

NOTES:
 1. SEE PROJECT CIVIL DRAWINGS FOR OFFICIAL LANDMARKS, SITE INFORMATION AND SURVEYING. SHOWN HERE AS REFERENCE ONLY.

LEGEND

□	MONUMENT PLANTED
■	MONUMENT FOUND
SIB	STANDARD IRON BAR
SSIB	SHORT STANDARD IRON BAR
IB	IRON BAR
CC	CUT CROSS
CP	CONCRETE PIN
IB#	ROUND IRON BAR
RPL	ROCK PLUG
RB	ROCK BAR
CM	CONCRETE MONUMENT
HCM	HORIZONTAL CONTROL MONUMENT
(WT)	WITNESS
m.	MEASURED
RF	RAIL FENCE
PWF	POST & WIRE FENCE
CLF	CHAIN LINK FENCE
BF	BOARD FENCE
UP	UTILITY POLE
AN	ANCHOR
LS	LAMP STANDARD
— OHW —	OVERHEAD WIRES
(p)	REGISTERED PLAN No. 266
(p2)	PLAN 52R-7075
(p3)	PLAN ATTACHED TO INST. S111400
(p4)	PLAN 52R-490
(959)	H.B. MELDRUM O.L.S.
(1802)	K. ADAMS O.L.S.

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REV. NO.	DESCRIPTION	ISSUE DATE	11.19.12	R.D.

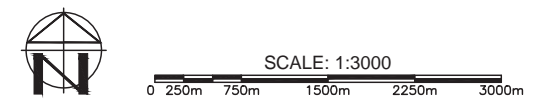
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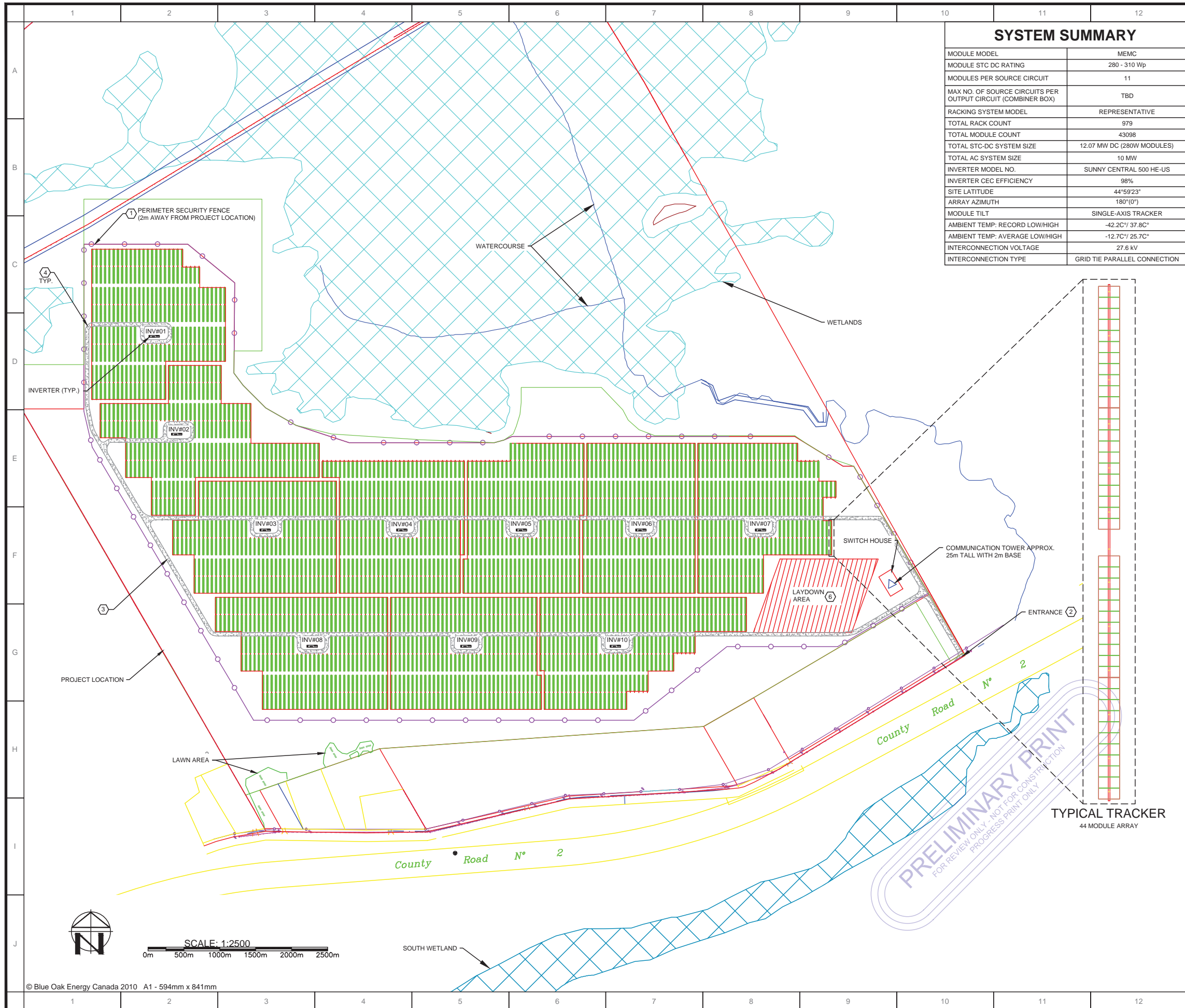
SunEdison
 simplifying solar
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 TORONTO, ON, CANADA M5A 1N8

**SunE BRUINING
 SOLAR ENERGY PROJECT**
 PT LT 25-27, CONCESSION 2 INGLESIDE
 TOWNSHIP OF SOUTH STORMONT

DRAWING: EXISTING SITE PLAN

DRAWING NO. **ES-101**





SYSTEM SUMMARY	
MODULE MODEL	MEMC
MODULE STC DC RATING	280 - 310 Wp
MODULES PER SOURCE CIRCUIT	11
MAX NO. OF SOURCE CIRCUITS PER OUTPUT CIRCUIT (COMBINER BOX)	TBD
RACKING SYSTEM MODEL	REPRESENTATIVE
TOTAL RACK COUNT	979
TOTAL MODULE COUNT	43098
TOTAL STC-DC SYSTEM SIZE	12.07 MW DC (280W MODULES)
TOTAL AC SYSTEM SIZE	10 MW
INVERTER MODEL NO.	SUNNY CENTRAL 500 HE-US
INVERTER CEC EFFICIENCY	98%
SITE LATITUDE	44°59'23"
ARRAY AZIMUTH	180°(0°)
MODULE TILT	SINGLE-AXIS TRACKER
AMBIENT TEMP: RECORD LOW/HIGH	-42.2C°/ 37.8C°
AMBIENT TEMP: AVERAGE LOW/HIGH	-12.7C°/ 25.7C°
INTERCONNECTION VOLTAGE	27.6 kV
INTERCONNECTION TYPE	GRID TIE PARALLEL CONNECTION

- NOTES:**
- PV RACKS SUPPORTING FIXED TILTED PV MODULES WITH DC WIRING AND COMBINER BOXES ABOVE GROUND. DC CABLING FROM COMBINER BOXES TO ROUTE UNDERGROUND TO INVERTER / POWER ENCLOSURES.
 - INVERTER / POWER ENCLOSURES TO BE LOCATED WITHIN ARRAY AREA TO COLLECT DC POWER, CONVERT AND OUTPUT MEDIUM VOLTAGE AC POWER.
 - DIMENSIONS ARE IN METERS UNLESS OTHERWISE NOTED.
 - SEE RACK DETAIL DRAWINGS IN S-101 FOR RACK ELEVATION AND TOLERANCES.
 - CONTACT, COORDINATE AND ATTAIN APPROVAL FROM AGENCIES HAVING EASEMENTS AND ROW SPACING IN PROJECT AREA.
 - PV MODULES TO BE MEMC 280 - 310W OR EQUIVALENT.
- KEYED NOTES:**
- PROJECT SECURITY FENCE: 2.7m (9 FT) TALL, SET APPROXIMATELY 2m INSIDE PROJECT LOCATION LINE.
 - DOUBLE SWING GATES, 2.5m EACH SECTION.
 - SERVICE ROAD, SEE SECTION DETAILS IN S-101.
 - 9m TURNING RADI AT ROAD CENTER LINES ON PERIMETER SERVICE ROAD AND ON TRANSITIONS TO INTERIOR SERVICE ROADS TO MEET TYPICAL SAFETY AGENCY REQUIREMENTS.
 - AREA AROUND GATES AND SWITCH HOUSE COMPACTED, SLOPED FOR DRAINAGE AND TOPPED WITH ROAD BASE ROCK AND SAND MIXTURE. PROVIDES PARKING FOR APPROX. 10 VEHICLES.
 - LAYDOWN AREA TO BE COMPACTED NATIVE SOIL ALLOWING TEMPORARY PARKING, STORAGE, ETC. DURING CONSTRUCTION. TO BE FINISH GRADED AND SEEDED AT END OF CONSTRUCTION.

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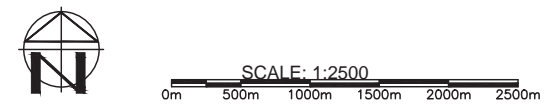
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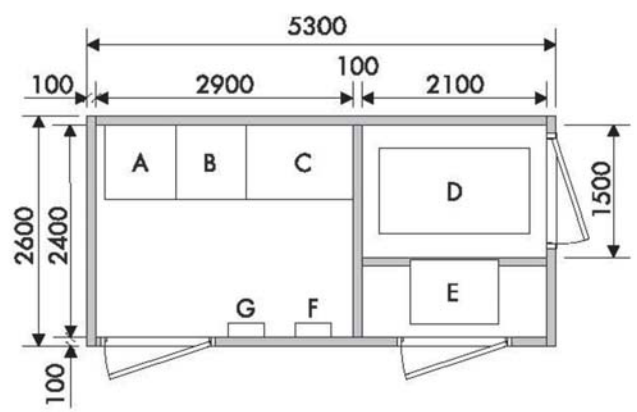
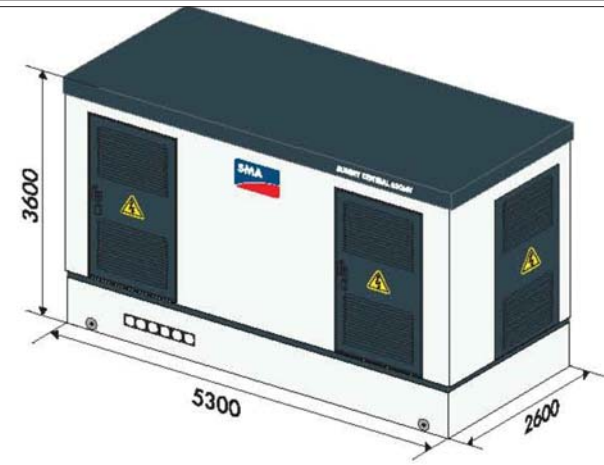
**SunE BRUINING
SOLAR ENERGY PROJECT**
 PT LT 25-27, CONCESSION 2 INGLESIDE
 TOWNSHIP OF SOUTH STORMONT

DRAWING: ARRAY PLAN
 DRAWING NO. **ES-102**



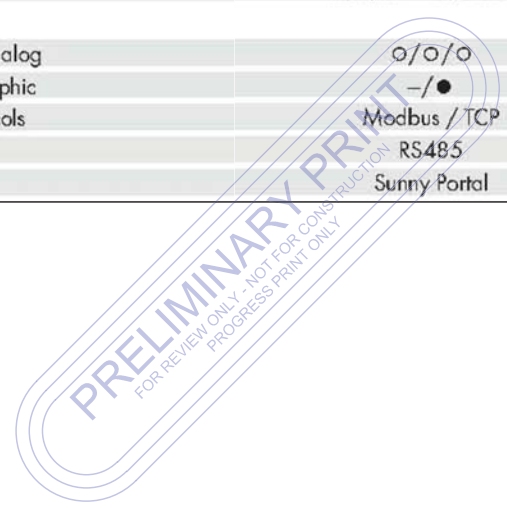


- | | | | |
|--|---|--|---|
| High Yields <ul style="list-style-type: none"> 98% CEC efficiency Suitable for ambient temperatures of up to 60 °C [140 °F] OptiCool™ intelligent temperature management | Low System Costs <ul style="list-style-type: none"> Outdoor-rated enclosure Couples to medium-voltage external transformer Available as integrated solution | Strong Peripherals <ul style="list-style-type: none"> Optional DC & AC disconnects Optional combiner boxes with string monitoring Sunny WebBox, Modbus® & OPC compatible | UL Certified <ul style="list-style-type: none"> UL 1741 / IEEE-1547 compliant |
|--|---|--|---|



- All figures in mm.
- | | |
|---|---------------------------|
| A | Sunny Central, DC cabinet |
| C | Sunny Central, AC cabinet |
| E | Medium-voltage switchgear |
| G | COM-B, optional |
- | | |
|---|---------------------------------|
| B | Sunny Central, inverter cabinet |
| D | Transformer |
| F | Station sub-distribution |

Technical data	Sunny Central 500HE-US
Input data	
Max. DC power	565 kWp ¹⁾
MPP voltage range	330 V - 600 V
Max. DC voltage	600 V
Feed starting at [U] / [P]	380 V / 5000 W
Max. DC current	1600 A
Number of DC inputs	6 - 9
Output data	
Nominal AC power	500 kVA @ 45 °C (113 °F)
Max. AC current	1470 A @ 200 V
AC grid frequency	60 Hz
AC voltage range	180 V - 220 V
AC voltage range, full active power	196 V - 210 V
Power factor (cos φ)	> 0.99
Max. THD	< 5%
Efficiency ²⁾	
Max. efficiency	98.6%
CEC efficiency	98.0%
Euro-eta	97.9%
Ambient conditions	
Operating temperature range	-25 °C ... +60 °C (-13 °F ... +140 °F)
Max. temperature for nominal conditions	+45 °C (+113 °F)
Protection rating	NEMA 3R
Installation indoors / outdoors	● / ●
Rel. humidity	15% ... 95%
Fresh air consumption	3000 m ³ /h
Internal consumption at nominal power	< 1600 W
Standby consumption (P _{night})	< 110 W
Dimensions and weight	
Height	2277 mm (90 in)
Width	2562 mm (101 in)
Depth	956 mm (38 in)
Weight	< 1800 kg (3970 lb)
Certificates / listings	
Certificates	UL 1741, UL 1998, IEEE 1547
EMC conformity	FCC, Part 15, Class A
Interfaces	
RS485 / Ethernet / analog	o / o / o
Display: text line / graphic	- / ●
Communication protocols	Modbus / TCP
SSM-US connection	RS485
Plant monitoring	Sunny Portal



EQUIPMENT SPECIFICATIONS
SCALE: NTS

NOTES:
1. NONE.
KEYED NOTES:
① NONE.

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PROJECT SITE:
SunE BRUINING SOLAR ENERGY PROJECT
PT LT 25-27, CONCESSION 2 INGLISIDE TOWNSHIP OF SOUTH STORMONT

DRAWING:
EQUIPMENT SPECIFICATIONS

DRAWING NO.
EP-701

PV SYSTEM GENERATOR CALCULATIONS

MODULE	MEMC 280W (TYPICAL)	
MODULE STC POWER	280 - 310Wp	
MODULE TILT	30°	
ARRAY AZIMUTH	180°	
	GENERATOR, TYPICAL OF 10	SITE TOTAL
GENERATOR MANUFACTURER	SMA	SMA
GENERATOR MODEL	SUNNY CENTRAL 500HE	SUNNY CENTRAL 500HE
NUMBER OF MODULES PER GENERATOR	4,312	43,098
DC RATING	1.2 MW	12.07 MW
AC NAMEPLATE RATING	1.0 MW	10 MW
NUMBER OF SOURCE CIRCUITS	392	3,918
SOURCE CIRCUIT COMBINERS	25	250

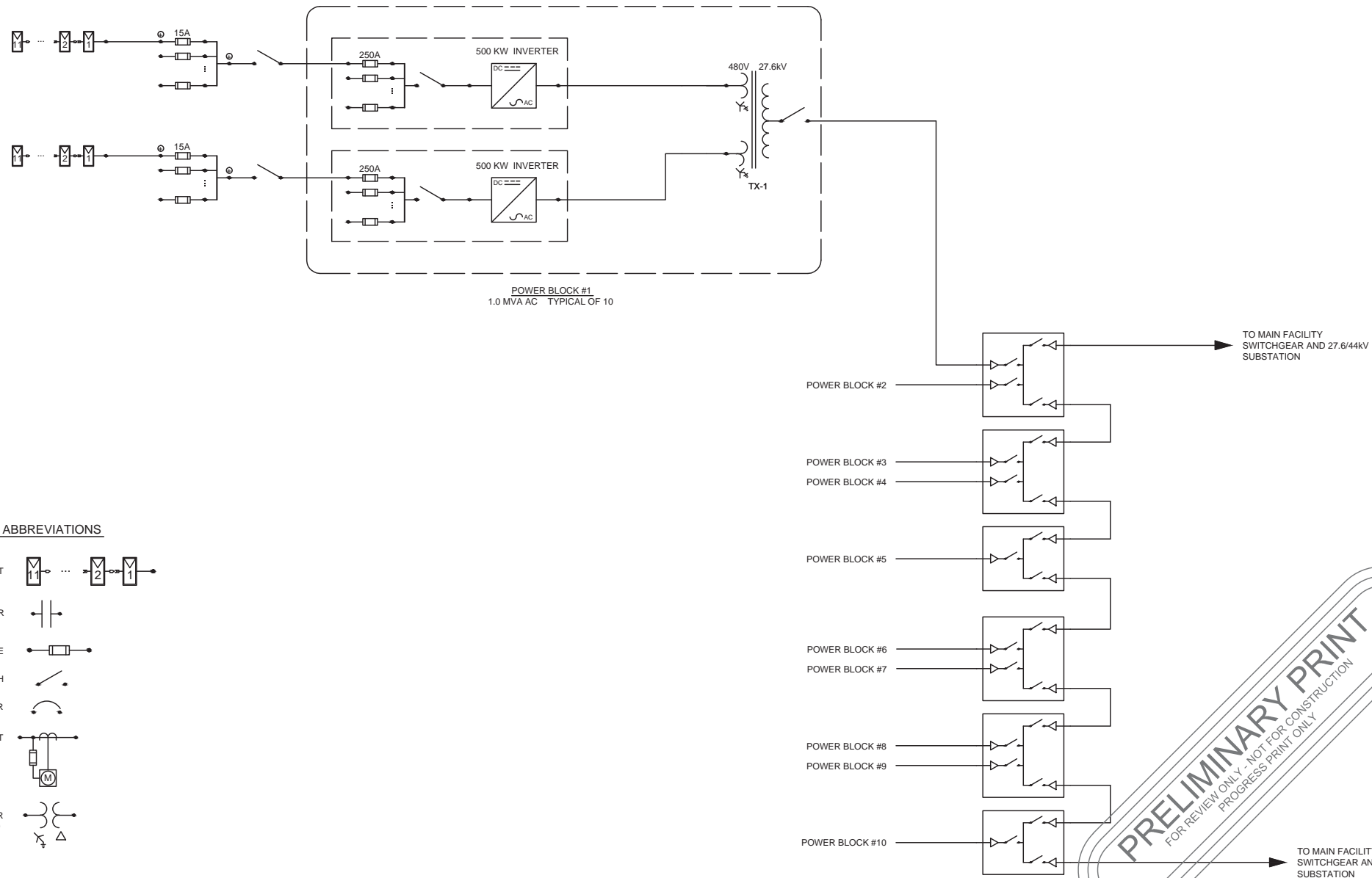
SOURCE CIRCUIT
MEMC
CONFORMS TO IEC 61215
600VDC MAX
11 MODULES WIRED IN SERIES

16 STRING COMBINER BOX WITH INTEGRATED DISCONNECT
TYPE 3R MIN.
600 VDC MAX FUSES

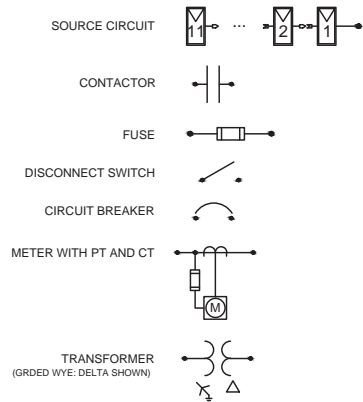
PV POWER CONDITIONING SYSTEM
IEEE 929 AND IEEE 1547 COMPLIANT
600 VDC MAX INPUT VOLTAGE
PRODUCTION METERING OCCURS AT INVERTER OUTPUT WITH GROUND-FAULT DETECTION

TRANSFORMER
1000 KVA, LV:27.6KV

SECTIONALIZING SWITCHES
600A BUS, 200A LOAD RATINGS
PAD MOUNTED



SYMBOLS AND ABBREVIATIONS



GENERAL NOTES:
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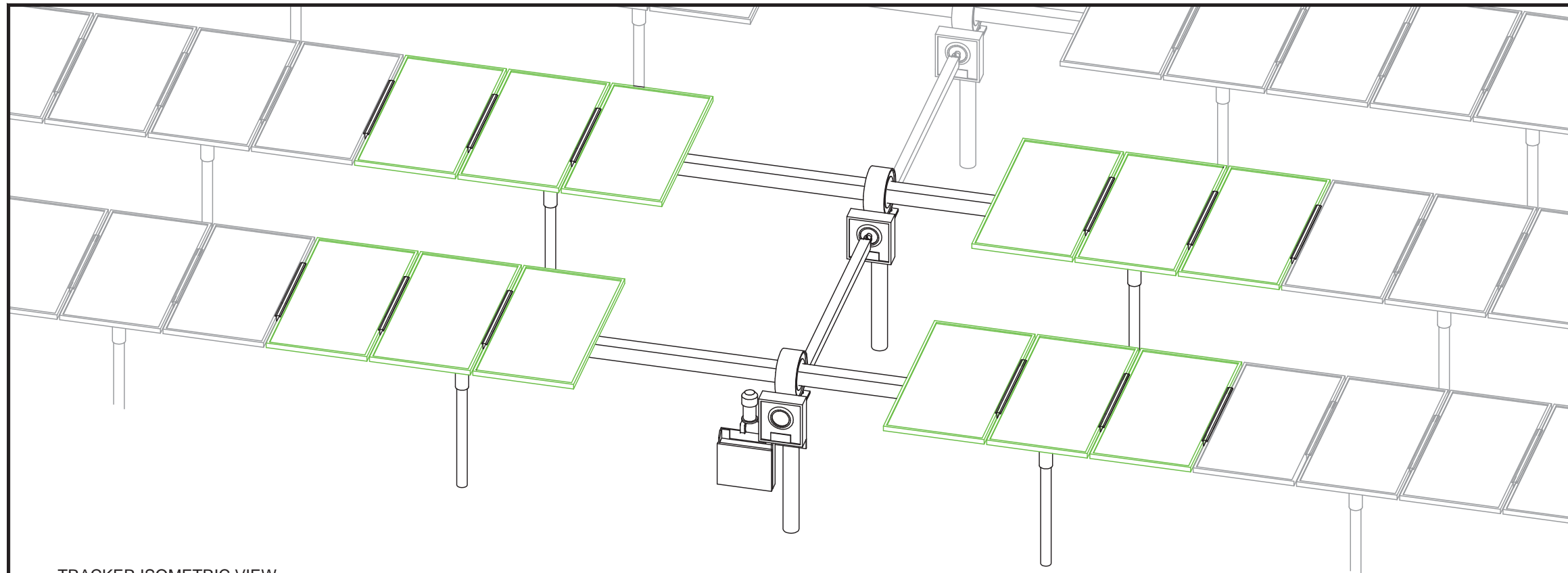
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PROJECT SITE:
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PT LT 25-27, CONCESSION 2 INGLESIDE TOWNSHIP OF SOUTH STORMONT

DRAWING: SINGLE LINE DIAGRAM

DRAWING NO.: EP-801

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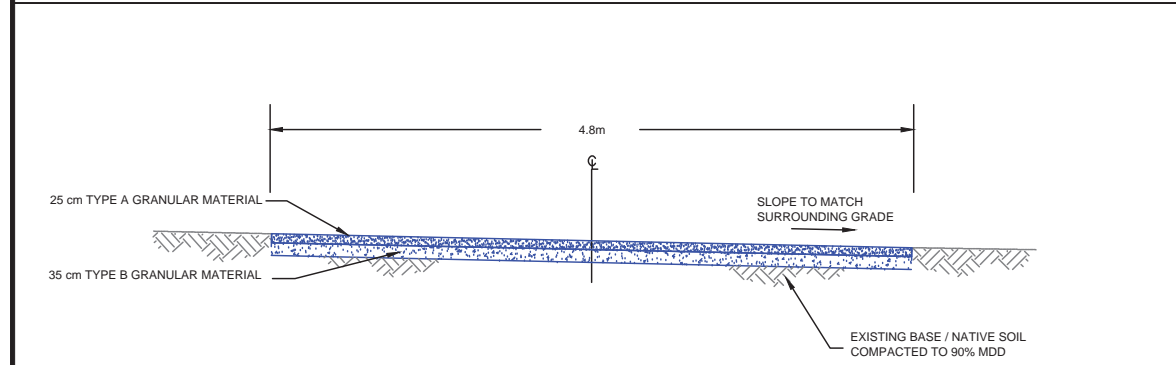


TRACKER ISOMETRIC VIEW

SCALE: NTS

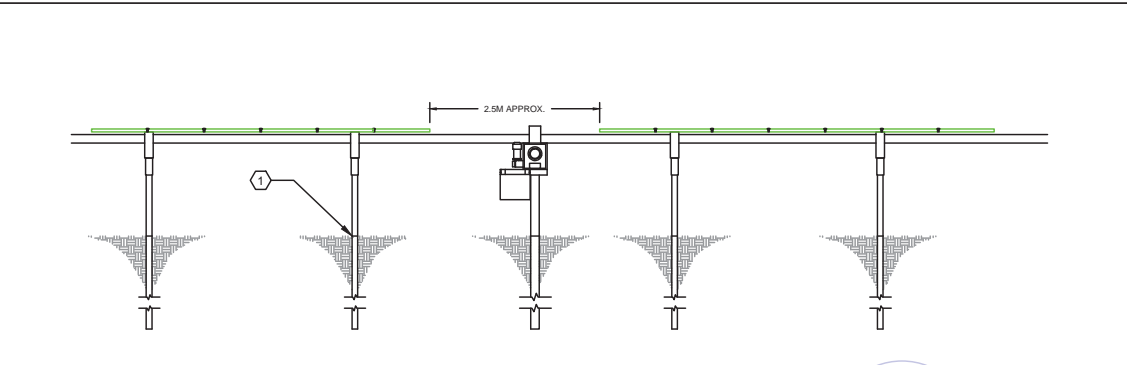
- GENERAL NOTES:**
1. EACH TRACKER INCORPORATES 44 MEMC MODULES.
 2. PV MODULES WIRED IN SERIES-PARALLEL COMBINATIONS ABOVE GROUND ALONG RACK STRUCTURES TO CREATE PV STRING CIRCUITS, 600V DC MAX. STRINGS TERMINATE IN PV COMBINER BOXES.
 3. COMBINER BOX OUTPUT (50-150A DC EACH) IS ROUTED UNDERGROUND IN RIGID NON-METALIC CONDUIT OR DIRECT BURIAL 2-CONDUCTOR CABLE TO PV INVERTER STATIONS.
 4. DEPTHS ARE APPROXIMATE, PENDING FINAL RACK AND STRUCTURAL ENGINEERING.
 5. FOUNDATIONS AND DEPTH OF PILES/POST ARE REPRESENTATIVE ONLY. ACTUAL SPECIFICATION WILL BE DETERMINED BY A LICENSED STRUCTURAL ENGINEER BASED ON THE GEOTECHNICAL STUDY.
 6. DIMENSIONS ARE IN METERS UNLESS OTHERWISE NOTED.
 7. APPROXIMATELY 6 PILES PER 22 MODULES

- KEYED NOTES:**
- ① FOUNDATION OPTIONS INCLUDE DRIVEN PILE, HELICAL GROUND ANCHOR, DRILLED PILE WITH CONCRETE REINFORCEMENT. DEPENDS ON SOIL TYPE AND PROPERTIES.



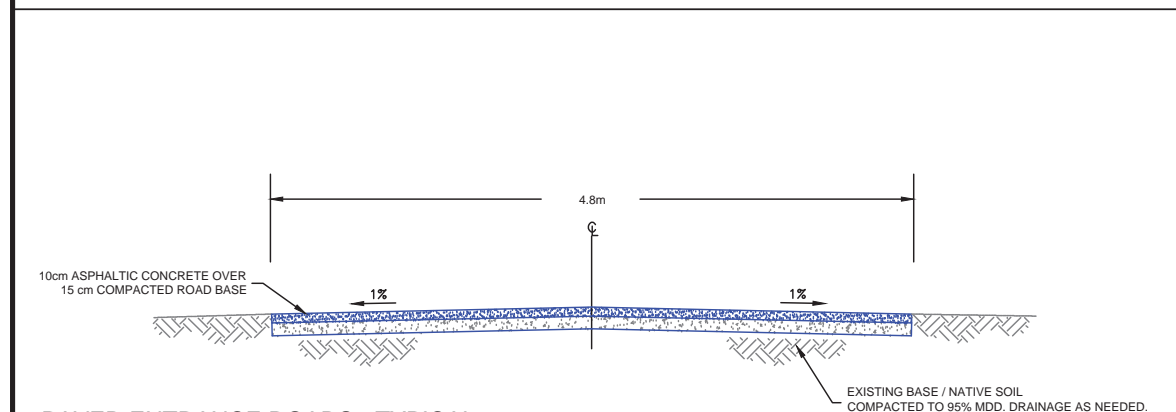
ACCESS ROADS - TYPICAL

SCALE: NTS



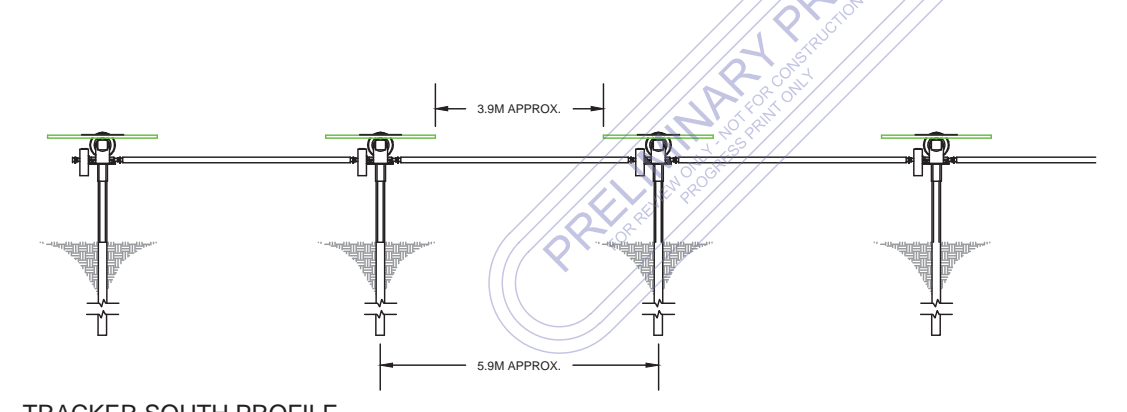
TRACKER EAST PROFILE

SCALE: NTS



PAVED ENTRANCE ROADS - TYPICAL

SCALE: NTS



TRACKER SOUTH PROFILE

SCALE: NTS

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DRAWING: TRACKER DETAILS
 DRAWING NO. **S-101**