NUCOR® BUILDINGS GROUP

TABLE OF CONTENTS

GENERAL DETAILS

EA6000 - ROOF PANEL HAND TOOLS
EA6010 - CFR - GENERAL NOTES
EA6011 - CFR - BASIC PANEL INSTALLATION
EA6012 - CFR - MODULARITY GUIDANCE
EA6015 - CFR - HAND CRIMPING NOTES
EA6016 - CFR - ROOF CLIP & SEAMING PLAN
EA6020 - CFR - PANEL ENDLAP
EA6035 - CFR START - FINISH PANEL WIDTH DETAIL
EA6200 - PIPE BOOT

EA6000 - ROOF PANEL HAND TOOLS
Download the DWG file by clicking here.

IMPORTANT!

ROOF PANEL HAND TOOLS ARE NO LONGER
PURCHASED THROUGH eQuote OR STEEL STORE.
ROOF PANEL HAND TOOLS CAN BE PURCHASED THROUGH
D.I. ROOF SEAMERS

HAND
TOOLS

ROOF
SEAMERS

SCAN THE QR CODE FOR TOOL PURCHASE AND SEAMER RENTAL
OR VISIT HTTP://DIROOFSEAMERS.COM/NBG OR CALL 1(888) 343-0456.

Detailer Notes:

1) DETAIL TO BE INSERTED INTO EVERY JOB THAT HAS BEEN ORDERED AFTER 10/12/2023.

2) IF HAND TOOLS HAVE BEEN ORDERED IN BOX 6 OF THE ORDER DOCUMENT, REMOVE DETAIL.

GENERAL DETAILS

TRAPEZOIDAL SEAM ROOF PANELS

EA6010 - CFR GENERAL NOTES

Download the DWG file by clicking here.

DESIGN AND PERFORMANCE CRITERIA

ROOF SYSTEM
THE ROOF SYSTEM CONSISTS OF 24 GAUGE PANELS WITH A NOMINAL COVERAGE OF 2'-0" AND A PANEL SEAM THAT IS 3 1/2", 4 1/2" OR 5 1/2" HIGH DEPENDING ON CLIP TYPE USED. REFER TO THE DETALS AND SECTIONS FOR SPECIFIC PANEL CLIP TYPE.

PANEL CLIP SPACING
THE ROOF SYSTEM USES A CLIP TO ATTACH THE PANELS TO THE ROOF SECONDARY MEMBERS. PANEL CLIP SPACING REQUIREMENTS AS A STANDARD ARE REQUIRED AT EVERY PURLIN AND/OR ROOF JOIST.
FOR STRUCTURES NOT SUPPLIED BY MBS, MAXIMUM CLIP SPACING IS TO BE 5'-0" FOR PURLIN ROOFS AND 5'-6" FOR JOIST ROOFS.

PANEL CLIP FASTENING REQUIREMENTS
STANDARD CLIP FASTENERS ARE DESIGNED TO FASTEN TO A STEEL STRUCTURAL MEMBER OF .060" MINIMUM THICKNESS (16 GA.). A MINIMUM OF TWO FASTENERS ARE REQUIRED TO ENGAGE THE STRUCTURAL MEMBER AT EVERY PANEL CLIP LOCATION. IN CERTAIN INSTANCES, THREE FASTENERS MAY BE REQUIRED PER CLIP. LOOK IN THE ERECTION DRAWINGS FOR YOUR SPECIFIC FASTENER REQUIREMENTS. FASTENER PULLOUT VALUES ARE DEPENDENT UPON PROJECT LOCATION, SIZE, BUILDING CODE AND LOADING.

ROOF TOP UNITS AND CURB SUPPORTS
THE ROOF SYSTEM IS ELEVATED ABOVE THE TOP OF THE ROOF SECONDARY STRUCTURAL MEMBERS. THE ROOF CURB SUB-FRAMING IS LEVEL WITH THE SECONDARY STRUCTURAL MEMBERS. REFER TO THE DETAILS FOR PROPER JAMB LOCATIONS AND DIMENSIONS.

THE ROOF SYSTEM IS DESIGNED AS A FLOATING SYSTEM. CURB FRAMING AND FLASHING MUST BE DESIGNED ACCORDINGLY TO ALLOW THE CURB SYSTEM TO FLOAT WITH THE ROOF DURING THERMAL EXPANSION AND CONTRACTION. ROOF CURBS SHALL NOT SPAN THE RIDGE OF A BUILDING.

INSULATION REQUIREMENTS
INSULATION IS RECOMMENDED TO BE USED IN ALL ROOF APPLICATIONS TO AVOID PROBLEMS WITH CONDENSATION FORMING ON THE UNDERSIDE OF THE SHEETING. THIS ALSO PROVIDES A BUFFER BETWEEN THE PURLINS AND THE ROOF TO ELIMINATE NOISE AND POSSIBLE DAMAGE DUE TO METAL-TO-METAL CONTACT. NOISE REDUCING FOAM TAPE CAN BE SUPPLIED FOR USE IN LIMITED APPLICATIONS (CANOPIES, ETC.) WHEN INCLUDED AS PART OF THE ROOF ORDER. REFER TO THE DETAILS FOR FOAM TAPE REQUIREMENTS.

PAINTED ROOF
PAINTED STANDING SEAM ROOF PANELS ARE OFTEN PROVIDED BY MBS. IN THIS CASE, GUTTER BRACKETS AND OUTSIDE CLOSURES WILL BE PAINTED TO MATCH THE ROOF COLOR AS A STANDARD.

MASTIC APPLICATION

TEMPERATURE EXTREMES
TEMPERATURE EXTREMES MUST BE CONSIDERED DURING INSTALLATION OF THE ROOF DUE TO THE SENSITIVITY OF MASTICS. THE RECOMMENDED INSTALLATION TEMPERATURE RANGE IS 20-120 DEGREES FAHRENHEIT. AT COLDER TEMPERATURES, THE MASTIC STIFFENS RESULTING IN LOSS OF ADHESION AND COMPRESSIBILITY. AT HOTTER TEMPERATURES, THE MASTIC BECOMES TOO SOFT FOR PRACTICAL HANDLING. ON COLD BUT SUNNY DAYS, THE PANEL SURFACE MAY BECOME WARM ENOUGH TO ACCEPT THE APPLICATION OF HEATED MASTIC EVEN THOUGH THE AIR TEMPERATURE IS BELOW 20 DEGREES FAHRENHEIT.

WHEN OVERNIGHT TEMPERATURES FALL BELOW FREEZING, THE MASTIC SHOULD BE STORED IN A HEATED ROOM SO IT WILL BE WARM ENOUGH TO USE THE FOLLOWING DAY. ON HOT DAYS, THE MASTIC CARTONS SHOULD BE STORED OFF THE ROOF IN A COOL AND SHADED AREA. WHILE ON THE ROOF, MASTIC ROLLS SHOULD BE KEPT SHADED UNTIL ACTUAL USE.

IN VERY COLD WEATHER, IT IS RECOMMENDED THAT THE FASTENERS BE TIGHTENED SLOWLY AND ONLY TIGHT ENOUGH THAT THE MASTIC IS IN FULL CONTACT WITH THE PANEL OR FLASHING. THEN ON THE NEXT SUNNY DAY, COMPLETE THE TIGHTENING PROCESS AFTER THE SUN WARMS THE PANEL AND FLASHING SURFACES.

CONTAMINATION
TO ASSURE PROPER ADHESION AND SEALING, THE MASTIC MUST HAVE COMPLETE CONTACT WITH ADJOINING SURFACES. CONTAMINANTS SUCH AS WATER OIL, DIRT AND DUST PREVENT SUCH CONTACT. THE PANEL AND FLASHING SURFACES MUST BE DRY AND THOROUGHLY CLEANED OF ALL CONTAMINANTS. BEFORE APPLYING TAPE MASTIC, THE MASTIC SHOULD BE CHECKED FOR CONTAMINANTS. IF THE MASTIC SURFACES ARE CONTAMINATED, IT MUST NOT BE USED.

DURING COOL WEATHER, CONDENSATION OR LIGHT MIST CAN ACCUMULATE ON THE PANEL AND FLASHING SURFACE AND NOT BE EASILY NOTICED. IT IS RECOMMENDED THAT THE MASTICS ALWAYS BE KEPT UNDER PROTECTIVE COVER AND THAT THE PANEL AND FLASHING SURFACES BE WIPED DRY IMMEDIATELY BEFORE INSTALLATION.

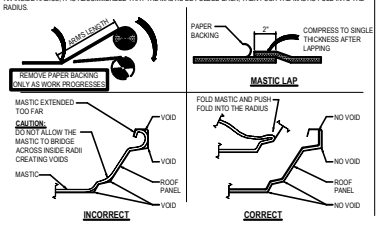
TAPE MASTIC IS PROVIDED WITH A PROTECTIVE PAPER TO REDUCE CONTAMINATION. INCOMPLETE REMOVAL OF THE PROTECTIVE PAPER WILL PREVENT THE MASTIC ADHESION TO THE PANEL OR FLASHING SURFACES. ALWAYS CHECK THAT THE PROTECTIVE PAPER IS COMPLETELY REMOVED. DO NOT REMOVE THE PROTECTIVE PAPER UNTIL IMMEDIATELY BEFORE THE PANEL OR FLASHING IS INSTALLED OVER THE MASTIC.

COMPRESSION
TO ASSURE PROPER COMPRESSION AND SEAL, THE TAPE MASTIC MUST BE COMPRESSED BETWEEN THE PANEL AND FLASHING SURFACES WITH FIRM AND UNIFORM PRESSURE. IN MOST CASES, THE REQUIRED PRESSURE IS APPLIED BY THE CLAMPING ACTION OF SCREWS PULLING THE ADJOINING SURFACES TOGETHER. HOWEVER, THE TAPE SEALANT'S RESISTANCE TO PRESSURE BECOMES GREATER IN COLD WEATHER.

DURING COLD WEATHER, THE FASTENERS MUST BE TIGHTENED SLOWLY TO ALLOW THE MASTIC TIME TO COMPRESS. IF THE FASTENERS ARE TIGHTENED TOO FAST, THE FASTENERS MAY STRIP OUT BEFORE THE MASTIC COMPRESSES ADEQUATELY, OR THE PANEL OR FLASHING MAY DEFORM IN THE IMMEDIATE AREA OF THE FASTENER, LEAVING THE REST OF THE MASTIC INSUFFICIENTLY COMPRESSED.

INSIDE CORNERS
AN INSIDE RADIUS, SUCH AS WHERE THE PANEL FLAT MEETS A RIB, IS USUALLY THE MOST CRITICAL AREA TO SEAL. A COMMON MISTAKE FOR THE INSTALLER IS TO BRIDGE THE MASTIC ACROSS THE INSIDE RADIUS.

WHEN THE LAPPING PANEL OR FLASHING IS PUSHED INTO PLACE, THE BRIDGED MASTIC IS STRETCHED AND THINNED. THE MASTIC MAY THEN BE TOO THIN TO ADEQUATELY SEAL THIS CRITICAL AREA. WHEN TAPE MASTIC IS APPLIED AT AN INSIDE RADIUS, IT IS RECOMMENDED THAT THE MASTIC BE FOLDED BACK, THEN PUSH THE MASTIC FOLD INTO THE RADIUS.



ERECTORS RESPONSIBILITY

REGULATIONS
REGULATIONS SET FORTH BY THE OCCUPATIONAL SAFETY AND HEALTH ACT, LOCAL, STATE, AND/OR FEDERAL AGENCIES SHOULD BE ADHERED TO AT ALL TIMES. MBS IS NOT RESPONSIBLE FOR INJURY, DAMAGE, OR FAILURE, WHICH MAY BE THE RESULT FROM FAILING TO MEET ANY OF THESE REGULATIONS.

IN COMPLIANCE WITH THE HAZARD COMMUNICATION RULE 1910.1200, MATERIAL SAFETY DATA SHEETS (MSDS) HAVE BEEN PROVIDED FOR YOUR USE AND SAFETY. THESE DATA SHEETS SHOULD BE MADE AVAILABLE TO ALL PERSONNEL THAT COME IN CONTACT WITH THESE PRODUCTS. THESE DATA SHEETS WILL GIVE YOU THE NECESSARY INFORMATION TO PROPERLY HANDLE SUCH MATERIALS AND WHAT TO DO IN CASE OF AN EMERGENCY. (THE MSDS SHEETS ARE LOCATED ONLINE AND ARE AVAILABLE UPON REQUEST).

THE ERECTOR OF THE ROOF SYSTEM IS RESPONSIBLE FOR THE SAFE EXECUTION OF THIS DETAIL. THESE INSTRUCTIONS ARE INTENDED TO DESCRIBE THE SEQUENCE AND PROPER PLACEMENT OF PARTS. THEY ARE NOT INTENDED TO PRESCRIBE COMPREHENSIVE SAFETY PROCEDURES. THE PROCEDURES IN THIS DETAIL ARE BELIEVED TO BE RELIABLE. HOWEVER, MBS SHALL NOT BE RESPONSIBLE FOR INJURY, DAMAGE, OR FAILURE DUE TO THE MISAPPLICATION OF THESE PROCEDURES, IMPROPER ERECTION TECHNIQUES, OR NEGLIGENCE

WALKING AND WORKING ON ROOF PANELS
DO NOT PLACE BUNDLES OF PANELS ON THE ROOF STRUCTURE WITHOUT FIRST VERIFYING THE STRUCTURE WILL SAFELY SUPPORT THE CONCENTRATED WEIGHT OF THE PANELS AND THE WEIGHT OF THE INSTALLATION CREW. SOME ROOF STRUCTURES MAY NOT BE DESIGNED TO SUPPORT THE WEIGHT OF A FULL PANEL BUNDLE WITHOUT ADDITIONAL STRUCTURE SUPPORT.

DO NOT USE A ROOF PANEL AS A WORKING PLATFORM. AN UNSECURED PANEL COULD COLLAPSE UNDER THE WEIGHT OF A PERSON STANDING BETWEEN PURLINS OR AT THE PANEL END.

DO NOT WALK ON THE LAST INSTALLED PANEL RUN, AS THE UNSECURED EDGE COULD COLLAPSE UNDER A PERSON'S WEIGHT. WHEN INSTALLING CLIPS OR MAKING END LAP CONNECTIONS, ETC., STAND WHERE THE ROOF STRUCTURAL WILL SUPPORT YOUR WEIGHT.

AN APPROVED AND SAFE WALKING PLATFORM SHOULD BE USED IN HIGH TRAFFIC AREAS TO PREVENT THE ROOF PANEL FROM BEING DEFORMED, SCRATCHED, OR SCUFFED.

SAFETY EQUIPMENT
THE USE OF SAFETY EQUIPMENT FOR THE ROOF PANEL INSTALLATION IS RECOMMENDED AT ALL TIMES DURING THE INSTALLATION PROCESS. HOWEVER, WHEN USING LANYARDS, ENSURE THAT THE CLASP, BELT HOOKS AND WIRE CABLES ARE COVERED IN SUCH A MANNER THAT THEY WILL NOT SCRATCH THE PANEL SURFACE IF ACCIDENTALLY DRAGGED ALONG THE PANEL.

CREW SIZE
THE LENGTH OF THE INDIVIDUAL ROOF PANELS SHOULD BE CONSIDERED WHEN DETERMINING CREW SIZE. IT IS RECOMMENDED THAT UNDER NORMAL CONDITIONS, THERE BE ONE PERSON FOR EVERY TEN FEET OF PANEL LENGTH, PLUS ONE.

PANEL OVERHANG
DO NOT STAND ON THE END OF UNSUPPORTED (CANTILEVERED) PANELS AT THE EAVE OR RIDGE. STANDING ON THE CANTILEVER PORTION MAY RESULT IN PANEL COLLAPSE.

POINT LOADS
WHEN PROPERLY SUPPORTED BY THE STRUCTURAL STEEL, PANELS ARE DESIGNED TO SUPPORT UNIFORM LOADS, WHICH ARE EVENLY DISTRIBUTED OVER THE PANEL SURFACES. POINT LOADS THAT OCCUR IN SMALL OR CONCENTRATED AREAS, SUCH AS HEAVY EQUIPMENT, LADDER, OR PLATFORM FEET, ETC., MAY CAUSE PANEL DEFORMATION OR EVEN PANEL COLLAPSE.

SLICK SURFACES
PANEL SURFACES AND STRUCTURAL STEEL SURFACES ARE HARD, SMOOTH, AND NONABSORBENT, WHICH CAUSES THESE SURFACES TO BE VERY SLICK WHEN WET OR COVERED WITH SNOW OR ICE. EVEN BLOWING SAND OR HEAVY DUST CAN MAKE THESE SURFACES DIFFICULT TO WALK ON WITHOUT SLIPPING.

UNPAINTED PANEL SURFACES ARE OFTEN COATED WITH OIL TO ACCOMMODATE THE PANEL-FABRICATION PROCESS. ALTHOUGH DESIGNED TO WASH AWAY OR EVAPORATE DURING NORMAL WEATHER, THE OIL ON NEW PANELS CAN BE EXTREMELY SLICK, ESPECIALLY DURING PERIODS OF LIGHT RAIN AND DEW.
CAUTION MUST BE EXERCISED TO PREVENT SLIPPING AND FALLING ONTO THE ROOF SURFACE OR EVEN SLIDING OFF THE ROOF. NON-SLIP FOOTWEAR IS A NECESSITY AND NON-SLIP WORKING PLATFORMS ARE RECOMMENDED.

ELECTRICAL CONDUCTANCE
METAL PANELS ARE EXCELLENT ELECTRICAL CONDUCTORS. A COMMON CAUSE OF INJURY IS THE CONTACT OF METAL PANELS WITH POWER LINES DURING HANDLING AND INSTALLATION. THE LOCATION OF ALL POWER LINES MUST BE NOTED AND, IF POSSIBLE, FLAGGED. THE INSTALLATION PROCESS MUST BE ROUTED TO AVOID ACCIDENTAL CONTACT WITH ALL POWER LINES AND HIGH VOLTAGE SERVICES AND EQUIPMENT. ALL TOOLS AND POWER CORDS MUST BE PROPERLY INSULATED AND GROUNDED AND THE USE OF APPROVED GROUND FAULT CIRCUIT BREAKERS IS RECOMMENDED.

FALSE SECURITY OF INSULATION
BLANKET AND RIGID BOARD INSULATION BLOCK THE INSTALLER'S VIEW OF THE GROUND BELOW THE ROOF. SERIOUS INJURY CAN OCCUR WHEN THE INSTALLER GETS A FALSE SENSE OF SECURITY BECAUSE HE CANNOT SEE THE GROUND AND STEPS THROUGH THE INSULATION.

SHARP EDGES
SOME EDGES OR PANELS AND FLASHING ARE RAZOR SHARP AND CAN CAUSE SEVERE CUTS IF PROPER PROTECTIVE HAND GEAR IS NOT WORN. BE CAREFUL NOT TO INJURE OTHERS WHILE MOVING PANELS AND FLASHING.

COORDINATION WITH OTHER TRADES
SUPPORTS FOR THE ROOF SYSTEM SHALL BE PROVIDED AND ARE REQUIRED AS SHOWN IN THE SECTIONS AND AS NOTED IN THESE SPECIFICATIONS. ALL NECESSARY CLEARANCE DIMENSIONS FOR PROPER ELEVATIONS RELATIVE TO THE ROOF FRAMING MUST BE GIVEN SHOWN. THE ERECTOR SHALL BE RESPONSIBLE FOR COORDINATING THESE DIMENSIONAL REQUIREMENTS WITH OTHER TRADES ASSOCIATED WITH THE BUILDING ROOF SYSTEM.

ERECTION CARE
THE ERECTOR MUST BE SKILLED IN THE ERECTION OF METAL BUILDING SYSTEMS AND IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, FEDERAL AND STATE CONSTRUCTION AND SAFETY REGULATIONS INCLUDING OSHA REGULATIONS AS WELL AS ANY APPLICABLE REQUIREMENTS OF LOCAL, NATIONAL OR INTERNATIONAL UNION RULES OR PRACTICES. THE ERECTOR REMAINS SOLELY RESPONSIBLE FOR THE SAFETY AND APPROPRIATENESS OF ALL TECHNIQUES AND METHODS UTILIZED BY ITS CREWS IN THE ERECTION OF THE METAL BUILDING SYSTEM AND/OR THE ROOF SYSTEM. THE ERECTOR IS ALSO RESPONSIBLE FOR SUPPLYING ANY SAFETY DEVICES SUCH AS SCAFFOLDS, RUNWAYS, NETS, ETC. WHICH MAY BE REQUIRED TO SAFELY ERECT THE METAL BUILDING SYSTEM AND/OR ROOF SYSTEM.

THE ERECTOR OF THE ROOF SYSTEM SHALL EXERCISE GREAT CARE AND ATTENTION TO THE DETAILS AS SHOWN ON THESE DRAWINGS TO INSURE A SECURE AND PROPER FIT OF ALL COMPONENTS. MBS SHALL NOT BE RESPONSIBLE FOR SUPERVISING AND/OR COORDINATING THE ERECTION OF THE ROOF SYSTEM WITH OTHER TRADES.

DUE CONSIDERATION MUST BE GIVEN BY THE ERECTOR TO THE EFFECTS OF THERMAL EXPANSION AND CONTRACTION WHEN ERECTING A ROOF TIE-IN TO AN EXISTING STRUCTURE TO INSURE A SAFE, SECURE, WEATHER TIGHT CONDITION. FLASHING FOR TIE-INS TO EXISTING BUILDINGS IS TYPICALLY NOT INCLUDED AS PART OF THE MATERIAL PROVIDED BY MBS. REFER TO THE SECTIONSDETAILS FOR SPECIFIC MATERIALS PROVIDED BY MBS.

THERMAL BLOCKS

PURPOSE
THERMAL BLOCKS ARE USED IN BOTH INSULATED AND UN-INSULATED CONDITIONS. THEY PROVIDE IMPROVED THERMAL PERFORMANCE WERE INSULATION HAS BEEN COMPRESSED AT THE SECONDARY MEMBERS UNDER THE PANEL. THEY ALSO PROVIDE SUPPORT TO THE PANEL AND REDUCE PANEL FLUTTERING AND RUMBLE IN UN-INSULATED CONDITIONS. UN-INSULATED CONDITIONS UTILIZE THERMAL BLOCKS OR FOAM SPACERS THAT HAVE ADHESIVE TO ADHERE TO THE SECONDARY MEMBER TO PREVENT THEM FROM FALLING OUT OF PLACE.

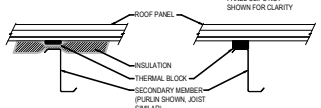
LOCATIONS
THERMAL BLOCKS OR FOAM SPACERS ARE TO BE USED OVER ANY SECONDARY MEMBER WITH THE EXCEPTION OF THE EAVE MEMBER WHERE THE EAVE PLATE IS LOCATED.

INSULATED ROOF

INSULATION		BLOCK		
R-	THICK	MK #	THICK	CLIP
R7	2"	N/A	N/A	SHORT
R10	3 3/8"	N/A	N/A	SHORT
R11	3 3/4"	N/A	N/A	SHORT
R13	4 3/8"	N/A	N/A	SHORT
R13	4 3/8"	H3301	1"	TALL
R16	5 1/4"	H3301	1"	TALL
R19	6 3/8"	H3301	1"	TALL
R25	8"	H3301	1"	TALL
R30	9 1/4"	H3301	1"	SUPER TALL
R32	10"	H3301	1"	SUPER TALL
R35	11 1/2"	H3301	1"	SUPER TALL
R38	12"	H3301	1"	SUPER TALL

UN-INSULATED ROOF

BLOCK		
MK #	THICK	CLIP
H3310	1/2"	SHORT
H3306	1 1/2"	TALL
H3307	2 1/2"	SUPER TALL



NOTE:
PANEL CLIPS NOT SHOWN FOR CLARITY

ROOF SYSTEM COMPONENT WITH DETAILING

DEFINITION
COMPONENTS WITH DETAILING DEFINITION IS A CASE WHERE MBS IS PROVIDING THE ROOF SYSTEM TO BE USED IN CONJUNCTION WITH ANOTHER STRUCTURE. MBS REFERS TO THAT AS A "COMPONENTS WITH DETAILING." THIS SIMPLY MEANS THAT MBS SHALL CALCULATE THE QUANTITIES AND LENGTHS FOR THE MATERIAL REQUIRED. MBS IS PERFORMING NO ENGINEERING STUDY OF THE EXISTING STRUCTURE. THE ENGINEER OF RECORD ON THE PROJECT SHALL BE RESPONSIBLE FOR COORDINATING THE ROOF SYSTEM WITH THE OTHER TRADES OF THE PROJECT TO INSURE A SAFE, QUALITY AND PROPER APPLICATION OF THE ROOF SYSTEM.

DIAPHRAGM
THE ROOF IS DESIGNED TO ACCOMMODATE THERMAL EXPANSION AND CONTRACTION AND WILL NOT ACT AS A DIAPHRAGM FOR RESISTING LATERAL LOAD FORCES OR PROVIDING LATERAL STABILITY TO THE ROOF STRUCTURAL MEMBERS. DUE CONSIDERATION FOR THIS MUST BE ADDRESSED BY THE PROJECT ENGINEER OF RECORD. IN ADDITION, THE ROOF SYSTEM, BECAUSE IT IS DESIGNED TO FLOAT, WILL NOT SUPPORT STRUCTURAL MEMBERS LATERALLY. WHEN REPLACING AN EXISTING SCREW DOWN ROOF, ADDITIONAL BRACING MAY BE REQUIRED TO LATERALLY SUPPORT THE MEMBERS. ENGINEERING AND MATERIAL FOR THESE USES SHALL NOT BE PROVIDED BY MBS.

BUILDING & PANEL PREPARATION

STEP 1: PLUMB AND SQUARE
THE FIRST STEP IN THE SUCCESSFUL INSTALLATION OF WALL PANELS IS TO HAVE THE PRIMARY FRAMING PLUMB AND SQUARE. FOR BEST RESULTS, IT IS RECOMMENDED THAT A TRANSIT BE USED WHEN ERECTING THE STRUCTURAL STEEL. MAKE SURE THAT THE FOUNDATION AND BUILDING STRUCTURE IS SQUARE, LEVEL, AND CORRECT TO THE OUT-TO-OUT STEEL LINE DIMENSIONS.
SEE FIGURE "A"

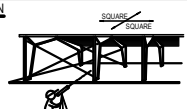


FIGURE "A"

FIELD CUTTING PANELS

WHEN FIELD CUTTING OR MITERING WALL PANELS, NON-ABRASIVE CUTTING TOOLS SUCH AS NIBBLERS OR TIN-SNIPS SHALL BE USED. ABRASIVE CUTTING TOOLS SUCH AS MECHANICAL GRINDERS OR POWER SAWS CAN DAMAGE THE MATERIAL FINISH AND CREATE EXCESS METAL SHAVINGS THAT CAN CORRODE THE PANELS. THE USE OF NON-APPROVED CUTTING DEVICES MAY VOID THE FACTORY WARRANTY.

ANY METAL SHAVINGS THAT ARE CREATED NEED TO BE CLEANED FROM THE PANEL TO PREVENT SCRATCHING AND/OR CORROSION. THE MANUFACTURER WILL NOT ACCEPT CLAIMS FOR DAMAGE/DETERIORATION DUE TO USE OF UNAPPROVED TOOLS.

SPECIAL CONDITION AT A STRONG-BACK EAVE BEAM

IF THIS PROJECT HAS AN EAVE BEAM WITH (2) PURLINS, AS SHOWN, DO NOT ATTACH ROOF CLIPS TO THE "SECOND" PURLIN.

FASTENER INSTALLATION

RECOMMENDED TOOL TYPES: SEE ALSO FASTENER SCHEDULE
4 AMP OR HIGHER RATED TOOLS (DO NOT USE IMPACTING TOOLS)
2000 - 2500 RPM SCREW GUN WITH TORQUE ADJUSTABLE CLUTCH
MANUAL OR ELECTRIC RIVET TOOL

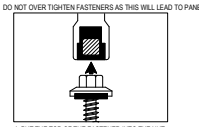
DO NOT USE IMPACTING TOOLS
TO ASSURE PROPER VOLTAGE TO THE TOOL, EXTENSION CORDS SHOULD BE CHECKED FOR PROPER WIRE SIZE/CHORD LENGTH.
16 GAGE WIRE, MAXIMUM CHORD LENGTH = 100'
14 GAGE WIRE, MAXIMUM CHORD LENGTH = 200'
12 GAGE WIRE, MAXIMUM CHORD LENGTH = 300'

DRIVING TIPS:
SET THE NUT DRIVER AS DESCRIBED BELOW PRIOR TO INSTALLING FASTENERS TO PREVENT FASTENER WOBBLE..

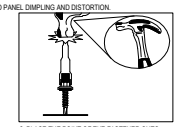
SOCKET EXTENSIONS (4" OR 6") ARE RECOMMENDED TO BE USED FOR INSTALLING PANEL CLIP FASTENERS TO MAINTAIN VERTICAL FASTENER INSTALLATION.

EXCESSIVE PRESSURE CAN CAUSE DRILL POINT FAILURE. LET THE FASTENER DO THE WORK.

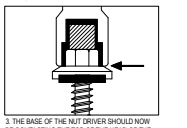
DO NOT OVER TIGHTEN FASTENERS AS THIS WILL LEAD TO PANEL DIMPLING AND DISTORTION.



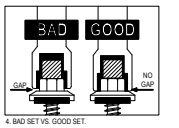
1. PUT THE TOP OF THE FASTENER INTO THE NUT DRIVER. NOTE: FOR PAINTED FASTENERS, PLACE A SINGLE OR DOUBLED LAYER OF PLASTIC BETWEEN THE FASTENER HEAD AND THE NUT DRIVER.



2. PLACE THE POINT OF THE FASTENER ONTO A HARD SURFACE AND FIRMLY HIT THE TOP OF THE NUT DRIVER 2-3 TIMES.

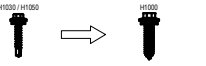


3. THE BASE OF THE NUT DRIVER SHOULD NOW BE CONTACTING THE TOP OF THE HEAD OF THE FASTENER WITH NO GAPS.



4. BAD SET VS. GOOD SET.

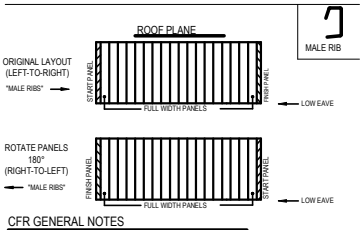
STRIP A FASTENER?
IF YOU STRIP H1030 OR H1050 REPLACE IT WITH H1000
IF YOU STRIP H1000 IN ENDLAP YOU MUST REBUILD THE ENDLAP



ROOF SHEETING DIRECTION

1.) THE ROOF SHEETING PLAN IS SHOWN WITH THE ROOF PANELS BEING ERECTED FROM "LEFT-TO-RIGHT". IF THE DESIRE IS TO ERECT THE ROOF PANELS FROM "LEFT-TO-RIGHT", FOLLOW THE ROOF SHEETING PLAN AS SHOWN. IF THE DESIRE IS TO ERECT THE ROOF PANELS FROM "RIGHT-TO-LEFT", FOLLOW THE INSTRUCTIONS SHOWN BELOW.

2.) WHEN SETTING BUNDLES OF PANELS ON THE ROOF, THE "MALE RIB" MUST ALWAYS BE AWAY FROM THE END OF THE BUILDING WHERE THE SHEETING WILL BEGIN.



CFR GENERAL NOTES
GENERAL ROOF PANEL NOTES

EA6010

Detailer Notes:

1) THIS DETAIL REQUIRED ON EVERY TRAPEZOIDAL ROOF PROJECT.

NUCOR® BUILDINGS GROUP

GENERAL DETAILS

TRAPEZOIDAL SEAM ROOF PANELS

EA6011 - CFR BASIC PANEL INSTALLATION

Download the DWG file by clicking here.

BASIC INSTALLATION SEQUENCE

THE FOLLOWING STEPS OUTLINE THE BASIC INSTALLATION OF THE ROOF SYSTEM. REFERENCE THE SPECIFIC DETAILS WITHIN THIS ERECTION DRAWING SET FOR CONDITIONS SPECIFIC TO THIS PROJECT.

START PANEL PREPARATION
THE ROOF SYSTEM IS DESIGNED TO BE ELEVATED AND FLOAT ABOVE THE ROOF SUPPORT MEMBERS. BEGIN AT THE LOWER RAKE CORNER BY INSTALLING THE EAVE PLATE. (REFERENCE EAVE PLATE INSTALLATION BELOW)

AFTER EAVE PLATE HAS BEEN INSTALLED, STITCH THE FIRST ROLL OF ROOF INSULATION FROM RIDGE / HIGH EAVE TO LOW EAVE.

INSTALL THE RAKE CLIPS AND RAKE ANGLE TO SUPPORT / SECURE THE START PANEL. (REFERENCE RAKE ANGLE / RAKE CLIP PREPARATION TO THE RIGHT)

FIELD CUT AND INSTALL START PANEL
THE START PANEL IS SUPPLIED AS A FULL SHEET AND WILL NEED TO BE CUT. REFER TO THE ROOF SHEETING PLAN FOR START / FINISH DIMENSIONS AND RAKE DETAILS TO DETERMINE PROPER PANEL CUT. INSTALL THE START PANEL (LOW EAVE PANEL FIRST IF PANEL RUN IS LONG ENOUGH TO REQUIRE ENDLAPS) BY SECURING THE PANEL TO THE EAVE PLATE AND RAKE ANGLE. (REFERENCE LOW EAVE AND RAKE DETAILS). INSTALL PANEL CLIPS ON LEADING EDGE OF PANEL AS SHOWN IN THE PANEL CLIP DETAIL. CONTINUE TO INSTALL UPSLOPE START PANEL IF ENDLAPS ARE REQUIRED. REFERENCE THE BACKUP PLATE DETAIL AND ENDLAP DETAIL FOR ATTACHMENT OF START PANEL(S) AT RAKE ANGLE.

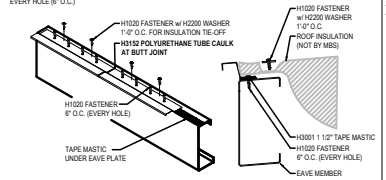
INTERMEDIATE PANEL & MODULARITY
THE INTERMEDIATE PANELS (FULL PANELS) SHOULD BE INSTALLED BY ROLLING THE PANEL INTO PLACE ENSURING THE SEAM IS FULLY ENGAGED. SECURE THE PANELS WITH PANEL CLIPS AND THE LOW EAVE ACROSS THE ROOF. IT IS RECOMMENDED TO INSTALL THE OUTSIDE CLOSURE AT THE HIGH EAVE / RIDGE AS THE ROOF PROGRESSES. THIS WILL HELP MAINTAIN MODULARITY. (REFERENCE HIGH EAVE / RIDGE DETAILS)

FINISH PANEL
THE FINISH PANEL IS SIMILAR TO THE START PANEL INSTALLATION. THE RAKE ANGLE CLIPS AND RAKE ANGLE NEEDS TO BE INSTALLED ON TOP OF THE INSULATION PRIOR TO INSTALLING THE FINISH PANEL. THE FINISH PANEL SHOULD BE FIELD CUT AND ROLLED INTO PLACE AND SECURED TO THE RAKE ANGLE SIMILAR TO THE START PANEL.

TRIM INSTALLATION
TRIM INSTALLATION CAN BE DONE AFTER THE ROOF PANELS ALL HAVE BEEN INSTALLED OR CAN BE INSTALLED AS ENOUGH PANELS HAVE BEEN INSTALLED FOR ATTACHMENT OF TRIMS. (REFERENCE TRIM DETAILS)

EAVE PLATE INSTALLATION

PLACE TAPE MASTIC ON TOP OF EAVE MEMBER PRIOR TO INSTALLING EAVE PLATE. INSTALL EAVE PLATE BY FASTENING EVERY HOLE TO EAVE MEMBER (6" O.C.) PRIOR TO INSULATION BEING INSTALLED. SECURE INSULATION WITH FASTENER & INSULATION RETAINER WASHER. NOTE: IF NO ROOF INSULATION IS USED SECURE EAVE PLATE IN EVERY HOLE (6" O.C.)

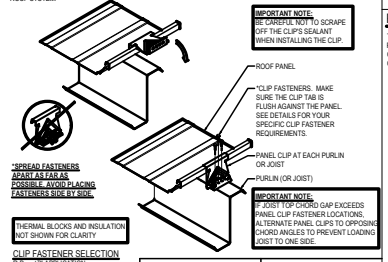


NOTE: H1020/H1070 (PURLIN/JOIST) FASTENER w/ H2200 WASHER 1'-0" O.C. FOR INSULATION TIE-OFF PROVIDED AT HIGH SIDE / RIDGE

SHORT EAVE PLATE		TALL EAVE PLATE		SUPER TALL EAVE PLATE	
EPS108	BASIC EAVE / GUTTER	EPT108	BASIC EAVE / GUTTER	EPX108	BASIC EAVE / GUTTER

PANEL CLIP INSTALLATION

BEFORE INSTALLING THE PANEL CLIP, FEEL FOR THE SUPPORT MEMBER BELOW THE INSULATION. ALIGN CLIP CENTERED OVER THE SUPPORT MEMBER AND ROLL CLIP OVER THE MALE HOOK OF THE PANEL. FASTEN CLIP WITH FASTENERS AS SPECIFIED IN THE DETAILS BASED ON THE SUPPORT MEMBER AND INSULATION UTILIZED FOR THE ROOF SYSTEM.



CLIP FASTENER SELECTION
R-Boost™ APPLICATION
SEE DETAIL PA2010

PURLIN APPLICATION
H1020 FOR INSULATION ≤R-19 (6 3/8")
H1025 FOR INSULATION >R-19 (6 3/8") AND ≤R-38 (12")

JOIST APPLICATION
H1070 FOR INSULATION ≤R-19 (6 3/8")
H1075 FOR INSULATION >R-19 (6 3/8") AND ≤R-38 (12")

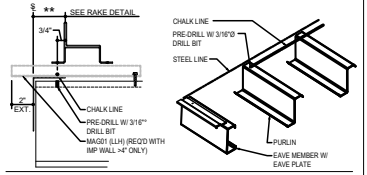
STANDARD CLIPS		PERIMETER CLIPS	
PART #	PART DESCRIPTION	PART #	PART DESCRIPTION
H2500	SHORT FIXED CLIP	H2720	8" SHORT SLIDING CLIP
H2510	TALL FIXED CLIP	H2730	8" TALL SLIDING CLIP
H2520	SHORT SLIDING CLIP	H2740	12" SHORT SLIDING CLIP
H2530	TALL SLIDING CLIP	H2750	12" TALL SLIDING CLIP
H2540	SUPER TALL SLIDING CLIP	H2760	16" SHORT SLIDING CLIP
		H2770	16" TALL SLIDING CLIP

RAKE ANGLE / RAKE CLIP PREPARATION

PRIOR TO INSTALLING THE ROOF INSULATION THE SECONDARY MEMBER WILL NEED TO BE PRE-DRILLED FOR THE RAKE CLIPS. PRE-DRILLING WILL MAKE INSTALLATION OF THE RAKE AND CLIPS MUCH EASIER AFTER INSULATION IS IN PLACE. DO NOT INSTALL RAKE CLIPS UNTIL INSULATION (IF REQUIRED) IS INSTALLED. **RAKE CLIP IS INSTALLED ON TOP OF THE INSULATION.**

SNAP A CHALK LINE AS SHOWN BELOW FROM HIGH EAVE / RIDGE TO LOW EAVE. DRILL 3/16" Ø HOLE CENTERED ON SECONDARY MEMBER. THIS HELPS TO ALIGN THE START PANEL.

NOTE: IMP WALL PANEL >4" THICK REQUIRE ANGLES ON TOP OF SECONDARY MEMBER EXTENDED BEYOND STEEL LINE TO ALLOW FOR RAKE CLIP ATTACHMENT. ATTACH WITH (1) H1020 / H1070 TO PURLIN / JOIST PRIOR TO RAKE CLIP INSTALLATION

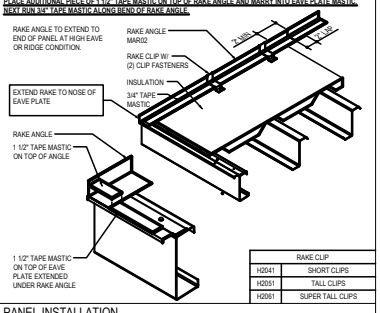


RAKE ANGLE / RAKE CLIP INSTALLATION

AFTER INSULATION IS IN PLACE AND PRIOR TO INSTALLING THE RAKE CLIPS AND RAKE ANGLE APPLY 1 1/2" TAPE MASTIC ON TOP OF THE EAVE PLATE BUT ONLY REMOVE PAPER BACKING WHERE THE RAKE ANGLE WILL REST. THIS WILL SEAL BETWEEN THE EAVE PLATE AND THE RAKE ANGLE.

SLIDE RAKE CLIPS ONTO RAKE ANGLE PRIOR TO SECURING THE RAKE CLIPS TO THE SECONDARY MEMBERS. PLACE THE RAKE CLIPS AND ANGLE OVER THE INSULATION USING A SMALL DRIFT PIN TO LOCATE THE PRE-DRILLED HOLE. INSTALL FASTENER THROUGH OPPOSITE CLIP HOLE INTO SECONDARY MEMBER. REMOVE DRIFT PIN AND INSTALL SECOND FASTENER TO SECURE CLIP. NOTE: (2) SCREWS ARE REQUIRED IN EVERY CLIP. DO NOT CUT INSULATION OUT FROM AROUND THE CLIP.

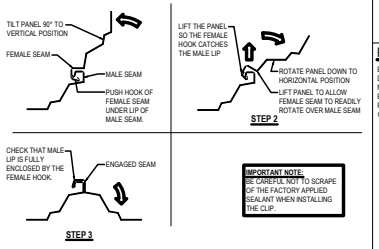
PLACE ADDITIONAL PIECE OF 1 1/2" TAPE MASTIC ON TOP OF RAKE ANGLE AND MARRY INTO EAVE PLATE MASTIC. NEXT RUN 3/4" TAPE MASTIC ALONG BEND OF RAKE ANGLE.



RAKE CLIP	
H2041	SHORT CLIPS
H2051	TALL CLIPS
H2061	SUPER TALL CLIPS

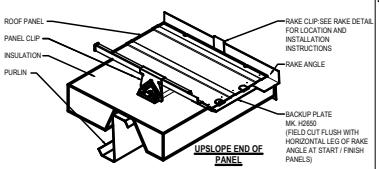
PANEL INSTALLATION

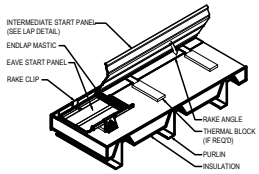
THE PANEL IS DESIGNED TO INTERLOCK AND HOOK TOGETHER AT THE SEAM. IN ORDER TO HOOK THE PANEL LAY PANEL WITH FEMALE RIB OVER TOP OF THE MALE RIB. TILT THE LEADING PANEL UP UNTIL THE HOOK CATCHES THE LIP OF THE MALE RIB. ROTATE THE PANEL DOWN WHILE ENSURING THE PANEL HOOKS ENGAGED COMPLETELY UP THE RIB OF THE PANEL.

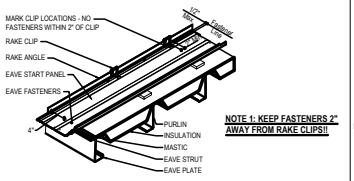


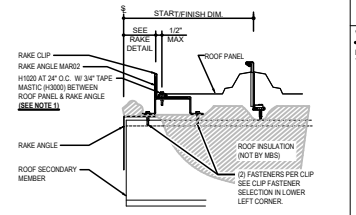
BACKUP PLATE INSTALLATION

THE BACKUP PLATE PROVIDES SUPPORT AT THE ENDLAP AND HIGH SIDE OF THE PANEL TO ALLOW FOR COMPRESSION OF SEALANTS. THE BACK LIP PLATE HAS NOTCHES THAT SLIDE ONTO THE PANEL TO LOCATE AND HOLD THE BACKUP PLATE IN PLACE. AT THE RAKE CONDITION, THE BACKUP PLATE IS TO BE FIELD CUT FLUSH WITH THE HORIZONTAL LEG OF THE RAKE ANGLE. DO NOT EXTEND BACKUP PLATE ON TOP OF RAKE ANGLE.



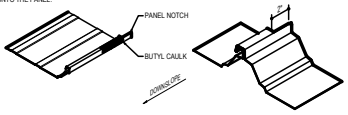






PANEL HIGH EAVE PREPARATION

BEFORE INSTALLING ADJOINING PANELS, **APPLY 3" OF BUTYL CAULK ON THE MALE RIB** FROM THE PANEL NOTCH DOWNSLOPE AS SHOWN TO SEAL PANEL SEAM. THE **FEMALE RIB WILL NEED TO BE FIELD NOTCHED** TO MATCH THE MALE RIB TO ALLOW THE OUTSIDE CLOSURE TO FIT PROPERLY. IT IS RECOMMENDED FOR THE NOTCH TO BE DONE BEFORE THE PANEL IS ROLLED INTO PLACE FOR EASE BUT CAN BE DONE AFTER. AFTER THE PANEL IS ROLLED INTO PLACE AND FIELD NOTCHED, **HAND CRIMP THE PANEL A FULL 16" FROM END OF PANEL** SLIDE THE BACKUP PLATE ONTO THE PANEL.



OUTSIDE CLOSURE MASTIC INSTALLATION

START & FINISH PANEL NOTE: OUTSIDE CLOSURE CANNOT BE INSTALLED IN THE START / FINISH PANEL UNTIL THE RAKE TRIM IS INSTALLED.

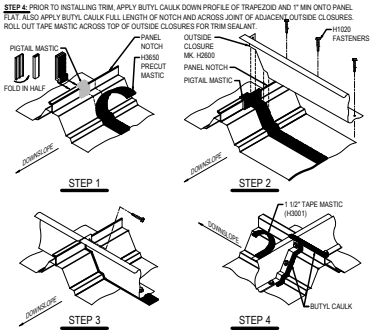
MODULARITY NOTE: OUTSIDE CLOSURE MUST BE INSTALLED AS ROOF PROGRESSES. AS NEXT PANEL IS INSTALLED, CLOSURE MUST BE INSTALLED IN THE PREVIOUS PANEL RUN.

STEP 1: APPLY THE PRECUT MASTIC ACROSS THE PANEL WITH THE BOTTOM OF THE MASTIC IN LINE WITH THE NOTCH. PRESS THE MASTIC INTO THE CORNERS OF THE TRAPEZOID TO ENSURE THERE ARE NO GAPS. CUT A 3" PIECE OF THE PRECUT MASTIC TO PLACE A PIGTAIL AROUND THE PANEL RIB WHERE THE NOTCH IS LOCATED. FOLD PIG TAIL AS SHOWN AND PRESS INTO VOID UNDER SEAM. MARRY PIGTAIL TO PRECUT AND SEAL END OF PANEL SEAM.

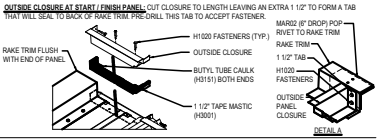
STEP 2: ALIGN THE OUTSIDE CLOSURE WITH THE NOTCH AND SEAT INTO THE PRECUT MASTIC. ATTACH THE OUTSIDE CLOSURE THROUGH THE PREPUNCHED HOLES THROUGH THE PANEL AND INTO THE BACKUP PLATE.

STEP 3: INSTALL FASTENER THROUGH RIB INTO ADJACENT OUTSIDE CLOSURE TO DRAW THEM TOGETHER.

STEP 4: PRIOR TO INSTALLING TRIM, APPLY BUTYL CAULK DOWN PROFILE OF TRAPEZOID AND 1" MIN ONTO PANEL FLAT. ALSO APPLY BUTYL CAULK FULL LENGTH OF NOTCH AND ACROSS JOINT OF ADJACENT OUTSIDE CLOSURES. ROLL OUT TAPE MASTIC ACROSS TOP OF OUTSIDE CLOSURES FOR TRIM SEALANT.

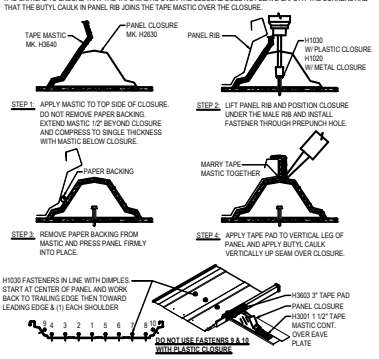


OUTSIDE CLOSURE AT START / FINISH PANEL: CUT CLOSURE TO LENGTH LEAVING AN EXTRA 1 1/2" TO FORM A TAB THAT WILL SEAL TO BACK OF RAKE TRIM. PRE-DRILL THIS TAB TO ACCEPT FASTENER.



VOID CLOSURE INSTALLATION

IT IS CRITICAL TO ENSURE THAT THE TAPE MASTIC OVER THE CLOSURE DOES NOT LEAVE GAPS AT THE CORNERS AND THAT THE BUTYL CAULK IN PANEL RIB JOINS THE TAPE MASTIC OVER THE CLOSURE.



CFR BASIC INSTALLATION DETAIL

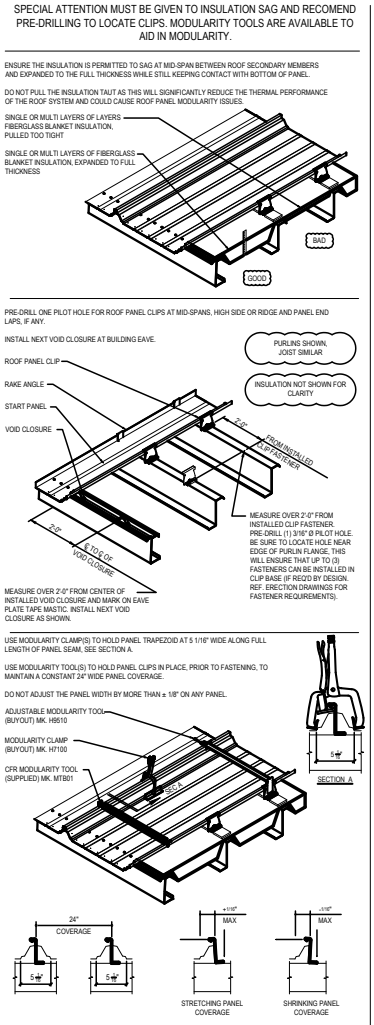
BASIC PANEL INSTALLATION INSTRUCTIONS
SEE ROOFLINE TRIM DETAILS FOR FURTHER INFORMATION

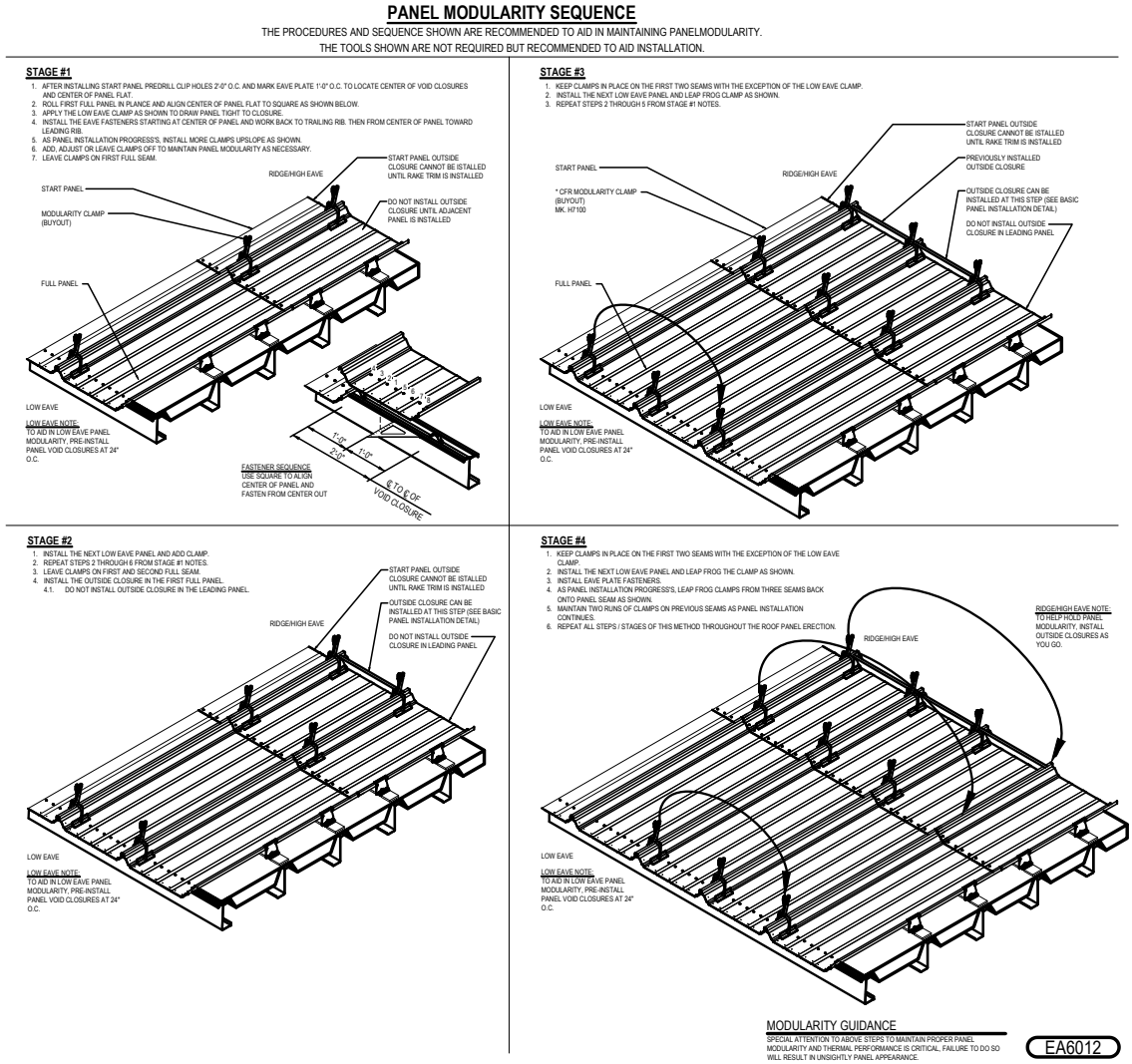
EA6011

Detailer Notes:

EA6012 - CFR MODULARITY GUIDANCE

Download the DWG file by clicking here.





Detailer Notes:

1) THIS DETAIL REQUIRED ON EVERY TRAPEZOIDAL ROOF PROJECT.

EA6015 - CFR - HAND CRIMPING NOTES

Download the DWG file by clicking here.

IMPORTANT NOTE:

THE INSTRUCTIONS ON THIS PAGE ONLY ADDRESS THE USE OF THE HAND CRIMPING TOOLS. INSTRUCTIONS FOR MECHANICAL SEAMING, IF REQUIRED, ARE OUTLINED IN THE SEAMING MANUAL. WHICH IS INCLUDED WITH THE MECHANICAL SEAMER KIT PROVIDED BY THE SEAMER RENTAL COMPANY.

SPECIALIZED SEAMING AND HAND CRIMPING TOOLS
THE FINISHED SEAM OF THE ROOF PANELS REQUIRES SPECIAL SEAMING TOOLS THAT ARE AVAILALBE ONLY THROUGH THE MBS. CAUTION: THE USE OF OTHER SEAMING / CRIMPING EQUIPMENT WILL RESULT IN FAULTY AND / OR DAMAGED SEAMS AND SHALL INVALIDATE ANY OF THE ROOF SYSTEM'S MATERIAL AND WEATHER TIGHTNESS WARRANTIES.

SEAMING TOOL SOURCE
THE SEAMING TOOLS ARE PROVIDED BY MBS IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE ORDER DOCUMENTS. CONTACT YOUR SERVICE REPRESENTATIVE TO PURCHASE NECESSARY CRIMPING TOOLS. CONTACT THE SEAMER RENTAL COMPANY FOR RENTAL INFORMATION OF THE MECHANICAL SEAMER IF REQUIRED.

CRIMPING & SEAMING REQUIREMENTS

THE DESIGN OF THIS STRUCTURE REQUIRES SEAMING TO MEET DESIGN AND CODE REQUIREMENTS. SEE THE SEAMING PLAN FOR ROOF PLANE SPECIFIC SEAMING REQUIREMENTS.
THERE ARE THREE SEAM TYPES POSSIBLE WITH THE NUCOR CFR ROOF AS NOTED BELOW. ALL OF THESE SEAM TYPES CAN BE ACHIEVED WITH THE AVAILABLE CRIMPERS. WHEN VISE LOCK AND VISE LOCK 360 SEAMS ARE REQUIRED, IT IS RECOMMENDED TO RENT A MECHANICAL SEAMER TO AID IN THE SEAMING PROCESS.

1. **NUCOR ROLL LOCK™ (SEE NOTES 1 AND 2 BELOW)**
2. **NUCOR VISE LOCK® (SEE NOTES 1, 2 AND 3 BELOW)**
3. **NUCOR VISE LOCK 360® (SEE NOTES 2 AND 3 BELOW)**

NOTE 1
NUCOR ROLL LOCK SEAM IN THE MINIMUM REQUIRED BY DESIGN FOR ANY ROOF PLANE. ADDITIONAL SEAMING MAY BE REQUIRED BY THE BUILDER OR ARCHITECT. IT IS THE ERECTORS RESPONSIBILITY TO PERFORM ANY ADDITIONAL CRIMPING / SEAMING REQUIRED BY THE BUILDER, ARCHITECT, ETC. ABOVE AND BEYOND THE DESIGN REQUIREMENT OF THE MBS.

NOTE 2
MULTIPLE SEAM TYPES MAY BE REQUIRED BY DESIGN IN DIFFERENT ZONES OF THE ROOF PLANE. REVIEW THE ROOF SEAMING PLAN CAREFULLY FOR ROOF PLANE SPECIFIC SEAMING REQUIREMENTS.

NOTE 3
NOT ALL ROOF SYSTEMS REQUIRE MECHANICAL SEAMING. THE BUYER, ARCHITECT, OWNER, ETC. MAY ELECT TO SPECIFY A MECHANICALLY SEAMED ROOF. OFTEN, FACTORY MUTUAL RATINGS ALSO REQUIRE A VISE LOCK 360 MECHANICAL SEAM.

SEE THE SEAMING MANUAL FOR IMPORTANT ERECTOR INFORMATOIN ABOUT THE VISE LOCK 360 SEAMER REQUIREMENTS.

WHEN TO CRIMP
AS WORK PROGRESSES, IT SHALL BE THE ERECTORS RESPONSIBILITY TO APPLY THE NUCOR ROLL LOCK HAND CRIMPING REQUIREMENTS IN SUCH A WAY AS TO ENSURE THAT THE PANELS HAVE BEEN ADEQUATELY SECURED AT THE COMPLETION OF EACH DAYS WORK.

NUCOR ROLL LOCK SEAM™

LOW EAVE, RIDGE, END LAP AND AT CLIP | **SEAM BETWEEN CLIPS**

THE ROLL LOCK SEAM™ ROLL LOCK SEAM REQUIRES THE ROOF PANELS TO BE CRIMPED WITH A MANUAL CRIMPING TOOL BY THE COMPLETION OF EACH DAY'S WORK. THIS DOES NOT REQUIRE THE USE OF A MOTORIZED SEAMER.

CRIMPING IS REQUIRED AT THE FOLLOWING LOCATIONS

1.	LOW EAVE	16"
2.	RIDGE / HIGH SIDE	16"
3.	ENDLAP	16"
4.	AT CLIPS	SINGLE CRIMP

NUCOR VISE LOCK SEAM®

SEAM AT CLIP | **SEAM BETWEEN CLIPS**

THE VISE LOCK SEAM® IS CONTINUOUS FULL LENGTH OF THE PANEL. THE VISE LOCK SEAM CAN BE ACHIEVED BY TWO DIFFERENT METHODS.

1. CONTINUALLY HAND CRIMPING THE SEAM WITH THE VISE LOCK HAND CRIMPER.
2. MECHANICALLY SEAMING WITH A VISE LOCK MOTORIZED SEAMER.

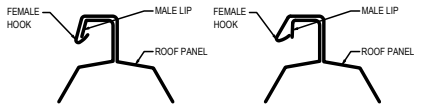
NUCOR VISE LOCK 360 SEAM®

SEAM AT CLIP | **SEAM BETWEEN CLIPS**

THE VISE LOCK 360 SEAM® IS CONTINUOUS FULL LENGTH OF THE PANEL. THE VISE LOCK 360® SEAM CAN BE ACHIEVED BY TWO DIFFERENT METHODS.

1. CONTINUALLY HAND CRIMPING THE SEAM WITH THE VISE LOCK 360 HAND CRIMPER. THE SEAM NEEDS TO BE HAND CRIMPED INTO A VISE LOCK SEAM PRIOR TO USING THE VISE LOCK 360 CRIMPER.
2. MECHANICALLY SEAMING WITH A MOTORIZED SEAMER.

CHECK PANEL ASSEMBLY



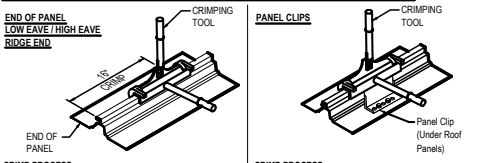
CORRECT | **WRONG (FALSE SEAMED)**

SIDE LAP FIT-UP
BEFORE CRIMPING AND / OR SEAMING, INSPECT THE FULL LENGTH OF EACH PANEL SIDE LAP. CHECK THAT THE LIP AT THE MALE EDGE OF THE PANEL IS ENCLOSED BY THE HOOK OF THE ADJACENT PANEL'S FEMALE EDGE AS SHOWN IN THE DETAIL ABOVE. ANY CONDITIONS WHERE THE SEAM IS NOT ENGAGED PROPERLY MUST BE CORRECTED BEFORE ATTEMPTING TO CRIMP OR SEAM THE PANEL. FALSE SEAMING OCCURS WHEN THE PANELS ARE NOT PROPERLY ENGAGED. FALSE SEAMED PANELS CANNOT PROVIDE THE REQUIRED WIND LOAD AND WEATHER RESISTANCE THEY WERE DESIGNED TO WITHSTAND. FALSE SEAMING CAN ALSO LEAD TO PANEL DAMAGE AND THE MBS NOR THE SEAMER RENTAL COMPANY CAN BE HELD RESPONSIBLE FOR ANY CONCERNS RELATED TO FALSE SEAMING.

CLIP ALIGNMENT
BEFORE CRIMPING AND / OR SEAMING, INSPECT THAT EACH ROOF PANEL CLIP IS PROPERLY ENGAGED IN THE SIDE LAP ASSEMBLY. ANY DISPLACED CLIPS MUST BE CORRECTED BEFORE ATTEMPTING TO CRIMP / SEAM THE ROOF PANELS. PANEL CLIPS THAT ARE NOT PROPERLY ENGAGED AND ALIGNED CAN CAUSE FAULTY CRIMP / SEAM AND OBJECTIONABLE SEAM APPEARANCE. THE MBS NOR THE SEAMER RENTAL COMPANY CAN BE HELD RESPONSIBLE FOR ANY CONCERNS RELATED TO IMPROPERLY ALIGNED CLIPS.

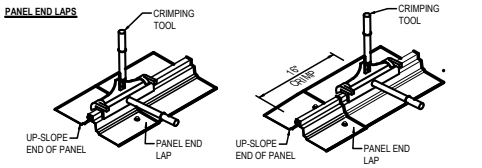
SEAM DAMAGE
BEFORE CRIMPING AND / OR SEAMING, INSPECT THAT EACH ROOF PANEL MALE AND FEMALE ARE FREE FROM DISTORTION AND KINKS WHICH CAN LEAD TO DIFFICULTY AND / OR DAMAGE TO THE PANEL WHILE ATTEMPTING TO CRIMP / SEAM THE PANEL. ANY DISTORTIONS / KINKS MUST BE CORRECTED BEFORE ATTEMPTING TO CRIMP / SEAM THE PANELS. THE MBS NOR THE SEAMER RENTAL COMPANY CAN BE HELD RESPONSIBLE FOR ANY CONCERNS RELATED TO DAMAGE CAUSED IN THE FIELD.

MANUAL CRIMPING - EAVE / END LAP / RIDGE / PANEL CLIP



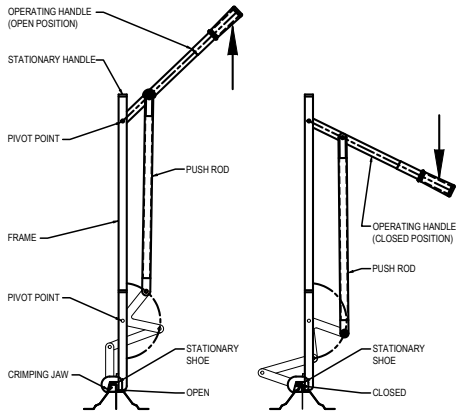
CRIMP PROCESS
CRIMP THE END OF THE PANEL FOLLOWED BY ADDITIONAL CRIMPS TO EXTEND 16" FROM END OF PANEL.

CRIMP PROCESS
THE PANEL CLIP REQUIRES A SINGLE CRIMP CENTERED OVER THE PANEL CLIP.



END LAP CRIMP IS TWO STEP PROCESS
STEP 1: CENTER THE CRIMP TOOL OVER THE PANEL END LAP FOR THE FIRST CRIMP.
STEP 2: THE SECOND CRIMP MUST OVERLAP THE FIRST CRIMP AND EXTEND TO ENSURE THE CRIMP REACHES THE DODWNSLOPE PANEL CLIP. THIS MAY REQUIRE A THIRD CRIMP DEPENDING HOW MUCH OVERLAP WAS DONE.

MANUAL CRIMPING STAND-UP VISE LOCK CRIMPER



STEP 1 UN-CRIMPED (ROLL LOCK) | **STEP 2 CRIMPED (VISE LOCK)**

THE MANUAL CRIMPING PROCEDURE FOR THE STAND-UP VISE LOCK CRIMPER IS THE SAME PROCEDURE AS THE SMALL VISE LOCK HAND CRIMPER. THE STAND-UP AND SMALL HAND CRIMPERS CAN BE USED IN CONJUNCTION WITH EACH OTHER. THE MANUAL CRIMPERS CAN BE UTLIZED TO CREATE A CONTINUOUS SEAM BY MAKING ADJACENT CRIMPS WITH SLIGHT OVERLAP.

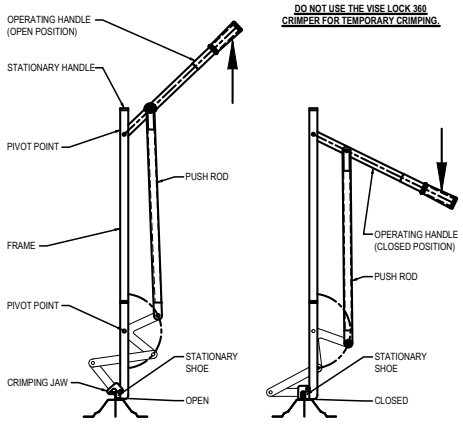
TOOL OPERATION

STEP 1
WITH THE HANDLE IN THE UPWARD (OPEN) POSITION, PLACE THE CRIMPER ON THE PANEL RIB. MAKE SURE THE CRIMPER HEAD IS COMPLETELY SEATED ON THE TOP OF THE PANEL RIB BEFORE CRIMPING. IT IS CRITICAL THAT THE OPERATING JAW IS TOWARD THE HOOK SIDE OF THE PANEL AS SHOWN ABOVE. OPERATING THE CRIMPER BACKWARDS ON THE PANEL WILL RESULT IN DAMAGE TO THE PANEL.

STEP 2
PUSH DOWN ON THE HANDLE UNTIL IT STOPS. RAISE HANDLE TO RELEASE CRIMPER. REPOSITION CRIMPER AS NECESSARY AND REPEAT TO EXTEND THE LENGTH OF THE CRIMP.

MANUAL CRIMPING STAND-UP VISE LOCK 360 CRIMPER

DO NOT USE THE VISE LOCK 360 CRIMPER FOR TEMPORARY CRIMPING.



STEP 1 CRIMPED (VISE LOCK) | **STEP 2 CRIMPED (VISE LOCK 360)**

THE MANUAL CRIMPING PROCEDURE FOR THE STAND-UP VISE LOCK 360 CRIMPER IS THE SAME PROCEDURE AS THE SMALL VISE LOCK 360 HAND CRIMPER. THE STAND-UP AND SMALL HAND VISE LOCK 360 CRIMPERS ARE DESIGNED TO BE USED IN CONJUNCTION WITH VISE LOCK CRIMPERS OR SEAMER. THE PANEL RIB MUST BE IN THE VISE LOCK SEAM PRIOR TO OPERATING THE VISE LOCK 360 CRIMPERS. THE MANUAL CRIMPERS CAN BE UTLIZED TO CREATE A CONTINUOUS SEAM BY MAKING ADJACENT CRIMPS WITH SLIGHT OVERLAP.

TOOL OPERATION

STEP 1
AFTER THE AREA HAS BEEN SEAMED TO THE VISE LOCK SEAM, PLACE THE VISE LOCK 360 CRIMPER ON THE PANEL RIB WITH THE HANDLE IN THE UPWARD (OPEN) POSITION. MAKE SURE THE CRIMPER HEAD IS COMPLETELY SEATED ON THE TOP OF THE PANEL RIB BEFORE CRIMPING. IT IS CRITICAL THAT THE OPERATING JAW IS TOWARD THE HOOK SIDE OF THE PANEL AS SHOWN ABOVE OPERATING THE CRIMPER BACKWARDS ON THE PANEL WILL RESULT IN DAMAGE TO THE PANEL.

STEP 2
PUSH DOWN ON THE HANDLE UNTIL IT STOPS. RAISE HANDLE TO RELEASE CRIMPER. REPOSITION CRIMPER AS NECESSARY AND REPEAT TO EXTEND THE LENGTH OF THE CRIMP.

IMPORTANT
IF THE 360 TOOL DOES NOT FORM THE VISE LOCK 360 SEAM CORRECTLY, STOP AND CHECK THE SEAM TO ENSURE A PROPER AND CONTINUOUS VISE LOCK SEAM HAS BEEN COMPLETED. IF NOT, RE-CRIMP / SEAM TO A PROPER VISE LOCK SEAM BEFORE ATTEMPTING TO SEAM TO THE VISE LOCK 360.

CFR HAND CRIMPING NOTES
HAND CRIMING TOOLS AND PROCEDURES

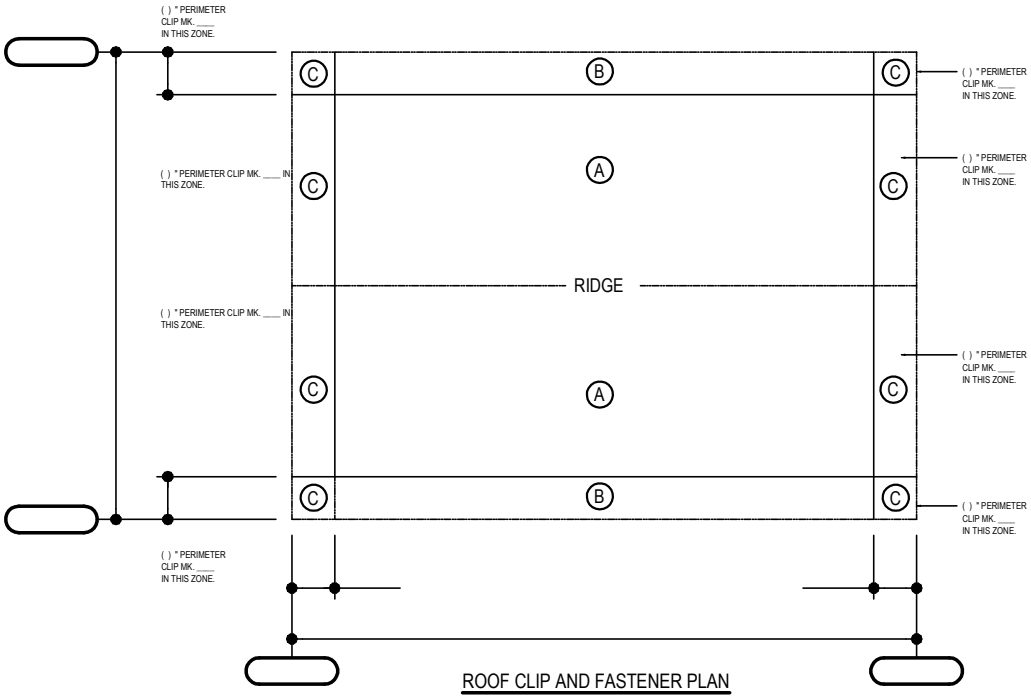
EA6015

Detailer Notes:

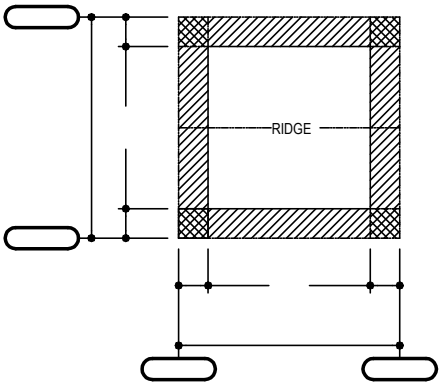
1) THIS DETAIL REQUIRED ON EVERY **CFR** ROOF PROJECT.

EA6016 - CFR ROOF CLIP & SEAMING PLAN

Download the DWG file by clicking here.



ROOF CLIP AND FASTENER PLAN



STANDARD CLIPS	
PART #	PART DESCRIPTION
H2500	SHORT FIXED CLIP
H2510	TALL FIXED CLIP
H2520	SHORT SLIDING CLIP
H2530	TALL SLIDING CLIP
H2540	SUPER TALL SLIDING CLIP

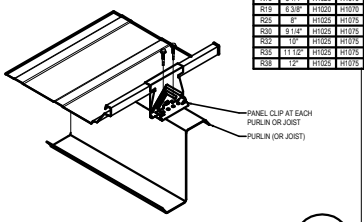
PERIMETER CLIPS	
PART #	PART DESCRIPTION
H2720	8" SHORT SLIDING CLIP
H2730	8" TALL SLIDING CLIP
H2740	12" SHORT SLIDING CLIP
H2750	12" TALL SLIDING CLIP
H2760	16" SHORT SLIDING CLIP
H2770	16" TALL SLIDING CLIP

ROOF SEAMING PLAN

1. NUCOR ROLL LOCK™
2. NUCOR VISE LOCK®
3. NUCOR VISE LOCK 360®

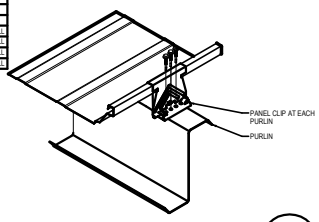
STANDARD CLIP

INSULATION R-	THICK.	FASTENER N/A	N/A	CLIP SHORT
NONE	0"	H1020	H1070	ALL
R7	2"	H1020	H1070	SHORT
R10	3 3/8"	H1020	H1070	SHORT
R11	3 3/4"	H1020	H1070	SHORT
R13	4 3/8"	H1020	H1070	SHORT/TALL
R16	5 1/4"	H1020	H1070	TALL
R19	6 3/8"	H1020	H1070	TALL
R25	8"	H1025	H1075	TALL
R30	9 1/4"	H1025	H1075	SUPER TALL
R32	10"	H1025	H1075	SUPER TALL
R35	11 1/2"	H1025	H1075	SUPER TALL
R38	12"	H1025	H1075	SUPER TALL



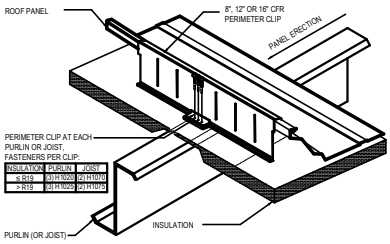
(2) FASTENERS PER CLIP AT PURLIN/JOIST — A

STANDARD CLIP



(3) FASTENERS PER CLIP AT PURLIN — B

PERIMETER CLIP



INSULATION	PURLIN	JOIST
≤ R19	(3) H1020	(2) H1070
> R19	(3) H1025	(2) H1075

(3) FASTENERS PER CLIP AT PURLIN
(2) FASTENERS PER CLIP AT JOIST — C

CRITICAL SEAMER ORDERING INFORMATION	
ROOF TYPE	-
PANEL GAUGE	- GA.
SQUARE FOOTAGE (ENTIRE ROOF)	- SQ. FT
ROOF PITCH	- :12
SEAM HEIGHT	3"
ENDLAPS	☐ YES ☐ NO
GALVALUME OR PAINTED ROOF	☐ GALVALUME ☐ PAINTED
PERIMETER CLIPS REQUIRED	☐ YES ☐ NO

PLEASE NOTE THAT ALL SEAMER ORDERS WILL TAKE APPROXIMATELY 5-7 WORKING DAYS FOR DELIVERY TO JOB SITE FROM DATE OF ORDER. VISE LOCK OPTIONS INCLUDE A 3 STATION SINGLE DIRECTION OR 5 STATION BI-DIRECTIONAL. VISE LOCK 360 ONLY HAS (5) STATION SINGLE DIRECTION AVAILABLE.

DIROOFSEAMERS.COM
PHONE (888) 343-0456

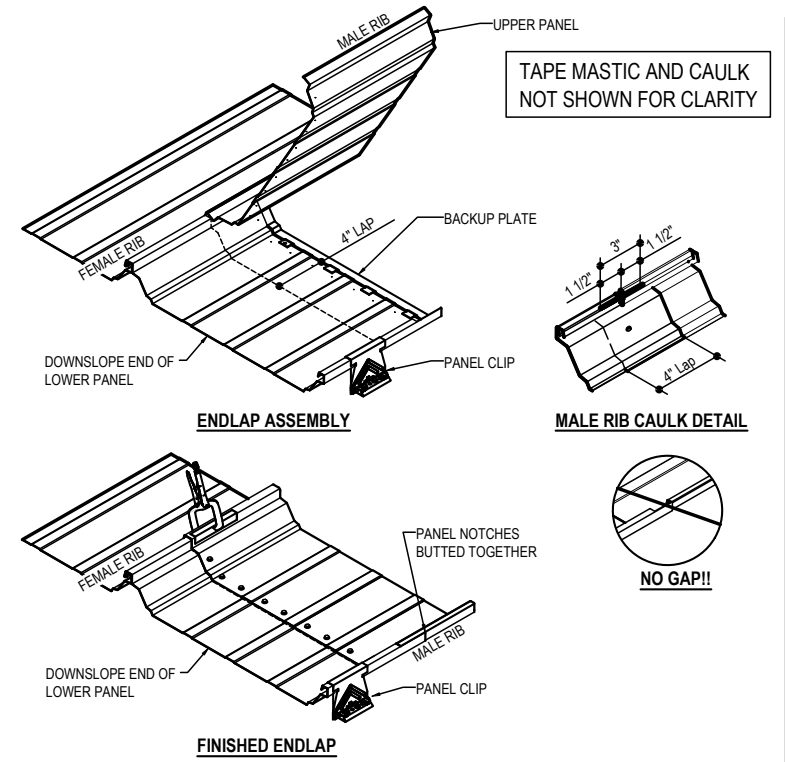
EA6016

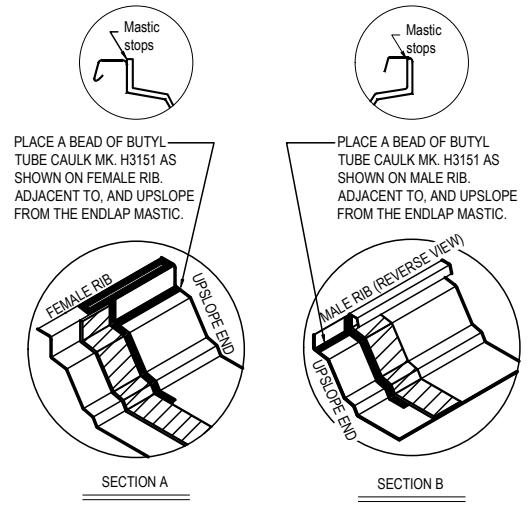
Detailer Notes:

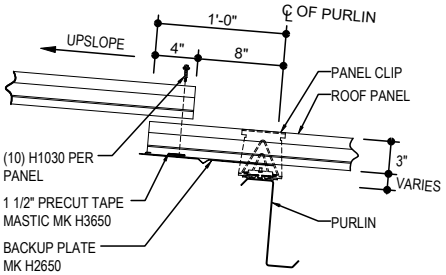
1) THIS DETAIL REQUIRED ON EVERY TRAPEZOIDAL ROOF PROJECT.

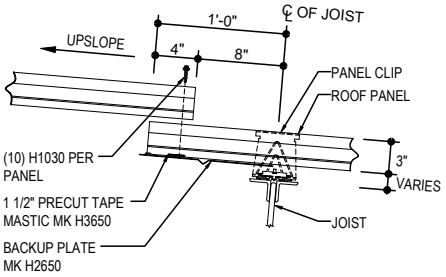
EA6020 - CFR PANEL ENDLAP

Download the DWG file by clicking here.









ERECTION NOTES:

PROPER PLACEMENT OF ENDLAP MASTIC IS CRITICAL TO WEATHER-TIGHTNESS OF ROOF AND ENDLAPS. WIPE DRY AND CLEAN THE PANEL SURFACES.

MARK LOWER PANEL AT 2" FOR TOP OF MASTIC AND 4" FOR LAP LOCATION. (**DO NOT USE PENCIL**) SLIDE BACKUP PLATE ONTO LOWER PANEL.

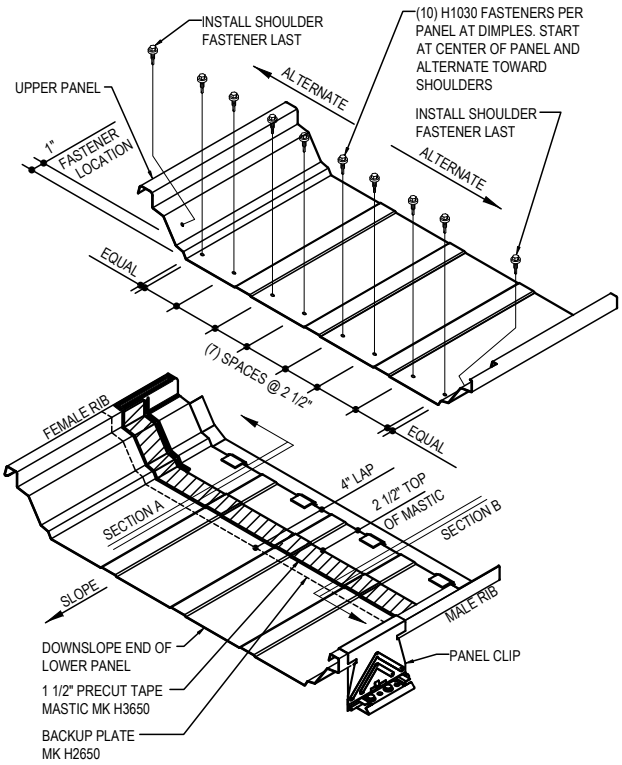
APPLY PRECUT TAPE MASTIC, START AT CORNER OF MALE RIB AND FINISH AT TOP OF FEMALE RIB. LEAVE PAPER BACKING ON MASTIC UNTIL UPPER PANEL HAS BEEN PLACED. MASTIC WILL NOT COVER DIMPLES OF LOWER PANEL.

APPLY BUTYL CAULK UPSLOPE OF TAPE MASTIC IN RIB LOCATIONS AS SHOWN. (BOTH MALE AND FEMALE RIBS)

AFTER ALL SEALANTS ARE IN PLACE, HOOK THE UPPER PANEL ONTO PREVIOUS PANEL, ALIGNING PANEL ALONG THE 4" LAP MARK ON LOWER PANEL. BOW THE PAN OF THE UPPER PANEL UP AND TUCK THE MALE RIB UNDER THE HOOK OF THE LOWER PANEL. **NOTE: THE NOTCHES MUST BUTT TIGHT TO AVOID A POTENTIAL LEAK. NO GAP!** PEEL PAPER BACKING OFF MASTIC AND FASTEN ENDLAP AS SHOWN. FASTENERS MUST PASS THROUGH MASTIC.

PRIOR TO INSTALLING NEXT LOWER PANEL, CAULK THE MALE LEG ENDLAP NOTCH AREA WITH BUTYL CAULK AS SHOWN ABOVE.

REPEAT PROCESS SUBSEQUENT ENDLAPS.



PANEL ENDLAP DETAIL

ENDLAP DETAIL WITH STRAIGHT OR STAGGERED ENDLAPS
(SEE ROOF SHEETING PLAN)
NOTE: INSULATION AND THERMAL BLOCKS NOT SHOWN FOR CLARITY

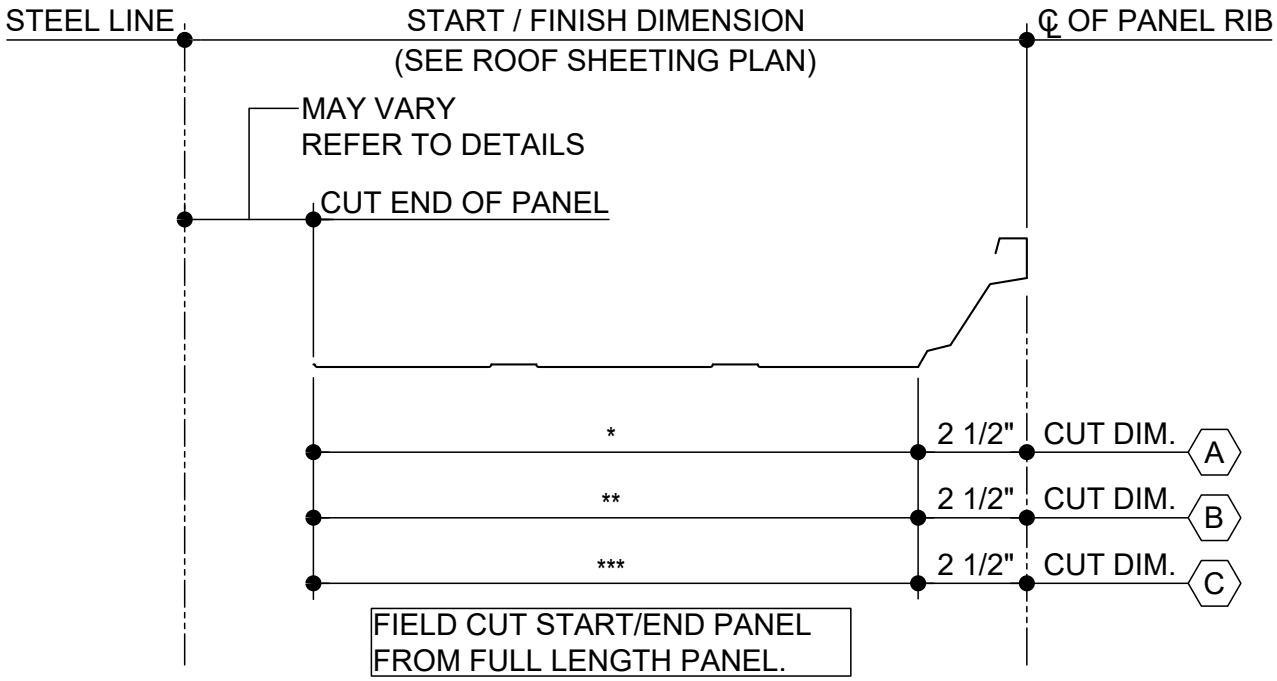
EA6020

Detailer Notes:

1) THIS DETAIL IS REQUIRED ON EVERY PROJECT WITH TRAPEZOIDAL ROOF PANEL WITH ENDLAPS.
2) TURN ON THE CORRECT LAYER BASED ON THE SPECIFIC TRAPEZOIDAL PANEL PROFILE AND TURN OFF THE PANEL PROFILES NOT USED.
3) THIS STANDARD DETAIL IS APPROVED FOR MIAMI-DADE USE. ALTERATIONS TO THIS DETAIL MAY IMPACT APPROVAL.

EA6035 - CFR START / FINISH PANEL WIDTH DETAIL

Download the DWG file by clicking here.



START / END CUT PANEL DIMENSION DETAIL

- WHEN FIELD CUTTING OR MITERING ROOF PANELS, NON-ABRASIVE CUTTING TOOLS SUCH AS NIBBLERS OR TIN-SNIPS SHALL BE USED.
- ABRASIVE CUTTING TOOLS SUCH AS MECHANICAL GRINDERS, SAWS, SHEARS OR SCISSORS CAN DAMAGE THE PANEL FINISH AND CREATE EXCESS METAL SHAVINGS THAT CAN CORRODE THE PANELS.
- THE USE OF NON-APPROVED CUTTING DEVICES MAY VOID YOUR FACTORY WARRANTY.

EA6035

Detailer Notes:

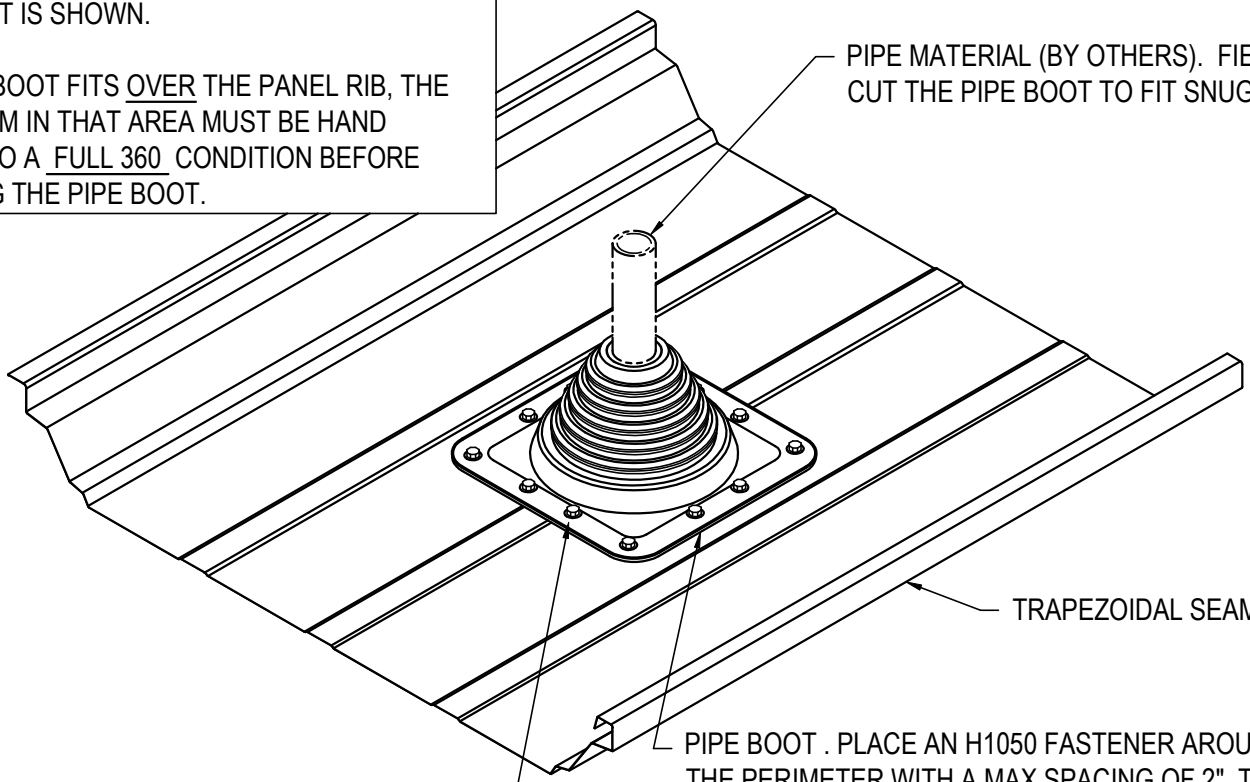
1) THIS DETAIL IS REQUIRED ON EVERY TRAPEZOIDAL ROOF PROJECT.

EA6200 - PIPE BOOT

Download the DWG file by clicking here.

NOTES:
1.) IF PIPE BOOT FITS BETWEEN THE MAJOR RIBS, IT IS RECOMMENDED TO ROTATE THE PIPE BOOT 45° FROM WHAT IS SHOWN.

2.) IF PIPE BOOT FITS OVER THE PANEL RIB, THE PANEL SEAM IN THAT AREA MUST BE HAND CRIMPED TO A FULL 360 CONDITION BEFORE INSTALLING THE PIPE BOOT.



PIPE BOOT DETAIL

PIPE BOOT PART NUMBERS
(#3) H3500 1/4"-5" DIAMETER
(#5) H3510 4 1/4"-7 1/2" DIAMETER
(#8) H3520 7"-13" DIAMETER

EA6200

Detailer Notes:
1) N/A