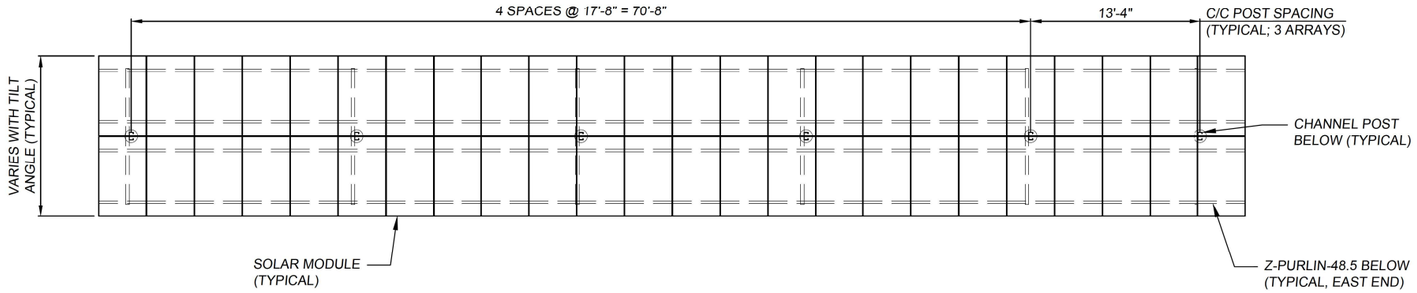
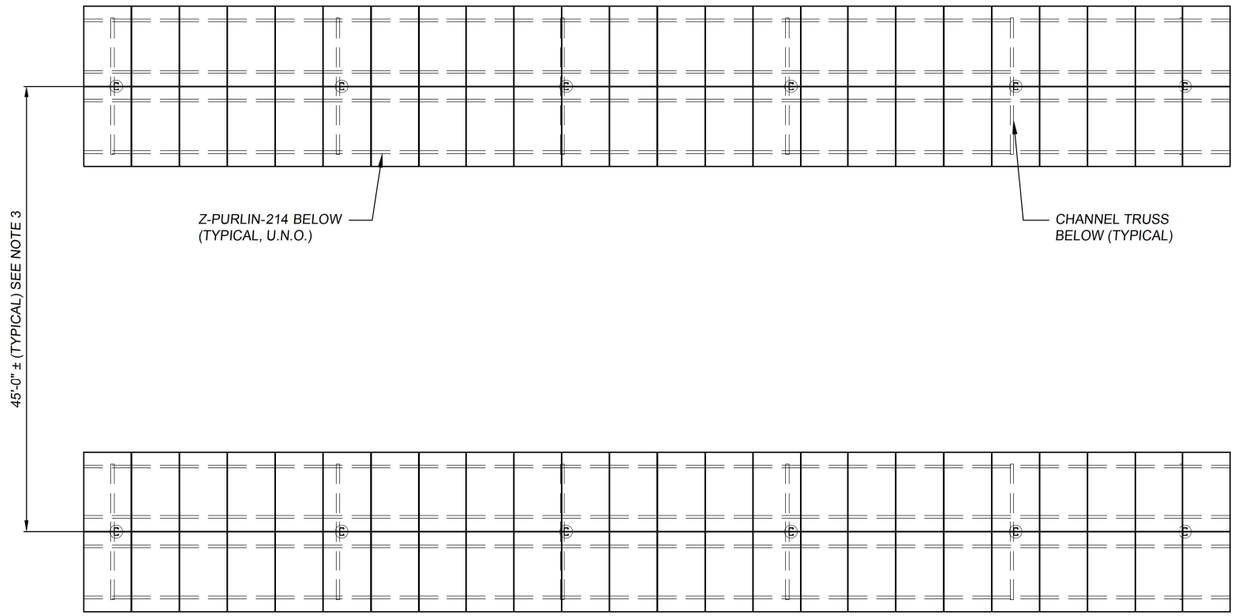
PROJECT NORTH





RACKING PLAN VIEW

SCALE: NONE

TOTAL MODULE COUNT: 144

BILL OF MATERIALS

QUANTITY	SDE ITEM	COMPONENT	COMPONENT WEIGHT (LBS)	TOTALS (LBS)
18	9x4 C-CHANNEL-174	POST	115	2070
18	TRUSS-120-CLAMPS	TRUSS	61	1098
18	SA-JACK	MANUALLY ADJUSTABLE JACK	15	270
60	Z-PURLIN-214	PURLIN	62	3720
12	Z-PURLIN-48.5 EAST	PURLIN CANTILEVER	16	192
18	ASSEMBLY HARDWARE KIT	ASSEMBLY BOLTS / NUTS	NA	-
276	CONDUCTIVE MID CLAMP	MID CLAMP KIT	NA	-
24	35 MM CONDUCTIVE END CLAMP	END CLAMP KIT	NA	-
		WEIGHT DOES NOT INCLUDE HARDWARE OR CLAMPS	TOTAL WEIGHT (LBS)	7350

NOTES

1. PANEL PROGRESSION (PER ARRAY) = (44.61" (PANEL WIDTH) + 0.4" (CLAMP)) x 24 PANELS = 1080.24"
2. RACKING PROVIDED (PER ARRAY) = 1104.5" (EXCESS OF 24.26"). BEGIN PANEL INSTALLATION APPROXIMATELY 3" FROM WEST END; TRIM EXCESS FROM EAST END
3. C/C POST DIMENSION AS SHOWN MAY BE FIELD MODIFIED; HOWEVER, CONSIDERATION SHOULD BE GIVEN TO SHADING
4. U.N.O. INDICATES UNLESS NOTED OTHERWISE
5. DESIGN IS APPROVED AS SHOWN
6. ENGINEER SHALL BE CONSULTED IF DESIGN IS MODIFIED
7. SEE DRAWING S2 FOR ADDITIONAL NOTES AND DESIGN CRITERIA

WISCONSIN
DUNLEY M STULTS
E-46581
MARSHALL MI
PROFESSIONAL ENGINEER
09/03/2025

SEAL LIMITED TO STRUCTURAL COMPONENTS

GREAT LAKES SOLAR & ENGINEERING, PLLC
1104 INDUSTRIAL BLVD
ALBION, MI 49224

C.O.A. No. 4917-11

PROJECT INFORMATION:
144x PANEL SA
120 KUCKKAN LN
WATERTOWN, WI 53094

TITLE: RACKING DETAILS

REV	SHEET No.	PROJECT No.	RELEASE DATE	APPR	DRAWN BY	SCALE
0	S1	250902-4	09/02/25	INT	MR	VARIES

NO	DESCRIPTION	DATE	BY
0	ISSUED FOR CONSTRUCTION	09/02/25	CMS

REVISIONS

ELECTRONIC FILE LOCATION: C:\Users\sde-el\OneDrive\Desktop

PLOT DATE/TIME: 9/2/2025 11:18 AM FILE NAME: Racking Details - 2 Page.dwg

DRAWING INDEX
S1 RACKING DETAILS
S2 RACKING DETAILS / SPECIFICATIONS & NOTES

SPECIFICATIONS
PANELS: SILFAB NTC QD
440 W MODULES; 63.36 kW DC
TILT ANGLE: VARIES
GROUND CLEARANCE: 22 IN. ± MIN. @ 55°

THIS CERTIFICATION IS FOR DESIGN OF SDE SOLAR PANEL RACKING @ 15 - 55 DEGREE TILT WITH EMBEDDED POSTS

55 DEGREES (FROM HORIZONTAL) SHALL BE THE MAXIMUM TILT IN THE WINTER AND 15 DEGREES (FROM HORIZONTAL) SHALL BE THE MINIMUM TILT IN THE SUMMER. THE SYSTEM SHALL BE ADJUSTED THROUGHOUT THE YEAR BETWEEN THESE TWO TILT ANGLES

THE SYSTEM SHALL BE TILTED TO NO LESS THAN 40 DEGREES (FROM HORIZONTAL) FROM DECEMBER 1 THROUGH MARCH 31

GREAT LAKES SOLAR & ENGINEERING IS NOT RESPONSIBLE FOR SOLAR PANEL DESIGN OR INSTALLATION

CONTACT GREAT LAKES SOLAR & ENGINEERING IF ROCK IS ENCOUNTERED DURING POST INSTALLATION

POSTS SHALL BE INSTALLED WITH FLAT FACE TO THE EAST FOR EVEN ANGLES (20° & 30°) AND WITH FLAT FACE TO THE WEST FOR ODD ANGLES (25° & 35°) AND SEASON ADJUSTABLE SYSTEMS

WEST FACING POST SHOWN IN RACKING SIDE ELEVATION VIEW. EAST FACING POST SIMILAR

POSTS MAY BE TRIMMED FROM BOTTOM TO AVOID EXCESS EMBEDMENT AS NEEDED

RACKING DESIGN CRITERIA
TOTAL AREA BETWEEN POSTS = 67.76" x 44.61" x 10 PANELS = 209.90 SQ.FT.
APPLICABLE CODES AND STANDARDS: IBC 2021, ASCE 7-16
RISK CATEGORY: I
FLOOR LIVE LOAD (1603.1.1): NA
ROOF LIVE LOAD (1603.1.2): 20 PSF (REDUCIBLE)
ROOF SNOW LOAD (1603.1.3):
Pg = 30 PSF
Pf = 16.14 PSF
Ce = 0.9
Is = 0.80
Ct = 1.2
WIND LOAD (1603.1.4):
V = 100 MPH
Iw = 1.0
EXPOSURE: C
EARTHQUAKE DESIGN DATA (1603.1.5)
Sds = 0.077
Sd1 = 0.075
SITE CLASS = D
Ie = 1.00
SDC = B
BASE SHEAR V = 31.74 LBS

SOIL IS ASSUMED TO BE STIFF

POSTS SHALL BE EMBEDDED INTO UNDISTURBED SOIL

2 PANEL HIGH (PORTRAIT), 10 PANELS BETWEEN POSTS
GROSS UPLIFT = 2580 LBS (PER POST)
HORIZONTAL = 2755 LBS (PER POST)

NOTES
1. DESIGN IS APPROVED AS SHOWN
2. GREAT LAKES SOLAR & ENGINEERING SHALL BE CONSULTED IF DESIGN IS MODIFIED
3. MAXIMUM STRESS IN POST AND FOUNDATION DESIGN ARE DETERMINED USING THE AVERAGE TILT ANGLE OF 35 DEGREES. RESULTS OF THIS POST CHECK ARE USED TO DETERMINE THE APPROVED POST LENGTH AND LEADING EDGE CLEARANCE
4. UNLESS INDICATED OTHERWISE, SYSTEM HAS BEEN DESIGNED ASSUMING MODULES FACE 180° AZIMUTH
5. SYSTEM SHALL BE INSTALLED PER MANUFACTURER'S INSTALLATION GUIDE AND SPECIFICATIONS
6. DRAINAGE SHALL BE DIVERTED AWAY FROM POSTS. POSTS SHALL NOT BE INSTALLED IN SWALES, DRAINAGE AREAS, OR WHERE WATER MAY BE ALLOWED TO FLOW OR STAND
7. EXISTING GRADE SHALL BE NOMINALLY FLAT WITH NO MORE THAN 5° SLOPE. GREAT LAKES SOLAR & ENGINEERING SHALL BE CONSULTED IF SLOPE IS GREATER THAN 5°
8. DAMAGED COMPONENTS SHALL BE REJECTED AND REPLACED
9. SEE SHEETS C1 THROUGH C3 FOR STANDARD CONNECTION DETAILS AND NOTES

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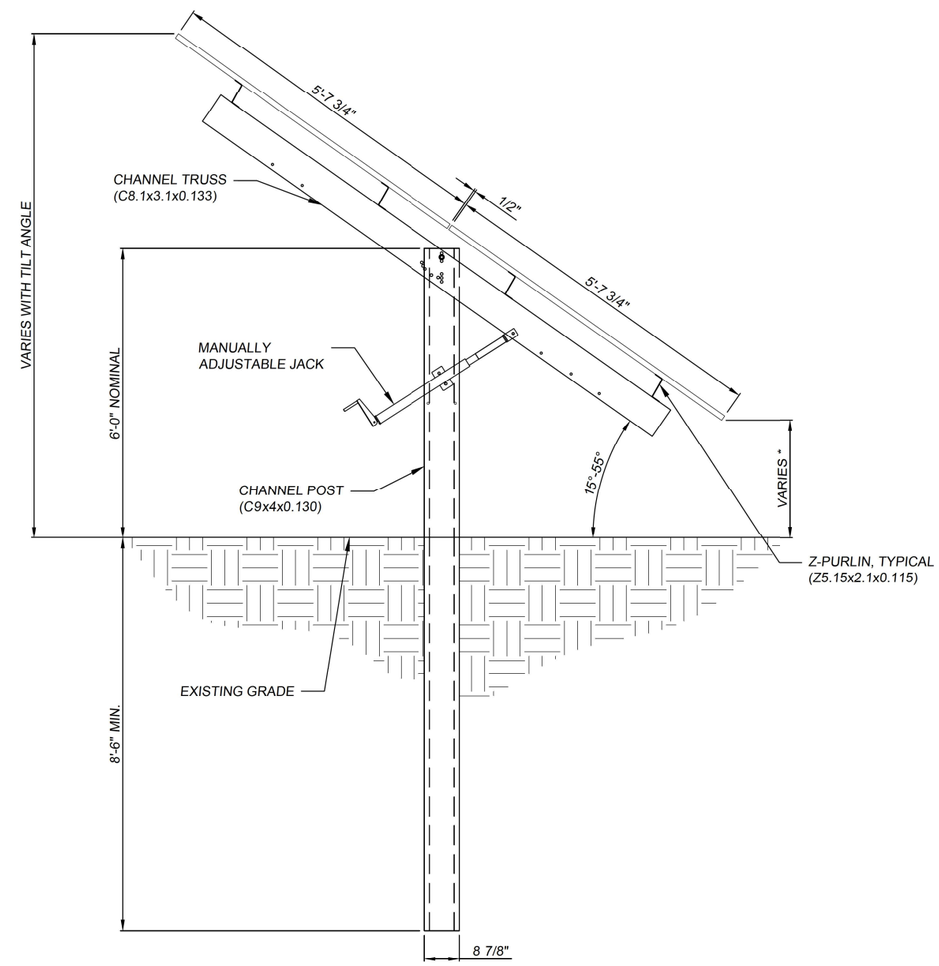

RACKING SIDE ELEVATION VIEW
SCALE: NONE

* APPROX. 1'-10" @ 55 DEGREES
APPROX. 5' 0" @ 15 DEGREES

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TITLE: RACKING DETAILS / SPECIFICATIONS & NOTES

SCALE	DRAWN BY	APPR	RELEASE DATE	PROJECT No.	SHEET No.	REV
VARIES	MR	INT	09/02/25	250902-4	S2	0

NO	DESCRIPTION	BY	DATE
0	ISSUED FOR CONSTRUCTION	CMS	09/02/25

REVISIONS

ELECTRONIC FILE LOCATION: \\sde-eng\d\SDEEng\New Projects\250902-4 144x Panel SA (CED Greentech)

PLOT DATE/TIME: 9/2/2025 1:58 PM FILE NAME: Racking Details - 2 Page.dwg