

SQUARE FOOTAGE OF ROOF: 2600.44 SQ. FT.
SQUARE FOOTAGE OF ARRAY: 631.68 SQ. FT.
PERCENTAGE OF ROOF COVERED BY THE ARRAYS: 24.29%

INTERIOR EQUIPMENT
(N) (1) MAIN ELECTRICAL PANEL
EXTERIOR PV EQUIPMENT
(E) (1) UTILITY METER
(N) (1) AC DISCONNECTS NON FUSED
(N) (1) AC COMBINER BOX

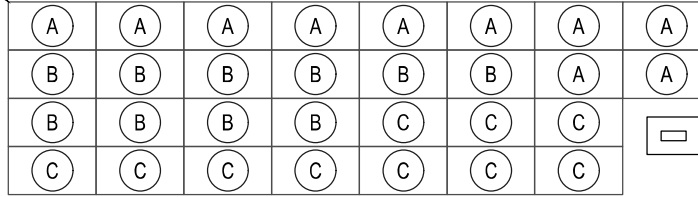
GENERAL NOTES

1. FIELD VERIFY ALL MEASUREMENTS
2. ITEMS BELOW MAY NOT BE ON THIS PAGE

- (A) MODULE STRINGING
(B) MODULE STRINGING
(C) MODULE STRINGING

(N) (1) JUNCTION BOX

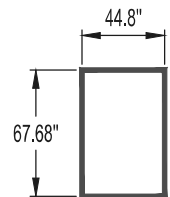
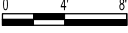
ARRAY 1 - 12,300 kW
[x30] (N) MODULES
TILT: 34 DEGREES
ROOF PITCH: 8:12
AZIMUTH: 161 DEGREES



01

ELECTRICAL PLAN

1/8" = 1'-0"



MODULE:
HYUNDAI ENERGI
SOLUTION
HIE-S410VG
410 WATTS

CONTRACTOR
E AND M SOLAR LLC
ADDRESS: FORT COLLINS, CO
PHONE:
CONTRACTOR #:



PRATT RESIDENCE

RESIDENTIAL GRID INTERACTIVE SOLAR INSTALLATION
26730 COUNTY ROAD 14, STEAMBOAT SPRINGS, CO 80487
APN: 116100002

ELECTRICAL PLAN

SYSTEM AC SIZE @ STC: 8,700 kW
(30) HYUNDAI ENERGI SOLUTION HIE-S410VG
(30) ENPHASE IQ8PLUS-72-2-US

SYSTEM DC SIZE @ STC: 12,300 kW

DRAWN BY:
V.G.

REV:

DATE:
03.23.2025

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CONDUCTOR AND CONDUIT SCHEDULE W/ELECTRICAL CALCULATIONS

ID	TYPICAL	CONDUCTOR	CONDUIT	CURRENT-CARRYING CONDUCTORS IN CONDUIT	OCPD	EGC	TEMP. CORR. FACTOR	CONDUIT FILL FACTOR	CONT. CURRENT	MAX. CURRENT (125%)	BASE AMP.	DERATED AMP.	TERM. TEMP. RATING	AMP. @ TERMINAL
1	1	10 AWG THWN-2, COPPER	0.75" DIA EMT	6	20A	10 AWG THWN-2, COPPER	0.96 (32.1 °C)	0.8	12.1A	15.13A	40A	30.72A	75°C	35A
2	1	8 AWG THWN-2, COPPER	0.75" DIA EMT	2	N/A	8 AWG THWN-2, COPPER	0.96 (32.1 °C)	1	36.3A	45.38A	55A	52.8A	75°C	50A
3	1	8 AWG THWN-2, COPPER	0.75" DIA EMT	2	50A	8 AWG THWN-2, COPPER	0.96 (32.1 °C)	1	36.3A	45.38A	55A	52.8A	75°C	50A

- (A) MODULE STRINGING
- (B) MODULE STRINGING
- (C) MODULE STRINGING

PV SYSTEM EQUIPPED WITH RAPID
SHUTDOWN DISCONNECT PER NEC 690.12
SYSTEM COMPLIANT WITH NEC 690.13

- (C) 10 IN BRANCH
- (B) 10 IN BRANCH
- (A) 10 IN BRANCH

(30) HYUNDAI ENERGI
SOLUTION HiE-S410VG
(30) ENPHASE IQ8PLUS-72-2-US

JUNCTION BOX

ENPHASE ENVOY
COMMUNICATIONS
GATEWAY

(N) AC COMBINER BOX, 125A
ENPHASE IQ COMBINER 5
(X-IQ-AM1-240-5)
120/240V, 1Ø, 3W
MAX. CONTINUOUS CURRENT: 64A
MAX. OCPD: 80A

TO UTILITY
GRID (OH)

(E) UTILITY
METER

GROUND
ROD
(E) GROUNDING
ELECTRODE

AC DISCONNECTS
NON FUSED, 60A

DERATED
(N) MAIN
175A

(N)
50A/2P

(E) MAIN ELECTRICAL PANEL
120/240 V 1Ø, 3W
MAIN BUSS: 200A
MAX BREAKER SIZE:
(200A x 1.2) - 175A = 65A

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PRATT RESIDENCE

RESIDENTIAL GRID INTERACTIVE SOLAR INSTALLATION
26730 COUNTY ROAD 14, STEAMBOAT SPRINGS, CO 80408
APN: 116100002

LINE DIAGRAM

SYSTEM AC SIZE @ STC: 8.700 kW
(30) HYUNDAI ENERGI SOLUTION HiE-S410VG
(30) ENPHASE IQ8PLUS-72-2-US

SYSTEM DC SIZE @ STC: 12.300 kW

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SYSTEM SUMMARY			
	BRANCH #1	BRANCH #2	BRANCH #3
INVERTERS PER BRANCH	10	10	10
MAX AC CURRENT	12.1A	12.1A	12.1A
MAX AC OUTPUT POWER	2,900W	2,900W	2,900W
ARRAY STC POWER		12,300W	
ARRAY PTC POWER		11,502W	
MAX AC CURRENT		36.3A	
MAX AC POWER		8,700W	
DERATED (CEC) AC POWER		8,700W	

MODULES											
REF.	QTY.	MAKE AND MODEL	P _{MAX}	PTC	ISC	IMP	VOC	VMP	TEMP. COEFF. OF VOC	FUSE RATING	
PM1-30	30	HYUNDAI ENERGI SOLUTION HIE-S410VG	410W	383.4W	11.07A	10.57A	46.6V	38.8V	-0.126V/°C (-0.27%/°C)	20A	

INVERTERS											
REF.	QTY.	MAKE AND MODEL	AC VOLTAGE	GROUND	OC _{PD} RATING	RATED POWER	MAX OUTPUT CURRENT	MAX INPUT CURRENT	MAX INPUT VOLTAGE	CEC WEIGHTED EFFICIENCY	
I1-30	30	ENPHASE IQ8PLUS-72-2-US	240V	FLOATING	20A	290W	1.21A	20A	60V	97.0%	

DISCONNECTS				
REF.	QTY.	MAKE AND MODEL	RATED CURRENT	MAX RATED VOLTAGE
SW1	1	SQUARE D DU222RB OR EQUIV.	60A	240VAC

ASHRAE EXTREME LOW	-28.7°C (-19.7°F), SOURCE: HAYDENIYAMPA (AWOS) (40.48°; -107.22°)
ASHRAE 2% HIGH	32.1°C (89.8°F), SOURCE: HAYDENIYAMPA (AWOS) (40.48°; -107.22°)

OCPDS				
REF.	QTY.	RATED CURRENT	MAX VOLTAGE	
CB1-3	3	20A	240VAC	
CB4	1	15A	240VAC	
CB5	1	50A	240VAC	

CONTRACTOR E AND M SOLAR LLC ADDRESS: FORT COLLINS, CO PHONE: CONTRACTOR #:		PRATT RESIDENCE RESIDENTIAL GRID INTERACTIVE SOLAR INSTALLATION 26730 COUNTY ROAD 14, STEAMBOAT SPRINGS, CO 80487 APN: 116100002	DESIGN TABLES			PAGE: PV-5
			SYSTEM AC SIZE @ STC: 8,700 kW (30) HYUNDAI ENERGI SOLUTION HIE-S410VG (30) ENPHASE IQ8PLUS-72-2-US			
			DRAWN BY: V.G.		DATE: 03.23.2025	