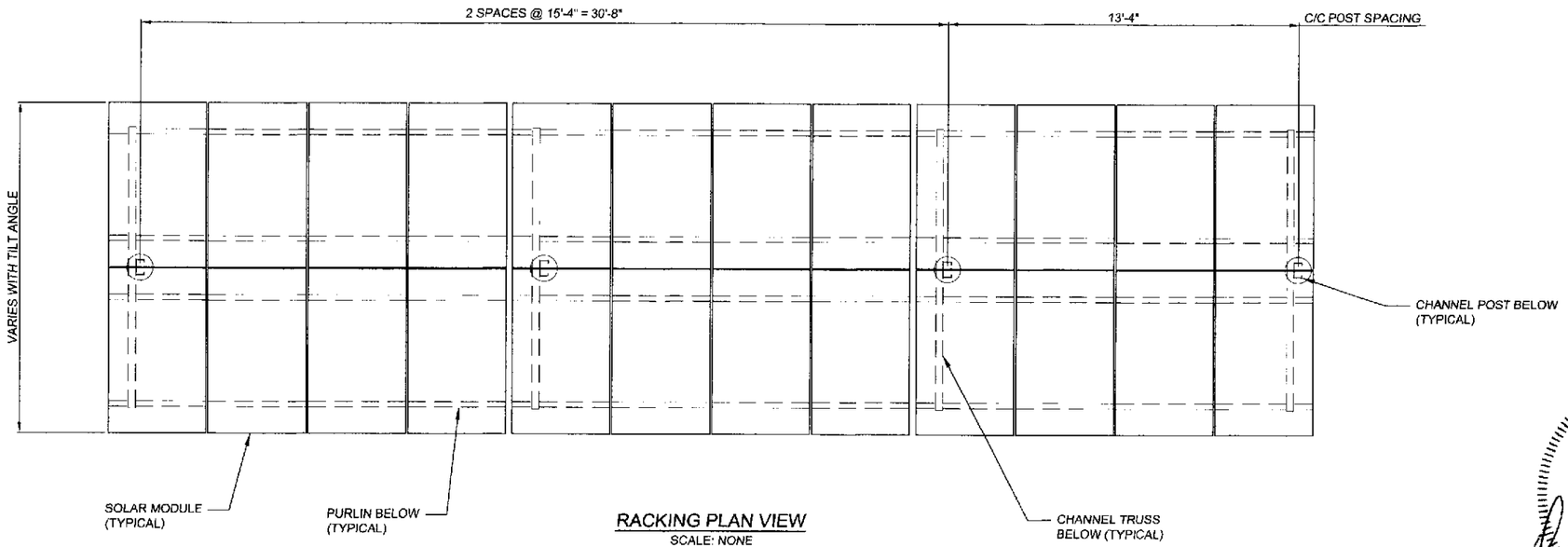
GREAT LAKES SOLAR & ENGINEERING, PLLC
1104 INDUSTRIAL BLVD
ALBION, MI 49224



RACKING PLAN VIEW
SCALE: NONE

TOTAL MODULE COUNT: 24

BILL OF MATERIALS				
QUANTITY	SDE ITEM	COMPONENT	COMPONENT WEIGHT (LBS)	TOTALS (LBS)
4	9x4 C-CHANNEL-144	POST	95	380
4	TRUSS-DIRECT TIE	TRUSS	75	300
4	SA-JACK	MANUALLY ADJUSTABLE JACK	15	60
12	Z-PURLIN-186	PURLIN	54	648
4	ASSEMBLY HARDWARE KIT	ASSEMBLY BOLTS / NUTS	NA	-
96	1/4-20 STAINLESS SERRATED FLANGE NUTS	ATTACHMENT HARDWARE	NA	-
96	1/4-20 x 3/4 STAINLESS SERRATED FLANGE BOLTS	ATTACHMENT HARDWARE	NA	-
		WEIGHT DOES NOT INCLUDE HARDWARE OR CLAMPS	TOTAL WEIGHT (LBS)	1388

NOTES
1. DESIGN IS APPROVED AS SHOWN
2. ENGINEER SHALL BE CONSULTED IF DESIGN IS MODIFIED
3. SEE DRAWING S2 FOR ADDITIONAL NOTES AND DESIGN CRITERIA

NORTH CAROLINA PROFESSIONAL SEAL 050201 ENGINEER DUDLEY M. STULTZ

01/11/2022
SEAL LIMITED TO STRUCTURAL COMPONENTS

NORTH CAROLINA GREAT LAKES SOLAR & ENGINEERING, PLLC No. P-2216 CERTIFICATE OF AUTHORIZATION

PROJECT INFORMATION:
WES CARVER
2104 PONDEROSA RD
CAMERON, NC 28326

RACKING DETAILS

SHEET No.	REV.
S1	1

PROJECT No. 230105-3
RELEASE DATE 01/11/23
APPR INT
DRAWN BY DMS
SCALE VARIES

NO.	DESCRIPTION	BY	DATE
1	UPDATED TITLE BLOCK	DMS	01/11/23
0	ISSUED FOR CONSTRUCTION	DMS	01/05/23

ELECTRONIC FILE LOCATION: D:\SDE\Engr\2022 new\2022 (Done)\230105-3 Wes Carver (Southern Energy)\ADONE

PLOT DATE/TIME: 1/11/2023 8:03 AM FILE NAME: Racking Details - Wes Carver.dwg

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

SPECIFICATIONS
PANELS: HANWHA Q.PEAK DUO XL-G11.3 / BFG 575 W MODULES; 13.8 kW DC
TILT ANGLE: VARIES
GROUND CLEARANCE: 24 IN. ± MIN. @ 55°

THIS CERTIFICATION IS FOR POST DRIVEN DESIGN OF SDE SOLAR PANEL RACKING @ 15 - 55 DEGREE TILT

55 DEGREES (FROM HORIZONTAL) SHALL BE THE MAXIMUM TILT IN THE WINTER AND 25 DEGREES (FROM HORIZONTAL) SHALL BE THE MINIMUM TILT IN THE SUMMER. THE SYSTEM SHALL BE ADJUSTED THROUGHOUT THE YEAR BETWEEN THESE TWO TILT ANGLES

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

SYSTEM SHALL BE INSTALLED PER MANUFACTURER'S INSTALLATION GUIDE AND SPECIFICATIONS

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

RACKING DESIGN CRITERIA
TOTAL AREA BETWEEN POSTS = 44.65" x 95.12" x 8 PANELS = 236.0 SQ.FT.
APPLICABLE CODES AND STANDARDS: IBC 2015, ASCE 7-10
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 = 10.0 PSF
Pf = 6.05 PSF
Ce = 0.9
Is = 0.8
Ct = 1.2
WIND LOAD (1603.1.4):
V = 106 MPH
Iw = 1.0
EXPOSURE: B
EARTHQUAKE DESIGN DATA (1603.1.5)
Sds = 0.216
Sd1 = 0.148
SITE CLASS = D
Ie = 1.0
SDC = C
BASE SHEAR V = 97.16 LBS

SOIL IS ASSUMED TO BE STIFF

2 PANEL HIGH (PORTRAIT), 10 PANELS BETWEEN POSTS
GROSS UPLIFT = 1915 LBS (PER POST)
HORIZONTAL = 2015 LBS (PER POST)

STRUCTURAL MEMBERS
STRUCTURAL MEMBERS COLD FORMED ASTM A653 STEEL
50 KSI MINIMUM YIELD STRENGTH
STRUCTURAL BOLTS GRADE 5 / GRADE 8
STRUCTURAL MEMBERS FABRICATED AND GALVANIZED PER ASTM A123
HOLES SHALL BE 1/16" LARGER THAN BOLTS

NOTES
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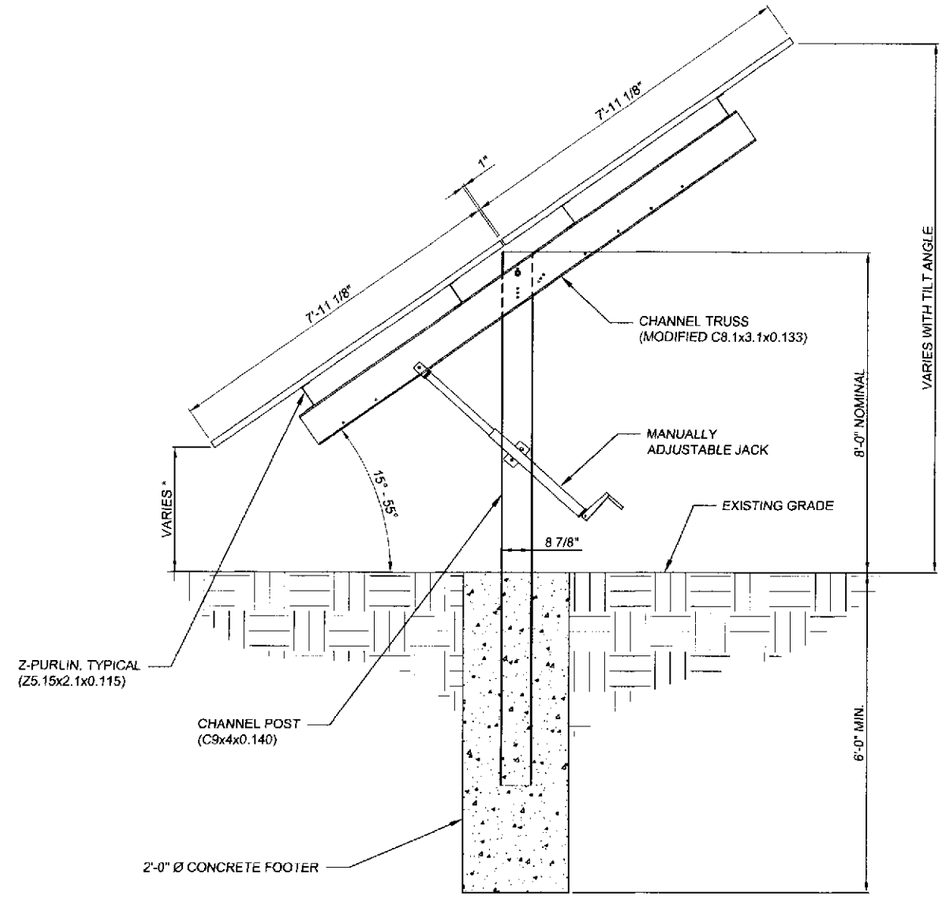
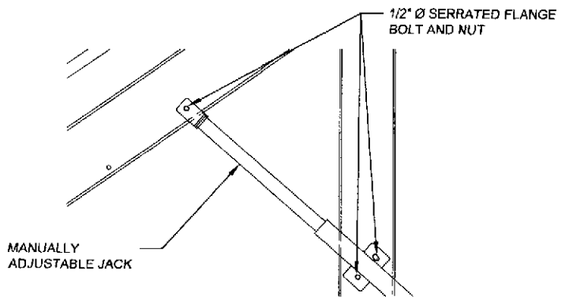
2. GREAT LAKES SOLAR & ENGINEERING SHALL BE CONSULTED IF DESIGN IS MODIFIED
3. MAXIMUM STRESS IN POST AND POST EMBEDMENT ARE DETERMINED USING THE AVERAGE TILT ANGLE OF 35 DEGREES. RESULTS OF THIS POST CHECK ARE USED TO DETERMINE THE APPROVED POST LENGTH AND LEADING EDGE CLEARANCE
4. DRAINAGE SHALL BE DIVERTED AWAY FROM POSTS. POSTS SHALL NOT BE INSTALLED IN SWALES, DRAINAGE AREAS, OR WHERE WATER MAY BE ALLOWED TO FLOW OR STAND
5. ADJUSTMENT HOLES IN POSTS SHALL BE USED TO LEVEL TRUSSES AND PURLINS PRIOR TO PANEL INSTALLATION
6. CANTILEVER MEMBERS SHALL BE ATTACHED WITH NO LESS THAN 3 - 1/2" Ø SERRATED FLANGE BOLTS. CANTILEVERS SHALL OVERLAP PURLINS BY 6"
7. EXISTING GRADE SHALL BE NOMINALLY FLAT WITH NO MORE THAN 5% SLOPE. ENGINEER SHALL BE CONSULTED IF SLOPE IS GREATER THAN 5%
8. DAMAGED COMPONENTS SHALL BE REJECTED AND REPLACED
9. ALL CONCRETE SHALL BE AIR ENTRAINED (5% TO 8%), HAVE A 3 1/2" TO 4 1/2" SLUMP, AND OBTAIN A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 4,000 PSI AT 28 DAYS

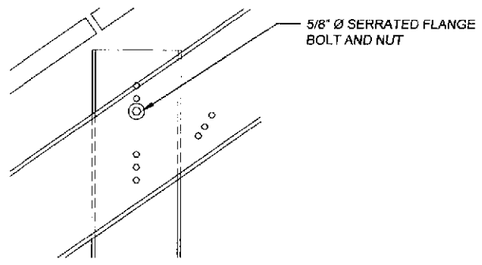


RACKING SIDE ELEVATION VIEW
SCALE: NONE

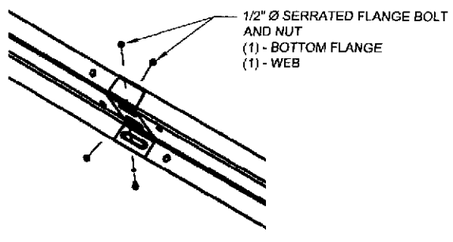
* APPROX. 2'-0" @ 55 DEGREES
APPROX. 6'-6" @ 15 DEGREES



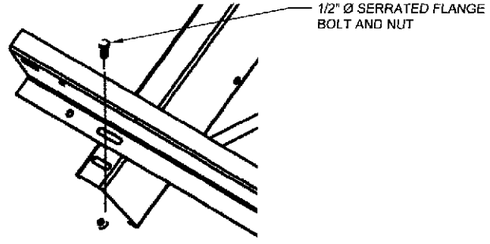
JACK CONNECTIONS
SCALE: NONE



TRUSS TO POST CONNECTION
SCALE: NONE



PURLIN 2" OVERLAP CONNECTION
SCALE: NONE



PURLIN TO TRUSS CONNECTION
SCALE: NONE

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SCALE	DRAWN BY	APPR
VARIES	DMS	INT

PROJECT No.	RELEASE DATE	SHEET No.	REV
230105-3	01/11/23	S2	1

NO	DESCRIPTION	DATE	BY
0	ISSUED FOR CONSTRUCTION	01/05/23	DMS
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REVISIONS

NORTH CAROLINA
GREAT LAKES SOLAR & ENGINEERING, PLLC
No. P-2216
CERTIFICATE OF AUTHORIZATION

NORTH CAROLINA
PROFESSIONAL
SEAL
050201
ENGINEER
DANLEY M. STULTZ

XX/XX/2022
SEAL LIMITED TO STRUCTURAL COMPONENTS

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