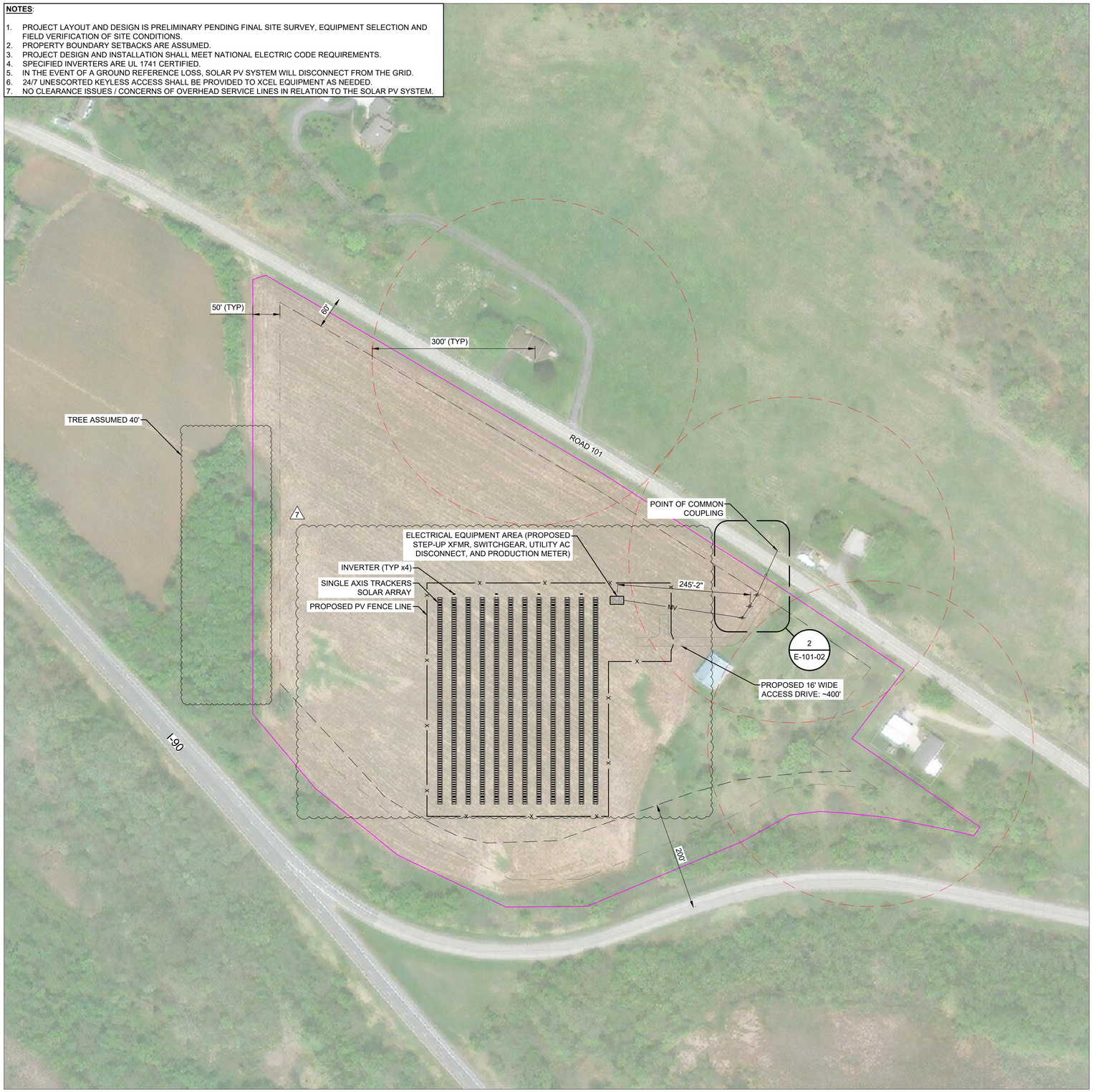
NOTES:

1. PROJECT LAYOUT AND DESIGN IS PRELIMINARY PENDING FINAL SITE SURVEY, EQUIPMENT SELECTION AND FIELD VERIFICATION OF SITE CONDITIONS.
2. PROPERTY BOUNDARY SETBACKS ARE ASSUMED.
3. PROJECT DESIGN AND INSTALLATION SHALL MEET NATIONAL ELECTRIC CODE REQUIREMENTS.
4. SPECIFIED INVERTERS ARE UL 1741 CERTIFIED.
5. IN THE EVENT OF A GROUND REFERENCE LOSS, SOLAR PV SYSTEM WILL DISCONNECT FROM THE GRID.
6. 24/7 UNESCORTED KEYLESS ACCESS SHALL BE PROVIDED TO XCEL EQUIPMENT AS NEEDED.
7. NO CLEARANCE ISSUES / CONCERNS OF OVERHEAD SERVICE LINES IN RELATION TO THE SOLAR PV SYSTEM.



SYSTEM SUMMARY	
CUSTOMER NAME	DAKOTASUN LLC
CASE #	04985270
APPLICATION MGR	DAVID AMSTER-OLSZEWSKI
APPLICATION MGR CONTACT	(719) 418-2153
INSTALLER	KONISTO COMPANIES LLC
INSTALLER CONTACT	(970) 403-8730
MODULE MFR	CANADIAN SOLAR
MODULE MODEL	CS7N-655MB-AG (BIFACIAL)
MODULE STC RATING	655W
MODULE QUANTITY	1,044
STRING SIZE	29
STRING QUANTITY	36
3-STR TABLE QTY	12
MAX DC SYSTEM VOLTAGE	1,500 V
TOTAL DC SYSTEM SIZE	683.8 kW
INVERTER MFR	CHINT POWER SYSTEMS
INVERTER MODEL	CPS SCH125KTL-DO/US-600
INVERTER OUTPUT VOLTAGE	600 V
INVERTER AC OUPUT	125.000 kW_{AC}
INVERTER QUANTITY	4
AC SYSTEM SIZE (@ POI)	500 kW_{AC}
POWER FACTOR (@ POI)	TBD
DC/AC RATIO (@ POI)	1.368
RACKING MFR	RPCS
RACKING MODEL	TBD
RACK TYPE	SAT
MODULE ORIENTATION	[1] PORTRAIT
ARRAY TILT ANGLE	+/- 52°
ARRAY AZIMUTH	180°
ARRAY PITCH , GCR	26'-1" , 30%
ASHRAE WEATHER STATION	LA CROSSE MUNI AP
ASHRAE 2% AVG HIGH TEMP	33.0°C
ASHRAE MIN EXTREME TEMP	-27.0°C
SITE ELEVATION	TBD

7 7 7

LEGEND

- PROPERTY BOUNDARY
- RESIDENTIAL SETBACK
- PROPERTY SETBACK
- ROAD SETBACK
- FENCE LINE (N)
- UG MV CIRCUIT
- OVERHEAD LINES (N)
- OVERHEAD LINES (E)
- EQUIPMENT POLE (N)
- EQUIPMENT POLE (E)
- SITE ACCESS ROAD

1 PROJECT VICINITY MAP
SCALE: 1" = 2000'-0"

EVS, INC.
10025 Valley View Road, Suite 140
Eden Prairie, Minnesota 55344
Phone: 952-646-0236
www.evs-eng.com

CLIENT

SunShare COMMUNITY SOLAR

PROJECT
DAKOTASUN LLC

LOCATION
43.921257, - 91.368962
DAKOTA, MN

SUBMITTAL
INTERCONNECTION SUBMITTAL

SCALE

0 100 200
SCALE IN FEET

#	DATE	DESCRIPTION
01	03.02.2021	CLIENT COMMENTS
02	03.05.2021	UTILITY COMMENTS
03	03.12.2021	CLIENT COMMENTS
04	03.18.2021	CLIENT COMMENTS
05	05.02.2022	PROJECT NAME CHANGE
06	08.05.2022	UTILITY COMMENTS
07	03.03.2023	MODULE CHANGE

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ROBERT HOERAUF, PE
DATE 03/03/2022
REGISTRATION NUMBER 17064

PRELIMINARY NOT FOR CONSTRUCTION OR PROCUREMENT

DRAWN BY **CL / PA**
CHECKED BY **IT / AS**
DATE **03.03.2023**
PROJECT # **2020-198.1**

SHEET NAME
SITE PLAN

SHEET NUMBER
E-101-01

NOTES:

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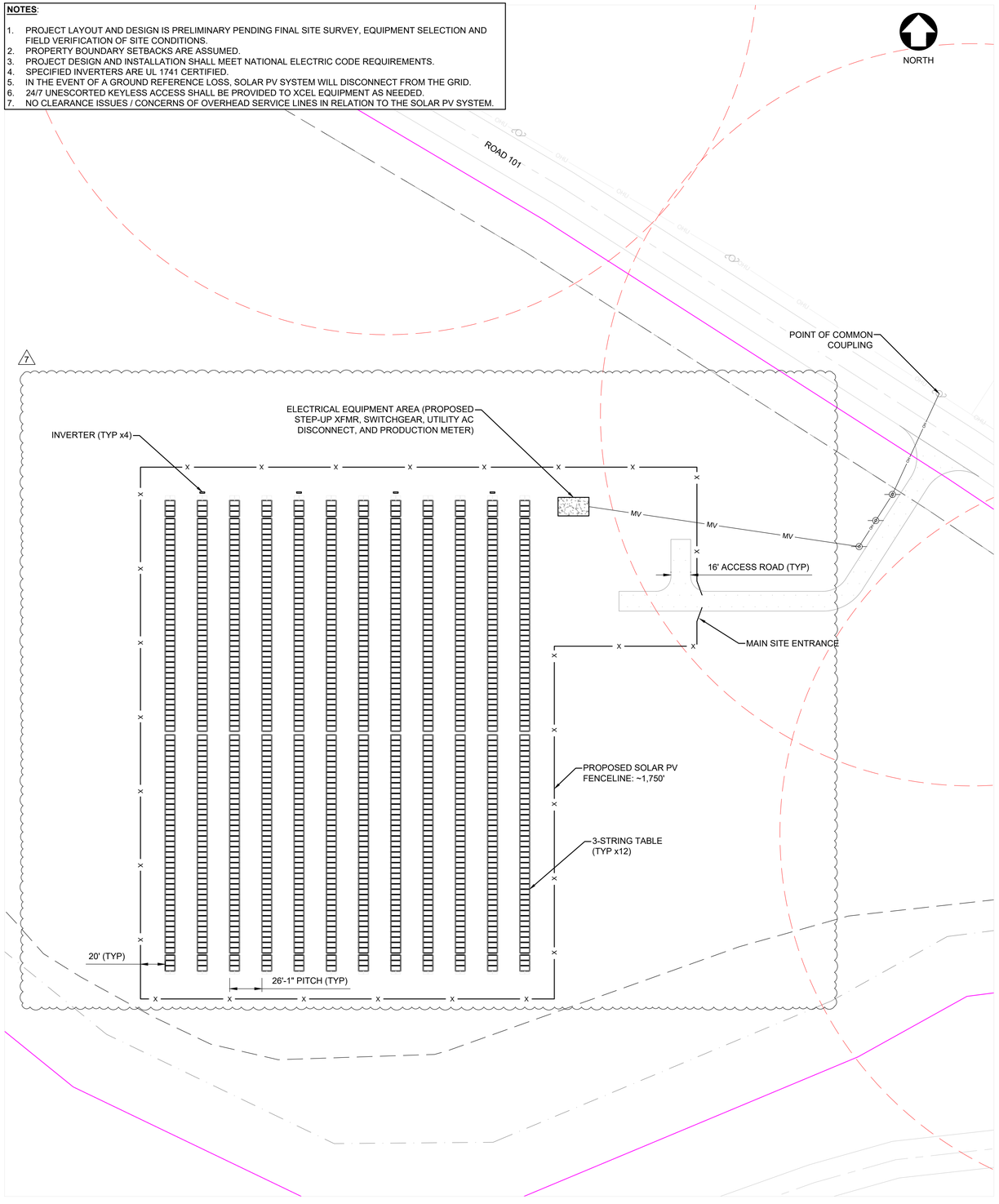

1 SITE LAYOUT
SCALE: 1" = 50'-0"

SYSTEM SUMMARY	
CUSTOMER NAME	DAKOTASUN LLC
CASE #	04985270
APPLICATION MGR	DAVID AMSTER-OLSZEWSKI
APPLICATION MGR CONTACT	(719) 418-2153
INSTALLER	KONISTO COMPANIES LLC
INSTALLER CONTACT	(970) 403-8730
MODULE MFR	CANADIAN SOLAR
MODULE MODEL	CS7N-655MB-AG (BIFACIAL)
MODULE STC RATING	655W
MODULE QUANTITY	1,044
STRING SIZE	29
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MAX DC SYSTEM VOLTAGE	1,500 V
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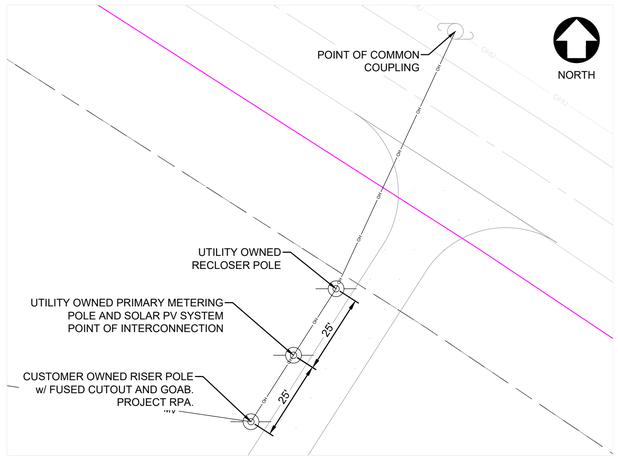
INVERTER AC OUPUT	125.000 kW_{AC}
INVERTER QUANTITY	4
AC SYSTEM SIZE (@ POI)	500 kW_{AC}
POWER FACTOR (@ POI)	TBD
DC/AC RATIO (@ POI)	1.368
RACKING MFR	RPCS
RACKING MODEL	TBD
RACK TYPE	SAT
MODULE ORIENTATION	[1] PORTRAIT
ARRAY TILT ANGLE	+/- 52°
ARRAY AZIMUTH	180°
ARRAY PITCH , GCR	26'-1" , 30%
ASHRAE WEATHER STATION	LA CROSSE MUNI AP
ASHRAE 2% AVG HIGH TEMP	33.0°C
ASHRAE MIN EXTREME TEMP	-27.0°C
SITE ELEVATION	TBD

LEGEND

- PROPERTY BOUNDARY
- RESIDENTIAL SETBACK
- PROPERTY SETBACK
- ROAD SETBACK
- FENCE LINE (N)
- UG MV CIRCUIT
- OVERHEAD LINES (N)
- OVERHEAD LINES (E)
- EQUIPMENT POLE (N)
- EQUIPMENT POLE (E)
- SITE ACCESS ROAD



2 INTERCONNECTION AERIAL CIRCUIT
SCALE: 1/2" = 1'-0"

EVS, INC.
10025 Valley View Road, Suite 140
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www.evs-eng.com

CLIENT

PROJECT
DAKOTASUN LLC

LOCATION
43.921257, - 91.368962
DAKOTA, MN

SUBMITTAL
INTERCONNECTION SUBMITTAL

SCALE

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01	03.02.2021	CLIENT COMMENTS
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ROBERT HOERAUF, PE
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DATE **03.03.2023**
PROJECT # **2020-198.1**

SHEET NAME
SITE LAYOUT

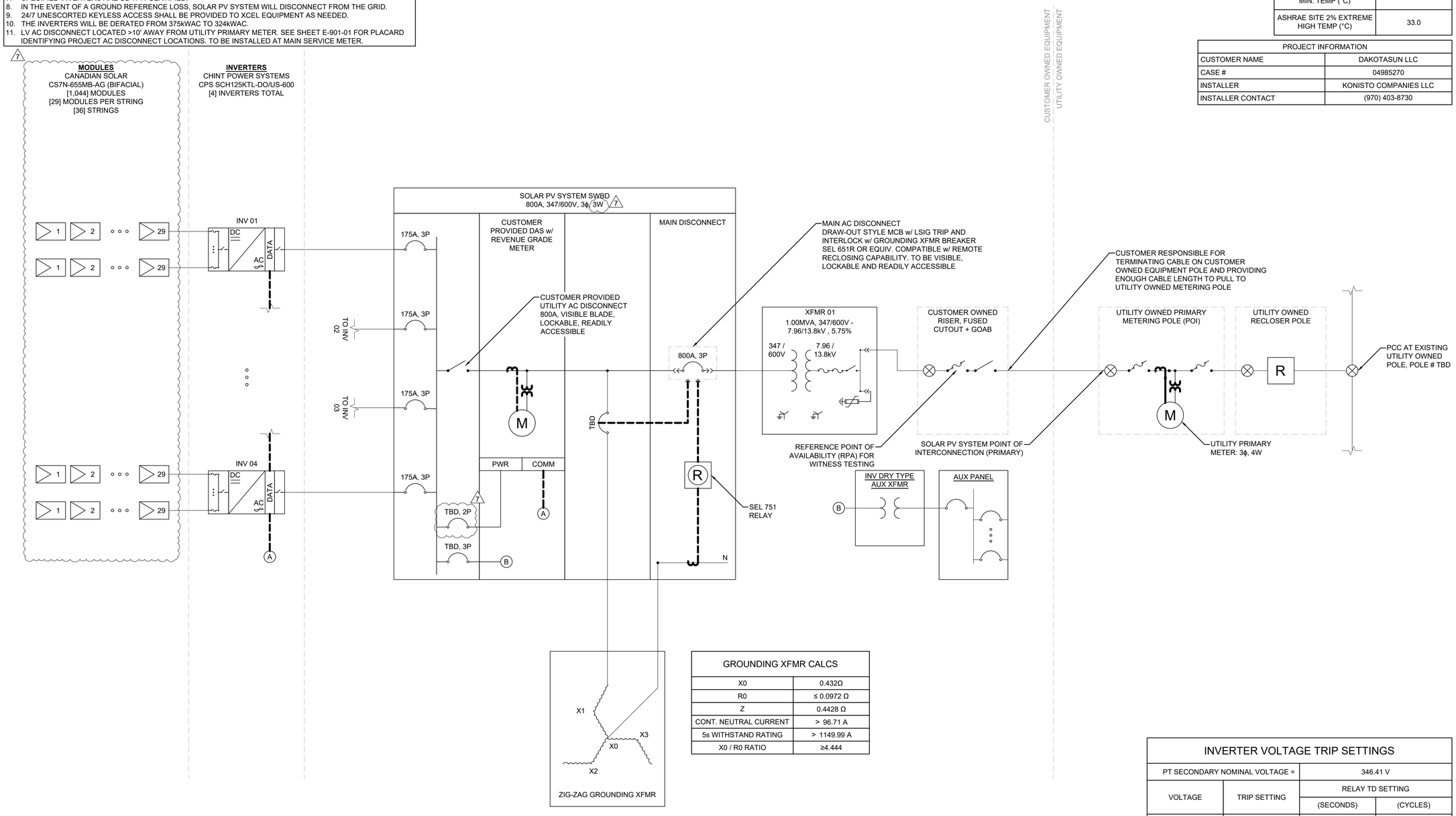
SHEET NUMBER
E-101-02

NOTES:

1. UTILITY DISTRIBUTION VOLTAGE AT POINT OF INTERCONNECTION TBD.
2. GROUNDING XFMR CALCULATIONS ARE PRELIMINARY PENDING UTILITY COORDINATION AND RECEIPT OF SITE AVAILABLE FAULT CURRENT.
3. ASSUMED PF = 1.0
4. PROJECT LAYOUT AND DESIGN IS PRELIMINARY PENDING FINAL SITE SURVEY, EQUIPMENT SELECTION AND FIELD VERIFICATION OF SITE CONDITIONS.
5. PROPERTY BOUNDARY SETBACKS ARE ASSUMED.
6. PROJECT DESIGN AND INSTALLATION SHALL MEET NATIONAL ELECTRIC CODE REQUIREMENTS.
7. SPECIFIED INVERTERS ARE UL 1741 CERTIFIED.
8. IN THE EVENT OF A GROUND REFERENCE LOSS, SOLAR PV SYSTEM WILL DISCONNECT FROM THE GRID.
9. 24/7 UNESCORTED KEYLESS ACCESS SHALL BE PROVIDED TO XCEL EQUIPMENT AS NEEDED.
10. THE INVERTERS WILL BE DERATED FROM 375kWAC TO 324kWAC.
11. LV AC DISCONNECT LOCATED >10' AWAY FROM UTILITY PRIMARY METER. SEE SHEET E-901-01 FOR PLACARD IDENTIFYING PROJECT AC DISCONNECT LOCATIONS. TO BE INSTALLED AT MAIN SERVICE METER.

SYSTEM SUMMARY	
CSG QTY	1
SITE CSG SIZE (AC)	500 kW
SITE CSG SIZE (DC)	658.8 kW
DC/AC RATIO	1.368
ASHRAE SITE EXTREME MIN. TEMP (°C)	-27.0
ASHRAE SITE 2% EXTREME HIGH TEMP (°C)	33.0

PROJECT INFORMATION	
CUSTOMER NAME	DAKOTASUN LLC
CASE #	04985270
INSTALLER	KONISTO COMPANIES LLC
INSTALLER CONTACT	(970) 403-8730



GROUNDING XFMR CALCS	
X0	0.432Ω
R0	≤ 0.0972 Ω
Z	0.4428 Ω
CONT. NEUTRAL CURRENT	> 96.71 A
5s WITHSTAND RATING	> 1149.99 A
X0 / R0 RATIO	≥4.444

INVERTER VOLTAGE TRIP SETTINGS			
PT SECONDARY NOMINAL VOLTAGE =		346.41 V	
VOLTAGE	TRIP SETTING	RELAY TD SETTING	
		(SECONDS)	(CYCLES)
V < 50%	173.21	0.16	66.00
V < 88%	304.84	2.00	120.00
V > 110%	381.05	1.00	120.00
V > 120%	415.69	0.16	9.60

INVERTER FREQUENCY TRIP SETTINGS			
FREQUENCY	TRIP SETTING	RELAY TD SETTING	
		(SECONDS)	(CYCLES)
f < 59.3	59.30	0.16	9.60
f > 60.5	60.50	0.16	9.60

INVERTER SPECIFICATIONS		
MODEL	CERTS	AC OUTPUT
CPS SCH125KTL-DO /US-600	IEEE1547, UL1741-SA	125kW, 600V, 120A, 3ϕ

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CLIENT

PROJECT
DAKOTASUN LLC

LOCATION
43.921257, - 91.368962
DAKOTA, MN

SUBMITTAL
INTERCONNECTION SUBMITTAL

SCALE

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PROJECT # **2020-198.1**

SHEET NAME
SINGLE LINE DIAGRAM

SHEET NUMBER
E-200-01

NOTES:

1. PLACARDS SHALL BE PROVIDED TO CLEARLY SHOW THE MAIN SERVICE METER AND PRODUCTION METER PAIRS
2. LABELS SHALL BE NEC COMPLIANT, WEATHERPROOF, DURABLE AND PERMANENTLY MOUNTED

1

PRODUCTION METER

3

WARNING

ELECTRIC SHOCK HAZARD

THE DC CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED

4

WARNING

ELECTRIC SHOCK HAZARD

DO NOT TOUCH THESE TERMINALS, TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

5

WARNING

ELECTRIC SHOCK HAZARD

WHEN A *GROUND FAULT* IS ACTIVE CONDUCTORS THAT ARE NORMALLY GROUNDED MAY BE UNGROUNDED AND ENERGIZED

6

CAUTION

PHOTOVOLTAIC SYSTEM CIRCUIT IS BACKFED

7

WARNING

TURN OFF DISCONNECT PRIOR TO WORKING INSIDE PANEL

2

PHOTOVOLTAIC POWER SOURCE

8

DO NOT DISCONNECT UNDER LOAD

9

MAIN AC DISCONNECT

10

UTILITY AC DISCONNECT

11

CAUTION

PHOTOVOLTAIC GENERATION SYSTEM CONNECTED

12

WARNING

DUAL POWER SOURCE. SECOND SOURCE IS A PV SYSTEM

13

CAUTION

MAXIMUM OPERATING CURRENT 480 A

MAXIMUM OPERATING AC VOLTS 600 V

14

CAUTION

NOMINAL OPERATING AC VOLTAGE	600 V
NOMINAL OPERATING AC FREQUENCY	60 Hz
MAXIMUM AC POWER	500 kW
MAXIMUM AC CURRENT	480 A
OVERCURRENT PROTECTION RATING	800 A

15

CAUTION

600V SECONDARY FAULT CURRENT = 16,735 AMPS

16

MAIN SERVICE METER A

13A

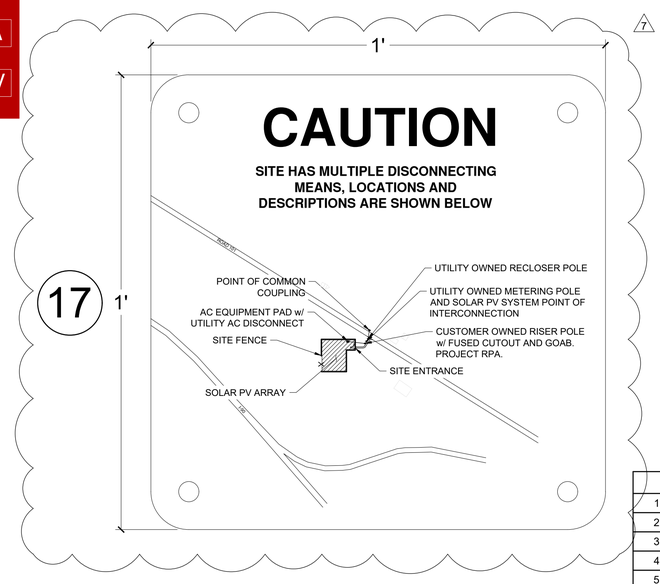
CAUTION

MAXIMUM OPERATING CURRENT 480A

MAXIMUM OPERATING AC VOLTS 600 V

17

△7



LABEL LOCATIONS/DETAILS	
1	XCEL PRIMARY PRODUCTION METER
2	UTILITY AC DISCONNECT, MAIN AC DISCONNECT
3	DC DISCONNECTS, INVERTERS
4	UTILITY AC DISCONNECT, MAIN AC DISCONNECT
5	DC DISCONNECTS, INVERTERS
6	UTILITY AC DISCONNECT & MAIN AC DISCONNECT - LOAD SIDE AND LINE SIDE
7	LV SWITCHGEARS
8	UTILITY AC DISCONNECT, MAIN AC DISCONNECT
9	MAIN AC DISCONNECT
10	UTILITY AC DISCONNECT
11	LV SWITCHGEAR, PRODUCTION METER, MAIN SERVICE BILLING METER
12	LV SWITCHGEAR, PRODUCTION METER, MAIN SERVICE BILLING METER
13	SWITCHBOARD
13A	UTILITY AC DISCONNECT, LV SWITCHGEAR, PRODUCTION METER, & MAIN AC DISCONNECT
14	SWITCHBOARD (4 INVERTER INPUT)
15	SWITCHBOARD
16	MAIN SERVICE BILLING METER
17	SITE ENTRANCE, UTILITY METERING POLE

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CLIENT

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PROJECT
DAKOTASUN LLC

LOCATION
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SHEET NAME
LABELS & SIGNS

SHEET NUMBER
E-901-01