THIS EDGE INTENTIONALLY LEFT BLANK FOR BINDING - PAPER SIZE 34" X 22" - THIS EDGE INTENTIONALLY LEFT BLANK FOR BINDING - PAPER SIZE 34" X 22" - THIS EDGE INTENTIONALLY LEFT BLANK FOR BINDING - PAPER SIZE 34" X 22"

MODULE CHARACTERISTICS		
MANUFACTURER		HELIENE
MODEL		156HC M10 NTYP SL
MAXIMUM POWER @ STC		640 W
MAXIMUM POWER VOLTAGE, Vmp		48.8 V
MAXIMUM POWER CURRENT, Imp		13.1 A
OPEN-CIRCUIT VOLTAGE, Voc		57.7 V
SHORT-CIRCUIT CURRENT, Isc		13.8 A
MAXIMUM SYSTEM VOLTAGE, Vmax		1500 V
MAXIMUM SERIES FUSE RATING		30.0 A
THERMAL PROPERTIES	Pmax COEFFICIENT (γ)	-0.300%
	Voc COEFFICIENT (β)	-0.250%
	Isc COEFFICIENT (α)	0.045%

INVERTER CHARACTERISTICS		
MANUFACTURER	YASKAWA SOLECTRIA SOLAR	YASKAWA SOLECTRIA SOLAR
MODEL	XGI 1500 225/225-600	XGI 1500 250/250-600
RATED AC POWER	225 kW	250 kW
MIN. MPPT VOLTAGE	860 V	860 V
MAX. MPPT VOLTAGE	1250 V	1250 V
MAX. DC INPUT VOLTAGE	1500 V	1500 V
AC OUTPUT VOLTAGE	600 V	600 V
AC OUTPUT CURRENT	216.5 A	240.6 A
MAX AC CABLE OUTPUT	2 (SETS) OF 600 KCMIL	

WEATHER STATION DATA	
JACKSONVILLE, IL	
2% AVERAGE HIGH TEMP	33.0 °C
20-YR EXTREME HIGH TEMP	39.1 °C
EXTREME LOW TEMP	-20.5 °C
SITE ELEVATION	
205 m (672 FT)	

OUTDOOR THERMAL EXPANSION		
CONDUIT	4" EXPANSION JOINT REQ'D ON CONTINUOUS SPANS OVER 'X' FT	4" EXPANSION JOINT ALLOWS SPAN OF 'X' FT
STEEL	25	406
ALUMINUM	13	206
PVC	6	94

VOLTAGE DROP SUMMARY		
SYSTEM	**AVERAGE**	**MAX**
DC SYSTEM - BLOCK 1	1.90%	3.22%
LVAC SYSTEM - BLOCK 1	0.14%	0.20%
DC SYSTEM - BLOCK 2	1.56%	2.27%
LVAC SYSTEM - BLOCK 2	0.13%	0.18%
MVAC	0.05%	0.05%

SHEET NOTES:

1. CONDUCTOR LENGTHS INDICATED ARE APPROXIMATIONS. CONTRACTOR SHALL VERIFY ACTUAL LENGTHS ON SITE.
2. ALL UNDERGROUND CONDUITS SHALL BE PVC 40. IF A CONDUIT RUN EXCEEDS 100 FT, THE 90° UNDERGROUND ELBOWS AT THE PULLING END OF THE CIRCUIT SHALL BE IMC. ALL OTHER UNDERGROUND ELBOWS AND STUB UPS SHALL BE PVC 80, UON.

KEYED NOTES:

[1] CONDUCTORS ARE LARGER THAN THE STANDARD SIZE THE BREAKER TERMINALS ACCEPT. CONTRACTOR SHALL USE COMPRESSION PIN ADAPTERS COMPATIBLE WITH CABLE SIZE AND BREAKER TERMINALS. CONTRACTOR SHALL CONFIRM THAT SWITCHBOARD HAS ADEQUATE BENDING SPACE TO ACCOMMODATE.

LVAC CIRCUIT CABLE SCHEDULE AND CALCULATIONS - BLOCK 1

GENERAL				PHASE & NEUTRAL CONDUCTOR DETAILS					GROUNDING CONDUCTOR DETAILS			RACEWAY DETAILS					OCPD SIZING / TERMINATION AMPACITY				RACEWAY AMPACITY				VOLTAGE DROP CALCULATIONS			
CABLE ID	ORIGINATING EQUIPMENT	TERMINATING EQUIPMENT	INVERTER SIZE (KW)	QTY	SIZE [1]	MATERIAL	INSULATION TYPE	INSULATION VOLTAGE	SIZE	MATERIAL	TYPE	QTY	SIZE	MATERIAL	FILL (%)	TYPE	MAX CURRENT (A)	CONTINUOUS RATING	OCPD RATING (A)	75°C TERM RATING (A)	90°C AMPACITY (A)	TEMP CORR.	FILL ADJUST	C.O.U. AMPACITY (A)	ONE-WAY LENGTH (FT)	OPERATING CURRENT (A)	OPERATING VOLTAGE (V)	VOLTAGE DROP TO POI (%)
AC-1.01	INV-1.01	SWBD-1	250	3	600 KCMIL	COPPER	XHHW_2	600 V	#3 AWG	COPPER	EGC	1	4"	PVC_40	22%	CONDUIT	300.8	80%	350	420	475	0.97	1.00	463.0	80	240.6	600	0.20%
AC-1.02	INV-1.02	SWBD-1	250	3	600 KCMIL	COPPER	XHHW_2	600 V	#3 AWG	COPPER	EGC	1	4"	PVC_40	22%	CONDUIT	300.8	80%	350	420	475	0.97	1.00	463.0	75	240.6	600	0.19%
AC-1.03	INV-1.03	SWBD-1	250	3	600 KCMIL	COPPER	XHHW_2	600 V	#3 AWG	COPPER	EGC	1	4"	PVC_40	22%	CONDUIT	300.8	80%	350	420	475	0.97	1.00	463.0	70	240.6	600	0.18%
AC-1.04	INV-1.04	SWBD-1	250	3	600 KCMIL	COPPER	XHHW_2	600 V	#3 AWG	COPPER	EGC	1	4"	PVC_40	22%	CONDUIT	300.8	80%	350	420	475	0.97	1.00	463.0	65	240.6	600	0.16%
AC-1.05	INV-1.05	SWBD-1	250	3	600 KCMIL	COPPER	XHHW_2	600 V	#3 AWG	COPPER	EGC	1	4"	PVC_40	22%	CONDUIT	300.8	80%	350	420	475	0.97	1.00	463.0	60	240.6	600	0.15%
AC-1.06	INV-1.06	SWBD-1	250	3	600 KCMIL	COPPER	XHHW_2	600 V	#3 AWG	COPPER	EGC	1	4"	PVC_40	22%	CONDUIT	300.8	80%	350	420	475	0.97	1.00	463.0	55	240.6	600	0.14%
AC-1.07	INV-1.07	SWBD-1	250	3	600 KCMIL	COPPER	XHHW_2	600 V	#3 AWG	COPPER	EGC	1	4"	PVC_40	22%	CONDUIT	300.8	80%	350	420	475	0.97	1.00	463.0	45	240.6	600	0.11%
AC-1.08	INV-1.08	SWBD-1	250	3	600 KCMIL	COPPER	XHHW_2	600 V	#3 AWG	COPPER	EGC	1	4"	PVC_40	22%	CONDUIT	300.8	80%	350	420	475	0.97	1.00	463.0	40	240.6	600	0.10%
AC-1.09	INV-1.09	SWBD-1	250	3	600 KCMIL	COPPER	XHHW_2	600 V	#3 AWG	COPPER	EGC	1	4"	PVC_40	22%	CONDUIT	300.8	80%	350	420	475	0.97	1.00	463.0	35	240.6	600	0.09%
AC-1.10	INV-1.10	SWBD-1	250	3	600 KCMIL	COPPER	XHHW_2	600 V	#3 AWG	COPPER	EGC	1	4"	PVC_40	22%	CONDUIT	300.8	80%	350	420	475	0.97	1.00	463.0	40	240.6	600	0.10%
																										AVERAGE LVAC VD		**0.14%**
																										MAXIMUM LVAC VD		**0.20%**

LVAC CIRCUIT CABLE SCHEDULE AND CALCULATIONS - BLOCK 2

GENERAL				PHASE & NEUTRAL CONDUCTOR DETAILS					GROUNDING CONDUCTOR DETAILS			RACEWAY DETAILS					OCPD SIZING / TERMINATION AMPACITY				RACEWAY AMPACITY				VOLTAGE DROP CALCULATIONS			
CABLE ID	ORIGINATING EQUIPMENT	TERMINATING EQUIPMENT	INVERTER SIZE (KW)	QTY	SIZE [1]	MATERIAL	INSULATION TYPE	INSULATION VOLTAGE	SIZE	MATERIAL	TYPE	QTY	SIZE	MATERIAL	FILL (%)	TYPE	MAX CURRENT (A)	CONTINUOUS RATING	OCPD RATING (A)	75°C TERM RATING (A)	90°C AMPACITY (A)	TEMP CORR.	FILL ADJUST	C.O.U. AMPACITY (A)	ONE-WAY LENGTH (FT)	OPERATING CURRENT (A)	OPERATING VOLTAGE (V)	VOLTAGE DROP TO POI (%)
AC-2.01	INV-2.01	SWBD-2	250	3	600 KCMIL	COPPER	XHHW_2	600 V	#3 AWG	COPPER	EGC	1	4"	PVC_40	22%	CONDUIT	300.8	80%	350	420	475	0.97	1.00	463.0	50	240.6	600	0.13%
AC-2.02	INV-2.02	SWBD-2	250	3	600 KCMIL	COPPER	XHHW_2	600 V	#3 AWG	COPPER	EGC	1	4"	PVC_40	22%	CONDUIT	300.8	80%	350	420	475	0.97	1.00	463.0	40	240.6	600	0.10%
AC-2.03	INV-2.03	SWBD-2	250	3	600 KCMIL	COPPER	XHHW_2	600 V	#3 AWG	COPPER	EGC	1	4"	PVC_40	22%	CONDUIT	300.8	80%	350	420	475	0.97	1.00	463.0	35	240.6	600	0.09%
AC-2.04	INV-2.04	SWBD-2	250	3	600 KCMIL	COPPER	XHHW_2	600 V	#3 AWG	COPPER	EGC	1	4"	PVC_40	22%	CONDUIT	300.8	80%	350	420	475	0.97	1.00	463.0	40	240.6	600	0.10%
AC-2.05	INV-2.05	SWBD-2	250	3	600 KCMIL	COPPER	XHHW_2	600 V	#3 AWG	COPPER	EGC	1	4"	PVC_40	22%	CONDUIT	300.8	80%	350	420	475	0.97	1.00	463.0	45	240.6	600	0.11%
AC-2.06	INV-2.06	SWBD-2	250	3	600 KCMIL	COPPER	XHHW_2	600 V	#3 AWG	COPPER	EGC	1	4"	PVC_40	22%	CONDUIT	300.8	80%	350	420	475	0.97	1.00	463.0	50	240.6	600	0.13%
AC-2.07	INV-2.07	SWBD-2	250	3	600 KCMIL	COPPER	XHHW_2	600 V	#3 AWG	COPPER	EGC	1	4"	PVC_40	22%	CONDUIT	300.8	80%	350	420	475	0.97	1.00	463.0	55	240.6	600	0.14%
AC-2.08	INV-2.08	SWBD-2	250	3	600 KCMIL	COPPER	XHHW_2	600 V	#3 AWG	COPPER	EGC	1	4"	PVC_40	22%	CONDUIT	300.8	80%	350	420	475	0.97	1.00	463.0	60	240.6	600	0.15%
AC-2.09	INV-2.09	SWBD-2	250	3	600 KCMIL	COPPER	XHHW_2	600 V	#3 AWG	COPPER	EGC	1	4"	PVC_40	22%	CONDUIT	300.8	80%	350	420	475	0.97	1.00	463.0	70	240.6	600	0.18%
AC-2.10	INV-2.10	SWBD-2	225	3	600 KCMIL	COPPER	XHHW_2	600 V	#3 AWG	COPPER	EGC	1	4"	PVC_40	22%	CONDUIT	270.6	80%	350	420	475	0.97	1.00	463.0	75	216.5	600	0.17%
																										AVERAGE LVAC VD		**0.13%**
																										MAXIMUM LVAC VD		**0.18%**

MVAC CIRCUIT CABLE SCHEDULE AND CALCULATIONS

GENERAL			CONDUCTOR DETAILS					EGC DETAILS		RACEWAY			VOLTAGE DROP CALCULATIONS				
CABLE ID	FROM	TO	QTY	SIZE	MATERIAL	TYPE	NEUTRAL / SHIELD	SIZE	MATERIAL	SIZE	MATERIAL	TYPE	OPERATING CURRENT (A)	LENGTH (FT)	VOLTAGE DROP %	TOTAL VD TO XFMR (%)	AVG VD TO XFMR (%)
OH-1	U1	C3	3	RAVEN #1/0 AWG	ALUMINUM	COVERED ACSR	RAVEN #1/0 AWG	-	-	-	-	-	83.7	50	0.005%	-	0.05%
OH-2	C3	C2	3	RAVEN #1/0 AWG	ALUMINUM	COVERED ACSR	RAVEN #1/0 AWG	-	-	-	-	-	83.7	50	0.005%	-	
OH-3	C2	C1	3	RAVEN #1/0 AWG	ALUMINUM	COVERED ACSR	RAVEN #1/0 AWG	-	-	-	-	-	83.7	50	0.005%	-	
UG-1	C1	XFMR-2	3	#1/0 AWG	ALUMINUM	35KV, 133% XLPE, MV-105, JCN	(6) #14 AWG	#4 AWG	COPPER	5"	PVC_80	STUB-UP	83.7	300	0.028%	0.04%	
UG-2	XFMR-2	XFMR-1	3	#1/0 AWG	ALUMINUM	35KV, 133% XLPE, MV-105, JCN	(6) #14 AWG	#4 AWG	COPPER	5"	PVC_80	STUB-UP	41.8	55	0.002%	0.05%	

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REVISIONS

#	DESCRIPTION	DATE
0	IFC	02/06/2026
1	IFC R1	02/27/2026

ISSUED FOR CONSTRUCTION
FEBRUARY 27, 2026

138883 CEMETERY SUN, LLC
FREDERICK, IL, 62639

SHEET TITLE

CABLE SCHEDULE & CALCULATIONS

SHEET NO.

E-502