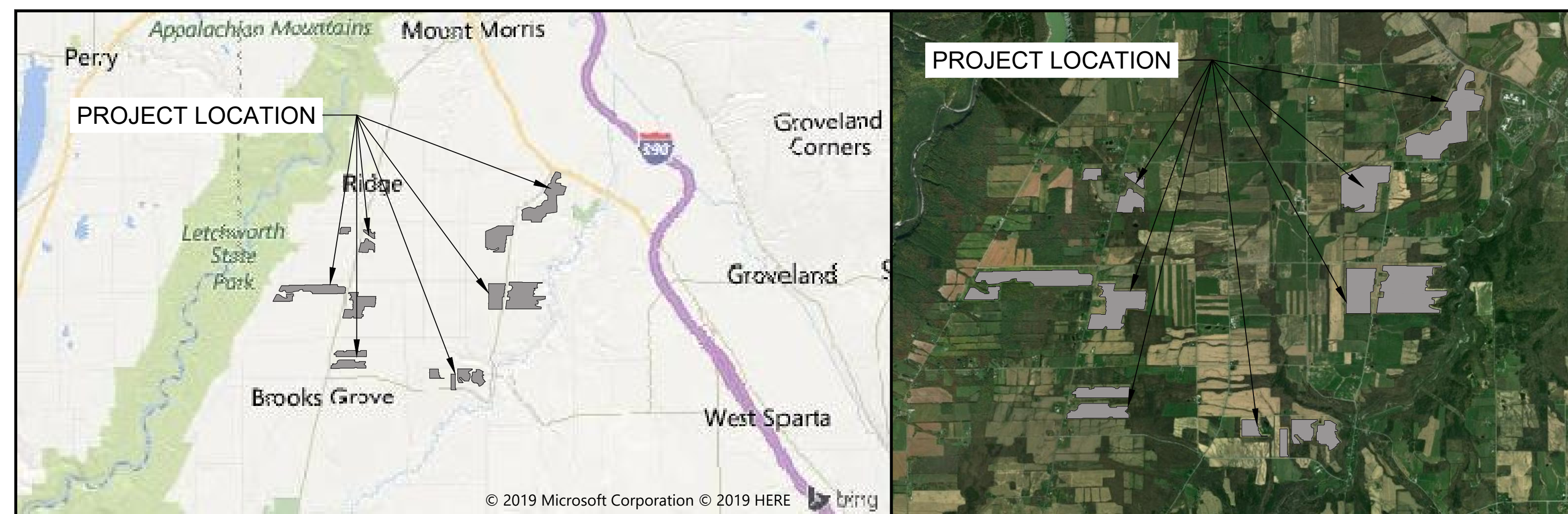


MORRIS RIDGE

SOLAR FARM



STATE OF NEW YORK



LOCATION MAPS

NTS

SITE INFORMATION:

THE MORRIS RIDGE SOLAR PROJECT, NYSEG PROJECT #193576A, WILL BE CONNECTED TO THE MORRIS RIDGE SUBSTATION AT 34.5KV.

PROJECT ADDRESS: P

MOUNT MORRIS
NEW YORK, 14510
USA

PROJECT DETAILS:

PV MODULE: CANADIAN SOLAR CS3W - 410 PV - AG 410WP
TRANSFORMER: (46) 4.5 MVA 34.5 KV AND (5) 3 MVA 34.5 KV PROVIDED BY SMA
INVERTER: (46) SMA SUNNY CENTRAL SC-4200 UP-US 4.2 MW AND (5) SMA SUNNY CENTRAL SC-2500 EV-US 2.5 MW
DESIGN: WSP

REGULATIONS AND STANDARDS:

IEEE C57.12.34- REQUIREMENTS FOR PAD-MOUNTED, COMPARTMENTAL-TYPE, SELF-COOLED, THREE-PHASE DISTRIBUTION TRANSFORMERS, 5MVA AND SMALLER; HIGH VOLTAGE, 34.5KV NOMINAL SYSTEM VOLTAGE AND BELOW ; LOW VOLTAGE, 15KV NOMINAL SYSTEM VOLTAGE AND BELOW

IEEE 81- IEEE GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE AND EARTH SURFACE POTENTIALS OF A GROUNDING SYSTEM

IEEE 400- GUIDE FOR MAKING HIGH-DIRECT-VOLTAGE TESTS ON POWER CABLE SYSTEMS IN THE FIELD

IEEE 442- IEEE GUIDE FOR SOIL THERMAL RESISTIVITY

IEEE 519- RECOMMENDED PRACTICES AND REQUIREMENTS FOR HARMONIC CONTROL IN ELECTRICAL POWER SYSTEMS

IEEE 1547- STANDARD FOR INTERCONNECTING DISTRIBUTED RESOURCES WITH ELECTRIC POWER SYSTEMS

NFPA- NATIONAL FIRE PROTECTION ASSOCIATION

NFPA 70- NATIONAL ELECTRICAL CODE (NEC)

NFPA 70E- STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE

NFPA 780- STANDARD FOR THE INSTALLATION OF LIGHTNING PROTECTION SYSTEMS

ALL APPLICABLE LOCAL UTILITY STANDARDS AND CODES OF PRACTICE

CONTACT INFORMATION:

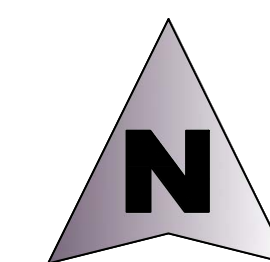
OWNER:

EDF RENEWABLES INC.
1010 DE LA GUICHETIERE WEST
SUITE 2000
MONTREAL, QC, H3B 2N2

ENGINEER:

WSP USA INC.
1600 BROADWAY SUITE 1100
DENVER, CO 80202
303.832.9091

DRAWING INDEX		
DRAWING #	DESCRIPTION	NUMBER OF SHEET
E-100	COVER SHEET & DRAWING INDEX	1
E-101	GENERAL SITE OVERVIEW	1
E-102	DC SINGLE LINE DIAGRAM	2
E-103	AC SINGLE LINE DIAGRAM	8
E-104	COMBINER TYPE DETAILS	1
E-105	INVERTER TYPE DETAILS	1
E-106	PARCEL LAYOUTS	7
E-107	TRENCH DETAILS	2
E-108	BORING DETAILS	1
E-109	EQUIPMENT MOUNTING DETAILS	1
E-110	EQUIPMENT PAD DETAILS	1
E-111	DC CABLE SCHEDULE STRINGS TO COMBINERS	1
E-112	DC CABLE SCHEDULE COMBINERS TO PCS	1
E-113	AC CABLE SCHEDULE PCS TO SUBSTATION	1
E-114	230KV TRANSMISSION LINE CUT-IN CONCEPTUAL PLAN	1
E-115	CUT SHEETS	1
E-116	BESS AC SINGLE LINE DIAGRAM	1
E-117	BESS AC SINGLE LINE DIAGRAM	1
E-118	BESS CABLE ROUTING	1
E-119	BESS CABLE SCHEDULE	1
E-120	BESS TRENCH DETAILS	1
E-121	BESS CUTSHEET	1



**NEW YORK STATE PLANES,
WEST ZONE, NY83-WF**



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MORRIS RIDGE
SOLAR FARM

PRELIMINARY DESIGN

MOUNT MORRIS,
NEW YORK
14510, USA

CLIENT:



JOB NO.
193576A
DATE:
12/02/19
DRAWN
CRR
APPROV
AP

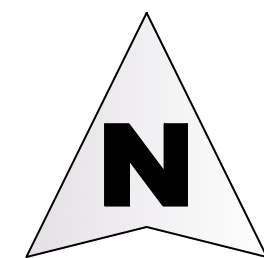
SHEET TITLE

**COVER
SHEET &
DRAWING
INDEX**

SHEET NUMBER

E-100

LEGEND	
	SITE FENCING
	WETLAND AREA
	INVERTER BLOCK AREA
	MV COLLECTION LINE E-01-1
	MV COLLECTION LINE E-01-2
	MV COLLECTION LINE E-02-1
	MV COLLECTION LINE E-03-1
	MV COLLECTION LINE E-03-2
	MV COLLECTION LINE E-03-3
	MV COLLECTION LINE E-04-1
	MV COLLECTION LINE W01-1
	MV COLLECTION LINE W-02-1
	MV COLLECTION LINE W-02-2
	MV COLLECTION LINE W03/04-1



**NY STATE PLANE, WEST
COORDINATE SYSTEM**



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MORRIS RIDGE SOLAR FARM

PRELIMINARY DESIGN

MOUNT MORRIS,
NEW YORK
14510, USA

CLIENT



JOB NO.:

193576A

DATE:

08/07/19

DRAWN BY
IDW

APPROVED

AP

SHEET T

SHEET 1

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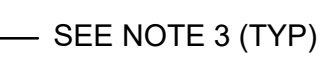
GENERAL SITE OVERVIEW

SHEET NUMBER

E-101



- ### LEGEND



E-103-2

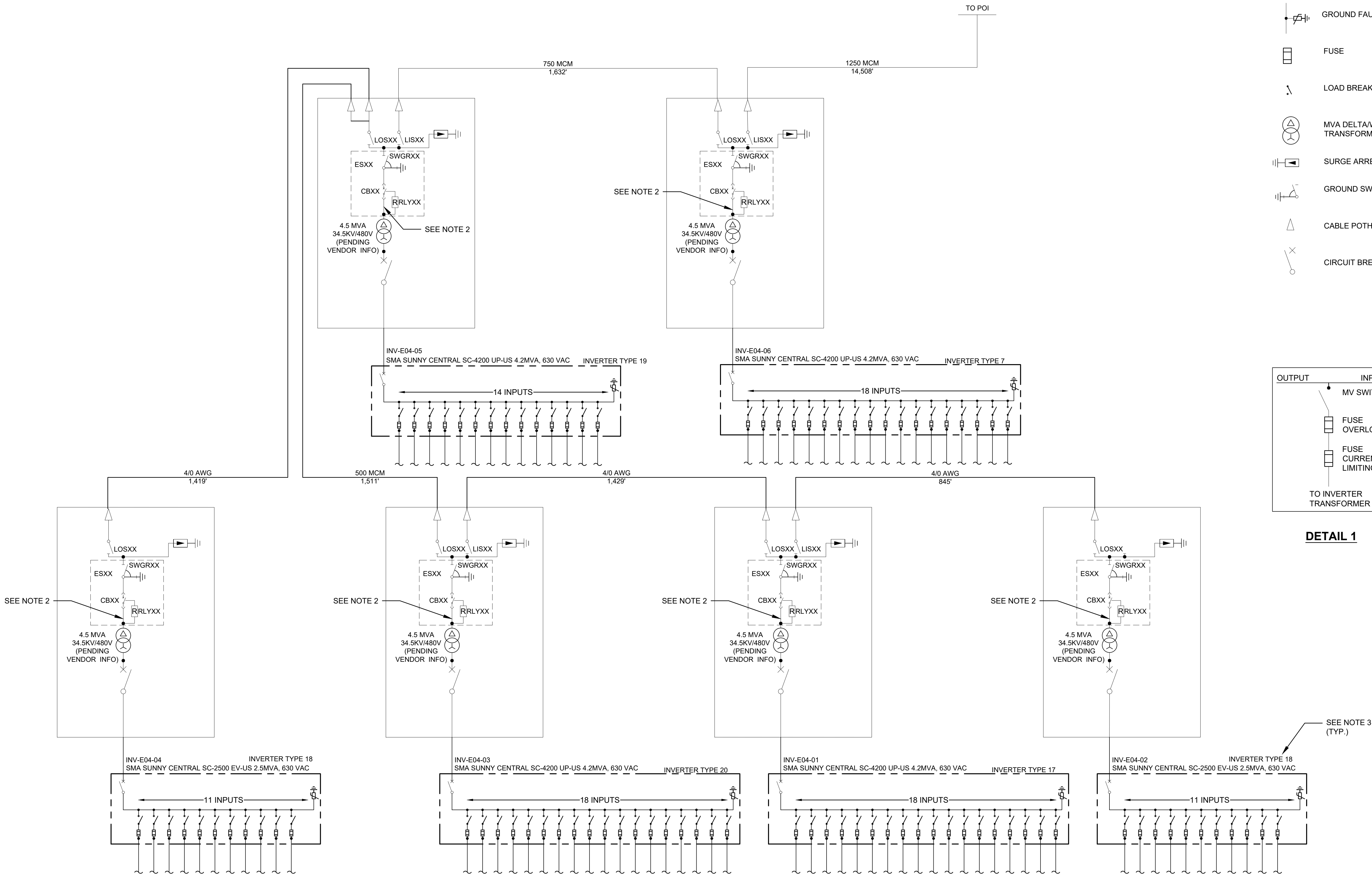
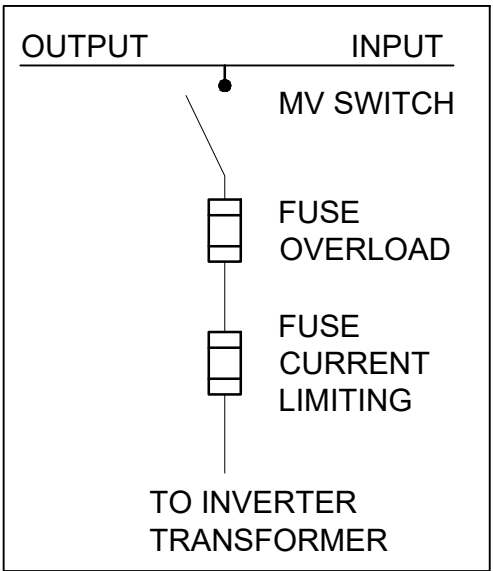
- NOTES:
1. SWGR=SWITCHGEAR, ES=EARTHING SWITCH, CB=CIRCUIT BREAKER, RLY=RELAY, LIS=LINE IN SWITCH & LOS=LINE OUTPUT SWITCH.
 2. THE SWITCHGEAR SHOWN IS A RELIABLE SOLUTION TO CONNECTING THE INVERTER TRANSFORMERS BUT CAN BE REPLACED BY AN OVERLOAD FUSE AND A CURRENT LIMITING FUSE PLACED IN SERIES (SEE DETAIL 1)
 3. SEE DRAWING E-105 FOR INVERTER DETAILS
 4. SEE DRAWING E-104 FOR COMBINER DETAILS



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LEGEND

- GROUND FAULT PROTECTOR
- FUSE
- LOAD BREAK SWITCH
- MVA DELTA/WYE TRANSFORMER
- SURGE ARRESTER
- GROUND SWITCH
- CABLE POTHEAD
- CIRCUIT BREAKER



MORRIS RIDGE
SOLAR FARM

PRELIMINARY
DESIGN

MOUNT MORRIS,
NEW YORK
14510, USA

CLIENT:



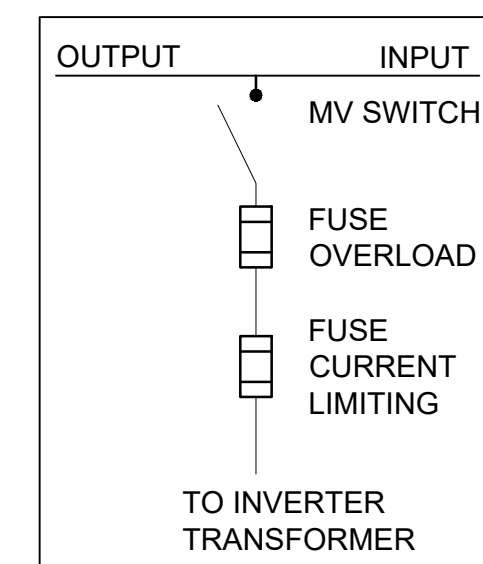
JOB NO.:
193576A
DATE:
11/27/19
DRAWN BY:
CRR
DESIGNED BY:
BT
APPROVED BY:
AP
CHECKED BY:
JTK

SHEET TITLE:

SINGLE LINE
DIAGRAM
E04 MV

SHEET NUMBER:

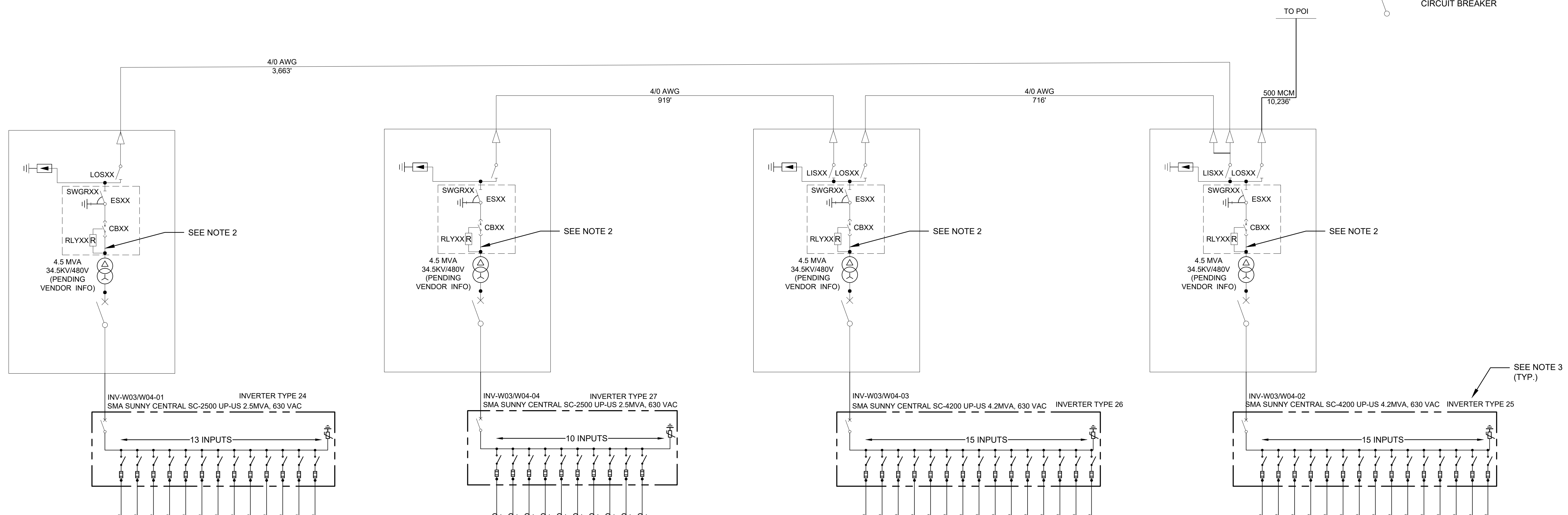
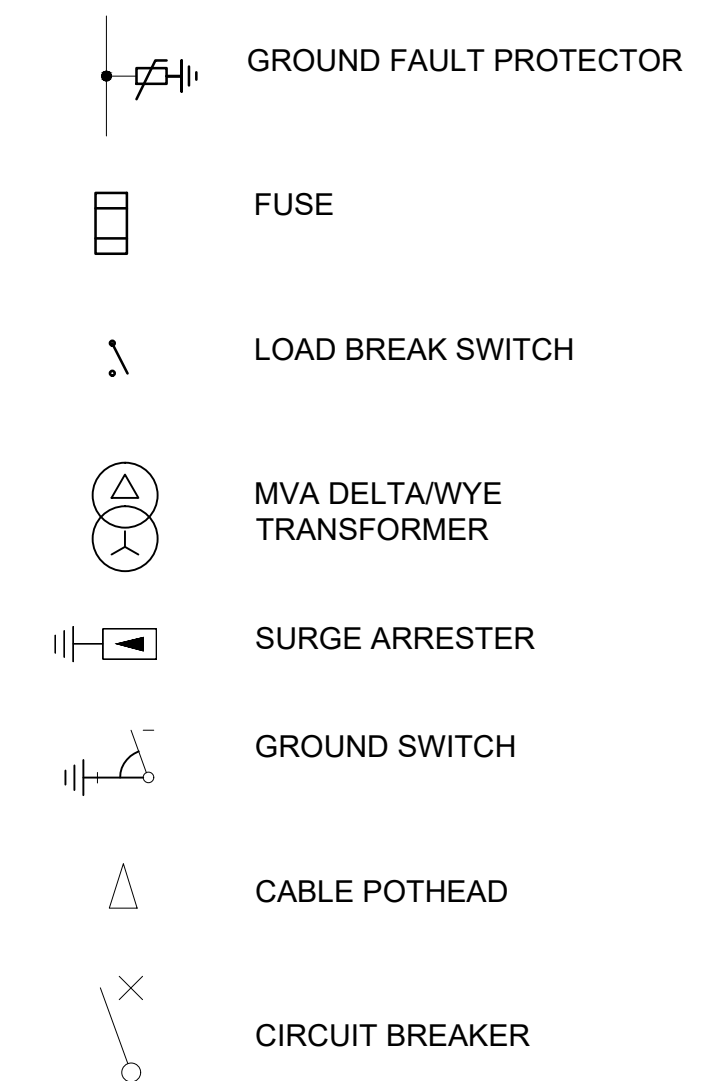
E-103-4



DETAIL 1

- NOTES:
1. SWGR=SWITCHGEAR, ES=EARTHING SWITCH, CB=CIRCUIT BREAKER, RLV=RELAY, LIS=LINE IN SWITCH & LOS=LINE OUTPUT SWITCH.
 2. THE SWITCHGEAR SHOWN IS A RELIABLE SOLUTION TO CONNECTING THE INVERTER TRANSFORMERS BUT CAN BE REPLACED BY AN OVERLOAD FUSE AND A CURRENT LIMITING FUSE PLACED IN SERIES (SEE DETAIL 1)
 3. SEE DRAWING E-105 FOR INVERTER DETAILS
 4. SEE DRAWING E-104 FOR COMBINER DETAILS

LEGEND



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REVISIONS

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MORRIS RIDGE SOLAR FARM

PRELIMINARY DESIGN

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NEW YORK
14510, USA

CLIENT:



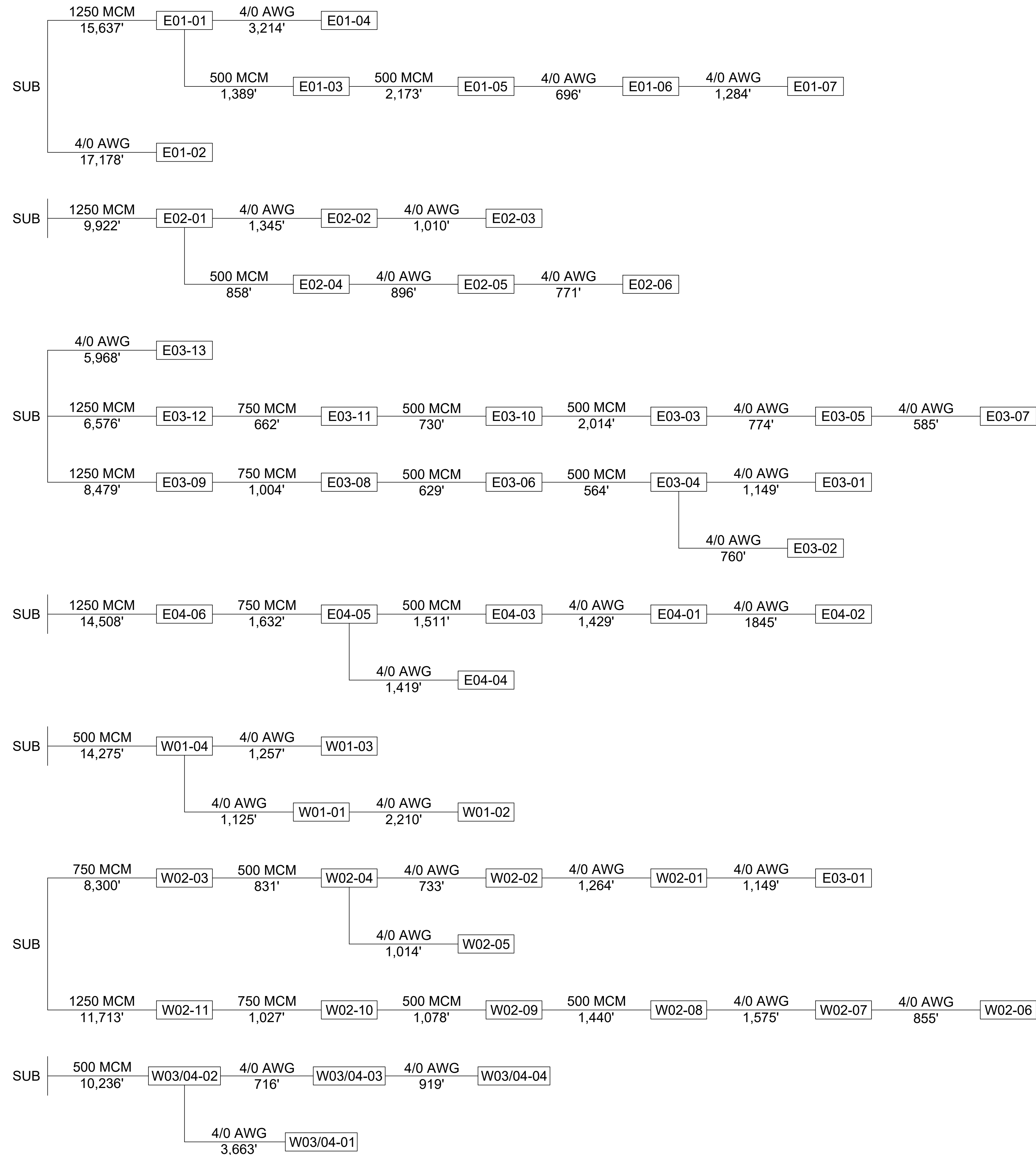
JOB NO.: 193576A	
DATE: 11/27/19	
DRAWN BY: CRR	DESIGNED BY: BT
APPROVED BY: AP	CHECKED BY: JTK

SHEET TITLE:

SINGLE LINE
DIAGRAM
W03/W04 MV

SHEET NUMBER:

E-103-7



***THIS DRAWING IS NOT FOR CONSTRUCTION**



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MORRIS RIDGE SOLAR FARM

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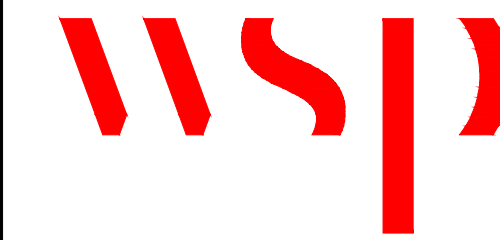


JOB NO.: 193576A	
DATE: 12/18/19	
DRAWN BY: CRR	DESIGNED BY: MB
APPROVED BY: AP	CHECKED BY: JTK

SIMPLIFIED AC SINGLE LINE DIAGRAM

SHEET NUMBER:

E-103-8



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DATE: _____

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DESIGNED BY

|BT

APPRO

CHECKED BY:

SHEET TITLE

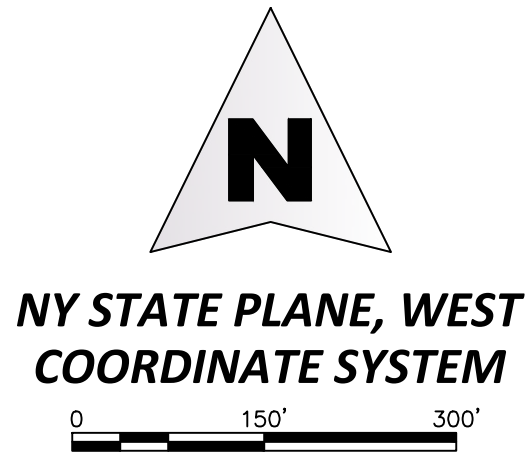
COMBINER TYPE DETAILS

SHEET NUMBER

E-104

COMBINER TYPE A	
MODULE TYPE	CANADIAN SOLAR CS3W - 410 PV - AG 410WP
QUANTITY	(784) MODULES
SOURCE CIRCUITS	(28) STRINGS OF (28) MODULES
COMBINER	(18) 1500V 28 INPUT DC COMBINERS
OPEN CIRCUIT VOLTAGE	1300 V
COMBINER TYPE B	
MODULE TYPE	CANADIAN SOLAR CS3W - 410 PV - AG 410WP
QUANTITY	(532) MODULES
SOURCE CIRCUITS	(14) STRINGS OF (28) MODULES
COMBINER	(1) 1500V 28 INPUT DC COMBINERS
OPEN CIRCUIT VOLTAGE	1300 V
COMBINER TYPE C	
MODULE TYPE	CANADIAN SOLAR CS3W - 410 PV - AG 410WP
QUANTITY	(448) MODULES
SOURCE CIRCUITS	(16) STRINGS OF (28) MODULES
COMBINER	(1) 1500V 28 INPUT DC COMBINERS
OPEN CIRCUIT VOLTAGE	1300 V
COMBINER TYPE D	
MODULE TYPE	CANADIAN SOLAR CS3W - 410 PV - AG 410WP
QUANTITY	(588) MODULES
SOURCE CIRCUITS	(21) STRINGS OF (28) MODULES
COMBINER	(1) 1500V 28 INPUT DC COMBINERS
OPEN CIRCUIT VOLTAGE	1300 V
COMBINER TYPE E	
MODULE TYPE	CANADIAN SOLAR CS3W - 410 PV - AG 410WP
QUANTITY	(644) MODULES
SOURCE CIRCUITS	(23) STRINGS OF (28) MODULES
COMBINER	(1) 1500V 28 INPUT DC COMBINERS
OPEN CIRCUIT VOLTAGE	1300 V
COMBINER TYPE F	
MODULE TYPE	CANADIAN SOLAR CS3W - 410 PV - AG 410WP
QUANTITY	(252) MODULES
SOURCE CIRCUITS	(9) STRINGS OF (28) MODULES
COMBINER	(1) 1500V 28 INPUT DC COMBINERS
OPEN CIRCUIT VOLTAGE	1300 V
COMBINER TYPE G	
MODULE TYPE	CANADIAN SOLAR CS3W - 410 PV - AG 410WP
QUANTITY	(112) MODULES
SOURCE CIRCUITS	(4) STRINGS OF (28) MODULES
COMBINER	(1) 1500V 28 INPUT DC COMBINERS
OPEN CIRCUIT VOLTAGE	1300 V
COMBINER TYPE H	
MODULE TYPE	CANADIAN SOLAR CS3W - 410 PV - AG 410WP
QUANTITY	(336) MODULES
SOURCE CIRCUITS	(12) STRINGS OF (28) MODULES
COMBINER	(1) 1500V 28 INPUT DC COMBINERS
OPEN CIRCUIT VOLTAGE	1300 V
COMBINER TYPE I	
MODULE TYPE	CANADIAN SOLAR CS3W - 410 PV - AG 410WP
QUANTITY	(700) MODULES
SOURCE CIRCUITS	(25) STRINGS OF (28) MODULES
COMBINER	(1) 1500V 28 INPUT DC COMBINERS
OPEN CIRCUIT VOLTAGE	1300 V
COMBINER TYPE J	
MODULE TYPE	CANADIAN SOLAR CS3W - 410 PV - AG 410WP
QUANTITY	(392) MODULES
SOURCE CIRCUITS	(14) STRINGS OF (28) MODULES
COMBINER	(1) 1500V 28 INPUT DC COMBINERS
OPEN CIRCUIT VOLTAGE	1300 V
COMBINER TYPE K	
MODULE TYPE	CANADIAN SOLAR CS3W - 410 PV - AG 410WP
QUANTITY	(504) MODULES
SOURCE CIRCUITS	(18) STRINGS OF (28) MODULES
COMBINER	(1) 1500V 28 INPUT DC COMBINERS
OPEN CIRCUIT VOLTAGE	1300 V

COMBINER TYPE L	
MODULE TYPE	CANADIAN SOLAR CS3W - 410 PV - AG 410WP
QUANTITY	(728) MODULES
SOURCE CIRCUITS	(26) STRINGS OF (28) MODULES
COMBINER	(1) 1500V 28 INPUT DC COMBINERS
OPEN CIRCUIT VOLTAGE	1300 V
COMBINER TYPE M	
MODULE TYPE	CANADIAN SOLAR CS3W - 410 PV - AG 410WP
QUANTITY	(196) MODULES
SOURCE CIRCUITS	(7) STRINGS OF (28) MODULES
COMBINER	(1) 1500V 28 INPUT DC COMBINERS
OPEN CIRCUIT VOLTAGE	1300 V
COMBINER TYPE N	
MODULE TYPE	CANADIAN SOLAR CS3W - 410 PV - AG 410WP
QUANTITY	(140) MODULES
SOURCE CIRCUITS	(5) STRINGS OF (28) MODULES
COMBINER	(1) 1500V 28 INPUT DC COMBINERS
OPEN CIRCUIT VOLTAGE	1300 V
COMBINER TYPE O	
MODULE TYPE	CANADIAN SOLAR CS3W - 410 PV - AG 410WP
QUANTITY	(864) MODULES
SOURCE CIRCUITS	(13) STRINGS OF (28) MODULES
COMBINER	(1) 1500V 28 INPUT DC COMBINERS
OPEN CIRCUIT VOLTAGE	1300 V
COMBINER TYPE P	
MODULE TYPE	CANADIAN SOLAR CS3W - 410 PV - AG 410WP
QUANTITY	(560) MODULES
SOURCE CIRCUITS	(20) STRINGS OF (28) MODULES
COMBINER	(1) 1500V 28 INPUT DC COMBINERS
OPEN CIRCUIT VOLTAGE	1300 V
COMBINER TYPE Q	
MODULE TYPE	CANADIAN SOLAR CS3W - 410 PV - AG 410WP
QUANTITY	(56) MODULES
SOURCE CIRCUITS	(2) STRINGS OF (28) MODULES
COMBINER	(1) 1500V 28 INPUT DC COMBINERS
OPEN CIRCUIT VOLTAGE	1300 V
COMBINER TYPE R	
MODULE TYPE	CANADIAN SOLAR CS3W - 410 PV - AG 410WP
QUANTITY	(168) MODULES
SOURCE CIRCUITS	(6) STRINGS OF (28) MODULES
COMBINER	(1) 1500V 28 INPUT DC COMBINERS
OPEN CIRCUIT VOLTAGE	1300 V
COMBINER TYPE S	
MODULE TYPE	CANADIAN SOLAR CS3W - 410 PV - AG 410WP
QUANTITY	(280) MODULES
SOURCE CIRCUITS	(10) STRINGS OF (28) MODULES
COMBINER	(1) 1500V 28 INPUT DC COMBINERS
OPEN CIRCUIT VOLTAGE	1300 V
COMBINER TYPE T	
MODULE TYPE	CANADIAN SOLAR CS3W - 410 PV - AG 410WP
QUANTITY	(84) MODULES
SOURCE CIRCUITS	(3) STRINGS OF (28) MODULES
COMBINER	(1) 1500V 28 INPUT DC COMBINERS
OPEN CIRCUIT VOLTAGE	1300 V
COMBINER TYPE U	
MODULE TYPE	CANADIAN SOLAR CS3W - 410 PV - AG 410WP
QUANTITY	(28) MODULES
SOURCE CIRCUITS	(1) STRINGS OF (28) MODULES
COMBINER	(1) 1500V 28 INPUT DC COMBINERS
OPEN CIRCUIT VOLTAGE	1300 V



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MORRIS RIDGE
SOLAR FARM

PRELIMINARY
DESIGN

MOUNT MORRIS,
NEW YORK
14510, USA

CLIENT



JOB NO.: 93576A	
DATE: 08/07/19	
DRAWN BY: MDW	DESIGNED BY: MB
APPROVED BY: AP	CHECKED BY: JTK

SHEET TITLE

EAST PARCEL 02 SITE PLAN

SHEET NUMBER

E-106-2

