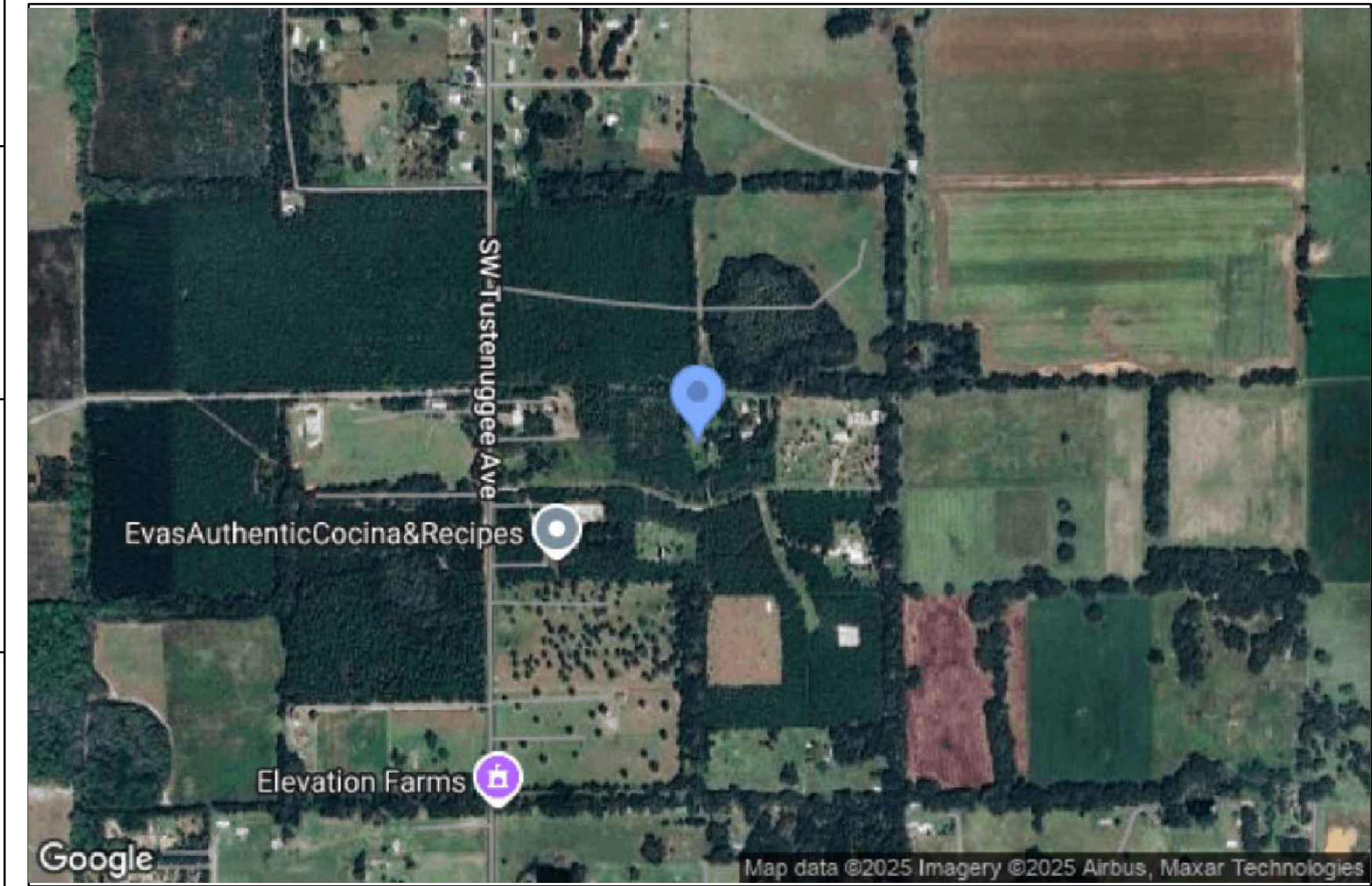


DONALD J HAYES

359 SW Hunter Leigh Place Lake City FL 32024  
30.0019684,-82.6388063

SYSTEM TIER (UTILITY): TIER 2 (13.78 KWDC\*0.85 = 11.71 KWAC)  
SCOPE OF WORK: INSTALLATION OF SOLAR PANELS AND ASSOCIATED ELECTRICAL EQUIPMENT.



01 AERIAL

PROJECT INFORMATION

DISTRICTS:  
COUNTY: COLUMBIA COUNTY  
JURISDICTION: UN-INCORPORATED COLUMBIA

DESIGN SPECS  
WIND EXPOSURE: B  
RISK CATEGORY: II  
WIND SPEED (MPH): 130  
SNOW LOAD (PSF): 0

GOVERNING CODES  
BUILDING: FBC 2023/ASCE 7-22  
ELECTRICAL: NEC 2020  
FIRE: FFPC, 8th ed. (2023)/NFPA 1 2021 ed.  
GENERAL: UN-INCORPORATED COLUMBIA ORDINANCES

SYSTEM  
SIZE (KWDC): 13.78  
EST KWH/YR: 21406  
PANEL: (26) ADANI SOLAR ASB-M10-144-530  
INVERTER(S): 18KPV-12LV  
VOLTAGE (V): 240

SHEET INDEX

|                    |        |
|--------------------|--------|
| COVER              | T1     |
| GENERAL            | G1     |
| LAYOUT             | S1     |
| STRING PLAN        | SF1    |
| LOCATIONS PLAN     | SL1    |
| ATTACHMENT PLAN    | SP1    |
| ATTACHMENT DETAIL  | SA1    |
| ELECTRICAL DIAGRAM | E1-E2  |
| LABELS             | EL1    |
| DATASHEETS         | D1-Dxx |

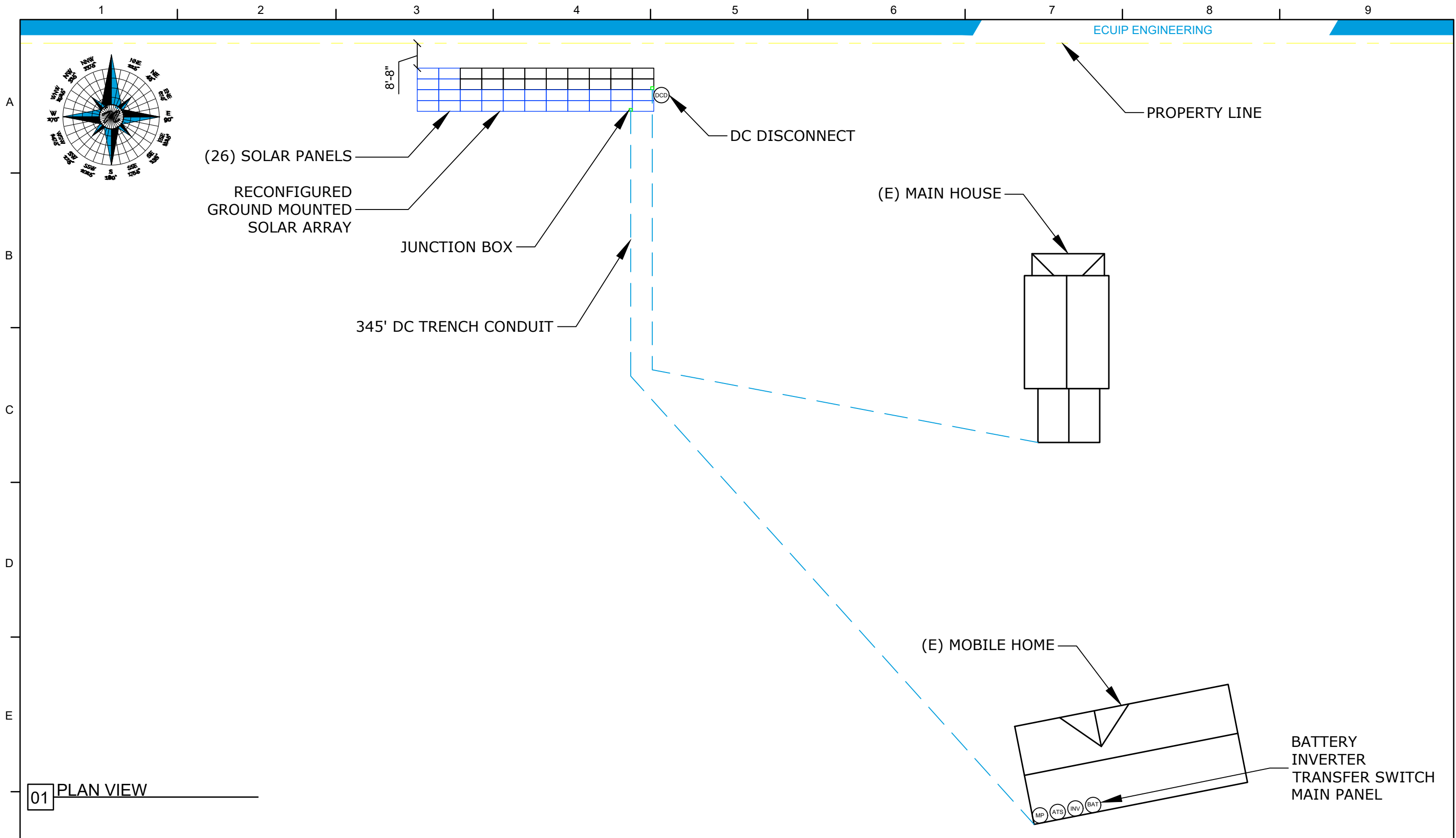
01 VICINITY

|                                              |                                                                          |                                                        |                                                                                  |          |    |     |                |              |
|----------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------|----------------------------------------------------------------------------------|----------|----|-----|----------------|--------------|
| DONALD J HAYES                               | CONTRACTOR:                                                              | ENGINEER: CA33343                                      |                                                                                  | DATE     | BY | VER | DESCRIPTION    | T1           |
|                                              | ENLIGHT ENERGY<br>978 SW 2ND AVE GAINESVILLE, FL 32601<br>(800) 798-0315 | ECUIP ENGINEERING<br>1646 W SNOW AVE 9 TAMPA, FL 33606 | Ryan S Gittens<br>2025.04.29<br>20:05:00<br>-04'00'<br>RYAN S GITTENS<br>PE90605 | 03.18.25 | JB | 00  | INITIAL DESIGN |              |
| 359 SW Hunter Leigh Place Lake City FL 32024 |                                                                          |                                                        |                                                                                  |          |    |     |                | PAPER: ARCHB |
| PROJECT ID: 432025-355                       |                                                                          |                                                        |                                                                                  |          |    |     |                | SCALE:       |

UNAUTHORIZED USE OF THIS DRAWING SET WITHOUT WRITTEN PERMISSION FROM CONTRACTOR IS IN VIOLATION OF U.S. COPYRIGHT LAWS AND WILL BE SUBJECT TO CIVIL DAMAGES AND PROSECUTIONS

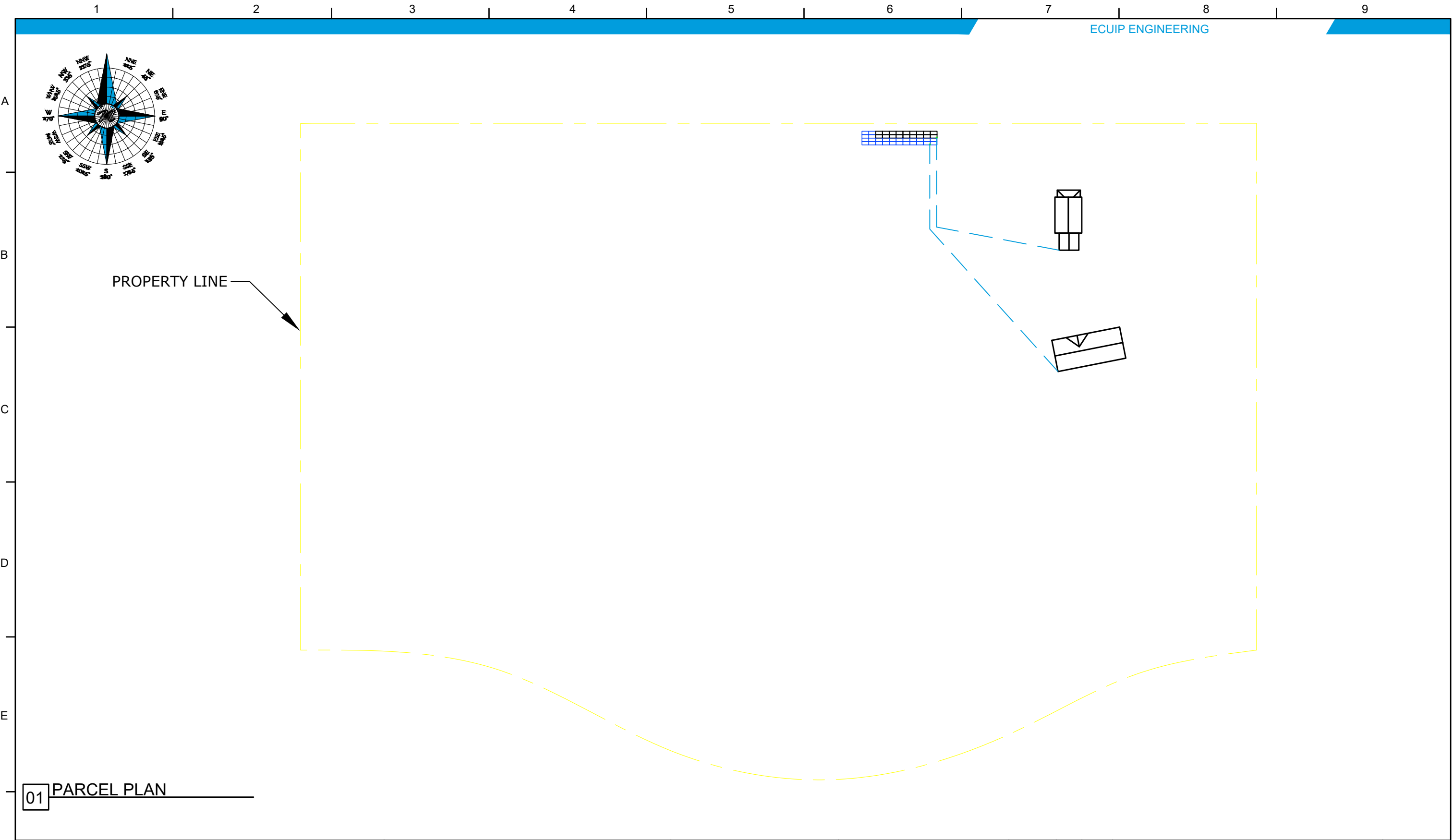
|                                              |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |   |    |     |                |  |              |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|---|---------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----|-----|----------------|--|--------------|
|                                              | 1                                                                                                                                                                                                                                                                          | 2                                                                                                   | 3 | 4                                                                                     | 5 | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 7 | 8  | 9   |                |  |              |
|                                              | ECUIP ENGINEERING                                                                                                                                                                                                                                                          |                                                                                                     |   |                                                                                       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |   |    |     |                |  |              |
| A                                            | GENERAL                                                                                                                                                                                                                                                                    |                                                                                                     |   |                                                                                       |   | EQUIPMENT NOTES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |   |    |     |                |  |              |
|                                              | 1.1 THE PROJECT IS DESIGNED IN GENERAL ACCORDANCE WITH FBC 2023/ASCE 7-22 AND OTHER REFERENCED CODES.                                                                                                                                                                      |                                                                                                     |   |                                                                                       |   | 1.1 NEW EQUIPMENT CLEARANCES: 36" (FRONT), 30" (WORK AROUND), 6 FT (OH) (NEC 110.26)                                                                                                                                                                                                                                                                                                                                                                                                                     |   |    |     |                |  |              |
|                                              | 1.2 ABBREVIATIONS OTHER THAN AS PROVIDED ARE INDUSTRY STANDARD.                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   | 1.2 NEW EQUIPMENT AND COMPONENTS SHALL BE CERTIFIED BY A NATIONAL LABORATORY.                                                                                                                                                                                                                                                                                                                                                                                                                            |   |    |     |                |  |              |
|                                              | 1.3 CONDITION AND CONSTRUCTION OF ROOF ASSEMBLY SHALL BE VERIFIED BY PHYSICAL INSPECTION AND ACCEPTED BY CONTRACTOR PRIOR TO COMMENCEMENT.                                                                                                                                 |                                                                                                     |   |                                                                                       |   | 1.3 EQUIPMENT SHALL BE INSTALLED AND USED ACCORDING TO INSTALLATION MANUAL OR SPECIFICATIONS, AND SHALL BE RATED FOR OUTDOOR USE IF INSTALLED OUTSIDE                                                                                                                                                                                                                                                                                                                                                    |   |    |     |                |  |              |
|                                              | 1.4 WORK TO BE COMPLETED SHALL BE VERIFIED BY INSTALLER AND ELECTRICIAN PRIOR TO COMMENCEMENT AND MATERIAL ORDER.                                                                                                                                                          |                                                                                                     |   |                                                                                       |   | GENERAL NOTES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |   |    |     |                |  |              |
|                                              | 1.5 ALL CONTRACTORS AND SUB-CONTRACTORS SHALL INSPECT THE SITE AND ALL RESPECTIVE BUILDINGS IMMEDIATELY BEFORE PREPARING ANY BID AND BEFORE ORDERING ANY MATERIALS, AND SHALL PROVIDE CONTRACTOR WRITTEN NOTICE OF ANY DISCREPANCY BETWEEN FIELD CONDITIONS AND THE PLANS. |                                                                                                     |   |                                                                                       |   | 2.1 INSTALLER SHALL FURNISH ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR THE INSTALLATION OF A COMPLETE ELECTRICAL SYSTEM PURSUANT TO THE PLANS IN ACCORDANCE WITH THE BUILDING CODE, OSHA AND ALL OTHER APPLICABLE CODES AND ORDINANCES.                                                                                                                                                                                                                                                            |   |    |     |                |  |              |
|                                              | 1.6 REQUIRED PLAN DIMENSIONS NOT PROVIDED SHALL BE CONFIRMED WITH ENGINEER OF RECORD. DIMENSIONS IN PARENTHESES ARE FOR ENGINEERING REFERENCE ONLY.                                                                                                                        |                                                                                                     |   |                                                                                       |   | 2.2 ELECTRICAL WORK AND RESPECTIVE PREPARATION WORK SHALL BE PERFORMED BY PROPERLY LICENSED SUBCONTRACTORS.                                                                                                                                                                                                                                                                                                                                                                                              |   |    |     |                |  |              |
|                                              | 1.7 UNPLANNED ALTERATION OF STRUCTURAL ROOF OR WALL FRAMING SHALL REQUIRE WRITTEN APPROVAL BY THE EOR AND OWNER; PLANS SHALL BE SO REVISED.                                                                                                                                |                                                                                                     |   |                                                                                       |   | 2.3 MATERIALS SHALL BE INCLUDED IN THE PLANS AND ANY NECESSARY EQUIVALENT SUBSTITUTIONS SHALL BE APPROVED BY THE EOR                                                                                                                                                                                                                                                                                                                                                                                     |   |    |     |                |  |              |
|                                              | 1.8 BEST MANAGEMENT PRACTICES SHALL BE EXERCISED AT ALL TIMES TO MAINTAIN A SAFE AND CLEAN JOBSITE IN COORDINATION WITH PROPERTY OWNER AS APPLIES TO PARKING, TRASH REMOVAL, STORAGE, SOUND, UTILITIES AND TIMES OF WORK.                                                  |                                                                                                     |   |                                                                                       |   | 2.4 CONDUCTORS SHALL BE COPPER OF 98% CONDUCTIVITY. CABLES SHALL BE RATED FOR APPLICABLE VOLTAGE, SINGLE-CONDUCTOR IN THERMOPLASTIC INSULATION SUITABLE FOR CONTINUOUS OPERATION AT 75° C. INSULATION SHALL BE COLOR-CODED #6 AND SMALLER. COLOR-CODED TAPE SHALL BE USED ON #4 AND LARGER.                                                                                                                                                                                                              |   |    |     |                |  |              |
|                                              | 1.9 NO WORK SHALL BE PERFORMED IN RIGHT-OF-WAY OR EASEMENTS WITHOUT WRITTEN PERMISSION FROM THE APPROPRIATE PERMITTING AGENCY AND OWNER.                                                                                                                                   |                                                                                                     |   |                                                                                       |   | 2.5 CONDUCTORS SHALL BE RUN IN CONDUIT WHEN NOT BENEATH MODULES. EXPOSED CONDUIT IS PERMITTED IN GARAGES OR OTHER AREAS ACCEPTABLE TO OWNER AND AS APPROVED BY EOR.                                                                                                                                                                                                                                                                                                                                      |   |    |     |                |  |              |
| B                                            | 1.10 IN THE EVENT OF WEATHER AND OTHER CIRCUMSTANCES THAT COULD MATERIALLY AFFECT BUILDING CONDITIONS OR INSTALLATION, CONTRACTOR SHALL PERFORM A RE-INSPECTION AS REQUIRED THEN ADJUST PROJECT SCHEDULE TO INCLUDE RESPECTIVE PLAN REVISIONS.                             |                                                                                                     |   |                                                                                       |   | 2.6 FLEXIBLE CONDUIT SHALL BE USED FOR VIBRATING EQUIPMENT AND RECESSED MOUNTED FIXTURES AND SHALL BE SEALED WITH LIQUID TIGHT IF EXPOSED TO WEATHER WITH GREEN BOND CONDUCTOR INSTALLED TOGETHER AT CIRCUIT CONDUCTORS. GALVANIZED EMT WITH SET-SCREW MAY BE USED FOR INTERIOR LOCATIONS. PVC WITH GREEN BOND CONDUCTOR (NEC 250) MAY BE USED IN UG LOCATIONS.                                                                                                                                          |   |    |     |                |  |              |
|                                              | 1.11 INTERIOR FINISHES INCLUDING DRYWALL, FLOORING, PAINT, AND TRIM WORK SHALL BE REPAIRED IF MODIFIED OR DAMAGED DURING INSTALLATION PROCESS.                                                                                                                             |                                                                                                     |   |                                                                                       |   | 2.7 FOR PIERCING TAPS, THE TOTAL AREA OF ALL CONDUCTORS, SPLICES, AND TAPS INSTALLED AT ANY CROSS SECTION OF THE WIRING SPACE SHALL NOT EXCEED 75 PERCENT OF THE CROSS-SECTIONAL AREA OF THAT SPACE (NEC 312.8.A).                                                                                                                                                                                                                                                                                       |   |    |     |                |  |              |
|                                              | ROOF FIRE SAFETY                                                                                                                                                                                                                                                           |                                                                                                     |   |                                                                                       |   | 2.8 PV AC DISCONNECT, WHEN INSTALLED, SHALL BE SERVICE ENTRANCE RATED IF CONNECTED TO SUPPLY SIDE OF SERVICE AND MUST BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE AND BE A VISIBLE BREAK SWITCH.                                                                                                                                                                                                                                                                                           |   |    |     |                |  |              |
|                                              | 2.1 FIRE PROTECTION PROCEDURES SHALL BE FOLLOWED IN ACCORDANCE WITH FFPC, 8th ed. (2023)/NFPA 1 2021 ed.. WORK SHALL BE INSPECTED PRIOR TO COVER BY BUILDING INSPECTOR, AND EOR UPON REQUEST.                                                                              |                                                                                                     |   |                                                                                       |   | 2.9 ALL FUSES SHALL BE (R) RATED AND SHALL HAVE APPROPRIATE REJECTION CLIPS                                                                                                                                                                                                                                                                                                                                                                                                                              |   |    |     |                |  |              |
|                                              | 2.2 ACCESS POINT FOR FIRE DEPT. LADDER(S) SHALL BE CLEAR OF OPENINGS/OBSTRUCTIONS.                                                                                                                                                                                         |                                                                                                     |   |                                                                                       |   | 2.10 THE SUGGESTED EQUIPMENT MOUNTING LOCATION MAY BE ADJUSTED AT INSTALLER'S DISCRETION SO LONG AS LOCAL AHJ REQUIREMENTS ARE ADHERED TO                                                                                                                                                                                                                                                                                                                                                                |   |    |     |                |  |              |
|                                              | 2.3 WORK SHALL BE PERFORMED IN ACCORDANCE WITH ROOF SAFETY RATING (CLASS A). (UL 790/ASTM E108)                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   | CONDUIT NOTES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |   |    |     |                |  |              |
|                                              | NOTE TO INSTALLER                                                                                                                                                                                                                                                          |                                                                                                     |   |                                                                                       |   | 3.1 PVC SCH 40 OR SCH 80 MAY BE USED AS REQUIRED FOR ADDITIONAL SAFETY OR FOR RUNS <= FT WITH UPSIZE ACCORDING TO FILL TABLE.                                                                                                                                                                                                                                                                                                                                                                            |   |    |     |                |  |              |
|                                              | 3.1 ALL PANELS SHALL BE ATTACHED TO EXISTING ROOF STRUCTURE USING THE REQUIRED NUMBER OF ATTACHMENTS IN THE PROPER CONFIGURATION AS DEFINED IN THIS PLAN SET.                                                                                                              |                                                                                                     |   |                                                                                       |   | 3.2 ELECTRICAL METALLIC TUBING (EMT) NEC Art. 358:                                                                                                                                                                                                                                                                                                                                                                                                                                                       |   |    |     |                |  |              |
|                                              | 3.2 ALL PANELS SHALL BE FULLY OUTSIDE OF ANY ROOF AREAS DEFINED AS FIRE SETBACK IN THIS SITE PLAN. FIRE SETBACKS ARE DEFINED BY THE DIMENSIONS IN RED AND ARE CONSIDERED ABSOLUTE.                                                                                         |                                                                                                     |   |                                                                                       |   | 3.3 1. EMT SHALL BE FASTENED EVERY 10 FT & FROM BOX, FITTING, TERMINAL POINT.                                                                                                                                                                                                                                                                                                                                                                                                                            |   |    |     |                |  |              |
|                                              | 3.3 ANY DIMENSIONS NOTED AS "MAX" SHALL BE BE UNDERSTOOD TO BE ABSOLUTE REQUIREMENTS WITH A TOLERANCE OF +-0.0"                                                                                                                                                            |                                                                                                     |   |                                                                                       |   | 3.4 2. BENDS BETWEEN PULL POINTS SHALL COMBINE LESS THAN OR EQUAL TO 360°.                                                                                                                                                                                                                                                                                                                                                                                                                               |   |    |     |                |  |              |
| C                                            | 3.4 ANY DIMENSIONS NOTED AS "MIN SHALL BE BE UNDERSTOOD TO BE ABSOLUTE REQUIREMENTS WITH A TOLERANCE OF +-0.0"                                                                                                                                                             |                                                                                                     |   |                                                                                       |   | 3.5 3. CONNECTORS SHALL BE CORROSION RESISTANT.                                                                                                                                                                                                                                                                                                                                                                                                                                                          |   |    |     |                |  |              |
|                                              | 3.5 STANDARD DIMENSIONS (NOT INCLUDING FIRE SETBACKS) SHALL BE UNDERSTOOD TO BE REQUIREMENTS WITH A TOLERANCE OF +-2.0"                                                                                                                                                    |                                                                                                     |   |                                                                                       |   | 3.6 4. GASKETS SHALL BE WATERTIGHT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |   |    |     |                |  |              |
|                                              | 3.6 ANY DIMENSIONS NOTED AS APPROX SHALL BE UNDERSTOOD TO BE APPROXIMATE IN NATURE AND SHOULD BE USED AS A GUIDE. EXACT PLACEMENT OF THE PANELS RELATIVE TO THESE DIMENSIONS ARE LEFT TO THE INSTALLERS DISCRETION ASSUMING THAT ALL OTHER DEFINED REQUIREMENTS ARE MET.   |                                                                                                     |   |                                                                                       |   | 3.7 5. COUPLINGS AND CONNECTORS SHALL BE RAIN-TIGHT OR RAIN-TIGHT/INSULATED. NEC FILL TABLES                                                                                                                                                                                                                                                                                                                                                                                                             |   |    |     |                |  |              |
|                                              | 3.7 ANY DIMENSIONS IN PARENTHESES () ARE FOR ENGINEERING REFERENCE ONLY AND ARE NOT NEEDED FOR INSTALLATION.                                                                                                                                                               |                                                                                                     |   |                                                                                       |   | 3.8 RIGID PVC CONDUIT TABLE: SCHEDULE 80-C10/40-C11                                                                                                                                                                                                                                                                                                                                                                                                                                                      |   |    |     |                |  |              |
|                                              | 3.8 IT IS THE CONTRACTOR RESPONSIBILITY TO INSTALL THE SYSTEM AND ITS SUPPORTS AS INDICATED IN THESE PLANS. THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD IF SITE CONDITIONS DIFFER FROM WHAT IS DEPICTED ON PLANS.                                                  |                                                                                                     |   |                                                                                       |   | 3.9 FLEXIBLE METALLIC CONDUIT-TABLE C3                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |   |    |     |                |  |              |
|                                              | ATTACHMENT SYSTEM                                                                                                                                                                                                                                                          |                                                                                                     |   |                                                                                       |   | 3.10 LIQUIDTIGHT FLEXIBLE CONDUIT TABLE-METALLIC C7/NON-METALLIC (FNMC-B)-CS                                                                                                                                                                                                                                                                                                                                                                                                                             |   |    |     |                |  |              |
|                                              | 4.1 ATTACHMENT SYSTEM AND FLASHING METHOD SHALL BE CONSTRUCTED ACCORDING MANUFACTURER'S INSTALLATION MANUAL AND AS SPECIFIED BY EOR.                                                                                                                                       |                                                                                                     |   |                                                                                       |   | ELECTRICIAN NOTES:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |   |    |     |                |  |              |
|                                              |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   | 4.1 1. CONFIRM GROUND CONDUCTOR (EGC) & EXISTING GROUNDING ELECTRODE (GE)                                                                                                                                                                                                                                                                                                                                                                                                                                |   |    |     |                |  |              |
|                                              |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   | 4.2 2. CONFIRM BUSBAR RATINGS & FEEDERS. IF ACTUAL CONDITIONS DIFFER, NOTIFY EOR.                                                                                                                                                                                                                                                                                                                                                                                                                        |   |    |     |                |  |              |
|                                              |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   | 4.3 3. CONDUCTORS MAY BE COMBINED USING RATED JUNCTIONS BOXES/CONDUIT UP-SIZE.                                                                                                                                                                                                                                                                                                                                                                                                                           |   |    |     |                |  |              |
| D                                            |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   | 4.4 EXPANSION NOTE: FITTINGS SHALL BE INSTALLED BETWEEN SECURELY-MOUNTED ELBOWS AND TERMINATION POINTS (NOT INCL. WYES). IF JOINT IS VERTICAL, OPEN-END SHALL BE SECURELY FASTENED IN DOWN POSITION W/COUPLING INSTALLED CLOSE TO TOP OF RUN W/ BARREL ALSO DOWN AND LOWER END SECURED AT BOTTOM TO ALLOW UPWARD MOVEMENT. (SEC. 352.44 NEC)                                                                                                                                                             |   |    |     |                |  |              |
|                                              |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   | BONDING & GROUNDING NOTE:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |    |     |                |  |              |
|                                              |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   | 5.1 1. MODULES SHALL BE BONDED BY BONDING MID-CLAMPS ACCORDING TO INSTALLATION MANUAL MODULES WHICH CAN NOT BE FULLY BONDED SHALL BE PROPERLY GROUND USING GROUNDING LUG WIRED DIRECTLY TO SYSTEM GROUND WIRE. ALTERNATIVES REQUIRE A CUSTOMIZED PLAN FROM EOR.                                                                                                                                                                                                                                          |   |    |     |                |  |              |
|                                              |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   | 5.2 2. (2) ROD AND PIPE ELECTRODES REQUIRED. ROD AND PIPE ELECTRODES SHALL NOT BE LESS THAN 2.44 M (8 FT) IN LENGTH AND SHALL CONSIST OF THE FOLLOWING MATERIALS: COPPER, GALVANIZED STEEL, STAINLESS STEEL                                                                                                                                                                                                                                                                                              |   |    |     |                |  |              |
|                                              |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   | 5.3 3. GROUNDING ELECTRODES OF PIPE OR CONDUIT SHALL NOT BE SMALLER THAN METRIC DESIGNATOR 21 (TRADE SIZE 3/4) AND, WHERE OF STEEL, SHALL HAVE THE OUTER SURFACE GALVANIZED OR OTHERWISE METAL-COATED FOR CORROSION PROTECTION.                                                                                                                                                                                                                                                                          |   |    |     |                |  |              |
|                                              |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   | 5.4 4. ROD-TYPE GROUNDING ELECTRODES OF STAINLESS STEEL AND COPPER OR ZINC-COATED STEEL SHALL BE AT LEAST 15.87 MM (5/8 IN.) IN DIAMETER, UNLESS LISTED.                                                                                                                                                                                                                                                                                                                                                 |   |    |     |                |  |              |
|                                              |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   | 5.5 5. THE METAL WATER PIPING SYSTEM SHALL BE BONDED AS REQUIRED PER NEC 250.104                                                                                                                                                                                                                                                                                                                                                                                                                         |   |    |     |                |  |              |
|                                              |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   | 5.6 6. INTERSYSTEM BONDING REQUIRED PER NEC 250.94                                                                                                                                                                                                                                                                                                                                                                                                                                                       |   |    |     |                |  |              |
|                                              |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   | SMOKE ALARM NOTES:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |   |    |     |                |  |              |
|                                              |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   | 6.1 INTERCONNECTED SMOKE ALARMS SHALL BE INSTALLED THROUGHOUT THE DWELLING, INCLUDING IN ROOMS, ATTACHED GARAGES, AND AREAS IN WHICH ESS ARE INSTALLED IN COMPLIANCE WITH LOCAL BUILDING CODE. WHERE ESS ARE INSTALLED IN AN ATTACHED GARAGE OR AREA IN WHICH SMOKE ALARMS CANNOT BE INSTALLED IN ACCORDANCE WITH THEIR LISTING, AN INTERCONNECTED LISTED HEAT ALARM SHALL BE INSTALLED AND BE CONNECTED TO THE SMOKE ALARM SYSTEM REQUIRED BY THE LOCAL BUILDING CODE PER NFPA 855 EDITION 2020 15.9.2. |   |    |     |                |  |              |
| E                                            |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   | SURGE PROTECTION NOTE:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |   |    |     |                |  |              |
|                                              |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   | 7.1 PER NEC 230.67(D) WHERE SERVICE EQUIPMENT IS REPLACED, A SURGE-PROTECTIVE DEVICE (SPD) SHALL BE PROVIDED TO NEW SERVICE EQUIPMENT                                                                                                                                                                                                                                                                                                                                                                    |   |    |     |                |  |              |
|                                              |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |   |    |     |                |  |              |
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|                                              |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |   |    |     |                |  |              |
|                                              |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |   |    |     |                |  |              |
| F                                            | 01 GENERAL NOTES                                                                                                                                                                                                                                                           |                                                                                                     |   |                                                                                       |   | 03 ELECTRICAL NOTES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |   |    |     |                |  |              |
|                                              |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |   |    |     |                |  |              |
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|                                              |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |   |    |     |                |  |              |
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| DONALD J HAYES                               |                                                                                                                                                                                                                                                                            | CONTRACTOR:                                                                                         |   | ENGINEER: CA33343                                                                     |   | DATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   | BY | VER | DESCRIPTION    |  | G1           |
| 359 SW Hunter Leigh Place Lake City FL 32024 |                                                                                                                                                                                                                                                                            |  ENLIGHT ENERGY |   |  |   | 03.18.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |   | JB | 00  | INITIAL DESIGN |  |              |
|                                              |                                                                                                                                                                                                                                                                            | 978 SW 2ND AVE GAINESVILLE, FL 32601                                                                |   | 1646 W SNOW AVE 9 TAMPA, FL 33606                                                     |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |   |    |     |                |  | PAPER: ARCHB |
|                                              |                                                                                                                                                                                                                                                                            | (800) 798-0315                                                                                      |   |                                                                                       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |   |    |     |                |  | SCALE: NTS   |
| PROJECT ID: 432025-355                       |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |   |    |     |                |  |              |
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|                                              |                                                                                                                                                                                                                                                                            |                                                                                                     |   |                                                                                       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |   |    |     |                |  |              |

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|   |                                              |                                                                                                                                                              |                                                                                                                            |                                                                                                                                                                                            |          |    |     |                |                 |
|---|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----|-----|----------------|-----------------|
| F | DONALD J HAYES                               | CONTRACTOR:                                                                                                                                                  | ENGINEER: CA33343                                                                                                          |  <div>Ryan S<br/>Gittens<br/>2025.04.29<br/>20:05:00<br/>-04'00'<br/>RYAN S GITTENS<br/>PE90605</div> | DATE     | BY | VER | DESCRIPTION    | S1              |
|   | 359 SW Hunter Leigh Place Lake City FL 32024 |  ENLIGHT ENERGY<br>978 SW 2ND AVE GAINESVILLE, FL 32601<br>(800) 798-0315 | <br>1646 W SNOW AVE 9 TAMPA, FL 33606 |                                                                                                                                                                                            | 03.18.25 | JB | 00  | INITIAL DESIGN |                 |
|   |                                              |                                                                                                                                                              |                                                                                                                            |                                                                                                                                                                                            |          |    |     |                | PAPER:<br>ARCHB |
|   |                                              |                                                                                                                                                              |                                                                                                                            |                                                                                                                                                                                            |          |    |     |                |                 |
|   | PROJECT ID: 432025-355                       |                                                                                                                                                              |                                                                                                                            |                                                                                                                                                                                            |          |    |     |                |                 |

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|   |                                              |                                                                                                                                    |                                                                                                                     |                                                                                                                                                                                                                                                                                                                   |          |    |     |                |              |
|---|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----|-----|----------------|--------------|
| F | DONALD J HAYES                               | CONTRACTOR:                                                                                                                        | ENGINEER: CA33343                                                                                                   | <div><div><div><div><div><div></div><div>NO 5/26/05</div><div>A</div><div>S &amp; L G P</div><div>REGISTERED PROFESSIONAL ENGINEER</div><div>STATE OF FLORIDA</div></div></div><div><div>2025.04.29</div><div>20:05:00</div><div>-04'00'</div><div>RYAN S GITTENS</div><div>PE90605</div></div></div></div></div> | DATE     | BY | VER | DESCRIPTION    | SL1          |
|   | 359 SW Hunter Leigh Place Lake City FL 32024 | <div><div><div></div><div>ENLIGHT ENERGY</div></div><div>978 SW 2ND AVE GAINESVILLE, FL 32601</div><div>(800) 798-0315</div></div> | <div><div><div></div><div>ECUIP</div><div>ENGINEERING</div></div><div>1646 W SNOW AVE 9 TAMPA, FL 33606</div></div> |                                                                                                                                                                                                                                                                                                                   | 03.18.25 | JB | 00  | INITIAL DESIGN |              |
|   |                                              |                                                                                                                                    |                                                                                                                     |                                                                                                                                                                                                                                                                                                                   |          |    |     |                | PAPER: ARCHB |
|   |                                              |                                                                                                                                    |                                                                                                                     |                                                                                                                                                                                                                                                                                                                   |          |    |     |                | SCALE: NTS   |
|   | PROJECT ID: 432025-355                       |                                                                                                                                    |                                                                                                                     |                                                                                                                                                                                                                                                                                                                   |          |    |     |                |              |

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ECUIP ENGINEERING

GENERAL

1.1 CONTRACTOR SHALL COMPLY WITH FBC 2023/ASCE 7-22, NEC 2020 AND EQUIPMENT INSTALLATION INSTRUCTIONS NOT SHOWN IN THIS PLAN.

1.2 ALL EQUIPMENT SHALL BE LISTED PER NEC 690.4(B).

1.3 PV SOURCE CONDUCTORS ARE SIZED BE EXPOSED TO DIRECT SUNLIGHT WHEN INSTALLED IN RACEWAYS 7/8" OR LESS ABOVE ROOF. ADJUSTMENTS ARE BASED ON MAX CURRENT OF 16A, 35C AMBIENT TEMP, NEC 310.15(B)(2) AND T310.15(B)(1).

1.4 ALL EQUIPMENT SHALL BE RATED FOR INSTALL LOCATION. ROOF & OUTDOOR JUNCTION BOXES SHALL BE OUTDOOR RATED

1.5 INTERCONNECTION EQUIPMENT SHALL BE RATED FOR AVAILABLE FAULT CURRENT.

1.6 NEC 230.67(D) WHERE SERVICE EQUIPMENT IS REPLACED, A SURGE-PROTECTIVE DEVICE (SPD) SHALL BE PROVIDED.

SYSTEM

2.1 THE ENPHASE SYSTEM IS NON-ISOLATED AND UNGROUNDED. NEITHER THE NEGATIVE NOR POSITIVE CONDUCTOR IS GROUNDED AND HAS A COMMON AC AND DC EQUIPMENT GROUNDING TERMINAL THEREFORE NO DC GEC IS REQUIRED.

2.2 ENPHASE IQ SERIES MICROINVERTERS REQUIRE NO GROUND OR GROUNDED CONDUCTOR BECAUSE THE DC CIRCUIT IS ISOLATED AND INSULATED FROM GROUND.

2.3 THE INVERTER IS EQUIPPED WITH A RAPID SHUTDOWN FEATURE WHICH CONFORMS TO NEC 690.12.

2.4 INTERCONNECTION SHALL BE MADE BY LINE-SIDE-TAP PER ARTICLE 705.11 USING CONNECTORS UL LISTED FOR THIS PURPOSE. TAP CONDUCTORS SHALL BE NO MORE THAN 10FT IF INSIDE BUILDING PER 705.11(C). TAP & ENCLOSURE SHALL COMPLY WITH NEC 312.8(A) (CROSS SECTIONAL AREA FILL).

2.5 NO MORE THAN 4 BRANCHES (OR 8 CONDUCTORS) SHALL BE RUN IN A SINGLE CONDUIT USING #10 WIRE. USE MULTIPLE CONDUITS/JBOX AS REQUIRED TO SATISFY THIS LIMIT.

GROUNDING

3.1 ALL EQUIPMENT SHALL BE PROPERLY GROUNDED PER THE REQUIREMENTS OF NEC ARTICLES 250 & 690.

3.2 FRAMED PV MODULES SHALL BE BONDED TOGETHER USING LUGS OR RACKING INTEGRATED GROUNDING CLAMPS.

3.3 EQUIPMENT GROUNDING SHALL BE INSTALLED PER NEC 250.120(C), SIZED PER 690.45 & BE A MINIMUM OF #6 WHEN EXPOSED TO DAMAGE.

3.4 INTERSYSTEM BONDING DEVICE REQUIRED AT SERVICE WHEN COMMUNICATION DEVICES ARE PRESENT PER 250.94.

3.5 EXISTING GROUNDING ELECTRODE SYSTEM (GES) SHALL COMPLY WITH 250.64, 250.53 & 250.62 & BE OF THE TYPES & SIZE LISTED IN 250.52.

3.6 EXISTING GROUNDING ELECTRODE SYSTEM (GES) SHALL BE SIZED PER 250.66 & T250.66: TYP. #4 GEC (FIELD VERIFY).

3.7 METAL WATER PIPES SHALL BE GROUNDED PER 250.104(A)

01

NOTES

# PV MODULES, INV

26

STC DC RATING (KW)

137.8

AC OUTPUT RATING (KW)

12

# STRINGS

3

MIN-MAX STRING SIZE

5-11

DC/AC RATIO

1.15

MPP CURRENT (A)

25

05

SYSTEM

MAKE

EG4

MODEL

WALLMOUNT INDOOR BATTERY

NOMINAL VOLTAGE

51.2

V

CAPACITY

280

AH

TOTAL STORAGE CAPACITY

14.3

KWH

MAX CHARGE CURRENT

200

A

MAX DISCHARGE CURRENT

200

A

USABLE CAPACITY

14.3

KWH

UNITS

5

TOTAL USABLE CAPACITY

71.5

KWH

07

ESS RATINGS

MAKE

ADANI SOLAR

MODEL

ASB-M10-144-530

RATED POWER (W)

530

MPP VOLTAGE (V)

41.49

MPP CURRENT (A)

12.79

OC VOLTAGE (V)

48.57

SC CURRENT (A)

13.7

02

MODULE RATINGS

MAKE

TIGO

MODEL

TS4-A-O

INPUT POWER (W)

700

MAX INPUT VOLTAGE (V)

90

MAX INPUT CURRENT (A)

15

MAX OUTPUT CURRENT (A)

15

MAX STRING POWER (W)

NA

03

OPT/RSD RATINGS

MAKE, INV

EG4

MODEL

12KPV

MAX INPUT POWER (W)

15000

MAX INPUT VOLTAGE (V)

600

NOM INPUT VOLTAGE (V)

360

MAX INPUT CURRENT (A)

25

NOM AC VOLTAGE (V)

240

MAX AC CURRENT (A)

33.3

NOM AC POWER (W)

12000

04

INVERTER RATINGS

MAKE

EG4

MODEL

GRIDBOSS

NOMINAL VOLTAGE

120/240

V

FREQUENCY

60

HZ

MAX CURRENT

200

A

INTERNAL BUS RATING

350

A

OUTDOOR RATING

NEMA 3R

06

TRANSFER SWITCH RATINGS

01

NOTES

05

SYSTEM

07

ESS RATINGS

02

MODULE RATINGS

03

OPT/RSD RATINGS

04

INVERTER RATINGS

06

TRANSFER SWITCH RATINGS

DONALD J HAYES

359 SW Hunter Leigh Place Lake City FL 32024

PROJECT ID: 432025-355

CONTRACTOR:

ENLIGHT ENERGY

978 SW 2ND AVE GAINESVILLE, FL 32601

(800) 798-0315

ENGINEER: CA33343

ECUIP ENGINEERING

1646 W SNOW AVE 9 TAMPA, FL 33606

RYAN S GITTENS

2025.04.29 20:05:00 -04'00'

RYAN S GITTENS

PE90605

DATE

03.18.25

BY

JB

VER

00

DESCRIPTION

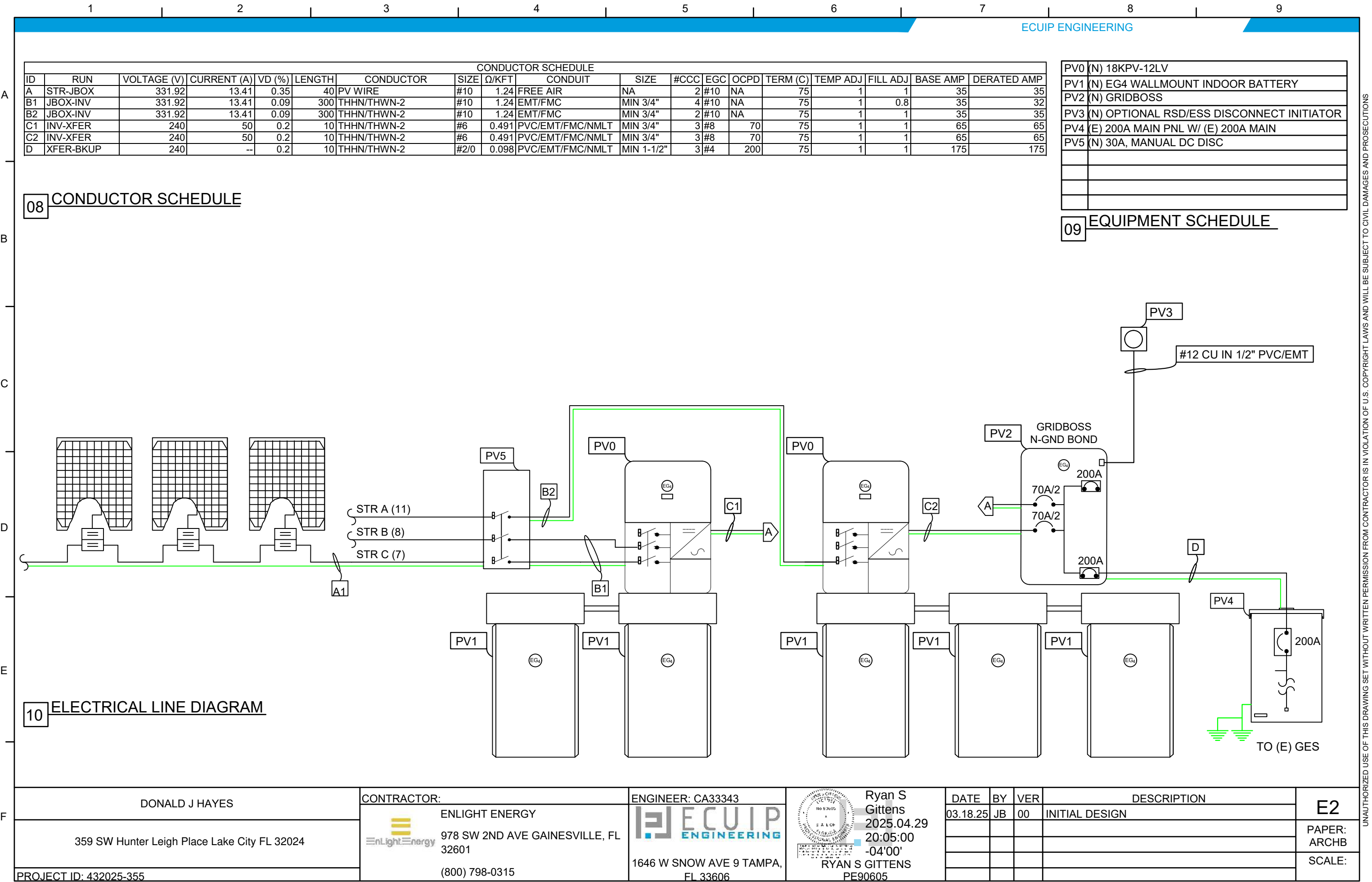
INITIAL DESIGN

E1

PAPER: ARCHB

SCALE:

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**! WARNING**  
**ELECTRICAL SHOCK HAZARD**  
**TERMINALS ON THE LINE AND LOAD**  
**SIDES MAY BE ENERGIZED IN THE OPEN**  
**POSITION**

NEC 706.15(C)(4), NEC 690.13(B)  
LOCATION(S): 3  
Combiner Box/Circuits/Enclosures

**! WARNING**  
ELECTRICAL SHOCK HAZARD  
TERMINALS ON THE LINE AND LOAD  
SIDES MAY BE ENERGIZED IN THE OPEN  
POSITION

NEC 690.13(B)  
LOCATION(S): 4, 3  
DC Disconnect

NEC 690.13(B)  
LOCATION(S): 4, 3  
DC Disconnect

NEC 690.13(B)  
LOCATION(S): 4, 3  
DC Disconnect

NEC 690.31(D)(2)  
LOCATION(S): 1, 2  
Conduit Raceways

NEC 690.31(D)(2)  
LOCATION(S): 4, 3  
Conduit Raceways

NEC 690.13(B)  
LOCATION(S): 4, 5  
AC Disconnect/Breaker/POC

DUAL POWER SOURCE  
SECOND POWER SOURCE IS PV SYSTEM

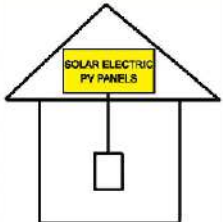
NEC 705.12(C), NEC 690.59  
LOCATION(S): 6  
Production/Net Meter

| PHOTOVOLTAIC AC DISCONNECT   |     |
|------------------------------|-----|
| RATED AC OUTPUT CURRENT      | 100 |
| NOMINAL OPERATING AC VOLTAGE | 240 |

NEC 690.54  
LOCATION(S): 3, 4  
Inverter/POC/Breaker Panel/Pull Boxes

NEC 690.13(B)  
LOCATION(S): 4, 5  
Main Service Disconnect

TURN RAPID  
SHUTDOWN  
SWITCH TO THE  
"OFF" POSITION TO  
SHUT DOWN PV  
SYSTEM  
AND REDUCE  
SHOCK HAZARD IN  
THE ARRAY



NFPA 1 11.12.2.1.1.1.1  
LOCATION(S): 5

NFPA 1 11.12.2.1.1.8  
LOCATION(S): 4  
Rapid Shutdown Switch

UTILITY REQ'D  
LOCATION(S): 4, 6  
Main Service Disconnect

DUAL POWER SOURCE  
SECOND POWER SOURCE IS BATTERY

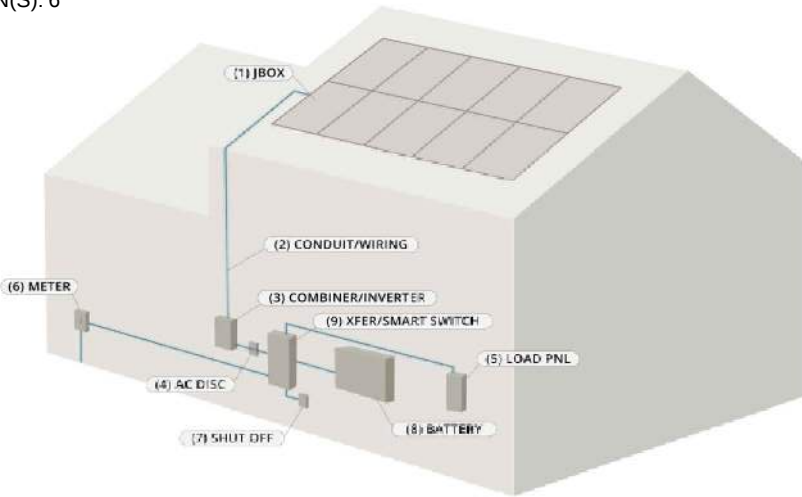
NEC 705.12(C), NEC 690.59  
LOCATION(S): 6  
Production/Net Meter

NEC 690.13(B)  
LOCATION(S): 8, 9  
Transfer Switch

[illegible]

**CAUTION: MULTIPLE SOURCES OF POWER**  
POWER TO THIS BUILDING IS ALSO SUPPLIED BY SOLAR  
PANELS WITH DISCONNECTS AS SHOWN

NFPA 1 11.12.2.1.1.1.1, NEC 690.56(C)(1)  
LOCATION(S): 6



1.1 LABEL MATERIALS SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT, NEC 110.21(B)(3).

1.2 EXACT MATERIALS USED ARE SUBJECT TO THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

1.3 LABELS SHALL BE A MINIMUM LETTER HEIGHT OF 3/8" AND PERMANENTLY AFFIXED.

1.4 LABELS WILL BE REFLECTIVE AND MEET THE REQUIREMENTS OF NFPA 1-11.12.2.1.1.2

02 NOTES

359 SW Hunter Leigh Place Lake City FL 3204

PROJECT ID: 432025-355

ENLIGHT ENERGY  
978 SW 2ND AVE GAINESVILLE, FL  
32601  
(800) 798-0315

**ECUIP**  
ENGINEERING

1646 W SNOW AVE 9 TAMPA  
FL 33606

 Ryan S  
Gittens  
2025.04.29  
20:05:00  
-04'00'  
RYAN S GITTENS  
PE90605

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## INITIAL DESIGN

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DESCRIPTION

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PAPER:  
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SCALE:

Preliminary Datasheet



Bifacial PV Modules  
MBB P-Type PERC Half-cut

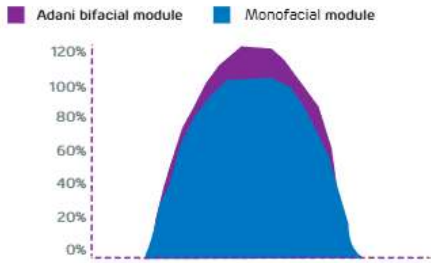
ASB-M10-144-AAA (AAA=520-545) | 144 Cells | 520-545 Wp

Highlights

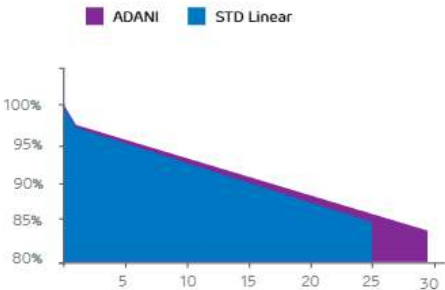
- MBB cell technology - excellent anti-microcracking performance with more balanced interior stress; grid pattern current path, lower cost
- Up to 600 Wp at 15% bifaciality Gain\*\*
- Characterised for 1000 W/m<sup>2</sup> & 200 W/m<sup>2</sup> on the front and rear side respectively
- Up to 70 ± 5 % bifaciality Factor
- Least Degradation for LID & LeTID with Ga Doped wafer technology
- Excellent PID Resistance



Higher generation due to bifacial technology

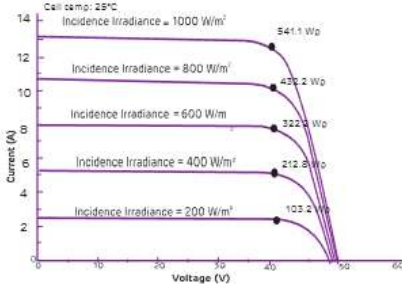


Bifacial technology

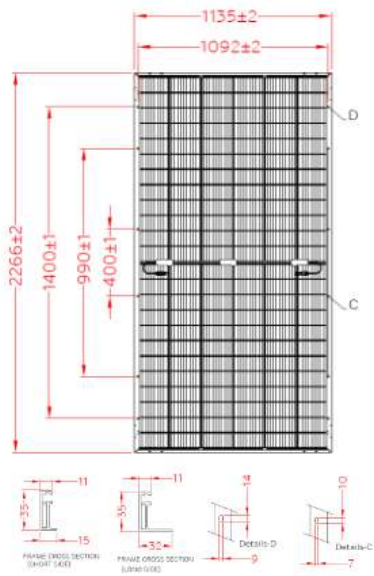


Technical Data

Multi irradiance curve for ASB-M10-144-AAA



Dimensions in mm



Warranty and certifications

**Product warranty\*\***  
12 years of product warranty

**Performance guarantee\*\***  
Power degradation < 2.0 % in first year  
< 0.55 % / year in 2-30 years

**Approvals and certificates\*** : IEC 61215 Ed2, IEC 61730, IEC 61701, UL 61730, MCS, JET, CEC, CEC-Aus, IEC 62716, IEC 62782, IEC 60068-2-68, IEC 61853, BIS



Preliminary Datasheet



Electrical data – All data measured to STC\*

| Electrical Specification                   | Only front (STC) |       |       |       |       |       |
|--------------------------------------------|------------------|-------|-------|-------|-------|-------|
| Peak power, (P <sub>max</sub> ) (Wp)       | 520              | 525   | 530   | 535   | 540   | 545   |
| Maximum voltage, V <sub>mpp</sub> (V)      | 41.19            | 41.34 | 41.49 | 41.64 | 41.80 | 41.94 |
| Maximum current, I <sub>mpp</sub> (A)      | 12.65            | 12.73 | 12.79 | 12.86 | 12.93 | 13.01 |
| Open circuit voltage, V <sub>oc</sub> (V)  | 48.18            | 48.36 | 48.57 | 48.72 | 48.92 | 49.07 |
| Short circuit current, I <sub>sc</sub> (A) | 13.54            | 13.62 | 13.70 | 13.74 | 13.84 | 13.92 |
| Module efficiency (%)                      | 20.22            | 20.41 | 20.60 | 20.80 | 21.00 | 21.20 |

\*STC: Irradiance 1000 W/m<sup>2</sup>, cell temperature 25°C, Air Mass AM 1.5 according to EN 60904-3  
Average efficiency reduction of 4.5 % at 200 W/m<sup>2</sup> according to EN 60904-1. Except P<sub>mpp</sub>, all other parameters have a tolerance of +/3 %, measurement uncertainty <3 %

Electrical Characteristics with different rear side power gain (Reference 525 Wp Front)

| Electrical Specification                   | Pmax gain from rear side* |       |       |       |
|--------------------------------------------|---------------------------|-------|-------|-------|
| Bifaciality Gain                           | 10%                       | 15%   | 20%   | 25%   |
| Peak power, (P <sub>max</sub> ) (Wp)       | 575                       | 600   | 630   | 650   |
| Maximum voltage, V <sub>mpp</sub> (V)      | 41.35                     | 41.35 | 41.36 | 41.36 |
| Maximum current, I <sub>mpp</sub> (A)      | 13.89                     | 14.50 | 15.25 | 15.75 |
| Open circuit voltage, V <sub>oc</sub> (V)  | 48.36                     | 48.36 | 48.36 | 48.36 |
| Short circuit current, I <sub>sc</sub> (A) | 15.01                     | 15.66 | 16.47 | 17.01 |
| Module efficiency (%)                      | 22.36                     | 23.33 | 24.50 | 25.27 |

\*\*Power gain from rear side depends upon the ground reflectance (Albedo) & Bifaciality factor.

Temperature co-efficients (T<sub>c</sub>) and permissible operating conditions

|                                             |                   |
|---------------------------------------------|-------------------|
| T <sub>c</sub> of open circuit voltage (β)  | -0.29 %/°C        |
| T <sub>c</sub> of short circuit current (α) | 0.045 %/°C        |
| T <sub>c</sub> of power (γ)                 | -0.35 %/°C        |
| Maximum system voltage                      | 1500 V (IEC & UL) |
| NOCT                                        | 44°C ± 2°C        |
| Temperature range                           | -40°C to + 85°C   |

Mechanical data

|                                      |                                                                              |
|--------------------------------------|------------------------------------------------------------------------------|
| Length                               | 2266 mm                                                                      |
| Width                                | 1135 mm                                                                      |
| Height                               | 35 mm                                                                        |
| Weight                               | 28.8 kg                                                                      |
| Junction box                         | IP68; Junction box, MC4 compatible                                           |
| Cable and connectors                 | 300 mm length cable, MC4 & Amphenol compatible connectors                    |
| Application class                    | Class A (Safety class II)                                                    |
| Superstrate                          | High transmittance ARC glass-3.2 mm                                          |
| Cells                                | 144 Half-cut mono-crystalline P-type PERC bifacial solar cells; MBB bus bars |
| Encapsulation                        | High volume resistivity and low MVTR                                         |
| Substrate                            | Transparent Backsheet                                                        |
| Frame                                | Anodized Frame                                                               |
| Mechanical load test as per IEC & UL | 5400 Pa-front; 2400 Pa-back                                                  |
| Maximum series fuse rating           | 25 A                                                                         |

Packaging Configuration

|                     |       |
|---------------------|-------|
| Container           | 40'HC |
| Pallets / Container | 18    |
| Pieces / Container  | 589   |

- Note:**
- The specifications included in this datasheet are subject to change without notice.
  - The electrical data given here is for reference purpose only.
  - Please confirm your exact requirements with the sales representative while placing your order.
- Warranty:**  
Please read Adani solar warranty documents thoroughly.
- Caution:**  
Please read safety and installation instructions before using the product.

\*This is preliminary datasheet and subjected to change after final ECN

DONALD J HAYES

359 SW Hunter Leigh Place Lake City FL 32024

PROJECT ID: 432025-355

CONTRACTOR:



ENLIGHT ENERGY  
978 SW 2ND AVE GAINESVILLE, FL 32601  
(800) 798-0315

ENGINEER: CA33343



1646 W SNOW AVE 9 TAMPA, FL 33606



Ryan S Gittens  
2025.04.29  
20:05:00  
-04'00'  
RYAN S GITTENS  
PE90605

| DATE     | BY | VER | DESCRIPTION    | D1<br>PAPER:<br>ARCHB<br>SCALE: |
|----------|----|-----|----------------|---------------------------------|
| 03.18.25 | JB | 00  | INITIAL DESIGN |                                 |
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ECUIP ENGINEERING

Tigo®

TS4-A-O

Module-level optimization, monitoring, and rapid shutdown

The Tigo TS4-A-O improves production, safety, and intelligence in new designs and existing systems. Patented technology delivers top performance with high efficiency for a fast ROI. Easy installation and long-term reliability reduce system downtime and truck rolls, while Tigo's Energy Intelligence platform enables quicker onsite commissioning and comprehensive remote monitoring.

TS4-A-O

Features

- Simple, fast installation – snaps to a standard PV module frame or mounts to racking
- Intelligent optimization – delivers the maximum energy from an array
- Module-level monitoring – full visibility into module- and system-level production
- Rapid shutdown – a UL Standards-certified component for photovoltaic rapid shutdown systems (PVRSS) worldwide
- Works with any system – fully compatible with thousands of different inverter models from more than 50 inverter brands
- 25-year warranty
- Monitoring, rapid shutdown, and remote troubleshooting with Tigo Access Point (TAP) and Cloud Connect Advanced (CCA)

Specifications

Electrical

|                                                     |                |
|-----------------------------------------------------|----------------|
| Maximum current (I <sub>MP</sub> /I <sub>SC</sub> ) | 15 A/20 A      |
| Input voltage range (V <sub>MP</sub> )              | 16 – 80 V      |
| Maximum input voltage                               | 80 V           |
| Maximum system voltage (V <sub>MAX</sub> )          | 1000 V/1500 V* |
| Maximum output current (I <sub>MAX</sub> )          | 15 A           |
| Maximum output power (P <sub>MAX</sub> )            | 700 W          |
| Maximum fuse rating                                 | 25 A           |
| Maximum efficiency                                  | 99.6%          |

AS 5033: Operational Output

|                        |                      |
|------------------------|----------------------|
| Maximum output current | I <sub>DCU MAX</sub> |
| Maximum output voltage | V <sub>DCU MAX</sub> |
| Maximum output power   | P <sub>DCU MAX</sub> |

Rapid Shutdown

|                                   |                                    |
|-----------------------------------|------------------------------------|
| TS4 conductor AWG                 | 12                                 |
| Rapid shutdown time limit         | <30 sec.                           |
| PVRSE-controlled conductor limits | ≤240 VA, ≤8 A, ≤30 V <sub>DC</sub> |
| UL 1741-compliant PVRSE           | Yes                                |
| Communications                    | Wireless                           |

Connections

|                                   |             |
|-----------------------------------|-------------|
| Input (from module) cable lengths | 0.12/0.62 m |
| Output (to string) cable lengths  | 1.2/2 m     |
| Connectors                        | MC4/EVO2    |

\* Depending on UL/IEC certification

Specifications

Environmental

|                             |                               |
|-----------------------------|-------------------------------|
| Operating temperature range | -40 – 70 °C<br>(-40 – 158 °F) |
| Storage temperature range   | -40 – 85 °C<br>(-40 – 185 °F) |
| Maximum elevation           | 2000 m (6560 ft.)             |
| Outdoor IP rating           | IP68/NEMA 3R                  |

Mechanical

|                    |                                                  |
|--------------------|--------------------------------------------------|
| Dimensions (H/W/D) | 139.7 x 138.4 x 22.9 mm<br>(5.4 x 5.5 x 0.9 in.) |
| Weight             | 520 g (1.15 lb.)                                 |

General

Standards compliance

FCC 15b, ETSI EN 301 489, CISPR 31, CSA 22.2, IEC 62109, NEC 690.12 UL 1741 PVRSE/PVRSS

Warranty

25 years

Ordering Information

| Part Number  | V <sub>MAX</sub> | Certifications<br>UL/IEC | Cable<br>Lengths | Connectors |
|--------------|------------------|--------------------------|------------------|------------|
| 461-00252-20 | 1500 V           | 1000 V                   | 1.2/2 m          | MC4        |
| 461-00252-32 | 1500 V           | 1000 V                   | 0.12/1.2 m       | MC4        |
| 461-00252-62 | 1500 V           | 1000 V                   | 0.62/1.2 m       | MC4        |
| 461-00261-32 | 1500 V           | 1500 V                   | 0.12/1.2 m       | EVO2       |
| 461-00261-62 | 1500 V           | 1500 V                   | 0.62/1.2 m       | EVO2       |
| 462-00252-32 | 1000 V*          |                          | 0.12/1.2 m       | MC4        |
| 462-00252-62 | 1000 V*          |                          | 0.62/1.2 m       | MC4        |
| 462-00261-32 | 1500 V*          |                          | 0.12/1.2 m       | EVO2       |
| 462-00261-62 | 1500 V*          |                          | 0.62/1.2 m       | EVO2       |

\* IEC certified only

More Resources

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DONALD J HAYES

359 SW Hunter Leigh Place Lake City FL 32024

PROJECT ID: 432025-355

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EG4® Electronics | Specification Sheet

EG4® Electronics | Specification Sheet

EG4® Electronics | Specification Sheet

EG4® 18KPV-12LV

Hybrid Inverter/Charger

|                                          |                                                                         |
|------------------------------------------|-------------------------------------------------------------------------|
| AC Input Data                            |                                                                         |
| Nominal AC Voltage                       | 240   208VAC                                                            |
| Frequency                                | 50/60Hz                                                                 |
| Max. Continuous AC Current               | 50A                                                                     |
| AC Grid Output Data                      |                                                                         |
| Max. Continuous Output Current           | 50A                                                                     |
| AC Bypass (Grid)                         | 200A                                                                    |
| Rated Voltage                            | 240VAC                                                                  |
| Operating Voltage Range                  | 180–270VAC                                                              |
| Nominal Power Output (W)                 | @240V 12kW / @208V 10.4kW                                               |
| Operating Frequency                      | 50/60Hz                                                                 |
| Phase Shift                              | 0.99@ full load                                                         |
| Reactive Power Adjust Range              | (-0.8) – (+0.8) leading adjustable                                      |
| Sync Inrush Current                      | 35A                                                                     |
| Backup/UPS AC Output Data                |                                                                         |
| Rated Output Current (240V/208V)         | 50A                                                                     |
| AC Bypass (Generator)                    | 90A                                                                     |
| Nominal Output Voltage (V)               | 240   120/240   120/208 VAC                                             |
| Rated Output Power (W)                   | @240VAC 12kW / @208VAC 10.4kW                                           |
| Max Cont. Line Wattage                   | 8kW per 120V                                                            |
| Peak Power (W)                           | With PV: 14.7kW (10 min), 15.5kW (5 min)<br>Without PV: 13.5kW (10 min) |
| Operating Frequency                      | 50/60Hz                                                                 |
| THDV (Total Harmonic Distortion Voltage) | <5%                                                                     |
| Switching Time                           | 10ms                                                                    |
| PV Input Data                            |                                                                         |
| Number of MPPTs                          | 3                                                                       |
| Inputs per MPPT                          | 2/1/1                                                                   |
| Max. Usable Input Current                | 25/15/15A                                                               |
| Max. Short Circuit Input Current         | 31/19/19A                                                               |
| DC Input Voltage Range                   | 100–600 VDC                                                             |
| Unit Startup Voltage                     | 100 VDC                                                                 |
| Load Output Minimum Voltage              | >140 VDC                                                                |
| MPP Operating Voltage Range              | 120–500 VDC                                                             |
| Full Power MPPT Voltage Range            | 230–500 VDC                                                             |
| Nominal MPPT Voltage                     | 360 VDC                                                                 |
| Maximum Utilized Solar Power             | 18kW                                                                    |
| Recommended Maximum Solar Input          | 21kW                                                                    |

EG4® 18KPV-12LV

Hybrid Inverter/Charger

|                                          |                                                                         |
|------------------------------------------|-------------------------------------------------------------------------|
| AC Input Data                            |                                                                         |
| Nominal AC Voltage                       | 240   208VAC                                                            |
| Frequency                                | 50/60Hz                                                                 |
| Max. Continuous AC Current               | 50A                                                                     |
| AC Grid Output Data                      |                                                                         |
| Max. Continuous Output Current           | 50A                                                                     |
| AC Bypass (Grid)                         | 200A                                                                    |
| Rated Voltage                            | 240VAC                                                                  |
| Operating Voltage Range                  | 180–270VAC                                                              |
| Nominal Power Output (W)                 | @240V 12kW / @208V 10.4kW                                               |
| Operating Frequency                      | 50/60Hz                                                                 |
| Phase Shift                              | 0.99@ full load                                                         |
| Reactive Power Adjust Range              | (-0.8) – (+0.8) leading adjustable                                      |
| Sync Inrush Current                      | 35A                                                                     |
| Backup/UPS AC Output Data                |                                                                         |
| Rated Output Current (240V/208V)         | 50A                                                                     |
| AC Bypass (Generator)                    | 90A                                                                     |
| Nominal Output Voltage (V)               | 240   120/240   120/208 VAC                                             |
| Rated Output Power (W)                   | @240VAC 12kW / @208VAC 10.4kW                                           |
| Max Cont. Line Wattage                   | 8kW per 120V                                                            |
| Peak Power (W)                           | With PV: 14.7kW (10 min), 15.5kW (5 min)<br>Without PV: 13.5kW (10 min) |
| Operating Frequency                      | 50/60Hz                                                                 |
| THDV (Total Harmonic Distortion Voltage) | <5%                                                                     |
| Switching Time                           | 10ms                                                                    |
| PV Input Data                            |                                                                         |
| Number of MPPTs                          | 3                                                                       |
| Inputs per MPPT                          | 2/1/1                                                                   |
| Max. Usable Input Current                | 25/15/15A                                                               |
| Max. Short Circuit Input Current         | 31/19/19A                                                               |
| DC Input Voltage Range                   | 100–600 VDC                                                             |
| Unit Startup Voltage                     | 100 VDC                                                                 |
| Load Output Minimum Voltage              | >140 VDC                                                                |
| MPP Operating Voltage Range              | 120–500 VDC                                                             |
| Full Power MPPT Voltage Range            | 230–500 VDC                                                             |
| Nominal MPPT Voltage                     | 360 VDC                                                                 |
| Maximum Utilized Solar Power             | 18kW                                                                    |
| Recommended Maximum Solar Input          | 21kW                                                                    |

EG4® 18KPV-12LV

Hybrid Inverter/Charger

|                                                                |     |
|----------------------------------------------------------------|-----|
| Standards and Certifications                                   |     |
| Safety                                                         |     |
| UL1741SB Rule 21                                               | Yes |
| Rapid Shut Down (RSD) NEC 2020:690.12                          | Yes |
| Arc-Fault Circuit Interrupter (AFCI) NEC 2020:690.11 / UL16998 | Yes |
| Ground Fault Monitoring (GFDI) NEC 2020:690.41(B)              | Yes |
| CSA 22.2.107.1                                                 | Yes |
| CSA 22.2.330                                                   | Yes |
| Grid Connection                                                |     |
| IEEE 1547.1:2020; IEEE 1547:2018                               | Yes |
| Hawaii Rule 14H                                                | Yes |
| California Rule 21 Phase I, II, III                            | Yes |
| EMC                                                            |     |
| FCC Part 15 Class B                                            | Yes |
| Outdoor Rating                                                 |     |
| NEMA 4X / IP65                                                 | Yes |

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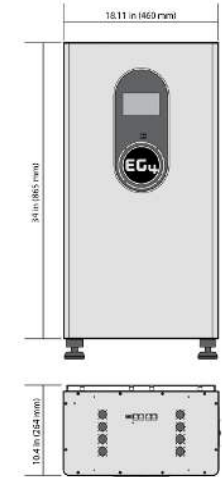
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EG4® WALLMOUNT  
INDOOR 280Ah  
LITHIUM BATTERY

The WallMount Indoor 280Ah batteries are ideal for low-voltage residential indoor energy storage applications. The batteries use lithium iron phosphate cells with the highest safety performance and an intelligent Battery Management System (BMS) that can monitor and record the voltage of each cell along with the current, voltage, and temperature of the module in real-time. The BMS also contains a passive balance function and an advanced battery control method, both of which improve the performance of the battery pack.



BUILT-IN  
200A BMS

INTEGRATED  
600A BUSBARS

82.6MWh  
LIFETIME  
PRODUCTION\*

\*10 YEAR  
WARRANTY  
>8000 CYCLES @  
80% DOD

ON-BOARD LCD TOUCH SCREEN

Easy to see BMS monitoring, and selectable closed-loop communications with EG4, Schneider, Sol-Ark, Victron, Growatt, Megarevo, Luxpower, and Deye inverters.

DUAL ON-BOARD FIRE ARRESTORS

Offer fail-safe protection against thermal runaway.

INTEGRATED SELF-HEATING FEATURE

Internal heating keeps cells operating during cold temperatures.

INTEGRATED BUSBARS

The battery design comes manufactured with 600A internal busbars with multiple terminals (4 positive & 4 negative) eliminating the need for external busbars when paralleling batteries and/or multiple inverters.

INNOVATIVE EMERGENCY STOP FUNCTION

The optional ESS disconnect can shut down all batteries and inverters (if equipped with rapid shut down capability) with the press of a button.

THE PERFECT PARTNER TO EG4 INVERTERS

The optional conduit box mates up directly to the connection ports of EG4 inverters allowing a sleek and efficient installation. For other inverters or stand-alone battery installation, the conduit box plugs should be installed.



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MODEL #: WM-48|280-LL-00 / WM-48-280-1-1H-LL-00

\*For information regarding warranty registration on EG4® Electronics products, please navigate to <https://eg4electronics.com/warranty/> and select the corresponding product to begin the registration process.

TECHNICAL SPECIFICATIONS

| MODULE OPERATING PARAMETERS    |                                    |                   |                                                      |
|--------------------------------|------------------------------------|-------------------|------------------------------------------------------|
| PARAMETER                      | BMS                                |                   | RECOMMENDED SETTING                                  |
| TOTAL ENERGY CAPACITY          | 14.3kWh @25C, 100% SOC             |                   | -                                                    |
| VOLTAGE                        | 51.2V                              |                   | -                                                    |
| CAPACITY                       | 280Ah                              |                   | -                                                    |
| CHARGING VOLTAGE (BULK/ABSORB) | 56.0V (+/-0.8V)                    |                   | 56.2V (+/-0.2V)                                      |
| FLOAT                          | -                                  |                   | 54V (+/-0.2V)                                        |
| SOC CUTOFF                     | -                                  |                   | 20%*                                                 |
| CHARGING CURRENT               | 200A (Max. continuous)             |                   | 60A - 160A                                           |
| DISCHARGING CURRENT            | 200A (Max. continuous)             |                   | 160A                                                 |
| DISCHARGE RATE                 | 10.24kW (Max. continuous)          |                   | -                                                    |
| BMS PARAMETERS                 |                                    |                   |                                                      |
| CHARGE                         | SPEC                               | DELAY             | RECOVERY                                             |
| CELL VOLTAGE PROTECTION        | 3.8V                               | 1 sec             | 3.45V                                                |
| MODULE VOLTAGE PROTECTION      | 60.0V                              | 1 sec             | 55.2V                                                |
| OVER CHARGING CURRENT 1        | >205A                              | 10 sec            | -                                                    |
| OVER CHARGING CURRENT 2        | >225A                              | 3 sec             | -                                                    |
| TEMPERATURE PROTECTION         | <23°F or >158°F<br><5°C or >70°C   | 1 sec             | >32°F or <140°F<br>>0°C or <60°C                     |
| DISCHARGE                      | SPEC                               | DELAY             | RECOVERY                                             |
| CELL VOLTAGE PROTECTION        | 2.3V                               | 1 sec             | 3.1V                                                 |
| MODULE VOLTAGE PROTECTION      | 44.8V                              | 1 sec             | 48V                                                  |
| OVER-CHARGING CURRENT 1        | >205A                              | 10 sec            | 60 sec                                               |
| OVER-CHARGING CURRENT 2        | >300A                              | 3 sec             | 60 sec                                               |
| SHORT CIRCUIT                  | >600A                              | <0.1 ms           | -                                                    |
| TEMPERATURE PROTECTION         | <-4°F or >167°F<br><-20°C or >75°C | 1 sec             | >14°F or <149°F<br>>-10°C or <65°C                   |
| PCB TEMP PROTECTION            | >230°F (>110°C)                    | 1 sec             | @ <176°F (<80°C)                                     |
| GENERAL SPECIFICATIONS         |                                    |                   |                                                      |
| PARAMETER                      | SPEC                               |                   | CONDITION                                            |
| CELL BALANCE                   | 120mA                              | Passive Balance   | Cell Voltage Difference >40mV                        |
| TEMPERATURE ACCURACY           | 3%                                 | Cycle Measurement | Measuring Range -40°F to +212°F<br>(-40°C to +100°C) |
| VOLTAGE ACCURACY               | 0.5%                               | Cycle Measurement | For Cells & Module                                   |
| CURRENT ACCURACY               | 3%                                 | Cycle Measurement | Measuring Range -200A - 200A                         |
| SOC                            | 5%                                 | -                 | Integral Calculation                                 |
| POWER CONSUMPTION              | Sleep & Off Mode                   | <300uA            | Storage/Transport/Standby                            |
| POWER CONSUMPTION              | Operating Mode                     | <25mA             | Charging/Discharging                                 |
| COMMUNICATION PORTS            | RS485/CAN                          |                   | Can be customized                                    |
| BATTERY HEATER SPECIFICATIONS  |                                    |                   |                                                      |
| PARAMETER                      | SPEC                               |                   | CONDITION                                            |
| VOLTAGE                        | 56V                                |                   | -                                                    |
| POWER CONSUMPTION              | 224W                               |                   | -                                                    |
| INTERNAL BATTERY TEMPERATURE   | ≤32°F (0°C) ≥41°F (5°C)            |                   | Heat On/Heat Off                                     |

| ENVIRONMENTAL PARAMETERS |                                                    |
|--------------------------|----------------------------------------------------|
| CHARGING RANGE           | 32° to 113°F (0°C to 45°C)                         |
| DISCHARGING RANGE        | -4°F to 122°F (-20°C to 50°C)                      |
| STORAGE RANGE            | -4°F to 122°F (-20°C to 50°C)                      |
| INGRESS PROTECTION       | IP20                                               |
| PHYSICAL SPECIFICATIONS  |                                                    |
| DIMENSIONS (H×W×D)       | 36.4 in x 18.1 in x 9.6 in. (925 mm×460 mm×245 mm) |
| WEIGHT                   | 282.2 lbs. (128 kg)                                |
| DESIGN LIFE              | >10 Years                                          |
| CYCLE LIFE               | >8000 cycles, 0.5C 80% DOD                         |
| LIFETIME PRODUCTION      | 82.6MWh**                                          |
| SAFETY CERTIFICATIONS    |                                                    |
| CERTIFICATIONS           | UL1973, UL 9540A (Passed)                          |

\*EG4 recommends this value be set no lower than 20% to maintain the recommended 80% depth of discharge.

\*\* (51.2V×280Ah/1000×80%×8000 cycles/1000)90%=MWh

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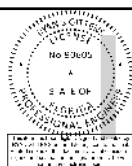


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TECHNICAL SPECIFICATIONS

|                                     |                                                           |
|-------------------------------------|-----------------------------------------------------------|
| GRID                                |                                                           |
| NOMINAL AC VOLTAGE                  | 120/240VAC (L1/L2/N required)                             |
| FREQUENCY                           | 60 Hz                                                     |
| MAXIMUM CURRENT                     | 200A                                                      |
| SERVICE ENTRANCE RATED              | 22kAIC with 200A Eaton breaker (model: (CSR2200N) CSR25K) |
| GENERATOR                           |                                                           |
| NOMINAL VOLTAGE                     | 120/240VAC (L1/L2/N required)                             |
| FREQUENCY                           | 60 Hz                                                     |
| MAXIMUM CURRENT                     | 125A                                                      |
| NON-BACKUP                          |                                                           |
| NOMINAL VOLTAGE                     | 120/240VAC (L1/L2/N required)                             |
| FREQUENCY                           | 60 Hz                                                     |
| MAXIMUM CURRENT                     | 200A                                                      |
| BACKUP                              |                                                           |
| NOMINAL VOLTAGE                     | 120/240VAC (L1/L2/N required)                             |
| FREQUENCY                           | 60 Hz                                                     |
| MAXIMUM CURRENT                     | 200A                                                      |
| HYBRID                              |                                                           |
| NUMBER OF PORTS                     | 3                                                         |
| NOMINAL VOLTAGE                     | 120/240VAC (L1/L2/N required)                             |
| FREQUENCY                           | 60 Hz                                                     |
| MAXIMUM CURRENT PER PORT            | 70A*                                                      |
| SUPPORTED INVERTERS                 | EG4® 12kPV, 18kPV, & FlexBOSS21**                         |
| SMART PORTS                         |                                                           |
| NUMBER OF PORTS                     | 4                                                         |
| NOMINAL VOLTAGE                     | 120/240VAC (L1/L2/N required)                             |
| FREQUENCY                           | 60 Hz                                                     |
| MAXIMUM CURRENT PER PORT            | 1: 125A   2: 80A   3: 60A   4: 60A                        |
| GENERAL DATA                        |                                                           |
| COMMUNICATION INTERFACE             | RS485/Wi-Fi/CAN                                           |
| IDLE CONSUMPTION                    | ~55W                                                      |
| TRANSFER TIME                       | ~25 ms                                                    |
| INTERNAL BUS RATING                 | 350A                                                      |
| INTERNAL FUSE RATING                | 315A                                                      |
| OPERATING ALTITUDE                  | <6561 ft (<2000 m)                                        |
| RELATIVE HUMIDITY                   | 0 – 100%                                                  |
| OUTDOOR RATING                      | NEMA 3R                                                   |
| OPERATING AMBIENT TEMPERATURE RANGE | -40°F – 140°F (-40°C – 60°C)                              |
| PRODUCT DIMENSIONS (H×W×D)          | 31.5×19.7×7 in (800×500×178 mm)                           |
| UNIT WEIGHT                         | 55 lbs. (25 kg)                                           |
| STANDARD WARRANTY                   | 10-year standard warranty***                              |

19.7 in. (500 mm)

31.5 in. (800 mm)

7 in. (178 mm)

EG4

GRIDBOSS

200A SERVICE ENTRANCE\*

4 CONFIGURABLE SMART PORTS

INTEGRATED GENERATOR SUPPORT

CENTRALIZED ESS CONTROL

REDUCED ESS COMPLEXITY

SERVICE ENTRANCE RATED

REMOTE MONITORING

SMART PORTS

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MODEL #: MI-200-2P-HYB-AW-01

\*When used with an Eaton 200A main breaker (model CSR25k)

\*Install a properly sized breaker based on the connected inverter: 50A - 12kPV; 70A - 18kPV; 90A - FlexBOSS21.

\*\*Third party inverters are not supported and cannot be connected to the hybrid ports.

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Tech Brief

Tech Brief

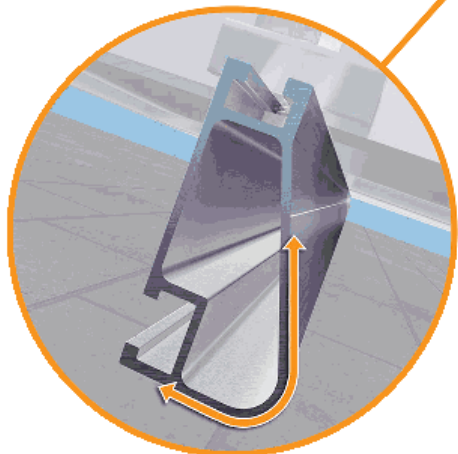
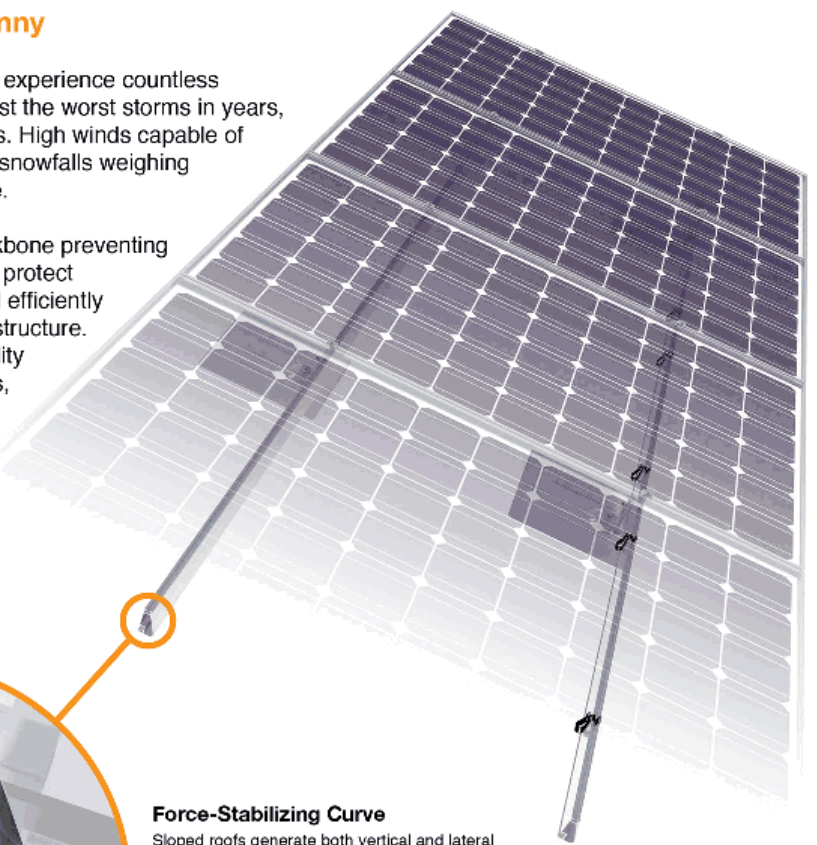


# XR Rail Family

## Solar Is Not Always Sunny

Over their lifetime, solar panels experience countless extreme weather events. Not just the worst storms in years, but the worst storms in 40 years. High winds capable of ripping panels from a roof, and snowfalls weighing enough to buckle a panel frame.

XR Rails are the structural backbone preventing these results. They resist uplift, protect against buckling and safely and efficiently transfer loads into the building structure. Their superior spanning capability requires fewer roof attachments, reducing the number of roof penetrations and the amount of installation time.



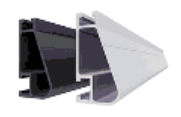
**Force-Stabilizing Curve**  
Sloped roofs generate both vertical and lateral forces on mounting rails which can cause them to bend and twist. The curved shape of XR Rails is specially designed to increase strength in both directions while resisting the twisting. This unique feature ensures greater security during extreme weather and a longer system lifetime.

### Compatible with Flat & Pitched Roofs

XR Rails are compatible with FlashFoot and other pitched roof attachments. IronRidge offers a range of tilt leg options for flat roof mounting applications.

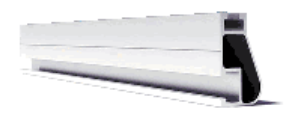
### Corrosion-Resistant Materials

All XR Rails are made of marine-grade aluminum alloy, then protected with an anodized finish. Anodizing prevents surface and structural corrosion, while also providing a more attractive appearance.



## XR Rail Family

The XR Rail Family offers the strength of a curved rail in three targeted sizes. Each size supports specific design loads, while minimizing material costs. Depending on your location, there is an XR Rail to match.



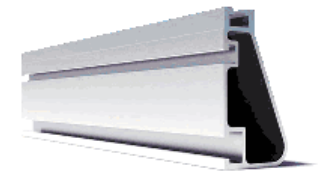
**XR10**  
XR10 is a sleek, low-profile mounting rail, designed for regions with light or no snow. It achieves 6 foot spans, while remaining light and economical.

- 6' spanning capability
- Moderate load capability
- Clear anodized finish
- Internal splices available



**XR100**  
XR100 is the ultimate residential mounting rail. It supports a range of wind and snow conditions, while also maximizing spans up to 8 feet.

- 8' spanning capability
- Heavy load capability
- Clear & black anodized finish
- Internal splices available



**XR1000**  
XR1000 is a heavyweight among solar mounting rails. It's built to handle extreme climates and spans 12 feet or more for commercial applications.

- 12' spanning capability
- Extreme load capability
- Clear anodized finish
- Internal splices available

## Rail Selection

The following table was prepared in compliance with applicable engineering codes and standards. Values are based on the following criteria: ASCE 7-10, Roof Zone 1, Exposure B, Roof Slope of 7 to 27 degrees and Mean Building Height of 30 ft. Visit IronRidge.com for detailed span tables and certifications.

| Load       |            | Rail Span |       |       |    |        |     |
|------------|------------|-----------|-------|-------|----|--------|-----|
| Snow (PSF) | Wind (MPH) | 4'        | 5' 4" | 6'    | 8' | 10'    | 12' |
| None       | 100        | XR10      |       | XR100 |    | XR1000 |     |
|            | 120        |           |       |       |    |        |     |
|            | 140        |           |       |       |    |        |     |
|            | 160        |           |       |       |    |        |     |
| 10-20      | 100        |           |       |       |    |        |     |
|            | 120        |           |       |       |    |        |     |
|            | 140        |           |       |       |    |        |     |
|            | 160        |           |       |       |    |        |     |
| 30         | 100        |           |       |       |    |        |     |
|            | 160        |           |       |       |    |        |     |
| 40         | 100        |           |       |       |    |        |     |
|            | 160        |           |       |       |    |        |     |
| 50-70      | 160        |           |       |       |    |        |     |
| 80-90      | 160        |           |       |       |    |        |     |

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PROJECT ID: 432025-355

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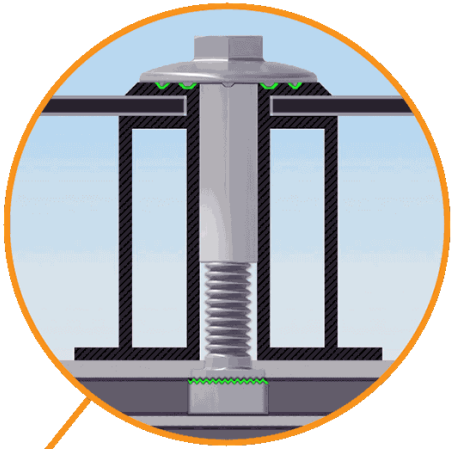


UFO Family of Components

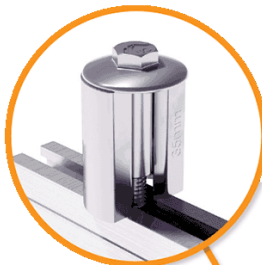
Simplified Grounding for Every Application

The UFO family of components eliminates the need for separate grounding hardware by bonding solar modules directly to IronRidge XR Rails. All system types that feature the UFO family—Flush Mount, Tilt Mount and Ground Mount—are fully listed to the UL 2703 standard.

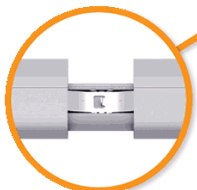
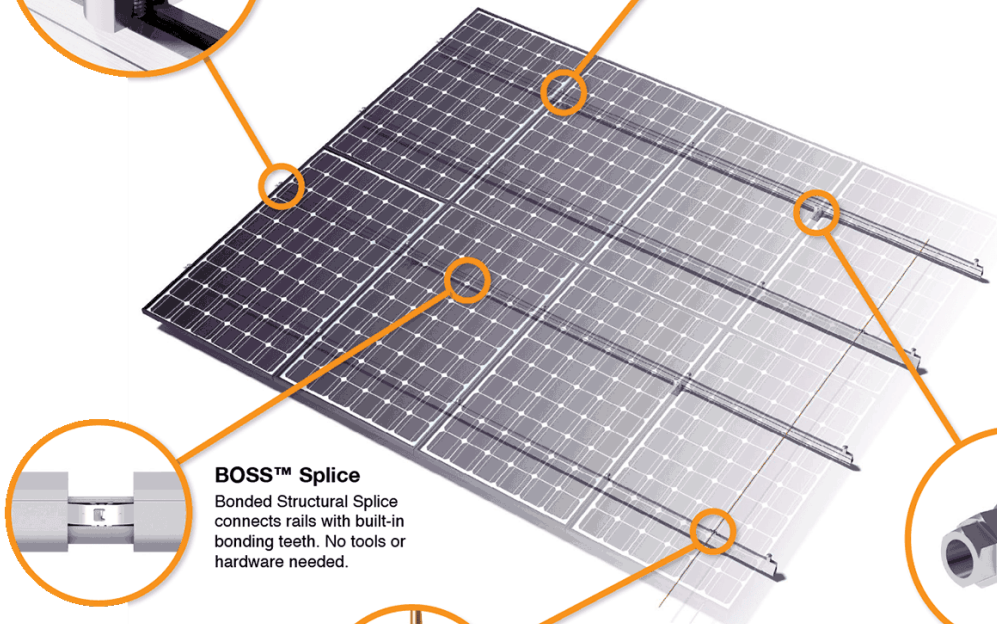
UFO hardware forms secure electrical bonds with both the module and the rail, resulting in many parallel grounding paths throughout the system. This leads to safer and more reliable installations.



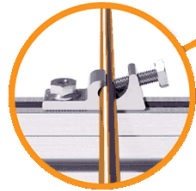
**Universal Fastening Object (UFO)**  
The UFO securely bonds solar modules to XR Rails. It comes assembled and lubricated, and can fit a wide range of module heights.



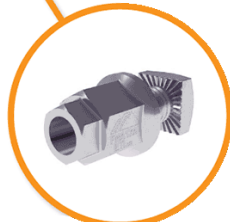
**Stopper Sleeve**  
The Stopper Sleeve snaps onto the UFO, converting it into a bonded end clamp.



**BOSS™ Splice**  
Bonded Structural Splice connects rails with built-in bonding teeth. No tools or hardware needed.

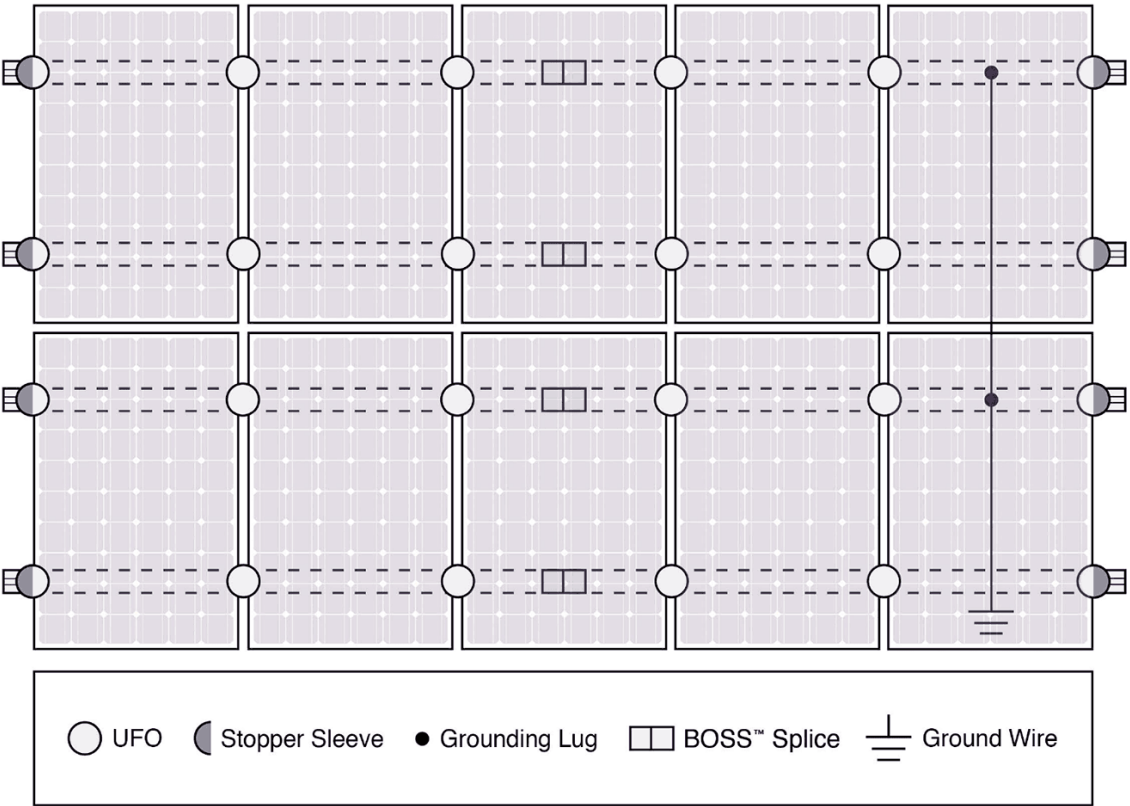


**Grounding Lug**  
A single Grounding Lug connects an entire row of PV modules to the grounding conductor.



**Bonded Attachments**  
The bonding bolt attaches and bonds the L-foot to the rail. It is installed with the same socket as the rest of the system.

System Diagram



Approved Enphase microinverters can provide equipment grounding of IronRidge systems, eliminating the need for grounding lugs and field installed equipment ground conductors (EGC). A minimum of two microinverters mounted to the same rail and connected to the same Engage cable is required. Refer to installation manuals for additional details.

UL Certification

The IronRidge Flush Mount, Tilt Mount, and Ground Mount Systems have been listed to UL 2703 by Intertek Group plc.

UL 2703 is the standard for evaluating solar mounting systems. It ensures these devices will maintain strong electrical and mechanical connections over an extended period of time in extreme outdoor environments.

Go to [IronRidge.com/UFO](https://www.ironridge.com/UFO)

| Cross-System Compatibility        |                                                                                                                                             |            |              |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------|
| Feature                           | Flush Mount                                                                                                                                 | Tilt Mount | Ground Mount |
| XR Rails                          | ✓                                                                                                                                           | ✓          | XR1000 Only  |
| UFO/Stopper                       | ✓                                                                                                                                           | ✓          | ✓            |
| BOSS™ Splice                      | ✓                                                                                                                                           | ✓          | N/A          |
| Grounding Lugs                    | 1 per Row                                                                                                                                   | 1 per Row  | 1 per Array  |
| Microinverters & Power Optimizers | Enphase - M250-72, M250-60, M215-60, C250-72<br>Darfon - MIG240, MIG300, G320, G640<br>SolarEdge - P300, P320, P400, P405, P600, P700, P730 |            |              |
| Fire Rating                       | Class A                                                                                                                                     | Class A    | N/A          |
| Modules                           | Tested or Evaluated with over 400 Framed Modules<br>Refer to installation manuals for a detailed list.                                      |            |              |

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