Butler Manufacturing
a division of BlueScope Buildings North America, Inc.

DRAWING INDEX

DRAWING TITLE	PAGES
COVER SHEET	1
CODES AND LOADS	2
NOTES	3-3a
ANCHOR ROD PLAN	4
PRIMARY STRUCTURAL	5-19
SECONDARY STRUCTURAL	20-28
COVERING	29-35
SPECIAL DRAWINGS	
STANDARD ERECTION DETAILS	
PLANOGRAPH DETAILS	

DRAWING RELEASE HISTORY

TYPE	DATE	DESCRIPTION
Anchor Rod Drawings Rev0	12/13/2024	FOR CONSTRUCTION
Final Erection Drawings Rev0	1/14/2024	FOR CONSTRUCTION

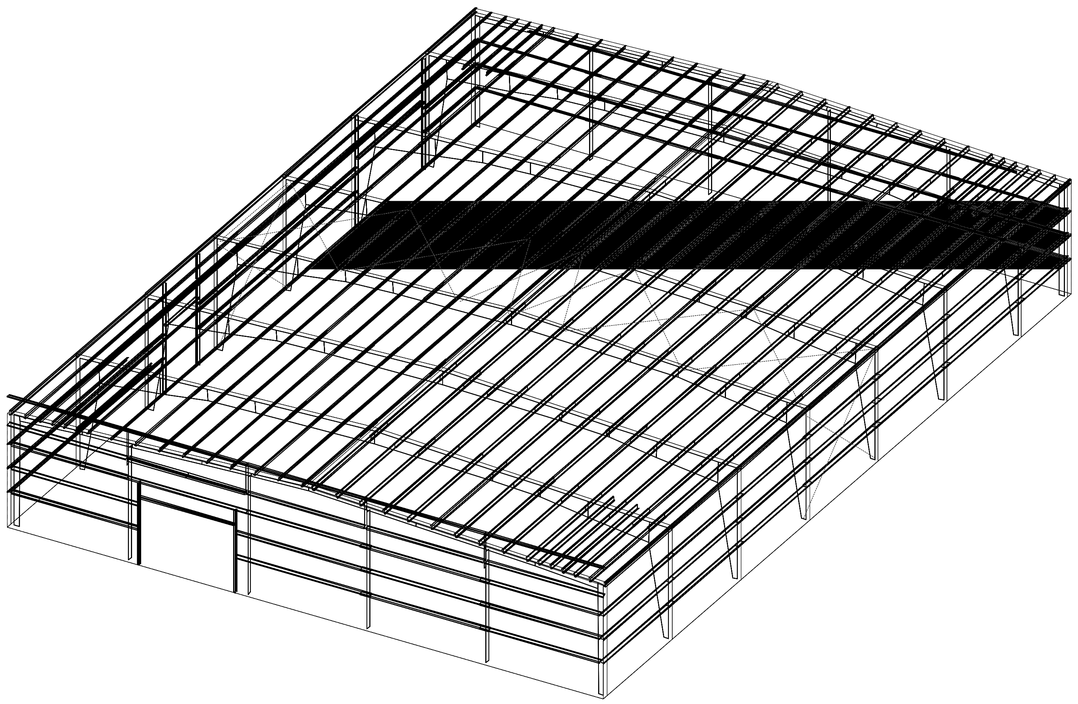
BASIC BUILDING INSTALLATION GUIDE 3586

MR-24 ROOF INSTALLATION GUIDE 4797

ROOF OWNERS MAINTENANCE 5038

Contact Information:

Project Manager	Mark Williams	(816) 968-4773
Designer	Shadrach Rubio-Pelayo	(479) 857-2248
Lead Detailer	Leticia Mortera	(816) 968-3350 ext.2321
Construction Consultant	Ray Nagiewicz	(816) 582-3185



GENERAL NOTES

MATERIALS

	ASTM DESIGNATION	
3 PLATE WELDED SECTIONS	A529, A572, A1011, A1018	GRADE 55
COLD FORMED LIGHT GAGE SHAPES	A653, A1011	GRADE 60
BRACE RODS	A572, A510	GRADE 50
HOT ROLLED MILL SHAPES	A36, A529, A572, A588, A992	GRADE 36 OR 50
HOT ROLLED ANGLES	A529, A572, A588, A992	GRADE 50
HOLLOW STRUCTURAL SECTION (HSS)	A500	GRADE B
CLADDING	A653, A792	GRADE 50 OR GRADE 80

HIGH STRENGTH BOLT TIGHTENING REQUIREMENTS

IT IS THE RESPONSIBILITY OF THE ERECTOR TO ENSURE PROPER BOLT TIGHTNESS IN ACCORDANCE WITH APPLICABLE REGULATIONS. SEE RCSC SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS FOR MORE INFORMATION. SEE ERECTION GUIDE FOR BOLT TIGHTENING INSTRUCTIONS. THE FOLLOWING CRITERIA MAY BE USED TO DETERMINE THE BOLT TIGHTNESS (I.E.-SNUG TIGHT OR PRE-TENSION) UNLESS REQUIRED OTHERWISE BY LOCAL JURISDICTION OR CONTRACT.

ALL A490 BOLTS SHALL BE "PRE-TENSIONED". A325 BOLTS IN PRIMARY FRAMING AND BRACING CONNECTIONS MAY BE "SNUG-TIGHT" EXCEPT AS FOLLOWS;

PRE-TENSION A325 BOLTS IF BUILDING SUPPORTS A CRANE GREATER THAN 5 TON CAPACITY.

PRE-TENSION A325 BOLTS IF BUILDING SUPPORTS MACHINERY THAT CREATES VIBRATION, IMPACT, OR STRESS REVERSALS ON CONNECTIONS.

PRE-TENSION A325 BOLTS IF LOCATED IN HIGH SEISMIC AREAS. FOR IBC BASED CODES; HIGH SEISMIC IS DESIGN CATEGORY D, E OR F. SEE CODES AND LOADS SECTION BELOW FOR DETAILS.

PRE-TENSION ANY CONNECTION WITH DESIGNATION A325-SC. SLIP CRITICAL (SC) CONNECTIONS MUST BE FREE OF PAINT, OIL OR OTHER MATERIALS THAT REDUCE FRICTION AT CONTACT SURFACES. GALVANIZED OR LIGHTLY RUSTED SURFACES ARE ACCEPTABLE.

IN CANADA, ALL A325 AND A490 BOLTS SHALL BE "PRE-TENSIONED", EXCEPT FOR SECONDARY MEMBERS AND FLANGE BRACES.

SECONDARY MEMBERS AND FLANGE BRACE CONNECTIONS ARE ALWAYS "SNUG TIGHT", UNLESS INDICATED OTHERWISE IN ERECTION DRAWING DETAILS.

INSPECTION AND TESTING

SPECIAL INSPECTIONS AND TESTING REQUIRED BY AUTHORITY HAVING JURISDICTION (AHJ) DURING CONSTRUCTION AND/OR STEEL FABRICATION IS THE RESPONSIBILITY OF THE OWNER OR OWNERS AUTHORIZED AGENT. WHEN REQUIRED, THE OWNER SHALL EMPLOY A QUALITY ASSURANCE AGENCY (QAA) APPROVED BY THE AHJ. THE BUILDER IS RESPONSIBLE TO COORDINATE BETWEEN THE QAA FIRM AND BBNA FABRICATION FACILITIES. THE TYPE AND EXTENT OF SPECIAL INSPECTIONS AND NDT WELD TESTING MUST BE SPECIFICALLY STIPULATED IN CONTRACT DOCUMENTS OR BBNA WILL ASSUME SPECIAL INSPECTIONS AND/OR NDT TESTING ARE WAIVED AS PERMITTED BY THE BUILDING CODE BASED ON BBNA FACILITIES IAS AC472 ACCREDITATION.

Keith Erick Fix electronically signs and seals this document with his Professional Engineer seal affixed. Printed copies of this document are not signed and sealed. This signature must be verified on an electronic copy.
2025.01.09 12:51:58-06'00'

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER

01/09/2025

Reviewed For Construction PG 1-35 on 1/9/2025 by SR

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

COVER SHEET

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 1

Codes and Loads

WHEN MULTIPLE BUILDINGS ARE INVOLVED, SPECIFIC LOAD FACTORS FOR DIFFERING OCCUPANCIES, BUILDING DIMENSIONS, HEIGHTS, FRAMING SYSTEMS, ROOF SLOPES, ETC., MAY RESULT IN DIFFERENT LOAD APPLICATION FACTORS THAN INDICATED BELOW. SEE CALCULATIONS FOR FURTHER DETAILS. WIND LOADS ARE APPLIED TO OVERALL BUILDING ENVELOPE. COMMON WALLS BETWEEN CONNECTED SHAPES ARE NOT SUBJECT TO EXTERNAL WIND LOADS.

City: Lees Summit County: Jackson State: Missouri Country: United States

Building Code

Building Code: IBC 2018
Based on Building Code: 2018 International Building Code
Building Risk/Occupancy Category: II (Standard Occupancy Structure)

Structural: 16AISC - ASD Rainfall: I: 3.00 inches per hour
Cold Form: 16AISI - ASD f'c: 3000.00 psi Concrete

Dead and Collateral Loads

Collateral Gravity: 5.00 psf
Collateral Uplift: 0.00 psf

Material Dead Weight

Roof Covering + Second. Dead Load: 2.26 psf
Frame Weight (assumed for seismic):2.50 psf

Roof Live Load

Roof Live Load: 20.00 psf Reducible

Wind Load

Wind Speed: Vult: 115.00 (Vasd: 89.08) mph
The 'Envelope Procedure' is Used
Primaries Wind Exposure: C - Kz: 0.936
Parts Wind Exposure Factor: 0.936
Wind Enclosure: Enclosed
Topographic Factor: Kzt: 1.0000
Ground Elevation Factor: Ke: 1.0000

NOT Windborne Debris Region
Base Elevation: 0/0/0
Site Elevation: 0.0 ft
Primary Zone Strip Width: 2a: 19/1/3
Parts / Portions Zone Strip Width:
Walls, a: 9/6/10
Roof(s), 0.6h: 14/3/14
Velocity Pressure: qz: 26.94, (C&C) 26.94 psf

Snow Load

Ground Snow Load: pg: 20.00 psf
Flat Roof Snow: pf: 14.00 psf
Design Snow (Sloped): ps: 14.00 psf
Rain Surcharge: 0.00 psf
Specified Minimum Roof Snow: 20.00 psf (Code)
Exposure Factor: 2 Partially Exposed - Ce: 1.00
Snow Importance: Is: 1.000
Thermal Factor: Heated - Ct: 1.00
Ground / Roof Conversion: 0.70
Obstructed or Not Slippery

Seismic Load

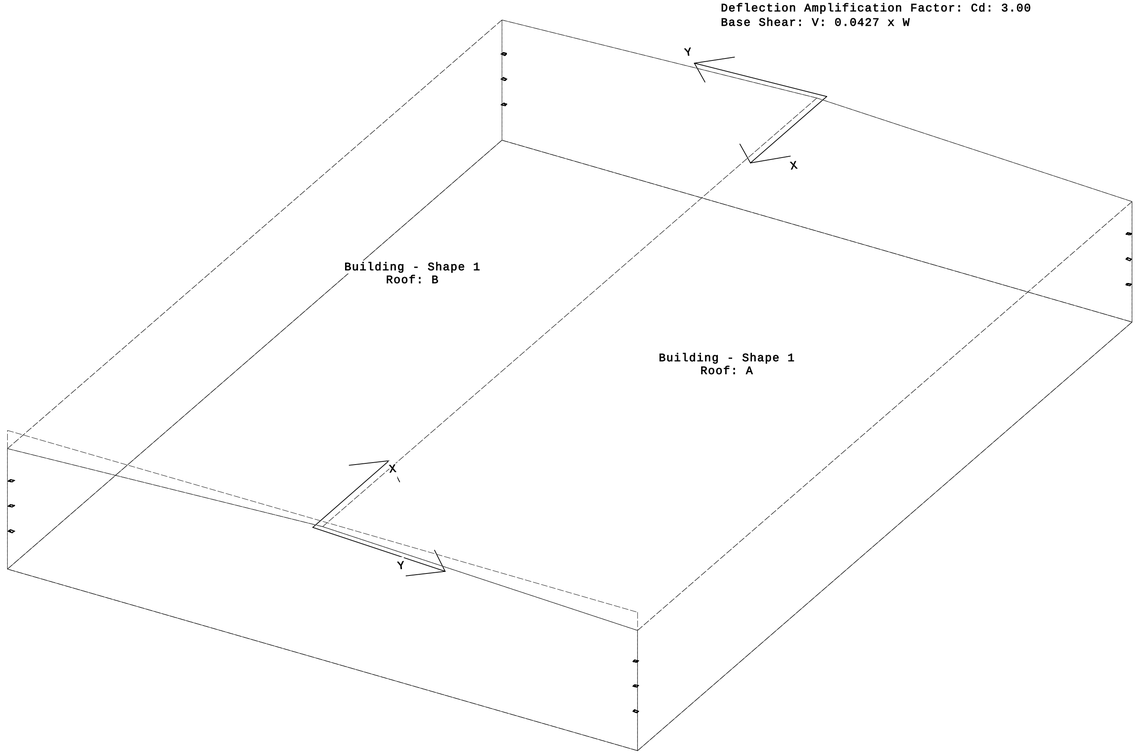
Lateral Force Resisting Systems using Equivalent Force Procedure
Mapped MCE Acceleration: Ss: 12.00 %g
Mapped MCE Acceleration: S1: 6.00 %g
Site Class: Stiff soil (D) - Default
Seismic Importance: Ie: 1.000
Design Acceleration Parameter: Sds: 0.1280
Design Acceleration Parameter: Sd1: 0.0960
Seismic Design Category: B
Seismic Snow Load: 0.00 psf
% Snow Used in Seismic: 0.00
Diaphragm Condition: Flexible
Fundamental Period Height Used: 25/2/2

Transverse Direction Parameters
System NOT detailed for Seismic
Redundancy Factor: Rho: 1.00
Fundamental Period: Ta: 0.3698
R-Factor: 3.00
Overstrength Factor: Omega: 2.50
Deflection Amplification Factor: Cd: 3.00
Base Shear: V: 0.0427 x W

Longitudinal Direction Parameters
System NOT detailed for Seismic
Redundancy Factor: Rho: 1.00
Fundamental Period: Ta: 0.2248
R-Factor: 3.00
Overstrength Factor: Omega: 2.50
Deflection Amplification Factor: Cd: 3.00
Base Shear: V: 0.0427 x W

Load Notes

Collateral Load Description - Lights HVAC, mics



Snow Buildup

Shape	Surface	Description	X Location	Y Location	Magnitude
Building - Shape 1	Roof: A	Unbalanced Snow Load 1, Shifted Left : Roof: A	0.0 ft	32.6 ft	8.4 psf
			0.0 ft	0.0 ft	8.4 psf
			170.0 ft	0.0 ft	8.4 psf
			170.0 ft	32.6 ft	8.4 psf
Building - Shape 1	Roof: A	Snow Drift (from Wall 1, Shape Building - Shape 1) (1 of 3) : Roof: A	0.0 ft	62.6 ft	39.0 psf
			0.0 ft	41.7 ft	39.0 psf
			11.4 ft	41.7 ft	0.0 psf
			11.4 ft	62.6 ft	0.0 psf
Building - Shape 1	Roof: A	Snow Drift (from Wall 1, Shape Building - Shape 1) (2 of 3) : Roof: A	0.0 ft	41.7 ft	24.6 psf
			0.0 ft	20.9 ft	24.6 psf
			7.4 ft	20.9 ft	0.0 psf
			7.4 ft	41.7 ft	0.0 psf
Building - Shape 1	Roof: A	Snow Drift (from Wall 1, Shape Building - Shape 1) (3 of 3) : Roof: A	0.0 ft	20.9 ft	10.2 psf
			0.0 ft	0.0 ft	10.2 psf
			3.4 ft	0.0 ft	0.0 psf
			3.4 ft	20.9 ft	0.0 psf
Building - Shape 1	Roof: B	Unbalanced Snow Load 1, Shifted Right : Roof: B	0.0 ft	32.6 ft	8.4 psf
			0.0 ft	0.0 ft	8.4 psf
			170.0 ft	0.0 ft	8.4 psf
			170.0 ft	32.6 ft	8.4 psf
Building - Shape 1	Roof: B	Snow Drift (from Wall 1, Shape Building - Shape 1) (1 of 3) : Roof: B	170.0 ft	0.0 ft	10.2 psf
			170.0 ft	20.9 ft	10.2 psf
			166.6 ft	20.9 ft	0.0 psf
			166.6 ft	0.0 ft	0.0 psf
Building - Shape 1	Roof: B	Snow Drift (from Wall 1, Shape Building - Shape 1) (2 of 3) : Roof: B	170.0 ft	20.9 ft	24.6 psf
			170.0 ft	41.7 ft	24.6 psf
			162.6 ft	41.7 ft	0.0 psf
			162.6 ft	20.9 ft	0.0 psf
Building - Shape 1	Roof: B	Snow Drift (from Wall 1, Shape Building - Shape 1) (3 of 3) : Roof: B	170.0 ft	41.7 ft	39.0 psf
			170.0 ft	62.6 ft	39.0 psf
			158.6 ft	62.6 ft	0.0 psf
			158.6 ft	41.7 ft	0.0 psf

1. The Snow Buildup loading shown is in addition to the flat or sloped roof snow.
2. The X and Y Location dimensions are from the point of origin of each surface.

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER
01/09/2025

FOR CONSTRUCTION

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

CODES AND LOADS

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 12/13/2024
DRAWN/CHECK: SR / KEF
PAGE: 2

BUILDER/CONTRACTOR RESPONSIBILITIES

Butler Mfg. follows the guidelines as outlined in the AISC and MBMA Codes of Standard Practice. Butler Mfg. standard product specifications, design, fabrication, quality criteria shall govern all work unless stipulated otherwise in the contract documents. In case of discrepancies between Butler Mfg. structural plans and plans for other trades, Butler Mfg. structural plans shall govern.

It is the responsibility of the Builder to obtain approvals and permits from all governing agencies and jurisdictions as required. Approval of Butler Mfg drawings constitutes the builders acceptance of Butler interpretation of the contract purchase order. Unless specific design criteria concerning interface design and details are furnished as part of the contract, Butler Mfg. design assumptions shall govern.

Butler engineers are not Project Engineers or Engineer of Record for the overall project. Butler engineering supply sealed engineering design data and drawings for Butler supplied material as part of the overall project for use by others to obtain permits, approvals, and coordinate with other trades. All interface and/or compatibility of any materials not furnished by Butler are to be considered and coordinated by the builder or A/E firm.

CONSTRUCTION & ERECTION RESPONSIBILITY

The Builder is responsible for construction in strict accordance with Butler Mfg. "FOR CONSTRUCTION" drawings and all applicable product installation guides. Butler is not responsible for work done from any other Butler drawings that are not marked "FOR CONSTRUCTION", nor any drawings prepared by others.

As erected field assemblies of members shall be as specified in MBMA Code of Standard Practice (in Canada - CSA S16), which require L/500 tolerance of installed members. Occasional field work including shimming, cutting, coping, and drilling for final fit-up are considered part of erection. Specified field work and field welding conditions indicated on these drawings shall also be included in the erectors scope of work. See Erection Guide for shimming procedure. For building with top riding bridge cranes see Crane Data drawing for column plumb tolerance.

The building erector shall be properly licensed and experienced in erecting metal building systems. The Builder is responsible for having knowledge of, and shall comply with, all OSHA requirements and all other governing site safety criteria. The builder is responsible for designing, supplying, locating and installing temporary supports and bracing during erection of the building. Butler bracing is designed for code required loads after building completion and shall not be considered as adequate erection bracing. See Erection Guide.

Shimming of steel buildings during erection may be required to accomodate allowable tolerances during fabrication and erection. Special care should be taken by the building erector to shim connections where key dimensions must be maintained for building performance as even small tolerances can have a significant impact on critical dimensions such as height, clearances and plumbness, especially as the size of the member or building increases. Conditions where shimming should be expected can include but are not limited to large door openings, critical clear height requirements, cranes, buildings greater than 45 feet in height, clear spans greater than 125 feet and adjacent frames with different characteristics (like clear span frames adjacent to an endwall or modular frame). Shims are normally provided by the erector, but may be ordered upon request by contacting your Project Manager.

EXISTING STRUCTURES

Butler must be advised of any structure that is within 20 ft. of Butler's building. Load effects from snow drifting, wind effects, and seismic separation must be considered for both the new and existing structures. Butler has designed the new Butler building for these effects. The owner/builder are responsible for employing a Professional Engineer to review and verify the existing structure for all load effects from the adjacent Butler building.

BRACING

Tension brace rods work in pairs to balance forces caused by initial tensioning. Care must be taken while tightening brace rods so as not to cause accidental or misalignment of components. All rods must be installed loose and then tightened. Rods should not exhibit excessive sag. For long or heavy rods, or angles it may be necessary to support the rods at mid-bay by suspending them from secondary members.

Bracing for seismic or wind loading of objects or equipment that are not a part of the Butler structure must be designed by a qualified professional to deliver lateral loads to primary frames and rod bracing struts. Equipment bracing and suspension connections must not impose torsion or minor axis loads, or cause local distortion in any Butler components. Butler accepts no responsibility for design or installation of bracing systems not furnished by Butler.

FIELD WELDING

All field welding shall be done at the direction of a design professional, and done in accordance with governing requirements (AWS in USA, CWB in Canada) by welders qualified to perform the welding as directed by the applicable welding procedure specification (WPS). A WPS shall be prepared by the contractor for each welding variation specified. The contractor is responsible for any special welding inspection as required by local jurisdiction. Filler metal shall be 70 ksi (480 MPa) tensile strength. For welds in high seismic force resisting system (Seismic Cat D, E or F), minimum Charpy V-Notch toughness shall meet AISC-341 criteria (20 ft-lbs min @ 0Deg F). Interpass temperatures shall not exceed 550Deg F (300Deg C).

SIGNAGE

The Builder is responsible for furnishing signs as required by Code and the Building Department, including but not limited to, exits, occupancy limits, floor loading limits, and bulk storage limits. Floor loading signs shall clearly indicate maximum floor live load permitted.
Bulk storage facilities shall have signs clearly posted on all loaded walls indicating the type of commodity stored and the maximum storage height. Signs shall be clearly visible when building is fully loaded to design level. Overloading of floors or walls may result in failure.

DELIVERIES

It is the responsibility of the builder to have adequate equipment available at the job site to unload trucks in a safe and timely manner. The Builder will be responsible for all retention charges from carriers as a result of job site unloading delays.

Claims for damage or shorts MUST be noted on the Bill-of-Lading or delivery receipt and filed against the carrier by the consignee as per Butler's Terms of Sales (F.O.B. Plant) under the Uniform Commercial Code. It is critical that damages or shorts be noted on the Bill-of-Lading or you have little recourse with the carrier. Immediately upon delivery of material, material quantities are verified by the Builder against quantities billed on the shipping document. Neither the Manufacturer nor the carrier is responsible for material shortages against quantities billed on the shipping document if such shortages are not noted on the shipping documents upon delivery of material and acknowledged by the carriers agent. For materials concealed in bundles, boxes, or crates, shortages must be reported immediately upon unpacking. Should products get wet, bundled and crated materials must be unpacked and unbundled immediately to provide drainage of trapped moisture. See Erection Guide for proper job site storage procedure.

SEALANTS

Sealants shall be applied in strict accordance with Butler details or weather tightness will be compromised. Sealant must be applied in temperatures and weather conditions consistent with labeling.

INDEPENDENT MEZZANINES

Independent mezzanines must be designed by a professional engineer. The engineer must ensure that proper isolation from the Butler building has been provided to avoid structural damage due to differential movements, or inadvertently apply loads to the Butler structure. Butler accepts no responsibility for the design of the independent mezzanine.

FIRE CODE COMPLIANCE

It is the responsibility of the project design professional and builder to comply with local fire code regulations including consideration of, but not limited to, building use and occupancy, all building construction materials, separation requirements, egress requirements, fire protection systems, etc. Builder shall advise Butler of any special requirements to be furnished by Butler.

FIELD MODIFICATIONS

Modifications to this building from details and instructions contained on these drawings must be approved in writing by Butler Mfg. engineers, or other licensed structural engineer. This includes, but is not limited to, removal of roof or wall cladding, removing or moving any flange braces or rod braces, cutting of openings for doors, windows or RTU's, correction of fabrication errors, etc. The owner shall not impose loads to this structure beyond what is specified for this building in the contract documents. Butler Mfg. accepts no responsibility for the consequences of any unauthorized additions, alterations, or added loads to this structure.

If the builder intends to invoice Butler Mfg. for modifications in excess of $1000, The builder must notify Butler Mfg. immediately, and obtain a Work Authorization from Butler Mfg prior to proceeding. All final claims must be submitted to Butler Mfg with all supporting documentation within 30 days of the building completion. Claims submitted without work authorizations, or after 30 days will not be accepted. Correction of minor misfits, shimming and plumbing, moderate amount of reaming, drilling, chipping / cutting and minor welding are considered by Code of Standard Practice to be part of erection are not subject to claim reimbursement.

CONCRETE/MASONRY/CONVENTIONAL STUD WALLS

The engineer responsible for the design of the wall system is responsible for coordinating with, or specifying to Butler Mfg, any wall to steel compatibility issues such as drift and deflection compatibility, special base details, and wall to Butler steel connections. All fasteners, sealant and counter flashing of wall systems are to be provided by contractor. The engineer responsible for the wall shall design the anchorage to Butler supporting elements consistent with Code required forces.

PANELS

Oil canning is an inherent characteristic of cold formed steel panels. It is the result of several factors that include induced stresses in the raw material delivered to Butler, fabrication methods, installation procedures, and post installation thermal forces. Thru fastened panels will exhibit some dimpling when installed, especially when insulation is installed between panels and secondary supports. Dimpling can be minimized by careful installation, taking care not to over drive fasteners.

Roof rumble is a phenomenon that is caused by wind gusts lifting up on the roof panels and then springing back into place. All panels experience this action to some degree, especially with concealed clip Standing Seam panels. Roof rumble noise may be minimized by providing a layer of blanket insulation between the panels and any hard support surface such as steel secondary members, substrates such as plywood, steel decking, or rigid board insulation. A minimum of 3 inch thick blanket is recommended over steel secondary members, or 2 inch over substrates.

Oil canning, dimpling, and roof rumble do not affect the structural integrity or weather tightness of the panels and is not grounds for rejection of panels.

The Standing Seam joint detail is designed with an interlocking feature for ease of installation. However, it is imperative that installed Standing Seam panels be secured to the secondary structural members and properly seamed prior to departure from the job site each day.

SKYLIGHTS

Local building departments may require added fall restraint due to conditions that may affect the skylight structural integrity. It is the responsibility of the builder to determine and provide any added fall restraint under the skylight as may be required by your building department.

RAIN WATER RUNOFF

Drainage systems must be designed by the project professional to comply with code requirements. Butler is not responsible for drainage designs, overflow scuppers, down piping, etc. The project professional and contractor are responsible to ensure that primary drains and overflow devices such as scuppers and auxiliary drains are provided as required for the required rain intensity at the building perimeter and at valley conditions to prevent ponding.

STEEL SHOP COAT

The purpose of Butler's shop coat is to provide protection for the steel members during transportation, during temporary job site storage and during erection. Standard shop formulation is not designed to perform as a finish coat when exposed to environmental conditions. Members shall be kept free of the ground and properly drained during job site storage. It is the Builder's responsibility to ensure that if a finish coat is being applied over Butler shop coat that the painting contractor verifies compatibility between his finish coat and Butler's shop coat.

BUTLER MFG. ACCREDITATIONS AND APPROVALS

Fabricator Approvals

IAS AC472 Approvals: (www.iasonline.org/services/metal-building-inspection)
Listed under BlueScope Buildings North America, Inc.
City of Los Angeles, CA #FB00031; City of Houston, TX 767;
City of Phoenix, AZ C19-02008; Clark County, NV 43 & 833, San Bernardino County, CA 289,
State of Utah, City of Richmond, Ca.

Design Approvals

IAS AC472 Approvals: (www.iasonline.org/services/metal-building-inspection)
Listed under Butler Manufacturing, a Division of BlueScope Buildings North America, Inc.

Canadian CSA A660 Certifications

(www.cwbgroup.org)
Listed under BlueScope Buildings North America, Inc.

Engineering Certifications of Authorization

USA--AL#CA-5589-E; AZ#22225-0; AR#576; FL#30427; GA#PEF007551; ID#C-2470; IL#184-002649; KS#E-29; KY#4490; LA#EF6722; MS#E-0592; MO#E-2010007736; NC#F-0998; ND#1579PE; NJ#24GA28318800; NV#20437; OH#05898; OK#CA4170PE; RI#8838; SC#6206; SD#C-1787; TX#F4828; VA#0411001520; VA#0411001518; WA#4119; WV#C03059-00
CAN--AB#P08900; NB#F0951; NL#D0044; NS#30123; NT#P062; ON#100148796; and YT#PP134

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER

01/09/2025

FOR CONSTRUCTION

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

ERECTION NOTES

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

BUTLER
Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 12/13/2024
DRAWN/CHECK: SR / KEF
PAGE: 3

NOTES FOR LARGE CLEAR SPAN PROJECTS (TYPICALLY 120' & GREATER):

THESE INSTRUCTIONS TYPICALLY APPLY TO FRAMES WITH CLEAR SPANS 120' OR GREATER, HOWEVER, IF A BUILDING SUPPORTS HEAVY ROOF LOADS OR LARGE BAYS, THEN SMALLER SPANS MAY BE OF CONCERN; REVIEW WITH YOUR SERVICE CENTER TO OBTAIN ANSWERS TO QUESTIONS.

LARGE CLEAR SPAN FRAMES VERTICALLY DEFLECT UNDER SELF WEIGHT AS WELL AS UNDER THE ADDITIONAL WEIGHT OF MATERIAL ATTACHING TO THE FRAMES (DEAD AND COLLATERAL LOAD).

FIVE REFERENCE ELEVATIONS ARE PROVIDED. THE FIRST ELEVATION IS THE FRAME IN ITS THEORETICAL UNLOADED POSITION (NO CAMBER OR SETTLEMENT). THE SECOND ELEVATION IS THE CAMBERED FRAME POSITION. THE THIRD ELEVATION IS THE FRAME SETTLEMENT UNDER FRAME SELF WEIGHT. THE FOURTH ELEVATION IS THE FRAME SETTLEMENT UNDER THE DEAD LOAD OF INTEGRAL MATERIAL (FRAME WEIGHT PLUS PURLINS, INSULATION, COVERING, AND LINER). THE FIFTH SCHEMATIC IS THE FRAME SETTLEMENT UNDER DEAD LOAD AND COLLATERAL LOAD.

DURING THE COURSE OF CONSTRUCTION, DIFFERENTIAL SETTLEMENTS MAY OCCUR IN RAFTER ELEVATIONS FROM FRAME LINE TO FRAME LINE. AS LONG AS ELEVATIONS EXCEED THE POSITIONS TABULATED, NO CONCERN IS NECESSARY.

IF THE ELEVATIONS DO NOT EXCEED THE TABULATED VALUES, REVIEW THE FIELD CONDITIONS WITH YOUR SERVICE CENTER TO ENSURE THE STRUCTURAL INTEGRITY OF THE BUILDING SYSTEM SUPPLIED.

MANY FIELD CONDITIONS CAN CAUSE FIELD VARIATION IN ELEVATION FROM CALCULATED VALUES. IF ALL OTHER FIELD CONDITIONS HAVE BEEN REVIEWED AND DETERMINED TO HAVE BEEN INSTALLED CORRECTLY IN ACCORDANCE WITH ERECTION DRAWINGS, THEN SHIMMING OF THE FRAME IS A VIABLE SOLUTION TO ADJUST ELEVATIONS TO A CORRECT LEVEL.

***SHIMS ARE TO BE PROVIDED BY THE ERECTOR.**
*SEE BUTLER'S *WIDESPAN INSTALLATION GUIDE (3586)*- SECTION E (BOLT TIGHTENING E-4) FOR SHIMMING GUIDELINES (SKETCHES PROVIDED TO RIGHT FOR REFERENCE).
*SHIMMING OF CONNECTIONS SHOULD BE EXPECTED TO MAINTAIN KEY DIMENSIONS SUCH AS CLEARANCE, HEIGHT, AND PLUMBNESS OF THE ERECTED BUILDING. AS NOTED ABOVE SHIMS ARE NORMALLY PROVIDED BY THE ERECTOR, BUT MAY BE ORDERED UPON REQUEST BY CONTACTING YOUR PROJECT MANAGER.

CAMBER DL+CG IS INCLUDED ON THE FRAMES OF THIS PROJECT.
ALL DIMENSIONS ARE FROM FINISH FLOOR TO THE TOP OF THE RAFTER SPLICE PLATE AT THE RIDGE.
NEGATIVE DEFLECTIONS ARE DOWNWARD, POSITIVE DEFLECTIONS OR CAMBER ARE UPWARD.
HEIGHTS ABOVE FINISH FLOOR ARE ROUNDED TO NEAREST SIXTEENTH.

On occasion shims may be required to fill joint gaps, level beams, accommodate varying depth of members, level frame bases, adjust for differential frame deflection, etc. Some shimming must be anticipated by the erector and is considered by the Code of Standard Practice to be part of the erection contract. Shims are provided by the erector.

Shimming between gaps at flanges is accomplished with thin flat plates stacked between the joints.

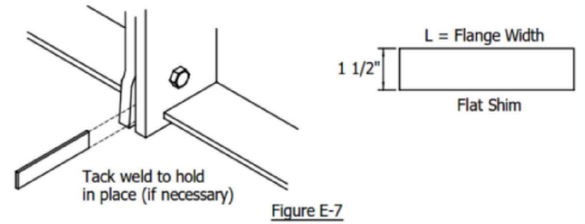


Figure E-7

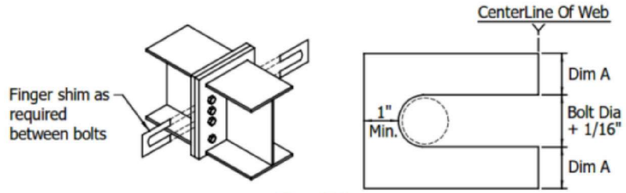
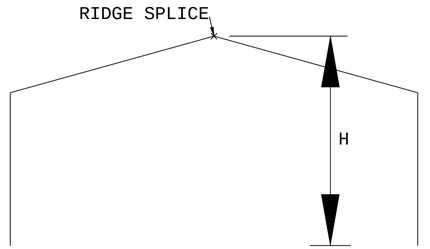


Figure E-8

- Dim A = 1". Shim dimensions may vary from those shown if required for fit up
- Multiple shims may be stacked to fill required gap.
- Gaps greater than a 1/4" require engineering review. Contact your Project Manager.

THEORETICAL SHAPE: AS MODELED		CAMBERED SHAPE: AS FABRICATED		DEFLECTED SHAPE: SELF WEIGHT		DEFLECTED SHAPE: DEAD LOAD		DEFLECTED SHAPE: DEAD + COLLATERAL LOAD	
GRID	HO (FT) AFF	Δ (IN) FROM CAMBER	H1 (FT) AFF	Δ (IN) FROM LOAD	H2 (FT) AFF	Δ (IN) FROM LOAD	H3 (FT) AFF	Δ (IN) FROM LOAD	H4 (FT) AFF
FL 2&3	25'-9 3/4"	3.0000	26'-0 3/4"	-0.9000	25'-11 7/8"	-0.9000	25'-11 7/8"	-2.0000	25'-10 3/4"
FL 3&4	25'-9 3/4"	3.0000	26'-0 3/4"	-0.9000	25'-11 7/8"	-0.9000	25'-11 7/8"	-2.0000	25'-10 3/4"
FL 5&6	25'-9 3/4"	3.0000	26'-0 3/4"	-0.9000	25'-11 7/8"	-0.9000	25'-11 7/8"	-2.0000	25'-10 3/4"
FL 7	25'-9 3/4"	3.0000	26'-0 3/4"	-0.9000	25'-11 7/8"	-0.9000	25'-11 7/8"	-2.0000	25'-10 3/4"



STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER

01/09/2025

MODIFIED IN AUTOCAD

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SACLE:

LARGE CLEARSPAN NOTES

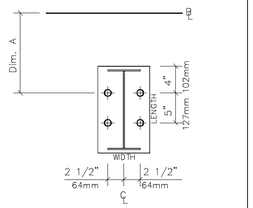
BUILDER: **MAR BUILDING SOLUTIONS LLC**
CUSTOMER:
LOCATION: **Lees Summit, Missouri**
PROJECT: **KR Wholesale**
BUILDER'S PO#: **200440709**

BUTLER®
Butler Manufacturing
VPC VERSION:

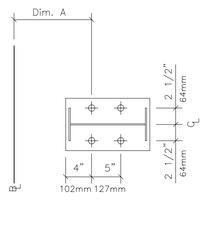
JOB #: 24-025448-01
DATE: 12.16.2024
DRAWN/CHECK: SR /
PAGE: **3a**

a division of BlueScope Buildings North America, Inc.

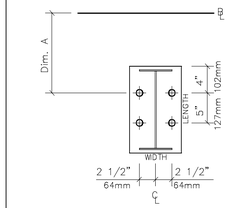
FILENAME:
SAVE DATE:
SAVE TIME:
LAST SAVED BY:



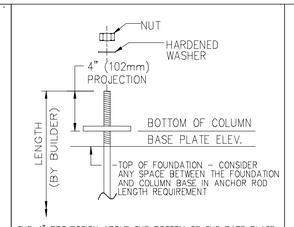
D1 (4)3/4" Dia.
Plate W=9", L=1'-1"
Dim: A=1'-0"
Elev.=100'-0"



D2 (4)3/4" Dia.
Plate W=9", L=1'-1"
Dim: A=1'-0"
Elev.=100'-0"



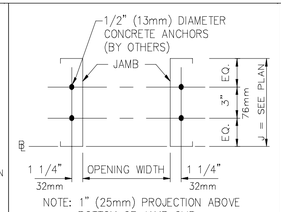
D3 (4)*1 1/4" Dia.*
Plate W=1'-1", L=1'-1"
Dim: A=1'-0"
Elev.=100'-0"



THE 4" PROJECTION ABOVE THE BOTTOM OF THE BASE PLATE IS A SUGGESTED MINIMUM TO ENSURE ADEQUATE ANCHOR ROD LENGTH. A DIFFERENT PROJECTION MAY BE REQUIRED BY THE FOUNDATION DESIGNER.

THE ANCHOR ROD PROJECTION MAY NEED TO BE CUT OFF IF THERE IS INTERFERENCE WITH OTHER PARTS.

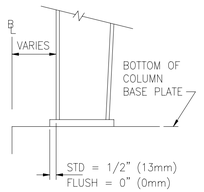
SUGGESTED ANCHOR ROD PROJECTION



NOTE: 1" (25mm) PROJECTION ABOVE BOTTOM OF JAMB CLIP
SEE PLAN FOR JAMB SIZES : J = SIZE

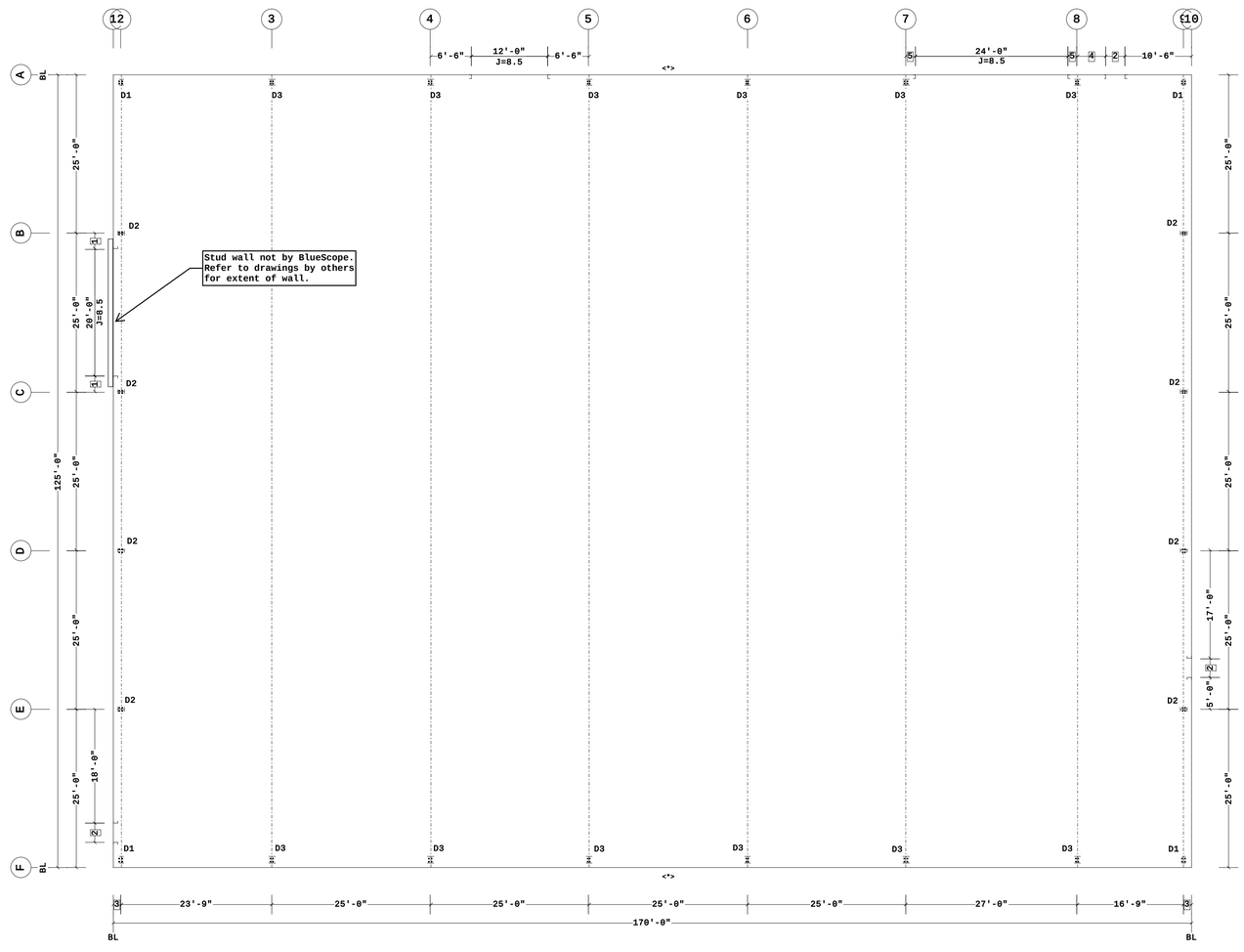
JAMB "EQ." VALUES:
7 EQ = 2" 51mm, 8.5 EQ = 2 3/4" 70mm
10 EQ = 3 1/2" 89mm, 11.5 EQ = 4 1/4" 108mm

FRAMED OPENING DETAIL



TYPICAL COLUMN BASE PLATE DETAIL

1. ANCHOR RODS, NUTS, HARDENED WASHERS AND ANY OTHER EMBEDDED ITEMS ARE TO BE FURNISHED BY CONTRACTOR.
2. ANCHOR ROD DIAMETERS WERE DETERMINED BY ALLOWABLE SHEAR AND TENSION PER AISC SPECIFICATIONS (FY=36KSI). (ASTM F1554 GRADE 36) ANCHOR ROD LENGTH, EFFECTS OF EMBEDDED ANCHOR ROD EDGE DIMENSIONS AND METHOD OF TRANSFERRING FORCES FROM ANCHOR RODS TO FOOTINGS ARE TO BE DETERMINED BY OTHERS.
3. UNLESS OTHERWISE SPECIFIED, ANCHOR RODS ARE DESIGNED AND DETAILED AS "CAST-IN-PLACE" ANCHOR RODS WITH "SNUG TIGHT" CONNECTIONS.
4. FOUNDATION MUST BE LEVEL, SQUARE AND SMOOTH. ANCHOR RODS MUST BE ACCURATELY PLACED AS SHOWN ON THIS DRAWING OR STEEL WILL NOT FIT. THE BUILDER IS RESPONSIBLE FOR ACCURATE SETTING OF ANCHOR RODS PER AISC CODE OF STANDARD PRACTICE, SEC 7.5 VARIATIONS ARE SUMMARIZED BELOW;
   a. CENTERS OF ANY TWO AR'S WITHIN A COLUMN BASE GROUP; +-1/8"
   b. CENTERS OF ADJACENT AR GROUPS; +-1/4"
   c. TOPS OF AR'S; +-1/2"
   d. ACCUMULATED DIM BETWEEN CENTERS OF AR GROUPS ALONG COLUMN LINE; +-1/4" PER 100FT., NOT TO EXCEED 1" TOTAL.
   e. DIM FROM CENTER OF ANY AR GROUP FROM COLUMN LINE; +-1/4"
5. DESIGN LOADS AND REACTIONS ARE FURNISHED IN THE REACTIONS REPORT.



ANCHOR ROD PLAN

5 1'-6"
4 4'-6"
3 1'-3"
2 3'-0" J=8.5
1 2'-6"
☐ Dimension Key

Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)

01/09/2025

FOR CONSTRUCTION

<*> THE BUILDING IS DESIGNED WITH BRACING DIAGONALS IN THE DESIGNATED BAYS. COLUMN BASE REACTIONS, BASE PLATES AND ANCHOR RODS ARE AFFECTED BY THIS BRACING AND DIAGONALS MAY NOT BE RELOCATED WITHOUT CONSULTING THE BUILDING SUPPLIERS ENGINEER.

THE BUTLER MFG. ENGINEER'S SEAL APPLIES ONLY TO THE WORK PRODUCT OF BUTLER MFG. AND DESIGN AND PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER. THE BUTLER MFG. ENGINEER'S SEAL DOES NOT APPLY TO THE PERFORMANCE OR DESIGN OF ANY OTHER PRODUCT OR COMPONENT FURNISHED BY BUTLER EXCEPT TO ANY DESIGN OR PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER.

THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN ACCORDANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING, ALL APPLICABLE BUTLER MFG. ERECTION GUIDES, AND INDUSTRY STANDARDS PERTAINING TO PROPER ERECTION, INCLUDING THE CORRECT USE OF TEMPORARY BRACING.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: Scale 1:140.0

ANCHOR ROD PLAN

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 12/13/2024
DRAWN/CHECK: SR / KEF
PAGE: 4

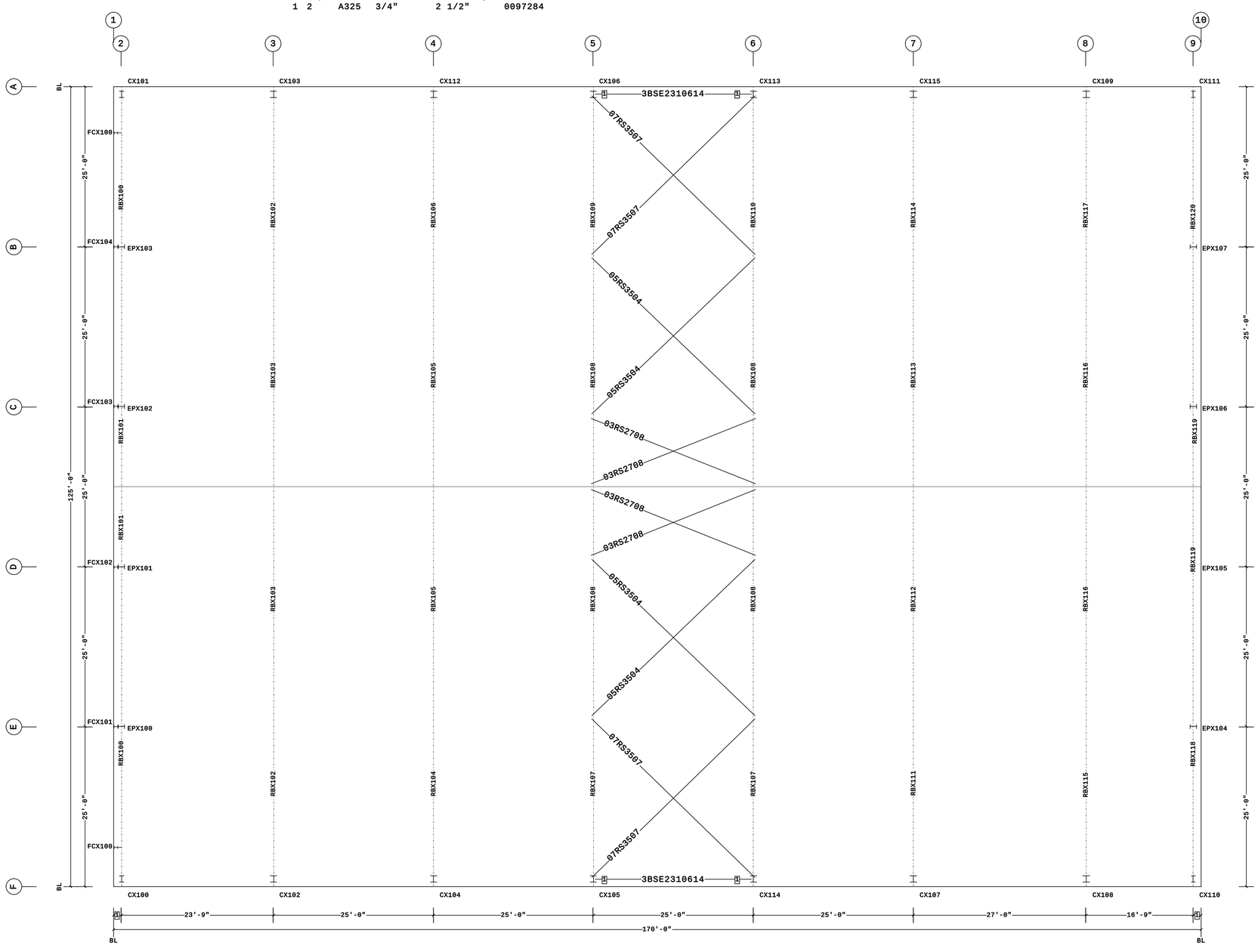
VPC FILENAME: 24-025448-01
12/12/2024 16:31:12

Bracing Part Schedule

Part	Qty	Length	Detail
03RS2708	4	27'-8"	BR01G2
05RS3504	4	35'-4"	BR01G2
07RS3507	4	35'-7"	BR01G2
3BSE2310614	2	23'-10 3/4"	BR15L1

☐ Rod, Strut, and Misc. Connection Bolts

Id	Qty	Grade	Bolt Diam.	Bolt Length	PartNo
1	2	A325	3/4"	2 1/2"	0097284



PRIMARY AND ROOF BRACING PLAN

1 1'-3"
☐ Dimension Key

Shape Name = Building - Shape 1

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER
01/09/2025

FOR CONSTRUCTION

1. USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.
2. SLOT REINFORCEMENT PLATES NEED NOT BE LOCATED ON THE SAME SIDE OF THE WEB AS THE HILLSIDE WASHER.

THE BUTLER MFG. ENGINEER'S SEAL APPLIES ONLY TO THE WORK PRODUCT OF BUTLER MFG. AND DESIGN AND PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER. THE BUTLER MFG. ENGINEER'S SEAL DOES NOT APPLY TO THE PERFORMANCE OR DESIGN OF ANY OTHER PRODUCT OR COMPONENT FURNISHED BY BUTLER EXCEPT TO ANY DESIGN OR PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER.

THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN ACCORDANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING, ALL APPLICABLE BUTLER MFG. ERECTION GUIDES, AND INDUSTRY STANDARDS PERTAINING TO PROPER ERECTION, INCLUDING THE CORRECT USE OF TEMPORARY BRACING.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

PRIMARY AND ROOF BRACING PLAN

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

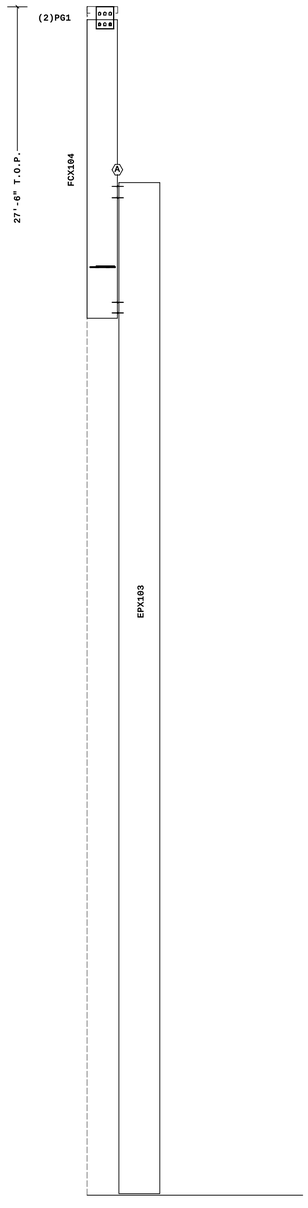
JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 5

Frame Member Schedule

Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx.Lgth	Approx.Weight
FCX104	30001	5.0000	.2500	.1345	8 1/2"	8 1/2"	6'-10 3/4"	90#

Bolt Connection & Plate Schedule

Id	Qty	Grade	Bolt Dia.	Bolt Length	Plate Thick.	Rows Out	Rows In	PartNo
A	8	A325	1/2"	1 1/2"	-	-	-	49080



ENDPOST CROSS SECTION AT [B-1]

Shape Name = Building - Shape 1 Wall 1, Frame 1

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER

01/09/2025

FOR CONSTRUCTION

1. USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.
2. SLOT REINFORCEMENT PLATES NEED NOT BE LOCATED ON THE SAME SIDE OF THE WEB AS THE HILLSIDE WASHER.

THE BUTLER MFG. ENGINEER'S SEAL APPLIES ONLY TO THE WORK PRODUCT OF BUTLER MFG. AND DESIGN AND PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER. THE BUTLER MFG. ENGINEER'S SEAL DOES NOT APPLY TO THE PERFORMANCE OR DESIGN OF ANY OTHER PRODUCT OR COMPONENT FURNISHED BY BUTLER EXCEPT TO ANY DESIGN OR PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER.

THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN ACCORDANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING, ALL APPLICABLE BUTLER MFG. ERECTION GUIDES, AND INDUSTRY STANDARDS PERTAINING TO PROPER ERECTION, INCLUDING THE CORRECT USE OF TEMPORARY BRACING.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

ENDPOST CROSS SECTION AT [B-1]

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

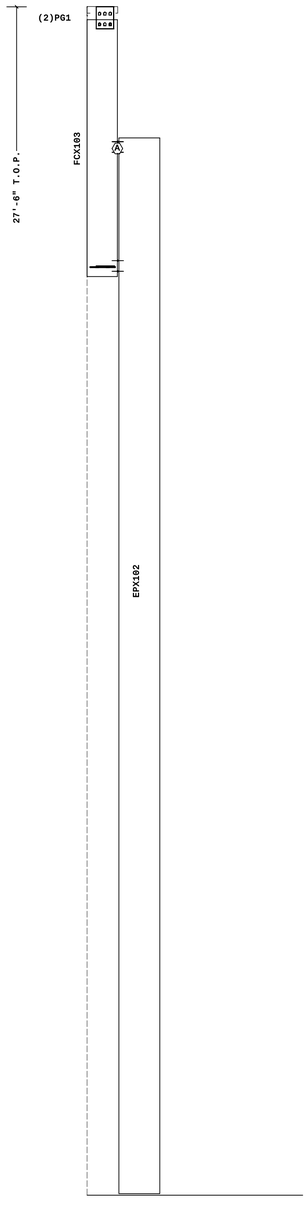
JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 6

Frame Member Schedule

Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx.Lgth	Approx.Weight
FCX103	30001	5.0000	.2500	.1345	8 1/2"	8 1/2"	5'-11 1/4"	79#

Bolt Connection & Plate Schedule

Id	Qty	Grade	Bolt Dia.	Bolt Length	Plate Thick.	Rows Out	Rows In	PartNo
A	8	A325	1/2"	1 1/2"	-	-	-	49080



ENDPOST CROSS SECTION AT [C-1]

Shape Name = Building - Shape 1 Wall 1, Frame 2

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER

01/09/2025

FOR CONSTRUCTION

1. USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.
2. SLOT REINFORCEMENT PLATES NEED NOT BE LOCATED ON THE SAME SIDE OF THE WEB AS THE HILLSIDE WASHER.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

ENDPOST CROSS SECTION AT [C-1]

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

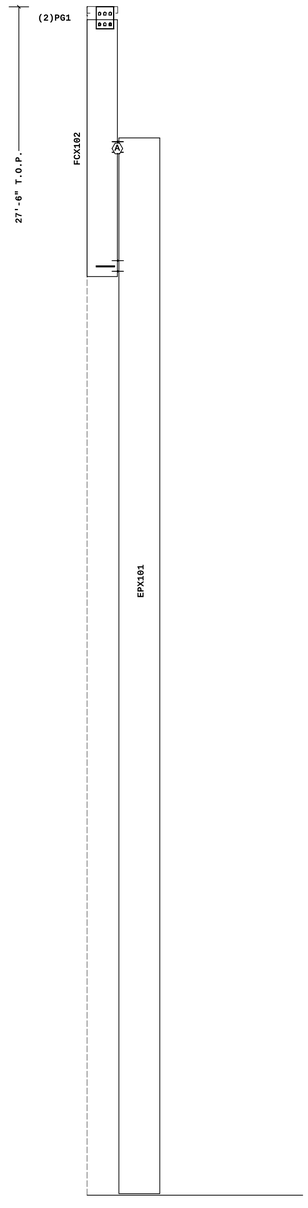
JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 7

Frame Member Schedule

Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx.Lgth	Approx.Weight
FCX102	30001	5.0000	.2500	.1345	8 1/2"	8 1/2"	5'-11 1/4"	74#

Bolt Connection & Plate Schedule

Id	Qty	Grade	Bolt Dia.	Bolt Length	Plate Thick.	Rows Out	Rows In	PartNo
A	8	A325	1/2"	1 1/2"	-	-	-	49080



ENDPOST CROSS SECTION AT [D-1]

Shape Name = Building - Shape 1 Wall 1, Frame 3

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER

01/09/2025

FOR CONSTRUCTION

1. USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.
2. SLOT REINFORCEMENT PLATES NEED NOT BE LOCATED ON THE SAME SIDE OF THE WEB AS THE HILLSIDE WASHER.

THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN ACCORDANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING, ALL APPLICABLE BUTLER MFG. ERECTION GUIDES, AND INDUSTRY STANDARDS PERTAINING TO PROPER ERECTION, INCLUDING THE CORRECT USE OF TEMPORARY BRACING.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

ENDPOST CROSS SECTION AT [D-1]

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

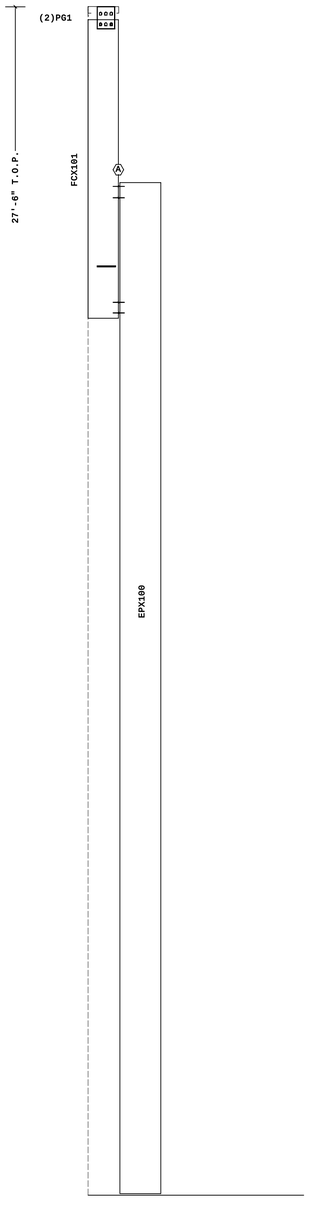
JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 8

Frame Member Schedule

Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx.Lgth	Approx.Weight
FCX101	30001	5.0000	.2500	.1345	8 1/2"	8 1/2"	6'-10 3/4"	86#

Bolt Connection & Plate Schedule

Id	Qty	Grade	Bolt Dia.	Bolt Length	Plate Thick.	Rows Out	Rows In	PartNo
A	8	A325	1/2"	1 1/2"	-	-	-	49080



ENDPOST CROSS SECTION AT [E-1]

Shape Name = Building - Shape 1 Wall 1, Frame 4

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER

01/09/2025

FOR CONSTRUCTION

1. USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.
2. SLOT REINFORCEMENT PLATES NEED NOT BE LOCATED ON THE SAME SIDE OF THE WEB AS THE HILLSIDE WASHER.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

ENDPOST CROSS SECTION AT [E-1]

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 9

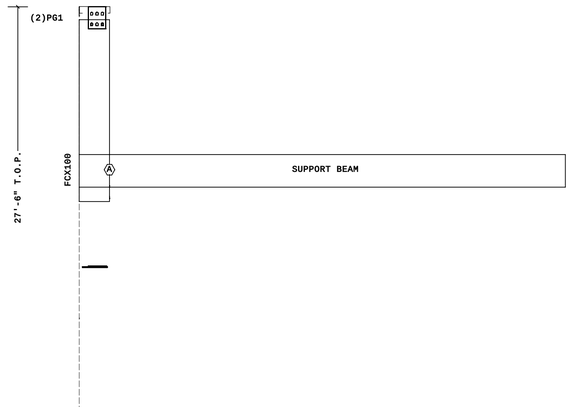
Frame Member Schedule

Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx.Lgth	Approx.Weight
FCX100	30001	6.0000	.2500	.1345	8 1/2"	8 1/2"	4'-2 5/16"	90#

ERECTION NOTE:
For parapet post and support beam locations refere to the Roof Secondary Plan. Support beam information is shown in the Roof Secondary Plan.

Bolt Connection & Plate Schedule

Id	Qty	Grade	Bolt Dia.	Bolt Length	Plate Thick.	Rows Out	Rows In	PartNo
A	4	A325	3/4"	2 1/2"	5/8"	1	1	0097284



ENDPOST CROSS SECTION ON SUPPORT BEAM (SBX)
BETWEEN A-B & E-F

Shape Name = Building - Shape 1 Wall 1, Frame 1

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER

01/09/2025

FOR CONSTRUCTION

1. USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.
2. SLOT REINFORCEMENT PLATES NEED NOT BE LOCATED ON THE SAME SIDE OF THE WEB AS THE HILLSIDE WASHER.

THE BUTLER MFG. ENGINEER'S SEAL APPLIES ONLY TO THE WORK PRODUCT OF BUTLER MFG. AND DESIGN AND PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER. THE BUTLER MFG. ENGINEER'S SEAL DOES NOT APPLY TO THE PERFORMANCE OR DESIGN OF ANY OTHER PRODUCT OR COMPONENT FURNISHED BY BUTLER EXCEPT TO ANY DESIGN OR PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER.

THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN ACCORDANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING, ALL APPLICABLE BUTLER MFG. ERECTION GUIDES, AND INDUSTRY STANDARDS PERTAINING TO PROPER ERECTION, INCLUDING THE CORRECT USE OF TEMPORARY BRACING.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

ENDPOST CROSS SECTION ON SBX

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 10

Frame Member Schedule

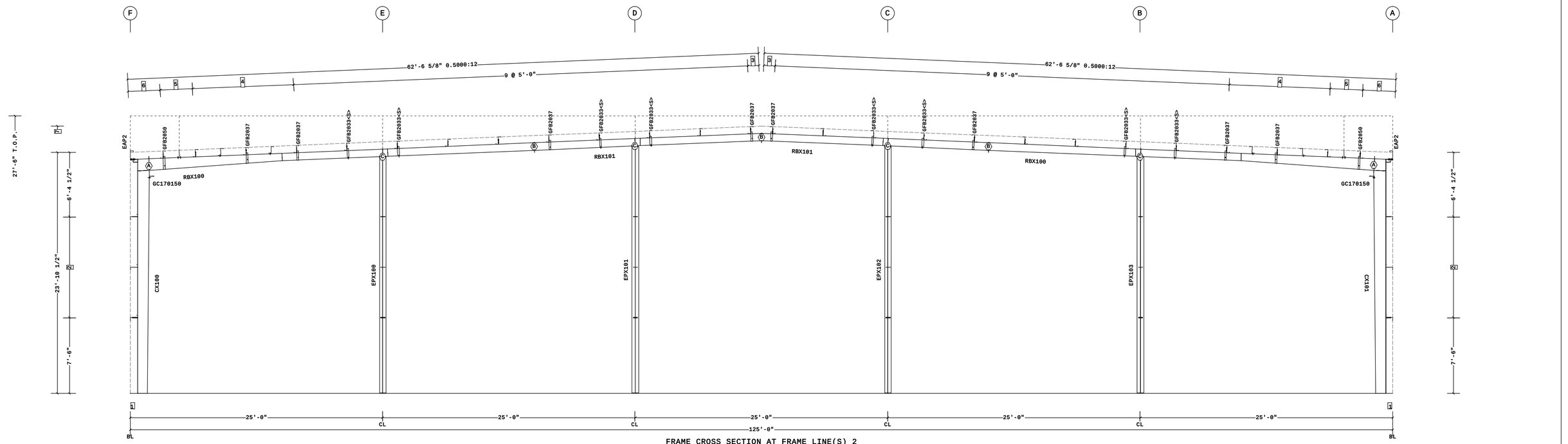
Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx.Lgth	Approx.Weight	Detail
CX100	1	8.0000	.2500	.1345	1'-0"	1'-2"	23'-2 7/8"	491#	
RBX100	2	5.0000	.2500	.1345	1'-2"	9"	38'-2 1/4"	518#	
	3	5.0000	.2500	.1345	9"	9"			
	4	5.0000	.2500	.1345	9"	9"			
RBX101	5-6	5.0000	.2500	.1345	9"	9"	22'-6 5/16"	301#	
RBX101	7-8	5.0000	.2500	.1345	9"	9"	22'-6 5/16"	301#	
RBX100	9	5.0000	.2500	.1345	9"	9"	38'-2 1/4"	518#	
	10	5.0000	.2500	.1345	9"	9"			
	11	5.0000	.2500	.1345	1'-2"	9"			
CX101	12	8.0000	.2500	.1345	1'-0"	1'-2"	23'-2 7/8"	491#	
EPX100	13	8.0000	.2500	.1345	1'-0"	1'-0"	23'-5 5/8"	470#	BR25CA
EPX101	14	8.0000	.2500	.1345	1'-0"	1'-0"	24'-6 1/8"	489#	BR25CA
EPX102	15	8.0000	.2500	.1345	1'-0"	1'-0"	24'-6 1/8"	489#	BR25CA
EPX103	16	8.0000	.2500	.1345	1'-0"	1'-0"	23'-5 5/8"	470#	BR25CA

Bolt Connection & Plate Schedule

Id	Qty	Grade	Bolt Dia.	Bolt Length	Plate Thick.	Rows Out	Rows In	PartNo
A	10	A325	3/4"	2 1/2"	3/8"	3	2	0097284
B	6	A325	3/4"	2 1/2"	3/8"	1	2	0097284
C	4	A325	1/2"	1 1/2"	3/8"	1	1	49080

<S> - (2) Washers (095872) req'd at Flange Brace to Secondary.

Frame Clearances
Horiz. Clearance between members 1(CX100) and 12(CX101): 121'-2 13/16"
Vert. Clearance at member 1(CX100): 21'-10 7/16"
Vert. Clearance at member 12(CX101): 21'-10 7/16"
Vert. Clearance at member 13(EPX100): 23'-5 1/2"
Vert. Clearance at member 14(EPX101): 24'-6"
Vert. Clearance at member 15(EPX102): 24'-6"
Vert. Clearance at member 16(EPX103): 23'-5 1/2"
Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



FRAME CROSS SECTION AT FRAME LINE(S) 2

7 26'-5 3/4" Ridge Ht.
6 3'-2 5/8"
5 2 @ 1'-7 5/16"
4 4 @ 2'-6"
3 1'-1 3/8"
2 2 @ 5'-0"
1 8 1/2"
Dimension Key

Shape Name = Building - Shape 1 Wall 4, Frame 1

01/09/2025

FOR CONSTRUCTION

1. USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.
2. SLOT REINFORCEMENT PLATES NEED NOT BE LOCATED ON THE SAME SIDE OF THE WEB AS THE HILLSIDE WASHER.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

FRAME CROSS SECTION AT FRAME LINE(S) 2

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

BUTLER
Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 11

Frame Member Schedule

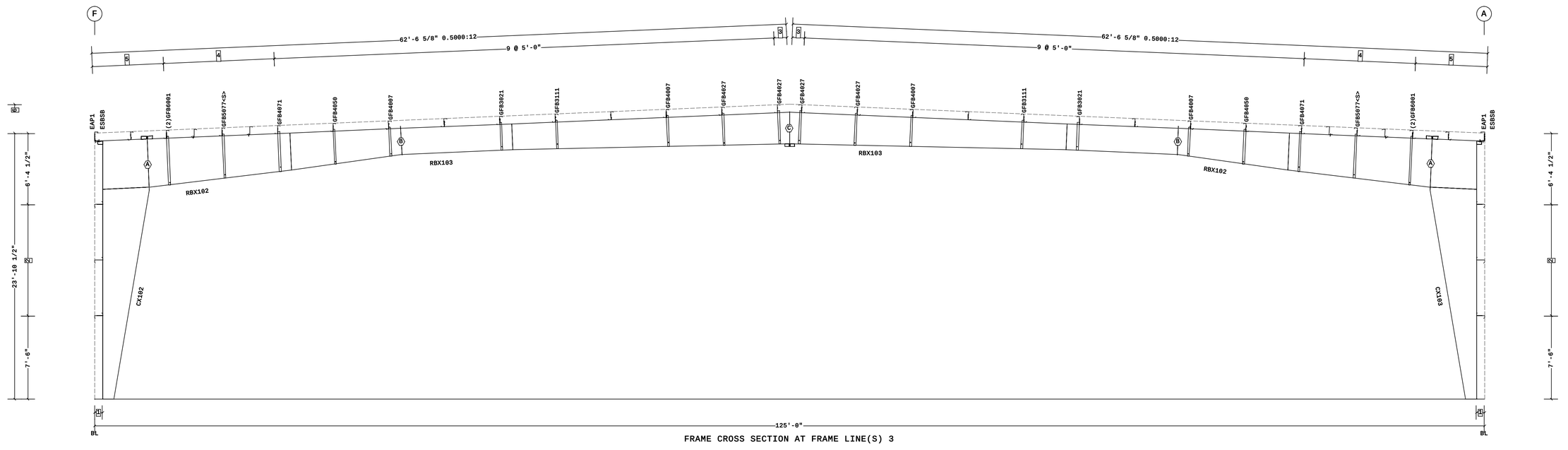
Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx.Lgth	Approx.Weight
CX102	1	12.0000	.5000	.2500	1'-0"	4'-2"	23'-4 5/16"	1856#
RBX102	2	6.0000	.6250	.3125	4'-4"	3'-4"	22'-10 3/16"	1445#
	3	6.0000	.5000	.1875	3'-4"	2'-4"		
RBX103	4	6.0000	.3750	.1644	2'-4"	2'-4"	35'-0"	1479#
	5	6.0000	.6250	.1875	2'-4"	2'-10"		
RBX103	6	6.0000	.6250	.1875	2'-4"	2'-10"	35'-0"	1479#
	7	6.0000	.3750	.1644	2'-4"	2'-4"		
RBX102	8	6.0000	.5000	.1875	3'-4"	2'-4"	22'-10 3/16"	1445#
	9	6.0000	.6250	.3125	4'-4"	3'-4"		
CX103	10	12.0000	.5000	.2500	1'-0"	4'-2"	23'-4 5/16"	1856#

Bolt Connection & Plate Schedule

Id	Qty	Grade	Bolt Dia.	Bolt Length	Plate Thick.	Rows Out	Rows In	PartNo
A	12	A325	1"	3 1/2"	5/8"	4	2	0097288
B	8	A325	3/4"	2 1/2"	1/2"	2	2	0097284
C	12	A325	3/4"	2 1/2"	1/2"	2	4	0097284

<S> - (2) Washers (095872) req'd at Flange Brace to Secondary.

Frame Clearances
Horiz. Clearance between members 1(CX102) and 10(CX103): 115'-2 3/4"
Vert. Clearance at member 1(CX102): 18'-9 1/4"
Vert. Clearance at member 10(CX103): 18'-9 1/4"
Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



FRAME CROSS SECTION AT FRAME LINE(S) 3

6 26'-5 3/4" Ridge Ht.
5 2 @ 3'-2 5/8"
4 4 @ 2'-6"
3 1'-1 3/8"
2 2 @ 5'-0"
1 8 1/2"
Dimension Key

Shape Name = Building - Shape 1 Wall 4, Frame 2

01/09/2025

FOR CONSTRUCTION

1. USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.
2. SLOT REINFORCEMENT PLATES NEED NOT BE LOCATED ON THE SAME SIDE OF THE WEB AS THE HILLSIDE WASHER.

THE BUTLER MFG. ENGINEER'S SEAL APPLIES ONLY TO THE WORK PRODUCT OF BUTLER MFG. AND DESIGN AND PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER. THE BUTLER MFG. ENGINEER'S SEAL DOES NOT APPLY TO THE PERFORMANCE OR DESIGN OF ANY OTHER PRODUCT OR COMPONENT FURNISHED BY BUTLER EXCEPT TO ANY DESIGN OR PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER.

THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN ACCORDANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING, ALL APPLICABLE BUTLER MFG. ERECTION GUIDES, AND INDUSTRY STANDARDS PERTAINING TO PROPER ERECTION, INCLUDING THE CORRECT USE OF TEMPORARY BRACING.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

FRAME CROSS SECTION AT FRAME LINE(S) 3

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 12

VPC FILENAME: 24-025448-01

12/18/2024 11:08:31

Frame Member Schedule

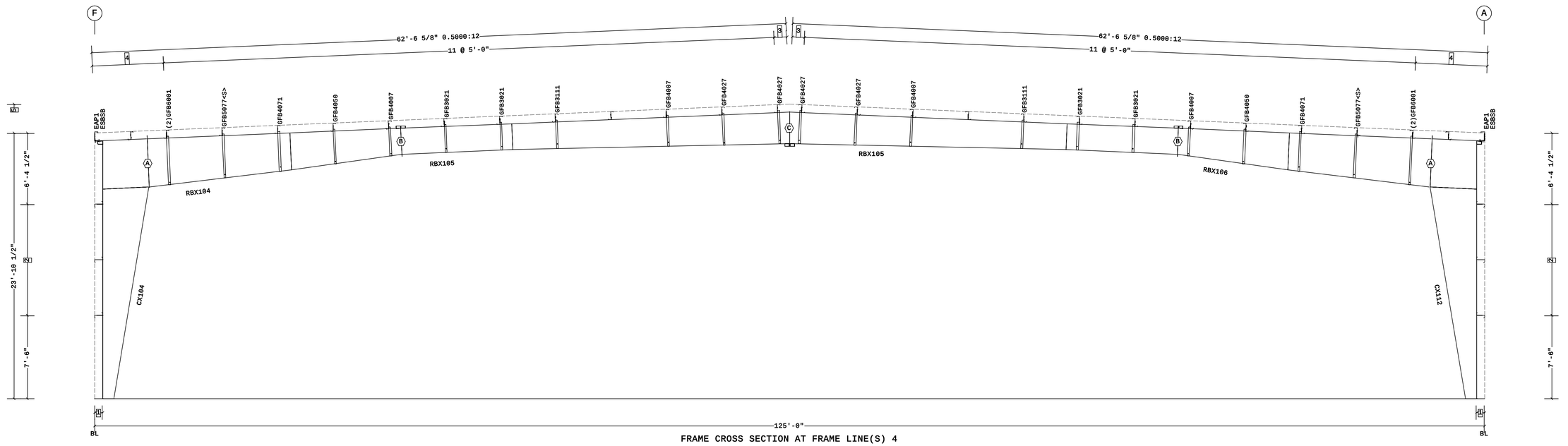
Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx.Lgth	Approx.Weight
CX104	1	12.0000	.5000	.2500	1'-0"	4'-2"	23'-4 5/16"	1873#
RBX104	2	6.0000	.6250	.3125	4'-4"	3'-4"	22'-10 1/16"	1471#
	3	6.0000	.5000	.1875	3'-4"	2'-4"		
RBX105	4	6.0000	.3750	.1644	2'-4"	2'-4"	35'-0"	1475#
	5	6.0000	.6250	.1875	2'-4"	2'-10"		
RBX105	6	6.0000	.6250	.1875	2'-4"	2'-10"	35'-0"	1475#
	7	6.0000	.3750	.1644	2'-4"	2'-4"		
RBX106	8	6.0000	.5000	.1875	3'-4"	2'-4"	22'-10 1/16"	1471#
	9	6.0000	.6250	.3125	4'-4"	3'-4"		
CX112	10	12.0000	.5000	.2500	1'-0"	4'-2"	23'-4 5/16"	1873#

Bolt Connection & Plate Schedule

Id	Qty	Grade	Bolt Dia.	Bolt Length	Plate Thick.	Rows Out	Rows In	PartNo
A	10	A325	1 1/8"	4"	3/4"	4	1	0097289
B	12	A325	3/4"	2 1/2"	3/8"	4	2	0097284
C	12	A325	3/4"	2 1/2"	1/2"	2	4	0097284

<S> - (2) Washers (095872) req'd at Flange Brace to Secondary.

Frame Clearances
Horiz. Clearance between members 1(CX104) and 10(CX112): 115'-2 15/16"
Vert. Clearance at member 1(CX104): 18'-11 7/8"
Vert. Clearance at member 10(CX112): 18'-11 7/8"
Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



FRAME CROSS SECTION AT FRAME LINE(S) 4

5 26'-5 3/4" Ridge Ht.
4 2 @ 3'-2 5/8"
3 1'-1 3/8"
2 2 @ 5'-0"
1 8 1/2"
Dimension Key

Shape Name = Building - Shape 1 Wall 4, Frame 3

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER
01/09/2025

FOR CONSTRUCTION

1. USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.
2. SLOT REINFORCEMENT PLATES NEED NOT BE LOCATED ON THE SAME SIDE OF THE WEB AS THE HILLSIDE WASHER.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

FRAME CROSS SECTION AT FRAME LINE(S) 4

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 13

Frame Member Schedule

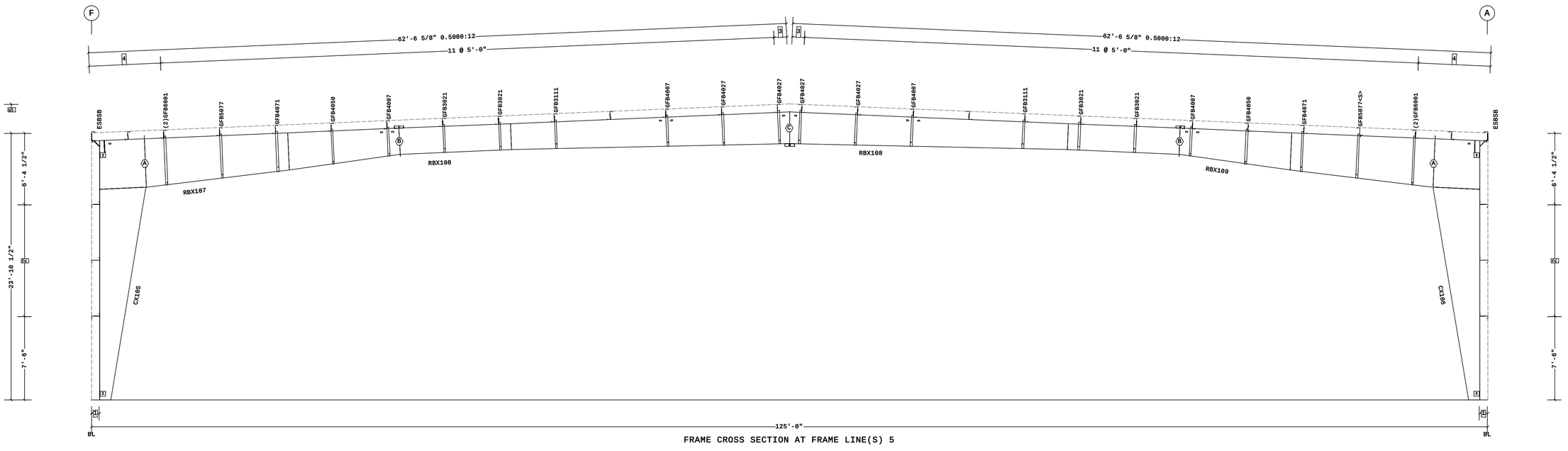
Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx.Lgth	Approx.Weight
CX105	1	12.0000	.5000	.2500	1'-0"	4'-2"	23'-4 5/16"	1881#
RBX107	2	6.0000	.6250	.3125	4'-4"	3'-4"	22'-10 1/16"	1471#
	3	6.0000	.5000	.1875	3'-4"	2'-4"		
RBX108	4	6.0000	.3750	.1644	2'-4"	2'-4"	35'-0"	1475#
	5	6.0000	.6250	.1875	2'-4"	2'-10"		
RBX108	6	6.0000	.6250	.1875	2'-4"	2'-10"	35'-0"	1475#
	7	6.0000	.3750	.1644	2'-4"	2'-4"		
RBX109	8	6.0000	.5000	.1875	3'-4"	2'-4"	22'-10 1/16"	1470#
	9	6.0000	.6250	.3125	4'-4"	3'-4"		
CX106	10	12.0000	.5000	.2500	1'-0"	4'-2"	23'-4 5/16"	1881#

Bolt Connection & Plate Schedule

Id	Qty	Grade	Bolt Dia.	Bolt Length	Plate Thick.	Rows Out	Rows In	PartNo
A	10	A325	1 1/8"	4"	3/4"	4	1	0097289
B	12	A325	3/4"	2 1/2"	3/8"	4	2	0097284
C	12	A325	3/4"	2 1/2"	1/2"	2	4	0097284

<S> - (2) Washers (095872) req'd at Flange Brace to Secondary.

Frame Clearances
Horiz. Clearance between members 1(CX105) and 10(CX106): 115'-2 15/16"
Vert. Clearance at member 1(CX105): 18'-11 7/8"
Vert. Clearance at member 10(CX106): 18'-11 7/8"
Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



FRAME CROSS SECTION AT FRAME LINE(S) 5

5 26'-5 3/4" Ridge Ht.
4 2 @ 3'-2 5/8"
3 1'-1 3/8"
2 2 @ 5'-0"
1 8 1/2"
Dimension Key

Shape Name = Building - Shape 1 Wall 4, Frame 4

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER
01/09/2025

FOR CONSTRUCTION

1. USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.
2. SLOT REINFORCEMENT PLATES NEED NOT BE LOCATED ON THE SAME SIDE OF THE WEB AS THE HILLSIDE WASHER.

THE BUTLER MFG. ENGINEER'S SEAL APPLIES ONLY TO THE WORK PRODUCT OF BUTLER MFG. AND DESIGN AND PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER. THE BUTLER MFG. ENGINEER'S SEAL DOES NOT APPLY TO THE PERFORMANCE OR DESIGN OF ANY OTHER PRODUCT OR COMPONENT FURNISHED BY BUTLER EXCEPT TO ANY DESIGN OR PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER.

THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN ACCORDANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING, ALL APPLICABLE BUTLER MFG. ERECTION GUIDES, AND INDUSTRY STANDARDS PERTAINING TO PROPER ERECTION, INCLUDING THE CORRECT USE OF TEMPORARY BRACING.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

FRAME CROSS SECTION AT FRAME LINE(S) 5

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 14

a division of BlueScope Buildings North America, Inc.

VPC FILENAME: 24-025448-01
12/18/2024 11:08:34

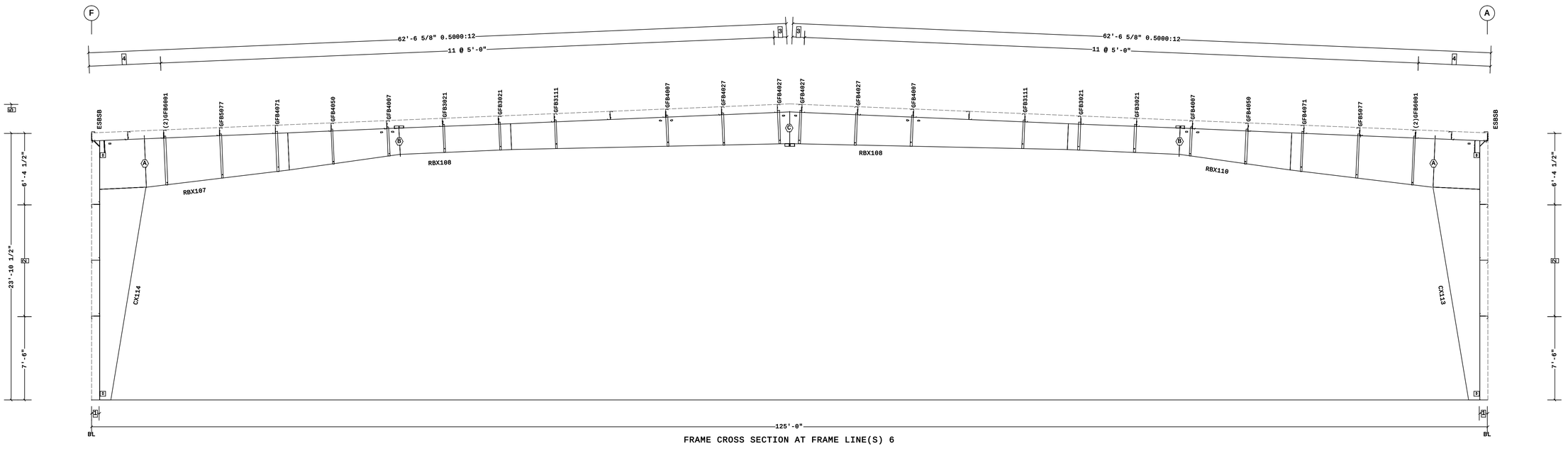
Frame Member Schedule

Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx.Lgth	Approx.Weight
CX114	1	12.0000	.5000	.2500	1'-0"	4'-2"	23'-4 5/16"	1881#
RBX107	2	6.0000	.6250	.3125	4'-4"	3'-4"	22'-10 1/16"	1471#
	3	6.0000	.5000	.1875	3'-4"	2'-4"		
RBX108	4	6.0000	.3750	.1644	2'-4"	2'-4"	35'-0"	1475#
	5	6.0000	.6250	.1875	2'-4"	2'-10"		
RBX108	6	6.0000	.6250	.1875	2'-4"	2'-10"	35'-0"	1475#
	7	6.0000	.3750	.1644	2'-4"	2'-4"		
RBX110	8	6.0000	.5000	.1875	3'-4"	2'-4"	22'-10 1/16"	1471#
	9	6.0000	.6250	.3125	4'-4"	3'-4"		
CX113	10	12.0000	.5000	.2500	1'-0"	4'-2"	23'-4 5/16"	1881#

Bolt Connection & Plate Schedule

Id	Qty	Grade	Bolt Dia.	Bolt Length	Plate Thick.	Rows Out	Rows In	PartNo
A	10	A325	1 1/8"	4"	3/4"	4	1	0097289
B	12	A325	3/4"	2 1/2"	3/8"	4	2	0097284
C	12	A325	3/4"	2 1/2"	1/2"	2	4	0097284

Frame Clearances
Horiz. Clearance between members 1(CX114) and 10(CX113): 115'-2 15/16"
Vert. Clearance at member 1(CX114): 18'-11 7/8"
Vert. Clearance at member 10(CX113): 18'-11 7/8"
Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



FRAME CROSS SECTION AT FRAME LINE(S) 6

5 26'-5 3/4" Ridge Ht.
4 2 @ 3'-2 5/8"
3 1'-1 3/8"
2 2 @ 5'-0"
1 8 1/2"
Dimension Key

Shape Name = Building - Shape 1 Wall 4, Frame 5

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER
01/09/2025

FOR CONSTRUCTION

1. USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.
2. SLOT REINFORCEMENT PLATES NEED NOT BE LOCATED ON THE SAME SIDE OF THE WEB AS THE HILLSIDE WASHER.

THE BUTLER MFG. ENGINEER'S SEAL APPLIES ONLY TO THE WORK PRODUCT OF BUTLER MFG. AND DESIGN AND PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER. THE BUTLER MFG. ENGINEER'S SEAL DOES NOT APPLY TO THE PERFORMANCE OR DESIGN OF ANY OTHER PRODUCT OR COMPONENT FURNISHED BY BUTLER EXCEPT TO ANY DESIGN OR PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER.

THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN ACCORDANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING, ALL APPLICABLE BUTLER MFG. ERECTION GUIDES, AND INDUSTRY STANDARDS PERTAINING TO PROPER ERECTION, INCLUDING THE CORRECT USE OF TEMPORARY BRACING.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

FRAME CROSS SECTION AT FRAME LINE(S) 6

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

BUTLER
Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 15

VPC FILENAME: 24-025448-01
12/18/2024 11:08:36
a division of BlueScope Buildings North America, Inc.

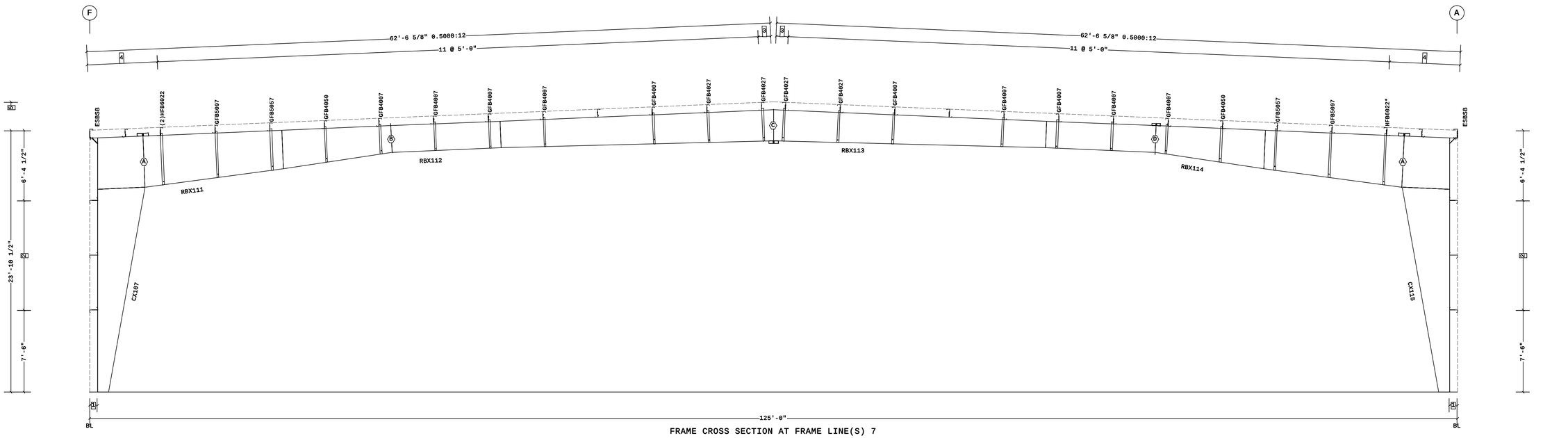
Frame Member Schedule

Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx.Lgth	Approx.Weight
CX107	1	12.0000	.5000	.2500	1'-0"	4'-4"	23'-4 3/8"	1888#
RBX111	2	6.0000	.6250	.3125	4'-8"	3'-6"	22'-8 5/16"	1486#
	3	6.0000	.5000	.1875	3'-6"	2'-5"		
RBX112	4	6.0000	.3750	.1644	2'-5"	2'-5"	35'-0"	1494#
	5	6.0000	.6250	.1875	2'-5"	2'-10"		
RBX113	6	6.0000	.6250	.1875	2'-5"	2'-10"	35'-0"	1489#
	7	6.0000	.3750	.1644	2'-5"	2'-5"		
RBX114	8	6.0000	.5000	.1875	3'-6"	2'-5"	22'-8 5/16"	1482#
	9	6.0000	.6250	.3125	4'-8"	3'-6"		
CX115	10	12.0000	.5000	.2500	1'-0"	4'-4"	23'-4 3/8"	1888#

Bolt Connection & Plate Schedule

Id	Qty	Grade	Bolt Dia.	Bolt Length	Plate Thick.	Rows Out	Rows In	PartNo
A	12	A325	1"	3 1/2"	5/8"	4	2	0097288
B	8	A325	3/4"	2 1/2"	1/2"	2	2	0097284
C	12	A325	3/4"	2 1/2"	1/2"	2	4	0097284
D	12	A325	3/4"	2 1/2"	3/8"	4	2	0097284

Frame Clearances
Horiz. Clearance between members 1(CX107) and 10(CX115): 114'-10 15/16"
Vert. Clearance at member 1(CX107): 18'-7 15/16"
Vert. Clearance at member 10(CX115): 18'-7 15/16"
Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



FRAME CROSS SECTION AT FRAME LINE(S) 7
GFB or HFB market with * must be installed at the opposite side of the frame.

5 26'-5 3/4" Ridge Ht.
4 2 @ 3'-2 5/8"
3 1'-1 3/8"
2 2 @ 5'-0"
1 8 1/2"
Dimension Key

KEITH ERICK FIX
NUMBER PE-2012033379
STATE OF MISSOURI
PROFESSIONAL ENGINEER

01/09/2025

FOR CONSTRUCTION

1. USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.
2. SLOT REINFORCEMENT PLATES NEED NOT BE LOCATED ON THE SAME SIDE OF THE WEB AS THE HILLSIDE WASHER.

THE BUTLER MFG. ENGINEER'S SEAL APPLIES ONLY TO THE WORK PRODUCT OF BUTLER MFG. AND DESIGN AND PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER. THE BUTLER MFG. ENGINEER'S SEAL DOES NOT APPLY TO THE PERFORMANCE OR DESIGN OF ANY OTHER PRODUCT OR COMPONENT FURNISHED BY BUTLER EXCEPT TO ANY DESIGN OR PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER.

THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN ACCORDANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING, ALL APPLICABLE BUTLER MFG. ERECTION GUIDES, AND INDUSTRY STANDARDS PERTAINING TO PROPER ERECTION, INCLUDING THE CORRECT USE OF TEMPORARY BRACING.

Shape Name = Building - Shape 1 Wall 4, Frame 6

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

FRAME CROSS SECTION AT FRAME LINE(S) 7

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 16

VPC FILENAME: 24-025448-01
12/18/2024 11:08:37
a division of BlueScope Buildings North America, Inc.

Frame Member Schedule

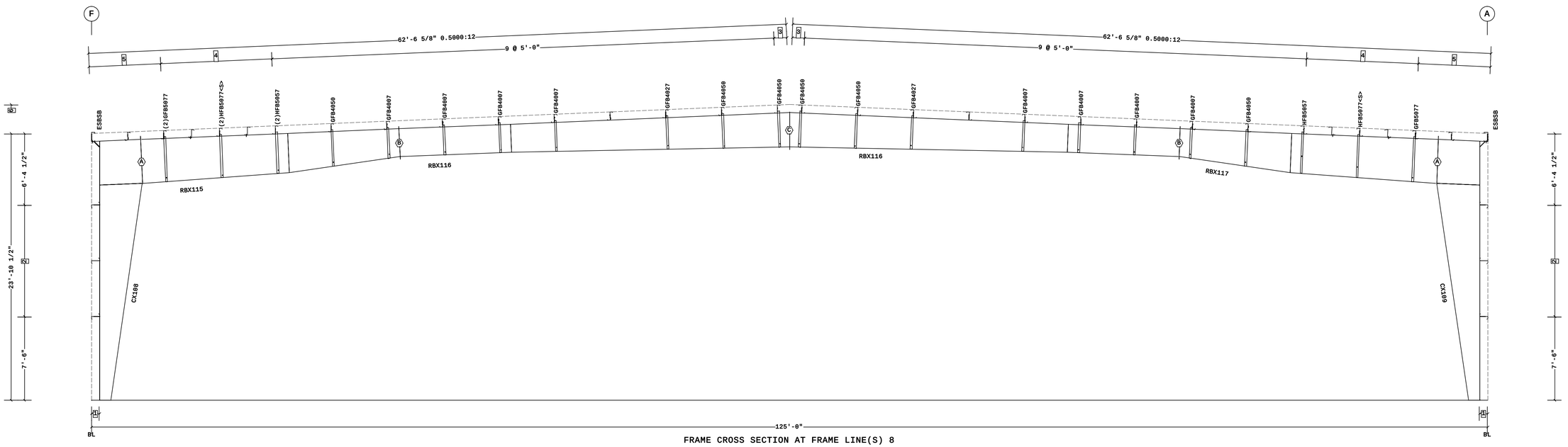
Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx.Lgth	Approx.Weight
CX108	1	12.0000	.5000	.3125	1'-0"	3'-10"	23'-4 1/8"	1955#
RBX115	2	6.0000	.6250	.3125	3'-11"	3'-6"	23'-1 7/8"	1429#
	3	6.0000	.3750	.1875	3'-6"	2'-6"		
RBX116	4	6.0000	.3125	.1644	2'-6"	2'-6"	35'-0"	1380#
	5	6.0000	.5000	.1875	2'-6"	3'-1"		
RBX116	6	6.0000	.5000	.1875	2'-6"	3'-1"	35'-0"	1380#
	7	6.0000	.3125	.1644	2'-6"	2'-6"		
RBX117	8	6.0000	.3750	.1875	3'-6"	2'-6"	23'-1 7/8"	1429#
	9	6.0000	.6250	.3125	3'-11"	3'-6"		
CX109	10	12.0000	.5000	.3125	1'-0"	3'-10"	23'-4 1/8"	1955#

Bolt Connection & Plate Schedule

Id	Qty	Grade	Bolt Dia.	Bolt Length	Plate Thick.	Rows Out	Rows In	PartNo
A	12	A325	1 1/8"	4"	3/4"	4	2	0097289
B	10	A325	3/4"	2 1/2"	3/8"	3	2	0097284
C	12	A325	3/4"	2 1/2"	1/2"	2	4	0097284

<S> - (2) Washers (095872) req'd at Flange Brace to Secondary.

Frame Clearances
Horiz. Clearance between members 1(CX108) and 10(CX109): 115'-10 15/16"
Vert. Clearance at member 1(CX108): 19'-4 3/4"
Vert. Clearance at member 10(CX109): 19'-4 3/4"
Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



FRAME CROSS SECTION AT FRAME LINE(S) 8

6 26'-5 3/4" Ridge Ht.
5 2 @ 3'-2 5/8"
4 4 @ 2'-6"
3 1'-1 3/8"
2 2 @ 5'-0"
1 8 1/2"
Dimension Key

Shape Name = Building - Shape 1 Wall 4, Frame 7

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER
01/09/2025

FOR CONSTRUCTION

1. USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.
2. SLOT REINFORCEMENT PLATES NEED NOT BE LOCATED ON THE SAME SIDE OF THE WEB AS THE HILLSIDE WASHER.

THE BUTLER MFG. ENGINEER'S SEAL APPLIES ONLY TO THE WORK PRODUCT OF BUTLER MFG. AND DESIGN AND PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER. THE BUTLER MFG. ENGINEER'S SEAL DOES NOT APPLY TO THE PERFORMANCE OR DESIGN OF ANY OTHER PRODUCT OR COMPONENT FURNISHED BY BUTLER EXCEPT TO ANY DESIGN OR PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER.

THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN ACCORDANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING, ALL APPLICABLE BUTLER MFG. ERECTION GUIDES, AND INDUSTRY STANDARDS PERTAINING TO PROPER ERECTION, INCLUDING THE CORRECT USE OF TEMPORARY BRACING.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

FRAME CROSS SECTION AT FRAME LINE(S) 8

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

BUTLER
Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 17

VPC FILENAME: 24-025448-01
12/18/2024 11:08:39
a division of BlueScope Buildings North America, Inc.

Frame Member Schedule

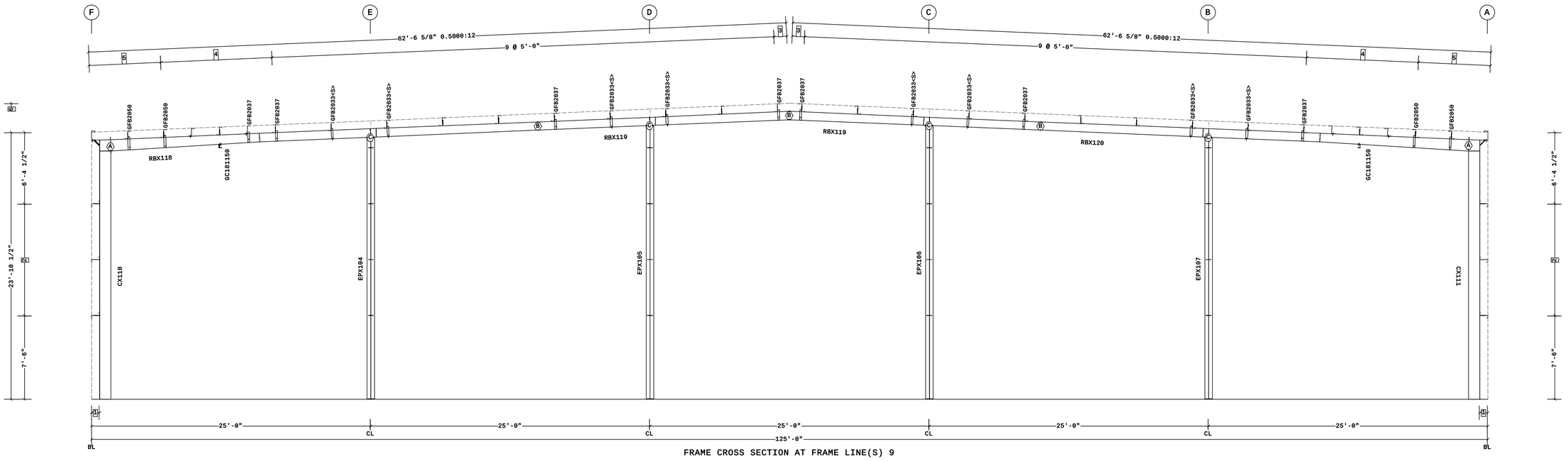
Part	Mem	Width	Thick	WebThk.	Depth1	Depth2	Approx.Lgth	Approx.Weight	Detail
CX110	1	8.0000	.2500	.1345	1'-0"	1'-0"	23'-2 13/16"	478#	
RBX118	2	5.0000	.1875	.1345	1'-0"	9"	38'-4 1/16"	433#	
	3	5.0000	.1875	.1345	9"	9"			
	4	5.0000	.1875	.1345	9"	9"			
RBX119	5-6	5.0000	.1875	.1345	9"	9"	22'-6 7/16"	252#	
RBX119	7-8	5.0000	.1875	.1345	9"	9"	22'-6 7/16"	252#	
RBX120	9	5.0000	.1875	.1345	9"	9"	38'-4 1/16"	433#	
	10	5.0000	.1875	.1345	9"	9"			
	11	5.0000	.1875	.1345	1'-0"	9"			
CX111	12	8.0000	.2500	.1345	1'-0"	1'-0"	23'-2 13/16"	478#	
EPX104	13	8.0000	.2500	.1345	1'-0"	1'-0"	23'-5 5/8"	471#	BR25CA
EPX105	14	8.0000	.2500	.1345	1'-0"	1'-0"	24'-6 1/8"	491#	BR25CA
EPX106	15	8.0000	.2500	.1345	1'-0"	1'-0"	24'-6 1/8"	491#	BR25CA
EPX107	16	8.0000	.2500	.1345	1'-0"	1'-0"	23'-5 5/8"	471#	BR25CA

Bolt Connection & Plate Schedule

Id	Qty	Grade	Bolt Dia.	Bolt Length	Plate Thick.	Rows Out	Rows In	PartNo
A	10	A325	3/4"	2 1/2"	3/8"	3	2	0097284
B	4	A325	3/4"	2 1/2"	3/8"	1	1	0097284
C	4	A325	1/2"	1 1/2"	3/8"	1	1	49080

<S> - (2) Washers (095872) req'd at Flange Brace to Secondary.

Frame Clearances
Horiz. Clearance between members 1(CX110) and 12(CX111): 121'-6 13/16"
Vert. Clearance at member 1(CX110): 22'-0 5/16"
Vert. Clearance at member 12(CX111): 22'-0 5/16"
Vert. Clearance at member 13(EPX104): 23'-5 1/2"
Vert. Clearance at member 14(EPX105): 24'-6"
Vert. Clearance at member 15(EPX106): 24'-6"
Vert. Clearance at member 16(EPX107): 23'-5 1/2"
Finished Floor Elevation = 100'-0" (Unless Noted Otherwise)



FRAME CROSS SECTION AT FRAME LINE(S) 9

6 26'-5 3/4" Ridge Ht.
5 2 @ 3'-2 5/8"
4 4 @ 2'-6"
3 1'-1 3/8"
2 2 @ 5'-0"
1 8 1/2"
Dimension Key

Shape Name = Building - Shape 1 Wall 4, Frame 8

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER
01/09/2025

FOR CONSTRUCTION

1. USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.
2. SLOT REINFORCEMENT PLATES NEED NOT BE LOCATED ON THE SAME SIDE OF THE WEB AS THE HILLSIDE WASHER.

THE BUTLER MFG. ENGINEER'S SEAL APPLIES ONLY TO THE WORK PRODUCT OF BUTLER MFG. AND DESIGN AND PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER. THE BUTLER MFG. ENGINEER'S SEAL DOES NOT APPLY TO THE PERFORMANCE OR DESIGN OF ANY OTHER PRODUCT OR COMPONENT FURNISHED BY BUTLER EXCEPT TO ANY DESIGN OR PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER.

THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN ACCORDANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING, ALL APPLICABLE BUTLER MFG. ERECTION GUIDES, AND INDUSTRY STANDARDS PERTAINING TO PROPER ERECTION, INCLUDING THE CORRECT USE OF TEMPORARY BRACING.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

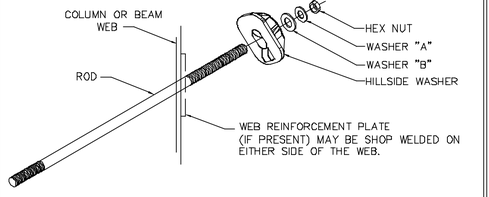
FRAME CROSS SECTION AT FRAME LINE(S) 9

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

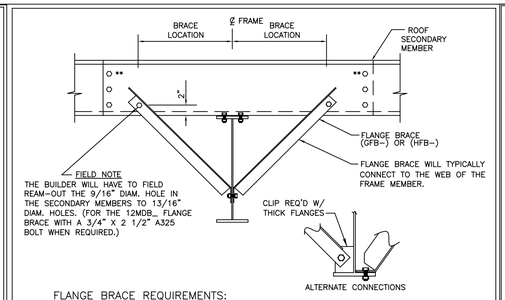
JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 18

VPC FILENAME: 24-025448-01
12/18/2024 11:08:40
a division of BlueScope Buildings North America, Inc.



DESCRIPTION/PART NO				
ROD DIAM	NUT	HARD STEEL ROUND WASHER A	HARD STEEL WASHER B	HILLSIDE WASHER
3/8"	95321	3/8" FLAT WASHER (96408)	1/2" BEVEL SQUARE WASHER (46040)	543334
1/2"	95230	1/2" FLAT WASHER (95872)	3/4" FLAT ROUND WASHER (95946)	
5/8"	95233	5/8" FLAT WASHER (95945)		
3/4"	95235	3/4" FLAT WASHER (95946)	1" FLAT ROUND WASHER (95948)	543335
7/8"	95237	7/8" FLAT WASHER (95947)		
1"	95238	1" FLAT WASHER (95948)	1 1/8" FLAT ROUND WASHER (95949)	543336
1 1/8"	95239	1 1/8" FLAT WASHER (95949)		

REV. DATE:08/02/17 | REV. NO. 04
BR01G2 — ROD BRACE
WEB SLOT ASSEMBLY



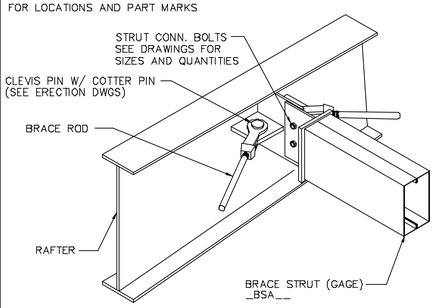
FLANGE BRACE REQUIREMENTS:

RULE#1– ALL FLANGE BRACES ON CROSS SECTIONS MUST BE INSTALLED.
RULE#2– SINGLE FLANGE BRACES ARE REQUIRED WHEN PART MARK ON CROSS SECTION IS NOT ACCOMPANIED BY (2).
RULE#3– FLANGE BRACES ARE REQUIRED BOTH SIDES OF THE FRAME WEB WHEN PART MARK IS ACCOMPANIED BY (2).
RULE#4– WHENEVER POSSIBLE, PLACE SINGLE BRACES TOWARD THE CENTER OF THE BUILDING.
RULE#5– WHENEVER POSSIBLE, PLACE ALL SINGLE BRACES ON THE SAME SIDE OF THE FRAME WEB.

** 10" & 11 1/2" PURLINS REQUIRE 3 BOLTS AT EACH END OF PURLIN LAP.

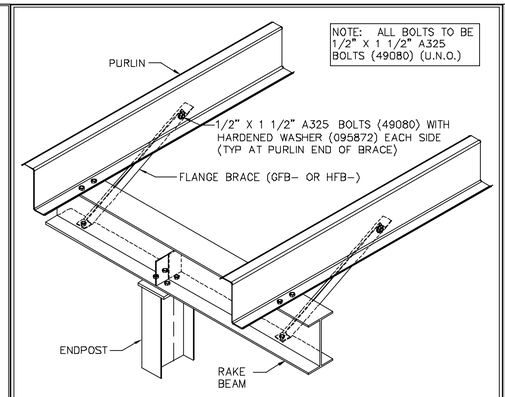
REV. DATE:05/08/18 | REV. NO. 02
BR06AE — TYPICAL FLANGE BRACE CONNECTIONS
CONT. PURLIN LAP SHOWN, CONT. GIRT & SIMPLE PURLIN

SEE ERECTION DRAWINGS FOR LOCATIONS AND PART MARKS



WHERE SLOTTED HOLES ARE PRESENT, BOLTS ARE SLIP CRITICAL AND MUST BE FULLY PRE TENSIONED. FAYING SURFACES MUST BE PAINT FREE. IF PAINT IS FOUND ON FAYING SURFACES IN SLOTTED CONNECTIONS REMOVE WITH LIGHT GRINDING. STANDARD HARDENED WASHERS ARE REQUIRED OVER ALL SLOTS. SEE ERECTION DRAWINGS FOR MARK NUMBERS AND QUANTITIES.

REV. DATE:06/23/11 | REV. NO. 01
BR15L1 — STRUT BRACING
GAGE STRUT IN ROOF



REV. DATE:11/16/15 | REV. NO. 03
BR25CA — ENDPOST TOP BETWEEN PURLINS
NO CAP CHANNEL – BRACED TO PURLINS ONLY

F = FEET
I = INCHES
E = EIGHTHS
G = GAGE
O = OPERATION
C = FIN/COLOR

PANEL/COVERING
W 1 3 1 1 7 2 6 1 K T D
* F F I I E G G O C C C
LENGTH | CODE

INSULATION
I B 1 3 0 1 0 3 6 0 3 0 W V
* * F F F I I I I I I E C C
LENGTH | WIDTH THK CODE

SECONDARY (STANDARD)
O B Z 1 9 1 1 4 1 7 – – – – –
* * * F F I I E G G * * * * *
DEPTH | LENGTH | SHAPE | GAGE ADJUST.CODES

SECONDARY (SPECIAL)
0 0 1 0 8 Z 1 9 1 1 4 1 7 – – –
* * * * * * F F I I E G G * * *
COUNTER DEPTH& SHAPE | LENGTH | GAGE ADJUST.CODES

ROD BRACING
0 3 R S 2 5 1 0
I E * * F F I I
DIA | LENGTH

RS = THREADS BOTH ENDS
RT = THREADS ONE END – CLEVIS ONE END
RU = CLEVIS BOTH ENDS
RP = THREAD BOTH ENDS – NO HILLSIDES

CX*** = COLUMN (PLATE)
CGX*** = COLUMN (GAGE)
WCX*** = COLUMN (HOTROLL)

RBX*** = RAFTER (PLATE)
BGX*** = RAFTER (GAGE)
WRX*** = RAFTER (HOTROLL)
TRX*** = TRUSS RAFTER

ICX*** = INTERIOR COLUMN
PCX*** = PIPE COLUMN
TCX*** = TUBE COLUMN

EPX*** = ENDPOST (PLATE)
EGX*** = ENDPOST (GAGE)

CBX*** = CANOPY (PLATE)
CBX*** = PIGGYBACK CANOPY

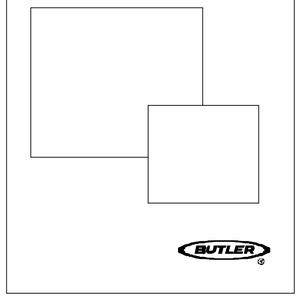
DCC*** = 8 1/2" GAGE POST
DCE*** = 10" GAGE POST

REV. DATE:08/29/12 | REV. NO. 01
EN50B1 — MARK NUMBER KEY
COMMON GENERATED MARK NUMBERS

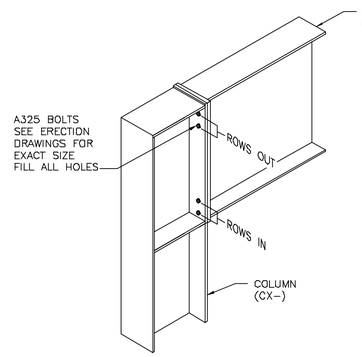
BASIC ERECTION GUIDE REQUIRED FOR THIS PROJECT:

REFER TO:

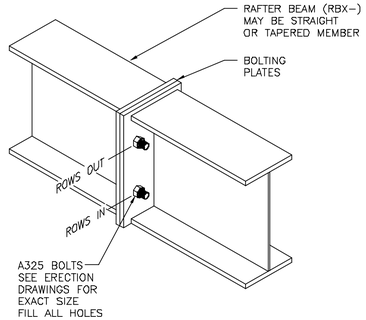
WIDESPAN STRUCTURAL SYSTEM
2013 INSTALLATION GUIDE



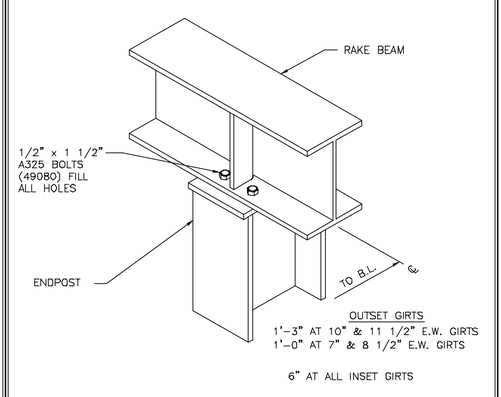
REV. DATE:01/30/14 | REV. NO. 00
ENB002 — BASIC ERECTION GUIDE – STRUCTURAL



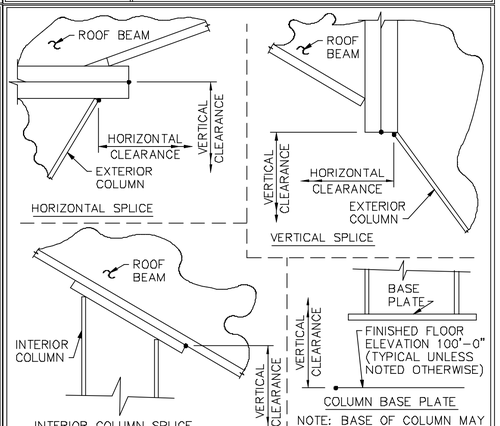
REV. DATE:07/01/09 | REV. NO. 00
PF01A2 — HAUNCH TO COLUMN CONNECTION
FACE/VERTICAL BOLTED COLUMN



REV. DATE:07/01/09 | REV. NO. 00
PF03A1 — RAFTER BEAM CONNECTION
RAKE BEAM OR FULL FRAME



REV. DATE:07/01/09 | REV. NO. 00
PF10C2 — RAKE BEAM CONNECTION
TO ENDPOST



REV. DATE:08/12/16 | REV. NO. 00
PFR007 — CLEAR HEIGHT DIMENSION WORK POINTS
AS SHOWN ON FRAME CROSS SECTION DRAWINGS

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER

01/09/2025

FOR CONSTRUCTION

1. USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS, SECONDARY CLIP CONNECTIONS, AND FLANGE BRACE CONNECTIONS, UNLESS NOTED OTHERWISE.
2. SLOT REINFORCEMENT PLATES NEED NOT BE LOCATED ON THE SAME SIDE OF THE WEB AS THE HILLSIDE WASHER.

THE BUTLER MFG. ENGINEER'S SEAL APPLIES ONLY TO THE WORK PRODUCT OF BUTLER MFG. AND DESIGN AND PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER. THE BUTLER MFG. ENGINEER'S SEAL DOES NOT APPLY TO THE PERFORMANCE OR DESIGN OF ANY OTHER PRODUCT OR COMPONENT FURNISHED BY BUTLER EXCEPT TO ANY DESIGN OR PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER.

THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN ACCORDANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING, ALL APPLICABLE BUTLER MFG. ERECTION GUIDES, AND INDUSTRY STANDARDS PERTAINING TO PROPER ERECTION, INCLUDING THE CORRECT USE OF TEMPORARY BRACING.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

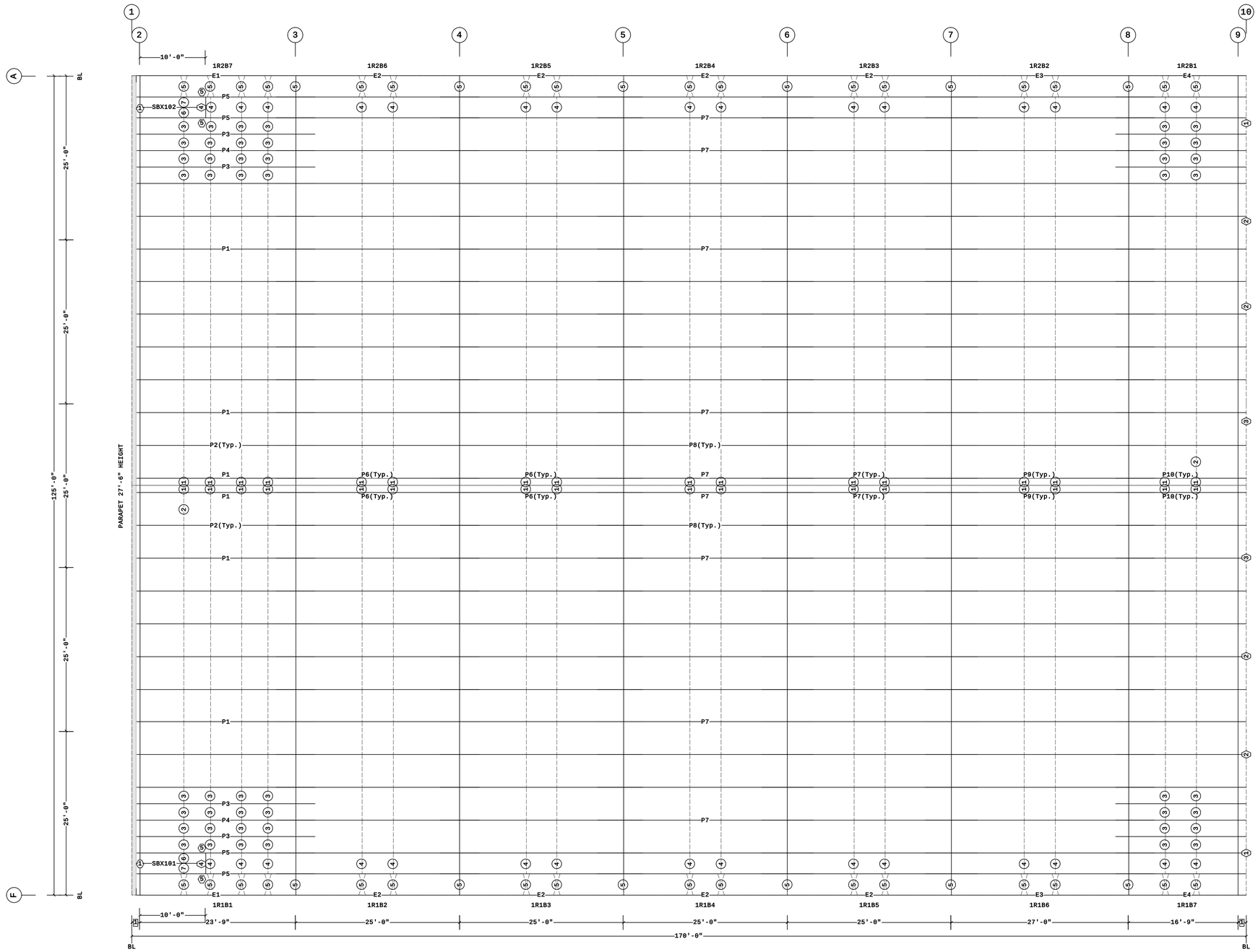
DRAWING SCALE: NTS

PRIMARY BRACING SED'S

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 19



ROOF SECONDARY PLAN

1 1'-3"
Dimension Key

Secondary Part Schedule

Mark	Part	Thick.	Depth	Lap	Detail
E1	10E2402414BDB30	0.0790	10"		RS12PF,RS12PE,RS12PJ
E2	10E2411414DDB30	0.0790	10"		RS12PA,RS12PE,RS12PJ
E3	10E2611414DDB30	0.0790	10"		RS12PA,RS12PJ
E4	10E1711414DVB30	0.0790	10"		RS12PH,RS12PA,RS12PJ
P1	08Z2702412B4B3	0.0980	8 1/2"	2'-10 1/2"	RS02T1,RS01T1
P2	08Z2702415B4B3	0.0730	8 1/2"	2'-10 1/2"	RS02T1,RS01T1
P3	08Z2702416B4B3	0.0680	8 1/2"	2'-10 1/2"	RS02T1,RS01T1
P4	08Z2702414B4B3	0.0790	8 1/2"	2'-10 1/2"	RS02T1,RS01T1
P5	08Z2702411B4B3	0.1130	8 1/2"	2'-10 1/2"	RS02T1,RS01T1
P6	08Z301141444B2	0.0790	8 1/2"	2'-10 1/2"	RS01T1
P7	08Z321141455B2	0.0790	8 1/2"	3'-10 1/2"	RS01T1
P8	08Z321141755B2	0.0600	8 1/2"	3'-10 1/2"	RS01T1
P9	08Z341141455B2	0.0790	8 1/2"	3'-10 1/2"	RS01T1
P10	08Z1911414V3A3	0.0790	8 1/2"	1'-10 1/2"	RS02T1
J5	00708JS0207111	0.1130	8 1/2"		FS31B1

Secondary Bracing Schedule

Id	Qty	Mark No	Spacing
1	32	CPBRA010602	1'-1 3/8"
2	328	CPBB050108(Typ.)	5'-0"
3	48	CPBB020708	2'-6"
4	30	CPBB030404	3'-2 5/8"
5	76	PBA0306	3'-2 5/8"
6	2	CPBB010813	1'-7 5/16"
7	2	CPBC011011	1'-7 5/16"

See SED:
BR09PK, BR09RY, BR09RZ, BR09JG, BR09PH
BR09JH, BR09K5, BR09K2, BRR050

Part Mark Key

1	001SGC216075
2	001SGC215023
3	001SGC216010
4	J5
5	PG1

Frame Member Schedule

Part	Width	Thick.	Webthk	Depth1	Approx. Lgth	Detail
SBX101	6"	.2500	.1875	8 1/2"	10'-6 1/8"	KPFSX1,FS31B1,FSX100
SBX102	6"	.2500	.1875	8 1/2"	10'-6 1/8"	KPFSX1,FS31B1,FSX100

Bolt Connection & Plate Schedule

Id	Qty	Grade	Bolt Dia.	Bolt Length	Plate Thick.	Rows Out	Rows In	Part No.
A	4	A325	1/2"	1 1/2"	-	-	-	49080

Shape Name = Building - Shape 1

FOR CONSTRUCTION

KEITH ERICK FIX
NUMBER PE-2012033379
STATE OF MISSOURI
PROFESSIONAL ENGINEER
01/09/2025

1. UNLESS NOTED, USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS.
2. FLANGE BRACES ARE AN INTEGRAL PART OF THE STABILITY OF THE STRUCTURAL SYSTEM AND MUST BE PROPERLY INSTALLED PRIOR TO ERECTION OF WALL AND ROOF SHEETS.
3. REMOVAL OR ALTERATION OF ANY COMPONENT IS PROHIBITED.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

ROOF SECONDARY PLAN

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

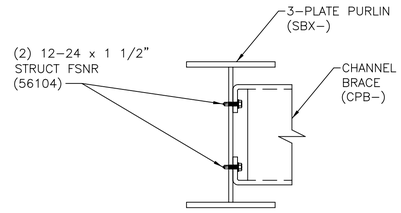
BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

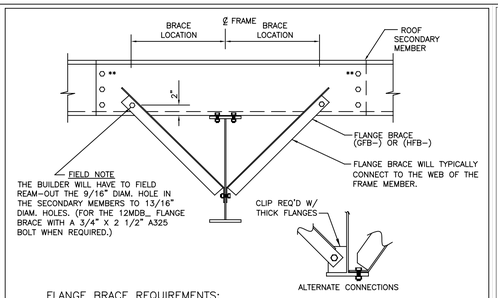
JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 20

ERECTION NOTE:

BEND THE CHANNEL TABS TOWARD THE PURLIN WEB AND USE A SELF-DRILLER (56104) TO ATTACH. PREDRILL AS REQUIRED. OFFSET CHANNEL BRACES WHEN REQUIRED ON BOTH SIDES OF WEB.



REV. DATE:06/01/18	REV. NO. 00	BRR050	CHANNEL BRACE ENDING AT 3-PLATE PURLIN SELF-DRILLER WITH BENT TABS



FLANGE BRACE REQUIREMENTS:

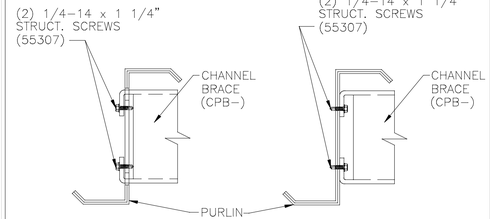
RULE#1- ALL FLANGE BRACES ON CROSS SECTIONS MUST BE INSTALLED.
RULE#2- SINGLE FLANGE BRACES ARE REQUIRED WHEN PART MARK ON CROSS SECTION IS NOT ACCOMPANIED BY (2).
RULE#3- FLANGE BRACES ARE REQUIRED BOTH SIDES OF THE FRAME WEB WHEN PART MARK IS ACCOMPANIED BY (2).
RULE#4- WHENEVER POSSIBLE, PLACE SINGLE BRACES TOWARD THE CENTER OF THE BUILDING.
RULE#5- WHENEVER POSSIBLE, PLACE ALL SINGLE BRACES ON THE SAME SIDE OF THE FRAME WEB.

** 10" & 11 1/2" PURLINS REQUIRE 3 BOLTS AT EACH END OF PURLIN LAP.

REV. DATE:05/08/18	REV. NO. 02	BR06AE	TYPICAL FLANGE BRACE CONNECTIONS CONT. PURLIN LAP SHOWN, CONT. GIRT & SIMPLE PURLIN

ERECTION NOTE:

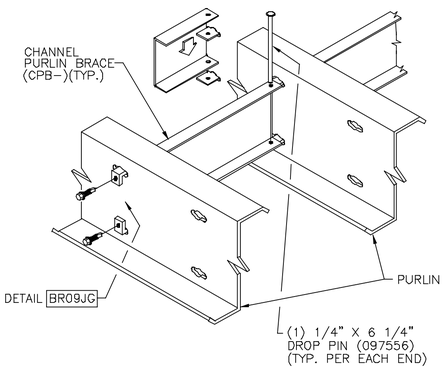
WHEN A CHANNEL BRACE DOES NOT LINE UP WITH ANOTHER CHANNEL BRACE OR THE SLOTS IN THE PURLIN WEB FOR A DROP PIN CONNECTION BEND THE CHANNEL TABS TOWARD THE PURLIN WEB AND USE A SELF-DRILLER (55307) TO ATTACH.



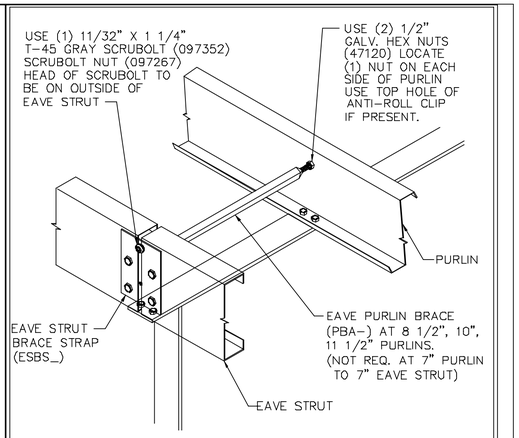
USE WHEN CHANNEL BRACE DOES LINE UP WITH THE SLOTS IN THE PURLIN WEB.

USE WHEN CHANNEL BRACE DOES NOT LINE UP WITH THE SLOTS IN THE PURLIN WEB.

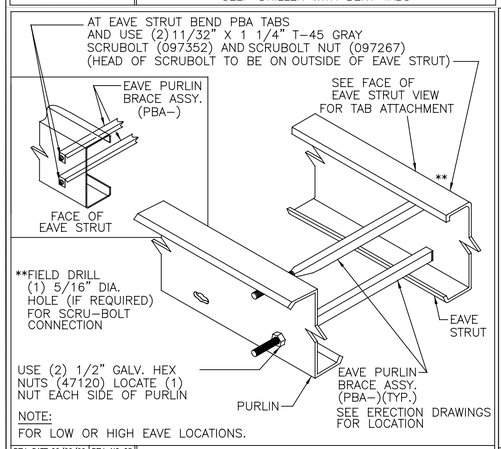
REV. DATE:02/05/24	REV. NO. 02	BR09JG	CHANNEL BRACE ENDING AT PURLIN WEB SELF-DRILLER WITH BENT TABS



REV. DATE:07/01/09	REV. NO. 00	BR09JH	SINGLE CHANNEL PURLIN BRACE ENDING AT PURLIN WEB LOCATION

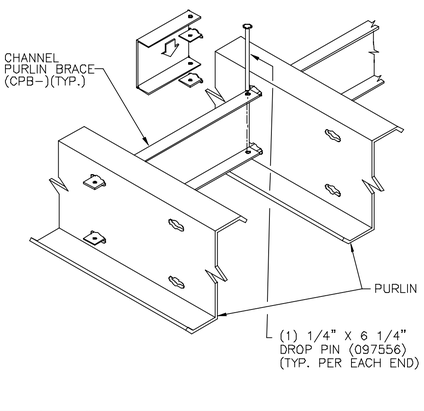


REV. DATE:07/20/18	REV. NO. 05	BR09K2	EAVE BRACE STRAP AND EAVE PURLIN BRACE LOCATED AT EAVE - CENTERLINE OF FRAME



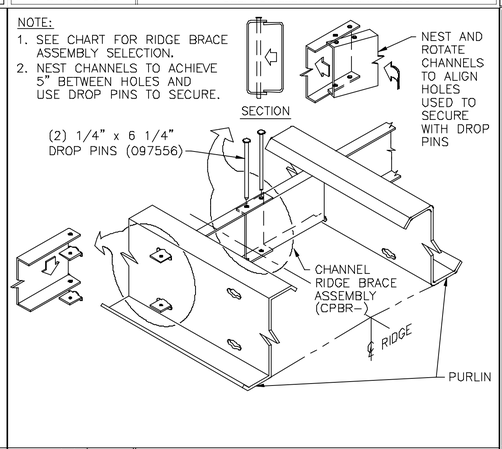
NOTE:
FOR LOW OR HIGH EAVE LOCATIONS.

REV. DATE:02/22/22	REV. NO. 05	BR09K5	EAVE STRUT BRACE

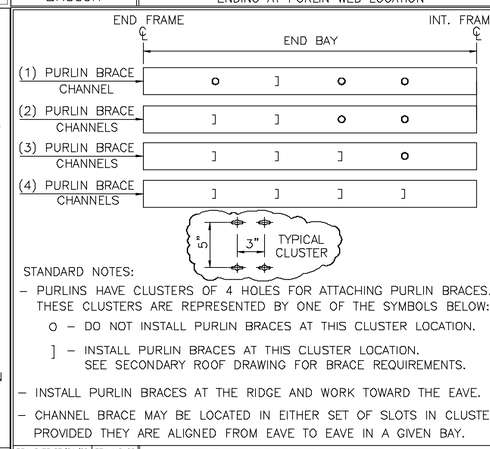


REV. DATE:07/01/09	REV. NO. 00	BR09PH	SINGLE CHANNEL PURLIN BRACE INTERMEDIATE LOCATION

NOTE:
1. SEE CHART FOR RIDGE BRACE ASSEMBLY SELECTION.
2. NEST CHANNELS TO ACHIEVE 5" BETWEEN HOLES AND USE DROP PINS TO SECURE.

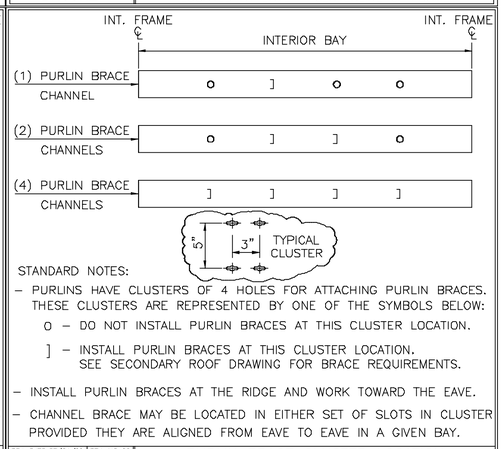


REV. DATE:07/01/09	REV. NO. 00	BR09PK	CHANNEL RIDGE BRACE ASSEMBLY SINGLE BRACE AT SYMMETRICAL RIDGE



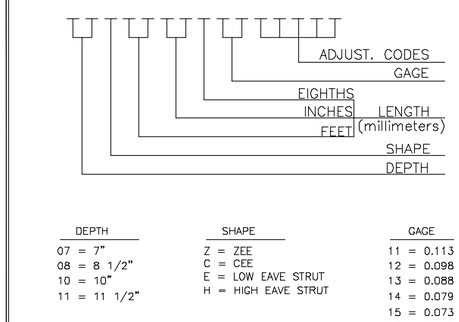
STANDARD NOTES:
- PURLINS HAVE CLUSTERS OF 4 HOLES FOR ATTACHING PURLIN BRACES. THESE CLUSTERS ARE REPRESENTED BY ONE OF THE SYMBOLS BELOW:
  - O - DO NOT INSTALL PURLIN BRACES AT THIS CLUSTER LOCATION.
  -] - INSTALL PURLIN BRACES AT THIS CLUSTER LOCATION. SEE SECONDARY ROOF DRAWING FOR BRACE REQUIREMENTS.
- INSTALL PURLIN BRACES AT THE RIDGE AND WORK TOWARD THE EAVE.
- CHANNEL BRACE MAY BE LOCATED IN EITHER SET OF SLOTS IN CLUSTER PROVIDED THEY ARE ALIGNED FROM EAVE TO EAVE IN A GIVEN BAY.

REV. DATE:07/01/09	REV. NO. 00	BR09RY	PURLIN BRACE CLUSTER LOCATION END BAY CHANNEL LOCATION



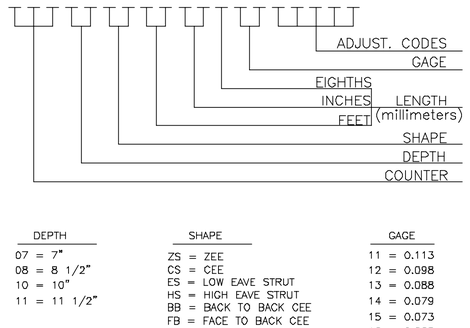
STANDARD NOTES:
- PURLINS HAVE CLUSTERS OF 4 HOLES FOR ATTACHING PURLIN BRACES. THESE CLUSTERS ARE REPRESENTED BY ONE OF THE SYMBOLS BELOW:
  - O - DO NOT INSTALL PURLIN BRACES AT THIS CLUSTER LOCATION.
  -] - INSTALL PURLIN BRACES AT THIS CLUSTER LOCATION. SEE SECONDARY ROOF DRAWING FOR BRACE REQUIREMENTS.
- INSTALL PURLIN BRACES AT THE RIDGE AND WORK TOWARD THE EAVE.
- CHANNEL BRACE MAY BE LOCATED IN EITHER SET OF SLOTS IN CLUSTER PROVIDED THEY ARE ALIGNED FROM EAVE TO EAVE IN A GIVEN BAY.

REV. DATE:07/01/09	REV. NO. 00	BR09RZ	PURLIN BRACE CLUSTER LOCATION INTERIOR BAY CHANNEL LOCATION



DEPTH	SHAPE	GAGE
07 = 7"	Z = ZEE	11 = 0.113
08 = 8 1/2"	C = CEE	12 = 0.098
10 = 10"	E = LOW EAVE STRUT	13 = 0.088
11 = 11 1/2"	H = HIGH EAVE STRUT	14 = 0.079
		15 = 0.073
		16 = 0.068
		17 = 0.060

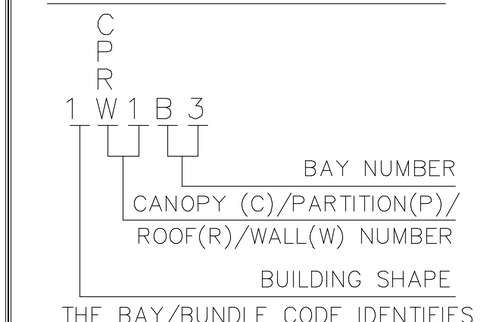
REV. DATE:07/01/09	REV. NO. 00	EN51B1	SECONDARY PART MARK NUMBER COMMON GENERATED MARK NUMBERS



DEPTH	SHAPE	GAGE
07 = 7"	ZS = ZEE	11 = 0.113
08 = 8 1/2"	CS = CEE	12 = 0.098
10 = 10"	ES = LOW EAVE STRUT	13 = 0.088
11 = 11 1/2"	HS = HIGH EAVE STRUT	14 = 0.079
	BB = BACK TO BACK CEE	15 = 0.073
	FB = FACE TO BACK CEE	16 = 0.068
	FF = FACE TO FACE CEE	17 = 0.060

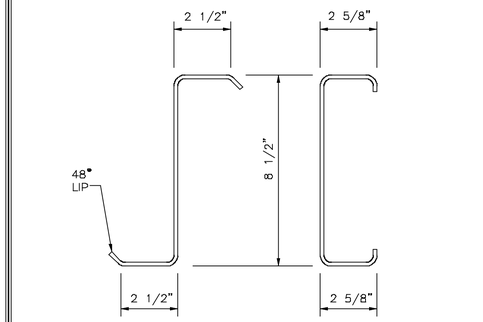
REV. DATE:07/01/09	REV. NO. 00	EN51B2	SPECIAL SECONDARY PART MARK KEY COMMON GENERATED MARK NUMBERS

ERECTION DRAWING PART MARK



THE BAY/BUNDLE CODE IDENTIFIES THE BUILDING CANOPY/PARTITION/ ROOF/WALL PLANE AND BAY

REV. DATE:01/31/13	REV. NO. 01	EN51B3	SECONDARY BUNDLE LOCATION KEY ALL SECONDARY DEPTHS



REV. DATE:07/01/09	REV. NO. 00	EN53F1	PURLIN AND GIRT SIZES 8 1/2" 216mm

01/09/2025

FOR CONSTRUCTION

1. UNLESS NOTED, USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS.
2. FLANGE BRACES ARE AN INTEGRAL PART OF THE STABILITY OF THE STRUCTURAL SYSTEM AND MUST BE PROPERLY INSTALLED PRIOR TO ERECTION OF WALL AND ROOF SHEETS.
3. REMOVAL OR ALTERATION OF ANY COMPONENT IS PROHIBITED.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

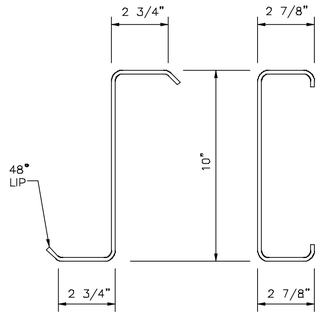
DRAWING SCALE: NTS

ROOF SECONDARY SED'S (a)

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

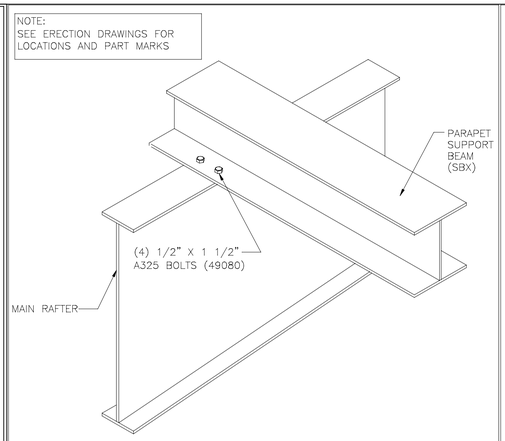
Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 21



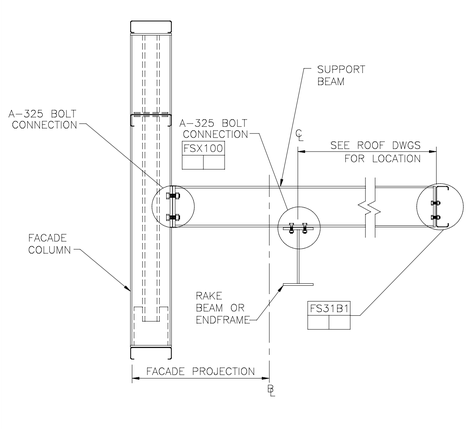
REV. DATE:07/01/09 | REV. NO. 00 — EN53G1

PURLIN AND GIRT SIZES
10" 254mm



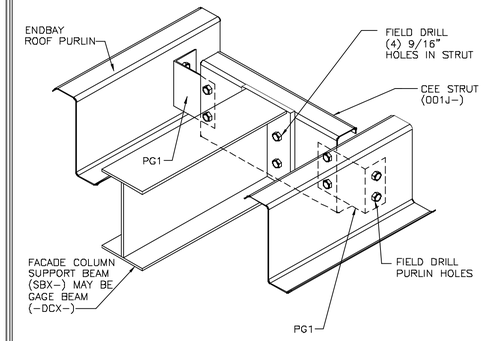
REV. DATE:12/18/24 | REV. NO. — FSX100

PARAPET SUPPORT BEAM
TO MAIN RAFTER



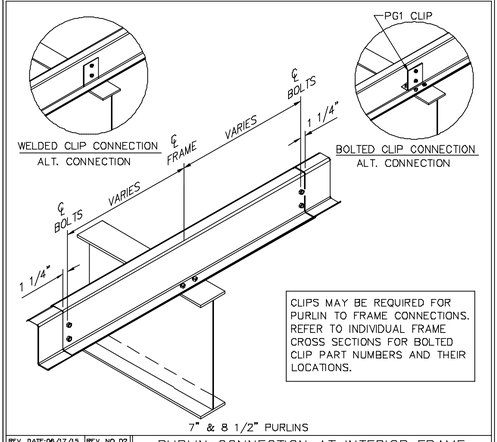
REV. DATE:12/18/24 | REV. NO. 00 — KPFSX1

FACADE COLUMN SUPPORT BEAM
VERT. STRUCT. FRMG. (ENDWALL KEY)



REV. DATE:07/01/09 | REV. NO. 00 — FS31B1

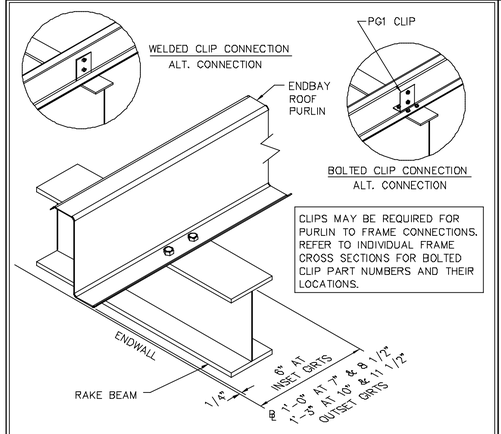
FACADE COLUMN SUPPORT BEAM
CONN. TO PURLIN STRUT



CLIPS MAY BE REQUIRED FOR PURLIN TO FRAME CONNECTIONS. REFER TO INDIVIDUAL FRAME CROSS SECTIONS FOR BOLTED CLIP PART NUMBERS AND THEIR LOCATIONS.

REV. DATE:06/17/15 | REV. NO. 02 — RS01T1

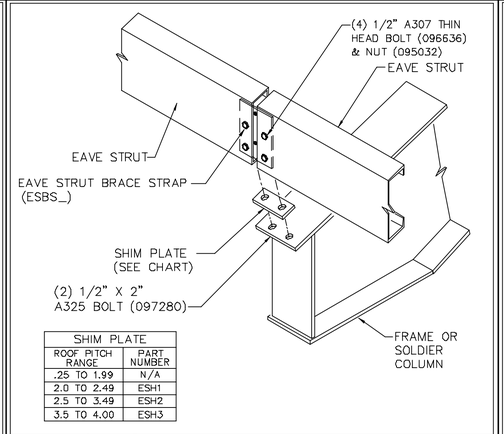
PURLIN CONNECTION AT INTERIOR FRAME
CONTINUOUS PURLINS



CLIPS MAY BE REQUIRED FOR PURLIN TO FRAME CONNECTIONS. REFER TO INDIVIDUAL FRAME CROSS SECTIONS FOR BOLTED CLIP PART NUMBERS AND THEIR LOCATIONS.

REV. DATE:06/17/15 | REV. NO. 02 — RS02T1

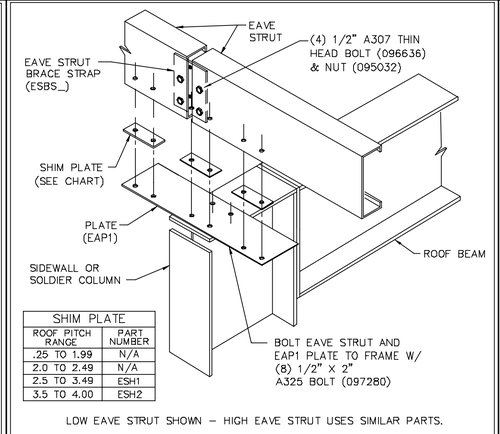
PURLIN CONNECTION TO END FRAME
CONTINUOUS PURLINS



SHIM PLATE	
ROOF PITCH RANGE	PART NUMBER
.25 TO 1.99	N/A
2.0 TO 2.49	ESH1
2.5 TO 3.49	ESH2
3.5 TO 4.00	ESH3

REV. DATE:07/20/16 | REV. NO. 03 — RS12PA

EAVE STRUT CONNECTION
AT INTERIOR FRAME



SHIM PLATE	
ROOF PITCH RANGE	PART NUMBER
.25 TO 1.99	N/A
2.0 TO 2.49	N/A
2.5 TO 3.49	ESH1
3.5 TO 4.00	ESH2

LOW EAVE STRUT SHOWN – HIGH EAVE STRUT USES SIMILAR PARTS.

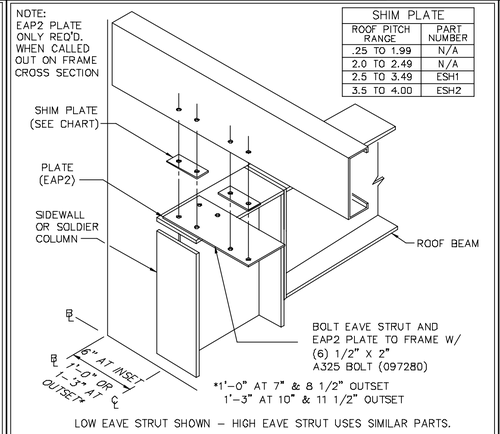
REV. DATE:07/20/16 | REV. NO. 05 — RS12PE

EAVE STRUT W/ ATTACHMENT PLATE
INTERIOR FRAME

USE 49080 BOLTS FOR CLIPS CONNECTION AND 097280 BOLTS FOR PLATE CONNECTION

NOTE:
EAP2 PLATE ONLY REQ'D. WHEN CALLED OUT ON FRAME CROSS SECTION

SHIM PLATE	
ROOF PITCH RANGE	PART NUMBER
.25 TO 1.99	N/A
2.0 TO 2.49	N/A
2.5 TO 3.49	ESH1
3.5 TO 4.00	ESH2

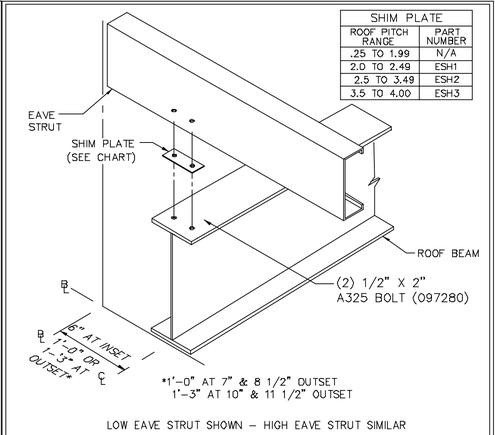


LOW EAVE STRUT SHOWN – HIGH EAVE STRUT USES SIMILAR PARTS.

REV. DATE:03/28/15 | REV. NO. 02 — RS12PF

EAVE STRUT W/ ATTACHMENT PLATE
END FRAME

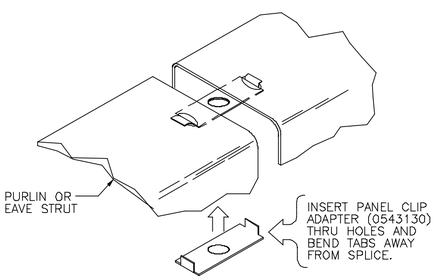
SHIM PLATE	
ROOF PITCH RANGE	PART NUMBER
.25 TO 1.99	N/A
2.0 TO 2.49	ESH1
2.5 TO 3.49	ESH2
3.5 TO 4.00	ESH3



LOW EAVE STRUT SHOWN – HIGH EAVE STRUT SIMILAR

REV. DATE:03/28/15 | REV. NO. 01 — RS12PH

EAVE STRUT CONNECTION
AT END FRAME



PANEL CLIP ADAPTER

USE A PANEL CLIP ADAPTER AT THE ENDS OF PURLINS OR EAVE STRUTS WHERE A PANEL CLIP OR PANEL EAVE ATTACHMENT MUST BE MADE.

REV. DATE:12/05/09 | REV. NO. 00 — RS12PJ

PANEL CLIP AT EAVE STRUT
LOCATED WHERE STRUT STOPS BUT CONNECTION REQUIRED

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER

01/09/2025

FOR CONSTRUCTION

1. UNLESS NOTED, USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS.
2. FLANGE BRACES ARE AN INTEGRAL PART OF THE STABILITY OF THE STRUCTURAL SYSTEM AND MUST BE PROPERLY INSTALLED PRIOR TO ERECTION OF WALL AND ROOF SHEETS.
3. REMOVAL OR ALTERATION OF ANY COMPONENT IS PROHIBITED.

THE BUTLER MFG. ENGINEER'S SEAL APPLIES ONLY TO THE WORK PRODUCT OF BUTLER MFG. AND DESIGN AND PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER. THE BUTLER MFG. ENGINEER'S SEAL DOES NOT APPLY TO THE PERFORMANCE OR DESIGN OF ANY OTHER PRODUCT OR COMPONENT FURNISHED BY BUTLER EXCEPT TO ANY DESIGN OR PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER.

THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN ACCORDANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING, ALL APPLICABLE BUTLER MFG. ERECTION GUIDES, AND INDUSTRY STANDARDS PERTAINING TO PROPER ERECTION, INCLUDING THE CORRECT USE OF TEMPORARY BRACING.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

ROOF SECONDARY SED'S (b)

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

BUTLER®
Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 22

VPC FILENAME: 24-025448-01

12/18/2024 SEDSheet 11:08:44

Secondary Part Schedule

Mark	Part	Thick.	Depth	Lap	Detail
G1	00108ZS2605413B0	0.0880	8 1/2"		WS12A2,WS20F2,WS21D5
G2	00208ZS2605415B0	0.0730	8 1/2"		WS12A2,WS20F2,WS21D5
G3	08Z2402415DQ00	0.0730	8 1/2"		WS12A2,WS01G2
G4	08Z2408413DG00	0.0880	8 1/2"		WS12H5,FS25G1
G5	08Z2411412DDB0	0.0980	8 1/2"		WS01G2
G6	00308ZS2802416B0	0.0680	8 1/2"	10 1/2"	WS01G3,WS20F2,WS21D5
G7	08Z2511416D100	0.0680	8 1/2"	10 1/2"	WS01G3,WS01G2
G8	08Z2405414GG00	0.0790	8 1/2"		FS25G1
G9	08Z261141611B0	0.0680	8 1/2"	10 1/2"	WS01G3
G10	08Z2405413GGB0	0.0880	8 1/2"		FS25G1
G11	08Z2502416Q1B0	0.0680	8 1/2"	10 1/2"	WS12A2,WS01G3
G12	08Z2408416DG00	0.0000	8 1/2"		WS12A2,WS12H5
G13(Flip)	08C2411413DD00	0.0880	8 1/2"		FSX101,FS25F5
G14(Flip)	08C2411415DD00	0.0730	8 1/2"		FSX101
G15(Flip)	08C2411416DD00	0.0680	8 1/2"		FSX101
H1	00108JS2000013	0.0880	8 1/2"		WS20F9
J1	00208JS1702214	0.0790	8 1/2"		WS20F9,WS20F2,WS20B2,WS20B8

Secondary Bracing Schedule

Id	Qty	Mark No	Spacing
1	20	CPBB060108	6'-0"
2	16	CPBB040108	4'-0"
3	4	CPBC040306	4'-0"
4	32	CPBB050108	5'-0"
5	4	CPBA030510	3'-6"
6	8	CPBA070510	7'-6"

See SEDs:
BRR004, BRR005, BRR006,
BRR007, BRR008

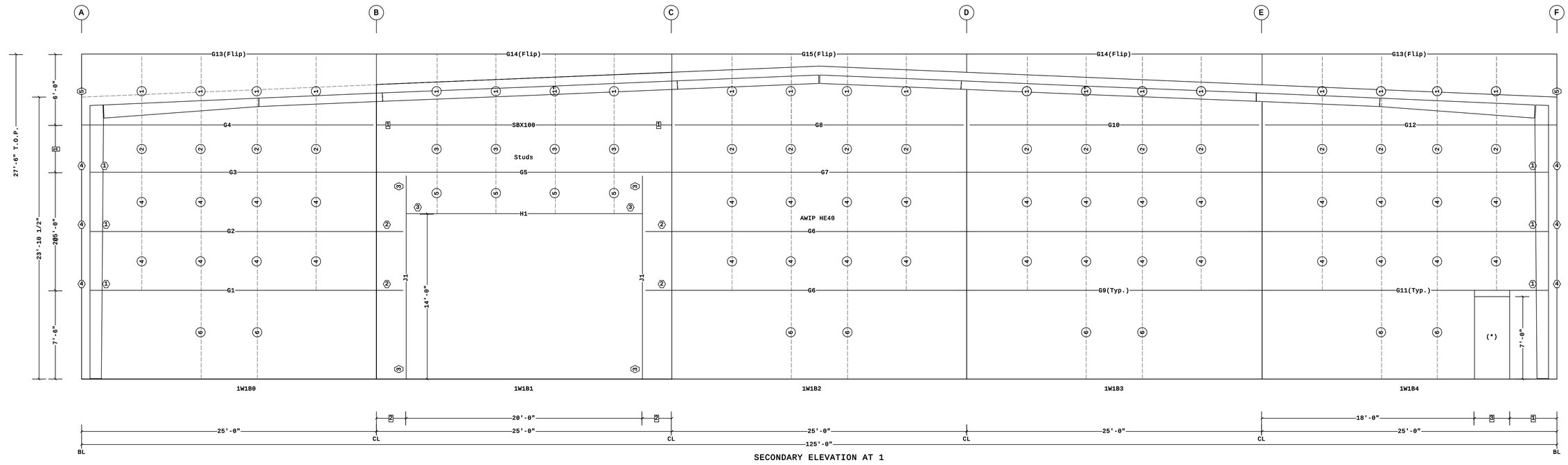
Frame Member Schedule

Part	Width	Thick.	Webthk	Depth1	Approx. Lgth	Detail
SBX100	8"	.2500	.2500	8 1/2"	24'-5 7/8"	WSX100

ERECTION NOTES:
- Jambs not designed for catenary loads.
- Wind beam designed to support stud wall to parapet height.
- FO's marked with (*) are not by BMC.

Bolt Schedule

Id	Qty	Grade	Bolt Dia.	Bolt Length	Plate Thick.	Rows Out	Rows In	PartNo
1	2	A325	3/4"	2 1/2"	-	-	-	0097284



SECONDARY ELEVATION AT 1

	5	RKC10
	4	GFA106
3	3'-0"	3 PG1
2	2'-6"	2 JTG1
1	4'-0"	1 VCC07003090

☐ Dimension Key ◯ Part Mark Key

Shape Name = Building - Shape 1, Wall = 1

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER

01/09/2025

FOR CONSTRUCTION

1. UNLESS NOTED, USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS.
2. FLANGE BRACES ARE AN INTEGRAL PART OF THE STABILITY OF THE STRUCTURAL SYSTEM AND MUST BE PROPERLY INSTALLED PRIOR TO ERECTION OF WALL AND ROOF SHEETS.
3. REMOVAL OR ALTERATION OF ANY COMPONENT IS PROHIBITED.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

SECONDARY ELEVATION AT 1

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

BUTLER
Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 23

Secondary Part Schedule

Mark	Part	Thick.	Depth	Lap	Detail
G16	00408ZS1902416B0	0.0680	8 1/2"		WS12A2,WS20F2,WS21D5
G17	08Z1811416V100	0.0680	8 1/2"	10 1/2"	WS12A2,WS01G3
G18	08Z291141622B0	0.0680	8 1/2"	1'-4 1/2"	WS01G3
G19	00508ZS2902416B0	0.0680	8 1/2"	2'-10 1/2"	WS01G3,WS20F2,WS21D5
G20	08Z2611416l100	0.0680	8 1/2"	10 1/2"	WS01G3
G21	08Z2711416D4B0	0.0680	8 1/2"	2'-10 1/2"	WS01G2,WS01G3
G22	08Z0602416DG00	0.0680	8 1/2"		WS20F2,WS01G2
G23	08Z0702416G100	0.0680	8 1/2"	10 1/2"	WS01G3,WS20F2
G24	08Z30114144400	0.0790	8 1/2"	2'-10 1/2"	WS01G3
G25	08Z271141622B0	0.0680	8 1/2"	1'-4 1/2"	WS01G3
G26	08Z2611416V3B0	0.0680	8 1/2"	1'-10 1/2"	WS12A2,WS01G3
H2	00108DS2400014	0.0790	8 1/2"		WS20F9
H3	00508JS1200015	0.0730	8 1/2"		WS20F9
J2	00308JS1702213	0.0880	8 1/2"		WS20F9,WS20F2,WS20B8,WS20H3
J3	00408JS0504015	0.0730	8 1/2"		WS20B6,WS20H3
J4	00608JS1702215	0.0730	8 1/2"		WS20F9,WS20F2,WS20B2,WS20B8

Secondary Bracing Schedule

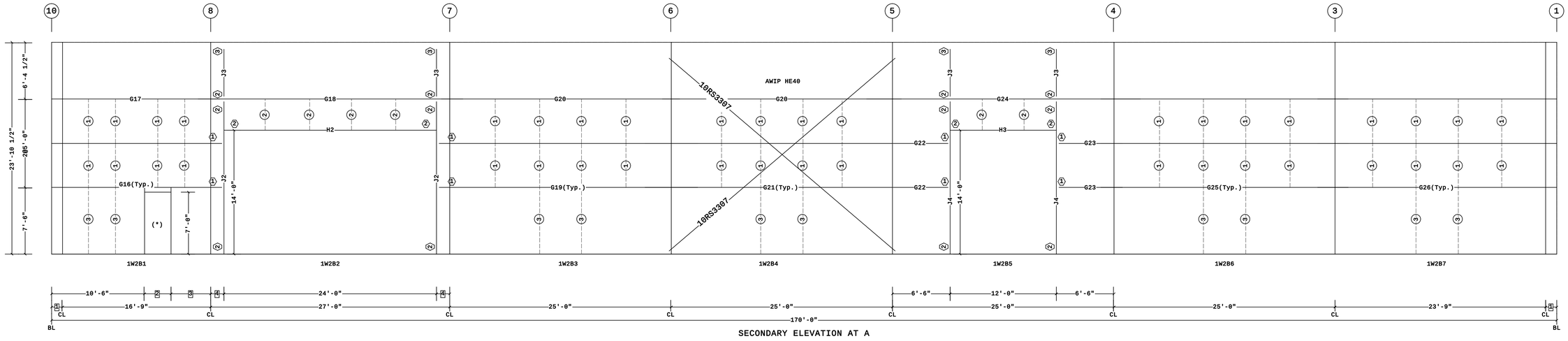
Id	Qty	Mark No	Spacing
1	40	CPBB050108	5'-0"
2	6	CPBA030510	3'-6"
3	10	CPBA070510	7'-6"

See SEDs:
BRR004, BRR005, BRR006,
BRR007, BRR008

Bracing Part Schedule

Part	Qty	Length	Detail
10RS3307	2	33'-7"	BR01G2

ERECTION NOTE:
- Jambs not designed for catenary loads.
- FO's marked with (*) are not by BMC.



SECONDARY ELEVATION AT A

4 1'-6"
3 4'-6"
2 3'-0"
1 1'-3"
Dimension Key

3 TSC1
2 PG1
1 JTG1
Part Mark Key

Shape Name = Building - Shape 1, Wall = 2

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER

01/09/2025

FOR CONSTRUCTION

1. UNLESS NOTED, USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS.
2. FLANGE BRACES ARE AN INTEGRAL PART OF THE STABILITY OF THE STRUCTURAL SYSTEM AND MUST BE PROPERLY INSTALLED PRIOR TO ERECTION OF WALL AND ROOF SHEETS.
3. REMOVAL OR ALTERATION OF ANY COMPONENT IS PROHIBITED.

THE BUTLER MFG. ENGINEER'S SEAL APPLIES ONLY TO THE WORK PRODUCT OF BUTLER MFG. AND DESIGN AND PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER. THE BUTLER MFG. ENGINEER'S SEAL DOES NOT APPLY TO THE PERFORMANCE OR DESIGN OF ANY OTHER PRODUCT OR COMPONENT FURNISHED BY BUTLER EXCEPT TO ANY DESIGN OR PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER.

THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN ACCORDANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING, ALL APPLICABLE BUTLER MFG. ERECTION GUIDES, AND INDUSTRY STANDARDS PERTAINING TO PROPER ERECTION, INCLUDING THE CORRECT USE OF TEMPORARY BRACING.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

SECONDARY ELEVATION AT A

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 24

Secondary Part Schedule

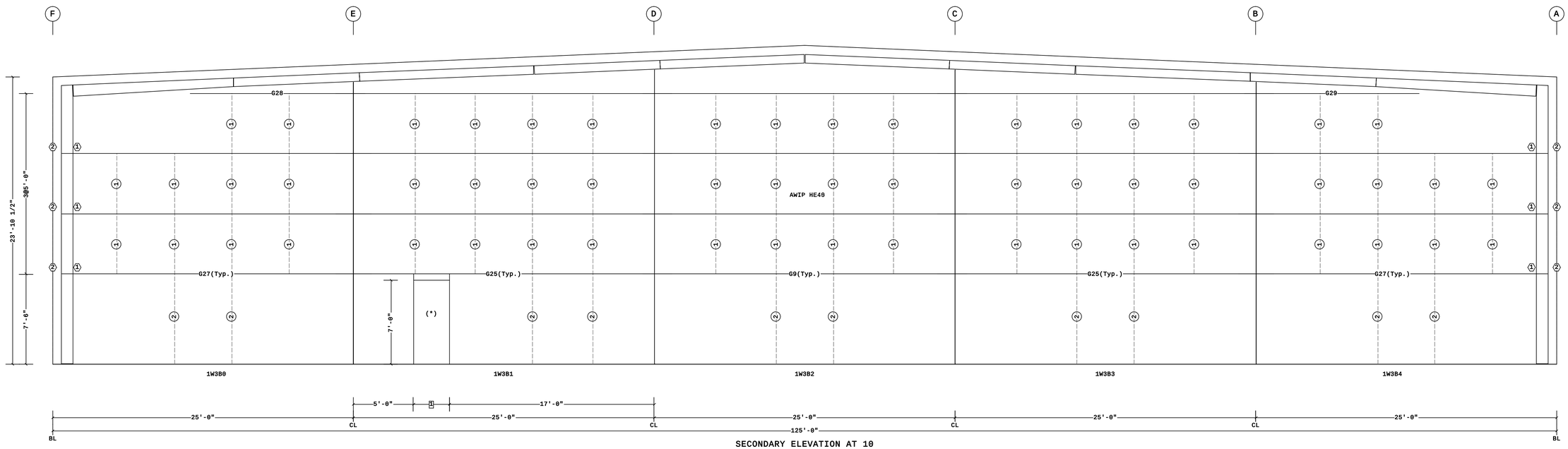
Mark	Part	Thick.	Depth	Lap	Detail
G9	08Z261141611B0	0.0680	8 1/2"	10 1/2"	WS01G3
G25	08Z271141622B0	0.0680	8 1/2"	1'-4 1/2"	WS01G3
G27	08Z2508416Q2B0	0.0680	8 1/2"	1'-4 1/2"	WS12A2,WS01G3
G28	00608ZS140641600	0.0680	8 1/2"	10 1/2"	WS01G3,WS04C2
G29	00708ZS140641600	0.0680	8 1/2"	10 1/2"	WS04C2,WS01G3

Secondary Bracing Schedule

Id	Qty	Mark No	Spacing
1	56	CPBB050108	5'-0"
2	10	CPBA070510	7'-6"

See SEDs:
BRR004, BRR005, BRR006
BRR007, BRR008

ERECTION NOTE:
- FO's marked with (*) are not by BMC.



SECONDARY ELEVATION AT 10

1	3'-0"	2	GFA106
		1	VCC07003090
Dimension Key		Part Mark Key	

Shape Name = Building - Shape 1, Wall = 3

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER
01/09/2025

FOR CONSTRUCTION

1. UNLESS NOTED, USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS.
2. FLANGE BRACES ARE AN INTEGRAL PART OF THE STABILITY OF THE STRUCTURAL SYSTEM AND MUST BE PROPERLY INSTALLED PRIOR TO ERECTION OF WALL AND ROOF SHEETS.
3. REMOVAL OR ALTERATION OF ANY COMPONENT IS PROHIBITED.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

SECONDARY ELEVATION AT 10

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 25

Secondary Part Schedule

Mark	Part	Thick.	Depth	Lap	Detail
G9	08Z261141611B0	0.0680	8 1/2"	10 1/2"	WS01G3
G30	08Z2511416V1B0	0.0680	8 1/2"	10 1/2"	WS12A2,WS01G3
G31	08Z281141611B0	0.0680	8 1/2"	10 1/2"	WS01G3
G32	08Z1811416V1A0	0.0680	8 1/2"	10 1/2"	WS12A2,WS01G3

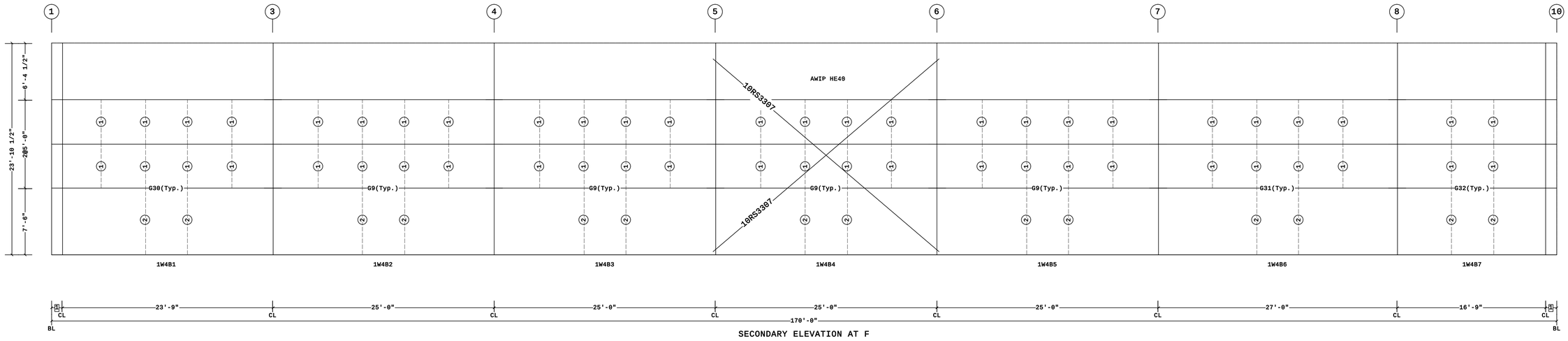
Secondary Bracing Schedule

Id	Qty	Mark No	Spacing
1	52	CPBB050108	5'-0"
2	14	CPBA070510	7'-6"

See SEDs:
BRR004, BRR005, BRR006
BRR007, BRR008

Bracing Part Schedule

Part	Qty	Length	Detail
10RS3307	2	33'-7"	BR01G2



SECONDARY ELEVATION AT F

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER

01/09/2025

1 1'-3"
Dimension Key

Shape Name = Building - Shape 1, Wall = 4

FOR CONSTRUCTION

1. UNLESS NOTED, USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS.
2. FLANGE BRACES ARE AN INTEGRAL PART OF THE STABILITY OF THE STRUCTURAL SYSTEM AND MUST BE PROPERLY INSTALLED PRIOR TO ERECTION OF WALL AND ROOF SHEETS.
3. REMOVAL OR ALTERATION OF ANY COMPONENT IS PROHIBITED.

THE BUTLER MFG. ENGINEER'S SEAL APPLIES ONLY TO THE WORK PRODUCT OF BUTLER MFG. AND DESIGN AND PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER. THE BUTLER MFG. ENGINEER'S SEAL DOES NOT APPLY TO THE PERFORMANCE OR DESIGN OF ANY OTHER PRODUCT OR COMPONENT FURNISHED BY BUTLER EXCEPT TO ANY DESIGN OR PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER.

THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN ACCORDANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING, ALL APPLICABLE BUTLER MFG. ERECTION GUIDES, AND INDUSTRY STANDARDS PERTAINING TO PROPER ERECTION, INCLUDING THE CORRECT USE OF TEMPORARY BRACING.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

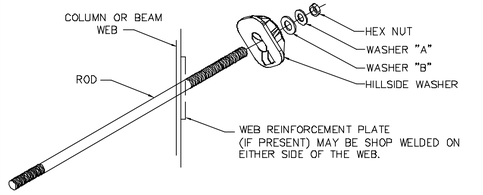
DRAWING SCALE: NTS

SECONDARY ELEVATION AT F

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

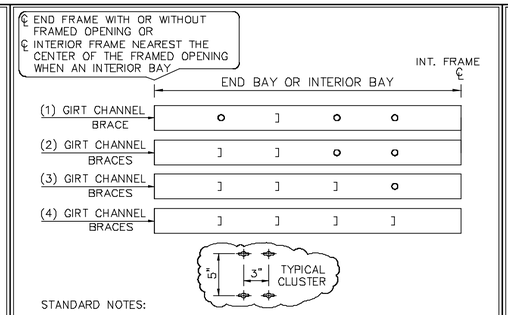
BUTLER
Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 26



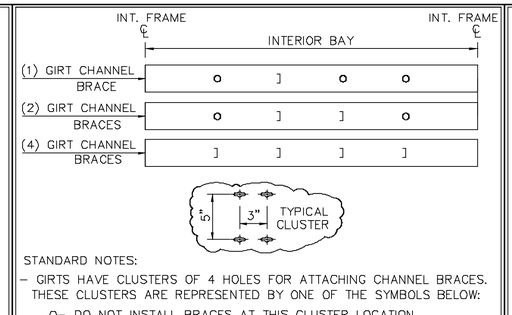
DESCRIPTION/PART NO				
ROD DIAM	NUT	HARD STEEL ROUND WASHER A	HARD STEEL WASHER B	HILLSIDE WASHER
3/8"	95321	3/8" FLAT WASHER (96408)	1/2" BEVEL SQUARE WASHER (46040)	543334
1/2"	95230	1/2" FLAT WASHER (95872)	3/4" FLAT ROUND WASHER (95946)	
5/8"	95233	5/8" FLAT WASHER (95945)		
3/4"	95235	3/4" FLAT WASHER (95946)	1" FLAT ROUND WASHER (95948)	543335
7/8"	95237	7/8" FLAT WASHER (95947)		
1"	95238	1" FLAT WASHER (95948)	1 1/8" FLAT ROUND WASHER (95949)	543336
1 1/8"	95239	1 1/8" FLAT WASHER (95949)		

REV. DATE:08/02/17 | REV. NO. 04 | BR01G2 | ROD BRACE — WEB SLOT ASSEMBLY



STANDARD NOTES:
- GIRTS HAVE CLUSTERS OF 4 HOLES FOR ATTACHING CHANNEL BRACES. THESE CLUSTERS ARE REPRESENTED BY ONE OF THE SYMBOLS BELOW:
  - O– DO NOT INSTALL BRACES AT THIS CLUSTER LOCATION.
  - ⊣ INSTALL BRACES AT THIS CLUSTER LOCATION. SEE SECONDARY WALL DRAWINGS FOR BRACE REQUIREMENTS.
- INSTALL BRACES WORKING FROM THE LOWEST GIRT TOWARD THE EAVE.
- CHANNEL BRACE MAY BE LOCATED IN EITHER SET OF SLOTS IN CLUSTER PROVIDED THEY ARE ALIGNED FROM TOP TO BOTTOM IN A GIVEN BAY.

REV. DATE:09/04/13 | REV. NO. 00 | BRR002 | CHANNEL BRACE CLUSTER LOCATION — INTERIOR BAY WITH FRAMED OPENING OR END BAY

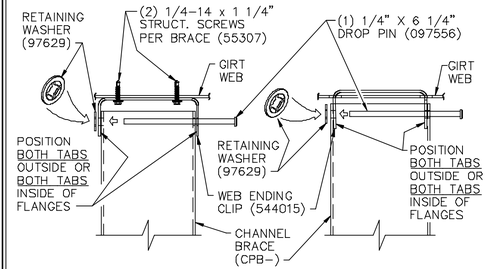


STANDARD NOTES:
- GIRTS HAVE CLUSTERS OF 4 HOLES FOR ATTACHING CHANNEL BRACES. THESE CLUSTERS ARE REPRESENTED BY ONE OF THE SYMBOLS BELOW:
  - O– DO NOT INSTALL BRACES AT THIS CLUSTER LOCATION.
  - ⊣ INSTALL BRACES AT THIS CLUSTER LOCATION. SEE SECONDARY WALL DRAWINGS FOR BRACE REQUIREMENTS.
- INSTALL BRACES WORKING FROM THE LOWEST GIRT TOWARD THE EAVE.
- CHANNEL BRACE MAY BE LOCATED IN EITHER SET OF SLOTS IN CLUSTER PROVIDED THEY ARE ALIGNED FROM TOP TO BOTTOM IN A GIVEN BAY.

REV. DATE:09/04/13 | REV. NO. 00 | BRR003 | CHANNEL BRACE CLUSTER LOCATION — INTERIOR BAY GIRTS

ERECTION NOTE:

CHANNEL BRACES THAT END AT A GIRT WEB, BUT DO NOT HAVE TABS USE WEB A WEB ENDING CLIP, A DROP PIN, AND A RETAINING WASHER TO SECURE CHANNEL BRACE.



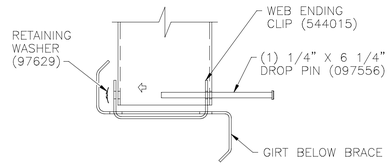
USE WHEN CHANNEL BRACE DOES NOT LINE UP WITH THE SLOTS IN THE WEB.

USE WHEN CHANNEL BRACE DOES LINE UP WITH THE SLOTS IN THE WEB.

REV. DATE:01/28/16 | REV. NO. 01 | BRR004 | CHANNEL BRACE ENDING AT GIRT WEB — WEB ENDING CLIP ATTACHMENT

ERECTION NOTE:

CHANNEL BRACES THAT END AT A GIRT WEB, BUT DO NOT HAVE TABS TO BEND AND SECURE. INSERT CLIP (544015) THROUGH WEB SLOTS AND USE A DROP PIN AND RETAINING WASHER TO SECURE CHANNEL BRACE.

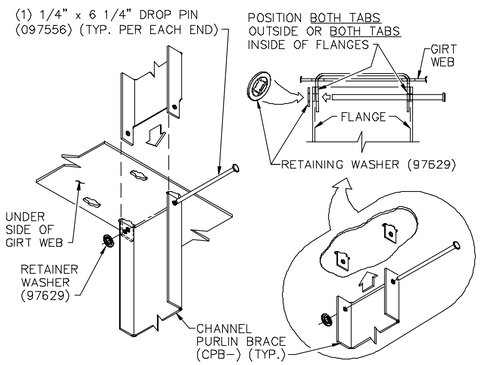


CHANNEL BRACE ABOVE GIRT AS SHOWN. CHANNEL BRACE BELOW GIRT WOULD APPEAR FLIPPED FROM AS SHOWN

REV. DATE:02/05/24 | REV. NO. 01 | BRR005 | CHANNEL BRACE ENDING AT GIRT WEB — BRACE ALIGNS WITH WEB SLOTS

ERECTION NOTE:

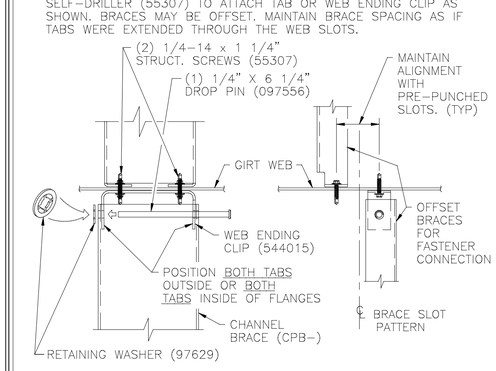
DROP PIN IS LOCATED BELOW GIRT. INSTALL PIN FROM NON–FLANGE SIDE OF GIRT AND INSTALL RETAINING WASHER.



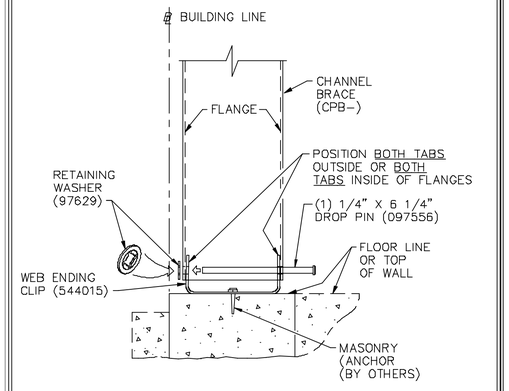
REV. DATE:01/28/16 | REV. NO. 01 | BRR006 | CHANNEL BRACE SPLICE AT GIRT — INTERMEDIATE LOCATION

ERECTION NOTE:

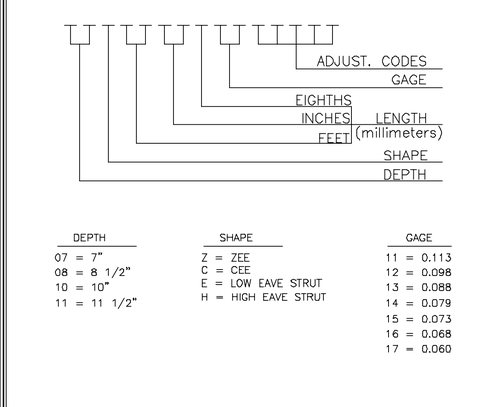
WHEN A DROP PIN CONNECTION CANNOT BE USED, BEND THE CHANNEL BRACE TABS TOWARD THE GIRT WEB AND USE A SELF–DRILLER (55307) TO ATTACH TAB OR WEB ENDING CLIP AS SHOWN. BRACES MAY BE OFFSET. MAINTAIN BRACE SPACING AS IF TABS WERE EXTENDED THROUGH THE WEB SLOTS.



REV. DATE:02/05/24 | REV. NO. 02 | BRR007 | CHANNEL BRACE BOTH SIDES OF GIRT WEB — OFFSET CONNECTION – S.D.S. WITH BENT TABS

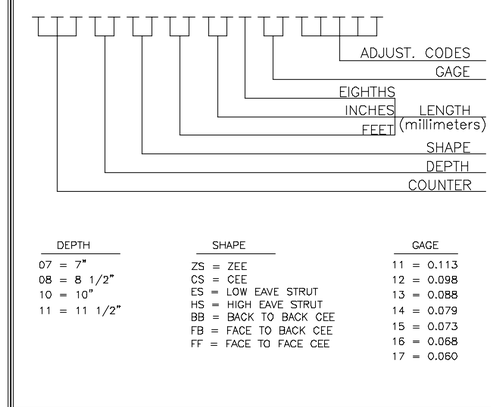


REV. DATE:01/28/16 | REV. NO. 01 | BRR008 | SINGLE GIRT – CHANNEL BRACE — ATTACHMENT AT BASE



DEPTH	SHAPE	GAGE
07 = 7"	Z = ZEE	11 = 0.113
08 = 8 1/2"	C = CEE	12 = 0.098
10 = 10"	E = LOW EAVE STRUT	13 = 0.088
11 = 11 1/2"	H = HIGH EAVE STRUT	14 = 0.079
		15 = 0.073
		16 = 0.068
		17 = 0.060

REV. DATE:07/01/08 | REV. NO. 00 | EN51B1 | SECONDARY PART MARK NUMBER — COMMON GENERATED MARK NUMBERS



DEPTH	SHAPE	GAGE
07 = 7"	ZS = ZEE	11 = 0.113
08 = 8 1/2"	CS = CEE	12 = 0.098
10 = 10"	ES = LOW EAVE STRUT	13 = 0.088
11 = 11 1/2"	HS = HIGH EAVE STRUT	14 = 0.079
	BB = BACK TO BACK CEE	15 = 0.073
	FB = FACE TO BACK CEE	16 = 0.068
	FF = FACE TO FACE CEE	17 = 0.060

REV. DATE:07/01/08 | REV. NO. 00 | EN51B2 | SPECIAL SECONDARY PART MARK KEY — COMMON GENERATED MARK NUMBERS

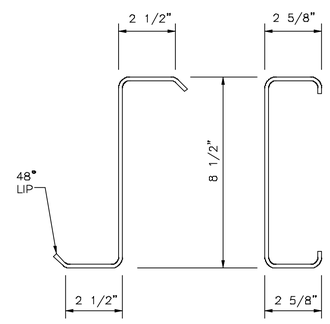
ERECTION DRAWING PART MARK

C P R 1 W 1 B 3

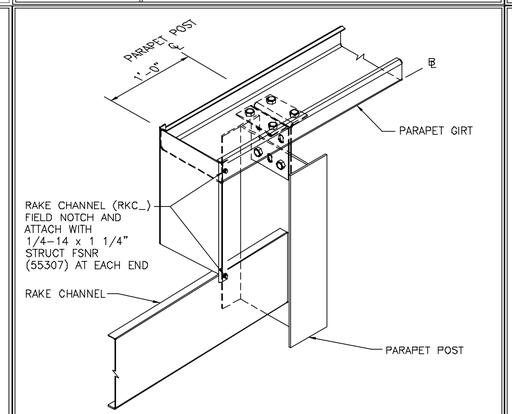
- BAY NUMBER
- CANOPY (C)/PARTITION(P)/ ROOF(R)/WALL(W) NUMBER
- BUILDING SHAPE

THE BAY/BUNDLE CODE IDENTIFIES THE BUILDING CANOPY/PARTITION/ ROOF/WALL PLANE AND BAY

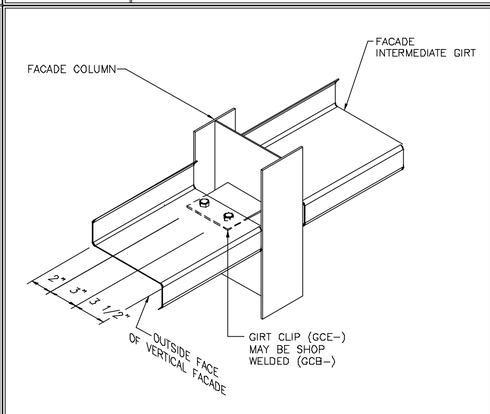
REV. DATE:01/31/13 | REV. NO. 01 | EN51B3 | SECONDARY BUNDLE LOCATION KEY — ALL SECONDARY DEPTHS



REV. DATE:07/01/08 | REV. NO. 00 | EN53F1 | PURLIN AND GIRT SIZES — 8 1/2" 216mm



REV. DATE:07/01/09 | REV. NO. 00 | FS25F5 | PARAPET STEP CONNECTION — STRUCTURAL FRAMING



REV. DATE:07/01/09 | REV. NO. 00 | FS25G1 | FACADE INTERMEDIATE GIRT. — STRUCTURAL FRAMING

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER

01/09/2025

FOR CONSTRUCTION

1. UNLESS NOTED, USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS.
2. FLANGE BRACES ARE AN INTEGRAL PART OF THE STABILITY OF THE STRUCTURAL SYSTEM AND MUST BE PROPERLY INSTALLED PRIOR TO ERECTION OF WALL AND ROOF SHEETS.
3. REMOVAL OR ALTERATION OF ANY COMPONENT IS PROHIBITED.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

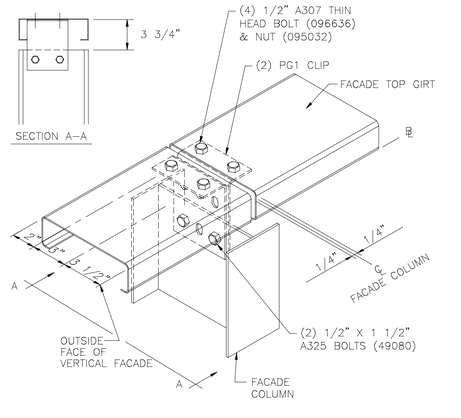
DRAWING SCALE: NTS

WALL SECONDARY SED'S (a)

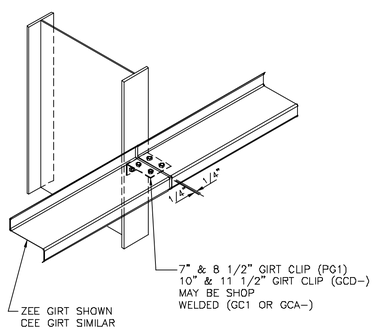
BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

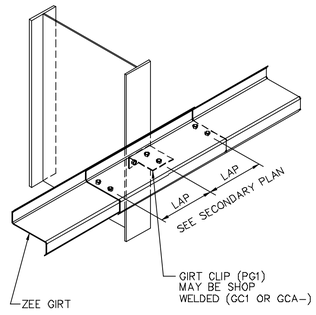
JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 27



REV. DATE:12/18/24	REV. NO. 00
FSX101	FACADE TOP GIRT CONNECTION FLANGES DOWNWARD – STRUCTURAL FRAMING

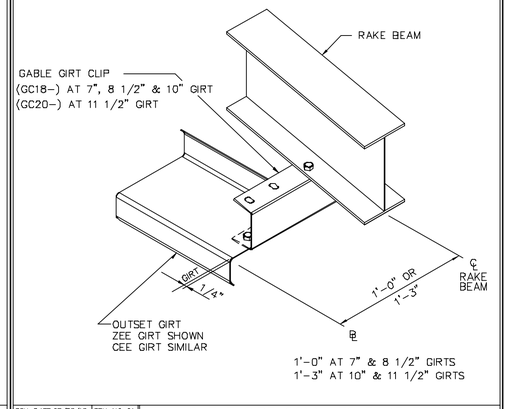


REV. DATE:07/01/09	REV. NO. 00
WS01G2	GIRT CONN. AT COLUMN OUTSET SIMPLE GIRTS

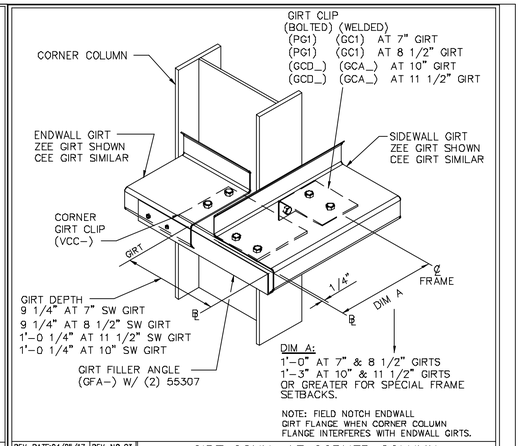


7" & 8 1/2" GIRT

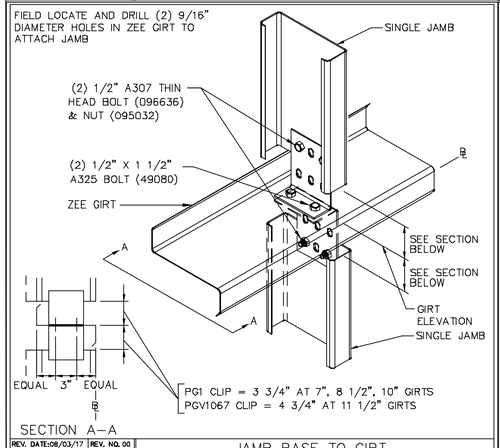
REV. DATE:01/20/11	REV. NO. 01
WS01G3	GIRT CONN. AT COLUMN OUTSET CONTINUOUS GIRT



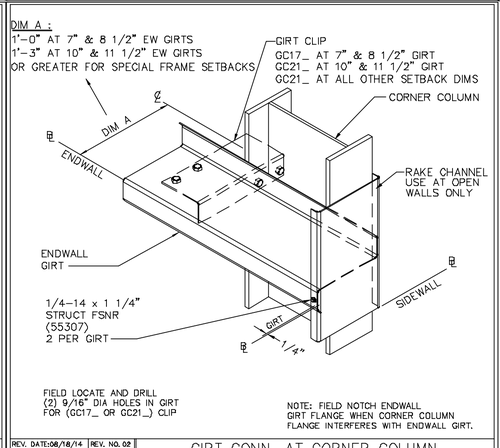
REV. DATE:07/23/13	REV. NO. 01
WS04C2	GABLE GIRT CONN. TO RAKE BEAM OUTSET GIRTS



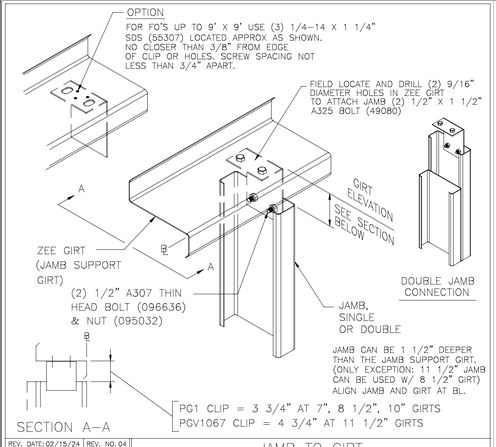
REV. DATE:04/05/17	REV. NO. 03
WS12A2	GIRT CONN. AT CORNER COLUMN ANY OUTSET GIRT AT EW, ANY GIRT AT SW



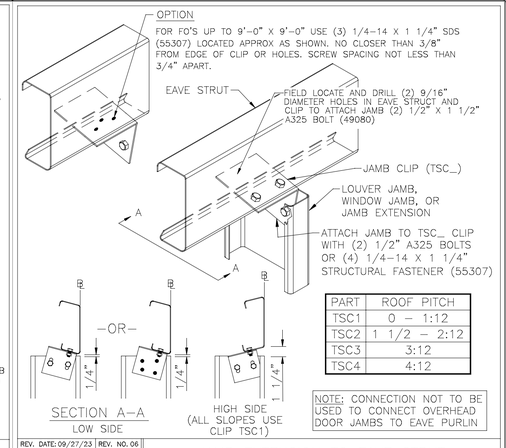
REV. DATE:08/03/17	REV. NO. 00
WS20H3	JAMB BASE TO GIRT ALL JAMB AND GIRT DEPTHS



REV. DATE:08/18/14	REV. NO. 02
WS12H5	GIRT CONN. AT CORNER COLUMN ANY OUTSET GIRT AT EW, NO SW GIRT



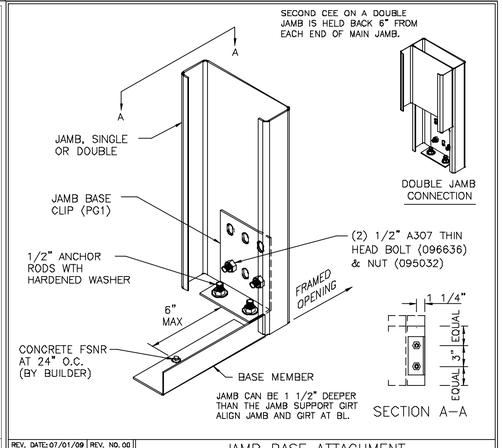
REV. DATE:02/15/24	REV. NO. 04
WS20B2	JAMB TO GIRT SINGLE OR DOUBLE JAMB, ANY ZEE GIRT



PART	ROOF PITCH
TSC1	0 – 1:12
TSC2	1 1/2 – 2:12
TSC3	3:12
TSC4	4:12

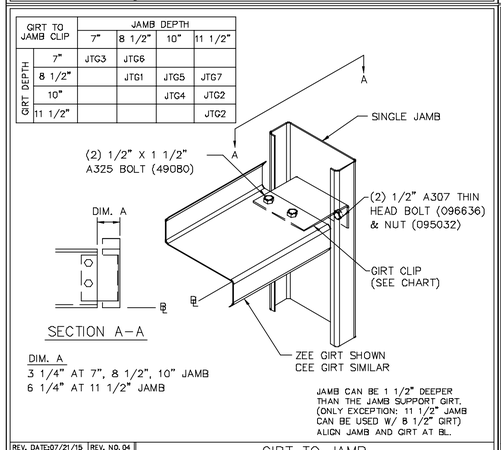
NOTE: CONNECTION NOT TO BE USED TO CONNECT OVERHEAD DOOR JAMBS TO EAVE PURLIN

REV. DATE: 09/27/23	REV. NO. 06
WS20B6	JAMB EXTENSION TO EAVE STRUT

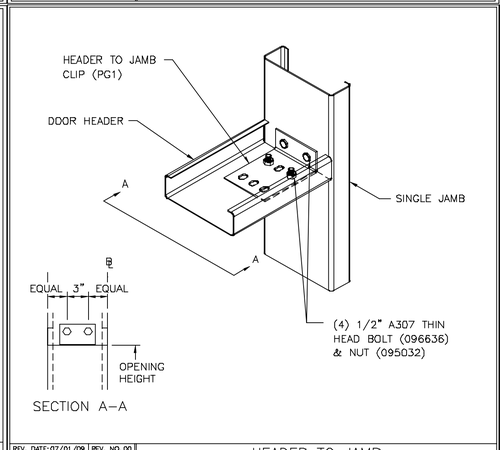


REV. DATE:07/01/09	REV. NO. 00
WS20B8	JAMB BASE ATTACHMENT SINGLE OR DOUBLE JAMB

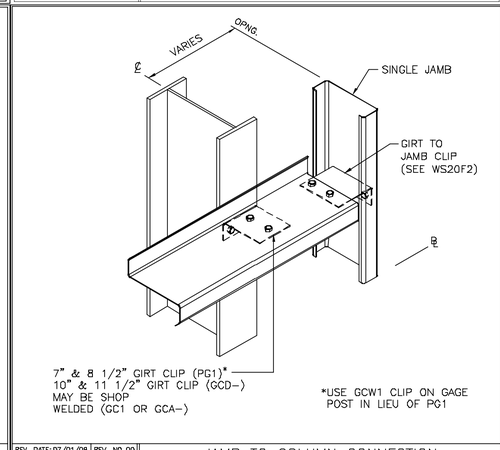
GIRT TO JAMB CLIP	JAMB DEPTH 7"	8 1/2"	10"	11 1/2"
GIRT DEPTH 7"	JTG3	JTG6		
GIRT DEPTH 8 1/2"		JTG1	JTG5	JTG7
GIRT DEPTH 10"			JTG4	JTG2
GIRT DEPTH 11 1/2"				JTG2



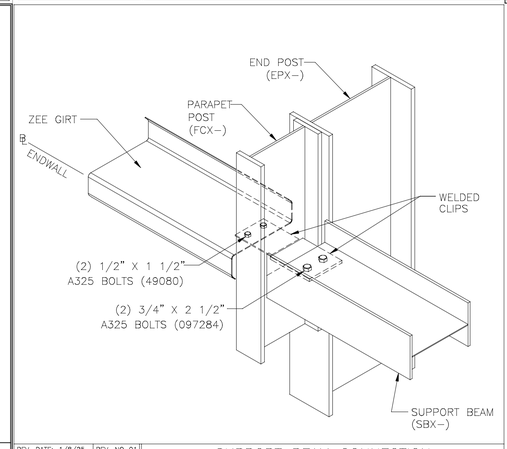
REV. DATE:07/21/15	REV. NO. 04
WS20F2	GIRT TO JAMB SINGLE JAMB



REV. DATE:07/01/09	REV. NO. 00
WS20F9	HEADER TO JAMB ANY HEADER, ANY SINGLE JAMB



REV. DATE:07/01/09	REV. NO. 00
WS21D5	JAMB TO COLUMN CONNECTION ANY OUTSET GIRTS TO SINGLE JAMB



REV. DATE: 1/8/25	REV. NO. 01
WSX100	SUPPORT BEAM CONNECTION TO PARAPET POST

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER

01/09/2025

FOR CONSTRUCTION

1. UNLESS NOTED, USE 1/2 X 1 1/2 A325T BOLT (49080) AND NUT (47120) W/O WASHERS. SNUG TIGHTEN BOLTS FOR ALL SECONDARY CONNECTIONS.
2. FLANGE BRACES ARE AN INTEGRAL PART OF THE STABILITY OF THE STRUCTURAL SYSTEM AND MUST BE PROPERLY INSTALLED PRIOR TO ERECTION OF WALL AND ROOF SHEETS.
3. REMOVAL OR ALTERATION OF ANY COMPONENT IS PROHIBITED.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

WALL SECONDARY SED'S (b)

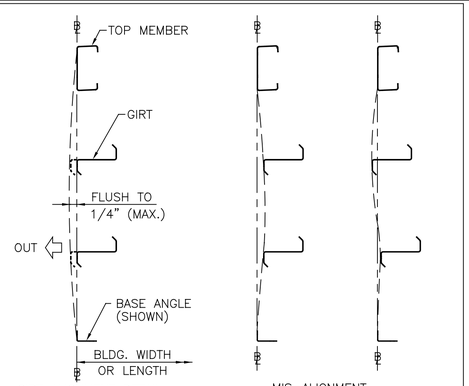
REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

BUTLER
Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 28



GIRT ALIGNMENT DETAIL
(CORRECT ALIGNMENT)

MIS–ALIGNMENT
(AVOID THESE CONDITIONS)

(Z–GIRTS SHOWN, ALSO APPLICABLE FOR C–GIRTS)

REV. DATE: 06/23/22	REV. NO. 00	
WSR065		WALL SECONDARY FRAMING ALIGNMENT

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER

01/09/2025

FOR CONSTRUCTION

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

WALL SECONDARY SED'S (c)

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 29

VPC FILENAME: 24-025448-01

1/8/2025 SEDSheet 10:23:38

Covering Schedule

Id	Qty	Start Length	Qty	Stagger Length	Type	Gage	OP	Fin.	Color	Direction
#3	1	27'-5 1/4"			MR24	24	89	Z	AZ	Right to Left
#4	1	25'-6"			MR24	24	86	Z	AZ	Right to Left
#5	1	10'-9 3/4"			MR24	24	87	Z	AZ	Right to Left
#6	42	20'-9 3/4"	41	25'-9 3/4"	MR24	24	11	Z	AZ	Right to Left
#7	42	42'-5 1/4"	41	37'-5 1/4"	MR24	24	13	Z	AZ	Right to Left
#8	1	27'-5 1/4"			MR24	24	35	Z	AZ	Right to Left
#9	1	25'-6"			MR24	24	35	Z	AZ	Right to Left
#10	1	10'-9 3/4"			MR24	24	30	Z	AZ	Right to Left
#11	1	27'-5 1/4"			MR24	24	35	Z	AZ	Right to Left
#12	1	25'-6"			MR24	24	35	Z	AZ	Right to Left
#13	1	10'-9 3/4"			MR24	24	30	Z	AZ	Right to Left
#14	42	20'-9 3/4"	41	25'-9 3/4"	MR24	24	11	Z	AZ	Right to Left
#15	42	42'-5 1/4"	41	37'-5 1/4"	MR24	24	13	Z	AZ	Right to Left
#16	1	27'-5 1/4"			MR24	24	89	Z	AZ	Right to Left
#17	1	25'-6"			MR24	24	86	Z	AZ	Right to Left
#18	1	10'-9 3/4"			MR24	24	87	Z	AZ	Right to Left

Oper. Code:89=SQ,NT
Oper. Code:86=SQ,NT
Oper. Code:87=SQ,SQ
Oper. Code:11=SQ,SQ
Oper. Code:13=SQ,NT
Oper. Code:35=SQ,NT
Oper. Code:30=SQ,SQ
Finish:Z=AlZn
Color:AZ=Plain AlZn

Covering Mark Schedule

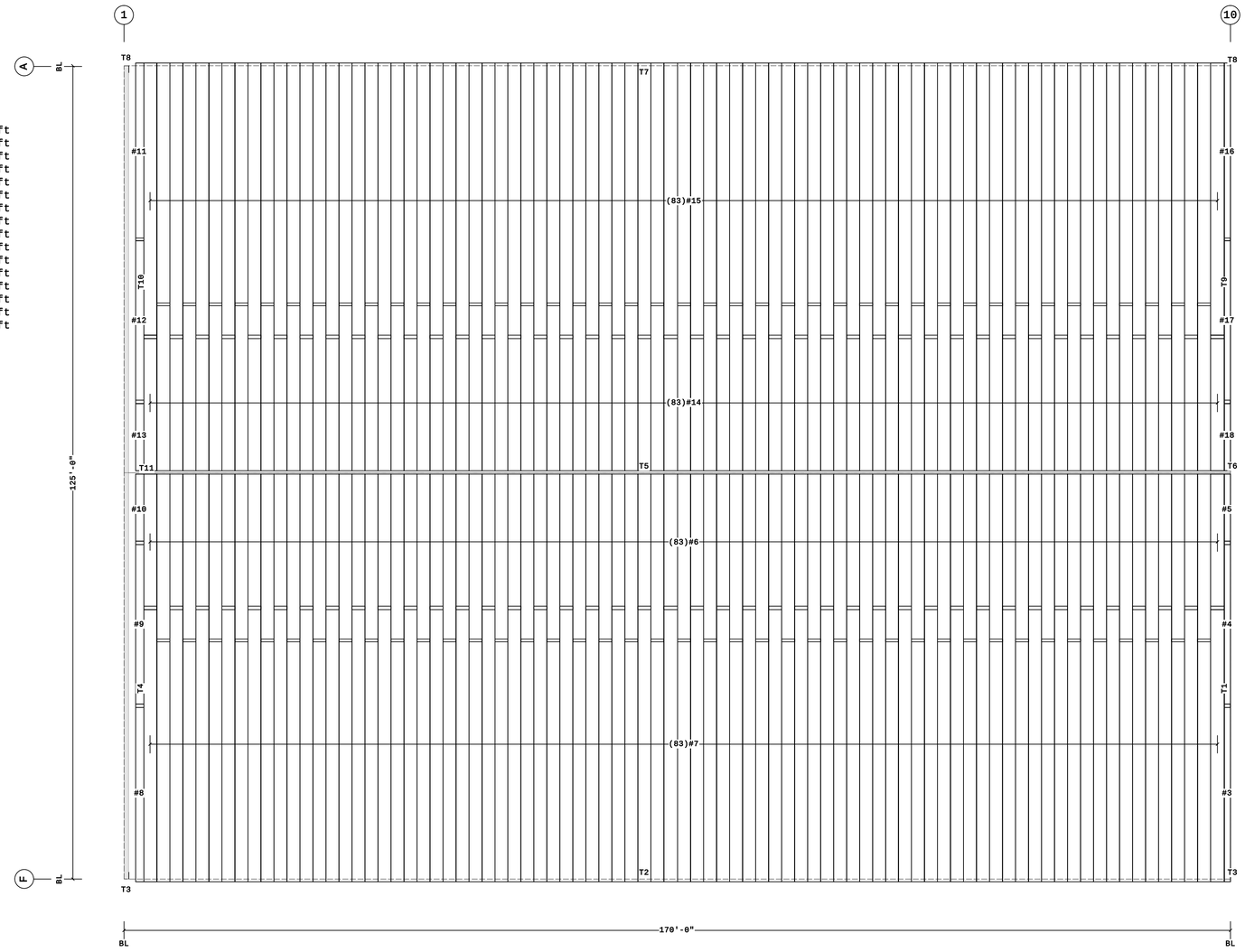
Id	Qty	Start Panel	Qty	Stagger/Last Panel	Direction
#3	1	MR12270522489ZAZ			Right to Left
#4	1	MR12250602486ZAZ			Right to Left
#5	1	MR12100962487ZAZ			Right to Left
#6	42	MR24200962411ZAZ	41	MR24250962411ZAZ	Right to Left
#7	42	MR24420522413ZAZ	41	MR24370522413ZAZ	Right to Left
#8	1	MR15270522435ZAZ			Right to Left
#9	1	MR15250602435ZAZ			Right to Left
#10	1	MR15100962430ZAZ			Right to Left
#11	1	MR15270522435ZAZ			Right to Left
#12	1	MR15250602435ZAZ			Right to Left
#13	1	MR15100962430ZAZ			Right to Left
#14	42	MR24200962411ZAZ	41	MR24250962411ZAZ	Right to Left
#15	42	MR24420522413ZAZ	41	MR24370522413ZAZ	Right to Left
#16	1	MR12270522489ZAZ			Right to Left
#17	1	MR12250602486ZAZ			Right to Left
#18	1	MR12100962487ZAZ			Right to Left

Trim Schedule

Id	Parts	Color	Details
T1	(3.5)MRGT20L,(6.1)WA10A	Cool Onyx Black	KVX100
T2	(15)CLE12C,(7)GTR25	Cool Onyx Black	EN60B1,RCB953
T3	0630043	Cool Onyx Black	
T4	(7)PTSA210,(4.2)TPCNFR24,(6.3)TTF10,(3.1)MGAUP20	Plain AlZn	
T5	(17)IRT10C,(8.5)RC20	Cool Onyx Black	ENB004,NV667
T6	MRRET,RBT2,TC1,(0.1)WA10A	Cool Onyx Black	
T7	(15)CLE12C,(7)GTR25	Cool Onyx Black	EN60B1,RCB953
T8	0630043	Cool Onyx Black	
T9	(3.5)MRGT20R,(6.1)WA10A	Cool Onyx Black	KVX100
T10	(7)PTSA210,(4.2)TPCNMR24,(6.3)TTF10,(3.1)MGAUP20	Plain AlZn	
T11	560208	Plain Alzn	

Planograph Schedule

Id	Details
T1	P-081167,P-RCI
T2	P-103223,P-103315,P-104714
T3	P-080572,P-081236,P-103223,P-104542,P-104714
T4	P-081535,P-081537
T5	P-080573,P-080575,P-080578,P-080949,P-ZRSLO
T6	P-081167,P-081243,P-RCI
T7	P-103223,P-103315,P-104714
T8	P-080572,P-081236,P-103223,P-104542,P-104714
T9	P-081167,P-RCI
T10	P-081535,P-081537
T11	P-081548



ROOF COVERING PLAN

Shape Name = Building - Shape 1

Accessory Schedule

Qty	Description
1	3070 Door - Standard (Flush Only)
2	3070 Door - Standard (Flush Only)

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2010033379
PROFESSIONAL ENGINEER

01/09/2025

FOR CONSTRUCTION

1. PRE-DRILLING 1/8 DIAMETER HOLES FOR STRUCTURAL FASTENERS MAY BE REQUIRED FOR HEAVY GAGE NESTED ZEE's AND/OR FASTENERS TO STRUCTURAL BEAMS
2. STEEL PANELS ARE AN INTEGRAL PART OF THE STRUCTURAL SYSTEM. REMOVAL OR ALTERATION WITHOUT PRIOR AUTHORIZATION IS PROHIBITED.
3. DUE TO MANUFACTURING LIMITATIONS SHORT PANELS MAY REQUIRE FIELD CUTTING, SEE THE COVERING SCHEDULE FOR CUT LENGTHS.
4. SEE JOB DETAILS FOR COVERING AND TRIM FASTENER SPECIFICATION.

THE BUTLER MFG. ENGINEER'S SEAL APPLIES ONLY TO THE WORK PRODUCT OF BUTLER MFG. AND DESIGN AND PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER. THE BUTLER MFG. ENGINEER'S SEAL DOES NOT APPLY TO THE PERFORMANCE OR DESIGN OF ANY OTHER PRODUCT OR COMPONENT FURNISHED BY BUTLER EXCEPT TO ANY DESIGN OR PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER.

THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN ACCORDANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING, ALL APPLICABLE BUTLER MFG. ERECTION GUIDES, AND INDUSTRY STANDARDS PERTAINING TO PROPER ERECTION, INCLUDING THE CORRECT USE OF TEMPORARY BRACING.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

ROOF COVERING PLAN

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

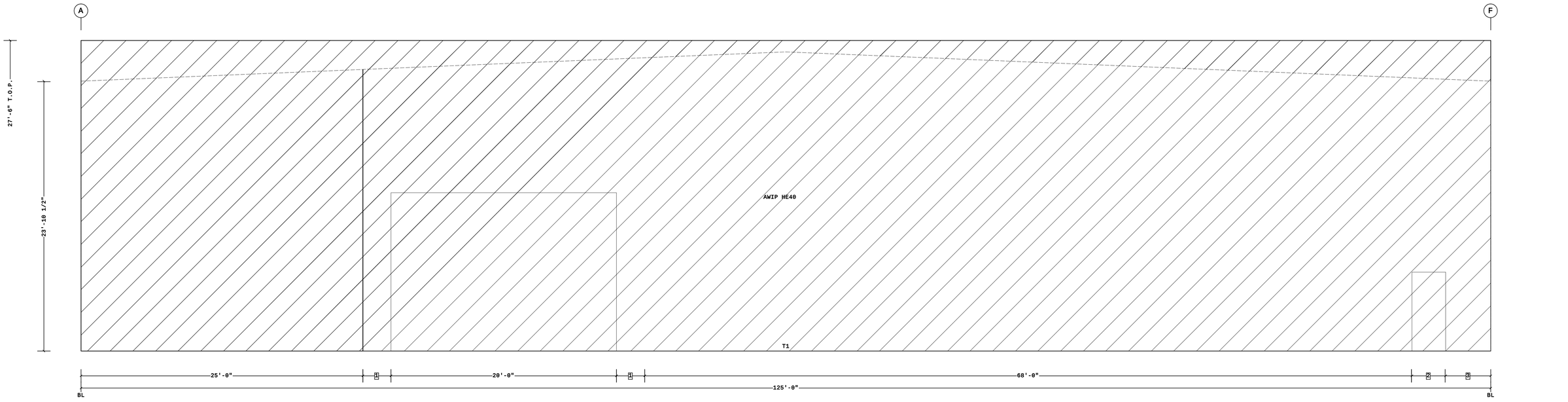
Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 30

Trim Schedule

Id	Parts	Color	Details
T1	(5)BA125	Galvalume	WCX100,WSR065

ERECTION NOTE:
Parapet cap trim (14-CTFV8E10 - Cool Onix Black) is provided as optional to be used at builder's earliest convenience.
Base angle is proivided for builder to field work at NBBMC wall as required.



COVERING ELEVATION AT 1

3 4'-0"
2 3'-0"
1 2'-6"
Dimension Key

Shape Name = Building - Shape 1, Wall = 1

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER

01/09/2025

FOR CONSTRUCTION

1. PRE-DRILLING 1/8 DIAMETER HOLES FOR STRUCTURAL FASTENERS MAY BE REQUIRED FOR HEAVY GAGE NESTED ZEE's AND/OR FASTENERS TO STRUCTURAL BEAMS
2. STEEL PANELS ARE AN INTEGRAL PART OF THE STRUCTURAL SYSTEM. REMOVAL OR ALTERATION WITHOUT PRIOR AUTHORIZATION IS PROHIBITED.
3. DUE TO MANUFACTURING LIMITATIONS SHORT PANELS MAY REQUIRE FIELD CUTTING, SEE THE COVERING SCHEDULE FOR CUT LENGTHS.
4. SEE JOB DETAILS FOR COVERING AND TRIM FASTENER SPECIFICATION.

THE BUTLER MFG. ENGINEER'S SEAL APPLIES ONLY TO THE WORK PRODUCT OF BUTLER MFG. AND DESIGN AND PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER. THE BUTLER MFG. ENGINEER'S SEAL DOES NOT APPLY TO THE PERFORMANCE OR DESIGN OF ANY OTHER PRODUCT OR COMPONENT FURNISHED BY BUTLER EXCEPT TO ANY DESIGN OR PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER.

THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN ACCORDANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING, ALL APPLICABLE BUTLER MFG. ERECTION GUIDES, AND INDUSTRY STANDARDS PERTAINING TO PROPER ERECTION, INCLUDING THE CORRECT USE OF TEMPORARY BRACING.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

COVERING ELEVATION AT 1

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 31

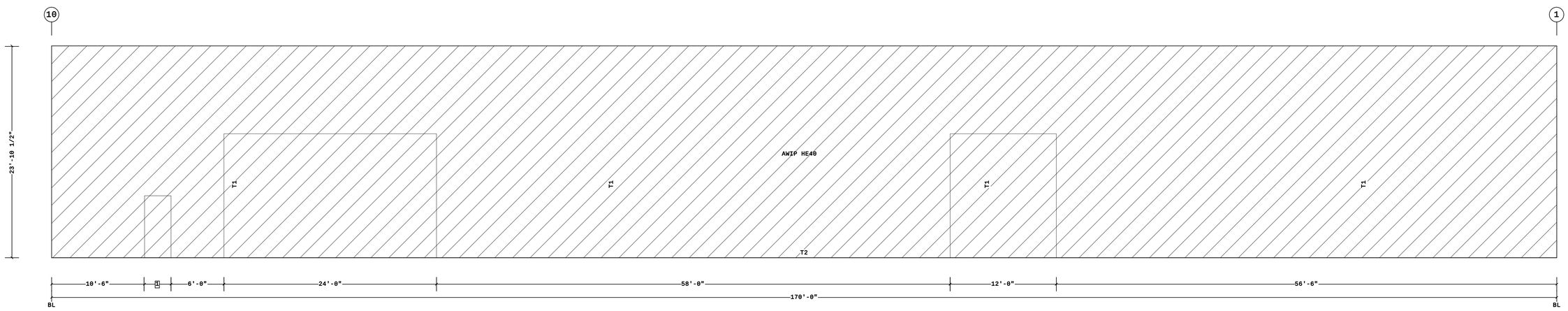
Trim Schedule

Id	Parts	Color	Details
T1	0008738,4CE75,(2.5)CP410	Cool Onyx Black	KV847
T2	(6.8)BA125	Galvalume	WCX100,WSR065

Planograph Schedule

Id	Details
T1	P-105224,P-105225,P-105228
T2	----

ERECTION NOTE:
Base angle is proivided for builder to field work as required.



COVERING ELEVATION AT A

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER
01/09/2025

1 3'-0"
Dimension Key

Shape Name = Building - Shape 1, Wall = 2

FOR CONSTRUCTION

1. PRE-DRILLING 1/8 DIAMETER HOLES FOR STRUCTURAL FASTENERS MAY BE REQUIRED FOR HEAVY GAGE NESTED ZEE's AND/OR FASTENERS TO STRUCTURAL BEAMS
2. STEEL PANELS ARE AN INTEGRAL PART OF THE STRUCTURAL SYSTEM. REMOVAL OR ALTERATION WITHOUT PRIOR AUTHORIZATION IS PROHIBITED.
3. DUE TO MANUFACTURING LIMITATIONS SHORT PANELS MAY REQUIRE FIELD CUTTING, SEE THE COVERING SCHEDULE FOR CUT LENGTHS.
4. SEE JOB DETAILS FOR COVERING AND TRIM FASTENER SPECIFICATION.

THE BUTLER MFG. ENGINEER'S SEAL APPLIES ONLY TO THE WORK PRODUCT OF BUTLER MFG. AND DESIGN AND PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER. THE BUTLER MFG. ENGINEER'S SEAL DOES NOT APPLY TO THE PERFORMANCE OR DESIGN OF ANY OTHER PRODUCT OR COMPONENT FURNISHED BY BUTLER EXCEPT TO ANY DESIGN OR PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER.

THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN ACCORDANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING, ALL APPLICABLE BUTLER MFG. ERECTION GUIDES, AND INDUSTRY STANDARDS PERTAINING TO PROPER ERECTION, INCLUDING THE CORRECT USE OF TEMPORARY BRACING.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

COVERING ELEVATION AT A

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

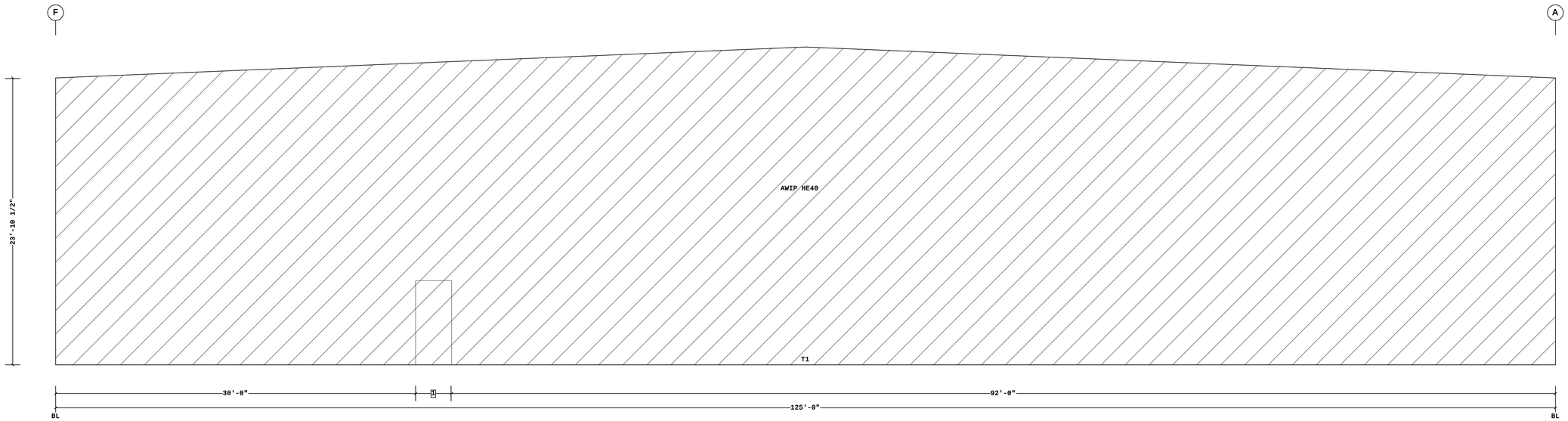
Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 32

Trim Schedule

Id	Parts	Color	Details
T1	(5)BA125	Galvalume	WCX100,WSR065

ERECTION NOTE:
Base angle is proivided for builder to field work as required.



COVERING ELEVATION AT 10

01/09/2025

1 3'-0"
Dimension Key

Shape Name = Building - Shape 1, Wall = 3

FOR CONSTRUCTION

1. PRE-DRILLING 1/8 DIAMETER HOLES FOR STRUCTURAL FASTENERS MAY BE REQUIRED FOR HEAVY GAGE NESTED ZEE's AND/OR FASTENERS TO STRUCTURAL BEAMS
2. STEEL PANELS ARE AN INTEGRAL PART OF THE STRUCTURAL SYSTEM. REMOVAL OR ALTERATION WITHOUT PRIOR AUTHORIZATION IS PROHIBITED.
3. DUE TO MANUFACTURING LIMITATIONS SHORT PANELS MAY REQUIRE FIELD CUTTING, SEE THE COVERING SCHEDULE FOR CUT LENGTHS.
4. SEE JOB DETAILS FOR COVERING AND TRIM FASTENER SPECIFICATION.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

COVERING ELEVATION AT 10

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 33

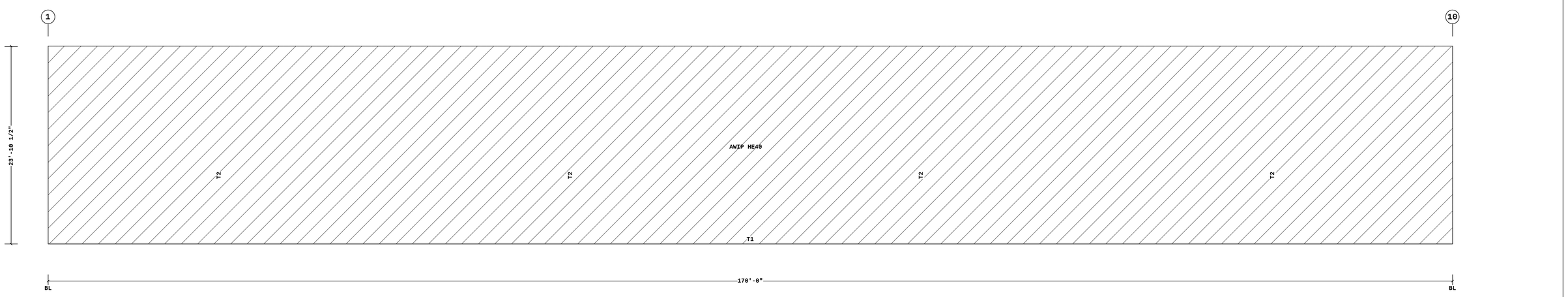
Trim Schedule

Id	Parts	Color	Details
T1	(6.8)BA125	Galvalume	WCX100,WSR065
T2	0008738,4CE75,(2.5)CP410	Cool Onyx Black	KV847

Planograph Schedule

Id	Details
T1	----
T2	P-105224,P-105225,P-105228

ERECTION NOTE:
Base angle is proivided for builder to field work as required.



COVERING ELEVATION AT F

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER
01/09/2025

FOR CONSTRUCTION

Shape Name = Building - Shape 1, Wall = 4

1. PRE-DRILLING 1/8 DIAMETER HOLES FOR STRUCTURAL FASTENERS MAY BE REQUIRED FOR HEAVY GAGE NESTED ZEE's AND/OR FASTENERS TO STRUCTURAL BEAMS
2. STEEL PANELS ARE AN INTEGRAL PART OF THE STRUCTURAL SYSTEM. REMOVAL OR ALTERATION WITHOUT PRIOR AUTHORIZATION IS PROHIBITED.
3. DUE TO MANUFACTURING LIMITATIONS SHORT PANELS MAY REQUIRE FIELD CUTTING, SEE THE COVERING SCHEDULE FOR CUT LENGTHS.
4. SEE JOB DETAILS FOR COVERING AND TRIM FASTENER SPECIFICATION.

THE BUTLER MFG. ENGINEER'S SEAL APPLIES ONLY TO THE WORK PRODUCT OF BUTLER MFG. AND DESIGN AND PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER. THE BUTLER MFG. ENGINEER'S SEAL DOES NOT APPLY TO THE PERFORMANCE OR DESIGN OF ANY OTHER PRODUCT OR COMPONENT FURNISHED BY BUTLER EXCEPT TO ANY DESIGN OR PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER.

THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN ACCORDANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING, ALL APPLICABLE BUTLER MFG. ERECTION GUIDES, AND INDUSTRY STANDARDS PERTAINING TO PROPER ERECTION, INCLUDING THE CORRECT USE OF TEMPORARY BRACING.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

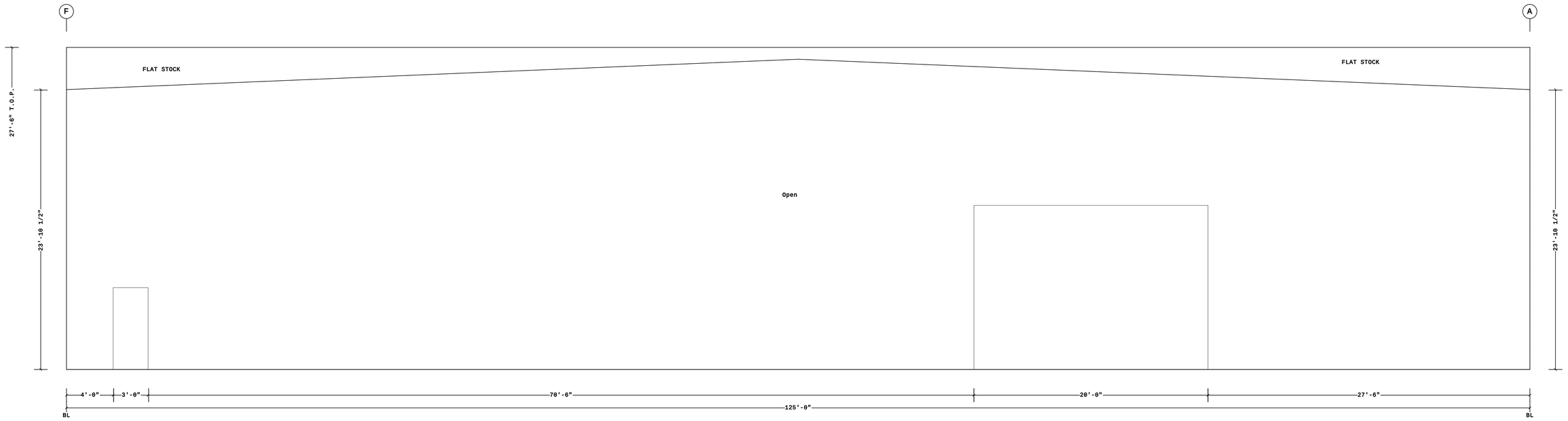
COVERING ELEVATION AT F

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 34

ERECTION NOTE:
Flat stock is provided for the builder
to use as backer panel, flat stock
provided will cover 330 sq. ft. approx.
Material provided:
(11) FSTKB10 - Plain AlZn



WALL LINER ELEVATION AT 1
(View from inside Building)

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER

01/09/2025

FOR CONSTRUCTION

Shape Name = Building - Shape 1, Wall = 1

1. PRE-DRILLING 1/8 DIAMETER HOLES FOR STRUCTURAL FASTENERS MAY BE REQUIRED FOR HEAVY GAGE NESTED ZEE's AND/OR FASTENERS TO STRUCTURAL BEAMS
2. STEEL PANELS ARE AN INTEGRAL PART OF THE STRUCTURAL SYSTEM. REMOVAL OR ALTERATION WITHOUT PRIOR AUTHORIZATION IS PROHIBITED.
3. DUE TO MANUFACTURING LIMITATIONS SHORT PANELS MAY REQUIRE FIELD CUTTING, SEE THE COVERING SCHEDULE FOR CUT LENGTHS.
4. SEE JOB DETAILS FOR COVERING AND TRIM FASTENER SPECIFICATION.

THE BUTLER MFG. ENGINEER'S SEAL APPLIES ONLY TO THE WORK PRODUCT OF BUTLER MFG. AND DESIGN AND PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER. THE BUTLER MFG. ENGINEER'S SEAL DOES NOT APPLY TO THE PERFORMANCE OR DESIGN OF ANY OTHER PRODUCT OR COMPONENT FURNISHED BY BUTLER EXCEPT TO ANY DESIGN OR PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER.

THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN ACCORDANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING, ALL APPLICABLE BUTLER MFG. ERECTION GUIDES, AND INDUSTRY STANDARDS PERTAINING TO PROPER ERECTION, INCLUDING THE CORRECT USE OF TEMPORARY BRACING.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

DRAWING SCALE: NTS

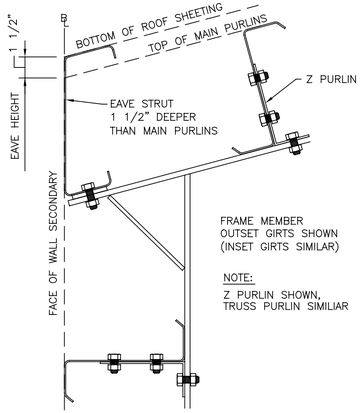
WALL LINER ELEVATION AT 1

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 35

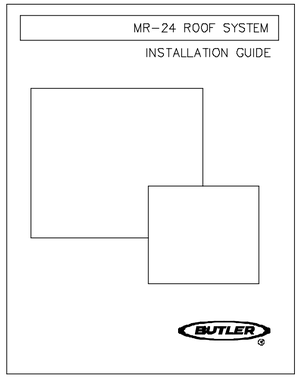
VPC FILENAME: 24-025448-01
12/18/2024 11:09:01



REV. DATE: 02/08/23	REV. NO. 01
EN60B1	EAVE HT. WITH MR-24 WITH THERMAL BLOCK 8 1/2 AND 10 INCH PURLINS

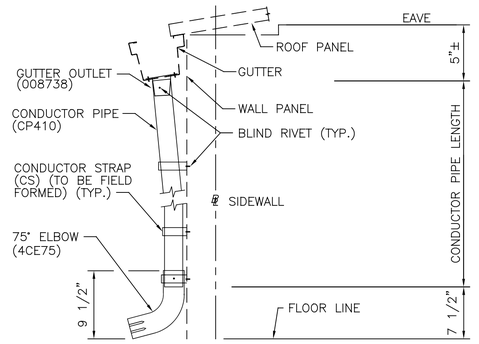
ROOF PANEL ERECTION GUIDE REQUIRED FOR THIS PROJECT:

REFER TO: MR-24 ROOF SYSTEM INSTALLATION GUIDE



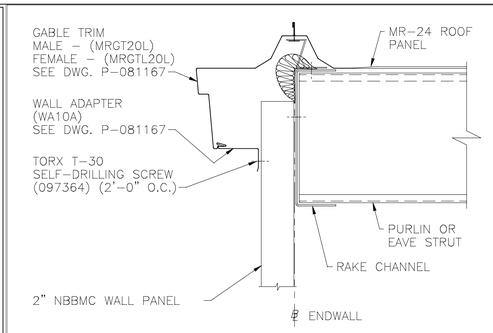
REV. DATE: 01/30/14	REV. NO. 00
ENB004	MR-24 ROOF SYSTEM

SEE DRAWING P-105224, P-105225, AND P-105228 FOR DOWNSPOUT INSTALLATION AND RIVET COLOR PART MARK INFORMATION



SLOPE RANGE 1/4:12 THRU 1/2:12

REV. DATE: 05/20/20	REV. NO. 04
KV847	4 INCH DOWNSPOUT AT WALL STYLWALL II AND ALL INSULATED WALL PANEL



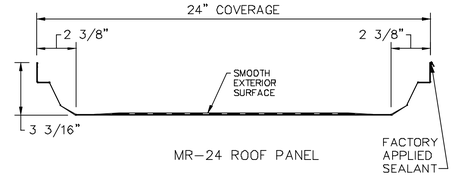
NOTE:
IF ERECTION DRAWING P-081635 HAS BEEN PROVIDED THEN THE HIGH WIND GABLE TRIM CLIPS ARE REQUIRED.

REV. DATE: 12/19/24	REV. NO. 00
KVX100	GABLE TRIM LEFT/RIGTH WITH MR-24 ROOF 2" NBBMC PANEL

F = FEET
I = INCHES
E = EIGHTHS

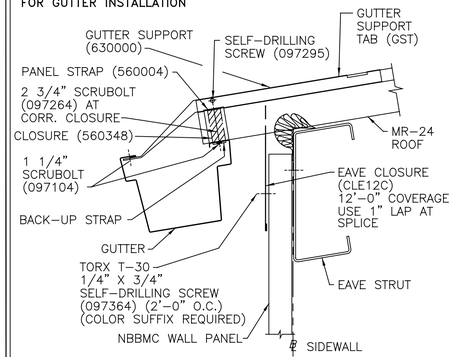
G = GAGE
OO = OPERATION
C = FIN/COLOR

MR-24 ROOF PANEL MARK NO.: MR24 F F I I E G G OO C C C
LENGTH CODE



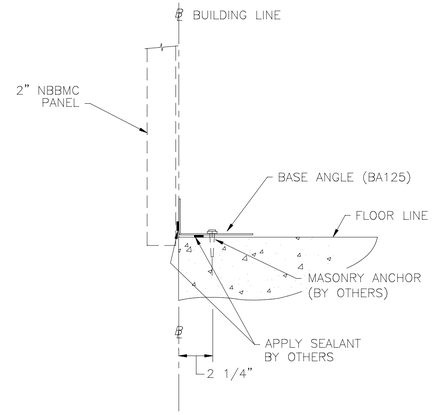
REV. DATE: 01/14/10	REV. NO. 00
NV667	MR-24 STANDING SEAM ROOF PANEL

SEE DRAWINGS P-103223 AND P-104714 FOR GUTTER INSTALLATION

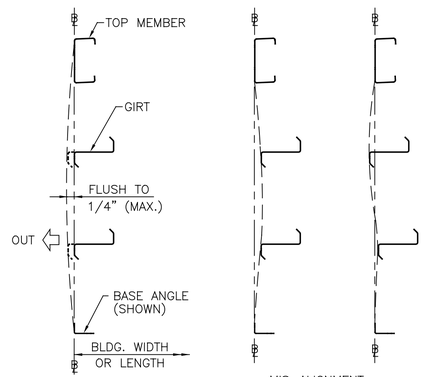


SLOPE RANGE 1/4:12 - 4:12

REV. DATE: 03/21/22	REV. NO. 01
RCB953	GUTTER WITH WTHR. SEAL WITH MR-24 ROOF NBBMC WALL PANEL WITHOUT WALL CLSR



REV. DATE: 12/19/24	REV. NO. 02
WCX100	BASE ANGLE W/O TRIM AT WALLS FOR 2" NBBMC WALL PANEL



(Z-GIRTS SHOWN, ALSO APPLICABLE FOR C-GIRTS)

REV. DATE: 06/23/22	REV. NO. 00
WSR065	WALL SECONDARY FRAMING ALIGNMENT

STATE OF MISSOURI
KEITH ERICK FIX
NUMBER PE-2012033379
PROFESSIONAL ENGINEER

01/09/2025

FOR CONSTRUCTION

THE BUTLER MFG. ENGINEER'S SEAL APPLIES ONLY TO THE WORK PRODUCT OF BUTLER MFG. AND DESIGN AND PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER. THE BUTLER MFG. ENGINEER'S SEAL DOES NOT APPLY TO THE PERFORMANCE OR DESIGN OF ANY OTHER PRODUCT OR COMPONENT FURNISHED BY BUTLER EXCEPT TO ANY DESIGN OR PERFORMANCE REQUIREMENTS SPECIFIED BY BUTLER.

THE GENERAL CONTRACTOR AND/OR ERECTOR IS SOLELY RESPONSIBLE FOR ACCURATE GOOD QUALITY WORKMANSHIP IN ERECTING THIS BUILDING IN ACCORDANCE WITH THIS DRAWING, DETAILS REFERENCED IN THIS DRAWING, ALL APPLICABLE BUTLER MFG. ERECTION GUIDES, AND INDUSTRY STANDARDS PERTAINING TO PROPER ERECTION, INCLUDING THE CORRECT USE OF TEMPORARY BRACING.

D

BUTLER MANUFACTURING
1540 GENESSEE ST. KANSAS CITY, MO 64102

REV:	DATE:	BY:	DESCRIPTION:

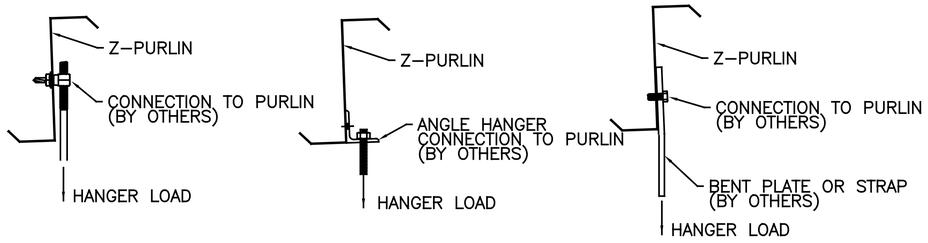
DRAWING SCALE: NTS

COVERING & TRIM SED'S

BUILDER: MAR BUILDING SOLUTIONS LLC
CUSTOMER:
LOCATION: Lees Summit, Missouri
PROJECT: KR Wholesale
BUILDER'S PO#: 200440709

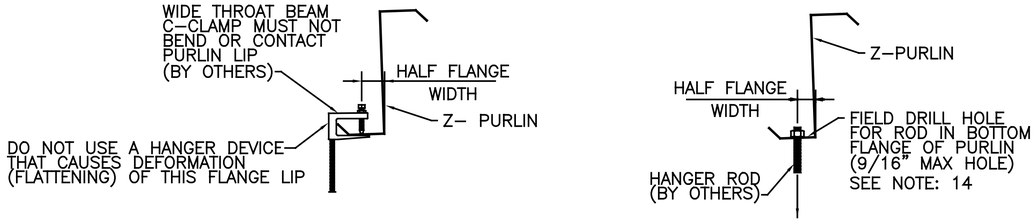
Butler Manufacturing
VPC VERSION: 24.3.1

JOB #: 24-025448-01
DATE: 1/14/2024
DRAWN/CHECK: LDCM / GL
PAGE: 36



WEB HANGERS

FOR 1/2" DIAM. BOLT TO PURLIN CONNECTION–– MAX HANGER LOAD=1500lbs
PURLIN MUST BE SPECIFICALLY DESIGNED FOR LOADS GREATER THAN 500 LB. SEE NOTE: 2.



VERIFY OVERALL PURLIN DESIGN CAN TAKE APPLIED LOADS. SEE NOTE: 2

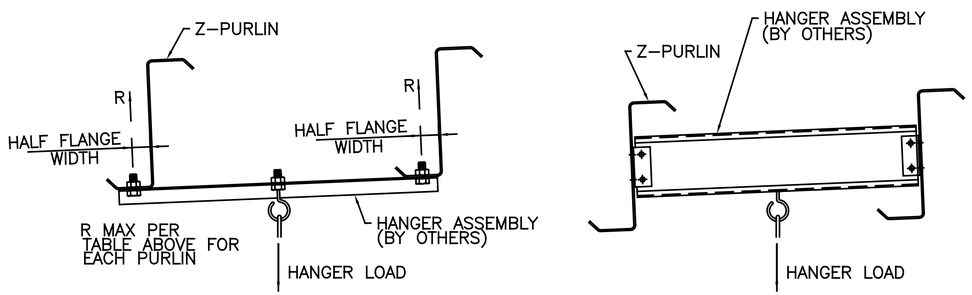
MAXIMUM LOAD SUSPENDED FROM BOTTOM FLANGE (LOCATED AT HALF–FLANGE WIDTH)			
THICKNESS	MAX LOAD	THICKNESS	MAX LOAD
0.060"	110lbs	0.088"	200lbs
0.068"	120lbs	0.098"	250lbs
0.073"	140lbs		
0.079"	180lbs	0.113"	250lbs

FOR LOADS LOCATED MORE THAN HALF FLANGE WIDTH
FROM WEB, USE HALF OF THE LOADS SHOWN ABOVE.

BOTTOM FLANGE CLAMP HANGER
(TOP FLANGE SIMILAR)

BOTTOM FLANGE ROD HANGER
(TOP FLANGE SIMILAR)

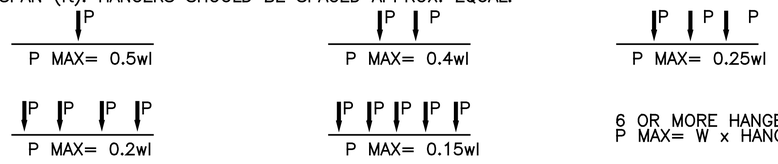
DO NOT USE ANY OF THE DETAILS ABOVE IF ROOF SLOPE IS GREATER THAN 4:12



DOUBLE PURLIN HANGERS
VERIFY OVERALL PURLIN DESIGN CAN SUPPORT APPLIED LOADS.

GENERAL NOTES

1. CONCENTRATED LOADS GREATER THAN 500lbs ON ANY SINGLE PURLIN MUST BE EXPLICITLY LOCATED AND DESIGNED FOR DURING DESIGN OF BUILDING SYSTEM.
2. SPECIFIED COLLATERAL LOADS MAY BE CONVERTED TO SAFE CONCENTRATED LOADS AS FOLLOWS, WHERE P = MAX CONCENTRATED LOAD(lbs); W = UNIFORM COLLATERAL LOAD (PSF) x PURLIN SPACING (ft) = lbs/ft; L = PURLIN SPAN (ft). HANGERS SHOULD BE SPACED APPROX. EQUAL.

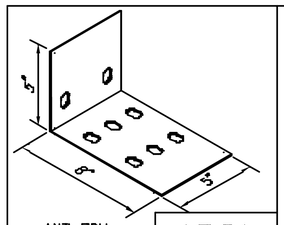


EXAMPLE: A PIPE IS SUSPENDED FROM A PURLIN AT 3 LOCATIONS EQUALLY SPACED
BAY SPACING = 24'–0" PURLIN SPACING = 5'–0"
SPECIFIED COLLATERAL LOAD = 5 PSF
W = 5 PSF x 5' = 25 PLF L = 24'–0"
PMAX = 0.25 x 25 PLF x 24'–0" = 150 LBS AT EACH LOCATION
THE PURLIN CAN SUPPORT 3 LOADS UP TO 150 LBS EACH. PICK A HANGER CONNECTION CAPABLE OF SUPPORTING ACTUAL APPLIED LOADS.

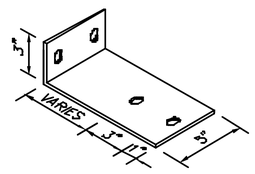
3. FOR LOADS GREATER THAN 250 lbs, PURLINS MUST BE "BLOCKED" AT LOCATION OF LOAD TO PREVENT PURLIN ROTATION.
4. EQUIPMENT LOADS SHOULD BE OBTAINED FROM CERTIFIED EQUIPMENT DRAWINGS AND MANUFACTURER'S DATA.
5. Z–PURLINS WILL DEFLECT UNDER SNOW AND WIND LOADS. ITEMS THAT MAY BE DAMAGED DUE TO DEFLECTIONS, (EX. GAS LINES), VERIFY THAT PIPES OR SUSPENDED EQUIPMENT ARE COMPATIBLE WITH EXPECTED DEFLECTION RANGES (±L/180).
6. THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) REQUIRES SPRINKLER HANGERS TO BE DESIGNED FOR A MINIMUM LOAD OF FIVE TIMES THE WEIGHT OF THE WATER–FILLED PIPE PLUS 250 POUNDS. THE HANGER ITSELF MUST BE ABLE TO SUPPORT THIS LOADING, IT IS NOT NECESSARY TO DESIGN THE SUPPORTING MEMBER FOR THIS LOAD IN COMBINATION WITH THE DESIGN LOADS.
7. SUSPENDED LOADS WILL NEED TO BE BRACED (TO THE PRIMARY FORCE RESISTING SYSTEM) FOR LATERAL STABILITY DUE TO EARTHQUAKES.
8. HANGER DESIGN IS NOT THE RESPONSIBILITY OF BLUESCOPE.
9. TOP FLANGE HANGERS SHOULD BE AVOIDED ON BUILDINGS WITHOUT INSULATION SPACER BLOCKS ON TOP OF THE TOP FLANGE. IF TOP FLANGE HANGERS ARE REQUIRED, PLACE THE HANGERS AT THE ROOF PANEL MAJOR CORRUGATION LOCATION TO AVOID DAMAGING THE ROOF PANEL WITH THE HANGER WHEN THE ROOF PANEL IS LOADED OR WALKED ON.
10. WHEN BEAM C–CLAMPS OR OTHER ROD HANGERS ARE USED ON THE TOP FLANGE, THE ROD SHOULD NOT EXTEND ABOVE THE TOP OF THE CLAMP TO AVOID DAMAGING THE ROOF PANEL WITH THE ROD WHEN THE ROOF PANEL IS LOADED OR WALKED ON.
11. DO NOT HANG ANY TYPE OF CRANE, HOIST, CONVEYOR OR ANY MOVING LOADS FROM THE Z–PURLINS.
12. DO NOT HANG ANY LOAD FROM BBNA SUPPLIED PURLIN BRACES OR BRIDGING.
13. DO NOT WELD ANY PART OF THE Z–PURLIN.
14. HOLES MUST NOT EXCEED 9/16" DIAMETER UNLESS AUTHORIZED BY BBNA ENGINEER. DRILL OR REAM HOLES WHEN REQUIRED– DO NOT FLAME CUT

CONCENTRATED LOADS ON ROOF
Z–PURLIN HANGER DETAILS

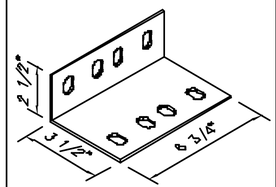
DRAWN BY	CHECKED BY	GROUP NUMBER: 80–054–01		
REVERITT	RBENTON	B	B–081465	09
FIRST RELEASE DATE	REVISION DATE			
02/26/10	02/26/20			



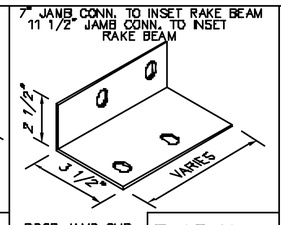
ANTI-ROLL CLIP — ARC1



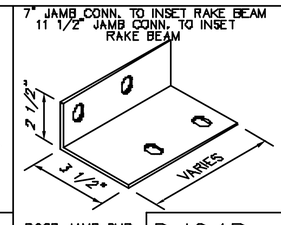
DOOR JAMB CLIP (OUTSET) — DJC1—



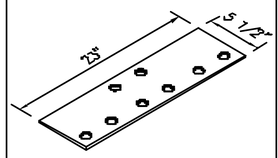
DOOR JAMB CLIP (INSET) — DJC2_



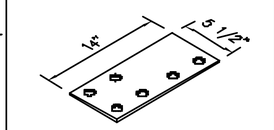
DOOR JAMB CLIP (INSET) — DJC4L_



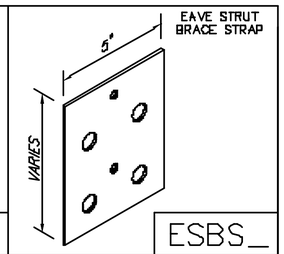
DOOR JAMB CLIP (INSET) — DJC4R_



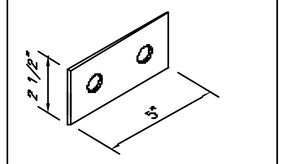
EAVE ATTACHMENT PLATE — EAP1



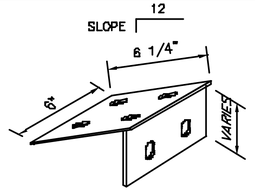
ENDFRAME EAVE ATTACHMENT PLATE — EAP2



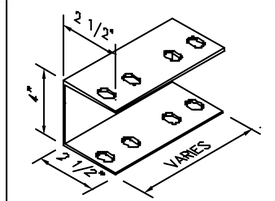
ESBS_



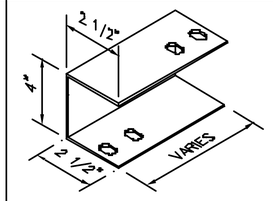
EAVE STRUT SHIM PLATE — ESH—



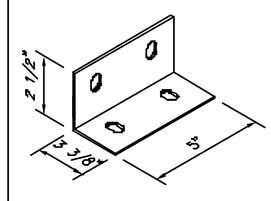
BOLTED FULL FRAME CLIP — FFC_



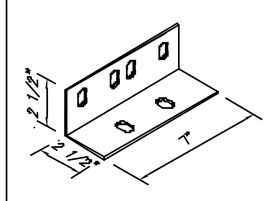
GIRT CLIP TO RAFTER — GC18_



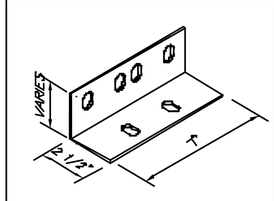
INSET GIRT CLIP TO RAFTER LEFT / RIGHT — GC19 L/R



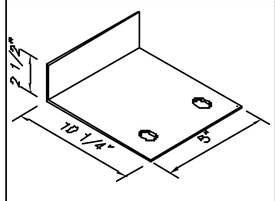
GIRT / JAMB CLIP — GC5



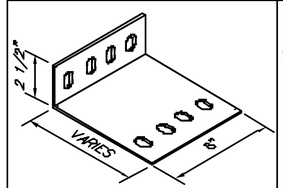
INSET GIRT TO GAGE COLUMN FLG. CLIP — GC53



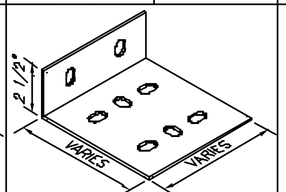
VARIABLE LEG CLIP 8.5 GIRTS — GC71__



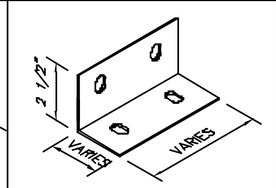
CORNER COLUMN TO RAKE CHANNEL CLIP — GC9



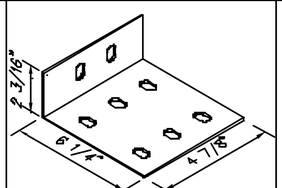
GIRT CLIP GAGE ENDWALL — GC91 A/B



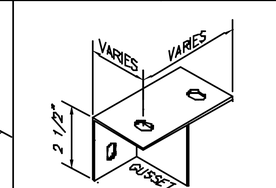
VARIABLE OUTSET GIRT CLIP — GCD



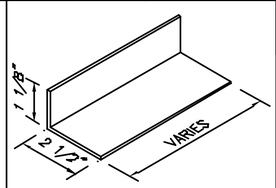
VARIABLE INSET GIRT CLIP — GCE



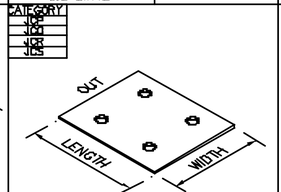
GAGE POST GIRT CLIP — GCW1



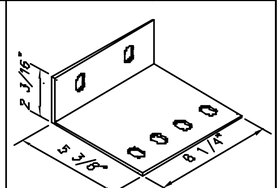
11.5 INSET GIRT CLIP — GCZZ



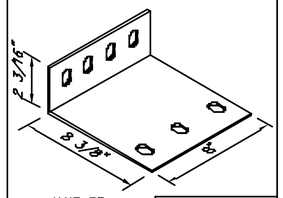
GIRT FILLER ANGLE — GFA



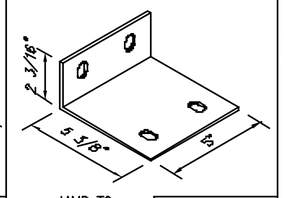
JAMB TO COLUMN MISC. PLATE — JC__



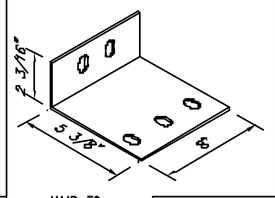
JAMB TO GIRT CLIP 8.5 – 8.5 — JTG1



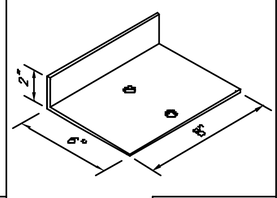
JAMB TO GIRT CLIP 11.5 –10 / 11.5 — JTG2



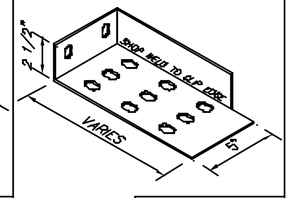
JAMB TO GIRT CLIP 7 – 7 — JTG3



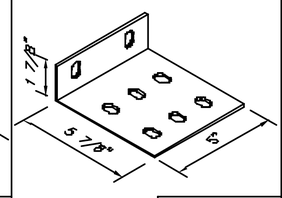
JAMB TO GIRT CLIP 10 – 10 — JTG4



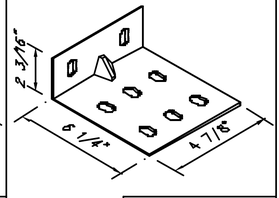
SIMPLE SAVER FB CLIP — KMA1



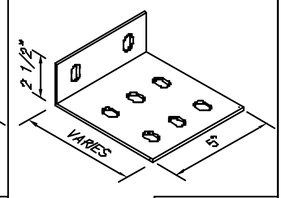
GUSSETED PURLIN GIRT CLIP — PC4/PC5



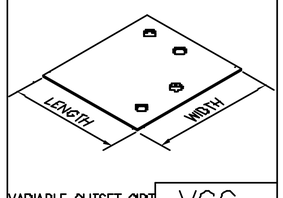
ANTI-ROLL PURLIN CLIP — PC27



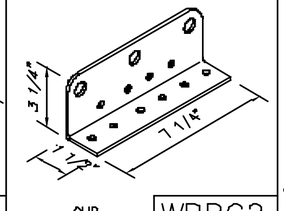
PURLIN / GIRT CLIP — PG1



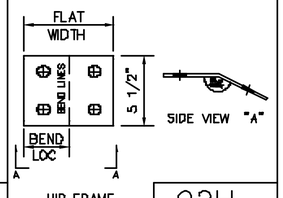
VARIABLE PURLIN GIRT CLIP — PGV_



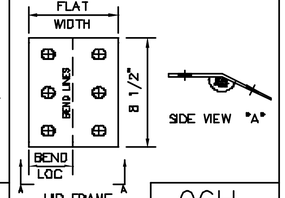
VARIABLE OUTSET GIRT CORNER CLIP — VCC_



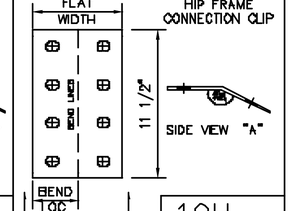
CLIP — WBBC2



HIP FRAME CONNECTION CLIP — 02H_



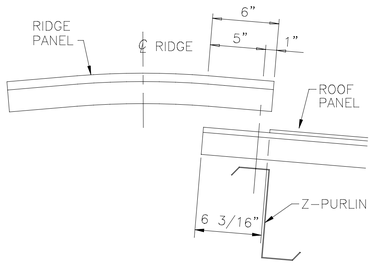
HIP FRAME CONNECTION CLIP — 06H_



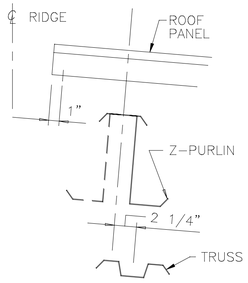
10H_

BENT CLIPS

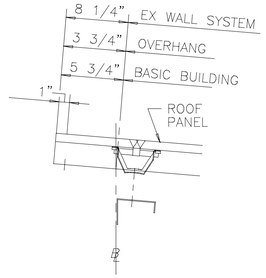
DRAWN BY	CHECKED BY	GROUP NUMBER: – –		
NF	RJR			
FIRST RELEASE DATE	REVISION DATE	B	B–081765	04
01/28/13	07/21/16			



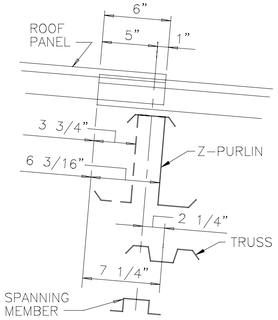
SEAMED RIDGE PANEL



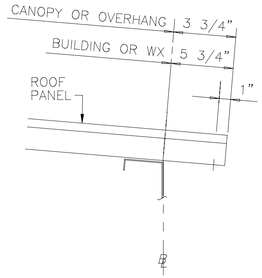
RIDGE



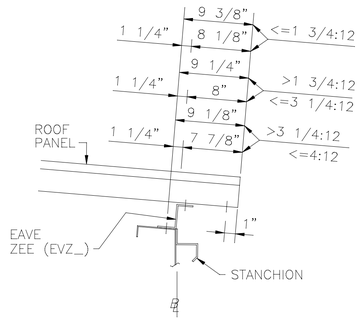
HIGH EAVE



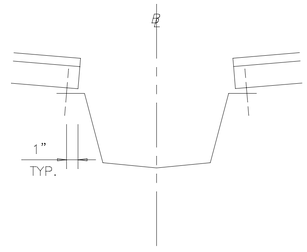
END LAP SPLICE



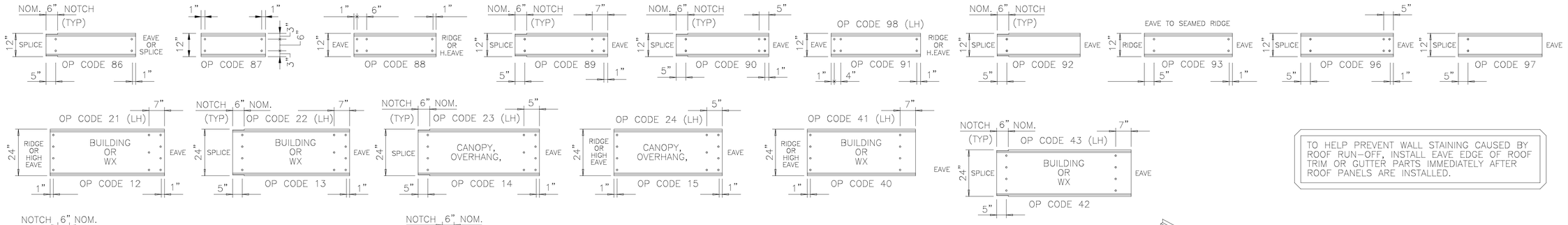
LOW EAVE



LOW EAVE
EX WALL PANEL SYSTEM



VALLEY GUTTER



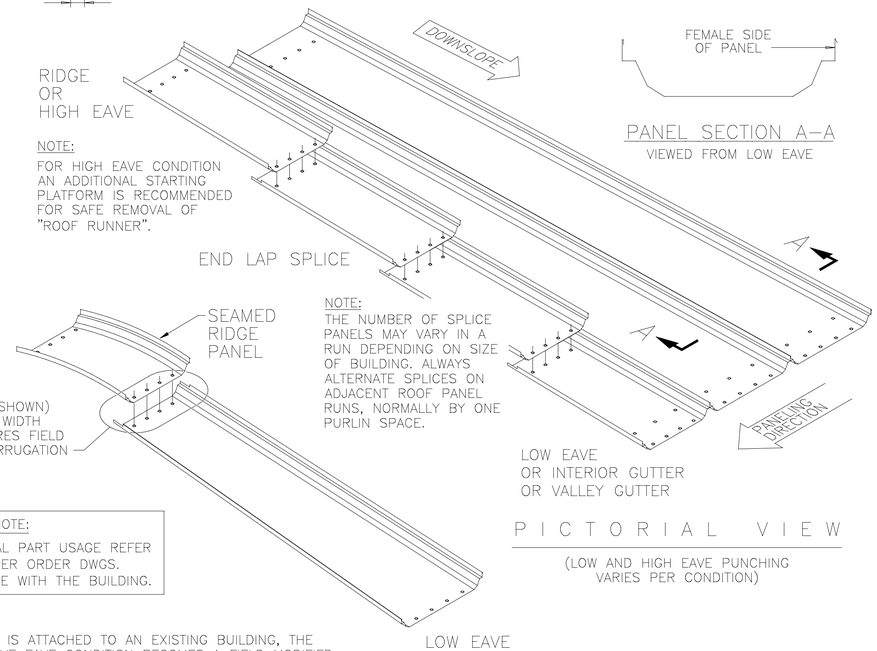
NOTE:
MR–24 VARIABLE WIDTH PANELS (EXCLUDING 12" PANELS) ARE UNPUNCHED.
SEE DWG. P–080876 FOR FIELD DRILLING REQUIREMENTS.

RIGHT HAND PANEL (SHOWN)
LEFT HAND VARIABLE WIDTH PANEL (ONLY) REQUIRES FIELD NOTCH AT PANEL CORRUGATION

BUILDER NOTE:
FOR ACTUAL PART USAGE REFER TO THE "PER ORDER DWGS. "THAT COME WITH THE BUILDING.

NOTE:
WHEN A WX IS ATTACHED TO AN EXISTING BUILDING, THE BUILDING EAVE EAVE CONDITION BECOMES A FIELD MODIFIED END LAP SPLICE WITH UPPER END OF PANEL UNPUNCHED.

TO HELP PREVENT WALL STAINING CAUSED BY ROOF RUN–OFF, INSTALL EAVE EDGE OF ROOF TRIM OR GUTTER PARTS IMMEDIATELY AFTER ROOF PANELS ARE INSTALLED.



PICTORIAL VIEW

(LOW AND HIGH EAVE PUNCHING VARIES PER CONDITION)

MR–24 ROOF PANEL IDENTIFICATION

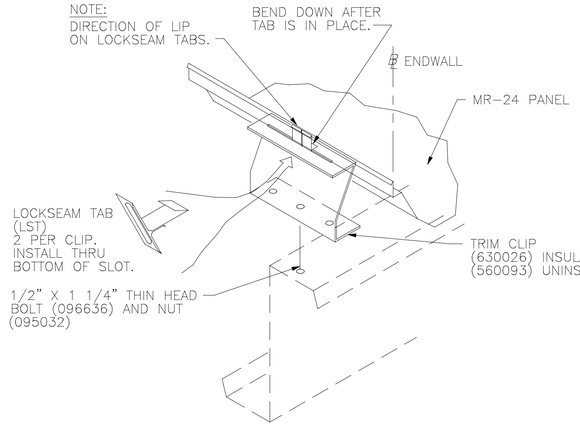
DRAWN BY	CHECKED BY	GROUP NUMBER: 02–030–01		
JPV	BJF	B	P–080570	10
FIRST RELEASE DATE	REVISION DATE			
01/21/10	05/02/24			

CAUTION

THE TRIM CLIP MUST BE INSTALLED AT THE SAME TIME AS THE GABLE ANGLE OR RAKE CHANNEL. BEFORE INSTALLING TRIM CLIPS SEE THE PROPER SECONDARY STRUCTURAL DETAIL DRAWING.

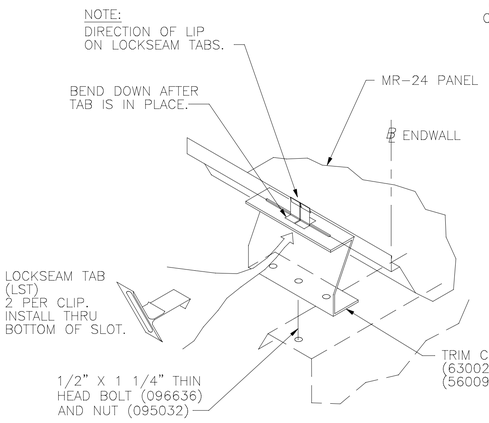
DETAIL 1 IMPORTANT NOTES:

1. USE THE OUTER DOWNSLOPE HOLE OR SLOT IN THE TRIM CLIP FOR THE CONNECTION TO THE EAVE STRUT.
2. WITH MULTIPLE GUTTER AT THE EAVE, MOVE THE TRIM CLIP UPSLOPE TO CLEAR THE RUBBER CORRUGATION CLOSURE IN THE END CORRUGATION. USE THE CLIP AS A TEMPLATE TO FIELD DRILL (2) 9/16" DIA. HOLES. USE THE TWO OUTER HOLES OR SLOTS AS A TEMPLATE TO FIELD DRILL THE GABLE ANGLE AND/OR RAKE CHANNEL. ATTACH WITH (2) 1/2" x 1 1/4" THIN HEAD BOLTS AND 1/2" NUTS IN THE TWO OUTER HOLES OF THE CLIP.



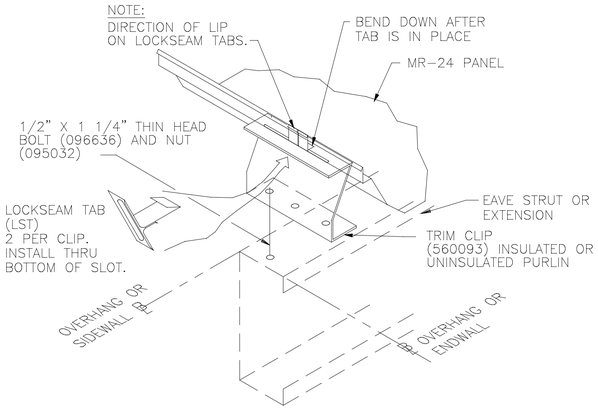
TAB ORIENTATION AT FEMALE SIDE OF PANEL

DETAIL 2



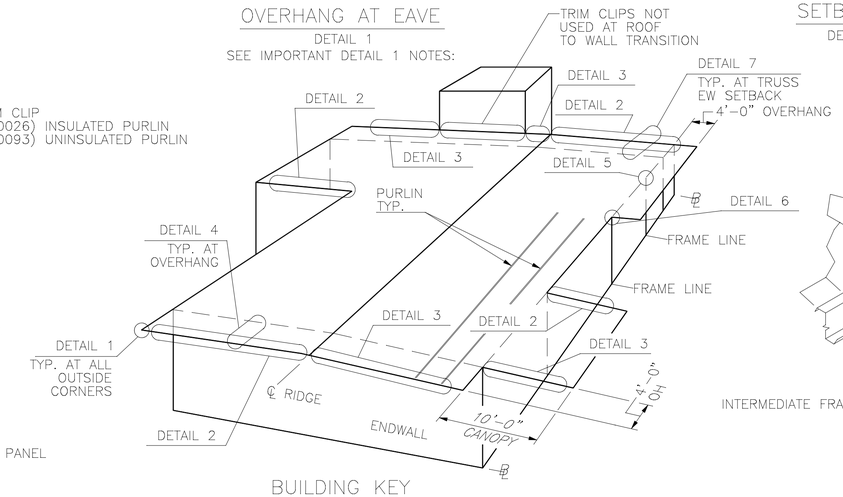
TAB ORIENTATION AT MALE SIDE OF PANEL

DETAIL 3

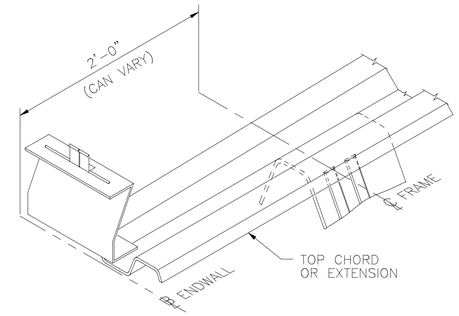


OVERHANG AT EAVE

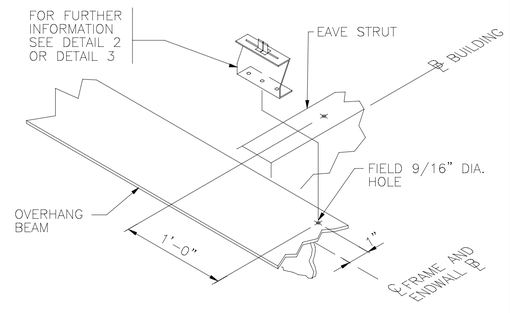
DETAIL 1
SEE IMPORTANT DETAIL 1 NOTES:



BUILDING KEY



NOTE:
FOR PART NUMBERS AND TAB ORIENTATION SEE DETAILS 2 AND 3.

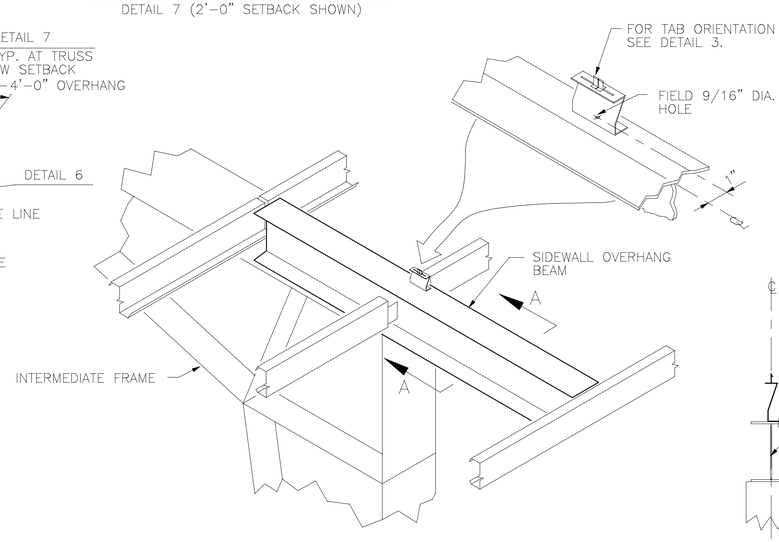


OVERHANG TERMINATING AT FRAME LINE

DETAIL 6

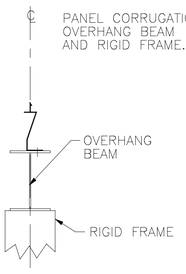
SETBACK AT TRUSS ENDWALL

DETAIL 7 (2'-0" SETBACK SHOWN)



TRIM CLIPS REQUIRED ON SIDEWALL OVERHANG BEAMS

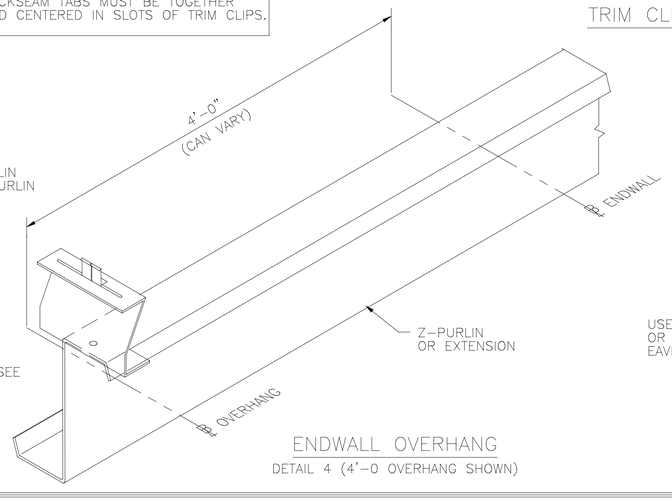
DETAIL 5



SECTION A-A

IMPORTANT NOTE

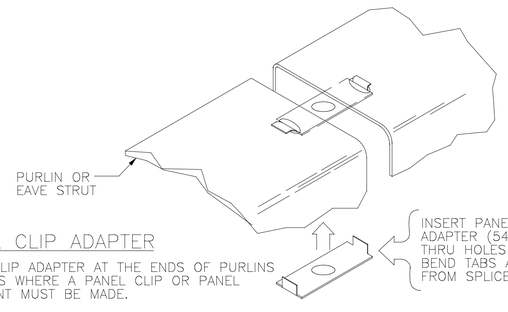
LOCKSEAM TABS MUST BE TOGETHER AND CENTERED IN SLOTS OF TRIM CLIPS.



NOTE:
FOR PART NUMBERS AND TAB ORIENTATION SEE DETAILS 2 AND 3.

ENDWALL OVERHANG

DETAIL 4 (4'-0 OVERHANG SHOWN)

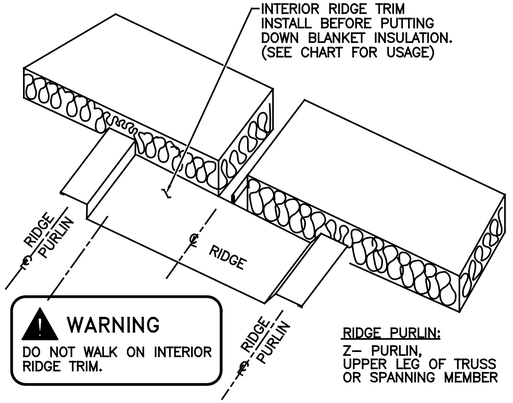


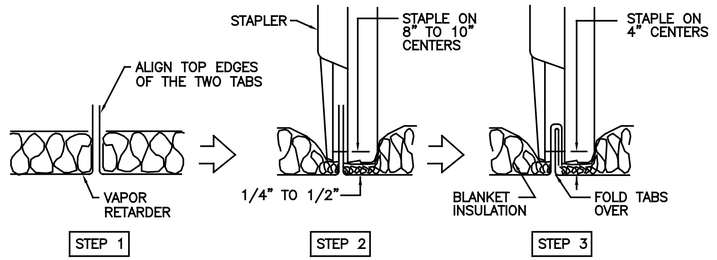
PANEL CLIP ADAPTER

USE A PANEL CLIP ADAPTER AT THE ENDS OF PURLINS OR EAVE STRUTS WHERE A PANEL CLIP OR PANEL EAVE ATTACHMENT MUST BE MADE.

MR-24 TRIM CLIP
LOCKSEAM TAB AND PANEL CLIP ADAPTER INSTL.

DRAWN BY	CHECKED BY	GROUP NUMBER: 02-030-02		
JPV	BJF			
FIRST RELEASE DATE	REVISION DATE	B	P-080572	05
01/21/10	03/07/24			

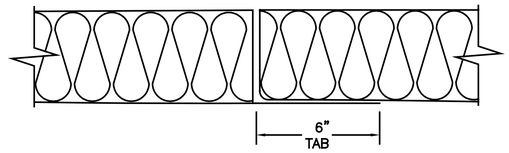




SEALING JOINTS

ALL JOINTS MUST BE STAPLED AS SHOWN TO MAINTAIN VAPOR RETARDER INTEGRITY.

DETAIL 3



INSULATION SIDE LAP DETAIL

(OPTIONAL)

INTERIOR RIDGE TRIM PART NUMBER					
BUILDING TYPE	ROOF SLOPE	7" PURLIN	8 1/2" PURLIN	10" PURLIN	11 1/2" PURLIN
Z–PURLIN	1/4:12 TO < 3/4:12	IRT10C	IRT10C	IRT10C	IRT10C
	3/4:12 TO <= 2 3/4:12	IRT10C	IRT10C	IRT10B	IRT10B
	> 2 3/4:12 TO < 3 1/2:12	IRT10C	IRT10C	IRT10D	IRT10D
	>= 3 1/2:12 TO <= 4:12	IRT10A	IRT10A	IRT10B	IRT10B

BUILDING TYPE	ROOF SLOPE	5" END SEAT	* INSULATION BRIDGE
TRUSS	1/4:12 TO < 1:12	IRT10C	IRTD10C
	1:12 TO 2:12	IRT10D	IRTD10D

BUILDING TYPE	ROOF SLOPE	8 1/2" PURLIN	10" PURLIN	11 1/2" PURLIN
* INSULATION BRIDGE WITH 5" BASE CLIP	1/4:12 TO < 3/4:12	IRTD10C	IRTD10C	IRTD10C
	3/4:12 TO <= 2 3/4:12	IRTD10C	IRTD10B	IRTD10B
	> 2 3/4:12 TO < 3 1/2:12	IRTD10C	IRTD10D	IRTD10D
	>= 3 1/2:12 TO <= 4:12	IRTD10A	IRTD10B	IRTD10B

* INTERIOR RIDGE TRIM (IRTD10_) HAS A 2" DEEP PAN AND 3" O.C. PUNCHING.

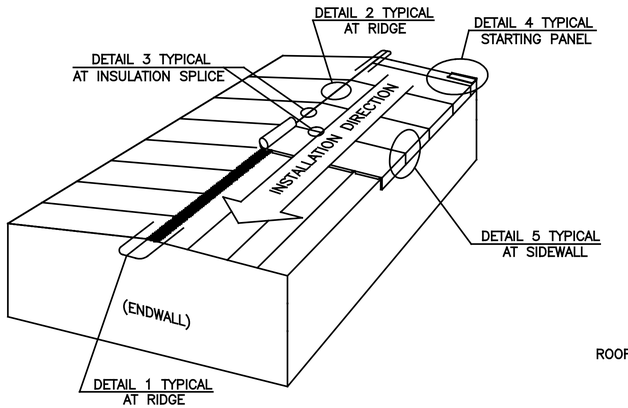
RIDGE CONDITION

DETAIL 2

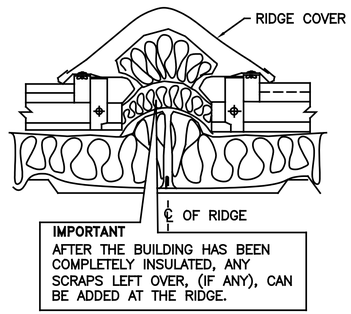
INTERIOR RIDGE TRIM INSTALLATION

NOTE: ROTATE ENDING PANEL

DETAIL 1

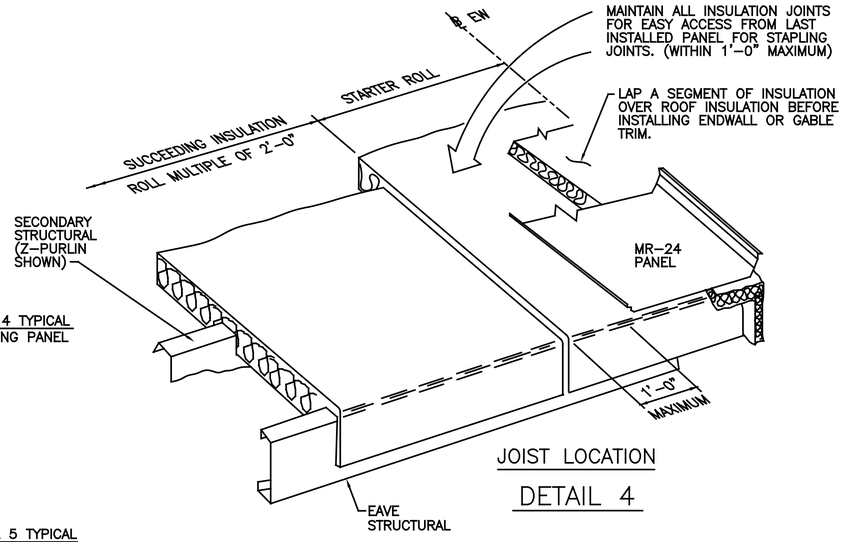


BUILDING KEY



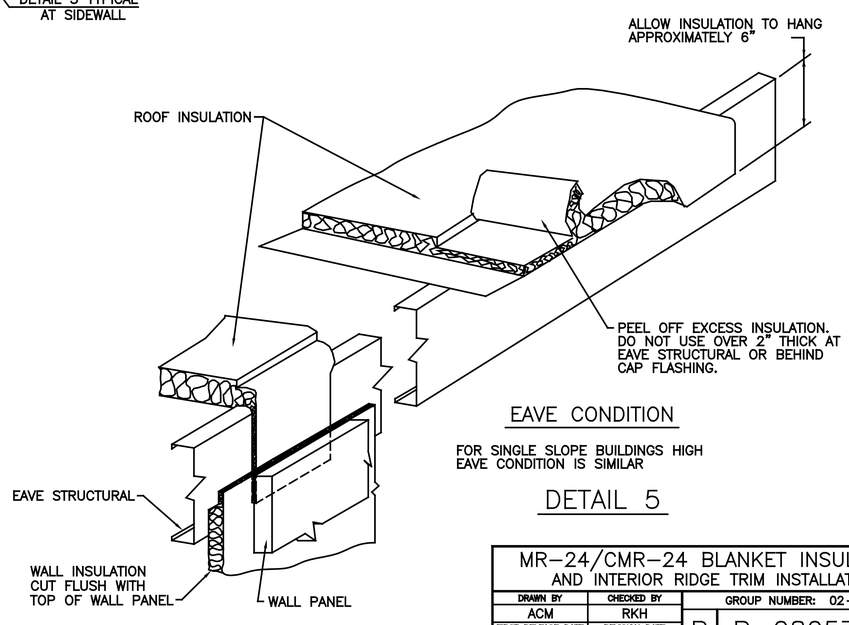
SECTION AT (FINISHED) RIDGE

(REFERENCE ONLY)



JOIST LOCATION

DETAIL 4



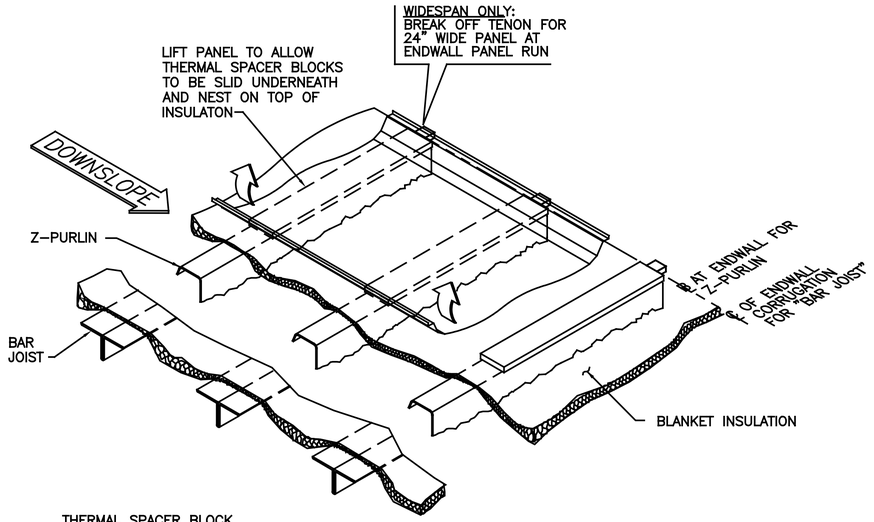
EAVE CONDITION

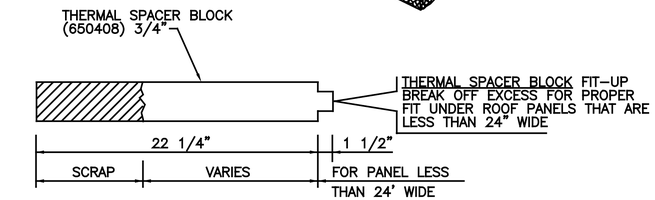
FOR SINGLE SLOPE BUILDINGS HIGH EAVE CONDITION IS SIMILAR

DETAIL 5

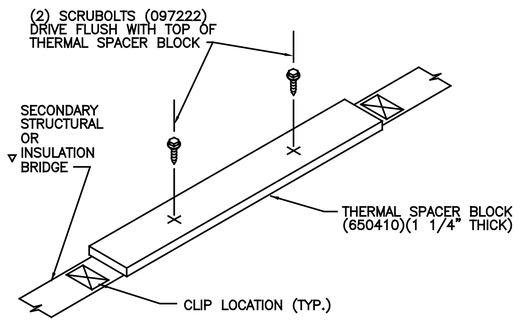
MR–24/CMR–24 BLANKET INSULATION AND INTERIOR RIDGE TRIM INSTALLATION

DRAWN BY	CHECKED BY	GROUP NUMBER: 02–032–01		
ACM	RKH			
FIRST RELEASE DATE	REVISION DATE	B	P–080573	05
01/21/10	03/15/19			





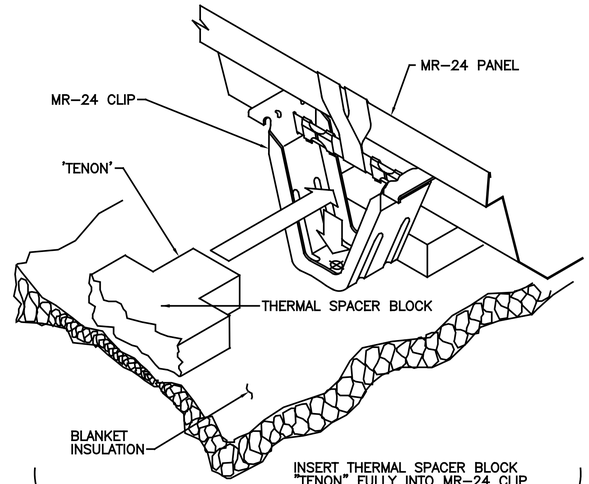
BAR JOIST OR Z–PURLIN DETAIL–1

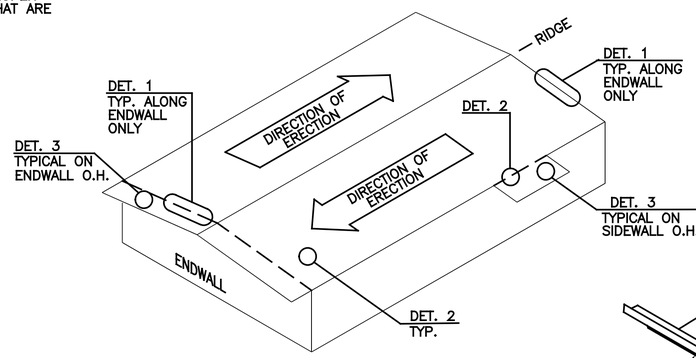


SIDEWALL OR ENDWALL OVERHANG DETAIL–3

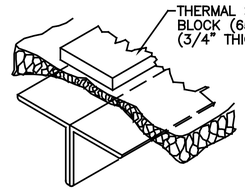
▼ SAME PRINCIPLE APPLES WHEN INSULATION BRIDGE IS INSTALLED

IT IS RECOMMENDED THAT OVERHANGS HAVE A MINIMUM OF 2" FACED INSULATION TO REDUCE CONDENSATION IN THESE AREAS.

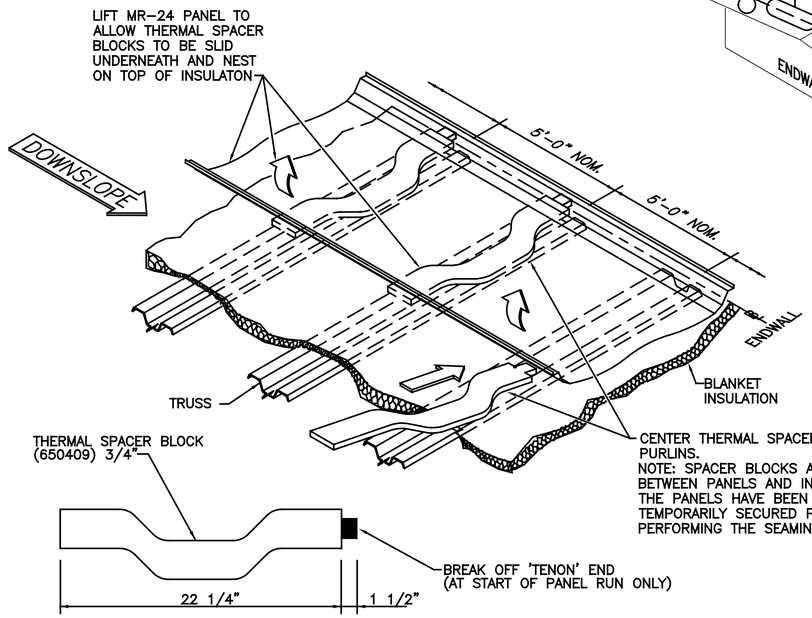




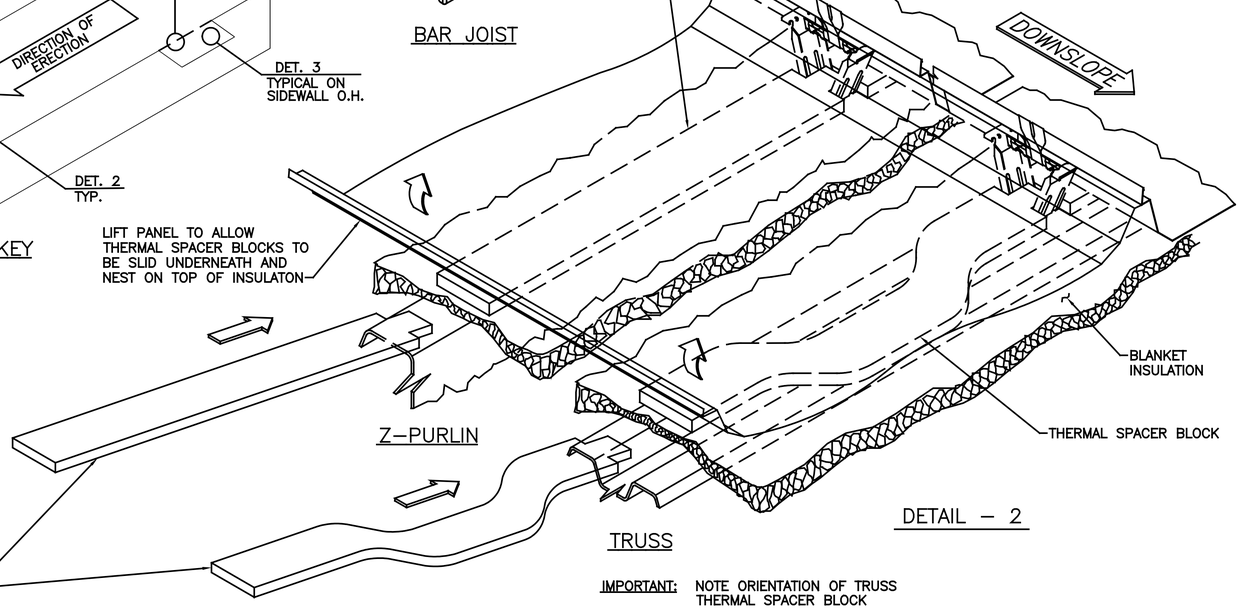
BUILDING KEY



BAR JOIST



TRUSS DETAIL – 1



Z–PURLIN

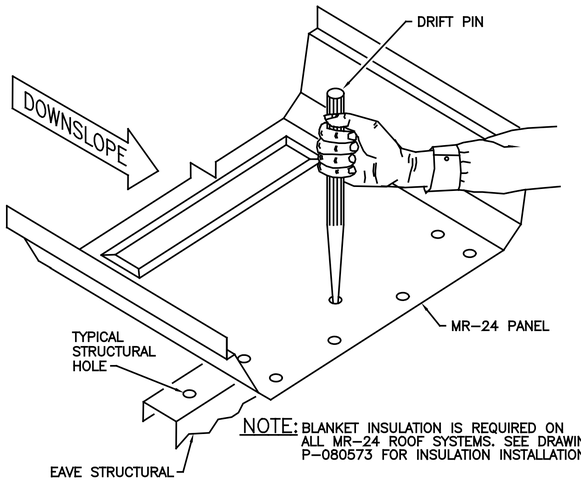
TRUSS

DETAIL – 2

IMPORTANT: NOTE ORIENTATION OF TRUSS THERMAL SPACER BLOCK

THERMAL SPACER BLOCK INSTALLATION
MR–24 ROOF

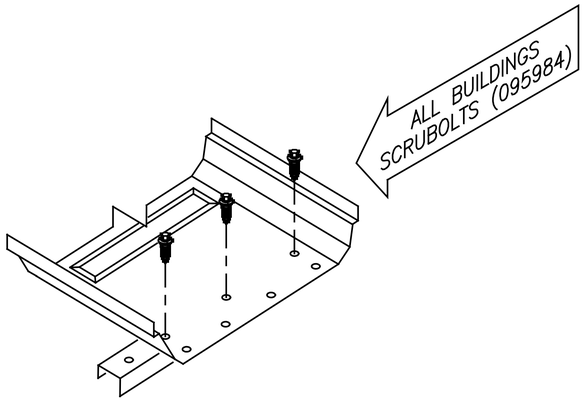
DRAWN BY	CHECKED BY	GROUP NUMBER: 02 030 01		
RKH	ACM			
FIRST RELEASE DATE	REVISION DATE	B	P–080574	05
01/21/10	04/05/22			



NOTE: BLANKET INSULATION IS REQUIRED ON ALL MR–24 ROOF SYSTEMS. SEE DRAWING P–080573 FOR INSULATION INSTALLATION.

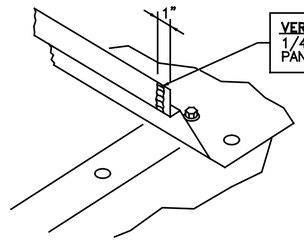
STEP 1 – LOCATE STRUCTURAL HOLE

- REFER TO ROOF PANEL LAYOUT DRAWING PROVIDED WITH EACH ORDER FOR PANEL PLACEMENT.
- PANEL CLIPS ARE NOT INSTALLED AT EAVE STRUCTURAL.



STEP 2 – INSTALL FASTENERS

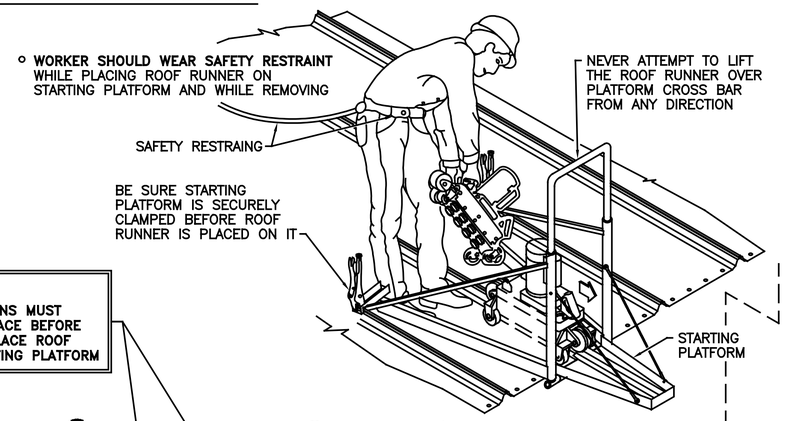
- INSTALL APPROPRIATE FASTENERS BEFORE PANEL CORRUGATIONS ARE LOCK SEAMED.



VERY IMPORTANT:
1/4" DIA. BEAD OF GUN GRADE PANLASTIC (025392)

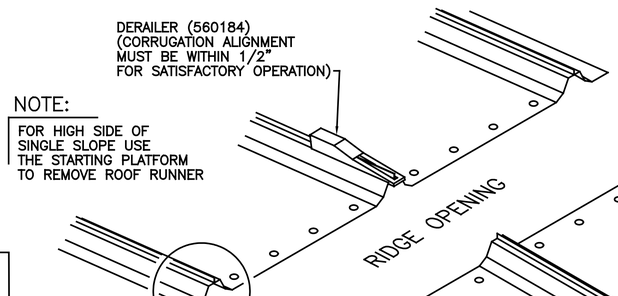
NOTE:
TO HELP PREVENT WALL STAINING CAUSED BY ROOF RUN–OFF, INSTALL EAVE EDGE OF ROOF TRIM OR GUTTER PARTS IMMEDIATELY AFTER ROOF PANELS ARE INSTALLED.

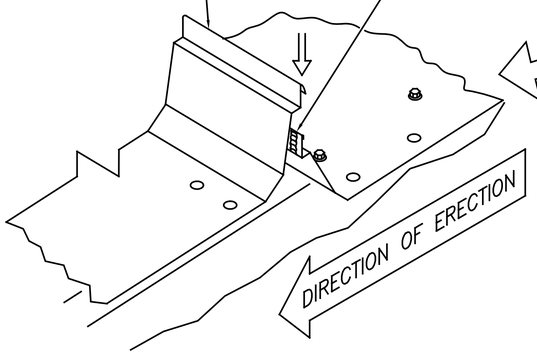
STEP 3 – INSTALL SEALANT



IMPORTANT:
QUICK RELEASE PINS MUST ALWAYS BE IN PLACE BEFORE ATTEMPTING TO PLACE ROOF RUNNER ON STARTING PLATFORM

WARNING
ALWAYS USE FALL PROTECTION WHILE WORKING AROUND ROOF OPENINGS.

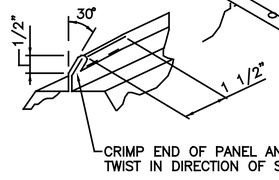




VERY IMPORTANT:
APPLY 1/4" DIA. BEAD OF GUN GRADE PANLASTIC (025392) AT H.S. SINGLE SLOPE BUILDINGS

STEP 4 – NEXT PANEL

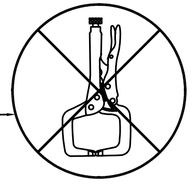
- DO NOT LAY PANELS TOO FAR AHEAD OF THE SEAMING OPERATION.

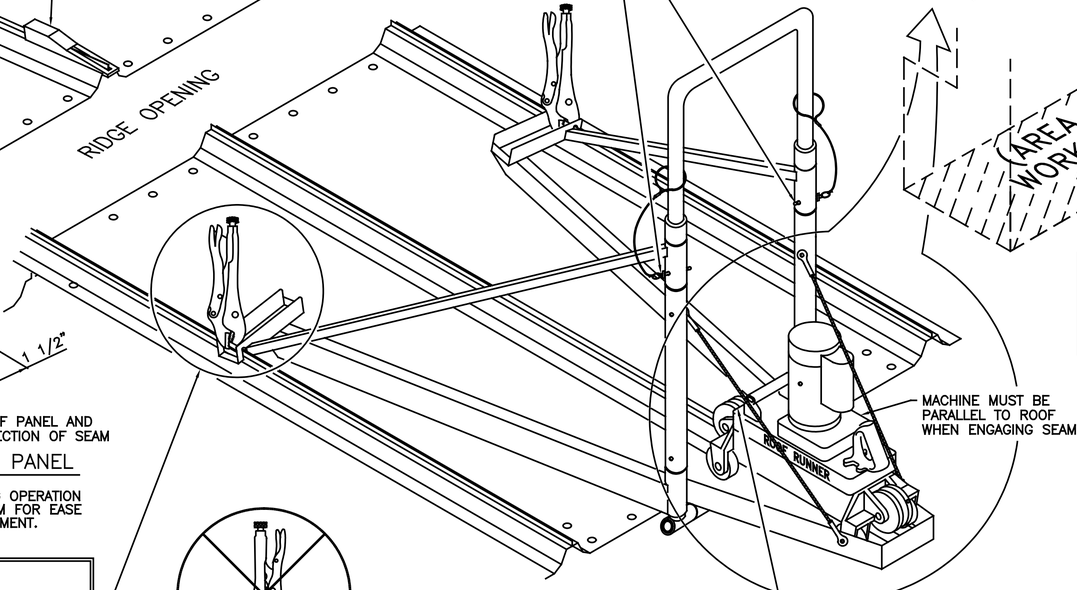


STEP 5 – CRIMP PANEL

- BEFORE STARTING SEAMING OPERATION CRIMP THE START OF SEAM FOR EASE OF ROOF RUNNER ENGAGEMENT.

IMPORTANT:
DO NOT USE C–CLAMP STYLE LOCKING PLIERS WHEN SECURING THE STARTING PLATFORM AT MR–24 CORRUGATION SEAM LOCATIONS. ONLY CURVED JAW TYPE, (9" MIN.), MAY BE USED.





IMPORTANT:
THE AREA BELOW WHERE A STARTING PLATFORM IS BEING USED MUST BE DESIGNATED A WORK EXCLUSION ZONE.

STEP 6 – SEAMING OPERATION

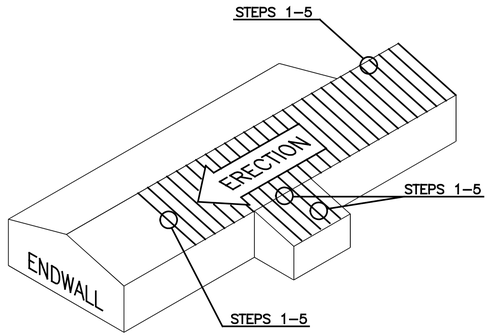
- BE SURE PANELS ARE PROPERLY NESTED TOGETHER PRIOR TO SEAMING.
- PANELS CAN BE TEMPORARILY HELD IN PLACE WITH VICE GRIPS BEFORE SEAMING.

THIS DRAWING IS INCLUDED IN A PRODUCT APPROVAL PACKAGE
REVISIONS MUST BE APPROVED BY THE MANAGER OF PRODUCT EXCELLENCE

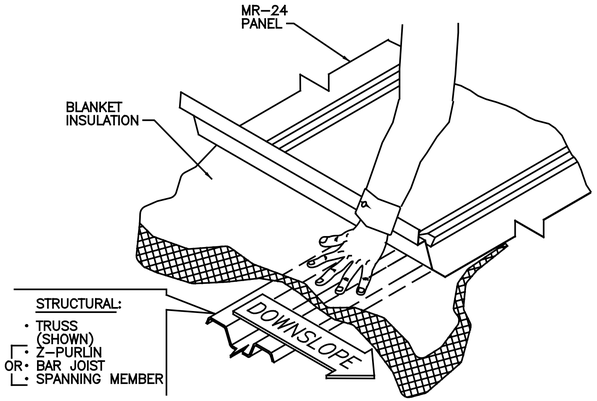
FLA

MR–24 PANEL INSTALLATION

DRAWN BY	CHECKED BY	GROUP NUMBER: 02–030–01		
RKH	ACM			
FIRST RELEASE DATE	REVISION DATE	B	P–080575	05
01/21/10	09/02/20			

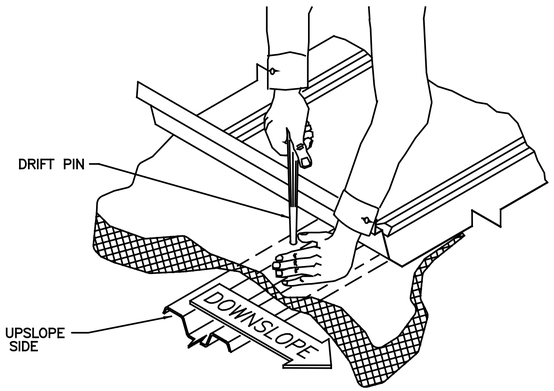


BUILDING KEY



STEP 1 LOCATE STRUCTURAL

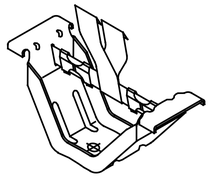
FROM THE ADJACENT MR–24 PANEL. LOCATE THE STRUCTURAL UNDER THE BLANKET INSULATION.



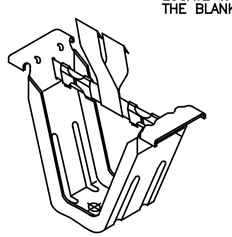
STEP 2 LOCATE HOLE IN STRUCTURAL WITH DRIFT PIN

IMPORTANT NOTE: ALWAYS LOCATE PANEL CLIPS ON THE UPSLOPE SIDE OF TRUSS OR DELTA JOIST. (FOR DELTA JOIST SYSTEM, AT THE HIGH SIDE OF SINGLE SLOPE MOUNT CLIP ON ROOF SUPPORT ANGLE.)

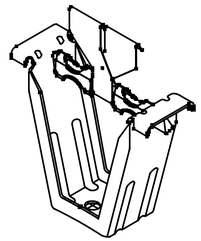
*NOTE:
MR–24 CLIP 560743, 560744 OR 560745 MAY BE SUPPLIED WHEN FACTORY MUTUAL CLASSIFICATION IS SPECIFIED.



SHORT PANEL CLIP (560440 OR *560743)
(WITHOUT THERMAL SPACER BLOCK)

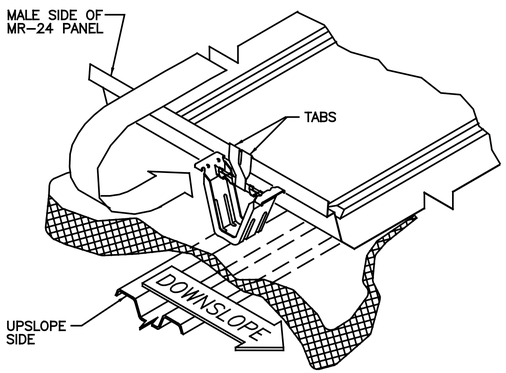


TALL PANEL CLIP (560441 OR *560744)
(WITH THERMAL SPACER BLOCK)

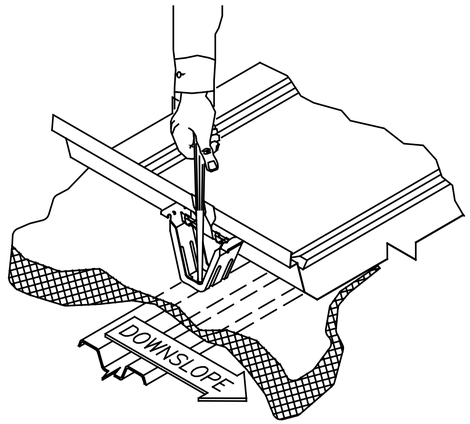


EXTRA TALL PANEL CLIP (*560745)
(WITH THERMAL SPACER BLOCK FOR >6" TO 9 1/4" INSULATION)

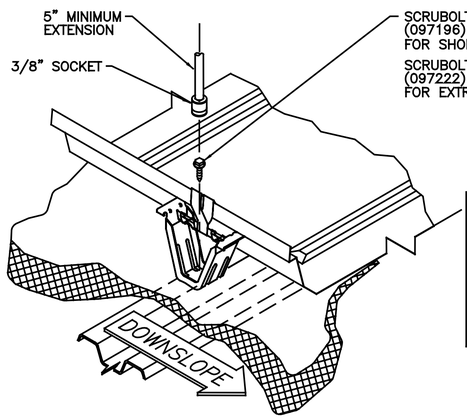
WARNING
ALWAYS USE FALL PROTECTION WHILE WORKING AROUND ROOF OPENINGS.



STEP 3 HOOK PANEL CLIP TABS OVER PANEL AND ROTATE CLIP INTO POSITION



STEP 4 TEMPORARILY SECURE THE PANEL CLIP WITH A DRIFT PIN



STEP 5 INSTALL SCRUBOLT FASTENER

INSTALLATION OF SCRUBOLT REQUIRES A 3/8" SOCKET AND A 5" (MINIMUM) EXTENSION.

IMPORTANT NOTE

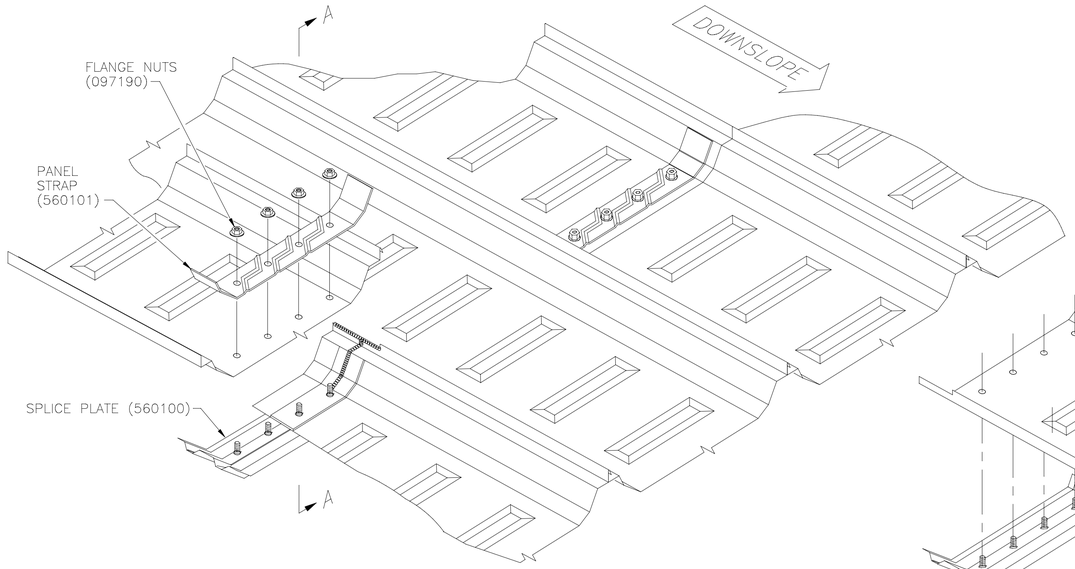
1. ALWAYS MAKE SURE TABS ARE CENTERED IN THE MR–24 CLIP AFTER THE CLIP IS INSTALLED.
2. PANEL CLIPS MUST BE ATTACHED TO ALL ROOF SECONDARY SUPPORT MEMBERS INCLUDING ALL INTERMEDIATE MEMBERS, SUB–PURLINS, ETC.

THIS DRAWING IS INCLUDED IN A PRODUCT APPROVAL PACKAGE
REVISIONS MUST BE APPROVED BY THE MANAGER OF PRODUCT EXCELLENCE

FLA

MR–24 PANEL CLIP INSTALLATION

DRAWN BY	CHECKED BY	GROUP NUMBER: 02–030–01		
RKH	RMS			
FIRST RELEASE DATE	REVISION DATE	B	P–080576	07
01/21/10	11/09/21			

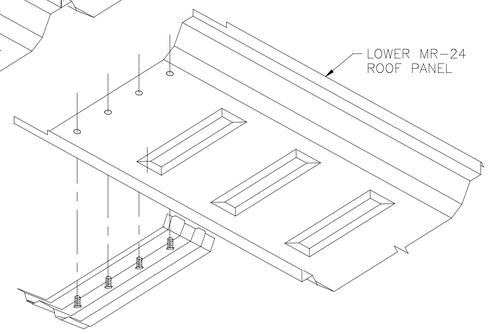


PANEL END LAP SPLICE

- PUNCHED AND NOTCHED PANELS ARE FURNISHED WITH LENGTHS CALCULATED FOR END LAP SPLICES TO OCCUR OVER SECONDARY STRUCTURALS.
- REFER TO ROOF PANEL LAYOUT DRAWINGS PROVIDED WITH EACH ORDER FOR PROPER PLACEMENT OF STAGGERED END LAP SPICE LOCATIONS.

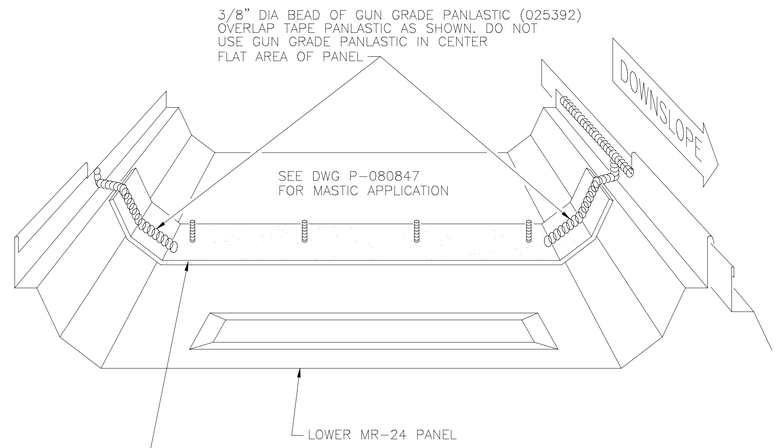
IMPORTANT:

COMPLETELY ASSEMBLE SPLICE BEFORE SEAMING ADJACENT PANELS.

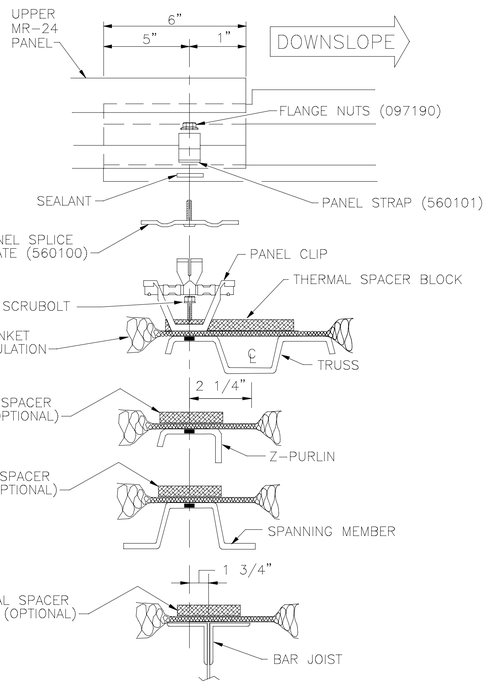


STEP 1 – SPLICE PLATE INSTALLATION

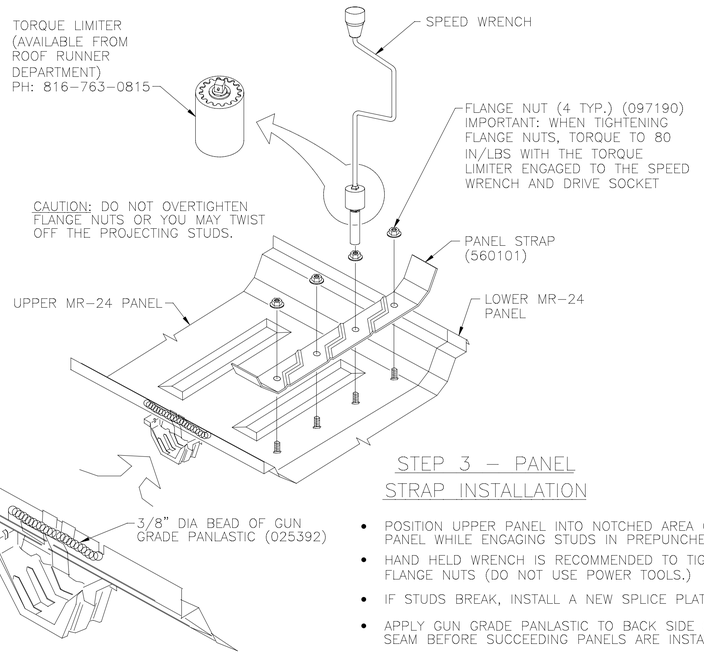
- ATTACH PANEL AT EAVE TO STRUCTURAL MEMBER.
- FOR EASE OF INSTALLATION, SPLICE PLATE (560100) CAN BE TEMPORARILY ATTACHED TO PANEL WITH (2) FLANGE NUTS BEFORE POSITIONING PANEL.



STEP 2 – SEALANT APPLICATION

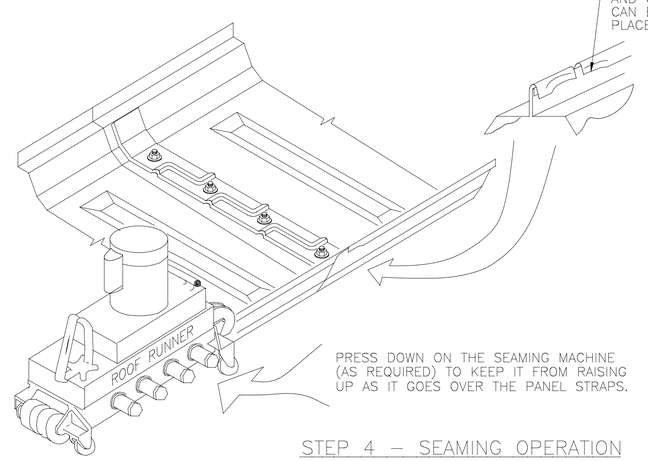


SECTION A–A



STEP 3 – PANEL STRAP INSTALLATION

- POSITION UPPER PANEL INTO NOTCHED AREA ON LOWER PANEL WHILE ENGAGING STUDS IN PREPUNCHED HOLES.
- HAND HELD WRENCH IS RECOMMENDED TO TIGHTEN FLANGE NUTS (DO NOT USE POWER TOOLS.)
- IF STUDS BREAK, INSTALL A NEW SPLICE PLATE.
- APPLY GUN GRADE PANLASTIC TO BACK SIDE OF SEAM BEFORE SUCCEEDING PANELS ARE INSTALLED.



STEP 4 – SEAMING OPERATION

- INSPECT EACH END LAP SPLICE FOR PROPER FIT AND WEATHER TIGHTNESS.
- IF REPAIR OF A STUD IS REQUIRED AFTER PANELS HAVE BEEN SEAMED, DRILL STUD OUT WITH 5/16" DIA BIT, APPLY GUN GRADE PANLASTIC BETWEEN PANEL AND PANEL STRAP THEN INSTALL GREEN WASHER LOCKRIVET (096306) (DO NOT ANCHOR TO SECONDARY STRUCTURAL).

NOTE:

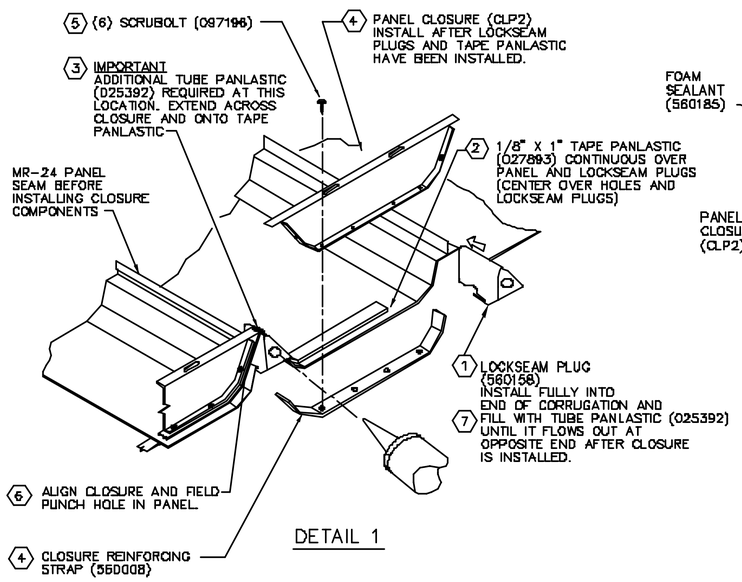
1. SEE DRAWING P-090005 FOR 12" VARIABLE WIDTH PANEL INFORMATION.

THIS DRAWING IS INCLUDED IN A PRODUCT APPROVAL PACKAGE
REVISIONS MUST BE APPROVED BY THE MANAGER OF PRODUCT EXCELLENCE

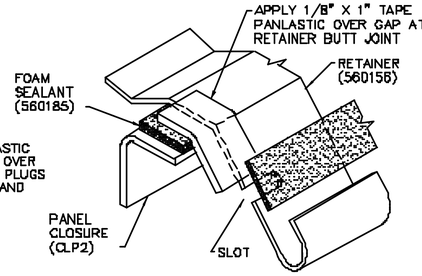
FLA

MR-24 END LAP SPLICE

DRAWN BY	CHECKED BY	GROUP NUMBER: 02-030-01		
ACM	RKH	B	P-080577	07
FIRST RELEASE DATE	REVISION DATE			
01/21/10	06/16/23			

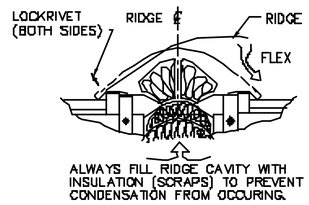


DETAIL 1

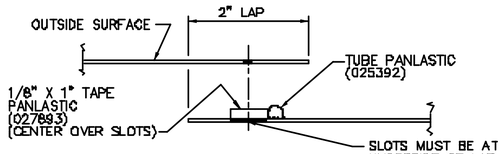


CENTER FOAM SEALANT ON TOP OF PANEL CLOSURE AND OVER RETAINER SLOTS

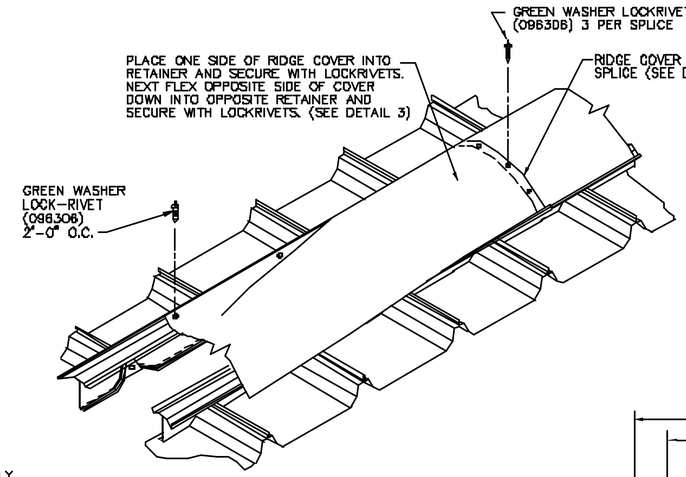
DETAIL 2



DETAIL 3

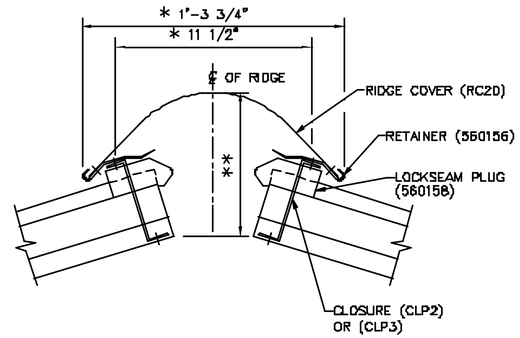


DETAIL 4



RIDGE COVER AND SPLICE INSTALLATION

WORK FROM ONE END TO THE OTHER

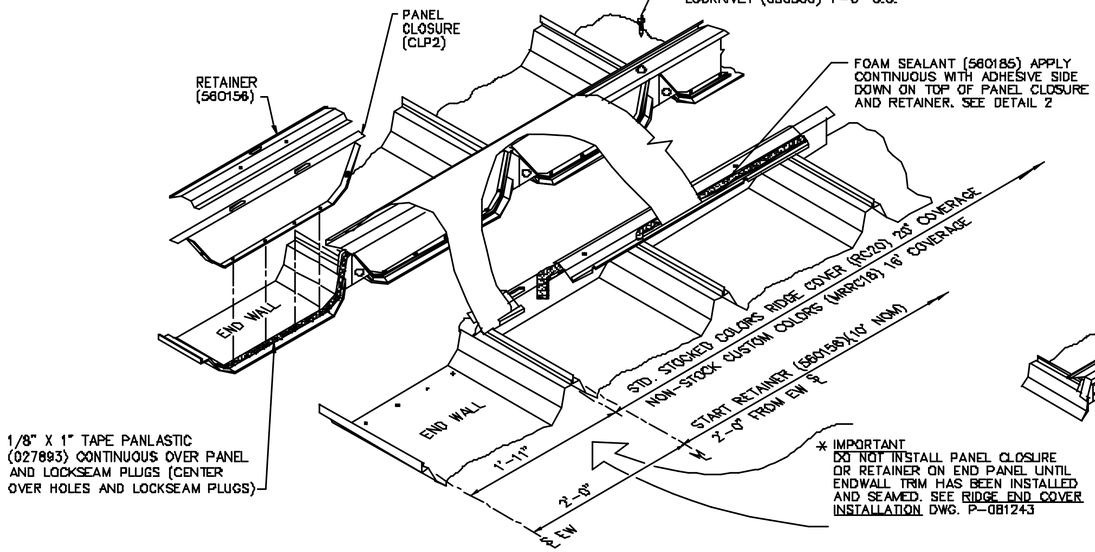


RIDGE OPENING

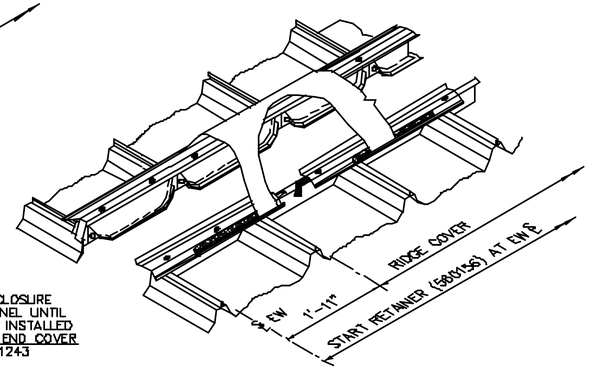
SECTION VIEW

* DIMENSIONS SHOWN ARE FOR FIELD VERIFICATION AND WILL VARY DUE TO TEMPERATURE.

** VARIES BETWEEN 5" AND 8 1/2"



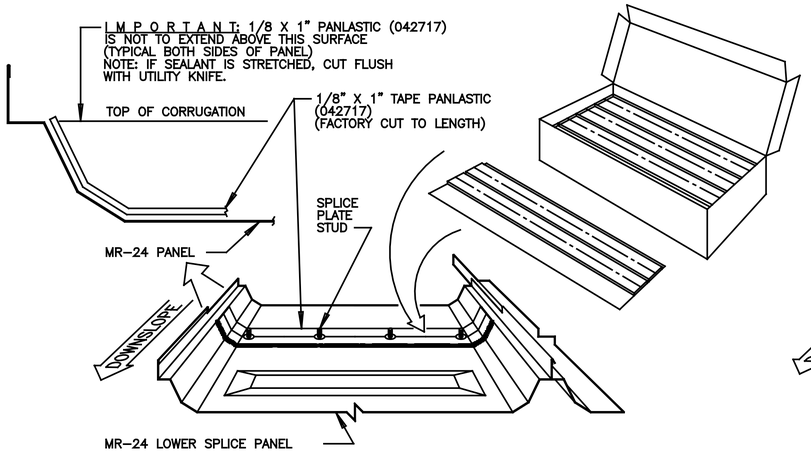
USED WHEN RIDGE IS INSTALLED BEFORE ENDWALL TRIM



USED WHEN RIDGE IS INSTALLED AFTER ENDWALL TRIM

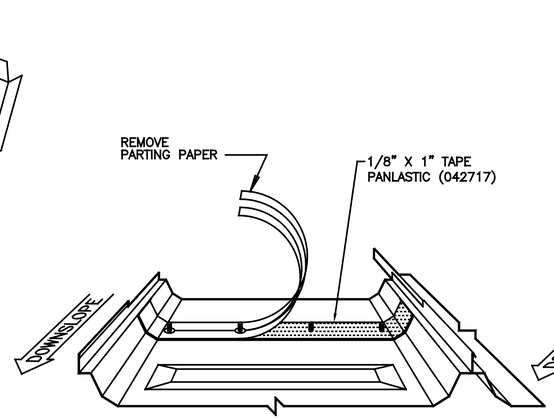
PANEL CLOSURE AND RETAINER INSTALLATION

MR-24 RIDGE INSTALLATION			
DRAWN BY	CHECKED BY	GROUP NUMBER: 02-032-01	
ACM	RMC		
FIRST RELEASE DATE	REVISION DATE	B	P-080578 | 04
01/21/10	03/08/16		



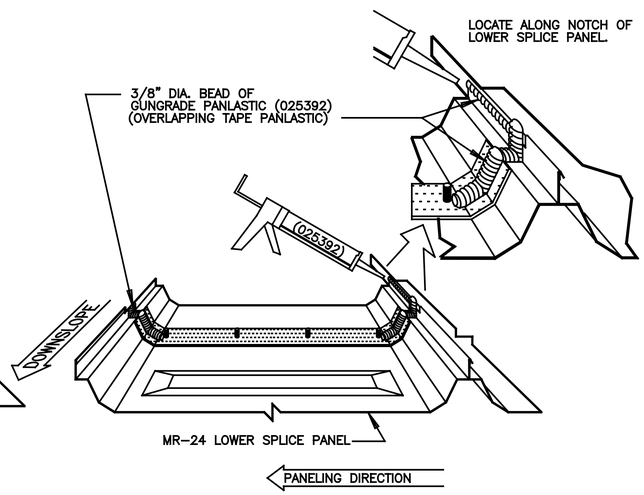
STEP 1

APPLY TAPE PANLASTIC OVER SPLICE PLATE STUDS,CENTERING TAPE DIRECTLY OVER THE STUDS. DO NOT REMOVE PARTING PAPER UNTIL TAPE IS IN PLACE ON THE PANEL (IF PAPER IS REMOVED PRIOR TO TAPE INSTALLATION, TAPE WILL STRETCH TO IMPROPER LENGTH). IMPALE THE TAPE PANLASTIC ON TO THE STUDS AND WORK THE PANLASTIC INTO THE CORNERS AND AROUND THE STUDS. IMPORTANT: START AND STOP TAPE PANLASTIC AT TOP OF CORRUGATION.



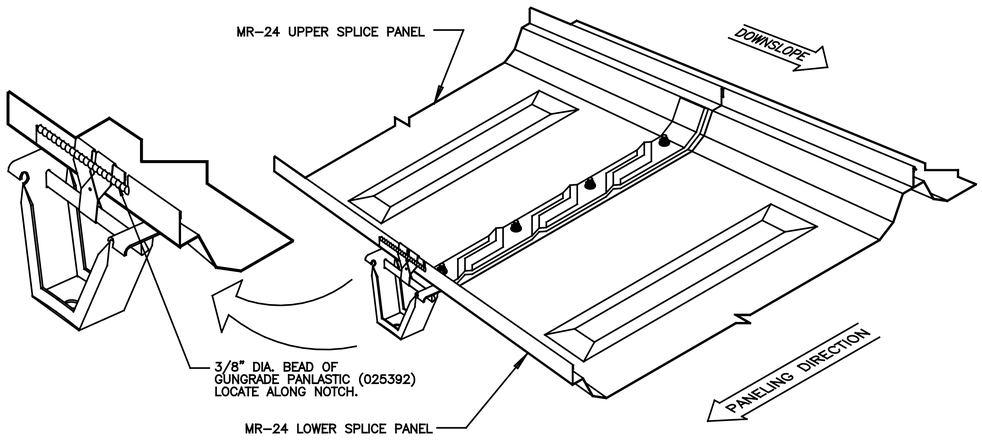
STEP 2

AFTER TAPE PANLASTIC IS PROPERLY IN PLACE PEEL BACK PARTING PAPER (TAKING CARE NOT TO DISLODGE MASTIC) AND DISCARD.



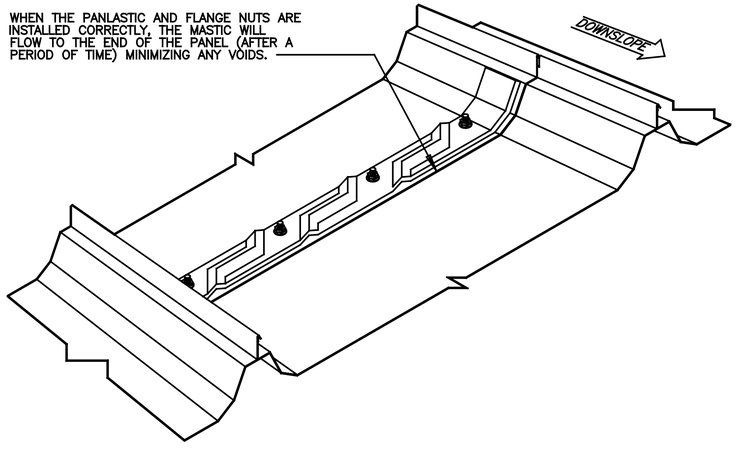
STEP 3

APPLY GUNGRADE PANLASTIC OVERLAPPING TAPE PANLASTIC, AS SHOWN. DO NOT APPLY IN CENTER FLAT OF PANEL.



STEP 4

AFTER UPPER SPLICE PANEL IS INSTALLED APPLY 3/8" DIA. BEAD OF GUNGRADE PANLASTIC TO THE BACK SIDE OF NOTCH AS SHOWN, BEFORE INSTALLING THE NEXT ROOF PANEL.

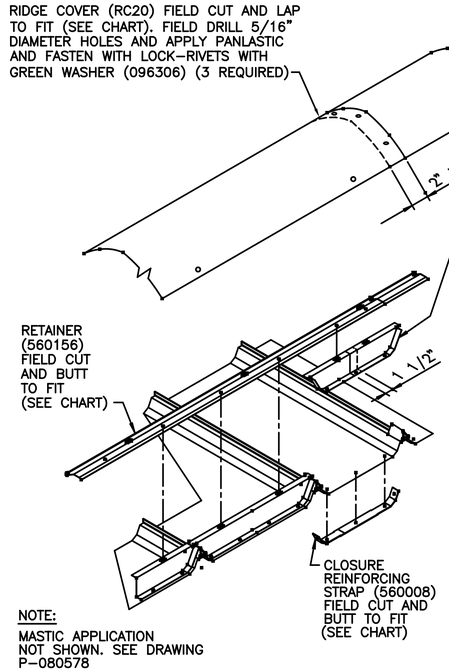


STEP 5

FINAL INSPECTION: MASTIC THAT IS PROPERLY INSTALLED WILL FLOW TOWARD THE PANEL END MINIMIZING ANY VOID BETWEEN THE PANELS.

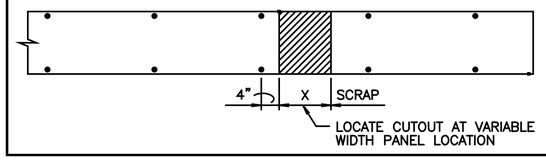
MR-24/CMR-24 MASTIC APPLICATION AT PANEL SPLICE

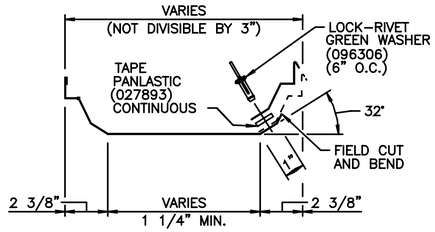
DRAWN BY	CHECKED BY	GROUP NUMBER: 02-030-01		
ACM	RMC			
FIRST RELEASE DATE	REVISION DATE	B	P-080847	01
01/21/10	12/04/18			



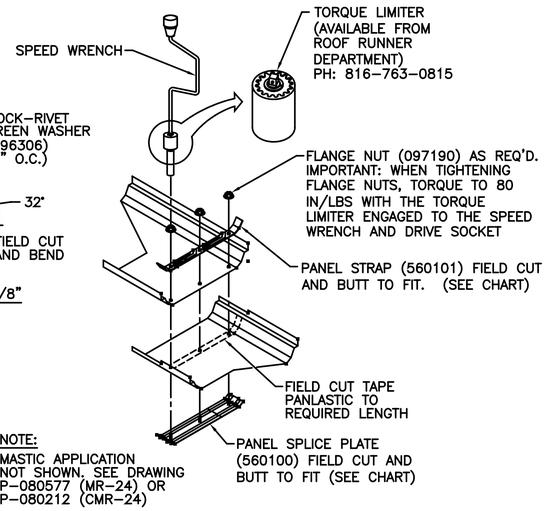
RIDGE COVER-RETAINER-PANEL CLOSURE AND REINFORCING STRAP MODIFICATION

** RIDGE COVER CUTTING DIAGRAM					
VARIABLE WIDTH PANEL	21"	18"	15"	12"	9"
X - DIMENSION	1"	4"	7"	10"	13"





FIELD FABRICATED PANEL

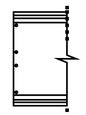
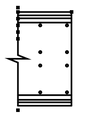
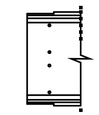
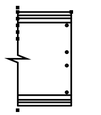
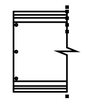
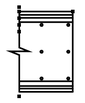
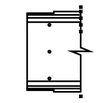
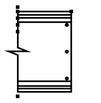
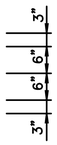
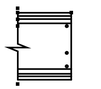
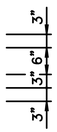
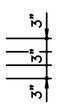


PANEL STRAP-PANEL SPLICE PLATE MODIFICATION

PANELING COMPONENTS CUTTING DIAGRAM CHART

STANDARD / VARIABLE	WIDTH	PANEL CLOSURE (CLP2) (SEE NOTE: 1)	PANEL STRAP (AT EAVE) (560004) (SEE NOTE: 2)	PANEL STRAP (AT SPLICE) (560101) (SEE NOTE: 2)	PANEL SPLICE PLATE (560100) (SEE NOTE: 2)	CLOSURE REINFORCING STRAP (560008) (SEE NOTE: 2)	** RIDGE RETAINER (560156) 10'-0" LENGTHS (TYP. BOTH SIDES) (SEE NOTE: 2)
STANDARD	24"						24" PNL. 24" PNL. 24" PNL.
VARIABLE	21"	8 1/4" 8 1/4" 1 1/2" SCRAP	7 1/2" 3" 7 1/2" SCRAP				24" PNL. 21" PNL. 24" PNL. 8" 3" SCRAP
VARIABLE	18"	6 3/4" 6 3/4" 4 1/2" SCRAP	7 1/2" 6" 4 1/2" SCRAP				24" PNL. 18" PNL. 24" PNL. 8" 6" SCRAP
VARIABLE	15"	8 1/4" SCRAP 7 1/2" 2 1/4"	7 1/2" 9" 1 1/2" SCRAP				24" PNL. 15" PNL. 24" PNL. 8" 9" SCRAP
VARIABLE	12"	SEE DRAWING P-090005 FOR 12" VARIABLE WIDTH PANEL INFORMATION					
VARIABLE	9"	SCRAP 2 1/4" 13 1/2" 2 1/4"	1 1/2" 15" 1 1/2" SCRAP				24" PNL. 9" PNL. 24" PNL. 8" 15" SCRAP

PANEL HOLE PATTERN DIAGRAM

PANEL WIDTH	* LONGITUDINAL DIMENSIONS: RIDGE (1")	EAVE (BUILDING/WX 6" 1", CANOPY/O.H. 4" 1")	SPLICE (HIGH END) (5")	SPLICE (LOW END) (1")	TRANSVERSE DIMENSIONS
21"					 3" 6" 3" 6" 3"
18"					 3" 6" 6" 3"
15"					 3" 6" 3" 6" 3"
12"	SEE DRAWING P-090005 FOR 12" VARIABLE WIDTH PANEL INFORMATION				
9"					 3" 3" 3"

* ALL FIELD DRILLED HOLES 5/16" DIAMETER LONGITUDINAL HOLE LOCATION DIMENSIONS ARE CRITICAL. ERRORS IN FIELD DRILLING LOCATION WILL ACCUMULATE AND CAUSE RIDGE FIT-UP DIFFICULTY.

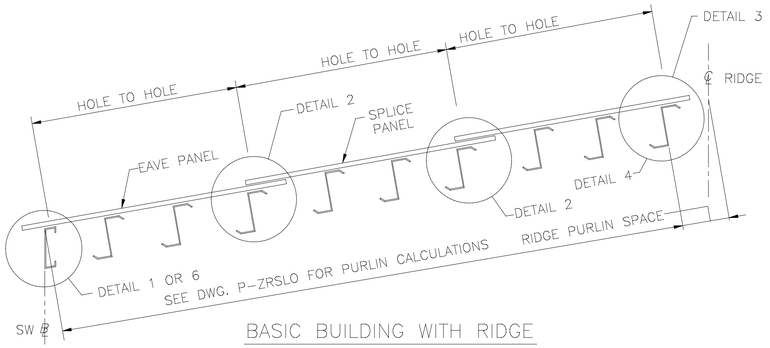
** THE RIDGE COVER/RETAINER CUTTING DIAGRAM IS ONLY APPLICABLE TO A SINGLE RUN OF THE 12" VARIABLE WIDTH PANEL LOCATED WITH IN THE INTERIOR OF THE BUILDING. CUTTING DETAIL IS NOT APPLICABLE TO MULTIPLE ADJACENT RUNS OR TO A SINGLE RUN OF 12" PANELS LOCATED AT THE ENDWALLS OF THE ROOF.

NOTES:

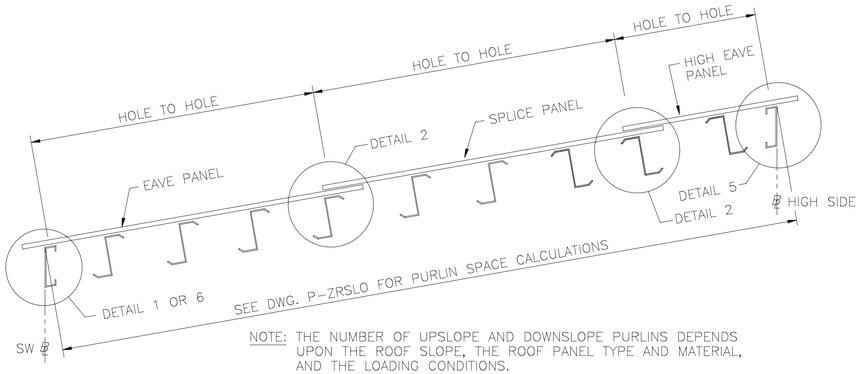
1. CUT PANEL CLOSURE AS SHOWN AND LAP 1 1/2".
2. CUT PARTS AS SHOWN AND BUTT TOGETHER.

MR-24/CMR-24 VARIABLE WIDTH PANELS
FIELD WORK DETAILS

DRAWN BY	CHECKED BY	GROUP NUMBER: 02-030-01		
ACM	RMC	B	P-080876	03
FIRST RELEASE DATE	REVISION DATE			
01/21/10	08/06/18			

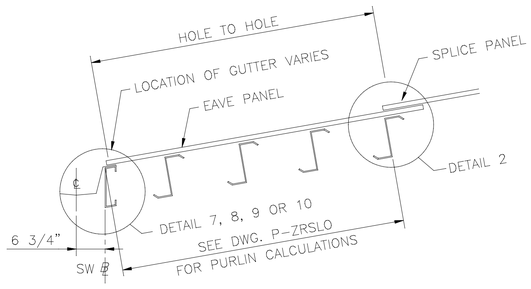


BASIC BUILDING WITH RIDGE

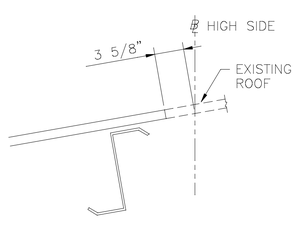


NOTE: THE NUMBER OF UPSLOPE AND DOWNSLOPE PURLINS DEPENDS UPON THE ROOF SLOPE, THE ROOF PANEL TYPE AND MATERIAL, AND THE LOADING CONDITIONS.

SINGLE SLOPE BUILDING

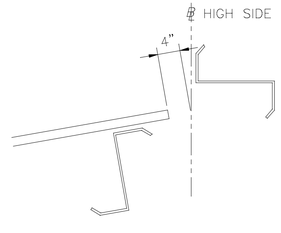


MULTIPLE GUTTER CONDITION



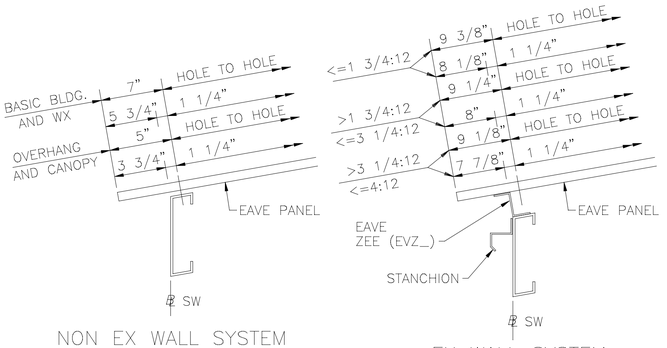
HIGH SIDE ATTACHING TO EXISTING BLDG.

SAME SLOPE – (SEE DWG P-080188)



PERPENDICULAR TRANS.

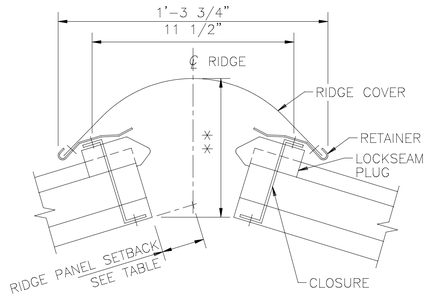
AT HIGH SIDE



NON EX WALL SYSTEM

EX WALL SYSTEM

DETAIL 1	MR–24 LOW EAVE



RIDGE PANEL SETBACK DIM. TABLE

SLOPE	ROOF SURFACE WIDTH *		
	< 100'	100' < 150'	> 150'
≤ 1/4:12	3 7/16"	3 1/4"	3 3/16"
> 1/4:12 TO ≤ 1/2:12	3 7/16"	3 1/4"	3 1/16"
> 1/2:12 TO ≤ 1:12	3 3/8"	3 3/16"	3"
> 1:12 TO ≤ 1 1/2:12	3 1/4"	3 1/16"	2 7/8"
> 1 1/2:12 TO ≤ 2:12	3 1/16"	2 7/8"	2 11/16"
> 2:12 TO ≤ 2 1/2:12	2 15/16"	2 3/4"	2 9/16"
> 2 1/2:12 TO ≤ 3:12	2 3/4"	2 9/16"	2 3/8"
> 3:12 TO ≤ 3 1/2:12	2 5/8"	2 7/16"	2 1/4"
> 3 1/2:12 TO ≤ 4:12	2 3/8"	2 3/16"	2"
> 4:12	2 1/4"	2 1/16"	1 7/8"

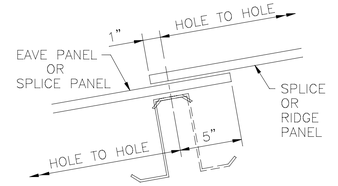
* ROOF SURFACE WIDTH IS HORIZONTAL STRUCTURAL WIDTH UNDER ONE ROOF SLOPE (INCLUDING ANY WX). THIS DIMENSION DOES NOT INCLUDE ANY CANOPY, OVERHANG OR EAVE/RIDGE ADJUSTMENT.

** VARIES BETWEEN 5" AND 8 1/2"

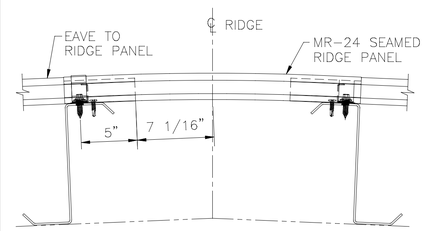
DETAIL 4	RIDGE OPENING

NOTES:

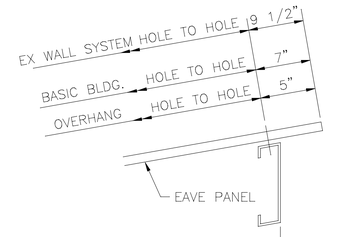
1. THE HOLE TO HOLE AND ℄ TO HOLE DIMENSION SHOULD BE DETERMINED FROM THE ROOF STRUCTURAL CALCULATOR DWG. P–ZRSLO BEFORE PROCEEDING TO THIS DRAWING. ADD PANEL MATERIAL SHOWN IN APPROPRIATE DETAILS TO DIMENSIONS DETERMINED FROM P–ZRSLO TO ARRIVE AT ROOF PANEL LENGTHS.
2. FOR MR–24 AND CMR–24 PANEL PART NUMBER SEE DWG. P–080570.
3. FOR MR–24 AND CMR–24 LITE*PANL SEE DWG. P–081659.
4. FOR BUILDINGS WITH ROOF SLOPES OF 3:12 AND GREATER, AND WITH SIDEWALL PANELS 4" INSULATED WALL PANEL, eSHADOWALL AND eSTYLWALL, THE EAVE PANEL MUST BE EXTENDED 1". PANEL WITH NO EAVE STRUT PUNCHING IS REQUIRED.
   EAVE TO RIDGE–OPERATION CODE = 11 EAVE TO SPLICE–OPERATION CODE = RH–10/LH–20.



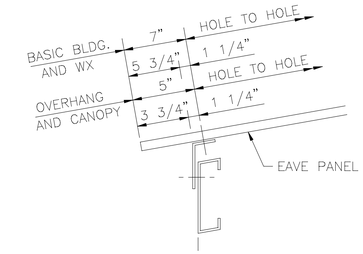
DETAIL 2	INTERMEDIATE SPLICE



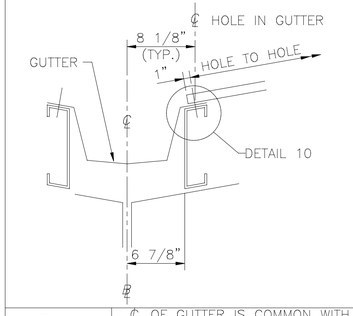
DETAIL 3	MR–24 SEAMED RIDGE ROOF SYSTEM



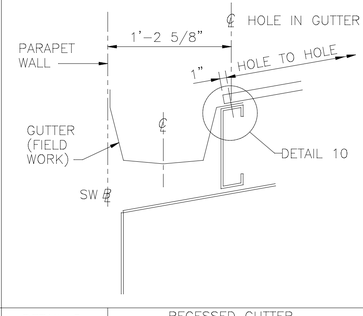
DETAIL 5	HIGH SIDE EAVE



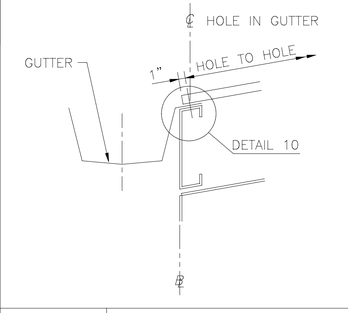
DETAIL 6	CMR–24 LOW EAVE



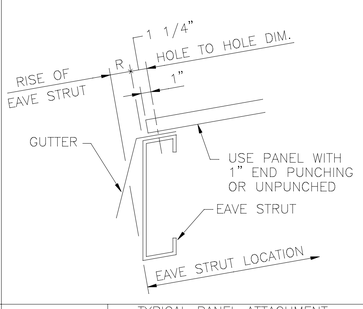
DETAIL 7	℄ OF GUTTER IS COMMON WITH ℄ OF MULTIPLE BLDGS.



DETAIL 8	RECESSED GUTTER PARAPET CONDITION



DETAIL 9	FLUSH–GUTTER OUTSIDE ℄



DETAIL 10	TYPICAL PANEL ATTACHMENT AT MULTIPLE GUTTER

MR–24 AND CMR–24 ROOF PANEL CALC FOR Z PURLINS

DRAWN BY	CHECKED BY	GROUP NUMBER: 02 030 02		
JPV	BJF	B	P–080949	07
FIRST RELEASE DATE	REVISION DATE			
01/21/10	08/07/23			

CATEGORY	DRAWING TITLE	DWG. NO.
ROOF PANELING	MR-24 ROOF SYSTEM ERECTION MANUAL	P-004797
	MR-24 WIDTH ADDITION TO EXISTING BLDG. MAXIMUM 50 FT. SAME SLOPE	P-080188
	MR-24 ROOF PANEL IDENTIFICATION	P-080570
	MR-24 TRIM CLIP LOC. LOCKSEAM TAB AND PNL CLIP ADAPTER	P-080572
	MR-24 PANEL INSTALLATION	P-080575
	MR-24 PANEL CLIP INSTALLATION	P-080576
	MR-24 END LAP SPLICE	P-080577
	MR-24 RIDGE INSTALLATION	P-080578
	MR/CMR-24 HAND SEAMER INSTRUCTIONS	P-080600
	MR/CMR-24 VALLEY FLASH. PNL. PREP.	P-080783
	MR/CMR-24 VALLEY FLASH. PARTS INSTALL.	P-080784
	MR/CMR-24 VALLEY FLASH. DETAILS	P-080785
	MR/CMR-24 HIP RIDGE PNL. PREP.	P-080786
	MR/CMR-24 HIP RIDGE PARTS INSTALL.	P-080787
	MR/CMR-24 HIP RIDGE DETAILS	P-080788
	MR-24 HS EAVE CLIP AND PNL. CLIP REQMT.	P-080789
	MR/CMR-24 MASTIC APPLICATION	P-080847
	MR/CMR-24 VARIABLE WIDTH PANELS	P-080875
	MR/CMR-24 CORR. END DEFLECTOR	P-080918
	MR/CMR-24 SEAM REINFORCING CLIP ASSBLY.	P-080951
	MR-CMR-24 ROOF WITHOUT RIDGE	P-081257
	MR-24 SUB PURLIN INSTALLATION	P-081598
	MR-24 SEAMER PLATFORM ASS'Y AND USAGE	P-081616
	MR-24 REPAIR CLIP INSTALLATION	P-081680
	MR-24/CMR-24 PANEL CLOSURE INSTALL.	P-103247
	MR-24 ENDWALL EXT./ROOF REPLACEMENT	P-105528
	MR-24/CMR-24 PANEL CLOSURE INSTALL.	P-105634
	MR-24 SINGLE PANEL REPAIR	P-107656
	MR-24/CMR-24 PANEL REPAIR CAP INSTALL.	P-107657
	MR-24/CMR-24 MULT. PANEL REPAIR AND DET.	P-107743
	MR-24 MULTIPLE PANEL REPAIR	P-107744
	MR-24 MULTIPLE PANEL REPAIR	P-107745
	MR-24 SEAMED RIDGE ROOF SYSTEM GENERAL INSTALLATION	P-090006
	MR-24 SEAMED RIDGE ROOF SYSTEM PANEL INSTALLATION	P-090007
	MR-24 SEAMED RIDGE ROOF SYSTEM ROOF PANEL FIELD NOTCHING DETAILS	P-090011
	MR-24 SEAMED RIDGE ROOF SYSTEM SPLICE DETAIL AND RIDGE PANEL FIELD HOLES	P-090012
BLGS. WITH TRUSS	MR/CMR-24 ROOF PANEL CALCULATOR	P-081113
	ROOF STRUCTURALS FOR ROOF PNL. CALC.	M-149099
BLGS. WITH Z-PURLIN	MR/CMR ROOF PANEL CALCULATOR	P-080949
	ROOF STRUCTURALS FOR ROOF PANEL CALCULATIONS	P-ZRSLO

CATEGORY	DRAWING TITLE	DWG. NO.
TRIM	WIDE GUTTER, ASSBLY. AND COMP'NTS.	P-080082
	WIDE GUTTER INSTALLATION WITHOUT WEATHERSEAL	P-080088
	WIDE GUTTER WITH WEATHERSEAL	P-080089
	MR/CMR-24 WEATHERSEAL FOR LOCAL TRIM	P-080377
	MR/CMR-24 HIGH EAVE PNL. CLOSURE FOR LOCAL TRIM	P-080378
	MR/CMR-24 RIDGE TRANSITION AND EXTENSION	P-080583
	MR/CMR-24 DRIP ANGLE INSTALL.	P-080720
	MR/CMR-24 WEATHERSEAL FOR LOCAL TRIM	P-080802
	GABLE TRIM AND WALL ADAPTER INSTALLATION (WITH RIDGE ASSEMBLY)	P-081167
	INSIDE CORNER TRIM INSTALLATION-NARROW GUTTER TO GABLE TRIM	P-081235
	NARROW GUTTER CORNER CAP INSTALL. INSTALLATION BUTLERIB II, MR-24/CMR-24	P-081236
	EAVE TRIM INSTALLATION	P-081239
	WIDE GUTTER, CORNER TRIM AND COLLECTOR BOX INSTALL.	P-081240
	WIDE GUTTER SEALANT AND SUPPORT CHANNEL INSTALLATION	P-081241
	RIDGE END COVER INSTALLATION (WITH RIDGE ASSEMBLY)	P-081243
	INSIDE CORNER TRIM INSTALLATION EAVE TRIM TO GABLE TRIM	P-081244
	WIDE GUTTER INSIDE CORNERS	P-081246
	VARIABLE WALL ADAPTER INSTALLATION	P-081259
	EW TRIM REINFORCING CLIP (HIGH WIND LOAD APPLICATION)	P-081635
	NARROW GUTTER ASSEMBLY	P-103223
	MR/CMR-24 GUTTER EXPANSION JOINT	P-103315
	BIRD STOP INSTALL. - GABLE TRIM	P-104542
	SOFFIT TRIM DETAILS	P-104544
	CORNER CAP INSTALLATION EAVE TRIM	P-104549
	NARROW GUTTER INSTALL. W/O WEATHERSEAL	P-104713
	NARROW GUTTER INSTALL. W/WEATHERSEAL	P-104714
	MR-24 SEAMED RIDGE ROOF SYSTEM RIDGE END COVER INSTALL. WITH RIDGE ASSY.	P-090008
	MR-24 SEAMED RIDGE ROOF SYSTEM INTERIOR RIDGE TRIM INSTALLATION	P-090010
CONDUCTOR PIPE	CONDUCTOR PIPE INSTALLATION AND DETAILS	P-080091
	COLLECTOR BOX INSTALL.-NARROW GUTTER	P-103225
	CONDUCTOR PIPE INSTALLATION	P-105224
	CONDUCTOR PIPE DETAILS	P-105225
	CONDUCTOR PIPE DETAILS	P-105228

CATEGORY	DRAWING TITLE	DWG. NO.
TRANSITIONS	WALL PNL. CALC. (ROOF TO WALL TRANS.)	P-080818
	FLEXIBLE SEAL INSTALLATION STEPPED ROOF OR ROOF TO WALL TRANS.)	P-081525
	SUPPORT MEMBER INSTALL (STEPPED ROOF)	P-081526
	STEPPED ROOF FLASH'G INSTALLATION	P-081528
	END COVER INSTALLATION PERP. ROOF TRANSITION	P-081530
	PARALLEL TRANS SUPT ANGLE INSTALL (CMR-24 AND UN-INSUL. PURLIN W/ MR-24)	P-081531
	SHORT PARALLEL TRANSITION PANEL INSTALLATION	P-081532
	PARALLEL TRANS. SUPT ANGLE INSTALL (INSULATED PURLIN)	P-081534
	TALL PARALLEL TRANSITION PANEL INSTALLATION	P-081535
	PARA / PERP TRANS. (SHORT AND TALL) COUNTER FLASHING INSTALLATION	P-081537
	PARALLEL TO PERP. TRANSITION INSIDE CORNER WITHOUT CORRUGATION	P-081539
	PARALLEL TO PERP. TRANSITION INSIDE CORNER WITH CORRUGATION	P-081541
	RIDGE TO WALL SHORT TRANS. (W/O CORR.)	P-081546
	RIDGE TO WALL SHORT TRANS. (W/CORR.)	P-081547
	RIDGE TO WALL TALL TRANS. (W/O CORR.)	P-081548
	RIDGE TO WALL TALL TRANS. (W/CORR.)	P-081549
	PARALLEL TO PERP. TRANSITION INSIDE/OUTSIDE CORNER WITH CORR.	P-081552
	PARALLEL TO PERP. TRANSITION INSIDE/OUTSIDE CORNER WITHOUT CORR.	P-081553
	END COVER INSTALLATION STEPPED ROOF (WITH SUPPORT MBR.)	P-081554
	PERPENDICULAR R TO W TRANSITION WITH SOLID WALL	P-081564
	PERPENDICULAR R TO W TRANSITION	P-081568
	PERPENDICULAR TRANSITION SHORT PERP. FLASHING INSTALLATION	P-081572
	PERPENDICULAR TRANSITION WITH OPEN WALL TALL PERP. FLASHING INSTALLATION	P-081573
	PARALLEL TRANSITION INSTALLATION TO EXISTING BLDG - NO WIDTH ADD.	P-081613
	PARALLEL TRANSITION INSTALLATION TO EXISTING BLDG - FOR WIDTH ADD.	P-081614
	CORRUGATION TRANSITION INSTALLATION GENERAL INFO AND CLIP INSTALL 1 OF 5	P-081675
	CORRUGATION TRANSITION INSTALLATION SEAMING OPERATION 2 OF 5	P-081676
	CORRUGATION TRANSITION INSTALLATION SILICONE MEMBRANE AND COVER 3 OF 5	P-081677
	CORRUGATION TRANSITION INSTALLATION SPECIFIC DETAILS 4 OF 5	P-081678
	CORRUGATION TRANSITION INSTALLATION RIDGE AND PERP. TRANS. 5 OF 5	P-081679
	MR-24 SEAMED RIDGE ROOF SYSTEM RIDGE PANEL AT PARALLEL TRANSITION	P-090009
MEMBRANE	PERPENDICULAR TRANSITION MEMBRANE ROOF TO METAL ROOF	P-081574
	PARALLEL TRANSITION MEMBRANE ROOF TO METAL ROOF	P-081575
INTERIOR GUTTERS	INTERIOR GUTTER CORNER INSTALLATION ROOF TO WALL	P-080189
	INTERIOR GUTTER PAR. TO INSIDE CORNER FLASHING WITHOUT CORRUGATION	P-081543
	INTERIOR GUTTER PAR. TO INSIDE CORNER FLASHING WITH CORRUGATION	P-081545
	PARALLEL TO PARAPET GUTTER WITH AND WITHOUT CORRUGATION	P-081550
	PARALLEL TRANS. TO VALLEY GUTTER WITH AND WITHOUT CORRUGATION	P-081551
	MULT. GUTTER STOP FLASHING	P-105525
	MULT. GUTTER GABLE TRIM	P-105526
	MULT. GUTTER EXPANSION JOINT	P-105533
	MULT. GUTTER SPECIAL APPLICATIONS	P-105534
	WELD PROCEDURES FOR SS GUTTERS	P-105846
	SUGGESTED FIELD FABRICATION COLLECTOR BOX AND SCREEN	P-107134

CATEGORY	DRAWING TITLE	DWG. NO.
ROOF ACCESSORIES	THERMAL SPACER BLOCK INSTALLATION	P-080574
	SKY-WEB PRODUCT DETAILS	P-080940
	SKY-WEB INSTALL. ON BLDG. STRUCT.	P-080941
	SKY-WEB ATTACHMENT DETAILS	P-080942
	SKY-WEB ASSEMBLY DAMAGE	P-080950
	IFCURB INSTALLATION PROCEDURES PANEL PREPARATION	P-081153
	IFCURB INSTALLATION PROCEDURES DIVERTER PLATE AND CURB	P-081154
	IFCURB INSTALLATION ELEVATED FRAME AT CARRY BEAMS	P-081654
	IFCURB INSTALLATION DOUBLE WALL - PURLIN CUTTING REQ'D	P-081655
	IFCURB INSTALLATION DOUBLE WALL - NO PURLIN CUTTING REQ'D	P-081656
	IFCURB INSTALLATION CARRY BEAMS - PURLIN CUTTING REQ'D	P-081657
	IFCURB INSTALLATION CARRY BEAMS - NO PURLIN CUTTING REQ'D	P-081658
	LITE*PANL PLACEMENT	P-081659
	UNINSULATED LITE*PANL-UNINSULATED PURLIN	P-081660
	INSULATED LITE*PANL-UNINSULATED PURLIN	P-081661
	UNINSULATED LITE*PANL-INSULATED PURLIN	P-081662
	INSULATED LITE*PANL-INSULATED PURLIN	P-081663
	UL 90 UNINSULATED LITE*PANL FOR UNINSULATED PURLINS	P-081664
	UL 90 INSULATED LITE*PANL FOR UNINSULATED PURLIN	P-081665
	UL 90 UNINSULATED LITE*PANL FOR INSULATED PURLIN	P-081666
	UL 90 INSULATED LITE*PANL FOR INSULATED PURLIN	P-081667
	LITE*PANL REPLACEMENT - DRAWING 1 OF 1	P-081681
	RIDGE VENTILATOR DETAILS	P-107551
	RIDGE VENTILATOR PREPARATION DETAILS	P-107552
	RIDGE VENTILATOR INSTALLATION	P-107553
	CONTINUOUS RIDGE VENTILATOR INSTALL.	P-107559

NOTES:

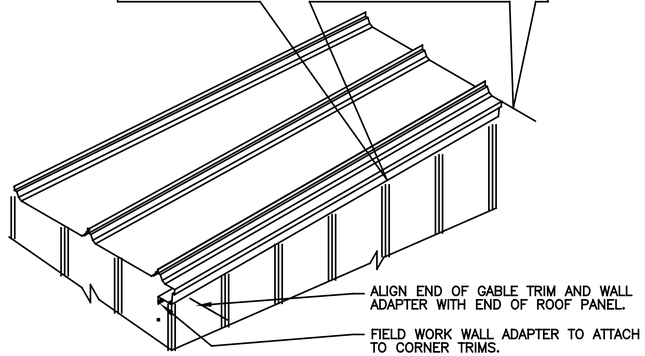
1. THE ABOVE DRAWINGS PERTAIN TO WIDESPAN BUILDINGS WITH Z-PURLIN AND/OR TRUSS FOR THE ROOF SECONDARY. THESE BUILDING HAVE EAVE STRUTS (OR AN EQUIVALENT MEMBER), GABLE ANGLES OR RAKE CHANNELS AT THE BUILDING STRUCTURE LINE, AT STANDARD LOCATIONS, FOR PANEL AND TRIM SUPPORT. THIS INDEX DRAWING IDENTIFIES THE ROOF PANEL, TRIM AND ACCESSORY DRAWINGS ASSOCIATED WITH THIS BUILDING.
2. ONLY THOSE DRAWINGS REQUIRED ON A SPECIFIC BUILDING

MR-24 ERECTION DRAWING INDEX

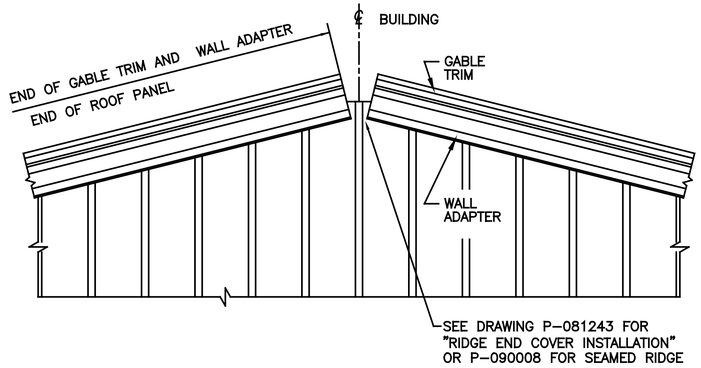
DRAWN BY	CHECKED BY	GROUP NUMBER: 02-030-02		
RRM	RSS			
FIRST RELEASE DATE	REVISION DATE	B	P-081111	07
01/21/10	06/05/17			

SINGLE SLOPE BUILDINGS

1. ALIGN END OF GABLE TRIM AND WALL ADAPTER WITH END OF ROOF PANEL.
2. INSTALL BUTLER NAME PLATE (630393) AT MID SLOPE WITH (2) 1/4–14 X 3/4" T–30 TORX SDS (097364).

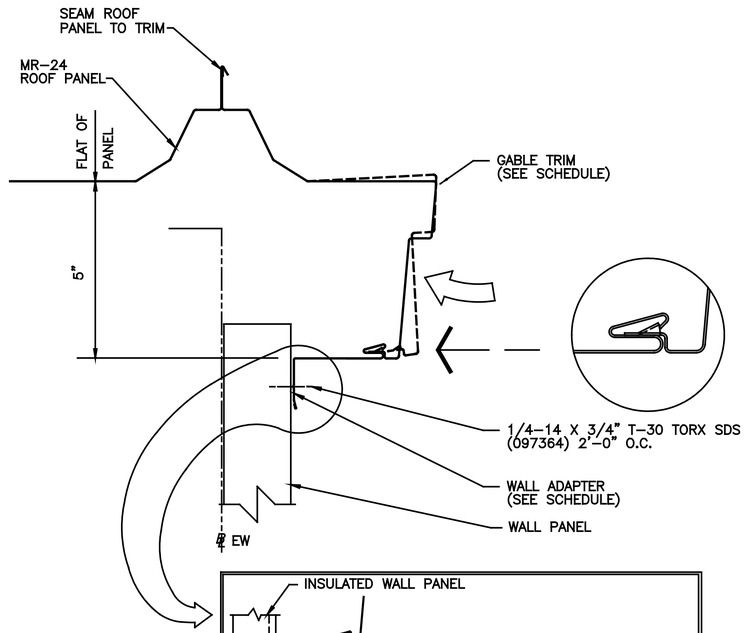


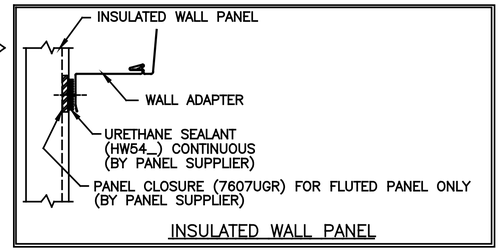
GABLE TRIM AND WALL ADAPTER–GENERAL



GABLE TRIM AND WALL ADAPTER AT RIDGE

DOUBLE SLOPE BUILDINGS





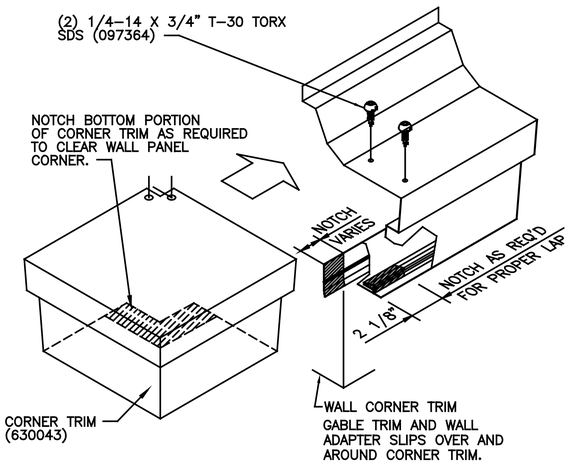
INSULATED WALL PANEL

GABLE TRIM AND WALL ADAPTER ASSEMBLY

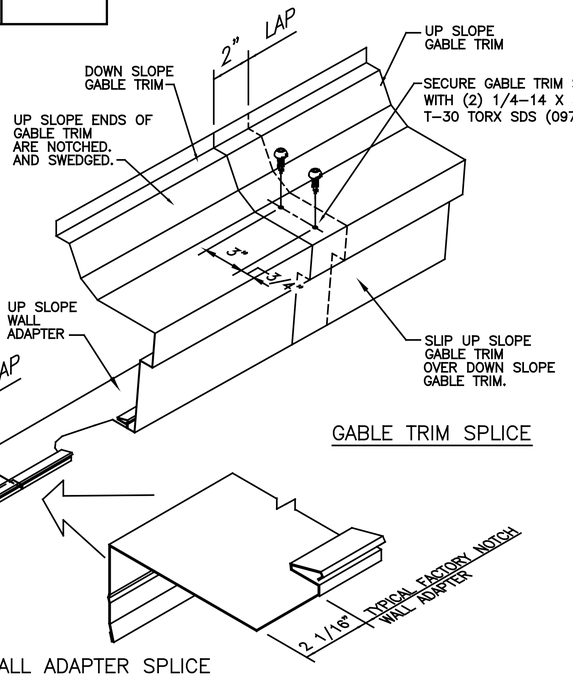
WALL ADAPTER PART SCHEDULE		
WALL PANEL	PART NUMBER	LENGTH
NON–BMC WALL (SEE DWG. P–081259)	VWA10	10'–4 1/2"
BUTLERIB II, SHADOWALL, STYLWALL II FLAT AND FLUTED, ALL (2") TEXTURED AND INSULATED WALL PANEL	WA10A	
ALL (2 1/2") TEXTURED AND INSULATED WALL PANEL ALL (3") TEXTURED AND INSULATED WALL PANEL OPEN ENDWALL OVERHANG AND CANOPY	WA10B	
ALL (4") TEXTURED AND INSULATED WALL PANEL	WA10C	

GABLE TRIM PART SCHEDULE				
LEFT HANDED PANELS		RIGHT HANDED PANELS		LENGTH
LEFT SLOPE	RIGHT SLOPE	LEFT SLOPE	RIGHT SLOPE	20'–6 7/8"
PART NO.	PART NO.	PART NO.	PART NO.	
MRGTL20L	MRGTL20R	MRGT20L	MRGT20R	

GABLE TRIM AND WALL ADAPTERS FURNISHED TO LENGTH SHOWN IN PARTS SCHEDULE. FIELD CUT TO LENGTH REQUIRED.



GABLE TRIM TO CORNER TRIM



GABLE TRIM SPLICE

WALL ADAPTER SPLICE

GABLE TRIM AND WALL ADAPTER SPLICE

ERECTION SEQUENCE:

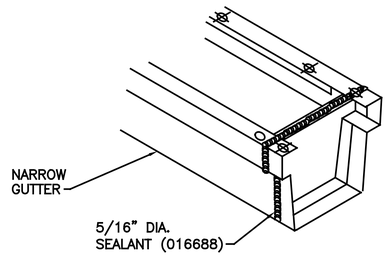
1. SNAP CHALK LINE ON FACE OF WALL PANEL AT 5" DIMENSION SHOWN ABOVE.
2. ATTACH WALL ADAPTER TO WALL PANEL, ALIGNING HORIZONTAL LEG WITH CHALK LINE. LOCATE TORX FASTENERS AT FASTENER GROOVE IN WALL ADAPTER.
3. ENGAGE GABLE TRIM CORRUGATION TO ROOF PANEL CORRUGATION. ENGAGE LOWER LEG OF GABLE TRIM INTO WALL ADAPTER. USING HAND PRESSURE, SNAP GABLE TRIM INTO WALL ADAPTER. VISUALLY CHECK TO ASSURE GABLE TRIM IS FULLY ENGAGED INTO WALL ADAPTER.
4. SEAM GABLE TRIM TO ROOF PANEL.

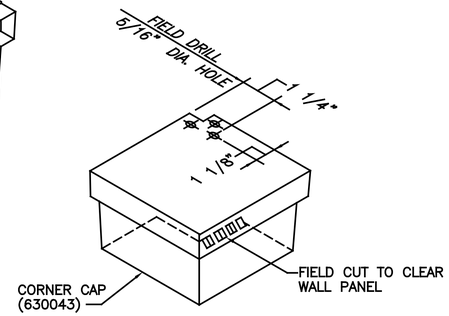
NOTES:

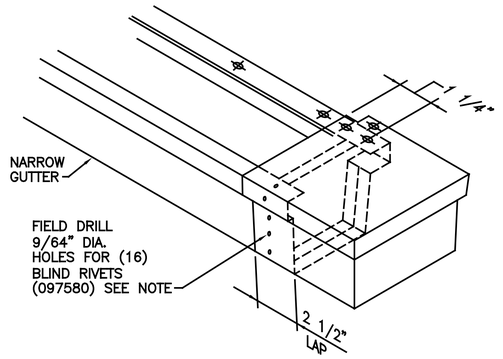
1. SEE ERECTION DRAWING P–081635 IF HIGH WIND GABLE TRIM CLIPS ARE REQUIRED.
2. BUILDINGS WITH WIDTH EXTENSION AND CANOPY TRANSITION THAT IMPOSES SLOPE CHANGE, FIELD MITER GABLE TRIM AND ADAPTER FOR SMOOTH FIT UP.
3. SEE DRAWING P–081243 FOR END RIDGE COVER INSTALLATION.

MR–24/CMR–24 GABLE TRIM AND WALL ADAPTOR INSTALL. WITH RIDGE ASSEMBLY

DRAWN BY	CHECKED BY	GROUP NUMBER: 02–001–02		
ACM	RHE			
FIRST RELEASE DATE	REVISION DATE	B	P–081167	06
01/21/10	09/14/20			







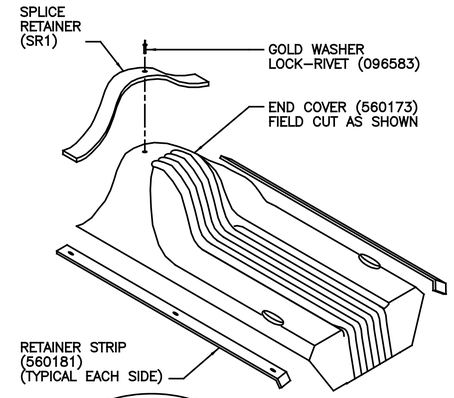
NARROW GUTTER

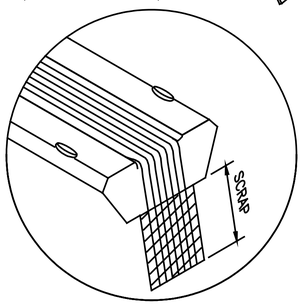
NOTE:

SEE DRAWING P-081764 FOR BLIND RIVET COLOR INFORMATION.

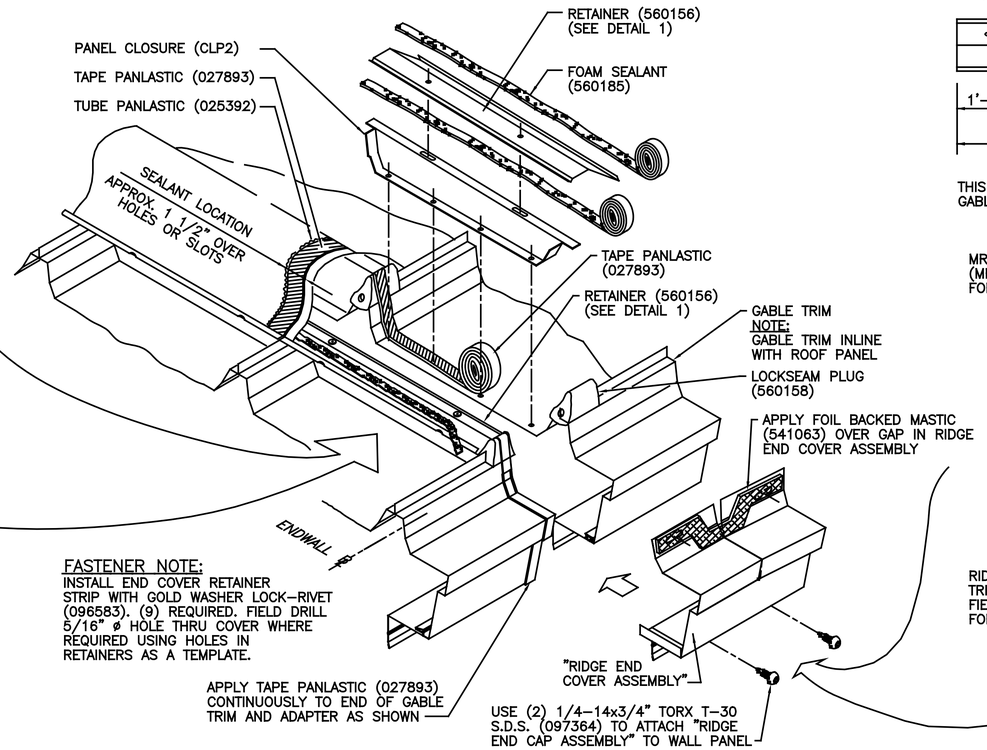
NARROW GUTTER CORNER CAP INSTALLATION – ALL ROOFS				
DRAWN BY	CHECKED BY	GROUP NUMBER: 01-004-01		
CAG	MEC	B	P-081236	04
FIRST RELEASE DATE	REVISION DATE			
01/21/10	12/04/18			

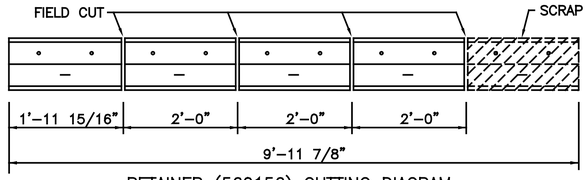
RIDGE END COVER COMPONENTS





END COVER MODIFICATION

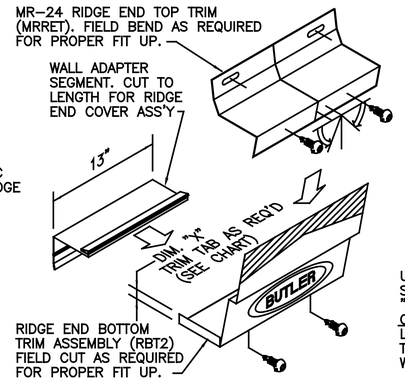




RETAINER (560156) CUTTING DIAGRAM

THIS CUTTING DIAGRAM IS A PROCEDURE USED WHEN RIDGE IS INSTALLED BEFORE GABLE TRIM. (SEE "RIDGE INSTALLATION" DWG. P–080578).

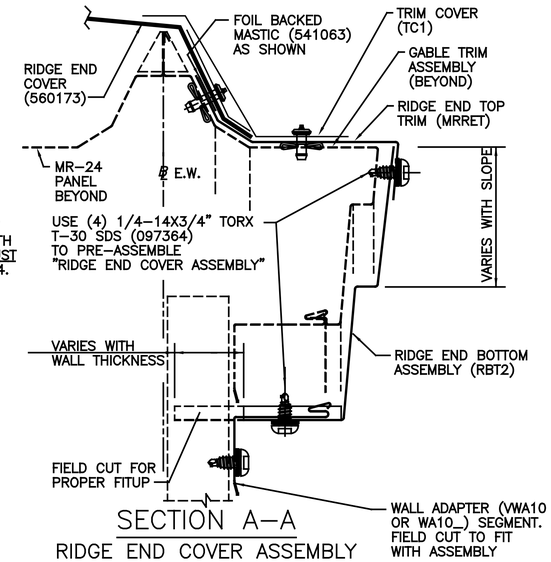
DETAIL 1



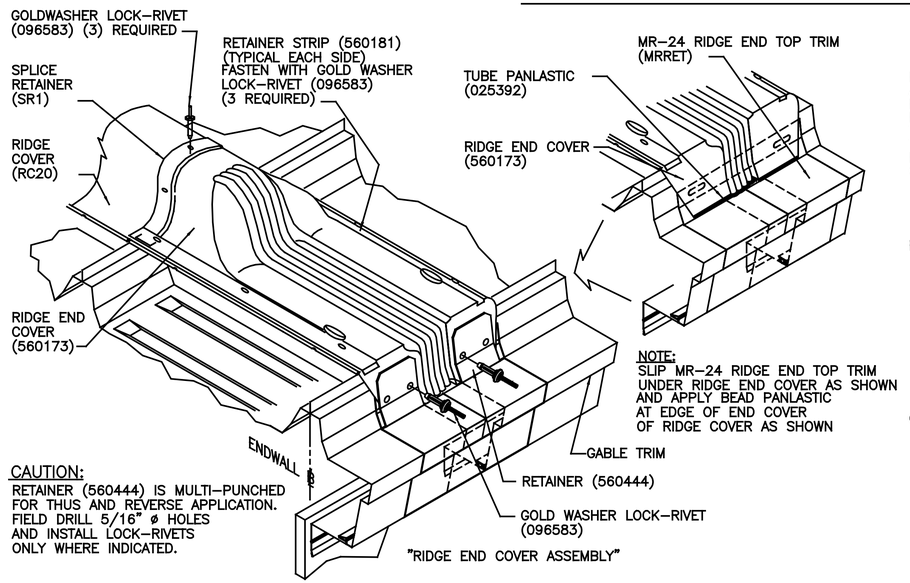
TAB TRIMMING CHART	
ROOF SLOPE	DIM. "X"
1:12	3/8"
2:12	11/32"
3:12	9/32"
4:12	7/32"
5:12	1/8"
6:12	0"

USE (4) 1/4–14X3/4" TORX T–30 SDS (097364) TO PRE–ASSEMBLE "RIDGE END CAP ASSEMBLY"
CAUTION:
LOCATE FASTENERS SO THAT THEY DO NOT INTERFERE WITH GABLE TRIM.

RIDGE END COVER ASSEMBLY



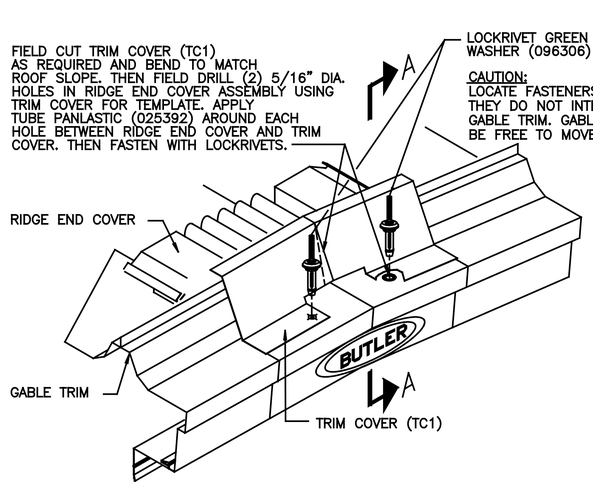
SECTION A–A
RIDGE END COVER ASSEMBLY



CAUTION:
RETAINER (560444) IS MULTI–PUNCHED FOR THUS AND REVERSE APPLICATION. FIELD DRILL 5/16" ø HOLES AND INSTALL LOCK–RIVETS ONLY WHERE INDICATED.

NOTE:
SLIP MR–24 RIDGE END TOP TRIM UNDER RIDGE END COVER AS SHOWN AND APPLY BEAD PANLASTIC AT EDGE OF END COVER OF RIDGE COVER AS SHOWN

RIDGE END COVER INSTALLATION



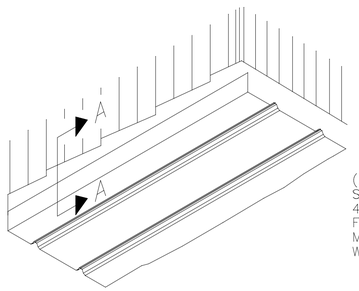
CAUTION:
LOCATE FASTENERS SO THAT THEY DO NOT INTERFERE WITH GABLE TRIM. GABLE TRIM MUST BE FREE TO MOVE W/MR–24.

END COVER RETAINER INSTALLATION

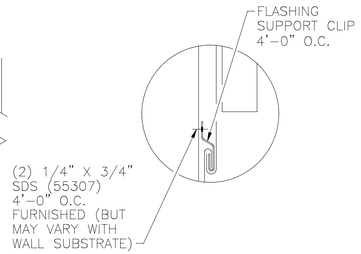
NOTES:

1. "RIDGE END COVER ASSEMBLY" CAPS OVER GABLE TRIM AND WALL ADAPTER.

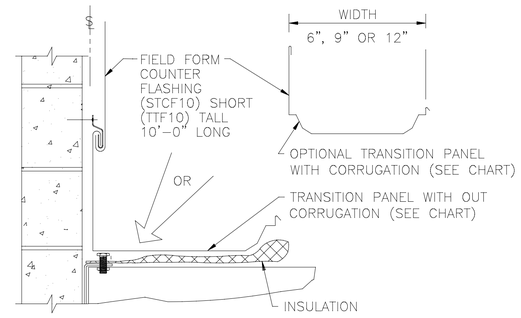
MR–24/CMR–24 RIDGE END COVER INSTALLATION WITH RIDGE ASSEMBLY (METAL WALL)				
DRAWN BY	CHECKED BY	GROUP NUMBER: 02–001–02		
ACM	RHE			
FIRST RELEASE DATE	REVISION DATE	B	P–081243	03
01/21/10	12/16/19			



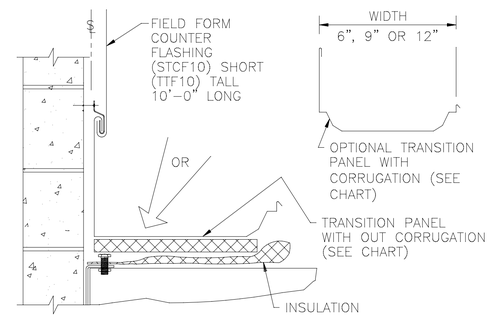
BUILDING KEY



SUPPORT CLIP
TYPICAL DETAIL



MASONRY OR IN-PLACE WALL
SECTION-A THRU PARL TRANS - UNINSULATED PURLIN



MASONRY OR IN-PLACE WALL
SECTION-A THRU PARL TRANS - INSULATED PURLIN

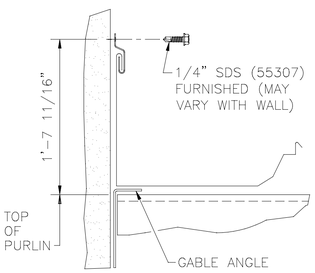
NOTES:

1. THE TRANSITION SUPPORT ANGLE (PTSA) IS NOT REQUIRED WHEN USING THE TALL PARALLEL TRANSITION PANEL SYSTEM. HOWEVER, A GABLE ANGLE IS USED TO ATTACH TO THE PURLINS WITH THE LEG TURNED DOWN.
2. BEGIN THE TRANSITION PANEL INSTALLATION BY LOCATING THE UPSLOPE END OF THE FIRST PIECE (AT THE EAVE) OVER THE PURLIN (SPLICE) AND FIELD CUT THE EAVE END TO MATCH THE ROOF PANELS. FIELD DRILL 3/16" DIA. HOLES FOR EAVE CONNECTION AND TRIM ATTACHMENT.
3. ATTACH THE TRANSITION PANELS ALONG THE WALL WITH THE FLASHING SUPPORT CLIPS (560741) 4' O.C. WITH A FASTENER SUITABLE FOR THE SUBSTRATE BEING FASTENED. LOCATE THE FASTENER AT THE DIMENSION SHOWN IN SECTION B FROM THE TOP OF THE PURLIN.
4. APPLY A GENEROUS BEAD OF GUNGRADE MASTIC (025392) BETWEEN THE PANELS AT EACH SPLICE LOCATION. LOCATE THE BEAD DIRECTLY OVER THE PUNCHED HOLES IN THE PANEL. THEN SECURE THE SPLICE W/THE SPLICE PLATES AS SHWON.
5. IF TRANSITION PANEL HAS A FEMALE SEAM APPLY A 1/4" X 4" BEAD OF GUN GRADE SEALANT (016688) OVER EACH MR-24 CLIP TAB.
6. FIELD CUT THE LAST PIECE TO EQUAL THE LENGTH OF THE ADJACENT ROOF PANEL.
7. SEAM THE TRANSITION PANEL WITH THE ROOF PANEL.
8. SEE DRAWING P-081537 FOR INSTALLATION OF COUNTER FLASHING.

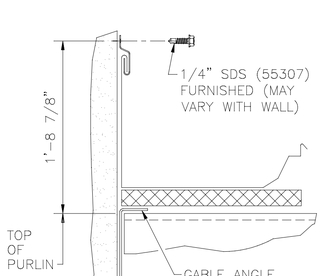
(TALL) TRANSITION PANEL CHART

PART	W/ OR W/O CORRUGATION	WIDTH	MALE OR FEMALE SEAM	LT OR RT HANDED PANEL
TPANML___	WITH OUT	6"	MALE	LEFT
TPBNML___	WITH OUT	9"	MALE	LEFT
TPCNML___	WITH OUT	12"	MALE	LEFT
TPANMR___	WITH OUT	6"	MALE	RIGHT
TPBNMR___	WITH OUT	9"	MALE	RIGHT
TPCNMR___	WITH OUT	12"	MALE	RIGHT
TPANFL___	WITH OUT	6"	FEMALE	LEFT
TPBNFL___	WITH OUT	9"	FEMALE	LEFT
TPCNFL___	WITH OUT	12"	FEMALE	LEFT
TPANFR___	WITH OUT	6"	FEMALE	RIGHT
TPBNFR___	WITH OUT	9"	FEMALE	RIGHT
TPCNFR___	WITH OUT	12"	FEMALE	RIGHT
TPACML___	WITH	6"	MALE	LEFT
TPBCML___	WITH	9"	MALE	LEFT
TPCCML___	WITH	12"	MALE	LEFT
TPACMR___	WITH	6"	MALE	RIGHT
TPBCMR___	WITH	9"	MALE	RIGHT
TPCCMR___	WITH	12"	MALE	RIGHT
TPACFL___	WITH	6"	FEMALE	LEFT
TPBCFL___	WITH	9"	FEMALE	LEFT
TPCCFL___	WITH	12"	FEMALE	LEFT
TPACFR___	WITH	6"	FEMALE	RIGHT
TPBCFR___	WITH	9"	FEMALE	RIGHT
TPCCFR___	WITH	12"	FEMALE	RIGHT

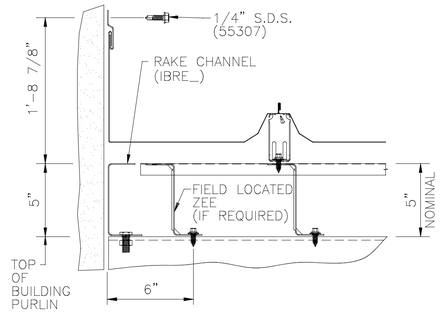
* RIGHT HANDED REPRESENT STANDARD MR-24 PANELS (ERECTION DIRECTION RIGHT TO LEFT). LEFT HANDED PANEL PROVIDE FOR LEFT TO RIGHT INSTALLATION.



UNINSUALTED PURLIN

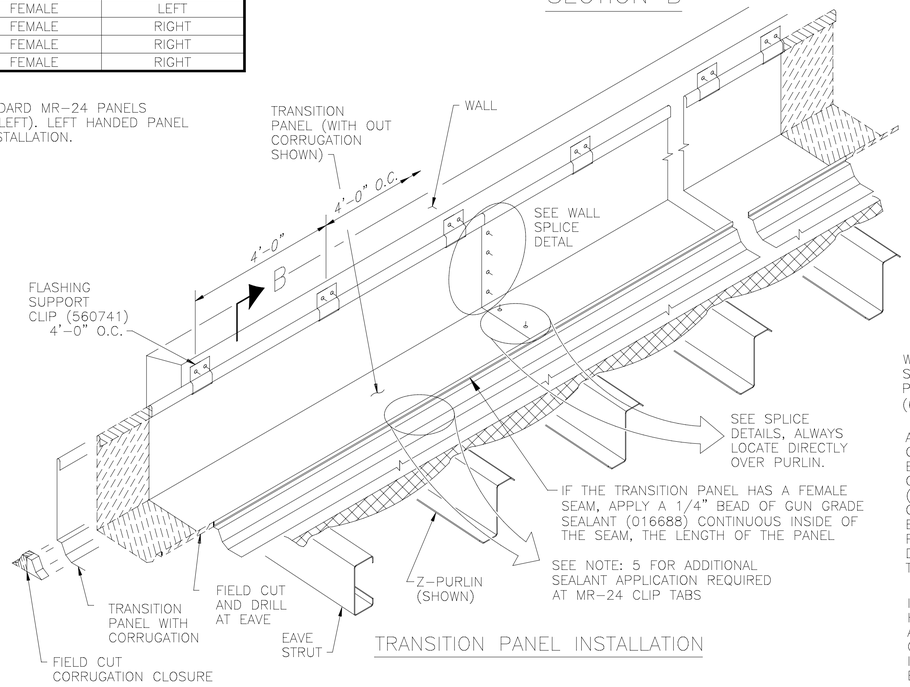


INSULATED PURLIN



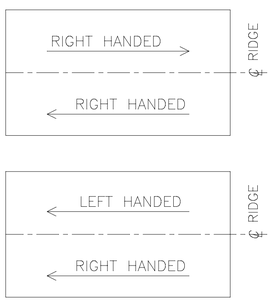
INSULATION BRIDGE

SECTION B

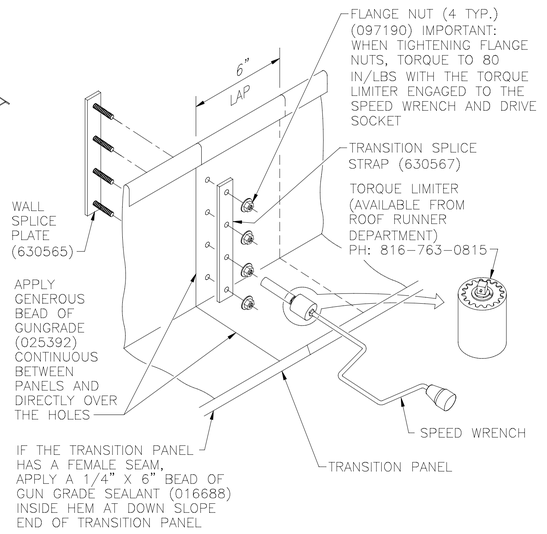


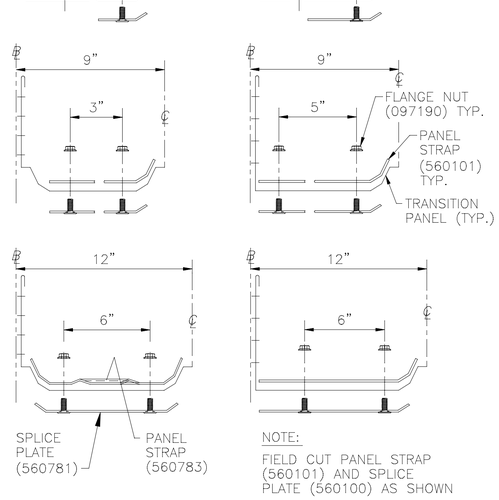
TRANSITION PANEL INSTALLATION

MALE FEMALE



HANDED PANEL
KEY PLAN





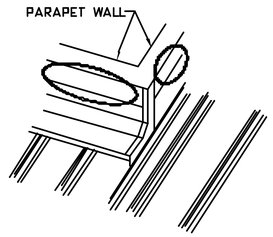
NOTE:
FIELD CUT PANEL STRAP (560101) AND SPLICE PLATE (560100) AS SHOWN

WITH CORRUGATION WITHOUT CORRUGATION

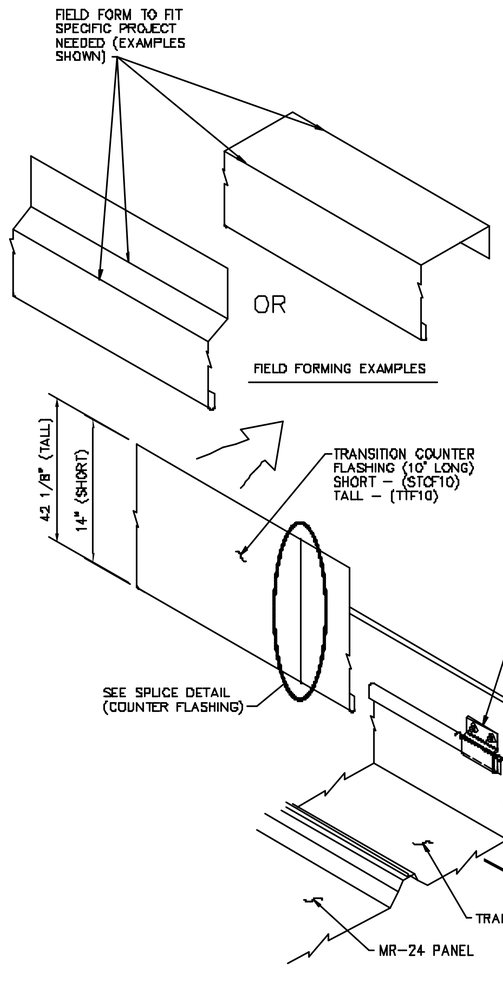
SPLICE DETAILS

MR-24 TALL PARALLEL TRANSITION
MASONRY OR IN-PLACE WALL INSTALLATION

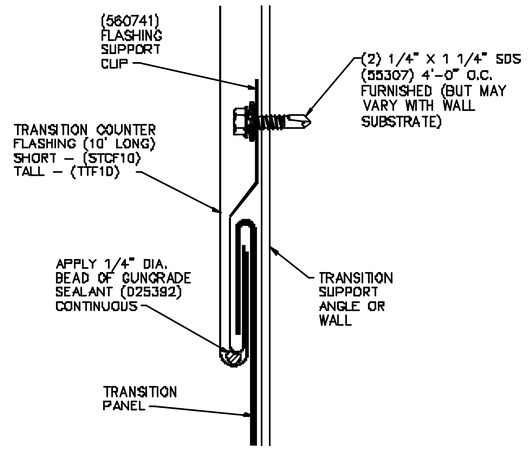
DRAWN BY	CHECKED BY	GROUP NUMBER: 02-021-01		
RHE	RMC	B	P-081535	08
FIRST RELEASE DATE	REVISION DATE			
01/21/10	05/04/23			



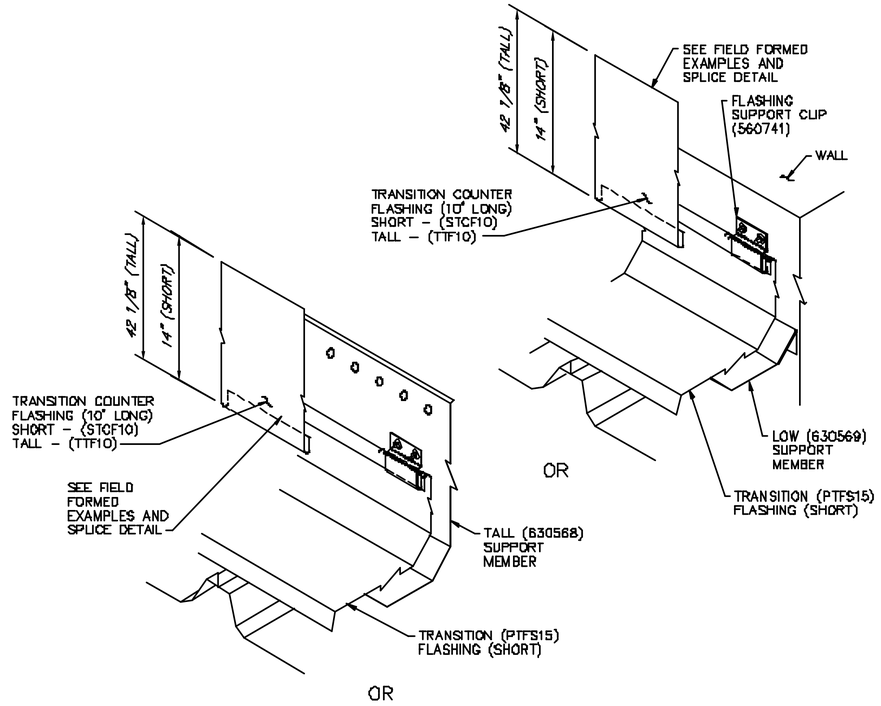
KEY PLAN

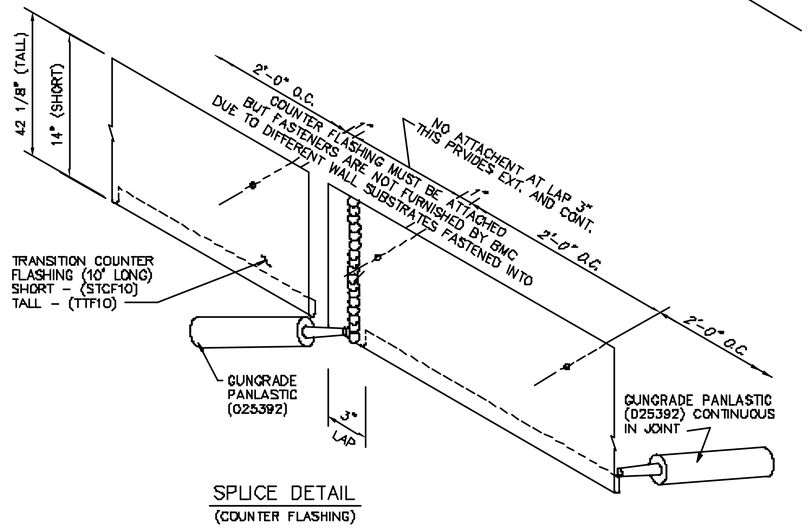


PARALLEL ROOF TO WALL TRANSITION DETAIL



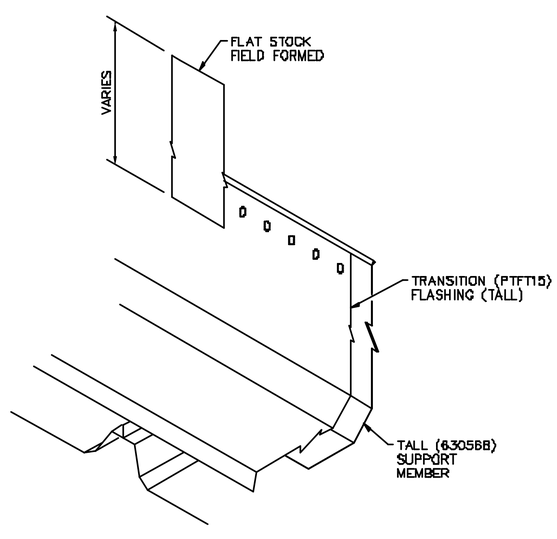
EXPANSION JOINT DETAIL





SPLICE DETAIL
(COUNTER FLASHING)

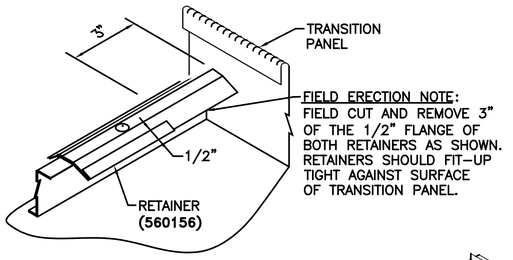
OR



PERPENDICULAR ROOF TO WALL TRANSITION DETAILS

MR-24/CMR-24 PARALLEL/PERP. TRANS. SHORT/TALL COUNTER FLASHING INSTALLATION

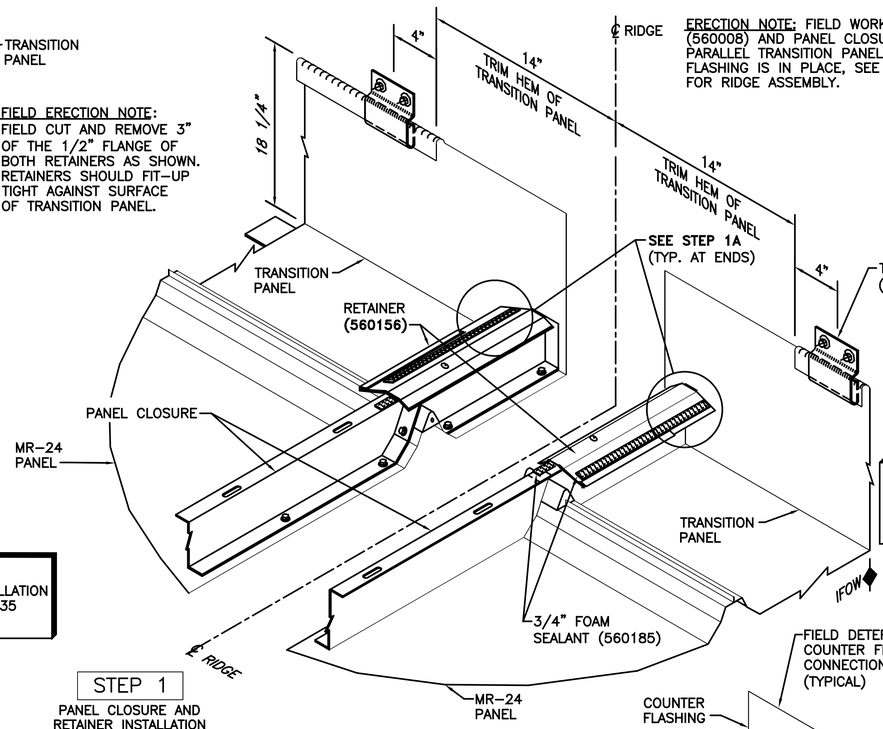
DRAWN BY	CHECKED BY	GROUP NUMBER: 02-021-01		
GW	RMC			
FIRST RELEASE DATE	REVISION DATE	B	P-081537	01
01/21/10	03/14/16			



STEP 1A

RETAINER MODIFICATION

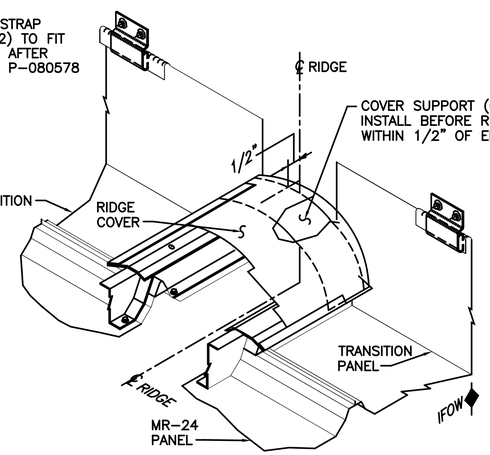
ERECTION NOTE:
FOR TRANSITION PANEL INSTALLATION REFER TO DRAWINGS P–081535 AND P–081536.



STEP 1

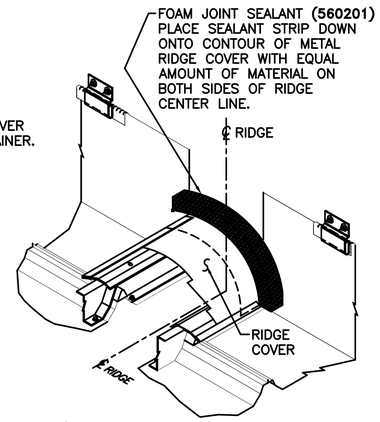
PANEL CLOSURE AND RETAINER INSTALLATION

ERECTION NOTE:
FOR PANEL CLOSURE, RETAINER AND RIDGE COVER INSTALLATION PROCEDURES REFER TO DRAWING **P–080578.**



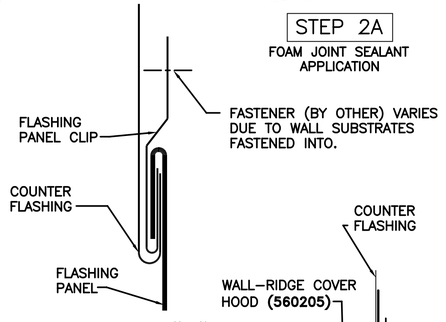
STEP 2

RIDGE COVER INSTALLATION

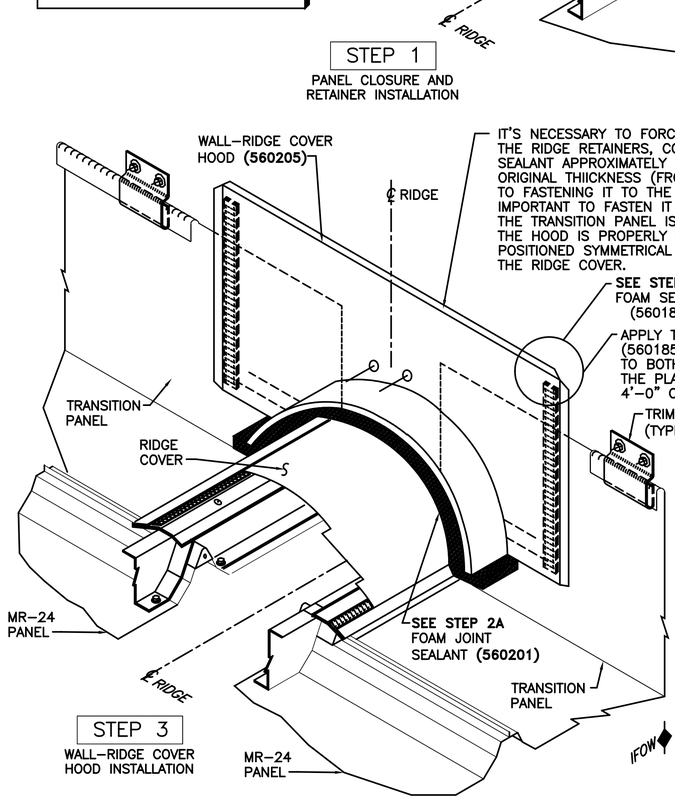


STEP 2A

FOAM JOINT SEALANT APPLICATION

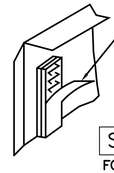


DETAIL "A" AT FLASHING SPLICE



STEP 3

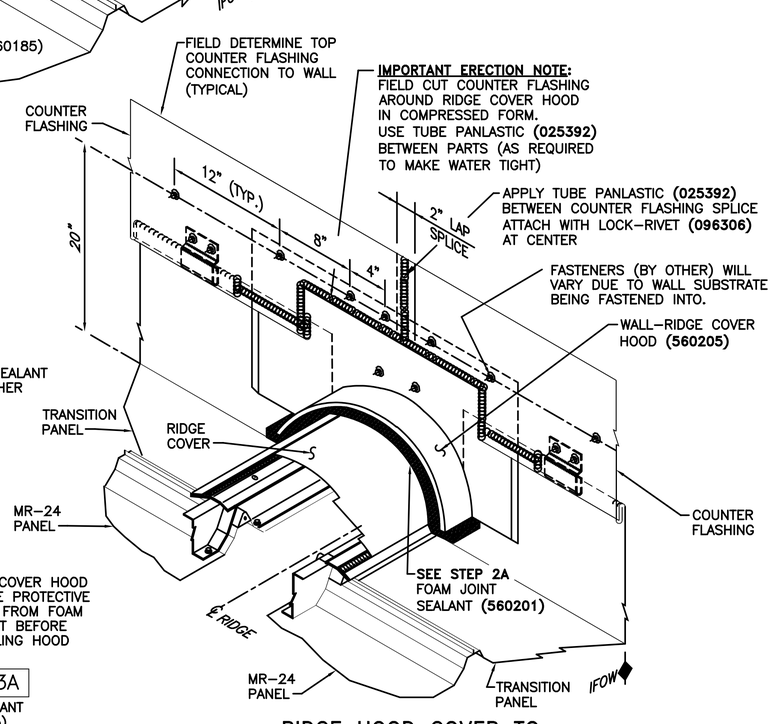
WALL–RIDGE COVER HOOD INSTALLATION



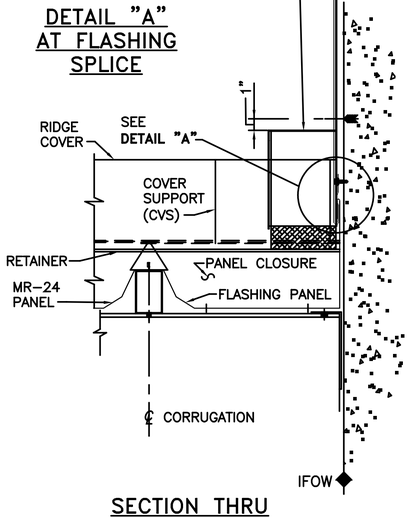
STEP 3A

FOAM SEALANT (560185)

IMPORTANT NOTE:
INSTALL FASTENERS THRU COVER HOOD AT LOCATIONS THAT WILL ALLOW THE TRANSITION PANEL TO MOVE FREELY.



RIDGE HOOD COVER TO ENDWALL ROOF TRIM PANEL

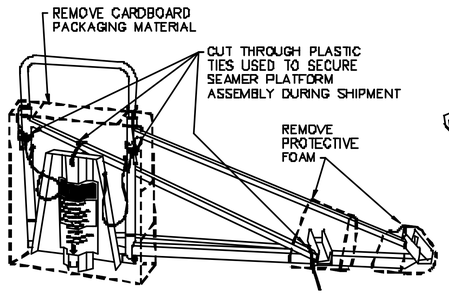


SECTION THRU RIDGE HOOD COVER TO ENDWALL ROOF TRIM PANEL

MANIFEST NOTE:
ALL PARTS FURNISHED IN PACKAGE (560208)

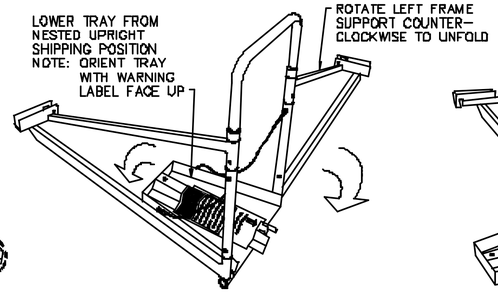
MR–24/CMR–24 RIDGE TO WALL TRANS.
TALL PARALLEL TRANSITION WITH OUT CORRUGATION

DRAWN BY	CHECKED BY	GROUP NUMBER: 02 021 01		
RHE	RMC			
FIRST RELEASE DATE	REVISION DATE	B	P–081548	04
01/21/10	08/09/18			



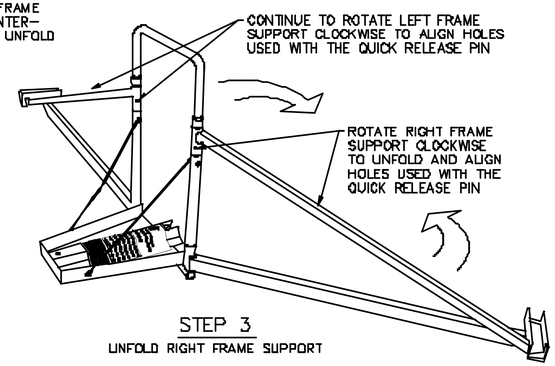
STEP 1

REMOVAL OF PACKAGING MATERIAL AND PLASTIC TIES



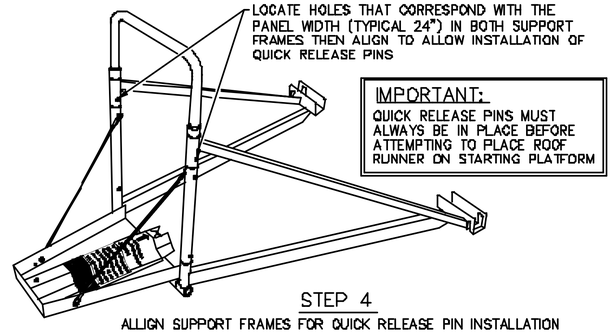
STEP 2

LOWER TRAY AND UNFOLD LEFT FRAME SUPPORT



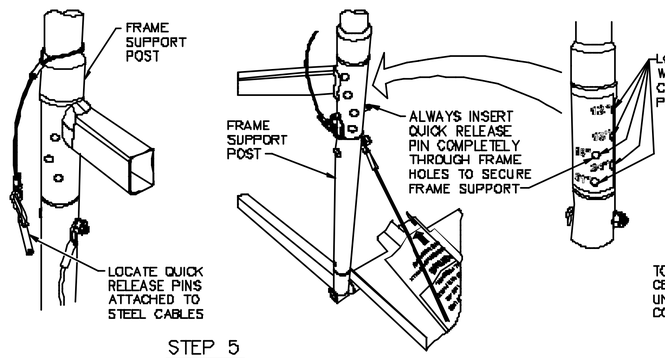
STEP 3

UNFOLD RIGHT FRAME SUPPORT



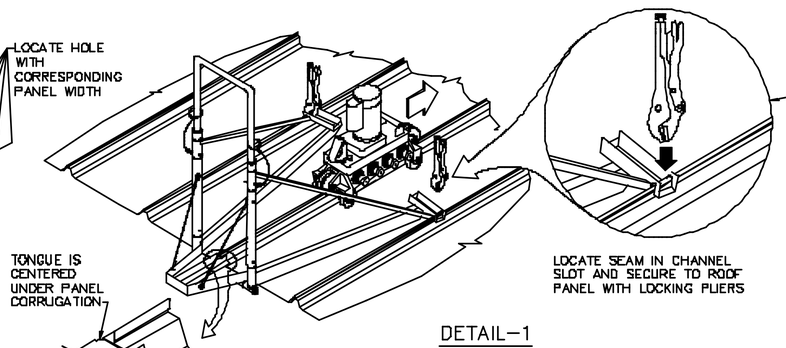
STEP 4

ALLIGN SUPPORT FRAMES FOR QUICK RELEASE PIN INSTALLATION



STEP 5

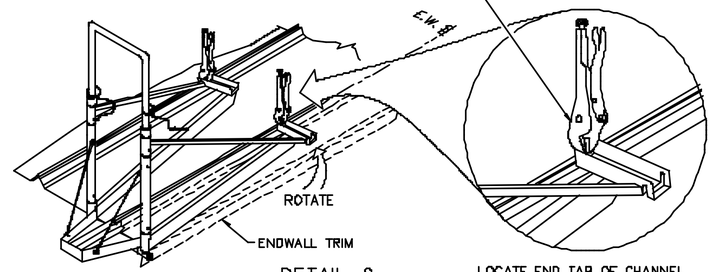
INSTALL QUICK RELEASE PIN TO BOTH SUPPORT FRAMES



DETAIL-1

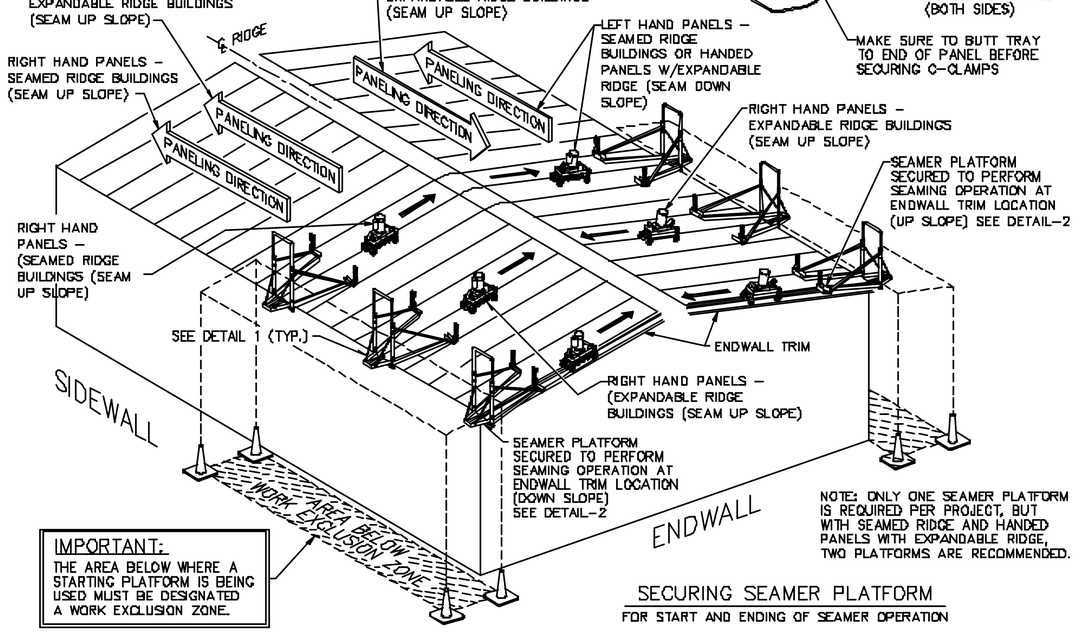
SECURING THE SEAMER PLATFORM (TYP. AT INTERMEDIATE LOCATION)

IMPORTANT:
DO NOT USE C-CLAMP STYLE LOCKING PLIERS WHEN SECURING THE STARTING PLATFORM AT MR-24 CORRUGATION SEAM LOCATIONS. ONLY CURVED JAW TYPE, (9" MIN.), MAY BE USED.



DETAIL-2

SECURING THE SEAMER PLATFORM (TYP. AT ENDWALL TRIM)



IMPORTANT:
THE AREA BELOW WHERE A STARTING PLATFORM IS BEING USED MUST BE DESIGNATED A WORK EXCLUSION ZONE.

SECURING SEAMER PLATFORM

FOR START AND ENDING OF SEAMER OPERATION

NOTE: ONLY ONE SEAMER PLATFORM IS REQUIRED PER PROJECT, BUT WITH SEAMED RIDGE AND HANDED PANELS WITH EXPANDABLE RIDGE, TWO PLATFORMS ARE RECOMMENDED.

GENERAL NOTES:

1. THE MR-24 SEAMER PLATFORM IS DESIGNED FOR STARTING AND REMOVING THE SEAMER AT THE EAVE.
2. THE SEAMER PLATFORM SUPPORTS THE ROOF RUNNER OUT BEYOND THE END OF THE PANEL AND ALIGNS IT WITH THE ROOF SLOPE WHEN SEAMING THE SEAM. THIS SEAMER PLATFORM IS ALSO DESIGNED TO SAFELY CATCH THE ROOF RUNNER WHEN RUNNING IT OFF AT THE EAVE.
3. THE SEAMER PLATFORM IS A PURCHASE ITEM AND IS NOT TO BE RETURNED.

ASSEMBLY NOTES:

1. THE MR-24 SEAMER PLATFORM COMES ASSEMBLED AND PARTIALLY ENCLOSED WITH A CARDBOARD BOX PROTECTING THE FRAME AND TRAY AREA, ALONG WITH FOAM WRAP SURROUNDING THE TAPERED ENDS OF THE LEFT AND RIGHT FRAME SUPPORTS. REMOVE ALL PROTECTIVE MATERIAL IN THESE AREAS, THEN USING WIRE CUTTERS, CAREFULLY CUT THROUGH THE PLASTIC TIES USED TO SECURE THE FRAME DURING SHIPMENT, SEE STEP 1. BE CAREFUL NOT TO CUT THROUGH ANY CABLES, RINGS OR HARDWARE USED TO SECURE AND STABILIZE THE SEAMER PLATFORM DURING USE.
2. ONCE ALL PACKING MATERIALS HAVE BEEN REMOVED, FOLLOW STEPS 2 THROUGH STEP 5 TO UNFOLD THE SEAMER PLATFORM AND PROPERLY ORIENT THE PLATFORM TRAY (WARNING LABEL FACE UP) ALONG WITH BOTH FRAME SUPPORTS TO ALLOW FOR INSTALLATION OF QUICK RELEASE PINS.

SECURING THE SEAMER PLATFORM:

1. BEFORE PLACING PLATFORM ON END OF PANEL, ROTATE BOTH FRAME SUPPORTS AND ATTACH QUICK RELEASE PIN IN HOLE CORRESPONDING WITH PANEL WIDTH BEING CLAMPED TO.
2. PLACE THE SEAMER PLATFORM AT THE END OF THE CORRUGATION TO BE SEAMED, INSERT THE CORRUGATION SUPPORT (ON THE PLATFORM TRAY) INTO THE PANEL CORRUGATION AND PULL THE PLATFORM UPSLOPE TIGHT AGAINST THE EDGE OF THE ROOF PANEL.
3. LOCATE THE SLOTS OF THE SUPPORT FRAMES OVER THE ADJACENT PANEL SEAMS (SEE DETAIL 1 AND DETAIL 2), THEN CLAMP THE LOCKING PLIERS WITHIN THE CHANNEL. THE LOCKING PLIERS SHOULD BE POSITIONED SNUG AGAINST THE BOTTOM OF THE CHANNEL WHILE APPLYING DOWNWARD FORCE TO THE FRAME SUPPORT, TO PROVIDE MAXIMUM SURFACE GRIP AT THE PANEL SEAM. ALWAYS DOUBLE CHECK THIS CONNECTION TO MAINTAIN A SAFE AND SECURE ATTACHMENT OF THE SEAMER PLATFORM TO THE ROOF.
4. IF THE CORRUGATION TO BE SEAMED IS AT THE ENDWALL TRIM, REMOVE THE SUPPORT FRAME LOCKING PIN AND ROTATE THE SUPPORT FRAME BACK TO THE ENDWALL TRIM SEAM. THEN CLAMP THE LOCKING PLIERS ON THE TAB OF THE SUPPORT FRAME AND THE ENDWALL TRIM SEAM. ALSO CLAMP AND SECURE THE OTHER SUPPORT FRAME ON THE ADJACENT PANEL SEAM.

MR-24 SEAMER PLATFORM
UNPACKING AND SECURING THE PLATFORM

DRAWN BY	CHECKED BY	GROUP NUMBER: 02-064-01		
GW	RMC			
FIRST RELEASE DATE	REVISION DATE	B	P-081616	03
01/21/10	09/20/16			

SAFETY PRECAUTIONS

SAFETY MUST BE A PRIME CONCERN THROUGHOUT THE ENTIRE ERECTION PROCESS. THESE INSTRUCTIONS CONTAIN SAFETY INFORMATION THAT IS IMPORTANT FOR ALL WORKERS TO KNOW AND UNDERSTAND. IN ADDITION, LOCAL, STATE AND OSHA SAFETY REGULATIONS MUST BE FOLLOWED AT ALL TIMES. THE ERECTION CONTRACTOR HAS THE ULTIMATE RESPONSIBILITY FOR THE SAFETY OF THE WORKERS AND MUST COMPLY WITH ALL APPLICABLE SAFETY REGULATIONS.

RECOGNIZE SAFETY INFORMATION

THIS IS THE SAFETY–ALERT SYMBOL. WHEN YOU SEE THIS SYMBOL IN THESE INSTRUCTION, BE ALERT TO THE POTENTIAL FOR PERSONAL INJURY. FOLLOW RECOMMENDED PRECAUTIONS AND SAFE PRACTICES.

FOLLOW SAFETY INSTRUCTIONS

CAREFULLY READ ALL SAFETY MESSAGES IN THESE INSTRUCTIONS AS WELL AS MR–24 ERECTION MANUAL, ALL APPLICABLE DRAWINGS AND THE ROOFING WORK SAFETY INSTRUCTIONS AND ROOF PANEL WARNING LABEL THAT ARE SHIPPED WITH THE ROOF MATERIALS.

THE FOLLOWING WARNING DECAL IS ATTACHED TO THE SEAMER PLATFORM PAN.

! WARNING

- DO NOT STEP ON PLATFORM PAN.
- DO NOT LEAN ON PLATFORM.
- DO NOT STRADDLE PLATFORM LEGS.
- MAKE SURE LOCKING PLIERS ARE SECURELY CLAMPED ONTO PANELS.
- ALWAYS USE FALL PROTECTION.

IMPORTANT:

CORRUGATION SUPPORT MUST BE FULLY INSERTED INTO CORRUGATION.

FAILURE TO HEED THESE WARNINGS CAN RESULT IN SERIOUS INJURY OR EVEN DEATH.

IF THE WARNING DECAL BECOMES ILLEGIBLE, ORDER A FREE REPLACEMENT FROM THE ROOF RUNNER OPERATIONS DEPARTMENT.

IN ADDITION, FOLLOW THESE GUIDELINES DURING ALL ROOF RUNNER SEAMING OPERATIONS:

- ALWAYS USE FALL PROTECTION AND WALKBOARDS WHEN INSTALLING PANELS OR WORKING NEAR ROOF EDGES.
- MAKE SURE SEAMING FOLOWS LAYING OF PANELS AS CLOSELY AS POSSIBLE AND USE FALL PROTECTION.
- LOCKING PLIERS (NOT BY BUTLER MANUFACTURING COMPANY) USED TO ATTACH SEAMER PLATFORM TO PANELS MUST BE IN GOOD CONDITION AND ADJUSTED TO RESIST A GOOD HARD PULL (60 POUNDS). ALWAYS DOUBLE CHECK SECURENESS OF LOCKING PLIERS EACH TIME THE SEAMER PLATFORM IS SECURED TO THE ROOF CORRUGATIONS.
- NEVER STEP ON THE SEAMER PLATFORM PAN.
- NEVER "RIDE" THE ROOF RUNNER OR BLOCK VENTS ON THE MOTOR IN ANY WAY.
- PANELS NOT FULLY SEAMED CAN COLLAPSE OR SLIDE OUT FROM UNDER YOU. ALWAYS USE FALL PROTECTION AND WALKBOARDS WHEN INSTALLING PANELS OR WORKING NEAR ROOF EDGES. MAKE SURE SEAMING FOLLOWS THE LAYING OF PANELS AS CLOSELY AS POSSIBLE.

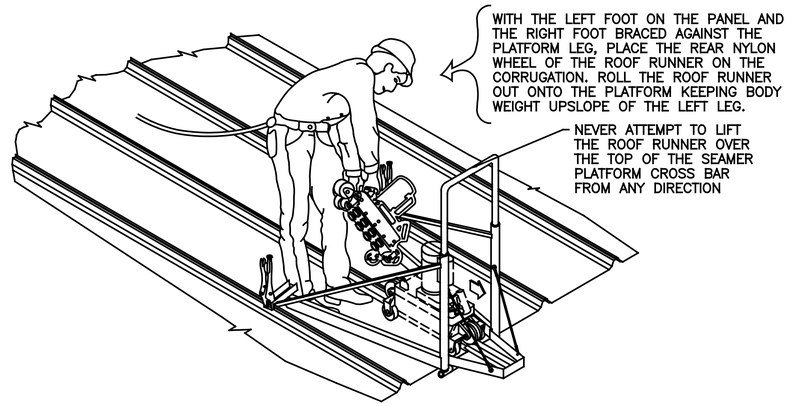
WARNING: NEVER TIE POWER CORDS TOGETHER OR TO THE ROOF RUNNER.

CAUTION: KEEP THE PATH OF THE ROOF RUNNER CLEAR AT ALL TIMES AND POWER CORDS FREE OF ENTANGLEMENTS. A NON–LOCKING PLUG IS SUPPLIED SO THAT IT WILL UNPLUG ITSELF SHOULD THE POWER CORD BECOME ENTANGLED. **DO NOT DEFEAT THIS SAFETY FEATURE BY TYING THE POWER CORD TO THE MOTOR LEAD OR TO THE ROOF RUNNER.** ADDITIONALLY, TOWING OF THE POWER CORD(S) CAN CAUSE IMPROPER SEAMS TO BE FORMED.

WARNING: DON'T RIDE THE ROOF RUNNER OR BLOCK VENTS ON THE MOTOR IN ANY WAY.

WARNING: PANELS NOT FULLY SEAMED CAN COLLAPSE OR SLIDE OUT FROM UNDER YOU. ALWAYS USE FALL PROTECTION AND WALKBOARDS WHEN INSTALLING PANELS OR WORKING NEAR ROOF EDGES. MAKE SURE SEAMING FOLLOWS THE LAYING OF PANELS AS CLOSELY AS POSSIBLE.

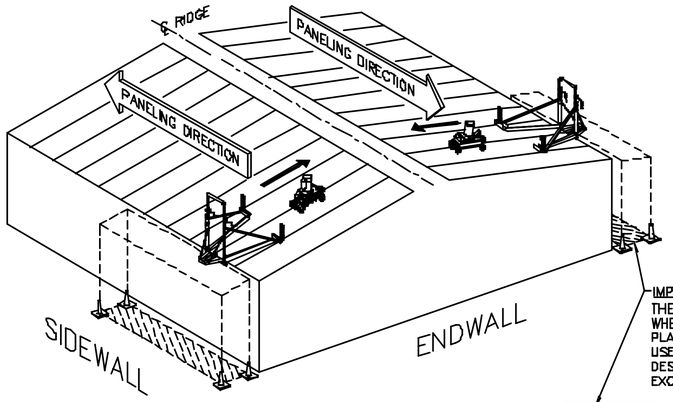
CAUTION: ALL ELECTRICAL SERVICE MUST BE PROPERLY GROUNDED, AND MUST INCLUDE A GROUND FAULT INTERRUPTER!



WARNING: NEVER STRADDLE THE PLATFORM OR COUNTERBALANCE THE ROOF RUNNER WITH YOUR WEIGHT.

MR–24 ROOF RUNNER OPERATIONS
SAFETY PRECAUTIONS

DRAWN BY	CHECKED BY	GROUP NUMBER: 02–064–01		
RHE	RMC			
FIRST RELEASE DATE	REVISION DATE	B	P–081672	01
01/21/10	12/04/18			

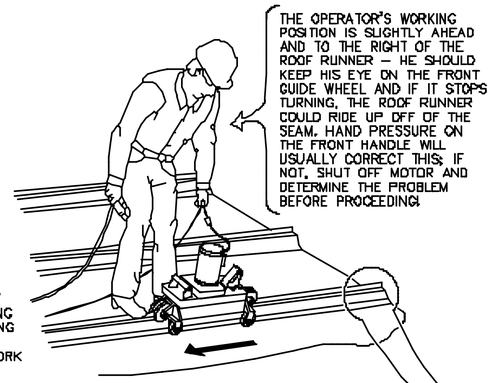


INSTALLATION OF MR-24

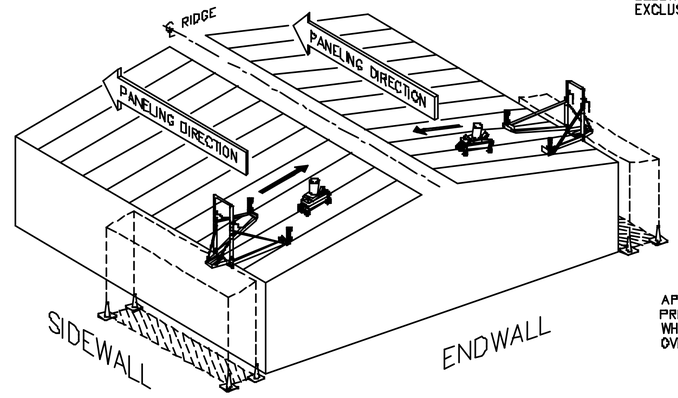
ON OPPOSITE SLOPES IN THE OPPOSITE DIRECTION
(PREFERRED METHOD OF INSTALLATION)

IMPORTANT:
THE AREA BELOW WHERE A STARTING PLATFORM IS BEING USED MUST BE DESIGNATED A WORK EXCLUSION ZONE

DENOTES AREA BELOW WORK EXCLUSION ZONE

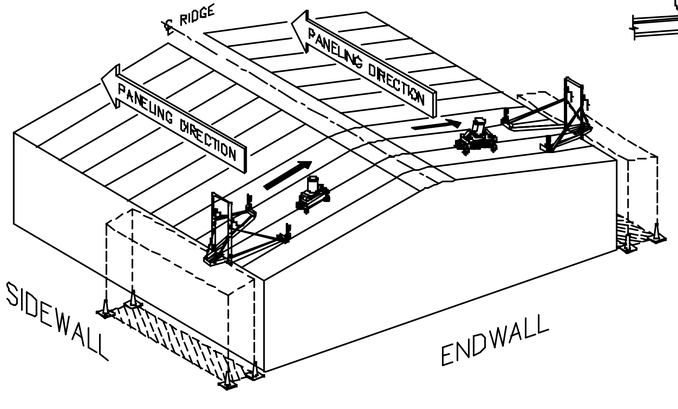


THE OPERATOR'S WORKING POSITION IS SLIGHTLY AHEAD AND TO THE RIGHT OF THE ROOF RUNNER - HE SHOULD KEEP HIS EYE ON THE FRONT GUIDE WHEEL AND IF IT STOPS TURNING, THE ROOF RUNNER COULD RIDE UP OFF OF THE SEAM. HAND PRESSURE ON THE FRONT HANDLE WILL USUALLY CORRECT THIS; IF NOT, SHUT OFF MOTOR AND DETERMINE THE PROBLEM BEFORE PROCEEDING!



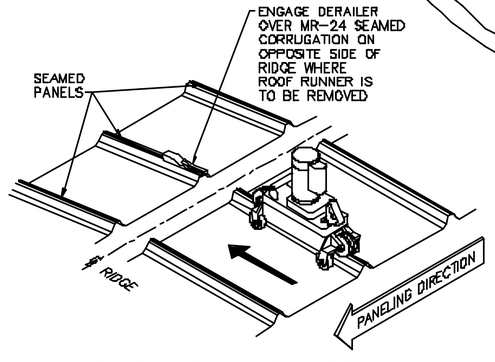
INSTALLATION OF (HANDED) MR-24

ON OPPOSITE SLOPES IN THE OPPOSITE DIRECTION



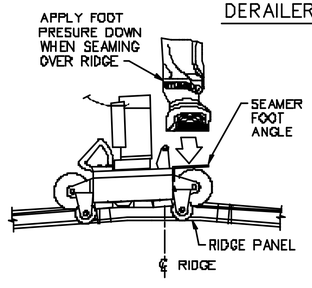
INSTALLATION OF (SEAMED RIDGE) MR-24

ON OPPOSITE SLOPES IN THE SAME DIRECTION



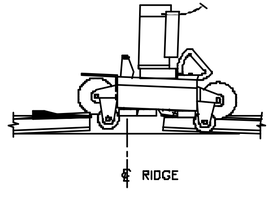
DERAILER AND ROOF RUNNER

AT RIDGE



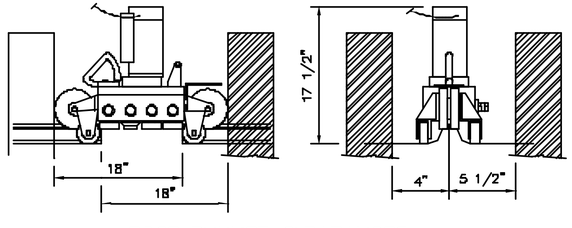
CROSS SECTION

AT SEAMED RIDGE



CROSS SECTION

DERAILER AND ROOF RUNNER AT RIDGE



ROOF RUNNER CLEARANCES

ROOF RUNNER DESCRIPTION

THE ROOF RUNNER IS A FOUR STAND, PORTABLE, ROLL FORMING MACHINE THAT JOINS THE MR-24 ROOF PANELS TOGETHER BY MAKING A DOUBLE LOCK SEAM OF THE VERTICAL LEGS OF THE PANEL HALF CORRUGATIONS. IT IS POWERED BY AN ELECTRIC MOTOR AND WEIGHS APPROXIMATELY 70 POUNDS (72 POUNDS IN ITS SHIPPING BOX). IT'S AVERAGE FORMING SPEED IS 13 FEET PER MINUTE AT 120V.

IT IS LEASED FROM AND REMAINS THE PROPERTY OF BUTLER MANUFACTURING CO. FOR LOSS VALUE SEE LEASE AGREEMENT.

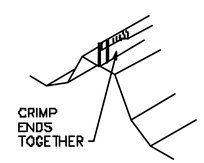
PAINTED PANELS

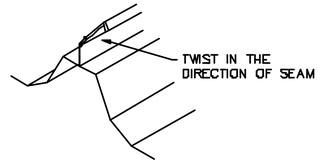
PRIOR TO USE ON "PAINTED" MR-24 PANELS, PLEASE CONTACT ROOF RUNNER OPERATIONS 815-763-0815. PAINTED MATERIAL PRESENTS SPECIAL CONDITIONS THAT REQUIRE NEW OR NEARLY NEW FEED WHEELS. IF YOU ALREADY HAVE A MACHINE, FEED WHEELS WILL BE SUPPLIED FOR FIELD INSTALLATION OR A REPLACEMENT MACHINE WILL BE FURNISHED IN ANY CASE, THERE IS NO ADDITIONAL CHARGE FOR THIS UPGRADE AND IT WORKS FINE WITH UNPAINTED MR-24. 22 GA. ROOF RUNNERS DO NOT REQUIRE UPGRADING FOR PAINTED PANELS.

THE SEAMING OPERATION

SEAMING WITH THE ROOF RUNNER CAN BEGIN AS SOON AS SUFFICIENT ROWS OF PANELS ARE LAYED IN PLACE TO PERMIT OPERATION OF THE ROOF RUNNER WITHOUT INTERFERENCE WITH THE CREW LAYING THE PANELS.
IMPORTANT: REFER TO THE MR-24 INSTALLATION MANUAL AND THE ERECTION DRAWINGS FOR MORE SPECIFIC INFORMATION ON PANEL INSTALLATION, CLIP ATTACHMENT, MASTIC PLACEMENT, ETC.

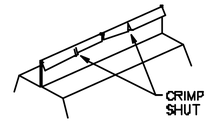
1. PANELS AND CLIP TABS MUST BE PROPERLY ENGAGED AND REMAIN IN POSITION DURING THE SEAMING OPERATION. IF NECESSARY, USE LOCKING PLIERS TO HOLD THE PANELS IN POSITION.
2. BEFORE BEGINING THE SEAMING OPERATION, THE ENDS OF THE PANELS MUST BE CRIMPED TOGETHER, TWISTING THE END SLIGHTLY IN THE DIRECTION OF SEAMING. CHECK FOR THE PIGTAIL OF PANLASTIC IN THE SEAM LAP.





3. ALWAYS KEEP THE TWO PANEL EDGES ENGAGED. IF THEY BECOME DISENGAGES, STOP THE ROOF RUNNER OPERATION AND CORRECT THE PROBLEM IMMEDIATELY.

PANEL AND SPLICES REQUIRE SPECIAL ATTENTION - IMPROPERLY PLACED OR EXCESS MASTIC WILL BE PICKED UP BY THE ROOF RUNNER MACHINE MAKING THE SEAMING PROCESS MORE DIFFICULT. THE UPPER PANELS MUST FIT INTO THE LOWER PANELS NOTCHES TO MINIMIZE THE MATERIAL THICKNESS TO BE SEAMED. BE SURE TO CRIMP THE PANEL LIPS SHUT AT THE JOINT TO PREVENT THE POSSIBILITY OF THE UPSLOPE END JAMMING IN THE MACHINE.

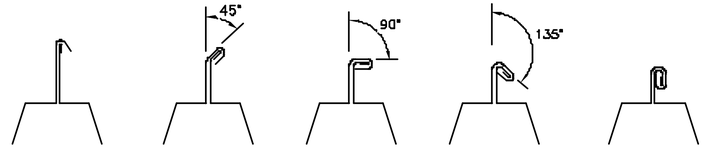


AVOID ROOF TRAFFIC DISTORTION TO THE PANELS BEING SEAMED. KEEP ROOF TRAFFIC AWAY FROM THE ROOF RUNNER.
IMPORTANT: THE OPERATOR SHOULD STAY IN A POSITION THAT MINIMIZES TRAFFIC DISTORTION. THE BEST POSITION IS 4' TO 5' AHEAD, TO THE RIGHT OF THE ROOF RUNNER ON A FULLY SEAMED PANEL FROM THIS POSITION. THE OPERATOR CAN:

- KEEP PANELS ENGAGED
- WATCH SEAM AND ROOF RUNNER
- STOP MACHINE AS NECESSARY
- HOLD DOWN FRONT OF MACHINE ACROSS LAPS
- WORK FROM SAFEST POSITION ON A STABLE PANEL

LOCK-SEAM SEQUENCE

THE FOLLOWING SERIES OF ILLUSTRATIONS SHOW THE LOCK-SEAM SEQUENCE PERFORMED BY THE ROOF RUNNER AS IT PROGRESSES ALONG THE LENGTH OF THE PANEL CORRUGATION.



ROOF RUNNER CLEARANCES

IN ORDER TO START OR REMOVE THE ROOF RUNNER IN CONDITIONS SUCH AS PARAPET WALLS OR OTHER OBSTRUCTION, A MINIMUM CLEAR DISTANCE OF 18 INCHES IS REQUIRED. THE MULTIPLE GUTTER CONDITION WILL REDUCE THIS DISTANCE DEPENDING ON THE ROOF SLOPES USED.

A DISTANCE OF 4" OR 5 1/2" AT THE SIDE OF THE SEAM IS REQUIRED FOR MACHINE CLEARANCE. 17 1/2" IS NEEDED FOR THE MACHINE TO PASS BENEATH OBSTRUCTION.

MR-24 ROOF RUNNER OPERATIONS
GENERAL SEAMING OPERATIONS

DRAWN BY	CHECKED BY	GROUP NUMBER: 02-064-01		
RHE	RMC			
FIRST RELEASE DATE	REVISION DATE	B	P-081673	01
01/21/10	10/11/16			

TIPS FOR TROUBLE FREE OPERATION

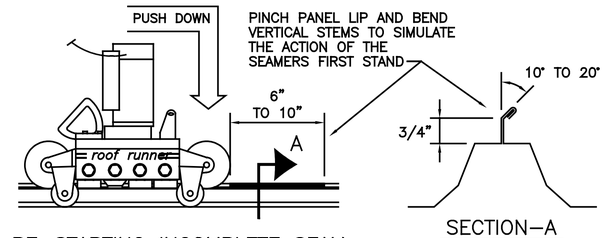
1. SAFE AND CORRECT SEAMING REQUIRES ALL MACHINE OPERATORS TO BE FAMILIAR WITH THE MACHINE FEATURES. BE SURE THEY ARE AWARE OF THE PROPER MATERIAL FLOW THROUGH THE FEED WHEELS SO THAT THEY CAN SPOT A MALFUNCTION QUICKLY AND CAN CORRECT ITS CAUSE IMMEDIATELY. IMPROPER SEAMS LONGER THAN 5 FEET ARE DIFFICULT TO REPAIR AS THEY INVOLVE THE PANEL CLIPS AND TABS.

2. ALWAYS USE A SEAMER PLATFORM.

3. MAKE SURE THE FEED WHEELS ARE KEPT CLEAN, ESPECIALLY ON PAINTED MATERIAL! (SEE MAINTENANCE)

4. MANY SEAMING PROBLEMS ARE THE RESULT OF MIS–ALIGNED PURLINS AND/OR FRAMES. A SUDDEN CHANGE IN DIRECTION (1/4" IN 5'–0") CAN CAUSE AN INCORRECT SEAM. A GOOD RULE TO FOLLOW IS TO "STRING LINE" THE PURLIN HOLES IN EACH BAY BEFORE PANELING.

5. BE SURE THE PANELS ARE PROPERLY ENGAGED PRIOR TO SEAMING. USE LOCKING PLIERS TO HOLD THEM IN POSITION AS REQUIRED. SHOULD AN INCOMPLETE SEAM OCCUR, STOP THE ROOF RUNNER IMMEDIATELY! AN INCOMPLETE SEAM CAN USUALLY BE RESTARTED BY BENDING THE PANEL STEMS SEVERAL INCHES AHEAD OF THE SEAMER, IN THE DIRECTION OF SEAMING.

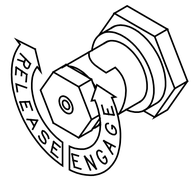


RE–STARTING INCOMPLETE SEAM

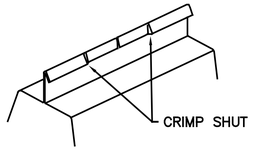
SECTION–A

6. WATCH TO SEE THAT THE LARGE FRONT AND REAR GUIDE WHEELS ARE BEARING ON THE CORRUGATION. THE WHEELS SHOULD TURN THROUGHOUT THE SEAMING OPERATION (AT CLIPS AND END SPLICES THEY MAY STOP MOMENTARILY, BUT SHOULD RESUME TURNING AGAIN IMMEDIATELY).

7. CAM RELEASES ARE PROVIDED FOR THE PURPOSE OF DISENGAGING THE MACHINE FROM THE PANEL. THEY SHOULD BE USED ONLY WHEN ABSOLUTELY NECESSARY. A LARGE ADJUSTABLE WRENCH OR 30 MM SOCKET IS REQUIRED AND THE PROCESS SHOULD BE DONE SLOWLY AND WITH GREAT CARE AS THERE ARE SEVERAL CAST PIECES INVOLVED THAT ARE UNDER HEAVY SPRING PRESSURE. THESE PIECES WILL BREAK IF EXTREME CARE IS NOT USED TO RELEASE AND ENGAGE THE CAM.



8. PANEL AND SPLICES REQUIRE SPECIAL ATTENTION – IMPROPERLY PLACED OR EXCESS MASTIC WILL BE PICKED UP BY THE ROOF RUNNER MACHINE MAKING THE SEAMING PROCESS MORE DIFFICULT. THE UPPER PANELS MUST FIT INTO THE LOWER PANELS NOTCHES TO MINIMIZE THE MATERIAL THICKNESS TO BE SEAMED. BE SURE TO CRIMP THE PANEL LIPS SHUT AT THE JOINT TO PREVENT THE POSSIBILITY OF THE UPSLOPE END JAMING THE ROOF RUNNER MACHINE.



9. AVOID ROOF TRAFFIC DISTORTION TO THE PANELS BEING SEAMED. KEEP ROOF TRAFFIC AWAY FROM THE ROOF RUNNER.

IMPORTANT: THE OPERATOR SHOULD STAY IN A POSITION THAT MINIMIZES TRAFFIC DISTORTION. THE BEST POSITION IS 4' TO 5' AHEAD, TO THE RIGHT OF THE ROOF RUNNER
THE OPERATOR CAN:

- KEEP PANELS ENGAGED
- WATCH SEAM AND ROOF RUNNER
- STOP MACHINE AS NECESSARY
- HOLD DOWN FRONT OF MACHINE ACROSS LAPS
- WORK FROM SAFEST POSITION ON A STABLE PANEL

MAINTENANCE FOR THE SEAMER PLATFORM

ALL MAINTENANCE AND REPAIRS ARE THE RESPONSIBILITY OF THE BUILDER.

THE SEAMER PLATFORM MUST BE MAINTAINED IN GOOD WORKING CONDITION IN ORDER TO FUNCTION PROPERLY AND SAFELY. DO NOT ALLOW THE SEAMER PLATFORM TO BE DROPPED, BENT, OR IN ANY WAY BE DAMAGED.

REGULAR INSPECTION OF THE SEAMER PLATFORM IS ADVISABLE IN ORDER TO DISCOVER HIDDEN DAMAGE AND TO INSURE IT IS IN GOOD WORKING ORDER.

IF ANY DAMAGE TO THE SEAMER PLATFORM AFFECTS ITS SAFE USAGE, DO NOT CONTINUE TO USE IT.

TO PURCHASE A REPLACEMENT, CALL THE ROOF RUNNER OPERATIONS DEPARTMENT.

THE WARNING DECAL ON THE SEAMER PLATFORM MUST ALSO BE KEPT IN GOOD CONDITION. REPLACEMENTS MAY BE ORDERED, FREE OF CHARGE, FROM THE ROOF RUNNER OPERATIONS DEPARTMENT (816–763–0815).

MAINTENANCE FOR THE ROOF RUNNER

ALL MAJOR MAINTENANCE AND REPAIRS WILL BE DONE BY BUTLER MANUFACTURING COMPANY – ROOF RUNNER OPERATIONS. EACH MACHINE WILL BE CLEANED, WORN PARTS REPLACED, LUBRICATED, PAINTED, AND TESTED BEFORE BEING SHIPPED TO INSURE RELIABLE PERFORMANCE ON THE JOB SITE.

MINOR MAINTENANCE SUCH AS MASTIC REMOVAL, PROTECTION FROM MOISTURE, DAMAGE, SHIPPING BOX CARE, ETC., ARE SOLELY THE RESPONSIBILITY OF THE LESSEE.

ALL QUESTIONS PERTAINING TO THE ROOF RUNNER SHOULD BE DIRECTED TO: (PLEASE REFER TO SPECIFIC ROOF RUNNERS BY SERIAL NUMBER ON ALL CORRESPONDENCE)

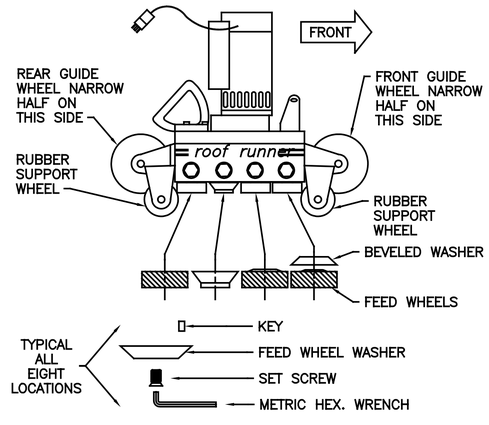
BUTLER MANUFACTURING COMPANY
13500 BOTTS ROAD
GRANDVIEW, MISSOURI 64030

TEL: 816–763–0815
FAX: 816–763–1717
ATTN: ROOF RUNNER OPS.

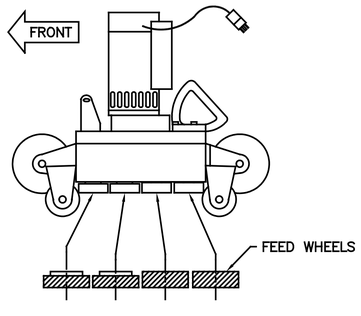
MASTIC REMOVAL – THE EIGHT FORMING WHEELS ON THE UNDERSIDE OF THE ROOF RUNNER MAY BE REMOVED FOR CLEANING (AN "L" SHAPED METRIC HEX WRENCH IS FURNISHED WITH THE ROOF RUNNER TO REMOVE THE FEED WHEEL SET SCREWS). THE FEED WHEELS, WASHERS, AND SET SCREWS CAN BE SOAKED IN A SOLVENT BATH TO REMOVE MASTICS. NAPTHA OR MINERAL SPIRITS WILL EFFECTIVELY CUT BUTLER MASTICS. CAUTION – READ SOLVENT LABELS THOROUGHLY BEFORE USING. DO NOT SOAK ANY OTHER PART OF THE ROOF RUNNER – SOLVENTS WILL ATTACK THE RUBBER SUPPORT WHEELS AND REMOVE THE LUBRICATING ABILITY OF THE BRONZE BEARINGS IF SOAKED. THESE PARTS MAY BE CLEANED BY BRUSHING OR WIPING WITH SOLVENTS AND SHOULD BE DRIED IMMEDIATELY. THE FOLLOWING SKETCHES SHOW THE PROPER ORIENTATION OF THE FEED WHEELS, KNURLING DIRECTION, AND OTHER PARTS THAT CAN BE REMOVED FOR CLEANING. FEED WHEELS MUST BE RE–INSTALLED EXACTLY AS SHOWN BEFORE THE MACHINE CAN FUNCTION PROPERLY.

PAINTED PANELS – FEED WHEELS MUST PENETRATE THE PAINTED SURFACE IN ORDER TO GRIP THE PANEL AND MAKE THE SEAM. THIS WILL LEAVE NON–OBJECTIONABLE TRACKS ON THE SEAM. A BUILD–UP OF PAINT CHIPS IN THE GROOVES OF THE FEED WHEELS WILL OCCUR REQUIRING CONTINUOUS WIRE BRUSHING TO INSURE AN ADEQUATE GRIP DURING THE SEAMING PROCESS.

THE FREQUENCY OF CLEANING SHOULD BE DETERMINED BY THE MACHINE OPERATOR. MASTIC MUST NOT BE ALLOWED TO ACCUMULATE ON THE FEED WHEELS EVEN THOUGH THE MACHINE IS FUNCTIONING PROPERLY. AS MASTICS BUILD UP, A CERTAIN AMOUNT WILL MIGRATE TO THE INTERNAL PARTS CAUSING BINDING OF PARTS AND RESULTING IN IMPROPER FUNCTIONING. INTERNAL CLEANING IS CONSIDERED MAJOR MAINTENANCE AND MUST BE DONE BY ROOF RUNNER OPERATIONS.



NOTICE THE ANGLED GROOVES IN THE FEED WHEELS, THEY MUST BE RE–INSTALLED EXACTLY AS SHOWN!



GUIDE WHEELS AND RUBBER SUPPORT WHEELS MAY ALSO BE REMOVED FOR CLEANING BY REMOVING SNAP RINGS AND WITHDRAWING THE AXLES

MR–24 ROOF RUNNER OPERATIONS
TIPS FOR TROUBLE FREE OPERATION–MAINT.

DRAWN BY	CHECKED BY	GROUP NUMBER: 02–064–01		
RHE	RMC	B	P–081674	01
FIRST RELEASE DATE	REVISION DATE			
01/21/10	12/04/18			

SCRUBOLTS

PART MARK	COLOR	DESCRIPTION
095984		11/32 X 7/8", HEX HD, SS W/WASHER
096932		3/8 X 1 1/4", HEX HD W/WASHER
097104		11/32 X 1 1/4", HEX HD, SS W/WASHER
097196		3/8 X 1", HEX HD W/WASHER
097222		3/8 X 2", HEX HD W/WASHER
097264		3/8 X 2 3/4", HEX HD W/WASHER
097270		3/8 X 2 1/4", HEX HD W/WASHER
097271		3/8 X 3 1/2", HEX HD W/WASHER
097292		3/8 X 5", HEX HD W/WASHER
097298		3/8 X 6", HEX HD W/WASHER
097351		11/32 X 7/8", T-45 TORX HD W/O WASHER (GRAY)
097352		11/32 X 1 1/4", T-45 TORX HD W/O WASHER (GRAY)
097361-	___	11/32 X 7/8", T-45 TORX HD W/WASHER
097362-	___	11/32 X 1 1/2", T-45 TORX HD W/WASHER
097363-	___	11/32 X 2", T-45 TORX HD W/WASHER
097604-	___	11/32 X 3 1/2", T-45 TORX HD W/WASHER
097267		SCRUBOLT NUT, 11/32", 1/2" HEX
097466		SCRUBOLT NUT, 23/64", 1/2" HEX

SELF-DRILLING SCREWS

PART MARK	COLOR	DESCRIPTION
097216		(T-3) #10-16 X 3/4", 5/16" HEX HD
097295		(T-3) #12-14 X 3/4", 5/16" HEX HD W/WASHER
097296		(T-3) #12-14 X 1 1/4", 5/16" HEX HD W/WASHER
097354		(T-4) 1/4-14 X 1 1/2", 3/8" HEX HD W/WASHER
097356		(T-3) 1/4-14 X 1" PHILLIPS WAFER HD
097373		(T-3) #12-14 X 1 1/4", 3/8" HEX HD, SS W/WASHER
097374		(T-3) #12-14 X 1 1/4", 3/8" HEX HD, SS W/WASHER
097405		(T-3) 5/16-12 X 1", 3/8" HEX HD W/WASHER
097406		(T-3) 5/16-12 X 1 1/2", 3/8" HEX HD W/WASHER
097409		(T-3) 1/4-14 X 7/8", 3/8" HEX HD, SS W/WASHER
097460		(T-3) 5/16-18 X 1 1/4", 3/8" HEX HD W/WASHER
097554		(T-5) #12-24 X 1 1/4", 5/16" HEX HD W/O WASHER
097555		(T-3) 1/4-14 X 1 1/4", 3/8" HEX HD W/O WASHER
097230-	___	(T-3) 1/4-14 X 1 1/4", 3/8" HEX HD W/WASHER
097357-	___	(T-1) 1/4-14 X 7/8", 3/8" HEX HD W/WASHER
097364-	___	(T-1) 1/4-14 X 3/4", T-30 TORX HD W/WASHER
097365-	___	(T-3) #12-14 X 1 1/4", T-30 TORX HD W/WASHER
097529-	___	(T-5) #12-24 X 1 1/2", T-30 TORX HD W/WASHER
097584-	___	(T-2) #12-14 X 1 1/4", 5/16" HEX HD, SS CAP W/WASHER
097605-	___	(T-3) 1/4-14 X 3 1/8", T-30 TORX HD STANDOFF SDS W/WASHER
55307		(T-3) 1/4-14 X 1 1/4", 5/16" HEX HD
55310		(T-3) 1/4-14 X 3", 5/16" HEX HD
55312		(T-3) #12-14 X 1" PANCAKE PHILLIPS SQUARE DRIVE
55320		(T-3) 1/4-14 X 1 1/2", 5/16" HEX HD
56104		(T-5) #12-24 X 1 1/2", 5/16" HEX HD
56450		(T-2) #12-14 X 1 1/4", 5/16" HEX HD W/O WASHER
097581-		(T-1) 1/4-14 X 7/8", 5/16" HEX HD, SS CAP W/WASHER

MISCELLANEOUS FASTENERS

PART MARK	COLOR	DESCRIPTION
095051		MACHINE SCREW 1/4 X 1", HEX HD
095056		MACHINE SCREW 1/4 X 3", HEX HD
095062		NUT, MACHINE SCREW 1/4", HEX HD
095241		NUT, 1/4" FLAT SPEED NUT
095895		(T-A) #10 X 3/4", PAN HD (SHEET METAL SCREW)
097190-	___	NUT, 1/4-20 SS FLANGE NUT

BLIND RIVETS

PART MARK	COLOR	DESCRIPTION
097580-	___	POP RIVET, 1/8 X 3/8"

FASTENER COLOR SUFFIX CHART

SUFFIX	COLOR	SUFFIX	COLOR
100 =	COOL IGLOO WHITE	112 =	COOL SHELL GRAY
101 =	COOL IVORY WHITE	113 =	COOL DESERT BEIGE
102 =	COOL SOLAR WHITE	115 =	COOL OCEAN BLUE
103 =	COOL BRICK RED	116 =	COOL GRAY STONE
104 =	COOL COUNTRY WHEAT	117 =	COOL COPPER PENNY
105 =	COOL HARVEST	118 =	COOL METALLIC SILVER
106 =	COOL SAFARI BROWN	119 =	COOL JADE GREEN
107 =	COOL PALM GREEN	120 =	COOL BRIGHT RED
108 =	COOL MARSH GREEN	121 =	COOL PARCHMENT
109 =	COOL EMERALD GREEN	122 =	COOL OLD TOWN GRAY
110 =	COOL ONYX BLACK	141 =	COOL BIRCH WHITE
111 =	COOL MAJESTIC BLUE	UNPNTD =	UNPAINTED

LOCK-RIVETS

PART MARK	DESCRIPTION
096295	9/32" X 1 3/32", "A" HD W/BLACK WASHER
096306	9/32" X 1 3/32", "B" HD W/GREEN WASHER
096582	9/32" X 1 11/32", "A" HD W/BLUE WASHER
096583	9/32" X 1 11/32", "B" HD W/GOLD WASHER

FOAM TYPE SEALANT

PART MARK	DESCRIPTION
560185	3/16" X 3/4" X 50' ROLL
560201	3" X 3" X 1'-10" STRIP

SEALANT

PART MARK	DESCRIPTION
016688	GRAY SKINNING SEALANT
025392	WHITE NON-SKINNING PANLASTIC SEALANT
80531	IMMERBOND FLEXIBLE SEAL ADHESIVE
560460	FLEXIBLE FLASHING ADHESIVE

TAPE MASTIC

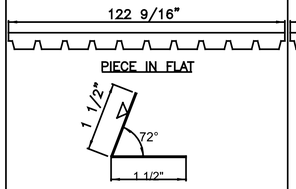
PART MARK	DESCRIPTION
025390	3/16" X 1/4" X 40' ROLL (10 ROLLS PER BOX)
027893	1/8" X 1" X 25' (5 ROLLS PER BOX)
042715	1/8" X 1 1/2" X 40' ROLL
042717	1/8" X 1" X 2'-0 1/4" STRIP (64 STRIPS PER BOX)
541063	1/8" X 3 7/8" X 10" ROLL FOIL STRIP (5 ROLLS PER CARTON)
560562	1/16" X 1" X 40' ROLL (5 ROLLS PER BOX)
560564	3/16" DIA. X 40' ROLL (10 ROLLS PER BOX)

PANEL CLOSURES

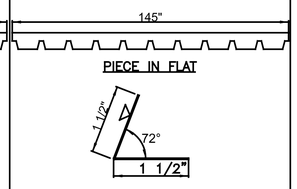
PART MARK	DESCRIPTION
026648	OPT. BUTLERIB RUBBER BASE CLOSURE 3'
026649	OPT. BUTLERIB FOAM BASE CLOSURE 3'
026654	BUTLERIB RUBBER ROOF CLOSURE 10 23/32"
560000	MR-24 RUBBER CORRUGATION CLOSURE
560158	MR-24 LOCK SEAM PLUG
560348	MR-24 PLASTIC CORRUGATION CLOSURE
570452	OPT. STYLWALL FLUTED FOAM WALL CLOSURE 2'-8"
570555	BUTLERIB OUTSIDE FOAM WALL CLOSURE 3'
570597	STYLWALL FLAT FOAM BASE CLOSURE 1'-4"
570674	STYLWALL FLUTED FOAM BASE CLOSURE 1'-4"
570730	OPT. SHADOWALL RUBBER BASE CLOSURE 10 11/16"
570731	OPT. SHADOWALL FOAM BASE CLOSURE 3'
570776	SHADOWALL OUTSIDE FOAM WALL CLOSURE 3'
ARPCPG	VSR II CORRUGATION CLOSURE
ARPHCP	VSR II HIP CORRUGATION PLUG 3'
BRCCL12	BUTLERIB CANOPY CLOSURE 12'
BRCL10A	OPT. BUTLERIB WALL CLOSURE 10' .75:12-3:12
BRCL10B	OPT. BUTLERIB WALL CLOSURE 10' 3.1:12-4:12
BRCL12	OPT. BUTLERIB WALL CLOSURE 12' .25:12-1:12
BRCLE12	VSR II EAVE CLOSURE 12' W/BUTLERIB WALL
CLE12A	BUTLERIB EAVE CLOSURE 12', 6 3/4"
CLE12B	BUTLERIB EAVE CLOSURE 12" W/BUTLERIB OVER 4:12, SHADOWALL OVER 1/2:12
CLE12C	MR-24 EAVE CLOSURE 12' W/STYLWALL OR SHADOWALL
CLE12D	MR-24 EAVE CLOSURE 12'-0" WITH INSULATED WALL PANEL
CLE1A	MR-24 EAVE CLOSURE 12' W/BUTLERIB
CLP2	MR-24 PANEL CLOSURE 2'-1 1/2"
MRCLE12A	CMR-24 EAVE CLOSURE 12'-0" WITH INSULATED WALL PANEL 10 3/4"
MRCLE12B	CMR-24 EAVE CLOSURE 12'-0" WITH INSULATED WALL PANEL 1'-1 3/4"
SHCL12	OPT. SHADOWALL WALL CLOSURE 12' .25:12-4:12
SHCLE11A	VSR II EAVE CLOSURE 11' W/SHADOWALL
SIIC12A	VSR II EAVE CLOSURE 12'-0" WITH INSULATED WALL PANEL OR FLAT STYLWALL
SIIC12B	VSR II EAVE CLOSURE 12' W/FLUTED STYLWALL
SIICLB1A	STYLWALL FLUTED METAL TRANSITION BASE CLOSURE 1'-4"
SIICLB1B	STYLWALL FLAT METAL TRANSITION BASE CLOSURE 1'-4"
TLCLB__	BUTLERIB WITH TLS PARTIAL WALL HEIGHT EAVE CLOSURE
TLCLM__	MR-24 WITH TLS PARTIAL WALL HEIGHT EAVE CLOSURE
TLCLV__	VSR II WITH TLS PARTIAL WALL HEIGHT EAVE CLOSURE

BMC COMMON WAREHOUSE PARTS

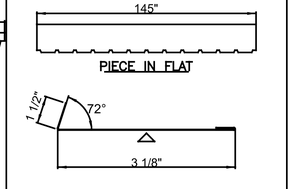
DRAWN BY	CHECKED BY	GROUP NUMBER:		
BJF		B	P-081764	15
FIRST RELEASE DATE	REVISION DATE			
01/10/13	06/05/23			



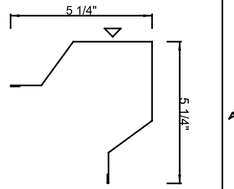
WALL CLOSURE BRII **BRCL10A**



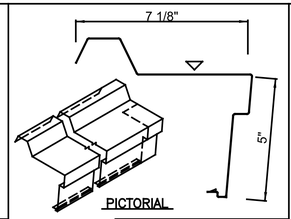
WALL CLOSURE BRII **BRCL12**



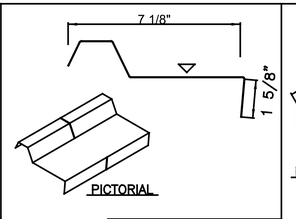
EAVE CLOSURE BRII WALL **BRCLE12**



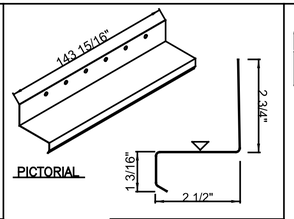
BUTLERIB CORNER TRIM **BRCT12**



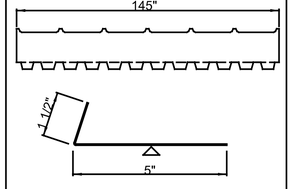
WALL CLOSURE BRII **BRGT20**



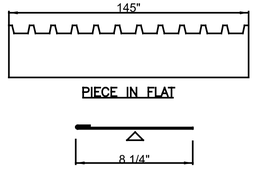
BRII RIDGE END TOP TRIM **BRRETT**



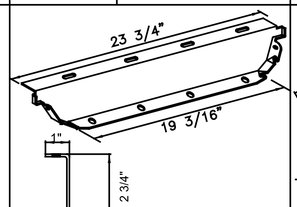
BASE TRIM **BT12A**



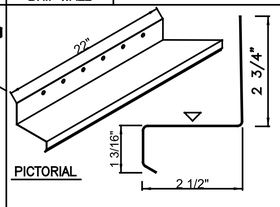
EAVE CLOSURE BRII TO MR 24 **CLE1A**



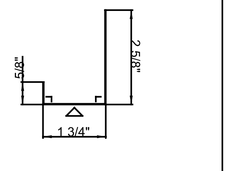
EAVE CLOSURE **CLE12A**



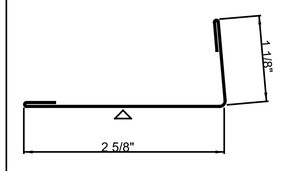
PANEL CLOSURE **CLP1**



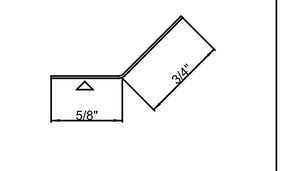
CORNER BASE TRIM LEFT(L) OR RIGHT(R) **CTB2__**



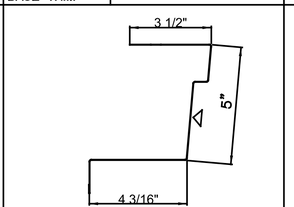
DRIP GUTTER **DG12**



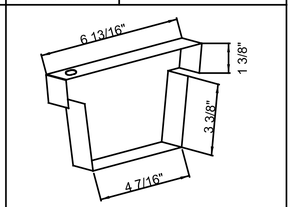
DOOR POST FLASHING **DSF12**



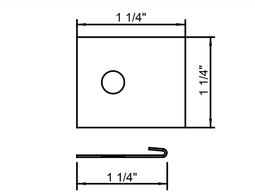
DRIP TRIM ATTCHMENT **DTA**



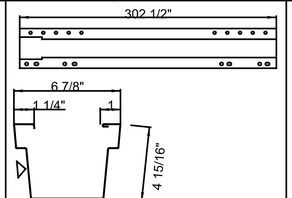
EAVE TRIM "A" THRU "E" **ET12__**



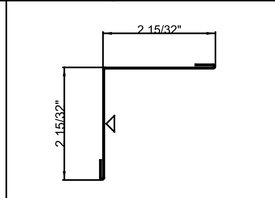
GUTTER END CAP LEFT(L) OR RIGHT(R) **GEC1__**



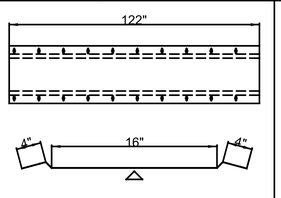
GUTTER SUPPORT TAB **GST**



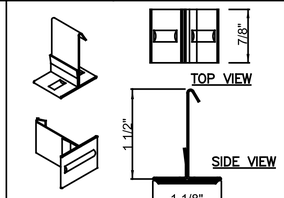
GUTTER **GTR25**



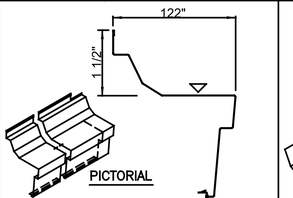
INSIDE CORNER TRIM **ICT12**



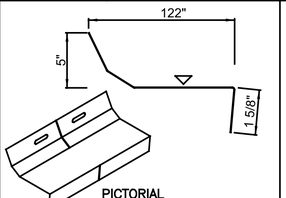
INTERIOR RIDGE TRIM "A" THRU "D" **IRT10**



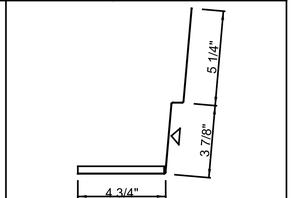
LOCK SEAM TAB **LST**



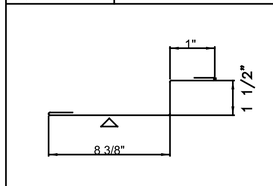
GABLE TRIM MR 24 "L" OR "R" **MRGT20__**



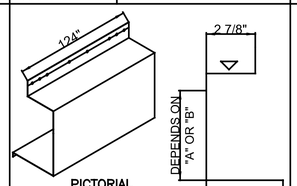
RIDGE END TOP TRIM MR 24 **MRRET**



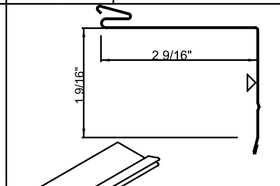
RIDGE END BOTTOM TRIM ASSY. **RBT1**



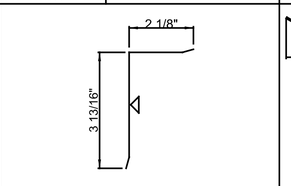
SOFFIT TRIM **ST2**



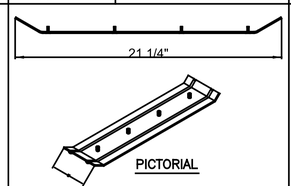
SOFFIT TRIM "A" OR "B" **ST10__**



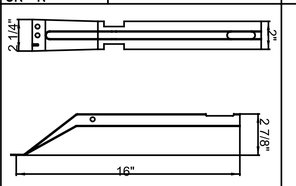
WALL ADAPTER "A" THRU "C" **WA10**



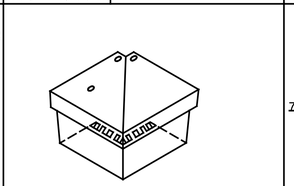
WALL SOFFIT SUPPORT **WSS10**



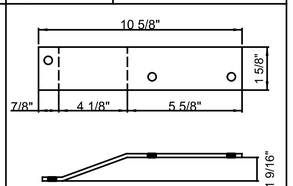
SPLICE PLATE ASSEMBLY MR 24 **560100**



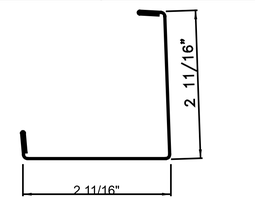
GUTTER SUPPORT **630000**



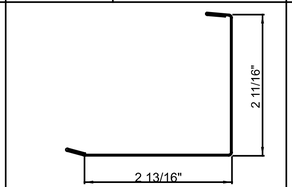
CORNER TRIM ASSEMBLY **630043**



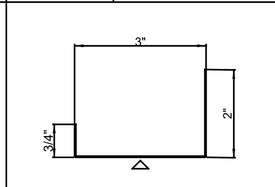
GUTTER HANGER **630077**



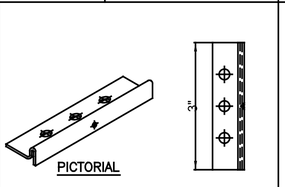
EXTERIOR CORNER TRIM STYLWALL II **ECT13A**



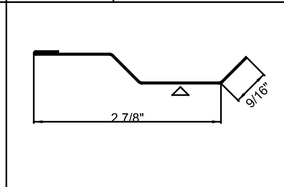
EXTERIOR CORNER TRIM STYLWALL II **ECT13B**



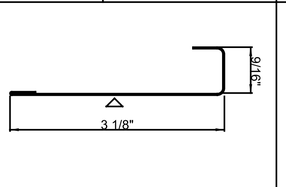
DRIP GUTTER STYLWALL II **SIIDG12**



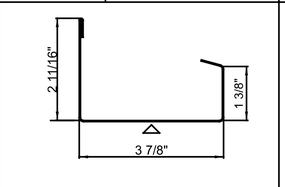
REINFORCEMENT CLIP **570675**



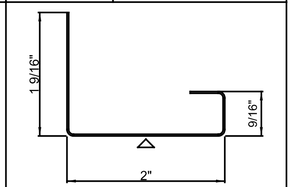
O.H. DOOR SIDE TRIM LEFT STYLWALL II **SIID12A**



O.H. DOOR SIDE TRIM RIGHT STYLWALL II **SIID12B**



O.H. DOOR SIDE TRIM LEFT STYLWALL II **SIID12C**



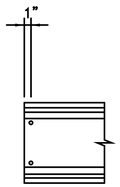
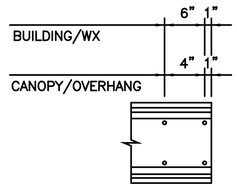
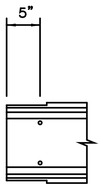
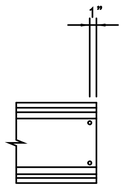
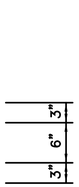
O.H. DOOR SIDE TRIM RIGHT STYLWALL II **SIID12D**

TRIM COLOR NOTE
△ DESIGNATES COLOR SIDE

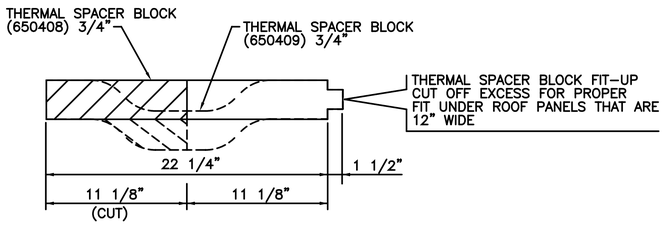
STANDARD TRIMS

DRAWN BY	CHECKED BY	GROUP NUMBER:		
CSF	RJR	B	P-081768	02
FIRST RELEASE DATE	REVISION DATE			
02/28/13	12/04/18			

12" MR–24 PANEL HOLE PATTERN DIAGRAM

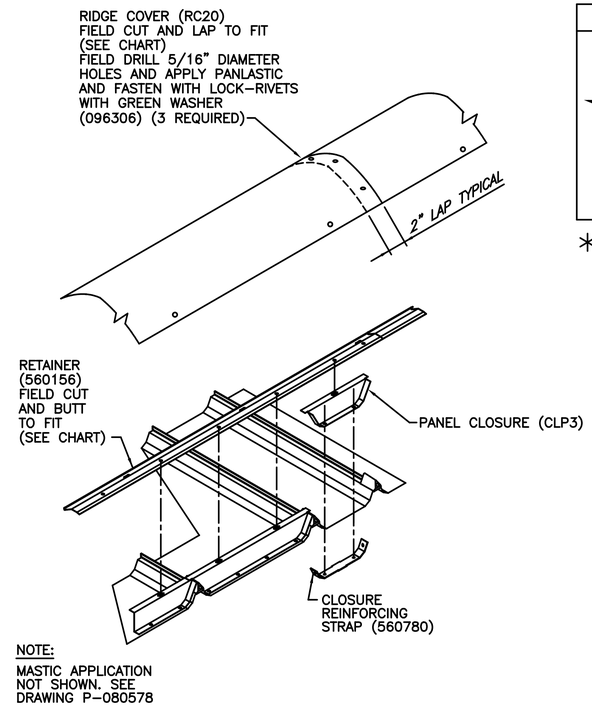
✳ LONGITUDINAL DIMENSIONS				TRANSVERSE DIMENSIONS
RIDGE	EAVE	SPLICE (HIGH END)	SPLICE (LOW END)	END
				

✳ ALL FIELD DRILLED HOLES 5/16" DIAMETER LONGITUDINAL HOLE LOCATION DIMENSIONS ARE CRITICAL. ERRORS IN FIELD DRILLING LOCATION WILL ACCUMULATE AND CAUSE RIDGE FIT–UP DIFFICULTY. RIGHT HAND PANELS WILL BE FACTORY PUNCHED. ONLY LEFT HANDED PANELS REQUIRE FIELD DRILLING FOR HOLES.



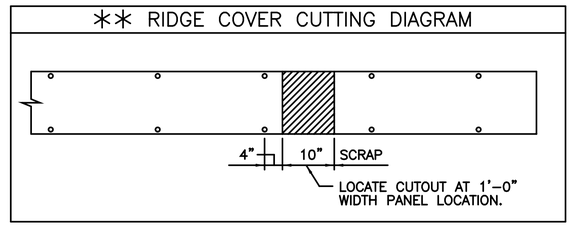
THERMAL SPACER BLOCK FIELD CUT DETAIL

** FIELD CUT BLOCK AS SHOWN AND KEEP CUT PART FOR REMAINING 12" PANELS. (1) 24" BLOCK IS PROVIDED FOR (2) 12" PANELS.

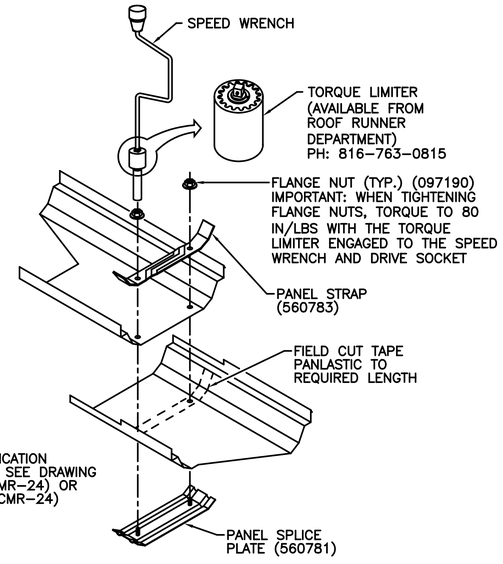


NOTE:
MASTIC APPLICATION NOT SHOWN. SEE DRAWING P–080578

RIDGE COVER RETAINER MODIFICATION



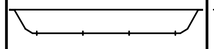
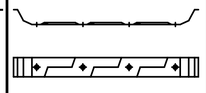
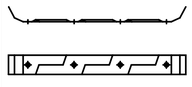
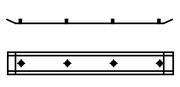
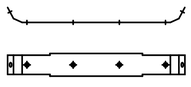
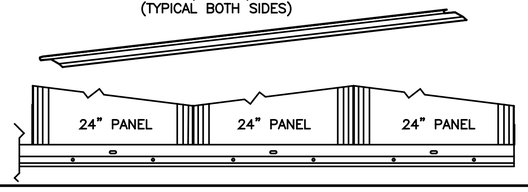
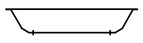
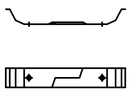
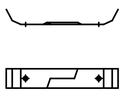
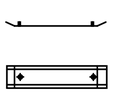
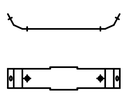
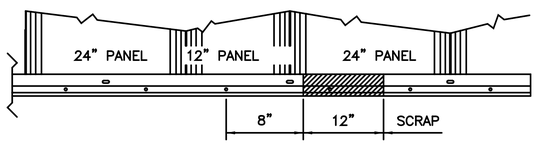
✳✳ THE RIDGE COVER/RETAINER CUTTING DIAGRAM IS ONLY APPLICABLE TO A SINGLE RUN OF THE 12" VARIABLE WIDTH PANEL LOCATED WITH IN THE INTERIOR OF THE BUILDING. CUTTING DETAIL IS NOT APPLICABLE TO MULTIPLE ADJACENT RUNS OR TO A SINGLE RUN OF 12" PANELS LOCATED AT THE ENDWALLS OF THE ROOF.



NOTE:
MASTIC APPLICATION NOT SHOWN. SEE DRAWING P–080577 (MR–24) OR P–080212 (CMR–24)

PANEL STRAP AND PANEL SPLICE PLATE

PANELING COMPONENTS REPLACEMENT CHART

PANEL WIDTH	PANEL CLOSURE (CLP2)	PANEL STRAP AT EAVE (560004)	PANEL STRAP AT SPLICE (560101)	PANEL SPLICE PLATE (560100)	CLOSURE REINFORCING STRAP (560008)	RIDGE RETAINER (560156) 10'–0" LENGTHS (TYPICAL BOTH SIDES)
24"						
12"						

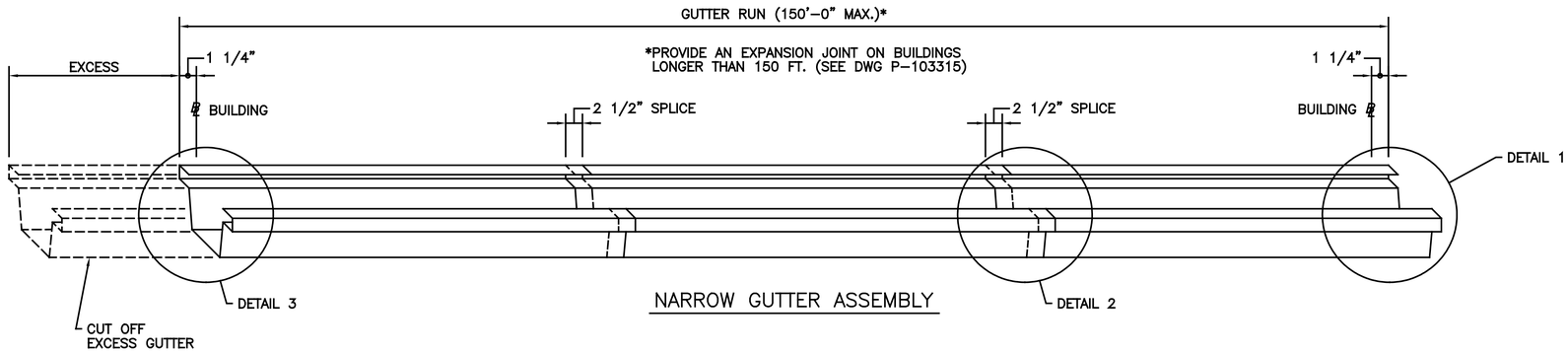
✳✳ (CUT PARTS AS SHOWN AND BUTT TOGETHER)

WHEN SPECIFIC DETAIL ON ERECTION DRAWINGS IS INDICATING THE USE OF A 2'–0" WIDE MR–24 PANEL THE PARTS SHOWN IN THE 24" PANEL WIDTH ROW SHOULD BE USED AS SHOWN WITHIN THE DETAIL

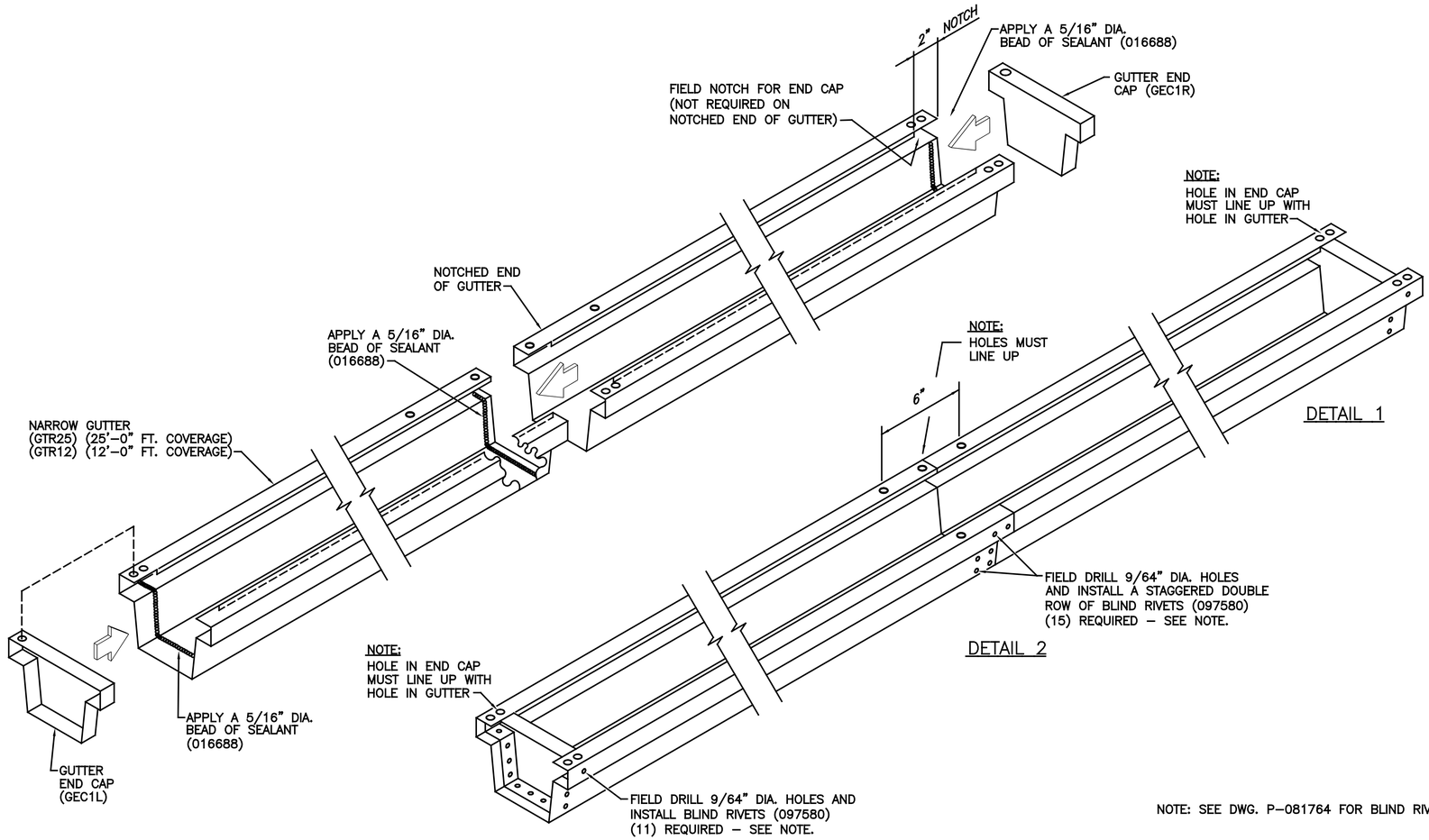
WHEN A 1'–0" WIDE PANEL IS BEING USED IN LIEU OF THE 2'–0" WIDE PANEL THE PARTS SHOWN IN THE 12" PANEL WIDTH ROW SHOULD REPLACE THE PARTS SHOWN IN THE SPECIFIC DETAIL ON THE ERECTION DRAWINGS

1'–0" MR–24 PANEL INSTALLATION
REPLACEMENT PART INFORMATION

DRAWN BY	CHECKED BY	GROUP NUMBER: 00–000–00		
BSN	RLB			
FIRST RELEASE DATE	REVISION DATE	B	P–090005	02
06/04/15	08/06/18			



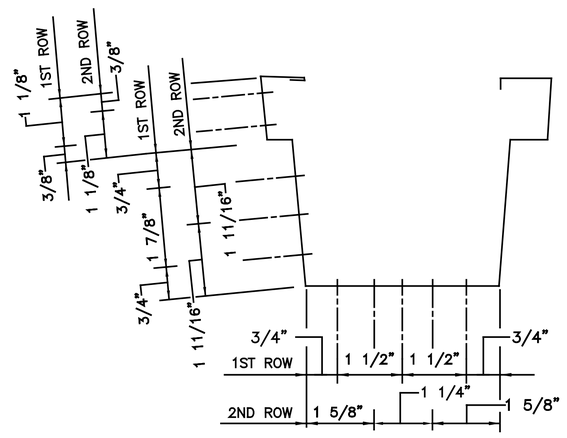
NARROW GUTTER ASSEMBLY



DETAIL 3

DETAIL 1

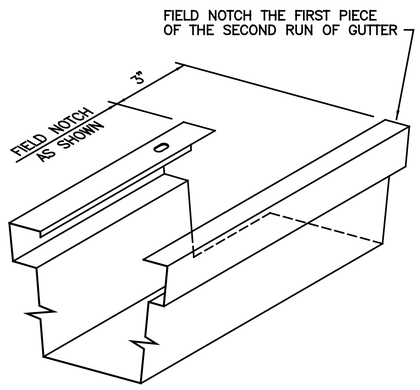
DETAIL 2



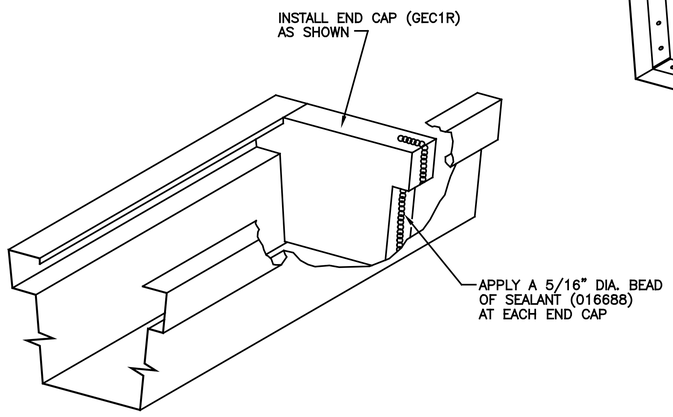
BLIND RIVET SPACING

NOTE: SEE DWG. P-081764 FOR BLIND RIVET COLOR INFORMATION.

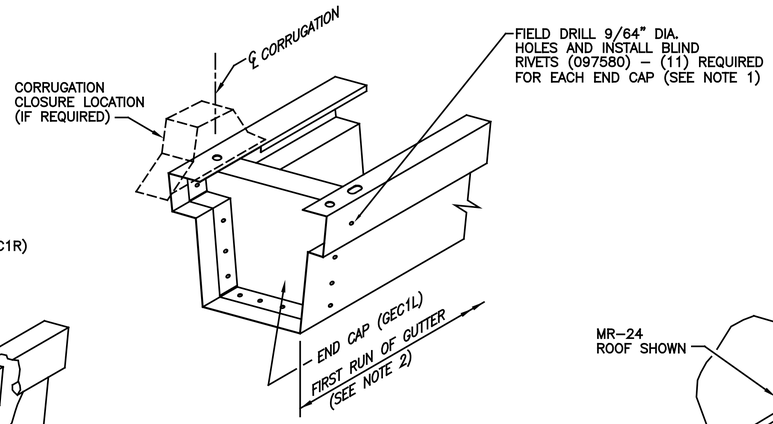
NARROW GUTTER ASSEMBLY (ALL ROOFS)				
DRAWN BY	CHECKED BY	GROUP NUMBER: 01-004-01		
FIRST RELEASE DATE: 01/21/10	REVISION DATE: 07/18/22	B	P-103223	05

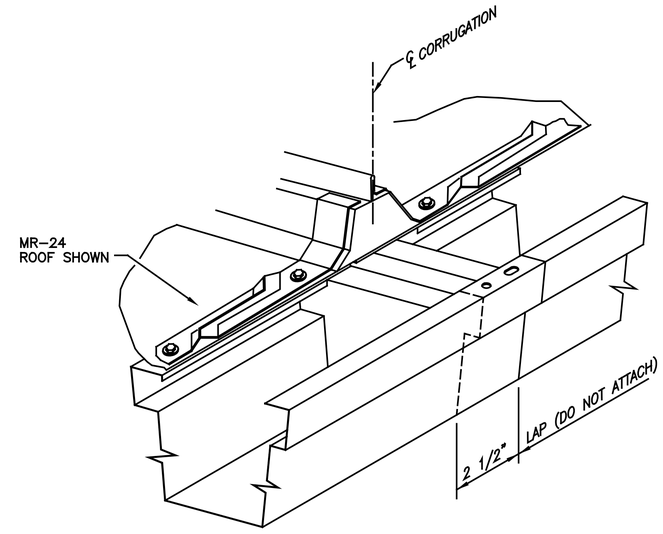


STEP 1



STEP 2





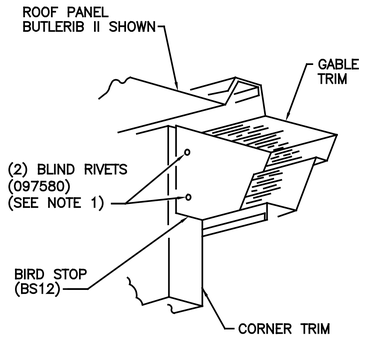
STEP 3

NOTES:

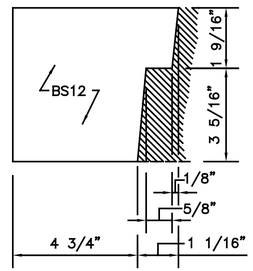
1. SEE DRAWING P-081764 FOR BLIND RIVET COLOR INFORMATION.
2. REFER TO DWG. P-103223 FOR "GUTTER ASSEMBLY"

NARROW GUTTER EXPANSION JOINT
GUTTER – ALL ROOFS

DRAWN BY	CHECKED BY	GROUP NUMBER: 01-004-01		
M.B.	J.S.			
FIRST RELEASE DATE	REVISION DATE	B	P-103315	04
01/21/10	12/04/18			

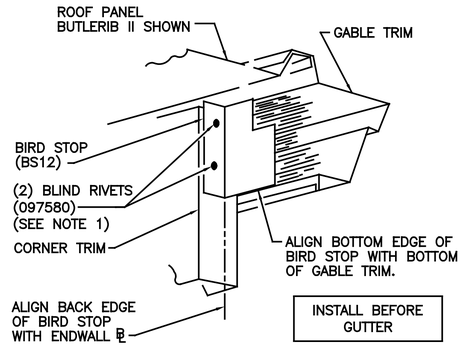


UNTRIMMED EAVE

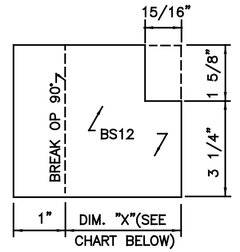


UNTRIMMED EAVE

BIRD STOP CUTTING DIAGRAM
FOR INSTALLATION SHOWN,
(REVERSE FOR OPPOSITE CORNER)

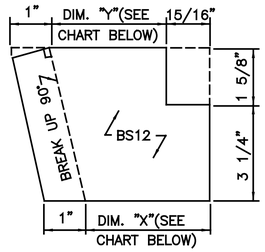


EAVE WITH GUTTER



1/4:12, 1/2:12, AND 1:12 ROOF SLOPES

(SEE NOTE 2)



4:12 ROOF SLOPE

(SEE NOTE 2)

EAVE WITH GUTTER

BIRD STOP CUTTING DIAGRAM
FOR INSTALLATION SHOWN,
(REVERSE FOR OPPOSITE CORNER)

CUTTING DIMENSIONS				
WALL		1/4, 1/2, AND 1:12 ROOF SLOPES	4:12 ROOF SLOPE	
		DIM. "X"	DIM. "X"	DIM. "Y"
BUTLERIB II OR SHADOWALL		3 1/8"	1 3/4"	2 3/8"
SHADOWALL		3 1/8"	1 3/4"	2 3/8"
INSULATED WALL PANEL	2"	2 5/8"	1 1/4"	1 7/8"
	2 1/2"	2 1/8"	NOT AVAILABLE	
	3"	1 5/8"	1 1/4"	1 7/8"
	4"	5/8"	NOT AVAILABLE	
TEXTURED INSULATED WALL PANEL	2"	2 1/8"	1/4"	7/8"
	2 1/2"	1 5/8"	NOT AVAILABLE	
	3"	5/8"	NOT AVAILABLE	
	4"	NOT AVAILABLE		
STYLWALL II	HIGH CORR.	2 5/8"	NOT AVAILABLE	
	LOW CORR.	3 1/8"	NOT AVAILABLE	

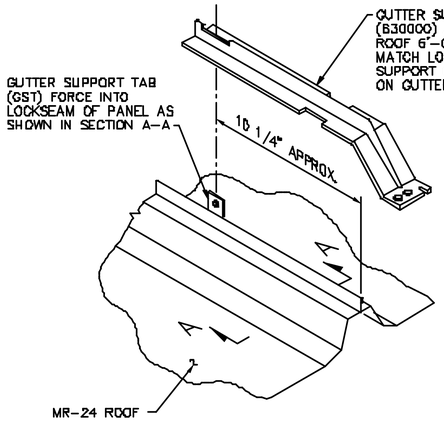
NOTE:

1. SEE DRAWING P-081764 FOR BLIND RIVET COLOR INFORMATION.

2. FIELD CUT BIRD STOP AS SHOWN IN CUTTING DIAGRAM FOR STANDARD SLOPES. FOR NON-STANDARD SLOPES, USE NEAREST STD. SLOPE INFO. AND ADJUST AS REQUIRED.

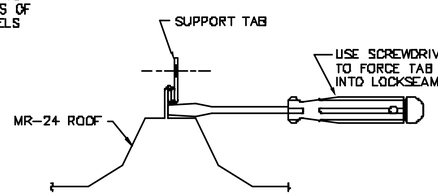
BIRD STOP INSTALLATION – ALL ROOFS

DRAWN BY	CHECKED BY	GROUP NUMBER: 01-001-01		
FIRST RELEASE DATE	REVISION DATE	B	P-104542	06
02/25/10	08/17/20			

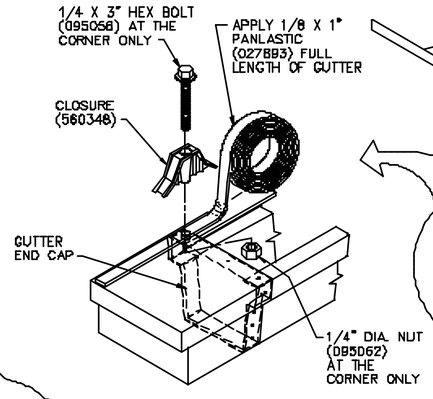


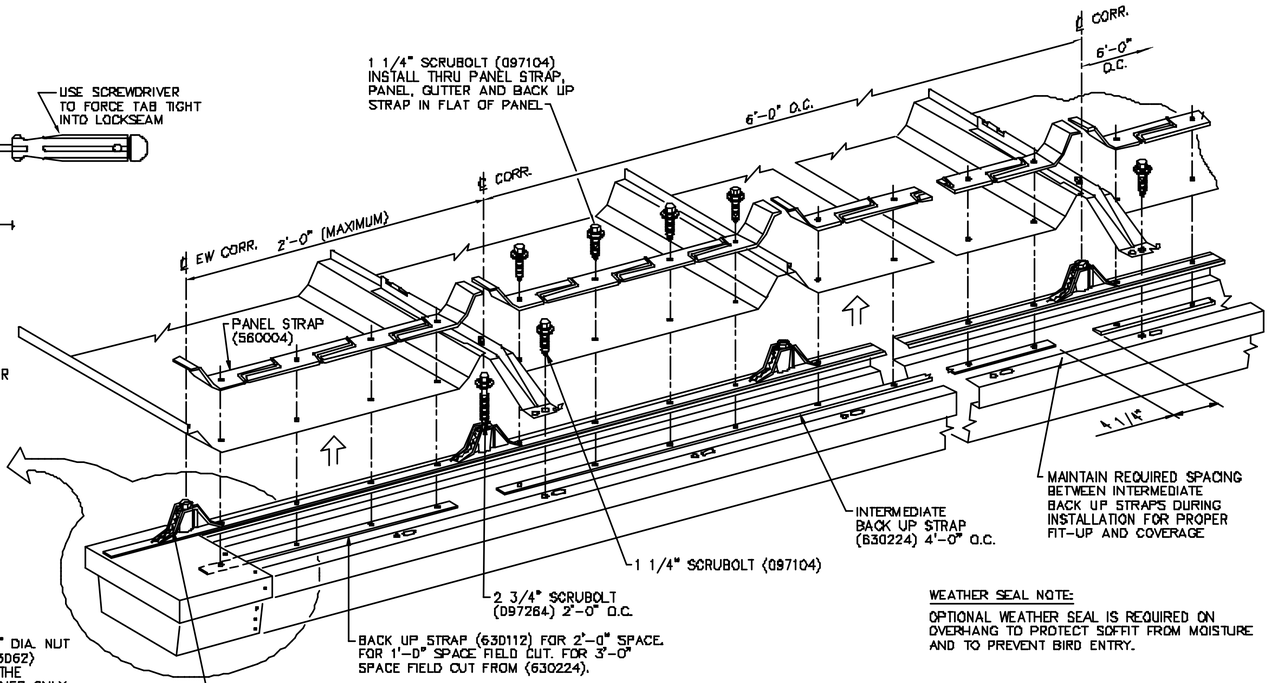
STEP 1

GUTTER SUPPORT TAB INSTALLATION



SECTION A-A

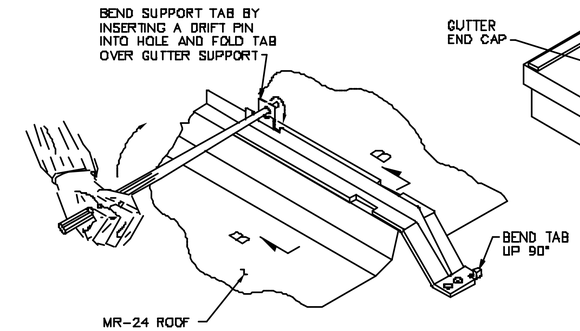




GUTTER SEALANT AND CLOSURE INSTALLATION

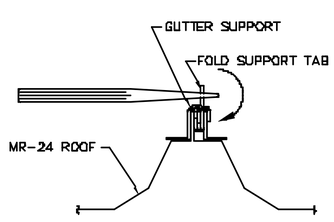
WEATHER SEAL NOTE:

OPTIONAL WEATHER SEAL IS REQUIRED ON OVERHANG TO PROTECT SOFFIT FROM MOISTURE AND TO PREVENT BIRD ENTRY.

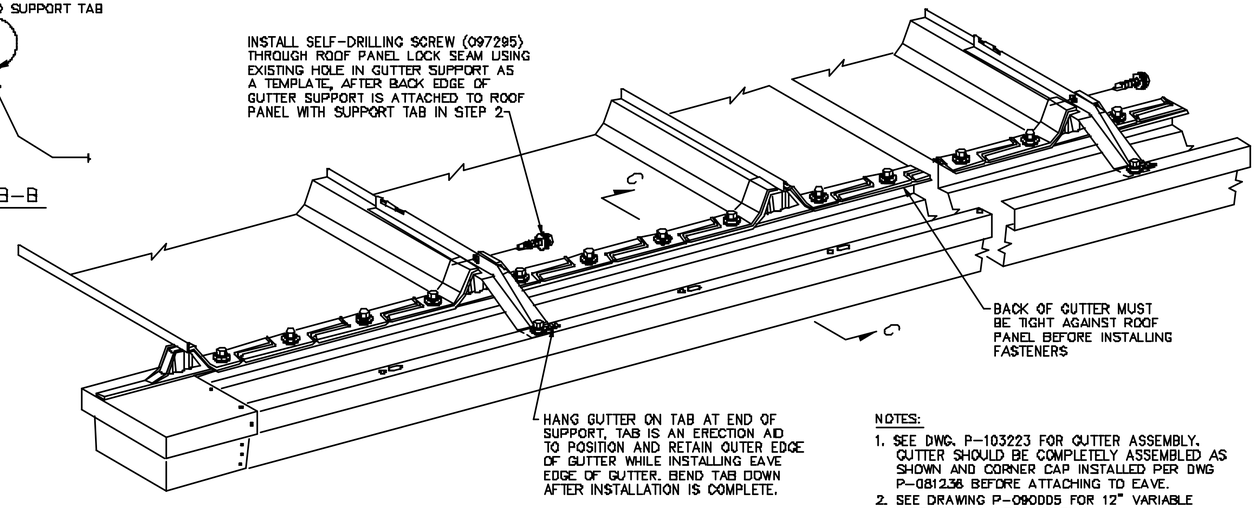


STEP 2

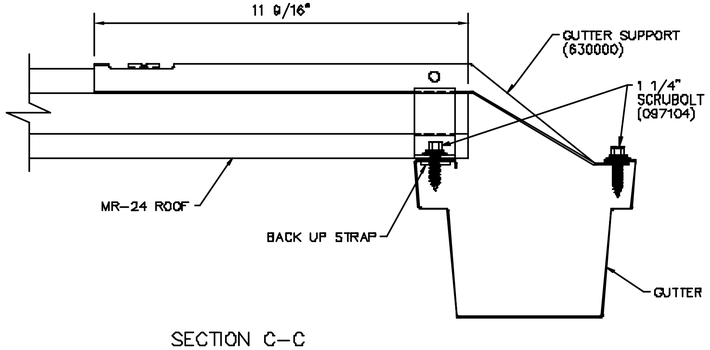
GUTTER SUPPORT INSTALLATION



SECTION B-B



FINISHED GUTTER



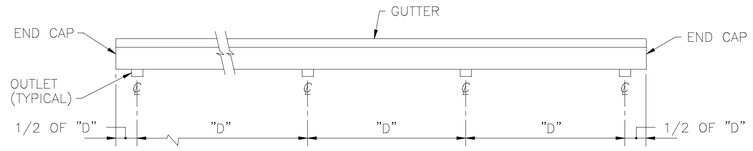
SECTION C-C

NOTES:

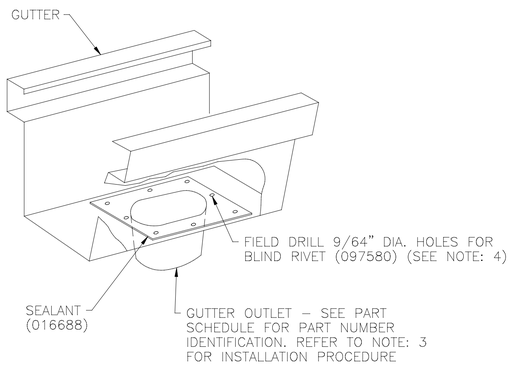
1. SEE DWG. P-103223 FOR GUTTER ASSEMBLY. GUTTER SHOULD BE COMPLETELY ASSEMBLED AS SHOWN AND CORNER CAP INSTALLED PER DWG P-081238 BEFORE ATTACHING TO EAVE.
2. SEE DRAWING P-090005 FOR 12" VARIABLE WIDTH PANEL INFORMATION

MR-24/CMR-24 NARROW GUTTER
INSTALLATION WITH WEATHERSEAL

DRAWN BY	CHECKED BY	GROUP NUMBER: 02-004-01		
RP	VLT			
FIRST RELEASE DATE	REVISION DATE	B	P-104714	03
01/21/10	03/08/16			



NOTE: MAXIMUM CONDUCTOR SPACING "D" MUST BE DETERMINED BASED ON RAINFALL INTENSITY.



OUTLET INSTALLATION

10'–0" CONDUCTOR PIPE AND STRAPS								
EAVE HEIGHT	BUTLERIB II BUTLERIB II EX SHADOWALL SHADOWALL EX eSHADOWALL STYLWALL II FLAT STYLWALL II FLUTED eSTYLWALL II FLAT eSTYLWALL II FLUTED INSULATED WALL 2" TEXTURED INSULATED WALL 2"		ALL WALLS		4'–0" OVERHANG		5'–0" OR 10'–0" CANOPY	
	AT WALL 1/4:12 THRU 1/2:12 ROOF SLOPE		AT WALL >1/2:12 THRU 4:12 ROOF SLOPE					
	QUANTITY PER OUTLET							
HEIGHT	PIPE	STRAPS	PIPE	STRAPS	PIPE	STRAPS	PIPE	STRAPS
10'	1	2	1	2	1 1/2	2	2 1/2	2
11'	1 1/2	3	1 1/2	3	2	3	3	3
12'	1 1/2	3	1 1/2	3	2	3	3	3
13'	1 1/2	3	1 1/2	3	2	3	3	3
14'	1 1/2	3	1 1/2	3	2	3	3	3
15'	1 1/2	3	1 1/2	3	2	3	3	3
16'	2	3	2	3	2 1/2	3	3 1/2	3
17'	2	3	2	3	2 1/2	3	3 1/2	3
18'	2	3	2	3	2 1/2	3	3 1/2	3
19'	2	3	2	3	2 1/2	3	3 1/2	3
20'	2	3	2	3	2 1/2	3	3 1/2	3
21'	2 1/2	4	2 1/2	4	3	4	4	4
22'	2 1/2	4	2 1/2	4	3	4	4	4
23'	2 1/2	4	2 1/2	4	3	4	4	4
24'	2 1/2	4	2 1/2	4	3	4	4	4
25'	2 1/2	4	2 1/2	4	3	4	4	4
26'	3	4	3	4	3 1/2	4	4 1/2	4
27'	3	4	3	4	3 1/2	4	4 1/2	4
28'	3	4	3	4	3 1/2	4	4 1/2	4
29'	3	4	3	4	3 1/2	4	4 1/2	4
30'	3	4	3	4	3 1/2	4	4 1/2	4
31'	3 1/2	5	3 1/2	5	4	5	5	5
32'	3 1/2	5	3 1/2	5	4	5	5	5
33'	3 1/2	5	3 1/2	5	4	5	5	5
34'	3 1/2	5	3 1/2	5	4	5	5	5
35'	3 1/2	5	3 1/2	5	4	5	5	5
36'	4	5	4	5	4 1/2	5	5 1/2	5
37'	4	5	4	5	4 1/2	5	5 1/2	5
38'	4	5	4	5	4 1/2	5	5 1/2	5
39'	4	5	4	5	4 1/2	5	5 1/2	5
40'	4	5	4	5	4 1/2	5	5 1/2	5

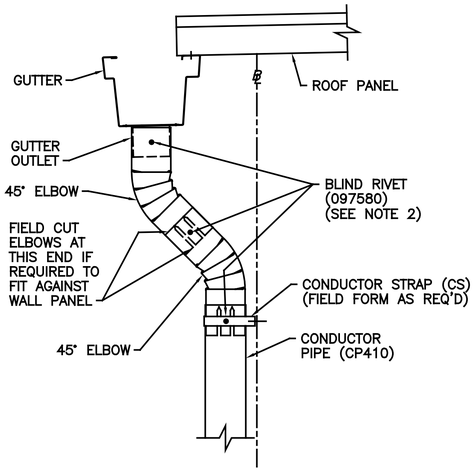
PART SCHEDULE	
PART NUMBER	DESCRIPTION
CP410	CONDUCTOR PIPE
4CE45	45° ELBOW
008738	GUTTER OUTLET 1/4:12 THRU 1/2:12
4CE75	75° ELBOW
016688	GRAY SEALANT
CS	CONDUCTOR STRAP (FIELD FORMED)
640432	GUTTER OUTLET – >3:12 THRU 4:12
640492	GUTTER OUTLET – >1/2:12 THRU 3:12

NOTES:

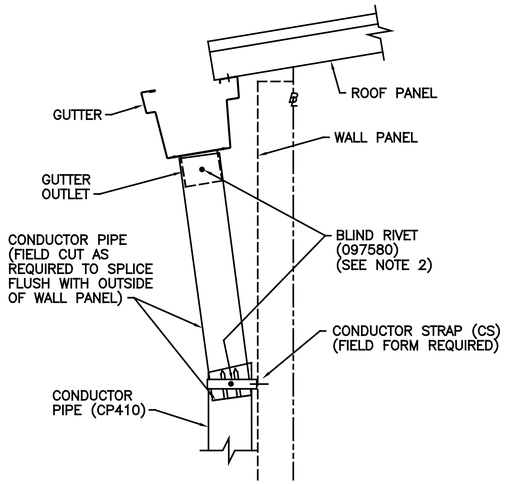
1. CONDUCTOR PIPE (CP410) FURNISHED IN 10'–0" LENGTHS ONLY. FIELD CUT TO LENGTHS REQUIRED.
2. USE (2) BLIND RIVETS AT EACH PIPE JOINT.
3. USING GUTTER OUTLET AS A PATTERN. FIELD CUT GUTTER FOR PROPER FIT. APPLY 016688 SEALANT TO UNDERSIDE OF OUTLET LIP AND ATTACH WITH (8) BLIND RIVETS. IMPORTANT: BE SURE TO ORIENT GUTTER AND GUTTER OUTLET PROPERLY PRIOR TO ATTACHMENT.
4. SEE DRAWING P–081764 FOR BLIND RIVET COLOR INFORMATION.
5. FOR CONDUCTOR PIPE DETAILS SEE DRAWINGS P–105225 AND P–105228.

4" CONDUCTOR PIPE INSTALLATION
ALL WALLS

DRAWN BY	CHECKED BY	GROUP NUMBER: 26–008–01		
RHE	BJF	B	P–105224	08
FIRST RELEASE DATE	REVISION DATE			
01/21/10	05/20/24			

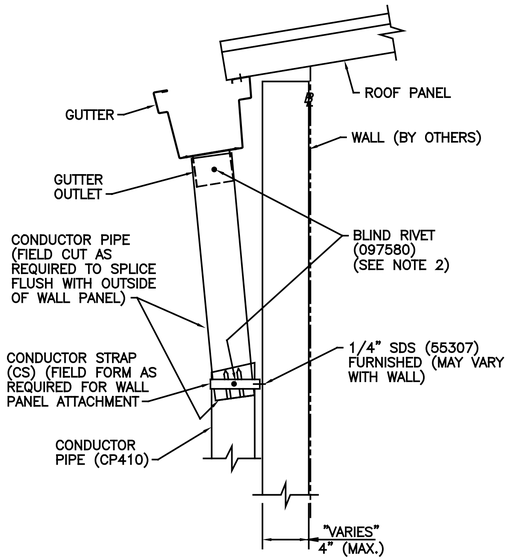


BUTLERIB II AND SHADOWALL
1/4:12 THRU 1/2:12 ROOF SLOPE

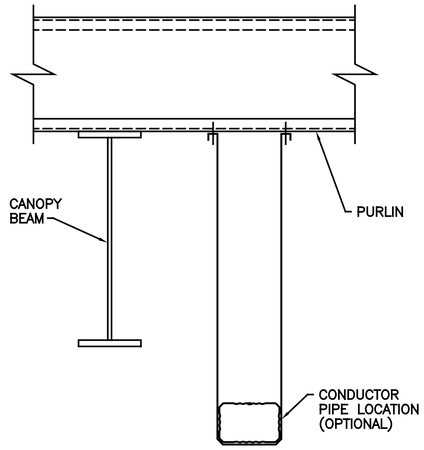


BUTLERIB II AND SHADOWALL
>1/2:12 THRU 4:12 ROOF SLOPE

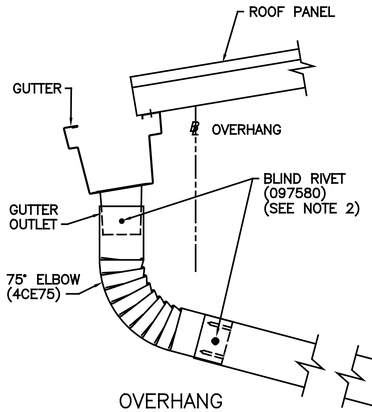
STYLWALL II, eSTYLWALL II, eSHADOWALL,
BUTLERIB II EX, SHADOWALL EX,
AND ALL INSULATED WALL PANELS/TEXTURED INSULATED WALL PANELS
1/4:12 THRU 4:12 ROOF SLOPE



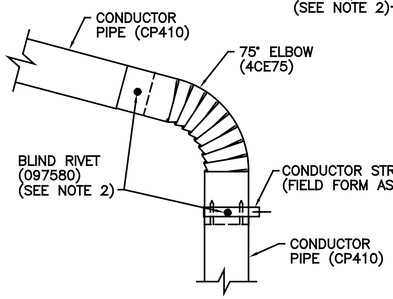
WALL (BY OTHERS)
>1/2:12 THRU 4:12 ROOF SLOPE



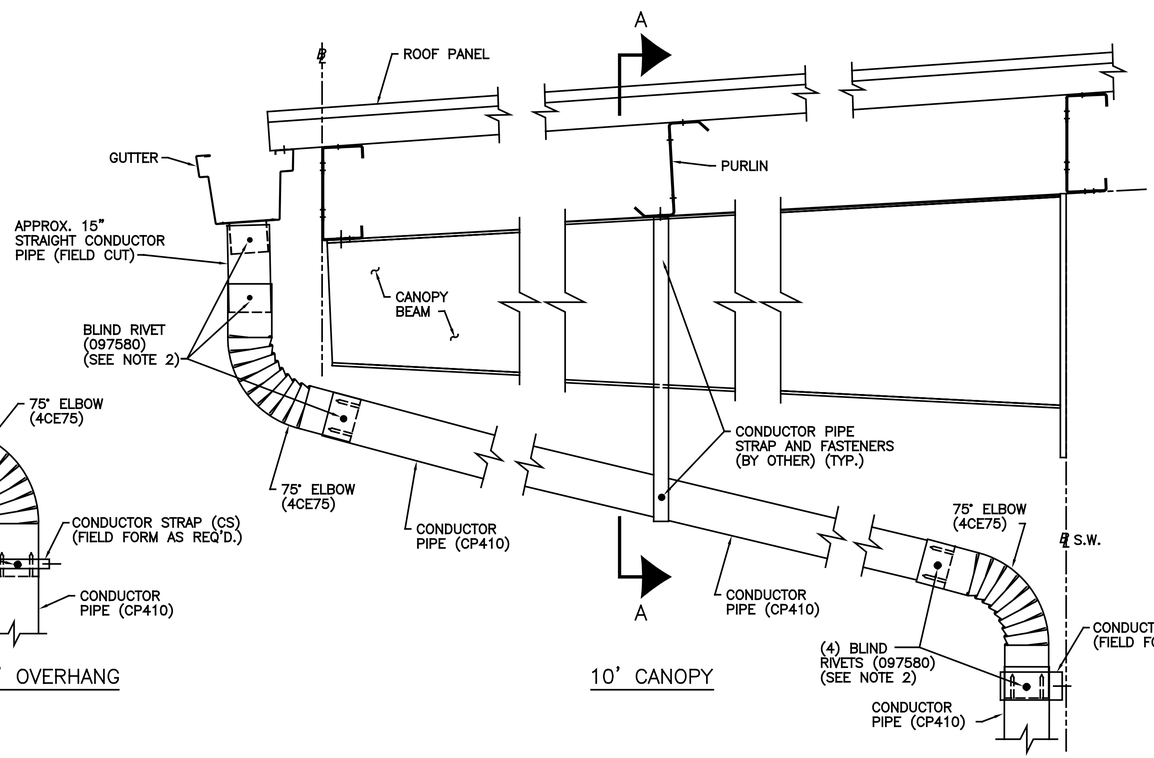
SECTION A–A



OVERHANG



5' CANOPY OR 4' OVERHANG

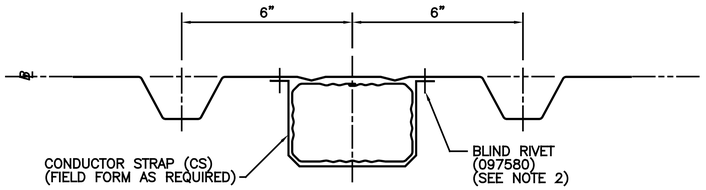


10' CANOPY

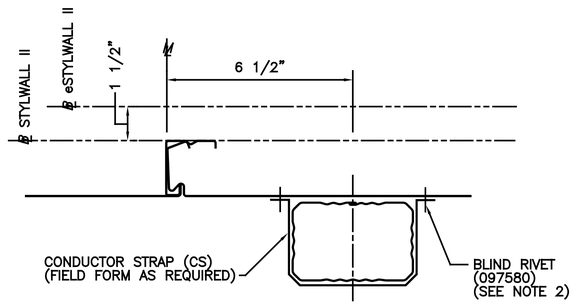
NOTES:
1. FIELD DRILL 9/64" DIA. FOR BLIND RIVETS (097580).
2. SEE DRAWING P–081764 FOR BLIND RIVET COLOR INFORMATION.
3. SEE DWG. P–105224 FOR PART SCHEDULE.
4. SEE DWG. P–105228 FOR CONDUCTOR PIPE DETAILS.

4" CONDUCTOR PIPE DETAILS
ALL WALLS

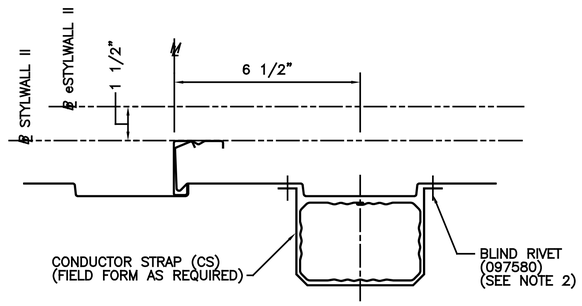
DRAWN BY	CHECKED BY	GROUP NUMBER: 26–008–01		
FIRST RELEASE DATE	REVISION DATE	B	P–105225	08
01/21/10	08/18/20			



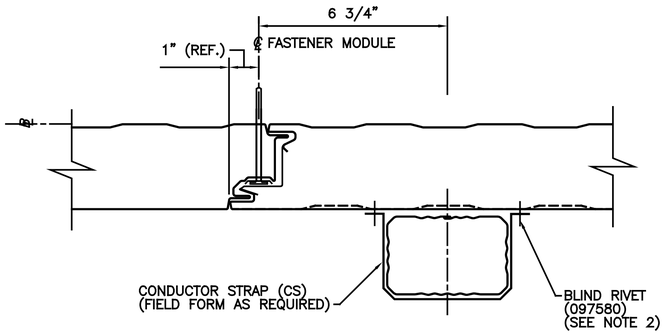
BUTLERIB II AND BUTLERIB EX



FLAT STYLWALL II AND FLAT eSTYLWALL II

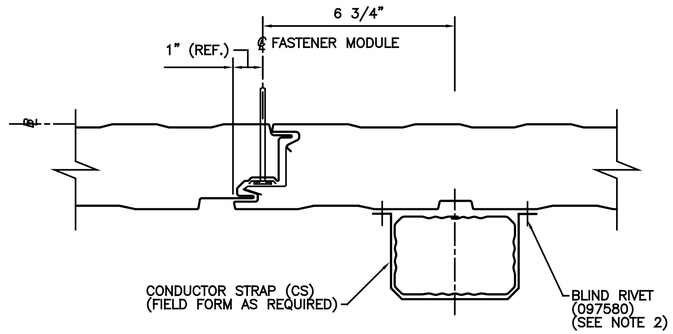


FLUTED STYLWALL II AND FLUTED eSTYLWALL II

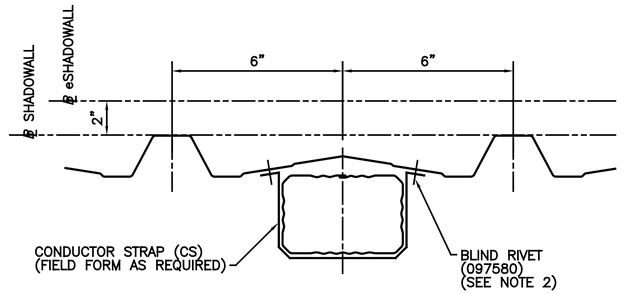


INSULATED WALL PANEL WITHOUT FLUTES

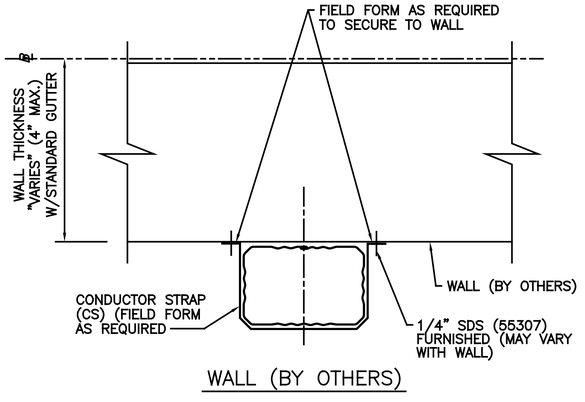
TEXTURED INSULATED WALL PANEL



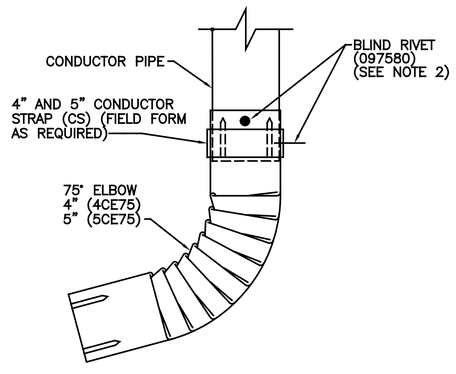
INSULATED WALL PANEL WITH FLUTES



SHADOWALL, SHADOWALL EX AND eSHADOWALL



WALL (BY OTHERS)



SHOE INSTALLATION

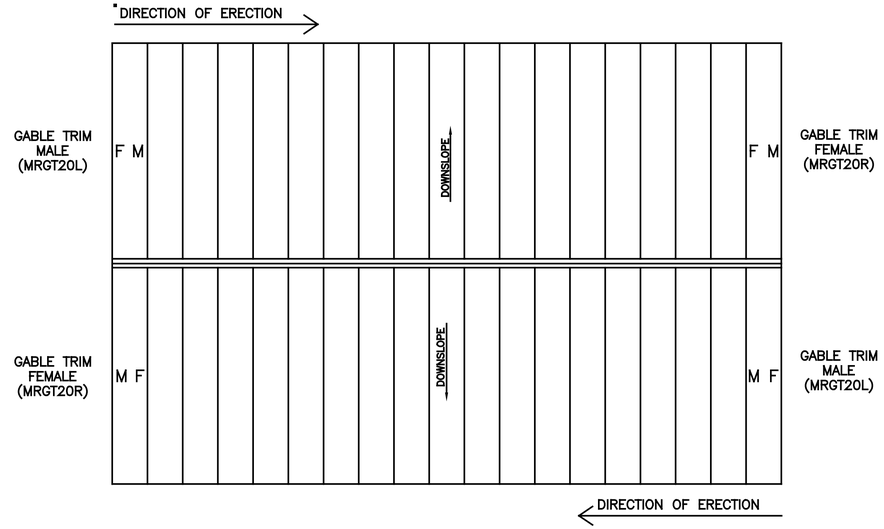
(TYPCAL SECTIONS – ABOVE)

NOTES:

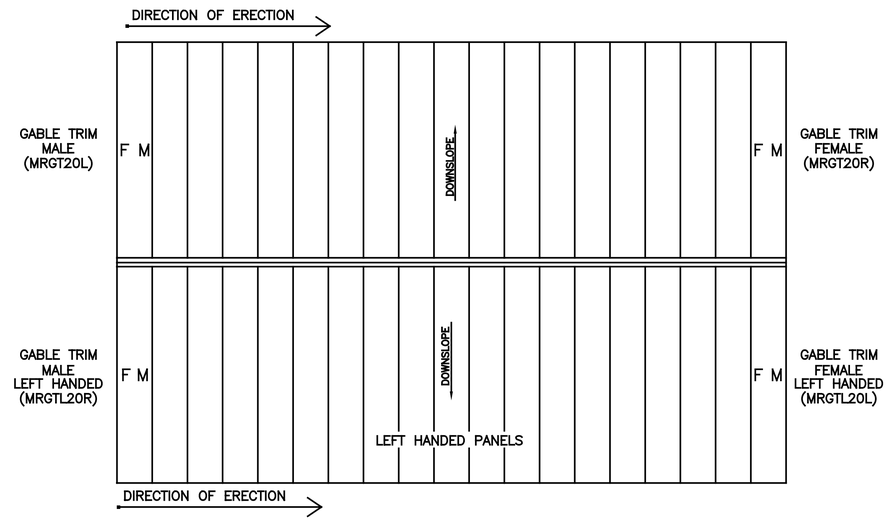
1. LOCATE CONDUCTOR STRAPS AT TOP, BOTTOM AND JOINTS OF VERTICAL 4" CONDUCTOR PIPES. 5" CONDUCTOR PIPES MAX. 6'–0" O.C. SPACING.
2. SEE DRAWING P–081764 FOR BLIND RIVET COLOR INFORMATION.
3. FOR PART SCHEDULES, SEE DWG. P–105224 (NARROW GUTTER), AND P–080091 (WIDE GUTTER).

4" AND 5" CONDUCTOR PIPE AND CONDUCTOR STRAP DETAILS (ALL WALLS)

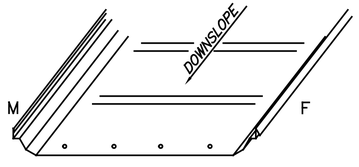
DRAWN BY	CHECKED BY	GROUP NUMBER: 26–008–01		
FIRST RELEASE DATE	REVISION DATE	B	P–105228	08
01/21/10	03/17/21			



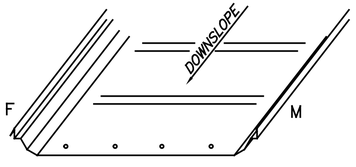
NORMAL ERECTION PROCEDURE



ERECTION PROCEDURE FROM LEFT TO RIGHT
(USING LEFT HANDED PANELS)

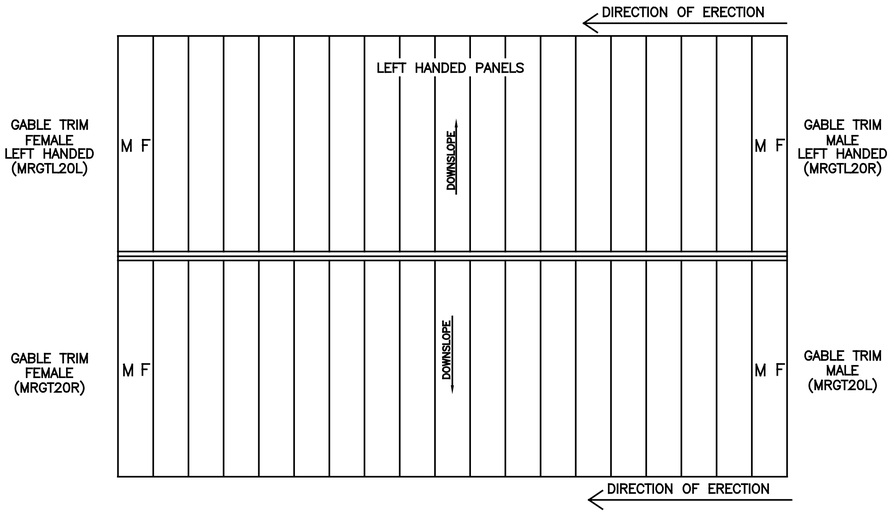


MR24 PANEL



LEFT HANDED
MR24 PANEL

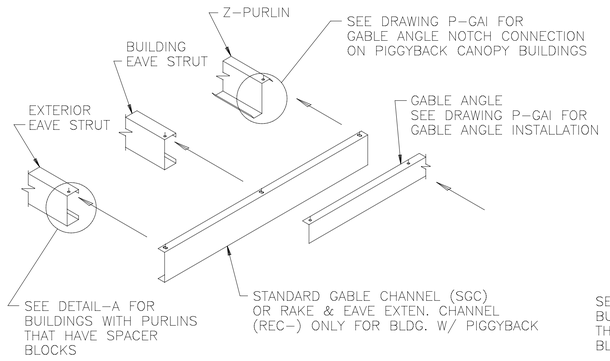
KEY
F = FEMALE
M = MALE



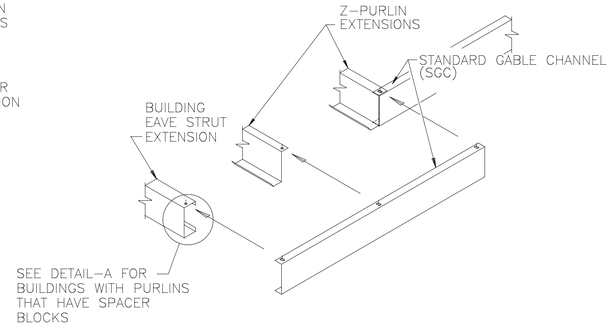
ERECTION PROCEDURE FROM RIGHT TO LEFT
(USING LEFT HANDED PANELS)

GABLE TRIM – ERECTION PROCEDURE
MR–24 ROOF

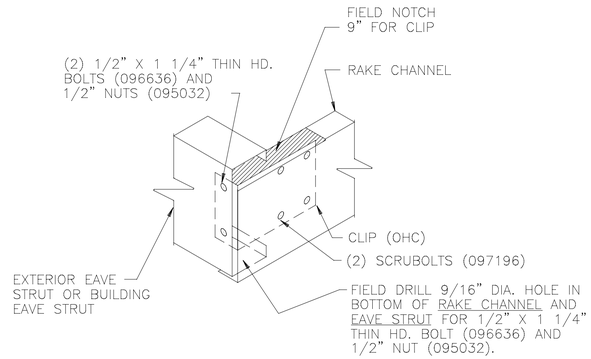
DRAWN BY	CHECKED BY	GROUP NUMBER: – –		
RHE	JWH			
FIRST RELEASE DATE	REVISION DATE	B	P–149060	00
04/12/21	04/12/21			



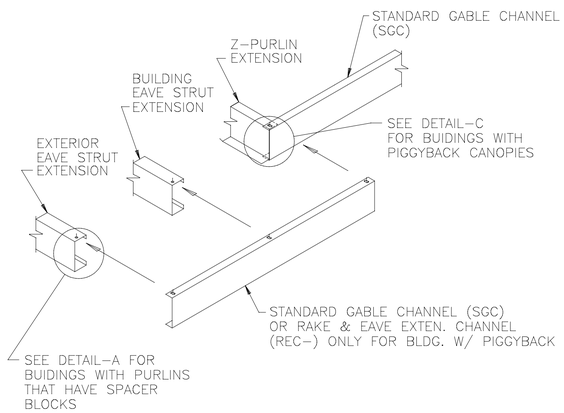
RAKE CHANNEL INSTALLATION
SIDEWALL OVERHANG ONLY



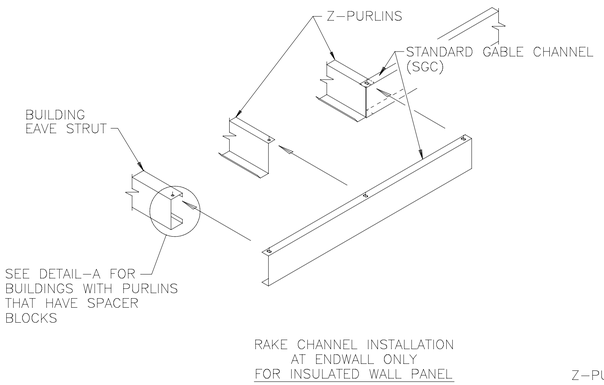
RAKE CHANNEL INSTALLATION
ENDWALL OVERHANG ONLY



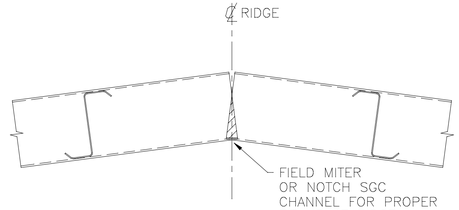
DETAIL–A
(SEE DETAIL RSB011 FOR ALTERNATE CONNECTION)



RAKE CHANNEL INSTALLATION
ENDWALL AND SIDEWALL OVERHANG



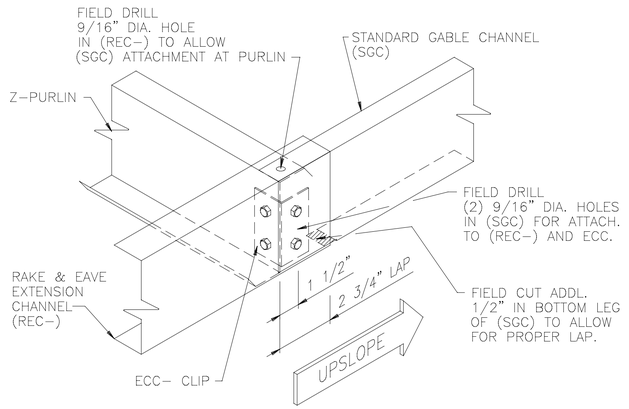
RAKE CHANNEL INSTALLATION
AT ENDWALL ONLY
FOR INSULATED WALL PANEL



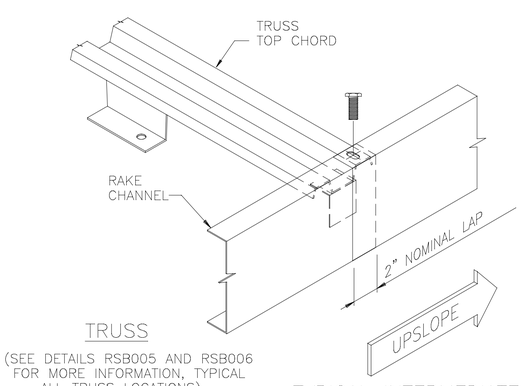
DETAIL–B

NOTES:

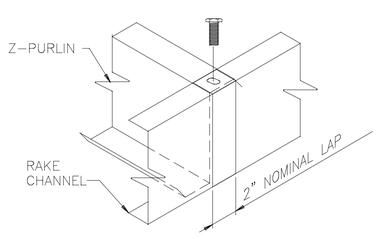
1. INSTALLATION FOR TRUSS IS SIMILAR. SEE DRAWING P–GAI FOR REFERENCE.



DETAIL–C
(SEE DETAILS RS10M3 AND RS10N3 FOR (REC–) CONN. AT PIGGYBACK CANOPY)



TRUSS
(SEE DETAILS RSB005 AND RSB006 FOR MORE INFORMATION, TYPICAL ALL TRUSS LOCATIONS)



Z–PURLIN

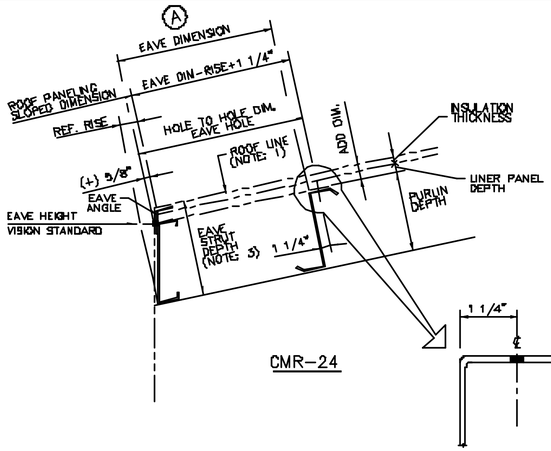
TYPICAL INTERMEDIATE RAKE CHANNEL SPLICE

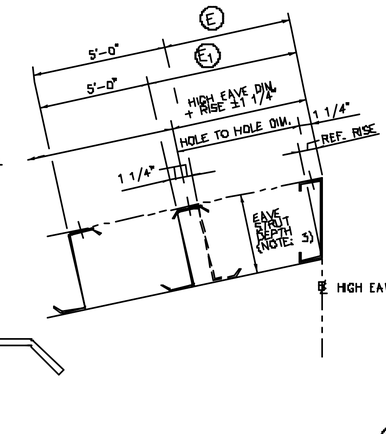
GENERAL NOTES:

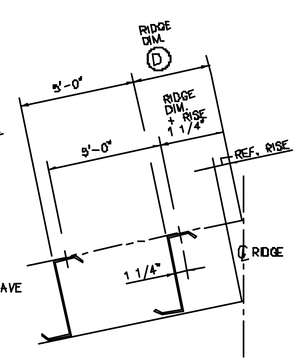
1. ATTACH RAKE CHANNELS TO TOP ONLY OF PURLIN EXTENSION AND EAVE STRUT EXTENSION WITH 1/2" X 1 1/4" THIN HEAD BOLT (096636) AND 1/2" NUT (095032). EXCLUDING EAVE STRUT ATTACHMENT WITH INSULATED PURLINS.
2. FOR EAVE STRUT CONNECTION WITH INSULATED PURLINS SEE DETAIL–A, THIS DRAWING.
3. FOR FIELD CUTTING OF SGC CHANNEL AT RIDGE, SEE DETAIL–B.
4. FOR GABLE CHANNEL LAP CONN. WITH REC– ON PIGGYBACK COND. SEE DETAIL–C, THIS DRAWING.

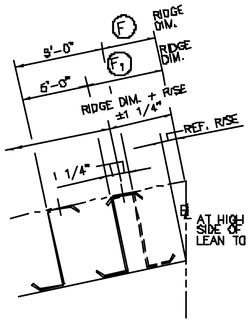
RAKE CHANNEL WITH OUT FASCIA
INSTALLATION DETAILS

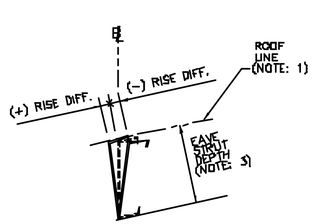
DRAWN BY	CHECKED BY	GROUP NUMBER: 00–000–00		
BSN	RHE	C	P–RCI	05
FIRST RELEASE DATE	REVISION DATE			
01/21/10	10/23/23			



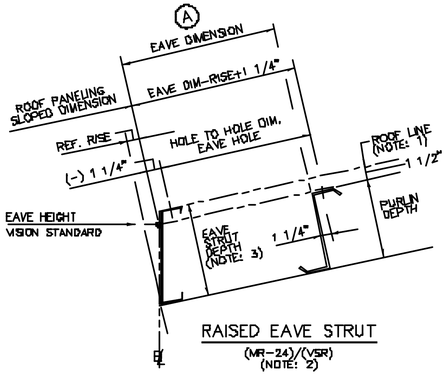




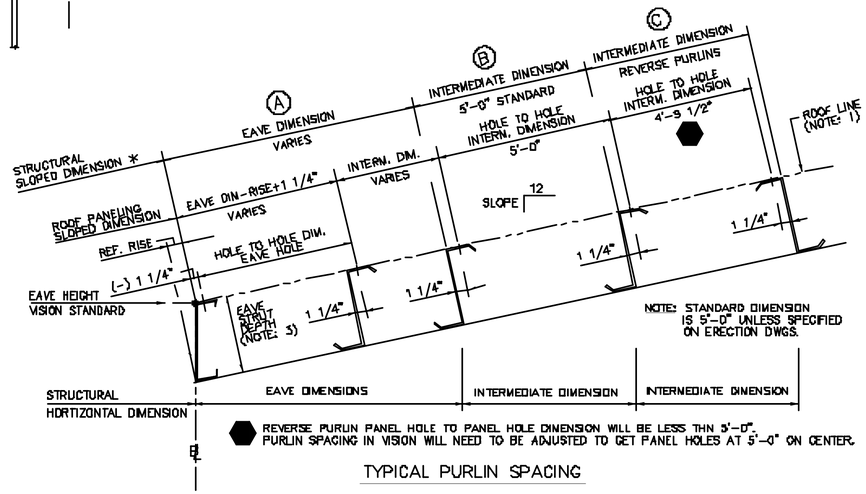




NON-STANDARD
EAVE STRUT
(NOTE: 8)



RAISED EAVE STRUT
(MR-24)/(VSR)
(NOTE: 2)



TYPICAL PURLIN SPACING

GENERAL NOTES:

1. ROOF LINE IS DEFINED AS THE BOTTION SURFACE OF THE BASIC ROOF PANEL. THIS IS A LINE PARALLEL TO THE TOP FLANGE OF THE EAVE STRUT OR EAVE ANGLE.
2. RAISED EAVE STRUT IS USED FOR MR-24 WITH INSULATED PURLINS OR VSR WITH THE TALL CLIP.
3. EAVE STRUT DEPTH IS THE DIMENSION FROM TOP OF ROOF BEAM TO THE ROOF LINE (BOTTOM OF THE BASIC ROOF PANEL).
4. SLOPED PURLIN SPACES ARE SHOWN IN THE TABLE AND ARE DIMENSIONED FROM TOP OF PURLIN.

   THE BASIC SLOPE IN THE TABLE IS A BUTLER STANDARD SLOPE. THE PURLIN SPACES ARE USED FOR THE ENTIRE SLOPE RANGE. THE HORIZONTAL SPACES ARE FOR THE BASIC SLOPE ONLY. TO DETERMINE THE HORIZONTAL SPACES FOR OTHER SLOPES IN THE THE SLOPE RANGE, DIVIDE THE SLOPED DIMENSION BY THE COSINE OF THE ROOF SLOPE.
5. STANDARD EAVE STRUTS ARE DESIGNED FOR THE "BASIC" SLOPES ONLY. ON STANDARD BUILDINGS THESE EAVE STRUTS ARE USED FOR ALL SLOPES WITHIN THE SLOPE RANGE.

   THE ORDER PROCESSOR SHOULD BE AWARE THAT THE ROOF PANEL LENGTHS MAY NEED TO BE ADJUSTED TO INSURE PROPER FIT-UP AT THE RIDGE AND SPLICES.

   THE ADJUSTMENT DIMENSION IS THE RISE DIFFERENCE FROM THE TOP OF THE EAVE STRUT TO BUILDING LINE. IF THIS DIMENSION IS GREATER THAN +/- 1/8", IT IS RECOMMENDED TO ADJUST THE PANEL LENGTH, OR AS AN ALTERNATE, USE A CUSTOM EAVE STRUT DESIGNED FOR THE ACTUAL ROOF SLOPE.

   EXAMPLE: A 2 1/2:12 BUILDING USES A 3:12 EAVE STRUT WITH A 10" DEPTH.

   3 ÷12 X 10 = 2.500"
   MINUS 2.5 ÷12 X 10 = 2.083"
   RISE DIFFERENCE = 27/64" (13/32")

   SINCE THE RISE DIFFERENCE IS GREATER THAN 1/8", 3/8" SHOULD BE DEDUCTED FROM THE EAVE PANEL LENGTH.
6. TO COMPLETE ROOF PANEL CALCULATIONS, REFER TO SPECIFIC ROOF PANELING CALCULATOR DRAWINGS OR PROCESSING PROCEDURES.

SLOPE RANGE		Ⓐ LOW EAVE DIMENSION FIRST AND SECOND PURLIN SPACES	Ⓑ INTERMEDIATE DIMENSION	Ⓒ⬢ SINGLE SLOPE REVERSE PURLIN DIMENSION	Ⓓ DBL SLOPE RIDGE DIMENSION				Ⓔ DOWN SLOPE HIGH EAVE DIMENSION	Ⓔ1 UP SLOPE HIGH EAVE DIMENSION	Ⓕ DOWN SLOPE LEAN TO HIGH SIDE OR PERP. TRANSITION DIMENSION				Ⓕ1 UP SLOPE LEAN TO HIGH SIDE OR PERP. TRANSITION DIMENSION				RISE DIMENSION (IN INCHES) EAVE STRUT DEPTH (NOTE: 3)			
RANGE	DIM.	ALL PANEL TYPES	ALL PANEL TYPES	ALL PANEL TYPES	ALL PANEL TYPES / PURLIN DEPTH				ALL PANEL TYPES	ALL PANEL TYPES	ALL PANEL TYPES / PURLIN DEPTH				ALL PANEL TYPES / PURLIN DEPTH				7"	8 1/2"	10"	11 1/2"
					7"	8 1/2"	10"	11 1/2"			7"	8 1/2"	10"	11 1/2"	7"	8 1/2"	10"	11 1/2"				
.25	SLOPED *	VARIES	5'-0" 60.00	5'-0" 60.00	1'-1 3/16" 13.15	1'-1 3/16" 13.15	1'-1 3/16" 13.21	1'-1 1/4" 13.23	5'-0" 60.00	5'-0" 60.00	10 7/8" 10.88	10 7/8" 10.88	10 7/8" 10.88	10 7/8" 10.88	1'-1 3/8" 13.38	1'-1 3/8" 13.38	1'-1 3/8" 13.38	1'-1 3/8" 13.38	.1458	.1771	.2083	.2395
	HORIZ.				1'-1" 13.00	1'-1" 13.00	1'-1" 13.00	1'-1" 13.00			10 3/4" 10.73	10 11/16" 10.70	10 11/16" 10.67	10 5/8" 10.64	1'-1 1/4" 13.23	1'-1 3/16" 13.20	1'-1 3/16" 13.17	1'-1 1/8" 13.14	BASIC SLOPE – .25:12			
.251 THRU .749	SLOPED *				1'-1 5/16" 13.30	1'-1 5/16" 13.35	1'-1 3/8" 13.41	1'-1 1/2" 13.48			10 7/8" 10.88	10 7/8" 10.88	10 7/8" 10.88	10 7/8" 10.88	1'-1 3/8" 13.38	1'-1 3/8" 13.38	1'-1 3/8" 13.38	1'-1 3/8" 13.38	.2817	.3542	.4167	.4792
	HORIZ.				1'-1" 13.00	1'-1" 13.00	1'-1" 13.00	1'-1" 13.00			10 5/8" 10.58	10 5/8" 10.52	10 5/8" 10.46	10 5/8" 10.40	1'-1 1/16" 13.06	1'-1" 13.02	1'-0 31/32" 12.98	1'-0 29/32" 12.90	BASIC SLOPE – .5:12			
.75 THRU 1.249	SLOPED *				1'-0 27/32" 12.85	1'-0 31/32" 12.97	1'-1 1/16" 13.08	1'-1 7/32" 13.23			10 7/16" 10.44	10 7/16" 10.44	10 7/16" 10.44	10 7/16" 10.44	1'-0 15/16" 12.94	1'-0 15/16" 12.94	1'-0 15/16" 12.94	1'-0 15/16" 12.94	.5833	.7083	.8333	.9583
	HORIZ.				1'-0 7/32" 12.22	1'-0 7/32" 12.22	1'-0 7/32" 12.22	1'-0 7/32" 12.22			9 27/32" 9.85	9 3/4" 9.73	9 19/32" 9.60	9 15/32" 9.48	1'-0 11/32" 12.35	1'-0 1/4" 12.23	1'-0 1/8" 12.10	1'-0" 11.98	BASIC SLOPE – 1:12			
1.25 THRU 2.249	SLOPED *				1'-1 11/32" 13.33	1'-1 9/16" 13.56	1'-1 13/16" 13.81	1'-2 3/32" 14.08			11" 11.00	11" 11.00	11" 11.00	11" 11.00	1'-1 1/2" 13.50	1'-1 1/2" 13.50	1'-1 1/2" 13.50	1'-1 1/2" 13.50	1.1667	1.4167	1.6667	1.9167
	HORIZ.				1'-0" 12.00	1'-0" 12.00	1'-0" 12.00	1'-0" 12.00			9 27/32" 9.83	9 19/32" 9.58	9 11/32" 9.33	9 1/16" 9.08	1'-0 5/16" 12.33	1'-0 7/16" 12.08	11 13/16" 11.83	11 19/32" 11.58	BASIC SLOPE – 2:12			
2.25 THRU 3.499	SLOPED *				1'-1 13/32" 13.41	1'-1 25/32" 13.78	1'-2 1/8" 14.14	1'-2 17/32" 14.54			11 1/4" 11.25	11 1/4" 11.25	11 1/4" 11.25	11 1/4" 11.25	1'-1 7/8" 13.88	1'-1 7/8" 13.88	1'-1 7/8" 13.88	1'-1 7/8" 13.88	1.7500	2.1250	2.5000	2.8750
	HORIZ.				11 5/16" 11.31	11 5/16" 11.31	11 5/16" 11.31	11 5/16" 11.31			9 1/2" 9.5	9 1/8" 9.13	8 3/4" 8.75	8 3/8" 8.38	1'-0 1/8" 12.13	11 3/4" 11.75	11 3/8" 11.38	11" 11.00	BASIC SLOPE – 3:12			
3.5 THRU 4.0	SLOPED *	▼	▼	▼	1'-0 5/8" 12.61	1'-1 1/8" 13.11	1'-1 15/32" 13.59	1'-2 1/8" 14.12			10" 10.00	10" 10.00	10" 10.00	10" 10.00	1'-0 2/8" 12.63	1'-0 2/8" 12.63	1'-0 2/8" 12.63	1'-0 2/8" 12.63	2.3333	2.8333	3.3333	3.8333
	HORIZ.	VARIES	5'-0" 60.00	5'-0" 60.00	9 3/4" 9.75	9 3/4" 9.75	9 3/4" 9.75	9 3/4" 9.75	5'-0" 60.00	5'-0" 60.00	7 11/16" 7.67	7 3/16" 7.17	6 11/16" 6.67	6 3/16" 6.17	10 9/32" 10.29	9 25/32" 9.79	9 9/32" 9.29	8 25/32" 8.79	BASIC SLOPE – 4:12			

* DEFAULT DIMENSION USED BY VISION

FORMULAS USED IN ROOF CALCULATIONS:

1. (CONVERT ROOF SLOPE DIMENSIONS TO DECIMAL FOR THESE CALCULATIONS)
2. RISE DIMENSION = (ROOF SLOPE ÷12) X EAVE STRUT DEPTH
3. SLOPED DIMENSION = (HORIZONTAL DIM. ÷COSINE OF THE ROOF SLOPE DEGREES)
4. HORIZONTAL DIM. = (SLOPE DIM. X COSINE OF THE ROOF SLOPE DEGREES)
5. ROOF SLOPE DEG = ARC TANGENT (OR INVERSE TANGENT) X (ROOF SLOPE ÷12)

Z-PURLIN ROOF STRUCTURAL LOCATION
PURLIN SPACING

DRAWN BY	CHECKED BY	GROUP NUMBER: 00-000-00		
BSN	MCC			
FIRST RELEASE DATE	REVISION DATE	C	P-ZRSLO	05
01/21/10	11/06/14			