NEW PHOTOVOLTAIC GROUND MOUNTED SYSTEM
9.030 KWDC/7.600 KWAC

SCOPE OF WORK:
CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND SPECIFICATIONS OF THE GRID-TIED PHOTOVOLTAIC SYSTEM. THE CONTRACTOR WILL BE RESPONSIBLE FOR COLLECTION OF EXISTING ONSITE CONDITIONS TO DESIGN, SPECIFY, AND INSTALL THE GROUND-MOUNTED PHOTOVOLTAIC SYSTEM DETAILED IN THIS DOCUMENT.

SYSTEM OVERVIEW:
SYSTEM SIZE: **9.030 KWDC / 7.600 KWAC**
- MODULE WATTAGE: **430W**
- INVERTER MAXIMUM OUTPUT POWER: **7600VA**

SYSTEM DESCRIPTION:
MODULE(s): (21) JINKO SOLAR JKM430N-54HL4-B [430W]
DIMENSIONS (L/W/H): 67.79"/44.65"/1.38"
INVERTER(s): (1) SOLAREDGE TECHNOLOGIES ENERGYHUB USE7600H-USMNBE78
POWER OPTIMIZER(s): (21) SOLAREDGE TECHNOLOGIES U650

SHEET INDEX:

STRUCTURAL ONLY

COMMONWEALTH OF MASSACHUSETTS
VINCENT MWUMVANEZA
CIVIL
NO. 54772
REGISTERED PROFESSIONAL ENGINEER

Signed on: 01/23/2026

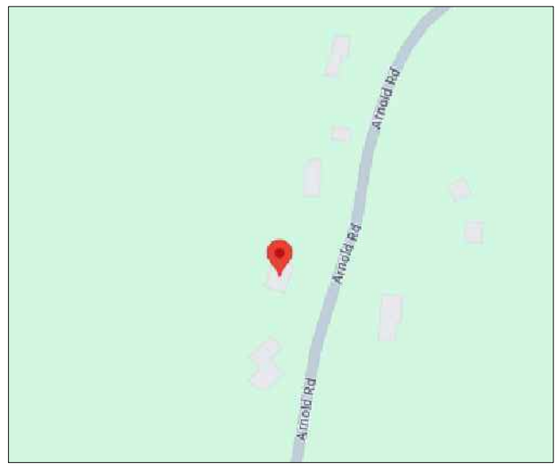
GOVERNING CODES:
ALL WORK SHALL CONFORM TO THE FOLLOWING CODES:
2021 INTERNATIONAL BUILDING CODE W/ 780 CMR
2021 INTERNATIONAL RESIDENTIAL CODE W/ 780 CMR
2021 INTERNATIONAL EXISTING BUILDING CODE W/ 780 CMR
2021 INTERNATIONAL ENERGY CONSERVATION CODE
2018 INTERNATIONAL FIRE CODE
2021 NFPA 1 WITH MASSACHUSSETTS AMENDMENTS
2023 NATIONAL ELECTRICAL CODE W/ MASS AMENDMENTS
AS ADOPTED BY PELHAM

DESIGN BRIEF	
RISK CATEGORY:	AS PER P.E.
BUILDING STORY:	2
ZONING:	RESIDENTIAL
SNOW LOAD:	40 PSF
EXPOSURE CATEGORY:	AS PER P.E.
WIND SPEED:	105 MPH

GENERAL NOTES:
- THESE CONSTRUCTION DOCUMENTS HAVE BEEN BASED ON FIELD INSPECTIONS AND OTHER INFORMATION AVAILABLE AT THE TIME. ACTUAL FIELD CONDITIONS MAY REQUIRE MODIFICATIONS IN CONSTRUCTION DETAILS.
- ARCHITECT HAS NOT BEEN RETAINED TO SUPERVISE ANY CONSTRUCTION OR INSTALLATION OF ANY EQUIPMENT AT SITE.
- CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, EQUIPMENT, TOOLS, OBTAINS ALL PERMITS, LICENSES AND PAY ALL REQUIRED FEES AND COMPLETE INSTALLATION.
- CONTRACTOR HAS THE FULL RESPONSIBILITY TO CHECK AND VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK. ANY WORK STARTED BEFORE CONSULTATION AND ACCEPTANCE BY THE ENGINEER SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE SUBJECT TO CORRECTION BY THEM WITHOUT ADDITIONAL COMPENSATION.
- DAMAGE CAUSED TO THE EXISTING STRUCTURE, PIPES, DUCTS, WINDOWS, WALL, FLOORS, ETC. SHALL BE REPAIRED TO THE ORIGINAL CONDITION OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST.
- THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE PROPER INSTALLATION AND COMPLETION OF THE WORK WITH APPROVED MATERIALS.
- NO CHANGES ARE TO BE MADE WITHOUT THE CONSULTATION AND APPROVAL OF THE ARCHITECT.
- CONTRACTOR SHALL OBTAIN BULDING PERMIT. NO WORK TO START UNLESS BUILDING PERMIT IS PROPERLY DISPLAYED.
- ALL WORKMANSHIP AND MATERIALS SHALL BE OF FIRST QUALITY AND IN COMPLIANCE WITH THE REQUIREMENTS OF THE NATIONAL BUILDING CODE, THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ALL PERTINENT AGENCIES.
- IT IS ESSENTIAL THAT ALL WORK PROCEED WITH THE MAXIMUM COOPERATION OF ALL PARTIES AND WITH MINIMUM INTERFERENCE TO THE OCCUPANTS WITHIN THE BUILDING. THE OWNER'S DIRECTIONS IN THIS REGARD SHALL BE FULLY COMPLIED WITH.
- ALL EXPOSED PLUMBING, HVAC, ELECTRICAL DUCTWORK, PIPING AND CONDUITS ARE TO BE PAINTED BY GENERAL CONTRACTOR.
- THE CONTRACTOR SHALL PERFORM THE WORK IN STRICT CONFORMANCE WITH THE LOCAL LAWS, REGULATIONS AND THE NATIONAL ELECTRIC CODE.
- THE CONTRACTOR SHALL OBTAIN ALL PERMITS, APPROVALS, AFFIDAVITS, CERTIFICATIONS, ETC. AND PAY ALL FEES AS REQUIRED BY THE LOCAL AUTHORITIES.
- CONTRACTORS SHALL OBTAIN FIRE CERTIF. UPON COMPLETION OF WORK.

PROJECT NOTES:
- THIS PHOTOVOLTAIC (PV) SYSTEM SHALL COMPLY WITH THE RELEVANT YEAR OF THE NATIONAL ELECTRIC CODE (NEC), ALL MANUFACTURER'S LISTING AND INSTALLATION INSTRUCTIONS, AND THE RELEVANT CODES AS SPECIFIED BY THE AUTHORITY HAVING JURISDICTION'S (AHJ) APPLICABLE CODES.
- THE UTILITY INTERCONNECTION APPLICATION MUST BE APPROVED AND THE PV SYSTEM BUST BE INSPECTED PRIOR TO OPERATION
- ALL PV SYSTEM COMPONENTS; MODULES, UTILITY-INTERACTIVE INVERTERS, AND SOURCE CIRCUIT COMBINER BOXES ARE IDENTIFIED AND LISTED FOR USE IN PHOTOVOLTAIC SYSTEMS AS REQUIRED BY NEC AND OTHER GOVERNING CODES
- ALL SIGNAGE TO BE PLACED IN ACCORDANCE WITH LOCAL BUILDING CODE. IF EXPOSED TO SUNLIGHT, IT SHALL BE UV RESISTANT. ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS REQUIRED BY THE NEC AND AHJ.

1 D-00 AERIAL VIEW CALE: NTS}



1 D-00 VICINITY MAP CALE: NTS}

TEAM SUNSHINE CONSTRUCTION LLC
24 SPICE ST BOSTON, MA02129
PHONE - (617) 580-8649
LIC. NO. - 115062

SIGNATURE AND SEAL

REVISIONS		
DESCRIPTION	DATE	REV
CAD	11-DEC-25	00

PROJECT NAME & ADDRESS

JOHN CHERRY RESIDENCE
47 ARNOLD RD PELHAM, MA 01002,USA
APN#: 002.0_0000_0092.A

AHJ NAME
PELHAM

SHEET NAME
COVER PAGE

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
D-00

EQUIPMENT LOCATIONS:

- ALL EQUIPMENT SHALL MEET MINIMUM SETBACKS IN ACCORDANCE WITH NEC 110.26.
- WIRING SYSTEMS INSTALLED IN DIRECT SUNLIGHT MUST BE RATED FOR EXPECTED OPERATING TEMPERATURE AS SPECIFIED BY NEC 690.31 (A),(C) AND NEC TABLES 310.15 (B)(2)(A) AND 310.15 (B)(3)(C).
- JUNCTION AND PULL BOXES PERMITTED INSTALLED UNDER PV MODULES IN ACCORDANCE WITH NEC 690.34.
- ADDITIONAL AC DISCONNECT(S) SHALL BE PROVIDED WHERE TAHE INVERTER IS NOT WITHIN SIGHT OF THE AC SERVICING DISCONNECT.
- ALL EQUIPMENT SHALL BE INSTALLED ACCESSIBLE TO QUALIFIED PERSONNEL IN ACCORDANCE WITH NEC APPLICABLE CODES.
- ALL COMPONENTS ARE LISTED FOR THEIR PURPOSE AND RATED FOR OUTDOOR USAGE WHEN APPROPRIATE.

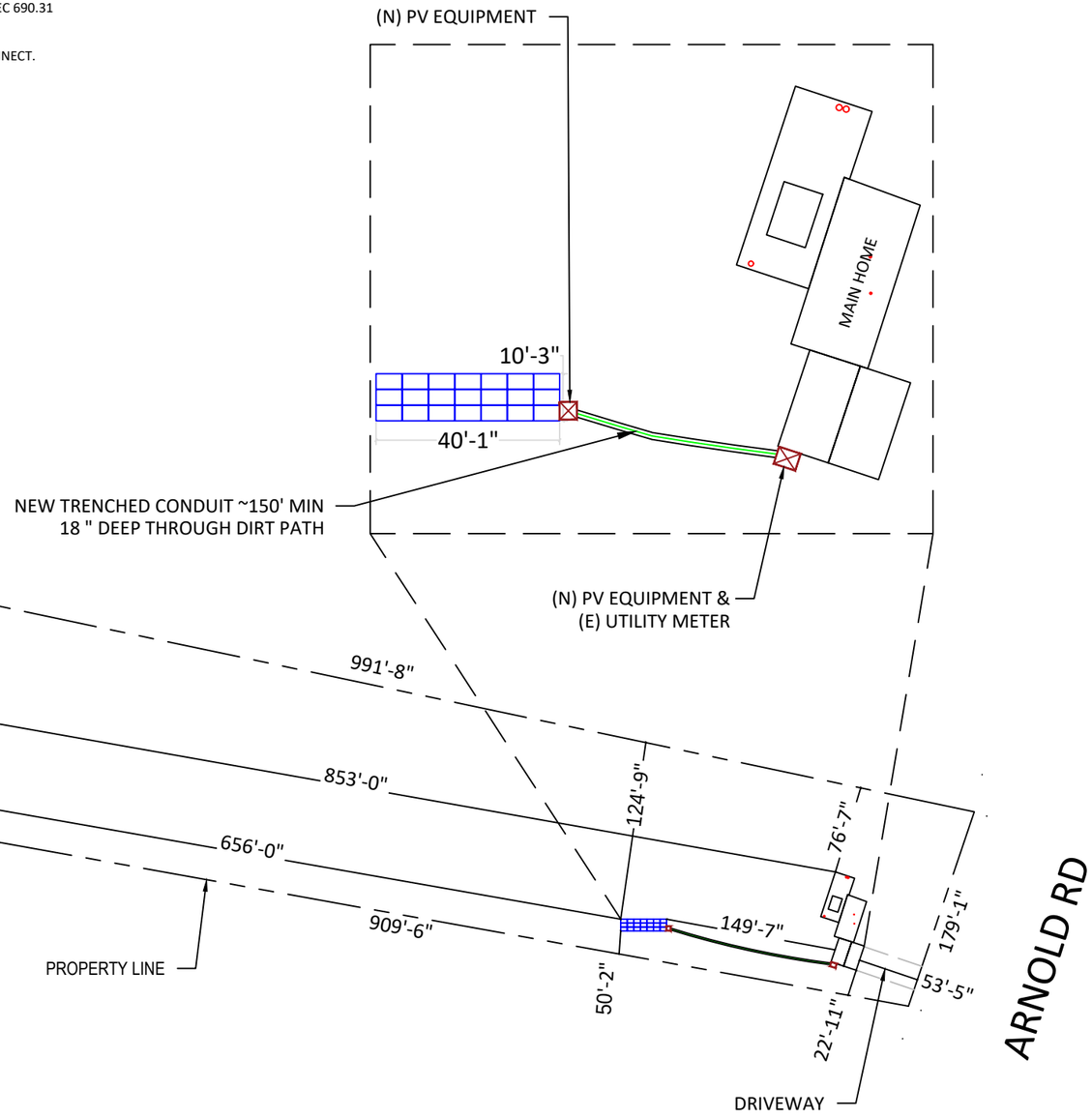
SITE NOTES:

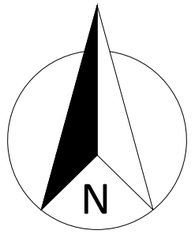
- A LADDER WILL BE IN PLACE FOR INSPECTION IN ACCORDANCEWITH OSHA REGULATIONS.
- THE PV MODULES ARE CONSIDERED NON-COMBUSTIBLE AND THISSYSTEM IS A UTILITY INTERACTIVE SYSTEM WITH NO STORAGE BATTERIES.
- THE SOLAR PV INSTALLATION WILL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS.
- PROPER ACCESS AND WORKING CLEARANCE AROUND EXISTING AND PROPOSED ELECTRICAL EQUIPMENT WILL BE PROVIDED IN ACCORDANCE WITH SECTION NEC 110.26.
- ROOF COVERINGS SHALL BE DESIGNED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THIS CODE AND THE APPROVED MANUFACTURER'S INSTRUCTIONS SUCH THAT THE ROOF COVERING SERVES TO PROTECT THE BUILDING OR STRUCTURE.

STRUCTURAL ONLY

COMMONWEALTH OF MASSACHUSETTS
VINCENT MWUMVANEZA
CIVIL
NO. 54772
REGISTERED PROFESSIONAL ENGINEER

Signed on: 01/23/2026





1 D-01 SITE PLAN
SCALE: 1/128" = 1'-0"

TEAM SUNSHINE CONSTRUCTION LLC
24 SPICE ST BOSTON, MA02129
PHONE - (617) 580-8649
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PROJECT NAME & ADDRESS

JOHN CHERRY RESIDENCE

47 ARNOLD RD PELHAM, MA 01002,USA

APN#: 002.0_0000_0092.A

AHJ NAME
PELHAM

SHEET NAME
SITE PLAN

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
D-01

LEGEND

UM	(E) UTILITY METER
MSP	(E) MAIN SERVICE PANEL
AC	(N) UTILITY ACCESSIBLE AC DISCONNECT: VISIBLE, LOCKABLE, LABELED
INV	(N) SOLAREDGE TECHNOLOGIES ENERGYHUB USE7600H-USMNBE78
AC'	(N) PV AC DISCONNECT: VISIBLE, LOCKABLE, LABELED

- (21) JINKO SOLAR JKM430N-54HL4-B [430W] MODULES
  OPTIMIZER (1 PER MODULE)
- VENT, ATTIC FAN (ROOF OBSTRUCTION)
- (N) JUNCTION BOX
- ROOF RUN CONDUIT

ARRAY DESCRIPTION		
ARRAY	ARRAY TILT	AZIMUTH
#1	25°	180°

ARRAY AREA CALC'S		
ARRAY	# OF MODULES	ARRAY AREA (Sqft)
#1	21	441.41

STRUCTURAL ONLY

COMMONWEALTH OF MASSACHUSETTS
VINCENT MWUMVANEZA
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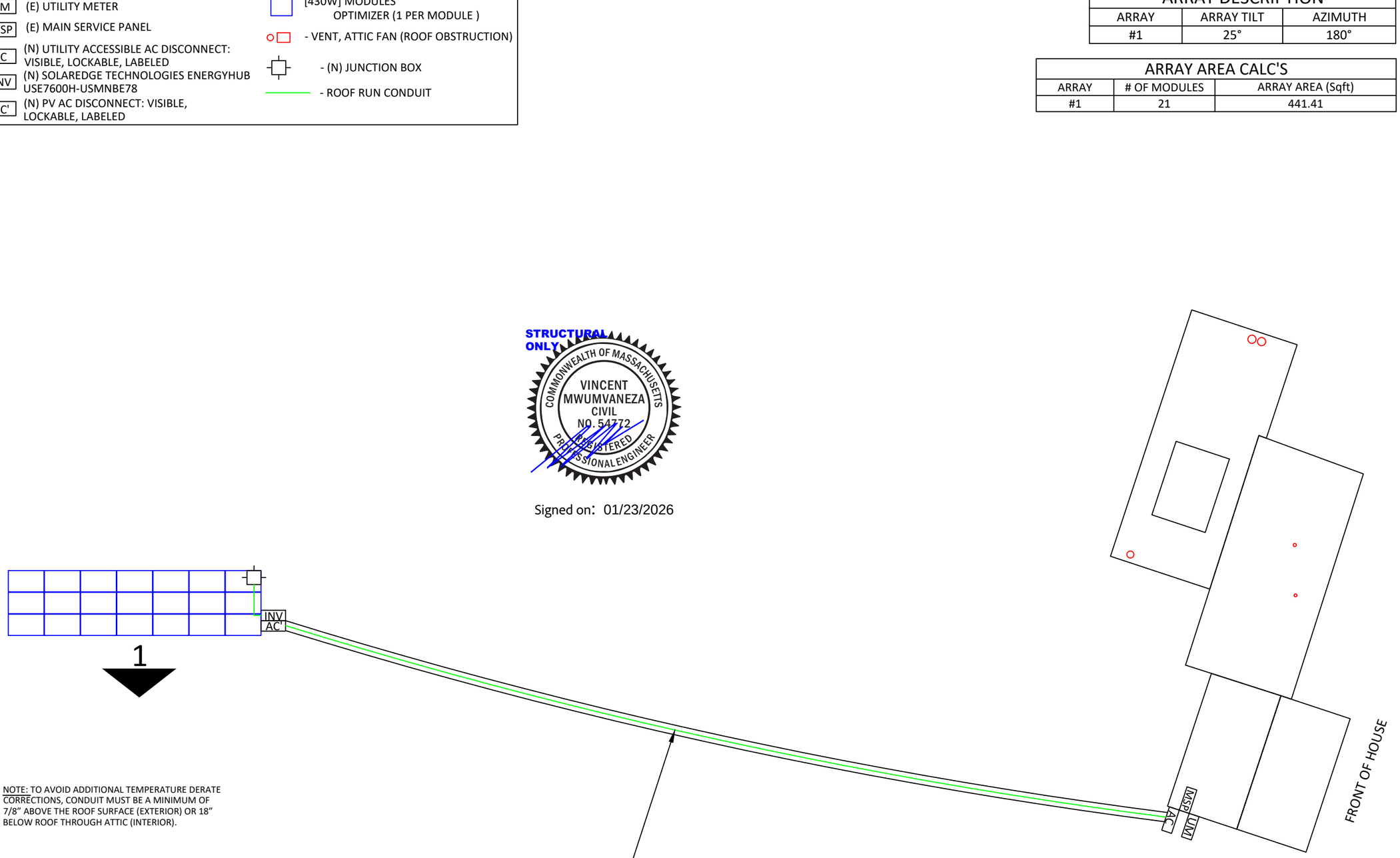
Signed on: 01/23/2026



NOTE: TO AVOID ADDITIONAL TEMPERATURE DERATE CORRECTIONS, CONDUIT MUST BE A MINIMUM OF 7/8" ABOVE THE ROOF SURFACE (EXTERIOR) OR 18" BELOW ROOF THROUGH ATTIC (INTERIOR).

1 D-02 ROOF PLAN

SCALE: 1/16" = 1'-0"

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47 ARNOLD RD PELHAM, MA 01002,USA

APN#: 002.0_0000_0092.A

AHJ NAME
PELHAM

SHEET NAME
ROOF PLAN

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
D-02

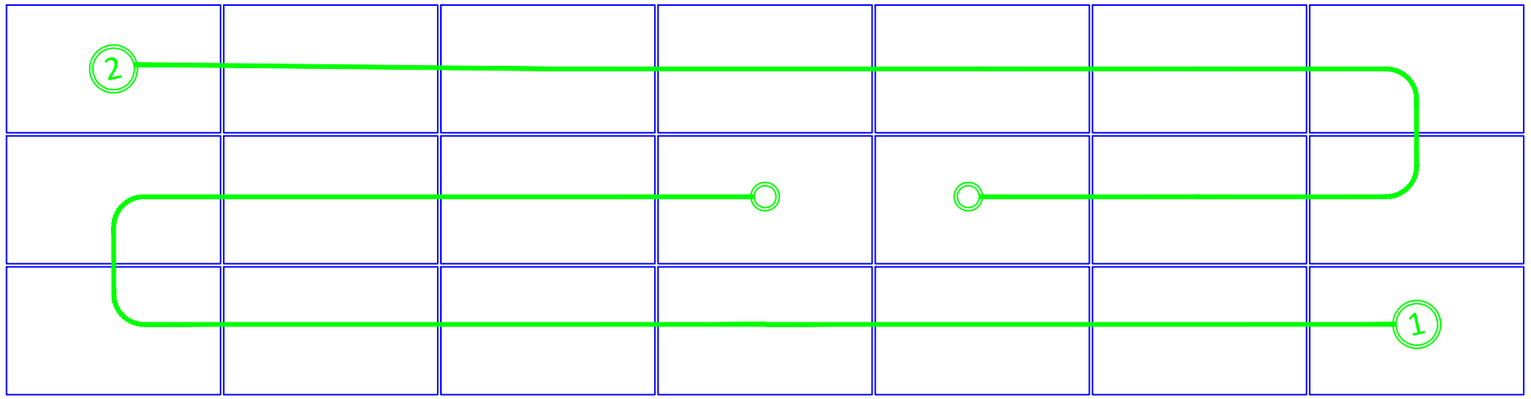
PV STRINGS / CIRCUIT

1 11 MODULES

2 10 MODULES

LEGEND

- (N) (21) JINKO SOLAR JKM430N-54HL4-B [430W] MODULES



N

1 D-03 STRINGING

SCALE: 1/4" = 1'-0"

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CAD	11-DEC-25	00

PROJECT NAME & ADDRESS

JOHN CHERRY RESIDENCE

47 ARNOLD RD PELHAM, MA 01002,USA

APN#: 002.0_0000_0092.A

AHJ NAME
PELHAM

SHEET NAME

STRINGING

SHEET SIZE

ANSI B
11" X 17"

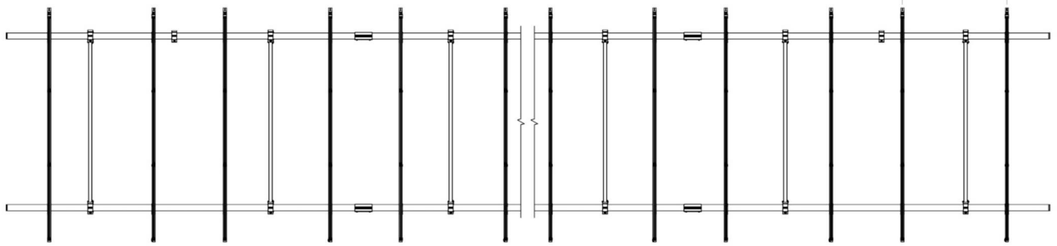
SHEET NUMBER

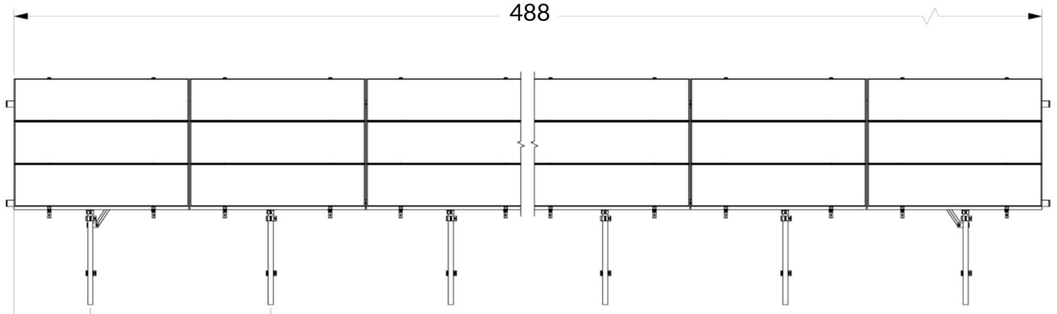
D-03

Sub Array #1 Spans

NOTES:
1. DIMENSIONS LABELED AS MAX ARE MAXIMUM ALLOWABLE AND MAY RESULT IN END POSTS BEING OUTSIDE ARRAY EDGES. MAXIMUM DIMENSIONS MAY BE REDUCED IF DESIRED.

RAIL SPACING
LANDSCAPE: PER MODULE MANUFACTURER





108 IN. MAX. ALLOW. SPAN
MIN # OF FRONT POSTS = 5
MIN # OF BACK POSTS = 5

STRUCTURAL ONLY

COMMONWEALTH OF MASSACHUSETTS
VINCENT MWUMVANEZA
CIVIL
NO. 54772
REGISTERED PROFESSIONAL ENGINEER

Signed on: 01/23/2026

SunModo Corp.
47 ARNOLD RD, PELHAM, MA 01002
D 6137599
SCALE N.T.S. SHEET 2 of 4 REV

Last edited by Sushant on 12/10/25 6:05 PM PST

TEAM SUNSHINE CONSTRUCTION LLC
24 SPICE ST BOSTON, MA02129
PHONE - (617) 580-8649
LIC. NO. - 115062

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CAD	11-DEC-25	00

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47 ARNOLD RD PELHAM, MA 01002,USA
APN#:
002.0_0000_0092.A

AHJ NAME
PELHAM

SHEET NAME
ATTACHMENT DETAILS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
A-00

Sub Array #1 Foundation Part 1

NOTES:
1. MAX DENOTES MAXIMUM PERMISSIBLE DIMENSIONS.
2. PIPE IS DESIGNED TO TELESCOPE IN AND OUT OF SCREW/AUGER FOR FIELD ADJUSTABILITY. 12" IS RECOMMENDED.

DIMENSIONS	
A	138
B	22
C	27.5
D	67
E	24
F	85
G	75

STRUCTURAL ONLY

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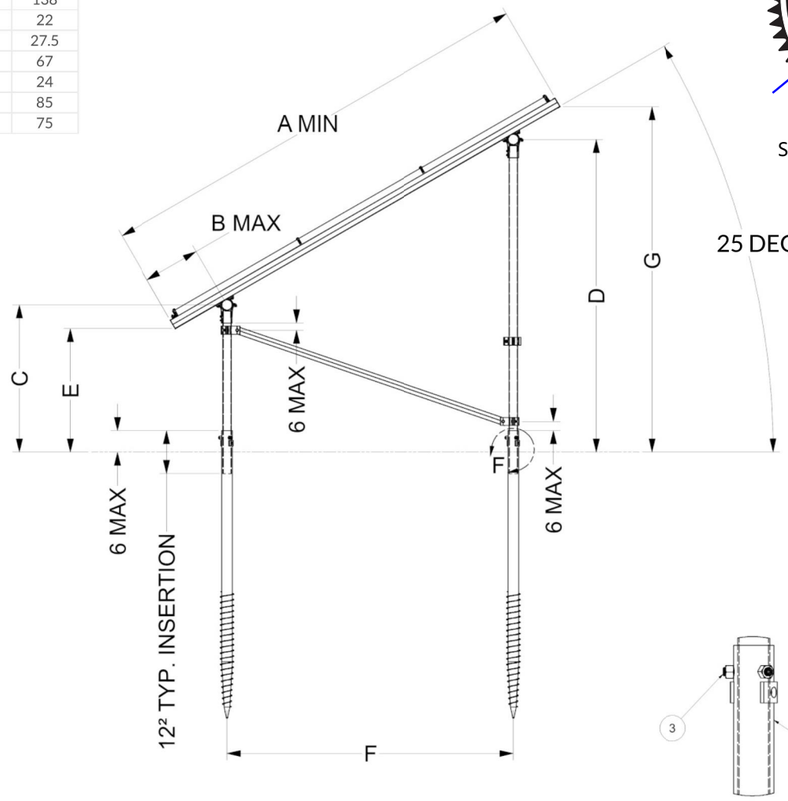
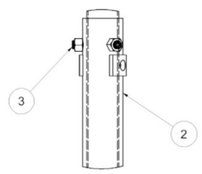
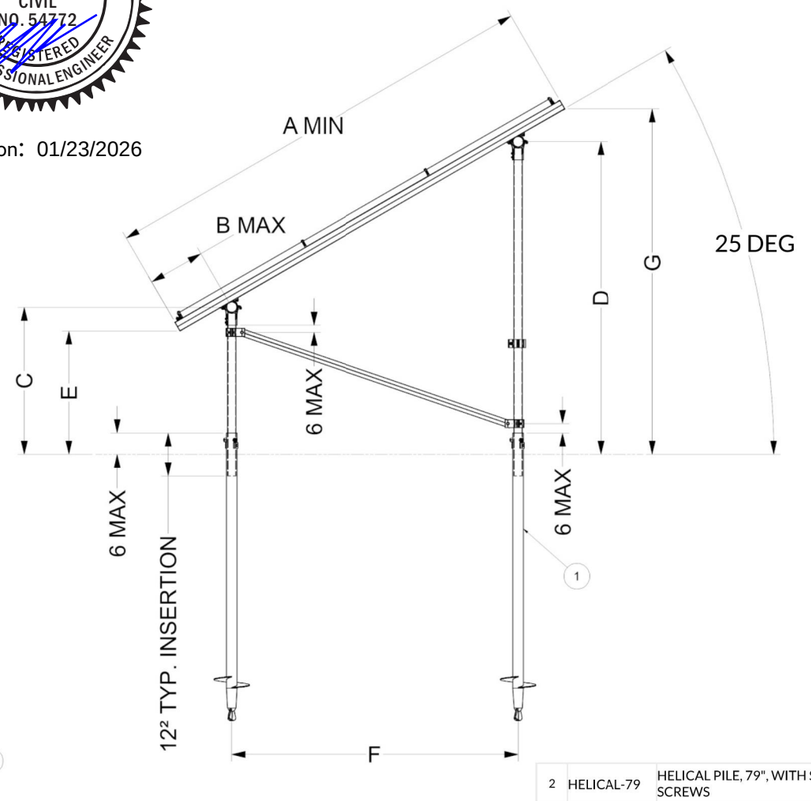


GROUND SCREW GROUND MOUNT (GSM)



DETAIL F



AUGER GROUND MOUNT (AGM)

ITEM	PART NUMBER	DESCRIPTION	QTY
2	HELICAL-79	HELICAL PILE, 79", WITH SET SCREWS	0
1	GRSCREW-80	GROUND SCREW, 80", WITH SET SCREWS	10

SunModo Corp.
47 ARNOLD RD, PELHAM, MA 01002
D | 6137599
SCALE N.T.S. | SHEET 3 of 4 | REV

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TEAM SUNSHINE

TEAM SUNSHINE CONSTRUCTION LLC
24 SPICE ST BOSTON, MA02129
PHONE - (617) 580-8649
LIC. NO. - 115062

SIGNATURE AND SEAL

REVISIONS		
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CAD	11-DEC-25	00

PROJECT NAME & ADDRESS

JOHN CHERRY RESIDENCE
47 ARNOLD RD PELHAM, MA 01002,USA
APN#: 002.0_0000_0092.A

AHJ NAME
PELHAM

SHEET NAME
ATTACHMENT DETAILS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
A-01

Sub Array #1 Foundation Part 2

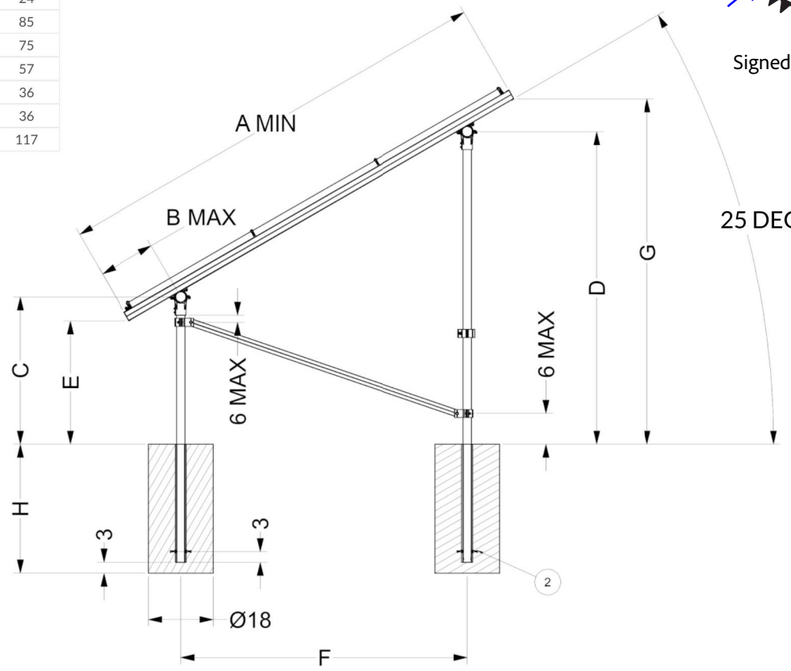
NOTES:
1. MAX DENOTES MAXIMUM PERMISSIBLE DIMENSIONS.
2. BASE-PIPE-20 (BASE PLATE, STEEL, 2" PIPE) OR K10302-001 (BASE PLATE, STEEL, 2" PIPE)

DIMENSIONS	
A	138
B	22
C	27.5
D	67
E	24
F	85
G	75
H	57
I	36
J	36
K	117

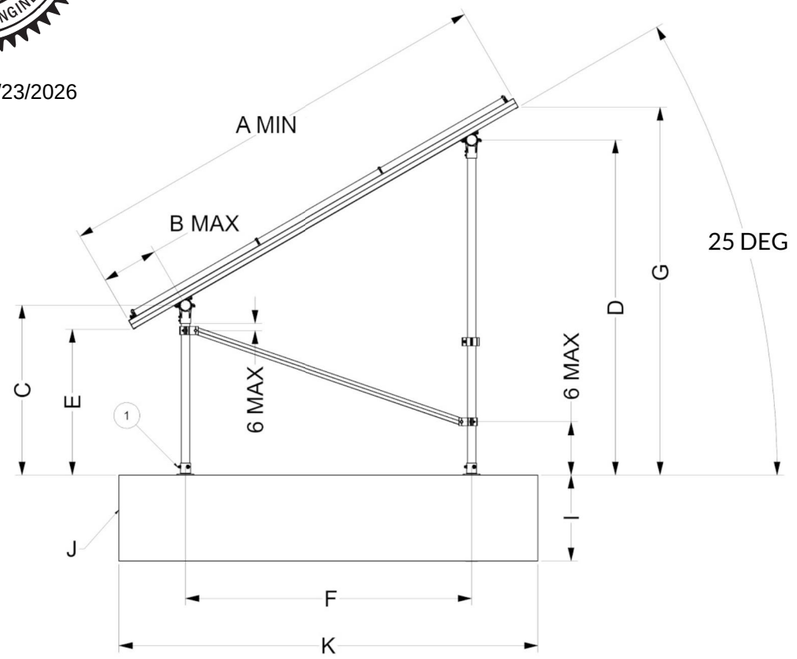
STRUCTURAL ONLY

COMMONWEALTH OF MASSACHUSETTS
VINCENT MWUMVANEZA
CIVIL
NO. 54772
REGISTERED PROFESSIONAL ENGINEER

Signed on: 01/23/2026



POST-IN-CONCRETE GROUND MOUNT (PGM)



BALLAST GROUND MOUNT (BGM)

ITEM	PART NUMBER	DESCRIPTION	QTY
2		POST BASE. VARIES PER NOTE 2	0
1	K10186-001	EMBEDDED 2.0" PIPE CLAMP KIT	0

SunModo Corp.
47 ARNOLD RD, PELHAM, MA 01002
D | PROJ. # 6137599
SCALE: N.T.S. | SHEET 4 of 4 | REV

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24 SPICE ST BOSTON, MA02129
PHONE - (617) 580-8649
LIC. NO. - 115062

SIGNATURE AND SEAL

REVISIONS		
DESCRIPTION	DATE	REV
CAD	11-DEC-25	00

PROJECT NAME & ADDRESS

JOHN CHERRY RESIDENCE

47 ARNOLD RD PELHAM, MA 01002,USA

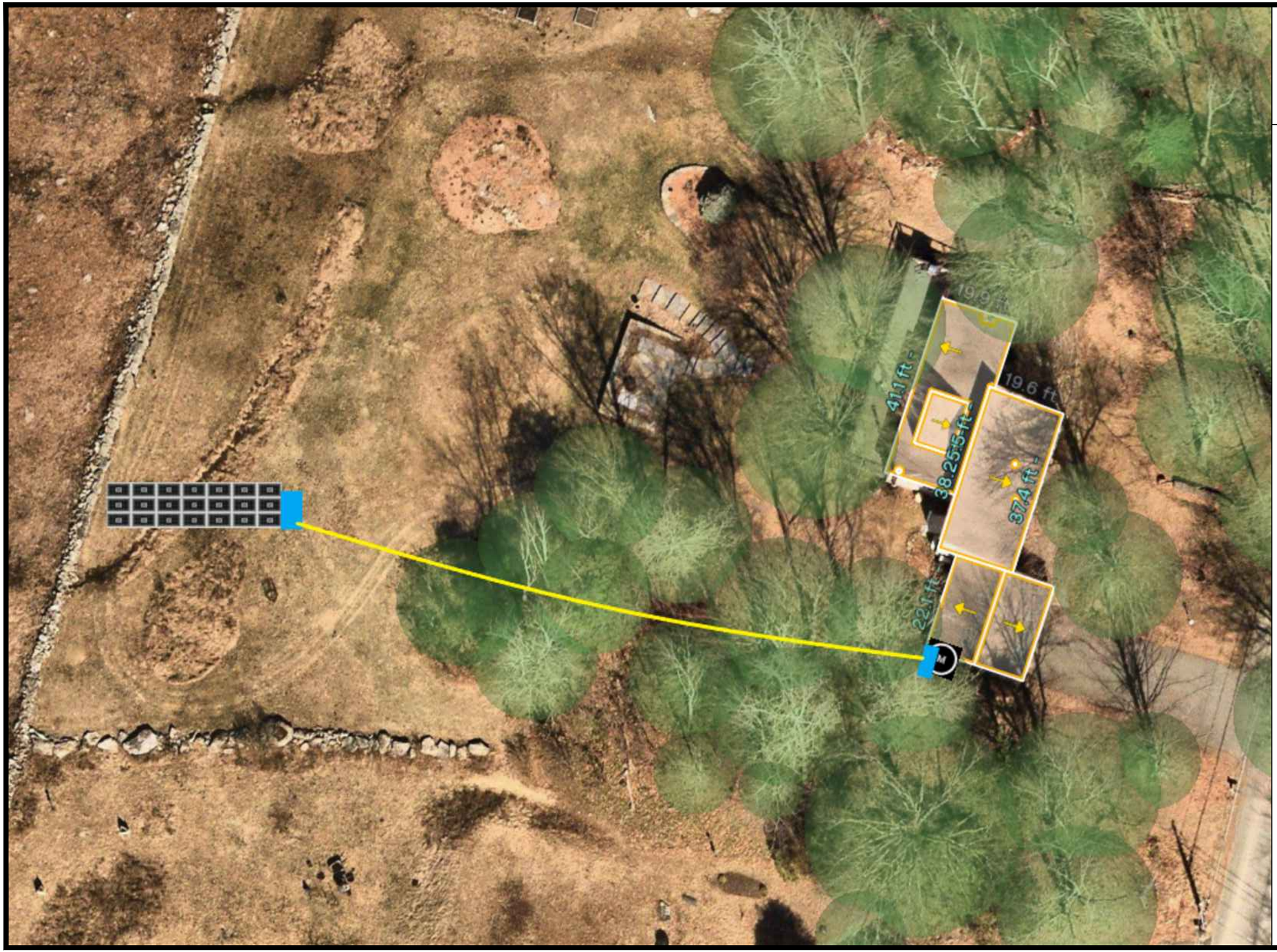
APN#: 002.0_0000_0092.A

AHJ NAME
PELHAM

SHEET NAME
ATTACHMENT DETAILS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
A-02



TEAM SUNSHINE CONSTRUCTION LLC
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47 ARNOLD RD PELHAM, MA 01002,USA

APN#:
002.0_0000_0092.A

AHJ NAME
PELHAM

SHEET NAME

LAYOUT

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

A-03

SERVICE INFO

AHJ NAME: PELHAM
UTILITY PROVIDER: EVERSOURCE
MAIN SERVICE VOLTAGE: 240V
MAIN SERVICE PANEL: 200A
MAIN BREAKER RATING: 200A
SERVICE FEED SOURCE: UNDERGROUND
MSP MANUFACTURER: SIEMENS

SYSTEM SIZE: 9.030 KWDC
7.600 KWAC

UNLESS OTHERWISE SPECIFIED, THE CONDUCTORS SHALL BE COPPER. THIS IS THE DEFAULT ASSUMPTION FOR THE CONDUIT CONDUCTOR SCHEDULE

TAG #	DESCRIPTION (OUTPUT)	WIRE GAUGE	NO. OF CONDUCTORS	CONDUIT TYPE	CONDUIT SIZE	CONDUCTOR TYPE
1	PV ARRAY	10 AWG	2L1, 2L2	OPEN AIR	N/A	PV WIRE
1	EGC	6 AWG	1	OPEN AIR	N/A	BARE COPPER
2	PV ARRAY	10 AWG	2L1, 2L2	EMT	3/4"	THWN-2
2	EGC	6 AWG	1	EMT	3/4"	THWN-2
3	INVERTER	8 AWG	1L1, 1L2, 1N	EMT	3/4"	THWN-2
3	EGC	8 AWG	1	EMT	3/4"	THWN-2
3t	NON-FUSED ACD	6 AWG	1L1, 1L2, 1N	PVC	1-1/4"	THWN-2
3t	EGC	8 AWG	1	PVC	1-1/4"	THWN-2

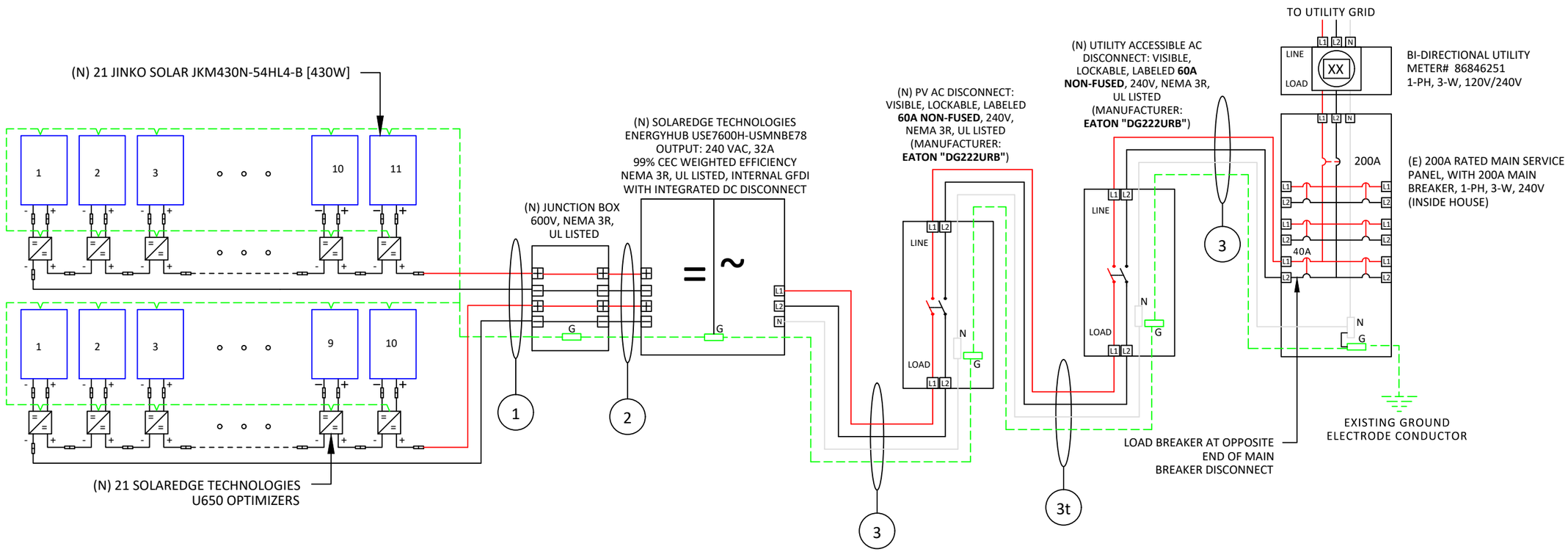
VOLTAGE DROP CALC FOR TAG 3t

WIRE SIZE	6 AWG
LENGTH OF TRENCH - ONE WAY	150.00 FT
STRING OUTPUT CURRENT	32.00 AMPS
WIRE RESISTANCE	0.000491 Ω/FT
TOTAL VOLTAGE DROP	1.96%
THIS IS WITHIN PERMISSIBLE LIMITS OF 2% , CONNECTION IS OKAY	

120% RULE FOR BACKFEED BREAKER NEC 705.12:

MAX ALLOWABLE PV BREAKER
= BUS BAR RATING x 1.2 - MAIN BREAKER RATING
= 200A x 1.2 - 200A = 40.00A

SELECTED PV BREAKER <= MAX ALLOWABLE PV BREAKER 40A <= 40.00A



ROMEX CAN BE USED IN LIEU OF CONDUIT FOR INTERIOR BUILDING AND ATTIC RUNS ONLY. DO NOT USE ROMEX IN CONDUIT OR OUTDOOR ENVIRONMENTS.

TEAM SUNSHINE CONSTRUCTION LLC
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JOHN CHERRY RESIDENCE
47 ARNOLD RD PELHAM, MA 01002,USA
APN#: 002.0_0000_0092.A

AHJ NAME
PELHAM

SHEET NAME
ELECTRICAL LINE

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
E-00

OCPD CALCULATIONS

PV OVERCURRENT PROTECTION NEC 690.9(B)
INVERTER CONTINUOUS DUTY OUTPUT CURRENT RATING = 32 X 1.25 = 40.00 <= 40A OCPD

CONDUCTOR SIZING

(TAG 2 ON ROOF):
10 GAUGE WIRE RATED FOR 40A, 40A X 0.96 X 0.80 (4 CONDUCTORS) = 30.72A > 15 A
(TAG 3 OFF ROOF):
8 GAUGE WIRE RATED FOR 50A , 50A X 0.94 = 47A > 40.00A (SYSTEM OCPD)
(TAG 3t TRENCHED):
6 GAUGE WIRE RATED FOR 65A , 65A X 0.94 = 61.1A > 40.00A (SYSTEM OCPD)

PV MODULE RATING @ STC	
MANUFACTURER	JINKO SOLAR JKM430N-54HL4-B [430W]
MAX. POWER-POINT CURRENT (IMP)	13.20 AMPS
MAX. POWER-POINT VOLTAGE (VMP)	32.58 VOLTS
OPEN-CIRCUIT VOLTAGE (VOC)	39.16 VOLTS
SHORT-CIRCUIT CURRENT (ISC)	13.65 AMPS
MAX. SERIES FUSE (OCPD)	25 AMPS
NOM. MAX. POWER AT STC (PMAX)	430 WATTS
MAX. SYSTEM VOLTAGE	1000 (IEC)/1000 (UL)
VOC TEMPERATURE COEFFICIENT	-0.25%/°C

AMBIENT TEMPERATURE SPECS	
RECORD LOW TEMP	-18°
AMBIENT TEMP (HIGH TEMP 2%)	32°
CONDUIT HEIGHT	7/8"
ROOF TOP TEMP	90°C

PERCENT OF VALUES	NUMBER OF CURRENT CARRYING CONDUCTORS IN EMT
0.80	4-6
0.70	7-9
0.50	10-20

INVERTER SPECIFICATIONS	
MANUFACTURER / MODEL	SOLAREDGE TECHNOLOGIES ENERGYHUB USE7600H-USMNBE78
MAX DC SHORT CIRCUIT CURRENT	45 A
CONTINUOUS OUTPUT CURRENT	32 A (240V)

OPTIMIZER SPECIFICATION	
MANUFACTURER / MODEL	SOLAREDGE TECHNOLOGIES U650
DC INPUT POWER	650
MAXIMUM INPUT VOLTAGE	60 VDC
MPPT RANGE	8 TO 60 VDC
MAXIMUM INPUT CURRENT	15 ADC
MAXIMUM OUTPUT CURRENT	15 ADC STRING
LIMITATIONS	8 TO 25 OPTIMIZERS
5700 WATTS STC PER STRING MAXIMUM	

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24 SPICE ST BOSTON, MA02129
PHONE - (617) 580-8649
LIC. NO. - 115062

SIGNATURE AND SEAL

REVISIONS		
DESCRIPTION	DATE	REV
CAD	11-DEC-25	00

PROJECT NAME & ADDRESS

JOHN CHERRY RESIDENCE
47 ARNOLD RD PELHAM, MA 01002,USA
APN#:
002.0_0000_0092.A

AHJ NAME
PELHAM

SHEET NAME
WIRE SIZING

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
E-01

WIRING & CONDUIT NOTES:

- ALL CONDUIT AND WIRE WILL BE LISTED AND APPROVED FOR THEIR PURPOSE.
- CONDUIT AND WIRE SPECIFICATIONS ARE BASED ON MINIMUM CODE REQUIREMENTS AND ARE NOT MEANT TO LIMIT UP-SIZING.
- CONDUCTORS SIZED IN ACCORDANCE WITH THE NEC
- AC CONDUCTORS TO BE COLORED OR MARKED PER NEC
- LISTED OR LABELED EQUIPMENT SHALL BE INSTALLED AND USED IN ACCORDANCE WITH ANY INSTRUCTIONS INCLUDED IN THE LISTING OR LABELING PER NEC

DISCONNECTION AND OVERCURRENT PROTECTION NOTES:

- DISCONNECTING SWITCHES SHALL BE WIRED SUCH THAT WHEN THE SWITCH IS OPENED THE CONDUCTORS REMAINING ENERGIZED ARE CONNECTED TO THE TERMINALS MARKED “LINE SIDE” (TYPICALLY THE UPPER TERMINALS).
- DISCONNECTS TO BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH
- PV SYSTEM CIRCUITS INSTALLED ON OR IN HABITABLE BUILDINGS SHALL INCLUDE A RAPID SHUTDOWN FUNCTION TO REDUCE SHOCK HAZARD FOR EMERGENCY RESPONDERS IN ACCORDANCE WITH 690.12
- ALL OCPD RATINGS AND TYPES SPECIFIED ACCORDING TO NEC 690.8, 690.9, AND 240.
- INVERTER ON-GRID BRANCHES SHALL BE CONNECTED TO A SINGLE BREAKER OR GROUPED FUSE DISCONNECT(S) IN ACCORDANCE WITH NEC 110.3(B).
- IF REQUIRED BY THE AHJ, SYSTEM WILL INCLUDE ARC-FAULT CIRCUIT PROTECTION IN ACCORDANCE WITH NEC 690.11 AND UL1699B

INTERCONNECTION NOTES:

- LOAD SIDE INTERCONNECTION SHALL BE INACCORDANCE WITH NEC 705.12.
- THE SUM OF THE UTILITY OCPD AND INVERTERCONTINUOUS OUTPUT MAY NOT EXCEED 120 PERCENT OF BUSBAR RATING PER NEC 705.12.
- THE SUM OF 125 PERCENT OF THE POWER SOURCE(S) OUTPUT CIRCUIT CURRENT AND THE RATING OF THE OVERCURRENT DEVICE PROTECTING THE BUSBAR SHALL NOT EXCEED 120 PERCENT OF THE AMPACITY OF THE BUSBAR, PV DEDICATED BACKFEED BREAKERS MUST BE LOCATED OPPOSITE END OF THE BUS FROM THE UTILITY SOURCE OCPD IN ACCORDANCE WITH NEC 705.12.
- AT MULTIPLE ELECTRIC POWER SOURCES OUTPUT COMBINER PANEL, TOTAL RATING OF ALL OVERCURRENT PROTECTION DEVICES SHALL NOT EXCEED AMPACITY OF BUSBAR. HOWEVER, THE MAIN OVERCURRENT PROTECTION DEVICE MAY BE EXCLUDED IN ACCORDANCE WITH NEC 705.12.
- FEEDER TAP INTERCONNECTION (LOAD SIDE) IN ACCORDANCE WITH NEC 705.12.
- SUPPLY SIDE TAP INTERCONNECTION IN ACCORDANCE WITH TO NEC 705.12 WITH SERVICE ENTRANCE CONDUCTORS IN ACCORDANCE WITH NEC 230.42.
- BACKFEEDING BREAKER FOR ELECTRIC POWER SOURCES OUTPUT IS EXEMPT FROM ADDITIONAL FASTENING PER NEC 705.12.

GROUNDING NOTES:

- GROUNDING SYSTEM COMPONENTS SHALL BE LISTED FORTHEIR PURPOSE, AND GROUNDING DEVICES EXPOSED TO THEELEMENTS SHALL BE RATED FOR SUCH USE.
- PV EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH NEC 690.43 AND NEC TABLE 250.122.
- METAL PARTS OF MODULE FRAMES, MODULE RACKING, AND ENCLOSURES CONSIDERED GROUNDED IN ACCORDANCE WITH NEC 250.134 AND 250.136(A).
- EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH NEC 690.45 AND INVERTER MANUFACTURER'S INSTALLATION PRACTICES
- EACH MODULE WILL BE GROUNDED AS SHOWN IN MANUFACTURER DOCUMENTATION AND APPROVED BY THE AHJ.
- THE GROUNDING CONNECTION TO A MODULE SHALL BE ARRANGED SUCH THAT THE REMOVAL OF A MODULE DOES NOT INTERRUPT A GROUNDING CONDUCTOR TO ANOTHER MODULE.
- GROUNDING AND BONDING CONDUCTORS, IF INSULATED, SHALL BE COLORED GREEN OR MARKED GREEN IF #4 AWG OR LARGER PER NEC 250.119
- THE GROUNDING ELECTRODE SYSTEM COMPLIES WITH NEC 690.47 AND NEC 250.50 THROUGH 250.106. IF EXISTING SYSTEM IS INACCESSIBLE, OR INADEQUATE, A GROUNDING ELECTRODE SYSTEM PROVIDED IN ACCORDANCE WITH NEC 250, NEC 690.47 AND THE AHJ.
- GROUND-FAULT DETECTION SHALL COMPLY WITH NEC 690.41(B)(1) AND (2) TO REDUCE FIRE HAZARDS

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JOHN CHERRY RESIDENCE

47 ARNOLD RD PELHAM, MA 01002,USA

APN#: 002.0_0000_0092.A

AHJ NAME
PELHAM

SHEET NAME
NOTES

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
P-01

⚠ WARNING

ELECTRIC SHOCK HAZARD
DO NOT TOUCH TERMINALS
TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

LABEL LOCATION: COMBINER PANEL, ACDISCONNECT, POINT OF INTERCONNECTIONPER CODE: NEC 690.13(B

⚠ WARNING

TURN OFF PHOTOVOLTAIC ACDISCONNECT PRIOR TOWORKING INSIDE PANEL

LABEL LOCATION: COMBINER PANEL(S), MAIN SERVICE DISCONNECT PER CODE: NEC 110.27(C), OSHA 1910.145(f)(7)

WARNING: PHOTOVOLTAIC POWER SOURCE

LABEL LOCATION: DC CONDUIT/RACEWAY/CABLE TRAY PER CODE: NEC 690.31(G)(3-4)

PHOTOVOLTAIC SYSTEM AC DISCONNECT
RATED AC OUTPUT CURRENT 32.00AMPS
NOMINAL OPERATING AC VOLTAGE 240 VOLTS

LABEL LOCATION: POINT OF INTERCONNECTION, (PER CODE: NEC 690.54)

PV SYSTEM DISCONNECT

LABEL LOCATION: AC DISCONNECT PER CODE: NEC 690.13(B)

LABEL LOCATION: AC DISCONNECT PER CODE: NEC 690.13(B)

LABEL LOCATION: MAIN SERVICE DISCONNECT PER CODE: NEC 690.15(C) & NEC 690.33(E)(2)

⚠ WARNING:
DUAL POWER SOURCESECOND SOURCE IS PHOTOVOLTAIC SYSTEM

LABEL LOCATION: POINT OF INTERCONNECTION (PER CODE: NEC 705.12(B)(3-4) AND 690.59

⚠ WARNING:
THIS EQUIPMENT FED BY MULTIPLE SOURCES. TOTAL RATING OF ALL OVERCURRENT DEVICES EXCLUDING MAIN SUPPLY OVERCURRENT DEVICE SHALL NOT EXCEED AMPACITY OF BUSBAR

LABEL LOCATION: POINT OF INTERCONNECTION, COMBINER PANEL PER CODE: NEC 705.12(B)(2)(3)(c

⚠ WARNING:
POWER SOURCE OUTPUTCONNECTION. DO NOT RELOCATETHIS OVERCURRENT DEVICE

LABEL LOCATION: MAIN SERVICE DISCONNECT, POINT OF INTERCONNECTIONPER CODE: 705.12(B)(2)(3)(b)

MAIN PHOTOVOLTAICSYSTEM DISCONNECT

LABEL LOCATION: MAIN SERVICE DISCONNECT, UTILITY METER PER CODE: NEC 690.13(B)

RAPID SHUTDOWN FOR SOLAR PV SYSTEM

LABEL LOCATION: RSD INITIATION DEVICE, AC DISCONNECT PER CODE: NEC 690.56(C)(3)

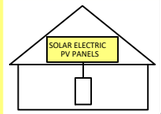
TEAM SUNSHINE CONSTRUCTION
PHONE- (617)-209-4343

LABEL LOCATION:RSD INITIATION DEVICE, AC DISCONNECT

ADHESIVE FASTENED SIGNS:
- THE LABEL SHALL BE SUITABLE FOR THE ENVIRONMENT WHERE IT IS INSTALLED.
- WHERE REQUIRED ELSEWHERE IN THIS CODE, ALL FIELD APPLIED LABELS, WARNINGS, AND MARKINGS SHOULD COMPLY WITH ANSI Z535.4 [NEC 110.21(B) FIELD MARKING].
- ADHESIVE FASTENED SIGNS MAY BE ACCEPTABLE IF PROPERLY ADHERED. VINYL SIGNS SHALL BE WEATHER RESISTANT [IFC 605.11.1.3]

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

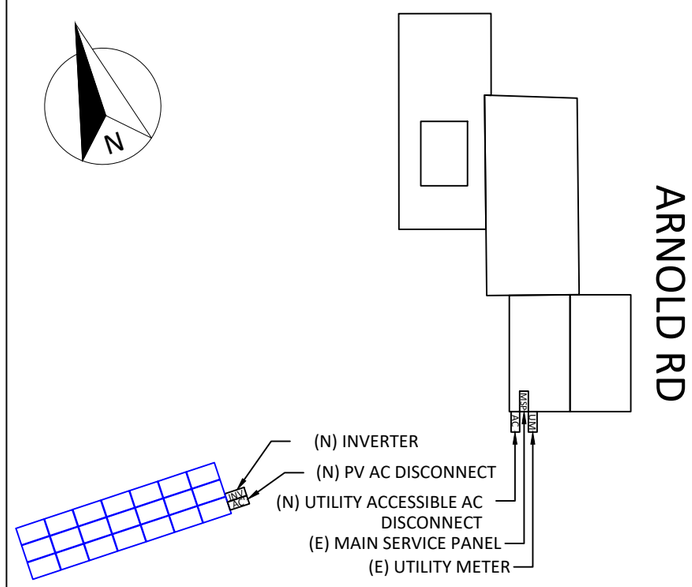
TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY



LABEL PER NEC 690.56(C)- PROVIDE AT AC DISCONNECT FOR RAPID SHUTDOWN COMPLIANT SYSTEM

CAUTION!

POWER TO THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECTS LOCATED AS SHOWN.



LABEL LOCATION: EACH SERVICE EQUIPMENT LOCATION AND AT THE LOCATION(S) OF THE SYSTEM DISCONNECT(S) FOR ALL ELECTRIC POWER PRODUCTION SOURCES CAPABLE OF BEING INTERCONNECTED
(PER CODE: NEC 705.10)

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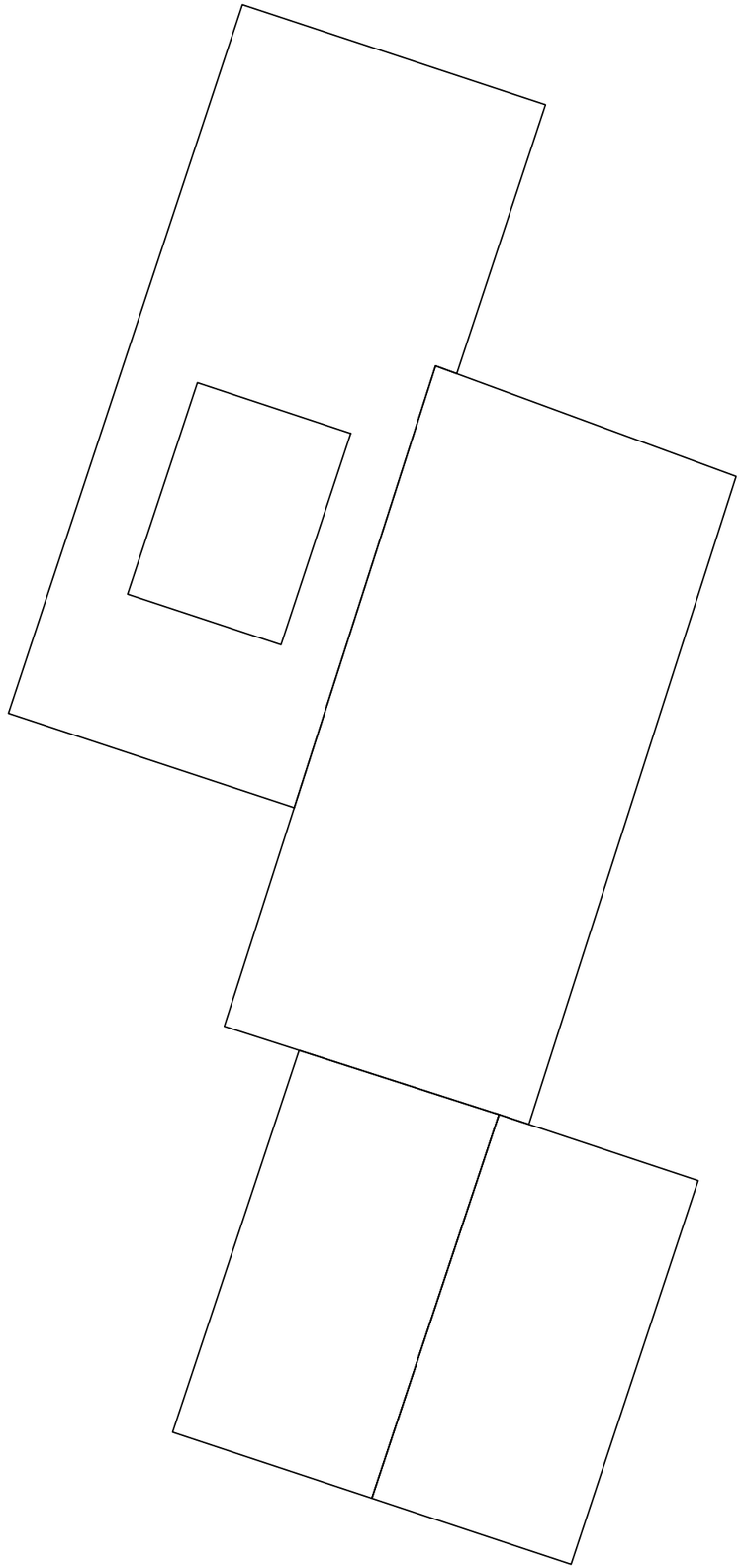
APN#:
002.0_0000_0092.A

AHJ NAME
PELHAM

SHEET NAME
SIGNAGE

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
P-02



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AHJ NAME
PELHAM

SHEET NAME

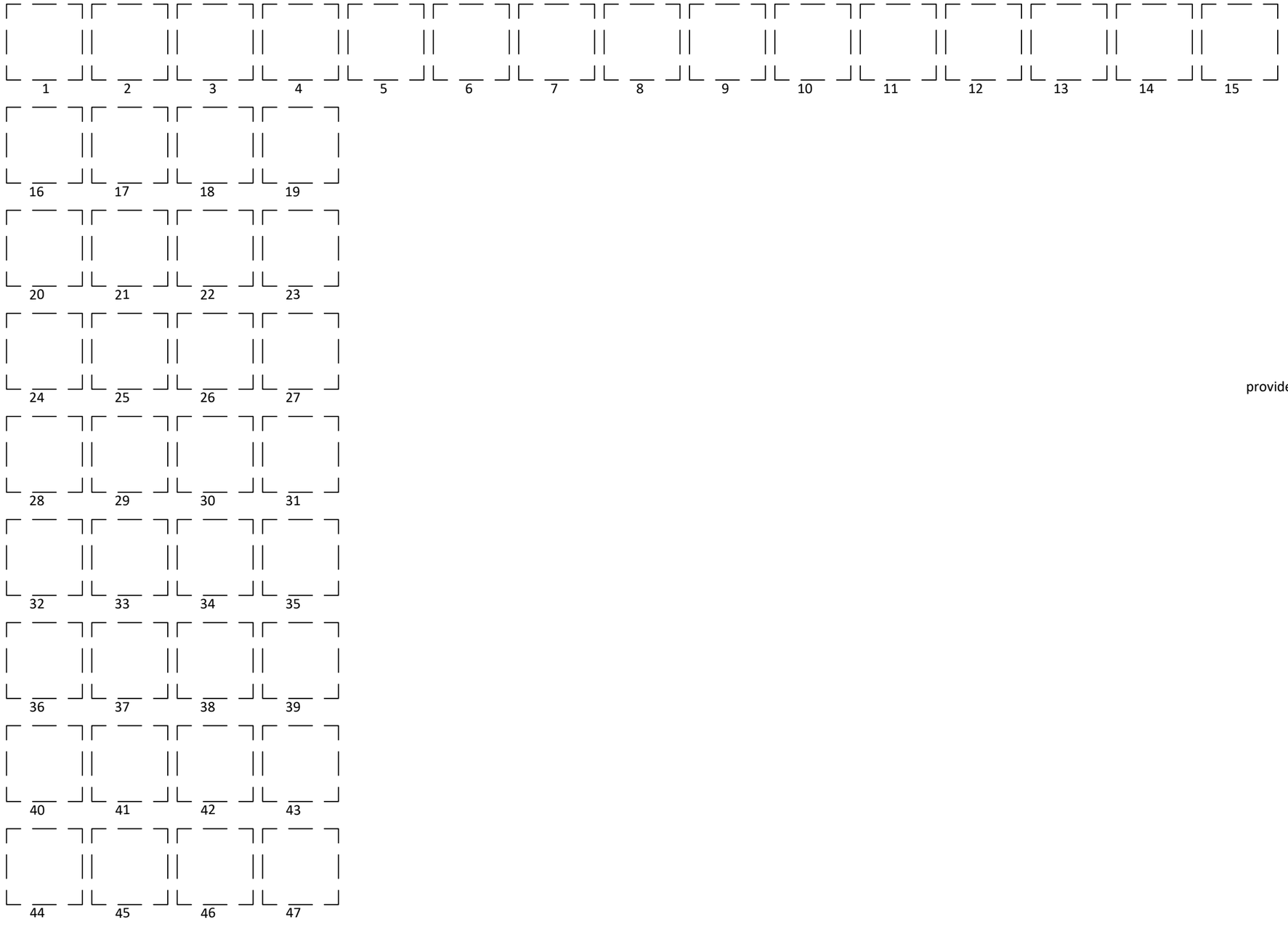
REFERENCE PAGE

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

P-03



Inverter	ZigBee Sticker
Model	
Serial #	
#of Modules per Inverter :	

provided.

Mapping Instructions:

1. Remove the 'square' Optimizer or Enphase sticker and place neatly on the appropriate numbered space.

2. Write the corresponding number on the appropriate panel within the array.

3. Attach the square Inverter sticker (and ZigBee sticker if req'd) in space

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AHJ NAME
PELHAM

SHEET NAME

MLPE MAP

SHEET SIZE

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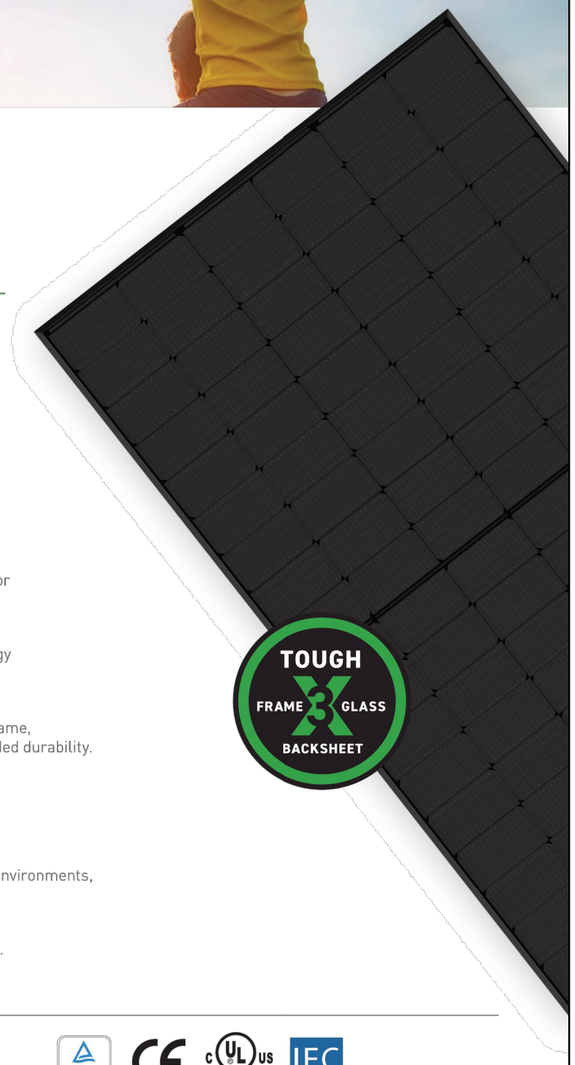
11" X 17"

SHEET NUMBER

P-04

EAGLE
MODULES

THE MOST DEPENDABLE
SOLAR PRODUCT



EAGLE 54HM G6

420-440 WATT • N-TYPE TOPCON

Positive power tolerance of 0~+3%

- NYSE-listed since 2010, Bloomberg Tier 1 manufacturer
- Top performance in the strictest 3rd party labs
- Automated manufacturing utilizing artificial intelligence
- Vertically integrated, tight controls on quality
- Premium solar factories in USA, Vietnam, and Malaysia

KEY FEATURES

Superior Aesthetics
Black backsheet and black frame create ideal look for residential applications.

N-Type Technology
N-type cells with Jinko's in-house TOPCon technology offers better performance and improved reliability.

Thick and Tough
Fire Type 1 rated module engineered with a thick frame, 3.2mm front side glass, and thick backsheet for added durability.

Shade Tolerant
Twin array design allows continued performance even with shading by trees or debris.

Protected Against All Environments
Certified to withstand humidity, heat, rain, marine environments, wind, hailstorms, and packed snow.

Warranty
25-year product and 30-year linear power warranty.

- ISO9001:2015 Quality Standards
- ISO14001:2015 Environmental Standards
- IEC61215, IEC61730 certified products
- ISO45001: 2018 Occupational Health & Safety Standards
- UL61730 certified products

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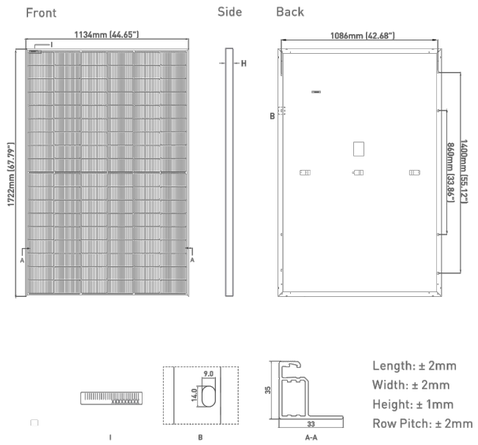
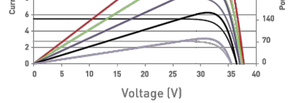
ENGINEERING DRAWINGS



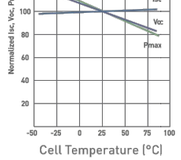
Length: ± 2mm
Width: ± 2mm
Height: ± 1mm
Row Pitch: ± 2mm

ELECTRICAL PERFORMANCE & TEMPERATURE DEPENDENCE

Current-Voltage & Power-Voltage Curves (440W)



Temperature Dependence of Isc, Voc, Pmax



MECHANICAL CHARACTERISTICS

No. of Half Cells	108 (2 x 54)
Dimensions	1722 × 1134 × 35mm (67.79 × 44.65 × 1.38 inch)
Weight	22.0kg (48.5lbs)
Front Glass	3.2mm, Anti-Reflection Coating High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminum Alloy
Junction Box	IP68 Rated
Output Cables	12 AWG, 1400mm (55.12in) or Customized Length
Connector	Staubli MC4
Fire Type	Type 1
Pressure Rating	5400Pa (Snow) & 2400Pa (Wind)

TEMPERATURE CHARACTERISTICS

Temperature Coefficients of Pmax	**-0.29%/°C**
Temperature Coefficients of Voc	-0.25%/°C
Temperature Coefficients of Isc	**0.045%/°C**
Nominal Operating Cell Temperature (NOCT)	45±2°C

MAXIMUM RATINGS

Operating Temperature (°C)	**-40°C~+85°C**
Maximum System Voltage	1000VDC
Maximum Series Fuse Rating	**25A**

PACKAGING CONFIGURATION

(Two pallets = One stack)

31pcs/pallets, 62pcs/stack, 806pcs/40 HQ Container

WARRANTY

25-year product and 30-year linear power warranty

1st year degradation not to exceed 1%, each subsequent year not to exceed 0.4%, minimum power at year 30 is 87.4% or greater.

ELECTRICAL CHARACTERISTICS

Module Type	JKM420N-54HL4-B		JKM425N-54HL4-B		JKM430N-54HL4-B		JKM435N-54HL4-B		JKM440N-54HL4-B	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	**420Wp**	**316Wp**	**425Wp**	**320Wp**	**430Wp**	**323Wp**	**435Wp**	**327Wp**	**440Wp**	**331Wp**
Maximum Power Voltage (Vmp)	32.16V	29.95V	32.37V	30.19V	32.58V	30.30V	32.78V	30.50V	32.99V	30.73V
Maximum Power Current (Imp)	**13.06A**	**10.55A**	**13.13A**	**10.60A**	**13.20A**	**10.66A**	**13.27A**	**10.72A**	**13.34A**	**10.77A**
Open-circuit Voltage (Voc)	38.74V	36.80V	38.95V	37.00V	39.16V	37.20V	39.36V	37.39V	39.57V	37.59V
Short-circuit Current (Isc)	**13.51A**	**10.91A**	**13.58A**	**10.96A**	**13.65A**	**11.02A**	**13.72A**	**11.08A**	**13.80A**	**11.14A**
Module Efficiency STC (%)	21.51%		21.76%		22.02%		22.28%		22.53%	

***STC:** Irradiance 1000W/m² Cell Temperature 25°C AM = 1.5
NOCT: Irradiance 800W/m² Ambient Temperature 20°C AM = 1.5 Wind Speed 1m/s

*Power measurement tolerance: ±3%

The company reserves the final right for explanation onany of the information presented hereby. JKM420-440N-54HL4-B-F1-US

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EQUIPMENT SPECIFICATION

SHEET SIZE
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11" X 17"

SHEET NUMBER
S-01

SolarEdge Home Hub Inverter

USA Domestic Content Eligible*
Single Phase, for North America

SE3800H-US / SE5700H-US / SE7600H-US / SE10000H-US / SE11400H-US

HOME BACKUP

Made in the USA from imported parts

SolarEdge's USA-manufactured residential single phase inverter offering for storage and backup applications

- Eligible for domestic content % under the enhanced federal income tax credit*
- The ultimate home energy manager in charge of PV production, battery storage, backup operation during a power outage**, EV Charging, and smart energy devices
- Record-breaking 99% weighted efficiency with up to 200% DC oversizing
- Able to start high LRA HVAC systems during backup operation
- Integrates seamlessly with the complete SolarEdge Home Smart Energy Ecosystem, through SolarEdge Home Network
- Module-level monitoring and visibility of battery status, PV production, and self-consumption data
- Integrated Wi-Fi antenna for enhanced communication reliability and simplicity
- Fast and easy installation – small and lightweight, with reduced commissioning time
- NEMA 4X-rated, for indoor and outdoor installations
- A scalable solution that supports future homeowner needs through easy connection to a growing ecosystem of products
- Advanced safety features with integrated arc fault protection and rapid shutdown for 690.11 and 690.12
- Advanced reliability with automotive-grade components
- Embedded revenue grade production data, ANSI C12.20 Class 0.5
- Install larger systems while avoiding main panel upgrades with the embedded Power Control System (PCS)

* As it relates to the domestic content rules, the U.S. Department of Treasury and the IRS have not yet issued proposed or final regulations. Rather, the IRS has issued three notices – Notice 2023-38, Notice 2024-41 and Notice 2025-08. These notices provide guidance regarding the domestic content rules. SolarEdge products referenced herein are manufactured with the intent to be eligible for inclusion under the elective safe harbor table in calculating the Domestic Cost Percentage under the "rooftop (MLPE)" category (under IRS Notice 2025-08). Eligibility is subject to the installation of qualified USA-Manufactured inverters and Power Optimizers (U650/U650B) in the same project. SolarEdge does not provide tax and/or legal advice. You should consult with your own legal and/or tax advisor(s) regarding the eligibility of your project for the ITC or PTC, including the 10% Domestic Content bonus, to determine how the applicable rules apply to your project. The forward-looking statements in this document are accurate as of the date herein and are subject to change. For more information, please contact your local SolarEdge sales representative. P/N US[xxxx]H-USMNBE78 contains the following domestically produced MPCs: per notice 2025-08^- Printed Circuit Board Assemblies (DC-DC) and (AC-AC), Enclosure, Production (24.8%); per notice 2024-41^- Printed Circuit Board Assemblies, Enclosure (17.6%).

** Requires additional hardware and firmware version upgrade.

solaredge.com

solaredge

SolarEdge Home Hub Inverter

USA Domestic Content Eligible
Single Phase, for North America

SE3800H-US / SE5700H-US / SE7600H-US / SE10000H-US / SE11400H-US

Applicable to inverters with part number	USExxxxH-USMNBE78					
Model Number[1]	SE3800H-US	SE5700H-US	SE7600H-US	SE10000H-US	SE11400H-US	
OUTPUT – AC ON GRID						
Maximum AC Power Output	3800 @ 240V 3300 @ 208V	5760 @ 240V 5000 @ 208V	7600 @ 240V 6600 @208V	10,000 @ 240V 8700 @ 208V	11,400 @ 240V 10,000 @ 208V	W
AC Output Voltage (Nominal)	208 / 240					Vac
AC Output Voltage (Range)	183 – 264					Vac
AC Frequency Range (min - nom - max)	59.3 – 60 – 60.5[2]					Hz
Maximum Continuous Output Current	16	24	32	42	47.8	A
Maximum Fault Current / Duration	74 / 50					Aac / µs
GFDI Threshold	1					A
Total Harmonic Distortion (THD)	< 3					%
Power Factor	1, adjustable -0.85 to 0.85					
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes					
Charge Battery from AC (if allowed)	Yes					
Typical Nighttime Power Consumption	< 2.5					W
OUTPUT – AC STANDALONE (BACKUP)[3]						
Rated AC Power in Standalone Operation[4]	12,5000[5][6]					W
Maximum Continuous Output Current in Standalone Operation	52					A
Locked Rotor Amperage (LRA)[7]	Up to 106					A
AC L-L Output Voltage Range in Standalone Operation	211 – 264					Vac
AC L-N Output Voltage Range in Standalone Operation	105 – 132					Vac
AC Frequency Range in Standalone Operation (min - nom - max)	55 – 60 – 65					Hz
GFDI	1					A
THD	< 5					%
INPUT – DC (PV AND BATTERY)						
Transformer-less, Ungrounded	Yes					
Maximum Input Voltage	480					Vdc
Nominal DC Input Voltage	380					Vdc
Reverse-Polarity Protection	Yes					
Ground-Fault Isolation Detection	600kΩ Sensitivity					
Maximum Input Short Circuit Current	45					Adc
Maximum Inverter Efficiency	99.2					%
CEC Weighted Efficiency	98.5		99		99 @ 240V 98.5 @ 208V	%
2-Pole Disconnection	Yes					
DC CONNECTION – PV						
Maximum Input Power	7600 @ 240V 6600 @ 208V	11,520 @ 240V 10,000 @ 208V	15,200 @ 240V 13,200 @ 208V	20,000 @ 240V 17,400 @ 208V	22,800 @ 240V 20,000 @ 208V	W
Maximum Input Current	20 @ 240V 17 @ 208V	30 @ 240V 26 @ 208V	40 @ 240V 35 @ 208V	53 @ 240V 46 @ 208V	60 @ 240V 53 @ 208V	Adc
Number of Ports	3					
Maximum Current per Port	40					Adc

(1) These specifications apply to inverters with part number SExxxxxH-USMNBE78 and connection unit model number DCD-1PH-US-PxH-F-x.
(2) For other regional settings please refer to the SolarEdge Inverters, Power Control Options application note.
(3) Not designed for non-grid connected applications and requires AC for commissioning. Standalone (backup) functionality is only supported for the 240V grid.
(4) For models SE7600H-US and below, the Rated AC Power in Standalone Operation is configurable between 7,600W with a Maximum Continuous Output Current of 32A or 12,500W with a Maximum Continuous Output Current of 52A, from firmware version 4.23.xx.
(5) Operational only at ambient temperatures up to 86°F / 30°C. Above 86°F / 30°C, the Maximum Rated AC Power in Standalone Operation is 11,400W.
(6) Available only for single inverter installations. In multi-inverter installations, the Maximum Rated AC Power in Standalone Operation is 11,400W.
(7) For more information about LRA (Locked Rotor Amperage) values, see the SolarEdge Home Hub Inverter LRA application note.

CE ETL LISTED

SolarEdge Home Hub Inverter

USA Domestic Content Eligible
Single Phase, for North America

SE3800H-US / SE5700H-US / SE7600H-US / SE10000H-US / SE11400H-US

Applicable to inverters with part number	USExxxxH-USMNBE78					
Model Number[1]	SE3800H-US	SE5700H-US	SE7600H-US	SE10000H-US	SE11400H-US	
DC CONNECTION – BATTERY						
Supported Battery Types	SolarEdge Home Battery 400V					
Number of Batteries per Inverter	Up to 3					
Maximum Continuous Power (Charge and Discharge)[8]	12,500					W
Number of Ports	2					
Maximum Current per Port	40					Adc
2-pole Disconnection	Up to the inverter's rated standalone power					
SMART ENERGY CAPABILITIES						
Consumption Metering	Built-in[9]					
Standalone & Battery Storage	With Backup Interface (purchased separately) for service up to 200A; up to 3 inverters					
EV Charging	Direct connection to the SolarEdge Home EV Charger[10]					
ADDITIONAL FEATURES						
Supported Communication Interfaces	RS485, Ethernet, Cellular[11] (optional), Wi-Fi[12], SolarEdge Home Network[13] (optional)					
Revenue Grade Metering, ANSI C12.20	Built-in[9]					
Integrated AC, DC, and Communication Connection Unit	Yes					
Inverter Commissioning	With the SetApp mobile application using built-in Wi-Fi Access Point for local connection					
DC Voltage Rapid Shutdown (PV and Battery)	Yes, NEC 690.12					
STANDARD COMPLIANCE						
Safety	UL 1741, UL 1741SA, UL 1741SB, UL 1699B, CSA 22.2#107.1, C22.2#330, C22.3#9, ANSI/CAN/UL 9540					
Grid Connection Standards	IEEE1547-2018 and IEEE-1547.1 Rule 21, Rule 14H					
Emissions	FCC Part 15 Class B					
Power Control System (PCS)	UL 1741 PCS[14]					
INSTALLATION SPECIFICATIONS						
AC Terminals	L1, L2, N terminal blocks, PE busbar for inverter connection L1, L2 terminal blocks, PE busbar for EV Charger AC connection					
DC Terminals	3 x terminal block pairs for PV input, 2 x terminal block pair for battery input					
AC Output and EV AC Output Conduit Size / AWG Range	1" maximum / 14 – 4 AWG					
DC Input (PV and Battery) Conduit Size / AWG Range	1" maximum / 14 – 6 AWG					
Dimensions with Connection Unit (H x W x D)	21.06 x 14.6 x 8.2 / 535 x 370 x 208					in / mm
Weight with Connection Unit	44.9 / 20.3					lb / kg
Noise	< 50					dBA
Cooling	Natural Convection					
Operating Temperature Range	-40 to +140 / -40 to +60[15]					°F / °C
Protection Rating	NEMA 4X					

(8) Discharge power is limited up to the inverter's rated AC power for on-grid applications, and up to 12.5 kW for standalone applications, as well as up to the installed batteries' rating.
(9) For consumption metering current transformers should be ordered separately: SECT-SPL-225A-T-20 or SEACT1250-400NA-20. Revenue grade metering is only for production metering.
(10) For more information about the SolarEdge Home EV Charger, refer to the SolarEdge Home EV Charger datasheet.
(11) Purchased separately. Information concerning the data plan terms & conditions is available in SolarEdge Communication Plan Terms and Conditions.
(12) External Wi-Fi antenna for wider range provided with the inverter's package. Refer to the Antenna for Wi-Fi and ZigBee Wireless Communications datasheet.
(13) SolarEdge Home Network Plugin ENET-HBNP-01 purchased separately. For more information, refer to the SolarEdge Home Network Plugin datasheet.
(14) Only part numbers USExxxxH-USMNxx7x support the PCS meter.
(15) Full power up to at least 122°F / 50°C. For power derating information refer to the Temperature Derating for North America technical note.

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TEAM Sunshine

TEAM SUNSHINE CONSTRUCTION LLC
24 SPICE ST BOSTON, MA02129
PHONE - (617) 580-8649
LIC. NO. - 115062

SIGNATURE AND SEAL

REVISIONS

DESCRIPTION	DATE	REV
CAD	11-DEC-25	00

PROJECT NAME & ADDRESS

JOHN CHERRY RESIDENCE

47 ARNOLD RD PELHAM, MA 01002,USA

APN#: 002.0_0000_0092.A

AHJ NAME
PELHAM

SHEET NAME
EQUIPMENT SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
S-02

Power Optimizer

USA Domestic Content Eligible*

For North America

U650 / U650B

POWER OPTIMIZER

Made in the USA from imported parts

SolarEdge's USA-manufactured offering for PV power optimization at the module level

- Eligible for domestic content: SolarEdge USA-manufactured Power Optimizers*, when paired with certain SolarEdge inverters, are intended to be eligible for the enhanced federal income tax credit for domestic content
- Specifically designed to work with SolarEdge inverters
- Supports high open circuit voltage (Voc) modules with U650B
- U650B provides improved design flexibility of multifaceted, complex roofs, with extended output voltage that reduces yield factor losses
- Superior efficiency (99.5%)
- Mitigates diverse types of module mismatch loss, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Faster installations with simplified wire management and easy assembly using a single bolt
- Compatible with a wide range of modules, including high-powered and bifacial PV modules
- Advanced safety:
  - Patented Sense Connect technology, designed to automatically detect and prevent potential electric arcs at the connector level before an arc is created
  - Patented SafeDC™ – module-level voltage shutdown, for installer and firefighter safety
  - Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)

* Manufactured by SolarEdge with the intent to be eligible for inclusion under the elective safe harbor in calculating the Domestic Cost Percentage under the "Rooftop (MLPE)" category (under IRS Notice 2024-41). The PCBA, Electrical Parts, and Enclosure are domestically manufactured to meet the requirements of eligibility to be considered for the ITC domestic content bonus adder. SolarEdge does not provide tax and/or legal advice. You should consult with your own legal and/or tax advisor(s) regarding the eligibility of your project for the ITC or PTC, including the 10% domestic content bonus, to determine how the applicable rules apply to your particular project. The forward-looking statements in this datasheet are accurate as of the date herein and are subject to change. For more information, please contact your local SolarEdge sales representative

solaredge.com

solaredge

Power Optimizer

USA Domestic Content Eligible, for North America

U650 / U650B

	U650	U650B	Units
INPUT			
Rated Input DC Power(1)	650		W
Absolute Maximum Input Voltage (Voc)	60	100	Vdc
MPPT Operating Range	8 – 60	12.5 – 100	Vdc
Maximum Input Current (Maximum Isc of Connected PV Module)	15		Adc
Maximum Input Short Circuit Current(2)	18.75		Adc
Maximum Efficiency	99.5		%
Weighted Efficiency	98.6		%
Overvoltage Category	II		
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREDGE INVERTER)			
Maximum Output Current	15		Adc
Maximum Output Voltage	60	80	Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREDGE INVERTER OR INVERTER OFF)			
Safety Output Voltage per Power Optimizer	1 ± 0.1		Vdc
STANDARD COMPLIANCE			
Photovoltaic Rapid Shutdown System	CSA C22.2#330, NEC 2014 – 2023		
EMC	FCC Part 15 Class B, IEC 61000-6-2, IEC 61000-6-3		
Safety	CSA C22.2#107.1, IEC 62109-1 (Class II safety), UL 1741		
Material	UL 94 V-0, UV Resistant		
RoHS	Yes		
Fire Safety	VDE-AR-E 2100-712:2013-05		
INSTALLATION SPECIFICATIONS			
Maximum Allowed System Voltage	1000		Vdc
Dimensions (W x L x H)	129 x 155 x 30 / 5.07 x 6.10 x 1.18	129 x 165 x 45 / 5.07 x 6.49 x 1.77	mm / in
Weight	720 / 1.6	790 / 1.74	gr / lb
Input Connector	MC4		
Input Wire Length	0.1 / 0.32		m / ft
Output Connector	MC4		
Output Wire Length	(+) 2.3, (-) 0.10 / (+) 7.54, (-) 0.32		m / ft
Operating Temperature Range(3)	-40 to +85		˚C
Protection Rating	IP68 / NEMA6P		
Relative Humidity	0 – 100		%

(1) The Rated Power of the module at STC will not exceed the power optimizer's Rated Input DC Power. Modules with up to +5% power tolerance are allowed.
(2) The Maximum Input Short Circuit Current is adjusted for worst case conditions of ambient temperature, irradiance, bifacial gain, and so on, in accordance with NEC and CSA.
(3) Power derating is applied for ambient temperatures above +85°C / +185°F for U650 and for ambient temperatures above +75°C / 167°F for U650B. Refer to the Power Optimizers Temperature Derating technical note for details.

PV System Design Using a SolarEdge Inverter(4)		SolarEdge Home Wave / Hub Single Phase	Three Phase for 208V Grid	Three Phase for 277/480V Grid	Units
Minimum String Length (Power Optimizers)	U650	8	10	18	
	U650B	6	8	14	
Maximum String Length (Power Optimizers)		25		50(5)	
Maximum Usable Power Delivered per String		5700	6000	12,750	W
Maximum Allowed Connected Power per String(6)(7)	Inverters with Rated AC Power ≤ 5700W	Per the inverter's maximum input DC power(8)	One string: 7200 Two strings or more: 7800	15,000	W
	Inverters with Rated AC Power of 6000W	5700			
	Inverters with Rated AC Power ≥ 7600W	6800, only when connected to at least two strings			
Parallel Strings of Different Lengths or Orientations		Yes			

(4) It is not allowed to mix U650 or U650B Power Optimizers with P-series Power Optimizers in new installations in the same string.
(5) A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement.
(6) For the 208V grid, the maximum is permitted only when the difference in connected power between strings is 1,000W or less.
(7) For the 240V or 277/480V grids, the maximum is permitted only when the difference in connected power between strings 2,000W or less.
(8) Refer to the Single String Design Guidelines application note for more details.

Intertek RoHS

TEAM SUNSHINE CONSTRUCTION LLC
24 SPICE ST BOSTON, MA02129
PHONE - (617) 580-8649
LIC. NO. - 115062

SIGNATURE AND SEAL

REVISIONS

DESCRIPTION	DATE	REV
CAD	11-DEC-25	00

PROJECT NAME & ADDRESS

JOHN CHERRY RESIDENCE

47 ARNOLD RD PELHAM, MA 01002,USA

APN#: 002.0_0000_0092.A

AHJ NAME
PELHAM

SHEET NAME
EQUIPMENT SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
S-03

SUNMODO

GO BIG ON TURF

SunTurf™ Ground Mount System

SunModo offers the next generation Ground Mount System with SunTurf™. The streamlined design combines the strength of Helio Rails with steel pipes to create the perfect ground mount solution.

SurTurf™ is ideal for solar installers looking for a durable and cost-effective system that can accommodate a wide variety of soil conditions.

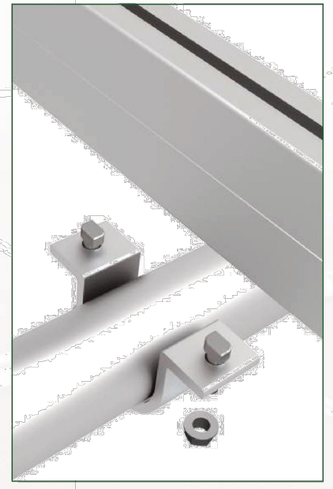
The SunTurf™ Ground Mount Advantage

- ✓ Easily scalable from kilowatts to multimegawatts PV Arrays.
- ✓ Foundation design solution for every soil condition.
- ✓ Online configuration tool available to streamline design process.
- ✓ Components optimized for strength, durability and fast installation.
- ✓ UL 2703 Listed by Intertek.

Key Features of SunTurf™ Ground Mount System

SUNMODO
We've Got Your Rack!

SunTurf™ Ground Mount System easily integrate Helio Rails with 2-inch Schedule 40 steel pipes. No drilling is required to attach the aluminum rails to the horizontal pipe. Optional bracing can provide additional structural rigidity for sites with high snow or wind load conditions. Anchor any ground mount installation using one of our fountain types including helical piles, precast ballasts and concrete piers.



Technical Data

Application	Ground Mount
Material	High grade aluminum, galvanized steel and 304 stainless steel hardware
Module Orientation	Portrait and landscape
Tilt Angle	Range between 10 to 50 degrees
Foundation Types	Post in concrete, helical earth auger, ground screw anchor and ballast
Structural Integrity	Stamped engineering letters available
Certification	UL 2703 Listed by ETL
Warranty	20 Years

TEAM Sunshine

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APN#: 002.0_0000_0092.A

AHJ NAME
PELHAM

SHEET NAME
EQUIPMENT SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
S-04

Product specifications

Eaton DG222URB

Catalog Number: DG222URB

Eaton General duty non-fusible safety switch, single-throw, 60 A, NEMA 3R, Rainproof, Painted galvanized steel, Two-pole, Two-wire, 240 V

Photo is representative

General specifications

Product Name
Eaton general duty non-fusible safety switch

Catalog Number
DG222URB

UPC
782113144238

Product Length/Depth
7.38 in

Product Height
14.38 in

Product Width
8.69 in

Product Weight
9 lb

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

Compliances
NEC 230.62 (C) Compliant Barrier

Certifications
UL Listed

Catalog Notes
WARNING! Switch is not approved for service entrance unless a neutral kit is installed.

Physical Attributes

Enclosure
NEMA 3R

Enclosure material
Painted galvanized steel

Fuse configuration
Non-fusible

Number Of Poles
Two-pole

Number of wires
2

Type
Non-fusible, single-throw

Performance Ratings

Amperage Rating
60A

Voltage rating
240V

Miscellaneous

Product Category
General duty safety switch

Resources

Catalogs
Eaton's Volume 2—Commercial Distribution

Multimedia
Switching Devices Flex Center

Double Up on Safety

Specifications and datasheets
Eaton Specification Sheet - DG222URB

Warranty guides
Selling Policy 25-000 - Distribution and Control Products and Services

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PHONE - (617) 580-8649
LIC. NO. - 115062

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CAD	11-DEC-25	00

PROJECT NAME & ADDRESS

JOHN CHERRY RESIDENCE
47 ARNOLD RD PELHAM, MA 01002,USA
APN#: 002.0_0000_0092.A

AHJ NAME
PELHAM

SHEET NAME
EQUIPMENT SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
S-08

47 Arnold Rd, Pelham, MA 01002

6137599

Ground Mount - SunTurf System

Project Details

Project Name	47 Arnold Rd, Pelham, MA 01002	**Zip Code:**	01002
ASCE	7-16	**City, State**	Pelham, MA
Total Watts	9 kW	**Date**	12/10/25
Total Modules	21		
Module Model	JinkoSolar JKM425N-54HL4R-B		
Module Dimensions	Height: 1,761.7 mm, Width: 1,134.1 mm, Depth: 30.0 mm (69.36” x 44.65” x 1.18”)		

Load Assumptions

Wind Speed	105 mph
Wind Expsoure	C
Ground Snow Load	40 psf

Structure & Foundation

Span Selection	Automatic: 108”
Front Edge Height	24”
Foundation Type	Ground Screw
Length of Screw	80”
Tilt	25°

Bill of Materials

Part	Spares	Total Qty
GRSCREW-80 Ground Screw, 80", with set screws		10
PIPE-20-60 Front Pipe, HSS, 2", 60"		5
PIPE-20-120 Rear Pipe, HSS, 2", 120"		5
PIPE-25-112 Pipe, HSS, 2.5", 112"		10
BRACE-TUBE-92 Brace, HSS Tube, 92"		7
SMR300-174-M SMR300 Rail, 174", Mill Finish		14
CLMP-SMR300-25-POP Pipe U-Clamp, 2.5", SMR300, Pop-on		28
PIPECAP-UNI Pipe Cap, Universal (2" or 2.5")		10
CLMP-PIPE-UNI Pipe Clamp, Universal (2" or 2.5")		14
SPLC-PIPE-25 Pipe Splice, 2.5"		8
CLMP-MID-SMR-S Mid Clamp, SMR Pop-On, Silver		28
CLMP-END-SMR-S End Clamp, SMR Pop-On, Silver		28
GRND-SMR Grounding Lug, SMR		1
CAP-SMR300-G Rail End Cap, SMR300, Gray		28
MLPE-SMR MLPE Mount, SMR		21

Array #1 Details

Orientation	Landscape	**Rail Type**	SMR300 Rail, 174", Mill Finish
Layout	3 rows by 7 columns	**N/S Span (in)**	85
Front Posts	5	**E/W Max Span (in)**	108
Back Posts	5	**Area**	486" (EW) x 134" (NS)

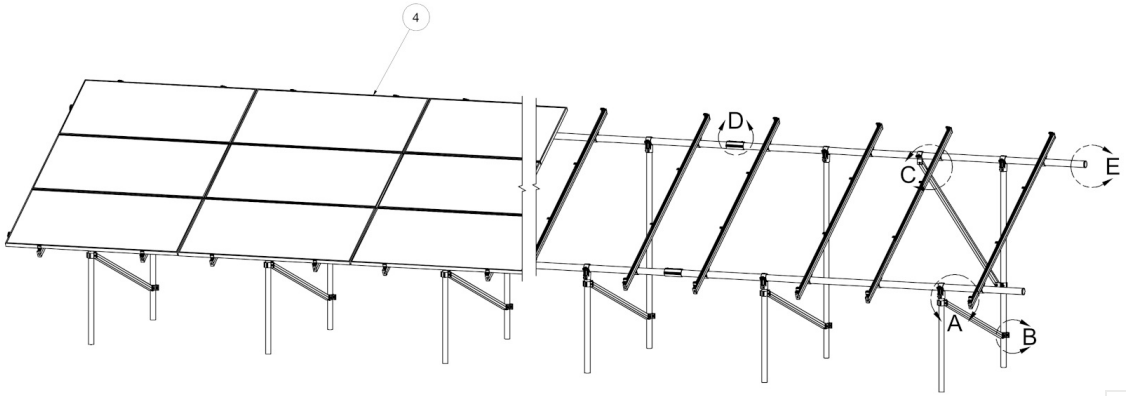
Sub Array #1 Layout

NOTES: UNLESS OTHERWISE SPECIFIED

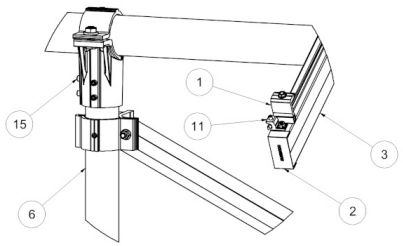
1. THIS DRAWING IS NOT FOR CONSTRUCTION UNTIL ENGINEERING HAS REVIEWED AND STAMPED THIS DOCUMENT.
2. DIMENSIONS SHOWN ARE INCHES.
3. THE SELF-BONDING SYSTEM AND SINGLE GROUND LUG IS FOR USE WITH PV MODULES THAT HAVE A MAXIMUM SERIES FUSE RATING OF 30A.
4. MATERIALS ARE AS SPECIFIED OR EQUIVALENT:
   HARDWARE: 304 STAINLESS STEEL
   FABRICATED EXTRUDED PARTS: 6005-T5 ALUMINUM ALLOY
   FABRICATED DIE CAST PARTS: ANSI/AA A380 ALUMINUM ALLOY
   STEEL PIPE: SCHEDULE 40 GALVANIZED
   ALUMINUM PIPE: SCHEDULE 10 ANODIZED
5. THE MAXIMUM PERMISSIBLE LENGTH OF ANY STRUCTURE SHALL BE 200 FT. FOR SYSTEMS USING A SHARED RAIL CONFIGURATION, A THERMAL BREAK IS REQUIRED IN THE RAIL EVERY 40 FT. PER THE DRAWING DETAILS.
6. 3LX7-25DEG-STR-GSM-AGM-BGM-PGM
7. APPROVED RAIL PROFILES
   VARY BASED ON ENGINEERING REQUIREMENTS. CONFIRM SELECTION WITH STRUCTURAL ENGINEER. SEE BOM IN BOTTOM RIGHT CORNER.
8. K10224-XXX END CLAMP KIT OR K10299-XXX ADJ. END CLAMP KIT.
9. FOUNDATION TYPES:
   GSM = GROUND SCREW GROUND MOUNT
   AGM = HELICAL AUGER GROUND MOUNT
   PGM = POST-IN-CONCRETE GROUND MOUNT
   BSM = BALLAST GROUND MOUNT
10. 1 OF 1 ARRAY TYPES
11. 1 ARRAYS TOTAL

PACKET B5	
Model Code	ASCE 7-16
Exposure Category	C
Wind Speed	105
Ground Snow Load	40
Tilt	25

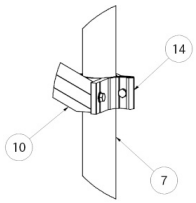
3LX7 ARRAY



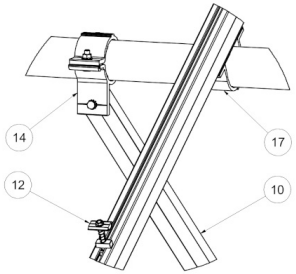
ITEM	PART NUMBER	DESCRIPTION	QTY
17	CLMP-SMR300-25-POP	Pipe U-Clamp, 2.5", SMR300, Pop-on	28
16	SPLC-PIPE-25	Pipe Splice, 2.5"	8
15	PIPECAP-UNI	Pipe Cap, Universal (2" or 2.5")	10
14	CLMP-PIPE-UNI	Pipe Clamp, Universal (2" or 2.5")	14
12	CLMP-MID-SMR-S	Mid Clamp, SMR Pop-On, Silver	28
11	GRND-SMR	Grounding Lug, SMR	1
10	BRACE-TUBE-92	Brace, HSS Tube, 92"	7
8	PIPE-25-112	Pipe, HSS, 2.5", 112"	10
7	PIPE-20-120	Rear Pipe, HSS, 2", 120"	5
6	PIPE-20-60	Front Pipe, HSS, 2", 60"	5
4		Panel 1,762 x1,134 x30.0mm	21
3	SMR300-174-M	SMR300 Rail, 174", Mill Finish	14
2	CAP-SMR300-G	Rail End Cap, SMR300, Gray	28
1	CLMP-END-SMR-S	End Clamp, SMR Pop-On, Silver	28



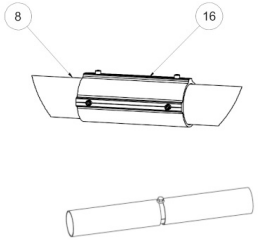
DETAIL A



DETAIL B



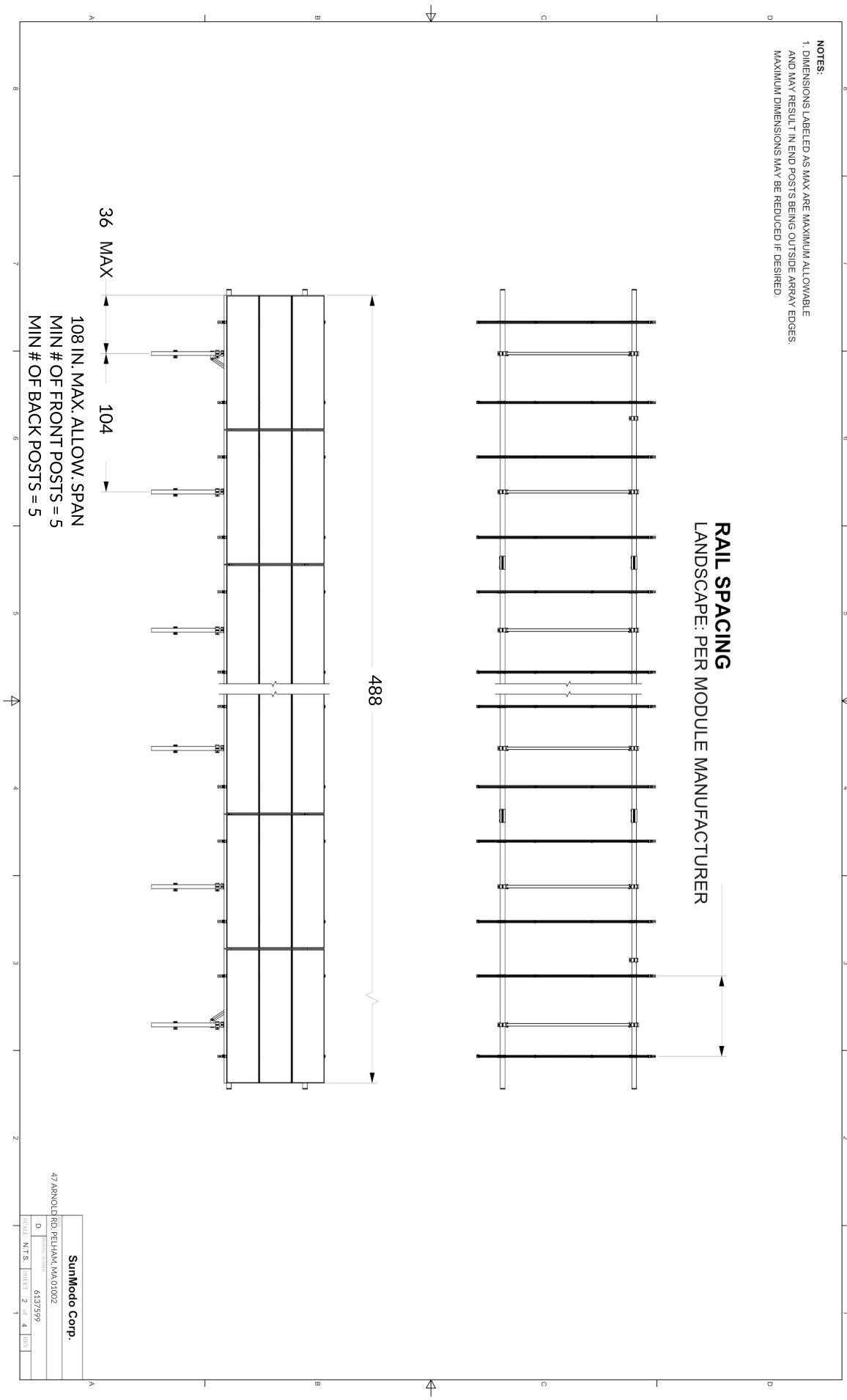
DETAIL C

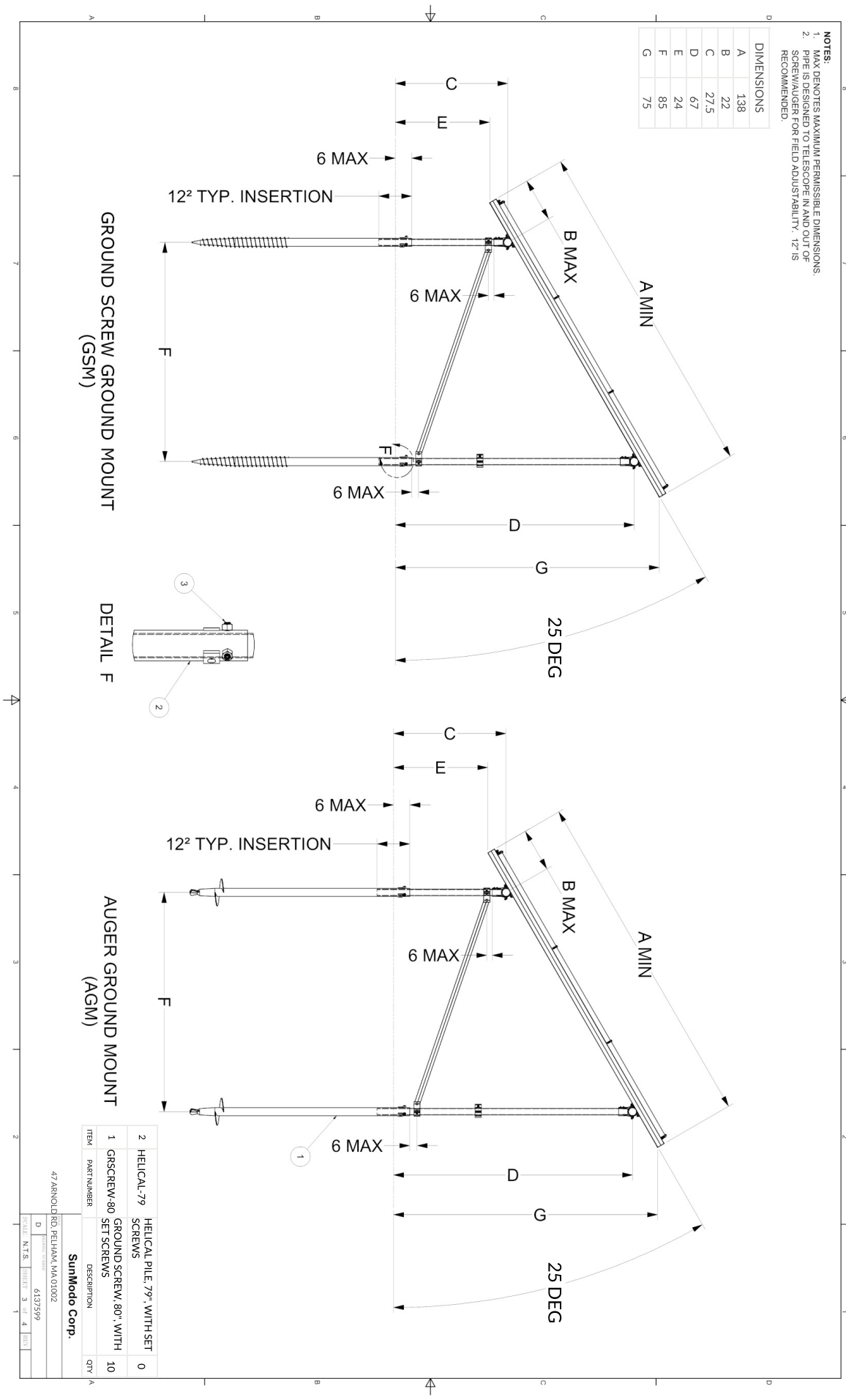


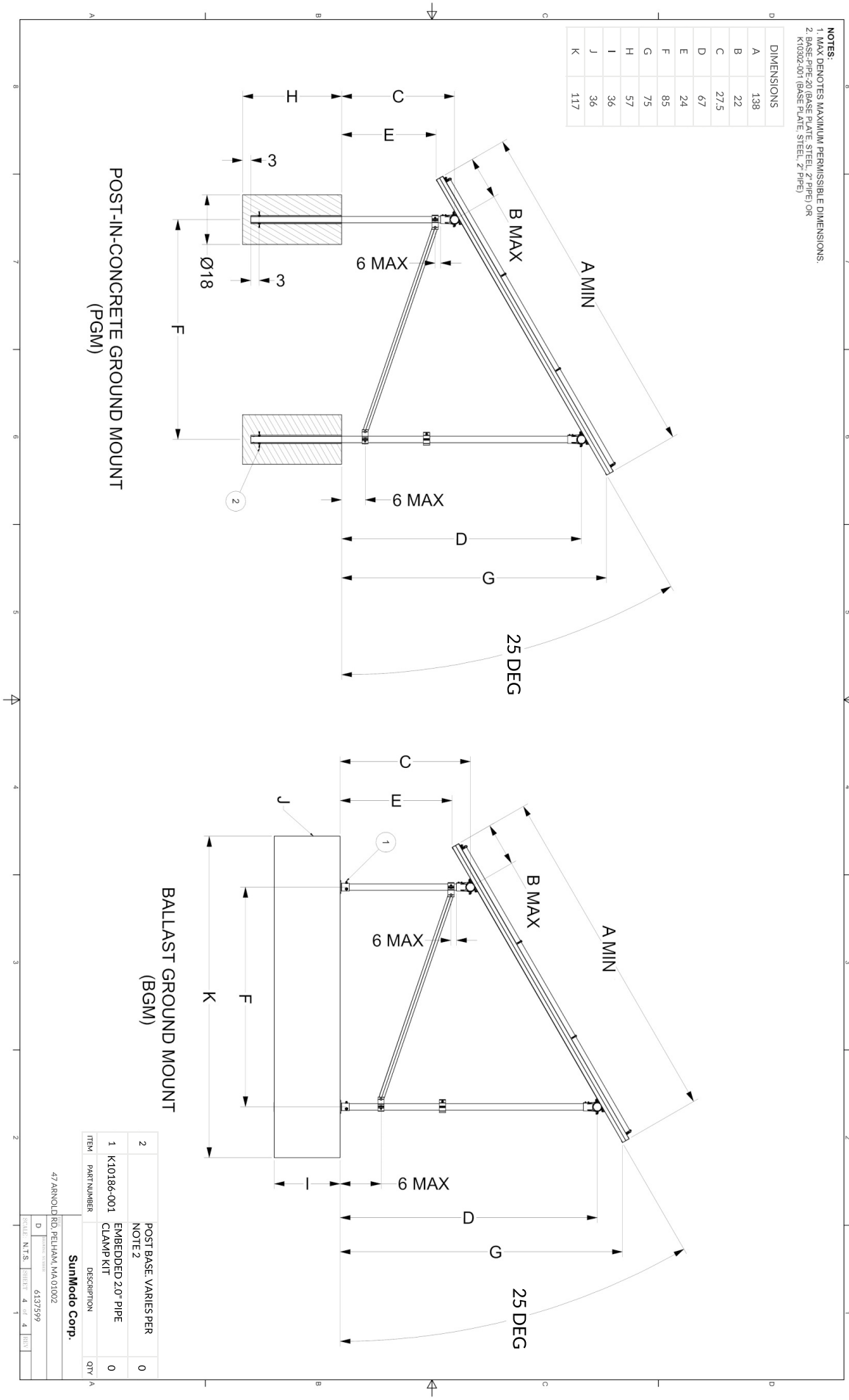
DETAIL D

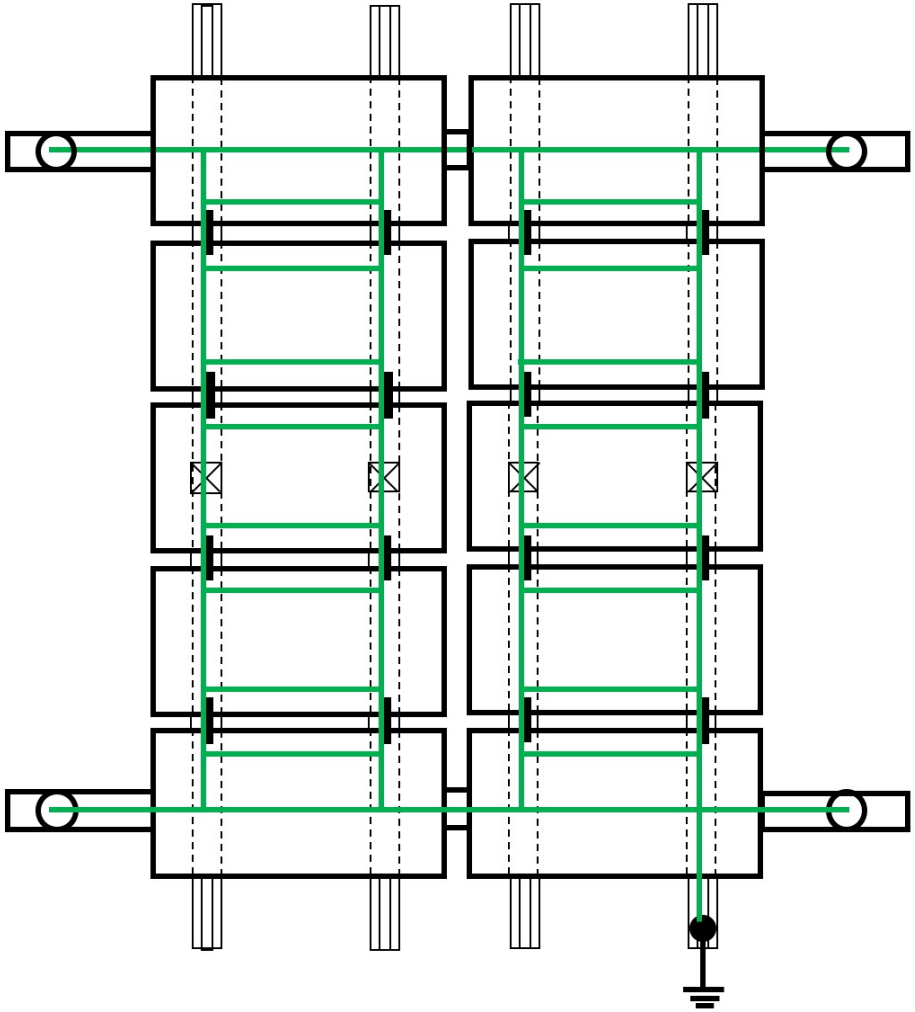
DETAIL E

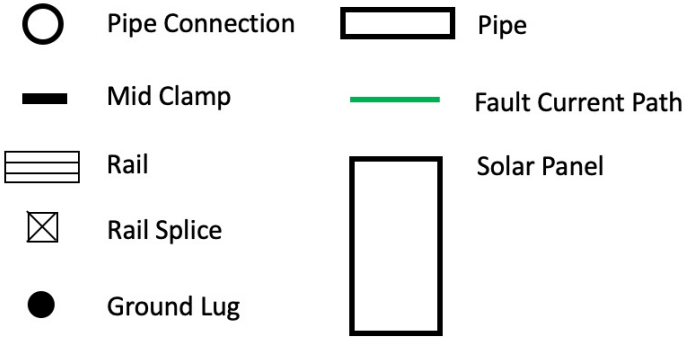
MATERIAL	SEE BOM	SunModo Corp.	
Third Angle Projection		14800 NE 65TH STREET, VANCOUVER WA 98682	
DRAWN BY	DATE	47 ARNOLD RD, PELHAM, MA 01002	
KYY	09/16/2019	D	6137599
CHECKED BY		SCALE: N.T.S.	SHEET 1 of 4
APPROVALS			


NOTES:
1. DIMENSIONS LABELED AS MAX ARE MAXIMUM ALLOWABLE AND MAY RESULT IN END POSTS BEING OUTSIDE ARRAY EDGES. MAXIMUM DIMENSIONS MAY BE REDUCED IF DESIRED.
RAIL SPACING
LANDSCAPE: PER MODULE MANUFACTURER
36 MAX
104
488
108 IN. MAX. ALLOW. SPAN
MIN # OF FRONT POSTS = 5
MIN # OF BACK POSTS = 5
SunModo Corp.
47 ARNOLD RD, PELHAM, MA 01002
6137599
SCALE: NTS
SHEET 2 of 4


NOTES:
1. MAX. DENOTES MAXIMUM PERMISSIBLE DIMENSIONS.
2. PIPE IS DESIGNED TO TELESCOPE IN AND OUT OF SCREW/AUGER FOR FIELD ADJUSTABILITY. 12" IS RECOMMENDED.
DIMENSIONS
A 138
B 22
C 27.5
D 67
E 24
F 85
G 75
GROUND SCREW GROUND MOUNT (GSM)
C
E
6 MAX
12² TYP. INSERTION
B MAX
A MIN
6 MAX
F
F
6 MAX
D
G
25 DEG
DETAIL F
3
2
AUGER GROUND MOUNT (AGM)
C
E
6 MAX
12² TYP. INSERTION
B MAX
A MIN
6 MAX
F
1
6 MAX
D
G
25 DEG
ITEM
PART NUMBER
DESCRIPTION
QTY
2 HELICAL-79 HELICAL PILE, 79", WITH SET SCREWS 0
1 GRSCREW-80 GROUND SCREW, 80", WITH SET SCREWS 10
SunModo Corp.
47 ARNOLD RD, PELHAM, MA 01002
6137599
SCALE: NTS
SHEET 3 of 4


NOTES:
1. MAX. DENOTES MAXIMUM PERMISSIBLE DIMENSIONS.
2. BASE-PIPE: 20 (BASE PLATE: STEEL, 2" PIPE) OR
K10302-001 (BASE PLATE: STEEL, 2" PIPE)
DIMENSIONS
A 138
B 22
C 27.5
D 67
E 24
F 85
G 75
H 57
I 36
J 36
K 117
POST-IN-CONCRETE GROUND MOUNT
(PGM)
H
C
E
3
Ø18
3
F
B MAX
A MIN
6 MAX
6 MAX
D
G
25 DEG
2
BALLAST GROUND MOUNT
(BGM)
C
E
J
1
K
F
B MAX
A MIN
6 MAX
I
6 MAX
D
G
25 DEG
ITEM PART NUMBER DESCRIPTION QTY
2 POST BASE. VARIES PER NOTE 2 0
1 K10186-001 EMBEDDED 2.0" PIPE CLAMP KIT 0
SunModo Corp.
47 ARNOLD RD. PELHAM, MA 01002
6137599
SCALE: N.T.S. SHEET 4 of 4





Note: All SunTurf metal structural components (Horizontal and Vertical Pipe, Pipe Splices, Post Caps, Pipe Clamps, Braces, Rail and Rail Splices) are electrically bonded together by design during the assembly of the racking.