



Alazani 1 Solar Power Plant

(Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)

INTRODUCTION PART

SOLAR POWER STATION(1 MW)
PROJECT
N006-2026-RAG

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RENEWABLE ENERGY SOLUTIONS LLC

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EXECUTOR
THE OHM ENERGY LLC

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Overall Explanatory Note

The construction of solar photovoltaic power plant with the peak capacity of 1000 kW is envisaged by this design in Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia. The solar power plant is designed on the land of 2.363 ha, the perimeter of which is 788 m. The following documents and definitions were taken for basis while designing the solar power plant:

- the technical condition for connection provided by the electrical network of Georgia,
- the results of geodetic research of the land,
- geological data of the land,
- climatological data of the site,
- international and local standards,
- other documents provided by the Client.

The main constituent elements of the solar photovoltaic power plant envisaged by the design are as follows:

- solar panels**
1854 bifacial solar panels are planned to be installed in the solar photovoltaic power plant, with the maximum capacity of 650 W each. The number of solar panels connected in series is 18, that in its turn forms a complete block with the maximum capacity of 11.7 kW. For the inverter each block is considered to be one circuit and is connected to the inverter by separate solar cables. 13 and 15 blocks in number with the maximum capacity of 152.1 kW and 175.5kW are connected to each inverter. Totally 103 blocks with the maximum capacity of 1205.1 kW (total maximum capacity of panels) are planned to be constructed in the solar plant.
- Inverters**
The nominal active power of the inverters is 150 kW (for 6 inverters) and 100 kW (for 1 inverter), with apparent power of 165 kVA and 110 kVA respectively. 6 inverters are each connected to 15 blocks (175.5 kW per inverter), while 1 inverter is connected to 13 blocks (152.1 kW).
A total of 7 solar inverters (6×150 kW and 1×100 kW) with a combined nominal output capacity of 1000 kW are planned to be installed in the solar photovoltaic power plant, while the output power to the electrical grid is limited to 1000 kW in accordance with the technical conditions provided by the electrical network.
It should be mentioned that the producer of solar inverters and the type of equipment used in the design can be changed maintaining the minimum technical parameters and requirements given in the design and the documents presented thereto and are to be agreed with the design organization and the client in advance.
- Ground Mounted System**
Panels in the solar plant are placed on the ground mounted system. Solar structures of the solar plant are foreseen to be of galvanized steel by the design, however, anodized aluminium solar frames are also admissible. Ground Mounted System is foreseen for bifacial solar panels.
The supporting structures of the solar power plant are mounted on galvanized steel driven piles.
A total of 103 blocks are planned across the site, each being structurally independent.
Each block is supported by 8 piles, totaling 824 piles for the entire installation.
The piles are made of galvanized steel and have a channel-shaped cross-section.
They are driven into pre-marked positions using specialized equipment such as hydraulic or vibratory hammers.
Each pile is 1800 mm.
The piles are embedded into the ground to a depth of 1300 mm, without pre-drilling or concreting.
Bolt holes are provided at the top of each pile for securing the metal structures.
- Direct current components elements (solar cables, MC4 connectors, protective gears, etc.)**
The design foresees the connection from blocks to inverters to be implemented by 1x6mm² DC cables. Direct current cables up to 7700 m are to be used in the solar plant.
- AC components elements (0.4kV voltage cable, protective gears, etc.)**
0.4 kV lines from inverters to the substation - aluminium cables 4×240 mm².
0,4kV voltage automatic breakers with the overload capacity of 250A and 160A are to be installed next to all inverters in metal boxes of 700x500x250 mm in size.

PROJECT PARTS		
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						006-2026-RAG-IP-1			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Introduction part	Stage	Sheet	Sheets
	Designed	A.Avagyan					D	1	1
	Checked	D.Barkhudaryan							
						Project composition, explanation			

TÜVNORD

Certificate

Management system as per
DIN EN ISO 9001:2015

The Certification Body TÜV NORD CERT GmbH hereby confirms as a result of the audit, assessment and certification decision according to ISO/IEC 17021-1:2015, that the organization

The OHM Energy LLC
11a Paliashvili St.
0179 Tbilisi
Georgien

operates a management system in accordance with the requirements of DIN EN ISO 9001:2015 and will be assessed for conformity within the 3 year term of validity of the certificate.

Scope

Sales, construction, electrical installation works and service of solar power stations and their separate elements / components.

Certificate Registration No. 44 100 241102
Audit Report No. 3537 4989

Valid from 2024-07-03
Valid until 2027-07-02
Initial certification 2024

Essen, 2024-07-03

Certification Body at TÜV NORD CERT GmbH

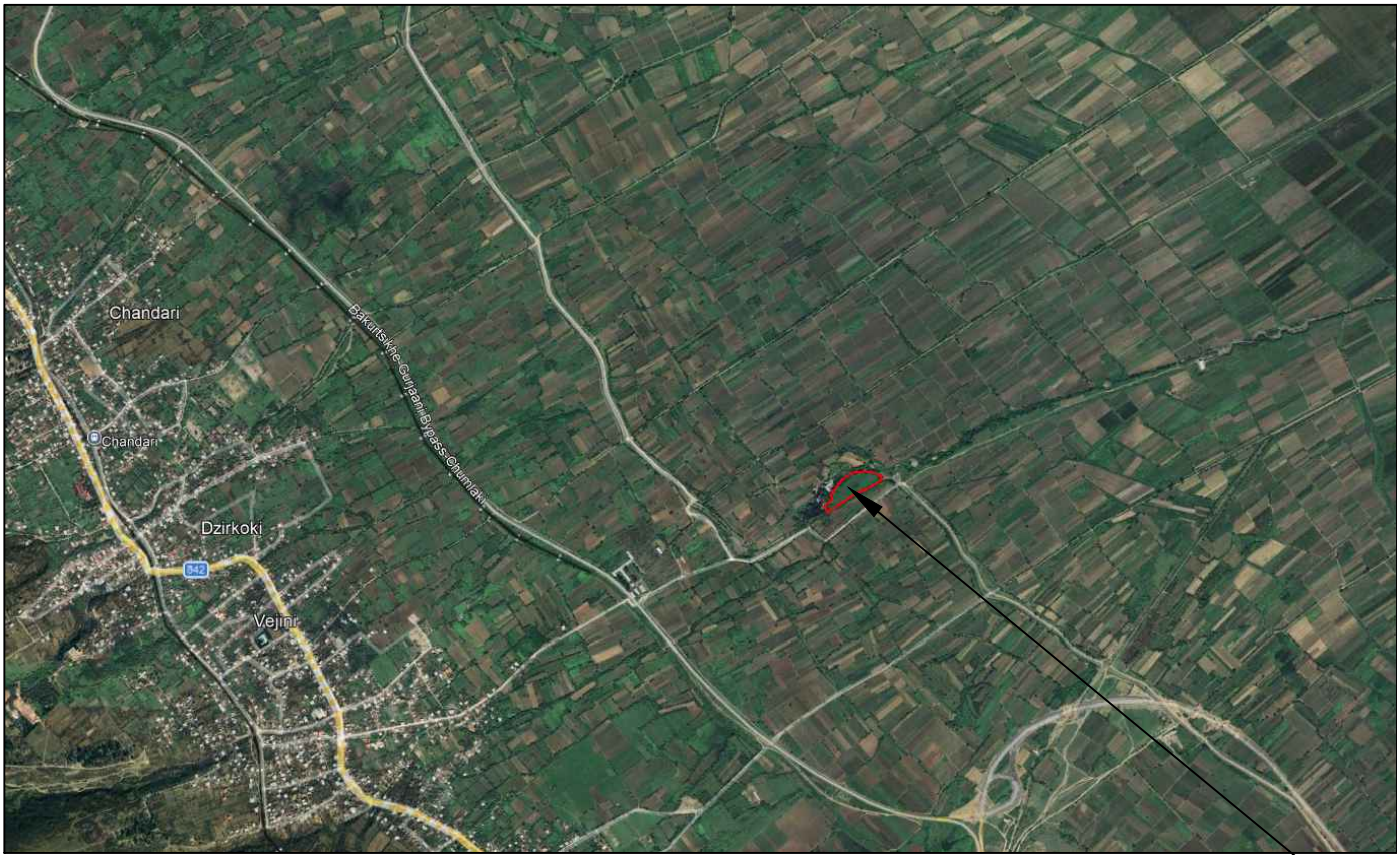
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Am TÜV 1, 45307 Essen
www.tuev-nord-cert.com

TÜV®



Visit our database to verify the validity of this certificate.

						006-2026-RAG-IP-2			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Introduction part	Stage	Sheet	Sheets
							D	1	1
						Licenses			



Alazani 1 Solar Power Plant

						006-2026-RAG-IP-3			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Introduction part	Stage	Sheet	Sheets
							D	1	1
Designed		A.Avagyan		6/5/24		Solar PS deployment plan in Google Earth			
Checked		D.Barkhudaryan		6/5/24					

SUN2000-150K-MG0 Smart PV Controller



Arc Fault Protection



PV Ground-Fault Protection



PID Recovery



Smart String Level Disconnect

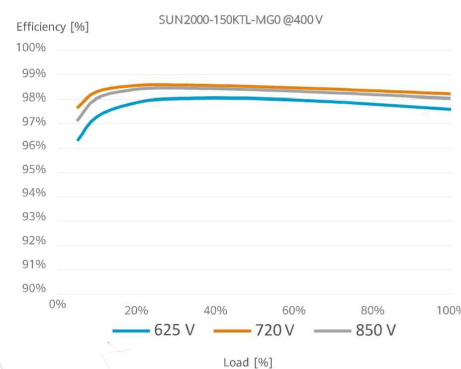


Smart Connector Temperature Detector



MBUS

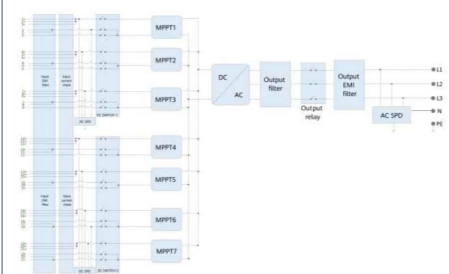
Efficiency Curve



• This datasheet only shows Preliminary Version, the information may change. Please contact with HW local supplier for the latest version

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Circuit Diagram



SUN2000-150K-MG0 Technical Specification

Technical Specification

SUN2000-150K-MG0

Efficiency

Max. efficiency	98.6% @400V, 98.8% @480V
European efficiency	98.4%

Input

Max. Input Voltage ¹	1,100 V
Max. Current per MPPT	48A
Max. Current per Input	23A
Max. Short Circuit Current per MPPT	66A
Start Voltage	200 V
MPPT Operating Voltage Range ²	200 V ~ 1,000 V
Number of MPP trackers	7
Max. input number per MPP tracker	3

Output

Nominal AC Active Power	150,000 W
Max. AC Apparent Power	165,000 VA
Max. AC Active Power (cosφ=1)	165,000 W
Nominal Output Voltage	380 V/400 V/480Vac
Rated AC Grid Frequency	50 Hz / 60 Hz
Nominal Output Current	227.9 A @380 V, 216.5 A @400 V, 180.4A @480Vac
Max. Output Current	253.2 A @380 V, 240.5 A @400 V, 200.5A @480Vac
Adjustable Power Factor Range	0.8 leading... 0.8 lagging
alternating current THDi	<1%

Protection

Anti-islanding Protection	Yes
AC Overcurrent Protection	Yes
DC Reverse-polarity Protection	Yes
PV-array String Fault Monitoring	Yes
DC Surge Arrester	Type II
AC Surge Arrester	Type II
DC Insulation Resistance Detection	Yes
Residual Current Monitoring Unit	Yes
Smart String Level Disconnect	Yes
Arc Fault Protection	Yes
Terminal Temperature Detection	Yes
PID Recovery	Yes
PV Ground-Fault Protection	Yes

Communication

Display	LED indicators; WLAN adaptor + FusionSolar APP
RS485	Yes
USB	Yes
Smart Dongle-4G	Smart Dongle - 4G / WLAN (Optional)
Monitoring BUS (MBUS)	Yes (isolation transformer required)

General Data

Dimensions (W x H x D)	1,000 x 710 x 395 mm
Weight (with mounting plate)	102 kg
Operating Temperature Range	-25°C ~ 60°C
Cooling Method	Smart Air Cooling
Max. Operating Altitude	4,000 m (13,123 ft.)
Relative Humidity	0 ~ 100%
DC Connector	Amphenol HH4
AC Connector	Waterproof Connector + OT/DT Terminal
Protection Degree	IP66
Topology	Transformerless

Standard Compliance (more available upon request)

Certificate	EN 62109-1/-2, IEC 62109-1/-2, IEC 62116, IEC 61727, IEC 60068, IEC 61683
Grid Connection Standards	VDE-AR-N4105, EN 50549-1, EN 50549-2, RD 661, RD 1699, C10/11

• This datasheet only shows Preliminary Version, the information may change. Please contact with HW local supplier for the latest version
• 1 The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter.
• 2 Any DC input voltage beyond the operating voltage range may result in inverter improper operating.

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006-2026-RAG-IP-4

Alazani 1 Solar power plant
(Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)

Rev.	No.	Sh.	DRG.no	Sign.	Date
Designed				A.Avagyan	6/25
Checked				D.Barkhudaryan	7/2

Introduction part

Stage	Sheet	Sheets
D	1	2

Datasheet of inverters



SUN2000-100KTL-M2 Smart PV Controller



10
MPP Trackers



98.8% (@480V)
Max. Efficiency



String-level
Management



Smart I-V Curve Diagnosis
Supported



MBUS
Supported



Support AFCI &
Smart String Level
Disconnecter



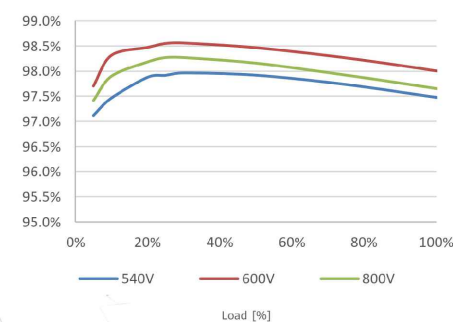
Surge Arresters for
DC & AC



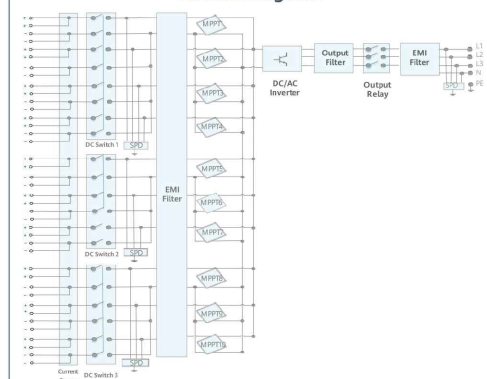
IP66
Protection

Efficiency Curve

SUN2000-100KTL-M2 @400 V



Circuit Diagram



SOLAR.HUAWEI.COM/EU/

SUN2000-100KTL-M2 Technical Specification

Technical Specification

SUN2000-100KTL-M2

Efficiency

Max. efficiency	98.6% @ 400 V, 98.8% @ 480 V
European efficiency	98.4% @ 400 V, 98.6% @ 480 V

Input

Max. Input Voltage ¹	1,100 V
Max. Current per MPPT	30 A
Max. Current per Input ³	20 A
Max. Short Circuit Current per MPPT	40 A
Start Voltage	200 V
MPPT Operating Voltage Range ²	200 V ~ 1,000 V
Nominal Input Voltage	600 V @ 400 Vac, 720 V @ 480 Vac
Number of MPP trackers	10
Max. input number per MPP tracker	2

Output

Nominal AC Active Power	100,000 W
Max. AC Apparent Power	110,000 VA
Max. AC Active Power (cosφ=1)	110,000 W
Nominal Output Voltage	380 V / 400 V / 480 V, 3W+(N)+PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Nominal Output Current	144.4 A @ 400 V, 120.3 A @ 480 V
Max. Output Current	160.4 A @ 400 V, 133.7 A @ 480 V
Adjustable Power Factor Range	0.8 leading... 0.8 lagging
Max. Total Harmonic Distortion	< 3%

Protection

Input-side Disconnection Device	Yes
Anti-islanding Protection	Yes
AC Overcurrent Protection	Yes
DC Reverse-polarity Protection	Yes
PV-array String Fault Monitoring	Yes
DC Surge Arrester	Type II
AC Surge Arrester	Type II
DC Insulation Resistance Detection	Yes
Residual Current Monitoring Unit	Yes
Arc Fault Protection	Yes
Smart String Level Disconnecter	Yes

Communication

Display	LED indicators; WLAN adaptor + FusionSolar APP
RS485	Yes
USB	Yes
Smart Dongle -4G	Smart Dongle - 4G / WLAN (Optional)
Monitoring BUS (MBUS)	Yes (isolation transformer required)

General Data

Dimensions (W x H x D)	1,035 x 700 x 365 mm
Weight (with mounting plate)	≤93 kg
Operating Temperature Range	-25°C ~ 60°C
Cooling Method	Smart Air Cooling
Max. Operating Altitude	4,000 m (13,123 ft.)
Relative Humidity	0 ~ 100%
DC Connector	Amphenol Helios H4
AC Connector	Waterproof Connector + OT/DT Terminal
Protection Degree	IP66
Topology	Transformerless
Nighttime Power Consumption	< 3.5 W

Standard Compliance (more available upon request)

Certificate	EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 61727, IEC 60068, IEC 61683
Grid Connection Standards	VDE-AR-N4105, EN 50549-1, EN 50549-2, RD 661, RD 1699, C10/11

¹ The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter.

² Any DC input voltage beyond the operating voltage range may result in inverter improper operating.

³ Single-string access.

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006-2026-RAG-IP-4

Alazani 1 Solar power plant
(Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)

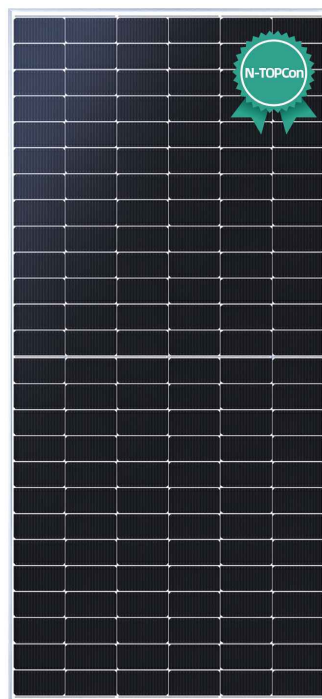
Rev.	No.	Sh.	DRG.no	Sign.	Date
Designed		A.Avagyan		<i>[Signature]</i>	
Checked		D.Barkhudaryan		<i>[Signature]</i>	

Introduction part

Datasheet of inverters

Stage	Sheet	Sheets
D	2	2





PHONO

630-650w

Draco Module Series

N-TOPCON HIGH EFFICIENCY 156-16BB-W-WG

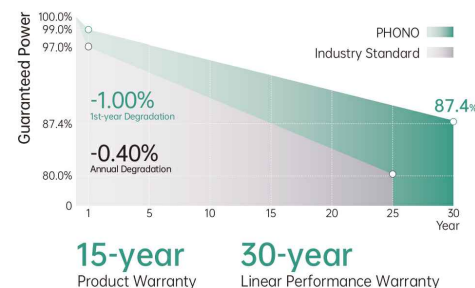
Bloomberg
NEW ENERGY FINANCE

Tier1



Extraordinary Product Performance

- Up to 30% additional power yield benefited from bifacial technology and over 80% cell bifaciality
- Competitive high-temperature performance with ameliorated temperature coefficient
- Better weak illumination response, higher power generation with N-TOPCon technology



Higher Quality Reliability

- N-type with lower LID and LeTID
- Industry-leading cell processing technology and dual glass contributes to excellent anti-PID characteristic
- First-year degradation is less than 1.0%, with linear degradation of 0.4% per year for 30 years

Wider Application Conditions

- BIPV, vertical installation, snowfield, high-humid area, windy and dusty area
- Safer and easier handling during transportation and installation



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Electrical Typical Values

Model	1000V	PS630M8GF-26/RNH	PS635M8GF-26/RNH	PS640M8GF-26/RNH	PS645M8GF-26/RNH	PS650M8GF-26/RNH
	1500V	PS630M8GFH-26/RNH	PS635M8GFH-26/RNH	PS640M8GFH-26/RNH	PS645M8GFH-26/RNH	PS650M8GFH-26/RNH
Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT
Rated Power (Pmpp)	630	482	635	486	640	490
Rated Current (Impp)	12.90	10.39	12.96	10.44	13.02	10.53
Rated Voltage (Vmpp)	48.84	46.43	49.00	46.58	49.16	46.73
Short Circuit Current (Isc)	13.62	10.97	13.68	11.02	13.75	11.07
Open Circuit Voltage (Voc)	57.15	54.72	57.31	54.87	57.47	55.03
Module Efficiency (%)	22.54	22.72	22.90	23.07	23.25	23.42

STC (Standard Testing Conditions): Irradiance 1000W/m², AM 1.5, Cell Temperature 25°C

NOCT (Nominal Operation Cell Temperature): Irradiance 800W/m², Ambient Temperature 20°C, Spectra at AM1.5, Wind at 1m/s

BNPI

Maximum Power (Pmax)	694	699	705	710	716
Optimum Operating Current (Impp)	14.21	14.27	14.35	14.40	14.48
Optimum Operating Voltage (Vmpp)	48.84	49.00	49.16	49.32	49.47
Short Circuit Current (Isc)	15.00	15.07	15.16	15.22	15.30
Open Circuit Voltage (Voc)	57.15	57.31	57.47	57.63	57.78

BNPI: Front side irradiation 1000W/m², back side reflection irradiation 135W/m², AM 1.5, ambient temperature 25°C

Mechanical Characteristics

Cell Type	N Type Monocrystalline
Dimension (L × W × H)	Length: 2465mm (97.05 inch) Width: 1134mm (44.65 inch) Height: 30mm (1.18 inch)
Weight	35.0kg (77.16 lbs)
Glass	2.0mm/2.0mm Heat Strengthened Glass
Frame	Anodized Aluminium Alloy
Cable (Including Connector)	4mm ² (IEC), (+): 350mm, (-): 250mm or Customized Length

Temperature Ratings

Voltage Temperature Coefficient	-0.25%/°C
Current Temperature Coefficient	+0.04%/°C
Power Temperature Coefficient	-0.29%/°C
Power Tolerance	0~+3%
NOCT	42±2°C
Bifaciality	80±5%

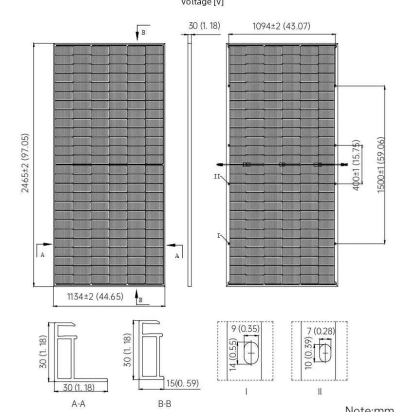
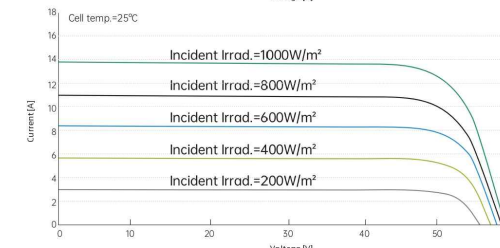
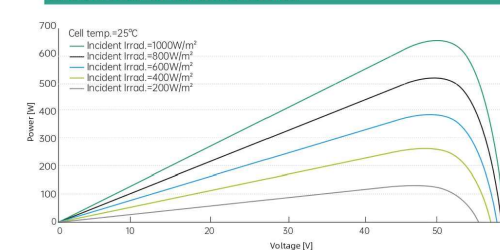
Absolute Maximum Rating

Operating Temperature	From -40 to +85°C
Hail Diameter @ 80km/h	Up to 25mm
Front Side Maximum Static Loading	5400Pa
Rear Side Maximum Static Loading	2400Pa
Maximum Series Fuse Rating	30A
PV Module Classification	II
Fire Rating (IEC61730)	C
Maximum System Voltage	DC 1000V/1500V

Packing Configuration

Container	40' HQ
Pieces/Container	576
Pcs/Pallet	36
Pallets/Container	16

Electrical Characteristics



SUMEC PHONO

PHONO SOLAR TECHNOLOGY CO., LTD. reserves the right to make necessary adjustments to the information described herein at any time without further notice. The specifications and certificates contained in this datasheet may deviate slightly from our actual products due to the on-going innovation and product enhancement. Please be sure to use the most recent version of data.

006-2026-RAG-IP-5

Alazani 1 Solar power plant
(Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)

Rev.	No.	Sh.	DRG.no	Sign.	Date
Designed		A.Avagyan			
Checked		D.Barkhudaryan			

Introduction part

Datasheet of PV modules

Stage	Sheet	Sheets
D	1	1





Version 7.4.0

PVsyst - Simulation report

Grid-Connected System

Project: Alazani 1

Variant: New simulation variant

Sheds on ground

System power: 1205 kWp

K'olagi - Georgia

Author



Project: Alazani 1

Variant: New simulation variant

PVsyst V7.4.0VC0, Simulation date:
28/04/26 20:11
with v7.4.0

Project summary

Geographical Site K'olagi Georgia	Situation Latitude 41.72 °N Longitude 45.86 °E Altitude 272 m Time zone UTC+4	Project settings Albedo 0.20
Meteo data K'olagi Meteonorm 8.1 (2003-2013), Sat=100% - Synthetic		

System summary

Grid-Connected System Simulation for year no 10	Sheds on ground	
PV Field Orientation Fixed plane Tilt/Azimuth 25 / 0 °	Near Shadings Linear shadings	User's needs Unlimited load (grid)
System information PV Array Nb. of modules 1854 units Pnom total 1205 kWp	Inverters Nb. of units 6.4 units Pnom total 914 kWac Pnom ratio 1.318	

Results summary

Produced Energy	1667890 kWh/year	Specific production	1384 kWh/kWp/year	Perf. Ratio PR	78.11 %
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General parameters, PV Array Characteristics, System losses	3
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Predef. graphs	7
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28/04/26

PVsyst Licensed to

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Rev.	No.	Sh.	DRG.no	Sign.	Date	Introduction part	Stage	Sheet	Sheets
							D	1	4
						PVsyst - Simulation report			



PVsyst V7.4.0
VC0, Simulation date:
28/04/26 20:11
with v7.4.0

Project: Alazani 1
Variant: New simulation variant

General parameters

Grid-Connected System

PV Field Orientation

Orientation
Fixed plane
Tilt/Azimuth 25 / 0 °

Sheds on ground

Sheds configuration

Nb. of sheds 103 units
Sizes
Sheds spacing 9.00 m
Collector width 4.79 m
Ground Cov. Ratio (GCR) 53.2 %
Top inactive band 0.02 m
Bottom inactive band 0.02 m
Shading limit angle
Limit profile angle 23.6 °

Models used

Transposition Perez
Diffuse Perez, Meteonorm
Circumsolar separate

Horizon

Free Horizon

Near Shadings

Linear shadings

User's needs

Unlimited load (grid)

PV Array Characteristics

Array #1 - PV Array

PV module

Manufacturer Phono Solar
Model PS650M8GFH-26/RNH
(Custom parameters definition)

Unit Nom. Power 650 Wp
Number of PV modules 1620 units
Nominal (STC) 1053 kWp
Modules 90 Strings x 18 In series

At operating cond. (50°C)

Pmpp 963 kWp
U mpp 617 V
I mpp 1562 A

Array #2 - Sub-array #2

PV module

Manufacturer Phono Solar
Model PS650M8GFH-26/RNH
(Custom parameters definition)

Unit Nom. Power 650 Wp
Number of PV modules 234 units
Nominal (STC) 152 kWp
Modules 13 Strings x 18 In series

At operating cond. (50°C)

Pmpp 139 kWp
U mpp 617 V
I mpp 226 A

Total PV power

Nominal (STC) 1205 kWp
Total 1854 modules
Module area 5759 m²
Cell area 5396 m²

Inverter

Manufacturer Huawei Technologies
Model SUN2000-150K-MG0-480V
(Custom parameters definition)

Unit Nom. Power 150 kWac
Number of inverters 38 * MPPT 14% 5.4 units
Total power 814 kWac
Operating voltage 200-1000 V
Max. power (=>44°C) 165 kWac
Phom ratio (DC:AC) 1.29
No power sharing between MPPTs

Inverter

Manufacturer Huawei Technologies
Model SUN2000-100KTL-M2-400Vac
(Custom parameters definition)

Unit Nom. Power 100 kWac
Number of inverters 10 * MPPT 10% 1 unit
Total power 100 kWac
Operating voltage 200-1000 V
Max. power (=>33°C) 110 kWac
Phom ratio (DC:AC) 1.52
No power sharing between MPPTs

Total inverter power

Total power 914 kWac
Nb. of inverters 7 units
0.6 unused
Phom ratio 1.32



PVsyst V7.4.0
VC0, Simulation date:
28/04/26 20:11
with v7.4.0

Project: Alazani 1
Variant: New simulation variant

Array losses

Array Soiling Losses

Loss Fraction 3.0 %

Thermal Loss factor

Module temperature according to irradiance
Uc (const) 20.0 W/m²K
Uv (wind) 0.0 W/m²K/m/s

Module Quality Loss

Loss Fraction -0.8 %

Module mismatch losses

Array #1 - PV Array

Loss Fraction 2.0 % at MPP

Array #2 - Sub-array #2

Loss Fraction 2.0 % at MPP

Module average degradation

Year no 10
Loss factor 0.4 %/year

Mismatch due to degradation

Imp RMS dispersion 0.4 %/year
Vmp RMS dispersion 0.4 %/year

IAM loss factor

Incidence effect (IAM): Fresnel, AR coating, n(glass)=1.526, n(AR)=1.290

0°	30°	50°	60°	70°	75°	80°	85°	90°
1.000	0.999	0.987	0.962	0.892	0.816	0.681	0.440	0.000

DC wiring losses

Global wiring resistance 5.7 mΩ
Loss Fraction 1.5 % at STC

Array #1 - PV Array

Global array res. 6.5 mΩ
Loss Fraction 1.5 % at STC

Array #2 - Sub-array #2

Global array res. 45 mΩ
Loss Fraction 1.5 % at STC

						006-2026-RAG-IP-6			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Introduction part	Stage	Sheet	Sheets
							D	2	4
						PVsyst - Simulation report			



Project: Alazani 1
Variant: New simulation variant

PVsyst V7.4.0

VC0, Simulation date:
28/04/26 20:11
with v7.4.0

Main results

System Production

Produced Energy

1667890 kWh/year

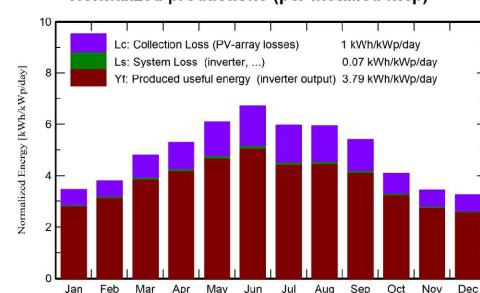
Specific production

1384 kWh/kWp/year

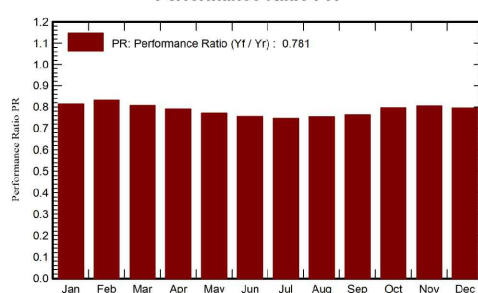
Perf. Ratio PR

78.11 %

Normalized productions (per installed kWp)



Performance Ratio PR



Balances and main results

	GlobHor	DiffHor	T_Amb	GlobInc	GlobEff	EArray	E_Grid	PR
	kWh/m ²	kWh/m ²	°C	kWh/m ²	kWh/m ²	kWh	kWh	ratio
January	65.4	23.25	2.85	107.4	97.0	107154	105342	0.814
February	76.8	36.99	4.70	106.2	98.8	108332	106497	0.832
March	120.4	53.53	8.69	148.2	138.8	146905	144340	0.808
April	145.1	75.73	12.98	158.8	148.0	154256	151568	0.792
May	185.7	84.58	18.45	188.4	175.6	178390	175220	0.772
June	205.2	80.96	22.87	201.4	188.2	186850	183536	0.756
July	186.6	80.56	26.36	184.7	172.2	169343	166327	0.747
August	172.2	83.20	26.35	183.9	171.7	170343	167309	0.755
September	137.1	55.08	21.08	162.2	151.6	151943	149260	0.764
October	96.5	45.76	15.21	126.7	118.2	123987	121816	0.798
November	66.9	27.44	8.57	102.9	94.1	101685	99931	0.806
December	58.7	21.88	4.34	100.9	88.9	98380	96745	0.796
Year	1516.4	668.95	14.43	1771.8	1643.2	1697568	1667890	0.781

Legends

GlobHor Global horizontal irradiation
DiffHor Horizontal diffuse irradiation
T_Amb Ambient Temperature
GlobInc Global incident in coll. plane
GlobEff Effective Global, corr. for IAM and shadings

EArray Effective energy at the output of the array
E_Grid Energy injected into grid
PR Performance Ratio

28/04/26

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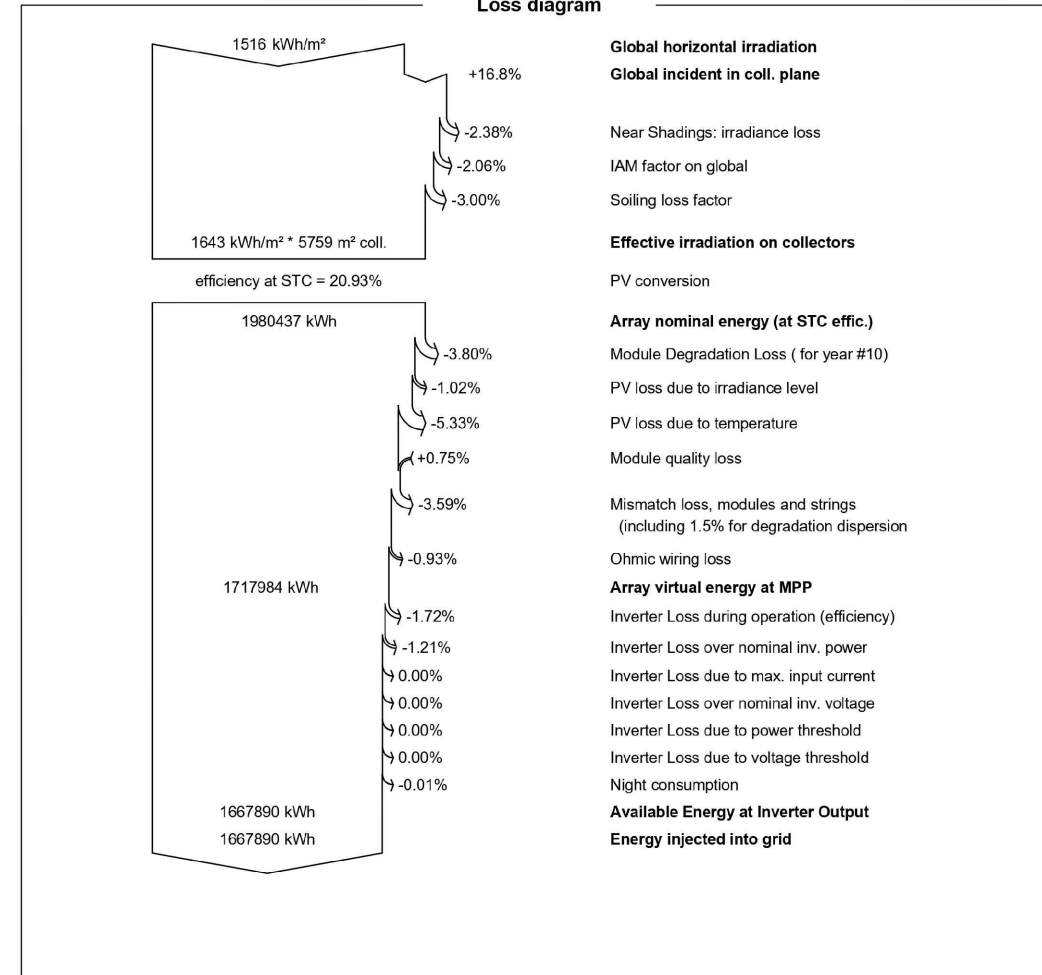


Project: Alazani 1
Variant: New simulation variant

PVsyst V7.4.0

VC0, Simulation date:
28/04/26 20:11
with v7.4.0

Loss diagram



28/04/26

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						006-2026-RAG-IP-6			
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Rev.	No.	Sh.	DRG.no	Sign.	Date	Introduction part	Stage	Sheet	Sheets
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						PVsyst - Simulation report			

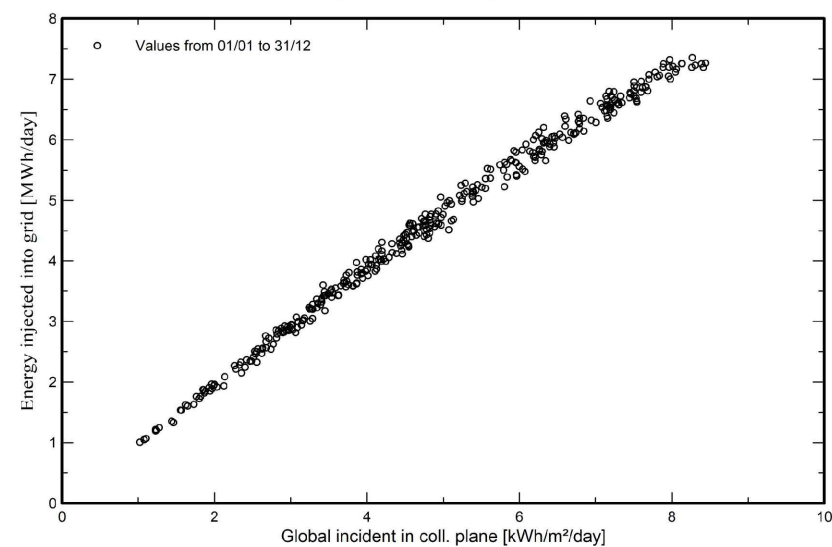


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VC0, Simulation date:
28/04/26 20:11
with v7.4.0

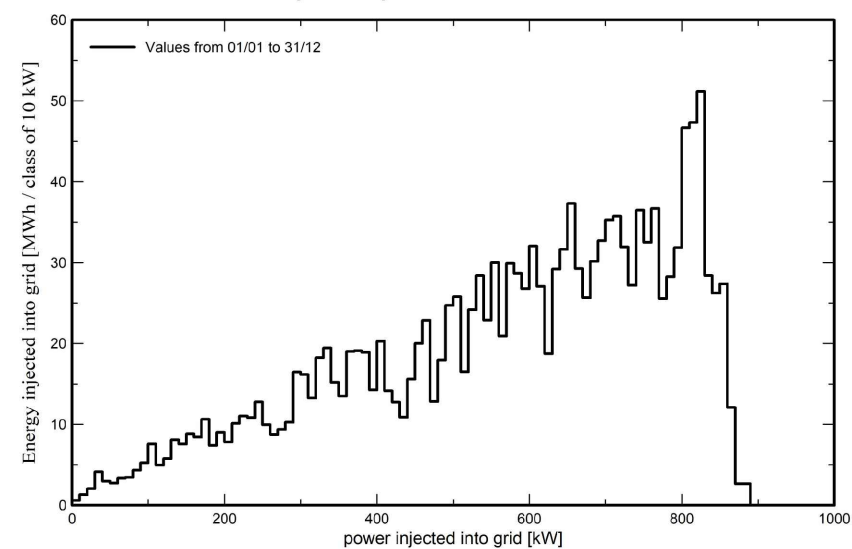
Project: Alazani 1
Variant: New simulation variant

Predef. graphs

Daily Input/Output diagram



System Output Power Distribution



28/04/26

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PVsyst V7.4.0
VC0, Simulation date:
28/04/26 20:11
with v7.4.0

Project: Alazani 1
Variant: New simulation variant

P50 - P90 evaluation

Meteo data

Source Meteonorm 8.1 (2003-2013), Sat=100%
Kind Not defined
Year-to-year variability(Variance) 0.0 %

Specified Deviation

Global variability (meteo + system)
Variability (Quadratic sum) 1.8 %

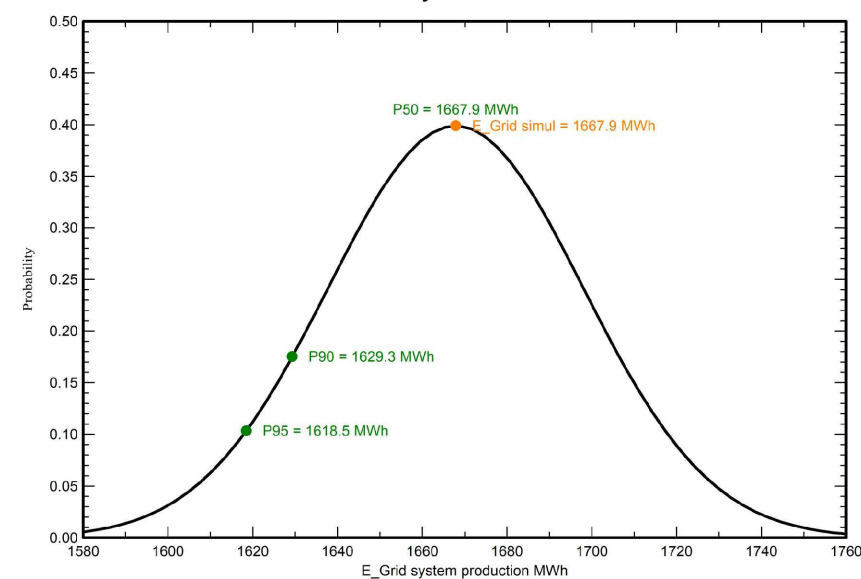
Simulation and parameters uncertainties

PV module modelling/parameters 1.0 %
Inverter efficiency uncertainty 0.5 %
Soiling and mismatch uncertainties 1.0 %
Degradation uncertainty 1.0 %

Annual production probability

Variability 30.1 MWh
P50 1667.9 MWh
P90 1629.3 MWh
P95 1618.5 MWh

Probability distribution



28/04/26

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						006-2026-RAG-IP-6			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Introduction part	Stage	Sheet	Sheets
Designed	A.Avagyan						D	4	4
Checked	D.Barkhudaryan								
						PVsyst - Simulation report			



Alazani 1 Solar Power Plant

(Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)

ARCHITECTURAL-CONSTRUCTION PART

SOLAR POWER STATION(1 MW)
PROJECT
N006-2026-RAG

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EXECUTOR
THE OHM ENERGY LLC

SEVAK GEVORGYAN

Explanatory Note of the architectural-construction part

Earthwork, Construction, and Structural Works of the Solar Photovoltaic Power Plant Project

This section of the project includes the following works:

1. Land grading of the solar photovoltaic power plant area;
2. Installation of driven piles for the metal structures of the plant;
3. Installation of metal fencing around the perimeter of the site;
4. Installation of the load-bearing metal structures for the solar panels.

1. Land Grading

Prior to the start of construction, the site must undergo land grading. This includes general surface leveling as well as the removal of the topsoil layer up to 200 mm thick, which must be transported offsite. The removed soil and vegetation must be disposed of in accordance with environmental regulations by contracting licensed waste removal services.

2. Installation of Driven Piles

The supporting structures of the solar power plant are mounted on galvanized steel driven piles. A total of 103 blocks are planned across the site, each being structurally independent. Each block is supported by 8 piles, totaling 824 piles for the entire installation. The piles are made of galvanized steel and have a channel-shaped cross-section. They are driven into pre-marked positions using specialized equipment such as hydraulic or vibratory hammers. Each pile is 1800 mm long. The piles are embedded into the ground to a depth of 1300 mm, without pre-drilling or concreting. Bolt holes are provided at the top of each pile for securing the metal structures.

Upon completion of installation, all bolts and screws, including those securing the solar panels, must be double-checked and re-tightened to ensure stability and durability.

3. Metal Perimeter Fencing

A metal mesh fence is installed along the perimeter of the solar power plant.

The main posts are made of square steel tubes 50×50×2 mm, 2.7 m, in a total quantity of 268 pcs. Each post is driven into the ground to a depth of 0.7 m.

In addition, 19 posts made of square steel tubes 80×80×2 mm, 4.5 m, are installed with an embedment depth of 1.3 m. These posts are intended for the future installation of CCTV cameras and lighting equipment.

Metal mesh fence panels measuring 1900 mm (height) × 2500 mm (length) are mounted onto the posts.

For site access, one gate with a width of 4000 mm and one wicket gate with a width of 1120 mm are provided.

4. Installation of the load-bearing metal structures.

A galvanized metal frame is used to mount the solar panels, designed specifically for bifacial modules. The frame is installed at an angle of 25° to the ground and consists of the following components:

1. Front post P1-1;
2. Rear post P1-2;
3. Base support element for posts PS-1;
4. Fastening profile for front and rear posts Sp1;
5. Connecting profile for rear posts BS-1;

6. Connecting profiles MB-1;
7. Tightening profile Dg-1;
8. Connecting component Cc-1;
9. Additional support pile P2-1;
10. Inverter mounting profile P2-2.

Assembly procedure of the metal frame:

1. Driving of PS-1 element into the ground;
2. Mounting of the front (P1-1) and rear (P1-2) posts onto PS-1;
3. Installation of Sp1 and connecting profiles MB-1;
4. Installation of Bs-1 between rear posts;
5. Installation of Dg-1 profiles for solar panel mounting;
6. Driving of P2-1 support piles into the ground;
7. Mounting of P2-2 profiles for inverter installation.

Upon completion of installation, all bolts and screws, including those securing the solar panels, must be double-checked and re-tightened to ensure stability and durability.

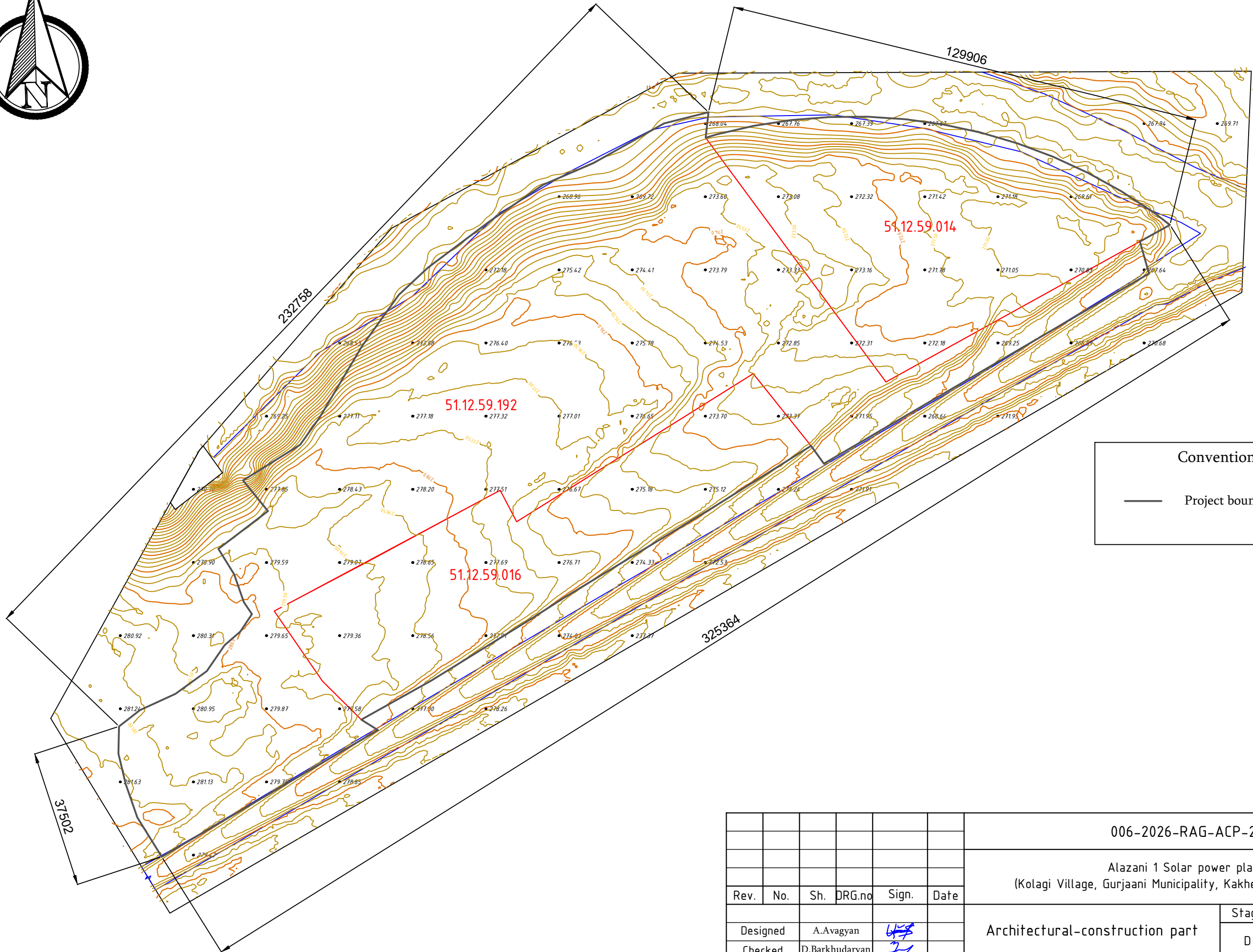
Note

The type of solar panels and equipment may be modified, provided that the minimum technical parameters and requirements specified in the project documentation are maintained. Any such changes must be coordinated and approved by the design organization and the client.

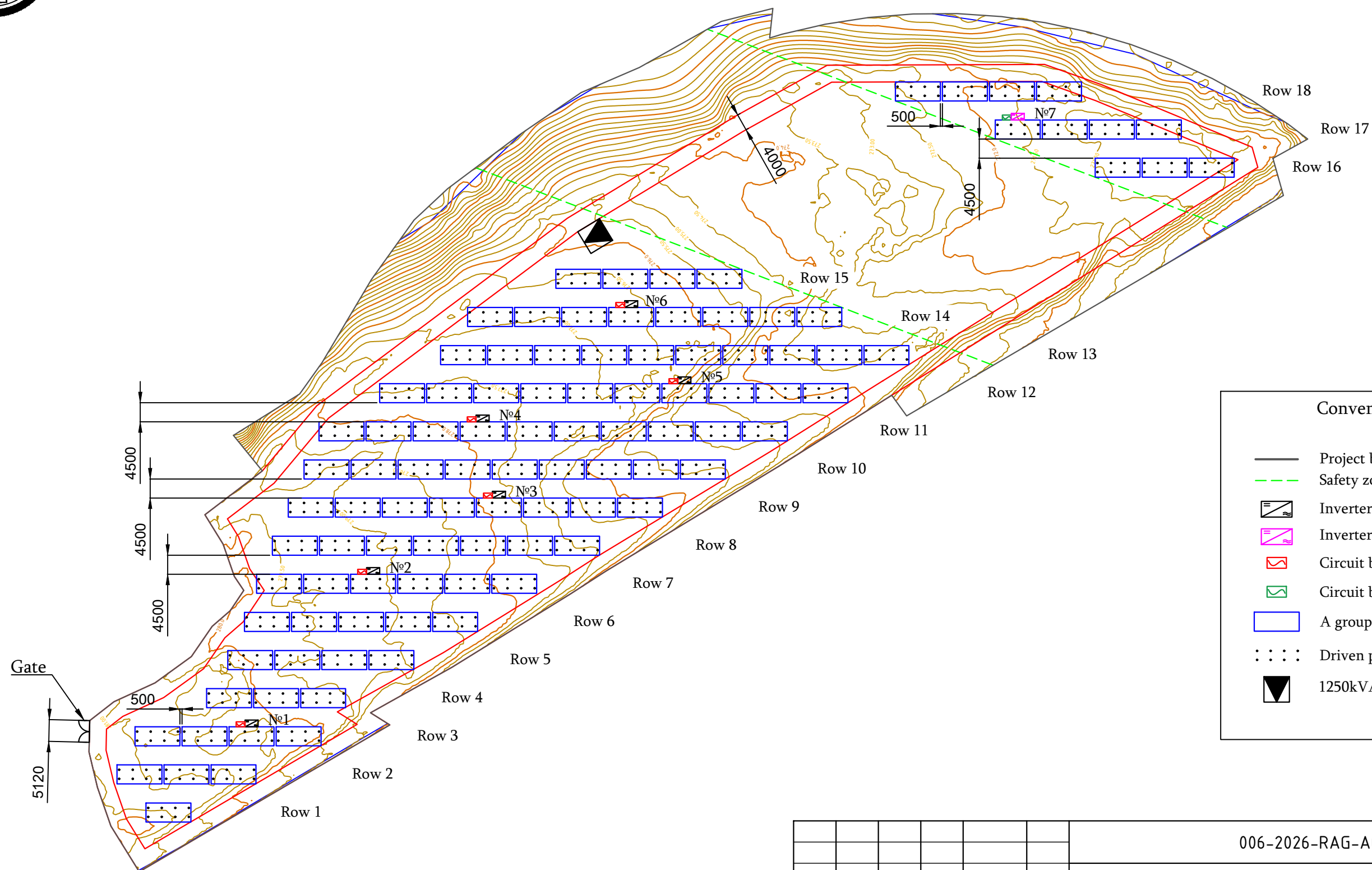
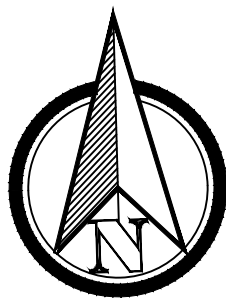
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2	Topographic survey	006-2026-RAG -ACP-2	2	
3	General layout of the solar power plant	006-2026-RAG -ACP-3	3	
4	Pile layout for solar panel structures	006-2026-RAG -ACP-4	4	2 sheet
5	Support pile for solar panel structures	006-2026-RAG -ACP-5	6	
6	Metal support frame general view	006-2026-RAG -ACP-6	7	2 sheet
7	Perimeter fence of the solar power plant	006-2026-RAG -ACP-7	9	3 sheet

						006-2026-RAG-ACP-1			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Architectural-construction part	Stage	Sheet	Sheets
							D	1	1
						Project composition, explanation			
									



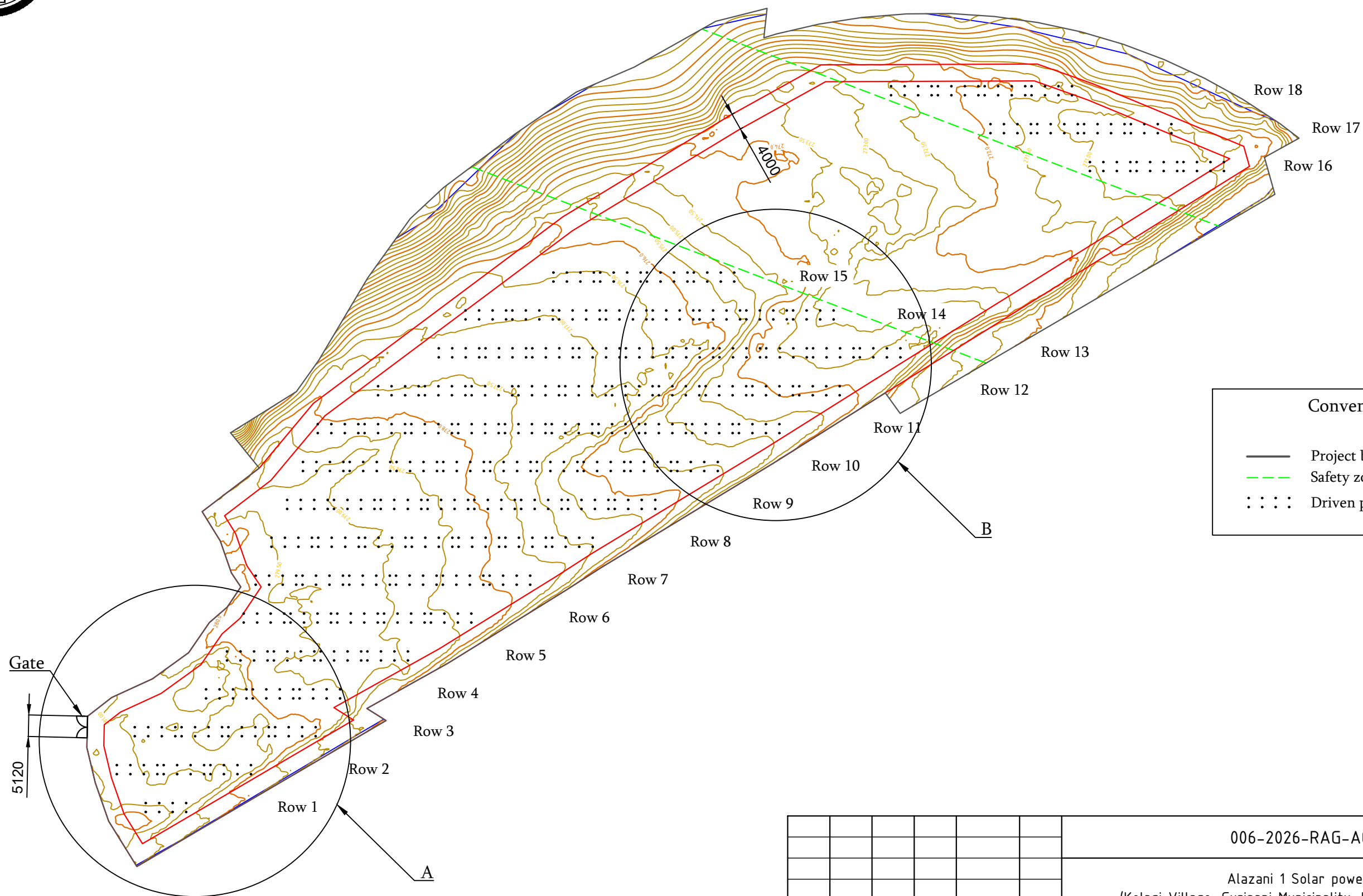
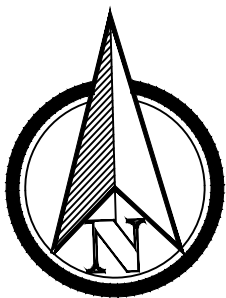
						006-2026-RAG-ACP-2				
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)				
Rev.	No.	Sh.	DRG.no	Sign.	Date					
Designed		A.Avagyan				Architectural-construction part		Stage	Sheet	Sheets
Checked		D.Barkhudaryan						D	1	1
						Topographic survey M1:1000		 OHM ENERGY SOLUTIONS		



Conventional signs

- Project boundary
- Safety zone boundary
- Inverter 165kVA(150kW)
- Inverter 110kVA(100kW)
- Circuit breaker 250A
- Circuit breaker 160A
- A group of 18 panels (n=103 pcs)
- Driven piles
- 1250kVA Power transformer

						006-2026-RAG-ACP-3			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Architectural-construction part	Stage	Sheet	Sheets
							D	1	1
						General layout of the solar power plant M1:1000			

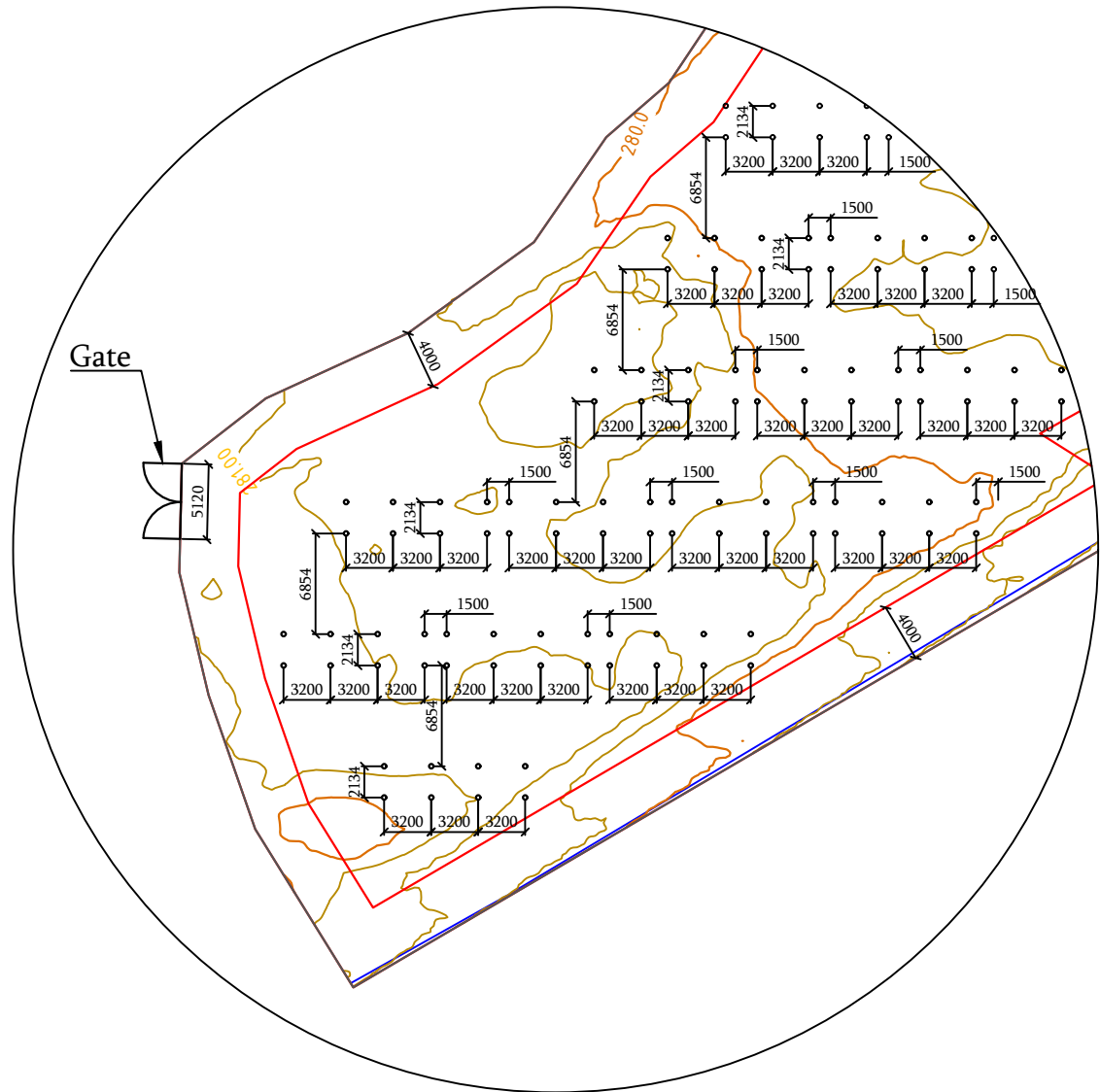


Conventional signs

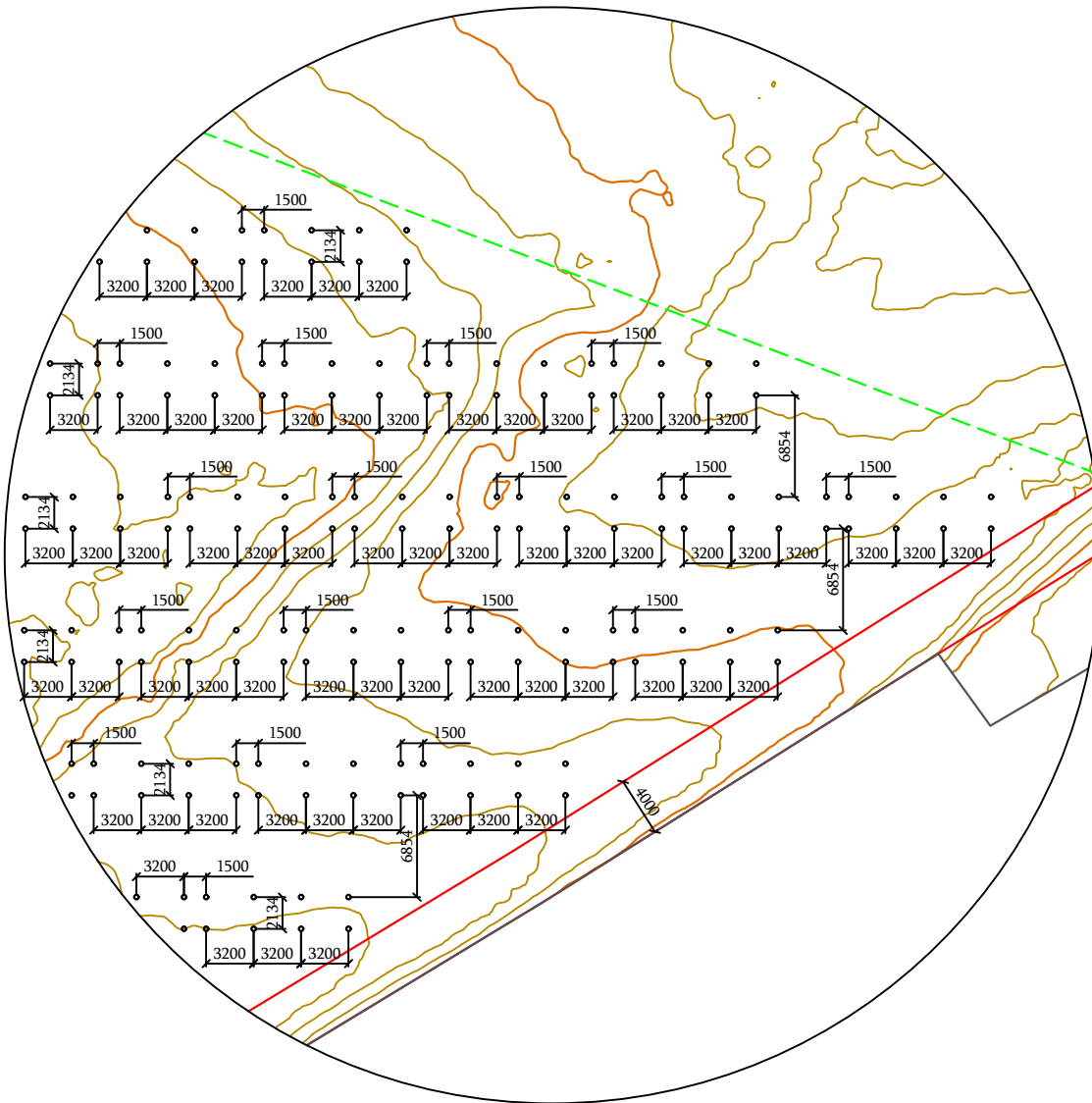
- Project boundary
- - - Safety zone boundary
- · · · Driven piles

						006-2026-RAG-ACP-4			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Architectural-construction part	Stage	Sheet	Sheets
Designed		A.Avagyan					D	1	2
Checked		D.Barkhudaryan							
						Pile layout for solar panel structures M1:1000			

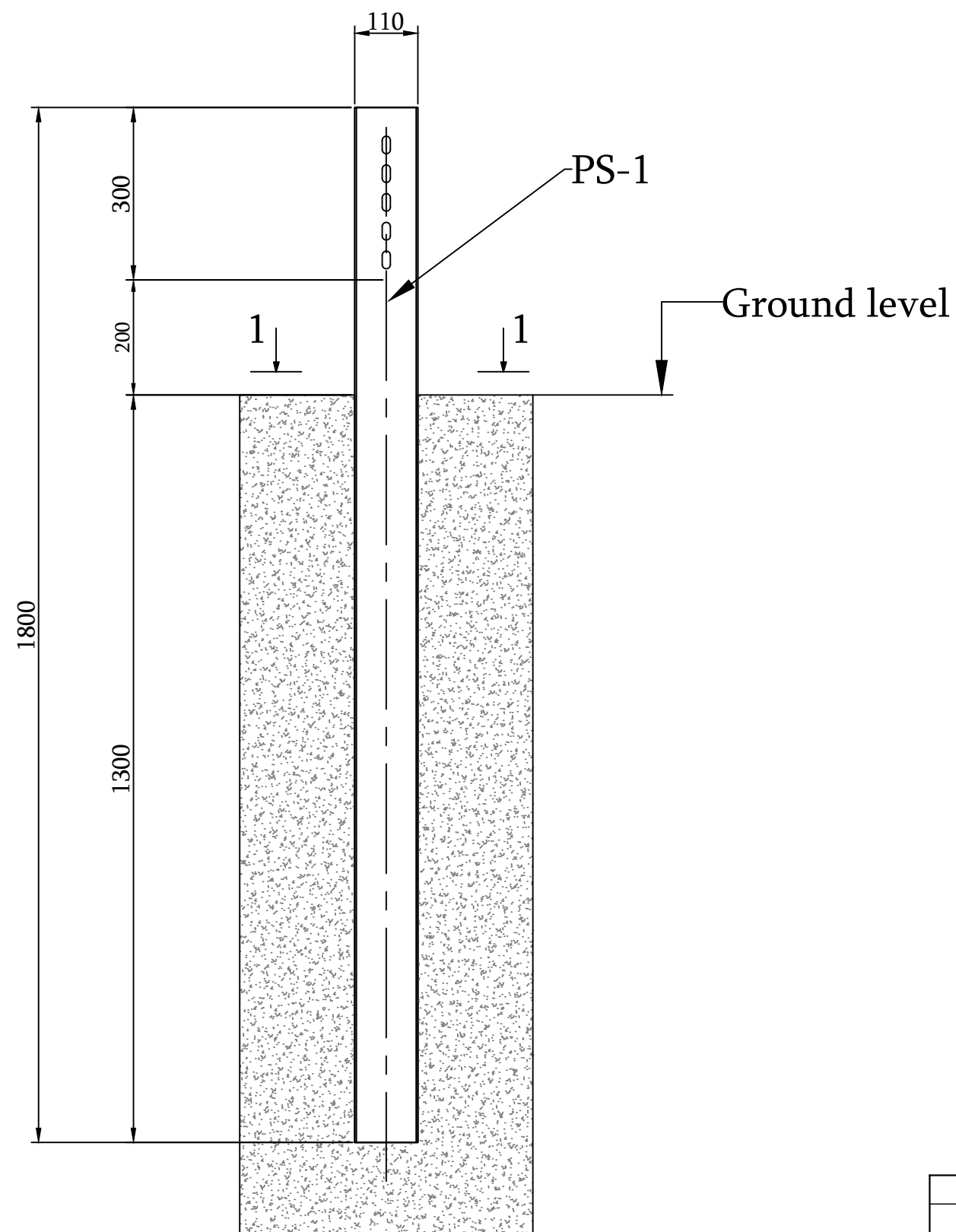
Detail A



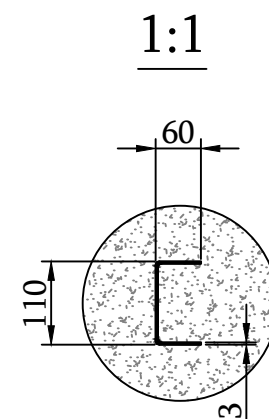
Detail B



						006-2026-RAG-ACP-4			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Architectural-construction part	Stage	Sheet	Sheets
							D	2	2
						Pile layout for solar panel structures M1:500			



Specification				
Nº	Product name	Dimensions	Spec, (mm)	Quantity
1	Pile PS-1	U110×60×3.0	L1800	824

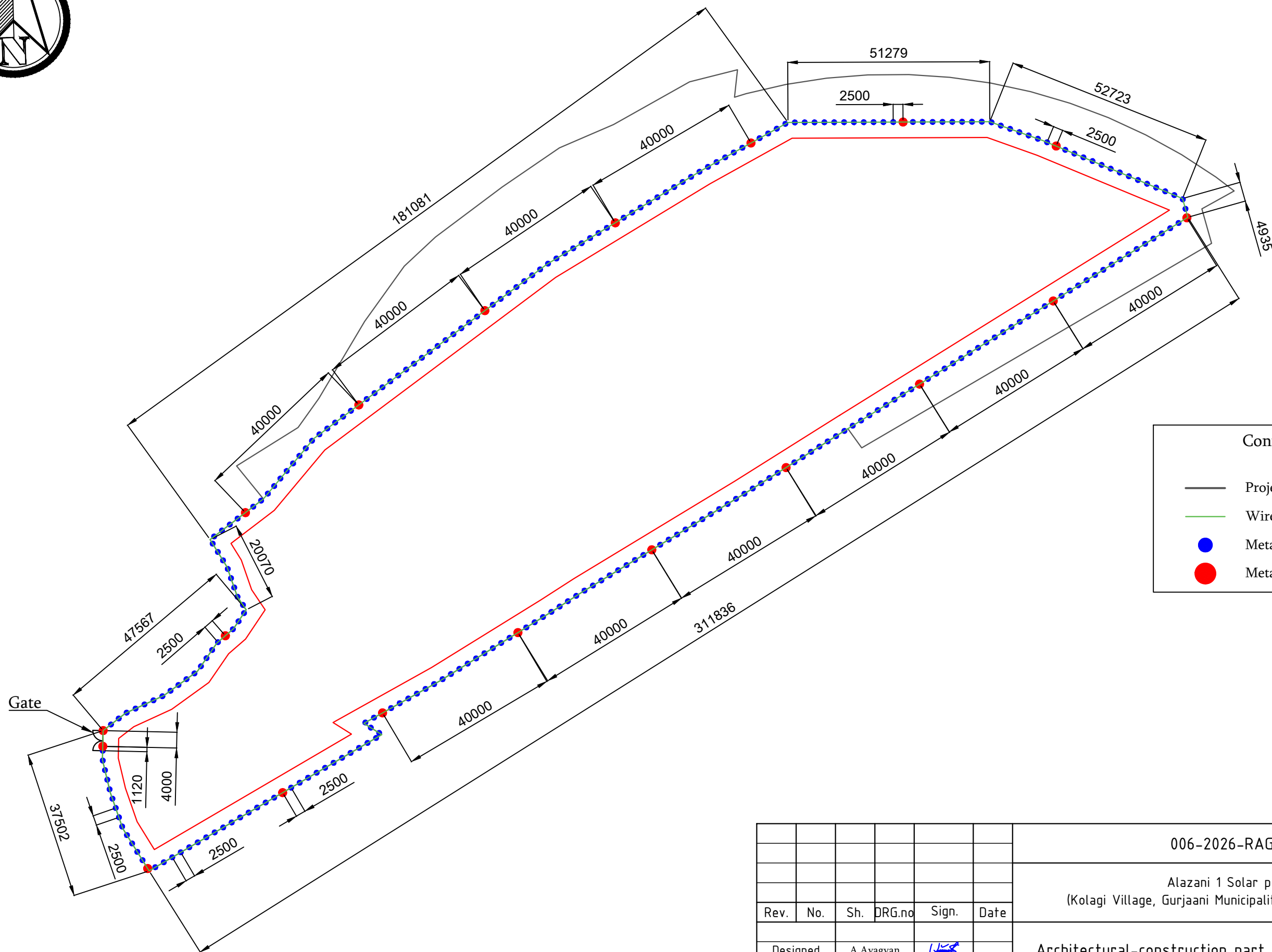
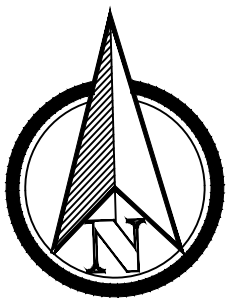


						006-2026-RAG-ACP-5		
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)		
Rev.	No.	Sh.	DRG.no	Sign.	Date	Architectural-construction part	Stage	Sheet
							D	1
						Support pile for solar panel structures M1:10		

Quantity for 1 block					
Nº	Product name	Dimensions	Spec, (mm)	Material	Quantity
1	Pile PS-1	U110×60×3.0	L1800	Q355B	8
2	Pile P1-1	100×50×15×3.0	L1300	S350GD	4
3	Pile P1-2	100×50×15×3.0	L2287	S350GD	4
4	Support Sp-1	U60×40×2.0	L2270	S350GD	4
5	Back support BS-1	U60×40×2.0	L3700	S350GD	4
6	Main beam Mb-1	C113×70×62×24×2.5	L5295	S350GD	4
9	Cross rail connector Cc-1	U121×65×3.0	L300	S350GD	2
10	C type Beam Dg-1	80×60×15×1.5	L3900	S350GD	10
11	End clamp	H30-L50	L50	6005-T5	8
12	Inner clamp	W20-L50	L50	6005-T5	32
13	Bolt (Clamp)	M8x45 (With 1 big flats, 1 bullet and 1 nut)	-	SUS304	40
14	Bolt (Cross rail connector)	M10x30 (With 1 big flats, 1 bullet and 1 nut)	M10*30	M8.8	8
15	Bolt (Mb & C type Beam)	M12x30 (With 1 big flats, 1 bullet and 1 nut)	M12*30	M8.8	20
16	Bolt (P1 & Mb)	M12x30 (With 1 big flats, 1 bullet and 1 nut)	M12*30	M8.8	8
17	Bolt (P1 & Sp-1)	M12x30 (With 1 big flats, 1 bullet and 1 nut)	M12*30	M8.8	8
18	Bolt (P1 & PS-1)	M12x30 (With 1 big flats, 1 bullet and 1 nut)	M12*30	M8.8	48
19	Bolt (P1-2 & BS-1)	M12x30 (With 1 big flats, 1 bullet and 1 nut)	M12*30	M8.8	8

Quantity for 1 inverter					
Nº	Product name	Dimensions	Spec, (mm)	Material	Quantity
1	C type Column P2-1	C100×50×15×3.0	L2600	S350GD	1
2	C type diagonal bracing P2-2	U60×40×2.0	L3350	S350GD	2
3	Bolt	10x400(U61x170) (With 1 big flats, 1 bullet and 1 nut)	-	M8.8	6

						006-2026-RAG-ACP-6			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Architectural-construction part	Stage	Sheet	Sheets
Designed	A.Avagyan						D	2	2
Checked	D.Barkhudaryan								
						Metal support frame general view			

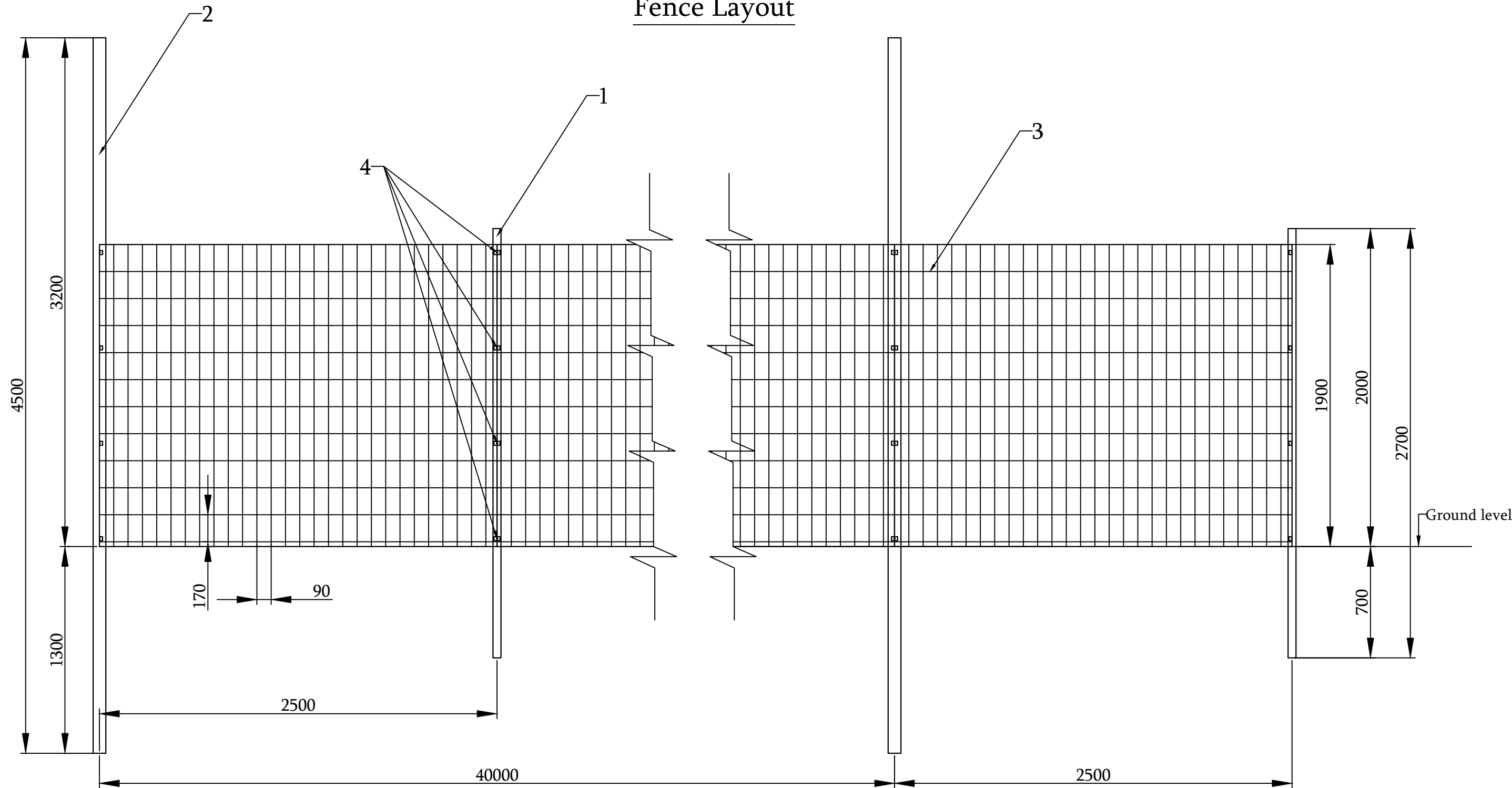


Conventional signs

- Project boundary
- Wire mesh fence (l=718 m)
- Metal pole h=2700mm (n=268 pcs)
- Metal pole h=4500mm (n=19 pcs)

						006-2026-RAG-ACP-7			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Architectural-construction part	Stage	Sheet	Sheets
Designed		A.Avagyan					D	1	3
Checked		D.Barkhudaryan							
						Perimeter fence of the solar power plant M1:1000			

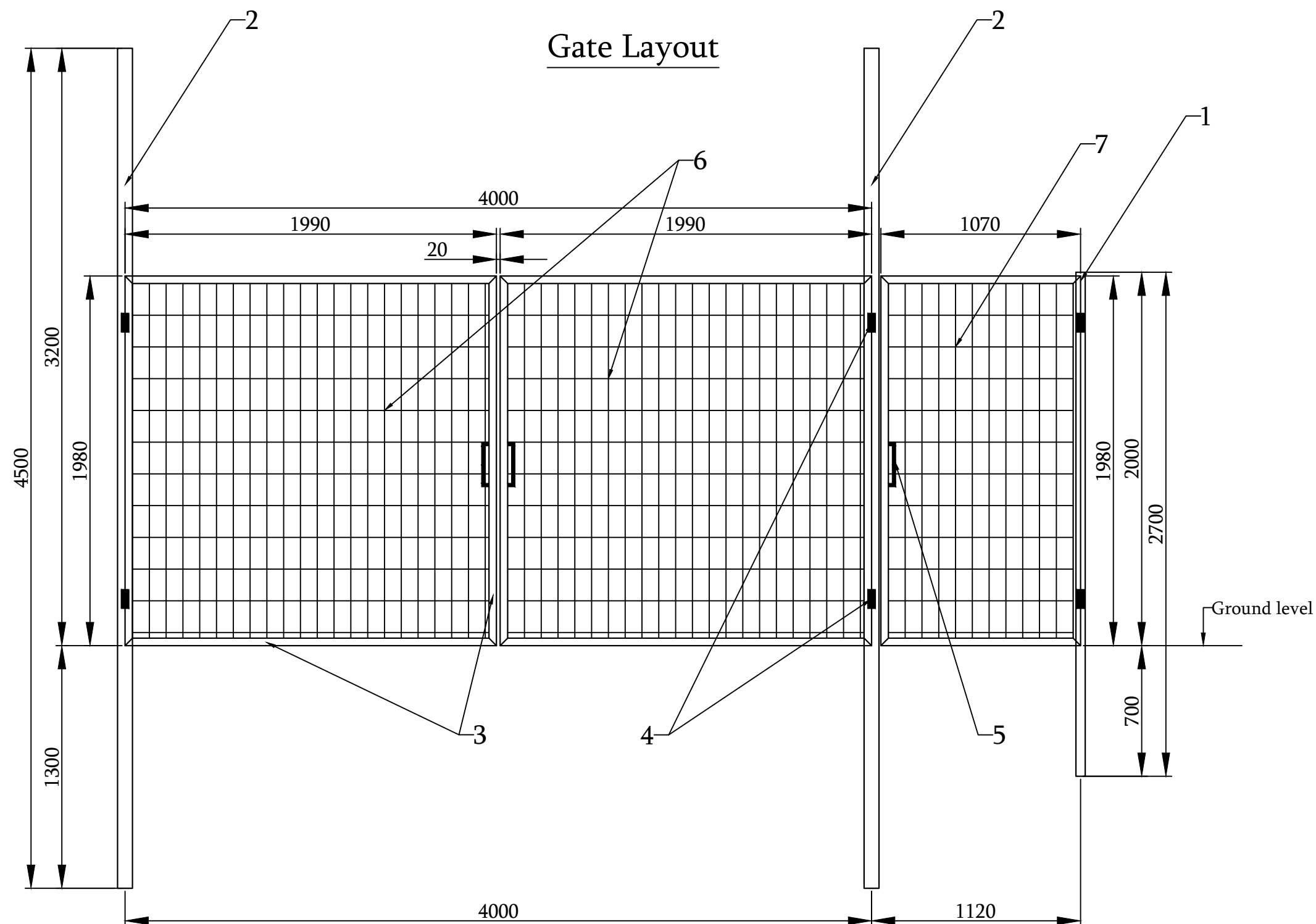
Fence Layout



Specification					
N	Name	Quantity (pcs)	Length per unit	Unit	Total quantity
1	Metal pipe (50x50x2mm)	267	2.7	m	720.9
2	Metal pipe (80x80x2mm)	17	4.5	m	76.5
3	Web (1900x2500mm)	284	2.5	m	710.0
4	Connector kit			pcs	1136

						006-2026-RAG-ACP-7			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Architectural-construction part	Stage	Sheet	Sheets
							D	2	3
						Perimeter fence of the solar power plant M1:25			

Gate Layout



Specification			
N	Name	Unit	Total quantity
1	Metal pipe (50x50x2mm)	pcs/m	1 / 2.7
2	Metal pipe (80x80x2mm)	pcs/m	2 / 9
3	Metal pipe (60x40x2)	m	22
4	Door hinges	pcs	6
5	Door handle	pcs	3
6	Web (1980x1990 mm)	pcs	2
7	Web (1980x1070 mm)	pcs	1

						006-2026-RAG-ACP-7			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Architectural-construction part	Stage	Sheet	Sheets
Designed		A.Avagyan					D	3	3
Checked		D.Barkhudaryan							
						Perimeter fence of the solar power plant M1:25	 OHM ENERGY SOLUTIONS		

Alazani 1 Solar Power Plant

(Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)

ELECTRICAL PART PART

SOLAR POWER STATION(1 MW)
PROJECT
N006-2026-RAG

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THE OHM ENERGY LLC

SEVAK GEVORGYAN

Explanatory Note of the Electrical Part

This section illustrates the connection of solar panels to the input circuits of the inverters. Electrical diagrams and parameters are provided to ensure proper direct current formation and optimal load distribution among the Maximum Power Point Trackers (MPPT) of the inverters.

For this project, HUAWEI inverters of two types have been selected. The technical specifications of the inverters are provided in the design documentation. The nominal power of the first type of inverters is 165 kVA (150 kW), quantity — 6 units. Each inverter is equipped with 7 independent Maximum Power Point Trackers (MPPT), each capable of connecting 3 direct current strings. The nominal power of the second type of inverter is 110 kVA (100 kW), quantity — 1 unit. This inverter is equipped with 10 independent MPPTs, each capable of connecting 2 direct current strings of the same voltage. The nominal voltage of all inverters is 0.4 kV.

Solar panels are connected using direct current cables with a cross-section of 1×6 mm², utilizing specialized MC4 connectors. Automatic circuit breakers rated at 0.4 kV and 250A and 160A are provided for connection and disconnection of inverters; these are housed in metal enclosures measuring 700×500×250 mm and installed adjacent to the inverters as per the design.

The alternating output current from the inverters is transmitted via AVVG cables, 4×240 mm² cross-section, connected to the 0.4 kV distribution points of the transformer substations. Cable selection is based on current carrying capacity and verified to ensure voltage drop does not exceed 5%.

Power cables to the 0.4/10 kV, 1250 kVA transformer substations are laid underground at a depth of 0.9 m. The minimum bending radius of cables must be no less than 15 times the cable diameter.

Cable trenches include a 100 mm thick sand bedding on which cables are laid and covered with an additional 150 mm sand layer. Backfilling is performed with excavated soil. Surplus soil must be removed from the site in accordance with contracts with authorized waste management organizations.

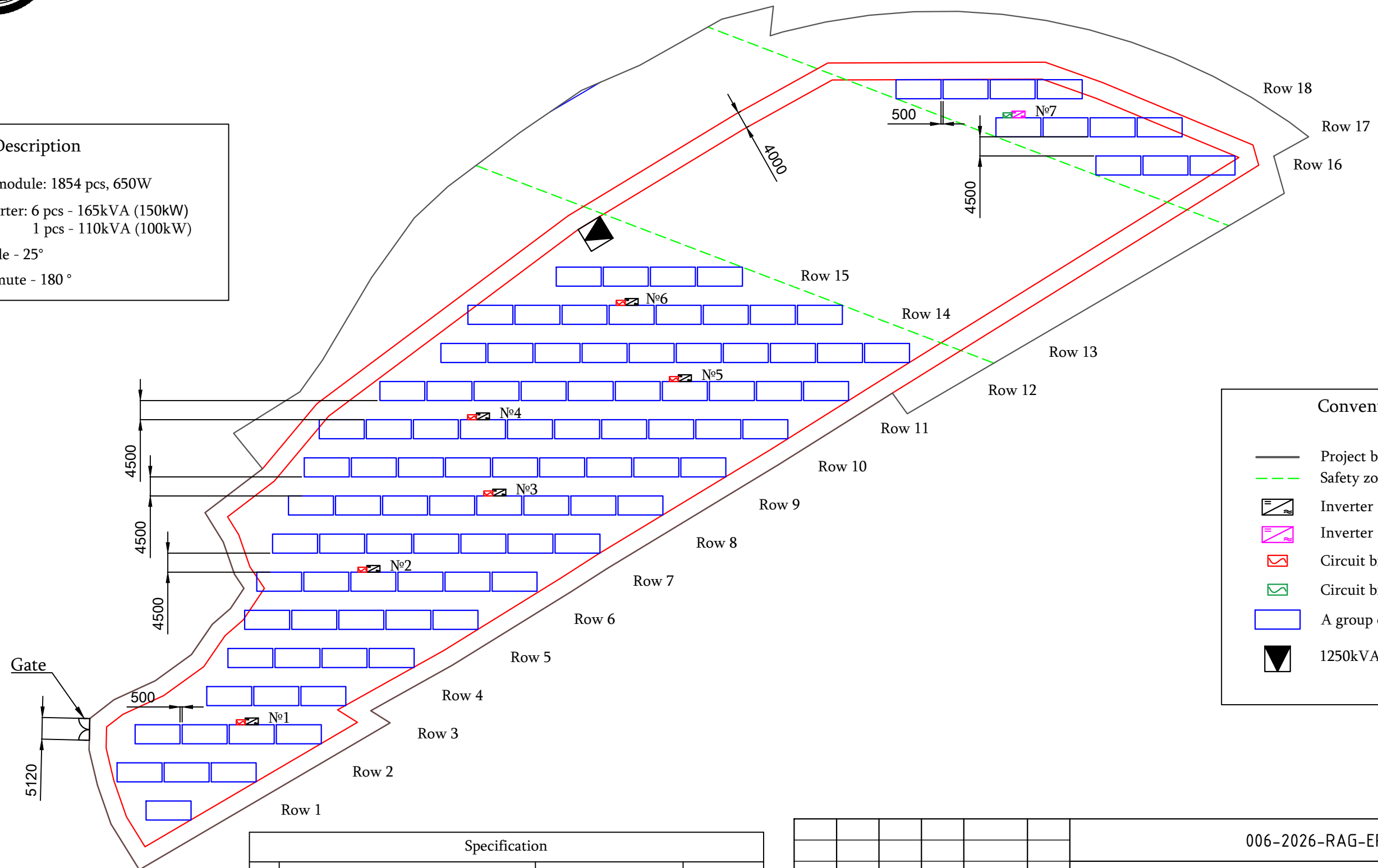
Warning tapes are installed along the entire length of the trenches to protect cables from mechanical damage.

Site lighting is provided by 18 luminaires of 50 W power.

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3	Inverter mounting series	006-2026-RAG -EP-3	3	
4	DC and AC cable connection diagram to inverter	006-2026-RAG -EP-4	4	7 sheet
5	Connection scheme of panel in block	006-2026-RAG -EP-5	11	
6	Appearance of DC power cables between blocks	006-2026-RAG -EP-6	12	
7	Appearance of DC power cables in blocks	006-2026-RAG -EP-7	13	
8	250A and 160A distribution point for inverter	006-2026-RAG -EP-8	14	
9	0.4 kV power cable lines	006-2026-RAG -EP-9	15	
10	Trench cross-sections for 0.4 kV power cable	006-2026-RAG -EP-10	16	
11	DC cable underground routing to next row	006-2026-RAG -EP-11	17	
12	Outdoor lighting and security cameras layout	006-2026-RAG -EP-12	18	

						006-2026-RAG-EP-1			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Electrical Part	Stage	Sheet	Sheets
						Project composition, explanation		1	1

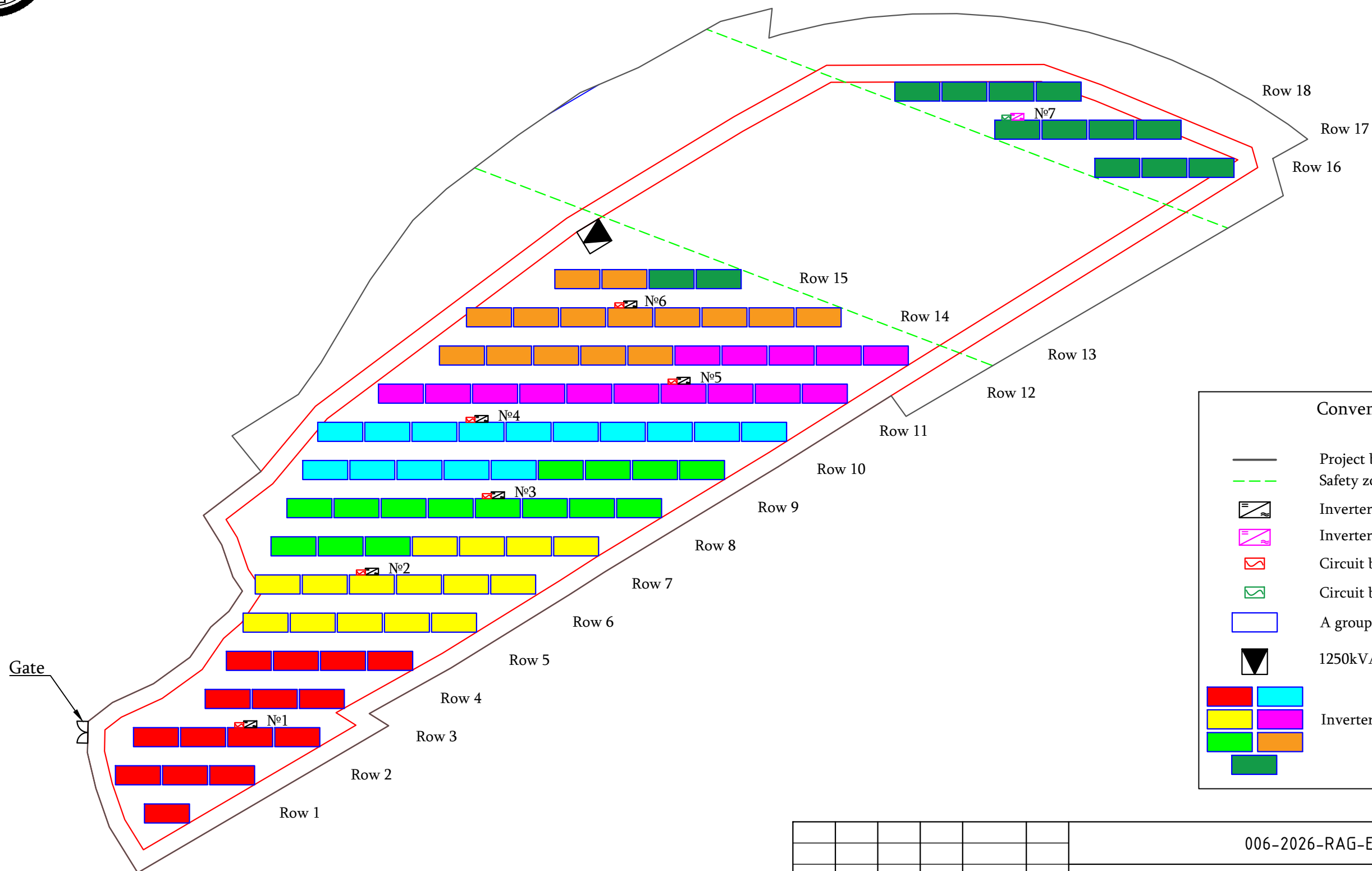
PV module: 1854 pcs, 650W
Inverter: 6 pcs - 165kVA (150kW)
 1 pcs - 110kVA (100kW)
Angle - 25°
Azimute - 180 °



	Project boundary
	Safety zone boundary
	Inverter 165kVA(150kW)
	Inverter 110kVA(100kW)
	Circuit breaker 250A
	Circuit breaker 160A
	A group of 18 panels (n=103 pcs)
	1250kVA Power transformer

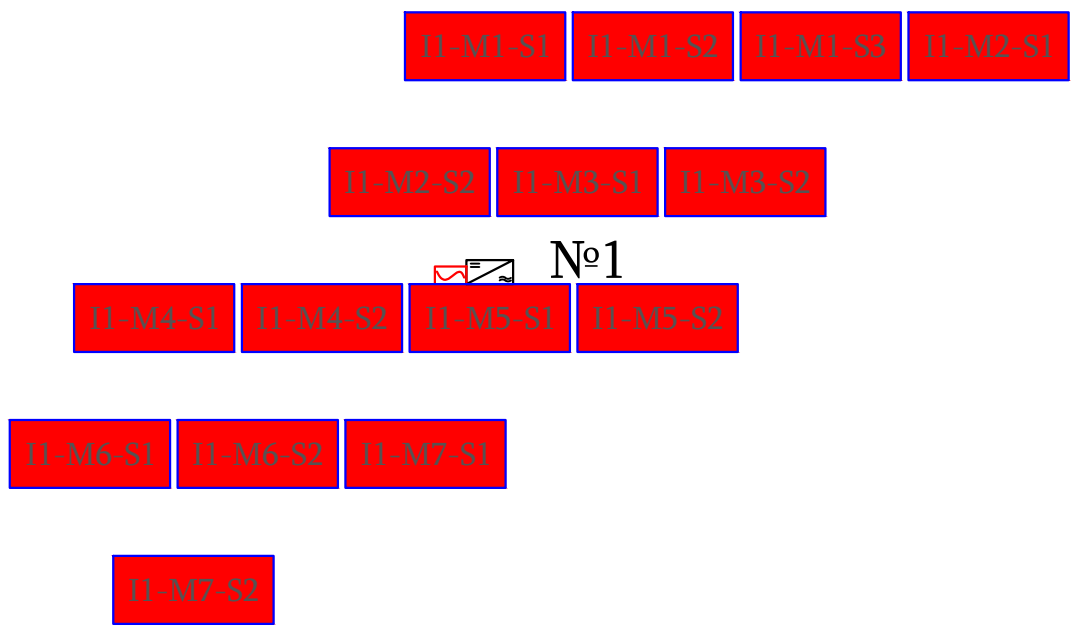
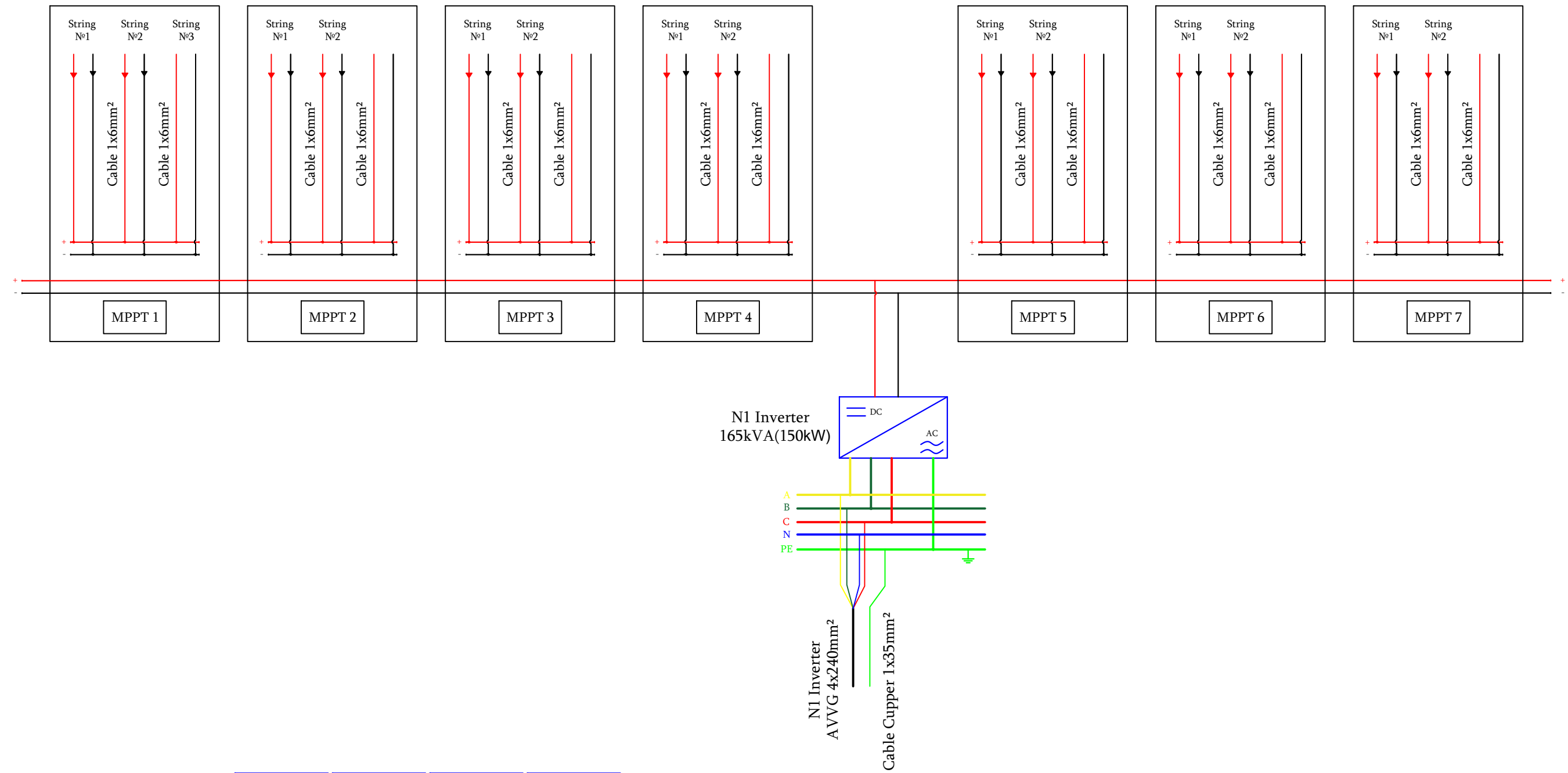
Specification			
N	Title	Unit of measurement	Quantity
1	Inverter 165kVA(150kW)	pcs	6
2	Inverter 110kVA(100kW)	pcs	1
3	0.4 kV circuit breaker 250A	pcs	6
4	0.4 kV circuit breaker 160A	pcs	1
5	0.4 kV switch box 700x500x250mm	pcs	7

						006-2026-RAG-EP-2				
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)				
Rev.	No.	Sh.	DRG.no	Sign.	Date					
Designed		A.Avagyan				Electrical Part		Stage	Sheet	Sheets
Checked		D.Barkhudaryan						D	1	1
						Inverter installation plant M1:1000		 OHM ENERGY SOLUTIONS		

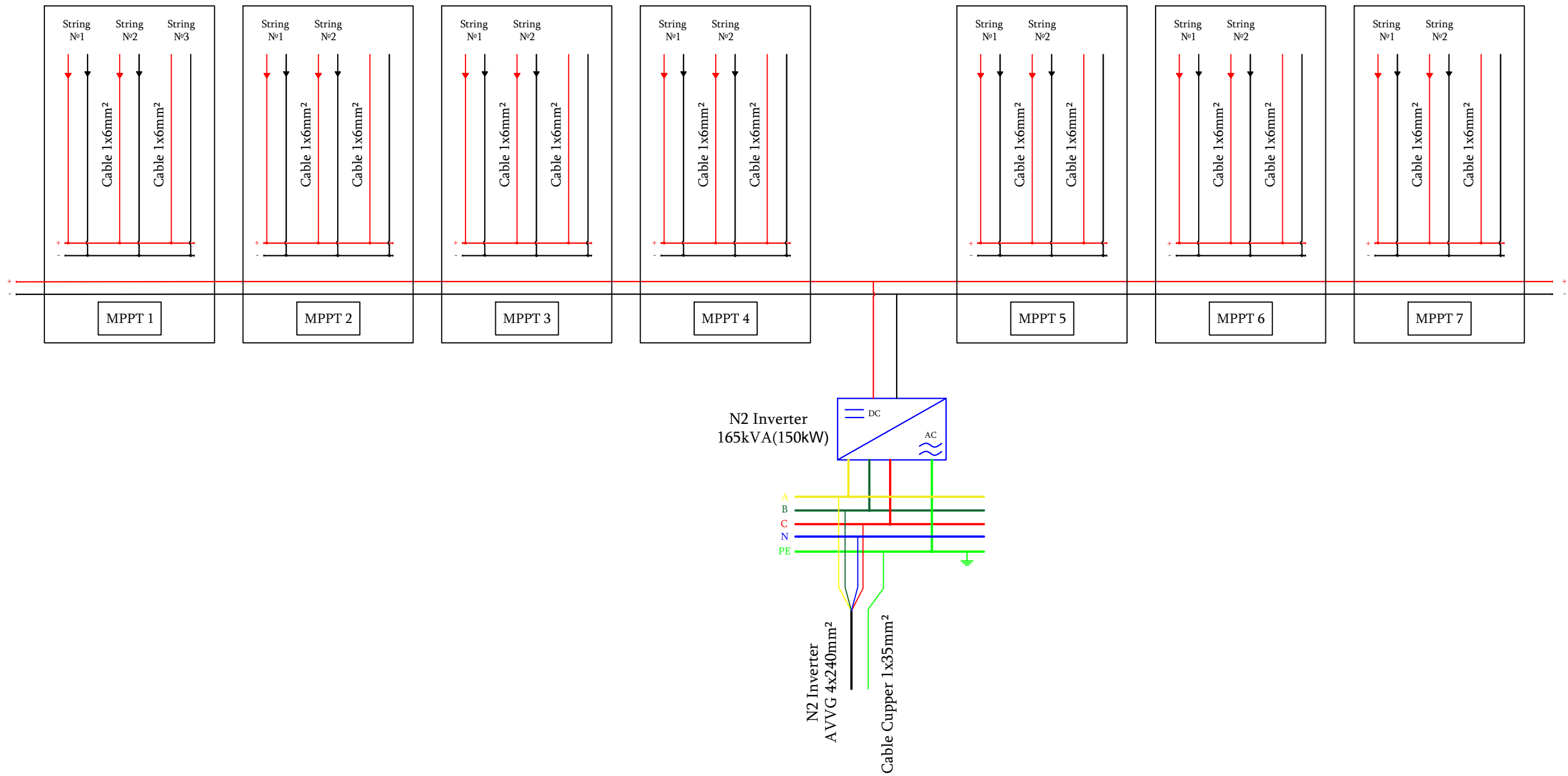


Specification			
N	Title	Unit of Measurement	Quantity
1	DC cable 1x6mm ²	m	7700
2	DC connector MC4 (Male)	pcs	206
3	DC connector MC4 (Female)	pcs	206

						006-2026-RAG-EP-3			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date				
Designed		A.Avagyan				Electrical Part	Stage	Sheet	Sheets
Checked		D.Barkhudaryan					D	1	1
						Inverter mounting series M1:1000			



						006-2026-RAG-EP-4			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Electrical Part	Stage	Sheet	Sheets
Designed		A.Avagyan					D	1	7
Checked		D.Barkhudaryan							
						DC and AC cable connection diagram to inverter			



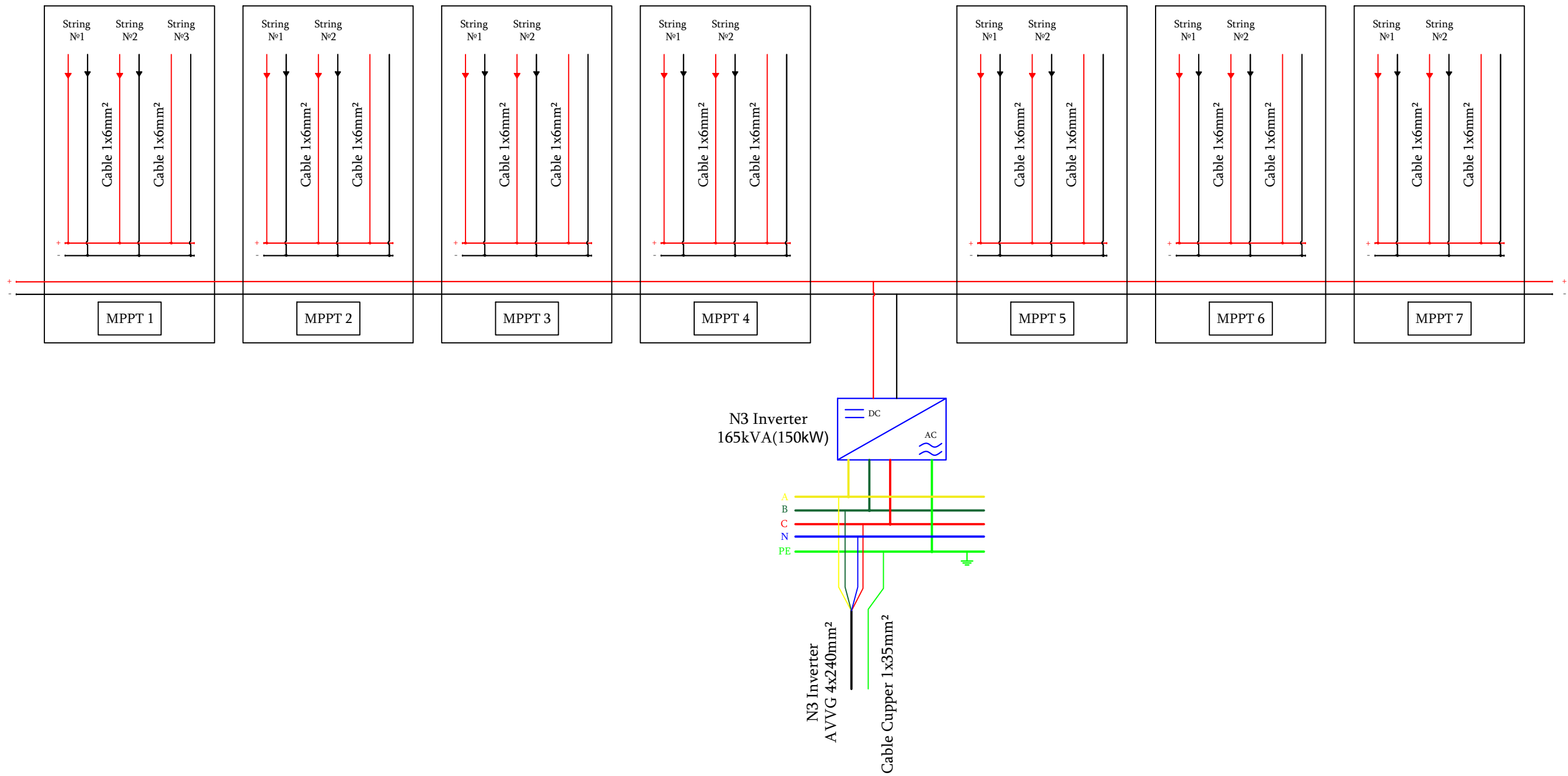
I2-M1-S1 I2-M1-S2 I2-M1-S3 I2-M2-S1

№2

I2-M2-S2 I2-M3-S1 I2-M3-S2 I2-M4-S1 I2-M4-S2 I2-M5-S1

I2-M5-S2 I2-M6-S1 I2-M6-S2 I2-M7-S1 I2-M7-S2

						006-2026-RAG-EP-4			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Electrical Part	Stage	Sheet	Sheets
Designed		A.Avagyan					D	2	7
Checked		D.Barkhudaryan							
						DC and AC cable connection diagram to inverter			



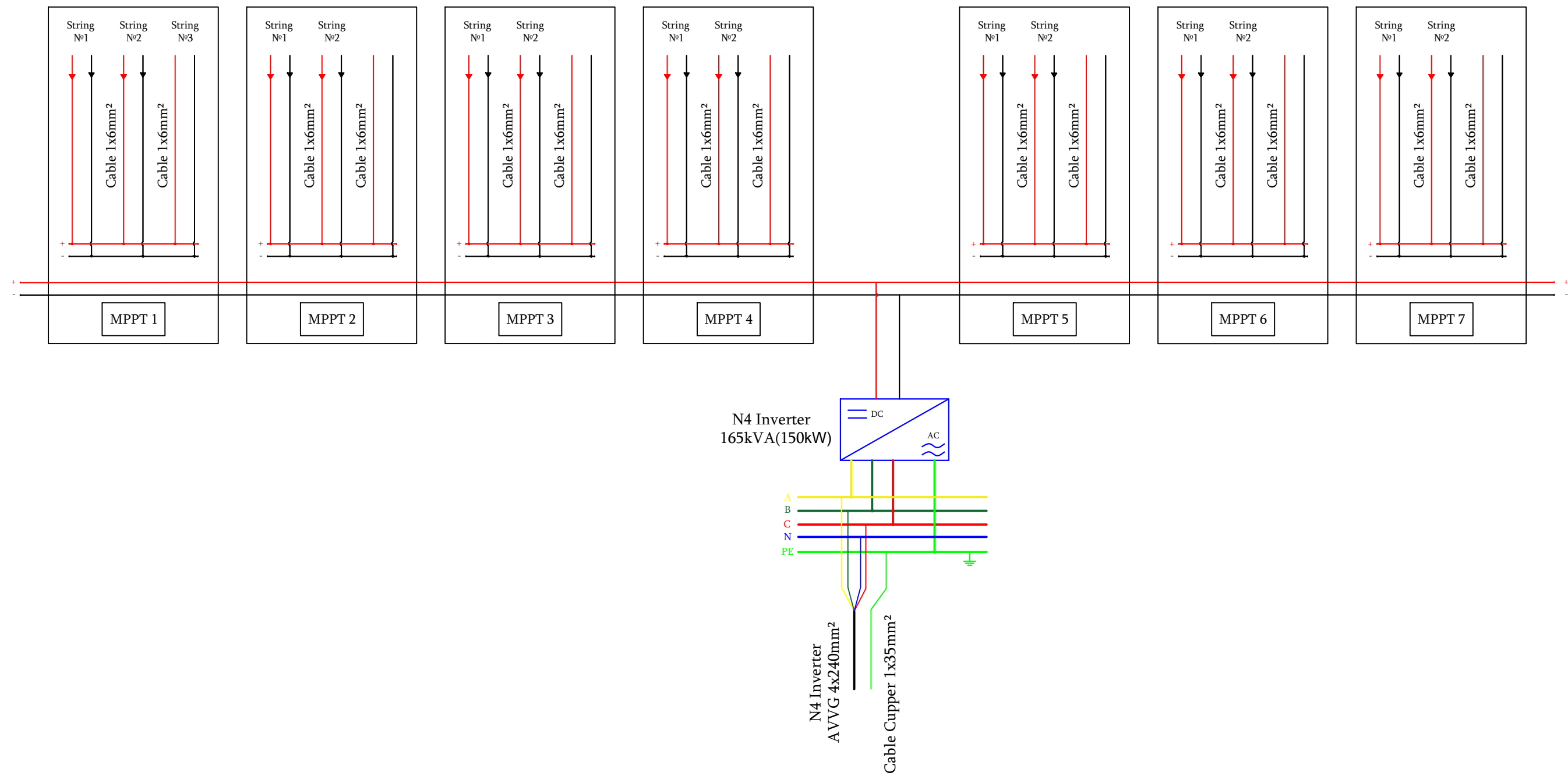
I3-M1-S1 I3-M1-S2 I3-M1-S3 I3-M2-S1

№3

I3-M2-S2 I3-M3-S1 I3-M3-S2 I3-M4-S1 I3-M4-S2 I3-M5-S1 I3-M5-S2 I3-M6-S1

I3-M6-S2 I3-M7-S1 I3-M7-S2

						006-2026-RAG-EP-4			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Electrical Part	Stage	Sheet	Sheets
Designed		A.Avagyan					D	3	7
Checked		D.Barkhudaryan							
						DC and AC cable connection diagram to inverter			

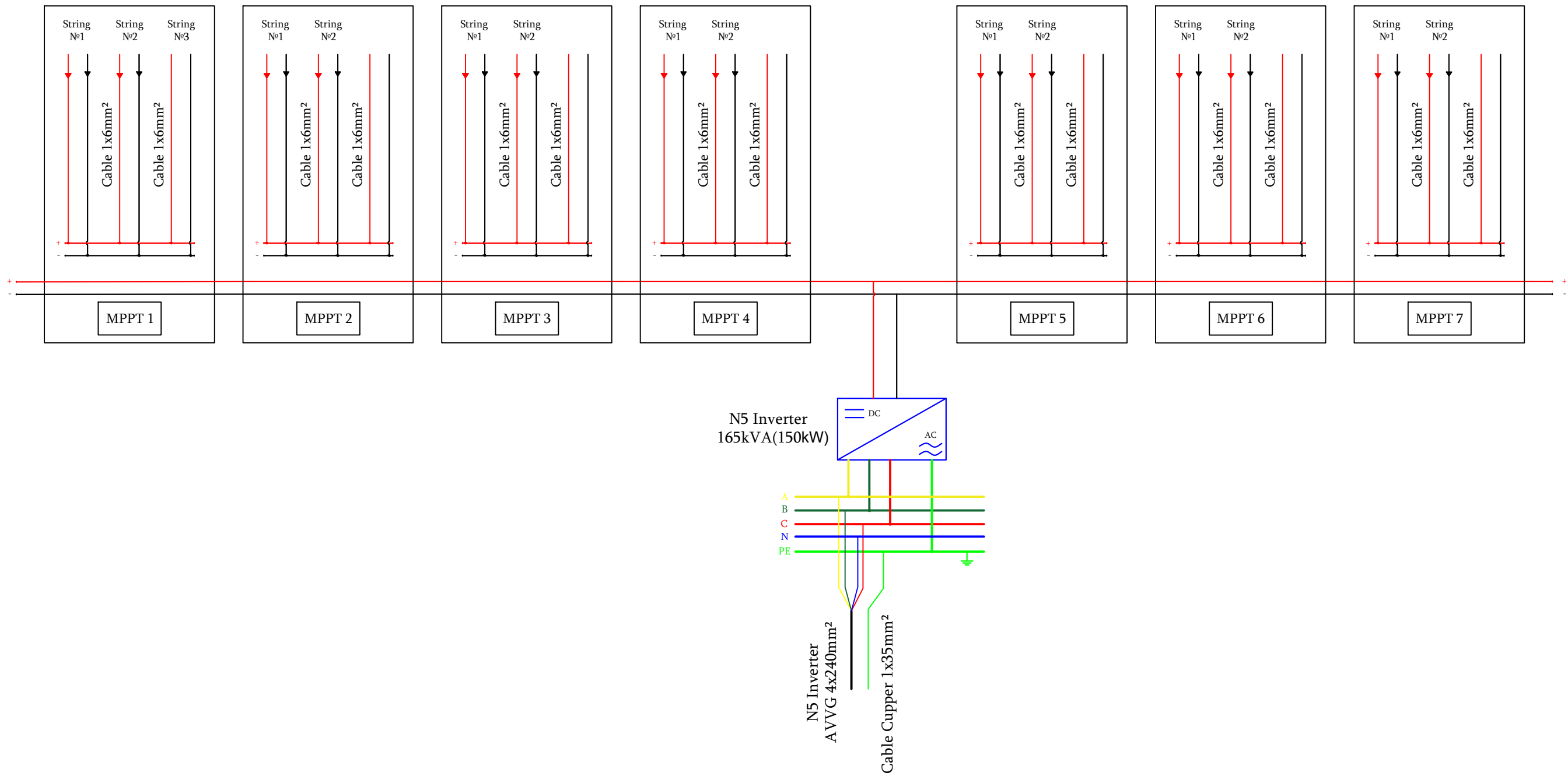


№4

I4-M1-S1 I4-M1-S2 I4-M1-S3 I4-M2-S1 I4-M2-S2 I4-M3-S1 I4-M3-S2 I4-M4-S1 I4-M4-S2 I4-M5-S1

I4-M5-S2 I4-M6-S1 I4-M6-S2 I4-M7-S1 I4-M7-S2

						006-2026-RAG-EP-4			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Electrical Part	Stage	Sheet	Sheets
Designed		A.Avagyan					D	4	7
Checked		D.Barkhudaryan							
						DC and AC cable connection diagram to inverter			



- I5-M1-S1

I5-M1-S2

I5-M1-S3

I5-M2-S1

I5-M2-S2
- I5-M3-S1

I5-M3-S2

I5-M4-S1

I5-M4-S2

I5-M5-S1

I5-M5-S2

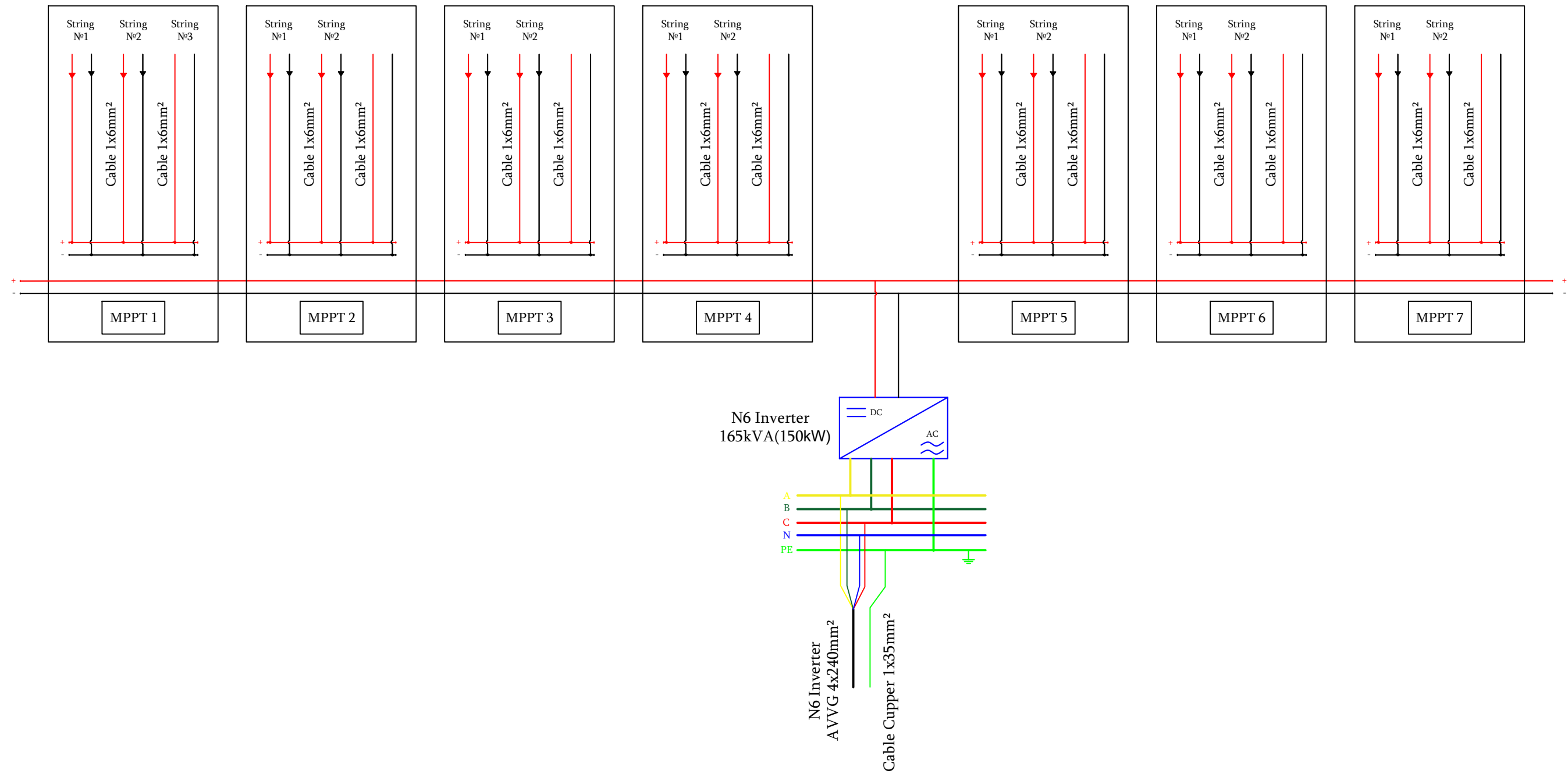
I5-M6-S1

I5-M6-S2

I5-M7-S1

I5-M7-S2

						006-2026-RAG-EP-4			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Electrical Part	Stage	Sheet	Sheets
Designed		A.Avagyan					D	5	7
Checked		D.Barkhudaryan							
						DC and AC cable connection diagram to inverter			



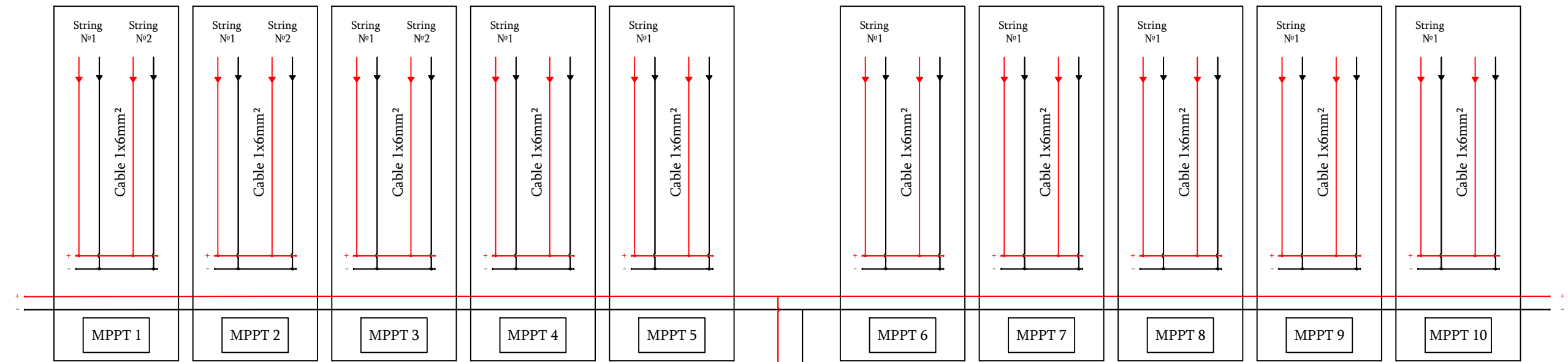
I6-M1-S1 I6-M1-S2

I6-M1-S3 I6-M2-S1 I6-M2-S2 I6-M3-S1 I6-M3-S2 I6-M4-S1 I6-M4-S2 I6-M5-S1

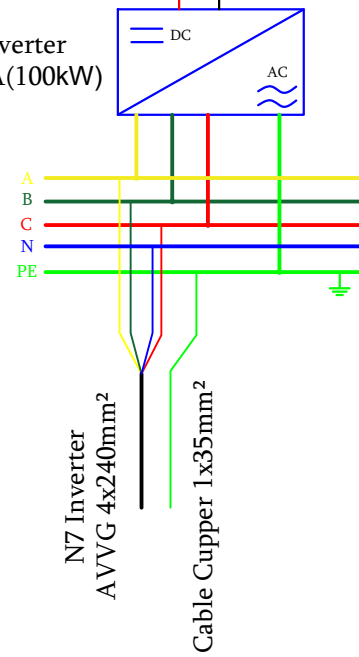
№6

I6-M5-S2 I6-M6-S1 I6-M6-S2 I6-M7-S1 I6-M7-S2

						006-2026-RAG-EP-4			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Electrical Part	Stage	Sheet	Sheets
Designed		A.Avagyan					D	6	7
Checked		D.Barkhudaryan							
						DC and AC cable connection diagram to inverter			



N7 Inverter
110kVA(100kW)



I7-M1-S1 I7-M1-S2 I7-M2-S1 I7-M2-S2

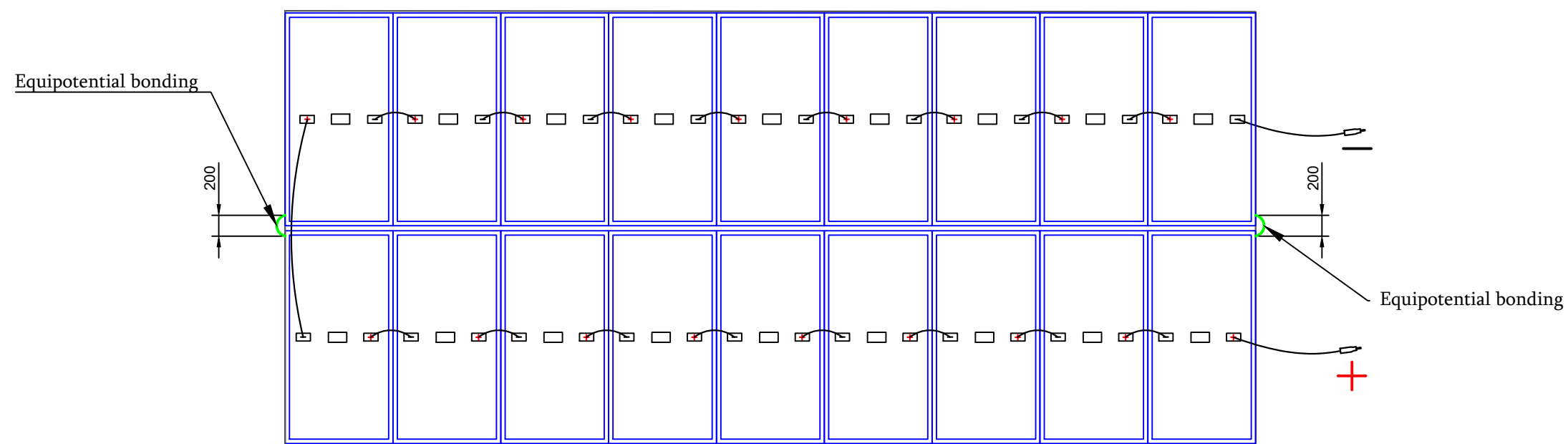
Nº7
I7-M3-S1 I7-M3-S2 I7-M4-S1 I7-M5-S1

I7-M6-S1 I7-M7-S1 I7-M8-S1

I7-M9-S1 I7-M10-S1

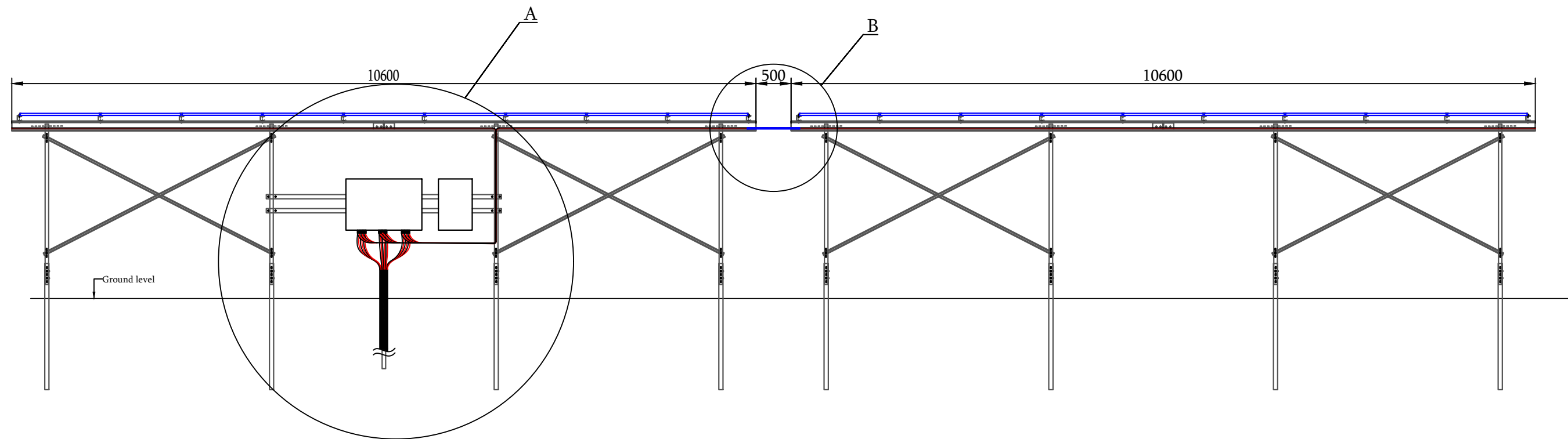
						006-2026-RAG-EP-4			
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Rev.	No.	Sh.	DRG.no	Sign.	Date	Electrical Part	Stage	Sheet	Sheets
Designed		A.Avagyan					D	7	7
Checked		D.Barkhudaryan							
						DC and AC cable connection diagram to inverter			

Block with 18 pcs panels in series



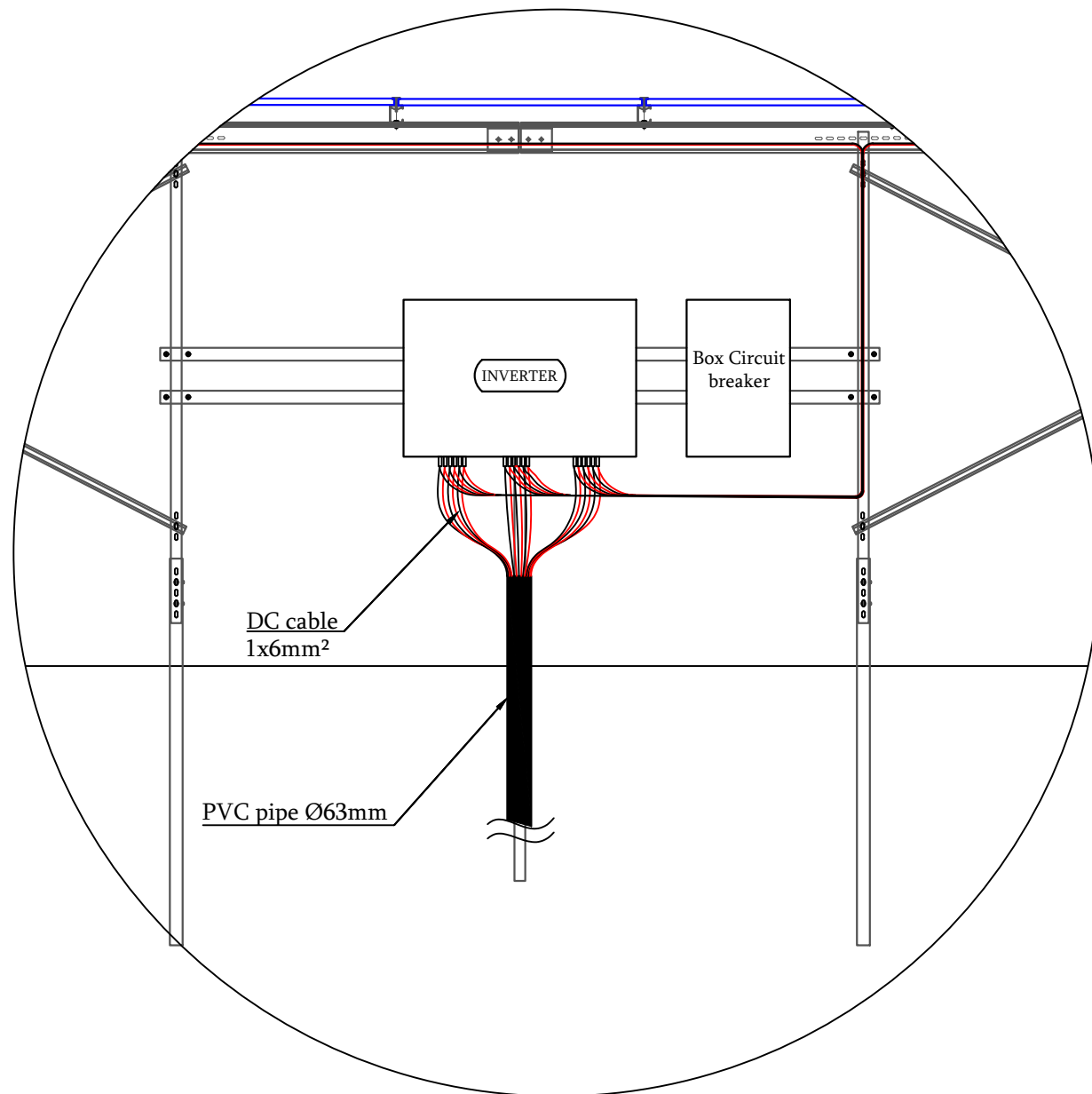
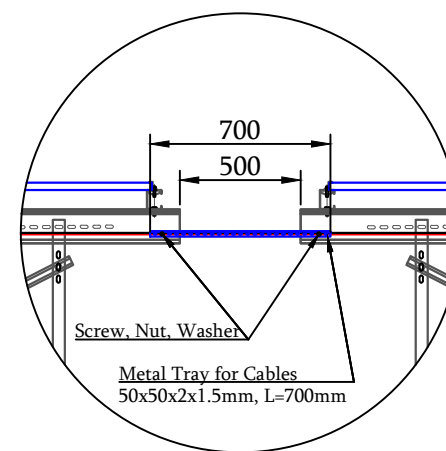
Specification			
N	Title	Unit of measurement	Quantity
1	Copper cable 1x2.5mm ²	m	41.2
2	Cable lug for 2.5mm ²	pcs	412

						006-2026-RAG-EP-5			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Electrical Part	Stage	Sheet	Sheets
							D	1	1
						Connection scheme of panel in block			



A

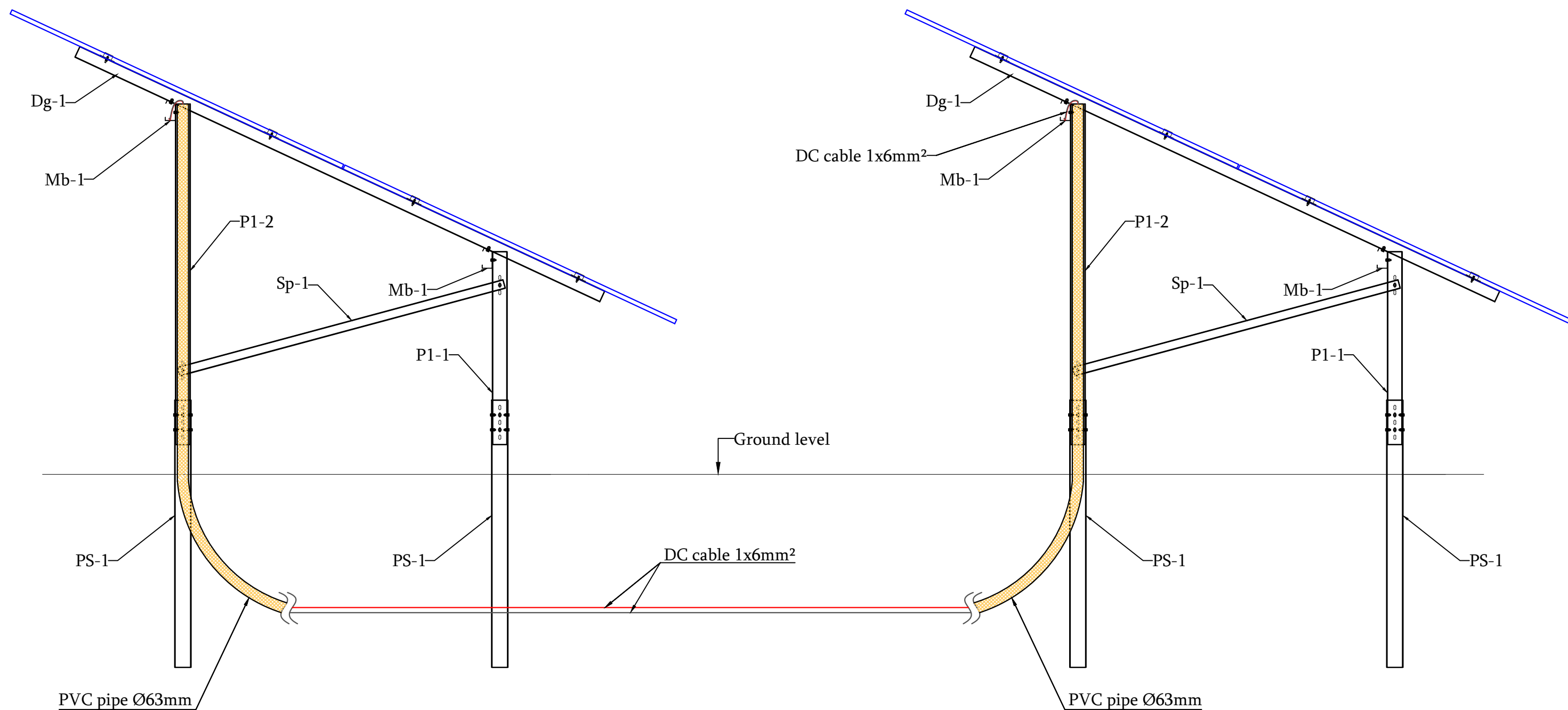
B



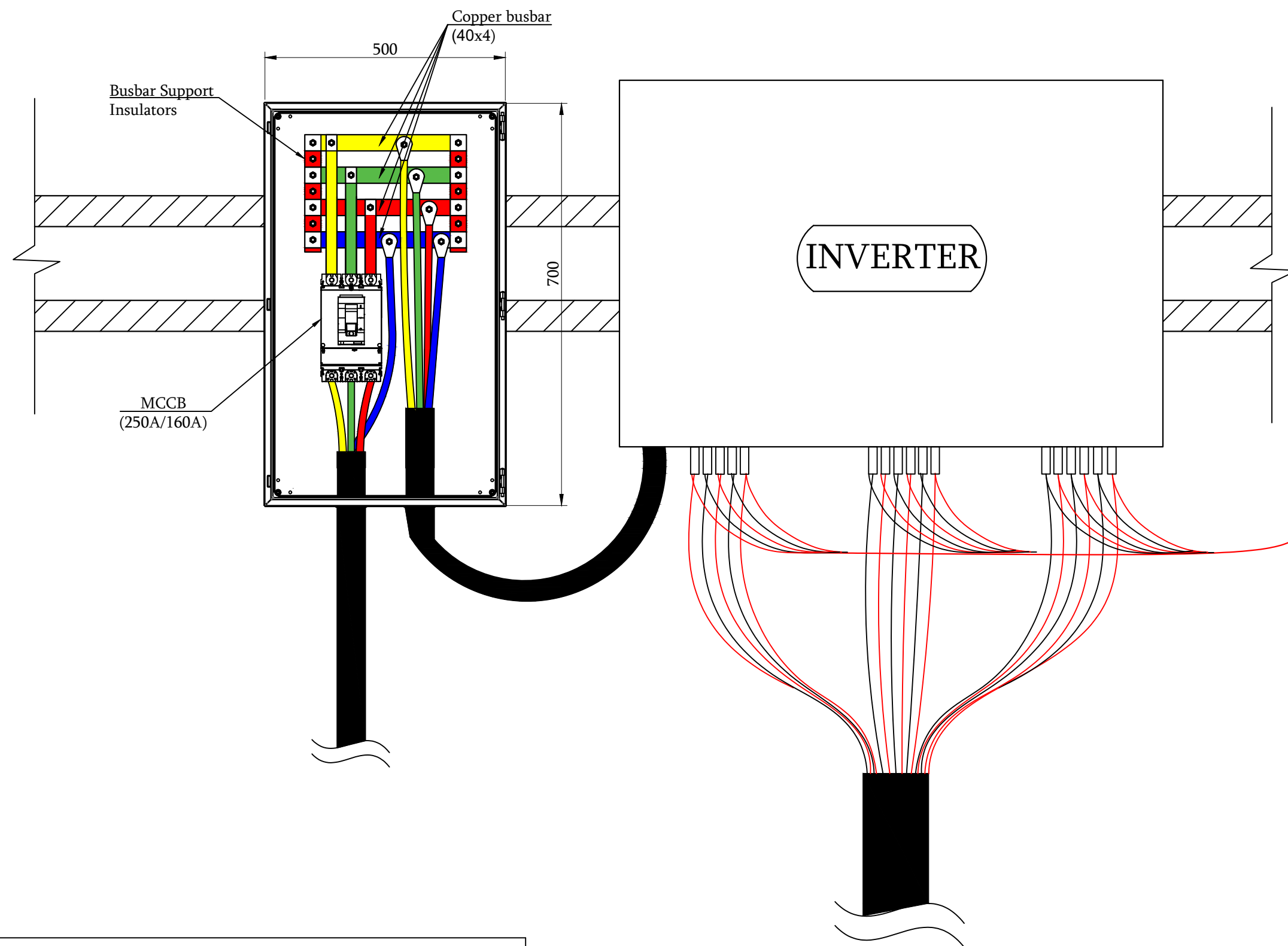
Specification

N	Name	Unit	Quantity
1	Metal Tray for Cables 50x50x2x1.5mm, L=700mm	pcs	81
2	Screw M10x30	pcs	162
3	Flange nut M10	pcs	162
4	Body washer M10	pcs	324

						006-2026-RAG-EP-6			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Electrical Part	Stage	Sheet	Sheets
Designed			A.Avagyan	6/5/24			D	1	1
Checked			D.Barkhudaryan	6/5/24					
						Appearance of DC power cables between blocks			

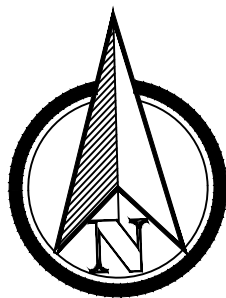


						006-2026-RAG-EP-7			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Electrical Part	Stage	Sheet	Sheets
							D	1	1
						Appearance of DC power cables in blocks			
									



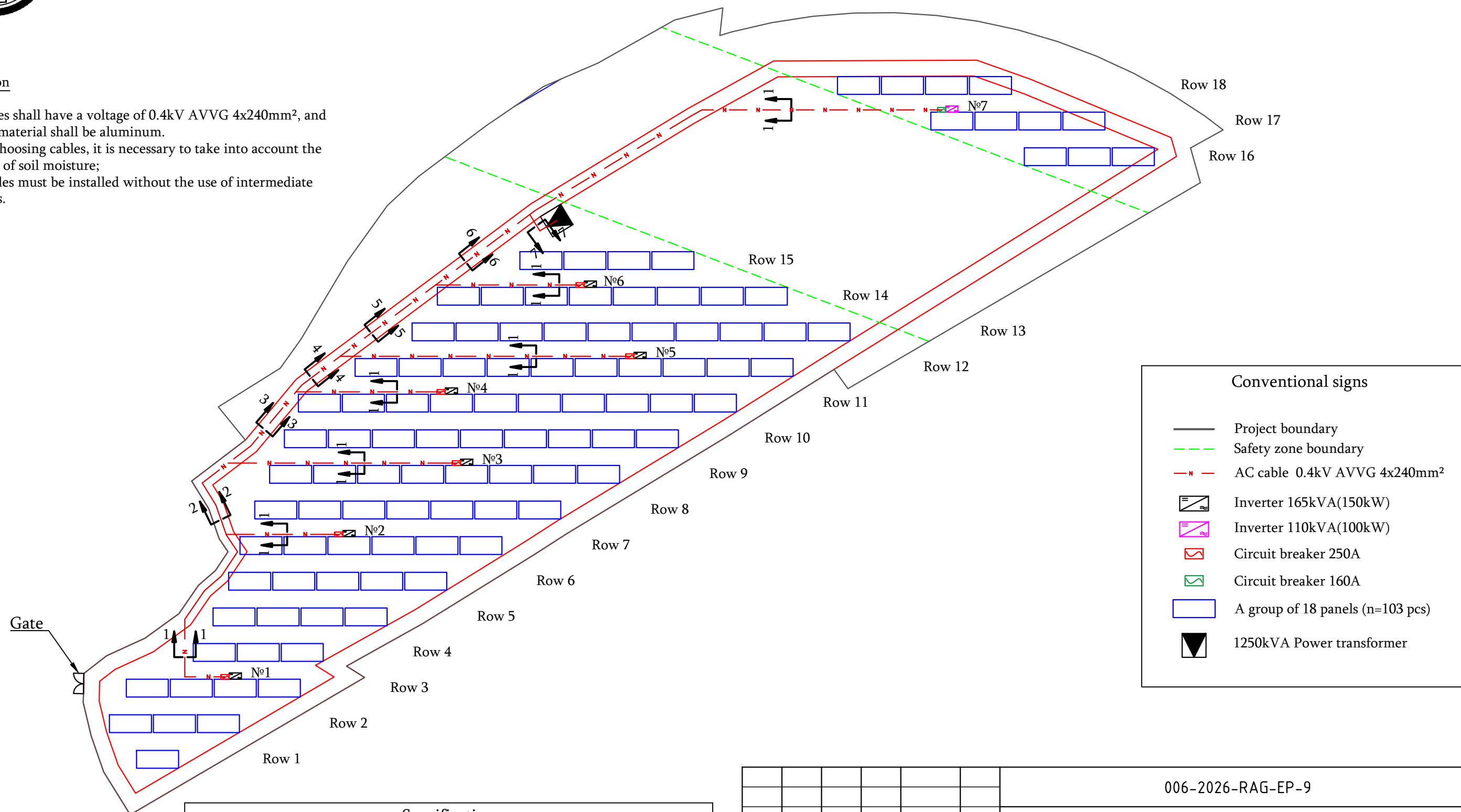
Specification				
N	Name	Unit	Quantity for 1 inverter	Total quantity
1	Metal distribution box 700x500x250mm	pcs	1	7
2	Three-phase AC circuit breaker 250A	pcs	1	6
3	Three-phase AC circuit breaker 160A	pcs	1	1

						006-2026-RAG-EP-8			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Electrical Part	Stage	Sheet	Sheets
Designed			A.Avagyan				D	1	1
Checked			D.Barkhudaryan						
						250A and 160A distribution point for inverter			



Attention

1. AC cables shall have a voltage of 0.4kV AVVG 4x240mm², and the metal material shall be aluminum.
2. When choosing cables, it is necessary to take into account the conditions of soil moisture;
3. The cables must be installed without the use of intermediate connectors.



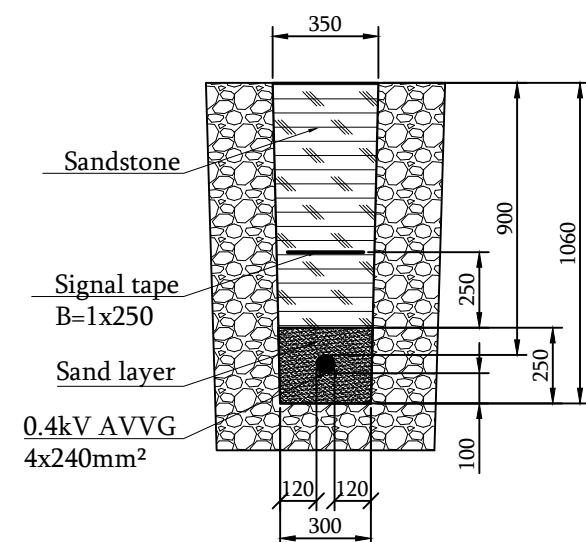
Conventional signs

- Project boundary
- Safety zone boundary
- AC cable 0.4kV AVVG 4x240mm²
- Inverter 165kVA(150kW)
- Inverter 110kVA(100kW)
- Circuit breaker 250A
- Circuit breaker 160A
- A group of 18 panels (n=103 pcs)
- 1250kVA Power transformer

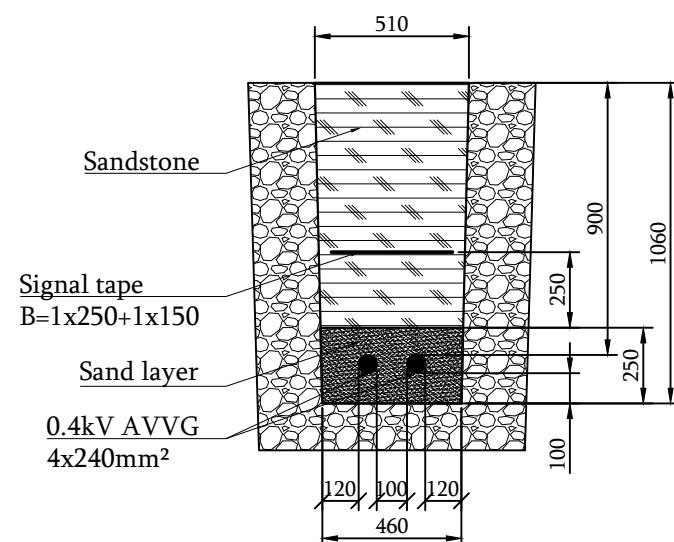
Specification				
N	Name	Unit	Quantity	Quantity including 4% addition
1	AC cable 0.4kV AVVG 4x240mm ² in the trench	m	970	1010
2	AC cable 0.4kV AVVG 4x240mm ² in the inverter and in the 0.4kV box	m	28	30
3	AC cable 0.4kV AVVG 4x240mm ² , in the SPS, for connect inverter	m	35	37
4	Length of trench	m	527	

						006-2026-RAG-EP-9			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Electrical Part	Stage	Sheet	Sheets
Designed		A.Avagyan					D	1	1
Checked		D.Barkhudaryan							
						0.4 kV power cable lines M1:1000			

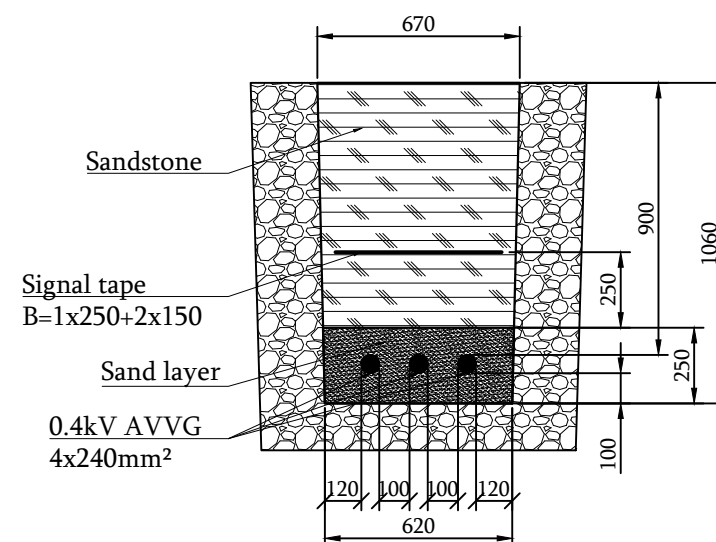
1-1
L=396m



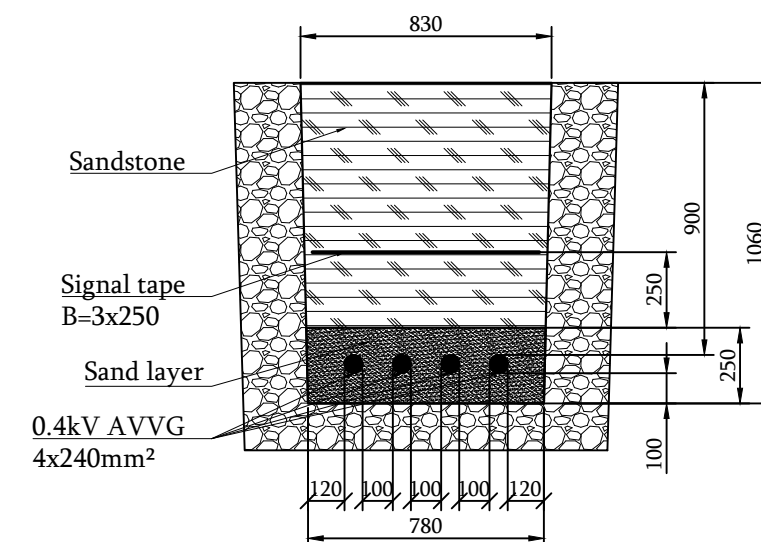
2-2
L=23m



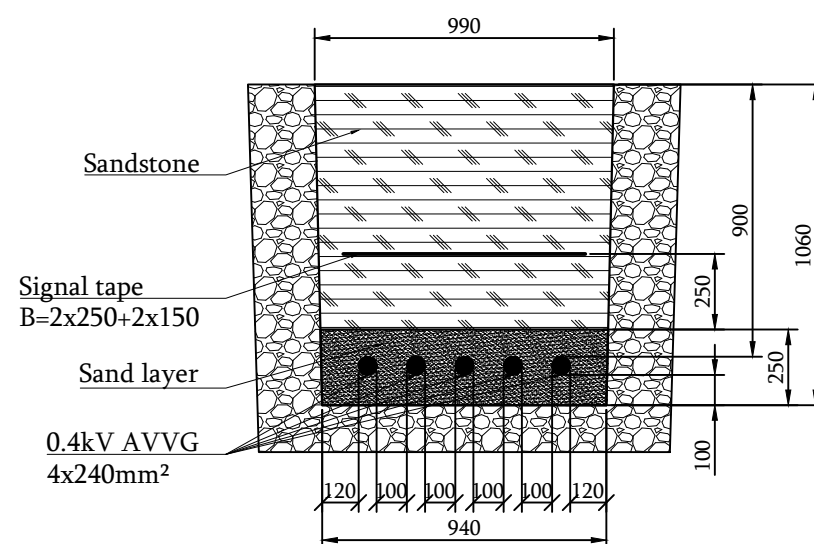
3-3
L=25m



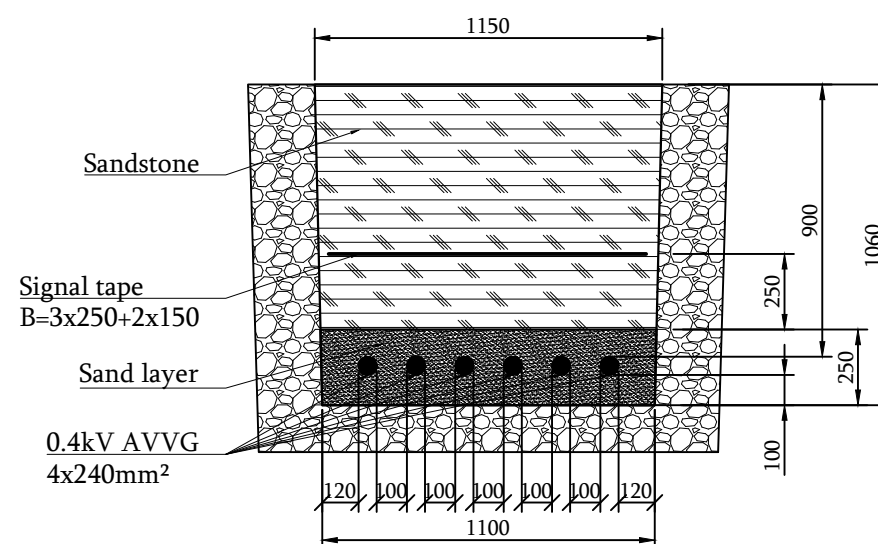
4-4
L=15m



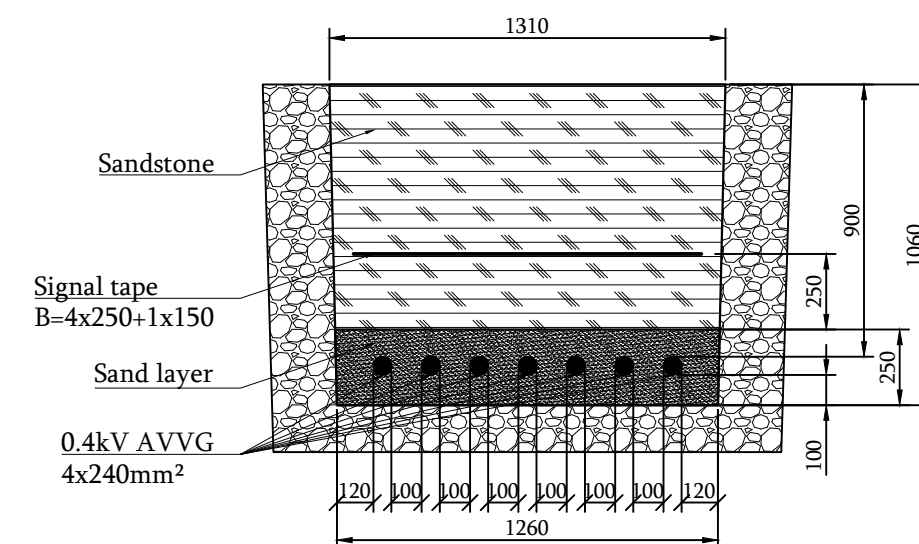
5-5
L=30m



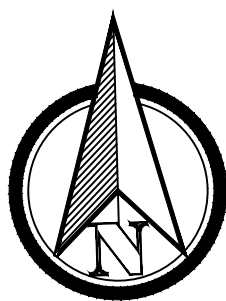
6-6
L=30m



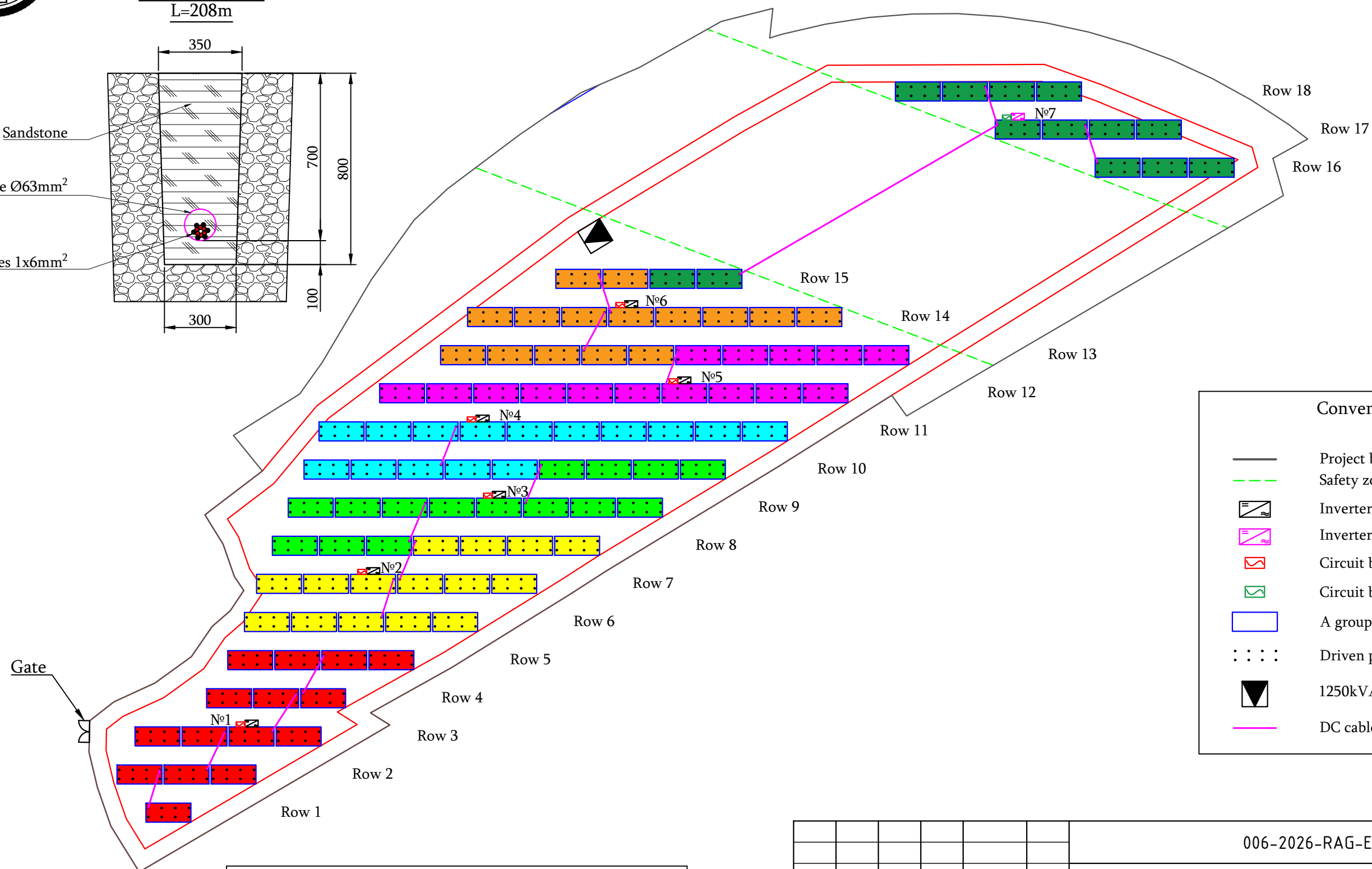
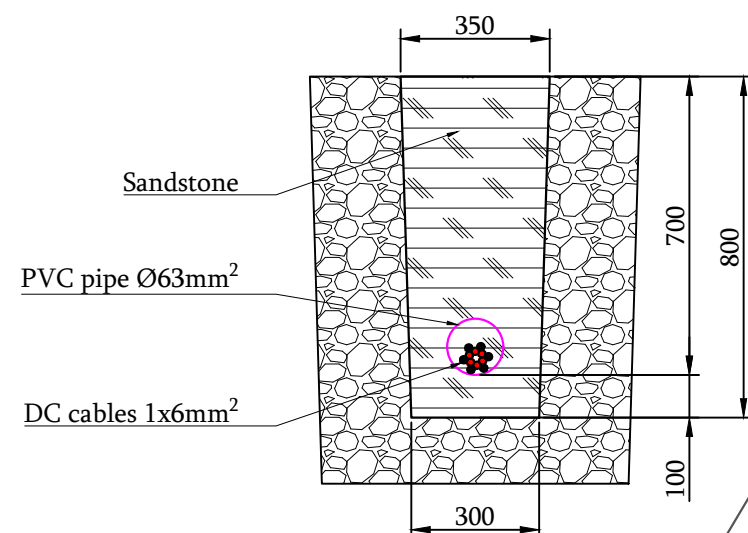
7-7
L=10m



						006-2026-RAG-EP-10			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Electrical Part	Stage	Sheet	Sheets
							D	1	1
						Trench cross-sections for 0.4 kV power cable			



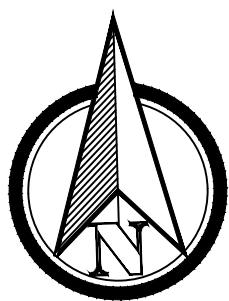
DC cable trench
L=208m



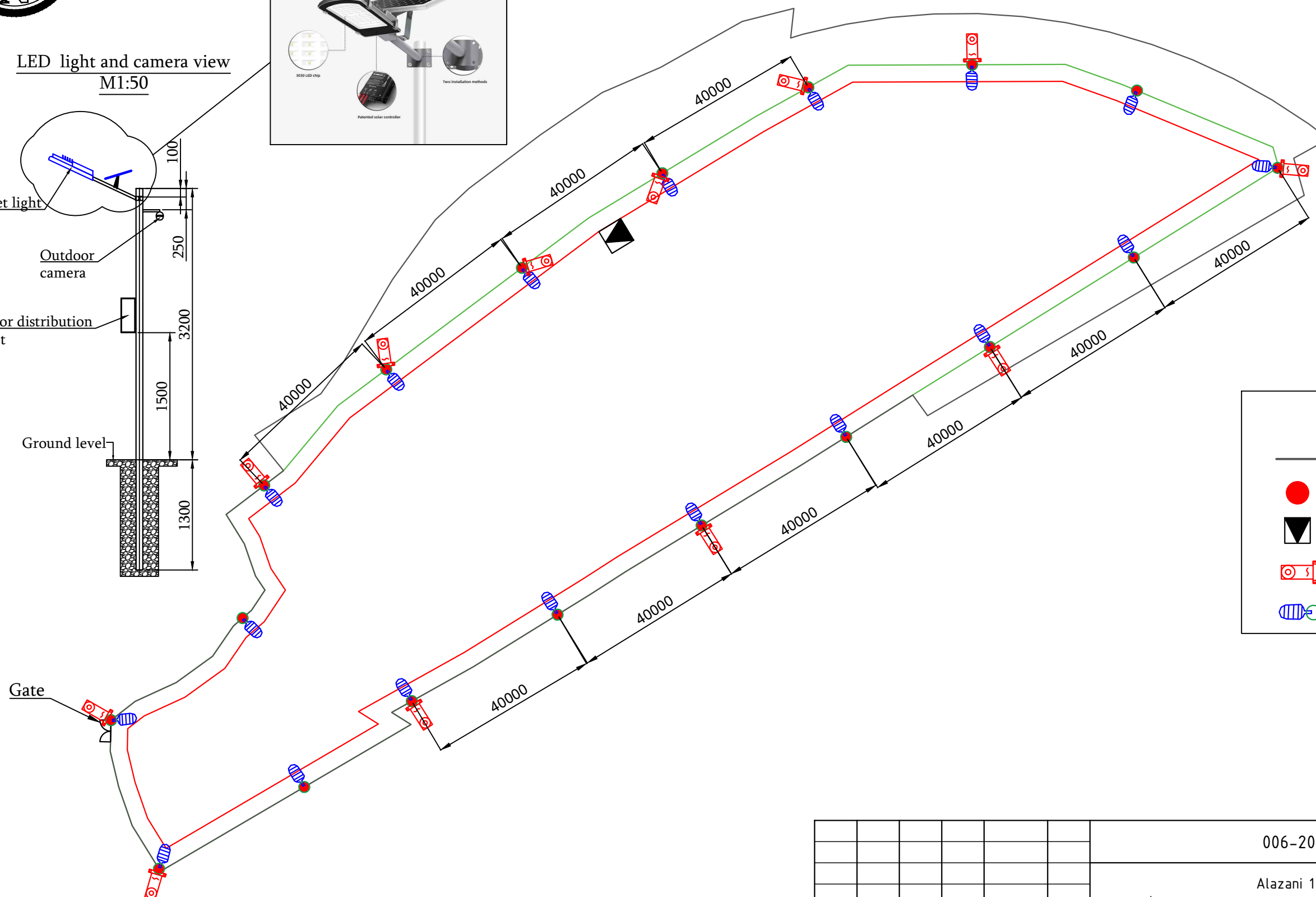
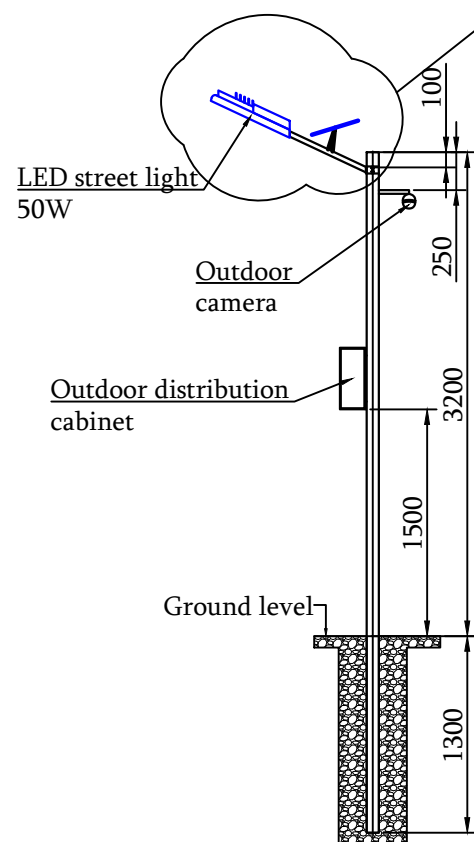
Conventional signs	
	Project boundary
	Safety zone boundary
	Inverter 165kVA(150kW)
	Inverter 110kVA(100kW)
	Circuit breaker 250A
	Circuit breaker 160A
	A group of 18 panels (n=103 pcs)
	Driven piles
	1250kVA Power transformer
	DC cable trench

Specification			
N	Name	Unit	Quantity
1	DC cable trench	m	208
2	PVC pipe Ø63mm	m	313

						006-2026-RAG-EP-11			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Electrical Part	Stage	Sheet	Sheets
Designed		A.Avagyan					D	1	1
Checked		D.Barkhudaryan							
						DC cable underground routing to next row M1:1000			



LED light and camera view
M1:50



Conventional signs

- Project boundary
- Metal pole h=4500mm
- ▼ 1250kVA Power transformer
- 📷 Outdoor camera
- 💡 LED street light (50W)

Specification			
N	Name	Unit	Quantity
1	Outdoor camera	pcs	12
2	LED street light (50W)	pcs	18

						006-2026-RAG-EP-12			
						Alazani 1 Solar power plant (Kolagi Village, Gurjaani Municipality, Kakheti Region, Georgia)			
Rev.	No.	Sh.	DRG.no	Sign.	Date	Architectural-construction part	Stage	Sheet	Sheets
Designed		A.Avagyan					D	1	1
Checked		D.Barkhudaryan							
						Outdoor lighting and security cameras layout M1:1000			