

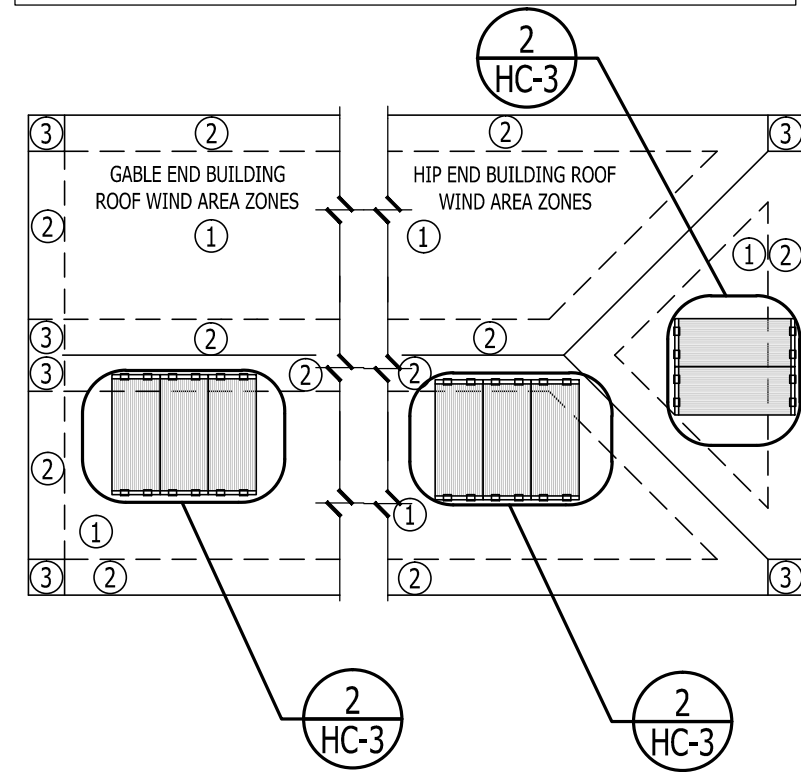
HELIOCOL COLLECTOR GENERAL NOTES:

1. APPLICABLE CODE: 2013 CALIFORNIA BUILDING CODE & ASCE-7-10 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES.
2. S-5! CLIPS USED ARE BASED ON STANDING SEAM PROFILE OF ROOF. SEE SCHEDULE AND EXAMPLES OF S-5! CLIPS USED WITH VARIOUS SEAM PROFILES.
3. ALL WIND DESIGN CRITERIA AND PARAMETERS ARE FOR HIP AND GABLE ROOFS, CONSIDERING FROM A 7° TO A MAXIMUM 27° (2/12 TO A MAXIMUM 6/12 PITCH) ROOF IN SCHEDULE. ALL ROOFS SHALL NOT TO EXCEED 60'-0" MEAN ROOF HEIGHT.
4. WIND TUNNEL TEST DATA FOR THIS COLLECTOR MAY BE REQUESTED THROUGH UMA SOLAR, INC. AND HAS BEEN COMPILED BY PRI CONSTRUCTION AND MATERIAL TESTING, INC.
5. S-5! CLAMP LOAD CAPACITIES BASED ON MANUFACTURER LOAD TEST DATA AND USES THE MINIMUM CAPACITY OF ALL TEST DONE WITH A SAFETY FACTOR OF (3).
6. THIS SHEET REFLECTS CONNECTIONS ONLY. REFER TO HELIOCOL INSTALLATION MANUAL FOR ALL ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND SOLAR SPECS. ANALYSIS OF SUPPORTING ROOF STRUCTURE NOT PERFORMED.
7. S-5! CLAMPS, SET SCREW, AND OTHER HARDWARE SHALL BE MADE OF STAINLESS STEEL.
8. ALL HELIOCOL COLLECTOR MODELS MAY BE INSTALLED PER THIS STRUCTURAL CONNECTION DRAWING.
9. PVC PIPE RISER/SPACER IS REQUIRED FOR PIPE CLAMPS WHERE PIPE ELEVATION VARIES.

ULTIMATE WIND SPEED V _{ult} : 110 MPH	V _{asd} WIND PRESSURES ZONE 1 (PSF)	V _{asd} WIND PRESSURES ZONE 2 (PSF)	V _{asd} WIND PRESSURES ZONE 3* (PSF)	QTY. OF S-5!S - CLAMPS PER COLLECTOR	ZONE 1 LOAD PER S-5! CLAMP (LBS)	ZONE 2 LOAD PER S-5! CLAMP (LBS)
EXP B	16.0, -16.0	16.0, -22.2	16.0, -33.1*	(4)	77.44	107.47
EXP C	16.0, -16.0	16.0, -29.5	16.0, -43.9*	(4)	77.44	142.70
EXP D	16.0, -16.0	16.0, -34.0	16.0, -50.7*	(4)	77.44	164.72

- PLUS AND MINUS SIGNS SIGNIFY PRESSURES ACTING TOWARD AND AWAY FROM SURFACES, RESPECTIVELY.
 - SCHEDULE REFLECTS COMPONENTS AND CLADDING (C&C) WIND SPEED PRESSURES AT 110 MPH WITH EXPOSURE AS NOTED, OCCUPANCY CATEGORY II, ENCLOSED BUILDING AND h < 60'-0" PER ASCE 7-10 "MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES".
 - EFFECTIVE DESIGN WIND AREA IS 16.0 SF PER COLLECTOR FOR HC-50.
 - MINIMUM WIND PRESSURE SHALL BE 16.0 PSF AND -16.0 PSF PER ASCE 7-10 SECTION 30.2.2

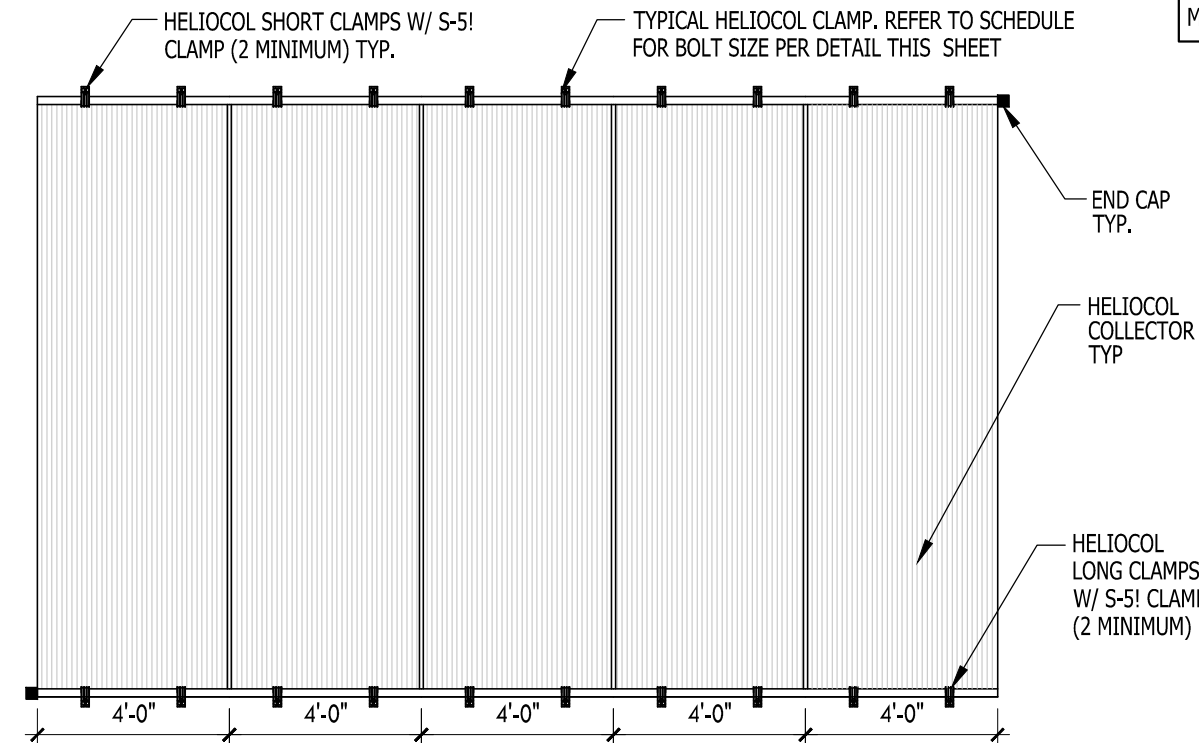
* INSTALLATION OF COLLECTORS MUST BE LOCATED IN ROOF WIND ZONE 1 AND 2. WIND ZONE 3 REQUIRES SITE SPECIFIC STRUCTURAL ENGINEER'S APPROVAL. SEE CBC 2013 & ASCE7-10 FOR DEFINITION OF DIMENSION "a" FOR ROOF ZONES.



TYPICAL COLLECTOR ROOF LAYOUT - WIND ZONES - SCHEDULE - PLAN

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

1
HC-3

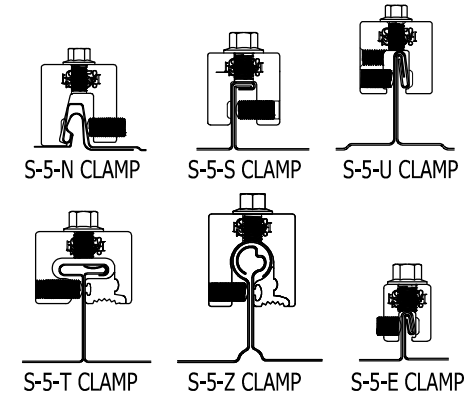


TYPICAL COLLECTOR ARRAY PLAN

SCALE: 1/4"=1'-0"

2
HC-3

CONTRACTOR / INSTALLER SHALL VERIFY EXISTING STANDING SEAM METAL ROOF PROFILE & MATERIAL AND SELECT S-5! CLAMP AS SHOWN IN EXAMPLE PROFILES BELOW PER MANUFACTURER REQUIREMENTS.



EXAMPLE PROFILES COMPATIBLE WITH S-5! CLAMPS

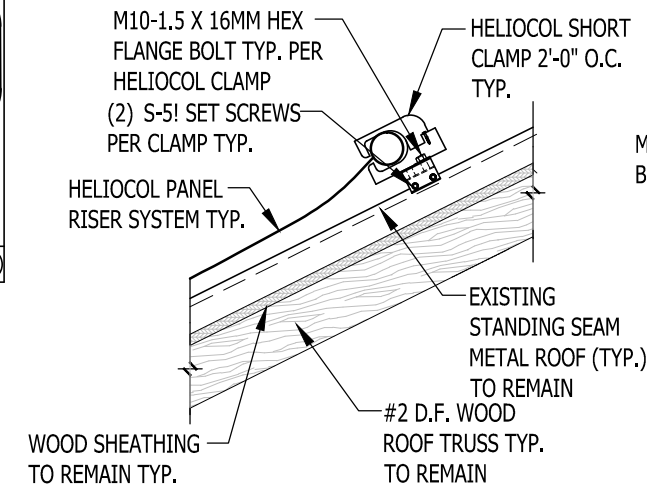
S-5! CLAMP	ALLOWABLE UPLIFT LOAD CAPACITY
S-5-N	464 LBS
S-5-S	308 LBS
S-5-U	286 LBS
S-5-T	564 LBS
S-5-Z	268 LBS
S-5-E	538 LBS

NOTE: ALLOWABLE UPLIFT LOAD VALUES BASED ON MINIMUM VALUE OF ALL TESTED SPECIMENS AND A SAFETY FACTOR OF (3).

TYP S-5! - METAL ROOF DETAIL

SCALE: N.T.S.

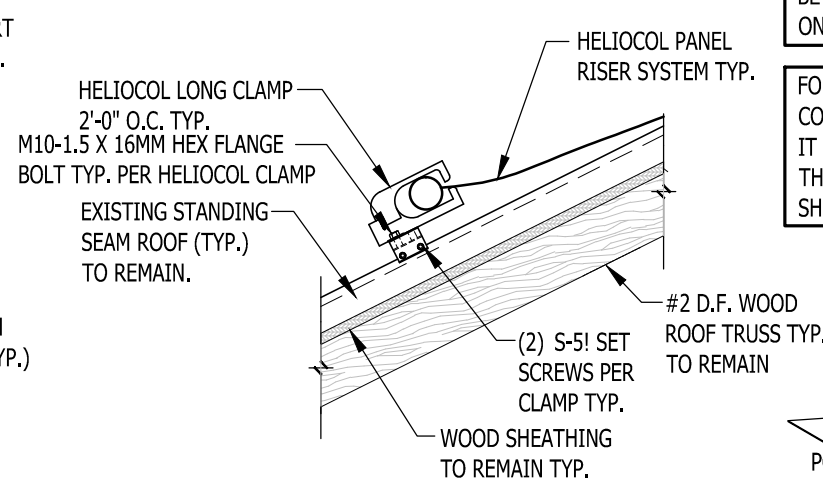
3
HC-3



TYP S-5 CONNECTION - STANDING SEAM METAL ROOF-TOP CLAMP CONNECTION DETAIL

SCALE: 1"=1'-0"

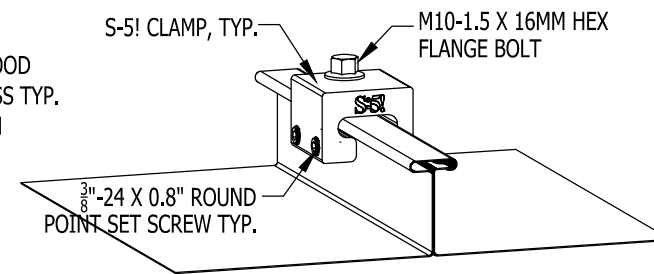
4
HC-3



TYP S-5 CONNECTION - STANDING SEAM METAL ROOF-BOTTOM CLAMP CONNECTION DETAIL

SCALE: 1"=1'-0"

5
HC-3



TYPICAL S-5! CLAMP STANDING SEAM METAL ROOF CONN. DETAIL

SCALE: 3"=1'-0"

NOTE: SOLAR PIPING, PIPE SUPPORTS, AND UNDERLAYING ROOF MATERIAL OMITTED FOR CLARITY. S5 CLAMP SET SCREW TENSION SHOULD BE PERIODICALLY VERIFIED USING A CALIBRATED TORQUE WRENCH BETWEEN 115 INCH-POUNDS (NOT FOOT-POUNDS) WHEN USED ON ON 24 GA STEEL. SEE MANUFACTURER SPEC FOR OTHER GAUGES.

FOR LOAD DATA ON SPECIFIC STANDING SEAM METAL ROOFS CONSULT S-5! WEBSITE (WWW.S-5.COM) FOR LOAD TEST RESULTS. IT IS THE CONTRACTOR/INSTALLER'S RESPONSIBILITY TO VERIFY THAT S-5! CLAMP USED IS ADEQUATE TO TRANSFER PANEL LOAD SHOWN THIS SHEET AND FITS ROOF PROFILE.



REV	DATE	REMARK

PROJECT:

HELIOCOL COLLECTOR - 110 MPH - PITCHED STANDING SEAM METAL ROOF - S-5! CLAMP CONNECTIONS
 PROJECT NAME:
 PROJECT ADDRESS:

DATE: 12-09-2013
 DRAWN BY: JAT
 CHKD BY: JLA
 RECORD #: ---
 SCALE: AS NOTED

DRAWING #
HC-3CA
 SHEET 1 OF 1

DOCUMENT NOT VALID WITHOUT SIGN AND SEAL

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