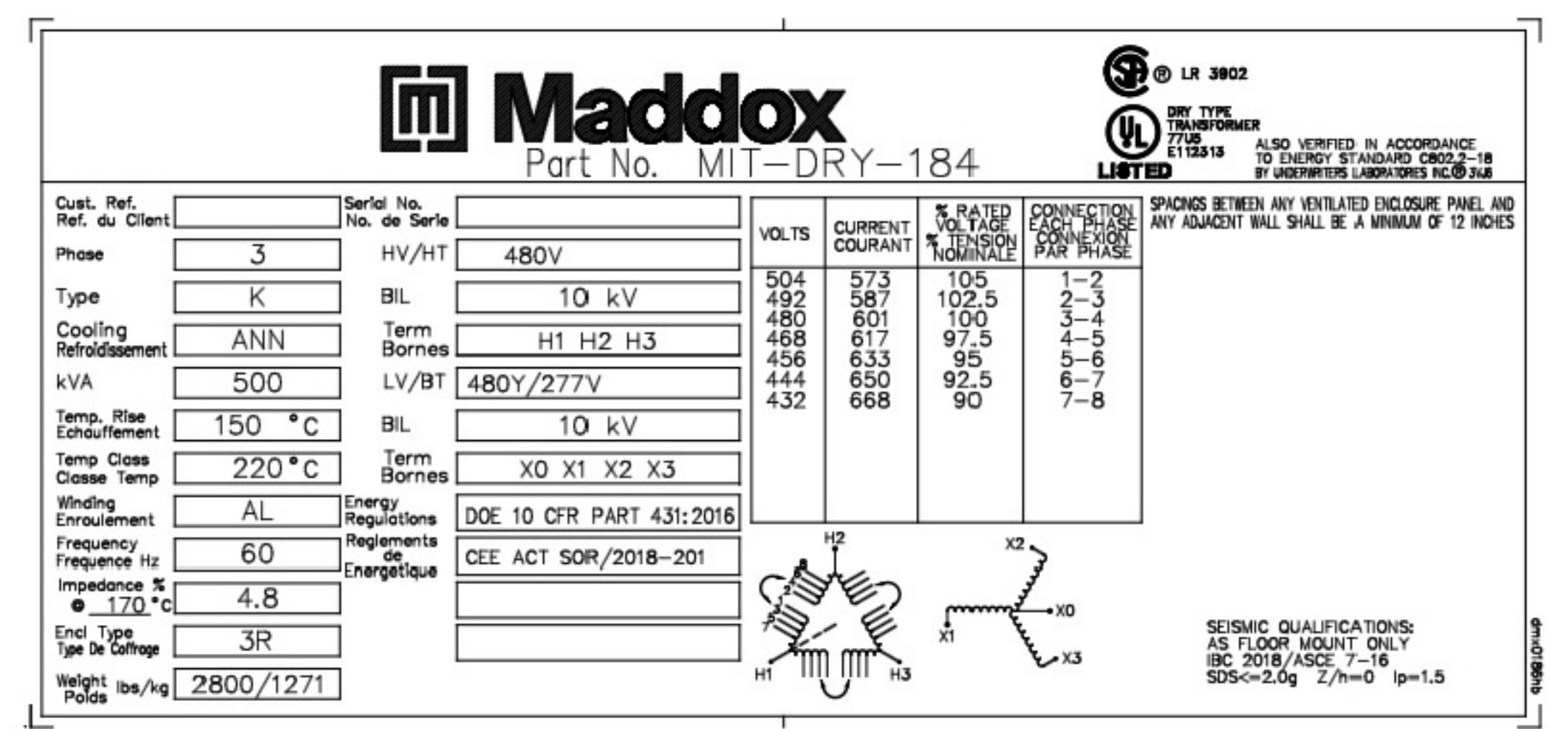
## Communications Interfaces

All Configurations
Communications Protocols
Modbus TCP/IP; MESA Sunspec compliant 2030.5
Communications Port
RJ-45 provided; separate static IP address per CPS-1250, CPS-2500
Communications Rates
10 Mbps, 100 Mbps, auto negotiated
Compatibility

# Century Tywood - Electrical Equipment: Other Equipment Specifications

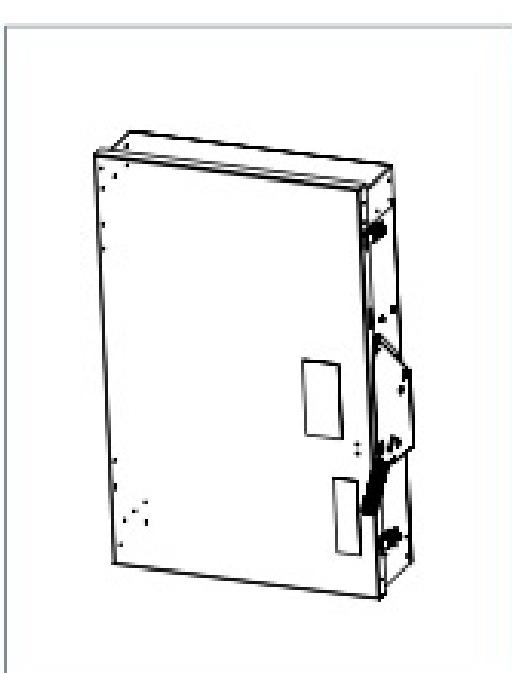
## Isolation Transformer:

Full original specification sheets, manuals, and certifications are provided as attachments to the plans.



## Electrical Disconnect:

Full original specification sheets, manuals, and certifications are provided as attachments to the plans.



**Standards and Ratings**

- UL listed under file #E4776
- CSA listed under file #15452
- Meets NEMA Standard KS-1 for enclosed switches
- Meets NEC wire bending space requirements
- Rated 10,000 AIC as standard or 200,000 when protected by Class R, T or J fuses rated 400 amp maximum
- 12t rated (Amps 2 x Seconds = 6,000,000)
- 12X overload current rating exceeds 10X industry standard
- Suitable for use as service entrance equipment
- Includes internal shields which meet 2020 NEC 230.62 touch safe requirements for service entrance equipment

**Features**

- Quick-make and break switching action
- Visible blade design
- Highly visible ON/OFF indication
- Modular design allows quick and easy replacement of parts
- Defeatable dual cover interlock
- Compact one piece light weight construction enables easier installation
- Can utilize either one large or two small wires
- Spring loaded heat sink fuse clip
- One piece line and load base for consistent phase-to-phase alignment
- Extra ground lug on neutral
- Tangential knock-out
- Lay in Lugs for easy wiring
- Window permits viewing of visible blade

## Eaton Breaker:

Full original specification sheets, manuals, and certifications are provided as attachments to the plans.

### Catalog Number: HLD3600

#### Product specifications

##### Series

##### Series C

##### Interrupt rating

65 kAIC at 480 Vac

100 kAIC at 240 Vac

##### General specifications

##### Product Name Catalog Number

Eaton Series C complete molded case circuit breaker, L-frame, HLD, Fixed thermal, Fixed magnetic trip, Three-pole, 600 A, 600 Vac, 250 Vdc, 100 kAIC at 240 Vac, 65 kAIC at 480 Vac, Aluminum, Line and load, 50/60 Hz

##### UPC

786679009611

##### Product Length/Depth Product Height

8.25 in 8.25 in

##### Product Width Product Weight

8.25 in 17 lb

##### Warranty Certifications

Eaton Selling Policy 25-000, one (1) year UL Listed from the date of installation of the Product or eighteen (18) months from the date of shipment of the Product, whichever occurs first.

##### Frequency rating

50 to 60 Hz

##### Circuit breaker frame type

Complete breaker

##### Terminals

##### Line and load

##### Voltage rating

600 Vac, 250 Vdc

##### Terminal material

Aluminum

##### Amperage Rating

600 A

##### Trip Type

Fixed thermal, fixed magnetic

##### Number of poles

##### Three-pole

#### Replacement Parts

Catalog Number	Description
HA161234	Aux. Switch (1NO - 1NC)
HA261234	Aux. Switch (2NO - 2NC)
HA361234	Low Voltage Aux. SW. (1NO - 1NC)
HN656A	Neutral
HN678A	200% Neutral
HG656A	Ground Lug
HG2656A	Isolated Ground
HR66A	R Fuse (600A)
TFAK65A	T Fuse (600A, 600V)
HJ66A	J Fuse (600A, 240/600V)
HCU66A	Copper Lug (600A, fused)
HNCU66A	Copper Lug (600A, nonfused)
HCM66A	Field Replacement Kit (600A, fused)
HNCM66A	Field Replacement Kit (600A, nonfused)
HVGK	Hub Gasket Kit
HV250	2.50" Type "HV" Outdoor Hub
HV300	3.00" Type "HV" Outdoor Hub
HV350	3.50" Type "HV" Outdoor Hub
HV400	4.00" Type "HV" Outdoor Hub
HCU656A	Copper Lug Kit

#### Mechanical Lug Wire Ranges

Description	Wire Range with Wire Bending Space per NEC® requirements	Lug Wire Range
Line and Load Terminals (Fusible)	(1) 1/0 AWG - 600 kcmil or (2) 1/0 AWG - 750 kcmil	(2) 1/0 AWG - 750 kcmil
Description	Wire Range	
100% Neutral	(2) 1/0 - 600 kcmil or (2) 6 - 300 kcmil	
200% Neutral	(4) 1/0 - 600 kcmil or (2) 6 - 300 kcmil	

## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

**Name:** Century-Tywood J3 Corp

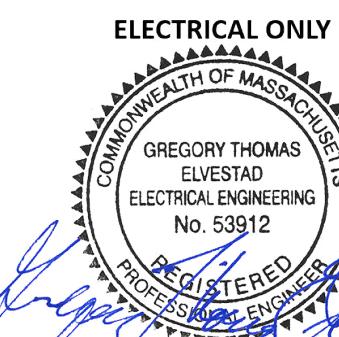
**Address:** 79 Lowland St  
Holliston, MA, 01747

**Website:** www.century-tywood.com/

**Phone:** (508)-422-8552

**Contact:** Jack Mahoney

## ENGINEER OF RECORD



Signed 11/06/2025

## PAGE NOTES

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		ESS-14.2
Drawn by: DG	Checked by:	Approved by: DG Date: 11/03/2025
Sheet No.		Revision A

# Century Tywood - Electrical Equipment: Other Equipment Specifications

## DLO Wire for Battery to Inverter:

Full original specification sheets, manuals, and certifications are provided as attachments to the plans.



Stock # 167021 | SPEC 44020

### DLO TCU 2000V EPDM Insulation Thermoset CPE Jacket. RHH/RHW-2/RW90 MSHA Approved.

UL Listed as 2kV Heavy Duty Flexible Power Cable (HDFPC) DLO, Rated 90°C Dry or Wet. 2kV Type RHH/RHW-2 Flexible Power Cable Rated for Dry or Wet. CSA Listed as 2kV Type RW90. Composite Thermoset Wall EPDM Insulation Thermoset CPE Jacket. Silicone-Free. MSHA Approved



Image not to scale. See Table 1 for dimensions.

#### CONSTRUCTION:

1. Conductor: Flexible Stranded Rope-Lay Class I Tinned Copper per ASTM B33 and B172 (As Applicable)
2. Binder Tape: Mylar Tape
3. Insulation: Black Thermoset Ethylene Propylene Diene Monomer (EPDM)
4. Jacket: Thermoset Chlorinated Polyethylene (CPE). Other colors available (see table below)

#### APPLICATIONS AND FEATURES:

HDFPC-DLO is a 2kV flexible power cable with a variety of possible applications such as but not limited to: Drilling rigs, railroad and transit car wiring, mining and other industrial equipment, and as flexible motor leads and wind turbine applications. The cable is suited for use in wet and dry areas, conduits, ducts, troughs, trays, and where superior electrical properties are desired. HDFPC-DLO is oil, heat, flame, abrasion, and sunlight resistant. Approved for use per the NEC® as Type RHH/RHW-2 and per the CE Code as 2kV Type RW90. These cables are capable of operating continuously at the conductor temperature not in excess of 90°C for normal operation in wet and dry locations, 130°C for emergency overload, and 250°C for short circuit conditions. Sizes 1/0 and Larger Rated For CT Use.

#### SPECIFICATIONS:



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Stock # 167021 | SPEC 44020

Services

### DLO TCU 2000V EPDM Insulation Thermoset CPE Jacket. RHH/RHW-2/RW90 MSHA Approved.

UL Listed as 2kV Heavy Duty Flexible Power Cable (HDFPC) DLO, Rated 90°C Dry or Wet. 2kV Type RHH/RHW-2 Flexible Power Cable Rated for Dry or Wet. CSA Listed as 2kV Type RW90. Composite Thermoset Wall EPDM Insulation Thermoset CPE Jacket. Silicone-Free. MSHA Approved

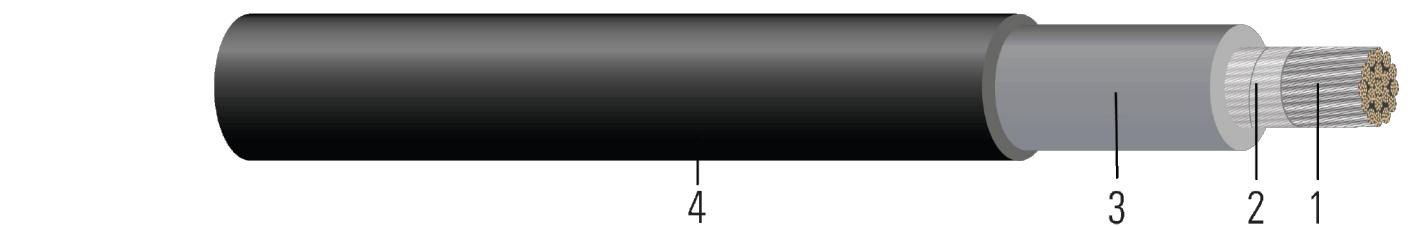


Image not to scale. See Table 1 for dimensions.

#### SAMPLE PRINT LEGEND:

Size 12 AWG and 10 AWG  
{SOFTG} SOUTHWIRE® ROYAL® XX AWG (XXmm<sup>2</sup>) E30117 (UL) TYPE RHH/RHW-2 90°C DRY 90°C WET 2kV (-40°C) PRI  
PRII SR --- EPR/CPE DLO --- P-07-KA100013-MSHA---Rohs

Sizes 2 AWG to 1 AWG

SOUTHWIRE® ROYAL® XX AWG (XX{mm<sup>2</sup>}) E30117 (UL) TYPE HDFPC EPR/CPE 2kV DLO 90°C DRY 90°C WET OR TYPE  
RHH/RHW-2 90°C DRY 90°C WET 2kV -40°C PRI PRII SR VV-1 - (CSA) 156205 RW90 90°C DRY 90°C WET 2kV -40°C PRI  
PRII FT1 SR (SEQUENTIAL FOOTAGE MARKS) SEQ FEET

Size 1/0 AWG and larger

{SOFTG} SOUTHWIRE® ROYAL® XX AWG XX STRAND CLASS XX (XX{mm<sup>2</sup>}) E30117 (UL) TYPE HDFPC EPR/CPE 2kV DLO  
90°C DRY 90°C WET OR TYPE RHH/RHW-2 90°C DRY 90°C WET 2kV -40°C PRI PRII SR FOR CT USE FT4 - (CSA) 156205  
RW90 90°C DRY 90°C WET TC-ER 2kV -40°C PRI PRII FT1 FT4 SR

#### Table 1 – Weights and Measurements

Cond. Size AWG/ Kcmil	Cond. Number	Strand Count	Diameter Over Conductor inch	Min. Avg. Insul. Thickness mil	Jacket Thickness mil	Approx. OD inch	Copper Weight lb/1000ft	Approx. Weight lb/1000ft	Jacket Color
1/0	1	266	0.379	75	55	0.645	327	450	BK

All dimensions are nominal and subject to normal manufacturing tolerances

© Cable marked with this symbol is a standard stock item

#### Table 2 – Electrical and Engineering Data

Cond. Size AWG/ Kcmil	Cond. Number	Min. Bending Radius inch	Max. Pull Tension lb	DC Resistance @ 25°C Ω/1000ft	AC Resistance @ 75°C Ω/1000ft	Inductive Reactance @ 60Hz Ω/1000ft	Allowable Ampacity At 75°C Amp	Allowable Ampacity At 90°C Amp
1/0	1	2.6	844	0.109	0.131	0.044	150	170

\* Ampacities in raceway are based upon 2023 NEC Table 310.15 and do not take into account the overcurrent protection limitations in NEC 240.4(D) 20 Amps for 12 AWG CU, and 30 Amps for 10 AWG CU (independent of the conductor temperature rating and stranding). Also, see NEC sections 310.15 and 110.14(C) for additional

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Stock # 167021 | SPEC 44020

Services

### DLO TCU 2000V EPDM Insulation Thermoset CPE Jacket. RHH/RHW-2/RW90 MSHA Approved.

UL Listed as 2kV Heavy Duty Flexible Power Cable (HDFPC) DLO, Rated 90°C Dry or Wet. 2kV Type RHH/RHW-2 Flexible Power Cable Rated for Dry or Wet. CSA Listed as 2kV Type RW90. Composite Thermoset Wall EPDM Insulation Thermoset CPE Jacket. Silicone-Free. MSHA Approved

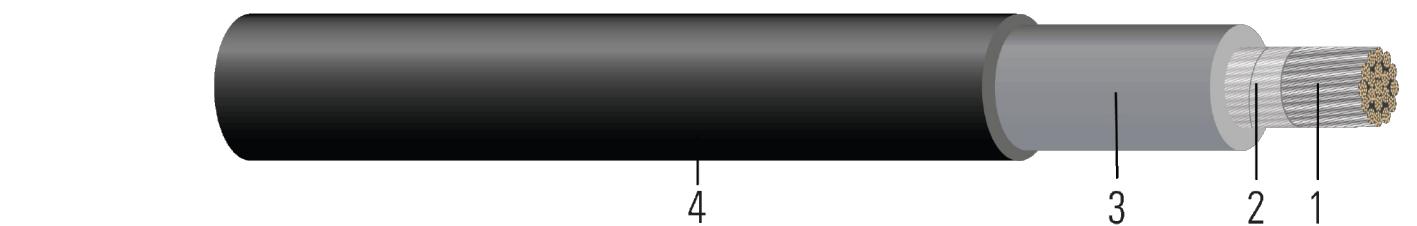


Image not to scale. See Table 1 for dimensions.

#### Other Insulation Colors

Cond. Size AWG/kmil	Black	Red	Brown	Orange	Yellow	Green	Gray
12	57123	665446	665465	665466	665467	665468	
10	500057	665469	665470	665471	665472	665473	
8	TBA	667014	665475	665476	665477	665478	
6	167015	665478	665479	665480	665481	665482	
4	167017	665483	665484	665485	665486	665487	
2	167019	138238	138239	138240	138241	138242	
1	167020	138262	138263	138267	138268	138269	
1/0	167021	138242	138244	138245	138246	138247	
2/0	167022	138247	138248	138251			
3/0	167023	138252	138253	138255	138256		
4/0	167024	167024	138257	138259	138260		
26/6	167026	641176	665452	665454	665455		
313.3	167027	665456	665457	665458	665459	665460	
373.7	167029	665203	678800	576729	678801	678802	
444.4	167030	665461	665462	665463	665464		
535.3	167031	167031	138211	138212	138213	677552	
646.4	167032	138229	138215	138216	138217	138218	
777.7	167033	167033	640880	640881	640882	138219	640883
1111	167035	138220	138221	138222	138223	138224	

#### Table 1 – Weights and Measurements

Cond. Size AWG/ Kcmil	Cond. Number	Strand Count	Diameter Over Conductor inch	Min. Avg. Insul. Thickness mil	Jacket Thickness mil	Approx. OD inch	Copper Weight lb/1000ft	Approx. Weight lb/1000ft	Jacket Color
1/0	1	266	0.379	75	55	0.645	327	450	BK

All dimensions are nominal and subject to normal manufacturing tolerances

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## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

**Name:** Century-Tywood J3 Corp

**Address:** 79 Lowland St

Holliston, MA, 01747

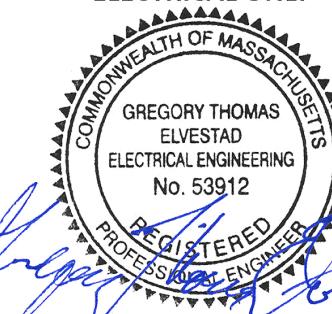
**Website:** www.century-tywood.com/

**Phone:** (508)-422-8552

**Contact:** Jack Mahoney

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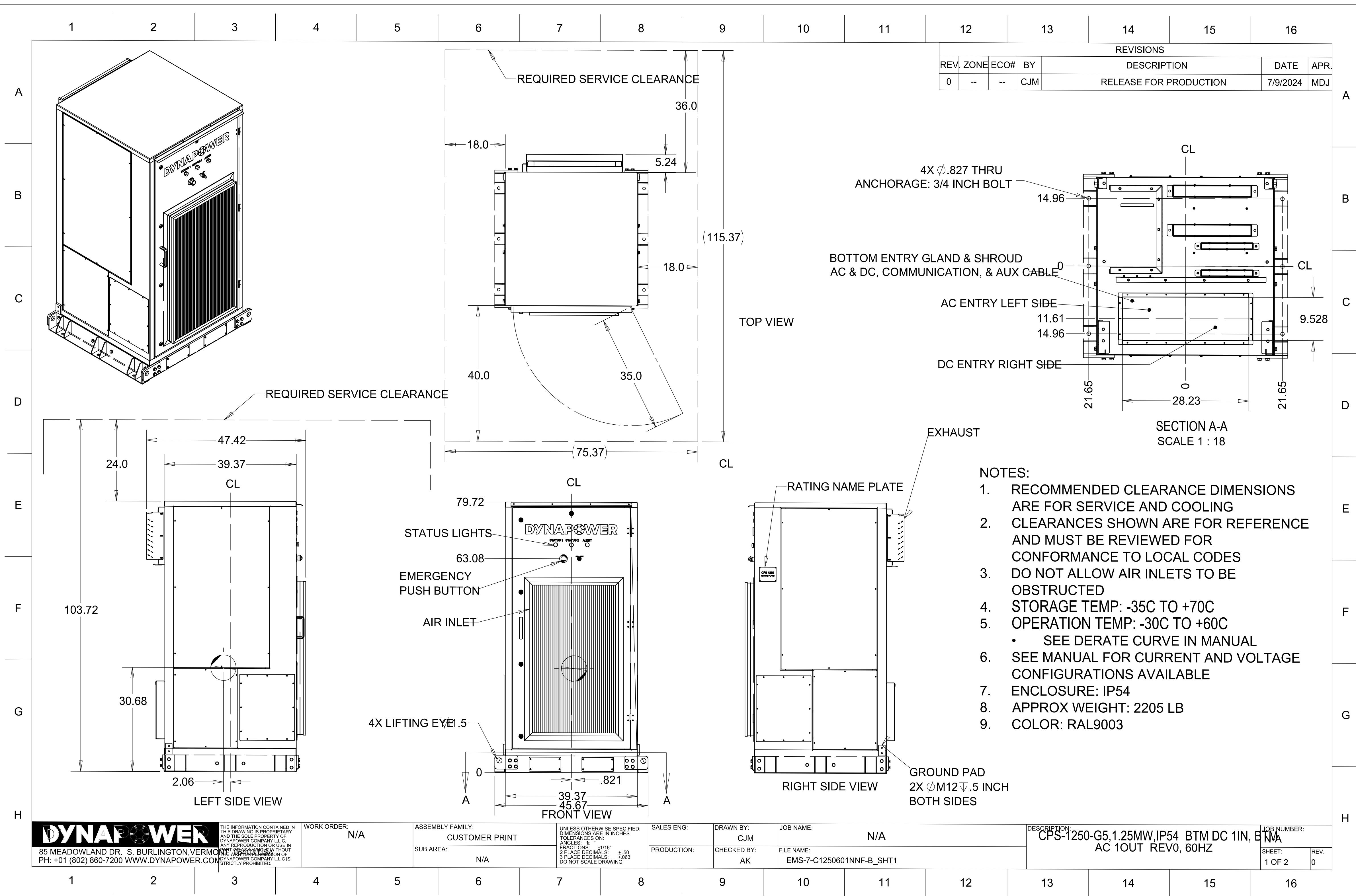
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# Century Tywood J3 Corp - Electrical Equipment: Dynapower CPS1250

## 1 Dynapower CPS1250

Scale: 3/4" = 1'-0"

Here you can see the cut sheet for the Dynapower CPS1250



## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

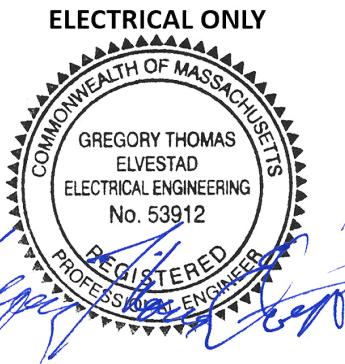
## CUSTOMER INFORMATION

**Name:** Century-Tywood J3 Corp

**Address:** 79 Lowland St  
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**Website:** www.century-tywood.com/  
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Town of Holliston, MA

**EQORE PROJECT**  
Century-Tywood  
Holliston, MA

**DESIGNER**  
**Company:** EQORE Inc.  
**Address:** 444 Somerville Ave,  
Somerville, MA, 02143  
**Website:** www.eqore.net  
**Phone:** 786-234-2655  
**Contact:** Donald Groh

## PAGE NOTES

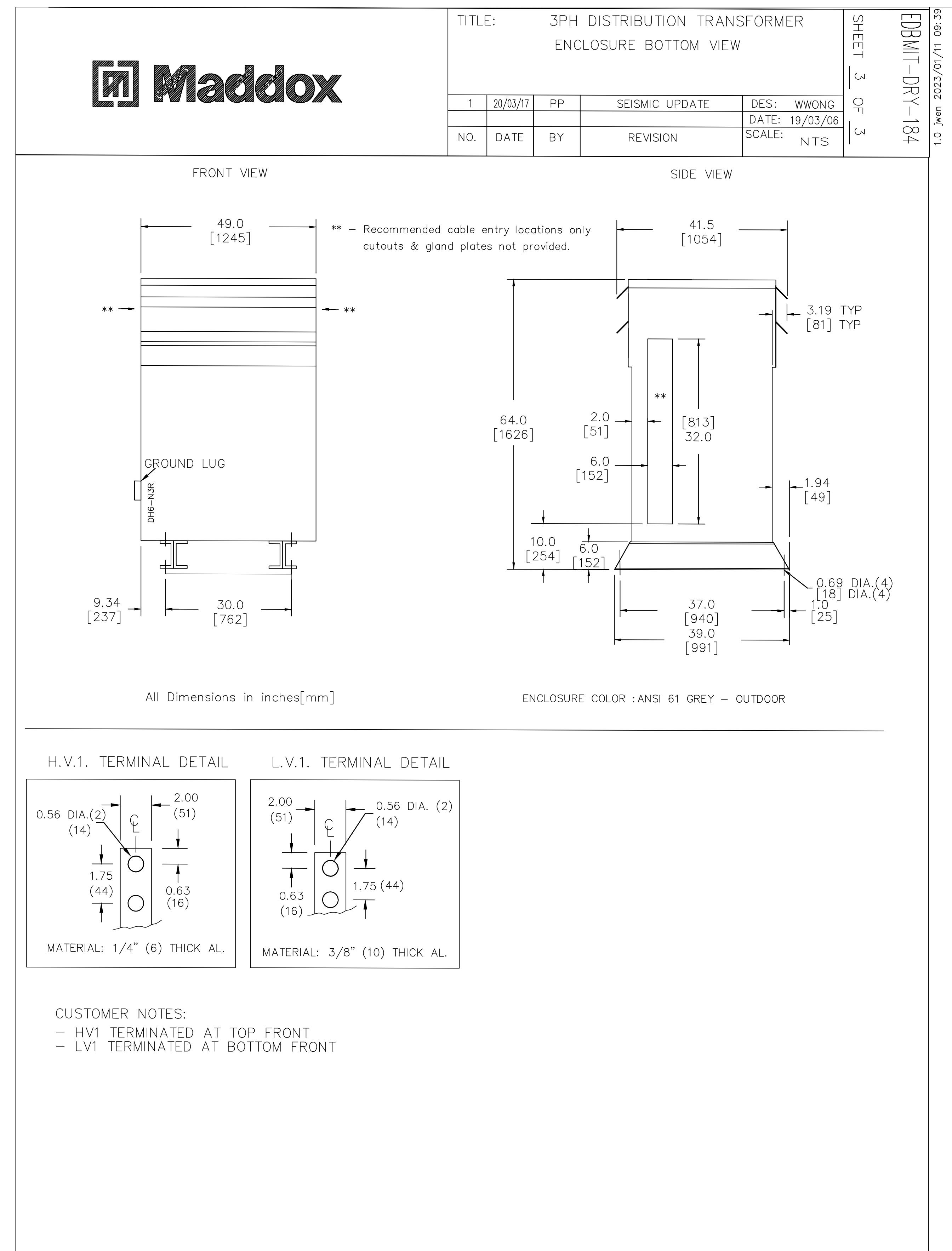
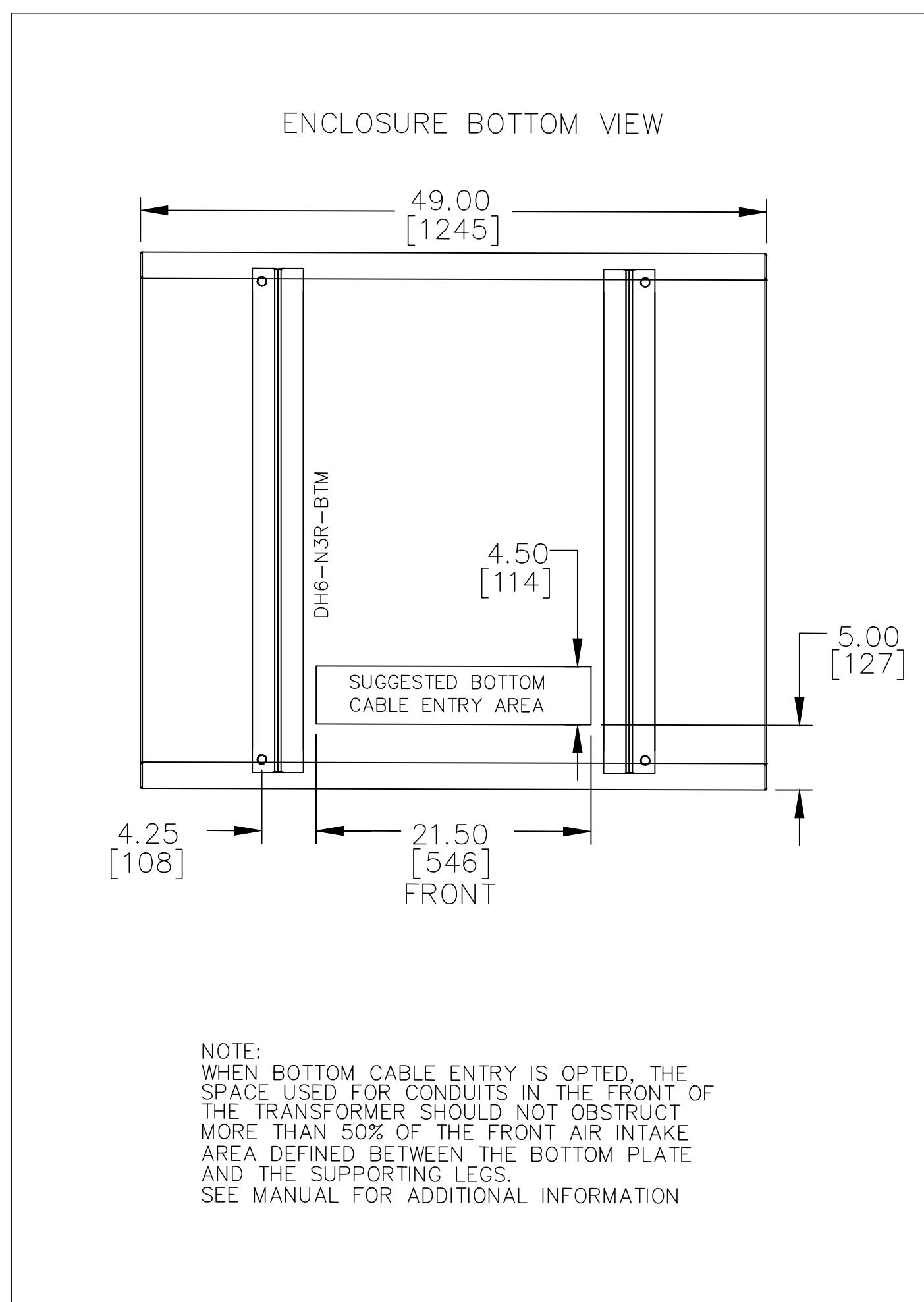
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Sheet No.		Revision A

# Century Tywood J3 Corp - Electrical Equipment: Isolation Transformer

## 1 Maddox 500kVA Isolation Transformer

Scale: 3/4" = 1'-0"

Here you can see the cut sheet for the Isolation Transformer



## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

**Name:** Century-Tywood J3 Corp

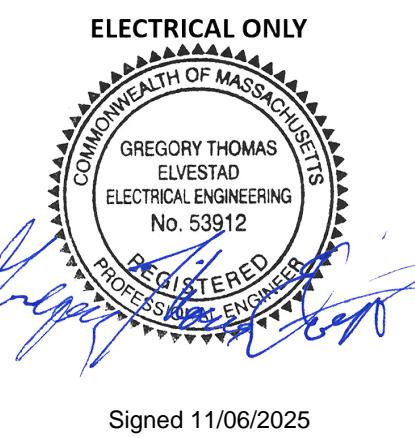
**Address:** 79 Lowland St  
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**Contact:** Jack Mahoney

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Century Tywood J3 Corp - Electrical Equipment: Gotion Edge760

1 | Gotion Edge 760 Page 1

Here you can see the cut sheet for the Battery Storage system, a Gotion Edge760

Model: EDGE 760  
Cell Capacity: 300Ah  
Nominal Energy: 760kWh  
Rated Voltage: 1267.2Vdc  
Operating Temperature Range: -20~45°C  
Operating Humidity Range: 0~95%  
Firefighting System: Aerosol/Water  
Altitude: < 3000m  
Dimensions (W x D x H): 1400mm x 2400mm x 2500mm  
Weight: 8t

## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

## **Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh  
**BESS:** Gotion Edge 760

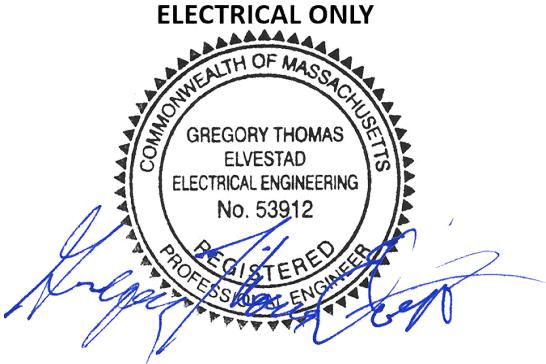
## CUSTOMER INFORMATION

**Name:** Century-Tywood J3 Corp  
**Address:** 521 Larchmont St.

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**Phone:** (508)-422-8552  
**Contact:** Jack Mahoney

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Holliston, MA

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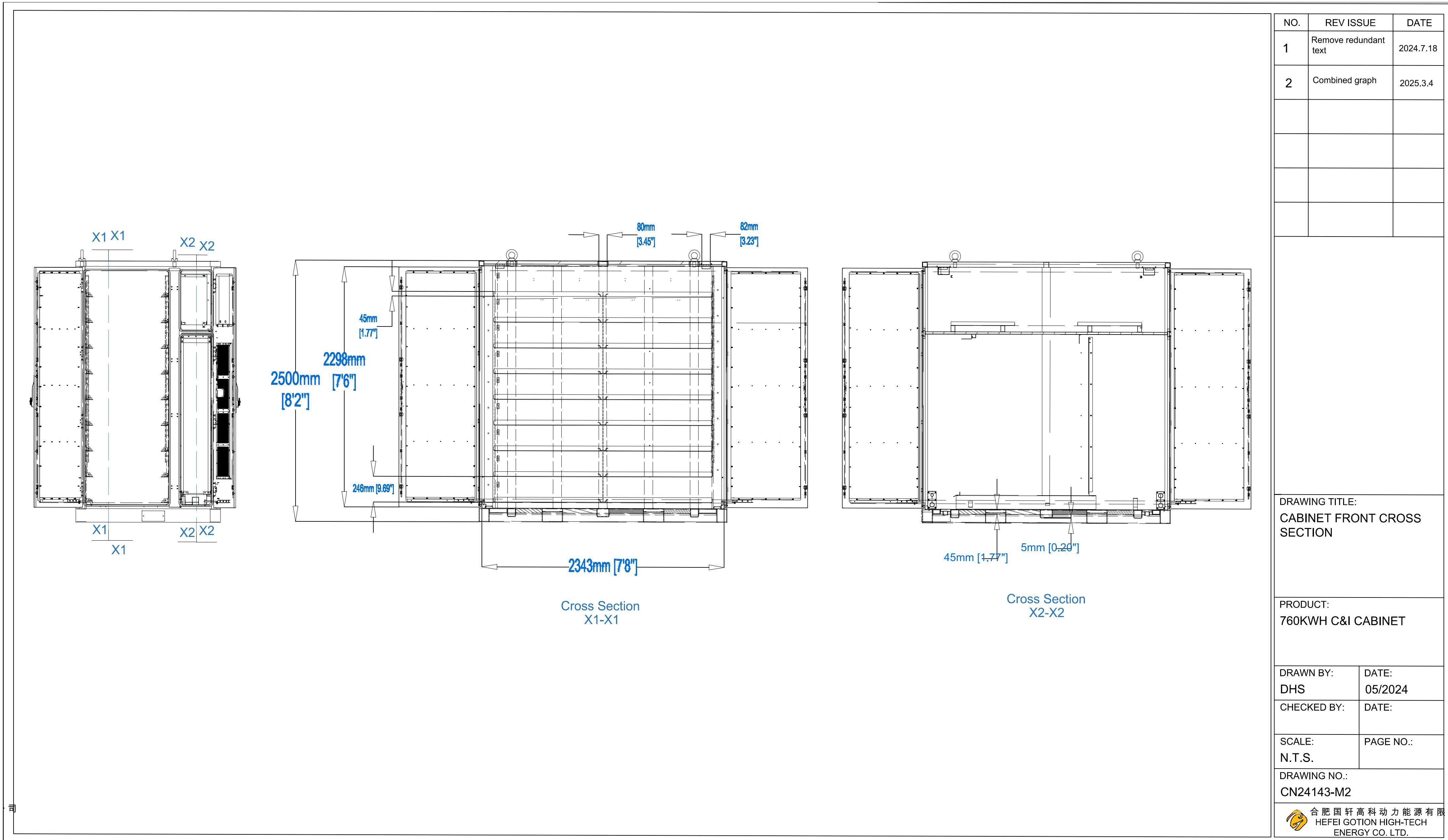
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# Century Tywood J3 Corp - Electrical Equipment: Gotion Edge760

1 Gotion Edge 760 Page 2

Scale: 3/4" = 1'-0"

Here you can see the cut sheet for the Battery Storage system, a Gotion Edge760



## SYSTEM INFORMATION

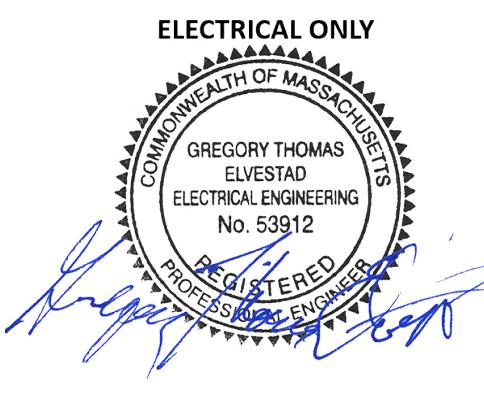
**AC System Size:** 380kW (Internally De-Rated from 1250kW)  
**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh  
**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

**Name:** Century-Tywood J3 Corp  
**Address:** 79 Lowland St Holliston, MA, 01747  
**Website:** www.century-tywood.com/  
**Phone:** (508)-422-8552  
**Contact:** Jack Mahoney

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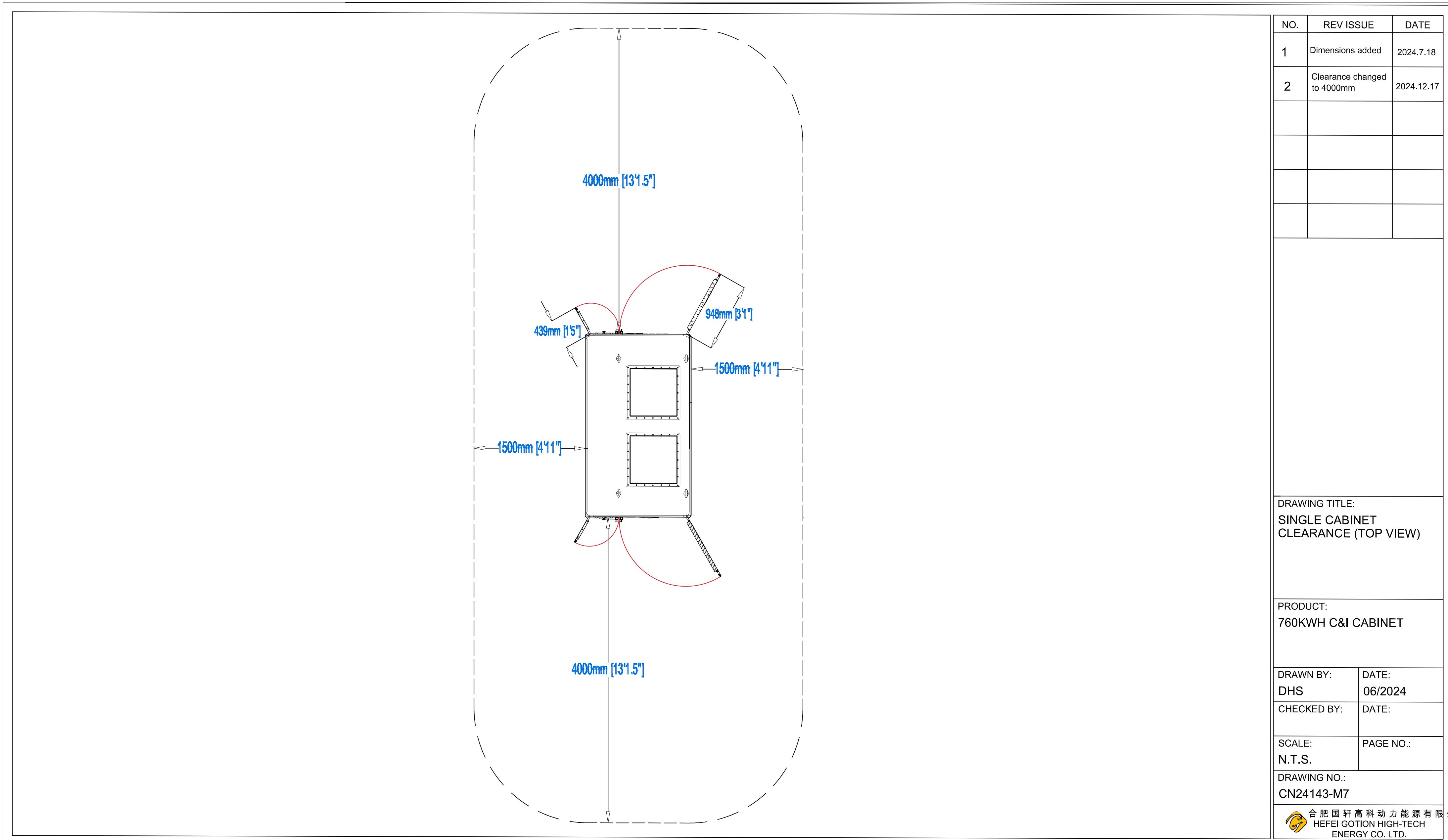
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Sheet No.	Revision A		

# Century Tywood J3 Corp - Electrical Equipment: Gotion Edge760

1 Gotion Edge 760 Page 3

Scale: 3/4" = 1'-0"

Here you can see the cut sheet for the Battery Storage system, a Gotion Edge760



## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

**Name:** Century-Tywood J3 Corp

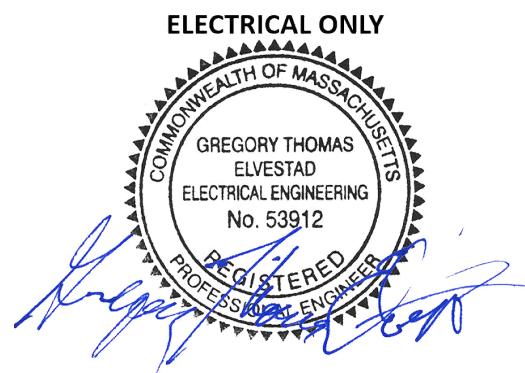
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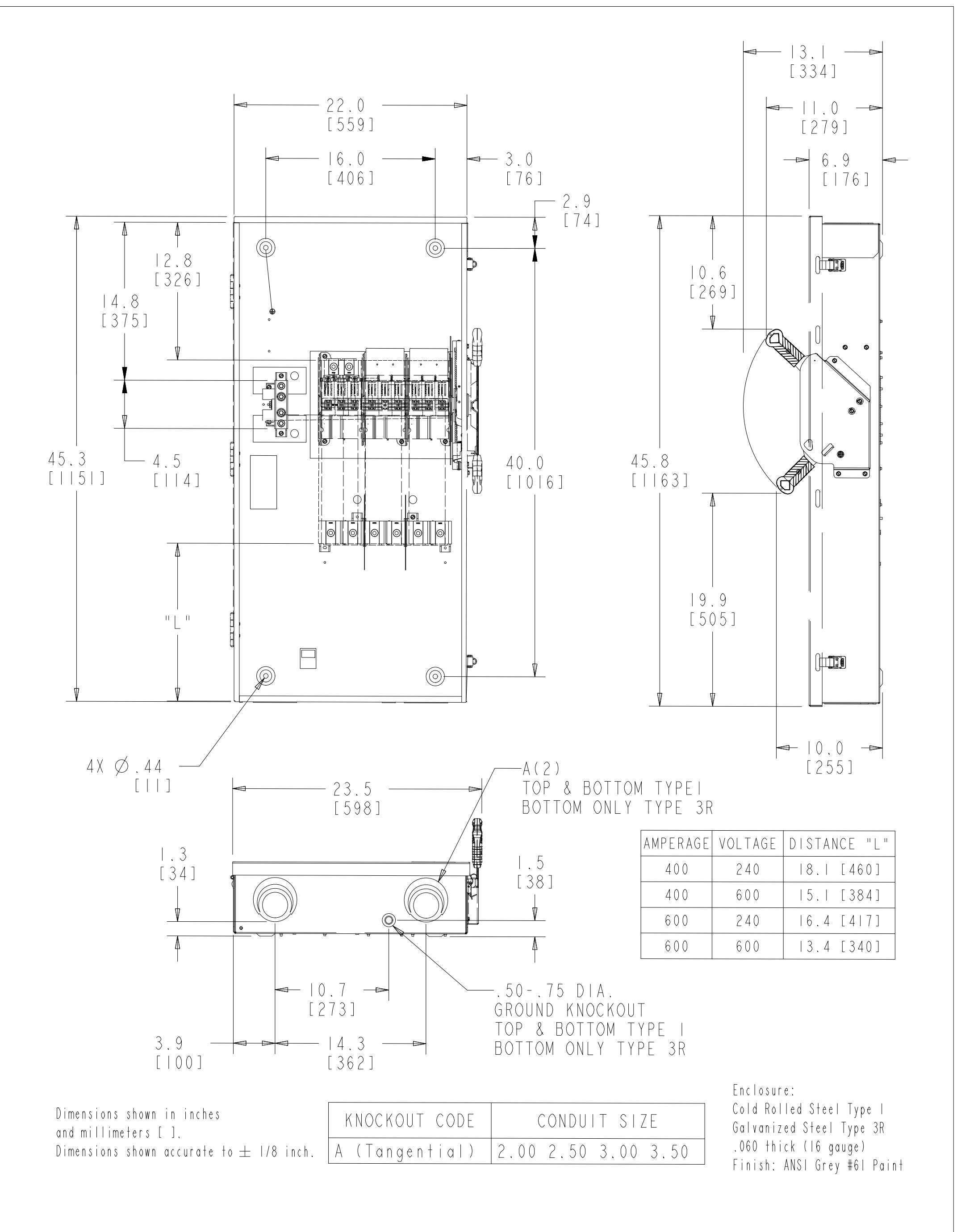
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# Century Tywood J3 Corp - Electrical Equipment: Disconnect & Breaker

## 1 Siemens HF366RA (Outdoor Disconnect)

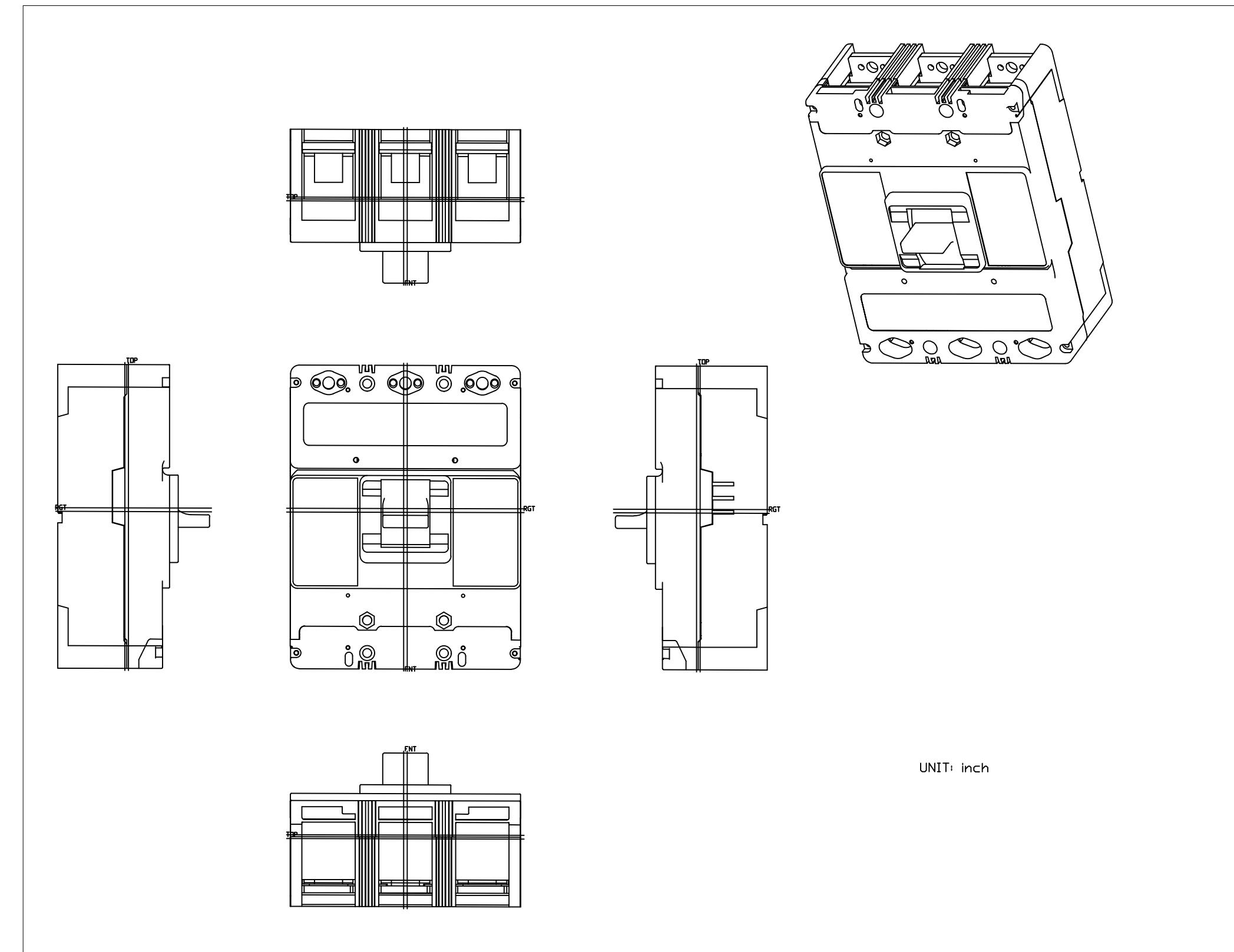
Scale: 1-1/2" = 1'-0"

Here you can see the cut sheet for the Electrical disconnect



## 2 Eaton/Cutler Hammer HLD3600 (Indoor Breaker)

Scale: 3" = 1'-0"



## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

**Name:** Century-Tywood J3 Corp

**Address:** 79 Lowland St

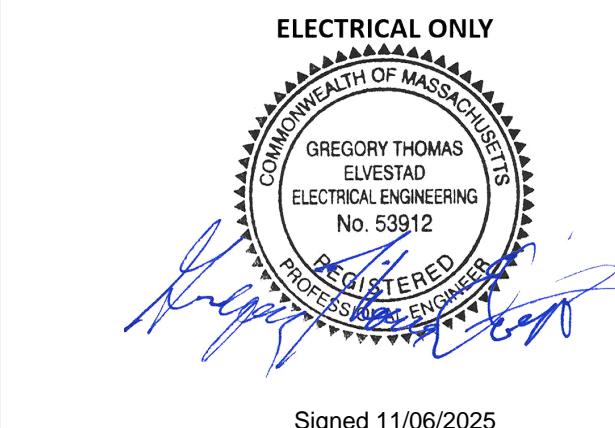
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**Phone:** (508)-422-8552

**Contact:** Jack Mahoney

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# Century Tywood J3 Corp - Electrical Calculations

## Comprehensive Conductor Sizing Calculations

Based on the manufacturer documentation and NEC requirements, here are complete calculations for aluminum conductors with a thorough evaluation of all equipment connections in your system.

### Connections:

- Gotion Edge760 (Battery) to Dynapower CPS1250 (Inverter) - DC Connection
- Dynapower CPS1250 (Inverter) to 500kVA Isolation Transformer - AC Connection
- 500kVA Isolation Transformer to Siemens HF366RA (outdoor disconnect) - AC Connection
- Siemens HF366RA (outdoor disconnect) to Eaton HLD3600 (Main Distribution Panel) - AC Connection

## Connection-by-Connection Analysis

### Connection 1: Gotion Edge760 to Dynapower CPS1250 (DC)

#### Specifications:

- **Voltage Range:** 1069.2 VDC to 1425.6 VDC (For the purpose of design, we use the minimum DC voltage)
- **Maximum Continuous Current:** Amps per entry
- **Configuration:** The Gotion EDGE760 has the power split between 2 High Voltage Distribution boxes located inside the unit. Each distribution box has a maximum output of 190 kW. The minimum voltage is 177.73 Amps per unit. With the total being 380kW or 355.47 Amps in total distributed between the two sides. Therefore the sizing required must satisfy the 177.73 Amp requirement.
- **Energy Storage Specific:** Due to the high operating voltage, the industry standard is to use Diesel Locomotive 2kV cable wire. For this installation we will likely be using a Southwire 44020, which is UL Listed as 2kV Heavy Duty Flexible Power Cable (HDFPC) DLO, Rated 90°C Dry or Wet. 2kV Type RHH/RHW-2 Flexible Power Cable Rated 90°C Dry or Wet. CSA Listed as 2kV Type RW90. Composite Thermostat Wall EPDM/CPE Insulation/Jacket. Sizes 1/0 and Larger Rated for CT Use.

The ampacity of the DLO 1/0 wire is 260 Amps up to 90°C. Considering we only need 177.73 Amps per High Voltage output box, the safety margin is 1.46. Therefore the 1/0 DLO is sufficient for this installation.

Since there are 2 High Voltage Output Units on the Gotion Edge760, we need to use 2 x 1/0 DLO 2kV Cable Wires.

Additionally since there is both a positive and a negative connection on each Gotion Edge760 High Voltage output unit, we require a total of 4 x 1/0 DLO 2kV conductors. One positive and one negative per High Voltage output unit.

Beyond the calculations provided here, the 1/0 DLO wire is the required wire per the specifications of the manual as can be seen on Page 55 of the EDGE760\_Installation\_Manual\_v3.1.pdf which was provided in the documents as "Installation Manual for Gotion Battery Energy Storage System".

Here are calculations for the maximum Ampacity requirement based on the Voltage and the kW output of the DC battery unit.

$$I_{(A)} = 1000 \times (P_{(kW)}) / (V_{(V)})$$

$$I_{(A)} = 1000 \times (380 / 1069.2)$$

$$I_{(A)} = 1000 \times 0.3554$$

$$I_{(A)} = 355.4 \text{ Amps}$$

Ampacity of 2 x 1/0 DLO 2kW Cable = 2 x 260 Amps = 520 Amps

**Check:** 520 Amps > 355.4 Amps by a safety margin of 1.46 beyond the included safety margin of only using the lowest possible battery voltage. Therefore, this wire passes the requirements.

## Connection-by-Connection Analysis

### Connection 2: Dynapower CPS1250 (AC) to 500kVA Isolation Transformer (AC)

#### Specifications:

- **Voltage:** 480 VAC Delta
- **Maximum AC Input/Output Current:** 579 Amps (limited by the Dynapower CPS1250 additionally, the limitations from the battery of 380kW output translate to 571.3 Amps, so we will use the Dynapower limit to act as the representative maximum AC output current.)
- **Configuration:** The inverter output is 480V delta. Technically the inverter is capable of various output voltages but we opted for using 480V AC Delta because the facility is 480V AC Wye. The isolation transformer is aimed to convert the voltage to 480 VAC Wye.

Here are calculations for the maximum Ampacity requirement based on the Voltage and the kW output. We used a power factor of 0.8 to be conservative. As mentioned above, these calculations are not the limitation for the selected amperage, instead we opt to utilize the maximum derated CPS1250 amperage of 579 Amps.

$$I_{(A)} = 1000 \times (P_{(kW)}) / (\sqrt{3} \times \text{PF} \times V_{(V)})$$

$$I_{(A)} = 1000 \times (380 / (\sqrt{3} \times 0.8 \times 480))$$

$$I_{(A)} = 1000 \times 0.5713$$

$$I_{(A)} = 571.3 \text{ Amps}$$

Based on the continuous amperage calculation we must convert to the NEC required maximum amperage using the 25% required safety margin.

#### Required Amperage for Conductors per Phase

$$(\text{Max Output current}) \times (\text{Continuous Load}) [\text{Per } 210.19(A)(1)] = \text{Max AC Output Current}$$

$$579 \text{ A} \quad \times \quad 1.25 \quad = \quad 724 \text{ A}$$

#### Adjusted Conductor Ampacity

##### Calculation Parameters

**Ambient Temperature:** We will opt for using a standard ambient temperature of 26-30°C which requires a correction factor of 1.0 because of the selection of 75°C rated conductors according to Table 310.15(B)(16).

**Conduit Fill Correction:** The Siemens HF366RA has 2 lugs for landing cable. So we are constrained to using 2 conductors per phase, considering this, we opted to run 2 parallel conduits rather than overfilling any one. Since we only have 3 current carrying conductors we have a conduit fill correction factor of 1.0 based on NEC table 310.15(B)(2)(a).

**Conduit Ampacity:** Using NEC table 310.16, we opt to use 500kcmil 75°C Copper conductors either type RHW, THHW, THW, THWN, or XHHW.

$$\text{Ambient Temp. Cor.} \times \text{Conduit Fill Cor.} \times \text{Num. of cond.} \times \text{Conduit Amp.} =$$

$$\text{Adjusted Conductor Ampacity} \\ 1.0 \quad \times \quad 1 \quad \times \quad 2 \quad \times \quad 380 \quad = \quad 760 \text{ A}$$

**Check:** 760 Amps > 724 Amps by a safety margin of 1.04 beyond the included required safety margin per NEC sizing. Therefore, this wire passes the requirements. The connection between the two units will be made using a total of 8 x 500kcmil 75°C Copper conductors either type RHW, THHW, THW, THWN, or XHHW.

Note: contractor reserves the right to adjust these conductors so long that the adjustments result in satisfaction of the required ampacity.

**Ground:** The NEC Table 250.122 sets the minimum EGC by the OCPS rating; at 600 Amps, the table minimum is 1/0 AWG copper (or 3/0 AWG aluminum/copper-clad aluminum). Either the copper or the aluminum are sufficient so long that they satisfy the minimum requirements per NEC table 250.122. One grounding conductor will be run in each of the 2 parallel conduits.

$$\text{Ambient Temp. Cor.} \times \text{Conduit Fill Cor.} \times \text{Num. of cond.} \times \text{Conduit Amp.} =$$

$$\text{Adjusted Conductor Ampacity} \\ 1.0 \quad \times \quad 1.0 \quad \times \quad 2 \quad \times \quad 380 \quad = \quad 760 \text{ A}$$

**Check:** 760 Amps > 724 Amps by a safety margin of 1.04 beyond the included required safety margin per NEC sizing. Therefore, this wire passes the requirements. The connection between the two units will be made using a total of 6 x 500kcmil 75°C Copper conductors either type RHW, THHW, THW, THWN, or XHHW.

Note: contractor reserves the right to adjust these conductors so long that the adjustments result in satisfaction of the required ampacity.

**Ground:** The NEC Table 250.122 sets the minimum EGC by the OCPS rating; at 600 Amps, the table minimum is 1/0 AWG copper (or 3/0 AWG aluminum/copper-clad aluminum). Either the copper or the aluminum are sufficient so long that they satisfy the minimum requirements per NEC table 250.122. One grounding conductor will be run in each of the 2 parallel conduits.

## Connection-by-Connection Analysis

### Connection 3: 500kVA Isolation Transformer (AC) to Siemens HF366RA

#### Specifications:

- **Voltage:** 480 VAC Wye
- **Maximum Continuous Current:** 579 Amps (similarly limited by Dynapower CPS1250 derating used for the Connection 2 analysis.)
- **Configuration:** The output from the Isolation transformer is 480VAC Wye so relative to the last connection the only difference is the requirement for a neutral.
- **Tight Constraint Requirement:** Similar to the other runs, the conduit and close proximity of the equipment makes the run challenging.

#### Required Amperage for Conductors per Phase

$$(\text{Max Output current}) \times (\text{Continuous Load}) [\text{Per } 210.19(A)(1)] = \text{Max AC Output Current}$$

$$579 \text{ A} \quad \times \quad 1.25 \quad = \quad 724 \text{ A}$$

#### Adjusted Conductor Ampacity

##### Calculation Parameters

**Ambient Temperature:** Since this is a below ground conduit run, we will opt for using an ambient temperature of 26-30°C which requires a correction factor of 1.0 because of the selection of 75°C rated conductors according to Table 310.15(B)(16).

**Conduit Fill Correction:** Both the Siemens HF366 and the breaker only have landings for 2 conductors. Considering this, we opted to run 2 parallel conduits based on NEC table 310.15(B)(2)(a).

**Conduit Ampacity:** Using NEC table 310.16, we opt to use 700kcmil 75°C Aluminum conductors either type RHW, THHW, THW, THWN, or XHHW. Aluminum was used in this run due to the length of the run.

$$\text{Ambient Temp. Cor.} \times \text{Conduit Fill Cor.} \times \text{Num. of cond.} \times \text{Conduit Amp.} =$$

$$\text{Adjusted Conductor Ampacity} \\ 1.0 \quad \times \quad 1.0 \quad \times \quad 2 \quad \times \quad 375 \quad = \quad 750 \text{ A}$$

**Check:** 750 Amps > 724 Amps by a safety margin of 1.036 beyond the included required safety margin per NEC sizing. Therefore, this wire passes the requirements. The connection between the two units will be made using a total of 8 x 700kcmil 75°C Aluminum conductors either type RHW, THHW, THW, THWN, or XHHW.

Note: contractor reserves the right to adjust these conductors so long that the adjustments result in satisfaction of the required ampacity.

**Ground:** The NEC Table 250.122 sets the minimum EGC by the OCPS rating; at 600 Amps, the table minimum is 1/0 AWG copper (or 3/0 AWG aluminum/copper-clad aluminum). Either the copper or the aluminum are sufficient so long that they satisfy the minimum requirements per NEC table 250.122. One grounding conductor will be run in each of the 2 parallel conduits.

## Connection-by-Connection Analysis

### Connection 4: Siemens HF366RA (AC) to Eaton/Cutler Hammer HLD3600 (AC)

#### Specifications:

- **Voltage:** 480 VAC Wye
- **Maximum Continuous Current:** 579 Amps (similarly limited by Dynapower CPS1250 derating used for the Connection 2 analysis.)
- **Configuration:** Similar to the connection 3, this connection is three phase 480V Wye.

#### Required Amperage for Conductors per Phase

$$(\text{Max Output current}) \times (\text{Continuous Load}) [\text{Per } 210.19(A)(1)] = \text{Max AC Output Current}$$

$$579 \text{ A} \quad \times \quad 1.25 \quad = \quad 724 \text{ A}$$

#### Adjusted Conductor Ampacity

##### Calculation Parameters

**Ambient Temperature:** Since this is a below ground conduit run, we will opt for using an ambient temperature of 26-30°C which requires a correction factor of 1.0 because of the selection of 75°C rated conductors according to Table 310.15(B)(16).

**Conduit Fill Correction:** Both the Siemens HF366 and the breaker only have landings for 2 conductors. Considering this, we opted to run 2 parallel conduits based on NEC table 310.15(B)(2)(a).

**Conduit Ampacity:** Using NEC table 310.16, we opt to use 700kcmil 75°C Aluminum conductors either type RHW, THHW, THW, THWN, or XHHW. Aluminum was used in this run due to the length of the run.

$$\text{Ambient Temp. Cor.} \times \text{Conduit Fill Cor.} \times \text{Num. of cond.} \times \text{Conduit Amp.} =$$

$$\text{Adjusted Conductor Ampacity} \\ 1.0 \quad \times \quad 1.0 \quad \times \quad 2 \quad \times \quad 375 \quad = \quad 750 \text{ A}$$

**Check:** 750 Amps > 724 Amps by a safety margin of 1.036 beyond the included required safety margin per NEC sizing. Therefore, this wire passes the requirements. The connection between the two units will be made using a total of 8 x 700kcmil 75°C Aluminum conductors either type RHW, THHW, THW, THWN, or XHHW.

Note: contractor reserves the right to adjust these conductors so long that the adjustments result in satisfaction of the required ampacity.

## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

**Name:** Century-Tywood J3 Corp

**Address:** 79 Lowland St

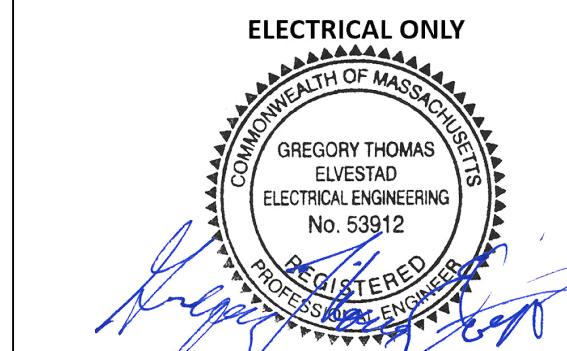
Holliston, MA, 01747

**Website:** www.century-tywood.com/

**Phone:** (508)-422-8552

**Contact:** Jack Mahoney

## ENGINEER OF RECORD



Signed 11/06/2025

REV. DATE DESCRIPTION

AHJ

Town of Holliston, MA

## EQORE PROJECT

Century-Tywood  
Holliston, MA

## DESIGNER

**Company:** EQORE Inc.  
**Address:** 444 Somerville Ave, Somerville, MA, 02143  
**Website:** www.eqore.net  
**Phone:** 786-234-2655  
**Contact:** Donald Groh

## PAGE NOTES</h2





# Century Tywood J3 Corp - Required Signage

## Signage.

Approved signage shall be provided in the following locations:

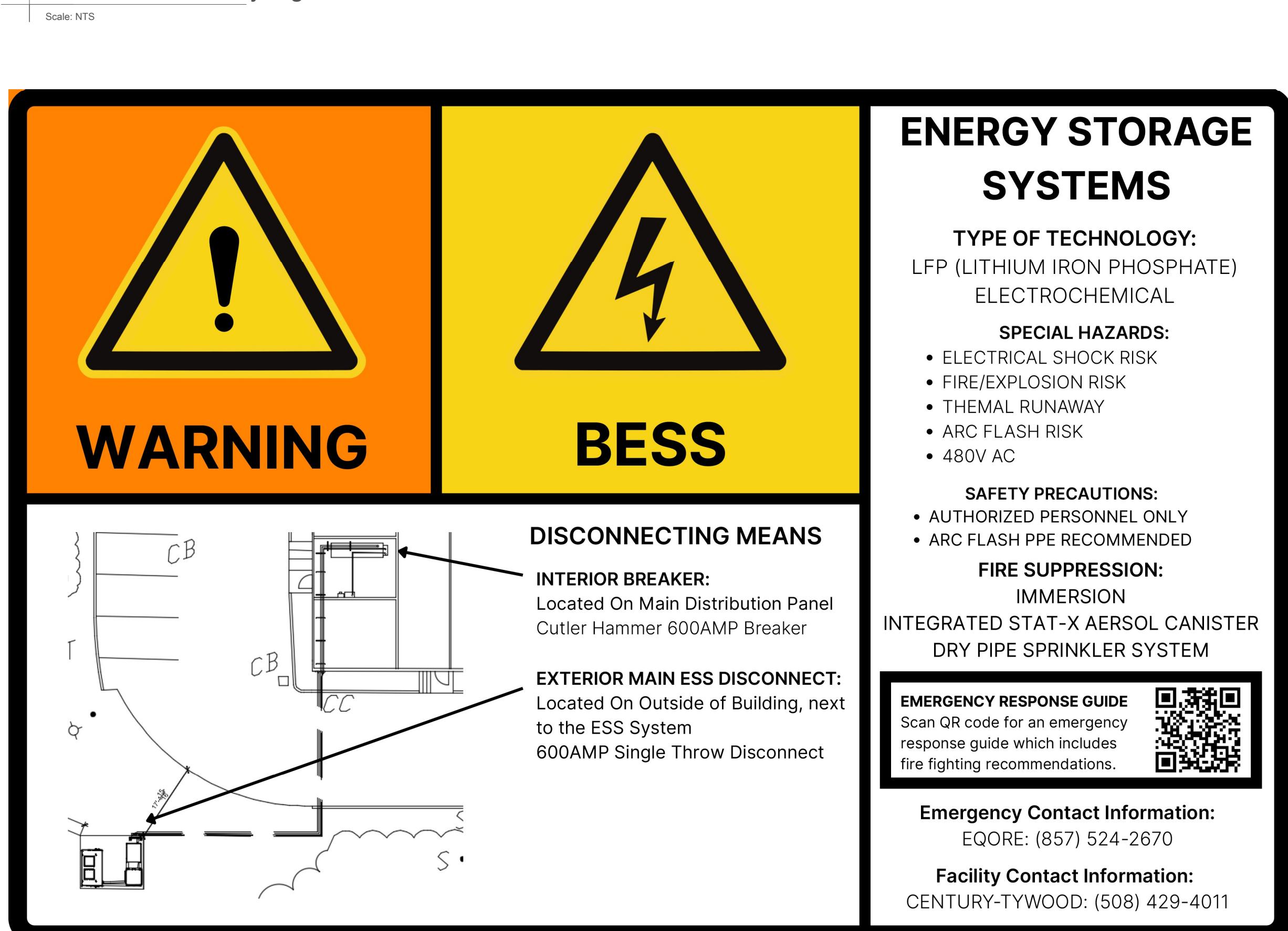
1. On The Main outdoor ESS disconnect for the system.
2. Inside the main electrical room where the point of interconnection is and the main ESS Breaker is located.
3. On the outside of the North facing door of the Gotion Edge760
4. On the outside of the South facing door of the Gotion Edge760

The signage shown below was designed in compliance with ANSI Z535 and clearly states the following required information.

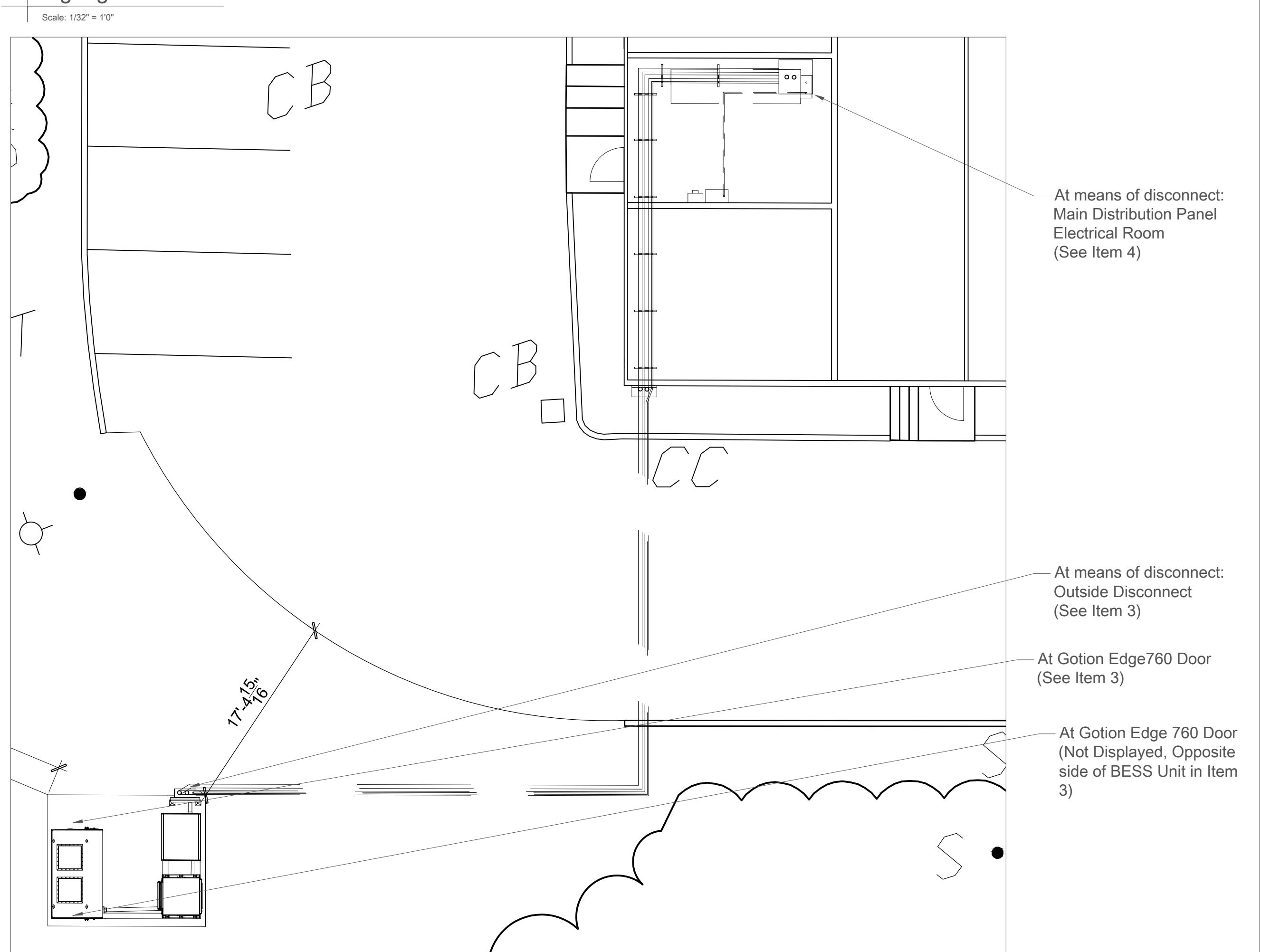
1. "Energy Storage Systems" with symbol of lightning bolt in a triangle
2. Type of technology associated with the ESS
3. Special hazards associated as identified in Chapters 9 through 15.
4. Type of suppression system installed in the area of the ESS
5. Emergency contact information

The EQORE sign denoting the location of all electric power source disconnecting means on or in the premises will be installed at each service equipment location and at the location(s) of the system disconnect(s) for all energy sources capable of being interconnected as seen in the diagrams showing the signage locations to the right. The same sign will be present at each location. The sign will be 20 inches wide by 13.25 inches tall.

1 | EQORE ESS Safety Sign



2 | Signage Locations



3 | Outdoor Signage Location



4 | Indoor Signage Location

## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

**Name:** Century-Tywood J3 Corp

**Address:** 79 Lowland St  
Holliston, MA, 01747

**Website:** www.century-tywood.com/

**Phone:** (508)-422-8552

**Contact:** Jack Mahoney

## ENGINEER OF RECORD



**AHJ**  
Town of Holliston, MA

**EQORE PROJECT**  
Century-Tywood  
Holliston, MA

## DESIGNER

**Company:** EQORE Inc.  
**Address:** 444 Somerville Ave,  
Somerville, MA, 02143  
**Website:** www.eqore.net  
**Phone:** 786-234-2655  
**Contact:** Donald Groh

## PAGE NOTES

Scale	As Noted	Sheet	ESS-18.0
Drawn by:	DG	Checked by:	
Approved by:	DG	Date:	11/03/2025
Sheet No.		Revision	A

# Century Tywood J3 Corp - Fire Suppression System: 1

## Fire Suppression System Review and Overall Fire Hazard Mitigation Summary

### Executive Summary

This document provides a comprehensive review of the fire suppression systems and fire hazard mitigation measures implemented in the Century Tywood energy storage installation, demonstrating full compliance with NFPA 855-2020 standards for outdoor stationary energy storage systems.

### System Configuration

The installation consists of the following equipment configuration:

- **Battery System:** Goton Edge760 (Model ESD1267-05P760-G) - 760kWh lithium iron phosphate (LFP) battery system
- **Power Conversion System:** Dynapower CPS1250 bidirectional inverter
- **Disconnect Transformer:** 3-phase 480VAC Delta input to 3-phase 480VAC Wye output
- **Disconnect:** Siemens HF366RA with 600A fuse
- **Main Breaker:** Eaton HLD3600 connected to facility distribution
- **Installation Type:** Outdoor installation on concrete pad

### NFPA 855-2020 Compliance Analysis

#### 1. Installation Classification (NFPA 855 Section 4.4.3)

- 1.1. **Requirement:** Outdoor ESS installations must be classified as either remote locations (>100 ft from exposures) or locations near exposures. Reference ESS 19.2.

**Compliance:** This installation is classified as a "location near exposures" based on the proximity to the Century-Tywood building and access road. The outdoor installation on a concrete pad meets the general outdoor installation requirements specified in NFPA 855 Section 4.4.3. Details on distances to exposures is provided on ESS 19.2.

#### 2. Clearance and Separation Requirements (NFPA 855 Section 4.4.3.3)

- 2.1. **Requirement:** ESS located outdoors must be separated by a minimum of 10 ft (3,048 mm) from:
  - 2.1.1. Lot lines
  - 2.1.2. Public ways
  - 2.1.3. Buildings
  - 2.1.4. Stored combustible materials
  - 2.1.5. Hazardous materials
  - 2.1.6. Other exposure hazards

**Compliance:** The outdoor concrete pad installation allows for proper clearance distances to be maintained from buildings, property lines, and combustible materials as required by NFPA 855.

#### Alternative Compliance Options (if reduced clearances needed):

Clearances may be reduced to 3 ft when a 1-hour freestanding fire barrier extending 5 ft above and beyond the ESS is provided

Clearances to buildings may be reduced to 3 ft where noncombustible exterior walls with no openings are provided with 2-hour fire resistance rating

**Compliance:** Alternatives not required for this installation

#### 3. Battery Technology and Inherent Safety (NFPA 855 Chapter 9)

- 3.1. **Requirement:** Technology-specific protections for lithium-ion battery systems must be implemented.

**Compliance:** The Goton Edge760 utilizes lithium iron phosphate (LFP) battery technology. Key safety features include:

- **Cell-Level Safety:** LFP cells do not contain metallic lithium and have superior thermal stability compared to other lithium-ion chemistries
- **Non-Propagation Design:** Testing per UL and IEC standards confirms that thermal runaway in a single pack/module will not spread to adjacent packs/modules. Please reference included HMA for additional detail.
- **Module Separation:** Modules are separated by steel barriers serving as both structural supports and effective thermal barriers
- **Certifications:** UN38.3, UL1973, UL9540, IEC62619 certified

#### 4. Multi-Tier Fire Protection System (NFPA 855 Sections 4.10, 4.11)

The installation implements a comprehensive two-level fire protection approach that exceeds basic NFPA 855 requirements:

##### Level 1: Pack-Level Immersion Protection

**System Description:** Integrated immersion-type fire suppression at the battery pack level managed by the Battery Management System (BMS). Details of immersion system operation are provided in provided Goton EDGE760 Manuals.

##### Activation Criteria (all three conditions must be met simultaneously):

1. Battery pack temperature is too high
2. Temperature of two or more cells exceeds 80°C (176°F)
3. Overall pack temperature rise rate exceeds threshold (4°C/7.2°F within 9 seconds, sustained for 3+ consecutive readings)

**Operation:** When activated, the immersion-type battery valve opens to suppress the thermal runaway at the pack level. The system floods the pack that experienced the above conditions with glycol to cool the unit and prevent damage to other battery packs.

**NFPA 855 Compliance:** Provides early detection and suppression at the smallest unit level, preventing propagation to adjacent packs.

##### Level 2: Cabinet-Level Aerosol Fire Suppression System

**System Description:** Cabinet-level Stat-X aerosol fire suppression system with dual independent detection circuits. Per manufacturer statements, built to satisfy requirements of NFPA 2010.

##### Detection Components:

- **Smoke Detectors:** NB758-S photoelectric smoke detectors (Wizmart Technology Inc.)
  - Operating voltage: DC 9-33V
  - Alarm threshold: 1.90 ±0.76 foot obscuration
  - Operating temperature: -10°C to 37.8°C
  - Protection class: IP43
- **Heat Detectors:** NB758H rate-of-rise and fixed-temperature detectors
  - Operating voltage: DC 9-33V
  - Alarm response threshold: 59°C static temperature and 11.1°C/min rate-of-rise
  - Operating temperature: -10°C to 37.8°C
  - Protection class: IP43

### Suppression Agent: Stat-X 250MT Powdered Aerosol (Type A SFE)

- Mass per device: 0.25 kg (0.55 lb)
- Discharge time: 18 seconds
- Quantity: 2 devices per cabinet
- UN Classification: UN 3178
- Activation temperature options: 70°C (158°F) standard, with optional settings of 95°C (203°F) and 123°C (253°F)

### Fire Classes Protected:

- Class A fires: 97.15 grams/m³ minimum application density
- Class B fires: 66.95 grams/m³ minimum application density
- Class C fires: Classified based on Class A or Class B material involved

### Operational Sequence:

1. When both smoke and temperature alarms trigger simultaneously, fire alarm activates
2. All charging/discharging operations halt immediately
3. Dry contacts engage, PCS shuts down
4. Contactors of each rack disconnect with 1-second delay
5. When protected area reaches activation threshold (70°C standard), aerosol releases automatically
6. System sends signal to BMS confirming activation

**NFPA 855 Compliance:** Dual detection circuits with automatic suppression meet Section 4.10 requirements for automatic fire suppression systems.

### Post Fire Cooling System: Dry Pipe Sprinkler System

**System Description:** Water-based cooling system aimed to flood unit after fire has ended. Reference EDGE760 Emergency Response Guide for full recommended operating procedures. Not required for NFPA 855 compliance. Charging the dry standpipe system with pressurized water is optional and should only be used at the discretion of emergency responders. Careful consideration must be taken before approaching an ESS container experiencing thermal runaway.

### Components:

- **Sprinkler Heads:** VK345 closed-type sprinklers (3 units per cabinet)
- **Piping:** DN25 (25mm) externally threaded pipes
- **Connection:** External fire department connection with removable pipe caps.
- **Coverage:** Sprinklers strategically positioned to cover most of cabinet area

**Activation:** Heat-sensitive elements in sprinkler heads activate when detecting flames or high-temperature airflow. Activation requires external water source integration via DN25 externally threaded pipes.

### External Water Source Integration:

- DN25 pipes (OD: 33.7mm, ID: 27.3-28.1mm) with external threads are pre-installed at lower section of cabinet.
- Sealed with pipe caps until connected to external fire hydrant
- System remains dry until external water source is connected
- Allows for efficient water distribution when activated
- Emergency responders should abide to Emergency Response Guide (ERG) when approaching system after emergency. ERG provides specific instructions on distances and PPE.

### 5. Fire Detection and Alarm System (NFPA 855 Section 4.10)

**Requirement:** Smoke and fire detection with alarm systems that transmit signals to approved locations.

**Compliance:** The installation includes comprehensive detection:

#### Fire Alarm Control Panel: Potter ARC-100

- Capacity: 100 addresses (analog addressable system)
- Protocol: Exclusive Potter protocol supporting complete line of detectors
- Power: 3.0 Amps @ 120VAC or 2.0 Amps @ 240VAC (50/60 Hz)
- Battery backup: 8-55Ah range, charger voltage 27.3VDC
- Standards compliance: NFPA 12, 12A, 13, 15, 16, 17, 17A, 70, 72, 92, 720, 750, 2001; ANSI/UL 864

#### Audible/Visual Alarm: Potter S-24HS-24 Series sound and light alarm

##### Detection Network:

- Multiple smoke detectors throughout cabinet (2 sets minimum)
- Multiple heat detectors with rate-of-rise capability (2 sets minimum)

##### System Integration: Fire control system provides:

- Data collection for fire control center and BMS
- Fire fault monitoring
- Fire alarm transmission
- Coordinated response with suppression systems
- Connection to building main fire control center. Connection matrix and signals provided in Goton EDGE760 Manuals.

**NFPA 855 Compliance:** Detection system meets Section 4.10 requirements with properly located smoke and heat detectors, automatic alarm transmission, and integration with suppression systems.

### 6. Deflagration/Pressure Relief (NFPA 855 Section 4.12)

**Requirement:** Protection from overpressure events.

**Compliance:** The Goton Edge760 cabinet incorporates deflagration vents which have approved functionality based on the provided UL9540A test report and provided HMA. And are designed per NFPA 68 according to the Goton Edge760 documentation (Technical & Commercial Proposal -EDGE760).

#### Deflagration Panel Specifications (IEP Technology Type KE 720x1020):

- Location: Two panels on top of cabinet (Panel 1 and Panel 2)
- Material: 1.4301 (SS304) stainless steel
- Size: 0.60m x 0.60m (2ft x 2ft) per panel
- Density: 6.25 kg/m²
- Relief area: 0.36 m² per panel
- Opening pressure: 0.1 bar
- Vacuum resistance: 500 mmWS
- Burst overpressure: 0.100 bar @ 20.0°C

##### Operational Design:

- Panels are designed as effective alternatives to domed vents where negative pressure does not exceed 60% of rated rupture pressure
- Provides long durability and aerodynamic advantages
- Automatically releases during overpressure events to prevent cabinet structural failure

**Smoke/Flame Exhaust:** Built-in deflagration vents on unit roof expel smoke and flames through top and front thermal system intake louvers during fire events

**NFPA 855 Compliance:** Pressure relief provisions meet requirements for preventing dangerous overpressure accumulation.

### 7. Thermal Management and Overheating Prevention (NFPA 855 Section 9.3)

**Requirement:** Systems to reduce risk of overheating and thermal runaway.

**Compliance:** Multiple overlapping thermal management systems:

#### Liquid Cooling System:

- Model: BTMS-12B (12kW liquid cooling unit)
- Operating voltage: AC480V
- Medium: 50% glycol solution
- Water discharge rate: 75 L/min (19.8 gal/min)
- Communication: RS485 protocol
- Dimensions: 1344mm x 1490mm x 280mm (W x D x H)

#### Temperature Control Performance:

- Intelligent liquid cooling maintains battery temperature difference within 5°C (9°F) across system
- Optimizes battery performance and extends system lifespan
- Prevents hot spots that could lead to thermal runaway

#### Operating Temperature Ranges:

- Optimal: 10-35°C (50-95°F)
- Operating: -20 to 45°C (-4 to 113°F)
- Storage: -30 to 60°C (-22 to 140°F)

#### Temperature Monitoring:

- Continuous real-time monitoring by BMS at cell, pack, and rack levels
- Automatic power curtailment when approaching temperature limits
- Multi-level thermal protection strategy integrated with fire suppression

**NFPA 855 Compliance:** Active thermal management reduces risk of conditions that could lead to thermal runaway, meeting preventive requirements of Section 9.3.

#### Battery Management System (BMS) Safety Functions (NFPA 855 Section 9.3)

**System Architecture:** Two-level or three-level hierarchical BMS providing comprehensive monitoring and control.

#### Safety Monitoring Capabilities:

- Real-time monitoring of cell voltage, temperature, current
- State of Charge (SoC) and State of Health (SoH) estimation
- Insulation resistance detection (>10MΩ @ 1000VDC)
- Fault diagnosis and alarm triggering
- Protection against overcharge, over-discharge, over-current
- Passive equalization for cell balancing
- Event logging and data storage

#### Protective Actions:

- Automatic shutdown sequences during abnormal conditions
- Anti-circulation control between battery racks
- Emergency stop integration with fire suppression
- Communication with PCS, EMS, and fire monitoring systems

**NFPA 855 Compliance:** BMS provides technology-specific protection required by Chapter 9 for lithium-ion systems, with multiple layers of monitoring and automatic protective responses.

### 9. Power Conversion System (PCS) Safety Features (NFPA 855 Section 4.2)

The Dynapower CPS1250 includes multiple safety protections:

#### Electrical Protection:

- AC circuit breaker: 1200A capacity with motorized operator and shunt trip
- DC fuse protection: Class 1500Vdc aR fuses
- DC contactor with status monitoring
- Maximum fault contribution limits (see specifications)

#### Operating Protections:

- Over/under voltage protection (AC and DC)
- Over/under frequency protection
- Over-current protection
- Phase loss detection
- Ground fault monitoring capability (with external monitoring system)

#### Environmental Protections:

- Operating temperature: -35°C to 60°C with derating curves
- Temperature monitoring with protective power curtailment
- IP54 rating for outdoor installation (NEMA 3R)

#### Emergency Systems:

- E-stop buttons with emergency shutdown capability
- Automatic disconnect/reconnect functions
- Watchdog timer to detect communication loss
- Anti-islanding protection

**NFPA 855 Compliance:** PCS safety systems provide additional layers of protection meeting general safety requirements of NFPA 855 Chapter 4.

### 10. Signage and Marking (NFPA 855 Section 4.3.5)

**Requirement:** Approved signage on doors and enclosures containing ESS.

**Compliance:** Comprehensive warning label system:

#### Primary Warning Labels:

- <ul style="list-style-type

# Century Tywood J3 Corp - Fire Suppression System: 2

## 10. Signage and Marking (NFPA 855 Section 4.3.5) Continued

**ESS Information Signage** (per ANSI Z535 and NFPA 855 Section 4.3.5.2):

Reference "Required Signage, ESS-18.0" which contains the following:

- Energy Storage System identifier with lightning bolt symbol
- Type of technology: Lithium Iron Phosphate (LFP)
- Special hazards identified
- Type of suppression system: Aerosol + Water
- Emergency contact information: Provided on Signage

**Electrical Disconnect Location:** Permanent plaque denoting location of all electrical disconnects is provided at service equipment and system disconnect locations.

**NFPA 855 Compliance:** Signage meets all requirements of Section 4.3.5 for identification, hazard communication, and emergency response information.

## 11. Installation Site Safety Features

### Foundation and Mounting:

- Seismic bracing per IEEE 693-2018 (High 0.5G ZPA)
- Wind loading rated for IBC 2018/ASCE 7-22 V 180mph
- Proper drainage and weatherproofing

### Environmental Protection:

- IP55 outdoor rating (dust and water spray protection)
- Corrosion-resistant enclosure (C3 classification per ISO 12944/ISO 9223)
- Filter class ISO 16890 coarse 30 (EN779:2012, G2)

### Access Control and Security:

- Lockable cabinet doors with key management
- Restricted access to qualified personnel only
- Protective fencing/barriers capability (site-dependent)

### Maintenance Clearances:

- Adequate clearances maintained per NFPA 70 working space requirements
- Service access designed for safe maintenance operations
- Emergency access provisions for first responders

**NFPA 855 Compliance:** Installation meets general installation requirements of Section 4.3 including elevation, access, and physical protection.

## 12. Emergency Response Provisions

**Emergency Response Guide:** Comprehensive Emergency Response Guide (ERG) provided covering:

- Product specifications and hazard information
- Emergency contact information (24/7 Goton ROC)
- First aid procedures
- Firefighting tactics and PPE requirements
- System shutdown procedures
- Hazardous materials information

### Firefighting Recommendations:

- **Primary Strategy:** Defensive firefighting approach
- **Water Application (Outlined in Goton ERG):**
  - If visible flames emerge, it's advisable to spray water on nearby surfaces rather than directly on the burning unit.
  - Direct water application to the affected enclosure will not stop the thermal event, and may only delay combustion, as the fire is shielded by layers of steel.
  - Utilize the fire nozzle's fog pattern to manage the fire plume and/or smoke and reduce heat on nearby exposures.
- **Approach Safety:** Avoid direct approach to door side; approach from sides or rear
- **Fire Duration:** Fires may persist for hours to days; allow system to burn out fully before additional intervention
- **Post-Fire Procedures:** Flood container with water using Fire Department connection after fire subsides

### Cooling and Monitoring:

- Use thermal imaging cameras from outside unit to check temperatures
- Measure flammable gas concentrations using gas sample port before entry
- Maintain 100-foot (30.5m) safety perimeter during fire events

### First Responder Equipment:

- Self-Contained Breathing Apparatus (SCBA) required
- Full protective turnout gear
- Thermal imaging capabilities
- Gas detection equipment

**NFPA 855 Compliance:** Emergency response provisions provided in the included Emergency Response Guides (attached) exceed basic requirements, providing detailed tactical information for authorities having jurisdiction (AHJ) and emergency responders.

### Built-In Equipment Protections Summary

The installation incorporates extensive built-in protections that work together to mitigate fire hazards:

#### Battery System Protections (Gotion Edge760)

##### 1. Cell-Level Safety:

- 1.1. LFP chemistry with superior thermal stability

##### 2. Pack-Level Protection:

- 2.1. Immersion-type fire suppression with BMS control
- 2.2. Real-time temperature monitoring (multiple NTC sensors)
- 2.3. Automatic valve actuation when thresholds exceeded

##### 3. Liquid Cooling:

- 3.1. Active temperature management maintains ±5°C uniformity
- 3.2. Reduces hot spots and thermal gradients
- 3.3. Automatic adjustment based on operating conditions

## 4. BMS Protective Functions:

- 4.1. Six-level battery protection strategy
- 4.2. Overcharge/over-discharge/over-current protection
- 4.3. Cell voltage and temperature balancing
- 4.4. Insulation resistance monitoring
- 4.5. Fault diagnosis with automatic shutdown

### Cabinet-Level Protections

#### 1. Aerosol Suppression:

- 1.1. Dual independent detection circuits (smoke + heat)
- 1.2. Automatic activation with BMS integration
- 1.3. Rapid discharge (18 seconds) with cooling effect
- 1.4. Electrically non-conductive agent (high insulation)

#### 2. Deflagration Vents:

- 2.1. Automatic pressure relief at 0.1 bar
- 2.2. Prevents cabinet structural failure
- 2.3. Directs smoke/flames away from personnel areas

#### 3. Ventilation:

- 3.1. Natural air ventilation
- 3.2. Prevents flammable gas accumulation
- 3.3. Maintains safe operating temperatures

### PCS and Electrical Protections (Dynapower CPS1250)

#### 1. Electrical Isolation:

- 1.1. Galvanic isolation through transformer
- 1.2. DC contactors with load break capability
- 1.3. AC motorized breaker with shunt trip
- 1.4. Fused DC inputs (1400A per fuse)

#### 2. Monitoring and Control:

- 2.1. Continuous voltage, current, frequency monitoring
- 2.2. Power quality monitoring (harmonics, power factor)
- 2.3. Real-time fault detection and response
- 2.4. Anti-islanding protection

#### 3. Automatic Shutdown:

- 3.1. E-stop emergency shutdown
- 3.2. Automatic disconnect on abnormal conditions
- 3.3. Coordinated shutdown with BMS
- 3.4. Failsafe default-to-safe operation

#### 4. Environmental Protection:

- 4.1. IP54 outdoor rating
- 4.2. Temperature monitoring with curtailment
- 4.3. Humidity protection (95% RH non-condensing)
- 4.4. Surge protection devices (AC and DC)

### System Integration Protections

#### 1. Communication Networks:

- 1.1. BMS to PCS communication (CAN, RS485)
- 1.2. Fire alarm to BMS integration
- 1.3. Internal Fire panel to main building fire panel integration
- 1.4. Emergency shutdown coordination
- 1.5. Remote monitoring capability

## 2. Layered Defense Strategy:

- 2.1. Detection → Prevention → Suppression → Containment
- 2.2. Multiple independent protective systems
- 2.3. Redundant detection and activation pathways
- 2.4. Fail-safe design philosophy

## 3. Fault Tolerance:

- 3.1. System continues operation with single module fault
- 3.2. Automatic isolation of failed components
- 3.3. Graceful degradation rather than catastrophic failure
- 3.4. Comprehensive fault logging and diagnostics

### Conclusion

The Century-Tywood energy storage installation demonstrates full compliance with NFPA 855-2020 requirements for outdoor stationary energy storage systems. The installation achieves compliance by incorporating:

#### 1. Best-in-Class Battery Technology:

LFP chemistry with inherent thermal stability.

#### 2. Advanced Two-Tier Fire Protection:

- 2.1. Pack-level immersion suppression (earliest intervention)
- 2.2. Cabinet-level aerosol suppression (rapid automatic response)

#### 3. Comprehensive Detection Systems:

Dual independent circuits with smoke and heat detection, automatic alarm transmission, and system integration

#### 4. Robust Thermal Management:

Active liquid cooling maintaining tight temperature control, preventing conditions that could lead to thermal runaway

#### 5. Intelligent Monitoring and Control:

Multi-level BMS with six-layer protection strategy, real-time monitoring, and automatic protective responses

#### 6. Proper Installation Practices:

Outdoor concrete pad, adequate clearances, pressure relief vents, weatherproof enclosure, and emergency access provisions

#### 7. Emergency Response Readiness:

Comprehensive ERG, proper signage, and defensive firefighting provisions.

The combination of inherently safer LFP technology, multiple layers of fire detection and suppression, active thermal management, comprehensive monitoring systems, and proper installation practices creates a defense-in-depth approach that exceeds basic NFPA 855 requirements and provides robust fire hazard mitigation for this outdoor energy storage installation.

This installation represents current best practices for ESS fire safety and is suitable for review and approval by the Authority Having Jurisdiction (AHJ).

### References

- NFPA 855-2020: Standard for the Installation of Stationary Energy Storage Systems
- Goton EDGE760 Emergency Response Guide v2.0 (March 2025)
- Goton EDGE760 System Manual v3.3
- Goton EDGE760 Installation Manual v3.1 (June 2025)
- Dynapower CPS1250 Installation Manual R013 (April 2025)
- Dynapower CPS1250 Specification Manual R011 (May 2025)
- Dynapower CPS1250 Operation Manual R007 (June 2024)
- 2020 NFPA National Electric Code 1
- 2020 NFPA National Electric Code 70
- 2021 International Fire Code
- 2021 International Building Code
- 2021 International Existing Building Code
- 527 CMR 12.00 Massachusetts State Building Code (NFPA W/ Massachusetts Amendments)
- 780 CMR Tenth Edition Massachusetts State Building Code

## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Goton Edge 760

## CUSTOMER INFORMATION

**Name:** Century-Tywood J3 Corp

**Address:** 79 Lowland St

Holliston, MA, 01747

**Website:** www.century-tywood.com/

**Phone:** (508)-422-8552

**Contact:** Jack Mahoney

## ENGINEER OF RECORD



REV.	DATE	DESCRIPTION

## AHJ

Town of Holliston, MA

## EQORE PROJECT

Century-Tywood

Holliston, MA

## DESIGNER

**Company:** EQORE Inc.

**Address:** 444 Somerville Ave, Somerville, MA, 02143

**Website:** www.eqore.net

**Phone:** 786-234-2655

**Contact:** Donald Groh

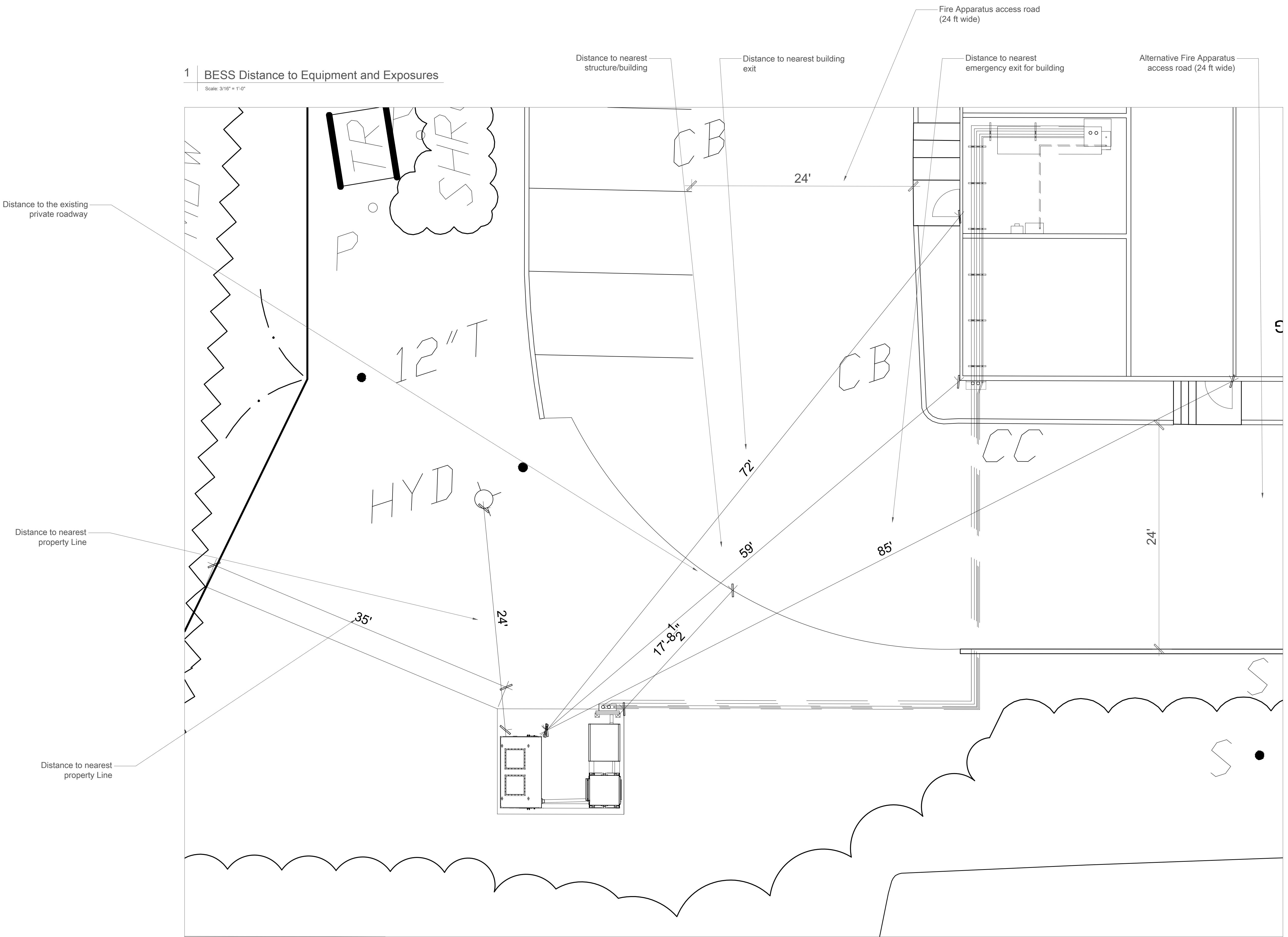
## PAGE NOTES

Scale	As Noted	Sheet
ESS-19.1		
Drawn by: DG	Checked by:	Approved by: DG Date: 11/03/2025
Sheet No.		Revision A

NFPA 855 Requirement	System Provision	Compliance Status
Section 4.3.5: Signage	Comprehensive warning labels, ESS identification, emergency contact info	Compliant
Section 4.3.7 Impact Protection	Outdoor pad installation, Elevated foundation, structural integrity, proper spacing	Compliant
Section 4.4		

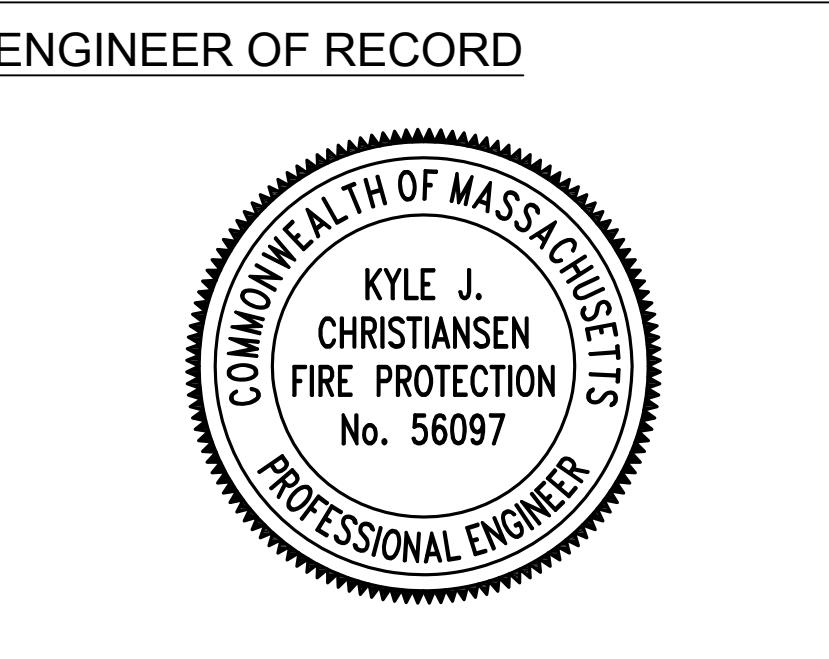
# Century Tywood J3 Corp - Fire Suppression System: 3

**Distance and map references**  
Below, the site map is outlined including relevant locations and distances referenced in the Fire Suppression System Notes and in the NFPA855 overview.



SYSTEM INFORMATION	
AC System Size:	380kW (Internally De-Rated from 1250kW)
Inverter Model:	Dynapower CPS1250
DC System Size:	760kWh
BESS:	Gotion Edge 760

CUSTOMER INFORMATION	
Name:	Century-Tywood J3 Corp
Address:	79 Lowland St Holliston, MA, 01747
Website:	<a href="http://www.century-tywood.com/">www.century-tywood.com/</a>
Phone:	(508)-422-8552
Contact:	Jack Mahoney



REV.	DATE	DESCRIPTION

AHJ
Town of Holliston, MA

EQORE PROJECT
Century-Tywood Holliston, MA

DESIGNER
Company: EQORE Inc.
Address: 444 Somerville Ave,
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Phone: 786-234-2655
Contact: Donald Groh

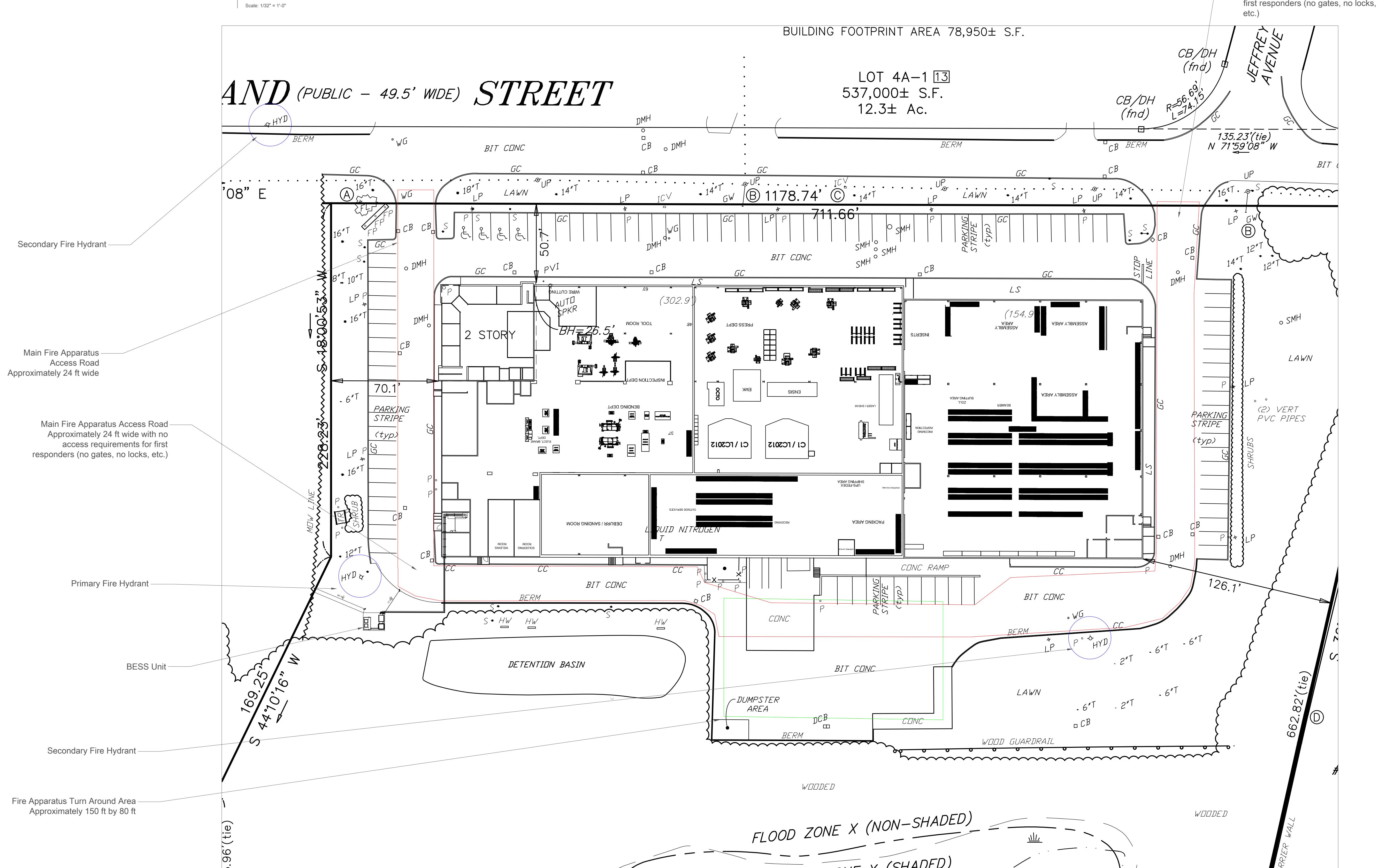
PAGE NOTES
Scale As Noted Sheet ESS-19.2 Drawn by: DG Checked by: Approved by: DG Date: 11/03/2025 Sheet No. Revision A

Scale	As Noted	Sheet	ESS-19.2
Drawn by:	DG	Checked by:	Approved by: DG Date: 11/03/2025
Sheet No.		Revision	A

# Century Tywood J3 Corp - Fire Suppression System: 4

**Distance and map references**  
Below, the site map shows a zoomed out image of the whole property outlining the fire apparatus access road, site access, and fire hydrants.

## 1 Full Site Fire Apparatus Access and Locations



## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

**Name:** Century-Tywood J3 Corp

**Address:** 79 Lowland St

Holliston, MA, 01747

**Website:** www.century-tywood.com/

**Phone:** (508)-422-8552

**Contact:** Jack Mahoney

## ENGINEER OF RECORD



## AHJ

Town of Holliston, MA

## EQORE PROJECT

Century-Tywood  
Holliston, MA

## DESIGNER

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## PAGE NOTES

Fire hydrant flow test is pending

Scale	As Noted	Sheet
		ESS-19.3
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DG		DG
Date: 11/03/2025		
Sheet No.		Revision A

# Century Tywood J3 Corp - NFPA 855 Compliance: 1

<p><b>General Overview</b></p> <p>NFPA 855 is the "Standard for the Installation of Stationary Energy Storage Systems." Documents including the 527 CMR 1.00 reference and NFPA 1 derive their guidance for fire protection for energy storage systems from NFPA 855.</p> <p>The goal of this review is to provide a detailed run-through of the relevant sections of NFPA 855 and provide evidence as to why the installation outlined in this plan complies with the requirements of the code.</p> <p><b>Chapter 1 Administration</b></p> <p><b>1.3 Application.</b> This standard applies to ESS exceeding the values shown in Table 1.3.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The system being installed is "Lithium-Ion, all types" and is 760kWh thereby it must comply with the requirements.</li> </ul> <p><b>1.3.1 ESS Shall comply with the requirements of this standard as applicable.</b></p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The applicable compliance methods are reviewed in this code review.</li> </ul> <p><b>1.5 Equivalency.</b> Nothing in this standard is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire, resistance, effectiveness, durability, reliability, and safety over those prescribed in this standard.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> No equivalencies are pursued.</li> </ul> <p><b>Chapter 3 Definitions</b></p> <p>Throughout this section, I will be providing the important definitions for this project. As well as a brief explanation of how they relate to the project.</p> <p><b>3.3.3 Battery Management System (BMS).</b> A system that monitors, controls, and optimizes performance of an individual or multiple battery modules in an energy storage system and has the ability to control the disconnection of the module(s) from the system in the event of abnormal conditions. This system can be completely independent of the ESMS.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The BMS is integrated into the battery system being used.</li> </ul> <p><b>3.3.8 Energy Storage Management System (ESMS).</b> A system that monitors, controls, and optimizes the performance of an energy storage system and has the ability to control the disconnection of the energy storage system in the event of abnormal conditions.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> EQORE provides the EMS for the Battery Energy Storage system. This is called the EQORE EMS (EMS is another term used for ESMS).</li> </ul> <p><b>3.3.9 Energy Storage Systems (ESS).</b> One or more devices, assembled together, capable of storing energy in order to supply electrical energy at a future time to the local power loads, to the utility grid, or for grid support.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> EQORE's system is a complete Energy Storage System made of components from various manufacturers. There are inverters, Battery modules, disconnects, concrete pad, EQORE computing unit, etc that come together to make the EQORE ESS. From now on, the Battery system will be referred to as the EQORE ESS or the ESS, the other components will be referred to as they are called. The Gotion EDGE760 battery system is the specific battery system being used in this installation.</li> </ul> <p><b>3.3.9.1.1 Electrochemical Energy Storage System.</b> An energy storage system that converts and stores chemical energy to electrical energy and vice versa.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> An important distinction is that the EQORE ESS utilizes Electrochemical Energy storage in the form of Lithium-Ion Phosphate battery cells.</li> </ul> <p><b>3.3.13 Large-Scale Fire Testing.</b> Testing of a representative energy storage system that induces a significant fire into the device under test and evaluates whether the fire will spread to adjacent energy storage system units, surrounding equipment, or through an adjacent fire-resistance-rated barrier.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> UL9540A is the standard for Large-Scale Fire Testing. The Gotion EDGE760 ESS Units used in the EQORE ESS have undergone the rigorous testing of UL9450A which will be referenced throughout the code review.</li> </ul>	<p><b>3.3.16 Off-Gassing.</b> The event in which the cell case vents due to a rise in internal pressure of the cell.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The Off-Gassing risk is highlighted in the UL9540A test and provided HMA. Pressure is addressed via deflagration vents on Gotion EDGE760 Unit.</li> </ul> <p><b>3.3.20 Thermal Runaway.</b> The condition when an electrochemical cell increases its temperature through self-heating in an uncontrollable fashion and progresses when the cell's heat generation is at a higher rate than it can dissipate, potentially leading to off-gassing, fire, or explosion.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> Thermal runaway is another popularly discussed topic in battery energy storage systems. It is a condition most importantly mentioned due to the fire fighting implications. In a typical fire, the fire requires oxygen, but in electrochemical cells that could induce thermal runaway, the chemical process is enabled by the internal production of oxygen so even if the oxygen is removed, the fire will burn. The more effective strategy is containment and allowing the fire to burn out.</li> </ul> <p><b>3.3.9.1.1 Utility Interactive.</b> An energy storage system intended for use in parallel with an electric utility to supply common loads that can deliver power to the utility.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The EQORE ESS is capable of being utility interactive, but is not inherently utility interactive. The main goal is to supply power to the facility where it is being installed.</li> </ul> <p><b>Chapter 4 General</b></p> <p><b>4.1 General.</b> The design, construction, and installation of ESS and related equipment shall comply with Chapter 4 and as supplemented or modified by the technology-specific provisions in Chapters 9 through 13.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The EQORE ESS is in compliance with the stated sections.</li> </ul> <p><b>4.1.2 Construction Documents.</b></p> <p><b>4.1.2.1 General.</b></p> <p><b>4.1.2.1.1</b> The plans and specifications associated with an ESS and its intended installation, replacement or renewal, commissioning, and use shall be submitted to the AHJ for approval and include the following:</p> <ol style="list-style-type: none"> <li>(1) Location and layout diagram of the room or area in which the ESS is to be installed</li> <li>(1)(1) <b>Compliance:</b> See Sheet ESS-19.3.</li> <li>(2) Details on hourly fire-resistant-rated assemblies provided or relied upon in relation to the ESS</li> <li>(2)(1) <b>Compliance:</b> This information is provided on the "Fire Resistance &amp; Suppression Overview"</li> <li>(3) The quantities and types of ESS units</li> <li>(3)(1) <b>Compliance:</b> This is provided throughout the plan. There is 1 ESS Unit provided by Gotion. The unit has 760kWh of battery Capacity.</li> <li>(4) Manufacturer's specifications, ratings, and listings of ESS</li> <li>(4)(1) <b>Compliance:</b> Listed on the specification page.</li> <li>(5) Description of energy storage management systems and their operation</li> <li>(5)(1) <b>Compliance:</b> This information is provided on the "EQORE System Overview" Page.</li> <li>(6) Location and content of required signage</li> <li>(6)(1) <b>Compliance:</b> This information is provided on the "Required Signage" Page</li> <li>(7) Details on fire suppression, smoke or fire detection, gas detection, thermal management, ventilation, exhaust, and deflagration venting systems, if provided</li> <li>(7)(1) <b>Compliance:</b> The relevant details are provided on the "Fire Resistance &amp; Suppression Overview" page</li> <li>(8) Support arrangement associated with the installation, including any required seismic support</li> <li>(8)(1) <b>Compliance:</b> These details are provided throughout the installation design specifications throughout the plans.</li> </ol>	<p><b>4.1.2.2 Building Owner.</b> The construction documents described in this section shall be provided to the building owner or the owner's authorized agent prior to the system being put in service.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> EQORE Inc is the owner's authorized agent and retains all plans and details for the system.</li> </ul> <p><b>4.1.2.3 Manuals.</b> An operations and maintenance manual shall be provided to both the ESS owner or their authorized agent and system operator before the system is put into operation.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> EQORE Inc, as the owner's authorized agent, manages the battery storage system and has all the documentation required by the regulation.</li> </ul> <p><b>4.1.2.3.2</b> A copy of the operations and maintenance manual shall be placed in an approved location to be accessible to AHJs and emergency responders.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The offices of the facility have operations and maintenance manuals that are accessible to the AHJ and emergency responders.</li> </ul> <p><b>4.1.3.2.1 Emergency Operations Plan.</b></p> <p><b>4.1.3.2.1.1</b> An emergency operations plan shall be readily available for use by facility operations and maintenance personnel.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The facility operations team and maintenance personnel have <math>\frac{2}{3}</math> access to the emergency operations plans.</li> </ul> <p><b>4.1.3.2.2 Facility Staff Training.</b></p> <p><b>4.1.3.2.2.1</b> Personnel responsible for the operation, maintenance, repair, servicing, and response of the ESS shall be trained in the procedures included in the emergency operations plan in 4.1.3.2.1.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> EQORE, as the system manager, operates a team of staff trained in all procedures for the EQORE systems.</li> </ul> <p><b>4.1.4 Hazard Mitigation Analysis.</b></p> <p><b>4.1.4.1</b> A hazard mitigation analysis shall be provided to the involving one ESS unit will not propagate to an adjacent unit. AHJ for review and approval when any of the following conditions are present:</p> <ol style="list-style-type: none"> <li>(1) When technologies not specifically addressed in Table 1.3 are provided.</li> <li>(2) More than one ESS technology is provided in a room or indoor area where adverse interaction between the technologies is possible.</li> <li>(3) When allowed as a basis for increasing maximum stored energy as specified in 4.8.1 and 4.8.2.</li> </ol> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> Hazard Mitigation Analysis is required for this EQORE system because the system exceeds the maximum allowable storage of 600kWh. Due to this, a hazard mitigation analysis that covers all the required points is provided.</li> </ul> <p><b>4.1.5 Large-Scale Fire Test.</b></p> <p><b>4.1.5.1</b> Where required elsewhere in this standard, large scale fire testing in accordance with 4.1.5 shall be conducted on a representative ESS in accordance with UL 9540A or equivalent test standard.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The UL9540A test results can be provided upon request.</li> </ul> <p><b>4.2 Equipment.</b></p> <p><b>4.2.1 Listings.</b> ESS shall be listed in accordance with UL 9540, unless specifically exempted in other sections of this standard.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The ESS battery systems are listed in accordance with UL 9540. Listing is included and documentation about the test results can be provided upon request.</li> </ul> <p><b>4.2.7 Charge Controllers.</b></p> <p><b>4.2.7.1</b> Charge controllers shall be compatible with the battery or ESS manufacturer's electrical ratings and charging specifications.</p> <p><b>4.2.7.2</b> Charge controllers shall be listed and labeled in accordance with UL 1741 or provided as part of a listed ESS.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The charge controller is integrated into the inverter system design which is provided as an integrated unit with the battery system from Gotion.</li> </ul>
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# Century Tywood J3 Corp- NFPA 855 Compliance: 2

<p><b>4.2.8 Inverters and Converters.</b></p> <p>4.2.8.1 Inverters and converters shall be listed and labeled in accordance with UL 1741.</p> <p>4.2.8.2 Only units listed and labeled for utility interactive system use and identified as interactive shall be allowed to operate in parallel with the electric utility power system.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> Inverters are listed and labeled in accordance with UL 1741.</li> </ul> <p><b>4.2.9 Energy Storage Management System (ESMS).</b></p> <p>4.2.9.1 Where required by the equipment listing in accordance with 4.2.1 or the hazard mitigation analysis in accordance with 4.1.4, an approved ESMS shall be provided for monitoring operating conditions and maintaining voltages, currents, and temperatures within the manufacturer's specifications.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The EQORE ESMS in collaboration with the Gotion EMS manage all the system operations for the inverter and battery. Combined these systems provide all the required operations for the EQORE ESS. From a safety perspective, Gotion's built in ESMS provides the protection and control of the systems independently of the EQORE ESMS.</li> </ul> <p><b>4.2.10 Reused and Repurposed Equipment.</b></p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> EQORE does not use Reused or repurposed equipment</li> </ul> <p><b>4.3 Installation.</b> ESS shall be installed in accordance with their listing, the manufacturer's installation instructions, and this standard.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> Please review the installation instructions/designs provided in the previous pages of this plan.</li> </ul> <p><b>4.3.1 Electrical Installation.</b> The electrical installation shall be in accordance with NFPA 70 or IEEE C2 based on the location of the ESS in relation to and its interaction with the electrical grid.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The EQORE system was designed per the requirements of NFPA 70 and all other pertinent building and electrical codes.</li> </ul> <p><b>4.3.2 Working Space.</b> At a minimum, ESS equipment shall be provided with working space in accordance with NFPA 70 or IEEE C2, as appropriate, for operation, inspection, trouble-shooting, maintenance, or replacement.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The full ESS was designed to satisfy the working space requirements of NFPA 70.</li> </ul> <p><b>4.3.3 Seismic Protection.</b> ESS shall be seismically braced in accordance with the local building code.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> Seismic protections are not needed for this installation due to the geographic conditions of Massachusetts. However, all structural design calculations took local building code requirements into account.</li> </ul> <p><b>4.3.4 Design Loads.</b> The weight of the ESS and all associated equipment, components, and enclosure elements and their impact on the dead and live loads of the building or system foundation shall be in accordance with the local building code.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The full system is designed to satisfy the design loads required of the material and equipment being used.</li> </ul> <p><b>4.3.5 Signage.</b></p> <p>4.3.5.1 Approved signage shall be provided in the following locations:</p> <ol style="list-style-type: none"> <li>1. On the front of doors to rooms or areas containing ESS or in approved locations near entrances to ESS rooms</li> <li>2. On the front of doors to outdoor occupiable ESS contain-ers</li> <li>3. In approved locations on outdoor ESS that are not enclosed in occupiable containers or otherwise enclosed</li> </ol> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> Signage details are provided on the "Required Signage" page.</li> </ul> <p>4.3.5.2 The signage required in 4.3.5.1 shall be in compliance with ANSI Z535 and include the following information as shown in Figure 4.3.5.2:</p> <ol style="list-style-type: none"> <li>1. "Energy Storage Systems" with symbol of lightning bolt in a triangle</li> <li>2. Type of technology associated with the ESS</li> <li>3. Special hazards associated as identified in Chapters 9 through 15.</li> <li>4. Type of suppression system installed in the area of the ESS</li> <li>5. Emergency contact information</li> </ol>	<ul style="list-style-type: none"> <li>- <b>Compliance:</b> As it can be seen in the "Required Signage" all the signs are designed in compliance with the requirements specified above.</li> </ul> <p>4.3.5.3 A permanent plaque or directory denoting the location of all electric power source disconnecting means on or in the premises shall be installed at each service equipment location and at the location(s) of the system disconnect(s) for all energy sources capable of being interconnected.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> Please reference the required signage page of this plan set.</li> </ul> <p><b>4.3.5.1 through 4.3.6</b> Are not relevant to this installation</p> <p><b>4.3.7 Impact Protection.</b></p> <p>4.3.7.1 ESS shall be located or protected to prevent physical damage from impact where such risks are identified.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The setback from the road is sufficient to satisfy the requirement for impact protection. Therefore subsections of 4.3.7 are not applicable to this installation.</li> </ul> <p><b>4.3.8 Security of Installations</b></p> <p>4.3.8.1 ESS shall be secured against unauthorized entry and safeguarded in an approved manner.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> All equipment is secured against unauthorized entry either through location inside the building (EQORE Computing Unit) or built in locks/locking mechanisms (Outdoor equipment).</li> </ul> <p><b>4.3.9 Elevation.</b> ESS shall be located only on floors that can be accessed by external fire department laddering capabilities unless a higher location is approved by the AHJ.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The EQORE ESS is located at ground level in a location that is easily accessible to the fire department. All other considerations of this section are not relevant to this installation.</li> </ul> <p><b>4.3.10.1 Means of Egress</b></p> <p>4.3.10.1 All areas containing ESS shall provide egress from the area in which they are located in accordance with the local building code.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The EQORE ESS is located outside the building in such a location that Egress is not a consideration.</li> </ul> <p><b>4.3.11 Open Rack Installations.</b> Where installed in a room accessible only to authorized personnel, ESS shall be permitted to be installed on an open rack</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> This is not relevant to the EQORE ESS installation because the EQORE ESS battery units are not installed as open racks.</li> </ul> <p><b>4.3.12 Fire Command Centers.</b> In buildings containing ESS and equipped with a fire command center, the command center shall include signage or readily available documentation that describes the location and type of ESS, operating voltages, and location of electrical disconnects as required by NFPA 70.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The ESS is not located inside the building, so there is no need for the Fire command center to include any signage and readily available documentation that describes the location and type of ESS. The Gotion built in fire controller is connected to EQORE databases for <math>\frac{2}{7}</math> alerts and monitoring and connected to the main facility fire panel.</li> </ul> <p><b>4.4 Location.</b></p> <p>4.4.1 ESS installed indoors, outdoors, on rooftops, and in open parking garages shall comply with this section.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> See relevant section below.</li> </ul> <p><b>4.4.3 Outdoor Installations.</b> Outdoor ESS installations shall comply with this section and as detailed in Table 4.4.3.</p> <p><b>4.4.3.1 Classification.</b> Outdoor ESS installations shall be classified as follows:</p> <ol style="list-style-type: none"> <li>1. Remote locations. Remote outdoor locations include ESS located more than 100 ft (30.5 m) from buildings, lot lines that can be built upon, public ways, stored combustible materials, hazardous materials, high-piled stock, and other exposure hazards not associated with electrical grid infrastructure.</li> </ol>	<p><b>2. Locations near exposures.</b> Locations near exposures include all outdoor ESS locations that do not comply with remote outdoor location requirements.</p> <ul style="list-style-type: none"> <li>-- <b>Compliance:</b> This is considered a "Location near exposures" so must comply with the requirements of this outdoor installation type. These can be seen in the table below.</li> <li>-- Per the chart provided, it can be seen that the compliance requirements of this installation include compliance with the following sections       <ul style="list-style-type: none"> <li>Chapters 1-3 (Addressed on NFPA 855 Compliance 1)</li> <li>Sections 4.1-4.3 (Addressed on NFPA 855 Compliance 1&amp;2)</li> <li>4.4.3.2 (Addressed on NFPA 855 Compliance 2)</li> <li>4.4.3.3 (Addressed on NFPA 855 Compliance 2)</li> <li>4.4.3.4 (Addressed on NFPA 855 Compliance 2)</li> <li>4.4.3.5 (Addressed on NFPA 855 Compliance 2)</li> <li>4.4.3.6 (Addressed on NFPA 855 Compliance 2)</li> <li>4.4.3.7 (Addressed on NFPA 855 Compliance 2)</li> <li>Section 4.6 (Addressed on NFPA 855 Compliance 2 &amp; 3)</li> <li>Section 4.8 (Addressed on NFPA 855 Compliance 3)</li> <li>Section 4.10 (Addressed on NFPA 855 Compliance 3)</li> <li>Section 4.11 (Addressed on NFPA 855 Compliance 3)</li> <li>Section 4.13 (Addressed on NFPA 855 Compliance 3)</li> <li>Section 4.3.5 (Addressed on NFPA 855 Compliance 3)</li> <li>Section 4.6 (Addressed on NFPA 855 Compliance 3)</li> <li>Chapters 9-13 (Addressed on NFPA 855 Compliance 5)</li> </ul> </li> </ul>
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<b>SYSTEM INFORMATION</b>	
AC System Size: 380kW (Internally De-Rated from 1250kW)	
Inverter Model: Dynapower CPS1250	
DC System Size: 760kWh	
BESS: Gotion Edge 760	
<b>CUSTOMER INFORMATION</b>	
Name: Century-Tywood J3 Corp	
Address: 79 Lowland St Holliston, MA, 01747	
Website: www.century-tywood.com/	
Phone: (508)-422-8552	
Contact: Jack Mahoney	
<b>ENGINEER OF RECORD</b>	
	
REV. DATE DESCRIPTION	
AHJ	Town of Holliston, MA
EQORE PROJECT	Century-Tywood Holliston, MA
DESIGNER	Company: EQORE Inc. Address: 444 Somerville Ave, Somerville, MA, 02143 Website: www.eqore.net Phone: 786-234-2655 Contact: Donald Groh
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Approved by: DG	Date: 11/03/2025
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<p><b>4.4.3.2 Maximum Size.</b></p> <p><b>4.4.3.2.1</b> Outdoor walk-in containers or enclosures housing ESS shall not exceed 53 ft x 8.5 ft x 9.5 ft (16.2 m x 2.6 m x 2.9 m), not including HVAC and other equipment.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The Gotion Edge760 system complies with this maximum sizing.</li> </ul> <p><b>4.4.3.3 Clearance to Exposures.</b> ESS located outdoors shall be separated by a minimum 10 ft (3048 mm) from the following exposures:</p> <ol style="list-style-type: none"> <li>(1) Lot lines</li> <li>(2) Public ways</li> <li>(3) Buildings</li> <li>(4) Stored combustible materials</li> <li>(5) Hazardous materials</li> <li>(6) High-piled stock</li> <li>(7) Other exposure hazards not associated with electrical grid infrastructure</li> </ol> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> This EQORE ESS is located more than 10ft from any exposures and does not require the exemptions.</li> </ul> <p><b>4.4.3.4 Means of Egress Separation.</b></p> <p><b>4.4.3.4.1</b> ESS located outdoors shall be separated from any means of egress as required by the AHJ to ensure safe egress under fire conditions but in no case less than 10 ft (3048 mm).</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The EQORE ESS installation does not encroach on any means of egress.</li> </ul> <p><b>4.4.3.6 Vegetation Control.</b></p> <p><b>4.4.3.6.1</b> Areas within 10 ft (3 m) on each side of outdoor ESS shall be cleared of combustible vegetation and other combustible growth.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The EQORE ESS is located more than 10ft from combustible growth.</li> </ul> <p><b>4.4.3.6.2</b> Single specimens of trees, shrubbery, or cultivated ground cover such as green grass, ivy, succulents, or similar plants used as ground covers shall be permitted to be exempt provided that they do not form a means of readily transmitting fire.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> This exemption is being used due to the grass located next to the EQORE ESS in this installation.</li> </ul> <p><b>4.4.3.7 Enclosures.</b></p> <p><b>4.4.3.7.1</b> ESS electrical circuitry shall be within weatherproof enclosures marked with the environmental rating suitable for the type of exposure required by NFPA 70.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The Gotion Edge760 enclosure and all disconnects located outdoors are rated to NEMA 3R or minimum IP54. The Gotion Edge760 is rated to IP55.</li> </ul> <p><b>4.4.3.7.2</b> Enclosures shall be of noncombustible construction.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The Gotion Edge760 enclosure is made of steel and other non-combustible materials.</li> </ul> <p><b>4.6 Size and Separation.</b></p> <p><b>4.6.1</b> ESS in the following locations shall comply with 4.6.2 and 4.6.3 unless otherwise permitted by 4.6.4 or 4.6.5.</p> <p><b>4.6.2</b> ESS shall be comprised of groups with a maximum stored energy of 50 kWh each.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The Gotion Edge760 relies on the large scale fire test exemption to allow for larger groupings and smaller separation distances of less than 3ft and a larger grouping of 760kWh. As noted in section 4.6.3 and 4.6.4, this is compliant due to these exceptions.</li> </ul> <p><b>4.6.3</b> Each group shall be spaced a minimum 3 ft (914 mm) from other groups and from walls in the storage room or area.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> As mentioned above, the system installed utilizes smaller group spacing because the systems have undergone large-scale fire testing in the form of UL9540A testing which proves that the risk of fire propagation throughout the system does not exist.</li> </ul>	<p><b>4.6.4</b> The AHJ shall be permitted to approve groups with larger energy capacities or smaller group spacing based on large-scale fire testing complying with 4.1.5.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> Considering the UL 9540A test, we rely on this exception to satisfy the requirement of group spacing. It is very common to utilize this exception in the process of designing a ESS due to the unfeasibility of reducing the capacity below 50kWh.</li> </ul> <p><b>4.6.5-4.6.7</b> Are notes subsections about nickel-cadmium batteries that do not apply to the chemistry in the EQORE system.</p> <p><b>4.8 Maximum Stored Energy.</b> ESS in the following locations shall comply with Section 4.8 as follows:</p> <ol style="list-style-type: none"> <li>1. Fire areas within non-dedicated-use buildings containing ESS as described in 4.4.2.2 shall not exceed the maximum stored energy values in Table 4.8 except as permitted by 4.8.1.</li> <li>2. Outdoor ESS installations in locations near exposures as described in 4.4.3.1(2) shall not exceed the maximum stored energy values in Table 4.8 except as permitted by 4.8.3.</li> <li>3. ESS installations in open parking garages and on rooftops of buildings as described in 4.4.4.1 shall not exceed the maximum stored energy values in Table 4.8 except as permitted by 4.8.3.</li> <li>4. Mobile ESS equipment as covered by Section 4.5 shall not exceed the maximum stored energy values in Table 4.8 except as permitted by 4.8.3.</li> </ol> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> Due to the installation proximity to exposures, we must comply with this section.</li> </ul>	<p><b>4.8.3</b> Where more than one ESS technology is present within a fire area, the fire protection systems shall be designed to protect the greatest hazard.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> There is only one type of ESS technology present for this installation.</li> </ul> <p><b>4.8.4</b> Where a single fire area within a building or walk-in unit contains a combination of energy systems covered in Table 4.8, the maximum stored energy per fire area shall be determined based on the sum of percentages of each type divided by the maximum stored energy of each type.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> This installation does not have a combination of energy systems.</li> </ul> <p><b>4.8.5</b> The sum of the percentages calculated in 4.8.4 shall not exceed 100 percent except as permitted in 4.8.1 or 4.8.3</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> This section is not relevant to this installation.</li> </ul> <p><b>4.10 Smoke and Fire Detection.</b></p> <p><b>4.10.1</b> All fire areas containing ESS systems located within buildings or structures shall be provided with a smoke detection system in accordance with NFPA 72.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The EQORE ESS has integrated smoke detection and notification that are developed in accordance with NFPA 72. Which is connected to the main fire control system in the building.</li> </ul> <p><b>4.10.2</b> Normally unoccupied, remote stand-alone telecommunications structures with a gross floor area of less than 1500 ft<sup>2</sup> (139 m<sup>2</sup>) utilizing lead-acid or nickel-cadmium battery technology shall not be required to have the detection required in 4.10.1.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> Not applicable to this installation.</li> </ul> <p><b>4.10.3</b> Lead-acid and nickel-cadmium battery systems that are designed in accordance with IEEE C2, used for dc power for control of substations and control or safe shutdown of generating stations under the exclusive control of the electric utility, and located outdoors or in building spaces used exclusively for such installations shall be allowed to use the process control system to monitor the smoke detectors required in 4.10.1.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> Not applicable to the EQORE ESS.</li> </ul> <p><b>4.10.4</b> The smoke detection system shall be permitted to be replaced with a radiant energy-sensing detection system installed in accordance with NFPA 72 in open parking garages and similar occupancies where conditions negatively impact the use of smoke detection technologies.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> Not applicable to the EQORE ESS in this location.</li> </ul> <p><b>4.10.5</b> Telecommunications facilities with lead-acid and nickel cadmium battery storage less than 50 V ac, 60 V dc shall have fire detection installed in accordance with NFPA 76.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> Not applicable to this installation.</li> </ul> <p><b>4.11 Fire Control and Suppression.</b></p> <p><b>4.11.1</b> Where required elsewhere in this standard, fire control and suppression for rooms or areas within buildings and outdoor walk-in units containing ESS shall be provided in accordance with this section.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The Gotion Edge760 is not a walk-in unit; therefore fire control/suppression is not required. A dry chemical system is provided voluntarily. See Section 4.11.3.</li> </ul> <p><b>4.11.2 Sprinkler System.</b> Sprinkler systems shall be installed in accordance with NFPA 13 or equivalent.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> This installation does not require the installation of a sprinkler system for fire suppression.</li> </ul>
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## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh  
**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

**Name:** Century-Tywood J3 Corp

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Holliston, MA, 01747

**Website:** [www.century-ty.com](http://www.century-ty.com) | **Phone:** (562) 422-2552

**Phone:** (508)-422-8552  
**Contact:** Jack Mahaney

# ENGINEER OF RECORD



REV.	DATE	DESCRIPTION

AHJ

Town of Holliston, MA

EQORE PROJECT

Century-Tywood  
Holliston, MA

DESIGNER

**Company:** EQORE Inc.  
**Address:** 444 Somerville Ave,  
Somerville, MA, 02143  
**Website:** [www.eqore.net](http://www.eqore.net)  
**Phone:** 786-234-2655  
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<b>SYSTEM INFORMATION</b>
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<b>CUSTOMER INFORMATION</b>
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Address: 79 Lowland St Holliston, MA, 01747
Website: <a href="http://www.century-tywood.com/">www.century-tywood.com/</a>
Phone: (508)-422-8552
Contact: Jack Mahoney
<b>ENGINEER OF RECORD</b>

REV. DATE DESCRIPTION
AHJ
Town of Holliston, MA
<b>EQORE PROJECT</b>
Century-Tywood Holliston, MA
<b>DESIGNER</b>
Company: EQORE Inc. Address: 444 Somerville Ave, Somerville, MA, 02143 Website: <a href="http://www.eqore.net">www.eqore.net</a> Phone: 786-234-2655 Contact: Donald Groh
<b>PAGE NOTES</b>
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Sheet No. Revision A

# Century Tywood J3 Corp - NFPA 855 Compliance: 5

<p><b>6.1.6 System Testing.</b></p> <p><b>6.1.6.1</b> ESS shall be evaluated for their proper operation by the system installer in accordance with the manufacturer's instructions, the commissioning plan, and the requirements of this section after the installation is complete but prior to final approval.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> EQORE validates the functionality of the system and continues to validate the functionality into the future for the entire lifespan of the system.</li> </ul> <p><b>6.1.6.2</b> A report documenting the commissioning process and the results shall be prepared by the entity commissioning the system and a copy provided to the AHJ prior to final inspection and approval and included in the manual required by 4.1.2.3.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> EQORE develops a commissioning report that includes all the recordings made during the commissioning process.</li> </ul> <p><b>6.1.6.3</b> System testing shall be conducted as a component of the commissioning process and include functional performance testing of the ESS that demonstrates that the installation and operation of the system and associated components, controls, and safety-related systems are in accordance with approved plans and specifications and that the operation, function, and maintenance serviceability for each of the commissioned ESS is confirmed.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The commissioning reports include all the information required.</li> </ul> <p><b>6.3 Operations and Maintenance Documentation.</b></p> <p><b>6.3.1</b> Operations and maintenance documentation shall be provided to the ESS owner.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> EQORE maintains and operates the ESS but also provides training and information to the on-site staff about the functionality of the ESS.</li> </ul> <p><b>6.3.2</b> The documentation shall include design, construction, installation, testing, and commissioning information associated with the ESS as initially approved after being commissioned.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> All this information is included in the documents that EQORE provides for maintaining and servicing the system.</li> </ul> <p><b>6.3.3</b> A copy of the documentation shall be placed in an approved location to be accessible to facility personnel, fire code officials, and emergency responders.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The documentation is provided on the EQORE customer dashboard to be viewed by any parties in need.</li> </ul> <p><b>6.4 Recommissioning of Existing Systems</b></p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The EQORE ESS is not a recommissioned system, so the provisions of this section do not apply.</li> </ul> <p><b>Chapter 7 Operations and Maintenance</b></p> <p><b>7.1 System Operation.</b> All ESS shall be operated in accordance with the manufacturer's instructions and the operation and maintenance documentation.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The ESS is operated in accordance with the manufacturer's instructions and maintenance documentation. EQORE is the system designer and operator so has full understanding of the limitations of the system.</li> </ul> <p><b>7.1.1 Electric Utilities Under NERC Jurisdiction.</b></p> <p><b>7.1.1.1</b> Electric utilities under NERC jurisdiction shall comply with NERC PRC-005 requirements.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The EQORE ESS is not associated with any utilities.</li> </ul> <p><b>7.1.1.2</b> Electric utilities under NERC jurisdiction shall not be required to follow manufacturer's instructions for lead-acid and nickel-cadmium battery systems that are designed in accordance with IEEE C2, used for dc power for control of substations and control or safe shutdown of generating stations under the exclusive control of the electric utility, and located outdoors or in building spaces used exclusively for such installations.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> This is not applicable for the EQORE ESS.</li> </ul>	<p><b>7.1.2</b> The operation and maintenance documentation shall include the following:</p> <ol style="list-style-type: none"> <li>1. Procedures for the safe startup of the ESS system and associated equipment</li> <li>2. Procedures for inspection and testing of associated alarms, interlocks, and controls</li> <li>3. Procedures for maintenance and operation of the following, when applicable:             <ol style="list-style-type: none"> <li>3.1. Energy storage management systems (ESMS)</li> <li>3.2. Fire protection equipment and systems</li> <li>3.3. Spill control and neutralization systems</li> <li>3.4. Exhaust and ventilation equipment and systems</li> <li>3.5. Gas detection systems</li> <li>3.6. Other required safety equipment and systems</li> </ol> </li> <li>4. Response considerations similar to a safety data sheet (SDS) that will address response safety concerns and extinguishment when an SDS is not required</li> <li>5. An indication of which changes would necessitate repermitting</li> <li>6. An instruction that equipment or system changes to the installation are required to be recorded by updating any engineering documentation</li> </ol> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The EQORE operations and maintenance document includes all of the required information.</li> </ul> <p><b>7.1.3 SDS for Hazardous Materials.</b></p> <p><b>7.1.3.1</b> SDS for hazardous materials contained in the ESS shall be posted within sight of the disconnecting means of any ESS or at a location approved by the AHJ.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> EQORE standard procedure is to provide the SDS in the form of an online hosted page that has the information needed for the AHJ and fire department easily accessible.</li> </ul> <p><b>7.1.3.2</b> For ESS located outdoors, a means shall be provided to protect the SDS from the weather.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> The online nature of the SDS data allows for easy access.</li> </ul> <p><b>7.1.4</b> Where the operations and maintenance documentation calls for detailed procedures to be used for specific scheduled operational checks or assessments, an operations record that includes data associated with configurable system settings, system start-up, system shutdown (including emergency shutdown and long-term shutdown (storage mode) shall be maintained by the system owner or their designated agent and be made available to the AHJ upon request.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> Similarly all this system related information is accessible to the facility owner via their online portal.</li> </ul> <p><b>7.1.5</b> The operations record shall indicate the maintenance action taken, the date of the action, who implemented the action, and the results associated with the action.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> Operations and maintenance records are stored on the dashboard and accessible to the facility owner and any authorized representatives.</li> </ul> <p><b>7.1.6</b> The operations record shall be kept in a readily accessible location, or a sign indicating where the record is located shall be posted adjacent to the system.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> All records are maintained on the customer's EQORE dashboard.</li> </ul> <p><b>7.1.6.1</b> For normally occupied facilities, the operations record shall be on site.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> Documentation is online per 7.1.6.2.</li> </ul> <p><b>7.1.6.2</b> The operations record shall be permitted to be made available electronically.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> EQORE utilizes this stipulation for maintaining all records, operation and maintenance instructions.</li> </ul> <p><b>7.2 System Maintenance.</b> The ESS shall be maintained in accordance with the system manufacturer's instructions.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> EQORE is responsible for the maintenance and operation of the ESS.</li> </ul> <p><b>7.2.1</b> The maintenance documentation shall include a detailed maintenance schedule covering all affected equipment and the activities to be performed.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> All online maintenance documentation covers the required factors stated.</li> </ul> <p><b>7.2.2</b> Maintenance shall be performed by qualified individuals.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> EQORE and EQORE's qualified representatives are the only individuals with access to the ESS.</li> </ul>	<p><b>7.2.3</b> Maintenance documentation indicating the maintenance action taken, the date of the action, who implemented the action, and the results associated with the action shall be maintained as required by Section 6.3.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> All documentation is accessible via the EQORE online dashboard.</li> </ul> <p><b>7.2.4</b> Maintenance documentation shall record information on any repair, renewal, or renovation made to the ESS.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> Documentation includes all necessary records.</li> </ul> <p><b>7.2.5 Training.</b> Training shall be provided to all those responsible for system operation and maintenance.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> All EQORE staff and partners are trained in the operation of EQORE equipment.</li> </ul> <p><b>7.2.5.1</b> Training on system operation and maintenance shall be provided by the system owner or their designated agent.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> EQORE is the designated agent for the system owners.</li> </ul> <p><b>7.2.5.2</b> After recommissioning the system, training on any changes to the operation and maintenance documentation shall be provided.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> EQORE routinely trains operation and maintenance personnel on the system operations.</li> </ul> <p><b>7.2.5.3</b> Training records of site operations and maintenance personnel shall be retained and accessible to the AHJ, indicating the training taken, the name(s) of those taking the training, and the training date.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> All records are accessible to the AHJ via the EQORE online facility dashboard.</li> </ul> <p><b>7.3 System Testing.</b></p> <p><b>7.3.1</b> System testing shall be performed when required by the operating instructions or maintenance documentation in accordance with testing procedures provided by the ESS manufacturer.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> All system testing is performed by EQORE and EQORE representatives who are trained on the specifics of the hardware provided in the system.</li> </ul> <p><b>7.3.2</b> A record of all testing shall be maintained in accordance with the requirements in Section 6.3.</p> <ul style="list-style-type: none"> <li>- <b>Compliance:</b> All testing and operations records are provided on the EQORE dashboard.</li> </ul>
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SYSTEM INFORMATION	
<b>AC System Size:</b> 380kW (Internally De-Rated from 1250kW)	<b>Inverter Model:</b> Dynapower CPS1250
<b>DC System Size:</b> 760kWh	<b>BESS:</b> Gotion Edge 760

CUSTOMER INFORMATION	
<b>Name:</b> Century-Tywood J3 Corp	
<b>Address:</b> 79 Lowland St	Holliston, MA, 01747
<b>Website:</b> www.century-tywood.com/	
<b>Phone:</b> (508)-422-8552	
<b>Contact:</b> Jack Mahoney	



REV.	DATE	DESCRIPTION
		AHJ

EQORE PROJECT	
Century-Tywood	Holliston, MA

DESIGNER	
<b>Company:</b> EQORE Inc.	
<b>Address:</b> 444 Somerville Ave,	
Somerville, MA, 02143	
<b>Website:</b> www.eqore.net	
<b>Phone:</b> 786-234-2655	
<b>Contact:</b> Donald Groh	
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# Century Tywood J3 Corp - NFPA 855 Compliance: 6

- 8.1.3** The decommissioning plan shall include the following information:
1. An overview of the decommissioning process developed specifically for the ESS that are to be decommissioned
  2. Roles and responsibilities for all those involved in the decommissioning of the ESS and their removal from the site
  3. Means and methods whereby the decommissioning plan will be made available at a point in time corresponding to the decision to decommission the ESS
  4. Plans and specifications necessary to understand the ESS and all associated operational controls and safety systems, as built, operated, and maintained
  5. A detailed description of each activity to be conducted during the decommissioning process and who will perform that activity and at what point in time
  6. Procedures to be used in documenting the ESS and all associated operational controls and safety systems that have been decommissioned
  7. Guidelines and format for a decommissioning checklist and relevant operational testing forms and necessary decommissioning logs and progress reports
  8. A description of how any changes to the surrounding areas and other systems adjacent to the ESS, such as but not limited to structural elements, building penetrations, means of egress, and required fire detection and suppression systems, will be protected during decommissioning and confirmed as being acceptable after the system is removed
- **Compliance:** All the aforementioned information is provided in the decommissioning documentation at the time of decommissioning.

## 8.2 Decommissioning Process.

### 8.2.1 The AHJ shall be notified prior to decommissioning an ESS.

- **Compliance:** EQORE or the owner shall notify the AHJ of the decommissioning process.

### 8.2.2 The ESS shall be decommissioned by the owner of the ESS or their designated agent(s) in accordance with the decommissioning plan.

- **Compliance:** EQORE or the owner shall decommission the system.

### 8.3 Decommissioning Report.

A decommissioning report shall be prepared by the ESS owner or their designated agent and summarize the decommissioning process of the system and associated operational controls and safety systems.

- **Compliance:** EQORE or the owner will provide a decommissioning report

### 8.3.1

The report shall include the final decommissioning plan and the results of the decommissioning process.

- **Compliance:** The decommissioning report will include plans and results of the process.

## Chapter 9 Electrochemical Energy Storage

### 9.1 Application.

#### 9.1.1

The requirements of this chapter shall apply to installations of electrochemical ESS.

- **Compliance:** The EQORE ESS uses Lithium Iron Phosphate batteries which result in its categorization as Electrochemical energy storage.

#### 9.1.2

Unless modified by this chapter, the requirements of Chapters 4 through 8 shall also apply.

- **Compliance:** Please refer to previous reviews on NFPA 855 Compliance 2-4.

### 9.2 General.

Electrochemical ESS shall comply with the applicable sections of Chapters 4 and 9 as specified in Table 9.2.

- The applicable sections to add the review of are:
  - Section 9.3 (Review provided on NFPA 855 Compliance 5)
  - Section 4.12 (Review provided on NFPA 855 Compliance 5)
  - Section 4.6 (Review provided on NFPA 855 Compliance 2)

Table 9.2 Electrochemical ESS Technology-Specific Requirements

Compliance Required	Battery Technology				Sodium Nickel Chloride	Other Electrochemical ESS and Battery Technologies <sup>b</sup>	Reference
	Lead-Acid	Nickel <sup>c</sup>	Lithium-Ion	Flow			
Exhaust ventilation	Yes	Yes <sup>d</sup>	No	Yes	No	Yes	Section 4.9
Spill control	Yes <sup>d</sup>	Yes <sup>d</sup>	No	Yes	No	Yes	Section 4.14
Neutralization	Yes <sup>d</sup>	Yes <sup>d</sup>	No	Yes	No	Yes	Section 4.15
Safety caps	Yes	Yes	No	No	No	Yes	Section 9.4
Thermal runaway	Yes <sup>e</sup>	Yes	Yes <sup>f</sup>	No	Yes <sup>f</sup>	Yes <sup>f</sup>	Section 9.3
Explosion control	Yes <sup>g</sup>	Yes <sup>g</sup>	Yes	No	Yes	Yes	Section 4.12
Size and separation	Yes	Yes	Yes	Yes	Yes	Yes	Section 4.6

**Compliance:** Considering the above, we must review Section 4.12

**4.12 Explosion Control.** Where required elsewhere in this standard, explosion prevention or deflagration venting shall be provided in accordance with this section.

4.12.1 ESS installed within a room, building, or walk-in unit shall be provided with one of the following:

1. Explosion prevention systems designed, installed, operated, maintained, and tested in accordance with NFPA 69
  2. Deflagration venting installed and maintained in accordance with NFPA 68
- **Compliance:** The Gotion EDGE760 has deflagration venting installed in accordance with NFPA 68 per the Gotion Technical & Commercial Proposal.

4.12.2 Explosion prevention and deflagration venting shall not be required where approved by the AHJ based on largescale fire testing in accordance with 4.1.5 that demonstrates that flammable gas concentrations in the room, building, or walk-in unit cannot exceed 25 percent of the LFL in locations where the gas is likely to accumulate.

- **Compliance:** The Gotion Edge760 utilizes deflagration venting designed in accordance with NFPA 68 therefore we are not utilizing this exception.

**9.3 Thermal Runaway protection.** Where required by Table 9.2, a listed device or other approved method shall be provided to preclude, detect, and minimize the impact of thermal runaway.

- **Compliance:** Per the requirements "The thermal runaway protection is permitted to be part of a battery management system that has been evaluated with the battery as part of the evaluation to UL 1973 or UL 9540." Considering the Gotion Edge760 system has undergone UL9540A testing, it is certified to have thermal runaway protections.

All other sections of NFPA 855 are not relevant to the EQORE installation either due to a lack of requirement for a particular form of installation or due to a difference in chemistry.

This concludes the full review of NFPA 855 as it relates to the EQORE system being installed at Century-Tywood J3 Corp.

## SYSTEM INFORMATION

**AC System Size:** 380kW (Internally De-Rated from 1250kW)

**Inverter Model:** Dynapower CPS1250

**DC System Size:** 760kWh

**BESS:** Gotion Edge 760

## CUSTOMER INFORMATION

**Name:** Century-Tywood J3 Corp

**Address:** 79 Lowland St  
Holliston, MA, 01747

**Website:** www.century-tywood.com/

**Phone:** (508)-422-8552

**Contact:** Jack Mahoney

## ENGINEER OF RECORD



REV.	DATE	DESCRIPTION

## AHJ

Town of Holliston, MA

## EQORE PROJECT

Century-Tywood  
Holliston, MA

## DESIGNER

**Company:** EQORE Inc.  
**Address:** 444 Somerville Ave,  
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