



PERMIT #: BLD-25-346

ISSUE DATE: December 17, 2025

General Questions: 503.537.1240
Email Address: building@newbergoregon.gov

BUILDING PERMIT

BUILDING DEPARTMENT

SITE ADDRESS: 501 N HARRISON ST Newberg, OR. 97132
PARCEL #: R3218DC 05301
TYPE OF CONSTRUCTION: VB
TYPE OF WORK: Residential Alteration to Existing Structure / **TOTAL SQ. FT.:** **BUILDING USE:** R-3
DETAILED DESCRIPTION OF WORK: Installation of solar panels on existing residential roof. 10.56 kW. Addition of 2 0-60A circuits. 24 panels.
ZONING: R-2
TOTAL VALUE OF WORK: \$7,392
PROJECT NAME (if applicable): **TOTAL PERMIT FEE'S PAID:** \$421.57

AUTHORIZED PERMIT HOLDERS

APPLICANT: ION Developer LLC SOLAR **PHONE:** 8887817074
MAILING ADDRESS: 44 E 800 N Orem, Utah. 84057
CONTRACTOR: ION DEVELOPER LLC **PHONE:** 8887817074
MAILING ADDRESS: 44 E 800 N **CCB #:** 230394

ADDITIONAL INFORMATION/CONDITIONS OF APPROVAL/COMMENTS

ALL WORK IS TO CONFORM TO THE CURRENT EDITION OF THE ORSC & OSCC.

INSPECTIONS REQUESTED **PRIOR TO 7AM** WILL BE COMPLETED THE **SAME** BUSINESS DAY.

INSPECTION RECEIVED **AFTER 7AM** WILL BE SCHEDULED FOR THE **NEXT** BUSINESS DAY.

**Schedule or track inspections at www.newbergor.portal.opengov.com OR
Call 503.554.7714 leave PERMIT # BLD-25-346, address & type of Insp.**

THIS PERMIT EXPIRES 6 MO FROM ISSUE DATE: June 15, 2026 IF WORK IS NOT STARTED OR IF WORK IS SUSPENDED OR ABANDONED FOR 180 DAYS OR LONGER AFTER WORK HAS COMMENCED.	8.15.150 UNNECESSARY NOISE—PERMITTED EXCEPTIONS. UNREASONABLE NOISE AND EXCEPTIONS. 3. The following acts are declared to be per se violations of this section. This enumeration does not constitute an exclusive list: j. Construction or Repair of Buildings, or Excavation of Streets and Highways. The construction, demolition, alteration or repair of any building or the excavation of streets and highways other than between the hours of 7:00 a.m. and 7:00 p.m. on weekdays. In cases of emergency, construction or repair noises are exempt from this provision. In nonemergency situations, the city may issue a permit, upon application, if the city determines that the public health and safety, as affected by loud and raucous noise caused by construction or repair of buildings or excavation of streets and highways between the hours of 7:00 p.m. and 7:00 a.m. will not be impaired, and if the city further determines that loss or inconvenience would otherwise result. The permit shall grant permission in nonemergency cases for a period of not more than three days. The permit may be renewed once for a period of three days or less.
A copy of the building permit & 1 set of approved construction documents are to be available for review at the work site.	
All persons or entities performing work under this permit are required to be licensed unless exempted by ORS 701.010 (Structural/Mechanical), and ORS 693.010-020 (Plumbing).	

NEWBERG CITY HALL

414 E FIRST ST

Web address:
newbergoregon.gov



PERMIT #: BLD-25-346

ISSUED DATE: May 21, 2026

CERTIFICATE OF COMPLETION

All inspections have been conducted and, as of the issuance of this certificate, the permitted work is in full compliance with all applicable codes and regulations.

THE PERMITTED WORK IS DEEMED SATISFACTORY AND COMPLETE

SITE ADDRESS:

501 N HARRISON ST, Newberg, OR, 97132

PARCEL #: R3218DC 05301

CONSTRUCTION TYPES:

Alteration to Existing Structure /

PERMIT TYPE: Residential

FIRE SPRINKLER REQUIRED BY CODE:

No

FIRE SPRINKLER INSTALLED/ALTERED:

DETAILED DESCRIPTION OF WORK: Installation of solar panels on existing residential roof. 10.56 kW. Addition of 2 0-60A circuits. 24 panels.

AUTHORIZED PERMIT HOLDERS

Owner: WALKER LINDA, NEWBERG, OR. 97132

Contractor: CCB License #:

CONDITIONS

ALL FINAL INSPECTIONS HAVE BEEN COMPLETED, AND THE PERMITTED WORK HAS BEEN FOUND TO MEET ALL REQUIRED STANDARDS AND IS HEREBY DEEMED COMPLETE.

THIS CERTIFICATE MAY BE REVOKED BY THE City of Newberg, OR UPON VIOLATION OF ANY OF ITS RULES AND REGULATIONS.

To view permit details, scan this barcode or visit newbergor.viewpointcloud.com/#/records/3890



City of Newberg, OR

Inspection Report

Inspection: BUILDING FINAL INSPECTION

Inspector: BLD- Brooks Bateman

Inspection Date: May 20, 2026

Record: *Building Permit #BLD-25-346

Location: 501 N HARRISON ST, Newberg, OR 97132

Applicant: ION Developer LLC SOLAR

BUILDING FINAL INSP

Overall Result: Pass

AERIAL SITE VIEW



SCOPE OF WORK

INSTALLATION OF UTILITY INTERACTIVE FIXED-TILT, PHOTOVOLTAIC SOLAR SYSTEM,

10.56 kW DC & 7.6 kW AC PHOTOVOLTAIC SOLAR ARRAY

PV MODULES: (24) SILFAB SOLAR SIL-440 QD DCA3

INVERTER(S): (1) SOLAREDGE SE7600H-US

ROOF TYPE: COMPOSITION SHINGLE - 1 LAYER(S)

PV MOUNTING HARDWARE: UNIRAC NXT DOM CON

SHEET LIST

G-1	COVER SHEET
V-2	SITE PLAN
S-3	ROOF PLAN
S-4	STRUCTURAL DETAILS
S-5	STRUCTURAL CALCULATIONS 1
S-6	STRUCTURAL CALCULATIONS 2
E-7	ELECTRICAL DETAILS (LINE DIAGRAM)
E-8	ELECTRICAL CALCULATIONS & NOTES
E-9	ELECTRICAL LOAD CALCULATIONS
E-10	ELECTRICAL LABELS & LOCATIONS
E-11	ELECTRICAL DIRECTORY PLACARD (AD. LIB)
E-12	ELECTRICAL LOAD ANALYSIS (AD. LIB)

JURISDICTION CODES AND STANDARDS

GOVERNING CODES

1. ALL WORK SHALL COMPLY WITH:

2023 OREGON ELECTRICAL SPECIALTY CODE (OESC)

2022 OREGON STRUCTURAL SPECIALTY CODE (OSSC)

2023 OREGON RESIDENTIAL SPECIALTY CODE (ORSC)

2022 OREGON FIRE CODE (IFC)

2021 OREGON PLUMBING SPECIALTY CODE

AND ALL STATE AND LOCAL BUILDING, ELECTRICAL, AND PLUMBING CODES.

SITE CLASSIFICATION NOTES, OSHA REGULATION

OCCUPANCY CLASS: SFR

CONSTRUCTION CLASS: V-B

ZONING TYPE: RESIDENTIAL

1. A LADDER SHALL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS.

2. MODULES HAVE AN ANTI-REFLECTIVE COATING TO PREVENT GLARE
3. FOR PROJECTS SUBMITTED FOR PRESCRIPTIVE REVIEW, ROOF ATTACHMENTS SHALL BE SPACED NO GREATER THAN 24" ON CENTER IN ANY DIRECTION WHERE LOCATED WITHIN 3' OF A ROOF EDGE, HIP, EAVE, OR RIDGE OSSC 3111.3.5.3 ITEM 5 EXCEPTION 1.2
JUNCTION BOXES UNDER PV ARRAY SHALL BE INSTALLED TO BE CONSIDERED ACCESSIBLE BY OESC 690.34

ELECTRICAL CRITERIA, NOTES

TEMPERATURE SOURCE: ASHRAE

WEATHER STATION: AURORA STATE AP

EXTREME MIN. TEMPERATURE: -5

ASHRAE 0.4% HIGH TEMP: 37

- DRAWINGS HAVE BEEN DETAILED ACCORDING TO UL LISTING REQUIREMENTS.
- TERMINALS AND LUGS WILL BE TIGHTENED TO MANUFACTURER TORQUE SPECIFICATIONS (WHEN PROVIDED) IN ACCORDANCE WITH NEC 110.14(D) ON ALL ELECTRICAL.
- PV MODULE CERTIFICATIONS WILL INCLUDE UL1703, IEC61646, IEC61730.
- CONDUIT AND WIRE SPECIFICATIONS ARE BASED ON MINIMUM CODE REQUIREMENTS AND ARE NOT MEANT TO LIMIT UP-SIZING AS REQUIRED BY FIELD CONDITIONS.
- PROPER ACCESS AND WORKING CLEARANCE AROUND EXISTING AND PROPOSED ELECTRICAL EQUIPMENT WILL BE PROVIDED AS PER SECTION [NEC 110.26].
- WHERE PV CABLES ON ROOFTOP WOULD OTHERWISE BE EXPOSED TO PHYSICAL DAMAGE, 3/4" EMT SHALL BE USED TO PROTECT CABLES

STRUCTURAL CRITERIA, NOTES

DESIGN LOAD STANDARD: ASCE 7-16

WIND EXPOSURE CATEGORY: B

WIND SPEED (3-SEC GUST): 96 MPH

GROUND SNOW LOAD: 36 PSF

DESIGN ROOF SNOW LOAD: 25 PSF

SEISMIC DESIGN CATEGORY: D

SEISMIC RISK FACTOR: II

11/26/2025



EXPIRES: 12/31/26
STRUCTURAL UPGRADES REQUIRED.
SEE PAGE S-4 FOR DETAILS.

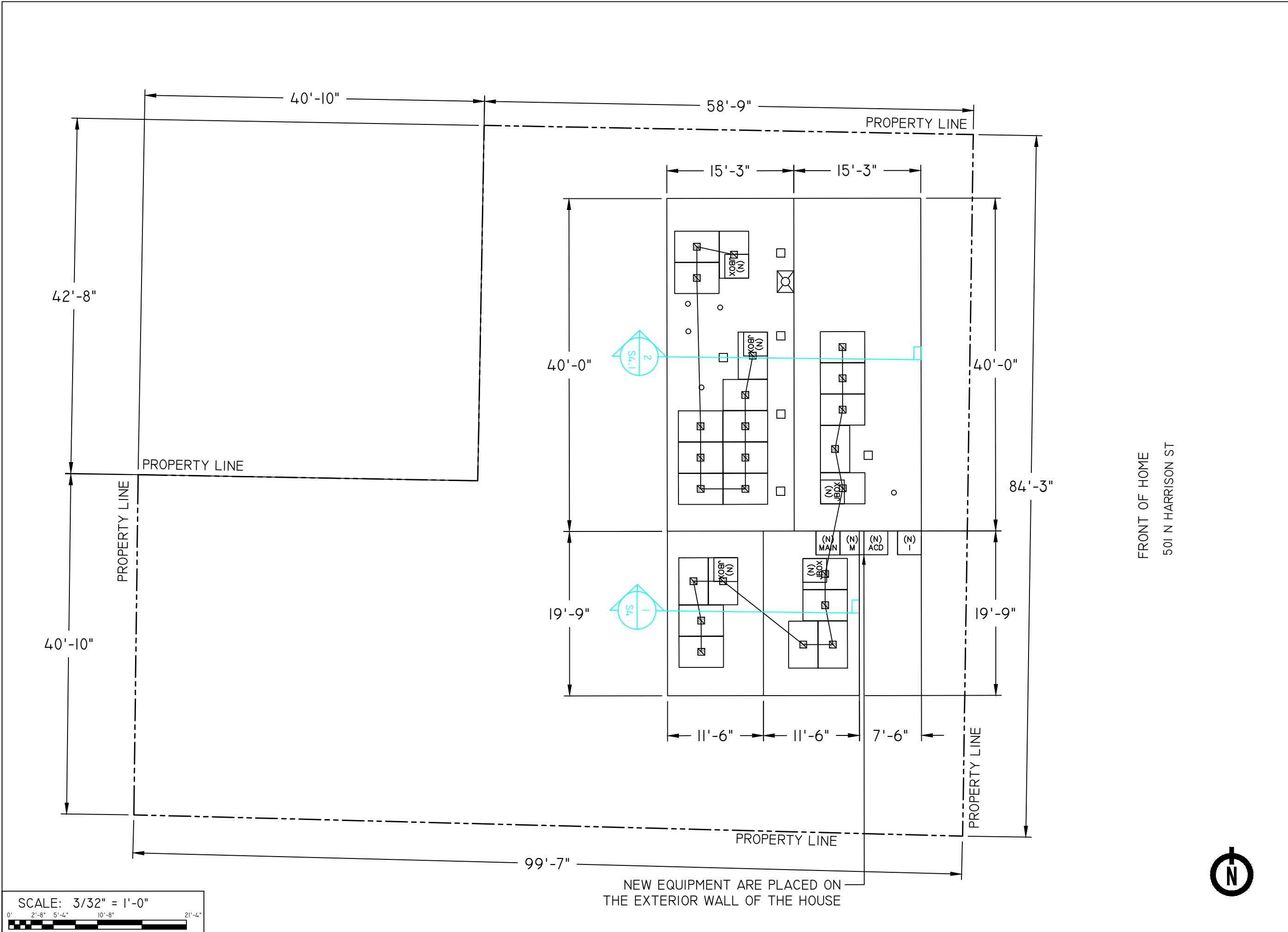


ION DEVELOPER LLC
DAVID STANLEY CONRAD
C - ELECTRICAL CONTRACTOR
CI524



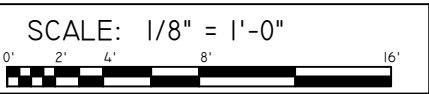
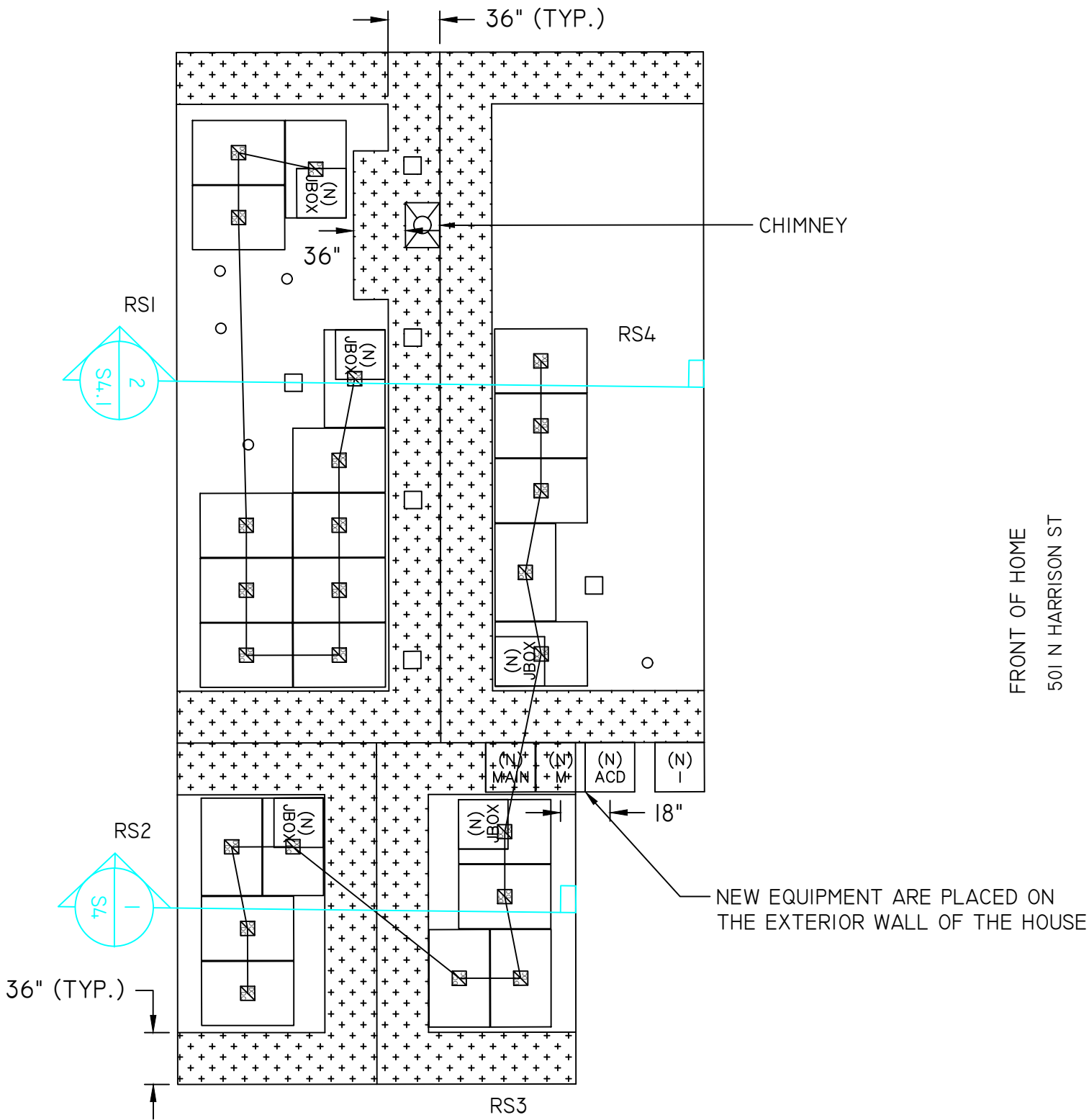
ION SOLAR
44 E 800 N
OREM, UTAH 84057
888.781.7074

PROJECT ID	
00GT58	
SITE OWNER	
LINDA M WALKER	
SITE ADDRESS	
501 N HARRISON ST NEWBERG, OREGON 97132	
EQUIP. (24) SILFAB SOLAR SIL-440 QD DCA3 (1) SOLAREDGE SE7600H-US	
SYSTEM SIZE	
10.56KW DC 7.6KW STC-AC, 9.864KW CEC-AC	
PROJECT DESIGNER	
SURENDRA	
DATE	
26-Nov-2025	
SHEET NAME	
COVER SHEET	
SHEET #	REV
G-1	0



11/26/2025	
REGISTERED PROFESSIONAL ENGINEER 98950PE ALAN ROWLEY JAN 11, 2022 OREGON	
EXPIRES: 12/31/26 STRUCTURAL UPGRADES REQUIRED. SEE PAGE S-4 FOR DETAILS.	
NARCEP BOARD CERTIFIED PV INSTALLATION PROFESSIONAL SCOTT A. GURNEY RPV 011718-010846 EXP. 3-17-2028	
ION DEVELOPER LLC DAVID STANLEY CONRAD C - ELECTRICAL CONTRACTOR CI524	
ION SOLAR 44 E 800 N OREM, UTAH 84057 888.781.7074	
PROJECT ID	00GT58
SITE OWNER	LINDA M WALKER
SITE ADDRESS	501 N HARRISON ST NEWBERG, OREGON 97132
EQUIP.	(24) SILFAB SOLAR SIL-440 QD DCA3 (1) SOLAREEDGE SE7600H-US
SYSTEM SIZE	10.56KW DC 7.6KW STC-AC, 9.864KW CEC-AC
PROJECT DESIGNER	SURENDRA
DATE	26-Nov-2025
SHEET NAME	SITE PLAN
SHEET #	V-2
REV	0

FOR PROJECTS SUBMITTED FOR PRESCRIPTIVE REVIEW, ROOF ATTACHMENTS SHALL BE SPACED NO GREATER THAN 24" ON CENTER IN ANY DIRECTION WHERE LOCATED WITHIN 3' OF A ROOF EDGE, HIP, EAVE, OR RIDGE OSSC 3III.3.5.3 ITEM 5 EXCEPTION I.2
JUNCTION BOXES UNDER PV ARRAY SHALL BE INSTALLED TO BE CONSIDERED ACCESSIBLE BY OESC 690.34
FOR ANY METER UPGRADES, ENSURE THAT THE UTILITY METER IS LOCATED WITHIN 10FT OF THE FRONT/STREET-SIDE OF THE HOUSE. PLEASE ADD A LABEL SHOWING THE DISTANCE FROM THE FRONT CORNER OF THE HOUSE.



SYSTEM LEGEND

	(N) UTILITY METER / MAIN SERVICE PANEL		(N) PV COMBINER PANEL		(N) JUNCTION BOX		S# SUNEYE LOCATION
	(N) MAIN SERVICE PANEL		(N) PV LOAD CENTER		(N) AC DISCONNECT (VISIBLE-OPEN LOCKABLE LABELED DISCONNECT)		FIRE SETBACK
	(E) SUBPANEL		(N) PV PRODUCTION METER		(N) DC-DC OPTIMIZER		(N) PV MODULE
			(N) DC-DC / STRING INVERTER		(N) DC DISCONNECT		STRUCTURALLY DISQUALIFIED

ROOF SECTION CRITERIA AND SPECIFICATIONS

ROOF SECTION	PV MODULE QTY	AZIMUTH	PITCH	TSRF
RS1	11	270	19	78%
RS2	4	270	19	75%
RS3	4	90	19	76%
RS4	5	90	19	75%



11/26/2025

EXPIRES: 12/31/26
STRUCTURAL UPGRADES REQUIRED.
SEE PAGE S-4 FOR DETAILS.

ION DEVELOPER LLC
DAVID STANLEY CONRAD
C - ELECTRICAL CONTRACTOR
CI524

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PROJECT ID
00GT58

SITE OWNER
LINDA M WALKER

SITE ADDRESS
501 N HARRISON ST
NEWBERG, OREGON 97132

EQUIP.
(24) SILFAB SOLAR SIL-440 QD DCA3

(1) SOLAREEDGE SE7600H-US

SYSTEM SIZE
10.56KW DC
7.6KW STC-AC, 9.864KW CEC-AC

PROJECT DESIGNER
SURENDRA

DATE
26-Nov-2025

SHEET NAME
ROOF PLAN

SHEET #
S-3

REV
0

STRUCTURAL INSTALLATION SCHEDULE AND CRITERIA

ROOF MEMBRANE		SPAN AREA	TAG	SPAN
ROOF TYPE:	COMPOSITION SHINGLE	RAIL - PORTRAIT - MODULE ORIENTATION		
ROOF SHEATHING TYPE:	1/2" PLYWOOD	X- SPACING	P-X1	48 IN. O.C. MAX.
		X-CANTILEVER	P-X2	23 IN. MAX.
		Y- SPACING	P-Y1	40.2 IN. MIN. - 55.9 IN. MAX.
		Y-CANTILEVER	P-Y2	6 IN. MIN. - 13.8 IN. MAX.
ARRAY PARAMETERS		RAIL - LANDSCAPE - MODULE ORIENTATION		
TOTAL ROOF AREA (SQ. FT.)	1768.87	X- SPACING	L-X1	48 IN. O.C. MAX.
TOTAL PV MODULE AREA (SQ. FT.)	504	X-CANTILEVER	L-X2	23 IN. MAX.
% PV MODULE ROOF COVERAGE	28.49%	Y- SPACING	L-Y1	24.9 IN. MIN. - 28.9 IN. MAX.
		Y-CANTILEVER	L-Y2	7.9 IN. MIN. - 9.8 IN. MAX.
PV RACKING				
RACKING:	UNIRAC NXT DOM CON			
RACKING TYPE:	RAIL			
	UNIRAC STRONGHOLD BUTYL ATT KIT #14S			
STANDOFF:	MILL			
STANDOFF TYPE:	L-FOOT & BUTYL TAPE MASTIC			
FASTENER:	3" #14-14 AB SCREW			
STRUCTURAL FRAMING				
ROOF SECTION	STRUCTURE TYPE	RAFTER / TC SIZE (IN)	RAFTER / TC SPACING (IN)	UPGRADE SIZE & LENGTH (FT)
RS1	CONVENTIONAL FRAMING	2x4	24	NONE - SINGLE PLY (1x) NONE
RS2	CONVENTIONAL FRAMING	2x4	24	UPGRADE - UPSIZED FULL SISTER (2.5x) 2x6, FULL LENGTH
RS3	CONVENTIONAL FRAMING	2x4	24	UPGRADE - UPSIZED FULL SISTER (2.5x) 2x6, FULL LENGTH
RS4	CONVENTIONAL FRAMING	2x4	24	NONE - SINGLE PLY (1x) NONE

PV ARRAY DETAIL, FRONT VIEW

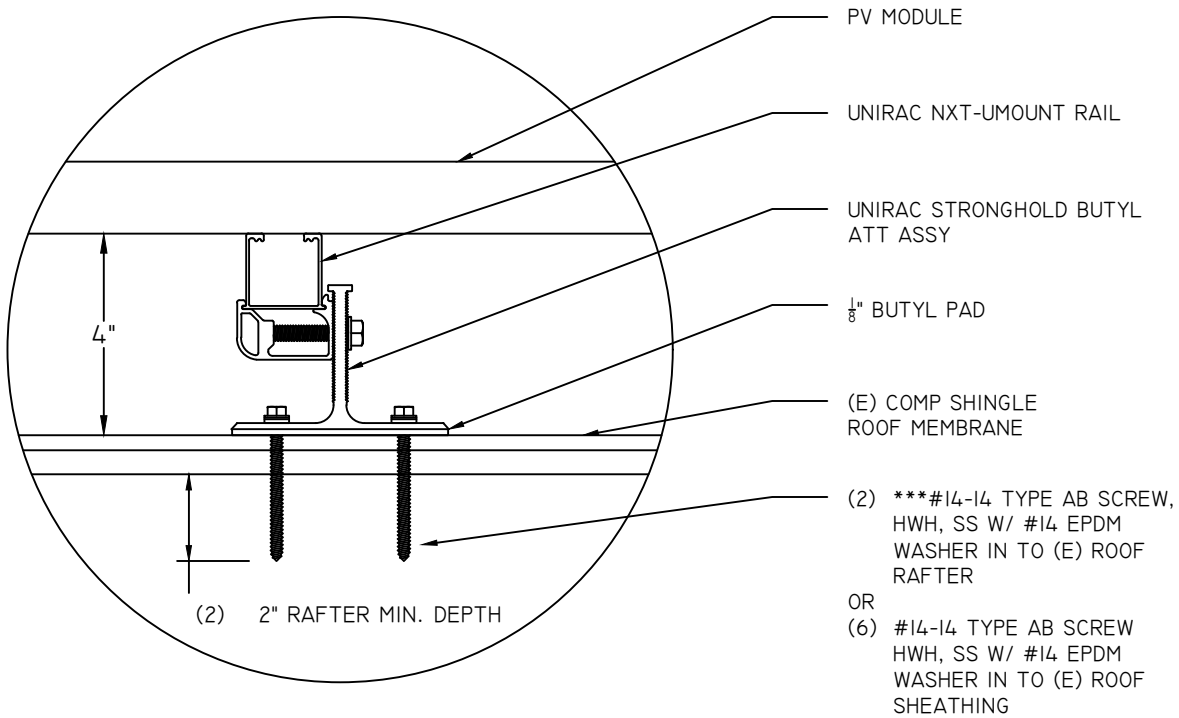
SCALE: 3/8" = 1'-0"

PV ARRAY DETAIL, SIDE VIEW

SCALE: 3/8" = 1'-0"

RACKING ATTACHMENTS TO BE STAGGERED BY SHIFTING EACH SUBSEQUENT ROW OF ATTACHMENTS ONE RAFTER OVER TO DISTRIBUTE LOAD ACROSS ALL FRAMING MEMBERS UNDER PV ARRAY.

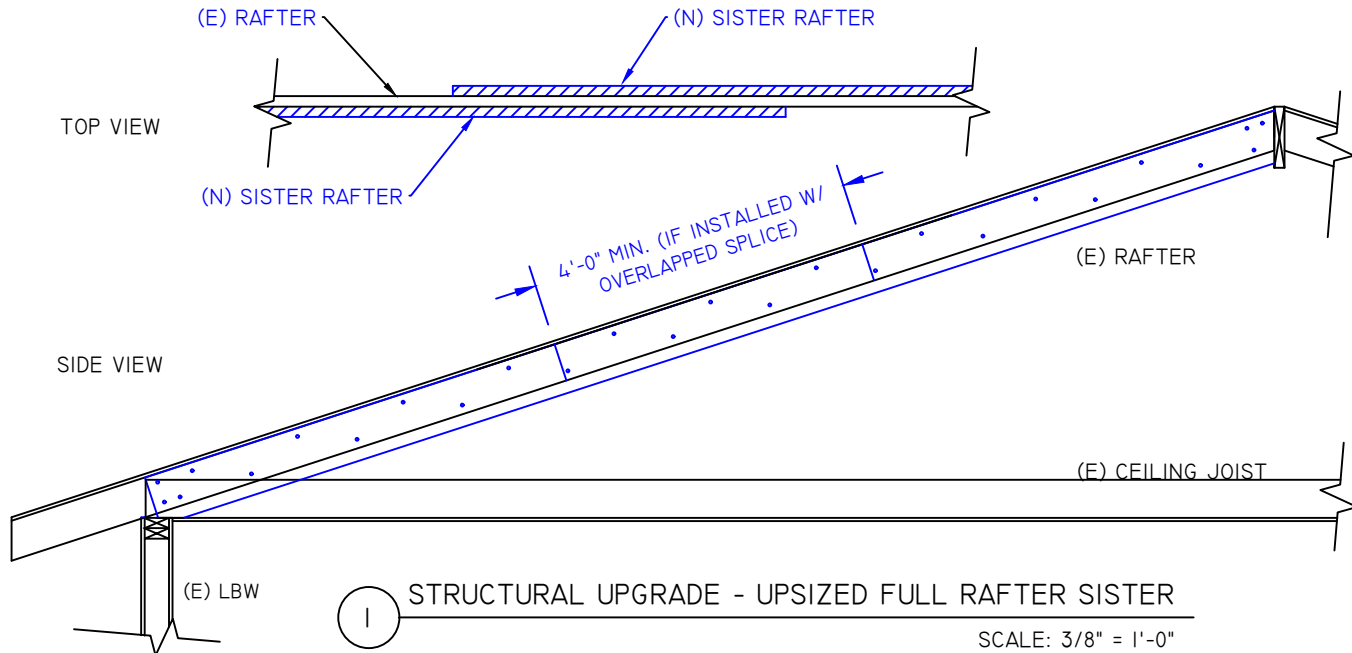
*** ONLY 2 FASTENERS REQUIRED IN TO (E) ROOF RAFTER/TOP CHORD. IF DURING INSTALLATION THE (E) RAFTER/TOP CHORD IS MISSED, CONTINUE TO DRIVE FASTENER UNTIL 2 LAND IN TO THE (E) RAFTER/TOP CHORD. IF ALL MISS, (6) IN (E) SHEATHING ONLY ARE SUFFICIENT AS LONG AS ATTACHMENTS SPAN NO GREATER THAN 24" OC.



A COMP SHINGLE - STRONGHOLD BUTYL ATT KIT - STANDOFF DETAIL
SCALE: 3" = 1'-0"

STRUCTURAL UPGRADE REQUIRED - FULL RAFTER SISTER

1. INSTALL (N) FULL SISTER FULL LENGTH OR OVERLAPPED W/ SPLICE TO (E) RAFTERS TO OCCUR ONLY UNDER PV ARRAY.
2. SECURE WITH (N) 10D SINKERS @ 6" O.C. STAGGERED.
3. IF RIDGE BOARD PRESENT SECURE EACH END WITH 3 SCREWS OR NAILS GROUPED WITHIN 6" OF EACH END.



I STRUCTURAL UPGRADE - UPSIZED FULL RAFTER SISTER
SCALE: 3/8" = 1'-0"

11/26/2025

REGISTERED PROFESSIONAL
ENGINEER
98950PE
ALAN ROWLEY
JAN 11, 2022
OREGON

EXPIRES: 12/31/26
STRUCTURAL UPGRADES REQUIRED.
SEE PAGE S-4 FOR DETAILS.



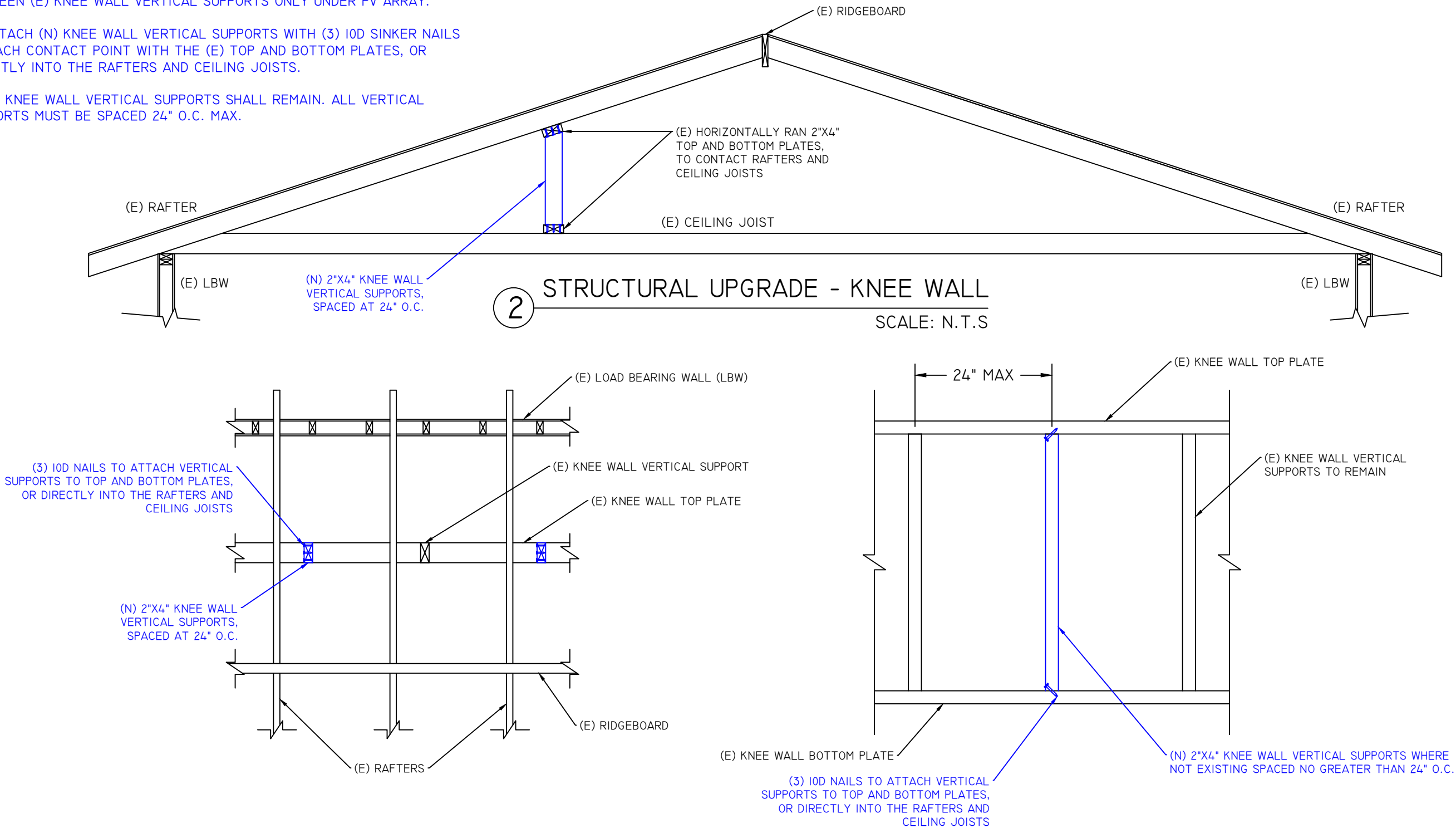
ION DEVELOPER LLC
DAVID STANLEY CONRAD
C - ELECTRICAL CONTRACTOR
CI524

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PROJECT ID	00GT58
SITE OWNER	LINDA M WALKER
SITE ADDRESS	501 N HARRISON ST NEWBERG, OREGON 97132
EQUIP.	(24) SILFAB SOLAR SIL-440 QD DCA3 (1) SOLAREEDGE SE7600H-US
SYSTEM SIZE	10.56KW DC 7.6KW STC-AC, 9.864KW CEC-AC
PROJECT DESIGNER	SURENDRA
DATE	26-Nov-2025
SHEET NAME	STRUCTURAL DETAILS
SHEET #	REV S-4 0

STRUCTURAL UPGRADE REQUIRED - KNEE WALL VERTICAL SUPPORT ADD-IN

1. INSTALL (N) 2"x4" KNEE WALL VERTICAL SUPPORTS SPACED 24" O.C. BETWEEN (E) KNEE WALL VERTICAL SUPPORTS ONLY UNDER PV ARRAY.
2. ATTACH (N) KNEE WALL VERTICAL SUPPORTS WITH (3) 10D SINKER NAILS AT EACH CONTACT POINT WITH THE (E) TOP AND BOTTOM PLATES, OR DIRECTLY INTO THE RAFTERS AND CEILING JOISTS.
3. (E) KNEE WALL VERTICAL SUPPORTS SHALL REMAIN. ALL VERTICAL SUPPORTS MUST BE SPACED 24" O.C. MAX.



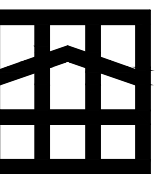
11/26/2025

REGISTERED PROFESSIONAL
ENGINEER
98950PE
ALAN ROWLEY
JAN 11, 2022
OREGON

EXPIRES: 12/31/26
STRUCTURAL UPGRADES REQUIRED.
SEE PAGE S-4 FOR DETAILS.



ION DEVELOPER LLC
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DATE	26-Nov-2025
SHEET NAME	STRUCTURAL DETAILS
SHEET #	S-4.1
REV	0

PV SYSTEM STRUCTURAL SPECIFICATIONS AND CALCULATIONS

DESIGN LOCATION AND SITE SPECIFICATIONS	
JURISDICTION	CITY OF NEWBERG
STATE	OREGON
ADOPTED LOAD STANDARD	ASCE 7-16
OCCUPANCY / RISK CATEGORY	II
BASIC WIND SPEED (MPH (3-SEC GUST))	96
WIND EXPOSURE CATEGORY	B
GROUND SNOW LOAD (PSF) (Pg)	36
BASE ELEVATION (FT)	180
STRUCTURE TYPE	INHABITED - GABLE / FLAT ROOF
MIN. ROOF SLOPE (DEG.)	19
MEAN ROOF HEIGHT (FT.)	11

RACKING AND ATTACHMENT SPECIFICATIONS	
MODULE MANUFACTURER / TYPE	SILFAB SOLAR SIL-440 QD DCA3
SOLAR MODULE WEIGHT (LBS)	46.3
SOLAR MODULE LENGTH (IN.)	67.8
SOLAR MODULE WIDTH (IN.)	44.6
SOLAR MODULE AREA (SQ. FT)	21
PV RACKING	UNIRAC NXT DOM CON
PV RACKING TYPE	RAIL
PV ROOF ATTACHMENT	UNIRAC STRONGHOLD BUTYL ATT KIT #14S MILL
PV ROOF ATTACHMENT FASTENER	(2) 3" #14-14 AB SCREWS(S)
MANUFACTURER UPLIFT CAPACITY (LBS)	779
MANUFACTURER LATERAL CAPACITY (LBS)	320
PORTRAIT ATT. SPACING (IN. O.C.)	48
LANDSCAPE ATT. SPACING (IN. O.C.)	48
MAX PORTRAIT RAIL CANTILEVER SPACING (IN. O.C.)	23
MAX LANDSCAPE RAIL CANTILEVER SPACING (IN. O.C.)	23
# OF ATTACHMENT POINTS	97
RACKING DEAD LOAD (PSF)	0.8
SOLAR MODULE DEAD LOAD (PSF)	2.20
TOTAL PV ARRAY DEAD LOAD (PSF)	3.00
MAX. ROOF POINT DEAD LOAD (PSF)	34.0

DESIGNED VELOCITY PRESSURE CALCULATIONS		ASCE 7-16 (C&C)
VELOCITY PRESSURE (PSF) = QH = 0.00256(KH)(Kzt)(Kd)(Ke)(V^2)		EQN. 26.10-1
TERRAIN EXPO. CONSTANT (A) =	7.0	TABLE 26.11-I
TERRAIN EXPO. CONSTANT (Zg)(FT) =	1200	TABLE 26.11-I
VP EXPOSURE COEFFICIENT (Kh) =	0.70	TABLE 26.10-I
TOPOGRAPHIC FACTOR (Kzt) =	1.0	EQN. 26.8-I
WIND DIRECTIONALITY FACTOR (Kd) =	0.9	TABLE 26.6-I
GROUND ELEVATION FACTOR (Ke) =	1.0	TABLE 26.9-I
QH (PSF) =	14.0	

DESIGNED ROOF SNOW LOAD CALCULATIONS		ASCE 7-16
SLOPED ROOF SNOW LOAD (PSF)	= Ps = (Cs)(0.7)(Ce)(Ct)(Is) (Pg)	EQN. 7.4-1
EXPOSURE FACTOR (Ce) =		TABLE 7.3-1
IMPORTANCE FACTOR (Is) =		TABLE 1.5-2
GROUND SNOW LOAD (PSF) (Pg) =	36.0	
NO PV - WARM NON SLIPPERY SURFACE		
THERMAL FACTOR (Ct) =		TABLE 7.3-2
SLOPE FACTOR (Cs) =		FIG. 7.4-1
Ps (PSF) =	25	
PV - COLD SLIPPERY SURFACE		
THERMAL FACTOR (Ct) =		TABLE 7.3-2
SLOPE FACTOR (Cs) =		FIG. 7.4-1
Ps (PSF) =	25	

RACKING - ATTACHMENT AND FASTENER, CONNECTION ZONE WIND PRESSURE AND POINT LOAD					
GABLE ROOF 7° < θ ≤ 20°			FIGURE 30.3-2B		
DESIGN WIND PRESSURE (PSF) = W = qh(GCp)(ye)(ya)			EQN. 26.10-1		
ARRAY EDGE FACTOR (ye) = 1			EQN. 29.4-7		
	UPLIFT	COMPRESSION	LATERAL		
	ZONE 1	ZONE 2R	ZONE 2E	ALL ZONES	ALL ZONES
RAIL - PORTRAIT MODULE ORIENTATION	48 IN. O.C.	48 IN. O.C.	48 IN. O.C.	48 IN. O.C.	48 IN. O.C.
SOLAR PANEL PRESSURE EQ. FACTOR (ya) =	0.80	0.80	0.80	0.80	0.80
EXTERNAL PRESSURE COEFF. (GCp) =	-2.0	-3.0	-3.6	0.5	-3.6
ASD PRESSURE (W)(PSF) =	-22.46	-33.69	-40.43	5.84	13.16
PV DEAD LOAD (D) =	3.00	3.00	3.00	3.00	0.00
SNOW OR LIVE LOAD (S OR L)(PSF) =	0.00	0.00	0.00	25.00	20.00
MAX. TRIBUTARY AREA (SQ. FT) =	11.3	11.3	8.5	11.3	11.3
GOV. LOAD COMBINATION (2.4.1) =	0.6D+0.6W	0.6D+0.6W	0.6D+0.6W	D+0.45W+0.75S	D+0.75L+0.45W
MAX. LOAD (LBS) =	-131.9	-208.1	-190.3	262.1	81.9

RAIL - LANDSCAPE MODULE ORIENTATION	48 IN. O.C.	48 IN. O.C.	48 IN. O.C.	48 IN. O.C.	48 IN. O.C.
SOLAR PANEL PRESSURE EQ. FACTOR (ya) =	0.80	0.80	0.80	0.80	0.80
EXTERNAL PRESSURE COEFF. (GCp) =	-2.0	-3.0	-3.6	0.7	-3.6
ASD PRESSURE (0.6P)(PSF) =	-22.46	-33.69	-40.43	7.86	13.16
PV DEAD LOAD (D) =	3.00	3.00	3.00	3.00	0.00
SNOW OR LIVE LOAD (S OR L)(PSF) =	0.00	0.00	0.00	25.00	20.00
TRIBUTARY AREA (SQ. FT) =	7.43	7.43	5.58	7.43	7.43
GOV. LOAD COMBINATION (2.4.1) =	0.6D+0.6W	0.6D+0.6W	0.6D+0.6W	D+0.45W+0.75S	D+0.75L+0.45W
MAX. LOAD (LBS) =	-86.8	-136.9	-125.2	179.2	59.0

RACKING - ATTACHMENT AND FASTENER, CAPACITY / DEMAND CHECK		NDS 12.2
UNIRAC STRONGHOLD BUTYL ATT KIT #14S MILL - (2) 3" #14-14 AB SCREW(S)		
LAG SCREW WITHDRAWAL DESIGN VALUE (LBS) = W = 1800(G*3/2)(D*3/4)		12.2.1
ROOF ATTACHMENT FASTENER (D) (IN.) =	6/25	TABLE 2.3.2
FASTENER QTY PER ATTACHMENT =	2	TABLE 12.3.3A
FASTENER EMBEDMENT DEPTH (IN.) =	2.0	
LUMBER SPECIFIC GRAVITY (G) =	0.5	
LOAD DURATION FACTOR (Cd) =	1.6	
PRYING COEFFICIENT =	1.4	
WITHDRAWAL DESIGN VALUE(W)(LBS / IN.) =	218.2	
LAG SCREW WITHDRAWL CAPACITY (LBS) =	997.6	

	UPLIFT	LATERAL
MANUFACTURER MAX. CAPACITY (LBS) =	779.0	320.0
MAX. LAG SCREW CAPACITY (LBS) =	997.6	
MAX. ATT. WITHDRAWL DEMAND (LBS) =	262.1	82.0
	OK	OK

RACKING - RAIL, SPAN AND CANTILEVER CHECK - ALL ZONES			
UNIRAC NXT DOM CON			
MAX. HORIZONTAL RAIL SPAN (L)(FT.) =	4.0		
MAX. VERTICAL SPACING BETWEEN RAILS (FT.) =	4.7		
MAX. RAIL CANTILEVER SPAN (A)(X)(FT.) =	1.9		
	COMPRESSION	UPLIFT	LATERAL
GOV. LOAD COMBINATION (2.4.1) =	D+0.45W+0.75S	0.6D+0.6W	D+0.6W
TOTAL LOAD (PSF) =	28.1	6.6	8.4
TOTAL LINEAR LOAD (W)(LB. / FT.) =	75.0	18.7	7.7
RAIL - SPAN CHECK			(WL^2)/8
ALLOWABLE MANU. BENDING MOMENT (LB. / FT.) =	223	331	264
ACTUAL MAX. BENDING MOMENT (LB / FT.) =	150.0	37.4	15.5
			(W)(L)^4 / 185(E)(I)
ALLOWABLE DEFLECTION (IN.) =	0.80	0.80	0.80
ACTUAL MAX DEFLECTION (IN.) =	0.12	0.03	0.01
	OK	OK	OK
RAIL - CANTILEVER CHECK			
OVERHANG			(W/2)(A-X)^2
ALLOWABLE MANU. BENDING MOMENT (LB. / FT.) =	223	331	264
ACTUAL MAX BENDING MOMENT (LB / FT.) =	137.7	34.4	14.2
			(wx/24EI)(4LA^2-L^3+6XA^2-4AX^2+X^3)
ALLOWABLE MANU. DEFLECTION (L/60)(IN.) =	0.38	0.38	0.38
ACTUAL MAX DEFLECTION (IN.) =	0.03	0.01	0.00
SPAN REACTION			(W/8L^2)(L+A)^2(L-A)^2
ALLOWABLE MANU. BENDING MOMENT (LB. / FT.) =	331	223	264
ACTUAL MAX BENDING MOMENT (LB / FT.) =	89.0	22.2	9.2
			(wx/24EI)(L^4-2L^2X^2+LX^3-2A^2L^2+2A^2X^2)
ALLOWABLE MANU. DEFLECTION (L/60)(IN.) =	0.80	0.80	0.80
ACTUAL MAX DEFLECTION (IN.) =	0.01	0.00	0.00
ATTACHMENT / CONNECTION REACTION			(W/2L)(L+A)^2
UPLIFT CAPACITY (LBS) =	779.0	779.0	779.0
ACTUAL MAX REACTION UPLIFT FORCE (LBS) =	328.1	81.8	33.9
	OK	OK	OK

RACKING - MODULE CLAMPS CAPACITY / DEMAND CHECK			
MID CLAMP: UNIRAC NXT UMount COMBO CLAMP - DARK - CCLAMPDI			
END CLAMP: UNIRAC NXT UMount COMBO CLAMP - DARK - CCLAMPDI			

	UPLIFT	SLIDING	LATERAL
MANUFACTURER MAX. CAPACITY (LBS) =	1820.0	652.0	398.0
MAX. CLAMP WITHDRAWL DEMAND (LBS) =	208.1	82	82
	OK	OK	OK

11/26/2025



EXPIRES: 12/31/26
STRUCTURAL UPGRADES REQUIRED.
SEE PAGE S-4 FOR DETAILS.



ION DEVELOPER LLC
DAVID STANLEY CONRAD
C - ELECTRICAL CONTRACTOR
CI524

ION SOLAR
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OREM, UTAH 84057
888.781.7074

PROJECT ID	00GT58
SITE OWNER	LINDA M WALKER
SITE ADDRESS	501 N HARRISON ST NEWBERG, OREGON 97132
EQUIP.	(24) SILFAB SOLAR SIL-440 QD DCA3 (1) SOLAREEDGE SE7600H-US
SYSTEM SIZE	10.56KW DC 7.6KW STC-AC, 9.864KW CEC-AC
PROJECT DESIGNER	SURENDRA
DATE	26-Nov-2025
SHEET NAME	STRUCTURAL CALCULATIONS I
SHEET #	S-5
REV	0

PV SYSTEM STRUCTURAL SPECIFICATIONS AND CALCULATIONS

GRAVITY LOAD / FRAMING CALCULATIONS

DEAD LOAD (PSF)	RS1	RS2	RS3	RS4
ROOF MEMBRANE	COMPOSITION SHINGLE	4.0 COMPOSITION SHINGLE	4.0 COMPOSITION SHINGLE	4.0 COMPOSITION SHINGLE
SHEATHING PITCH (DEG)	1/2" PLYWOOD 19	1/2" PLYWOOD 19	1/2" PLYWOOD 19	1/2" PLYWOOD 19
FRAMING	CONVENTIONAL FRAMING - NONE - SINGLE PLY (IX) - RAFTER 2X4 @ 24 IN. O.C. - DF #2 @ 8 FT. MAX SPAN	CONVENTIONAL FRAMING - UPGRADE - UPSIZED FULL SISTER (2.5X) - RAFTER 2X4 @ 24 IN. O.C. - DF #2 @ 10.6 FT. MAX SPAN	CONVENTIONAL FRAMING - UPGRADE - UPSIZED FULL SISTER (2.5X) - RAFTER 2X4 @ 24 IN. O.C. - DF #2 @ 10.6 FT. MAX SPAN	CONVENTIONAL FRAMING - NONE - SINGLE PLY (IX) - RAFTER 2X4 @ 24 IN. O.C. - DF #2 @ 8 FT. MAX SPAN
PV ARRAY	3.0	3.0	3.0	3.0
TOTAL ROOF DEAD LOAD	9.7	10.9	10.9	9.7
ADJUSTED TO SLOPED ROOF	10.2	11.4	11.4	10.2
ROOF SNOW LOAD	25.0	25.0	25.0	25.0
LIVE LOAD (PSF)	0.0	0.0	0.0	0.0
TOTAL GREATEST LIVE OR PV LOAD (PSF)	35.2	36.4	36.4	35.2
IBC 1607.14.4.1				

RAFTER / TOP CHORD MEMBER PROPERITES

	DF #2 - 2x4 - NONE - SINGLE PLY (1x)	DF #2 - 2x4 - UPGRADE - UPSIZED FULL SISTER (2.5x)	DF #2 - 2x4 - UPGRADE - UPSIZED FULL SISTER (2.5x)	DF #2 - 2x4 - NONE - SINGLE PLY (1x)
SECTION MODULUS (S)(IN^3)	3.06	10.13	10.13	3.06
MOMENT OF INERTIA (I)(IN^4)	5.36	22.78	22.78	5.36
TOTAL LOAD ON MEMBER (W) (PLF)	70.4	72.8	72.8	70.4
MEMBER SPAN 1 (L) (FT)	6.4	10.6	10.6	6.4
MEMBER SPAN 2 (K) (FT)	8	0	0	8
MIN. EAVE SPAN (V) (FT)	0.92	0.92	0.92	0.92
MODULUS OF ELASTICITY (E) (PSI)	1600000	1600000	1600000	1600000
SHEAR (Fv) (PSI)	180	180	180	180
AREA (A) (IN^2)	5.25	13.5	13.5	5.25

MAX BENDING STRESS CHECK

	(Fb)(Cd)(Cf)(Cr)	(Fb)(Cd)(Cf)(Cr)	(Fb)(Cd)(Cf)(Cr)	(Fb)(Cd)(Cf)(Cr)
BENDING (Fb) (PSI)	900	900	900	900
LOAD DURATION FACTOR (Cd)	1.15	1.15	1.15	1.15
SIZE FACTOR (Cf)	1.50	1.40	1.40	1.50
REPETITIVE MEMBER FACTOR (Cr)	1.15	1.15	1.15	1.15

ALLOWABLE BENDING MOMENT (FT-LBS)	455.6	1406.0	1406.0	455.6
	((WL^3)+(WK^3))/8(S)(L+K)	(W/8L^2)((L+V)^2)((L-V)^2)/(S)	(W/8L^2)((L+V)^2)((L-V)^2)/(S)	((WL^3)+(WK^3))/8(S)(L+K)
ACTUAL MAX BENDING MOMENT (FT-LBS)	473.2	1023.0	1023.0	473.2
	104% OK 73%	OK 73%	OK 104%	OK

MAX DEFLECTION CHECK - TOTAL LOAD

	UNIFORM DISTRIBUTED L / 120	UNIFORM DISTRIBUTED L / 120	UNIFORM DISTRIBUTED L / 120	UNIFORM DISTRIBUTED L / 120
ALLOWABLE DEFLECTION	0.640 IN.	1.060 IN.	1.060 IN.	0.640 IN.
ACTUAL MAX DEFLECTION (W)(L)^4 / 185(E)(I)	0.129 IN. 20% OK 22%	0.236 IN. OK 22%	0.236 IN. OK 20%	0.129 IN. OK

MAX DEFLECTION CHECK - LIVE LOAD

	L / 180	L / 180	L / 180	L / 180
ALLOWABLE DEFLECTION	0.320 IN.	0.707 IN.	0.707 IN.	0.427 IN.
ACTUAL MAX DEFLECTION (W)(L)^4 / 185(E)(I)	0.073 IN. 23% OK 18%	0.129 IN. OK 18%	0.129 IN. OK 17%	0.073 IN. OK

MAX SHEAR CHECK

ALLOWABLE SHEAR = Fv (A)	945	LB S.	2430	LBS.	2430	LBS.	945	LBS.
ACTUAL MAX SHEAR = (w)(L)/2	225	LB S.	386	LBS.	386	LBS.	225	LBS.

11/26/2025



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CI524



ION SOLAR

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PROJECT ID

00GT58

SITE OWNER

LINDA M WALKER

SITE ADDRESS

501 N HARRISON ST

NEWBERG, OREGON 97132

EQUIP.

(24) SILFAB SOLAR SIL-440 QD DCA3

(1) SOLAREEDGE SE7600H-US

SYSTEM SIZE

10.56KW DC

7.6KW STC-AC, 9.864KW CEC-AC

PROJECT DESIGNER

SURENDRA

DATE

26-Nov-2025

SHEET NAME

STRUCTURAL CALCULATIONS 2

SHEET #

REV

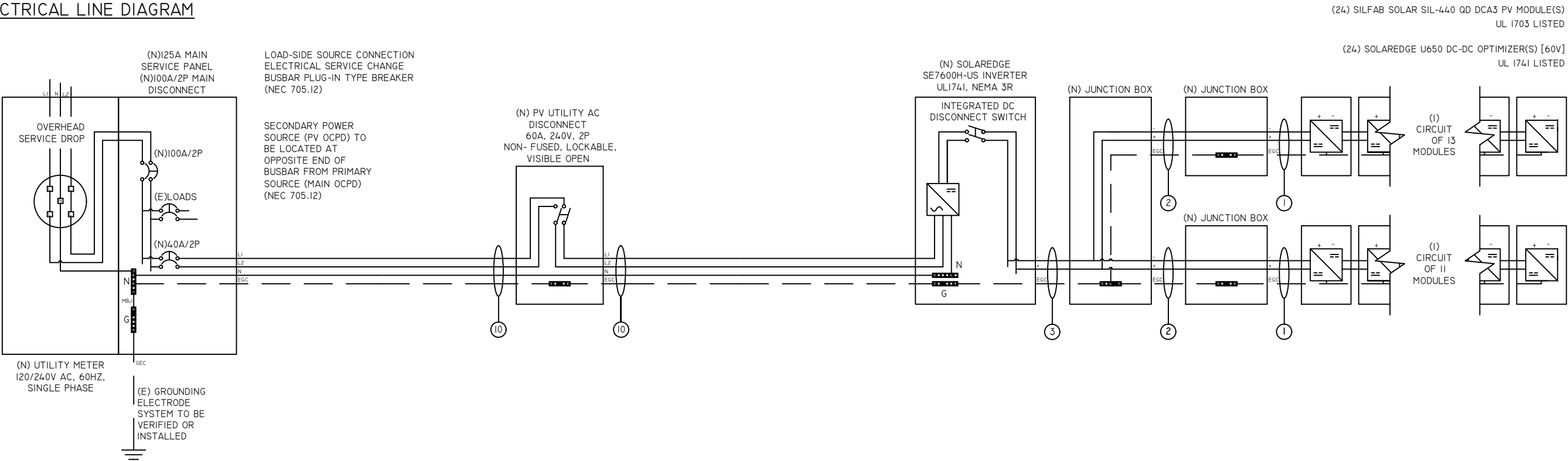
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S-6

CONDUCTOR AND RACEWAY SCHEDULE

TAG	QTY	SIZE - #	TYPE	DESIGNATOR	I / V	TAG	QTY	SIZE - #	TYPE	DESIGNATOR	I / V	TAG	QTY	SIZE - #	TYPE	DESIGNATOR	I / V	TAG	QTY	SIZE - #	TYPE	DESIGNATOR	I / V
10	(1)	8 AWG THHN / THWN-2, CU.		BLACK (L1)	32.0 A AC (MAX)							1	(1)	10 AWG USE-2 / RHH / RHW-2		(-), (+)	15.0 A DC (ISC)						
	(1)	8 AWG THHN / THWN-2, CU.		RED (L2)	240 V AC								(1)	6 AWG SOLID BARE CU.		(EGC)	14.5 A DC (IMP)						
	(1)	8 AWG THHN / THWN-2, CU.		WHITE (N)													480.0 V DC (VOC)						
	(1)	10 AWG THHN / THWN-2, CU.		GREEN (EGC)													395.0 V DC (VMP)						
	(1)	3/4 IN. EMT		(RACEWAY)	EXTERIOR													EXTERIOR					
												2	(1)	10 AWG 2C, MC W/G, CU.		(-), (+), (EGC)	15.0 A DC (ISC)						
														(CABLE)		(NO RACEWAY)	14.5 A DC (IMP)						
																	480.0 V DC (VOC)						
																	395.0 V DC (VMP)						
																	INTERIOR						
												3	(1)	8 AWG THHN / THWN-2, CU.		BLACK (-)	30.0 A DC (ISC)						
													(1)	8 AWG THHN / THWN-2, CU.		RED (+)	26.7 A DC (IMP)						
													(1)	10 AWG THHN / THWN-2, CU.		GREEN (EGC)	480.0 V DC (VOC)						
													(1)	3/4 IN. EMT		(RACEWAY)	395.0 V DC (VMP)						
																	EXTERIOR						

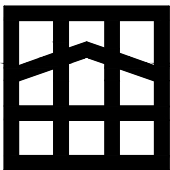
ELECTRICAL LINE DIAGRAM



STRUCTURAL UPGRADES REQUIRED.
SEE PAGE S-4 FOR DETAILS.



ION DEVELOPER LLC
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PROJECT ID	00GT58
SITE OWNER	LINDA M WALKER
SITE ADDRESS	501 N HARRISON ST NEWBERG, OREGON 97132
EQUIP.	(24) SILFAB SOLAR SIL-440 QD DCA3 (1) SOLAREDGE SE7600H-US
SYSTEM SIZE	10.56KW DC 7.6KW STC-AC, 9.864KW CEC-AC
PROJECT DESIGNER	SURENDRA
DATE	26-Nov-2025
SHEET NAME	ELECTRICAL LINE DIAGRAM
SHEET #	E-7
REV	0

PV SYSTEM ELECTRICAL SPECIFCATIONS AND CALCULATIONS

DESIGN LOCATION AND TEMPERATURES

TEMPERATURE DATA SOURCE	ASHRAE
STATE	OREGON
JURISDICTION	CITY OF NEWBERG
WEATHER STATION	AURORA STATE AP
ASHRAE EXTREME LOW TEMP (°C)	-5
ASHRAE 0.4% HIGH TEMP (°C)	37
DESIGNED MAX. SYSTEM VDROP / VRISE	4.00%

PV MODULE SPECIFICATIONS

	SILFAB SOLAR SIL-440 QD DCA3
RATED POWER (P _{MAX}) (W DC)	440
MAXIMUM POWER VOLTAGE (V _{MP} DC)	33.41
MAXIMUM POWER CURRENT (I _{MP} DC)	13.17
OPEN CIRCUIT VOLTAGE (V _{OC} DC)	38.97
SHORT CIRCUIT CURRENT (I _{SC} DC)	14.22
PMP/VMP TEMP. COEFFICIENT	-0.29
VOC TEMP. COEFFICIENT	-0.24
SERIES FUSE RATING (A DC)	25
ADJ. MODULE VOC @ ASHRAE LOW TEMP (°C)	41.8
ADJ. MODULE VMP @ ASHRAE 2% AVG. HIGH TEMP (°C)	29.1

DC-DC OPTIMIZER

	SOLAREEDGE U650
RATED INPUT POWER (W DC)	650
MAX VOLTAGE (ADJ. TEMP. VOC) (V DC)	60
MAX INPUT CURRENT (ISC) (A DC)	15
CEC WEIGHTED EFFICIENCY (%)	98.6
MAX OUTPUT CURRENT (A DC)	15
MAX OUTPUT VOLTAGE (V DC)	60
MIN STRING LENGTHS (PV MODULE / OPTIMIZER QTY)	8
MAX STRING LENGTHS (PV MODULE / OPTIMIZER QTY)	25
MAX NOMINAL POWER PER CIRCUIT (W DC)	6800

INVERTER(S) SPECIFICATIONS

	SOLAREEDGE SE7600H-US
TYPE	DC-DC OPTIMIZER
MAX. OR RECOMMENDED MODULE POWER (W)	15200
MAXIMUM INPUT DC OPEN-CIRCUIT VOLTAGE (VOC)	480
NOMINAL DC INPUT VOLTAGE (V)	395
MAXIMUM DC START VOLTAGE(V)	480
MAXIMUM INPUT CURRENT (ISC) (A)	45
MAX CONTINUOUS OUTPUT POWER (VA)	7600
MAX. CONTINUOUS OUTPUT CURRENT (A)	32
NOMINAL (L-L) OUTPUT VOLTAGE	240
CEC WEIGHTED EFFICIENCY (%)	99.0%

SYSTEM ELECTRICAL SPECIFICATIONS

	CIR I	CIR 2
NUMBER OF MODULES PER CIRCUIT	13	11
DC POWER RATING PER CIRCUIT (STC)(W DC)	5720	4840
TOTAL MODULE QUANTITY	24	PV MODULES
STC DC POWER RATING OF ARRAY	10560W	DC
MAXIMUM DC INPUT CURRENT (ISC) (A)	30	
NOMINAL DC INPUT CURRENT @ STC (IMP) (A)	14.5	12.3
INVERTER OCPD RATING (A)	40	
COMBINED INV. CONT. OUTPUT CURRENT x 125% (A AC)	40.0	
PV POWER PRODUCTION SYSTEM OCPD RATING (A)	40	
MAX. ARRAY STC-AC POWER (W)	7600	
MAX. ARRAY CEC-AC POWER (W)	9864	

DC/AC VOLTAGE DROP CALCULATIONS

	DIST (FT)	COND.	VDROP(V))	VEND(V)	%VDROP
VDROP SEC. 1 (DC-DC OPT. TO JBOX)	51	10 Cu.	1.8	393.2	0.46%
VDROP SEC. 2 (JBOX TO INVERTER)	70	10 Cu.	2.5	392.5	0.64%
VDROP SEC.4 (INVERTER TO POI)	16	8 Cu.	0.8	394.2	0.20%
TOTAL VDROP			5.2	389.8	1.30% OK

RACEWAY / CONDUCTOR CALCULATIONS

DC-DC OPTIMIZER TO JUNCTION BOX (1)

MAX COMBINED DC-DC OPTIMIZER CURRENT =	15.0 A DC	
CONDUCTOR SIZE / INSULATION / TYPE =	10 AWG	USE-2 / RHH / RHW-2
CONDUCTOR AMP. RATING @ 90°C =	40 A	
PER NEC 690.8(B)(1)(W/OUT CORRECTION FACTORS)		
MAX DC-DC OPTIMIZER CURRENT X125%= 18.8	A DC	
PER NEC 690.8(B)(2)(WITH CORRECTION FACTORS)		
AMB. TEMP. AMP. CORRECTION =	0.91	
# OF CONDUCTORS IN RACEWAY CORRECTION =	1.0	
ADJUSTED CONDUCTOR AMPACITY (A) =	36.4 A DC	
LARGER AMPACITY OF 690.8(B)(1) or (B)(2) =	18.8 < 36.4	
(B)(1) - W/OUT CORRECTION FACTORS		
LARGER AMPACITY COMPLIANCE =	40.0 > 18.8	OK
RACEWAY SIZE / TYPE =	1 IN.	EMT OR NO RACEWAY
CONDUCTOR(S) / CABLE(S) CROSS-SECTION AREA (IN.^2) =	0.213 IN.^2	
CROSS-SECTIONAL AREA OF RACEWAY(IN.^2) =	0.864 IN.^2	
% ALLOWABLE RACEWAY FILL (NEC CH. 9, TBL 1) =	40% > 25%	OK

JUNCTION BOX TO JUNCTION BOX (2)

MAX COMBINED DC-DC OPTIMIZER CURRENT =	15.0 A DC	
CONDUCTOR SIZE / INSULATION / TYPE =	10 AWG	2C, MC W/G, CU.
CONDUCTOR AMP. RATING @75°C =	35 A	
PER NEC 690.8(B)(1)(W/OUT CORRECTION FACTORS)		
MAX DC-DC OPTIMIZER CURRENT X125%= 18.8	A DC	
PER NEC 690.8(B)(2)(WITH CORRECTION FACTORS)		
AMB. TEMP. AMP. CORRECTION =	0.88	
# OF CONDUCTORS IN RACEWAY CORRECTION =	1.0	
ADJUSTED CONDUCTOR AMPACITY (A) =	30.8 A DC	
LARGER AMPACITY OF 690.8(B)(1) or (B)(2) =	18.8 < 30.8	
(B)(1) - W/OUT CORRECTION FACTORS		
LARGER AMPACITY COMPLIANCE =	35.0 > 18.8	OK
RACEWAY SIZE / TYPE =	CABLE	

JUNCTION BOX TO INVERTER(S) (3)

MAX COMBINED DC-DC OPTIMIZER CURRENT =	30.0 A DC	
CONDUCTOR SIZE / INSULATION / TYPE =	8 AWG	THHN / THWN-2, CU.
CONDUCTOR AMP. RATING @75°C =	50 A	
PER NEC 690.8(B)(1)(W/OUT CORRECTION FACTORS)		
MAX DC-DC OPTIMIZER CURRENT X125%= 38.0	A DC	
PER NEC 690.8(B)(2)(WITH CORRECTION FACTORS)		
AMB. TEMP. AMP. CORRECTION =	0.88	
# OF CONDUCTORS IN RACEWAY CORRECTION =	1.0	
ADJUSTED CONDUCTOR AMPACITY (A) =	44.0 A DC	
LARGER AMPACITY OF 690.8(B)(1) or (B)(2) =	38.0 < 44.0	
(B)(1) - W/OUT CORRECTION FACTORS		
LARGER AMPACITY COMPLIANCE =	50.0 > 38.0	OK
RACEWAY SIZE / TYPE =	3/4 IN.	EMT
CONDUCTOR(S) / CABLE(S) CROSS-SECTION AREA (IN.^2) =	0.110 IN.^2	
CROSS-SECTIONAL AREA OF RACEWAY(IN.^2) =	0.533 IN.^2	
% ALLOWABLE RACEWAY FILL (NEC CH. 9, TBL 1) =	40% > 21%	OK

INVERTER TO MAIN PV OCPD (10)

COMBINED INVERTER CONTINUOUS OUTPUT CURRENT =	32.0 A AC	
CONDUCTOR SIZE / INSULATION / TYPE =	8 AWG	THHN / THWN-2, CU.
CONDUCTOR AMP. RATING @75°C =	50 A	
PER NEC 690.8(B)(1)(W/OUT CORRECTION FACTORS)		
MAX COMBINED INVERTER CONT. OUTPUT CURRENT X125% = 40.0	A AC	
PER NEC 690.8(B)(2)(WITH CORRECTION FACTORS)		
AMB. TEMP. AMP. CORRECTION =	0.88	
# OF CONDUCTORS IN RACEWAY CORRECTION =	1.0	
ADJUSTED CONDUCTOR AMPACITY (A) =	44.0 A AC	
LARGER AMPACITY OF 690.8(B)(1) or (B)(2) =	40.0 < 44.0	
(B)(1) - W/OUT CORRECTION FACTORS		
LARGER AMPACITY COMPLIANCE =	50.0 > 40.0	OK
RACEWAY SIZE / TYPE =	3/4 IN.	EMT
CONDUCTOR(S) / CABLE(S) CROSS-SECTION AREA (IN.^2) =	0.146 IN.^2	
CROSS-SECTIONAL AREA OF RACEWAY(IN.^2) =	0.533 IN.^2	
% ALLOWABLE RACEWAY FILL (NEC CH. 9, TBL 1) =	40% > 27%	OK

STRUCTURAL UPGRADES REQUIRED.
SEE PAGE S-4 FOR DETAILS.



ION DEVELOPER LLC

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PROJECT ID

00GT58

SITE OWNER

LINDA M WALKER

SITE ADDRESS

501 N HARRISON ST

NEWBERG, OREGON 97132

EQUIP.

(24) SILFAB SOLAR SIL-440 QD DCA3

(1) SOLAREEDGE SE7600H-US

SYSTEM SIZE

10.56KW DC

7.6KW STC-AC, 9.864KW CEC-AC

PROJECT DESIGNER

SURENDRA

DATE

26-Nov-2025

SHEET NAME

ELECTRICAL CALCULATIONS

SHEET #

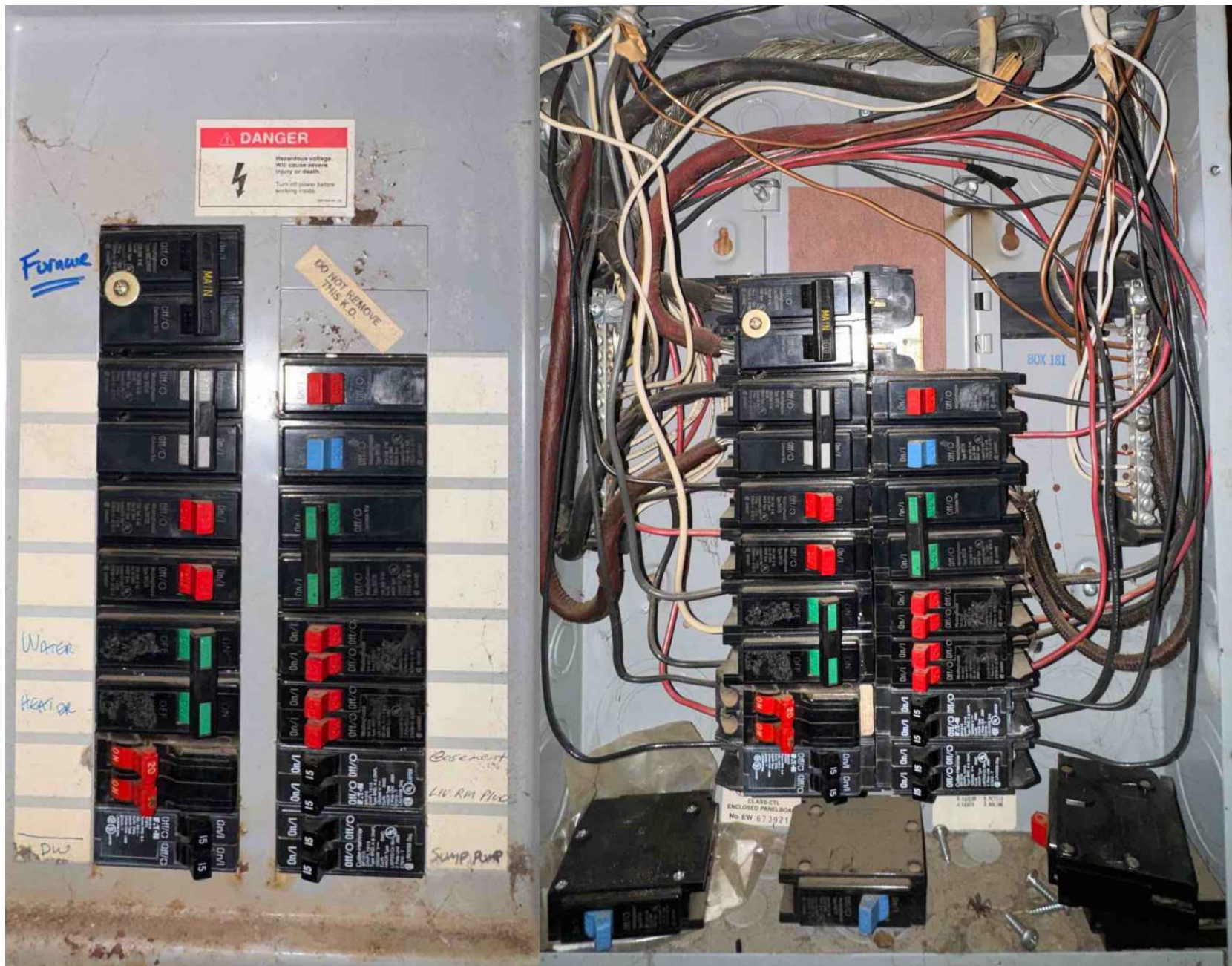
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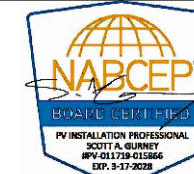
E-8

OPTIONAL FEEDER AND SERVICE LOAD

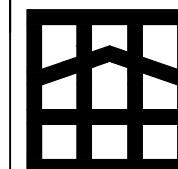
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SITE ADDRESS 501 N HARRISON ST
NEWBERG, OREGON 97132

EQUIP.
(24) SILFAB SOLAR SIL-440 QD DCA3

(1) SOLAREEDGE SE7600H-US

SYSTEM SIZE	10.56KW DC 7.6KW STC-AC, 9.864KW CEC-AC
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PROJECT DESIGNER

SURENDRA

DATE	26-Nov-2025
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SHEET NAME
ELECTRICAL LOAD CALCULATION

SHEET #	REV
E-9	0

ELECTRICAL FIELD-APPLIED HAZARD MARKINGS

- A

FOR EACH PV DISCONNECTING MEANS WHERE ALL TERMINALS OF THE DISCONNECTING MEANS MAY BE ENERGIZED IN THE OPEN POSITION.
[OESC 690.13(B), OESC 690.56, OESC 705.20]
- B

PLACED ADJACENT TO PV SYSTEM PLUG-IN TYPE BREAKER TO A BUSBAR FOR A LOAD SIDE CONNECTION.
[OESC 705.12(B)(2)]
- C

FOR ELECTRICAL SERVICES CONNECTED TO PV SYSTEM. SIGN TO BE LOCATED AT EACH SERVICE EQUIPMENT LOCATION.
[OESC 690.12]
- D

FOR RAPID SHUTDOWN SWITCH INITIATION DEVICE LOCATED AT A READILY ACCESSIBLE OUTDOOR LOCATION. CAN BE THE SYSTEM PLUG-IN TYPE BREAKER OR A SAFETY SWITCH.
[OESC 690.12]

N

PERMANENT DIRECTORY TO BE LOCATED AT THE MAIN SERVICE EQUIPMENT IF ALL ELECTRICAL POWER SOURCE DISCONNECTING MEANS ARE GROUPED AND IN LINE OF SITE OF THE MAIN SERVICE DISCONNECTING MEANS.
[OESC 690.56 & OESC 705.10].

H

FOR WIRING METHODS CONTAINING DC PV CIRUCITS (NOT TO BE CONFUSED WITH AC PV CIRCUITS). TO BE PLACED ON JUNCTION BOXES AND ALONG RACEWAYS NO GREATER THAN 10 FT. [NEC 690.12]

T

AT EACH PV SYSTEM DISCONNECTING MEANS.
[UTILITY SPECIFIC LABEL]

32.0
240

