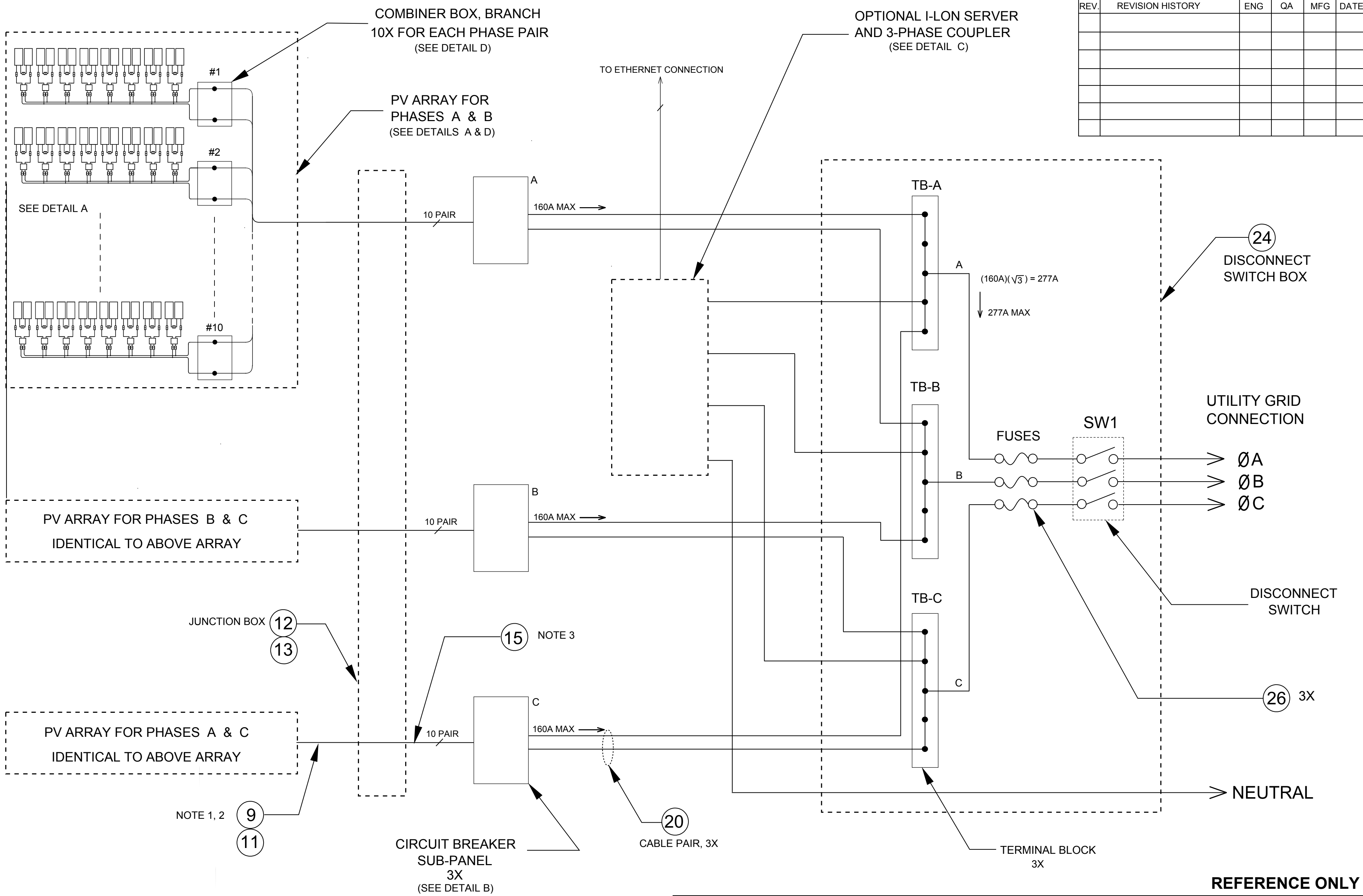


REV.	REVISION HISTORY	ENG	QA	MFG	DATE




- NOTES:**
- 1) ALL CABLING BETWEEN PV ARRAYS AND THE JUNCTION BOX WILL BE ROUTED USING SNAKE TRAYS.
 - 2) BETWEEN "BRANCH COMBINER BOX" AND "BREAKER SUB-PANEL COMBINER BOX" CABLING (USE-2) IS A CONTINUOUS LENGTH, AND PASSES THROUGH THE JUNCTION BOX.
 - 3) BETWEEN JUNCTION BOX AND BREAKER SUB-PANEL, CABLE IS ROUTED OFF THE ROOFTOP WITHIN CONDUIT.

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UNLESS OTHERWISE SPECIFIED REFERENCE DIMENSIONS SHOWN IN PARENTHESIS DIMENSIONS ARE IN INCHES
 X.X = +/- 0.050
 X.XX = +/- 0.010
 X.XXX = +/- 0.005
 ANGULAR = +/- 30'

APPROVALS		
DEPT.	SIGNATURE	DATE
ENG		
QA		
MFG		
DWN	<i>R. MacArthur</i>	10-14-11
FILE #:	xxx-xxxx-xx	

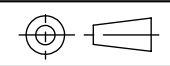
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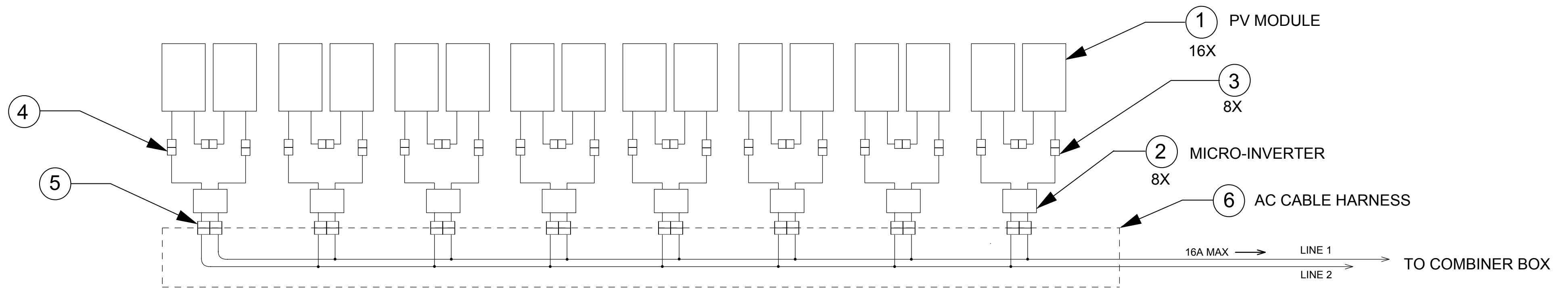


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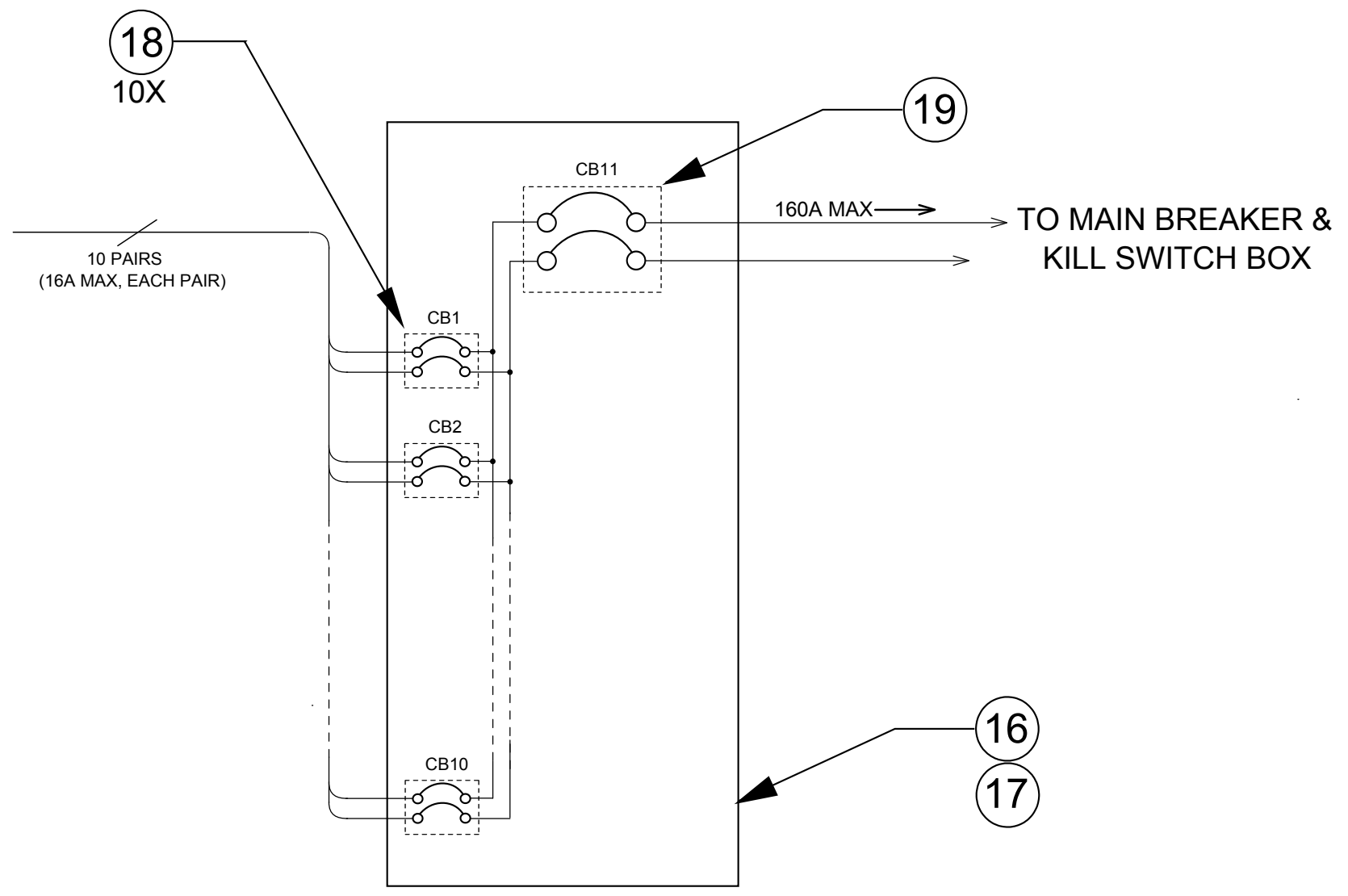
TITLE BLOCK DIAGRAM,
PV FARM, 480 MODULES,
8 MICRO-INVERTERS PER BRANCH

DWG. NO. _____ REV. **4**

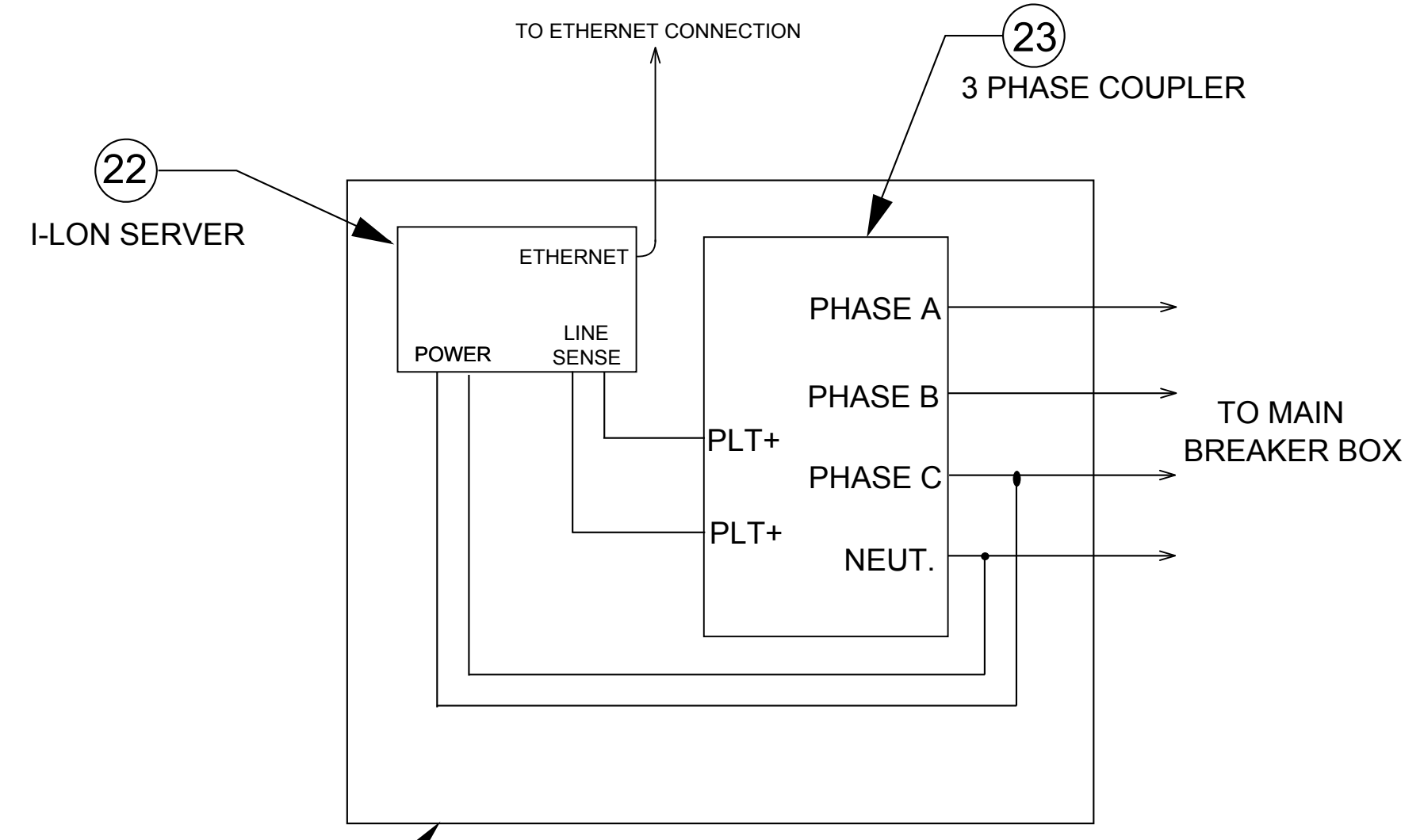
SCALE: **DO NOT SCALE**  **SIZE B** SHEET 1 OF 2



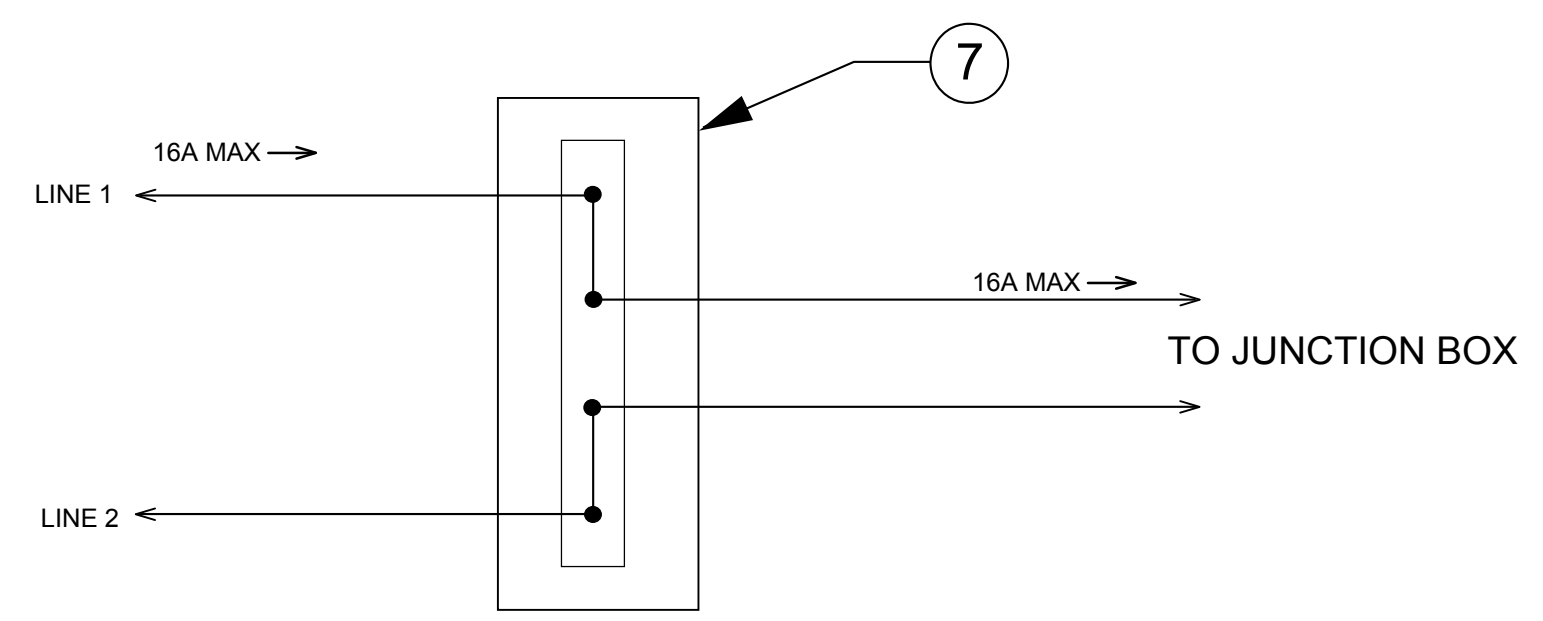
DETAIL A
16 PV MODULE / 8 MICRO-INVERTER BRANCH



DETAIL B
CIRCUIT BREAKER SUB-PANEL




DETAIL C
OPTIONAL I-LON SERVER
AND 3-PHASE COUPLER

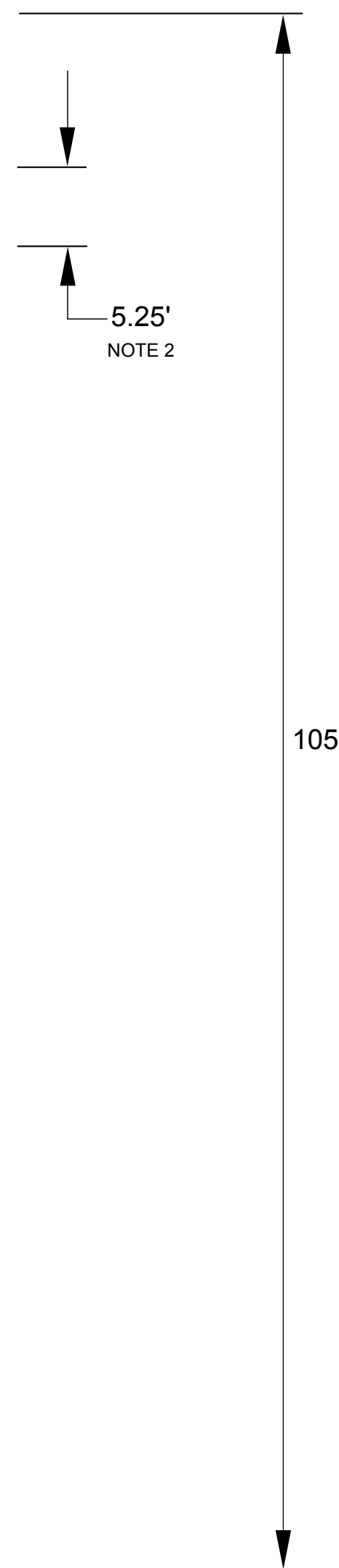
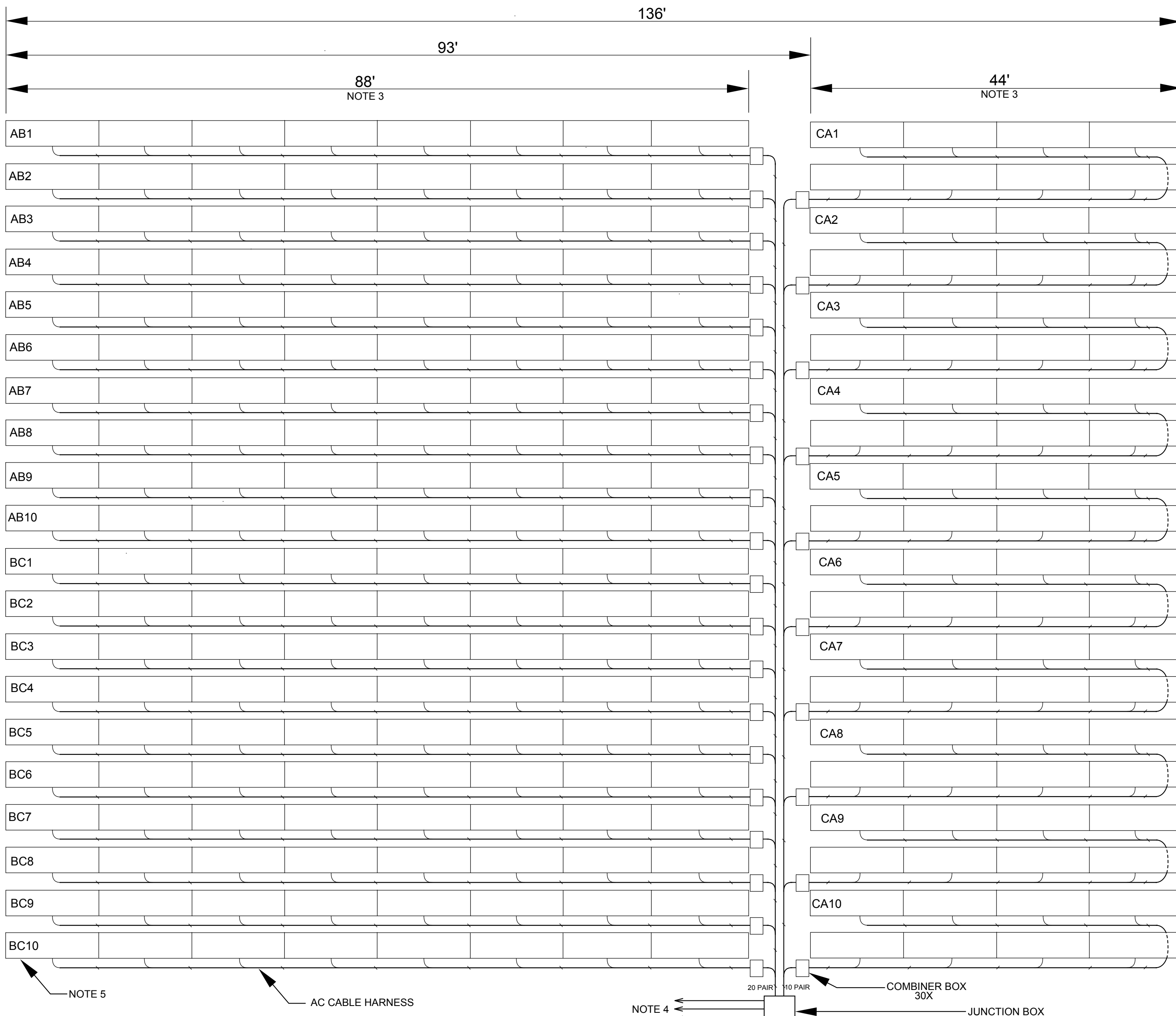


DETAIL D
COMBINER BOX FOR CIRCUIT BRANCHES

21
JUNCTION BOX

CONFIDENTIAL		REFERENCE ONLY	
<p>THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF DIRECT GRID TECHNOLOGIES. REPRODUCTION IN PART OR AS A WHOLE WITHOUT WRITTEN PERMISSION FROM DIRECT GRID TECHNOLOGIES IS PROHIBITED. THIS DRAWING SHALL NOT BE USED IN ANY WAY DETRIMENTAL TO DIRECT GRID TECHNOLOGIES.</p>		 131 Heartland Blvd., Edgewood, NY 11717	
<p>UNLESS OTHERWISE SPECIFIED REFERENCE DIMENSIONS SHOWN IN PARENTHESIS DIMENSIONS ARE IN INCHES</p> <p>X.X = +/- 0.050 X.XX = +/- 0.010 X.XXX = +/- 0.005 ANGULAR = +/- 30'</p>		<p>TITLE BLOCK DIAGRAM, PV FARM, 480 MODULES, 8 MICRO-INVERTERS PER BRANCH</p>	
<p>SCALE: DO NOT SCALE</p>		<p>DWG. NO.</p>	<p>REV. 4</p>
<p>SIZE C</p>		<p>SHEET 2 OF 2</p>	

REV.	REVISION HISTORY	ENG	QA	MFG	DATE




- NOTES:**
- 1) ALL CABLING IS EXPOSED TO THE ELEMENTS AND MUST HAVE APPROPRIATE RATING PER NEC.
 - 2) DIMENSION SHOWN IS BASED ON 39" FOR THE PV MODULE AND 24" SPACING BETWEEN ROWS.
 - 3) DIMENSION SHOWN IS BASED ON TYPICAL 65" PV MODULE WIDTH.
 - 4) A SET OF 10 CABLE PAIR IS USED FOR EACH OF 3 PHASE PAIR. EACH GROUPING IS ROUTED THROUGH CONDUIT TO THE ROOF EDGE (~10') AND DOWN TO THE SUB-BREAKER BOX (~30').
 - 5) THE DESIGNATOR LETTERS REFER TO THE ASSOCIATED GRID PHASES. THE NUMBER REFERS TO THE BRANCH NUMBER FOR THAT PHASE (BC10 IS THE 10th BRANCH USED TO DIFFERENTIALLY DRIVE PHASES "B & C"). A BRANCH IS COMPOSED OF 8 GROUPS, EACH CONSISTING OF ONE MICRO-INVERTER AND 2 PV MODULES.

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 X.XXX = +/- 0.005
 ANGULAR = +/- 30'

APPROVALS		
DEPT.	SIGNATURE	DATE
ENG		
QA		
MFG		
DWN	<i>R. MacArthur</i>	10-16-11
FILE #:	xxx-xxxxx-xx	



131 Heartland Blvd., Edgewood, NY 11717

TITLE **PHYSICAL LAYOUT,
480 MODULE PV ARRAY**

DWG. NO. REV. 1

SCALE: **DO NOT SCALE** SIZE B SHEET 1 OF 1

SYSTEM LEVEL BOM, 120KW PV FARM, 8 MICRO-INVERTERS PER BRANCH, 480 PV MODULES														
		PV MODULE NAMEPLATE POWER:			250	Watts	FARM NAMEPLATE POWER:			120,000	Watts			
ITEM	DESCRIPTION										QTY	UM	UNIT \$\$	EXT. \$\$
1	PV MODULE, 60 CELL, 250W										480	ea		
2	MICRO-INVERTER										240	ea		
3	CONNECTOR, MATE FOR PV (-)										240	ea		
4	CONNECTOR, MATE FOR PV (+)										240	ea		
5	CONNECTOR, MATE FOR AC HARNESS										240	ea		
6	CABLE HARNESS, AC, 8 UNIT BRANCH										30	ea		
7	COMBINER BOX, BRANCH										30	ea		
8	STRAIN RELIEF & GROMMETS FOR COMB. BOXES										66	ea		
9	SNAKE TRAY (assume separate path for phase pairs AB, BC, CA)										262.5	ft		
10														
11	WIRE, 4AWG, ALUM., USE-2										5220	ft		
12	JUNCTION BOX										1	ea		
13	BUTT SPLICE / TERM BLOCK POS. (Re: Transiiton from USE-2 to THHN)										60	ea		
14														
15	CONDUIT (3", 10 FOOT LENGTH)										12	10 ft		
16	CIRCUIT BREAKER SUB-PANEL, 200A, 120/240V, NEMA 3R										3	ea		
17	MISC. CONDUIT FITTINGS, ELBOWS, ETC.										24	ea		
18	CIRCUIT BREAKER, 2 POLE, 20A, 120/240V (CB rating: 16A*1.25=20A)										30	ea		
19	CIRCUIT BREAKER, 2 POLE, 200A, 120/240V (CB rating: 160A*1.25=200A)										3	ea		
20	WIRE, 4/0AWG, COPPER (from sub-panel to disconnect switch box)										36	ft		
21	UTILITY BOX, PVC, NEMA RATED (Optional, reqd for Echelon)										1	ea		
22	I_LON SERVER (Optional, reqd for Echelon)										1	ea		
23	3-PHASE COUPLER (Optional, reqd for Echelon)										1	ea		
24	DISCONNECT SWITCH BOX, 400A, 3 PHASE, 120/240V										1	ea		
25														
26	FUSE, 400A, 250V										3	ea		
27														
28	WEB BASED MONITORING SUBSCRIPTION, 5 YEARS										240	ea		
													TOTAL:	\$ -
													Cost/W	\$ -
	Installer; Electrical Labor													
	Engineering													
													TOTAL \$/W	\$ -