



IIAN TECH
(주)이안기술

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Tel 482-31-776-0632 Fax 482-31-776-0633

SOLAR POWER PLANT LAYOUT

SITE : KON YAMBETTA, CAMEROON

PV SPEC. : 545WP

PV STRUCTURE TYPE : SINGLE AXIS TRACKING

TOTAL PV: 120 MWP (70MW+50MW)



IIAN TECH CO., LTD.

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REVISION NO.수정

SCALE
축척 A1:1/NONE
A3:1/NONE

DATE
일자 2020. 05

ARCH. DESIGNED BY
건축 설계

STRUCT. DESIGNED BY
구조 설계

MECH. DESIGNED BY
설비 설계

ELEC. DESIGNED BY
전기 설계

CHECKED BY
심사

PROJECT TITLE
시설명
SOLAR POWER PLANT 100Mwp

DRAWING NAME
도면명
PROJECT LOCATION IN KATI
SOLAR POWER PLANT

DWG. FILE NAME
파일명
LAY OUT DRAWING, PV PLANT

APPROVED BY
승인

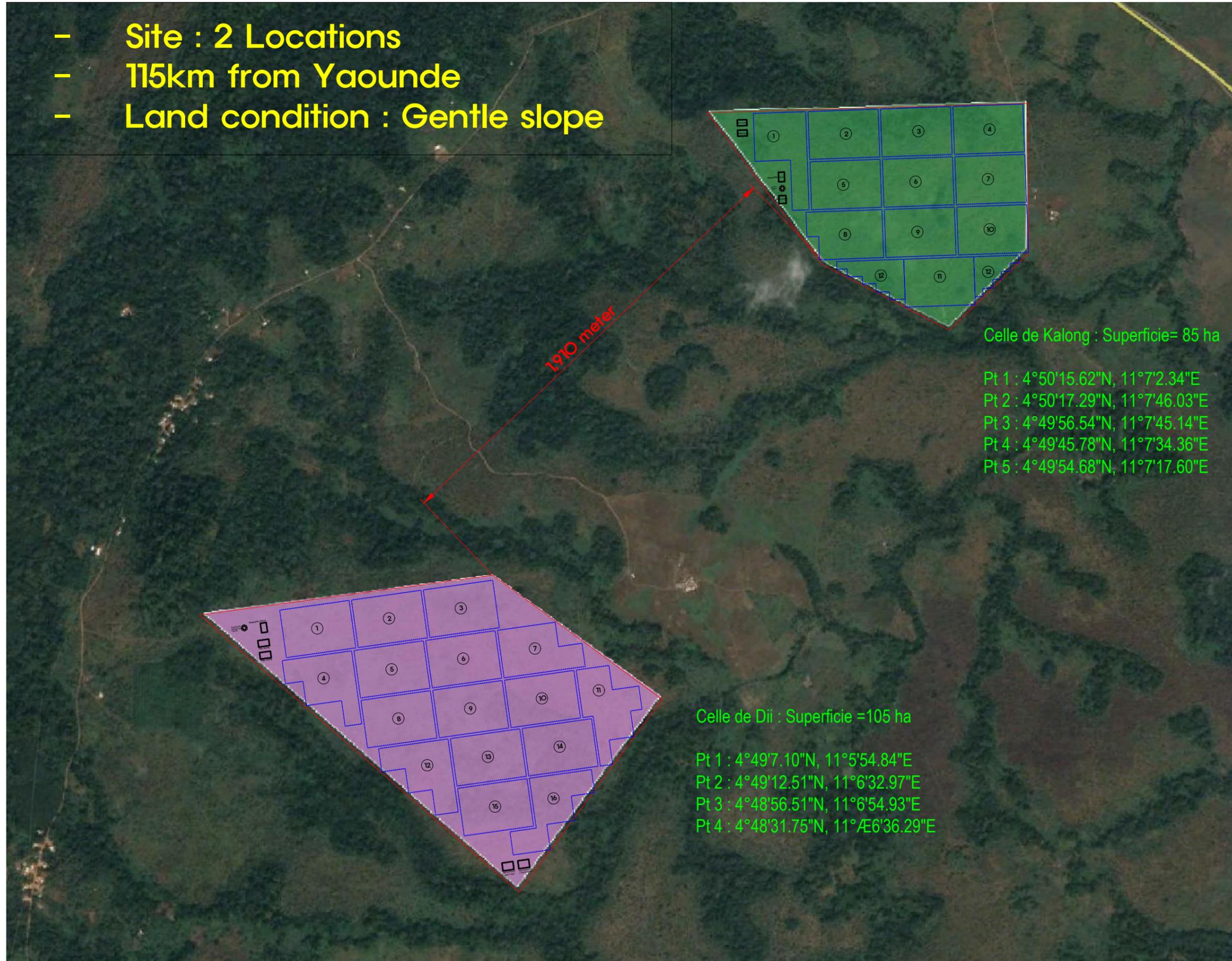
DRAWING NO.
도면번호

IIANTECH- LAYOUT

SHEET NO.
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Solar Power Plant, 120MWp, CAMEROON

- Site : 2 Locations
- 115km from Yaounde
- Land condition : Gentle slope



Celle de Kalong : Superficie= 85 ha

- Pt 1 : 4°50'15.62"N, 11°7'2.34"E
- Pt 2 : 4°50'17.29"N, 11°7'46.03"E
- Pt 3 : 4°49'56.54"N, 11°7'45.14"E
- Pt 4 : 4°49'45.78"N, 11°7'34.36"E
- Pt 5 : 4°49'54.68"N, 11°7'17.60"E

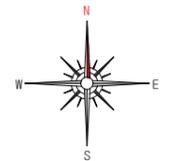
Celle de Dii : Superficie =105 ha

- Pt 1 : 4°49'7.10"N, 11°5'54.84"E
- Pt 2 : 4°49'12.51"N, 11°6'32.97"E
- Pt 3 : 4°48'56.51"N, 11°6'54.93"E
- Pt 4 : 4°48'31.75"N, 11°Æ6'36.29"E



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PROJECT TITLE
시 설 명
SOLAR POWER PLANT 120MWp

DWG. NAME
도 면 명
PROJECT IN CAMEROON
SOLAR POWER PLANT

DWG. FILE NAME
파 일 명
PROJECT LOCATION

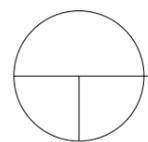
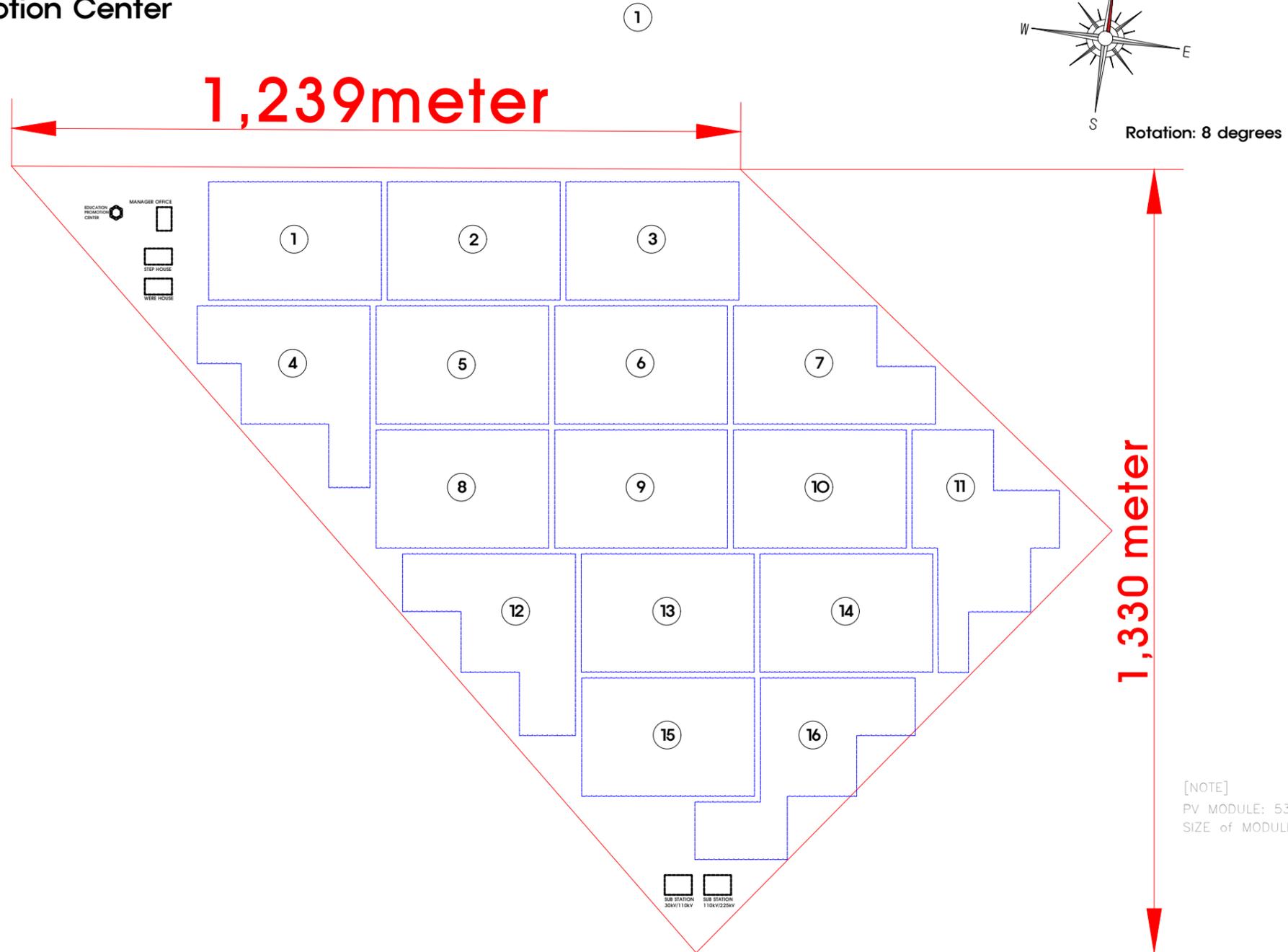
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DRAWING NO.
도 면 번호
IIANTECH- 100

SHEET NO.
일련 번호
001

Area for 70MW PV Power plant

- Project Area : About 105Ha
- SUB Station
- OFFICE
- O and M Step House
- Education/Promotion Center



Solar Power Plant Layout - Floor Plan

SCALE A1:1/NONE
A3:1/NONE



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SOLAR POWER PLANT 120MWp

DWG. NAME
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PROJECT IN CAMEROON
SOLAR POWER PLANT

DWG. FILE NAME
파 일 명
POWER PLANT LAYOUT-70MW

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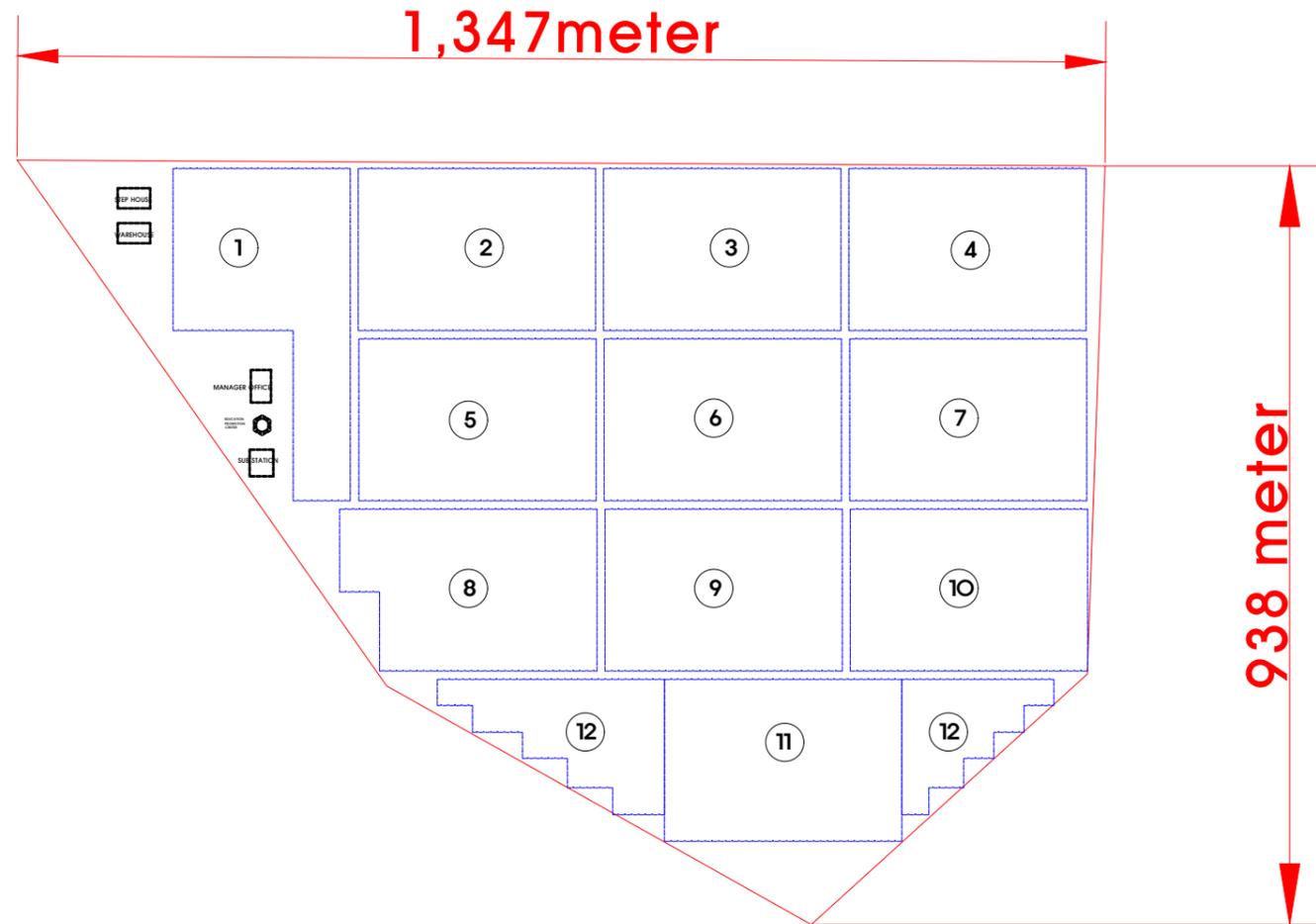
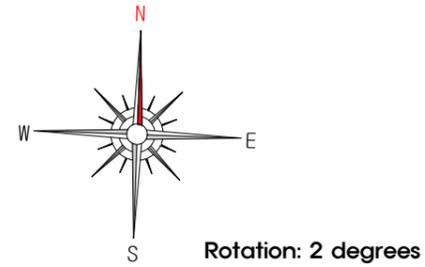
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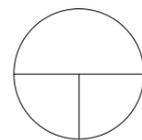
001

Area for 50MW PV Power plant

- Project Area : About 85Ha
- SUB Station
- OFFICE
- O and M Step House
- Education/Promotion Center



[NOTE]
 PV MODULE: 530Wp
 SIZE of MODULE: 2256*1133*40



Solar Power Plant Layout – Floor Plan

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PROJECT TITLE
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 SOLAR POWER PLANT 120MWp

DWG. NAME
 도면명
 PROJECT IN CAMEROON
 SOLAR POWER PLANT

DWG. FILE NAME
 파일명
 POWER PLANT LAYOUT-50MW

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DRAWING NO.
 도면번호

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SHEET NO.
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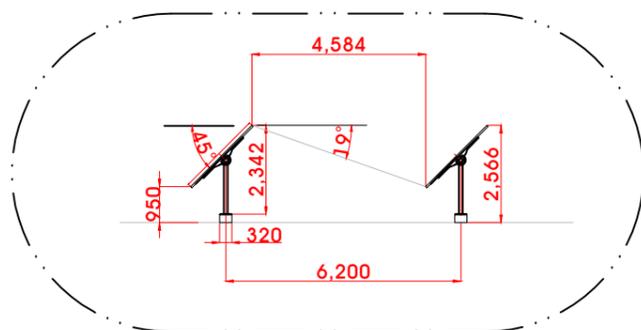


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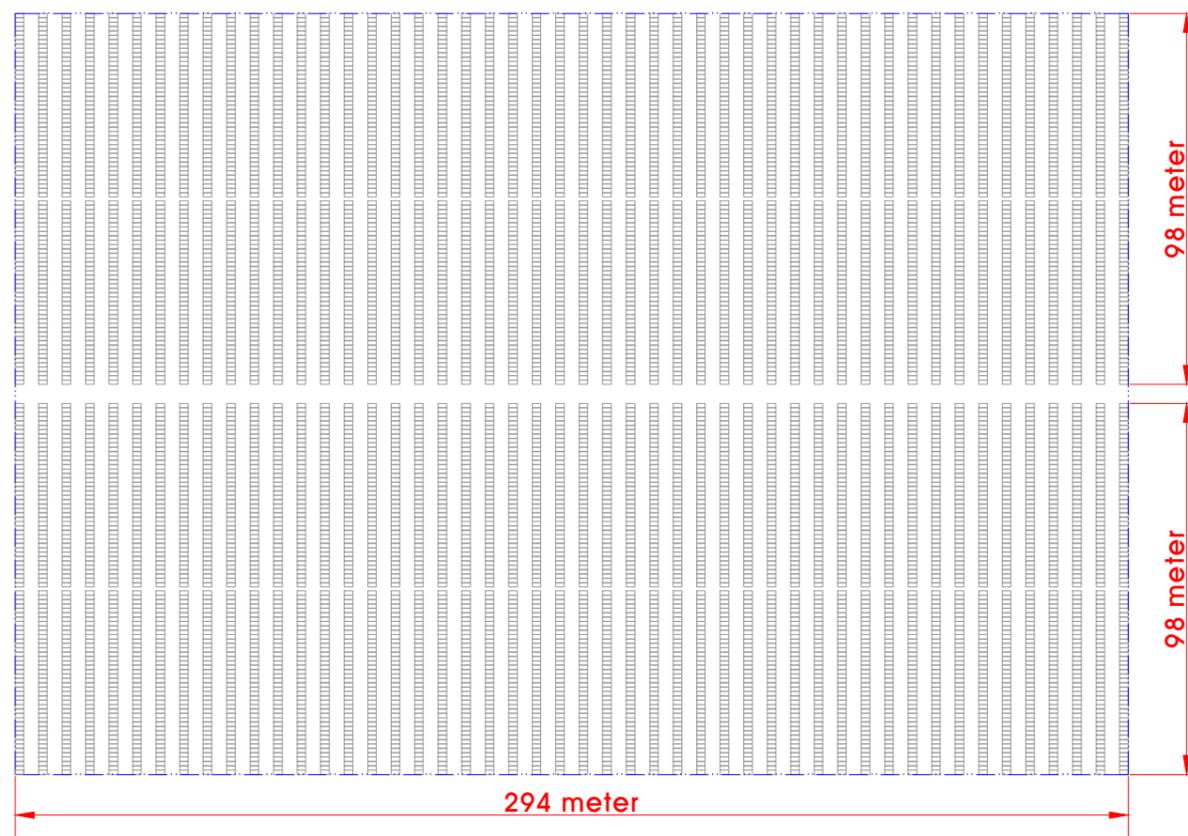
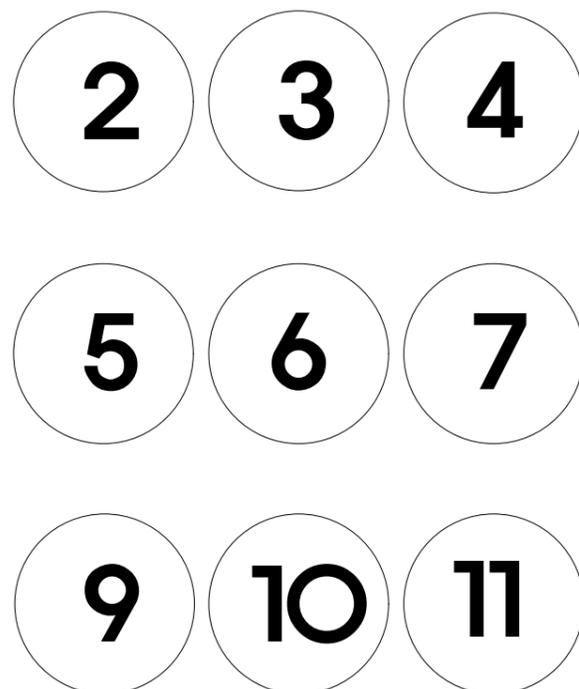
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One PV Array Complex- 4400kWac

Central inverter and transformer



PV Array Components			
NO	Items	Spec	Remarks
1	PV Modules	545Wp	8,064 pcs
2	Combiner	20Ch 1500V	18 sets
3	Inverter	SMA SC4400 UP	1 sets
4	Transformer	4400kVA	1 sets
5	PV Structures	Single Axis Tracking	Designed



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SOLAR POWER PLANT 125MWp

DWG. NAME
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PROJECT IN CAMEROON
SOLAR POWER PLANT

DWG. FILE NAME
파일명
PV ARRAY LAYOUT-COMPLEX

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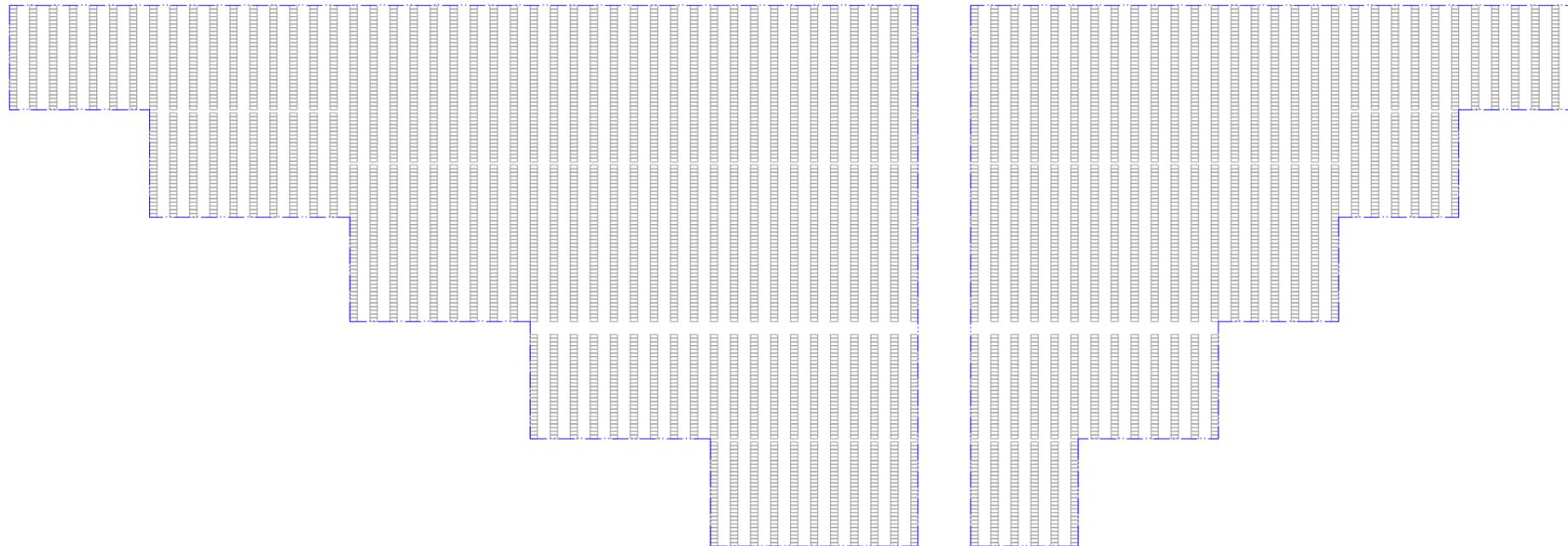
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12



545W*6692PCS



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MECH. DESIGNED BY 설비 설계

ELEC. DESIGNED BY 전기 설계

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DWG. NAME 도면명
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SOLAR POWER PLANT

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PV ARRAY LAYOUT-COMPLEX

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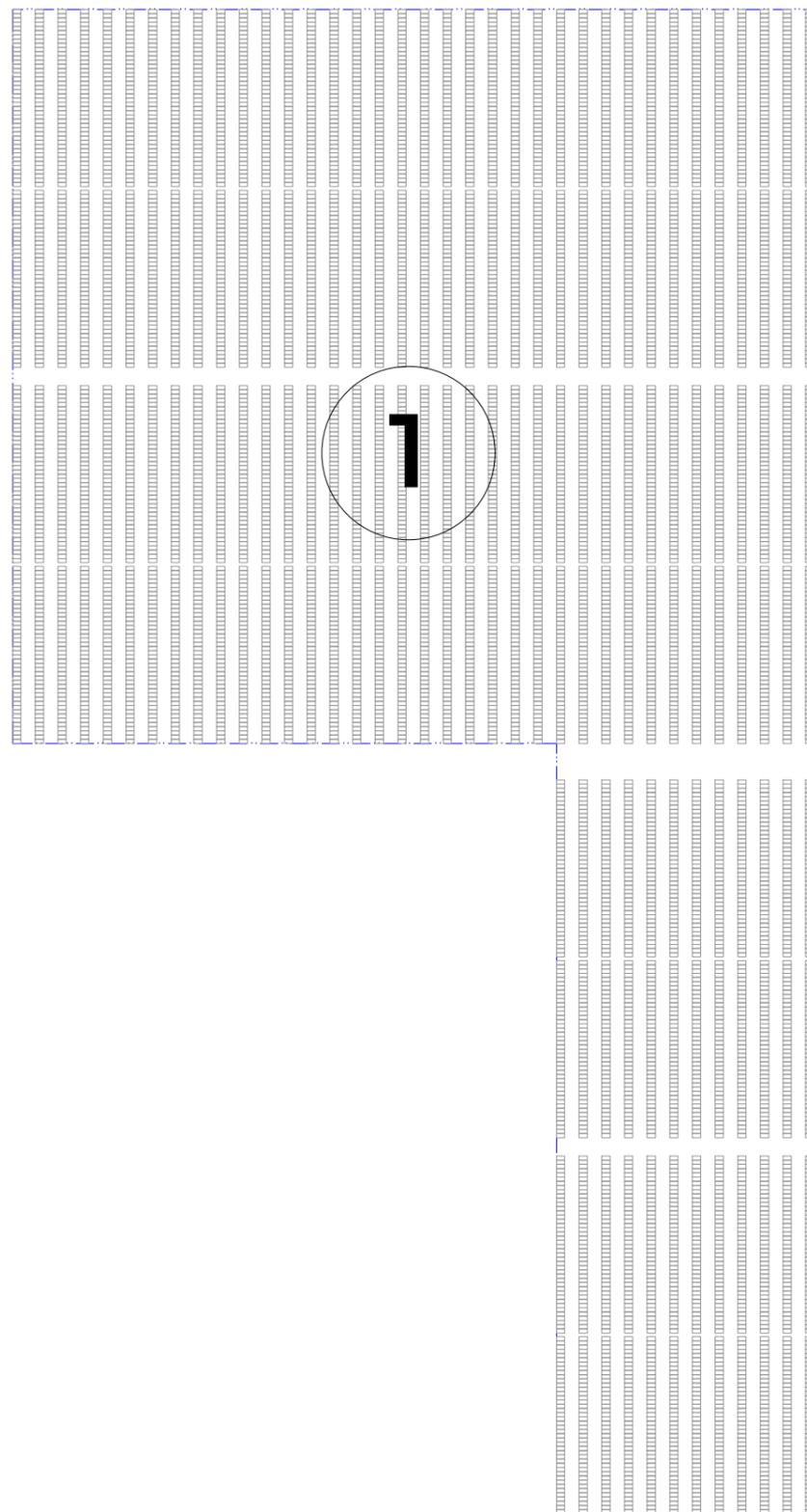
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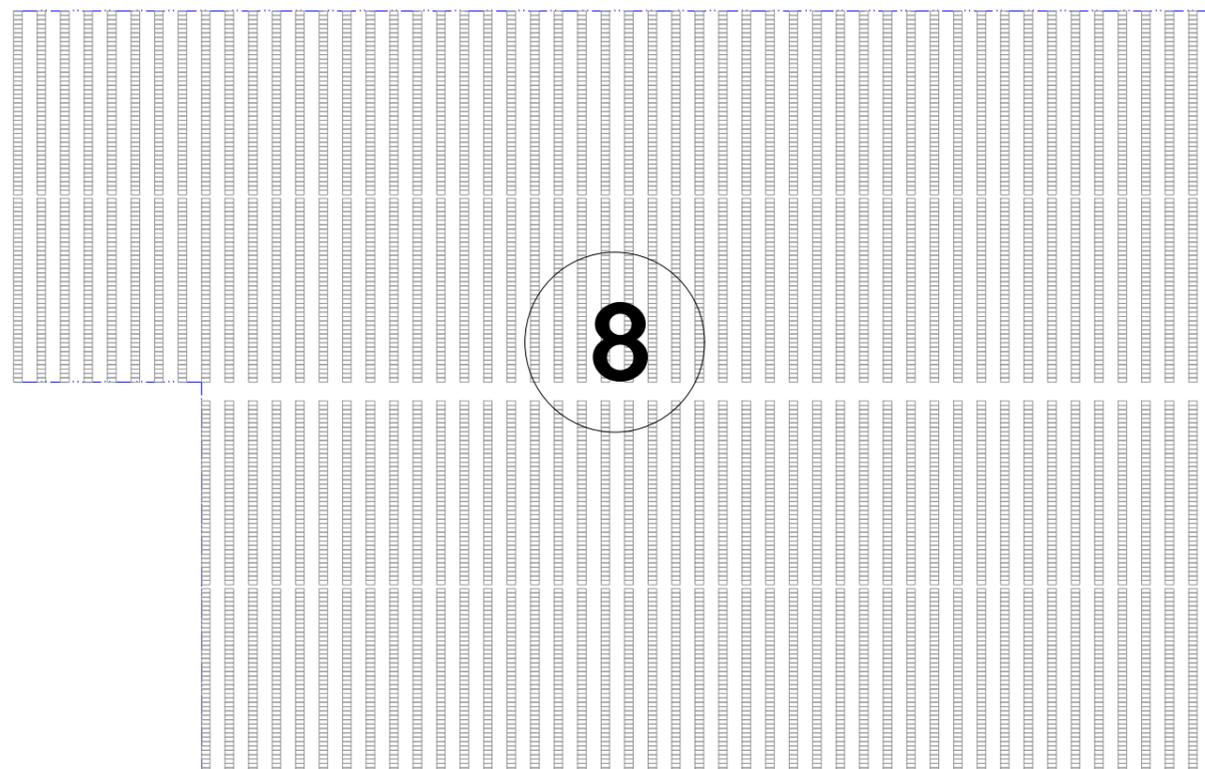
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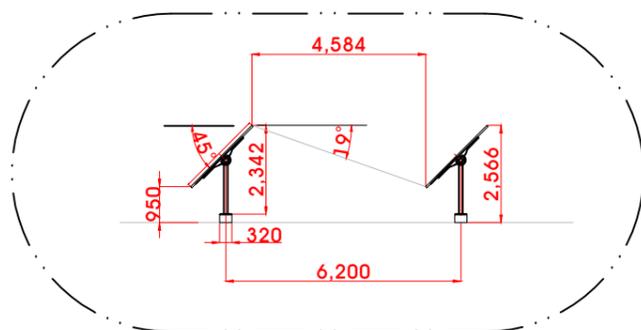


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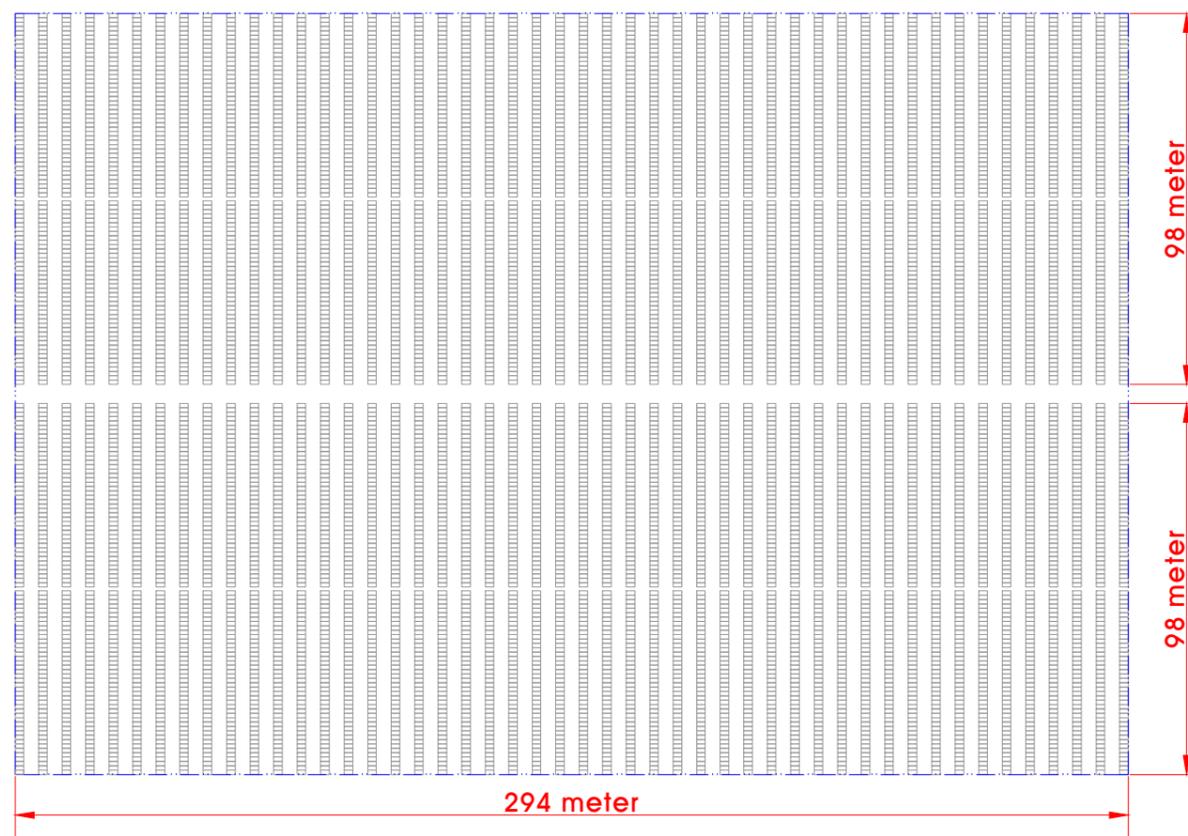
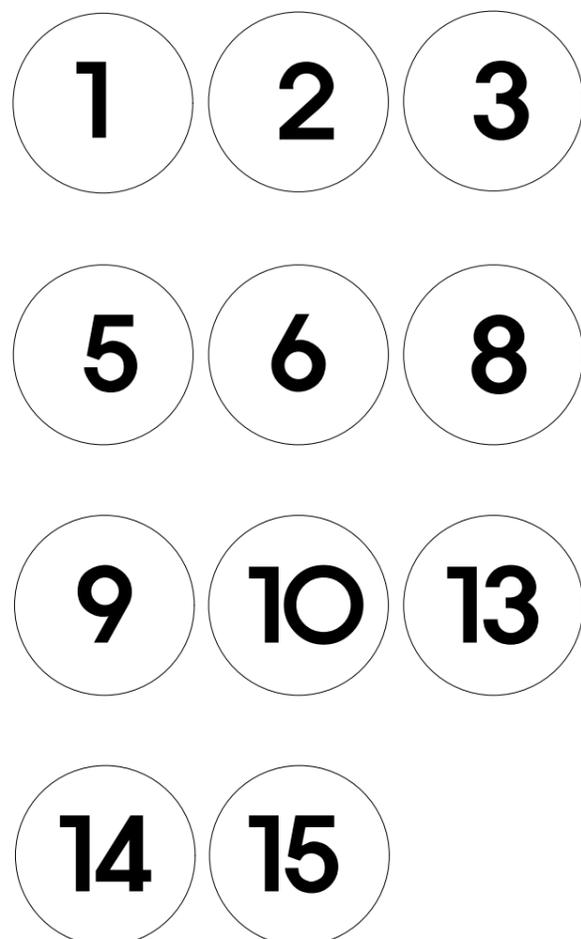
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Central inverter and transformer



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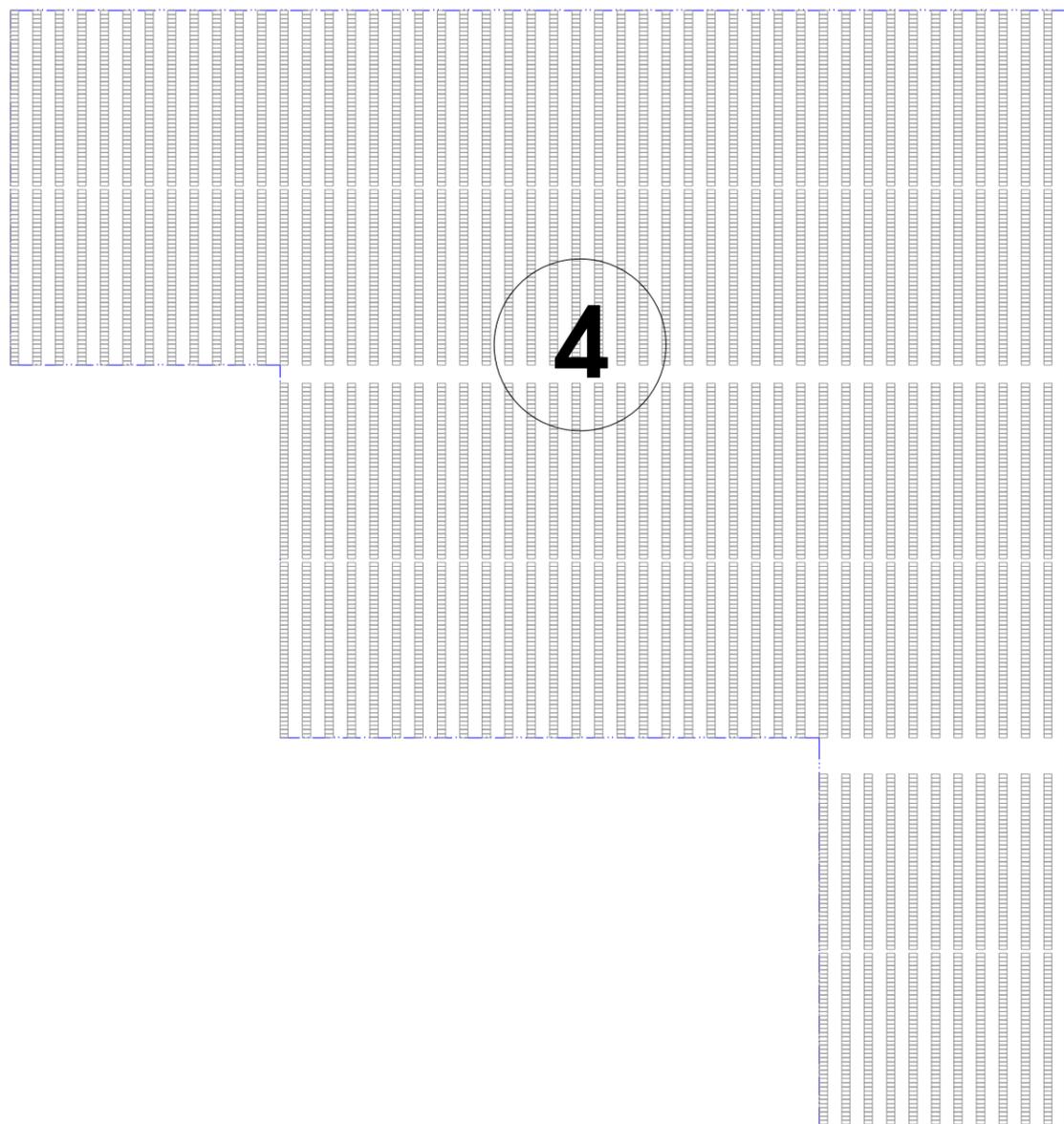
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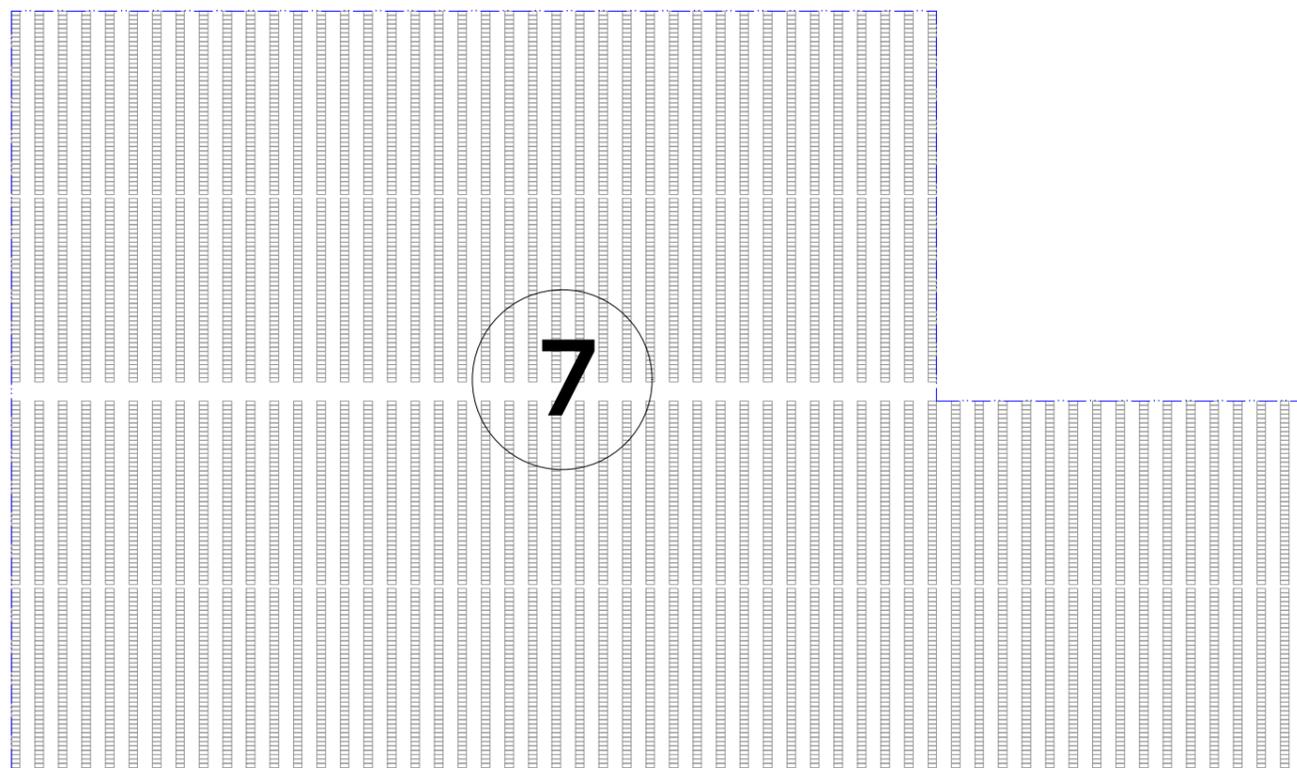
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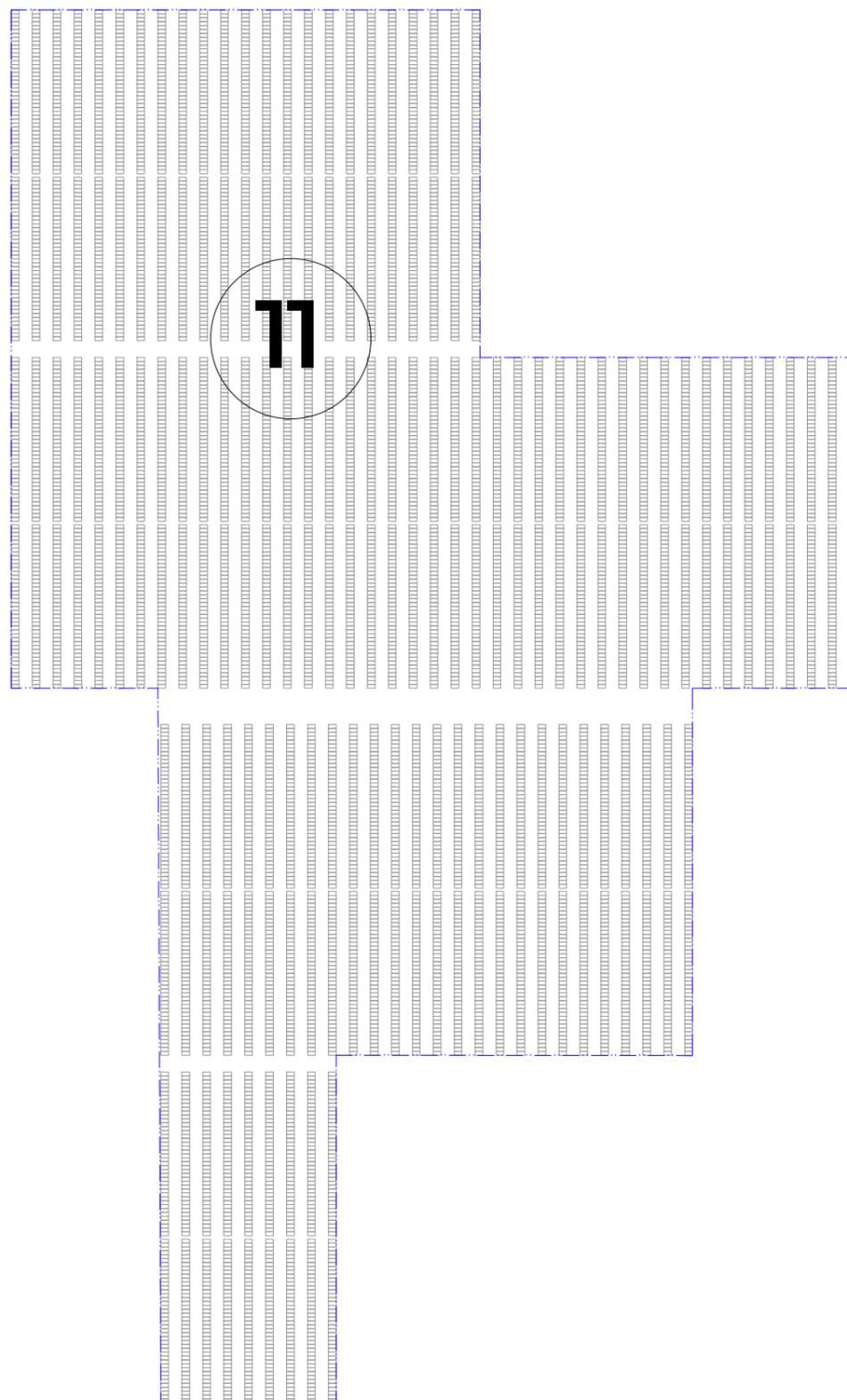
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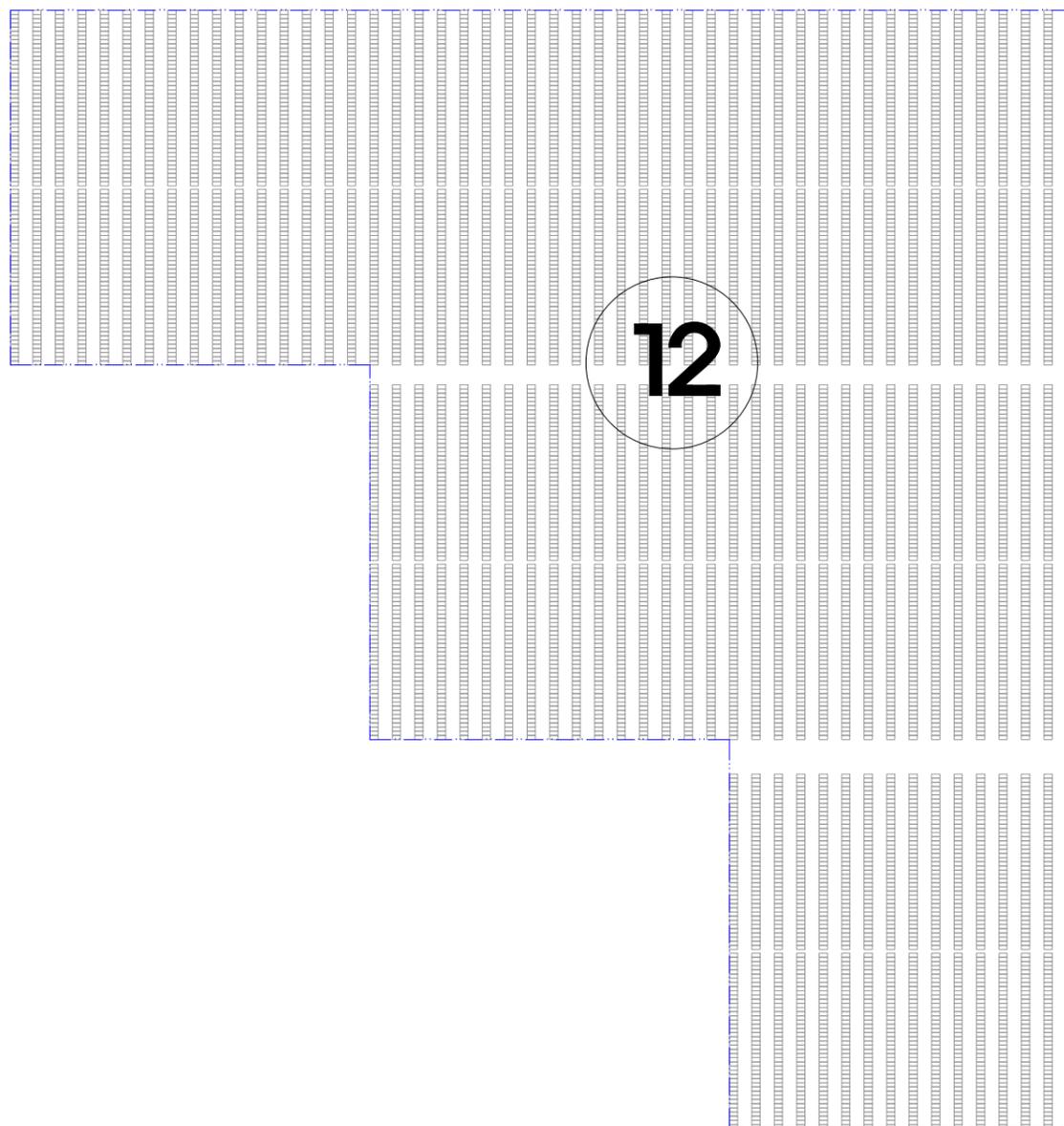
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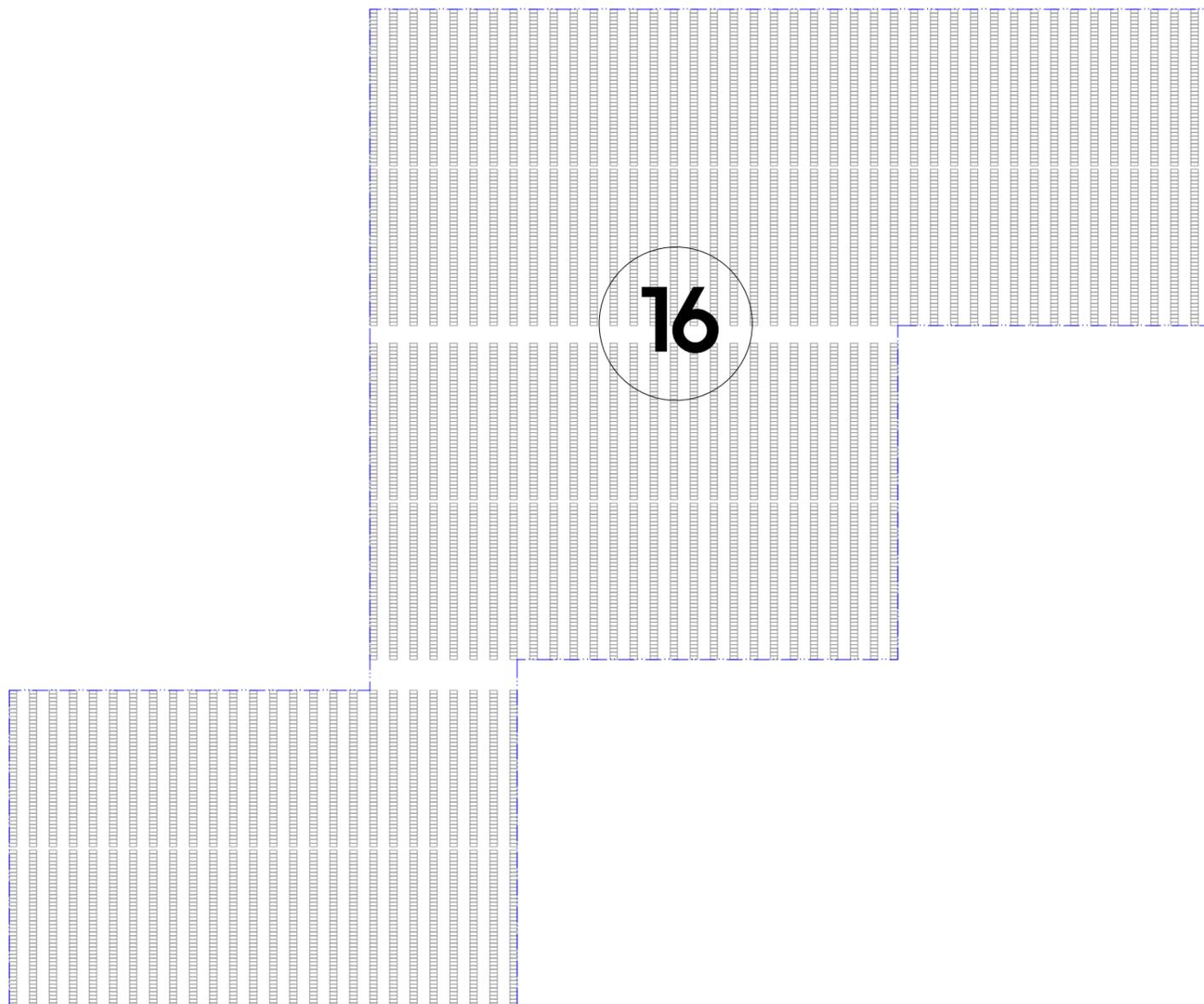
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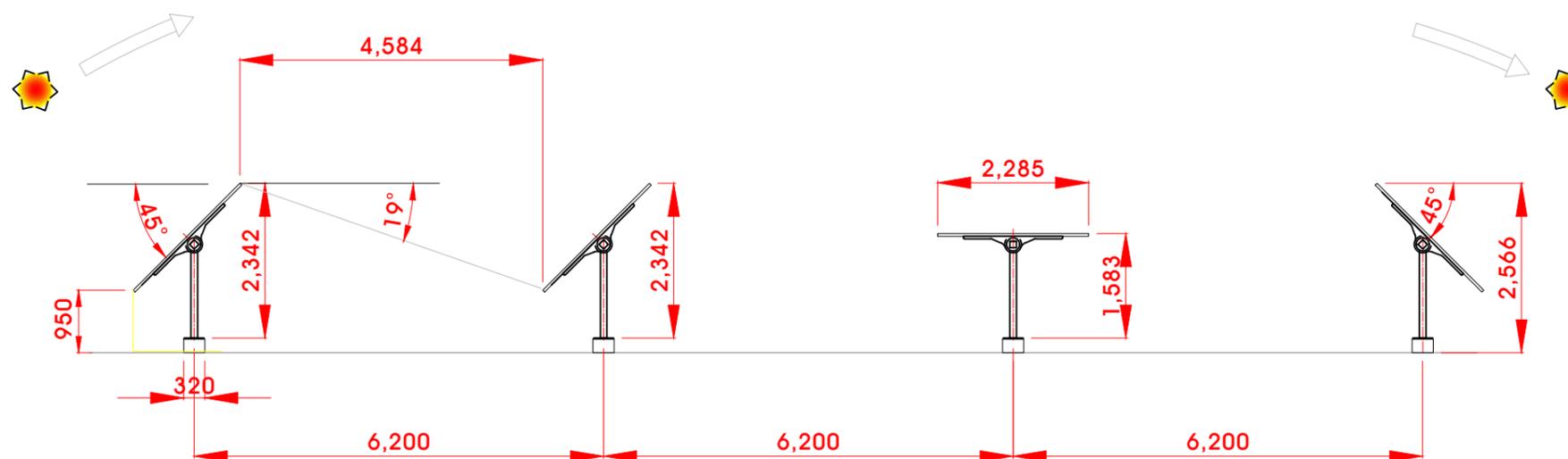
Single-Axis Tracker

- Max Tilt Tracking Angle : +, - 45 degree Horizontal Axis
- PV Position by the Solar tracking sensors
- Safety Mode
- Bad weather or Raining condition Mode

Morning condition -45 angle

Noon condition Zero angle

Evening condition +45 angle



Note: The solar module array using a tracking device has a longer installation distance than a fixed type in order to reduce shadows.

REVISION NO. 수정

SCALE
축척 A1:1/NONE
A3:1/NONE

DATE
일자 2021. 06

ARCH. DESIGNED BY
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STRUCT. DESIGNED BY
구조 설계

MECH. DESIGNED BY
설비 설계

ELEC. DESIGNED BY
전기 설계

CHECKED BY
심사

PROJECT TITLE
시설명
SOLAR POWER PLANT 125MWp

DRAWING NAME
도면명
PROJECT IN CAMEROON
SOLAR POWER PLANT

DWG. FILE NAME
파일명
PV ARRAY TRACKING

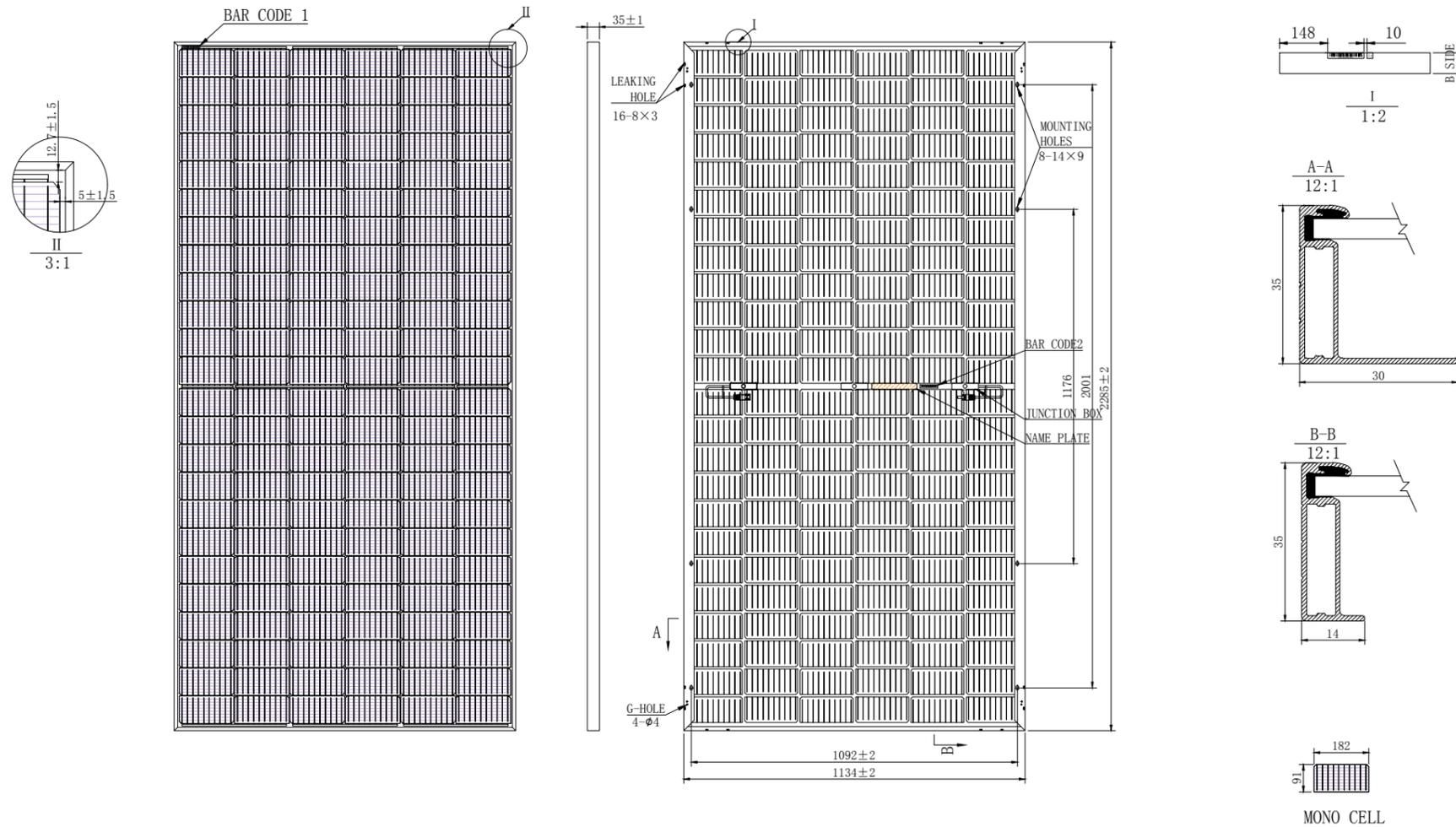
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승인

DRAWING NO.
도면번호
IIANTECH-500

SHEET NO.
일련번호
001

PV Module-545Wp

[SIZE : 2285 x 1134 x 35 (mm)]



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REVISION NO. 수정

2020. 05

SCALE
축척 A1:1/NONE
A3:1/NONE

DATE
일자

ARCH. DESIGNED BY
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구조설계

MECH. DESIGNED BY
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ELEC. DESIGNED BY
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PROJECT TITLE
시설명

SOLAR POWER PLANT 100MWp

DRAWING NAME
도면명

PROJECT LOCATION IN KATI
SOLAR POWER PLANT

DWG. FILE NAME
파일명

PV MODULE

APPROVED BY
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DRAWING NO.
도면번호

IIANTECH- 500

SHEET NO.
일련번호

001



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SOLAR POWER PLANT, Kon Yambetta

PV SPEC. : 545WP

PV STRUCTURE TYPE : SINGLE AXIS TRACKING

TOTAL PV: 120 MWP

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REVISION NO. 수정

SCALE
축척 A1:1/NONE
A3:1/NONE

DATE
일차 2020. 05

ARCH. DESIGNED BY
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ELEC. DESIGNED BY
전기 설계

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심사

PROJECT TITLE
시설명
SOLAR POWER PLANT 100Mwp

DRAWING NAME
도면명
PROJECT LOCATION IN KATI
SOLAR POWER PLANT

DWG. FILE NAME
파일명
ELECTRICITY DRAWING, PV PLANT

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DRAWING NO.
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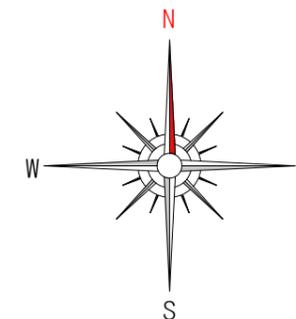
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SHEET NO.
일련번호



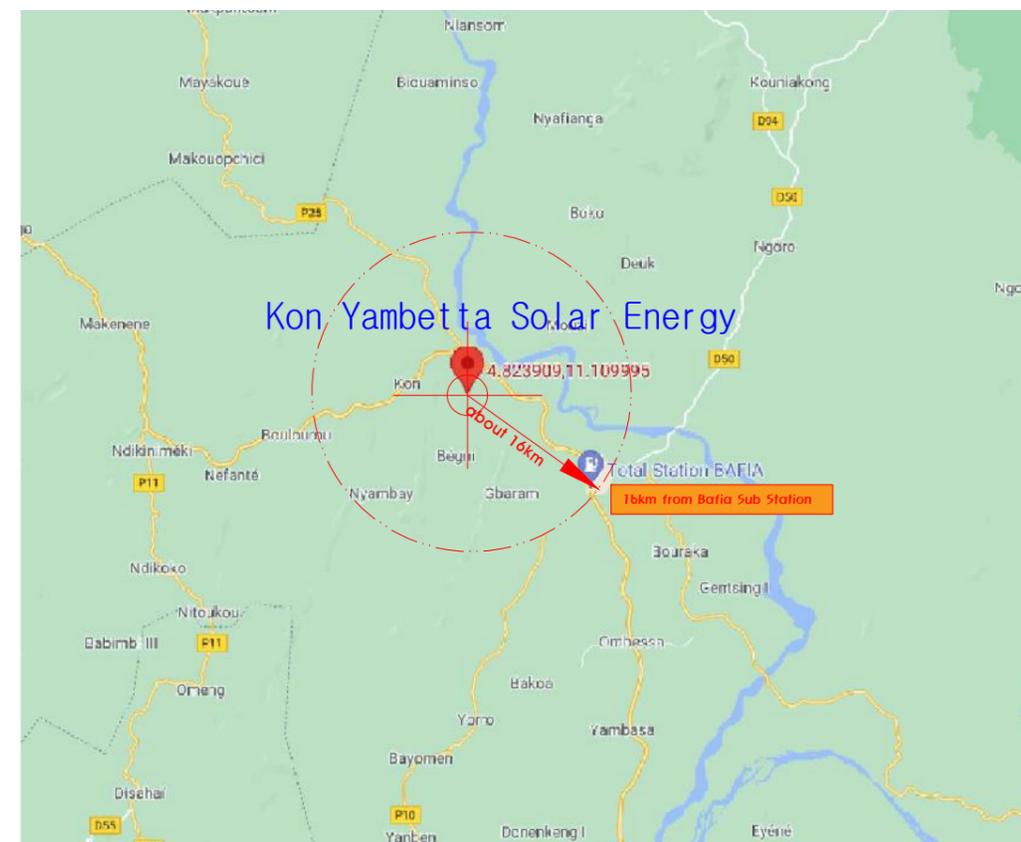
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Overview TOTAL 120MW , Kon Yambetta

* PROJECT OVERVIEW		
Location	Kon Yambetta, 4.82° N 11.10° E	Kon Yambetta, 4.82° N 11.10° E
Owner (SPC)	KON YAMBETTA SOLAR ENERGY	KON YAMBETTA SOLAR ENERGY
Project Name	70MW, Kon Yambetta, Cameroon	50MW, Kon Yambetta, Cameroon
* Site Environment		
Average annual temperature	23.75 °C degree	23.75 °C degree
Average wind speed	2.2 m/s	2.2 m/s
Average humidity	46.4 %	46.4 %
Atmospheric pressure	97.4 %	97.4 %
* Electrical Equipment		
Energy of type	Solar Photovoltaic	Solar Photovoltaic
Interconnection Voltage	225 kV	225 kV
Frequency	50 Hz	50 Hz
Capacity	70 MWDC	50 MWDC
* Scale of PV facilities		
Installation Module	545 Wp	545 Wp
Installation of capacity	70MW (129,024 pcs)	50MW (97,768pcs)
Serial connection quantity	28 Modules	28 Modules
Parallel connection quantity	4,608 Strings	3,456 Strings
Combiner box	20 CH, Max.1500Vdc	20 CH, Max.1500Vdc
Inverters	4,400 kWAC x 16set	4,400 kWAC x 12set
Steel Structure type	Single Axis Tracking by Designed	Single Axis Tracking by Designed
* Photovoltaic Module Specifications		
Maximum output (Wp)	545 Wp	
Open circuit voltage (V)	50.0 V	
Short-circuit current (A)	13.83 A	
Maximum output voltage (V)	41.70 V	
Maximum output current (A)	13.07 A	
Efficiency (%)	21.03 %	
Dimension (mm)	1,134 mm x 2,285 mm x 40 mm	
Weight (kg)	34 kg	
Remarks		



REVISION NO. 수정

SCALE
축척 A1:1/NONE
A3:1/NONE

DATE
일차 2021. 06

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ELEC. DESIGNED BY
전기 설계

CHECKED BY
심사

PROJECT TITLE
시설명

SOLAR POWER PLANT 120MWp

DRAWING NAME
도면명
PROJECT KON YAMBETTA
SOLAR POWER PLANT -120MW

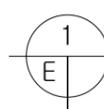
DWG. FILE NAME
파일명
ELECTRICITY DRAWING, PV PLANT

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DRAWING NO.
도면번호

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SHEET NO.
일련번호



TOTAL 120MW Kon Yambetta PROJECT OVERVIEW

SCALE (A4) : 1/NONE
SCALE (A3) : 1/NONE

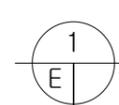
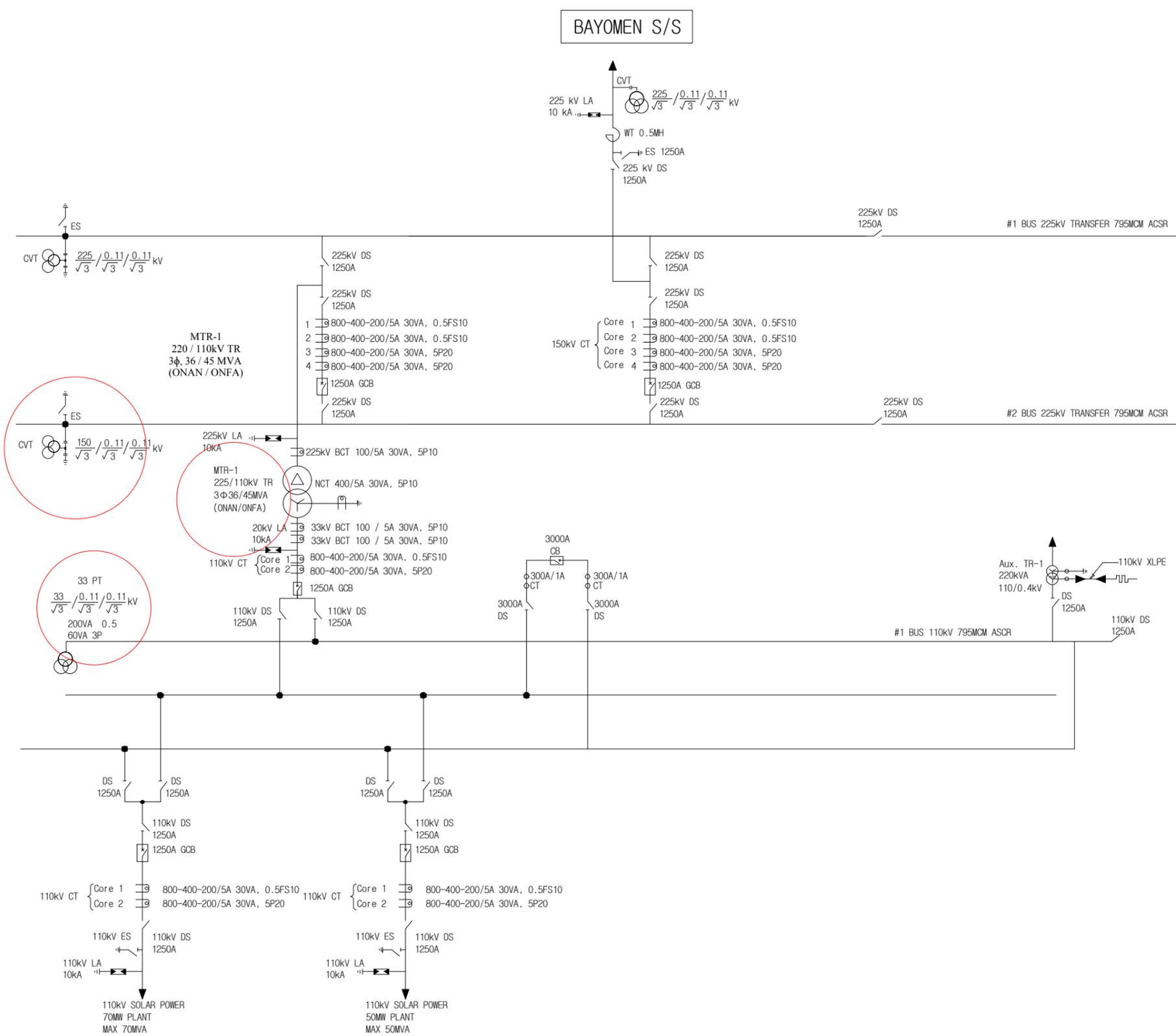


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LEGEND

NO.	SYMBOL	DESCRIPTION
1.		CIRCUIT BREAKER
2.		SURGE ARRESTER
3.		DISCONNECTING SWITCH
4.		EARTHING SWITCH
5.		CURRENT TRANSFORMER
6.		CAPACITOR TYPE VOLTAGE TRANSFORMER
7.		OVER HEAD LINE (OUT OF SCOPE)
8.		WAVE TRAP
9.		SHUNT PEACTOR
10.		NEUTRAL EARTHING RESISTOR
11.		SOLID LINE TO BE UNDER THIS PROJECT
12.		DOTTED LINE TO BE FUTURE OR OUT OF SCOPE



POWER GENERATION SYSTEM DIAGRAM-1

SCALE (A4) : 1/NONE
SCALE (A3) : 1/NONE

REVISION NO. 수정	
SCALE	A1:1/NONE A3:1/NONE
DATE	2020. 05
ARCH. DESIGNED BY	건축 설계
STRUCT. DESIGNED BY	구조 설계
MECH. DESIGNED BY	설비 설계
ELEC. DESIGNED BY	전기 설계
CHECKED BY	심사
PROJECT TITLE	시 설 명
	SOLAR POWER PLANT 100MW
DRAWING NAME	도면명
PROJECT LOCATION IN KATI	SOLAR POWER PLANT
DWG. FILE NAME	파일명
	ELECTRICITY DRAWING, PV PLANT
APPROVED BY	승인
DRAWING NO.	도면번호
	IIANTECH- SP-02
SHEET NO.	일련번호



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REVISION NO.수정

SCALE
축척 A1:1/NONE
A3:1/NONE

DATE
일자 2020. 05

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STRUCT. DESIGNED BY
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MECH. DESIGNED BY
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ELEC. DESIGNED BY
전기 설계

CHECKED BY
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PROJECT TITLE
시설명

SOLAR POWER PLANT 100MWp

DRAWING NAME
도면명

PROJECT LOCATION IN KATI
SOLAR POWER PLANT

DWG. FILE NAME
파일명
ELECTRICITY DRAWING, PV PLANT

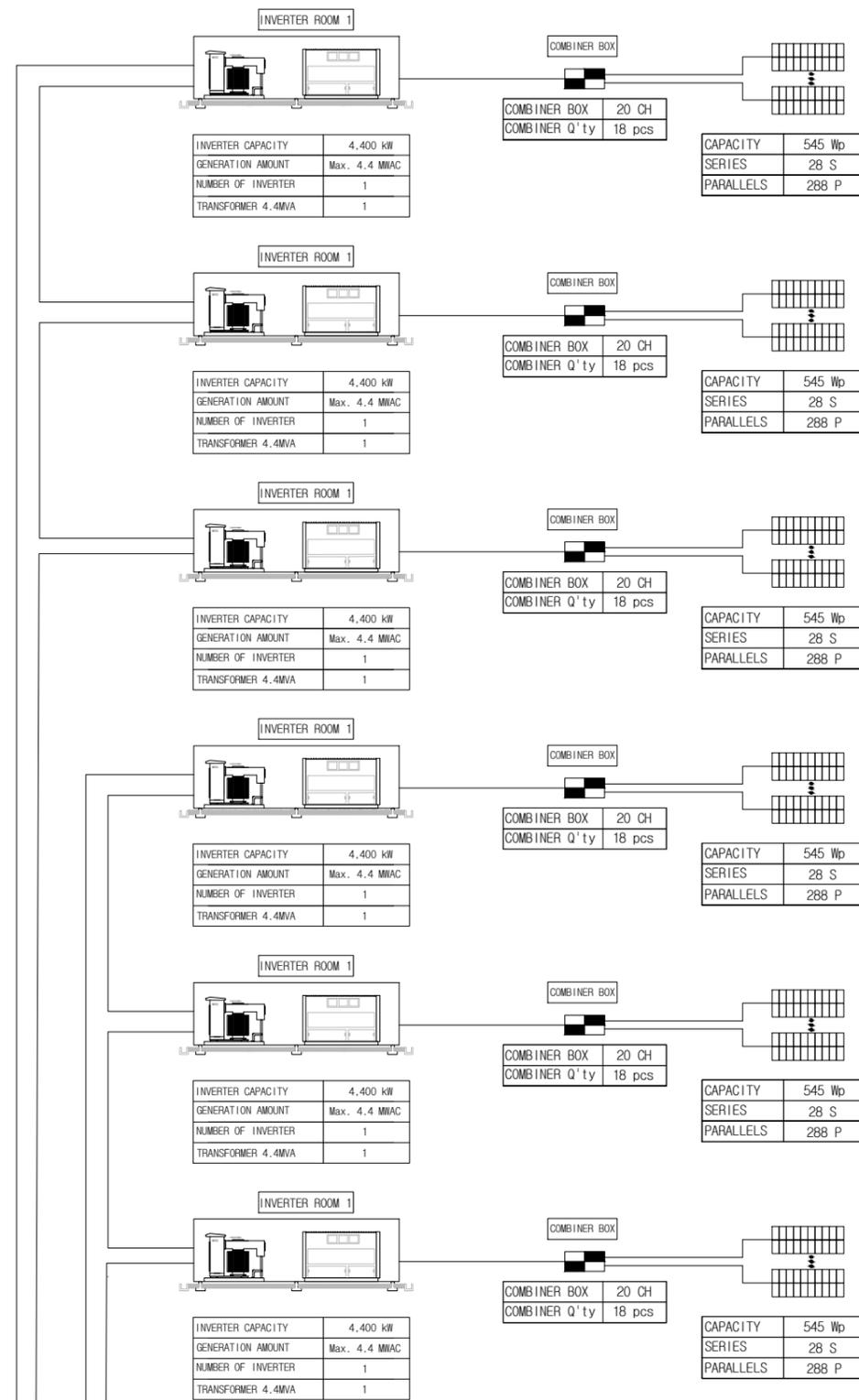
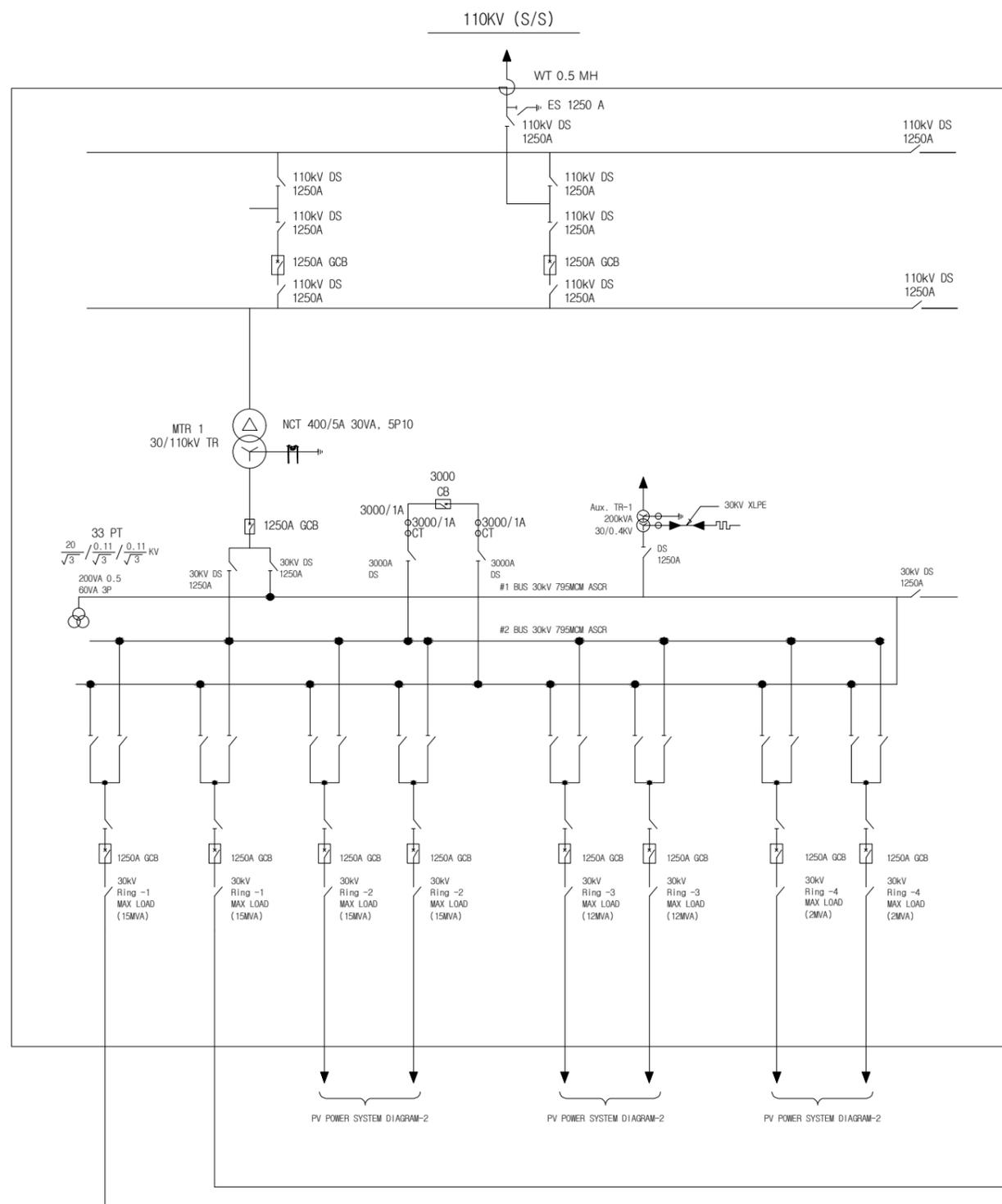
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DRAWING NO.
도면번호

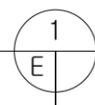
IIANTECH- SP-02

SHEET NO.
일련번호

TO 110/225KV S/Substation



TO : 30KV S/S RING-2
SINGLE LINE FOR PV POWER PLANT



50MW, POWER GENERATION SYSTEM DIAGRAM-1

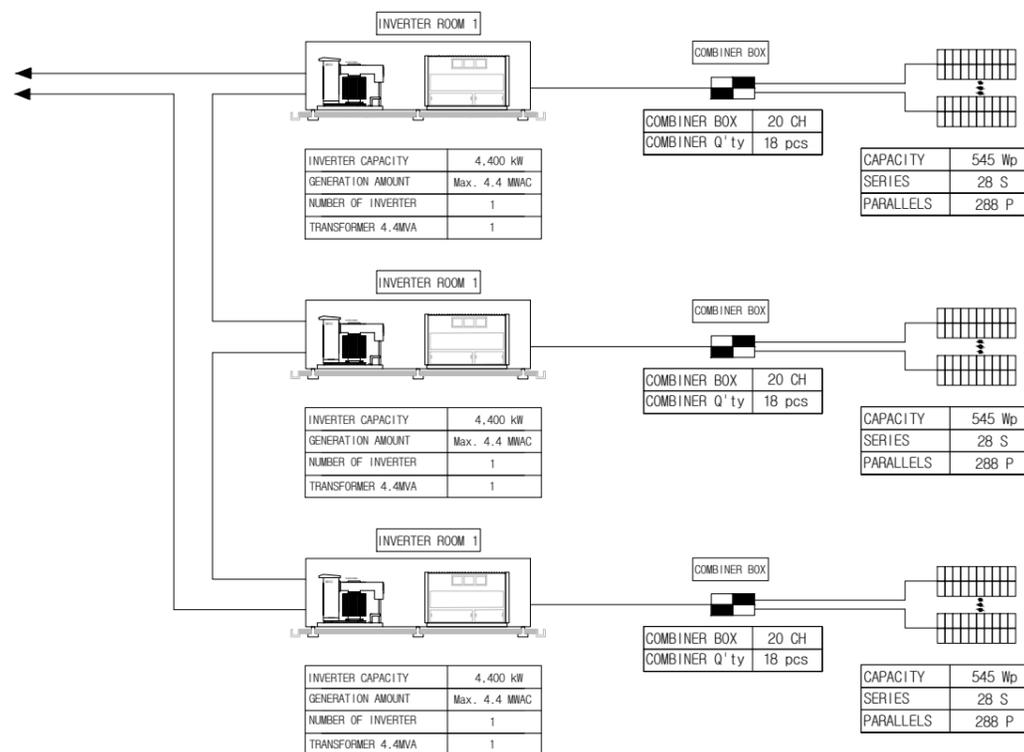
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SCALE (A3) : 1/NONE



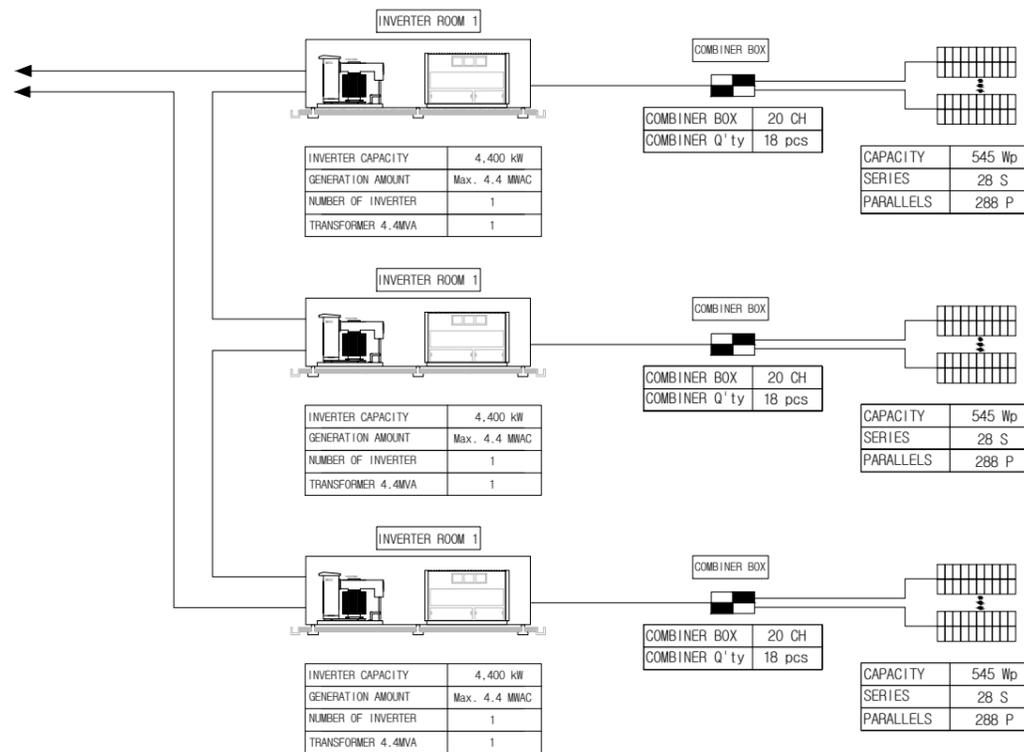
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TO : 30kV S/S RING-3
SINGLE LINE FOR PV POWER PLANT



TO : 30kV S/S RING-4
SINGLE LINE FOR PV POWER PLANT



50MW, POWER GENERATION SYSTEM DIAGRAM-2

SCALE (A4) : 1/NONE
SCALE (A3) : 1/NONE

[NOTE]

- RING #1,2,3,4 SAME TYPE SINGLE LINE

REVISION NO. 수정

SCALE
속 적 A1:1/NONE
A3:1/NONE

DATE
일 차 2020. 05

ARCH. DESIGNED BY
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STRUCT. DESIGNED BY
구 조 설 계

MECH. DESIGNED BY
설 비 설 계

ELEC. DESIGNED BY
전 기 설 계

CHECKED BY
심 사

PROJECT TITLE
시 설 명
SOLAR POWER PLANT 100MWp

DRAWING NAME
도 면 명
PROJECT LOCATION IN KATI
SOLAR POWER PLANT

DWG. FILE NAME
파 일 명
ELECTRICITY DRAWING, PV PLANT

APPROVED BY
승 인

DRAWING NO.
도 면 번호

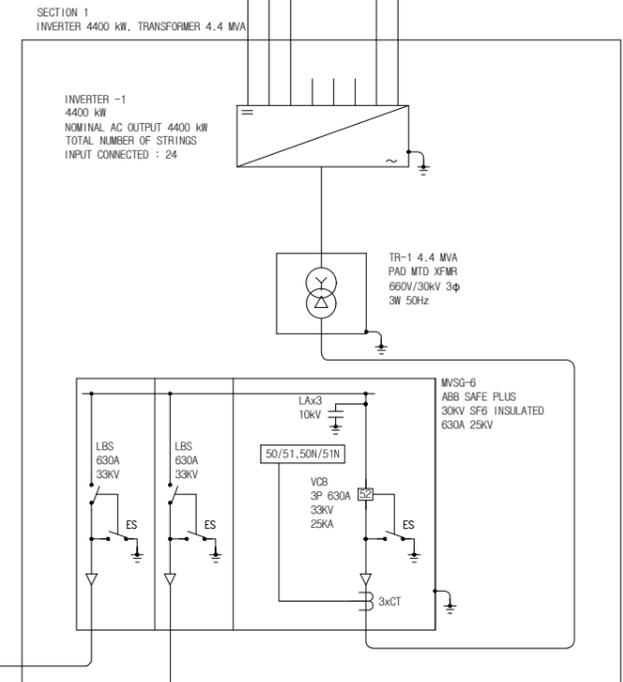
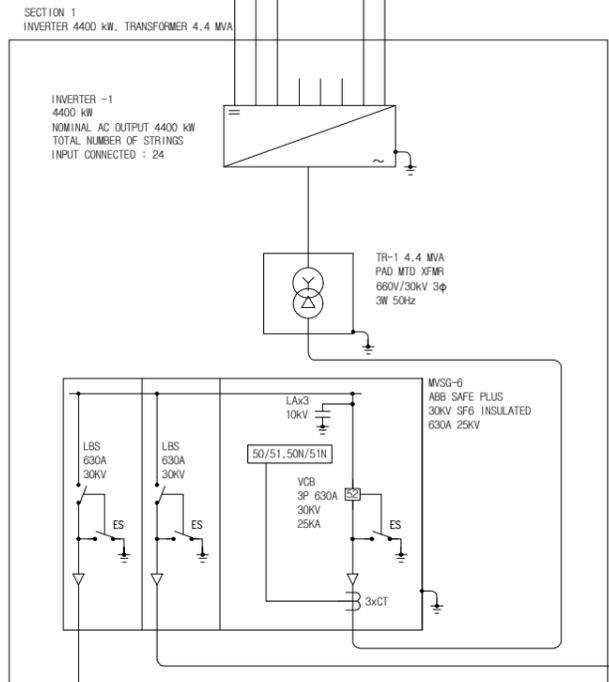
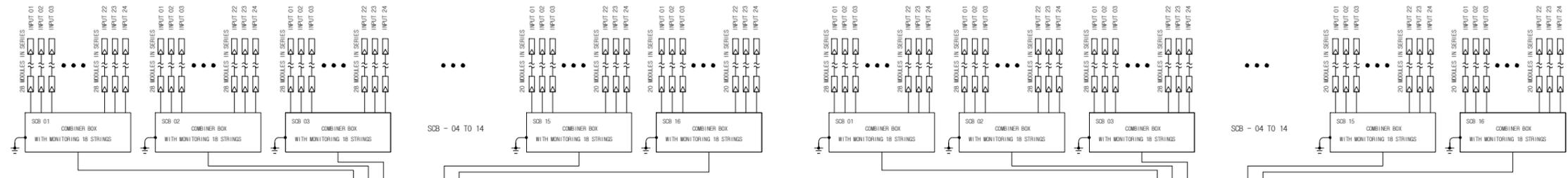
IIANTECH- SP-03

SHEET NO.
일련 번호

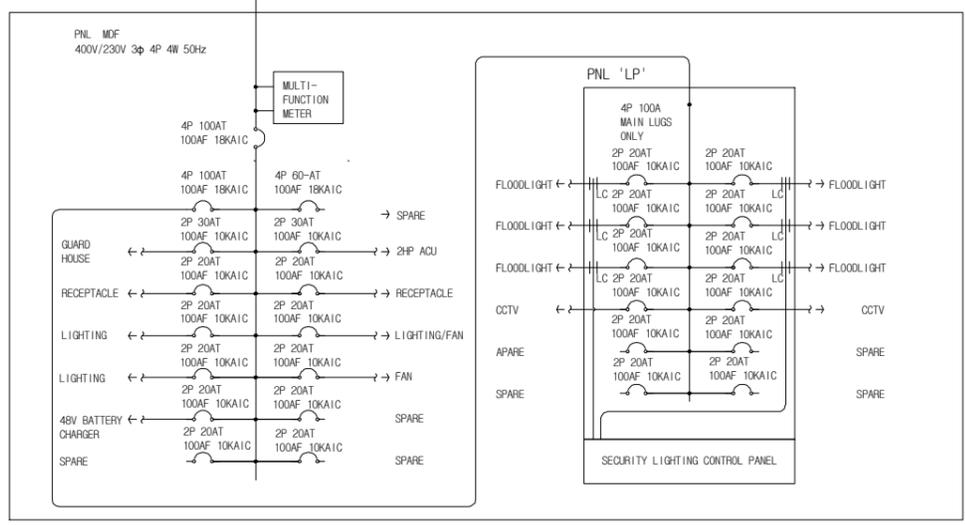


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TO : 110kV S/S (Ring-1)
TO : 110kV S/S (Ring-1)
TO : 110kV S/S (AUX-TR)



REVISION NO. 수정

SCALE
축척 A1:1/NONE
A3:1/NONE

DATE
일자 2020. 05

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MECH. DESIGNED BY
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ELEC. DESIGNED BY
전기 설계

CHECKED BY
심사

PROJECT TITLE
시설명

SOLAR POWER PLANT 100MW

DRAWING NAME
도면명

PROJECT LOCATION IN KATI
SOLAR POWER PLANT

DWG. FILE NAME
파일명

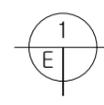
ELECTRICITY DRAWING, PV PLANT

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DRAWING NO.
도면번호

IIANTECH- SP-04

SHEET NO.
일련번호



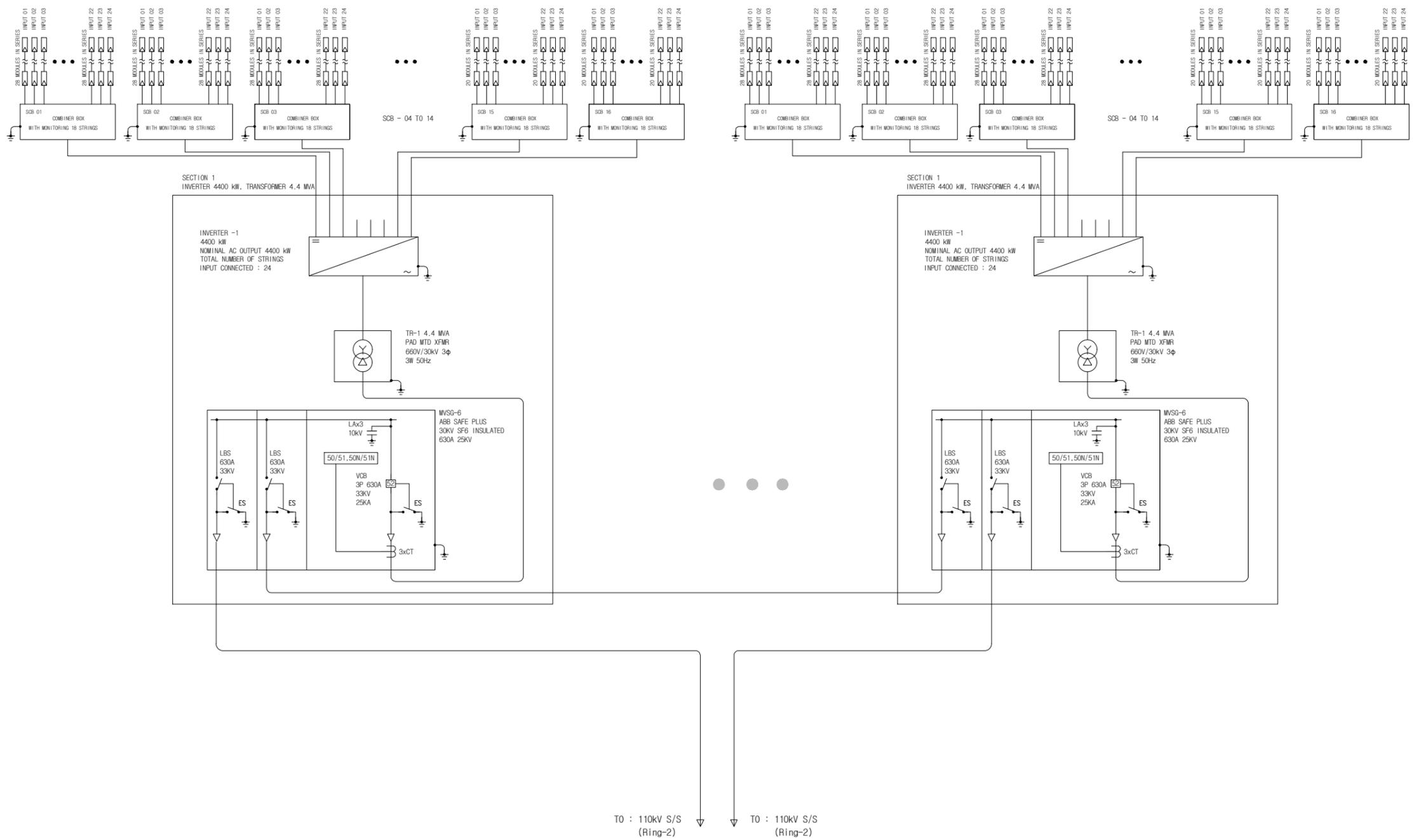
50MW, POWER PLANT CONSTRUCTION DIAGRAM-3

SCALE (A4) : 1/NONE
SCALE (A3) : 1/NONE



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TO : 110kV S/S (Ring-2) TO : 110kV S/S (Ring-2)

[NOTE]
- RING #2,3,4 SAME TYPE SINGLE LINE
- THE SAME DRAWING IS OMITTED (SAME AS RING 2)

1
E
50MW, POWER PLANT CONSTRUCTION DIAGRAM-4
SCALE (A4) : 1/NONE
SCALE (A3) : 1/NONE

REVISION NO. 수정	
SCALE 축척	A1:1/NONE A3:1/NONE
DATE 일차	2020. 05
ARCH. DESIGNED BY 건축 설계	
STRUCT. DESIGNED BY 구조 설계	
MECH. DESIGNED BY 설비 설계	
ELEC. DESIGNED BY 전기 설계	
CHECKED BY 심사	
PROJECT TITLE 시설명	SOLAR POWER PLANT 100MW
DRAWING NAME 도면명	PROJECT LOCATION IN KATI SOLAR POWER PLANT
DWG. FILE NAME 파일명	ELECTRICITY DRAWING, PV PLANT
APPROVED BY 승인	
DRAWING NO. 도면번호	IIANTECH- SP-05
SHEET NO. 일련번호	



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[NOTE]

- SIZE: W 2,815mm / H 2,318mm / D 1,588 mm
- WEIGHT: about 4000kgs

Technical Data	SC 4400 UP
DC side	
MPPT voltage range V_{MPPT} (at 25 °C / at 50 °C)	957 to 1375 V / 1000 V
Min. DC voltage V_{DCmin} / Start voltage $V_{DCstart}$	934 V / 1112 V
Max. DC voltage V_{DCmax}	1550 V
Max. DC current I_{DCmax}	4750 A
Max. short-circuit current I_{DCsc}	8400 A
Number of DC inputs	Busbar with 26 connection ports (max), 24 double pole fused (32 single pole fused)
Number of DC inputs with optional UC, occupied storage	18 double pole fused (36 single pole fused) for PV and 6 double pole fused for batteries
Max. number of DC cables per DC input (for each polarity)	2 x 800 core, 2 x 450 mm ²
Integrated zone monitoring	○
Available PV fuse sizes (per input)	200 A, 250 A, 315 A, 350 A, 400 A, 450 A, 500 A
Available battery fuse size (per input)	750 A
AC side	
Nominal AC power at cos φ = 1 (at 35 °C / at 50 °C)	4400 kVA ⁽¹⁾ / 3800 kW
Nominal AC active power at cos φ = 0.8 (at 35 °C / at 50 °C)	3520 kW ⁽¹⁾ / 3168 kW
Nominal AC current I_{ACmax} (at 35 °C / at 50 °C)	3150 A / 2465 A
Max. total harmonic distortion	< 3% at nominal power
Nominal AC voltage / nominal AC voltage range ⁽¹⁾	660 V / 518 V to 729 V
AC power frequency / range	50 Hz / 47 Hz to 53 Hz 60 Hz / 57 Hz to 63 Hz
Min. short-circuit rate of the AC terminals ⁽²⁾	> 2
Power factor at rated power / displacement power factor adjustable ⁽¹⁾⁽³⁾	* 1 / 0.8 corrected to 0.9 uncorrected
Efficiency	
Max. efficiency ⁽¹⁾ / European efficiency ⁽¹⁾ / CEC efficiency ⁽¹⁾	99.8% / 98.7% / 98.5%
Protective Devices	
Input side disconnection point	DC load break switch
Output side disconnection point	AC circuit breaker
DC overvoltage protection	Surge arrester, type I & II
AC overvoltage protection (optional)	Surge arrester, class I & II
Lightning arrester (according to IEC 62305-1)	Lightning Protection Level III
Ground-fault monitoring / remote ground-fault monitoring	○ / ○
Insulation monitoring	○
Degree of protection: electronics / air duct / connection area (as per IEC 60529)	IP54 / IP34 / IP34
General Data	
Dimensions (W / H / D)	2815 / 2318 / 1588 mm [110.8 / 91.3 / 62.5 inch]
Weight	< 3700 kg / < 8153 lb
Self-consumption (max. % of portfolio load ⁽¹⁾ / average ⁽¹⁾)	< 0.000 W / < 1.000 W / < 0.000 W
Self-consumption (standby)	< 570 W
Internal auxiliary power supply	○ Integrated 8.4 kVA transformer
Operating temperature range ⁽⁴⁾	-25 °C to 60 °C / -13 °F to 140 °F
Noise emission ⁽¹⁾	65.0 dBA ⁽¹⁾
Temperature range (standby)	-40 °C to 60 °C / -40 °F to 140 °F
Temperature range (storage)	-40 °C to 70 °C / -40 °F to 158 °F
Max. permissible value for relative humidity (condensing / non-condensing)	95% to 100% (2 month/year) / 0% to 95%
Maximum operating altitude above MSL ⁽⁵⁾ 1005 m / 2000 m ⁽¹⁾ / 3000 m ⁽¹⁾	● / ○ / -
Fresh air consumption	6500 m ³ /h
Features	
DC connection	Terminal lug or work lug (without bus)
AC connection	With busbar system (three busbars, one per line conductor)
Communication	Ethernet, Modbus Master, Modbus Slave
Enclosure / roof color	RAL 90 05 / RAL 7014
Supply for external loads	○ (2.5 kW)
Standards and directives complied with	CE, IEC / EN 62109-1, IEC / EN 62109-2, AS/NZS 1110, IEEE 1547, UL 9740 Can. W. Article 23.07/23
EMC standards	IEC 33011, IEC 61000-6-2, FCC Part 15 Class A
Quality standards and directives complied with	VDE/VDE 2862 page 2, DIN EN ISO 9001
Standard features: ○ Optional not available * preliminary	
Type designation	SC 4400 UP



MV POWER STATION (SUNNY CENTRAL 4400 UP)

SCALE (A4) : 1/NONE
SCALE (A3) : 1/NONE

REVISION NO. 수정

SCALE
축척 A1:1/NONE
A3:1/NONE

DATE
일자 2020. 05

ARCH. DESIGNED BY
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STRUCT. DESIGNED BY
구조 설계

MECH. DESIGNED BY
설비 설계

ELEC. DESIGNED BY
전기 설계

CHECKED BY
심사

PROJECT TITLE
시 설 명
SOLAR POWER PLANT 100MWp

DRAWING NAME
도면 명

PROJECT LOCATION IN KATI
SOLAR POWER PLANT

DWG. FILE NAME
파일 명
ELECTRICITY DRAWING, PV PLANT

APPROVED BY
승인

DRAWING NO.
도면 번호

IIANTECH- SP-07

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