PHOTOVOLTAIC SYSTEM

SYSTEM SPECIFICATIONS	
DC Capacity	10.00 kW
AC Capacity	10.00 kW
DC/AC Ratio	1.00
Annual Production	7,895 kWh
Specific Yield	789 kWh/kW
Module Count	25
Module	Powerlily PL-400M
Inverter	25× Powerlily PL-400M

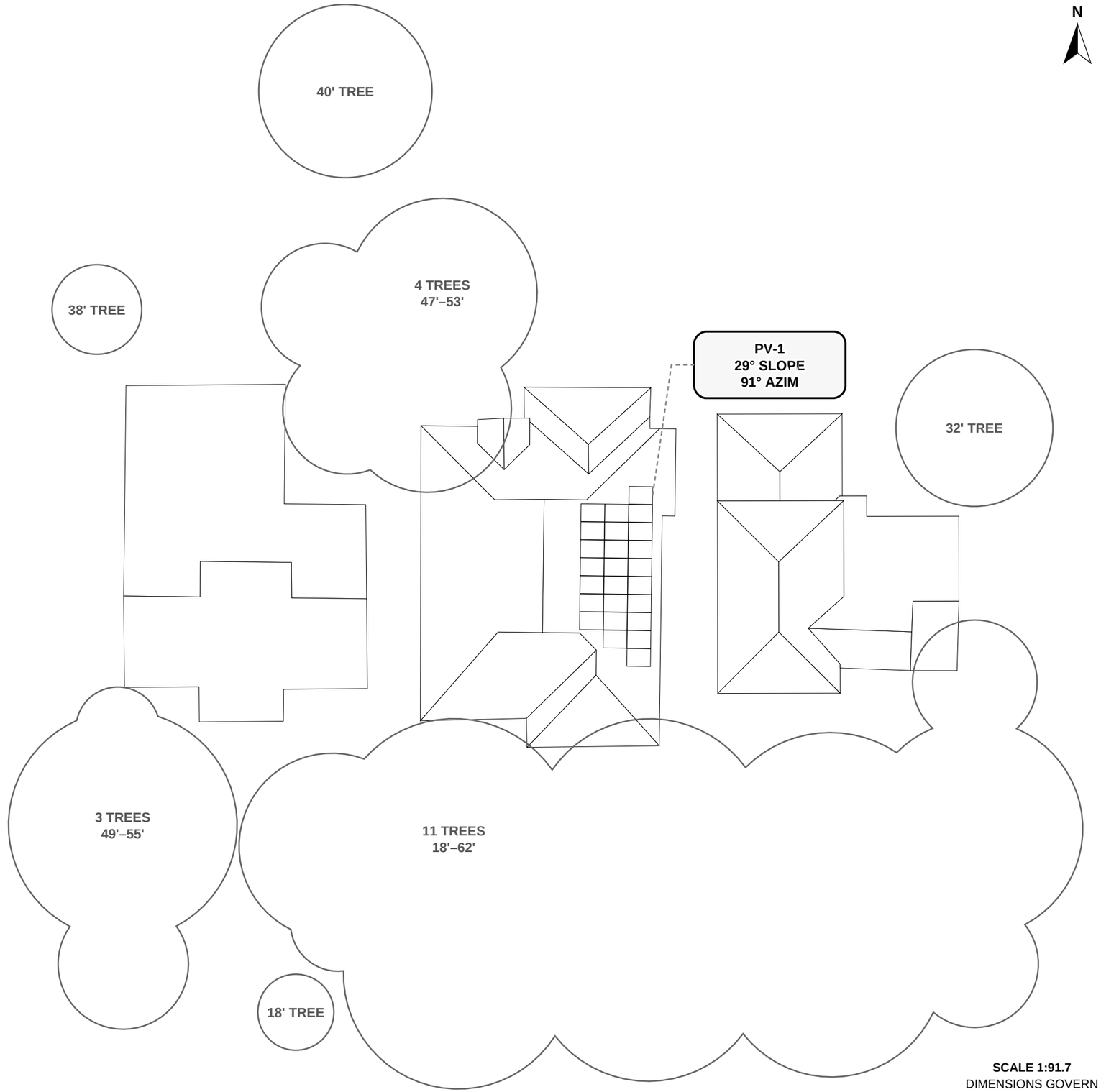
GENERAL NOTES

1. ALL ELECTRICAL EQUIPMENT SHALL BE APPROVED FOR USE IN CANADA AND INSTALLED IN ACCORDANCE WITH ITS CERTIFICATION AND MANUFACTURER INSTRUCTIONS.
2. ELECTRICAL WORK SHALL COMPLY WITH THE ADOPTED CANADIAN ELECTRICAL CODE, PROVINCIAL OR TERRITORIAL AMENDMENTS, LOCAL CODES AND SUPPLY-AUTHORITY REQUIREMENTS.
3. WORK SHALL BE PERFORMED BY QUALIFIED PERSONS AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
4. PV MODULE FRAMES, RACKING AND OTHER EXPOSED CONDUCTIVE PARTS SHALL BE BONDED AND GROUNDED IN ACCORDANCE WITH CEC SECTION 10 AND SECTION 64.
5. WIRING METHODS AND CONDUCTOR AMPACITY SHALL COMPLY WITH CEC SECTIONS 12 AND 64, INCLUDING APPLICABLE TEMPERATURE, BUNDLING AND CONTINUOUS-LOAD FACTORS.
6. DISCONNECTING MEANS, OVERCURRENT PROTECTION, MARKING AND INTERCONNECTION SHALL COMPLY WITH CEC SECTIONS 14, 64 AND 84 AND LOCAL SUPPLY-AUTHORITY RULES.
7. PROVIDE PV RAPID-SHUTDOWN, ARC-FAULT OR OTHER PROTECTIVE FUNCTIONS WHERE REQUIRED BY THE ADOPTED CEC EDITION, EQUIPMENT CERTIFICATION OR AHJ.

DRAWING INDEX

SHEET	TITLE
PV-0	COVER SHEET / SITE PLAN
PV-1	STRUCTURAL / MOUNTING PLAN
PV-2	ROOF PLAN
PV-2.1	ELEVATION & ATTACHMENT DETAILS
PV-3	SINGLE LINE DIAGRAM
E1.2	ELECTRICAL NOTES
E1.3	LABELS & PLACARDS

EQUIPMENT LOCATION SCHEDULE	
STREET / FRONTAGE	85 Westridge Rd NW
OCCUPANCY	One- or two-family dwelling
INVERTER(S)	Roof-mounted microinverters
DC DISCONNECT	Integral to inverter
RAPID SHUTDOWN	Module-level shutdown integrated with listed microinverters
INTERCONNECTION	Backfed breaker in the main panel or switchboard
CONDUIT ROUTE	Roof -> AC disconnect -> service panel



SCALE 1:91.7
DIMENSIONS GOVERN

The Sun Box

Photovoltaic System Design
11/6/2026

PROJECT SITE
85 Westridge Rd NW, Edmonton, AB T5T 1B3, Canada

CUSTOMER: Michael Scott
PROJECT #: —
SITE ID: —
PARCEL ID: —
AHJ: NSP · Alberta
PERMIT: Residential PV — streamlined
CODES: Canadian Electrical Code
DATE: 11/6/2026
DRAWN BY: The Sun Box
CHECKED BY: —
ISSUE: A · Initial Issue
SCALE: AS NOTED; DIMENSIONS GOVERN

REVISIONS

REV	DATE	DESCRIPTION
A	2026-04-24	Initial Issue

SHEET TITLE
COVER SHEET / SITE PLAN

PV-0

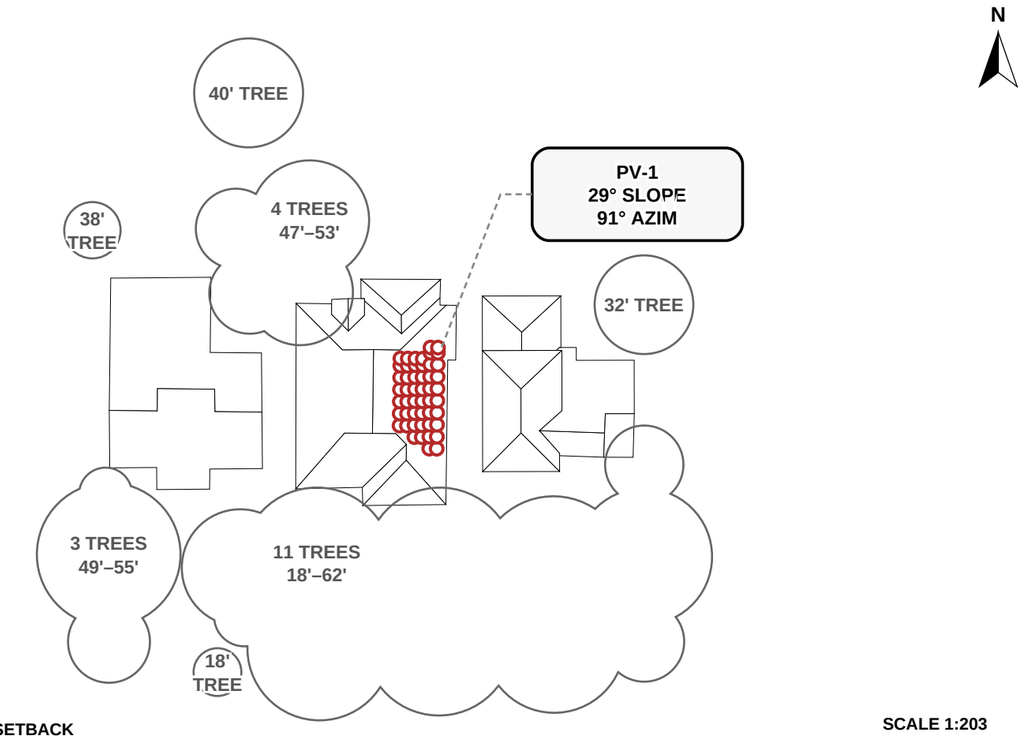
STRUCTURAL / MOUNTING PLAN

ROOF CONSTRUCTION	
F11 · COVERING	NOT PROVIDED
DECK / FRAMING	NOT PROVIDED / NOT PROVIDED
VERIFICATION	not-reviewed

DESIGN CRITERIA	
RISK / EXPOSURE	II / C
DESIGN WIND	100 mph / 161 km/h
GROUND SNOW	35.00 psf / 1.676 kPa
ROOF SNOW	24.50 psf / 1.173 kPa
SEISMIC	A
SOURCE	TYPICAL FOR PRAIRIE PROVINCES — UNCONFIRMED

WEIGHT / LOAD SUMMARY	
F11 · ROOF LOAD	1404 lb / 2.67 psf; 60 lb/attachment — layout estimate
ROOF ARRAY TOTAL	1403.9 lb / 636.8 kg
MODULES / RACKING	1185.0 lb / 537.5 kg / 158.9 lb / 72.1 kg
BALLAST / MICROS	0.0 lb / 0.0 kg / 60.0 lb / 27.2 kg

ROOF ACCESS / SETBACK POLICY	
EAVE / RIDGE / HIP	0 ft / 0 ft / 0 ft
VALLEY / RAKE / OBSTRUCTIONS	0 ft / 0 ft / 0 ft



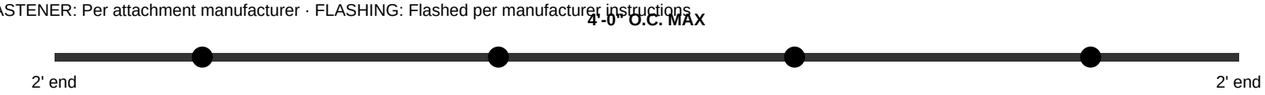
ROOF ACCESS / ARRAY SETBACK LIMIT

SCALE 1:203
DIMENSIONS GOVERN

TYPICAL RAIL-RUN ATTACHMENT CONVENTION – NTS

RAIL **TYPICAL ATTACHMENT** **SHOWN ON PLAN ABOVE FROM SHARED BOM CONFIGURATION**

RACKING: NOT PROVIDED
RAIL: NOT PROVIDED
ATTACHMENT: Flashed roof attachment
TARGET: Rafter or truss
FASTENER: Per attachment manufacturer · FLASHING: Flashed per manufacturer instructions



TYPICAL FIELD CONVENTION ONLY. FIRST AND LAST ATTACHMENT 2'-0" FROM EACH RAIL-RUN END; INTERMEDIATE ATTACHMENTS 4'-0" O.C. MAX. FIELD-ADJUST TO LAND ON FRAMING. FOLLOW RACKING MANUFACTURER AND PROJECT-SPECIFIC ENGINEERING WHERE REQUIRED.

The Sun Box

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11/6/2026

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REVISIONS

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SHEET TITLE
STRUCTURAL / MOUNTING PLAN

PV-1

MODULE INFO

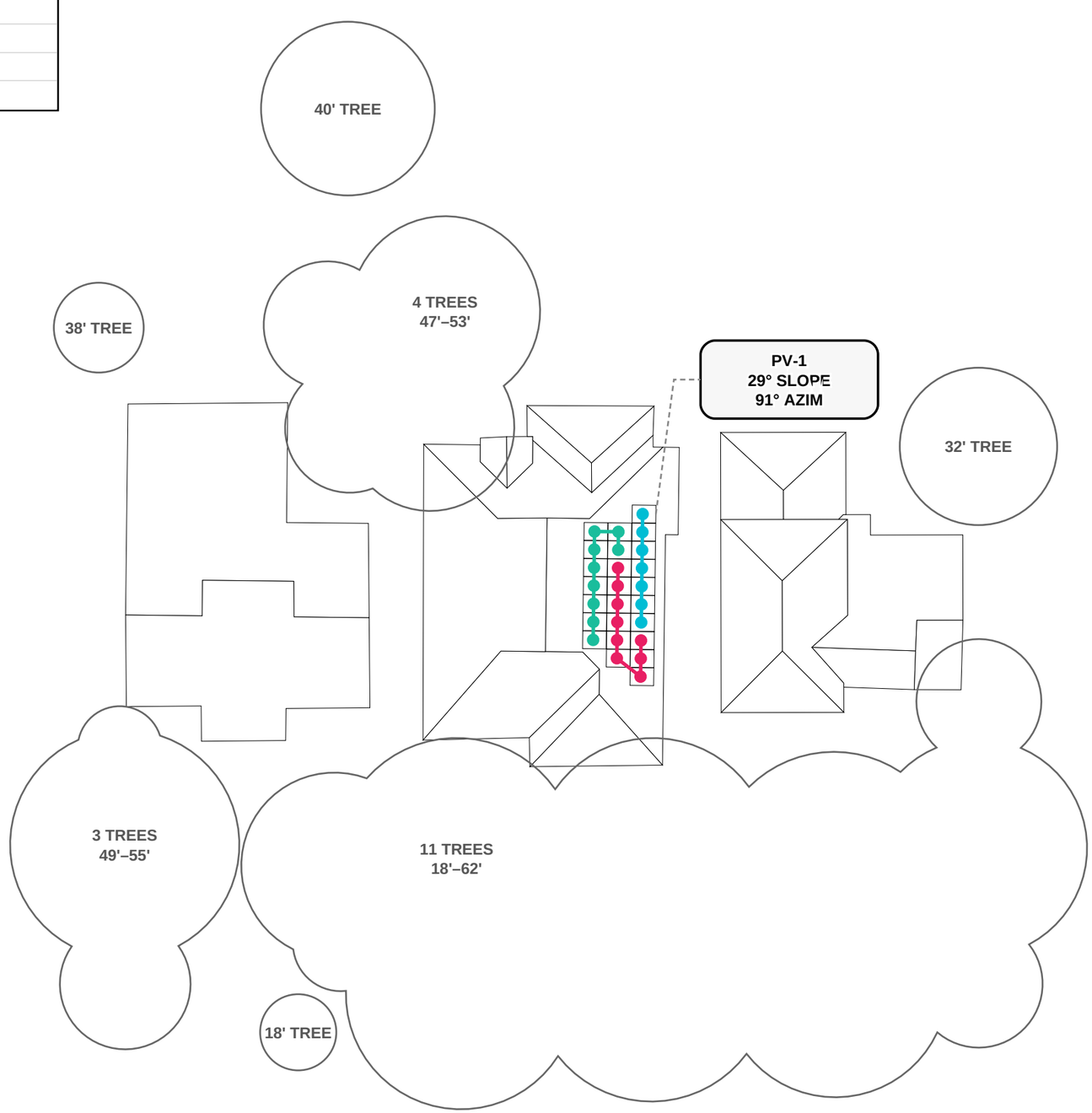
Module 1	25× Powerlily PL-400M · 400W
Size / module-only wt	44.6" × 67.8" · 47.4 lb · 2.26 psf
Primary Voc / Vmp	45.3V / 38.6V
Primary Isc / Imp	11.08A / 10.36A
Inverter	25× Powerlily PL-400M
Inverter Type	Microinverter
Inverter AC	0.4 kW
DC/AC Ratio	1.00

ARRAY SCHEDULE

ARRAY	TILT	AZIMUTH	AREA ft²	MODULES	DC kW	kWh/YR	TSRF
PV-1	29°	91°	1,091	25	10.00	7,895	0.8%
TOTAL				25	10.00	7,895	

BRANCH CIRCUIT SCHEDULE

BRANCH	MODULES	MAX AMPS	VOLTAGE
Branch 1	9	16	240V
Branch 2	9	16	240V
Branch 3	7	16	240V



ROOF ACCESS / ARRAY SETBACK LIMIT

SCALE 1:107
DIMENSIONS GOVERN

The Sun Box

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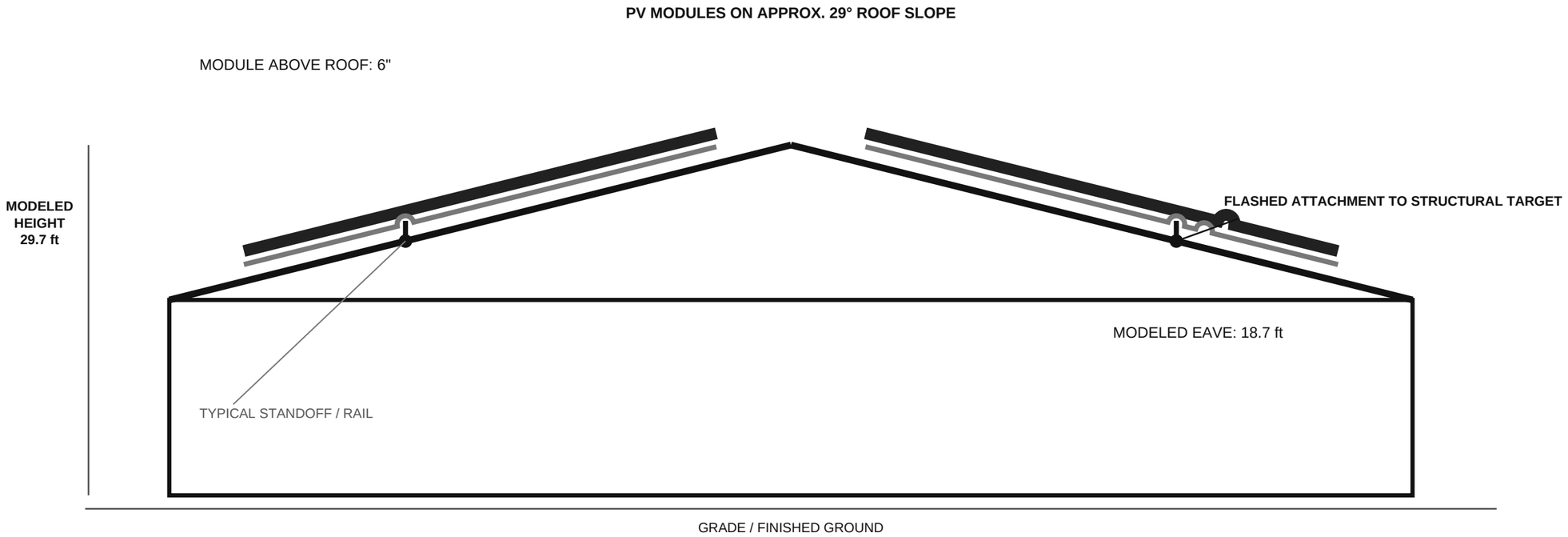
REVISIONS

REV	DATE	DESCRIPTION
A	2026-04-24	Initial Issue

SHEET TITLE
ROOF PLAN

PV-2

TYPICAL BUILDING ELEVATION & ROOF ATTACHMENT — NTS



ROOF / BUILDING SECTION	
F11 · COVERING	NOT PROVIDED
DECK / FRAMING	NOT PROVIDED / NOT PROVIDED
VERIFICATION	not-reviewed

ATTACHMENT SECTION	
RACKING	NOT PROVIDED
RAIL	NOT PROVIDED
ATTACHMENT	Flashed roof attachment
TARGET	Rafter or truss
FASTENER	Per attachment manufacturer
EMBEDMENT	PER MANUFACTURER / ENGINEER
FLASHING	Flashed per manufacturer instructions

DETAIL NOTES

1. VERIFY ROOF COVERING, DECK, FRAMING SIZE, SPACING, SPAN AND CONDITION IN FIELD BEFORE INSTALLATION.
2. ATTACH ONLY TO THE CONFIGURED STRUCTURAL TARGET; DO NOT RELY ON SHEATHING UNLESS SPECIFICALLY ENGINEERED.
3. MAINTAIN A WATERTIGHT ROOF ASSEMBLY AND INSTALL FLASHING, RACKING, CLAMPS AND FASTENERS PER THEIR LISTED INSTRUCTIONS.
4. THIS TYPICAL DETAIL COMMUNICATES THE INTENDED ASSEMBLY. PROJECT-SPECIFIC ENGINEERING AND MANUFACTURER LIMITS GOVERN.

The Sun Box
Photovoltaic System Design
11/6/2026

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SHEET TITLE
ELEVATION & ATTACHMENT DETAILS

PV-2.1

SINGLE LINE DIAGRAM



ROOF PV ARRAYBranch 1: 8 ModulesBranch 2: 8 ModulesBranch 3: 8 ModulesBranch 4: 8 ModulesBranch 5: 8 ModulesBranch 6: 1 ModulesROOF WIRING(N) ROOF JUNCTION BOXTRUNK CABLE TO RACEWAYEQUIPMENT(N) AC COMBINER PANEL125A BUS6 BRANCH BREAKERS(N) BATTERY15kWh 305VDCSERVICE EQUIPMENT200A 2P AC DISCONNECT(E) MAIN SERVICE PANEL120/240V 1Ø3W200 A Bus Bar110A 2P AC(PV BACKFEED)60A 2P AC(ESS

ROOF PV ARRAYBranch 1: 10 ModulesBranch 2: 10 ModulesROOF WIRING(N) ARRAY JUNCTION BOXTRUNK CABLE TO RACEWAYEQUIPMENT(N) AC COMBINER PANEL 60A BUS2 BRANCH BREAKERSSERVICE EQUIPMENT(N) AC DISCONNECT 60A 2P AC DISCONNECT(E) MAIN SERVICE PANEL 120/240V 1Ø3W200 A Bus Bar40A 2P AC(PV BACKFEED)200A MAIN AC6AWG RW90 UTILITY M(E) UTILITY METER200A MAINNSP DISTRIBUTIONSYSTEMSystem GroundAL 4/0 RW90 (2) 'BRANCHES 12AWG RW90 IN 3/4" EMT 6AWG RW90 AL 4/0 RW90 4AWG CU GEC Notes: 1. All marking of the system shall comply with Rules 64-074, 64-076 and 64-200 of the Canadian Electrical Code. Label all disconnects and the rapid shutdown initiator for quick and safe shutdown operation. 2. All components shall be CSA certified or bear an equivalent recognized certification mark, with nameplate certification visible. Equipment tagged (E) is existing; equipment tagged (N) is new under this permit. 3. Photovoltaic system disconnect: nominal operating voltage 120/240V 1Ø3W, rated AC output current 31.67A. 4. This is a two power source parallel system. Interconnection per Rules 64-112 and 84-030. 5. Design conditions (site weather data, TMY extremes): Extreme low ambient 29°C for open-circuit voltage per Rule 64-202; high ambient 34°C with a 30°C cell rise for minimum string voltage; conductor ampacity corrected at 34°C indoors and 34°C on the roof per Rule (4-004 and Table 5A. 6. Maximum PV system voltage 47.69 V (cold-corrected string Voc) against a limit of 600 V per CEC 64-202 (dwelling). 7. PV source circuit conductors are ___, sized per Rule 64-206 at 125% of module short-circuit current, with r ampacity corrected for ambient temperature and conductors per raceway per Rule 4-004 and Tables 5A and 5C; terminations rated 75°C per Rule 4-006. 8. Array wiring runs in free air beneath the modules to a certified roof junction box, then in EMT per Rules 64-210 and 64-064; with raceway fill per Rule 12-910 and Table 8; Rooftop raceways supported at least 7/8 in above the roof surface; no rooftop temperature adder applies. 9. Photovoltaic overcurrent devices per Rules 64-214 and 64-058. 10. DC arc-fault circuit protection per Rule 64-216 and ground-fault protection per Rule 64-066 are provided by the certified inverter(s). 11. PV system dc disconnecting means per Rule 64-060: integral load-break disconnect in the listed inverter(s). 12. 64-218 Photovoltaic rapid shutdown provided per Rule 64-218 — 13. Inverter(s) certified to CSA C22.2 No. 107.1 and UL 1741 SB; 14. Module frames, racking and all non-current-carrying metal parts bonded per Rules 64-072 and 64-224 with unding bondingconductors sized per Table 16; 15. System grounding at the service entrance only, per Rules 64-066 and 64-070; no separate grounding electrode required for the PV array unless noted. 16. Point of interconnection: load-side backfed breaker (main panel), backfed breaker 40A on a 200A bus with 200A main — bus loading verified per Rule 64-112. 17. Warning: inverter output connection — do not relocate this overcurrent device. Project DetailsCLIENT: Tom MKRAddress: 85 Westridge Rd fo NW, Edmonton, AB T5T 1B3, Canada SYSTEM SIZE: 10.6 kWDC Annual output: 8,519 kWh AC OUTPUT: 7.6 kWACDC/AC Ratio: 1.39 Installer: The Sun BoxDesigned By: The Sun BoxDate: 9/14/2026 Code: Canadian Electrical Code 2024 Scale: 3, NOT TO SCALE STAMP System Specifications Modules 20 x Bauer Solartechnik BS-530-132M10 HBB GG 530 Watts 10.6 kWDC Inverter 20 x Enphase IQ8H @ 0.38 kWAC x 1Ø3W x 120/240V Design Conditions Temperatures: -29°C extreme low, 34°C S high ambient + 30°C cell rise (site weather data: TMY extremes). Max PV system voltage 47.69 V of 600 V allowed (CEC 64-202 (dwelling)). Raceways: EMT, array-side raceway runs at 34°C, interior runs at 34°C. DC disconnect: integral load-break e (si disconnect in the listed inverter(s). Rapid Shutdown Module-level — integrated in Enphase IQ8H (microinverters Equipment Legend (E) EXISTING ((N) NEW PV Module + MicroinverterAC DisconnectMutility MeterGrounding ElectrodeConductor id Schedule QTY TAG FROM → TO CONDUCTORS EGC OCPD RACEWAY AMPACITY (90°C × TEMP × FILL) LENGTH (2) PV-AC (N). MICROINVERTERS -> (N) ARRAY JUNCTION BOX MICROINVERTER TRUNK CABLE (LISTED) IN TRUNK CABLE FREE AIR UNDER MODULES (2) PV-AC (N) ARRAY JUNCTION BOX -> (N) AC COMBINER PANEL (2) 12 AWG RW90 -> (1) 12 AWG N14 AWG RW90 BOND 20A 2-POLE 3/4" EMT 30A @90°C × 0.97 (34°C) × 0.8 (4 CCC) = 23.3A (1) PV-AC (N) BCAC COMBINER PANER -> (N) AC DISCONNECT (2) 6AWG RW90 -> (1) 6AWG N10AWG RW90 (BOND 3/4" EMT 75A @90°C × 0.97 (34°C) × 1 (2 CCC) = 72.8A; 75°C termination 65A; 6AWG minimum governs (60A disconnect) (1) PV-AC (N) / AC JA DISCONNECT -> (E) MAIN SERVICE PANEL (2) 6AWG RW90 -> (1) 6AWG IN10AWG RW90 BOND 40A 2-POLE 3/4" EMT 75A @90°C × 0.97 (34°C) × 1 (2 CCC) = 72.8A; 75°C termination 65A; 6AWG minimum (governs (60A disconnect) (1) (E) SVC (E) 115A (1) PV-ACUTILITY METER -> (E) MAIN SERVICE PANEL (2) AL 4/0 RW90 -> (1) 4/0 NEXISTING (1) GND MAIN PANEL -> GND ELECTRODE 4AWG CU GEC LISTED TRUNK CABLE 20A 2-POLE LISTED TRUNK CABLE 20A 2-POLE TERY -> MAIN PANEL ESS (2) 6AWG DLO 2KV RW90 EPR + (1) 6AWG N10AWG RW90 BOND 60A 2P ACDISCONNECT 3/4" EMT 75A @90°C × 0.97 (34°C) × 1 (2 CCC) = 72.8A; 75°C termination 65A (1) (E) SVC (E) UTILITY METER -> (E) MAIN SERVICE PANEL (2) AL 4/0 RW90 + (1) 4/0 NEXISTING (1) GND MAIN PANEL -> GND ELECTRODE 4AWG CU GEC

(3)	PV-AC	(N) MICROINVERTERS – (N) ARRAY JUNCTION BOX	MICROINVERTER TRUNK CABLE (LISTED)	IN TRUNK CABLE			
(3)	PV-AC	(N) ARRAY JUNCTION BOX · Whole run – (N) AC COMBINER PANEL	3C 12 AWG CU TECK90 + 14 AWG BOND	14 AWG CU BOND	20A 2-POLE	CABLE ASSEMBLY	30A @90°C × 0.97 (34°C) × 0.8 (6 CCC) = 23.3A; rooftop, dry	NOT MEASURED
(1)	PV-AC	(N) AC COMBINER PANEL · Whole run – (N) AC DISCONNECT	3C 6 AWG CU TECK90 + 10 AWG BOND	10 AWG CU BOND		CABLE ASSEMBLY	75A @90°C × 0.97 (34°C) × 1 (2 CCC) = 72.8A; 75°C termination 65A; indoor, dry	NOT MEASURED
(1)	PV-AC	(N) AC DISCONNECT · Whole run – (E) MAIN SERVICE PANEL	3C 6 AWG CU TECK90 + 10 AWG BOND	10 AWG CU BOND	60A 2-POLE	CABLE ASSEMBLY	75A @90°C × 0.97 (34°C) × 1 (2 CCC) = 72.8A; 75°C termination 65A; indoor, dry	NOT MEASURED
(1)	GND	(E) MAIN SERVICE PANEL – GND ELECTRODE	4AWG CU GEC					

Designed By: The Sun Box
Date: 11/6/2026
Code: Canadian Electrical Code 2024
Scale: NOT TO SCALE

STAMP

The Sun Box

Photovoltaic System Design
11/6/2026

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REVISIONS

REV	DATE	DESCRIPTION
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SHEET TITLE
SINGLE LINE DIAGRAM

PV-3

ELECTRICAL DETAILS & NOTES

PV MODULE RATING @ STC	
MANUFACTURER	Powerlily PL-400M
PMAX	400W
VOC / VMP	45.3V / 38.6V
ISC / IMP	11.08A / 10.36A
DIMENSIONS	44.6" × 67.8"
MODULE-ONLY WEIGHT	47.4 lbs (2.26 psf)
MICROINVERTER SPECIFICATIONS	
MANUFACTURER	Powerlily PL-400M
TYPE / COUNT	Microinverter × 25
AC RATING	400W (0.40 kW)
PANELS/UNIT	1
WEATHER & TEMPERATURE DATA	
LOW / HIGH TEMP	-20°F / 93°F
PEAK SUN HRS/DAY	3.3 hrs
ANNUAL GHI	1220 kWh/m²
DESIGN CONDITIONS (SLD)	
SOURCE	site weather data, TMY extremes
LOW / HIGH AMBIENT	-29°C / 34°C
CELL RISE	30°C
MAX PV VOLTAGE	51.9V
VOLTAGE LIMIT	600V
SERVICE	120/240V 1Ø3W
PV BACKFEED OCPD	60A
RACEWAYS	EMT
SYSTEM SUMMARY	
DC / AC CAPACITY	10.00 kW / 10.00 kW
DC/AC RATIO	1.00
MODULES / ARRAYS	25 / 1
ANNUAL PRODUCTION	7,895 kWh
SPECIFIC YIELD	789 kWh/kW

CONDUCTOR SCHEDULE

QTY	TAG	FROM / TO	CONDUCTORS	EGC	RACEWAY	OCPD
(3)	PV-AC	(N) MICROINVERTER CIRCUIT	(N) #12 AWG THWN-2 COPPER (L1, L2, N)	(N) #12 AWG THWN-2 COPPER (EGC)	(N) 3/4" EMT CONDUIT UNDER MODULES	
(3)	PV-AC	(N) ARRAY JUNCTION BOX	(N) #12 AWG THWN-2 COPPER (L1, L2, N)	(N) #12 AWG THWN-2 COPPER (EGC)	(N) 3/4" EMT CONDUIT ON ROOF	

+3 more runs on the SLD sheet

GENERAL

1. All marking of the system shall comply with Rules 64-074, 64-076 and 64-200 of the Canadian Electrical Code. Label all disconnects and the rapid shutdown initiator for quick and safe shutdown operation.
2. All components shall be CSA certified or bear an equivalent recognized certification mark, with nameplate certification visible. Equipment tagged (E) is existing; equipment tagged (N) is new under this permit.
3. Photovoltaic system disconnect: nominal operating voltage 120/240V 1Ø3W, rated AC output current 41.67A.
4. This is a two power source parallel system. Interconnection per Rules 64-112 and 84-030.
5. Design conditions (site weather data, TMY extremes): extreme low ambient -29°C for open-circuit voltage per Rule 64-202; high ambient 34°C with a 30°C cell rise for minimum string voltage; conductor conditions and adjustments are shown by run in the conductor schedule.

PV CIRCUITS

6. Maximum PV system voltage 51.90V (cold-corrected string Voc) against a limit of 600V per CEC 64-202 (dwelling).
7. PV source and field homerun conductor sizes, materials, temperature ratings and ampacity calculations follow the conductor schedule and the selected installation conditions.
8. Array wiring runs to the listed roof junction box; the conductor schedule specifies the wiring method for each field homerun and route section.
9. Photovoltaic overcurrent devices per Rules 64-214 and 64-058.
10. DC arc-fault circuit protection per Rule 64-216 and ground-fault protection per Rule 64-066 are provided by the certified inverter(s).
11. PV system dc disconnecting means per Rule 64-060: integral load-break disconnect in the listed inverter(s).
12. Photovoltaic rapid shutdown provided per Rule 64-218—.
13. Inverter(s) certified to CSA C22.2 No. 107.1 and UL 1741-SB.

GROUNDING & BONDING

14. Module frames, racking and all non-current-carrying metal parts bonded per Rules 64-072 and 64-224 with bonding conductors sized per Table 16.
15. System grounding at the service entrance only per Rules 64-066 and 64-070; no separate grounding electrode required for the PV array unless noted.

INTERCONNECTION

16. Point of interconnection: Backfed breaker in the main panel or switchboard, backfed breaker 60A on a 200A bus with 200A main. PCS-limited source current 40A; allowed 40A. Source connection shall be at the opposite end of the bus from the main.
17. Warning: inverter output connection — do not relocate this overcurrent device.
18. Proposed PCS (Listed power control system (UL 3141)) limits aggregate PV/storage source current to 40A per phase; the bus check counts that limit, capped at the backfed breakers' continuous rating. Confirm the listed configuration, CT locations and commissioning settings per 64-112.

WIRING

19. Field wiring methods, materials, sizes, conditions and bonding conductors are specified by run in the conductor schedule. Cable assembly selections specify the required construction; confirm the supplied cable's marking, conductor/bond sizes, fittings and equipment termination suitability. Factory wiring remains subject to the equipment instructions.

The Sun Box
Photovoltaic System Design
11/6/2026

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SHEET TITLE
ELECTRICAL NOTES

E1.2

LABELS & PLACARDS

CEC / supply-authority label set. Verify final wording, materials and locations with the AHJ.

PHOTOVOLTAIC SYSTEM
DISCONNECT

CEC Section 64 / AHJ

WARNING
MULTIPLE POWER SOURCES
SECOND SOURCE IS PHOTOVOLTAIC

CEC Sections 64 / 84; supply authority

CAUTION
PHOTOVOLTAIC POWER SOURCE

CEC Section 64 / AHJ

POWER SOURCE DIRECTORY
SEE SITE PLAN FOR PV DISCONNECT AND INTERCONNECTION LOCATIONS

CEC Section 84 / supply authority

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SHEET TITLE
LABELS & PLACARDS

E1.3